JACOB

NO.1 IN TUBING SYSTEMS

THE CATALOG



THE PDF CATALOG
Easy to use

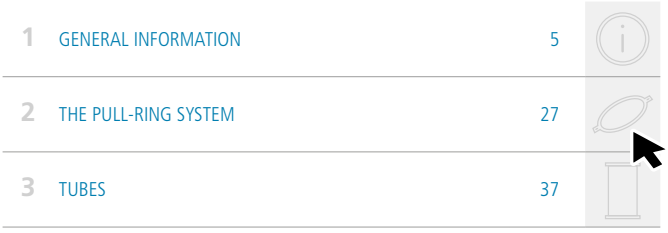
THE PDF CATALOG GIVES YOU A FAST ROUTE...

... to the table of contents

Just one click away from the table of contents: The doorway to our range of products – your one-stop shop for modular tubing systems. Try it out!

... to our products

Quickly find your product of choice: To save you the page-turning, we have made the table of contents "clickable."
This way, you can quickly find what you are looking for.

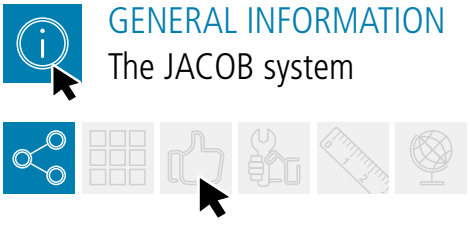


... backwards and forwards

Navigating the chapters is easy and intuitive.

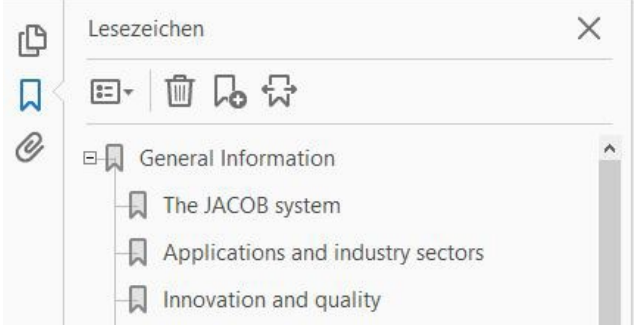
The chapter icons on every left-hand side lead you back to the table of contents.

The chapter section symbols to the right can be clicked on, allowing easy navigation within a chapter.



... using bookmarks

You can move directly to any chapter or page using the structure tree.







CONTACT US

+1 901 566-1110

EFFICIENT SALES

A warehouse with over 1 million articles ensures that our standard parts are available at any time, within a very short time if sent by express. Thanks to our ultra-modern production processes, we also manufacture individual parts to your specification. This guarantees great planning and project reliability for your tubing system.

CUSTOMER SERVICE

Do you have any questions about designing your tubing system? Or about the right material to use? Or about the performance of particular components? No matter what you need before, during and after the purchase of a JACOB tubing system - our customer service is always on hand to help you!

A DIRECT PERSONAL LINK

Our team is available to give you their personal attention. Please don't hesitate to call us if you have any questions, criticisms or suggestions which you would like to share with us. Call for support or to place an order - we will be pleased to assist you in person.

SOCIAL MEDIA

Be up to date at any time: our Facebook page will keep you informed each day about innovations, trade show presence and much more. It's also easy to start up a conversation with us there. We look forward to your posts!

YOUTUBE CHANNEL

On JACOB's YouTube channel you will find numerous videos about our products and innovations from our company. Our explanatory videos inform you quickly and easily about how our modular tubing system works and what advantages our products have.

THE INFORMATIVE WEBSITE

It's worth a visit: Have a look at our website. No matter whether you want to find out what's new or are looking for technical background knowledge on JACOB products: you will find what you're looking for on our website.

THE WHOLE WORLD

JACOB is proud to have such a big global team behind it. With our subsidiaries and reps, we are on the ground worldwide and so are just as globally present as you are.



NO.1 IN PIPEWORK SYSTEMS

Order number key

Worldwide presence

Index

1 GENERAL INFORMATION 5

2 THE PULL RING SYSTEM 27

3 TUBES 37

4 THE RANGE OF TUBE BENDS 53

5 FORM PIECES 69

6 TRANSITION PIECES AND ADAPTERS 81

7 INSPECTION TUBE COMPONENTS 105

8 CONTROL VALVES 115

9 TWO-WAY DIVERTERS 137

10 MULTI PORT DISTRIBUTORS 173

11 THE FLANGE PRODUCT RANGE 191

12 FITTINGS AND ACCESSORIES 233

13 SILENCERS AND CYCLONES 243

14 WEAR PROTECTION 253

15 SPECIAL MANUFACTURE 267

DIMENSIONS on page 278, T&Cs on page 282, INDEX on page 286



THREE FACTORS ARE DECISIVE FOR JACOB'S SUCCESS: INNOVATION – QUALITY – SERVICE

Dr. Uwe Braun and Patrick Jacob

DEAR CUSTOMERS AND PARTNERS,

Since Friedrich Jacob founded our factory over 90 years ago, the company has stood for great products and a dedicated workforce. We are very proud of this. Today, there are three factors which are still decisive for JACOB's success: Innovation – Quality – Service.

It was on the basis of an **innovation** that JACOB was founded in the first place. The idea was to no longer manufacture tubing on an individual basis, but to mass-produce components to form a modular system. Even today, the company is shaped by innovations: These range from fast and reliable connections with QUICK CONNECT, sanitary transport with FOOD GRADE and reliable protection from contamination through DETECTABLE DESIGN - the advancements we make are for the benefit of our customers; and we have plenty of other ideas as well!

For us, **quality** means first and foremost the quality of our products. Using the most modern production methods and perfectly coordinated materials, we ensure that our tubing systems do exactly what the name JACOB suggests. But quality for us also means the pragmatism and dependability that comes with a family run enterprise.

Our service means that we are always there for our customers. We want to make our products as accessible and easy to handle as possible – from placing an order to servicing them. One example of this is our new online shop. This not only offers all the features of a modern e-commerce shop but also has numerous convenient features that are tailored to your needs, simplify, and speed up your order. Another example is our logistics center which makes us faster and more reliable than ever. Service for us also means being there, on the ground, wherever our customers need us. We therefore have 40 agencies and five subsidiaries all over the world.

JACOB would be pleased to support you with your projects. No matter whether you order from this catalog or from our online shop (www.jacob-shop.com): JACOB is and remains your dependable partner.





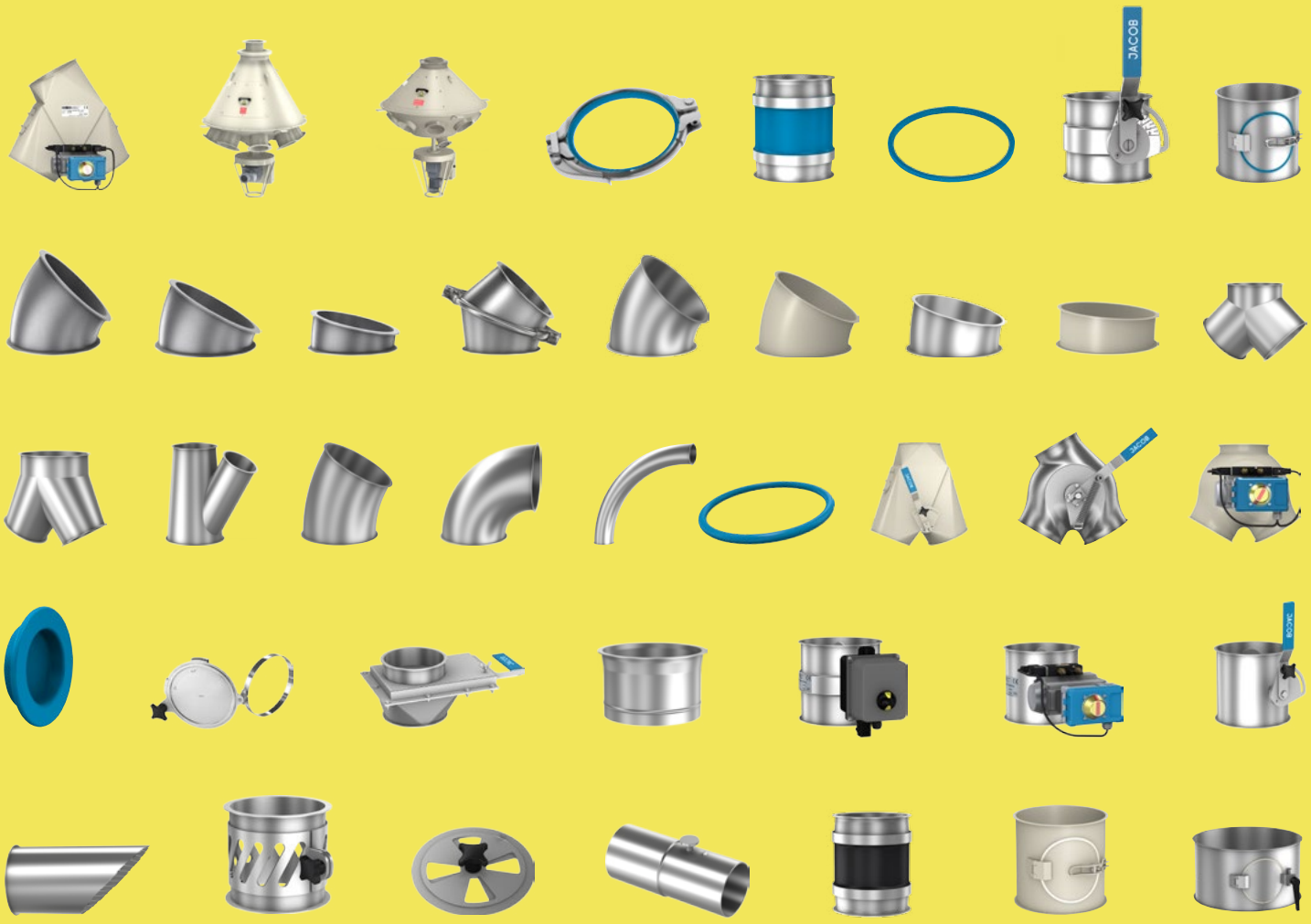
Patrick Jacob Dr. Uwe Braun



JACOB IS WHEN INNOVATION,
QUALITY, AND SERVICE RESULT
IN A PERFECT WHOLE

GENERAL INFORMATION

The JACOB system	6
Applications and industry sectors	10
Innovation and quality	12
Materials and finishing	16
Types of connection and dimensions	20
History and international	22



JACOB DIVERSITY

- Over 8,500 standard parts
- Diameter 2¼"– 63"
- Wall thicknesses from 19 to 11 gauge
- Stainless steel: CrNi-blasted
- Mild steel: powder-coated or hot-dip galvanized







Explanatory video modular tubing system

THE JACOB SYSTEM

There's a system behind what JACOB does: top quality standards, an outstanding innovative spirit, and an uncompromising choice of materials. Profound knowledge of the industry, customer orientation and expertise based on more than 90 years experience. International customer support, excellent service and round-the-clock availability. The result is perfect modular tubing systems and satisfied customers throughout the world.

THE DIFFERENCE

Other tubing systems are specially produced for a project and welded together on site. JACOB has come up with a far more efficient way: Standard modular parts with lipped ends are fitted with a U-shaped gasket and joined together with a pull ring. This system is fast, tight, and flexible.

THE PRINCIPLE

The tubing components have a machine-lipped end turned out at right angles. The U-shaped gasket is fitted over one of these lipped ends. A pull ring is used to join the two tubing components together. This is either attached with two bolts – or if a QUICK CONNECT pull ring is used – in one easy movement. For special applications, JACOB also supplies its tubes with a welded flange or a loose flange connection.

RELIABILITY

Anyone who thinks that this easy connection principle is second-rate compared to welded tubing systems is mistaken. These connections can be used at differential pressures of up to 7.25 psi and form a condensate leak-proof seal, making them ideally suited for extracting oil mist. There are even special versions of JACOB tubing systems that are up to 145.03 psi shock explosion proof.

THE DIVERSITY

JACOB components can be used to configure even the most complex tubing systems. Our range of products is comprised of over 8,000 standardized parts. If that's not enough, we are pleased to manufacture customized parts for you, which will allow you, for example, to connect our tubing system to your existing systems and machines.

FLEXIBLE AND INSTALLATION FRIENDLY

Our tubing system guarantees the utmost flexibility due to its modular design. Existing systems can be freely expanded and modified.

Our pull ring system can be assembled and dismantled in a matter of seconds. This reduces downtime, saves assembly costs, and enables your installations to be cleaned efficiently.

DELIVERY CAPABILITY

We currently store over 1,000,000 parts in our logistics center. We have additional warehouses at our subsidiary companies and agencies and therefore offer you fast availability of $17,000,000 worth of parts throughout the world. Tube diameters of up to ND 16" can normally be dispatched straight from our logistics center in Memphis.

QUALITY

We offer you a tubing system of the very highest quality. We develop and build key elements of our machinery, such as flanging machines, ourselves in order to guarantee the outstanding leak tightness and longevity of our products. We continually invest in new production technologies, machinery, and processes to expand our quality leadership on an ongoing basis.

BULK GOODS HANDLING

Gravity chute systems



DUST EXTRACTION AND EXHAUST AIR

Environmental technology



LOW PRESSURE CONVEYING

Product and air conveying



APPLICATIONS AND INDUSTRY SECTORS

JACOB tubing systems are condensate leak-proof and the materials and workmanship are of outstanding quality. These properties make them the perfect choice for numerous applications and industry sectors.

The JACOB tubing system offers flexibility in use for virtually every industry sector – from conveying sensitive foodstuffs or pharmaceutical products or conveying granulates in the chemical or plastics industry, right up to extracting dust or oil mist in the automotive or metal-working industry.

All industry sectors which involve conveying raw materials and products or extracting contaminated air will benefit from installation-friendly JACOB tubing systems. They are particularly appreciated in the following industry sectors due to their high quality, tightness and their flexibility:

CONVEYING BULK GOODS

Grains in any form	Food, beverage and tobacco	Chemicals, pharmaceuticals, plastics
Cereals	Spices	Polyamides
Concentrated feed	Coffee	Intermediate products
Seeds	Tobacco	Pharmaceuticals
	Sugar	Granulate
	Rice	
	Animal feed and pet food	
	Confectionery	

DUST EXTRACTION AND EXHAUST AIR

Metal-working	Food, beverage and tobacco	Chemicals, pharmaceuticals, plastics
Degreasing systems	Dusts	Dusts
Oil mist	Fumes	Lacquers
Welding fumes		Fumes
Grind dusts		

LOW PRESSURE CONVEYING

Recycling	Wood and paper	Chemicals	Air conditioning
Electronics	Paper	Polystyrene	Printing companies
Plastic	Wood	PU foam	Cleanrooms
Glass	Wood shavings		Cereal cooling
	Pellets		



INNOVATIONS AND QUALITY

Innovations are our way of helping our customers to move forward – quality is a matter of course.

FOOD GRADE
EG/EC 1935/2004 plus FDA

FOOD GRADE LINE

JACOB sets standards in food safety. Our new FOOD GRADE line of products complies with both the European EC 1935/2004 regulations and the American FDA guidelines. All components that come into contact with food are made exclusively of high grade stainless steel. In addition, we use adhesive-free, heat-sealed U-shaped gaskets and ring seals. They are more resistant to chemicals, temperature, and tearing than glued gaskets and ring seals.

DETECTABLE DESIGN

THE DETECTABLE DESIGN LINE

Foreign particles in a product are not acceptable in many industry sectors. Up to now, it was practically impossible to trace gaskets and seals, or even just parts of them, in the product flow. JACOB has succeeded in incorporating minuscule particles in the compound that the gaskets or seals are made of. If gaskets or seals get into the product flow, such as during maintenance work, these can now be reliably detected by metal detectors and then removed. This makes the DETECTABLE DESIGN range an indispensable safety factor.

QUICK CONNECT

THE QUICK CONNECT PRINCIPLE

JACOB tubing systems take less time to install than conventional systems. Using the QUICK CONNECT pull ring makes it even faster. It only takes a few quick turns of the hand to join two sections of tube together or to separate them again. This is a great advantage! This is particularly the case with tubing systems that require to be dismantled regularly for cleaning and maintenance.

EXPLOSION SAFETY AND ELECTROSTATIC GROUNDING

JACOB tubing systems, if configured accordingly, are shock explosion proof to 43.51 psi or 145.03 psi overpressure. Particularly when conveying solids and gases that have a tendency to explode, this is an important safety factor. To ensure that this does not happen, JACOB tubing systems can be installed in such a way that they are completely electrostatically conductive.







MATERIALS

High-grade materials, perfect workmanship: This is the basis for the excellent quality of our products.

Tubing and press-formed components in mild steel

Mainly the following materials:

- DD11 (1.0332) to DIN EN 10111
- DD13 (1.0335) to DIN EN 10111
- DC01 (1.0330) to DIN EN 10130
- DC04 (1.0338) to DIN EN 10130

Corrosion protection through powder coating, priming (spray painted) or hot-dip galvanizing

Flanges and mounting brackets in structural grade carbon steel

S235JR (1.0038) to DIN EN 10025-2

Corrosion protection through powder coating, priming (spray painted) or hot-dip galvanizing

Tubing and press-formed components in stainless steel

Suitable for moderate to medium corrosive environmental conditions (CRC 2 to DIN EN 1993-1-4).

Primarily for use in the food industry. Mainly the following materials:

- 1.4301 (X5CrNi18-10), AISI 304, ASTM A240, A480, A 666
- 1.4307 (X2CrNi18-9), AISI 304L, ASTM A240, A480, A 666

To restore the corrosion resistance and to create a uniform surface finish, these materials are stainless steel CrNi-blasted as standard. Temperature-resistant to 572°F.

Available on request

Stainless steels for higher corrosive environmental conditions (CRC 3 to DIN EN 1993-1-4).

Primarily for use in the chemical and pharmaceutical industry.

- 1.4404 (X2CrNiMO17-12-2) AISI 316L, ASTM A 240
- 1.4571 (X6CrNiMoTi17-12-2), AISI 316Ti, ASTM A 240

As standard, components are pickled in a bath and passivated by storing in the open air to restore their corrosion resistance. Prices and delivery time on request. Other materials that are not explicitly mentioned can also be offered after examining their processability.



FINISHING

To prevent damage due to corrosion in mild steel, our components are protected to enable them to withstand the general ambient conditions. JACOB has different product groups available for the mild steel modular tubing system: powder-coated, spray primed or galvanized components.

Corrosion protection through powder-coating or spray priming

Powder-coating:

- Pretreatment: Thin film iron phosphate coating
- Powder coating primer from ND 2¼" to 25"
- Silk gloss, smooth polyester resin binder-based powder coating
- Its constituents comply with the Food and Drug Administration (FDA) requirements of regulation 21 CFR 175.300 for direct contact with food
- Temperature resistance: from -76 F to +248 F
- Electrostatically conductive
- Color similar to RAL 7032 (pebble gray)
- Coating thickness on the outside: average layer thickness 55 µm
- Coating thickness on the inside: optically covered as temporary corrosion protection

Priming (spray painted):

- Generally used with tubing > ND 25"
- Inner and outer priming
- Coating thickness: average layer thickness 45 µm
- Color similar to RAL 7032 (pebble gray)
- Inside and outside optically covered as temporary corrosion protection

More colors:

- Choose from more than 3,000 color and effect variations
- Final outside painting of tubing components and pressed components in a coating thickness of approx. 80 µm

Options:

- Structured coatings and high-gloss effects
- UV protection
- Inner coating free from spray mist possible at additional cost with spray priming

Corrosion protection through hot-dip galvanization

- Tubing components described as "galvanized" are all hot-dip galvanized
- Hot-dip galvanizing to DIN EN ISO 1461
- Average layer thicknesses (minimum values) depend on the thickness of the steel:
  - <16 gauge: 45 µm
  - ≥16 to ≤11 gauge: 55 µm
  - ≥11 to ≤2 gauge: 70 µm
- Temperature-resistant to 248°F
- During hot-dip galvanization, irregularities may occur in the color and structure of the surface

Corrosion protection through electro galvanization

- E.g. for pull rings, air regulators, ball joints and other accessories
- Galvanization according to DIN EN ISO 19598 (Fe//Zn8//An//T0) colorless to iridescent color
- Layer thickness approx. 10 µm
- Temperature-resistant to 248°F

Types of connection and dimensions

OUR CONNECTIONS AND DIMENSIONS

Our modular tubing system is distinguished by its diversity and its top quality. We have the right type of connection in our range for virtually all applications involving bulk goods conveying, air and dust exhaust extraction, and low-pressure conveying: from the JACOB pull ring system and loose flange system to welded-on flanged tubing.

Nominal diameters and dimensions are given in inches.

Inside diameter **The JACOB pull ring system**



ND (mm)	ND (inch)	Ø d (mm) with a wall thickness of S=19 gauge	S=16 gauge	S=14 gauge	S=11 gauge	Lip width 0.24"	QUICK CONNECT pull ring	Pull ring without seal	Pull ring with sealant	Pull ring one-parted with sealant
60	**2¼**		57			■		■		
80	**3**	78	77	76		■	■	■	■	■
100	**4**	100	100	99		■	■	■	■	■
120	**5**	120	120	119	118	■	■	■	■	■
140	**5½**	136	136	135		■	■	■	■	
150	**6**	150	150	149	148	■	■	■	■	■
175	**7**	175	175	174	173	■	■	■	■	■
200	**8**	200	200	199	198	■	■	■	■	■
224	**9**	220	220	219		■	■	■	■	
250	**10**	250	250	249	248	■	■	■	■	
280	**11**	278	277	276		■	■	■	■	
300	**12**	300	300	299	298	■	■	■	■	
315	**12½**	313	312	311		■	■	■	■	
350	**14**	350	350	349	348	■	■	■	■	
400	**16**	400	399	398	396	■	■	■	■	
450	**18**	450	449	448	446	■	□	□	■	
500	**20**	500	499	498	496	■		□	■	
560	**22**		559	558	556	■		□	■	
630	**25**		629	628	626	■		□	■	
710	**28**			707	705					
800	**31½**			797	795					
900	**35½**			897	895					
1000	**39**			997	995					
1120	**44**			1117	1115					
1250	**49**			1247	1245					
1400	**55**				1398					
1600	**63**				1598					

ND = Nominal diameter
■ Standard
□ Optional, use depends on application

QUICK CONNECT

Tolerances:

- Tube diameter and roundness - DIN EN 10296-1
- Lengths and angles – DIN ISO 2768-1 – tolerance class V
- Excluded: Segments and transition pieces with a gradient, angle tolerance ±1°
- The wall thickness of drawn or ground partial areas may differ
- JACOB flanges similar to DIN 24154-2 (DN 120, 150, 300, 350 not included in the DIN standard)

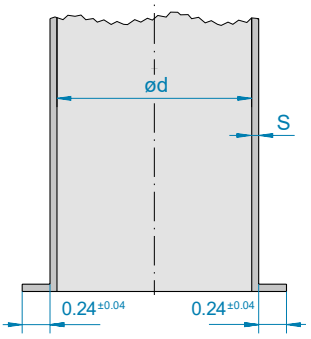
The JACOB flange system



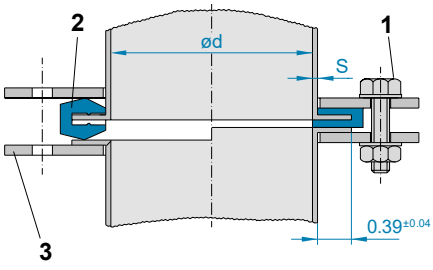


ND (mm)	ND (inch)	Lip width 0.24"	Lip width 0.39"	Loose flange	Fixed flange welded-on	145.03 psi shock explosion proof
60	2¼	■		□	□	
80	3	■		□	□	■
100	4	■		□	□	■
120	5	■		□	□	■
140	5½	■		□	□	
150	6	■		□	□	■
175	7	■		□	□	■
200	8	■		□	□	■
224	9	■		□	□	
250	10	■		□	□	■
280	11	■		□	□	
300	12	■		□	□	■
315	12½	■		□	□	□
350	14		■	■	□	□
400	16		■	■	□	□
450	18		■	■	□	□
500	20		■	■	□	□
560	22		■	■	□	□
630	25		■	■	□	□
710	28		■	■	□	
800	31½		■	■	□	
900	35½		■	■	□	
1000	39		■	■	□	
1120	44		■	■	□	
1250	49		■	■	□	
1400	55				■	
1600	63				■	

ND = Nominal diameter
■ Standard
□ Optional, use depends on application
Price on request



JACOB tubing system with a lip for pull ring connection



JACOB loose flange system
1 Mounting bolts
2 U-shaped gasket for 0.39" lip
3 Loose flange to DIN 24154-2

S = Wall thickness
Ød = Internal diameter

All JACOB components are manufactured to Metric dimensions; any Imperial / English units listed are for reference only.


PUMA

OUR FAMILY-OWNED ENTERPRISE

Our business has been in the family since it was founded in 1924. This makes JACOB particularly flexible and therefore able to work in partnership and react fast to customers' needs and the demands of the market. Our company stands out with its clear values and sense of responsibility. We are conscious of the fact that JACOB owes its existence and success to its workforce. This is why we are committed to all the people who work at JACOB, in the same way that they are dedicated to the company.

OUR HISTORY

In the 1950's, JACOB turned its focus to the manufacture of tubing systems and developed a modular system which is distinguished by its connections using flanged lips, U-shaped gaskets and pull rings. We have continued to perfect this principle right up to today and have become market leaders in our industry.

OUR EXPERTISE

The secret of JACOB's exceptional quality lies in our expertise, which we have built up over more than 60 years of experience with modular tubing systems. JACOB has a large number of in-house developed and self-built tools for accurately producing pressed components, such as drawn bends, valves, and pull rings. In addition, we have designed and built our own machines for the lip flanging process and high-performance automated manufacturing. Together with our innovative development department, we are therefore able to guarantee flawless engineering and a consistently high standard of quality.



THE WHOLE WORLD

JACOB is a globally active company which supports its customers all over the world with its five subsidiaries – in Germany, France, Italy, the UK and the US – and a presence in some 40 countries. We are able to count reputable customers from all sectors of industry both in Germany and abroad among our long-standing and satisfied customers. Expanding this leading position and building on the confidence that our customers place in us is our goal.


JACOB (UK) Limited
Shropshire, UK
Lufttechnik Gransee
Gransee, Germany
Fr. JACOB Söhne
Porta Westfalica, Germany
JACOB DOSATEC SARL
Eaubonne, France
EUROTUBI S.R.L.
Borgofranco Po, Italy
JACOB
locations
JACOB
subsidiaries
JACOB
headquarters



JACOB PULL RING SYSTEM: EASY TO INSTALL, MAXIMUM TIGHTNESS

THE PULL RING SYSTEM

Technical information	28
Installation instructions	30
Pull rings	32
U-shaped gaskets	33
Pull rings with mastic sealant	34
Accessories	35

Explanatory video about pull ring system

PULL RINGS






ND	QUICK CONNECT pull ring [1]	Pull ring without sealant [1]	Pull ring with sealant	Pull ring one-parted with sealant
2¼		■		
3	■	■	■	■
4	■	■	■	■
5	■	■	■	■
5½	■	■	■	
6	■	■	■	■
7	■	■	■	■
8	■	■	■	■
9	■	■	■	
10	■	■	■	
11	■	■	■	
12	■	■	■	
12½	■	■	■	
14	■	■	■	
16	■	■	■	
18	□	□	■	
20		□	■	
22		□	■	
25		□	■	

1) Use in conjunction with U-shaped gasket
■ Standard
□ Optional, use depends on application

Pull rings made of mild steel come standard electro-galvanized. Stainless steel pull rings are CrNi-blasted. Electrolytic polishing or ball-polishing is also available on request.

Details of leakage values for the pull ring system with U-shaped gasket

QUICK CONNECT PULL RINGS AND PULL RINGS WITHOUT SEALANT

Highlights: The JACOB pull ring system is very easy to assemble and gives the tubing system its high stability and leak tightness due to its high-quality construction. Both pull rings have been tested in conjunction with JACOB U-shaped gaskets. The air leakage per connection, measured at a differential pressure of 7.25 psi – e.g. with a diameter of 12" – is far below the admissible values of DIN EN 12237, class D.

Application: Up to a diameter of ND 12", our pull ring system with a U-shaped gasket, if configured accordingly, is condensate leak-proof and therefore is ideal for applications such as extracting oil mist. As a rule, our pull ring connections with a U-shaped gasket can be used for conveying bulk goods and for ventilation systems at overpressures of up to 7.25 psi, 197" WC). Vacuum applications are possible on request, depending on the product selected.

PULL RINGS WITH FACTORY-FITTED MASTIC SEALANT

Application: The elastic sealant in the pull ring is EC 1935/2004 compliant and is food grade in the temperature range between -40°F and +212°F.

This pull ring is used for bulk goods conveyed by gravity and ventilation systems with low differential pressures and without condensate. For higher demands concerning sealing properties and the resistance of the connection, pull rings with U-shaped gaskets should be used.

QUICK CONNECT

U-SHAPED GASKETS

Our U-shaped gaskets combine an ideal profile with the perfect choice of materials.

The benefits:

- Tear-resistant, FOOD GRADE and resistant to many aggressive chemicals thanks to heat-sealing
- Maximum tightness through an ideal profile
- Resistant to a broad range of substances due to large selection of materials available
- Metal-detectable and FOOD GRADE due to special materials (DETECTABLE DESIGN line)



NBR	Silicone (F)	Silicone (F) (D)	EPDM (F) [1]	Viton (FKM) (F)
gray white	beige	blue	black	reddish brown
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA	FOOD GRADE: EC 1935/2004 plus FDA	FOOD GRADE: EC 1935 / 2004 plus FDA[1]	FOOD GRADE: EC 1935/2004 plus FDA
-20 °C to +212°F	-76°F to +482°F	-76°F to +482°F	-22°F to +248°F	-0.4°F to +446°F
glued	heat-sealed	heat-sealed	heat-sealed	heat-sealed
		metal-detectable	electrostatically conductive	

1) We would like to point out that only certain diameters are FDA compliant, other diameters are currently under review. See page 33 for details

Refer to the technical information at the beginning of this chapter and in the installation instructions (see next page) for more details. The temperatures given indicate the permanent temperature resistance. U-shaped gaskets must be tested by the user to ensure they are sufficiently resistant to the working conditions. Our team would be pleased to assist you with selecting the right U-shaped gasket. We can send you samples on request.

EARTHING BRIDGES



Without contact caps



With contact caps

The innovative solution from JACOB for electrostatic grounding.

Suitable for retrofitting to our pull ring system without welding and drilling. The stainless steel earthing bridge can be used as an alternative to the grounding wire or the conductive EPDM U-shaped gasket.

Both versions of earthing bridge have been tested by DEKRA EXAM GmbH, a specialist unit for explosion protection.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

Installation instructions for the pull ring system

INSTALLATION OF PULL RING CONNECTIONS WITH A U-SHAPED GASKET

Pull rings are used in conjunction with U-shaped gaskets to connect tubing components and pressed components with a 0.24" lip. The use of different U-shaped gasket profiles enables the same pull ring to be used with 19 to 14 gauge tubing components and pressed components.

To meet the different requirements of every system, JACOB offers a comprehensive and wide-ranging standard product line which covers most requirements.

U-shaped gaskets

	Profile for 19 gauge wall thickness		Profile for 14 and 11 gauge wall thickness
	NBR, silicone, Viton	EPDM conductive	NBR, silicone, Viton, EPDM conductive For 11 gauge wall thickness, the use of U-shaped gaskets made of NBR or silicone is recommended. Only in conjunction with the pull ring for 11 gauge tubing.
			

Tubing component B	Wall thickness tubing component A			Wall thickness tubing component A		Wall thickness tubing component A	
	19 gauge	16 gauge	14 gauge	16 gauge	14 gauge	14 gauge	11 gauge
19 gauge	■	■	■				
16 gauge	■	■			■		
14 gauge	■			■	■		■
11 gauge						■	■

Refer to page 29 for more technical information on pull rings.

Pull rings

QUICK CONNECT pull ring	Pull ring (without sealant)
	

Refer to page 28 for more technical information on pull rings.

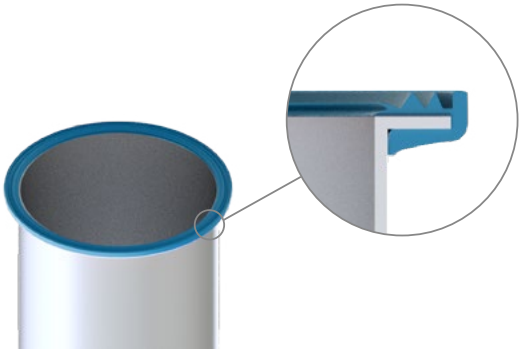
GENERAL INSTALLATION INFORMATION ON CREATING LEAK-PROOF CONNECTIONS

- Repair damaged lipped ends (e.g. align)
- Eliminate any unevenness from the lipped end
- Assemble the tubing tension-free
- Ensure when fitting the pull ring that the U-shaped gasket does not bunch or fold
- Support horizontal tubing approximately every 13 feet. If there are multiple short tubing components in the tubing line, the interval between supports should be reduced
- Attach branch components so that they do not generate any tension in the main tubing line
- Tighten the bolts of two-parted pull rings evenly on both sides
- Re-tighten the pull rings after 24 hours to ensure they are as leak-proof as possible

QUICK CONNECT

INSTALLATION OF PULL RING CONNECTIONS WITH A U-SHAPED GASKET

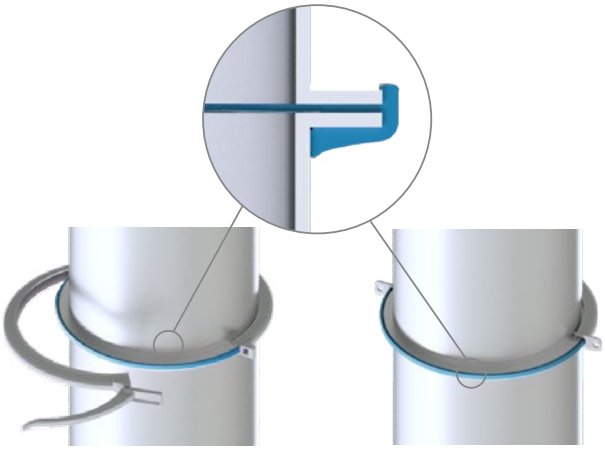
Note: To connect JACOB tubing components with a 0.24" lip. A U-shaped gasket and a pull ring are needed for each connection. You need a 0.24" hexagon cap screwdriver to mount the pull rings.



Step 1

Attach a U-shaped gasket over one of the lipped tube ends.

- The U-shaped gasket must be slightly stretched to enable it to be attached
- The profiled side must face the tubing component that is being connected



Step 2

Position the connecting tube and slide one pull ring half over the lipped tube end.

QUICK CONNECT pull ring

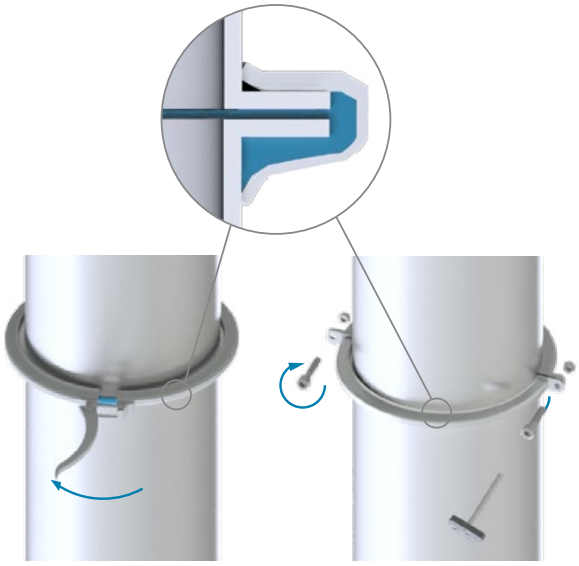
First, attach the pull ring half without the toggle clip

Two-parted pull ring

We recommend separating the two halves of the pull ring beforehand

Ensure that the tubing components are properly aligned and the U-shaped gasket is in the correct position.

Note: We recommend that when fitting horizontal tubing lines where condensate occurs, any points at which the U-shaped gasket is glued should be positioned on top and the connecting points of the pull ring halves should be horizontal. This ensures the maximum possible tightness at the lowest point of the connection.



Step 3

Press the second pull ring half onto the lipped tube ends.

Please note:
When closing the pull ring, the U-shaped gasket must not bunch or fold.

QUICK CONNECT pull ring

- Place the clasp over the closing hook and close the clip.
- To prevent the connection from loosening accidentally (such as due to vibration) tighten the bolt with a 10 Nm torque on the mounting face

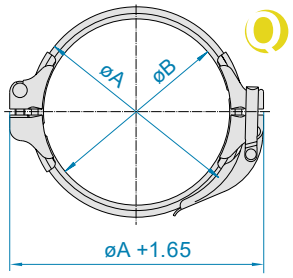
Two-parted pull ring

- Tighten the bolts evenly with a torque of 10 Nm

Please note: A bolt tightening torque of 10 Nm is necessary for the QUICK CONNECT pull ring, or 25 Nm for the two-parted pull ring, for shock explosion proof connection of up to 43.51 psi overpressure.

Pull rings





QUICK CONNECT PULL RINGS

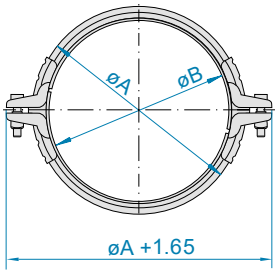
3085

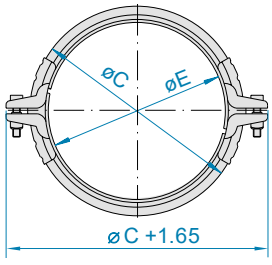
- Pull rings for use in conjunction with U-shaped gasket for 19 and 14 gauge tubing system
- Up to ND 12", shock explosion proof to 43.51 psi
- Please also read and take into account the technical information given at the beginning of this chapter

Pull rings for 19 and 14 gauge wall thickness

ND	Ø A	Ø B	lb	Electro-galvanized	Stainless steel
				Item no.	Item no.
3	3.94	3.15	0.77	12082903	12083903
4	4.84	4.06	0.82	12102903	12103903
5	5.63	4.84	0.88	12122903	12123903
5½	6.26	5.47	0.99	12142903	12143903
6	6.81	6.02	1.04	12152903	12153903
7	7.80	7.01	1.08	12172903	12173903
8	8.78	7.99	1.12	12202903	12203903
9	9.57	8.78	1.21	12222903	12223903
10	10.75	9.96	1.28	12252903	12253903
11	11.85	11.06	1.34	12282903	12283903
12	12.72	11.93	1.37	12302903	12303903
12½	13.23	12.44	1.39	12312903	12313903
14	14.69	13.90	1.50	12352903	12353903
16	16.65	15.87	1.63	12402903	12403903
18	18.58	17.72	1.74	12452903	12453903







PULL RINGS WITHOUT SEALANT

3060

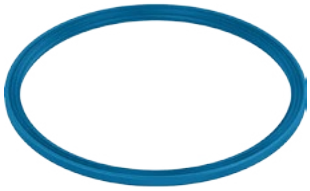
- Pull rings for use in conjunction with U-shaped gasket for 19 and 14 gauge tubing system
- From ND 3" to 12", shock explosion proof to 43.51 psi
- Pull ring for 11 gauge wall thickness, in conjunction with U-shaped gasket made of NBR or silicone for 14 gauge tubing system
- Please also read and take into account the technical information given at the beginning of this chapter

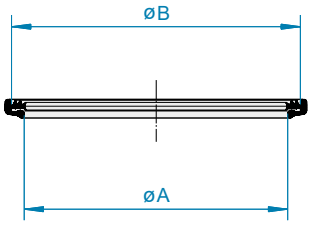
Pull rings for 19 and 14 gauge wall thickness | **Pull rings for 11 gauge wall thickness**

ND	Ø A	Ø B	lb	Electro-galvanized	Stainless steel	Ø C	Ø E	Electro-galvanized	Stainless steel
				Item no.	Item no.			Item no.	Item no.
2¼	3.19	2.36	0.66	12062383	12063383				
3	3.98	3.15	0.68	12082383	12083383				
4	4.92	4.09	0.73	12102383	12103383				
5	5.71	4.88	0.79	12122383	12123383	5.94	4.96	12122926	12123926
5½	6.34	5.51	0.82	12142383	12143383				
6	6.89	6.06	0.86	12152383	12153383	7.13	6.14	12152926	12153926
7	7.87	7.05	0.93	12172383	12173383	8.11	7.13	12172926	12173926
8	8.86	8.03	0.99	12202383	12203383	9.09	8.11	12202926	12203926
9	9.65	8.82	1.04	12222383	12223383				
10	10.83	10.00	1.12	12252383	12253383	11.06	10.08	12252926	12253926
11	11.89	11.06	1.21	12282383	12283383				
12	12.80	11.97	1.26	12302383	12303383	13.03	12.05	12302926	12303926
12½	13.27	12.44	1.28	12312383	12313383				
14	14.76	13.94	1.39	12352383	12353383	15.00	14.02	12352926	12353926
16	16.73	15.91	1.50	12402383	12403383	16.97	15.98	12402926	12403926
18	18.82	17.72	1.61	12452383	12453383				
20	20.63	19.69	1.72	12502383	12503383				
22	23.07	22.05	1.83	12562383	12563383				
25	25.83	24.88	1.98	12632383	12633383				

QUICK CONNECT

Pull rings with a U-shaped gasket, in conjunction with the tubing components indicated in the catalog, shock explosion proof tested up to 43.51 psi.





U-SHAPED GASKETS

3070

- For use in conjunction with JACOB pull rings and tubing system with a 0.24" lip
- **U-shaped gaskets for 19 gauge tubing system**, also for connecting 19 to 16 gauge, 19 to 14 gauge and 16 to 16 gauge tubing components
- **U-shaped gaskets for 14 gauge tubing system**, also for connecting 14 to 16 gauge tubing components
- For 11 gauge tubing components, the use of U-shaped gaskets made of NBR or silicone for a 14 gauge tubing system is recommended
- Please also read and take into account the technical information given at the beginning of this chapter

U-shaped gaskets for 19 gauge tubing system

ND	Ø A	Ø B	NBR gray	Silicone beige (F)	Silicone blue (F) (D)	EPDM black (F) 1)	Viton reddish brown (F)
			Item no.	Item no.	Item no.	Item no.	Item no.
2¼	2.24	2.72	100669517	1006795109	10067951091	1006895159	100699519
3	3.19	3.66	100869517	1008795109	10087951091	1008895159	100899519
4	4.06	4.53	101069517	1010795109	10107951091	1010895159	101099519
5	4.84	5.31	101269517	1012795109	10127951091	1012895159	101299519
5½	5.47	5.94	101469517	1014795109	10147951091	1014895159	101499519
6	6.02	6.50	101569517	1015795109	10157951091	1015895159	101599519
7	7.01	7.48	101769517	1017795109	10177951091	1017895159	101799519
8	7.99	8.46	102069517	1020795109	10207951091	1020895159	102099519
9	8.78	9.25	102269517	1022795109	10227951091	1022895159	102299519
10	9.96	10.43	102569517	1025795109	10257951091	1025895159	102599519
11	11.02	11.50	102869517	1028795109	10287951091	1028895159	102899519
12	11.93	12.40	103069517	1030795109	10307951091	1030895159	103099519
12½	12.40	12.87	103169517	1031795109	10317951091	1031895159	103199519
14	13.90	14.37	103569517	1035795109	10357951091	1035895159	103599519
16	15.87	16.34	104069517	1040795109	10407951091	1040895159	104099519
18	17.72	18.50	104569517	1045795109	10457951091	1045895159	104599519
20	19.69	20.31	105069517	1050795109	10507951091	1050895159	105099519
22	22.05	22.76	105669517	1056795109	10567951091	1056895159	105699519
25	24.88	25.51	106369517	1063795109	10637951091	1063895159	106399519

U-shaped gaskets for 14 gauge tubing system, NBR and silicone also suitable for 11 gauge tubing system

ND	Ø A	Ø B	NBR gray	Silicone beige (F)	Silicone blue (F) (D)	EPDM black (F) 2)	Viton reddish brown (F)
			Item no.	Item no.	Item no.	Item no.	Item no.
3	3.19	3.66	100869527	1008795209	10087952091	1008895259	100893869
4	4.06	4.53	101069527	1010795209	10107952091	1010895259	101093869
5	4.84	5.31	101269527	1012795209	10127952091	1012895259	101293869
5½	5.47	5.94	101469527	1014795209	10147952091	1014895259	101493869
6	6.02	6.50	101569527	1015795209	10157952091	1015895259	101593869
7	7.01	7.48	101769527	1017795209	10177952091	1017895259	101793869
8	7.99	8.46	102069527	1020795209	10207952091	1020895259	102093869
9	8.78	9.25	102269527	1022795209	10227952091	1022895259	102293869
10	9.96	10.43	102569527	1025795209	10257952091	1025895259	102593869
11	11.02	11.50	102869527	1028795209	10287952091	1028895259	102893869
12	11.93	12.40	103069527	1030795209	10307952091	1030895259	103093869
12½	12.40	12.87	103169527	1031795209	10317952091	1031895259	103193869
14	13.90	14.37	103569527	1035795209	10357952091	1035895259	103593869
16	15.87	16.34	104069527	1040795209	10407952091	1040895259	104093869
18	17.72	18.50	104569527	1045795209	10457952091	1045895259	104593869
20	19.69	20.31	105069527	1050795209	10507952091	1050895259	105093869
22	22.05	22.76	105669527	1056795209	10567952091	1056895259	105693869
25	24.88	25.51	106369527	1063795209	10637952091	1063895259	106393869

VULCANIZED AND BETTER TEAR-RESISTANT QUALITY.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

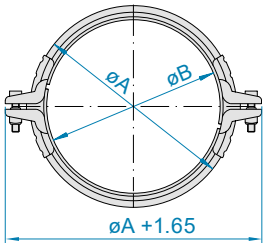
(D) DETECTABLE DESIGN
Metal-detectable

1) **ND 2¼, 3, 4, 5 and 6" are FDA compliant. Other diameters are currently under review.**
2) **ND 3, 4, 5 and 6" are FDA compliant. Other diameters are currently under review.**

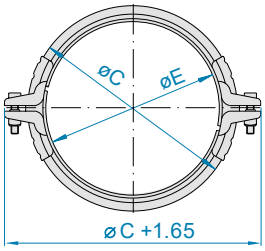
THE PULL RING SYSTEM

Pull rings with mastic sealant

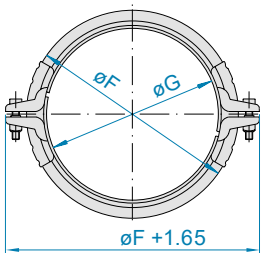




for 19 gauge



for 14 gauge



for 11 gauge

PULL RING WITH SEALANT

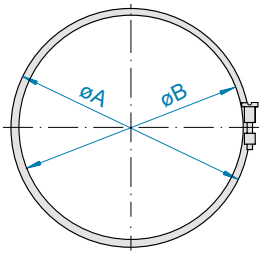
3050

- All versions electro-galvanized
- Pull rings for 19 gauge also suitable for connecting 19 to 16 gauge or 14 gauge tubing components
- Pull rings for 14 gauge also suitable for connecting 14 to 16 gauge tubing components
- For larger diameters, pull rings for 11 gauge are used for all wall thicknesses

Pull rings for 19, 14 and 11 gauge wall thickness

ND	Ø A	Ø B	lb	For 19 tubing system	Ø C	Ø E	For 16 tubing system	Ø F	Ø G	For 11 tubing system
				Item no.			Item no.			Item no.
3	3.90	3.15	0.51	11082381	3.94	3.15	11082382			
4	4.76	4.02	0.57	11102381	4.84	4.06	11102382			
5	5.55	4.80	0.62	11122381	5.63	4.84	11122382	5.71	4.88	11122383
5½	6.18	5.43	0.66	11142381	6.26	5.47	11142382			
6	6.73	5.98	0.73	11152381	6.81	6.02	11152382	6.89	6.06	11152383
7			0.75	11172382	7.80	7.01	11172382	7.87	7.05	11172383
8			0.84	11202382	8.78	7.99	11202382	8.86	8.03	11202383
9			0.88	11222382	9.57	8.78	11222382	9.61	8.78	11222383
10			0.93	11252382	10.83	10.00	11252382	10.83	10.00	11252383
11			1.04	11282382	11.89	11.06	11282382			
12			1.10	11302382	12.80	11.97	11302382	12.80	11.97	11302383
12½			1.17	11312383	13.27	12.44	11312383			
14			1.50	11352383			11352383	14.76	13.94	11352383
16			1.65	11402383			11402383	16.65	15.83	11402383
18			1.79	11452383			11452383	18.62	17.80	11452383
20			1.94	11502383			11502383	20.59	19.76	11502383
22			2.09				11562383	22.95	22.13	11562383
25			2.31				11632383	25.71	24.88	11632383





Product similar to picture

ONE-PARTED PULL RINGS WITH SEALANT

3055

- All versions electro-galvanized
- Pull rings for 19 gauge also suitable for connecting 19 to 16 gauge tubing components

Pull rings for 19 gauge wall thickness

ND	Ø A	Ø B	lb	19 gauge
				Item no.
3	3.82	3.15	0.09	11082372
4	4.69	4.02	0.11	11102372
5	5.47	4.80	0.13	11122372
6	6.65	5.98	0.15	11152372
7	7.64	6.97	0.18	11172372
8	8.62	7.95	0.20	11202372



EARTHING BRIDGES WITHOUT CONTACT CAPS

1400

- Engineered by JACOB for electrostatic grounding
- Patented and tested
- Recommended in conjunction with the two-parted pull ring with or without sealant (pages 32 and 34)
- Independent of the temperature and resistance
- Recommended for use in conjunction with galvanized tubing components or stainless steel surfaces
- Please also read and take into account the technical information given at the beginning of this chapter

Item no.	Pack of ten
11003792	



EARTHING BRIDGES WITH CONTACT CAPS

- Engineered by JACOB for electrostatic grounding
- Patented and tested
- Recommended in conjunction with the two-parted pull ring with or without sealant (pages 32 and 34)
- Contact caps made of electrostatically conductive EPDM
- Recommended for use in conjunction with powder-coated tubing components in JACOB standard RAL 7032 (pebble gray), electrostatically conductive
- Please also read and take into account the technical information given at the beginning of this chapter

Item no.	Pack of ten
11003793	



ALLEN WRENCHES

4030

- SW 5 Allen wrench for assembling one-parted pull ring
- SW 6 Allen wrench for assembling QUICK CONNECT pull ring, pull ring without sealant and pull ring with sealant

	Item no.
SW 5 for one-parted pull rings	10002361
SW 6 for two-parted pull rings	10002362



JACOB TUBES – THE SOLID FOUNDATION FOR YOUR TUBING SYSTEMS

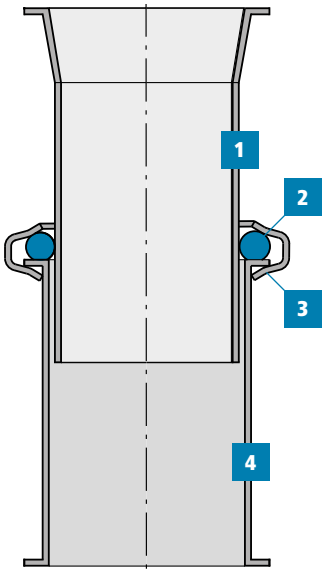
TUBES

Technical information	38
Tubes	40
Welding ends	45
Slip tubes	46
Ring seals	49
Tubes with ports	49



WELDED TUBES

The cornerstone of the modular tubing system – our certification according to the DIN EN ISO 3834-3 welding quality management system and automated welding processes guarantee top mass production quality. Straight tubes are available in diameters ranging from 2¼" to 25" with a 0.24" lip in various materials with a 19 to 11 gauge wall thickness. Please refer to chapter 1, on page 20 for information on inside diameters. At your request we manufacture custom special lengths, supply tubes with flanges, or produce finishes to your specification as far as technically possible – from special colors to pickled stainless steel.



1 Slip tube
2 Ring seal
3 Standard pull ring
(refer to chapter 2)
4 Straight tube

SLIP TUBES

The easy solution for creating special lengths on site within a modular system. Slip tubes are available in different lengths and are installed with a ring seal. They are inserted into a welded tube as far as required and then fixed in place with a pull ring. The slip tube should be inserted at least 2" into the straight tube, and the minimum length that can be bridged is 1¾". The easiest way of creating a special length – without sawing, welding, or lip flanging!

This connection is **not** shock explosion proof. Admissible overpressure 1.45 psi, (39" WC).

Slip tubes are not telescopic tubes that can be adjusted during operation. When slip tubes are installed horizontally, support must be provided directly on the tube before or after the slip tube. In vertical tubing, the tube underneath the slip tube must be supported. Their use in tubing conveying food product is not recommended. Please also read and take into account our slip tube installation instructions.

Slip tube installation instructions



RING SEALS FOR SLIP TUBES

- Tear-resistant, FOOD GRADE and resistant to many aggressive chemicals due to vulcanization
- Resistance to a broad range of substances due to large selection of materials available
- Metal-detectable and FOOD GRADE due to special materials (DETECTABLE DESIGN line)



NBR	Silicone (F)	Silicone (F) (D)	EPDM (F) 1)	Viton (FKM) (F)
gray white	beige	blue	black	reddish brown
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA	FOOD GRADE: EC 1935/2004 plus FDA	FOOD GRADE: EC 1935/2004 plus FDA[1)]	FOOD GRADE: EC 1935/2004 plus FDA
-20 °C to +212°F	-76°F to +482°F	-76°F to +482°F	-22°F to +248°F	-0.4°F to +446°F
glued	heat-sealed	heat-sealed	heat-sealed	heat-sealed
		metal-detectable	electrostatically conductive	

1) We would like to point out that only certain diameters are FDA compliant, other diameters are currently under review. See page 49 for details



TUBES WITH PORTS

The ideal solution for incorporating sensors in the modular tubing system.

JACOB offers 8" long tubing components as standard with a 0.24" lip, made of various materials, with different ports. Special lengths and other ports are available on request.

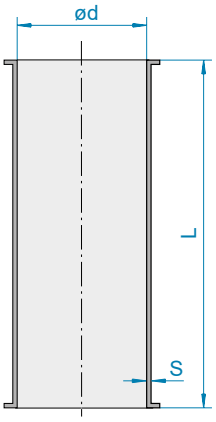
(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

WELDED TUBES

- L = actual length
- Ø d = internal diameter of 1/16" parts
- All tubes with a 0.24" lip
- Special lengths and colors available on request
- Lengths of 6 ft up to 40 ft available on request





79" (2000 MM) TUBES

1010

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	78.11	9.48	11061010*		
3	2.99	78.11	17.20	11081010	12081010	
4	3.90	78.11	22.38	11101010	12101010	
5	4.69	78.11	26.12	11121010	12121010	13121010
5½	5.31	78.11	28.99	11141010	12141010	
6	5.87	78.11	33.18	11151010	12151010	13151010
7	6.85	78.11	38.03	11171010	12171010	13171010
8	7.83	78.11	42.44	11201010	12201010	13201010
9	8.62	78.11	47.73	11221010	12221010	
10	9.80	78.11	53.90	11251010	12251010	13251010
11	10.94	78.11	60.41	11281010		
12	11.77	78.11	64.04	11301010	12301010	13301010
12½	12.32	78.11	68.34	11311010		
14	13.74	78.11	76.06	11351010	12351010	13351010
16	15.67	78.11	86.86	11401010	12401010	13401010
18	17.64	78.11	97.66	11451010	12451010	13451010
20	19.61	78.11	108.69	11501010	12501010	13501010
22	21.97	78.11	123.90		12561010	13561010
25	24.72	78.27	141.09		12631010	13631010

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

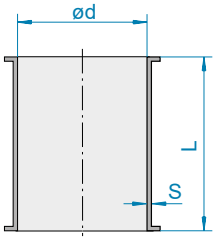
ND	Ø d	L	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	78.11	9.48	11062010*		11063010*	
3	2.99	78.11	17.20	11082010	12082010	11083010	
4	3.90	78.11	22.38	11102010	12102010	11103010	12103010
5	4.69	78.11	26.12	11122010	12122010	11123010	12123010
5½	5.31	78.11	28.99	11142010	12142010	11143010	
6	5.87	78.11	33.18	11152010	12152010	11153010	12153010
7	6.85	78.11	38.03	11172010	12172010	11173010	12173010
8	7.83	78.11	42.44	11202010	12202010	11203010	12203010
9	8.62	78.11	47.73	11222010	12222010	11223010	
10	9.80	78.11	53.90	11252010	12252010	11253010	12253010
11	10.94	78.11	60.41	11282010		11283010	
12	11.77	78.11	64.04	11302010	12302010	11303010	12303010
12½	12.32	78.11	68.34	11312010		11313010	
14	13.74	78.11	76.06	11352010		11353010	12353010
16	15.67	78.11	86.86	11402010		11403010	12403010
18	17.64	78.11	97.66	11452010		11453010	12453010
20	19.61	78.11	108.69	11502010		11503010	12503010
22	21.97	78.11	123.90		12562010		12563010
25	24.72	78.27	141.09		12632010		12633010

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





39" (1000 MM) TUBES

1010

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	38.74	4.63	11061020*		
3	2.99	38.74	8.38	11081020	12081020	
4	3.90	38.74	10.91	11101020	12101020	
5	4.69	38.74	12.90	11121020	12121020	13121020
5½	5.31	38.74	14.44	11141020	12141020	
6	5.87	38.74	15.98	11151020	12151020	13151020
7	6.85	38.74	18.85	11171020	12171020	13171020
8	7.83	38.74	20.83	11201020	12201020	13201020
9	8.62	38.74	23.70	11221020	12221020	
10	9.80	38.74	26.57	11251020	12251020	13251020
11	10.94	38.74	30.20	11281020		
12	11.77	38.74	31.42	11301020	12301020	13301020
12½	12.32	38.74	31.75	11311020		
14	13.74	38.74	36.49	11351020	12351020	13351020
16	15.67	38.74	41.78	11401020	12401020	13401020
18	17.64	38.74	47.73	11451020	12451020	13451020
20	19.61	38.74	54.23	11501020	12501020	13501020
22	21.97	38.74	61.95		12561020	13561020
25	24.72	38.74	65.81		12631020	13631020

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

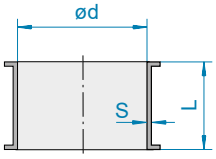
ND	Ø d	L	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	38.74	4.63	11062020*		11063020*	
3	2.99	38.74	8.38	11082020	12082020	11083020	
4	3.90	38.74	10.91	11102020	12102020	11103020	12103020
5	4.69	38.74	12.90	11122020	12122020	11123020	12123020
5½	5.31	38.74	14.44	11142020	12142020	11143020	
6	5.87	38.74	15.98	11152020	12152020	11153020	12153020
7	6.85	38.74	18.85	11172020	12172020	11173020	12173020
8	7.83	38.74	20.83	11202020	12202020	11203020	12203020
9	8.62	38.74	23.70	11222020	12222020	11223020	
10	9.80	38.74	26.57	11252020	12252020	11253020	12253020
11	10.94	38.74	30.20	11282020		11283020	
12	11.77	38.74	31.42	11302020	12302020	11303020	12303020
12½	12.32	38.74	31.75	11312020		11313020	
14	13.74	38.74	36.49	11352020		11353020	12353020
16	15.67	38.74	41.78	11402020		11403020	12403020
18	17.64	38.74	47.73	11452020		11453020	12453020
20	19.61	38.74	54.23	11502020		11503020	12503020
22	21.97	38.74	61.95		12562020		12563020
25	24.72	38.74	65.81		12632020		12633020

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





20" (500 MM) TUBES

1010

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	19.13	2.27	11061030*		
3	2.99	19.13	4.19	11081030	12081030	
4	3.90	19.13	5.62	11101030	12101030	
5	4.69	19.13	6.39	11121030	12121030	13121030
5½	5.31	19.13	7.16	11141030	12141030	
6	5.87	19.13	8.05	11151030	12151030	13151030
7	6.85	19.13	9.59	11171030	12171030	13171030
8	7.83	19.13	10.69	11201030	12201030	13201030
9	8.62	19.13	11.68	11221030	12221030	
10	9.80	19.13	13.12	11251030	12251030	13251030
11	10.94	19.13	14.99	11281030		
12	11.77	19.13	15.98	11301030	12301030	13301030
12½	12.32	19.13	16.98	11311030		
14	13.74	19.13	18.63	11351030	12351030	13351030
16	15.67	19.13	21.05	11401030	12401030	13401030
18	17.64	19.13	23.70	11451030	12451030	13451030
20	19.61	19.13	26.57	11501030	12501030	13501030
22	21.97	19.13	31.08		12561030	13561030
25	24.72	19.13	34.83		12631030	13631030

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

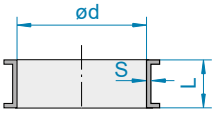
ND	Ø d	L	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	19.13	2.27	11062030*		11063030*	
3	2.99	19.13	4.19	11082030	12082030	11083030	
4	3.90	19.13	5.62	11102030	12102030	11103030	12103030
5	4.69	19.13	6.39	11122030	12122030	11123030	12123030
5½	5.31	19.13	7.16	11142030	12142030	11143030	
6	5.87	19.13	8.05	11152030	12152030	11153030	12153030
7	6.85	19.13	9.59	11172030	12172030	11173030	12173030
8	7.83	19.13	10.69	11202030	12202030	11203030	12203030
9	8.62	19.13	11.68	11222030	12222030	11223030	
10	9.80	19.13	13.12	11252030	12252030	11253030	12253030
11	10.94	19.13	14.99	11282030		11283030	
12	11.77	19.13	15.98	11302030	12302030	11303030	12303030
12½	12.32	19.13	16.98	11312030		11313030	
14	13.74	19.13	18.63	11352030		11353030	12353030
16	15.67	19.13	21.05	11402030		11403030	12403030
18	17.64	19.13	23.70	11452030		11453030	12453030
20	19.61	19.13	26.57	11502030		11503030	12503030
22	21.97	19.13	31.08		12562030		12563030
25	24.72	19.13	34.83		12632030		12633030

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





8" (200 MM) TUBES

1010

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	7.87	0.99	11061040*		
3	2.99	7.87	1.54	11081040	12081040	
4	3.90	7.87	2.20	11101040	12101040	
5	4.69	7.87	2.65	11121040	12121040	13121040
5½	5.31	7.87	3.09	11141040	12141040	
6	5.87	7.87	3.31	11151040	12151040	13151040
7	6.85	7.87	3.97	11171040	12171040	13171040
8	7.83	7.87	4.52	11201040	12201040	13201040
9	8.62	7.87	4.85	11221040	12221040	
10	9.80	7.87	5.62	11251040	12251040	13251040
11	10.94	7.87	6.39	11281040		
12	11.77	7.87	6.50	11301040	12301040	13301040
12½	12.32	7.87	7.28	11311040		
14	13.74	7.87	8.16	11351040	12351040	13351040
16	15.67	7.87	9.04	11401040	12401040	13401040

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

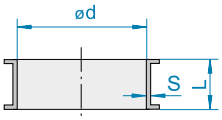
ND	Ø d	L	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	7.87	0.99	11062040*		11063040*	
3	2.99	7.87	1.54	11082040	12082040	11083040	
4	3.90	7.87	2.20	11102040	12102040	11103040	12103040
5	4.69	7.87	2.65	11122040	12122040	11123040	12123040
5½	5.31	7.87	3.09	11142040	12142040	11143040	
6	5.87	7.87	3.31	11152040	12152040	11153040	12153040
7	6.85	7.87	3.97	11172040	12172040	11173040	12173040
8	7.83	7.87	4.52	11202040	12202040	11203040	12203040
9	8.62	7.87	4.85	11222040	12222040	11223040	
10	9.80	7.87	5.62	11252040	12252040	11253040	12253040
11	10.94	7.87	6.39	11282040		11283040	
12	11.77	7.87	6.50	11302040	12302040	11303040	12303040
12½	12.32	7.87	7.28	11312040		11313040	
14	13.74	7.87	8.16	11352040		11353040	12353040
16	15.67	7.87	9.04	11402040		11403040	12403040

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





2" (50 MM) TUBES

1010

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	2.17	0.26	11061050 *		
3	2.99	1.97	0.33	11081050	12081050	
4	3.90	1.97	0.66	11101050	12101050	
5	4.69	1.97	0.88	11121050	12121050	13121050
5½	5.31	1.97	0.99	11141050	12141050	
6	5.87	1.97	1.10	11151050	12151050	13151050
7	6.85	1.97	1.21	11171050	12171050	13171050
8	7.83	1.97	1.32	11201050	12201050	13201050
9	8.62	1.97	1.43	11221050	12221050	
10	9.80	1.97	1.65	11251050	12251050	13251050
11	10.94	1.97	1.98	11281050		
12	11.77	1.97	1.98	11301050	12301050	13301050
12½	12.32	1.97	2.20	11311050		

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

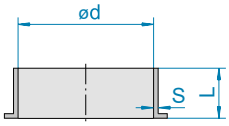
ND	Ø d	L	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	2.17	0.26			11063050 *	
3	2.99	1.97	0.33	11082050	12082050	11083050	
4	3.90	1.97	0.66	11102050	12102050	11103050	12103050
5	4.69	1.97	0.88	11122050	12122050	11123050	12123050
5½	5.31	1.97	0.99	11142050	12142050	11143050	12143050
6	5.87	1.97	1.10	11152050	12152050	11153050	12153050
7	6.85	1.97	1.21	11172050	12172050	11173050	12173050
8	7.83	1.97	1.32	11202050	12202050	11203050	12203050
9	8.62	1.97	1.43	11222050	12222050	11223050	12223050
10	9.80	1.97	1.65	11252050	12252050	11253050	12253050
11	10.94	1.97	1.98	11282050		11283050	
12	11.77	1.97	1.98	11302050	12302050	11303050	12303050
12½	12.32	1.97	2.20	11312050		11313050	

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





2¼" (55 MM) WELDING ENDS, FLANGED ON ONE SIDE

1020

- Flanged on one side with a 0.24" lip
- For connection to existing tubing systems or machinery on site

Steel (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	14 gauge steel uncoated	11 gauge steel uncoated	14 gauge galvanized
				Item no.	Item no.	Item no.
2¼	2.24	2.17	0.31	11060060*		
3	2.99	2.17	0.33	12080060		
4	3.90	2.17	0.77	12100060		12102060
5	4.69	2.17	0.88	12120060	13120060	12122060
5½	5.31	2.17	0.99	12140060		12142060
6	5.87	2.17	0.99	12150060	13150060	12152060
7	6.85	2.17	1.21	12170060	13170060	12172060
8	7.83	2.17	1.32	12200060	13200060	12202060
9	8.62	2.17	1.54	12220060		12222060
10	9.80	2.17	1.65	12250060	13250060	12252060
11	10.87	2.17	1.76	12280060		
12	11.77	2.17	1.87	12300060	13300060	12302060
12½	12.24	2.17	1.98	12310060		
14	13.74	2.17	2.31	12350060	13350060	
16	15.67	2.17	2.54	12400060	13400060	
18	17.64	2.17	3.09	12450060	13450060	
20	19.61	2.17	3.42	12500060	13500060	
22	21.97	2.17	3.75	12560060	13560060	
25	24.72	2.17	4.19	12630060	13630060	

*16 gauge

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	16 gauge primed	14 gauge primed	11 gauge primed	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	2.17	0.31	11061060			11063060*
3	2.99	2.17	0.33	11081060	12081060		12083060
4	3.90	2.17	0.77		12101060		12103060
5	4.69	2.17	0.88		12121060	13121060	12123060
5½	5.31	2.17	0.99		12141060		12143060
6	5.87	2.17	0.99		12151060	13151060	12153060
7	6.85	2.17	1.21		12171060	13171060	12173060
8	7.83	2.17	1.32		12201060	13201060	12203060
9	8.62	2.17	1.54		12221060		12223060
10	9.80	2.17	1.65		12251060	13251060	12253060
11	10.87	2.17	1.76				12283060
12	11.77	2.17	1.87		12301060	13301060	12303060
12½	12.24	2.17	1.98				12313060
14	13.74	2.17	2.31		12351060	13351060	12353060
16	15.67	2.17	2.54		12401060	13401060	12403060
18	17.64	2.17	3.09		12451060	13451060	12453060
20	19.61	2.17	3.42		12501060	13501060	12503060
22	21.97	2.17	3.75		12561060	13561060	12563060
25	24.72	2.17	4.19		12631060	13631060	12633060

*16 gauge

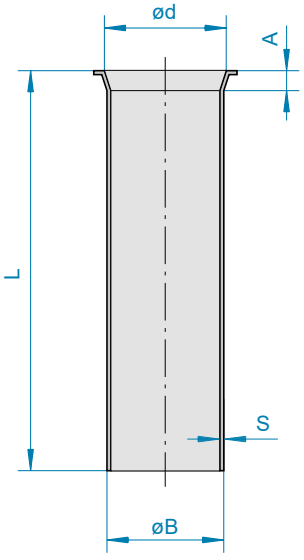
FOOD GRADE
EC 1935/2004 plus FDA compliant

SLIP TUBES

Slip tubes in 19 and 11 gauge wall thickness

For connecting with:
- QUICK CONNECT pull ring or pull ring without sealant for 19 and 14 gauge tubing (page 32)
- Ring seal (page 49)





Slip tube installation instructions

39" (1000 MM) SLIP TUBES

1030

Powder-coated or primed(dimensions for 16 gauge tubing)

ND	Ø d	A	Ø B	L	lb	19 gauge primed	16 gauge primed
						Item no.	Item no.
2¼	2.24	1.34	2.13	38.98	4.85		11061110
3	3.03	1.34	2.91	38.98	5.95	11081110	
4	3.94	1.34	3.78	38.98	7.72		11101110
5	4.72	1.34	4.57	38.98	9.48		11121110
5½	5.35	1.34	5.20	38.98	10.14		11141110
6	5.91	1.34	5.75	38.98	11.90		11151110
7	6.89	1.34	6.73	38.98	13.67		11171110
8	7.87	1.34	7.72	38.98	15.43		11201110
9	8.66	1.34	8.50	38.98	16.75		11221110
10	9.84	1.34	9.69	38.98	19.40		11251110
11	10.91	1.34	10.71	38.98	22.05		11281110
12	11.81	1.34	11.65	38.98	23.59		11301110
12½	12.28	1.34	12.09	38.98	24.91		11311110
14	13.78	1.97	13.62	38.98	27.34		11351110
16	15.71	1.97	15.59	38.98	31.31		11401110

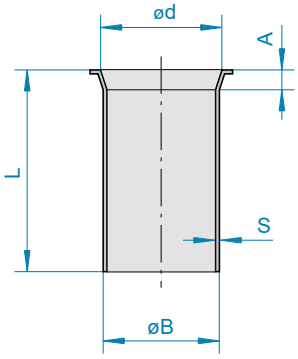
Galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	Ø B	L	lb	16 gauge galvanized	19 gauge stainless steel	16 gauge stainless steel	14 gauge stainless steel
						Item no.	Item no.	Item no.	Item no.
2¼	2.24	1.34	2.13	38.98	4.85	11062110		11063110	
3	3.03	1.34	2.91	38.98	5.95	11082110*	11083110		
4	3.94	1.34	3.78	38.98	7.72	11102110	11103110		12103110
5	4.72	1.34	4.57	38.98	9.48	11122110	11123110		12123110
5½	5.35	1.34	5.20	38.98	10.14	11142110	11143110		
6	5.91	1.34	5.75	38.98	11.90	11152110	11153110		12153110
7	6.89	1.34	6.73	38.98	13.67	11172110	11173110		12173110
8	7.87	1.34	7.72	38.98	15.43	11202110	11203110		12203110
9	8.66	1.34	8.50	38.98	16.75	11222110	11223110		
10	9.84	1.34	9.69	38.98	19.40	11252110	11253110		12253110
11	10.91	1.34	10.71	38.98	22.05	11282110		11283110	
12	11.81	1.34	11.65	38.98	23.59	11302110	11303110		12303110
12½	12.28	1.34	12.09	38.98	24.91	11312110		11313110	
14	13.78	1.97	13.62	38.98	27.34	11352110	11353110		12353110
16	15.71	1.97	15.59	38.98	31.31	11402110	11403110		12403110

*19 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant





20" (500 MM) SLIP TUBES

1030

Powder-coated or primed(dimensions for 16 gauge tubing)

ND	Ø d	A	Ø B	L	lb	19 gauge primed	16 gauge primed	11 gauge primed
						Item no.	Item no.	Item no.
2¼	2.24	1.34	2.13	19.37	2.43		11061120	
3	3.03	1.34	2.91	19.37	3.09	11081120		
4	3.94	1.34	3.78	19.37	3.97		11101120	
5	4.72	1.34	4.57	19.37	4.63		11121120	
5½	5.35	1.34	5.20	19.37	5.40		11141120	
6	5.91	1.34	5.75	19.37	5.84		11151120	13151120
7	6.89	1.34	6.73	19.37	6.83		11171120	13171120
8	7.87	1.34	7.72	19.37	7.72		11201120	13201120
9	8.66	1.34	8.50	19.37	8.60		11221120	
10	9.84	1.34	9.69	19.37	9.92		11251120	13251120
11	10.91	1.34	10.71	19.37	11.02		11281120	
12	11.81	1.34	11.65	19.37	11.90		11301120	13301120
12½	12.28	1.34	12.09	19.37	12.57		11311120	
14	13.78	1.97	13.62	19.37	13.67		11351120	
16	15.71	1.97	15.59	19.37	15.87		11401120	

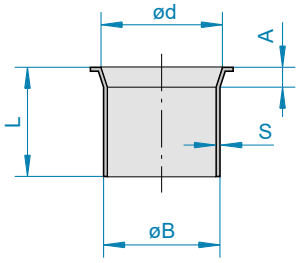
Galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	Ø B	L	lb	16 gauge galvanized	19 gauge stainless steel	16 gauge stainless steel	14 gauge stainless steel
						Item no.	Item no.	Item no.	Item no.
2¼	2.24	1.34	2.13	19.37	2.43	11062120		11063120	
3	3.03	1.34	2.91	19.37	3.09	11082120*	11083120		
4	3.94	1.34	3.78	19.37	3.97	11102120	11103120		12103120
5	4.72	1.34	4.57	19.37	4.63	11122120	11123120		12123120
5½	5.35	1.34	5.20	19.37	5.40	11142120	11143120		
6	5.91	1.34	5.75	19.37	5.84	11152120	11153120		12153120
7	6.89	1.34	6.73	19.37	6.83	11172120	11173120		12173120
8	7.87	1.34	7.72	19.37	7.72	11202120	11203120		12203120
9	8.66	1.34	8.50	19.37	8.60	11222120	11223120		
10	9.84	1.34	9.69	19.37	9.92	11252120	11253120		12253120
11	10.91	1.34	10.71	19.37	11.02	11282120		11283120	
12	11.81	1.34	11.65	19.37	11.90	11302120	11303120		12303120
12½	12.28	1.34	12.09	19.37	12.57	11312120		11313120	
14	13.78	1.97	13.62	19.37	13.67	11352120	11353120		12353120
16	15.71	1.97	15.59	19.37	15.87	11402120	11403120		12403120

*19 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant





8" (200 MM) SLIP TUBES

1030

Powder-coated or primed(dimensions for 16 gauge tubing)

ND	Ø d	A	Ø B	L	lb	19 gauge primed	16 gauge primed
						Item no.	Item no.
2¼	2.24	1.34	2.13	7.87	0.90		11061130
3	3.03	1.34	2.91	7.87	1.32	11081130	
4	3.94	1.34	3.78	7.87	1.65		11101130
5	4.72	1.34	4.57	7.87	1.87		11121130
5½	5.35	1.34	5.20	7.87	2.09		11141130
6	5.91	1.34	5.75	7.87	2.43		11151130
7	6.89	1.34	6.73	7.87	2.87		11171130
8	7.87	1.34	7.72	7.87	3.31		11201130
9	8.66	1.34	8.50	7.87	3.42		11221130
10	9.84	1.34	9.69	7.87	4.19		11251130
11	10.91	1.34	10.71	7.87	4.63		11281130
12	11.81	1.34	11.65	7.87	5.40		11301130
12½	12.28	1.34	12.09	7.87	5.51		11311130

Galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	Ø B	L	lb	16 gauge galvanized	19 gauge stainless steel	16 gauge stainless steel	14 gauge stainless steel
						Item no.	Item no.	Item no.	Item no.
2¼	2.24	1.34	2.13	7.87	0.90	11062130		11063130	
3	3.03	1.34	2.91	7.87	1.32	11082130*	11083130		
4	3.94	1.34	3.78	7.87	1.65	11102130	11103130		12103130
5	4.72	1.34	4.57	7.87	1.87	11122130	11123130		12123130
5½	5.35	1.34	5.20	7.87	2.09	11142130	11143130		
6	5.91	1.34	5.75	7.87	2.43	11152130	11153130		12153130
7	6.89	1.34	6.73	7.87	2.87	11172130	11173130		12173130
8	7.87	1.34	7.72	7.87	3.31	11202130	11203130		12203130
9	8.66	1.34	8.50	7.87	3.42	11222130	11223130		
10	9.84	1.34	9.69	7.87	4.19	11252130	11253130		12253130
11	10.91	1.34	10.71	7.87	4.63	11282130		11283130	
12	11.81	1.34	11.65	7.87	5.40	11302130	11303130		12303130
12½	12.28	1.34	12.09	7.87	5.51	11312130		11313130	

*19 gauge

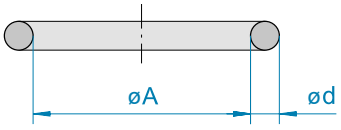
FOOD GRADE
EC 1935/2004 plus FDA compliant



RING SEALS FOR SLIP TUBES

3020

- Use in conjunction with slip tubes and QUICK CONNECT pull ring or pull ring without sealant
- The use of silicone ring seals is recommended with an 11 gauge wall thickness



FOR USE IN CONJUNCTION WITH SLIP TUBE AND PULL RING.

Ring seals to seal slip tubes from 19 to 11 gauge wall thickness

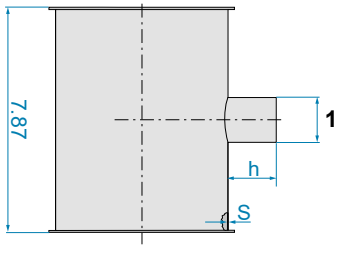
ND	Ø d	ØA	NBR gray	Silicone beige (F)	Silicone blue (F)(D)	EPDM black (F) 1)	Viton reddish brown (F)
			Item no.	Item no.	Item no.	Item no.	Item no.
2¼	0.28	2.09	100661557	1006715509	10067155091	1006815559	**100691559**
3	0.35	2.68	100861557	1008715509	10087155091	1008815559	**100891559**
4	0.35	3.43	101061557	1010715509	10107155091	1010815559	**101091559**
5	0.35	4.17	101261557	1012715509	10127155091	1012815559	**101291559**
5½	0.35	4.76	101461557	1014715509	10147155091	1014815559	**101491559**
6	0.35	5.43	101561557	1015715509	10157155091	1015815559	**101591559**
7	0.35	6.38	101761557	1017715509	10177155091	1017815559	**101791559**
8	0.35	7.32	102061557	1020715509	10207155091	1020815559	**102091559**
9	0.35	8.07	102261557	1022715509	10227155091	1022815559	**102291559**
10	0.35	9.17	102561557	1025715509	10257155091	1025815559	**102591559**
11	0.35	10.16	102861557	1028715509	10287155091	1028815559	**102891559**
12	0.35	11.06	103061557	1030715509	10307155091	1030815559	**103091559**
12½	0.35	11.54	103161557	1031715509	10317155091	1031815559	**103191559**
14	0.35	12.91	103561557	1035715509	10357155091	1035815559	**103591559**
16	0.35	14.80	104061557	1040715509	10407155091	1040815559	**104091559**



TUBES WITH 8" (200 MM) PORTS

1035

- For installation of sensors on site
- Port length
  - ½": h = 34 mm
  - 1": h = 43 mm
  - 1½": h = 48 mm
- Special lengths and other ports available on request



1 Port with inner thread

14 gauge powder-coated, length 8"

ND	Ø d	Port ½"	Port 1"	Port 1½"
		Item no.	Item no.	Item no.
2¼	2.24	110610400901*	110610400902*	
3	2.99	120810400901	120810400902	120810400903
4	3.90	121010400901	121010400902	121010400903
5	4.69	121210400901	121210400902	121210400903
5½	5.35	121410400901	121410400902	121410400903
6	5.87	121510400901	121510400902	121510400903
7	6.85	121710400901	121710400902	121710400903
8	7.83	122010400901	122010400902	122010400903
9	8.66	122210400901	122210400902	122210400903
10	9.80	122510400901	122510400902	122510400903
11	10.87	122810400901	122810400902	122810400903
12	11.77	123010400901	123010400902	123010400903

*16 gauge

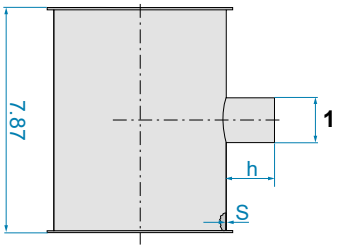
(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

1) ND 2¼, 3, 4 and 5" are FDA compliant. Other diameters are currently under review.

Tubes with ports





1 Port with inner thread

14 gauge galvanized, length 8"

ND	Ø d	Port ½"	Port 1"	Port 1½"
		Item no.	Item no.	Item no.
2¼	2.24	110620400901*	110620400902*	
3	2.99	120820400901	120820400902	120820400903
4	3.90	121020400901	121020400902	121020400903
5	4.69	121220400901	121220400902	121220400903
5½	5.35	121420400901	121420400902	121420400903
6	5.87	121520400901	121520400902	121520400903
7	6.85	121720400901	121720400902	121720400903
8	7.83	122020400901	122020400902	122020400903
9	8.66	122220400901	122220400902	122220400903
10	9.80	122520400901	122520400902	122520400903
11	10.87	122820400901	122820400902	122820400903
12	11.77	123020400901	123020400902	123020400903

*16 gauge

14 gauge stainless steel, length 8"

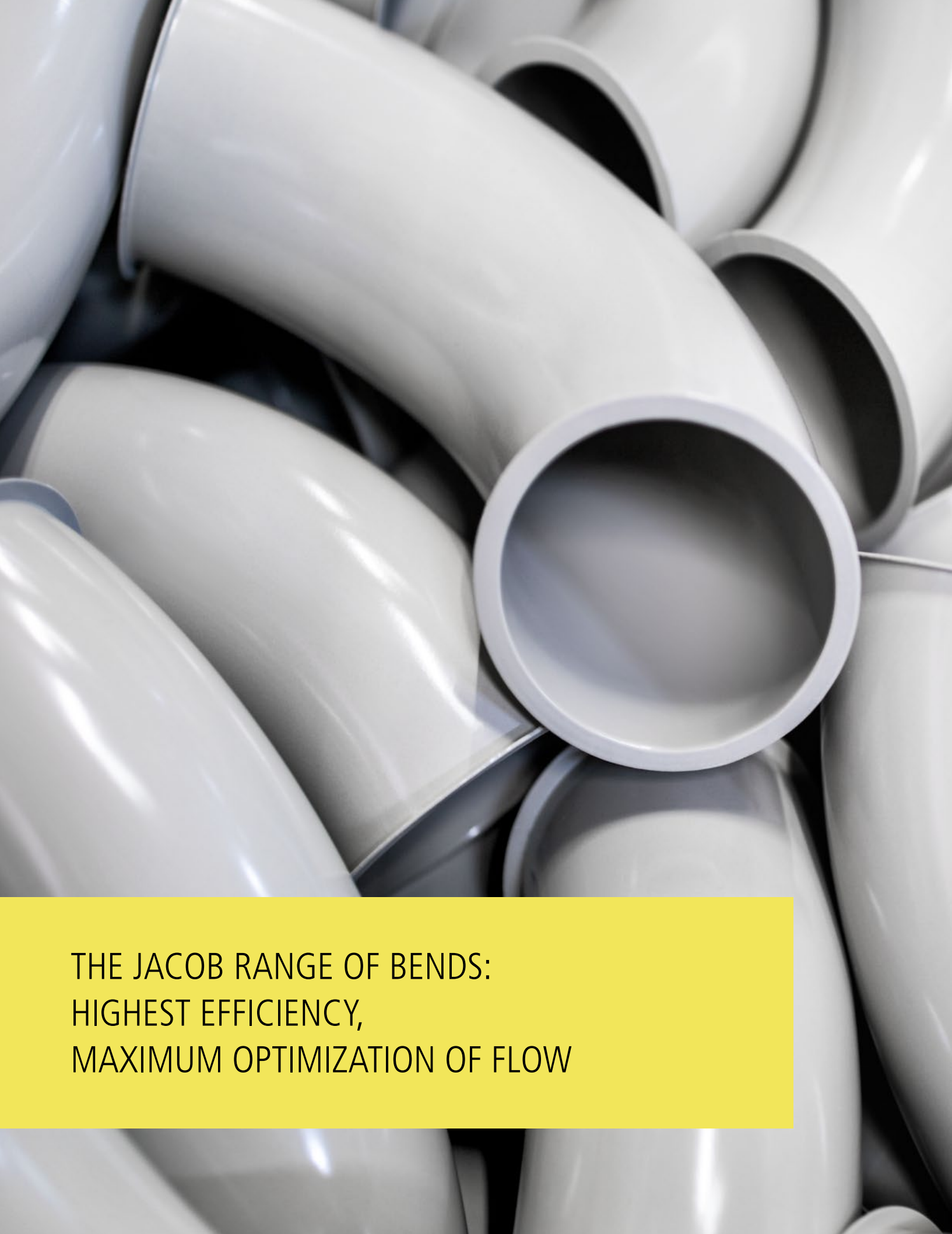
ND	Ø d	Port ½"	Port 1"	Port 1½"
		Item no.	Item no.	Item no.
2¼	2.24	110630400901*	110630400902*	
3	2.99	120830400901	120830400902	120830400903
4	3.90	121030400901	121030400902	121030400903
5	4.69	121230400901	121230400902	121230400903
5½	5.35	121430400901	121430400902	121430400903
6	5.87	121530400901	121530400902	121530400903
7	6.85	121730400901	121730400902	121730400903
8	7.83	122030400901	122030400902	122030400903
9	8.66	122230400901	122230400902	122230400903
10	9.80	122530400901	122530400902	122530400903
11	10.87	122830400901	122830400902	122830400903
12	11.77	123030400901	123030400902	123030400903

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant







THE JACOB RANGE OF BENDS: HIGHEST EFFICIENCY, MAXIMUM OPTIMIZATION OF FLOW

THE RANGE OF TUBE BENDS

Technical information	54
Segments	56
Bends	60
Adjustable elbows	67
Ball joints	67

SEGMENTS AND BENDS

Perfect flow properties pay off! If the product flow is ideally guided through direction-changing elements, the flow resistance, and therefore the wear, are significantly reduced. This results in: energy savings, longer maintenance intervals, shorter downtimes, and therefore lower costs. We achieve this with our innovative manufacturing technology. We produce bends from pressed half shells or pressed segments. Automated production stages, particularly during welding, ensure a uniformly high level of quality.

Maximum flexibility for planning and implementation: from bends for restricted spaces with a radius of R = 1D up to drawn bends with a large radius. All parts have a 0.24" lip and can be combined with all JACOB tubing using our pull ring system.

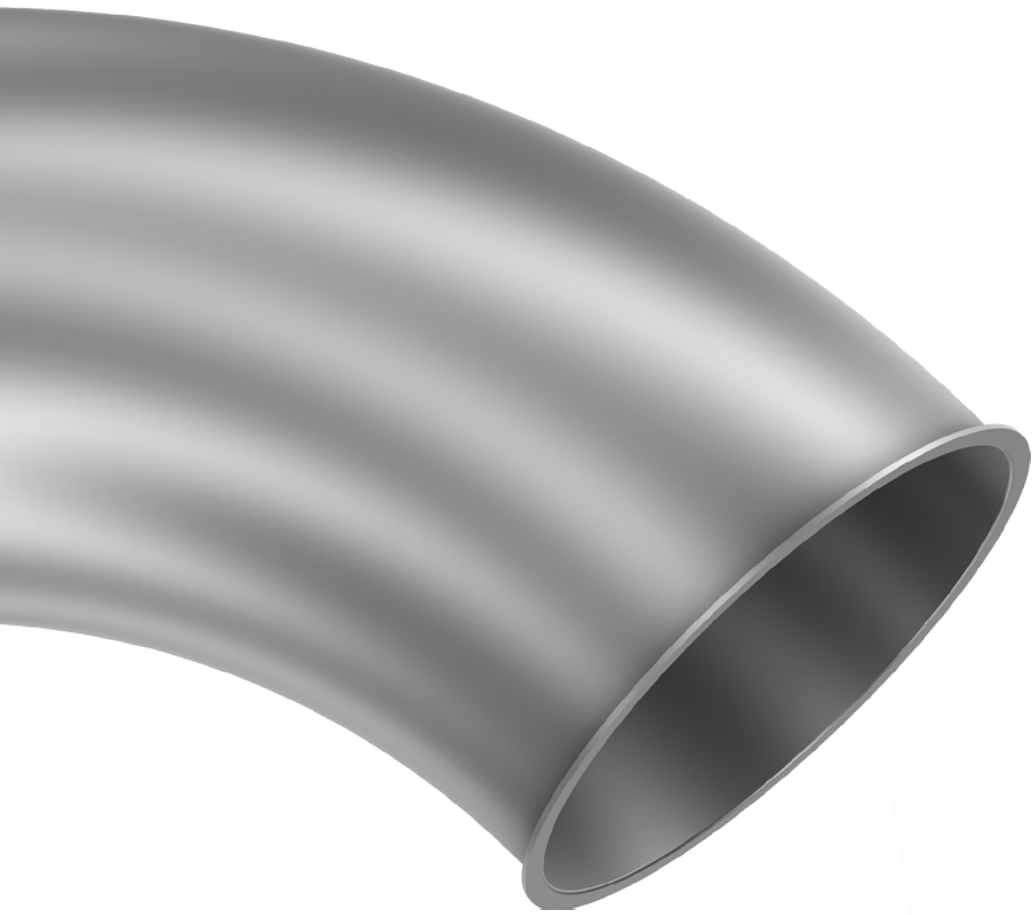
Are you looking for the right angle or radius for your application? No problem with the JACOB tubing system! By using our flexible adjustable elbows and ball joints or by counter-rotating two segments: a wide range of different angles can easily be achieved with parts from our standard product range. We can produce special radius segment-bends on demand.

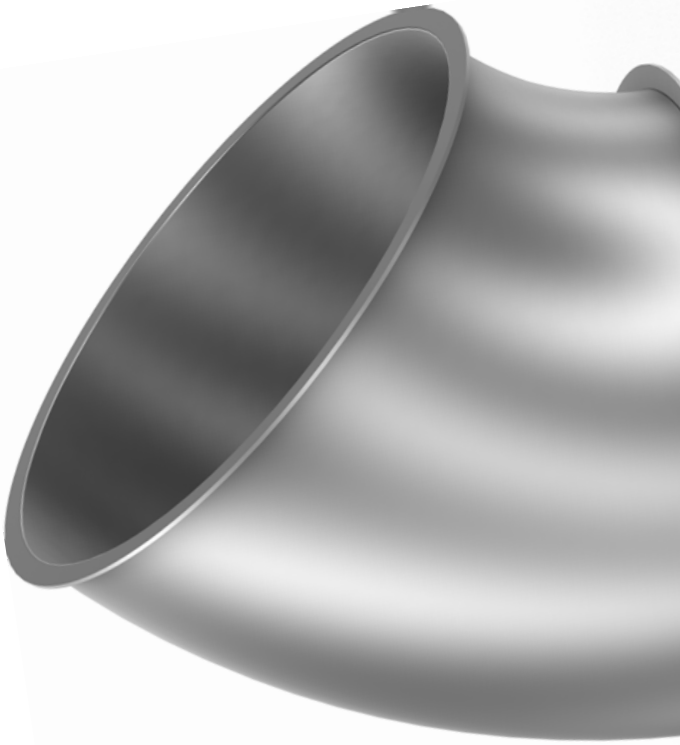
The unique JACOB flexibility makes it possible to implement numerous special requirements that our customers request: from bends with welded-on flanges to a wide range of special colors – this is no problem at all with our unique in-depth production range.

Overview of segment and bend versions

ND	Segments		Bends			
	5°	15°, 30°, 45°	R = 1D 90°	R = 2D 30°	R = 2D 90°, 60°, 45°	Long radius 15°, 30°, 45°, 60°, 90°
2¼	■	■	■	■	■	
3–5	■	■	■	■	■	■
5½	■	■	■	■	■	
6–8	■	■	■	■	■	■
9	■	■	■	■	■	
10	■	■	■	■	■	■
11	■	■	■	■	■	
12	■	■	■	■	■	■
12½	■	■	■	■	■	
14–16	■	■	■	■	■	
18–25	■	■	■	■	■	

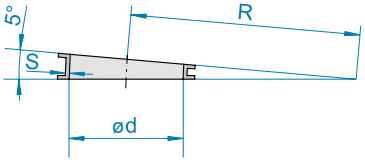
■ Flat back version, segments/bends made up of one or more flat back segments with a straight back
■ Pressed segment version, pressed segments and bends
■ Pressed segments and bends, bends made up of several pressed segments
■ Bends with long radius, drawn from pipes with longitudinally welded tubes











SEGMENTS 5°

1110

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
3	2.99	12.20	0.22	11081300		
4	3.90	12.60	0.44	11101300	12101300	
5	4.69	14.17	0.55	11121300	12121300	13121300
5½	5.31	18.11	0.77	11141300*		
6	5.87	19.69	0.99	11151300	12151300	13151300
7	6.85	22.05	1.21	11171300	12171300	13171300
8	7.83	27.17	1.43	11201300	12201300	13201300
9	8.62	22.05	1.54	11221300*		
10	9.80	25.00	1.65	11251300	12251300	13251300
11	10.87	22.05	1.98	11281300*		
12	11.77	24.61	2.09	11301300	12301300	13301300
12½	12.24	23.62	2.09	11311300*		
14	13.74	13.78	1.76	11351300*	12351300	13351300
16	15.67	15.75	2.09	11401300*	12401300	13401300
18	17.64	17.72	3.09	11451300*	12451300	13451300
20	19.61	19.69	3.20	11501300*	12501300	13501300
22	21.97	22.05	3.53		12561300	13561300
25	24.72	24.80	4.74		12631300	13631300

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

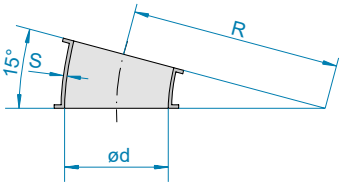
ND	Ø d	R	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
3	2.99	12.20	0.22	11082300		11083300	
4	3.90	12.60	0.44	11102300	12102300	11103300	12103300
5	4.69	14.17	0.55	11122300	12122300	11123300	12123300
5½	5.31	18.11	0.77	11142300*	12142300	11143300*	
6	5.87	19.69	0.99	11152300	12152300	11153300	12153300
7	6.85	22.05	1.21	11172300	12172300	11173300	12173300
8	7.83	27.17	1.43	11202300	12202300	11203300	12203300
9	8.62	22.05	1.54	11222300*	12222300	11223300*	
10	9.80	25.00	1.65	11252300	12252300	11253300	12253300
11	10.87	22.05	1.98	11282300*		11283300*	
12	11.77	24.61	2.09	11302300	12302300	11303300	12303300
12½	12.24	23.62	2.09	11312300*		11313300*	
14	13.74	13.78	1.76	11352300*		11353300	12353300
16	15.67	15.75	2.09	11402300*		11403300	12403300
18	17.64	17.72	3.09	11452300*		11453300	12453300
20	19.61	19.69	3.20	11502300*		11503300	12503300
22	21.97	22.05	3.53		12562300		12563300
25	24.72	24.80	4.74		12632300		12633300

*16 gauge

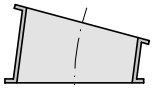
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





1 pressed segment 15°



1 flat back segment 15°

SEGMENTS 15°

1120

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	4.72	0.22	11061310*		
3	2.99	5.12	0.22	11081310		
4	3.90	5.12	0.44	11101310	12101310	
5	4.69	6.10	0.66	11121310	12121310	13121310
5½	5.31	7.28	0.66	11141310*		
6	5.87	9.84	1.21	11151310	12151310	13151310
7	6.85	11.02	1.65	11171310	12171310	13171310
8	7.83	10.63	1.76	11201310	12201310	13201310
9	8.62	8.66	1.21	11221310*		
10	9.80	12.20	2.31	11251310	12251310	13251310
11	10.87	11.02	2.76	11281310*		
12	11.77	12.20	2.87	11301310	12301310	13301310
12½	12.24	12.40	3.53	11311310*		
14	13.74	13.78	3.86	11351310*	12351310	13351310
16	15.67	15.75	5.18	11401310*	12401310	13401310
18	17.64	17.72	6.50	11451310*	12451310	13451310
20	19.61	19.69	7.72	11501310*	12501310	13501310
22	21.97	22.05	9.70		12561310	13561310
25	24.72	24.80	12.35		12631310	13631310

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

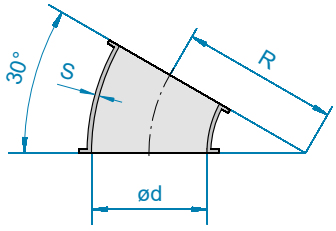
ND	Ø d	R	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.72	0.22	11062310*		11063310*	
3	2.99	5.12	0.22	11082310		11083310	
4	3.90	5.12	0.44	11102310	12102310	11103310	12103310
5	4.69	6.10	0.66	11122310	12122310	11123310	12123310
5½	5.31	7.28	0.66	11142310*	12142310	11143310*	
6	5.87	9.84	1.21	11152310	12152310	11153310	12153310
7	6.85	11.02	1.65	11172310	12172310	11173310	12173310
8	7.83	10.63	1.76	11202310	12202310	11203310	12203310
9	8.62	8.66	1.21	11222310*	12222310	11223310	
10	9.80	12.20	2.31	11252310	12252310	11253310	12253310
11	10.87	11.02	2.76	11282310*		11283310*	
12	11.77	12.20	2.87	11302310	12302310	11303310	12303310
12½	12.24	12.40	3.53	11312310*		11313310*	
14	13.74	13.78	3.86	11352310*		11353310	12353310
16	15.67	15.75	5.18	11402310*		11403310	12403310
18	17.64	17.72	6.50	11452310*		11453310	12453310
20	19.61	19.69	7.72	11502310*		11503310	12503310
22	21.97	22.05	9.70		12562310		12563310
25	24.72	24.80	12.35		12632310		12633310

*16 gauge

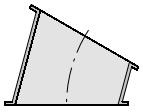
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





1 pressed segment 30°



1 flat back segment 30°

SEGMENTS 30°

1130

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
3	2.99	3.94	0.22	11081320		
4	3.90	3.74	0.66	11101320	12101320	
5	4.69	4.33	0.88	11121320	12121320	13121320
5½	5.31	5.51	0.99	11141320*		
6	5.87	6.89	1.54	11151320	12151320	13151320
7	6.85	8.19	2.31	11171320	12171320	13171320
8	7.83	7.09	2.31	11201320	12201320	13201320
9	8.62	7.68	2.09	11221320*		
10	9.80	9.06	3.42	11251320	12251320	13251320
11	10.87	11.14	5.07	11281320*		
12	11.77	9.06	4.19	11301320	12301320	13301320
12½	12.24	12.40	6.50	11311320*		
14	13.74	13.78	7.28	11351320*	12351320	13351320
16	15.67	15.75	9.04	11401320*	12401320	13401320
18	17.64	17.72	12.35	11451320*	12451320	13451320
20	19.61	19.69	14.55	11501320*	12501320	13501320
22	21.97	22.05	18.74		12561320	13561320
25	24.72	24.80	23.15		12631320	13631320

*16 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
3	2.99	3.94	0.22	11082320		11083320	
4	3.90	3.74	0.66	11102320	12102320	11103320	12103320
5	4.69	4.33	0.88	11122320	12122320	11123320	12123320
5½	5.31	5.51	0.99	11142320*	12142320	11143320*	
6	5.87	6.89	1.54	11152320	12152320	11153320	12153320
7	6.85	8.19	2.31	11172320	12172320	11173320	12173320
8	7.83	7.09	2.31	11202320	12202320	11203320	12203320
9	8.62	7.68	2.09	11222320*	12222320	11223320	
10	9.80	9.06	3.42	11252320	12252320	11253320	12253320
11	10.87	11.14	5.07	11282320*		11283320*	
12	11.77	9.06	4.19	11302320	12302320	11303320	12303320
12½	12.24	12.40	6.50	11312320*		11313320*	
14	13.74	13.78	7.28	11352320*		11353320	12353320
16	15.67	15.75	9.04	11402320*		11403320	12403320
18	17.64	17.72	12.35	11452320*		11453320	12453320
20	19.61	19.69	14.55	11502320*		11503320	12503320
22	21.97	22.05	18.74		12562320		12563320
25	24.72	24.80	23.15		12632320		12633320

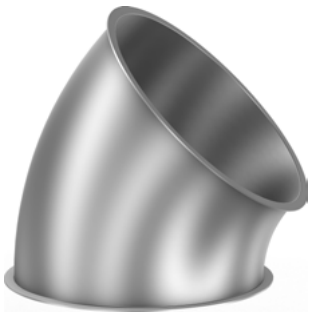
*16 gauge

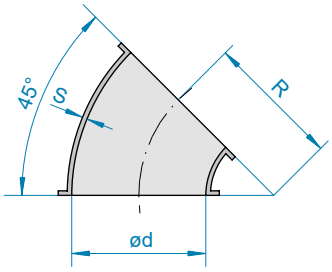
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi

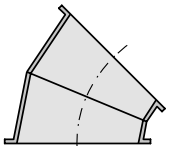
SEGMENTS 45°

1140





1 pressed segment 45°



2 flat back segments:
2 x 22.5°

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	19 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
3	2.99	3.15	0.33	11081330		
4	3.90	3.27	0.77	11101330	12101330	
5	4.69	3.46	1.10	11121330	12121330	13121330
5½	5.31	4.41	1.10	11141330*		
6	5.87	5.91	1.98	11151330	12151330	13151330
7	6.85	6.30	2.65	11171330*	12171330	13171330
8	7.83	7.68	3.42	11201330*	12201330	13201330
9	8.62	6.10	2.43	11221330*		
10	9.80	7.68	4.30	11251330*	12251330	13251330
11	10.87	11.02	7.83	11281330*		
12	11.77	8.07	5.51	11301330*	12301330	13301330
12½	12.24	12.40	9.48	11311330*		
14	13.74	13.78	10.80	11351330*	12351330	13351330
16	15.67	15.75	14.33	11401330*	12401330	13401330
18	17.64	17.72	17.97	11451330*	12451330	13451330
20	19.61	19.69	22.05	11501330*	12501330	13501330
22	21.97	22.05	27.34		12561330	13561330
25	24.72	24.80	35.49		12631330	13631330

*16 gauge

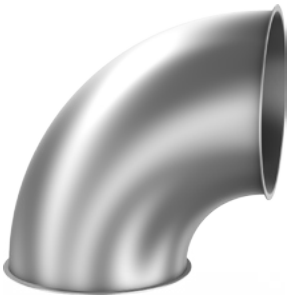
Galvanized and stainless steel (dimensions for 14 gauge tubing)

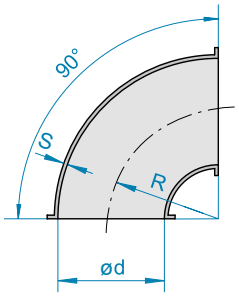
ND	Ø d	R	lb	19 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
3	2.99	3.15	0.33	11082330		11083330	
4	3.90	3.27	0.77	11102330	12102330	11103330	12103330
5	4.69	3.46	1.10	11122330	12122330	11123330	12123330
5½	5.31	4.41	1.10	11142330*	12142330	11143330*	
6	5.87	5.91	1.98	11152330	12152330	11153330	12153330
7	6.85	6.30	2.65	11172330*	12172330	11173330*	12173330
8	7.83	7.68	3.42	11202330*	12202330	11203330*	12203330
9	8.62	6.10	2.43	11222330*	12222330	11223330*	
10	9.80	7.68	4.30	11252330*	12252330	11253330*	12253330
11	10.87	11.02	7.83	11282330*		11283330*	
12	11.77	8.07	5.51	11302330*	12302330	11303330*	12303330
12½	12.24	12.40	9.48	11312330*		11313330*	
14	13.74	13.78	10.80	11352330*		11353330*	12353330
16	15.67	15.75	14.33	11402330*		11403330*	12403330
18	17.64	17.72	17.97	11452330*		11453330*	12453330
20	19.61	19.69	22.05	11502330*		11503330*	12503330
22	21.97	22.05	27.34		12562330		12563330
25	24.72	24.80	35.49		12632330		12633330

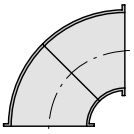
*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

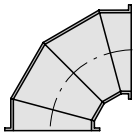
Shock explosion proof tested
up to 43.51 psi







2 pressed segments 45°



4 flat back segments:
2 x 30° / 2 x 15°

BENDS R = 1D, 90°

1220

- ND 5½", 9" and 12" R ≠ 1 D

Powder-coated or primed (dimensions for 16 gauge tubing)

ND	Ø d	R	lb	19 gauge primed	16 gauge primed	14 gauge primed
				Item no.	Item no.	Item no.
3	3.03	3.15	0.88	11081339		
4	3.94	3.94	0.95	11101339		
5	4.72	4.72	2.20	11121339		
5½	5.35	4.92	2.65		11141339	
6	5.91	5.91	2.03	11151339		
7	6.85	6.89	4.41		11171339	
8	7.87	7.87	5.34		11201339	
9	8.66	6.50	5.73		11221339	
10	9.84	9.84	8.82		11251339	
11	10.91	11.02	11.02		11281339	
12	11.81	8.27	11.02		11301339	
12½	12.28	12.40	13.67		11311339	
14	13.78	13.78	17.64		11351339	
16	15.71	15.75	22.05		11401339	
18	17.68	17.72	28.66		11451339	
20	19.65	19.69	35.27		11501339	
22	21.97	22.05	57.32			12561339
25	24.72	24.80	50.71			12631339

Galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	R	lb	19 gauge galvanized	16 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
3	3.03	3.15	0.88	11082339		11083339	
4	3.94	3.94	0.95	11102339		11103339	
5	4.72	4.72	2.20	11122339		11123339	
5½	5.35	4.92	2.65		11142339	11143339*	
6	5.91	5.91	2.03	11152339		11153339	
7	6.85	6.89	4.41		11172339	11173339*	
8	7.87	7.87	5.34		11202339	11203339*	
9	8.66	6.50	5.73		11222339	11223339*	
10	9.84	9.84	8.82		11252339	11253339*	
11	10.91	11.02	11.02		11282339	11283339*	
12	11.81	8.27	11.02		11302339	11303339*	
12½	12.28	12.40	13.67		11312339	11313339*	
14	13.78	13.78	17.64		11352339	11353339*	
16	15.71	15.75	22.05		11402339	11403339*	
18	17.68	17.72	28.66		11452339	11453339*	
20	19.65	19.69	35.27		11502339	11503339*	
22	21.97	22.05	57.32		12562339*		12563339
25	24.72	24.80	50.71		12632339*		12633339

*14 gauge *16 gauge

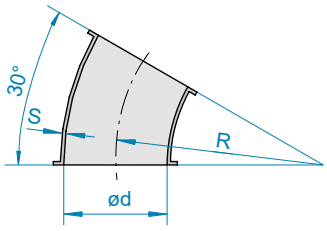
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi

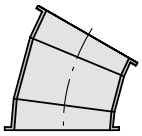
BENDS R = 2D, 30°

1230





1 pressed segment 30°



3 flat back segments:
1 x 15° / 2 x 7.5°

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	4.72	0.55	11061343		
3	2.99	6.30	0.77	11081343*	12081343	
4	3.90	7.87	1.32	11101343*	12101343	
5	4.69	9.45	1.76	11121343	12121343	13121343
5½	5.31	11.02	2.20	11141343	12141343	
6	5.87	11.81	2.76	11151343	12151343	13151343
7	6.85	13.78	3.64	11171343	12171343	13171343
8	7.83	15.75	4.63	11201343	12201343	13201343
9	8.62	17.64	5.84	11221343	12221343	
10	9.80	19.69	7.72	11251343	12251343	13251343
11	10.91	22.05	9.70	11281343		
12	11.77	23.62	10.14	11301343	12301343	13301343
12½	12.28	24.80	12.13	11311343		
14	13.74	27.56	14.00		12351343	13351343
16	15.67	31.50	18.74		12401343	13401343
18	17.64	35.43	23.59		12451343	13451343
20	19.61	39.37	29.10		12501343	13501343
22	21.97	44.09	35.05		12561343	13561343
25	24.72	49.61	41.89		12631343	13631343

*19 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.72	0.55	11062343		11063343*	
3	2.99	6.30	0.77	11082343*	12082343	11083343	
4	3.90	7.87	1.32	11102343*	12102343	11103343	12103343
5	4.69	9.45	1.76	11122343	12122343	11123343	12123343
5½	5.31	11.02	2.20	11142343	12142343	11143343	12143343
6	5.87	11.81	2.76	11152343	12152343	11153343	12153343
7	6.85	13.78	3.64	11172343	12172343	11173343*	12173343
8	7.83	15.75	4.63	11202343	12202343	11203343*	12203343
9	8.62	17.64	5.84	11222343	12222343	11223343*	
10	9.80	19.69	7.72	11252343	12252343	11253343*	12253343
11	10.91	22.05	9.70	11282343		11283343*	
12	11.77	23.62	10.14	11302343	12302343	11303343*	12303343
12½	12.28	24.80	12.13	11312343		11313343*	
14	13.74	27.56	14.00		12352343		12353343
16	15.67	31.50	18.74		12402343		12403343
18	17.64	35.43	23.59	11452343			12453343
20	19.61	39.37	29.10	11502343			12503343
22	21.97	44.09	35.05	11562343			12563343
25	24.72	49.61	41.89	11632343			12633343

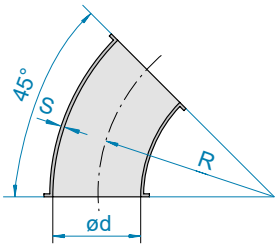
*19 gauge

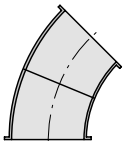
*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

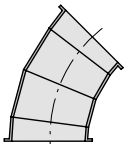
Shock explosion proof tested
up to 43.51 psi







2 pressed segments 22.5°



4 flat back segments:
2 x 15° / 2 x 7.5°

BENDS R = 2D, 45°

1240

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	4.72	0.88	11061344		
3	2.99	6.30	1.10	11081344*	12081344	
4	3.90	7.87	1.87	11101344*	12101344	
5	4.69	9.45	2.54	11121344	12121344	13121344
5½	5.31	11.02	3.20	11141344	12141344	
6	5.87	11.81	3.97	11151344	12151344	13151344
7	6.85	13.78	4.96	11171344	12171344	13171344
8	7.83	15.75	6.61	11201344	12201344	13201344
9	8.62	17.64	8.60	11221344	12221344	
10	9.80	19.69	10.58	11251344	12251344	13251344
11	10.91	22.05	14.44	11281344		
12	11.77	23.62	15.87	11301344	12301344	13301344
12½	12.28	24.80	17.97	11311344		
14	13.74	27.56	21.61		12351344	13351344
16	15.67	31.50	28.00		12401344	13401344
18	17.64	35.43	35.27		12451344	13451344
20	19.61	39.37	43.65		12501344	13501344
22	21.97	44.09	52.69		12561344	13561344
25	24.72	49.61	65.26		12631344	13631344

*19 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

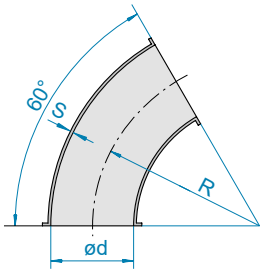
ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.72	0.88	11062344		11063344*	
3	2.99	6.30	1.10	11082344*	12082344	11083344	
4	3.90	7.87	1.87	11102344*	12102344	11103344	12103344
5	4.69	9.45	2.54	11122344	12122344	11123344	12123344
5½	5.31	11.02	3.20	11142344	12142344	11143344	12143344
6	5.87	11.81	3.97	11152344	12152344	11153344*	12153344
7	6.85	13.78	4.96	11172344	12172344	11173344	12173344
8	7.83	15.75	6.61	11202344	12202344	11203344*	12203344
9	8.62	17.64	8.60	11222344	12222344	11223344*	
10	9.80	19.69	10.58	11252344	12252344	11253344*	12253344
11	10.91	22.05	14.44	11282344		11283344*	
12	11.77	23.62	15.87	11302344	12302344	11303344*	12303344
12½	12.28	24.80	17.97	11312344		11313344*	
14	13.74	27.56	21.61		12352344		12353344
16	15.67	31.50	28.00		12402344		12403344
18	17.64	35.43	35.27	11452344			12453344
20	19.61	39.37	43.65	11502344			12503344
22	21.97	44.09	52.69	11562344			12563344
25	24.72	49.61	65.26	11632344			12633344

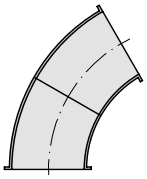
*19 gauge *16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

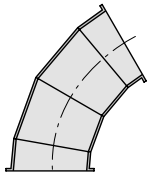
Shock explosion proof tested
up to 43.51 psi







2 pressed segments 30°



4 flat back segments:
2 x 20° / 2 x 10°

BENDS R = 2D, 60°

1250

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	4.72	1.10	11061346		
3	2.99	6.30	1.43	11081346*	12081346	
4	3.90	7.87	2.43	11101346*	12101346	
5	4.69	9.45	3.31	11121346	12121346	13121346
5½	5.31	11.02	4.52	11141346	12141346	
6	5.87	11.81	5.29	11151346	12151346	13151346
7	6.85	13.78	6.94	11171346	12171346	13171346
8	7.83	15.75	9.04	11201346	12201346	13201346
9	8.62	17.64	11.46	11221346	12221346	
10	9.80	19.69	15.21	11251346	12251346	13251346
11	10.91	22.05	19.40	11281346		
12	11.77	23.62	20.50	11301346	12301346	13301346
12½	12.28	24.80	23.81	11311346		
14	13.74	27.56	28.66	11351346	12351346	13351346
16	15.67	31.50	37.26		12401346	13401346
18	17.64	35.43	46.96		12451346	13451346
20	19.61	39.37	58.20		12501346	13501346
22	21.97	44.09	70.33		12561346	13561346
25	24.72	49.61	83.55		12631346	13631346

*19 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.72	1.10	11062346		11063346*	
3	2.99	6.30	1.43	11082346*	12082346	11083346	
4	3.90	7.87	2.43	11102346*	12102346	11103346	12103346
5	4.69	9.45	3.31	11122346	12122346	11123346	12123346
5½	5.31	11.02	4.52	11142346	12142346	11143346	12143346
6	5.87	11.81	5.29	11152346	12152346	11153346	12153346
7	6.85	13.78	6.94	11172346	12172346	11173346*	12173346
8	7.83	15.75	9.04	11202346	12202346	11203346*	12203346
9	8.62	17.64	11.46	11222346	12222346	11223346*	
10	9.80	19.69	15.21	11252346	12252346	11253346*	12253346
11	10.91	22.05	19.40	11282346		11283346*	
12	11.77	23.62	20.50	11302346	12302346	11303346*	12303346
12½	12.28	24.80	23.81	11312346		11313346*	
14	13.74	27.56	28.66		12352346		12353346
16	15.67	31.50	37.26		12402346		12403346
18	17.64	35.43	46.96	11452346			12453346
20	19.61	39.37	58.20	11502346			12503346
22	21.97	44.09	70.33	11562346			12563346
25	24.72	49.61	83.55	11632346			12633346

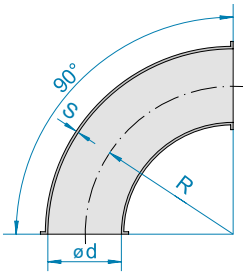
*19 gauge *16 gauge

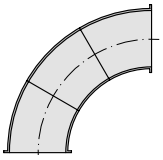
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi

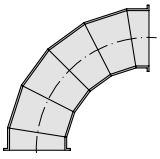
Bends







3 pressed segments 30°



6 flat back segments:
4 x 18° / 2 x 9°

BENDS R = 2D, 90°

1260

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed	11 gauge primed
				Item no.	Item no.	Item no.
2¼	2.24	4.72	1.65	11061349		
3	2.99	6.30	2.09	11081349*	12081349	
4	3.90	7.87	3.42	11101349*	12101349	
5	4.69	9.45	4.85	11121349	12121349	13121349
5½	5.31	11.02	6.72	11141349	12141349	
6	5.87	11.81	7.72	11151349	12151349	13151349
7	6.85	13.78	10.14	11171349	12171349	13171349
8	7.83	15.75	13.45	11201349	12201349	13201349
9	8.62	17.64	17.20	11221349	12221349	
10	9.80	19.69	21.38	11251349	12251349	13251349
11	10.91	22.05	28.00	11281349		
12	11.77	23.62	29.76	11301349	12301349	13301349
12½	12.28	24.80	35.93	11311349		
14	13.74	27.56	43.21		12351349	13351349
16	15.67	31.50	55.12		12401349	13401349
18	17.64	35.43	70.55		12451349	13451349
20	19.61	39.37	86.64		12501349	13501349
22	21.97	44.09	105.60		12561349	13561349
25	24.72	49.61	125.44		12631349	13631349

*19 gauge

Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
				Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.72	1.65	11062349		11063349*	
3	2.99	6.30	2.09	11082349*	12082349	11083349	
4	3.90	7.87	3.42	11102349*	12102349	11103349	12103349
5	4.69	9.45	4.85	11122349	12122349	11123349	12123349
5½	5.31	11.02	6.72	11142349	12142349	11143349	12143349
6	5.87	11.81	7.72	11152349	12152349	11153349	12153349
7	6.85	13.78	10.14	11172349	12172349	11173349*	12173349
8	7.83	15.75	13.45	11202349	12202349	11203349*	12203349
9	8.62	17.64	17.20	11222349	12222349	11223349*	
10	9.80	19.69	21.38	11252349	12252349	11253349*	12253349
11	10.91	22.05	28.00	11282349		11283349*	
12	11.77	23.62	29.76	11302349	12302349	11303349*	12303349
12½	12.28	24.80	35.93	11312349		11313349*	
14	13.74	27.56	43.21		12352349		12353349
16	15.67	31.50	55.12		12402349		12403349
18	17.64	35.43	70.55	11452349			12453349
20	19.61	39.37	86.64	11502349			12503349
22	21.97	44.09	105.60	11562349			12563349
25	24.72	49.61	125.44	11632349			12633349

*19 gauge *16 gauge

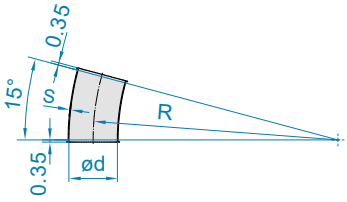
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi

BENDS LONG RADIUS, 15°

1262





- ND 3", 10" and 12" R = 4D
- ND 4", 5", 6", 7" and 8" R = 5D

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

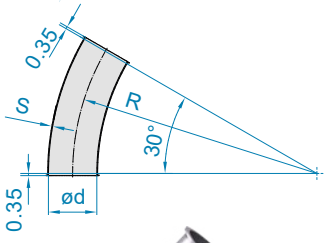
ND	Ø d	R	lb	14 gauge primed	14 gauge stainless steel
				Item no.	Item no.
3	2.99	19.69	7.50	120813511	120833511
4	3.90	19.69	9.04	121013511	121033511
5	4.69	23.62	12.57	121213511	121233511
6	5.87	29.53	29.76	131513511*	121533511
7	6.89	34.45	27.34	131713511*	121733511
8	7.83	39.37	57.76	132013511*	132033511*
10	9.80	39.37	72.31	132513511*	132533511*
12	11.77	47.24	102.29	133013511*	133033511*

*11 gauge

BENDS LONG RADIUS, 30°

1264





- ND 3", 10" and 12" R = 4D
- ND 4", 5", 6", 7" and 8" R = 5D

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

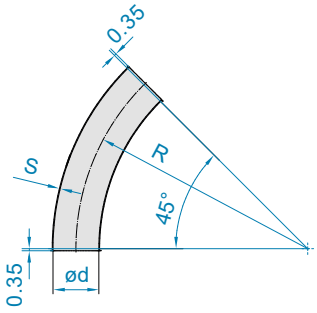
ND	Ø d	R	lb	14 gauge primed	14 gauge stainless steel
				Item no.	Item no.
3	2.99	19.69	7.50	120813531	120833531
4	3.90	19.69	9.04	121013531	121033531
5	4.69	23.62	12.57	121213531	121233531
6	5.87	29.53	29.76	131513531*	121533531
7	6.89	34.45	27.34	131713531*	121733531
8	7.83	39.37	57.76	132013531*	132033531*
10	9.80	39.37	72.31	132513531*	132533531*
12	11.77	47.24	102.29	133013531*	133033531*

*11 gauge

BENDS LONG RADIUS, 45°

1266





- ND 3", 10" and 12" R = 4D
- ND 4", 5", 6", 7" and 8" R = 5D

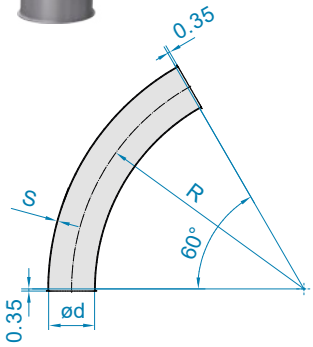
Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	14 gauge primed	14 gauge stainless steel
				Item no.	Item no.
3	2.99	19.69	7.50	120813541	120833541
4	3.90	19.69	9.04	121013541	121033541
5	4.69	23.62	12.57	121213541	121233541
6	5.87	29.53	29.76	131513541*	121533541
7	6.89	34.45	27.34	131713541*	121733541
8	7.83	39.37	57.76	132013541*	132033541*
10	9.80	39.37	72.31	132513541*	132533541*
12	11.77	47.24	102.29	133013541*	133033541*

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant





BENDS LONG RADIUS, 60°

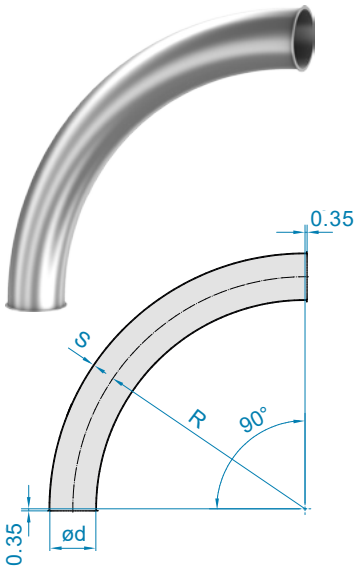
1268

- ND 3", 10" and 12" R = 4D
- ND 4", 5", 6", 7" and 8" R = 5D

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	14 gauge primed	14 gauge stainless steel
				Item no.	Item no.
3	2.99	19.69	7.50	120813561	120833561
4	3.90	19.69	9.04	121013561	121033561
5	4.69	23.62	12.57	121213561	121233561
6	5.87	29.53	29.76	131513561*	121533561
7	6.89	34.45	27.34	131713561*	121733561
8	7.83	39.37	57.76	132013561*	132033561*
10	9.80	39.37	72.31	132513561*	132533561*
12	11.77	47.24	102.29	133013561*	133033561*

*11 gauge



BENDS LONG RADIUS, 90°

1270

- ND 3", 10" and 12" R = 4D
- ND 4", 5", 6", 7" and 8" R = 5D

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

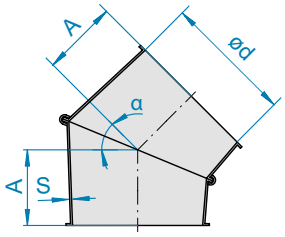
ND	Ø d	R	lb	14 gauge primed	14 gauge stainless steel
				Item no.	Item no.
3	2.99	19.69	7.50	120813591	120833591
4	3.90	19.69	9.04	121013591	121033591
5	4.69	23.62	12.57	121213591	121233591
6	5.87	29.53	29.76	131513591*	121533591
7	6.89	34.45	27.34	131713591*	121733591
8	7.83	39.37	57.76	132013591*	132033591*
10	9.80	39.37	72.31	132513591*	132533591*
12	11.77	47.24	102.29	133013591*	133033591*

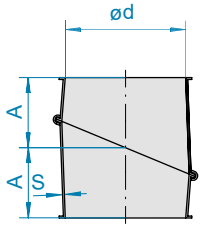
*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

For more technical information go to www.jacob-pipesystems.com







ADJUSTABLE ELBOWS

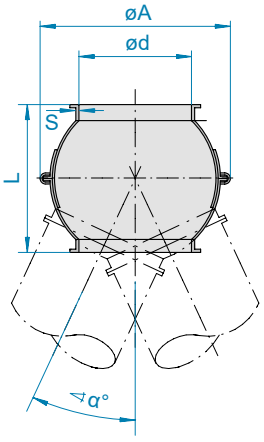
1145

- Version with galvanized pull ring and U-shaped gasket
- Pre-assembled at the factory
- 2 segments can also be adjusted by counter-rotating

Powder-coated or primed, and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	α	lb	16 gauge primed with NBR	16 gauge primed with EPDM	16 gauge stainless steel with blue silicone (F D)
					Item no.	Item no.	Item no.
4	3.94	2.76	55°	0.33	1110133503	1110133502	1110333501
5	4.72	2.36	45°	0.35	1112133503	1112133502	1112333501
6	5.91	3.15	45°	0.53	1115133503	1115133502	1115333501
7	6.89	3.94	45°	0.66	1117133503	1117133502	1117333501
8	7.87	4.72	45°	0.77	1120133503	1120133502	1120333501
10	9.84	5.51	45°	1.01	1125133503	1125133502	1125333501





BALL JOINTS

2125

Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	ØA	α	L	lb	14 gauge electro-galvanized	14 gauge stainless steel (F)
						Item no.	Item no.
4	3.90	5.91	25°	5.12	3.31	12102730	12103730
5	4.69	5.91	15°	4.53	3.53	12122730	12123730
6	5.87	7.87	18°	6.30	5.18	12152730	12153730
7	6.85	9.84	25°	7.87	8.16	12172730	12173730
8	7.83	9.84	15°	6.69	7.72	12202730	12203730
10	9.80	11.81	16°	7.48	10.14	12252730	12253730

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable



JACOB FORM PIECES:
ALMOST EVERYTHING AVAILABLE AS PART
OF OUR STANDARD PRODUCT LINE,
THE REST AT CUSTOMER'S REQUEST

FORM PIECES

Technical information	70
T-pieces	72
Laterals	73
Symmetrical Y-branches	78

5

FORM PIECES

Form pieces turn a straightforward tube into a complex tubing system. They are therefore key elements during planning and implementation.

To meet the particular requirements of each system, JACOB offers a comprehensive and wide-ranging standard product range which covers most requirements. If this does not meet your particular needs, we also manufacture individual parts to customers' specification. This is possible due to advanced technology, such as fully-automated laser welding equipment, which can carry out precise custom and small-scale production as well as production on an industrial scale.

We can therefore manufacture your own individual form piece – from a wide range of special colors as well as with different flanges, special lengths, and individual angles.

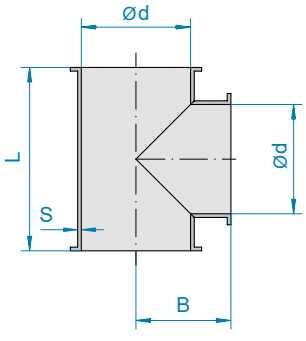
T-PIECES, LATERALS, AND SYMMETRICAL Y-BRANCHES ACCORDING TO YOUR INDIVIDUAL DIMENSIONS

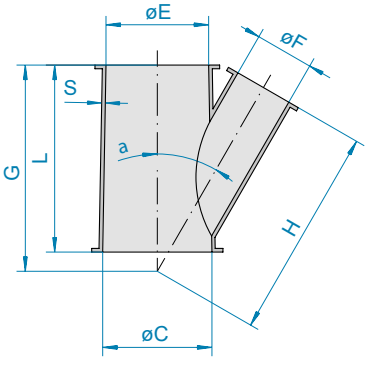
We manufacture laterals, T-pieces and symmetrical Y-branches to your specifications if you inform us of the dimensions of the material and the wall thickness you require. Prices and delivery times on request.

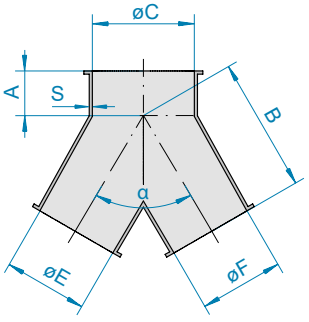






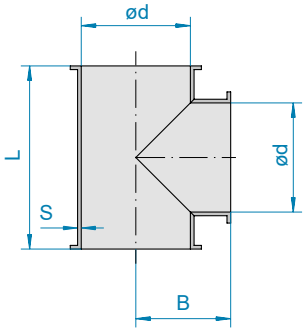












T-PIECES 90°

1070

- Other combinations of diameter and wall thickness available on request

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

ND	Ø d	B	L	lb	16 gauge primed	14 gauge primed	16 gauge galvanized	14 gauge galvanized
					Item no.	Item no.	Item no.	Item no.
2¼	2.24	2.36	5.12	1.21	11061240		11062240	
3	3.03	2.76	5.91	1.32	11081240		11082240	
4	3.94	3.94	7.87	2.20	11101240		11102240	
5	4.72	4.33	8.66	2.65	11121240		11122240	
5½	5.35	4.72	9.45	3.09	11141240		11142240	
6	5.91	4.92	9.84	3.64	11151240		11152240	
7	6.89	54.13	10.83	4.52	11171240		11172240	
8	7.87	5.91	11.81	5.62	11201240		11202240	
9	8.66	63.98	12.80	6.39	11221240		11222240	
10	9.84	6.89	13.78	7.72	11251240		11252240	
11	10.91	7.48	14.96	9.48	11281240		11282240	
12	11.81	7.87	15.75	10.36	11301240		11302240	
12½	12.28	8.27	16.54	11.68	11311240		11312240	
14	13.78	10.83	21.65	17.86	11351240		11352240	
16	15.71	11.81	23.62	21.83	11401240		11402240	
18	17.68	12.80	25.59	28.11	11451240		11452240	
20	19.65	13.78	27.56	31.08	11501240		11502240	
22	21.97	14.96	29.92	48.83		12561240		12562240
25	24.72	16.34	32.68	59.08		12631240		12632240

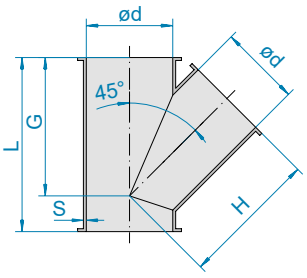
Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	B	L	lb	16 gauge stainless steel	14 gauge stainless steel
					Item no.	Item no.
2¼	2.24	2.36	5.12	1.21	11063240	
3	3.03	2.76	5.91	1.32	11083240	
4	3.94	3.94	7.87	2.20	11103240	12103240
5	4.72	4.33	8.66	2.65	11123240	12123240
5½	5.35	4.72	9.45	3.09	11143240	
6	5.91	4.92	9.84	3.64	11153240	12153240
7	6.89	54.13	10.83	4.52	11173240	12173240
8	7.87	5.91	11.81	5.62	11203240	12203240
9	8.66	63.98	12.80	6.39	11223240	
10	9.84	6.89	13.78	7.72	11253240	12253240
11	10.91	7.48	14.96	9.48	11283240	
12	11.81	7.87	15.75	10.36	11303240	12303240
12½	12.28	8.27	16.54	11.68	11313240	
14	13.78	10.83	21.65	17.86	11353240	12353240
16	15.71	11.81	23.62	21.83	11403240	12403240
18	17.68	12.80	25.59	28.11	11453240	12453240
20	19.65	13.78	27.56	31.08	11503240	12503240
22	21.97	14.96	29.92	48.83		12563240
25	24.72	16.34	32.68	59.08		12633240

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested up to 43.51 psi





LATERALS 45°

1050

- Other combinations of diameters available on request
- Conical laterals available on request
- From ND 14", dimensions for 14 gauge tubing

Powder-coated or primed (dimensions for 16 gauge tubing)

ND	Ø d	G	H	L	lb	16 gauge primed	14 gauge primed	11 gauge primed
						Item no.	Item no.	Item no.
2¼	2.24	4.53	4.53	5.71	1.10	11061220		
3	3.03	4.84	5.39	6.30	1.65	11081220		
4	3.94	6.97	6.93	8.46	2.54	11101220		
5	4.72	7.36	7.28	9.45	2.65	11121220	12121220	13121220
5½	5.35	8.50	8.62	11.02	3.53	11141220	12141220	13141220
6	5.91	9.21	9.09	11.81	4.63	11151220	12151220	13151220
7	6.89	10.59	10.47	13.39	4.85	11171220	12171220	13171220
8	7.87	12.17	12.05	15.35	9.04	11201220	12201220	13201220
9	8.66	13.15	13.23	16.54	12.57	11221220	12221220	13221220
10	9.84	14.09	13.86	17.72	11.90	11251220	12251220	13251220
11	10.91	15.75	15.75	19.69	15.21	11281220		
12	11.81	16.46	16.22	20.47	17.20	11301220	12301220	13301220
12½	12.28	17.72	17.72	22.05	19.18	11311220		
14	13.74	19.61	18.58	24.21	33.07	11351220	12351220	13351220
16	15.67	21.93	20.98	26.97	39.13	11401220	12401220	13401220
18	17.64	26.06	24.53	31.50	50.26	11451220	12451220	13451220
20	19.61	27.60	26.54	33.46	59.97	11501220	12501220	13501220
22	21.97	31.06	30.94	37.40	83.77		12561220	13561220
25	24.72	34.84	35.04	41.73	105.82		12631220	13631220

Galvanized and stainless steel (dimensions for 16 gauge tubing)

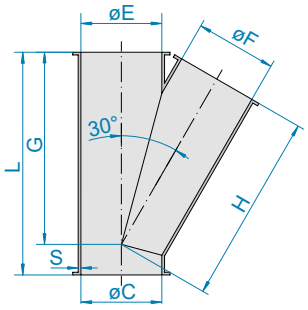
ND	Ø d	G	H	L	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel (F)	14 gauge stainless steel (F)
						Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.53	4.53	5.71	1.10	11062220		11063220*	
3	3.03	4.84	5.39	6.30	1.65	11082220		11083220	
4	3.94	6.97	6.93	8.46	2.54	11102220	12102220	11103220	12103220
5	4.72	7.36	7.28	9.45	2.65	11122220	12122220	11123220	12123220
5½	5.35	8.50	8.62	11.02	3.53	11142220	12142220	11143220	12143220
6	5.91	9.21	9.09	11.81	4.63	11152220	12152220	11153220	12153220
7	6.89	10.59	10.47	13.39	4.85	11172220	12172220	11173220	12173220
8	7.87	12.17	12.05	15.35	9.04	11202220	12202220	11203220	12203220
9	8.66	13.15	13.23	16.54	12.57	11222220	12222220	11223220	12223220
10	9.84	14.09	13.86	17.72	11.90	11252220	12252220	11253220	12253220
11	10.91	15.75	15.75	19.69	15.21	11282220		11283220*	
12	11.81	16.46	16.22	20.47	17.20	11302220	12302220	11303220	12303220
12½	12.28	17.72	17.72	22.05	19.18	11312220		11313220*	
14	13.74	19.61	18.58	24.21	33.07	11352220		11353220*	12353220
16	15.67	21.93	20.98	26.97	39.13	11402220		11403220*	12403220
18	17.64	26.06	24.53	31.50	50.26	11452220		11453220*	12453220
20	19.61	27.60	26.54	33.46	59.97	11502220		11503220*	12503220
22	21.97	31.06	30.94	37.40	83.77	11562220			12563220
25	24.72	34.84	35.04	41.73	105.82	11632220			12633220

*16 gauge

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

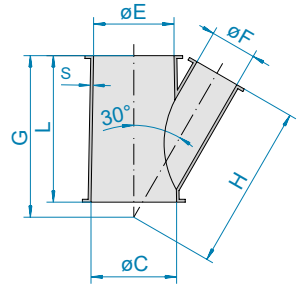
Shock explosion proof tested up to 43.51 psi





Lateral 30°





Conical lateral 30°

LATERALS 30°

1060/1080

- Diameter C, E, F = nominal diameter, internal diameter, refer to chapter 1, Connecting systems and dimensions
- Other combinations of diameter, angle and wall thickness available on request

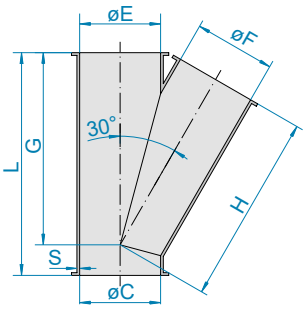
Powder-coated or primed (dimensions for 16 gauge tubing)

ND C - E - F	G	H	L	lb	16 gauge primed	14 gauge primed	11 gauge primed
					Item no.	Item no.	Item no.
2¼-2¼-2¼	6.69	6.69	7.87	1.76	11061230		
3 -2¼-2¼	6.69	6.69	7.87	2.09	11081255		
3 -3 -3	8.23	8.50	9.45	2.91	11081230		
4 -3 -3	9.33	9.29	9.84	2.76	11101255		
4 -4 -3	9.41	9.76	9.84	2.98	11101258		
4 -4 -4	10.31	9.76	11.81	3.75	11101230	12101230	
5 -3 -3	10.16	10.20	10.04	2.98	11121286		
5 -4 -3	10.24	10.28	10.04	3.20	11121257		
5 -4 -4	10.51	10.51	11.42	3.86	11121255		
5 -5 -3	10.08	10.16	9.84	3.31	11121258		
5 -5 -5	11.77	11.65	13.39	4.85	11121230	12121230	13121230
5½-4 -4	11.42	11.50	11.81	4.30	11141255		
5½-5 -3	10.79	10.94	10.04	3.64	11141257		
5½-5 -4	11.46	11.54	11.81	4.41	11141256		
5½-5½-3	10.83	11.18	10.04	3.75	11141258		
5½-5½-5½	13.23	13.15	15.35	6.17	11141230		
6 -4 -4	11.46	11.57	11.42	4.63	11151254		
6 -5 -4	11.54	11.65	11.42	4.52	11151256		
6 -5 -5	12.72	12.76	13.39	5.40	11151255		
6 -5½-3	11.26	11.50	10.04	3.86	11151287		
6 -6 -3	11.10	11.34	9.84	4.08	11151258		
6 -6 -6	13.98	13.78	16.14	6.72	11151230	12151230	13151230
7 -5 -5	13.50	13.66	13.39	5.95	11171285		
7 -5½-5	13.54	13.70	13.39	5.95	11171286		
7 -6 -3	11.89	12.24	9.84	4.19	11171258		
7 -6 -4	12.40	12.64	11.42	5.29	11171257		
7 -6 -5	13.58	13.74	13.39	6.17	11171256		
7 -6 -6	14.76	14.69	16.14	8.38	11171255		
7 -7 -7	15.43	15.08	17.72	8.82	11171230	12171230	13171230
8 -5½-5½	15.24	15.79	15.35	7.94	11201285		
8 -6 -5	14.37	14.69	13.39	5.95	11201286		
8 -6 -6	15.55	15.59	16.14	11.02	11201255		
8 -7 -4	13.23	13.62	11.42	5.95	11201258		
8 -7 -5	14.41	14.72	13.39	6.83	11201257		
8 -7 -6	15.59	15.67	16.14	9.04	11201256		
8 -8 -3	12.99	13.70	10.04	5.51	11201253		
8 -8 -4	13.70	14.09	11.81	6.61	11201254		
8 -8 -8	18.23	17.99	20.87	12.35	11201230	12201230	13201230
9 -6 -6	16.14	16.69	16.14	8.82	11221255		
9 -7 -5½	15.98	16.65	15.35	8.82	11221256		
9 -8 -4	14.33	14.84	11.81	6.61	11221258		
9 -8 -5	15.12	15.55	13.39	7.28	11221257		
9 -9 -9	20.08	20.08	22.83	15.21	11221230		

Shock explosion proof tested up to 43.51 psi

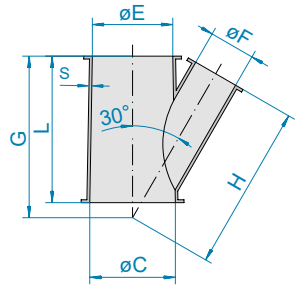
For more technical information go to www.jacob-pipesystems.com





Lateral 30°



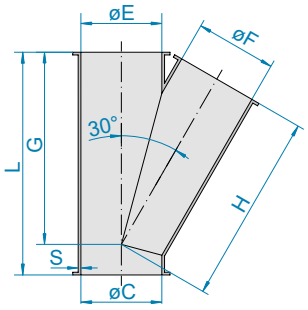


Conical lateral 30°

ND C - E - F	G	H	L	lb	16 gauge primed	14 gauge primed	11 gauge primed
					Item no.	Item no.	Item no.
10 - 8 - 6	17.24	17.56	16.14	10.14	11251286		
10 - 8 - 7	17.83	17.91	17.72	12.79	11251256		
10 - 8 - 8	19.80	20.20	20.87	13.45	11251255		
10 - 9 - 5	16.10	16.69	13.39	9.26	11251288		
10 - 9 - 5½	17.05	17.91	15.35	9.70	11251287		
10 -10 - 3	14.72	15.67	10.04	6.39	11251253		
10 -10 - 4	15.43	16.10	11.81	7.72	11251254		
10 -10 -10	21.54	21.42	24.41	17.64	11251230	12251230	13251230
11 -11 -11	24.02	24.02	27.17	22.05	11281230		
12 - 9 -9	22.64	22.99	22.83	16.98	11301285		
12 -10 -5½	18.70	19.41	15.35	10.80	11301288		
12 -10 - 6	18.74	19.49	16.14	11.68	11301258		
12 -10 - 7	19.53	19.88	17.72	13.01	11301257		
12 -10 - 8	21.50	22.17	20.87	15.65	11301256		
12 -10 -10	23.11	22.83	24.41	19.18	11301255		
12 -12 - 3	16.42	17.64	10.04	7.28	11301253		
12 -12 - 4	17.13	18.07	11.81	9.04	11301254		
12 -12 -12	25.20	25.20	28.35	24.80	11301230	12301230	13301230
12½-12½-12½	27.17	27.17	30.71	28.00	11311230		
14 -10 -10	24.69	24.69	24.41	21.16	11351255		
14 -12 -6	20.63	21.50	16.14	13.45	11351288		
14 -12 -8	23.23	24.13	20.87	17.42	11351257		
14 -12 -9	24.37	25.04	22.83	19.62	11351286		
14 -12 -10	24.80	24.80	24.41	21.83	11351256		
14 -14 -14	28.66	28.23	32.28	31.75	11351230	12351230	13351230
16 -12 -10	26.38	26.65	24.41	22.93	11401256		
16 -12 -12	28.39	28.50	28.35	27.34	11401255		
16 -14 -7	22.95	23.98	17.72	16.31	11401288		
16 -14 -9	26.10	27.01	22.83	22.49	11401287		
16 -16 -16	32.52	32.48	36.42	41.12	11401230	12401230	13401230
18 -14 -12	30.08	30.47	28.35	32.63	11451256		
18 -14 -14	31.85	31.93	32.28	38.58	11451255		
18 -16 -8	26.61	28.07	20.87	23.59	11451258		
18 -16 -10	28.19	28.74	24.41	28.22	11451257		
18 -18 -18	37.20	36.61	41.34	52.03	11451230	12451230	13451230
20 -16 -14	33.58	33.90	32.28	40.12	11501256		
20 -16 -16	35.79	35.98	36.42	50.04	11501255		
20 -18 -9	29.49	30.94	22.83	28.66	11501288		
20 -18 -12	31.89	32.56	28.35	37.48	11501257		
20 -20 -20	40.87	40.43	45.28	63.49	11501230	12501230	13501230
22 -22 -22	46.46	46.26	51.18	119.05		12561230	13561230
25 -25 -25	51.22	51.34	56.30	141.09		12631230	13631230

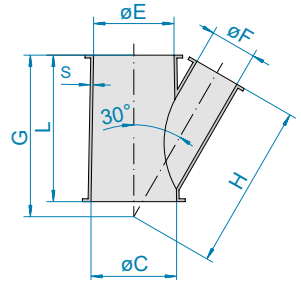
Shock explosion proof tested up to 43.51 psi





Lateral 30°





Conical lateral 30°

LATERALS 30°

1060/1080

- Other combinations of diameter, angle and wall thickness available on request
- Diameter C, E, F: Nominal diameters, for inside diameters see chapter 1, Connecting systems and dimensions

Galvanized and stainless steel (dimensions for 16 gauge tubing)

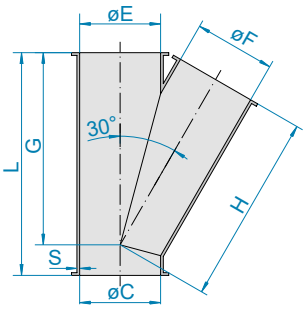
ND C - E - F	G	H	L	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel (F)	14 gauge stainless steel (F)
					Item no.	Item no.	Item no.	Item no.
2¼-2¼-2¼	6.69	6.69	7.87	1.76	11062230		11063230*	
3 -2¼-2¼	6.69	6.69	7.87	2.09	11082255		11083255*	
3 -3 -3	8.23	8.50	9.45	2.91	11082230		11083230	
4 -3 -3	9.33	9.29	9.84	2.76	11102255		11103255	12103255
4 -4 -3	9.41	9.76	9.84	2.98	11102258		11103258	12103258
4 -4 -4	10.31	9.76	11.81	3.75	11102230	12102230	11103230	12103230
5 -3 -3	10.16	10.20	10.04	2.98	11122286		11123286	12123286
5 -4 -3	10.24	10.28	10.04	3.20	11122257		11123257	12123257
5 -4 -4	10.51	10.51	11.42	3.86	11122255		11123255	12123255
5 -5 -3	10.08	10.16	9.84	3.31	11122258		11123258	12123258
5 -5 -5	11.77	11.65	13.39	4.85	11122230	12122230	11123230	12123230
5½-4 -4	11.42	11.50	11.81	4.30	11142255		11143255	12143255
5½-5 -3	10.79	10.94	10.04	3.64	11142257		11143257	12143257
5½-5 -4	11.46	11.54	11.81	4.41	11142256		11143256	12143256
5½-5½-3	10.83	11.18	10.04	3.75	11142258		11143258	12143258
5½-5½-5½	13.23	13.15	15.35	6.17	11142230	12142230	11143230	
6 -4 -4	11.46	11.57	11.42	4.63	11152254		11153254	
6 -5 -4	11.54	11.65	11.42	4.52	11152256		11153256	12153256
6 -5 -5	12.72	12.76	13.39	5.40	11152255		11153255	12153255
6 -5½-3	11.26	11.50	10.04	3.86	11152287		11153287	12153287
6 -6 -3	11.10	11.34	9.84	4.08	11152258		11153258	12153258
6 -6 -6	13.98	13.78	16.14	6.72	11152230	12152230	11153230	12153230
7 -5 -5	13.50	13.66	13.39	5.95	11172285		11173285	12173285
7 -5½-5	13.54	13.70	13.39	5.95	11172286		11173286	12173286
7 -6 -3	11.89	12.24	9.84	4.19	11172258		11173258	12173258
7 -6 -4	12.40	12.64	11.42	5.29	11172257		11173257	12173257
7 -6 -5	13.58	13.74	13.39	6.17	11172256		11173256	12173256
7 -6 -6	14.76	14.69	16.14	8.38	11172255		11173255	12173255
7 -7 -7	15.43	15.08	17.72	8.82	11172230	12172230	11173230	12173230
8 -5½-5½	15.24	15.79	15.35	7.94	11202285		11203285	12203285
8 -6 -5	14.37	14.69	13.39	5.95	11202286		11203286	12203286
8 -6 -6	15.55	15.59	16.14	11.02	11202255		11203255	12203255
8 -7 -4	13.23	13.62	11.42	5.95	11202258		11203258	12203258
8 -7 -5	14.41	14.72	13.39	6.83	11202257		11203257	12203257
8 -7 -6	15.59	15.67	16.14	9.04	11202256		11203256	12203256
8 -8 -3	12.99	13.70	10.04	5.51	11202253		11203253	12203253
8 -8 -4	13.70	14.09	11.81	6.61	11202254		11203254	12203254
8 -8 -8	18.23	17.99	20.87	12.35	11202230	12202230	11203230	12203230
9 -6 -6	16.14	16.69	16.14	8.82	11222255		11223255	12223255
9 -7 -5½	15.98	16.65	15.35	8.82	11222256		11223256	12223256
9 -8 -4	14.33	14.84	11.81	6.61	11222258		11223258	12223258
9 -8 -5	15.12	15.55	13.39	7.28	11222257		11223257	12223257
9 -9 -9	20.08	20.08	22.83	15.21	11222230	12222230	11223230	

*16 gauge

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

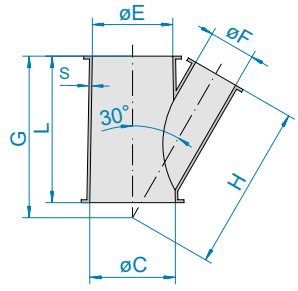
Shock explosion proof tested up to 43.51 psi





Lateral 30°





Conical lateral 30°

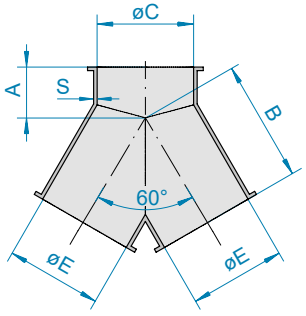
ND C - E - F	G	H	L	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel (F)	14 gauge stainless steel (F)
					Item no.	Item no.	Item no.	Item no.
10 - 8 - 6	17.24	17.56	16.14	10.14	11252286		11253286	12253286
10 - 8 - 7	17.83	17.91	17.72	12.79	11252256		11253256	12253256
10 - 8 - 8	19.80	20.20	20.87	13.45	11252255		11253255	12253255
10 - 9 - 5	16.10	16.69	13.39	9.26	11252288		11253288	12253288
10 - 9 - 5½	17.05	17.91	15.35	9.70	11252287		11253287	12253287
10 -10 - 3	14.72	15.67	10.04	6.39	11252253		11253253	
10 -10 - 4	15.43	16.10	11.81	7.72	11252254		11253254	12253254
10 -10 -10	21.54	21.42	24.41	17.64	11252230	12252230	11253230	12253230
11 -11 -11	24.02	24.02	27.17	22.05	11282230		11283230	
12 - 9 - 9	22.64	22.99	22.83	16.98	11302285		11303285	12303285
12 -10 - 5½	18.70	19.41	15.35	10.80	11302288		11303288	12303288
12 -10 - 6	18.74	19.49	16.14	11.68	11302258		11303258	12303258
12 -10 - 7	19.53	19.88	17.72	13.01	11302257		11303257	12303257
12 -10 - 8	21.50	22.17	20.87	15.65	11302256		11303256	12303256
12 -10 -10	23.11	22.83	24.41	19.18	11302255		11303255	12303255
12 -12 - 3	16.42	17.64	10.04	7.28	11302253		11303253	
12 -12 - 4	17.13	18.07	11.81	9.04	11302254		11303254	12303254
12 -12 -12	25.20	25.20	28.35	24.80	11302230	12302230	11303230	12303230
12½-12½-12½	27.17	27.17	30.71	28.00	11312230		11313230	
14 -10 -10	24.69	24.69	24.41	21.16	11352255		11353255*	12353255
14 -12 - 6	20.63	21.50	16.14	13.45	11352288		11353288	12353288
14 -12 - 8	23.23	24.13	20.87	17.42	11352257		11353257*	12353257
14 -12 - 9	24.37	25.04	22.83	19.62	11352286		11353286*	12353286
14 -12 -10	24.80	24.80	24.41	21.83	11352256		11353256*	12353256
14 -14 -14	28.66	28.23	32.28	31.75	11352230		11353230*	12353230
16 -12 -10	26.38	26.65	24.41	22.93	11402256		11403256*	12403256
16 -12 -12	28.39	28.50	28.35	27.34	11402255		11403255*	12403255
16 -14 - 7	22.95	23.98	17.72	16.31	11402288		11403288	12403288
16 -14 - 9	26.10	27.01	22.83	22.49	11402287		11403287*	12403287
16 -16 -16	32.52	32.48	36.42	41.12	11402230		11403230*	12403230
18 -14 -12	30.08	30.47	28.35	32.63	11452256		11453256*	12453256
18 -14 -14	31.85	31.93	32.28	38.58	11452255		11453255*	12453255
18 -16 - 8	26.61	28.07	20.87	23.59	11452258		11453258*	12453258
18 -16 -10	28.19	28.74	24.41	28.22	11452257		11453257*	12453257
18 -18 -18	37.20	36.61	41.34	52.03	11452230		11453230*	12453230
20 -16 -14	33.58	33.90	32.28	40.12	11502256		11503256*	12503256
20 -16 -16	35.79	35.98	36.42	50.04	11502255		11503255*	12503255
20 -18 - 9	29.49	30.94	22.83	28.66	11502288		11503288*	12503288
20 -18 -12	31.89	32.56	28.35	37.48	11502257		11503257*	12503257
20 -20 -20	40.87	40.43	45.28	63.49	11502230		11503230*	12503230
22 -22 -22	46.46	46.26	51.18	119.05	11562230			12563230
25 -25 -25	51.22	51.34	56.30	141.09	11632230			12633230

*16 gauge

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

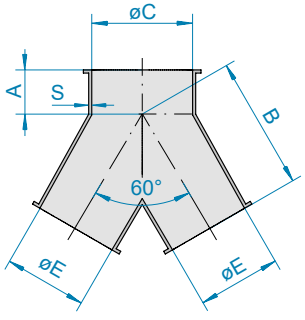
Shock explosion proof tested
up to 43.51 psi





Y-branch 60°





Conical Y-branch 60°

SYMMETRICAL Y-BRANCHES 60°

1090/1095

- Other combinations of diameter, angle and wall thickness available on request

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

ND C-E-E	A	B	ØC	ØE	lb	16 gauge primed	16 gauge galvanized
						Item no.	Item no.
3 - 3 - 3	1.57	4.72	3.03	3.03	1.76	11081270	11082270
4 - 3 - 3	1.57	5.12	3.94	3.03	1.87	11101275	11102275
4 - 4 - 4	1.97	4.72	3.94	3.94	2.20	11101270	11102270
5 - 4 - 4	1.97	5.91	4.72	3.94	2.76	11121275	11122275
5 - 5 - 5	1.97	5.91	4.72	4.72	3.31	11121270	11122270
5½- 4 - 4	1.97	5.91	5.35	3.94	2.76	11141275	11142275
5½- 5½- 5½	2.76	6.50	5.35	5.35	4.41	11141270	11142270
6 - 4 - 4	1.97	6.69	5.91	3.94	3.09	11151276	11152276
6 - 5 - 5	1.97	6.69	5.91	4.72	3.64	11151275	11152275
6 - 6 - 6	2.95	6.89	5.91	5.91	4.85	11151270	11152270
7 - 5 - 5	1.97	7.87	6.89	4.72	4.41	11171276	11172276
7 - 7 - 7	3.15	8.27	6.89	6.89	6.83	11171270	11172270
8 - 5½- 5½	2.36	7.87	7.87	5.35	5.18	11201276	11202276
8 - 6 - 6	2.36	7.87	7.87	5.91	5.51	11201275	11202275
8 - 8 - 8	3.54	9.45	7.87	7.87	8.82	11201270	11202270
9 - 6 - 6	2.36	8.66	8.66	5.91	5.84	11221275	11222275
9 - 9 - 9	3.54	10.83	8.66	8.66	11.02	11221270	11222270
10 - 8 - 8	2.36	9.84	9.84	7.87	7.72	11251275	11252275
10 -10 -10	3.94	11.81	9.84	9.84	13.67	11251270	11252270
12 - 9 - 9	2.76	11.81	11.81	8.66	10.58	11301276	11302276
12 -12 -12	4.72	14.17	11.81	11.81	19.62	11301270	11302270
14 -10 -10	2.76	11.81	13.78	9.84	11.68	11351275	11352275
16 -12 -12	2.76	13.78	15.71	11.81	13.67	11401275	11402275
18 -14 -14	3.15	15.75	17.68	13.78	20.28	11451275	11452275
20 -16 -16	3.15	17.72	19.65	15.71	25.13	11501275	11502275

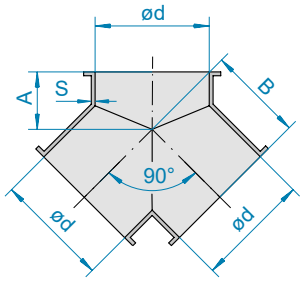
Stainless steel (dimensions for 16 gauge tubing)

ND C-E-E	A	B	ØC	ØE	lb	19 gauge stainless steel (F)	14 gauge stainless steel (F)
						Item no.	Item no.
3 - 3 - 3	1.57	4.72	3.03	3.03	1.76	11083270	
4 - 3 - 3	1.57	5.12	3.94	3.03	1.87	11103275	12103275
4 - 4 - 4	1.97	4.72	3.94	3.94	2.20	11103270	12103270
5 - 4 - 4	1.97	5.91	4.72	3.94	2.76	11123275	12123275
5 - 5 - 5	1.97	5.91	4.72	4.72	3.31	11123270	12123270
5½- 4 - 4	1.97	5.91	5.35	3.94	2.76	11143275	12143275
5½- 5½- 5½	2.76	6.50	5.35	5.35	4.41	11143270	12143270
6 - 4 - 4	1.97	6.69	5.91	3.94	3.09	11153276	12153276
6 - 5 - 5	1.97	6.69	5.91	4.72	3.64	11153275	12153275
6 - 6 - 6	2.95	6.89	5.91	5.91	4.85	11153270	12153270
7 - 5 - 5	1.97	7.87	6.89	4.72	4.41	11173276	12173276
7 - 7 - 7	3.15	8.27	6.89	6.89	6.83	11173270	12173270
8 - 5½- 5½	2.36	7.87	7.87	5.35	5.18	11203276	12203276
8 - 6 - 6	2.36	7.87	7.87	5.91	5.51	11203275	12203275
8 - 8 - 8	3.54	9.45	7.87	7.87	8.82	11203270	12203270
9 - 6 - 6	2.36	8.66	8.66	5.91	5.84	11223275	12223275
9 - 9 - 9	3.54	10.83	8.66	8.66	11.02	11223270	12223270
10 - 8 - 8	2.36	9.84	9.84	7.87	7.72	11253275	12253275
10 -10 -10	3.94	11.81	9.84	9.84	13.67	11253270	12253270
12 - 9 - 9	2.76	11.81	11.81	8.66	10.58	11303276	12303276
12 -12 -12	4.72	14.17	11.81	11.81	19.62	11303270	12303270
14 -10 -10	2.76	11.81	13.78	9.84	11.68	11353275	12353275
16 -12 -12	2.76	13.78	15.71	11.81	13.67	11403275	12403275
18 -14 -14	3.15	15.75	17.68	13.78	20.28	11453275	12453275
20 -16 -16	3.15	17.72	19.65	15.71	25.13	11503275	12503275

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested up to 43.51 psi





SYMMETRICAL Y-BRANCHES 90°

1100

- Other combinations of diameter, angle and wall thickness available on request

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

ND	Ø d	A	B	lb	16 gauge primed	11 gauge primed	16 gauge galvanized
					Item no.	Item no.	Item no.
3	3.03	1.57	3.15	1.21	11081260		11082260
4	3.94	2.36	3.94	1.87	11101260		11102260
5	4.72	2.95	4.33	2.43	11121260	13121260	11122260
5½	5.35	2.95	4.72	2.87	11141260		11142260
6	5.91	2.95	4.92	3.20	11151260	13151260	11152260
7	6.89	2.95	5.51	3.86	11171260	13171260	11172260
8	7.87	3.54	6.69	5.51	11201260	13201260	11202260
9	8.66	3.94	7.48	6.61	11221260		11222260
10	9.84	3.94	7.87	7.72	11251260	13251260	11252260
12	11.81	4.72	8.66	9.70	11301260	13301260	11302260
14	13.78	4.72	9.84	12.46	11351260		11352260
16	15.71	5.91	10.63	15.43	11401260		11402260
18	17.68	5.91	11.81	18.63	11451260		11452260
20	19.65	6.89	12.80	22.49	11501260		11502260

Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	lb	19 gauge stainless steel	16 gauge stainless steel	14 gauge stainless steel
					Item no.	Item no.	Item no.
3	3.03	1.57	3.15	1.21	11083260		
4	3.94	2.36	3.94	1.87	11103260		12103260
5	4.72	2.95	4.33	2.43	11123260		12123260
5½	5.35	2.95	4.72	2.87	11143260		12143260
6	5.91	2.95	4.92	3.20	11153260		12153260
7	6.89	2.95	5.51	3.86	11173260		12173260
8	7.87	3.54	6.69	5.51	11203260		12203260
9	8.66	3.94	7.48	6.61	11223260		12223260
10	9.84	3.94	7.87	7.72	11253260		12253260
12	11.81	4.72	8.66	9.70	11303260		12303260
14	13.78	4.72	9.84	12.46		11353260	12353260
16	15.71	5.91	10.63	15.43		11403260	12403260
18	17.68	5.91	11.81	18.63		11453260	12453260
20	19.65	6.89	12.80	22.49		11503260	12503260

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested up to 43.51 psi



JACOB TRANSITION PIECES AND ADAPTERS: CONNECTING YOUR EQUIPMENT WITH OUR TUBING SYSTEM

TRANSITION PIECES AND ADAPTERS

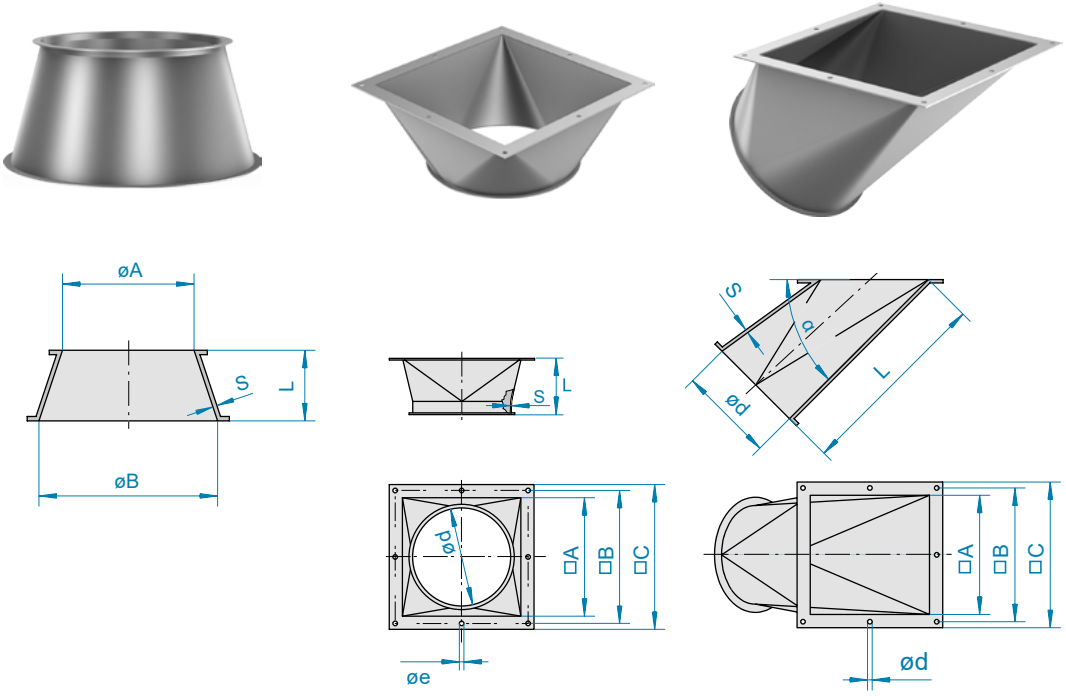
Technical information	82
Cone adapters	84
Compensators	88
Connecting flanges	88
Transition pieces and counter flanges	91
Flex hose and accessories	95
Bagging spouts and accessories	99
Jet caps and rain caps	100
Exhaust stubs and safety grate	102

JACOB TRANSITION PIECES AND ADAPTERS

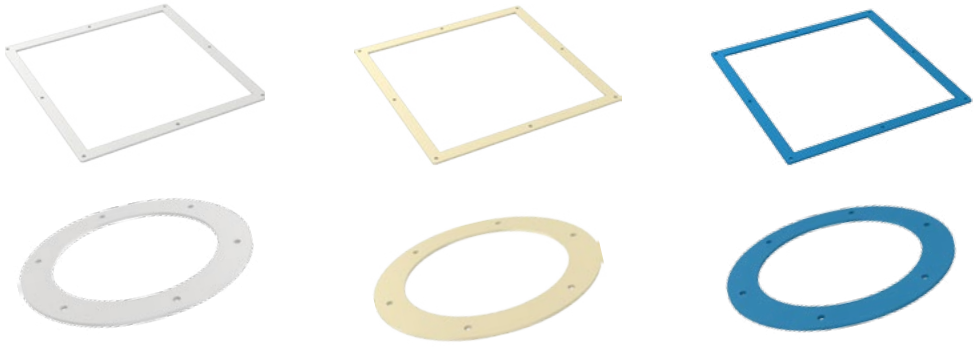
How you'll get connected: With our extensive range of cone adapters, transition pieces, and adapters, we create the connection between your JACOB tubing system and your equipment. Because there's nothing as individual as these transition pieces, we'll manufacture them from a batch size of one, according to your specifications. These custom parts have one thing in common with their counterparts from large-scale production: consistent top quality.

CONE ADAPTERS AND TRANSITION PIECES MADE TO YOUR CUSTOM MEASUREMENTS

We manufacture cone adapters and transition pieces to your specifications if you inform us of the dimensions of the material and the wall thickness you require. Prices and delivery times on request



FLAT GASKETS



NBR	Silicone	Silicone
gray white	beige	blue
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
-22°F to +176°F	-22°F to +446°F	-22°F to +392°F
		metal-detectable

Our gaskets for connecting tubing components with welded-on flanges or transition pieces:
- Tear-resistant and FOOD GRADE
- Metal DETECTABLE DESIGN
- Other materials available on request
- Electrostatically conductive



COMPENSATORS

Material: Conductive EPDM, black
- Temperature resistance: -30°C to +212°F
- Admissible differential pressure: 1.45 psi
- Not suitable for contact with food product
- Electrostatically conductive



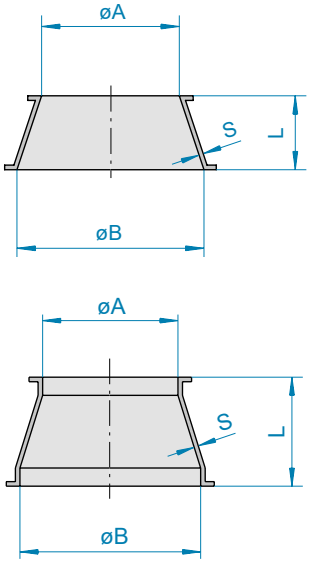
Compensator collars of VA, material 1.4301 with press-formed connection to extruded polyurethane (AU) sleeve, transparent/milky white, 1/16" thick.
- FOOD GRADE: EC 1935/2004 plus FDA compliant
- Temperature resistance: -4°F to +194°F

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

Cone adapters





Cone ends in cylindrical shape

CONE ADAPTERS

1330

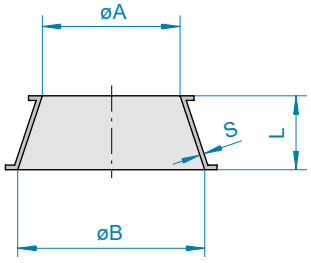
- Diameter A + B = internal diameter with 16 gauge wall thickness
- Some cone ends in cylindrical shape
- From ND 18-22", dimensions for 14 gauge tubing

Powder-coated or primed (dimensions for 16 gauge tubing)

ND	ØA	ØB	L	lb	16 gauge primed	11 gauge primed
					Item no.	Item no.
2¼- 3	2.24	3.03	2.36	0.37	11001488	
2¼- 4	2.24	3.94	3.94	0.55	11001492	
3 - 4	3.03	3.94	3.94	0.77	11001450	
3 - 5	3.03	4.72	3.15	0.77	11001478	
3 - 5½	3.03	5.35	4.72	1.21	11001479	
3 - 6	3.03	5.91	5.51	1.43	11001489	
4 - 5	3.94	4.72	2.36	0.66	11001451	
4 - 5½	3.94	5.35	3.94	1.10	11001459	
4 - 6	3.94	5.91	3.74	1.10	11001452	
4 - 7	3.94	6.89	4.72	1.54	11001464	
4 - 8	3.94	7.87	4.72	1.65	11001453	
4 -10	3.94	9.84	7.87	3.20	11001454	
5 - 5½	4.72	5.35	3.94	1.21	11001466	
5 - 6	4.72	5.91	5.91	1.87	11001455	13001455
5 - 7	4.72	6.89	3.94	1.43	11001456	13001456
5 - 8	4.72	7.87	4.72	1.76	11001457	13001457
5 -10	4.72	9.84	5.91	2.65	11001458	13001458
5½- 6	5.35	5.91	3.94	1.32	11001467	
5½- 7	5.35	6.89	3.94	1.43	11001468	
5½- 8	5.35	7.87	5.91	2.31	11001469	
6 - 7	5.91	6.89	3.94	1.32	11001460	13001460
6 - 8	5.91	7.87	3.94	1.65	11001461	13001461
6 - 9	5.91	8.66	5.91	2.54	11001472	
6 -10	5.91	9.84	5.91	2.43	11001462	13001462
6 -12	5.91	11.81	7.87	4.08	11001463	13001463
7 - 8	6.89	7.87	3.94	1.76	11001465	13001465
7 - 9	6.89	8.66	3.94	1.87	11001473	
8 - 9	7.87	8.66	3.94	1.87	11001474	
8 -10	7.87	9.84	4.72	2.43	11001470	13001470
8 -12	7.87	11.81	5.91	3.42	11001471	13001471
9 -10	8.66	9.84	3.94	2.20	11001476	
9 -12	8.66	11.81	5.91	3.53	11001477	
10 -11	9.84	10.91	4.72	2.87	11001960	
10 -12	9.84	11.81	5.91	3.64	11001475	13001475
10 -14	9.84	13.78	7.87	4.85	11001484	13001484
11 -12	10.91	11.81	3.94	2.69	11001961	
12 -12½	11.81	12.28	3.94	2.87	11001962	
12 -14	11.81	13.78	7.87	5.62	11001480	13001480
12 -16	11.81	15.71	7.87	6.06	11001481	13001481
12½-14	12.28	13.78	4.72	3.64	11001963	
14 -16	13.78	15.71	7.87	6.50	11001482	13001482

Shock explosion proof tested up to 43.51 psi



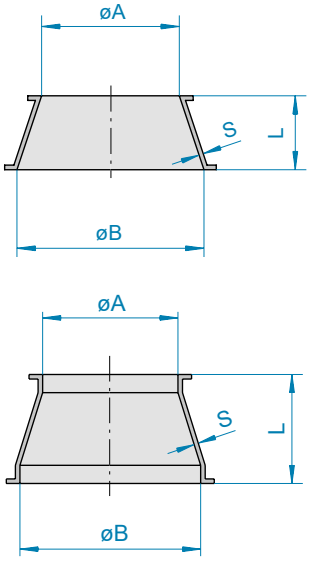


ND	Ø A	Ø B	L	lb	16 gauge primed	11 gauge primed
					Item no.	Item no.
14 -18	13.78	17.68	7.87	6.94	11001483	13001483
16 -18	15.71	17.68	7.87	7.50	11001485	13001485
16 -20	15.71	19.65	9.84	9.70	11001486	13001486
18 -20	17.68	19.65	7.87	8.16	11001487	13001487
18 -22	17.64	21.97	9.84	14.77	12001495*	13001495
20 -22	19.61	21.97	9.84	15.43	12001496*	13001496
20 -25	19.61	24.72	11.81	19.62	12001497*	13001497
22 -25	21.97	24.72	11.81	20.94	12001498*	13001498

*14 gauge

Cone adapters





Cone ends in cylindrical shape

CONE ADAPTERS

1330

- Diameter A + B = internal diameter with 16 gauge wall thickness
- Some cone ends in cylindrical shape
- From ND 18-22", dimensions for 14 gauge tubing

Galvanized and stainless steel (dimensions for 16 gauge tubing)

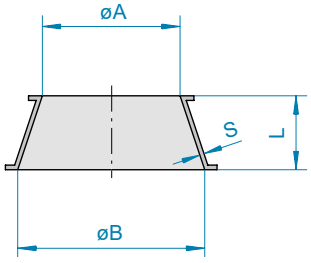
ND	ØA	ØB	L	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
					Item no.	Item no.	Item no.	Item no.
2¼- 3	2.24	3.03	2.36	0.37			11003488*	
2¼- 4	2.24	3.94	3.94	0.55	11002492		11003492	
3 - 4	3.03	3.94	3.94	0.77	11002450		11003450	
3 - 5	3.03	4.72	3.15	0.77	11002478		11003478	
3 - 5½	3.03	5.35	4.72	1.21	11002479		11003479	
3 - 6	3.03	5.91	5.51	1.43	11002489		11003489	
4 - 5	3.94	4.72	2.36	0.66	11002451		11003451	12003451
4 - 5½	3.94	5.35	3.94	1.10	11002459		11003459	
4 - 6	3.94	5.91	3.74	1.10	11002452		11003452	12003452
4 - 7	3.94	6.89	4.72	1.54	11002464		11003464	12003464
4 - 8	3.94	7.87	4.72	1.65	11002453		11003453	12003453
4 -10	3.94	9.84	7.87	3.20	11002454		11003454	12003454
5 - 5½	4.72	5.35	3.94	1.21	11002466		11003466	
5 - 6	4.72	5.91	5.91	1.87	11002455		11003455	12003455
5 - 7	4.72	6.89	3.94	1.43	11002456		11003456	12003456
5 - 8	4.72	7.87	4.72	1.76	11002457		11003457	12003457
5 -10	4.72	9.84	5.91	2.65	11002458		11003458	12003458
5½- 6	5.35	5.91	3.94	1.32	11002467		11003467	
5½- 7	5.35	6.89	3.94	1.43	11002468		11003468	
5½- 8	5.35	7.87	5.91	2.31	11002469		11003469	
6 - 7	5.91	6.89	3.94	1.32	11002460		11003460	12003460
6 - 8	5.91	7.87	3.94	1.65	11002461		11003461	12003461
6 - 9	5.91	8.66	5.91	2.54	11002472		11003472	
6 -10	5.91	9.84	5.91	2.43	11002462		11003462	12003462
6 -12	5.91	11.81	7.87	4.08	11002463		11003463	12003463
7 - 8	6.89	7.87	3.94	1.76	11002465		11003465	12003465
7 - 9	6.89	8.66	3.94	1.87	11002473		11003473	
8 - 9	7.87	8.66	3.94	1.87	11002474		11003474	12003474
8 -10	7.87	9.84	4.72	2.43	11002470		11003470	12003470
8 -12	7.87	11.81	5.91	3.42	11002471		11003471	12003471
9 -10	8.66	9.84	3.94	2.20	11002476		11003476	
9 -12	8.66	11.81	5.91	3.53	11002477		11003477	12003477
10 -11	9.84	10.91	4.72	2.87	11002960		11003960*	
10 -12	9.84	11.81	5.91	3.64	11002475		11003475	12003475
10 -14	9.84	13.78	7.87	4.85	11002484		11003484	12003484
11 -12	10.91	11.81	3.94	2.69	11002961		11003961*	
12 -12½	11.81	12.28	3.94	2.87	11002962		11003962*	
12 -14	11.81	13.78	7.87	5.62	11002480		11003480	12003480
12 -16	11.81	15.71	7.87	6.06	11002481		11003481	12003481

*16 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested
up to 43.51 psi





ND	Ø A	Ø B	L	lb	16 gauge galvanized	14 gauge galvanized	19 gauge stainless steel (F)	14 gauge stainless steel (F)
					Item no.	Item no.	Item no.	Item no.
12½-14	12.28	13.78	4.72	3.64	11002963		11003963*	
14 -16	13.78	15.71	7.87	6.50	11002482		11003482	12003482
14 -18	13.78	17.68	7.87	6.94	11002483		11003483	12003483
16 -18	15.71	17.68	7.87	7.50	11002485		11003485	12003485
16 -20	15.71	19.65	9.84	9.70	11002486		11003486	12003486
18 -20	17.68	19.65	7.87	8.16	11002487		11003487	12003487
18 -22	17.64	21.97	9.84	14.77		12002495		12003495
20 -22	19.61	21.97	9.84	15.43		12002496		12003496
20 -25	19.61	24.72	11.81	19.62		12002497		12003497
22 -25	21.97	24.72	11.81	20.94		12002498		12003498

*16 gauge

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

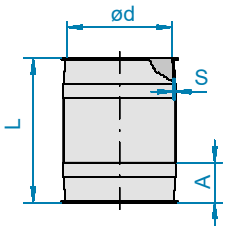
Compensators/Connecting flanges



Conductive EPDM, black



AU transparent



COMPENSATORS

1348

- Please also read and take into account the technical information given at the beginning of this chapter

Powder-coated or primed, galvanized and stainless steel

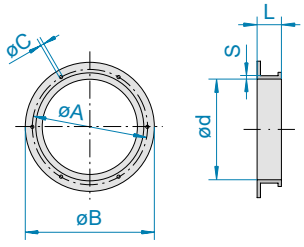
ND	Ø d	A	S	L	lb	14 gauge primed (EPDM, black)	14 gauge galvanized (EPDM, black)	14 gauge stainless steel (EPDM, black)	14 gauge stainless steel (AU transparent)
						Item no.	Item no.	Item no.	Item no.
3	3.07	2.17	0.04	7.87	1.15	11081707*	11082707*	11083707*	11083171*
4	3.90	2.17	0.08	7.87	2.20	12101707	12102707	12103707	12103171
5	4.69	2.17	0.08	7.87	2.56	12121707	12122707	12123707	12123171
5½	5.31	2.17	0.08	7.87	2.87	12141707	12142707	12143707	12143171
6	5.87	2.17	0.08	7.87	3.13	12151707	12152707	12153707	12153171
7	6.85	2.17	0.08	7.87	3.64	12171707	12172707	12173707	12173171
8	7.83	2.17	0.08	7.87	4.14	12201707	12202707	12203707	12203171
9	8.62	2.17	0.08	7.87	4.54	12221707	12222707	12223707	12223171
10	9.80	2.17	0.08	7.87	5.16	12251707	12252707	12253707	12253171
12	11.77	2.17	0.08	7.87	6.17	12301707	12302707	12303707	12303171

*19 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.





E = No. of holes

CONNECTING FLANGES

1310

- For use in conjunction with a counter flange for connecting flanges and a flat gasket for counter flanges (refer to page 89)
- Not suitable for combining with flanges according to DIN 24154-2

Powder-coated or primed (dimensions for 16 gauge tubing)

ND	Ø d	ØA	Ø B	C	E	L	lb	16 gauge primed	11 gauge primed
								Item no.	Item no.
3	3.03	4.25	4.84	0.24	6	1.38	0.60	11081431	
4	3.94	5.12	5.91	0.24	6	1.10	0.51	11101431	
5	4.72	5.91	6.69	0.24	6	1.10	0.62	11121431	13121431
6	5.91	7.09	7.95	0.24	6	1.42	0.88	11151431	13151431
7	6.89	8.07	8.98	0.24	6	1.57	1.08	11171431	13171431
8	7.87	9.06	9.84	0.24	6	1.46	1.15	11201431	13201431
10	9.84	11.02	11.81	0.24	6	1.89	1.65	11251431	13251431

Galvanized and stainless steel

ND	Ø d	ØA	Ø B	C	E	L	lb	16 gauge galvanized	16 gauge stainless steel
								Item no.	Item no.
3	3.03	4.25	4.84	0.24	6	1.38	0.60	11082431	11083431
4	3.94	5.12	5.91	0.24	6	1.10	0.51	11102431	11103431
5	4.72	5.91	6.69	0.24	6	1.10	0.62	11122431	11123431
6	5.91	7.09	7.95	0.24	6	1.42	0.88	11152431	11153431
7	6.89	8.07	8.98	0.24	6	1.57	1.08	11172431	11173431
8	7.87	9.06	9.84	0.24	6	1.46	1.15	11202431	11203431
10	9.84	11.02	11.81	0.24	6	1.89	1.65	11252431	11253431

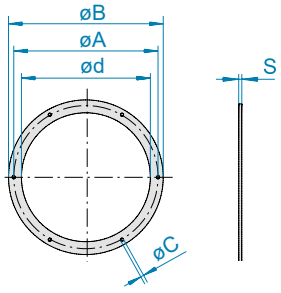
FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable

COUNTER FLANGES FOR CONNECTION, ROUND

1311





E = No. of holes

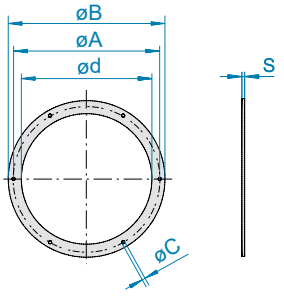
- Counter flange to match connecting flanges (refer to page 88)
- For use in conjunction with a square flat gasket (see below)

ND	Ø d	ØA	Ø B	Ø C	E	S	lb	Black steel S235 JR (ST 37-2)	Stainless steel 1.4301 (F)
								Item no.	Item no.
3	3.23	4.25	4.80	0.24	6	0.20	0.55	10080710	10083710
4	4.13	5.12	6.10	0.24	6	0.20	0.88	10100710	10103710
5	4.92	5.91	6.89	0.24	6	0.20	1.01	10120710	10123710
6	6.10	7.09	8.07	0.24	6	0.20	1.21	10150710	10153710
7	7.09	8.07	9.06	0.24	6	0.20	1.39	10170710	10173710
8	8.07	9.06	10.04	0.24	6	0.20	1.57	10200710	10203710
10	10.04	11.02	12.01	0.24	6	0.20	1.90	10250710	10253710

GASKET FOR COUNTER FLANGE (ROUND) FOR CONNECTING FLANGES

1312





E = No. of holes

- Flat gasket to match connecting flange (page 88) and counter flange (see above)
- Please also read and take into account the technical information given at the beginning of this chapter
- Not suitable for use with flanges according to DIN 24154-2

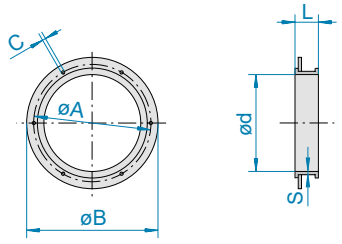
ND	Ø d	ØA	Ø B	Ø C	E	S	NBR gray white	Silicone, beige (F)	Silicone, blue (F)(D)
							Item no.	Item no.	Item no.
3	3.07	4.25	4.80	0.24	6	0.12	10086731	10087731	1008773101
4	3.90	5.12	6.10	0.24	6	0.12	10106731	10107731	1010773101
5	4.69	5.91	6.89	0.24	6	0.12	10126731	10127731	1012773101
6	5.87	7.09	8.07	0.24	6	0.12	10156731	10157731	1015773101
7	6.85	8.07	9.06	0.24	6	0.12	10176731	10177731	1017773101
8	7.83	9.06	10.04	0.24	6	0.12	10206731	10207731	1020773101
10	9.80	11.02	12.01	0.24	6	0.12	10256731	10257731	1025773101

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

Connecting flanges





E = No. of holes

CONNECTING FLANGE WITH LOOSE FLANGE

1315

- Loose flange according to DIN 24154-2
- From ND 18", measurements for 1/16" tubing
- Lipped ends for use with flange according to DIN 25154-2 and U-shaped gasket
- Up to ND 14", use in combination with U-shaped gasket for 0.24" lip (refer to page 33)
- From ND 14", use in combination with U-shaped gasket for 0.39" lip or flat gasket (refer to 230/231)

Powder-coated or primed (dimensions for 16 gauge tubing)

ND	Ø d	ØA	Ø B	Ø C	E	L	lb	16 gauge primed	14 gauge primed	11 gauge primed
								Item no.	Item no.	Item no.
2¼	2.24	4.02	5.04	0.37	4	1.97	1.12	11061432		
3	3.03	4.65	5.59	0.37	4	1.97	1.37	11081432		
4	3.94	5.47	6.50	0.37	4	1.97	1.54	11101432		
5	4.72	6.50	7.28	0.37	4	1.97	1.85	11121432		
5½	5.35	7.17	8.35	0.45	8	1.97	2.34	11141432		
6	5.91	7.87	8.86	0.45	8	1.97	2.60	11151432		
7	6.89	8.62	9.84	0.45	8	1.97	2.95	11171432		
8	7.87	9.49	10.83	0.45	8	1.97	3.26	11201432		
9	8.66	10.43	11.61	0.45	8	1.97	3.64	11221432		
10	9.84	11.50	12.80	0.45	8	1.97	4.01	11251432		
11	10.91	13.07	14.29	0.45	8	1.97	4.56	11281432		
12	11.81	14.41	15.55	0.45	8	1.97	5.09	11301432		13301432
12½	12.28	14.41	15.67	0.45	8	1.97	5.47	11311432		
14	13.78	15.94	17.17	0.45	8	1.97	6.46	11351432		13351432
16	15.71	17.64	19.09	0.45	12	1.97	7.87	11401432		13401432
18	17.64	19.57	21.06	0.45	12	1.97	12.17		12451432	13451432
20	19.61	21.69	23.03	0.45	12	1.97	13.18		12501432	13501432
22	21.97	24.76	26.18	0.55	16	1.97	14.84		12561432	13561432
25	24.72	27.48	28.94	0.55	16	1.97	17.33		12631432	13631432

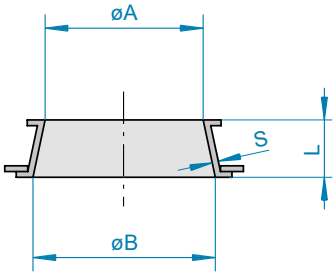
Galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	C	E	L	lb	16 gauge galvanized	14 gauge galvanized	16 gauge stainless steel	14 gauge stainless steel
								Item no.	Item no.	Item no.	Item no.
2¼	2.24	4.02	5.04	0.37	4	1.97	1.12	11062432		11063432	
3	3.03	4.65	5.59	0.37	4	1.97	1.37	11082432		11083432	
4	3.94	5.47	6.50	0.37	4	1.97	1.54	11102432		11103432	
5	4.72	6.50	7.28	0.37	4	1.97	1.85	11122432		11123432	
5½	5.35	7.17	8.35	0.45	8	1.97	2.34	11142432		11143432	
6	5.91	7.87	8.86	0.45	8	1.97	2.60	11152432		11153432	
7	6.89	8.62	9.84	0.45	8	1.97	2.95	11172432		11173432	
8	7.87	9.49	10.83	0.45	8	1.97	3.26	11202432		11203432	
9	8.66	10.43	11.61	0.45	8	1.97	3.64	11222432		11223432	
10	9.84	11.50	12.80	0.45	8	1.97	4.01	11252432		11253432	
11	10.91	13.07	14.29	0.45	8	1.97	4.56	11282432		11283432	
12	11.81	14.41	15.55	0.45	8	1.97	5.09	11302432		11303432	
12½	12.28	14.41	15.67	0.45	8	1.97	5.47	11312432		11313432	
14	13.78	15.94	17.17	0.45	8	1.97	6.46	11352432		11353432	
16	15.71	17.64	19.09	0.45	12	1.97	7.87	11402432		11403432	
18	17.64	19.57	21.06	0.45	12	1.97	12.17		12452432		12453432
20	19.61	21.69	23.03	0.45	12	1.97	13.18		12502432		12503432
22	21.97	24.76	26.18	0.55	16	1.97	14.84		12562432		12563432
25	24.72	27.48	28.94	0.55	16	1.97	17.33		12632432		12633432

FOOD GRADE
EC 1935/2004 plus FDA compliant

ND 14" to 25" with 0.39" lip flange. Use in combination with U-shaped seal for 0.39" lip flange (refer to page 230)





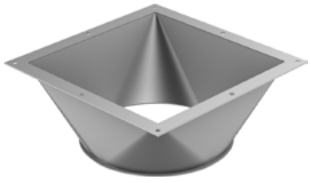
ADAPTERS WITH LOOSE FLANGE

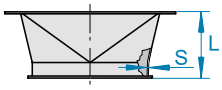
1320

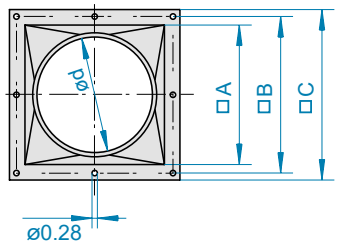
- Flanges to DIN 24154-2
- Galvanized: ND 5″ – 5″, ND 6″ – 6½″, ND 11″ – 12″ mm with welded-on flange
- Powder-coated and stainless steel: ND 11″ – 12″ with welded-on flange
- Lipped ends for use with flange according to DIN 25154-2 and U-shaped seal for 0.24″ lip (refer to page 33)

Powder-coated or primed, galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø A	Ø B	L	lb	16 gauge primed	16 gauge galvanized	19 gauge stainless steel
					Item no.	Item no.	Item no.
5- 5	4.72	4.96	1.97	2.09	11001441	11002441	11003441
6- 6½	5.91	6.34	1.97	2.87	11001443	11002443	11003443
7- 7	6.89	7.13	1.97	3.20	11001445	11002445	11003445
10-11	9.84	11.10	1.97	6.72	11001446	11002446	11003446
12-11	11.81	11.10	1.97	6.83	11001447	11002447	11003447
12-12½	11.81	12.48	1.97	7.72	11001448	11002448	11003448







E = No. of holes

SPOUTS FROM SQUARE TO ROUND

1280

- Special models and individual flange dimensions on request
- For use in conjunction with a square flat gasket
- Lipped on one side for use with JACOB pull ring system

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

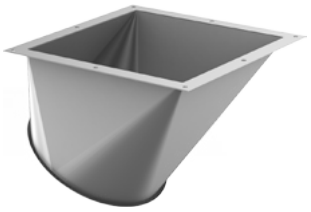
ND	Ø d	A	B	C	E	L	lb	16 gauge primed	11 gauge primed	16 gauge galvanized
								Item no.	Item no.	Item no.
3	3.03	3.94	4.72	5.51	8	1.97	0.79	11081400		11082400
4	3.94	4.72	5.51	6.30	8	2.36	0.99	11101400		11102400
5	4.72	5.51	6.46	7.09	8	2.76	1.39	11121400	13121400	11122400
6	5.91	7.09	7.95	8.66	8	3.35	1.98	11151400	13151400	11152400
7	6.89	7.87	8.86	9.65	8	5.71	3.31	11171400	13171400	11172400
8	7.87	9.84	10.63	11.42	8	4.53	3.97	11201400	13201400	11202400
10	9.84	11.81	12.80	13.58	8	5.91	5.95	11251400	13251400	11252400
12	11.81	13.78	14.76	15.55	8	8.27	8.60	11301400	13301400	11302400

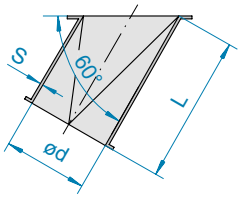
Stainless steel (dimensions for 16 gauge tubing)

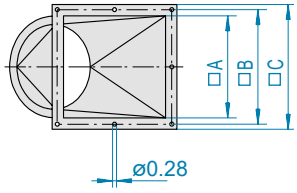
ND	Ø d	A	B	C	E	L	lb	16 gauge stainless steel	14 gauge stainless steel
								Item no.	Item no.
3	3.03	3.94	4.72	5.51	8	1.97	0.79	11083400	
4	3.94	4.72	5.51	6.30	8	2.36	0.99	11103400	12103400
5	4.72	5.51	6.46	7.09	8	2.76	1.39	11123400	12123400
6	5.91	7.09	7.95	8.66	8	3.35	1.98	11153400	12153400
7	6.89	7.87	8.86	9.65	8	5.71	3.31		12173400
8	7.87	9.84	10.63	11.42	8	4.53	3.97		12203400
10	9.84	11.81	12.80	13.58	8	5.91	5.95		12253400
12	11.81	13.78	14.76	15.55	8	8.27	8.60		12303400

FOOD GRADE
EC 1935/2004 plus FDA compliant

Transition pieces/counter flanges







E = No. of holes

SPOUTS FROM SQUARE TO ROUND / 60°

1290

- Other gradients and individual flange dimensions on request
- For use in conjunction with a square flat gasket
- Lipped on one side for use with JACOB pull ring system

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

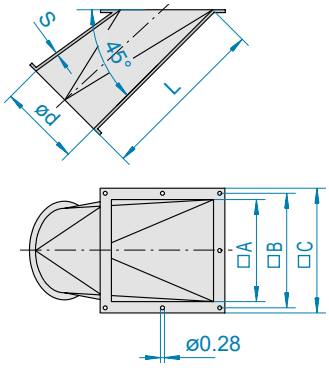
ND	Ø d	A	B	C	E	L	lb	16 gauge primed	11 gauge primed	16 gauge galvanized
								Item no.	Item no.	Item no.
3	3.03	3.94	4.72	5.51	7	7.48	1.65	11081410		11082410
4	3.94	4.72	5.51	6.30	7	7.48	1.98	11101410		11102410
5	4.72	5.51	6.46	7.09	7	8.46	2.65	11121410	13121410	11122410
6	5.91	7.09	7.95	8.66	7	10.24	3.97	11151410	13151410	11152410
7	6.89	7.87	8.86	9.65	7	10.83	4.96	11171410	13171410	11172410
8	7.87	9.84	10.63	11.42	7	10.43	5.29	11201410	13201410	11202410
10	9.84	11.81	12.80	13.58	7	13.58	8.93	11251410	13251410	11252410
12	11.81	13.78	14.76	15.55	7	18.70	14.55	11301410	13301410	11302410

Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	C	E	L	lb	16 gauge stainless steel	14 gauge stainless steel
								Item no.	Item no.
3	3.03	3.94	4.72	5.51	7	7.48	1.65	11083410	
4	3.94	4.72	5.51	6.30	7	7.48	1.98	11103410	12103410
5	4.72	5.51	6.46	7.09	7	8.46	2.65	11123410	12123410
6	5.91	7.09	7.95	8.66	7	10.24	3.97	11153410	12153410
7	6.89	7.87	8.86	9.65	7	10.83	4.96		12173410
8	7.87	9.84	10.63	11.42	7	10.43	5.29		12203410
10	9.84	11.81	12.80	13.58	7	13.58	8.93		12253410
12	11.81	13.78	14.76	15.55	7	18.70	14.55		12303410

FOOD GRADE
EC 1935/2004 plus FDA compliant





E = No. of holes

SPOUTS FROM SQUARE TO ROUND / 45 °

1300

- Other gradients and individual flange dimensions on request
- For use in conjunction with a square flat gasket
- Lipped on one side for use with JACOB pull ring system

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

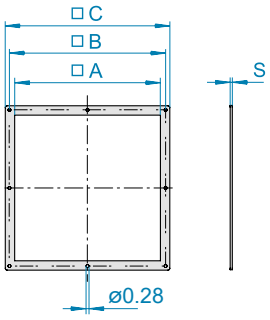
ND	Ø d	A	B	C	E	L	lb	16 gauge primed	11 gauge primed	16 gauge galvanized
								Item no.	Item no.	Item no.
3	3.03	3.94	4.72	5.51	7	6.30	1.32	11081420		11082420
4	3.94	4.72	5.51	6.30	7	7.09	1.65	11101420		11102420
5	4.72	5.51	6.46	7.09	7	7.48	1.98	11121420	13121420	11122420
6	5.91	7.09	7.95	8.66	7	11.61	4.30	11151420	13151420	11152420
7	6.89	7.87	8.86	9.65	7	11.81	5.29	11171420	13171420	11172420
8	7.87	9.84	10.63	11.42	7	12.80	6.06	11201420	13201420	11202420
10	9.84	11.81	12.80	13.58	7	15.55	10.25	11251420	13251420	11252420
12	11.81	13.78	14.76	15.55	7	17.72	12.24	11301420	13301420	11302420

Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	C	E	L	lb	16 gauge stainless steel	14 gauge stainless steel
								Item no.	Item no.
3	3.03	3.94	4.72	5.51	7	6.30	1.32	11083420	
4	3.94	4.72	5.51	6.30	7	7.09	1.65	11103420	12103420
5	4.72	5.51	6.46	7.09	7	7.48	1.98	11123420	12123420
6	5.91	7.09	7.95	8.66	7	11.61	4.30	11153420	12153420
7	6.89	7.87	8.86	9.65	7	11.81	5.29		12173420
8	7.87	9.84	10.63	11.42	7	12.80	6.06		12203420
10	9.84	11.81	12.80	13.58	7	15.55	10.25		12253420
12	11.81	13.78	14.76	15.55	7	17.72	12.24		12303420

FOOD GRADE
EC 1935/2004 plus FDA compliant





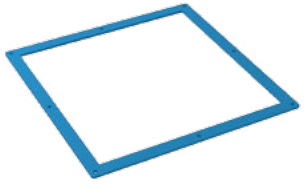
E = No. of holes

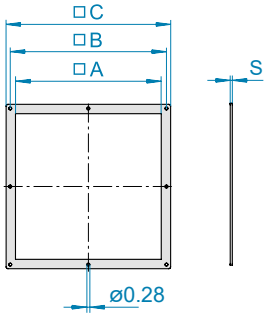
COUNTER FLANGES FOR SPOUTS FROM SQUARE TO ROUND

1301

- Counter flange to match spouts from square to round
- For use in conjunction with a square flat gasket

ND	A	B	C	E	S	lb	Black steel S235 JR (ST 37-2)	Stainless steel 1.4301 (F)
							Item no.	Item no.
3	3.94	4.72	5.51	8	0.20	0.84	10080714	10083714
4	4.72	5.51	6.30	8	0.20	0.97	10100714	10103714
5	5.51	6.46	7.09	8	0.20	1.10	10120714	10123714
6	7.09	7.95	8.66	8	0.20	1.39	10150714	10153714
7	7.87	8.86	9.65	8	0.20	1.74	10170714	10173714
8	9.84	10.63	11.42	8	0.20	1.87	10200714	10203714
10	11.81	12.80	13.58	8	0.20	2.51	10250714	10253714
12	13.78	14.76	15.55	8	0.20	2.87	10300714	10303714





E = No. of holes

FLAT GASKETS FOR SPOUTS FROM SQUARE TO ROUND

1302

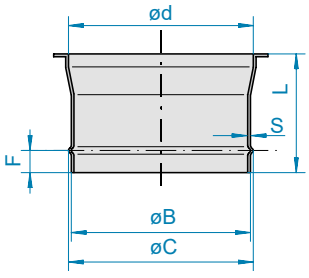
- Flat gasket to match square to round spout and counter flange for spout
- Please also read and take into account the technical information given at the beginning of this chapter

ND	A	B	C	E	S	NBR gray white	Silicone, beige (F)	Silicone, blue (F)(D)
						Item no.	Item no.	Item no.
3	3.94	4.72	5.51	8	0.12	10086732	10087732	1008773201
4	4.72	5.51	6.30	8	0.12	10106732	10107732	1010773201
5	5.51	6.46	7.09	8	0.12	10126732	10127732	1012773201
6	7.09	7.95	8.66	8	0.12	10156732	10157732	1015773201
7	7.87	8.86	9.65	8	0.12	10176732	10177732	1017773201
8	9.84	10.63	11.42	8	0.12	10206732	10207732	1020773201
10	11.81	12.80	13.58	8	0.12	10256732	10257732	1025773201
12	13.78	14.76	15.55	8	0.12	10306732	10307732	1030773201

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable





HOSE CONNECTIONS

1340

- For use in conjunction with PU hose and special hose clamp

Powder-coated or primed, electro-galvanized and stainless steel (dimensions for 19 gauge tubing)

ND	Ø d	Ø B	Ø C	F	S	L	lb	19 gauge primed	19 gauge galvanized	19 gauge stainless steel
								Item no.	Item no.	Item no.
2¼-2	2.24	1.97	2.01		0.04	3.15	0.44	110614990 *	110624990 *	110634990 *
2¼	2.24	2.36	2.40		0.04	3.15	0.44	11061499 *	11062499 *	11063499 *
3	3.07	3.07	3.15	0.59	0.04	3.46	0.44	11081499	11082499	11083499
4	3.94	3.74	3.94	0.59	0.04	3.94	0.55	11101499 *	11102499 *	11103499
5	4.72	4.80	4.92	0.59	0.04	3.94	0.66	11121499	11122499	11123499
5½	5.35	5.43	5.51	0.59	0.04	3.94	0.77	11141499	11142499	11143499
6	5.91	5.71	5.91	0.79	0.04	3.94	0.88	11151499 *	11152499 *	11153499
7	6.89	6.97	7.09	0.79	0.04	3.94	0.99	11171499	11172499	11173499
8	7.87	7.80	7.87	0.79	0.04	3.94	1.10	11201499	11202499	11203499
9	8.66	8.74	8.86	0.79	0.04	3.94	1.26	11221499	11222499	11223499
10	9.84	9.76	9.84	0.79	0.04	3.94	1.43	11251499	11252499	11253499
11	10.94	10.87	10.94	0.79	0.04	3.94	1.68	11281499	11282499	11283499
12	11.81	11.73	11.81	0.79	0.04	3.94	1.85	11301499	11302499	11303499
12½	12.32	12.40	12.48	0.79	0.04	3.94	1.90	11311499	11312499	11313499

*16 gauge



SPECIAL HOSE CLAMPS

3170

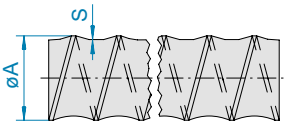
- For use in conjunction with hose connections and JACOB PU hose

ND	Galvanized	Stainless steel
	Item no.	Item no.
2	10052162	10053162
2¼	10062162	10063162
3	10082162	10083162
4	10102162	10103162
5	10122162	10123162
5½	10142162	10143162
6	10152162	10153162
7	10172162	10173162
8	10202162	10203162
9	10222162	10223162
10	10252162	10253162
11	10282162	10283162
12	10302162	10303162
12½	10312162	10313162

FOOD GRADE
EC 1935/2004 plus FDA compliant

Flex hose and accessories





PU HOSE

3160

- Material: Polyether polyurethane with spring steel wire
- Properties: highly abrasion resistant, oil and fuel resistant, inside largely smooth, transparent
- Temperature range: -40 °C to +212°F
- Not suitable for conveying water vapor
- Suitable for short-term contact with food product without fatty substances (max. 4 hours, max. +104°F)
- FOOD GRADE: EC 1935/2004 plus FDA compliant
- Pressure resistance on request
- Bending radius: Minimum R = 1 D or greater
- Available in length of 3 ft and increments of 5ft (i.e. 10 ft, 15 ft, 20 ft)
- Maximum length: 50 ft
- Please mention the required length in case of a request or order

Available in 3 ft and increments of 5 ft up to max. 50 ft

ND	ØA	S	lb/m	Item no.
2	2.28	0.28	0.90	100501659
2¼	2.68	0.28	1.08	100601659
3	3.46	0.28	1.68	100801659
4	4.33	0.28	2.09	101001659
5	5.08	0.28	2.47	101201659
5½	5.87	0.28	3.04	101401659
6	6.34	0.28	3.26	101501659
7	7.28	0.28	4.08	101701659
8	8.43	0.28	5.07	102001659
9	9.25	0.28	5.62	102201659
10	10.24	0.28	6.66	102501659
11	11.42	0.28	6.97	102801659
12	12.20	0.28	7.05	103001659
12½	12.80	0.28	7.50	103101659

FOOD GRADE
EC 1935/2004 plus FDA compliant



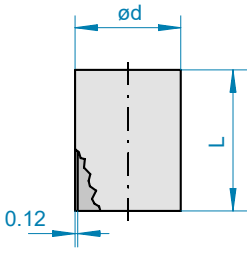
HOSE CLAMPS

3165

- For fixing flexible sleeves

ND	Stainless steel
	Item no.
2¼	10063163
3	10083163
4	10103163
5	10123163
5½	10143163
6	10153163
7	10173163
8	10203163
9	10223163
10	10253163
12	10303163





FLEXIBLE SLEEVES FOR HOSE CONNECTIONS

1345

- Material: Conductive EPDM, black
- Electrostatically conductive
- Temperature resistance: -22°F to +248°F
- Pressure resistance on request

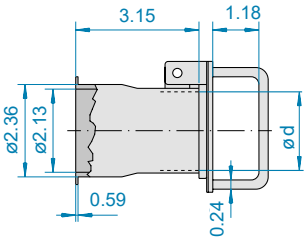
ND	Ø d	L	lb	Conductive EPDM, black
				Item no.
2¼	2.36	7.87	0.42	100681705
3	3.15	7.87	0.46	100881705
4	3.94	7.87	0.57	101081705
5	4.92	7.87	0.71	101281705
5½	5.51	7.87	0.82	101481705
6	5.91	7.87	0.88	101581705
7	6.89	7.87	1.01	101781705
8	7.87	7.87	1.17	102081705
9	8.86	7.87	1.30	102281705
10	9.84	7.87	1.46	102581705
12	11.81	7.87	1.74	103081705



HOSE SOCKETS

3175

- With cover for hose plug
- The version with a ND 3" diameter differs from the illustration



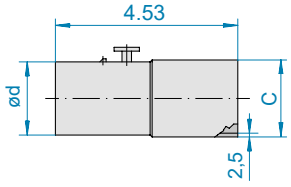
ND	Electro-galvanized	Stainless steel
	Item no.	Item no.
2¼	10062860	10063860
3	10082860	



HOSE PLUGS

3180

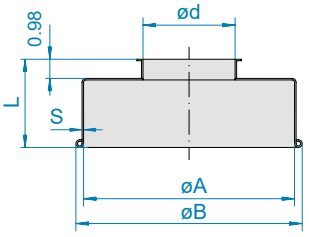
- ND 1¾" and 2" diameters are suitable for 2¼" hose socket



ND	C	Electro-galvanized	Stainless steel
		Item no.	Item no.
1¼	1.77	100628651	100638651
2	1.97	100628650	100638650
3	3.15	100828650	

For more technical information go to www.jacob-pipesystems.com





BAGGING SPOUTS

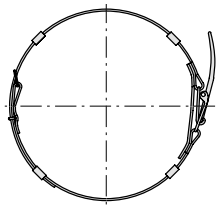
1350

- For use in conjunction with a bag clamp

Powder-coated or primed, galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	ØA	Ø B	L	16 gauge primed	16 gauge galvanized	16 gauge stainless steel
					Item no.	Item no.	Item no.
3	3.03	10.83	11.61	4.53	11081585	11082585	11083585
4	3.94	10.83	11.61	4.53	11101585	11102585	11103585
5	4.72	10.83	11.61	4.53	11121585	11122585	11123585
6	5.91	10.83	11.61	4.53	11151585	11152585	11153585
7	6.89	10.83	11.61	4.53	11171585	11172585	11173585
8	7.87	10.83	11.61	4.53	11201585	11202585	11203585
10	9.84	10.83	11.61	4.53	11251585	11252585	11253585
12	11.81	11.81	12.24	4.53	11301585	11302585	11303585





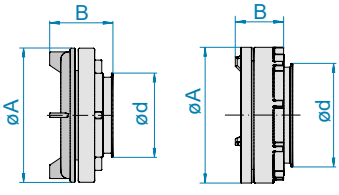
BAG CLAMPS

4010

- Made from leather for bagging spout
- Bag clamp no. 10080581 can be used for bagging spout with 3"- 12" diameter
- For attachment on site

ND min / max	Item no.
10 -12½	10080581
16½-20	10080582





ND 4" ND 6"

PNEUMATIC FILL AND VACUUM COUPLINGS

1460

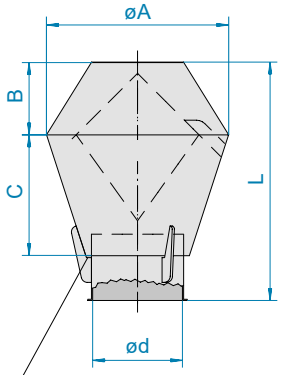
- Pressure coupling aluminum
- Sealing cap plastic
- Chain galvanized steel
- With 0.24" lip for connecting to JACOB pull-ring system

ND	Ø d	ØA	B	lb	Aluminum
					Item no.
4	4.45	7.17	3.35	2.78	10100870
6	6.46	8.46	3.58	6.66	10150870

FOOD GRADE
EC 1935/2004 plus FDA compliant

Jet caps and rain caps





Circular water outlet

JET CAPS

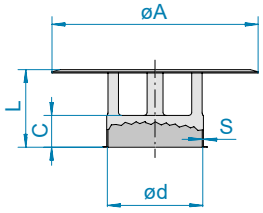
1430

- Diameters from 14" with welded-on flange according to DIN 24154-2, but without counter-flange (see chapter 11 for matching flanges)

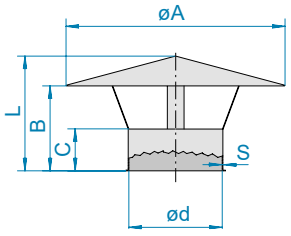
Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	Ø A	B	C	L	lb	14 gauge galvanized	14 gauge stainless steel
							Item no.	Item no.
3	2.99	9.06	4.33	7.40	14.17	7.05	12082805	12083805
4	3.90	9.06	4.33	5.98	12.80	7.50	12102805	12103805
5	4.69	10.24	4.92	6.65	13.98	11.46	12122805	12123805
5½	5.31	12.20	5.12	8.74	16.34	14.55	12142805	12143805
6	5.87	12.20	5.12	7.87	15.35	16.31	12152805	12153805
7	6.85	14.17	6.30	9.33	18.11	20.94	12172805	12173805
8	7.83	18.11	7.87	12.68	24.41	27.56	12202805	12203805
9	8.62	20.28	9.25	14.49	27.36	31.97	12222805	12223805
10	9.80	20.28	9.25	12.68	25.59	41.45	12252805	12253805
11	10.87	22.44	9.65	12.01	22.28	39.68	12282805	12283805
12	11.77	22.64	10.04	13.19	26.77	40.79	12302805	12303805
12½	12.24	23.23	10.04	12.87	26.77	44.09	12312805	12313805
14	13.74	25.39	10.83	17.64	33.39	56.22	12352805	12353805
16	15.67	28.15	11.61	18.90	36.02	65.04	12402805	12403805
18	17.64	32.28	12.60	23.15	40.94	109.13	12452805	12453805
20	19.61	34.25	12.60	23.15	40.94	117.95	12502805	12503805
22	21.97	38.98	14.65	27.68	47.56	156.53	12562805	12563805
25	24.72	44.88	17.40	30.55	56.46	209.44	12632805	12633805
28	27.83	50.79	19.76	35.47	64.06	260.14	12712805	12713805
31½	31.38	56.69	20.47	40.16	70.47	313.05	12802805	12803805





Version ND 3" to 8"



From ND 9"

RAIN CAPS

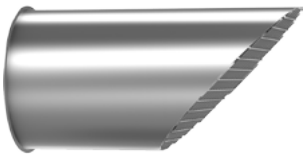
1440

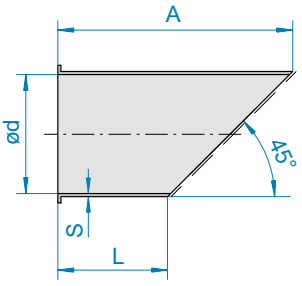
- Take local building regulations into account, alternatively use a jet cap

Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	Ø A	B	C	L	lb	16 gauge galvanized	14 gauge galvanized	16 gauge stainless steel	14 gauge stainless steel
							Item no.	Item no.	Item no.	Item no.
3	3.03	7.09		1.97	3.62	1.32	11082850		11083850	
4	3.94	8.86		1.97	4.02	1.98	11102850		11103850	
5	4.72	10.63		1.97	4.41	2.87	11122850		11123850	
5½	5.35	12.80		1.97	4.80	3.75	11142850		11143850	
6	5.91	12.80		1.97	5.00	3.97	11152850		11153850	
7	6.89	14.76		1.97	5.51	5.07	11172850		11173850	
8	7.87	16.73		1.97	5.98	6.39	11202850		11203850	
9	8.66	20.67	8.07	4.17	10.83	13.45	11222850		11223850	
10	9.84	20.67	8.07	4.17	10.83	14.11	11252850		11253850	
11	10.91	23.46	8.66	4.17	11.81	14.55	11282850		11283850	
12	11.81	24.61	9.06	6.14	12.40	13.67	11302850		11303850	
12½	12.28	25.79	9.06	4.17	12.60	23.24	11312850		11313850	
14	13.78	29.53	11.81	6.14	15.55	32.41	11352850		11353850	
16	15.71	33.46	12.60	6.14	17.13	33.51	11402850		11403850	
18	17.64	37.40	13.39	5.91	18.50	48.50		12452850		12453850
20	19.61	41.34	16.14	7.87	21.65	61.07		12502850		12503850
22	21.97	45.28	17.13	7.87	23.23	59.52		12562850		12563850
25	24.72	51.18	18.50	7.87	25.39	70.55		12632850		12633850

Exhaust stubs and safety grate





EXHAUST STUBS 45°

1450

- With bird-guard, mesh size 13/16" x 13/16" x 1/16"

Galvanized (dimensions for 16 gauge tubing)

ND	Ø d	A	L	lb	16 gauge galvanized	14 gauge galvanized
					Item no.	Item no.
3	3.03	11.02	7.87	1.98	11082880*	
4	3.94	11.81	7.87	2.65	11102880	
5	4.72	12.60	7.87	3.31	11122880	
5½	5.35	13.39	7.87	4.19	11142880	
6	5.91	13.78	7.87	4.85	11152880	
7	6.89	14.76	7.87	5.73	11172880	
8	7.87	15.75	7.87	7.05	11202880	
9	8.66	16.69	7.87	8.16	11222880	
10	9.84	17.72	7.87	9.70	11252880	
11	10.91	18.90	7.87	11.90	11282880	
12	11.81	19.69	7.87	13.23	11302880	
12½	12.28	20.28	7.87	15.87	11312880	
14	13.78	21.65	7.87	18.08	11352880	
16	15.71	23.62	7.87	22.49	11402880	
18	17.68	25.59	7.87	27.34	11452880	
20	19.65	27.56	7.87	32.85	11502880	
22	21.97	29.92	7.87	52.25		11562880
25	24.72	32.68	7.87	64.37		11632880

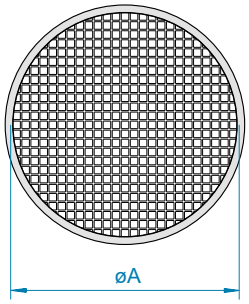
*19 gauge

Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	L	lb	16 gauge stainless steel	14 gauge stainless steel
					Item no.	Item no.
3	3.03	11.02	7.87	1.98	11083880	
4	3.94	11.81	7.87	2.65	11103880	
5	4.72	12.60	7.87	3.31	11123880	
5½	5.35	13.39	7.87	4.19	11143880	
6	5.91	13.78	7.87	4.85	11153880	
7	6.89	14.76	7.87	5.73	11173880	
8	7.87	15.75	7.87	7.05	11203880	
9	8.66	16.69	7.87	8.16	11223880	
10	9.84	17.72	7.87	9.70	11253880	
11	10.91	18.90	7.87	11.90	11283880*	
12	11.81	19.69	7.87	13.23	11303880	
12½	12.28	20.28	7.87	15.87	11313880*	
14	13.78	21.65	7.87	18.08	11353880	
16	15.71	23.62	7.87	22.49	11403880	
18	17.68	25.59	7.87	27.34	11453880	
20	19.65	27.56	7.87	32.85	11503880	
22	21.97	29.92	7.87	52.25		12563880
25	24.72	32.68	7.87	64.37		12633880

*19 gauge





SAFETY GRATE

1380

- With NBR U-shaped gasket for 14 gauge
- 69% free space, hole size 3/8"x 3/8"
- NBR: Temperature resistance: -4°F to +212°F, food grade standard, in accordance with EC 1935/2004
- On request: Silicone seal, temperature resistance -76°F to +482°F
- FOOD GRADE: EC 1935/2004 plus FDA compliant

ND	ØA	lb	19 gauge stainless steel
			Item no.
3	3.62	0.02	11083716
4	4.49	0.11	11103716
5	5.28	0.11	11123716
5½	5.91	0.11	11143716
6	6.46	0.22	11153716
7	7.44	0.22	11173716
8	8.43	0.24	11203716
9	9.37	0.24	11223716
10	10.39	0.24	11253716
11	11.57	0.29	11283716
12	12.36	0.31	11303716
12½	12.83	0.33	11313716
14	14.33	0.33	11353716
16	16.30	0.33	11403716

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

DETECTABLE DESIGN
Metal-detectable



JACOB INSPECTION TUBE COMPONENTS: CLEANING AND MAINTENANCE IN NEXT TO NO TIME

INSPECTION TUBE COMPONENTS

Technical information	106
Inspection sections	108
Cleaning sections	109
Inspection ports	110
Rubber covers	111
Sight glasses	112

INSPECTION TUBE COMPONENTS

Control is better: Inspection tube components allow you to keep an eye on the inside of your JACOB tubing system too. Special tubing components provide unhindered access and let you carry out inspections, maintenance, and cleaning without having to dismantle the complete surrounding area. Like all other tubing elements, the inspection tube components are manufactured to the same high JACOB standard of quality.

SEALS FOR INSPECTION TUBE COMPONENTS AND RUBBER COVERS

Seals for inspection sections





NBR	Silicone (F)	Silicone (F) (D)
gray white	beige	blue
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
-20°C to +212°F	-76°F to +482°F	-76°F to +482°F
glued	heat-sealed	heat-sealed
		metal-detectable

Seals for cleaning sections





EPDM (sponge rubber)	Foam silicone (F)	Foam silicone (F) (D)
light gray	white	blue
	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
-31°F to +230°F	-76°F to +356°F	-76°F to +356°F
glued	heat-sealed	heat-sealed
		metal-detectable

Rubber covers for inspection ports






NBR	TPE (F)	Silicone (F)	Silicone (F) (D)
dark gray	white	translucent beige	blue
	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
-22°F to +194°F	-30°C to +212°F	-76°F to +392°F	-76°F to +392°F
			metal-detectable

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

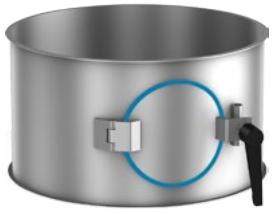
(D) DETECTABLE DESIGN
Metal-detectable



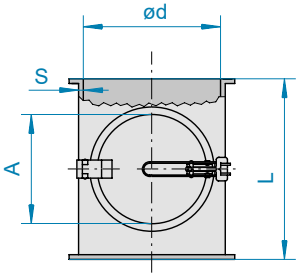
Inspection sections



ND 3" to 12½"



ND 14" to 16"



INSPECTION SECTIONS

2010

- Galvanized and primed in standard product range with NBR seal
- Stainless steel in standard product range with silicone seal
- Other materials available on request
- Reinforced shock explosion proof version up to 43.51 psi on request

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

ND	Ø d	A	L	lb	16 gauge primed	11 gauge primed	16 gauge galvanized
					Item no.	Item no.	Item no.
3	3.03	3.15	7.87	2.31	11081190		11082190
4	3.94	4.53	7.87	2.76	11101190		11102190
5	4.72	4.53	7.87	3.20	11121190	13121190	11122190
5½	5.35	4.53	7.87	3.42	11141190		11142190
6	5.91	4.53	7.87	3.64	11151190	13151190	11152190
7	6.89	4.53	7.87	4.08	11171190	13171190	11172190
8	7.87	4.53	7.87	4.41	11201190	13201190	11202190
9	8.66	4.53	7.87	4.96	11221190		11222190
10	9.84	4.53	7.87	5.29	11251190	13251190	11252190
11	10.91	4.53	7.87	5.73	11281190		11282190
12	11.81	4.53	7.87	5.84	11301190	13301190	11302190
12½	12.28	4.53	7.87	6.28	11311190		11312190
14	13.78	4.53	7.87	7.05	11351190	13351190	11352190
16	15.71	4.53	7.87	7.83	11401190	13401190	11402190

Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	L	lb	19 gauge stainless steel	16 gauge stainless steel	14 gauge stainless steel
					Item no.	Item no.	Item no.
3	3.03	3.15	7.87	2.31	11083190		
4	3.94	4.53	7.87	2.76	11103190		12103190
5	4.72	4.53	7.87	3.20	11123190		12123190
5½	5.35	4.53	7.87	3.42	11143190		
6	5.91	4.53	7.87	3.64	11153190		12153190
7	6.89	4.53	7.87	4.08	11173190		12173190
8	7.87	4.53	7.87	4.41	11203190		12203190
9	8.66	4.53	7.87	4.96	11223190		
10	9.84	4.53	7.87	5.29	11253190		12253190
11	10.91	4.53	7.87	5.73		11283190	
12	11.81	4.53	7.87	5.84	11303190		12303190
12½	12.28	4.53	7.87	6.28		11313190	
14	13.78	4.53	7.87	7.05	11353190		12353190
16	15.71	4.53	7.87	7.83	11403190		12403190

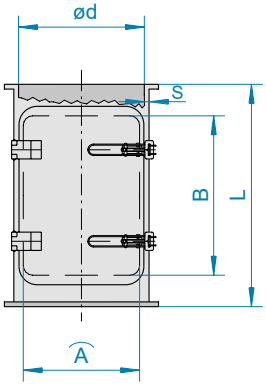
DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable





CLEANING SECTIONS

2020

- Galvanized and primed in standard product range with EPDM (sponge rubber) seal
- Stainless steel with foam silicone seal
- Other materials available on request
- Not recommended for extracting exhaust air containing condensates

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

ND	Ø d	A	B	L	lb	16 gauge primed	14 gauge primed	16 gauge galvanized
						Item no.	Item no.	Item no.
8	7.87	8.82	13.78	19.13	10.36	11201195		11202195
9	8.66	8.82	13.78	19.13	11.46	11221195		11222195
10	9.84	8.82	13.78	19.13	12.90	11251195		11252195
11	10.91	8.82	13.78	19.13	14.55	11281195		11282195
12	11.81	13.78	13.78	19.13	15.43	11301195		11302195
12½	12.28	13.78	13.78	19.13	16.20	11311195		11312195
14	13.78	13.78	13.78	19.13	18.52	11351195		11352195
16	15.71	13.78	13.78	19.13	20.06	11401195		11402195
18	17.64	19.69	13.78	19.13	25.57		12451195	12452195*
20	19.61	19.69	13.78	19.13	28.22		12501195	12502195*
22	21.97	19.69	13.78	19.13	31.53		12561195	12562195*
25	24.72	19.69	13.78	19.13	35.27		12631195	12632195*

*14 gauge

Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	L	lb	16 gauge stainless steel (F)	14 gauge stainless steel (F)
						Item no.	Item no.
8	7.87	8.82	13.78	19.13	10.36	11203195	
9	8.66	8.82	13.78	19.13	11.46	11223195	
10	9.84	8.82	13.78	19.13	12.90	11253195	
11	10.91	8.82	13.78	19.13	14.55	11283195	
12	11.81	13.78	13.78	19.13	15.43	11303195	
12½	12.28	13.78	13.78	19.13	16.20	11313195	
14	13.78	13.78	13.78	19.13	18.52	11353195	
16	15.71	13.78	13.78	19.13	20.06	11403195	
18	17.64	19.69	13.78	19.13	25.57		12453195
20	19.61	19.69	13.78	19.13	28.22		12503195
22	21.97	19.69	13.78	19.13	31.53		12563195
25	24.72	19.69	13.78	19.13	35.27		12633195

(D) DETECTABLE DESIGN

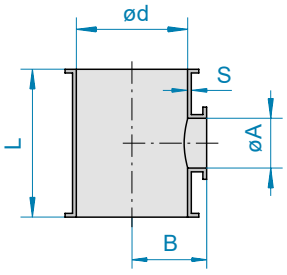
AVAILABLE IN THE DETECTABLE DESIGN LINE.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

Inspection ports





INSPECTION PORTS

1040

- For use in conjunction with a rubber cover
- Alternatively: Combined with a blank off cover and JACOB pull ring
- Refer to dimension A to select the right rubber cover or blank off cover

Powder-coated or primed (dimensions for 16 gauge tubing)

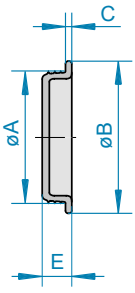
ND	Ø d	Ø A	B	L	lb	16 gauge primed	14 gauge primed	11 gauge primed
						Item no.	Item no.	Item no.
4	3.94	3.94	3.11	6.50	1.65	11101200		
5	4.72	3.94	3.50	6.50	1.76	11121200		13121200
6	5.91	4.72	3.94	7.80	2.65	11151200		13151200
7	6.89	5.91	4.49	8.86	3.42	11171200	12171200	13171200
8	7.87	5.91	4.92	8.86	3.97	11201200	12201200	13201200
10	9.84	5.91	5.91	8.86	4.85	11251200	12251200	13251200
12	11.81	5.91	6.97	8.86	5.62	11301200	12301200	13301200

Galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	Ø A	B	L	lb	16 gauge galvanized	19 gauge stainless steel	14 gauge stainless steel
						Item no.	Item no.	Item no.
4	3.94	3.94	3.11	6.50	1.65	11102200	11103200	12103200
5	4.72	3.94	3.50	6.50	1.76	11122200	11123200	12123200
6	5.91	4.72	3.94	7.80	2.65	11152200	11153200	12153200
7	6.89	5.91	4.49	8.86	3.42	11172200	11173200	12173200
8	7.87	5.91	4.92	8.86	3.97	11202200	11203200	12203200
10	9.84	5.91	5.91	8.86	4.85	11252200	11253200	12253200
12	11.81	5.91	6.97	8.86	5.62	11302200	11303200	12303200

FOOD GRADE
EC 1935/2004 plus FDA compliant





RUBBER COVERS

3030

- For use in conjunction with inspection ports or JACOB tubing in the appropriate diameter
- To select the right rubber cover, please refer to dimension A of the inspection port
- Refer to the beginning of the chapter for more information on materials

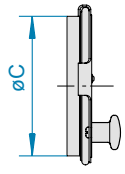
NBR and TPE

ND	Ø A	Ø B	C	E	lb	NBR (-22°F to +194°F)	TPE (-22°F to +212°F) (F)
						Item no.	Item no.
3	3.11	3.90	0.20	0.79	0.22		1008520309
4	3.98	4.76	0.20	0.83	0.33	10106203	1010520309
5	4.76	5.55	0.20	0.87	0.44	10126203	1012520309
6	5.94	6.73	0.24	0.94	0.77	10156203	1015520309
7	6.93	7.76	0.24	1.14	0.99	10176203	1017520309
8	7.91	8.70	0.24	1.02	1.32	10206203	1020520309
10	9.88	10.67	0.28	1.18	1.98	10256203	1025520309
12	11.85	12.64	0.28	1.26	2.98	10306203	1030520309

Silicone

ND	Ø A	Ø B	C	E	lb	Silicone (-76°F to +392°F) (F)	Silicone (blue) (-76°F to +392°F) (F) (D)
						Item no.	Item no.
3	3.11	3.90	0.20	0.79	0.22	10087203	1008720301
4	4.02	4.76	0.20	0.83	0.33	10107203	1010720301
5	4.84	5.55	0.20	0.87	0.44	10127203	1012720301
6	5.94	6.73	0.24	0.94	0.77	10157203	1015720301
7	6.93	7.76	0.24	0.98	0.99	10177203	1017720301
8	7.95	8.70	0.24	1.02	1.32	10207203	1020720301
10	9.92	10.67	0.28	1.18	1.98	10257203	1025720301
12	11.89	12.64	0.28	1.26	2.98	10307203	1030720301





SAFETY COVERS

3040

- For use in conjunction with inspection ports and rubber covers

Galvanized

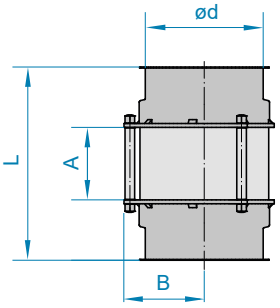
ND	Ø C	lb	14 gauge electro-galvanized	Item no.
4	3.94	0.66	for inspection ports ND 4" and 5"	11102210
5	4.72	0.77	for inspection ports ND 6"	11122210
6	5.91	1.21	for inspection ports ND 7" to 12"	11152210

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

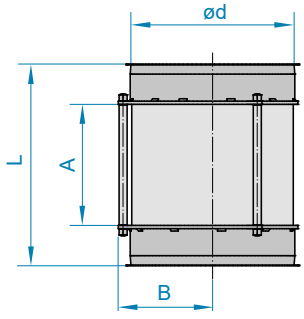
(D) DETECTABLE DESIGN
Metal-detectable

Sight glasses





ND 3" to 6"



ND 7" to 10"

SIGHT GLASSES WITH COLLARS AND ROD SPACERS

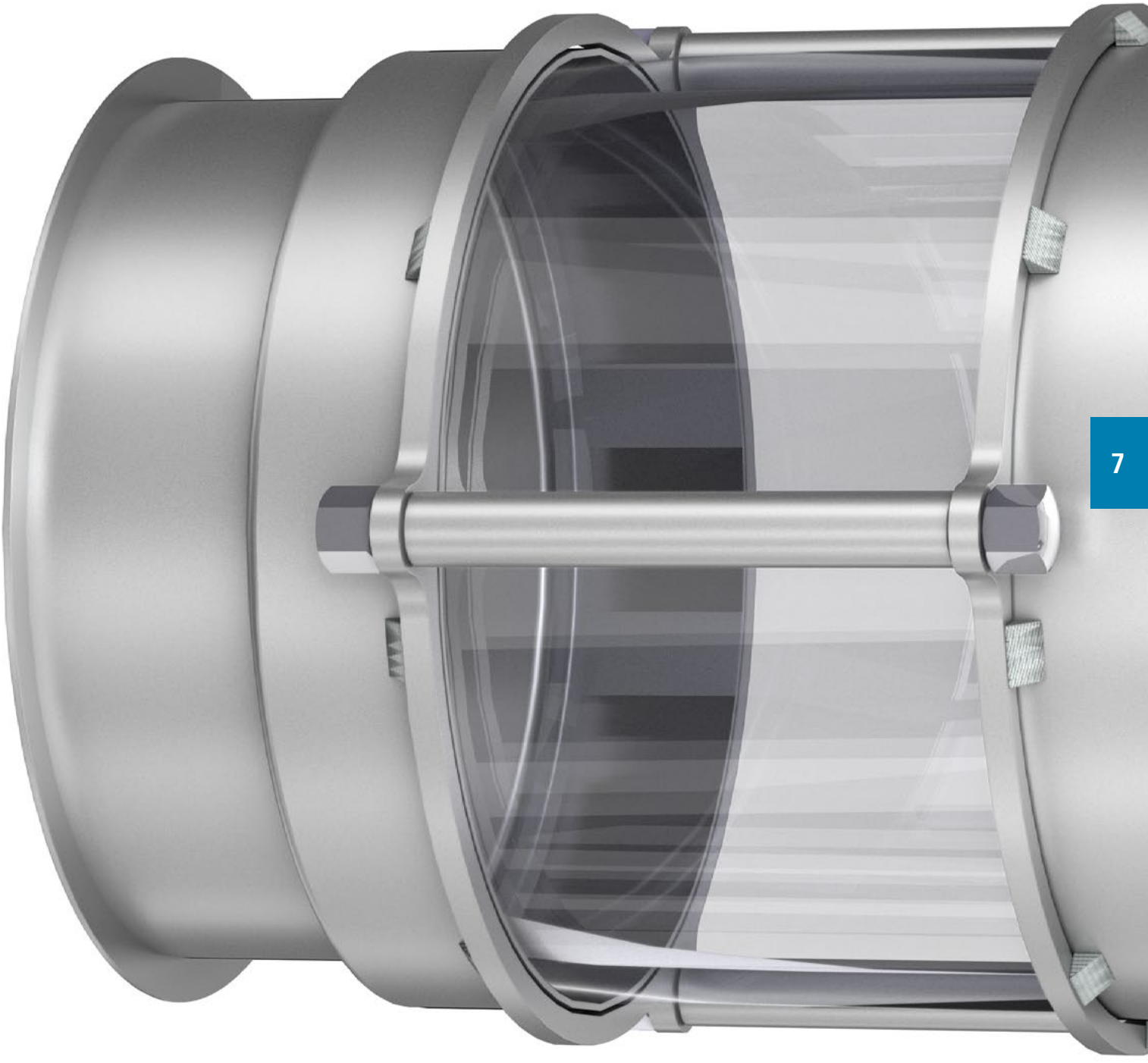
1390

- Including collars with a lip
- NEW: with rods for a stronger construction
- Temperature-resistant to 158°F
- Sight glasses must not be installed in load bearing situations
- ND 2¼" to 6" and ND 8" made of seamless plexiglass
- FOOD GRADE: EC 1935/2004 plus FDA compliant
- ND 7" and 10" with glued plexiglass, compliant in accordance with FDA

Powder-coated or primed, electro-galvanized and stainless steel (dimensions for 19 gauge tubing)

ND	Ø d	A	B	L	lb	19 gauge primed	19 gauge Electro-galvanized	19 gauge stainless steel
						Item no.	Item no.	Item no.
3	3.07	2.95	2.44	7.87	1.76	11081725	11082725	11083725
4	3.94	2.95	2.83	7.87	1.98	11101725	11102725	11103725
5	4.72	2.95	3.27	7.87	2.43	11121725	11122725	11123725
6	5.91	2.95	3.82	7.87	2.87	11151725	11152725	11153725
7	6.89	3.94	4.09	7.87	3.31	11171725	11172725	11173725
8	7.87	5.91	4.61	9.84	4.19	11201725	11202725	11203725
10	9.84	5.91	5.59	9.84	5.07	11251725	11252725	11253725

FOOD GRADE
EC 1935/2004 plus FDA compliant





AIR FLOW AND PRODUCT TRANSPORT DESIGNED FOR YOUR SYSTEM: PERFECTLY BALANCED AT ALL TIMES

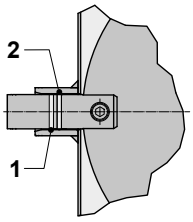
CONTROL VALVES

Technical information	116
Throttle valves	118
Throttle valves with seal	123
Adjustable blank-off covers and air intake regulators	128
Non-return valves	129
Air and product slide gates	129
Silo / Redler outlet slide gates	133

THROTTLE VALVES

JACOB throttle valves and regulators precisely control the air flow and product transport and can be flexibly incorporated in our pull ring system due to their lipped ends.

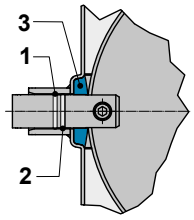
We have a wide range of standard products – from manually adjustable throttle valves and pneumatic rotary actuators to electrically operated adjustable drives. Other drives and larger diameters are available on request. We reserve the right to alter design specifications.



Cross-section of throttle valve without seal, valve open
1 EPDM
2 Viton

THROTTLE VALVES WITHOUT SEAL

- Diameters of 2¼" to 16"
- Hand-operated, made of primed, galvanized, and stainless steel
- Pneumatically operated with a rotary actuator, electrically operated with an electric motor; in powder-coated and stainless steel
- Both shafts are sealed with an O-ring made of Viton and a conductive EPDM seal to discharge charges on the inner flap to the housing
- Neither of the O-ring seals are in contact with the product
- FOOD GRADE stainless steel version dually compliant for contact with food in accordance with EC 1935/2004 plus FDA
- Versions with a diameter over 14" are alternatively available with loose flanges. Refer to chapter 11 for details



Cross-section of throttle valve with seal, valve open
1 EPDM
2 Viton
3 Silicone rubber

THROTTLE VALVES WITH SEAL

- Diameters of 3" to 16"
- Hand-operated, pneumatically operated with a rotary actuator, and electrically operated with an electric motor; powder-coated and stainless steel
- Up to a diameter of 8", the valve is tested as shock explosion proof externally up to 43.51 psi overpressure
- Ignition fail-safe in a closed condition in conjunction with a pneumatic rotary actuator. Compressed air connection with 72.52 psi minimum operating pressure
- The standard quality with an inner valve seal is made of silicone rubber
- Both shafts are sealed with an O-ring made of Viton and a conductive EPDM seal to discharge charges on the inner flap to the housing
- Neither of the O-ring seals are in contact with the product
- FOOD GRADE stainless steel version dually compliant with EC 1935/2004 plus FDA for contact with food, including all product contact parts and any sealing materials and glues
- Please refer to chapter 11 for information on special throttle valve versions with a seal in diameters of over 16"

Throttle valves with and without a seal: Shafts are sealed with O-ring seals
Throttle valves with a seal: Inner valve seal made of silicone rubber

O-ring EPDM	O-ring Viton	Valve seal made of silicone rubber
black	green	transparent
not in contact with the product	not in contact with the product	FOOD GRADE: EC 1935/2004 plus FDA compliant
-40°F to +302°F	-4°F to +392°F	-76°F to +356°F
conductive		heat-sealed

FOOD GRADE
EC 1935/2004 plus FDA compliant

For more technical information go to www.jacob-pipesystems.com

Special versions available – prices on request

- Housing available in various types of stainless steel, such as 316L
- Versions for higher temperatures on request
- Actuation possible 4" away from the housing for higher temperature protection
- Actuators, solenoid valves and limit switches according to customers' specifications
- Larger diameters available on request
- Versions with loose flanges or welded-on flanges, e.g. in accordance with DIN 24154-2
- Special colors
- Other actuators on request



Product similar to picture

ACTUATORS FOR THROTTLE VALVES

Pneumatic rotary actuators ELOMATIC

Required air pressure 72.52 psi. Switch-over time for 90° < 3 seconds. On the rotary actuator a 5/2-way solenoid valve (single coil) is mounted, with compressed air connection for fabric air hoses of 0.315" clear width. As a standard, the valve defaults to a closed position in case of power failure.



Electrically operated BELIMO valve actuators (IP 42)

Overload proof, in standard version without limit switches. The valve remains under tension in the respective end position. Consumption approx. 4 watt. Switch-over time for 90° approx. 150 seconds. Valves larger than ND 12" without a seal and larger than ND 8" with a seal are not fitted with a BELIMO actuator in standard quality. Larger diameters available on request. Adjustable limit switches for switching off and remote controlling, or as a continuously adjustable actuator, are available at additional cost.



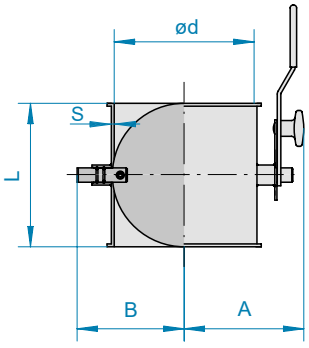
Electrically operated adjustable drives AIR TORQUE (IP 65)

1-phase, with emergency hand operation. Switch-over time for 90° for throttle valves without a seal approx. 11 to 12 seconds, throttle valves with a seal approx. 12 to 23 seconds, 2 limit switches integrated in the actuator. Prices for additional limit switch, potentiometer or position controller on request.

ATEX

Depending on the actuator, ATEX versions in category 2/3 G/D for the surroundings of the valves are available at additional cost. Inside the valve housing, Zone 0 or 20 is admitted for versions without an inner valve seal. For versions with a seal, ATEX versions up to and including ND 12" are also admitted inside Zone 0 or 20, but from ND 12", only Zone 20 is admitted. If Zone 0 is required, conductive EPDM seal without food quality are necessary. Dusts and gases with a minimum ignition energy < 3 mJ are not admissible. All throttle valves in ATEX version are supplied with grounding lugs as standard.





THROTTLE VALVES, HAND-OPERATED

2070

- Larger diameters available on request
- Refer to chapter 11 for version with loose flange
- For manual continuous flow regulation

Powder-coated or primed and galvanized (dimensions for 16 gauge tubing)

ND	Ø d	A	B	L	lb	16 gauge primed	16 gauge galvanized
						Item no.	Item no.
2¼	2.24	3.11	2.48	2.36	1.54	11061566	
3	3.03	3.54	2.91	3.94	1.98	11081566	11082566
4	3.94	3.98	3.35	3.94	2.43	11101566	11102566
5	4.72	4.88	4.06	4.72	4.19	11121560	11122560
5½	5.35	5.20	4.37	5.51	4.85	11141560	11142560
6	5.91	5.47	4.65	5.91	5.29	11151560	11152560
7	6.89	5.98	5.12	6.89	6.61	11171560	11172560
8	7.87	6.46	5.63	7.87	7.72	11201560	11202560
9	8.66	6.85	6.02	7.87	8.60	11221560	11222560
10	9.84	7.44	6.61	7.87	9.92	11251560	11252560
11	10.91	7.99	7.13	7.87	11.02	11281560	11282560
12	11.81	8.43	7.60	7.87	12.13	11301560	11302560
12½	12.28	8.66	7.83	7.87	14.33	11311560*	11312560*
14	13.78	9.41	8.58	7.87	16.53	11351560*	11352560*
16	15.71	10.39	9.53	7.87	19.84	11401560*	11402560*

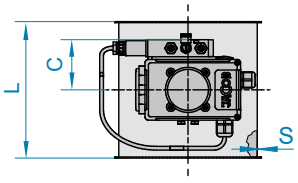
*14 gauge

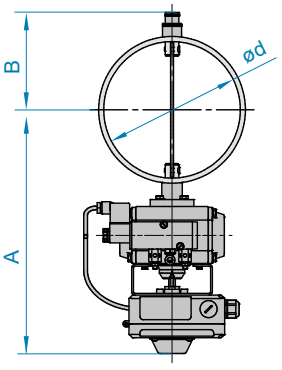
Stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	L	lb	16 gauge stainless steel (F)	14 gauge stainless steel (F)
						Item no.	Item no.
2¼	2.24	3.11	2.48	2.36	1.54	11063566	
3	3.03	3.54	2.91	3.94	1.98	11083566	
4	3.94	3.98	3.35	3.94	2.43	11103566	12103566
5	4.72	4.88	4.06	4.72	4.19	11123560	12123560
5½	5.35	5.20	4.37	5.51	4.85	11143560	
6	5.91	5.47	4.65	5.91	5.29	11153560	12153560
7	6.89	5.98	5.12	6.89	6.61	11173560	12173560
8	7.87	6.46	5.63	7.87	7.72	11203560	12203560
9	8.66	6.85	6.02	7.87	8.60	11223560	
10	9.84	7.44	6.61	7.87	9.92	11253560	12253560
11	10.91	7.99	7.13	7.87	11.02		12283560
12	11.81	8.43	7.60	7.87	12.13	11303560	12303560
12½	12.28	8.66	7.83	7.87	14.33		12313560
14	13.78	9.41	8.58	7.87	16.53		11353560
16	15.71	10.39	9.53	7.87	19.84		11403560

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant







Product similar to picture

THROTTLE VALVES WITH PNEUMATIC ROTARY ACTUATOR

2095

- 5/2-way solenoid valve (single coil)
- Limit switches optional
- Switch-over time for 90°: < 3 seconds
- Throttle valve defaults to closed when there is a loss of power
- Larger diameters available on request

Powder-coated or primed, and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	C	L	lb	16 gauge primed	16 gauge stainless steel
							Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC								
2¼	2.24	6.89	2.48	2.90	2.36	7.28	5662060311	6662060311
3	3.03	7.28	3.43	2.90	3.94	7.94	5662080311	6662080311
4	3.94	7.74	3.90	2.90	3.94	8.60	5662100311	6662100311
5	4.72	10.01	4.29	3.18	4.72	9.48	5852120311	6852120311
5½	5.35	10.33	4.61	3.18	5.51	10.36	5852140311	6852140311
6	5.91	10.60	4.88	3.18	5.91	11.02	5852150311	6852150311
7	6.89	11.10	5.35	3.18	6.89	14.55	5852170311	6852170311
8	7.87	11.59	5.87	3.18	7.87	16.31	5852200311	6852200311
9	8.66	11.98	6.26	3.18	7.87	17.42	5852220311	6852220311
10	9.84	12.57	6.85	3.18	7.87	18.96	5852250311	6852250311
11	10.91	13.28	7.40	3.18	7.87	20.06	5852280311	6852280311
12	11.81	13.56	7.83	3.18	7.87	21.61	5852300311	6852300311
12½	12.28	14.47	8.07	3.37	7.87	22.49	5852310311*	6852310311*
14	13.78	14.96	8.82	3.37	7.87	24.03	5852350311*	6852350311*
16	15.71	15.93	9.76	3.37	7.87	27.12	5852400311*	6852400311*
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC								
2¼	2.24	6.89	2.48	2.90	2.36	7.28	5662060312	6662060312
3	3.03	7.28	3.43	2.90	3.94	7.94	5662080312	6662080312
4	3.94	7.74	3.90	2.90	3.94	8.60	5662100312	6662100312
5	4.72	10.01	4.29	3.18	4.72	9.48	5852120312	6852120312
5½	5.35	10.33	4.61	3.18	5.51	10.36	5852140312	6852140312
6	5.91	10.60	4.88	3.18	5.91	11.02	5852150312	6852150312
7	6.89	11.10	5.35	3.18	6.89	14.55	5852170312	6852170312
8	7.87	11.59	5.87	3.18	7.87	16.31	5852200312	6852200312
9	8.66	11.98	6.26	3.18	7.87	17.42	5852220312	6852220312
10	9.84	12.57	6.85	3.18	7.87	18.96	5852250312	6852250312
11	10.91	13.28	7.40	3.18	7.87	20.06	5852280312	6852280312
12	11.81	13.56	7.83	3.18	7.87	21.61	5852300312	6852300312
12½	12.28	14.47	8.07	3.37	7.87	22.49	5852310312*	6852310312*
14	13.78	14.96	8.82	3.37	7.87	24.03	5852350312*	6852350312*
16	15.71	15.93	9.76	3.37	7.87	27.12	5852400312*	6852400312*

*14 gauge

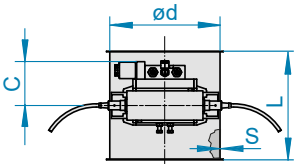
FOOD GRADE
EC 1935/2004 plus FDA compliant

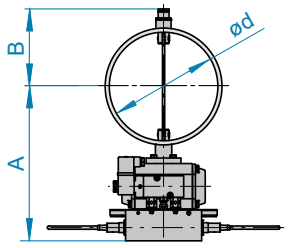


THROTTLE VALVES WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2095

- Switch-over time for 90°: < 3 seconds
- Designed inside with equipment category 1 G/D, outside with equipment category 3 D
- Control with 5/2-way solenoid valve and 2 inductive limit switches 24 V DC
- Without terminal box
- Terminal box and limit switch box on request
- Throttle valve defaults to closed when there is a loss of power
- Larger diameters available on request





Powder-coated or primed, and stainless steel (dimensions for 16 gauge tubing)

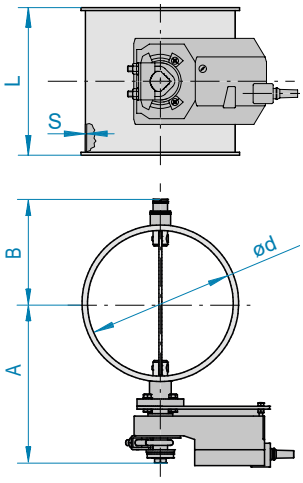
ND	Ø d	A	B	C	L	lb	16 gauge primed	16 gauge stainless steel
							Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version								
2¼	2.24	11.02	2.48	3.11	2.36	7.28	56620603455	66620603455
3	3.03	11.93	3.43	3.11	3.94	7.94	56620803455	66620803455
4	3.94	12.40	3.90	3.11	3.94	8.60	56621003455	66621003455
5	4.72	12.80	4.29	3.11	4.72	9.48	58521203455	68521203455
5½	5.35	13.11	4.61	3.11	5.51	10.36	58521403455	68521403455
6	5.91	13.39	4.88	3.11	5.91	11.02	58521503455	68521503455
7	6.89	13.86	5.35	3.31	6.89	14.55	58521703455	68521703455
8	7.87	14.33	5.87	3.31	7.87	16.31	58522003455	68522003455
9	8.66	14.72	6.26	3.31	7.87	17.42	58522203455	68522203455
10	9.84	15.28	6.85	3.31	7.87	18.96	58522503455	68522503455
11	10.91	15.87	7.40	3.31	7.87	20.06	58522803455	68522803455
12	11.81	16.30	7.83	3.31	7.87	21.61	58523003455	68523003455
12½	12.28	16.61	8.07	3.31	7.87	22.49	58523103455*	68523103455*
14	13.78	18.11	8.82	3.31	7.87	24.03	58523503455*	68523503455*
16	15.71	19.09	9.76	3.31	7.87	27.12	58524003455*	68524003455*

*14 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

For more technical information go to www.jacob-pipesystems.com





THROTTLE VALVES WITH ELECTRICALLY-OPERATED ACTUATOR

2105

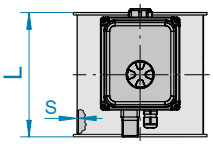
- Switch-over time for 90°: approx. 150 seconds
- Limit switch indication at additional cost
- With external control voltage 0 to 10 V DC on request

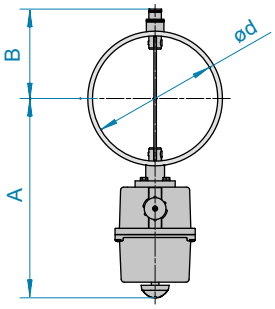
Powder-coated or primed, and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	L	lb	16 gauge primed	16 gauge stainless steel
						Item no.	Item no.
Valve actuator, make BELIMO, voltage 230 V AC							
2¼	2.24	5.71	2.48	2.36	7.94	5662060551	6662060551
3	3.03	6.54	3.43	3.94	8.60	5662080551	6662080551
4	3.94	7.05	3.90	3.94	9.26	5662100551	6662100551
5	4.72	7.44	4.29	4.72	10.14	5852120551	6852120551
5½	5.35	7.76	4.61	5.51	11.02	5852140551	6852140551
6	5.91	8.03	4.88	5.91	11.46	5852150551	6852150551
7	6.89	8.50	5.35	6.89	12.35	5852170551	6852170551
8	7.87	9.02	5.87	7.87	14.11	5852200551	6852200551
9	8.66	9.41	6.26	7.87	14.99	5852220551	6852220551
10	9.84	10.00	6.85	7.87	16.31	5852250551	6852250551
11	10.91	15.87	7.40	7.87	17.86	5852280551	6852280551
12	11.81	10.91	7.83	7.87	19.18	5852300551	6852300551
Valve actuator, make BELIMO, voltage 24 V DC/AC							
2¼	2.24	5.71	2.48	2.36	7.94	5662060552	6662060552
3	3.03	6.54	3.43	3.94	8.60	5662080552	6662080552
4	3.94	7.05	3.90	3.94	9.26	5662100552	6662100552
5	4.72	7.44	4.29	4.72	10.14	5852120552	6852120552
5½	5.35	7.76	4.61	5.51	11.02	5852140552	6852140552
6	5.91	8.03	4.88	5.91	11.46	5852150552	6852150552
7	6.89	8.50	5.35	6.89	12.35	5852170552	6852170552
8	7.87	9.02	5.87	7.87	14.11	5852200552	6852200552
9	8.66	9.41	6.26	7.87	14.99	5852220552	6852220552
10	9.84	10.00	6.85	7.87	16.31	5852250552	6852250552
11	10.91	15.87	7.40	7.87	17.86	5852280552	6852280552
12	11.81	10.91	7.83	7.87	19.18	5852300552	6852300552

FOOD GRADE
EC 1935/2004 plus FDA compliant







THROTTLE VALVES WITH ELECTRICALLY-OPERATED ADJUSTABLE ACTUATOR

2107

- Adjustable drive, make AIR TORQUE
- Including 2 limit switches
- Switch-over time for 90°: approx. 11-12 seconds
- ATEX version on request
- Larger diameters available on request

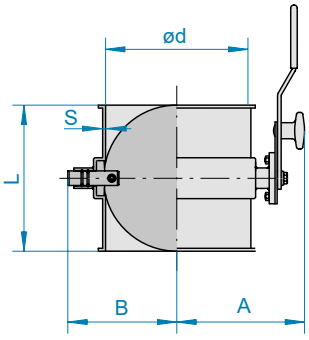
Powder-coated or primed, and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	B	L	lb	16 gauge primed	16 gauge stainless steel
						Item no.	Item no.
Adjustable drive, make AIR TORQUE, voltage 230 V AC							
2¼	2.24	9.45	2.48	2.36	6.17	5662060773	6662060773
3	3.03	9.84	2.95	3.94	6.61	5662080773	6662080773
4	3.90	10.31	3.35	7.87	7.05	5662100773	6662100773
5	4.69	10.91	4.06	7.87	8.16	5852120773	6852120773
5½	5.31	11.22	4.37	7.87	8.82	5852140773	6852140773
6	5.87	11.54	4.65	7.87	9.26	5852150773	6852150773
7	6.85	12.01	5.16	7.87	10.36	5852170773	6852170773
8	7.83	12.48	5.63	7.87	11.68	5852200773	6852200773
9	8.62	12.87	6.02	7.87	12.57	5852220773	6852220773
10	9.80	13.46	6.61	7.87	13.89	5852250773	6852250773
11	10.87	14.06	7.17	7.87	14.99	5852280773	6852280773
12	11.77	14.49	7.60	7.87	16.09	5852300773	6852300773
12½	12.24	14.72	7.83	7.87	18.52	5852310773*	6852310773*
14	13.74	15.47	8.58	7.87	20.72	5852350773*	6852350773*
16	15.67	16.46	9.53	7.87	23.81	5852400773*	6852400773*
Adjustable actuator, make AIR TORQUE, voltage 24 V DC/AC							
2¼	2.24	9.45	2.48	2.36	6.17	5662060774	6662060774
3	3.03	9.84	2.95	3.94	6.61	5662080774	6662080774
4	3.90	10.31	3.35	7.87	7.05	5662100774	6662100774
5	4.69	10.91	4.06	7.87	8.16	5852120774	6852120774
5½	5.31	11.22	4.37	7.87	8.82	5852140774	6852140774
6	5.87	11.54	4.65	7.87	9.26	5852150774	6852150774
7	6.85	12.01	5.16	7.87	10.36	5852170774	6852170774
8	7.83	12.48	5.63	7.87	11.68	5852200774	6852200774
9	8.62	12.87	6.02	7.87	12.57	5852220774	6852220774
10	9.80	13.46	6.61	7.87	13.89	5852250774	6852250774
11	10.87	14.06	7.17	7.87	14.99	5852280774	6852280774
12	11.77	14.49	7.60	7.87	16.09	5852300774	6852300774
12½	12.24	14.72	7.83	7.87	18.52	5852310774*	6852310774*
14	13.74	15.47	8.58	7.87	20.72	5852350774*	6852350774*
16	15.67	16.46	9.53	7.87	23.81	5852400774*	6852400774*

*14 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant





THROTTLE VALVES, HAND-OPERATED

2080

- Silicone rubber seal
- Temperature resistance: -76°F to +356°F
- Larger diameters available on request

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	B	L	lb	14 gauge primed	14 gauge stainless steel
						Item no.	Item no.
3	3.03	4.76	3.27	3.94	3.97	12081577*	12083577
4	3.90	5.24	3.66	3.94	4.85	12101577	12103577
5	4.69	5.63	4.06	4.72	5.73	12121577	12123577
5½	5.31	5.94	4.37	5.51	6.39	12141577	12143577
6	5.87	6.22	4.57	5.91	7.05	12151577	12153577
7	6.85	6.69	5.16	6.89	8.60	12171577	12173577
8	7.83	7.20	5.63	7.87	10.14	12201577	12203577
9	8.62	7.60	6.02	7.87	11.24	12221577	12223577
10	9.80	8.19	6.61	7.87	12.79	12251577	12253577
11	10.87	8.74	7.17	7.87	14.11	12281577	12283577
12	11.77	9.17	7.60	7.87	15.92	12301577	12303577
12½	12.24	10.71	8.66	7.87	23.15	12311577	12313577
14	13.74	11.46	9.41	7.87	26.46	12351577	12353577
16	15.67	12.44	10.39	7.87	31.31	12401577	12403577

*16 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

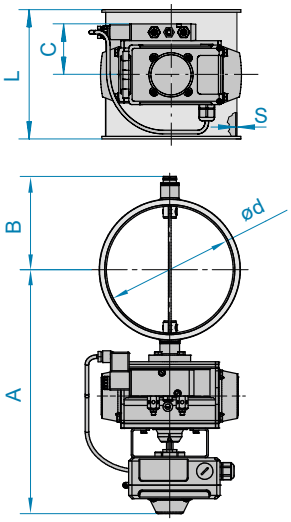
8

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable

Throttle valves with seal





Product similar to picture

THROTTLE VALVES WITH PNEUMATIC ROTARY ACTUATOR

2090

- 5/2-way solenoid valve (single coil)
- Limit switches optional
- Switch-over time for 90°: < 3 seconds
- Silicone rubber seal
- Throttle valve defaults to closed when there is a loss of power
- Larger diameters available on request

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	B	C	L	lb	14 gauge primed	14 gauge stainless steel
							Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC								
3	2.99	9.36	3.43	3.18	3.94	7.94	5772080311	6772080311
4	3.90	9.82	3.90	3.18	3.94	8.60	5772100311	6772100311
5	4.69	10.21	4.29	3.18	4.72	9.48	5772120311	6772120311
5½	5.31	10.53	4.61	3.18	5.51	10.36	5772140311	6772140311
6	5.87	10.80	4.88	3.18	5.91	11.02	5772150311	6772150311
7	6.85	11.73	5.35	3.18	6.89	14.55	5772170311	6772170311
8	7.83	12.23	5.87	3.37	7.87	16.31	5772200311	6772200311
9	8.62	12.62	6.26	3.37	7.87	17.42	5772220311	6772220311
10	9.80	13.21	6.85	3.37	7.87	18.96	5772250311	6772250311
11	10.87	13.77	7.40	3.37	7.87	21.16	5772280311	6772280311
12	11.77	14.20	7.83	3.37	7.87	21.61	5772300311	6772300311
12½	12.24	15.23	8.66	3.57	7.87	31.08	5772310311	6772310311
14	13.74	15.97	9.41	3.57	7.87	40.12	5772350311	6772350311
16	15.71	16.96	10.39	3.57	7.87	45.64	5772400311	6772400311
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC								
3	2.99	9.36	3.43	3.18	3.94	7.94	5772080312	6772080312
4	3.90	9.82	3.90	3.18	3.94	8.60	5772100312	6772100312
5	4.69	10.21	4.29	3.18	4.72	9.48	5772120312	6772120312
5½	5.31	10.53	4.61	3.18	5.51	10.36	5772140312	6772140312
6	5.87	10.80	4.88	3.18	5.91	11.02	5772150312	6772150312
7	6.85	11.73	5.35	3.18	6.89	14.55	5772170312	6772170312
8	7.83	12.23	5.87	3.37	7.87	16.31	5772200312	6772200312
9	8.62	12.62	6.26	3.37	7.87	17.42	5772220312	6772220312
10	9.80	13.21	6.85	3.37	7.87	18.96	5772250312	6772250312
11	10.87	13.77	7.40	3.37	7.87	21.16	5772280312	6772280312
12	11.77	14.20	7.83	3.37	7.87	21.61	5772300312	6772300312
12½	12.24	15.23	8.66	3.57	7.87	31.08	5772310312	6772310312
14	13.74	15.97	9.41	3.57	7.87	40.12	5772350312	6772350312
16	15.71	16.96	10.39	3.57	7.87	45.64	5772400312	6772400312

DETECTABLE DESIGN **AVAILABLE IN THE DETECTABLE DESIGN LINE.**

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable

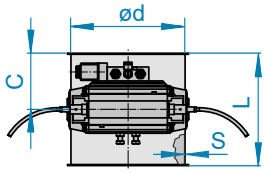
ND 3" to 8" shock explosion proof externally up to 43.52 psi, and electric shock explosion proof in a closed condition. Compressed air connection with 72.52 psi minimum operating pressure

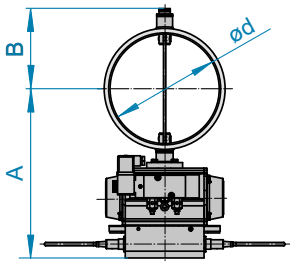


THROTTLE VALVES WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2090

- Switch-over time for 90°: < 3 seconds
- Silicone rubber seal
- Designed inside with equipment category 1 G/D, and outside with equipment category 3 D
- Control with 5/2-way solenoid valve and 2 inductive limit switches 24 V DC
- Without terminal box
- Terminal box and limit switch box on request
- Throttle valve defaults to closed when there is a loss of power
- Larger diameters available on request





Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	B	C	L	lb	14 gauge primed	14 gauge stainless steel
							Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version								
3	2.99	11.93	3.43	3.11	3.94	7.94	57720803455	67720803455
4	3.90	12.40	3.90	3.11	3.94	8.60	57721003455	67721003455
5	4.69	12.80	4.29	3.11	4.72	9.48	57721203455	67721203455
5½	5.31	13.11	4.61	3.11	5.51	10.36	57721403455	67721403455
6	5.87	13.39	4.88	3.11	5.91	11.02	57721503455	67721503455
7	6.85	13.86	5.35	3.31	6.89	14.55	57721703455	67721703455
8	7.83	15.16	5.87	3.31	7.87	16.31	57722003455	67722003455
9	8.62	15.55	6.26	3.31	7.87	17.42	57722203455	67722203455
10	9.80	16.14	6.85	3.31	7.87	18.96	57722503455	67722503455
11	10.87	16.26	7.40	3.31	7.87	21.16	57722803455	67722803455
12	11.77	17.28	7.83	3.31	7.87	21.61	57723003455	67723003455
12½	12.24	17.91	8.66	3.31	7.87	31.08	57723103455	67723103455
14	13.74	18.66	9.41	3.31	7.87	40.12	57723503455	67723503455
16	15.71	19.65	10.39	3.31	7.87	45.64	57724003455	67724003455

DETECTABLE DESIGN

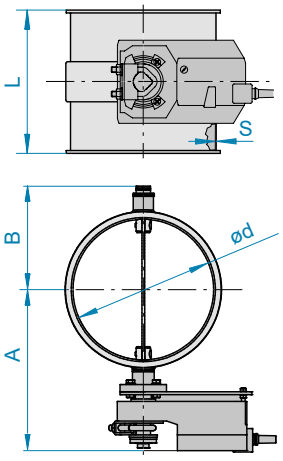
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable

ND 3" to 8" shock explosion proof externally up to 43.52 psi, and electric shock explosion proof in a closed condition. Compressed air connection with 72.52 psi minimum operating pressure





THROTTLE VALVES WITH ELECTRICALLY-OPERATED ACTUATOR

2100

- Switch-over time for 90°: approx. 150 seconds
- Limit switch indication at additional cost
- With external control voltage 0 to 10 V DC on request
- Silicone rubber seal

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	B	L	lb	14 gauge primed	14 gauge stainless steel
						Item no.	Item no.
Valve actuator, make BELIMO, voltage 230 V AC							
3	2.99	6.54	3.39	3.94	8.60	5772080551	6772080551
4	3.90	7.05	3.86	3.94	9.26	5772100551	6772100551
5	4.69	7.44	4.25	4.72	10.14	5772120551	6772120551
5½	5.31	7.76	4.57	5.51	11.02	5772140551	6772140551
6	5.87	8.03	4.84	5.91	11.46	5772150551	6772150551
7	6.85	8.50	5.31	6.89	12.79	5772170551	6772170551
8	7.83	9.02	5.83	7.87	14.55	5772200551	6772200551
Valve actuator, make BELIMO, voltage 24 V DC/AC							
3	2.99	6.54	3.39	3.94	8.60	5772080552	6772080552
4	3.90	7.05	3.86	3.94	9.26	5772100552	6772100552
5	4.69	7.44	4.25	4.72	10.14	5772120552	6772120552
5½	5.31	7.76	4.57	5.51	11.02	5772140552	6772140552
6	5.87	8.03	4.84	5.91	11.46	5772150552	6772150552
7	6.85	8.50	5.31	6.89	12.79	5772170552	6772170552
8	7.83	9.02	5.83	7.87	14.55	5772200552	6772200552

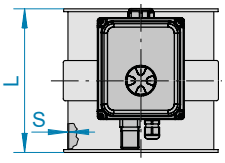
DETECTABLE DESIGN

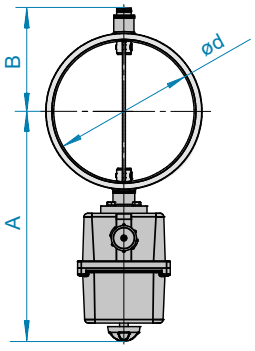
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







THROTTLE VALVES WITH ELECTRICALLY-OPERATED ADJUSTABLE ACTUATOR

- Including 2 limit switches
- Switch-over time for 90°: approx. 12 to 22 seconds
- ATEX version on request
- Silicone rubber seal
- Larger diameters available on request

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	B	L	lb	14 gauge primed	14 gauge stainless steel
						Item no.	Item no.
Adjustable drive, make AIR TORQUE, voltage 230 V AC							
3	3.03	10.08	3.23	3.94	7.50	5772080773	6772080773
4	3.90	10.51	3.66	3.94	8.16	5772100773	6772100773
5	4.69	10.91	4.06	4.72	9.04	5772120773	6772120773
5½	5.31	11.22	4.37	5.51	9.92	5772140773	6772140773
6	5.87	11.54	4.65	5.91	10.58	5772150773	6772150773
7	6.85	12.01	5.16	6.89	11.90	5772170773	6772170773
8	7.83	12.48	5.63	7.87	13.67	5772200773	6772200773
9	8.62	12.87	6.02	7.87	14.55	5772220773	6772220773
10	9.80	13.46	6.61	7.87	16.09	5772250773	6772250773
11	10.87	14.02	7.17	7.87	17.64	5772280773	6772280773
12	11.77	14.49	7.60	7.87	18.96	5772300773	6772300773
12½	12.24	15.20	8.66	7.87	25.57	5772310773	6772310773
14	13.74	15.94	9.41	7.87	28.66	5772350773	6772350773
16	15.67	16.93	10.39	7.87	33.07	5772400773	6772400773
Adjustable actuator, make AIR TORQUE, voltage 24 V DC/AC							
3	3.03	10.08	3.23	3.94	7.50	5772080774	6772080774
4	3.90	10.51	3.66	3.94	8.16	5772100774	6772100774
5	4.69	10.91	4.06	4.72	9.04	5772120774	6772120774
5½	5.31	11.22	4.37	5.51	9.92	5772140774	6772140774
6	5.87	11.54	4.65	5.91	10.58	5772150774	6772150774
7	6.85	12.01	5.16	6.89	11.90	5772170774	6772170774
8	7.83	12.48	5.63	7.87	13.67	5772200774	6772200774
9	8.62	12.87	6.02	7.87	14.55	5772220774	6772220774
10	9.80	13.46	6.61	7.87	16.09	5772250774	6772250774
11	10.87	14.02	7.17	7.87	17.64	5772280774	6772280774
12	11.77	14.49	7.60	7.87	18.96	5772300774	6772300774
12½	12.24	15.20	8.66	7.87	25.57	5772310774	6772310774
14	13.74	15.94	9.41	7.87	28.66	5772350774	6772350774
16	15.67	16.93	10.39	7.87	33.07	5772400774	6772400774

DETECTABLE DESIGN

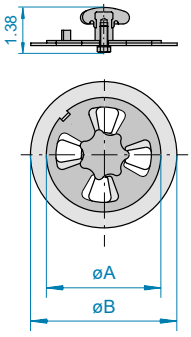
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

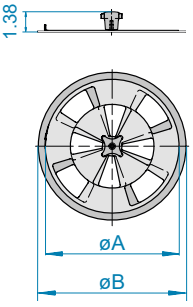
DETECTABLE DESIGN
Metal-detectable

Adjustable blank-off covers and air intake regulators





ND 3" to 8"



ND 9" to 12"

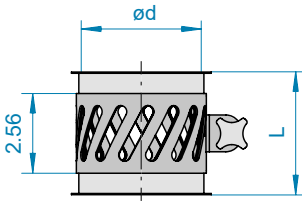
ADJUSTABLE BLANK-OFF COVERS

2030

Powder-coated or primed, and stainless steel

ND	Ø A	Ø B	lb	Opening surfaces %	16 gauge primed Item no.	16 gauge stainless steel Item no.
3	2.76	3.62	0.31	12	11081522	11083522
4	3.54	4.53	0.42	17	11101522	11103522
5	4.33	5.31	0.55	21	11121522	11123522
5½	4.96	5.94	0.66	25	11141522	11143522
6	5.51	6.50	0.75	26	11151522	11153522
7	6.50	7.48	0.97	29	11171522	11173522
8	7.48	8.46	1.23	31	11201522	11203522
9	8.27	9.25	1.43	31	11221522	11223522
10	9.45	10.43	1.79	33	11251522	11253522
11	10.63	11.50	2.14	34	11281522	11283522
12	11.42	12.40	2.47	35	11301522	11303522





AIR INTAKE REGULATORS

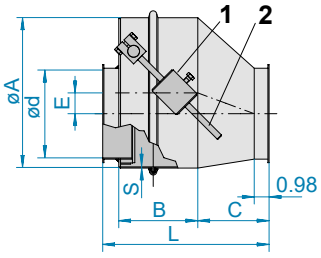
2040

Powder-coated or primed, and stainless steel

ND	Ø d	L	lb	19 gauge primed Item no.	19 gauge stainless steel Item no.
3	3.07	3.94	0.86	11081523	11083523
4	3.94	3.94	1.04	11101523	11103523
5	4.72	3.94	1.21	11121523	11123523
5½	5.35	3.94	1.34	11141523	11143523
6	5.91	3.94	1.48	11151523	11153523
7	6.89	3.94	1.68	11171523	11173523
8	7.87	3.94	1.94	11201523	11203523

FOOD GRADE
EC 1935/2004 plus FDA compliant





1 Lever arm adjustable 360°

2 Adjustable weight on lever arm

NON-RETURN VALVES

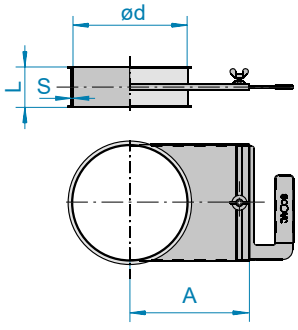
2060

- Lever arm and weights adjustable
- Inner seal NR-SBR from -40°F to +158°F
- U-shaped NBR gasket from -4°F to +212°F
- FOOD GRADE version and other seals on request

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	ØA	B	C	E	L	lb	14 gauge primed	14 gauge stainless steel
								Item no.	Item no.
3	2.99	5.91	3.74	3.54	0.79	8.27	9.48	12081575	12083575
4	3.90	6.89	4.53	3.54	8.86	9.06	10.80	12101575	12103575
5	4.69	7.87	5.12	3.94	0.98	10.04	13.78	12121575	12123575
6	5.87	9.84	5.31	4.72	1.38	11.02	18.30	12151575	12153575
7	6.85	11.81	5.91	5.51	18.70	12.40	23.15	12171575	12173575
8	7.83	11.81	7.28	5.51	1.38	13.78	25.57	12201575	12203575
10	9.80	13.78	8.86	6.50	1.38	16.34	33.29	12251575	12253575
12	11.77	17.72	10.24	7.68	2.17	18.90	50.04	12301575	12303575





PRODUCT SLIDE GATES

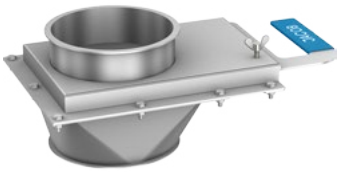
2110

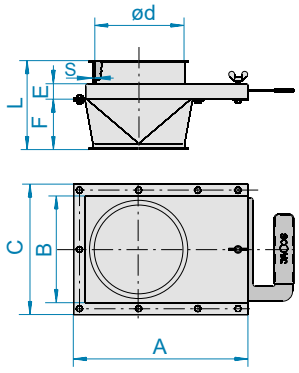
- Only for granular products
- Only for installation in inclined tube runs with the operating mechanism facing upwards

Powder-coated or primed, and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	L	lb	14 gauge primed	14 gauge stainless steel
					Item no.	Item no.
4	3.90	3.94	2.76	2.43	12101610	12103610
5	4.69	4.72	2.76	3.09	12121610	12123610
6	5.87	5.91	2.76	4.41	12151610	12153610
7	6.85	7.09	2.76	6.06	12171610	12173610
8	7.83	7.87	2.76	6.83	12201610	12203610
10	9.80	9.84	2.76	10.14	12251610	12253610
12	11.77	11.81	2.76	15.65	12301610	12303610

FOOD GRADE
EC 1935/2004 plus FDA compliant





PRODUCT SLIDE GATES, HAND-OPERATED

2120

- Stainless steel: Silicone slide plate seal
- Powder-coated or primed, and galvanized version: Felt seal
- Stainless steel version: temperature resistant from -76°F to +482°F and FOOD GRADE: compliant with EC 1935/2004 plus FDA

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	A	B	C	E	F	L	lb	19 gauge primed	14 gauge primed
									Item no.	Item no.
3	3.07	8.86	4.72	6.30	1.10	4.06	6.02	4.08	11081620	
4	3.90	8.86	4.72	6.30	1.10	2.36	4.25	4.52		12101620
5	4.69	9.88	5.51	7.09	1.10	2.76	5.43	6.61		12121620
6	5.87	11.61	7.09	8.66	0.98	3.35	5.98	9.26		12151620
7	6.85	12.60	7.87	9.65	1.10	5.71	8.35	12.79		12171620
8	7.83	16.14	9.84	11.42	1.02	4.53	7.17	16.75		12201620
10	9.80	17.01	11.81	13.58	1.18	5.91	8.54	20.94		12251620
12	11.77	20.16	13.78	15.55	1.18	8.27	10.91	29.76		12301620

Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	A	B	C	E	F	L	lb	19 gauge galvanized	14 gauge galvanized
									Item no.	Item no.
3	3.07	8.86	4.72	6.30	1.10	4.06	6.02	4.08	11082620	
4	3.90	8.86	4.72	6.30	1.10	2.36	4.25	4.52		12102620
5	4.69	9.88	5.51	7.09	1.06	2.76	5.43	6.61		12122620
6	5.87	11.61	7.09	8.66	0.98	3.35	5.98	9.26		12152620
7	6.85	12.60	7.87	9.65	1.10	5.71	8.35	12.79		12172620
8	7.83	16.14	9.84	11.42	1.02	4.53	7.17	16.75		12202620
10	9.80	17.01	11.81	13.58	1.18	5.91	8.54	20.94		12252620
12	11.77	20.16	13.78	15.55	1.18	8.27	10.91	29.76		12302620

Stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	A	B	C	E	F	L	lb	19 gauge stainless steel (F)	14 gauge stainless steel (F)
									Item no.	Item no.
3	3.07	8.86	4.72	6.30	1.10	4.06	6.02	4.08	11083620	
4	3.90	8.86	4.72	6.30	1.10	2.36	4.25	4.52		12103620
5	4.69	9.88	5.51	7.09	1.06	2.76	5.43	6.61		12123620
6	5.87	11.61	7.09	8.66	0.98	3.35	5.98	9.26		12153620
7	6.85	12.60	7.87	9.65	1.10	5.71	8.35	12.79		12173620
8	7.83	16.14	9.84	11.42	1.02	4.53	7.17	16.75		12203620
10	9.80	17.01	11.81	13.58	1.18	5.91	8.54	20.94		12253620
12	11.77	20.16	13.78	15.55	1.18	8.27	10.91	29.76		12303620

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

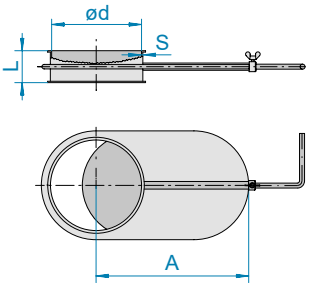
DETECTABLE DESIGN
Metal-detectable

AIR REGULATOR SLIDE GATES

2050



- Only for air handling

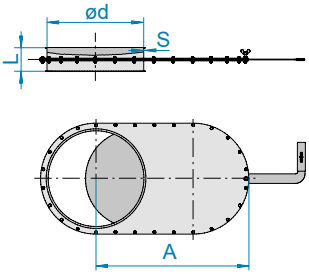


ND 3" to 12"

Powder-coated or primed (dimensions for 16 gauge tubing)

ND	Ø d	A	L	lb	16 gauge primed	14 gauge primed
					Item no.	Item no.
3	3.07	5.83	1.97	1.65	11081525	
4	3.94	6.89	2.28	2.43	11101525	
5	4.72	8.07	2.28	2.87	11121525	
5½	5.35	9.53	2.76	3.75	11141525	
6	5.91	9.84	2.76	3.97	11151525	
7	6.89	11.42	2.76	5.62	11171525	
8	7.87	13.19	2.76	7.50	11201525	
9	8.66	15.43	2.76	8.60	11221525	
10	9.84	16.14	3.94	10.14	11251525	
12	11.77	19.09	3.94	17.42		12301525





ND 14" to 20"

Electro-galvanized and stainless steel (dimensions for 16 gauge tubing)

ND	Ø d	A	L	lb	16 gauge electro-galvanized	14 gauge electro-galvanized	16 gauge stainless steel
					Item no.	Item no.	Item no.
3	3.07	5.83	1.97	1.65	11082525		11083525
4	3.94	6.89	2.28	2.43	11102525		11103525
5	4.72	8.07	2.28	2.87	11122525		11123525
5½	5.35	9.53	2.76	3.75	11142525		11143525
6	5.91	9.84	2.76	3.97	11152525		11153525
7	6.89	11.42	2.76	5.62	11172525		11173525
8	7.87	13.19	2.76	7.50	11202525		11203525
9	8.66	15.43	2.76	8.60	11222525		11223525
10	9.84	16.14	3.94	10.14	11252525		11253525
12	11.77	19.09	3.94	17.42		12302525	12303525*
14	13.74	22.05	3.94	34.17		12352525	12353525*
16	15.67	25.04	3.94	41.45		12402525	12403525*
18	17.64	27.95	3.94	49.60		12452525	12453525*
20	19.61	31.30	3.94	63.49		12502525	12503525*

* 14 gauge

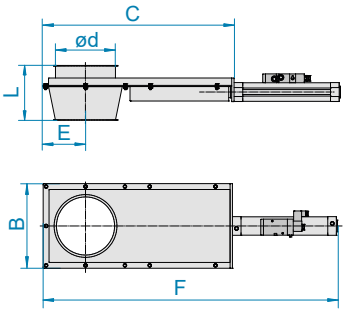
FOOD GRADE
EC 1935/2004 plus FDA compliant



INLINE SLIDE GATES, PNEUMATICALLY OPERATED

2290

- Including cylinder, make FESTO
- 5/2-way solenoid valve (1-coil) with auxiliary hand operation and 2 limit switches, potential-free
- ATEX version on request
- For shutting off granular bulk goods without overpressure in the tubing system
- Slide gate closes when there is loss of power
- Stainless steel: Silicone slide plate seal: -76°F to +482°F
- Primed version: Felt seal
- Other cylinders available on request
- Other diameters available on request



Inline slide gates, including cylinder, primed and stainless steel

ND	Ø d	B	C	E	F	L	lb	14 gauge primed	14 gauge stainless steel
								Item no.	Item no.
Control voltage 110 V AC									
4	3.90	6.50	14.65	3.15	25.59	4.09	13.01	5602100221	6602100221
5	4.69	7.28	16.34	3.54	27.24	5.43	15.21	5602120221	6602120221
6	5.87	8.86	19.88	4.33	30.79	5.98	20.28	5602150221	6602150221
7	6.85	9.84	21.85	4.84	34.72	8.35	24.25	5602170221	6602170221
8	7.83	11.61	25.39	5.83	41.54	7.17	43.87	5602200221	6602200221
10	9.80	13.78	30.71	6.81	47.64	8.54	48.94	5602250221	6602250221
12	11.77	15.75	34.65	7.80	53.54	10.91	62.61	5602300221	6602300221
Control voltage 24 V DC									
4	3.90	6.50	14.65	3.15	25.59	4.09	13.01	5602100222	6602100222
5	4.69	7.28	16.34	3.54	27.24	5.43	15.21	5602120222	6602120222
6	5.87	8.86	19.88	4.33	30.79	5.98	20.28	5602150222	6602150222
7	6.85	9.84	21.85	4.84	34.72	8.35	24.25	5602170222	6602170222
8	7.83	11.61	25.39	5.83	41.54	7.17	43.87	5602200222	6602200222
10	9.80	13.78	30.71	6.81	47.64	8.54	48.94	5602250222	6602250222
12	11.77	15.75	34.65	7.80	53.54	10.91	62.61	5602300222	6602300222

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

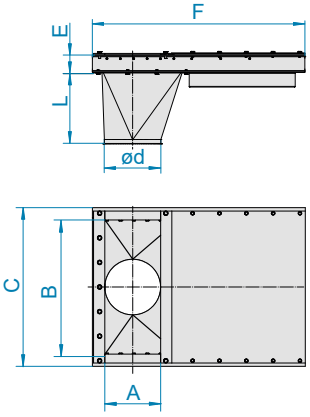
DETECTABLE DESIGN
Metal-detectable



SILO / REDLER OUTLET SLIDE GATES, PNEUMATICALLY OPERATED

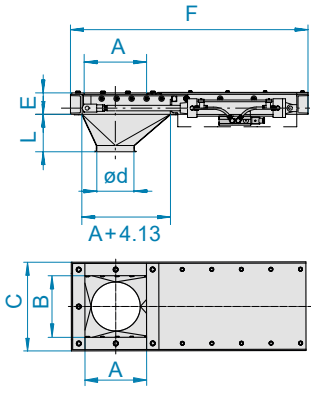
2300/2305

- Including cylinder, make FESTO
- 5/2-way solenoid valve (1-coil) with auxiliary hand operation and 2 limit switches, potential-free
- Slide plate runs on ball bearings in a U-frame
- Steel, primed, powder coating on request
- For shutting off granular bulk goods without overpressure in the tubing system
- Slide gate closes when there is loss of power
- FOOD GRADE version, powder coating, ATEX version or other cylinders on request
- Other dimensions available on request



Redler outlet slide gates (cross-slide), primed steel, color RAL 7032

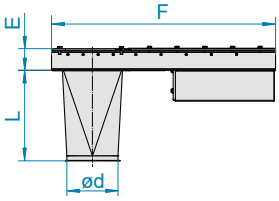
ND	Ø d	A	B	C	E	F	L	lb	Without spout	14 gauge spout
									Item no.	Item no.
Control voltage 230 V AC										
8	7.83	7.87	23.62	27.95	3.39	33.54	14.17		5710200121	5712200121
10	9.80	9.84	23.62	27.95	3.39	37.48	12.60		5710250121	5712250121
12	11.77	11.81	23.62	27.95	3.39	41.42	10.63		5710300121	5712300121
Control voltage 24 V DC										
8	7.83	7.87	23.62	27.95	3.39	33.54	14.17		5710200123	5712200123
10	9.80	9.84	23.62	27.95	3.39	37.48	12.60		5710250123	5712250123
12	11.77	11.81	23.62	27.95	3.39	41.42	10.63		5710300123	5712300123

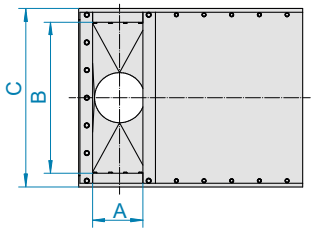


Silo outlet slide gates, primed steel, color RAL 7032

ND	Ø d	A	B	C	E	F	L	lb	Without spout	14 gauge spout
									Item no.	Item no.
Control voltage 230 V AC										
6	5.87	7.87	7.87	12.20	3.39	33.54	5.91		5760150121	5762150121
8	7.83	9.84	9.84	14.17	3.39	37.48	5.91		5760200121	5762200121
10	9.80	11.81	11.81	16.14	3.39	41.42	5.91		5760250121	5762250121
Control voltage 24 V DC										
6	5.87	7.87	7.87	12.20	3.39	33.54	5.91		5760150123	5762150123
8	7.83	9.84	9.84	14.17	3.39	37.48	5.91		5760200123	5762200123
10	9.80	11.81	11.81	16.14	3.39	41.42	5.91		5760250123	5762250123







SILO/REDLER OUTLET SLIDE GATES, ELECTRICALLY-OPERATED

2310/2315

- Including worm-gear motor 380/400 V, 50 Hz and 2 mechanical limit switches
- Slide plate runs on ball bearings in a U-frame
- Steel, primed, powder coating on request
- For shutting off granular bulk goods without overpressure in the tubing system
- FOOD GRADE version, powder coating or ATEX version available on request
- Other dimensions available on request

Redler outlet slide gates (cross-slide), primed steel, color RAL 7032

ND	Ø d	A	B	C	E	F	L	lb	Without spout	14 gauge spout
									Item no.	Item no.
8	7.83	7.87	23.62	27.95	3.39	33.27	14.17		57102005	57122005
10	9.80	9.84	23.62	27.95	3.39	39.17	12.60		57102505	57122505
12	11.77	11.81	23.62	27.95	3.39	45.08	10.63		57103005	57123005

Silo outlet slide gates, primed steel, color RAL 7032

ND	Ø d	A	B	C	E	F	L	lb	Without spout	14 gauge spout
									Item no.	Item no.
6	5.87	7.87	7.87	11.97	2.80	36.69	5.91		57601505	57621505
8	7.83	9.84	9.84	13.94	2.80	42.60	5.91		57602005	57622005
10	9.80	11.81	11.81	15.91	2.80	48.50	5.91		57602505	57622505

For more technical information go to www.jacob-pipesystems.com


JACOB
6
2
1
0



THE RIGHT WAY FOR YOUR PRODUCT: JACOB TWO-WAY DIVERTERS FOR EVERY APPLICATION

TWO-WAY DIVERTERS

Technical information	138
Two-way valves with inner collar	144
Two-way valves with seal	150
Two-way distributors	156



Cross-section: Two-way valves with inner collar 60°, symmetrical

JACOB TWO-WAY DIVERTERS

JACOB has various types of two-way diverters available to meet your requirements: From bulk goods conveying by gravity to pneumatic low pressure conveying, JACOB has just the right solution in its product line for distributing your product.

JACOB two-way diverters

	Two-way valves with inner collar	Two-way valves with seal	Two-way distributors
Application	Gravity conveying bulk goods	Gravity conveying bulk goods Ventilation systems up to 1.45 psi	Gravity conveying bulk goods Ventilation systems up to 43.51 psi (version with more powerful actuator necessary from 1.45 psi upwards)
Seal	No inner flap seal	Standard range inner flap seal NBR or silicone No seal below shaft	Standard inner flap seal in NBR or silicone Standard shaft seal in silicone
Diameters and angles	ND 4" to 12" pressed component with lip, angle: 60° ND 14" and 16" from flanged tubing, with welded-on flanges, angle: 50°	ND 4" to 12" pressed component with lip, angle: 60°	ND 4" to 12" with lip, angle: 60° or 45° ND 14" to 25" with welded-on flanges: Angle: 60° or 45°



Example: Two-way valves with inner collar 60°, symmetrical, hand-operated



Example: Two-way valves with inner collar 50°, symmetrical, construction ND > 12" with welded-on flanges, pneumatically operated with a rotary actuator

Product similar to picture

TWO-WAY VALVES WITH INNER COLLAR

Construction: symmetrical and asymmetrical

Diameters and versions: ND 4" to 16"

ND 4" to 12":

- Component die pressed in tool (consisting of 2 half shells)
- Angle between outlets 60°
- With 0.24" lip for pull ring connection
- Shaft seal with NBR double V-ring seal

ND > 12":

- Angle between outlets 50°
- Inlet and outlets with welded-on flanges according to DIN 24154-2, but without counter-flange
- Shafts with ball bearings with Viton O-ring seal

Explosion protection: Version pneumatically operated with a rotary actuator: designed for ATEX category 1 G/D internally (gas zone 0 or dust zone 20), and category 3 D externally (dust zone 22), control with 5/2-way solenoid valve and 2 inductive limit switches 24 V DC. Terminal box or limit switch box on request. All two-way valves in ATEX version are supplied with grounding lugs as standard.

Materials: 14 and 11 gauge powder-coated or primed, 14 gauge stainless steel

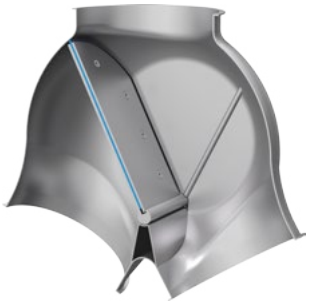
Actuation:

- Hand-operated, ND > 8" with additional lever lock, ND 14" and 16" without tension spring
- Fitted with pneumatic rotary actuator, make ELOMATIC (refer also to actuators)
- Fitted with pneumatic cylinder, make FESTO (refer also to actuators)

Modularity: With 0.24" lip for pull ring connection up to ND 12". Installation dimensions are identical to two-way valves with a seal.

Applications: For gravity conveying of free-flowing, no header, non-glutinous, granular bulk goods. With powdery products, especially with overpressure or underpressure in the closed outlet, there could be leakages in the closed outlet. Only limited use in ventilation plants is recommended due to the absence of an inner flap seal. The product flow is maintained at the inlet by covering the inner collar on the side facing the inlet flap, and at the outlet by covering the U-shaped inner flap that faces towards the continuing tube.

FOOD GRADE: All metal components and sealing materials in stainless steel that are in contact with products are compliant with EC 1935/2004 plus FDA.



Cross-section: Two-way valves with seal 60°, symmetrical



Example: Two-way valves with seal 60°, symmetrical, pneumatically operated with a rotary actuator

Product similar to picture

TWO-WAY VALVES WITH SEAL

Construction: symmetrical and asymmetrical

Diameters and versions: ND 4" to 12"

- Component die pressed in tool (consisting of 2 half shells)
- Angle between outlets 60°
- On the side with formed beads to increase tightness, (except ND 7")
- For hand-operated two-way valves, shaft sealing with NBR double V-ring seal
- For two-way valves with rotary actuator or cylinder: Shafts with ball bearings with Viton O-ring seal
- Two-way distributors should be used for diameters > ND 12"

Explosion protection: Version pneumatically operated with a rotary actuator: designed for ATEX category 1 D internally (dust zone 20), and category 3 D externally (dust zone 22), control with 5/2-way solenoid valve and 2 inductive limit switches 24 V DC. Further limit switches available on request. Without terminal box. Terminal box or limit switch box on request. All two-way valves in ATEX version are supplied with grounding lugs as standard.

Materials: 14 and 11 gauge powder-coated or primed, 14 gauge stainless steel

Actuation:

- Hand-operated, with lever lock, can also be locked in intermediate position (increased seal wear is likely)
- Fitted with pneumatic rotary actuator, make ELOMATIC (refer also to actuators)
- Fitted with pneumatic cylinder, make FESTO (refer also to actuators)

Modularity: With 0.24" lip for pull ring connection. Installation dimensions are identical to two-way valves with an inner collar.

Inner flap seal:

- Primed two-way valves, standard version with intermediate NBR seal on 3-parted inner flap
- Stainless steel two-way valves, standard version with intermediate silicone seal on 3-parted inner flap

Silicone (F)	NBR (F)
transparent	gray white
-76°F to +356°F	-22°F to +176°F
FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
Thickness: 11 or 9 gauge	Thickness: 11 or 9 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

Applications: For gravity conveying of free-flowing bulk goods and in ventilation plants up to 1.45 psi. There is no seal underneath the shaft, so that in the case of higher tightness requirements towards the closed outlet the two-way distributor should be used.

FOOD GRADE: All metal components and sealing materials in stainless steel that are in contact with products are compliant with EC 1935/2004 plus FDA.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable



Cross-section: Two-way distributor 60° up to ND 12", symmetrical



Example: Two-way distributor 60° up to ND 12", symmetrical, pneumatically operated with cylinder



Example: Two-way distributor 60° ND > 12", symmetrical, pneumatically operated with cylinder and welded-on flanges

TWO-WAY DISTRIBUTORS

Construction: symmetrical and asymmetrical

Diameters and versions:

- ND 4" to 25"
- ND > 12": Inlets and outlets with welded-on flanges according to DIN 24154-2
- Angle between outlets 45° or 60°
- The use of pneumatic actuators is recommended as they better hold the inner flap in the end position
- Below the shaft there is a silicone seal that can be re-adjusted from outside
- Shafts with ball bearings and a silicone flat ring-seal
- From ND 10 to 25" with inspection openings on both outlets for inspection purposes

Explosion protection: Version pneumatically operated with a rotary actuator: designed for ATEX category 1 G/D internally (gas zone 0 or dust zone 20), and category 3 D externally (dust zone 22), control with 5/2-way solenoid valve and 2 inductive limit switches 24 V DC. Further limit switches available on request. Without terminal box. Terminal box or limit switch box on request. All two-way distributors in ATEX version are supplied with grounding lugs as standard.

Materials: up to ND 16": 14 gauge powder-coated or primed, and stainless steel, from ND 18": 11 gauge powder-coated pr primed, and stainless steel

Actuation:

- Hand-operated, ND 4" to 12"with lever lock, can also be locked in intermediate positions (increased seal wear)
- Fitted with pneumatic rotary actuator, ND 4" to 12", make ELOMATIC (refer also to actuators)
- Fitted with pneumatic cylinder, ND 4" to 12", make FESTO (refer also to actuators)

Modularity: With 0.24" lip for pull ring connection up to ND 12".

Inner flap seal: 3-parted straight inner flap with intermediate silicone seal.
Other seal qualities on request (e.g.: NBR or EPDM)

Silicone	NBR
transparent	gray white
-76°F to +356°F	-22°F to +176°F
FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
Thickness: 11 or 9 gauge	Thickness: 11 or 9 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

Applications: For gravity conveying of free-flowing bulk goods and ventilation plants up to 4.35 psi (if more powerful actuators are fitted). The 45° version is recommended for sensitive bulk goods or for products with bad flow properties.

FOOD GRADE: All metal components and sealing materials in stainless steel that are in contact with products are compliant with EC 1935/2004 plus FDA.

Special feature: All two-way distributors have an inner flap which can be disassembled from the tubing line (for cleaning or for exchanging the seals) without removing the distributor

F FOOD GRADE
EC 1935/2004 plus FDA compliant

D DETECTABLE DESIGN
Metal-detectable

ACTUATORS FOR TWO-WAY DIVERTERS

Version fitted with pneumatic rotary actuator

- Rotary actuator, make ELOMATIC, other makes are available on request
- With 5/2-way solenoid valve (single coil) with auxiliary hand operation, in 110 V AC or 24 V DC
- The solenoid valve is bolted directly to the actuator in accordance with Namur specification
- Complete with 2 silencers for speed adjustment and compressed air connection for fabric air hoses
- Required air pressure: min. 72.52 to max. 101.53 psi
- In case of loss of power, the selected valve position remains unchanged
- Option: Information on positions via limit switches, suitable for PLC
  Switching range 4 to 250 V AC/DC at 0.1 A
- ATEX version:
  – Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
  – Designed to comply with ATEX category 3 D externally (dust zone 22)
  – Without terminal box
  – Terminal box or limit switch box on request
  – ATEX version supplied with grounding lugs as standard

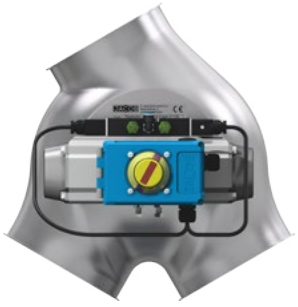
Version fitted with pneumatic cylinder

- Cylinder, make FESTO, other makes are available on request
- With 5/2-way solenoid valve (2-coil) with auxiliary hand operation; fitted to the cylinder with a hose connection and available in 24 V DC or in 110 V AC with connection sockets, IP 65
- Complete with 2 silencers for speed adjustment and a hose connection for compressed air connection for fabric air hoses
- Required air pressure: 72.52 to max. 101.52 psi
- In case of loss of power, the selected valve position remains unchanged
- Information on position via 2 potential-free limit switches with LEDs, which are positioned on the cylinder. With 6'6" long free cable end. 24 V version: Switching range 12 to 30 V DC at 500 mA, 110 V version: Switching range 4 to 230 V AC/DC at 120 mA. Protection category IP 67
- Standard version without terminal box, without wiring, with protective device made of polycarbonate

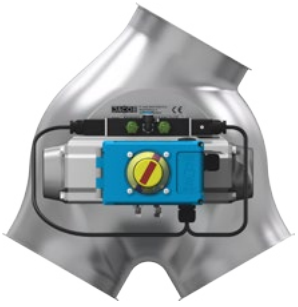


Installation of the actuator in asymmetrical components

With asymmetric components, the actuation is positioned on the right-hand side as standard according to the illustration. Installation on the left-hand side is possible at no extra charge at the customer's request.



Standard: Actuator unit right-side



Special: Actuator unit left-side

ACCESSORIES AND SPECIAL VERSIONS

Inspection openings

Installation of an inspection opening with a diameter of 4½" possible for inspection purposes on all two-way valves from 6" upwards. Upwards of ND 10", two-way distributors are fitted with two inspection openings as standard.





Manual rope device

For two-way valves with inner collar, hand-operated up to ND 8". The lever is available with an additional bolted switch device for rope or chain operation.



Proximity switch versions

Two proximity switches positioned on a base plate opposite to the actuator side, with protective cover, without terminal box

- Siemens 3SE 5232-OHD03
- Pepperl & Fuchs type NBB 5-18GM50-E2
- Pepperl & Fuchs type NCB 5-18GM40-N0, ATEX Zone 21
- ATEX limit switch IFM IG 513A, ATEX category 3D



Gear-motor

Prices for electrically-operated two-way distributors with gear-motor or cylinder and pneumatic actuators and limit switches in ex-proof version on request.

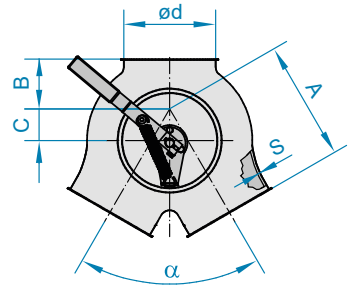
YOUR INDIVIDUAL TWO-WAY DIVERTERS

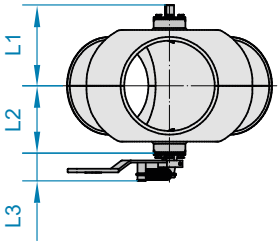
JACOB two-way diverters are available not only in a comprehensive standard range but also in a wide product range of special versions:

- Electrical actuation
- Other materials
- Rotary actuators or cylinders at the customer's request
- Lining with a wide range of different wear protection materials (refer to chapter 14 for information on lined two-way valves with an inner collar)
- Welded-on flanges: in JACOB standard (refer to chapter 11 for dimensions) or with customers' own dimensions. In this case, outlets and, if necessary, inlets are supplied in a longer version. Inlet and outlets can also be specially produced to match the diameter of connecting tubes
- Stainless steel in a pickled and passivated version
- Over 3,000 special colors (refer to chapter 1, Materials)
- ATEX-version: with terminal box or limit switch box, other inductive limit switches
- Viton shaft seal
- Fitting of inspection opening in small diameters on request (refer also to Technical information and accessories)
- Other inner flap seals for two-way valves with seal or two-way distributors
- More powerful actuators for use with differential pressures of up to 4.35 psi for two-way valves with seal or two-way distributors

TWO-WAY DIVERTERS

Two-way valves with inner collar





TWO-WAY VALVES WITH INNER COLLAR, SYMMETRICAL, HAND-OPERATED

2130

- Please also read and take into account the technical information given at the beginning of this chapter

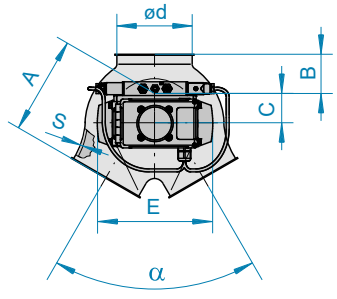
ND	α	A	B	C	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
								Item no.	Item no.	Item no.
4	60°	5.31	1.97	1.61	4.65	3.46	2.36	12101502		12103502
5	60°	6.30	1.97	2.13	5.08	3.90	2.36	12121502		12123502
6	60°	7.87	3.15	2.36	5.75	4.57	2.36	12151502	13151502	12153502
7	60°	8.58	2.48	2.95	6.26	5.08	2.36	12171505	13171505	12173505
8	60°	10.43	4.33	2.76	7.01	5.83	2.36	12201505	13201505	12203505
10	60°	12.01	4.53	3.23	7.83	6.65	2.36	12251505	13251505	12253505
12	60°	15.16	5.71	4.33	8.86	7.68	2.36	12301502	13301502	12303502
14	50°	20.47	3.74	7.28	13.58	11.81	3.54	12351505	13351505	12353505
16	50°	22.83	4.13	7.68	14.88	13.11	3.54	12401505	13401505	12403505

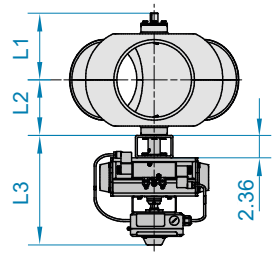


TWO-WAY VALVES WITH INNER COLLAR, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2150

- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Other rotary actuators are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter





Product similar to picture

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC											
4	60°	5.31	1.97	1.61	13.11	5.08	3.46	6.50	5582100211		6582100211
5	60°	6.30	1.97	2.13	13.11	5.08	3.90	6.50	5582120211		6582120211
6	60°	7.87	3.15	2.36	13.11	5.75	4.57	6.50	5582150211	5583150211	6582150211
7	60°	8.58	2.48	2.95	13.11	6.26	5.08	6.50	5582170111	5583170111	6582170111
8	60°	10.43	4.33	2.76	15.03	7.01	5.83	7.28	5582200111	5583200111	6582200111
10	60°	12.01	4.53	3.23	15.03	7.83	6.65	7.28	5582250111	5583250111	6582250111
12	60°	15.16	5.71	4.33	15.03	8.86	7.68	7.28	5582300211	5583300211	6582300211
14	50°	20.47	3.74	7.28	12.20	13.58	11.81	12.28	5582350111	5583350111	6582350111
16	50°	22.83	4.13	7.68	12.20	14.88	13.11	12.28	5582400111	5583400111	6582400111
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC											
4	60°	5.31	1.97	1.61	13.11	5.08	3.46	6.50	5582100212		6582100212
5	60°	6.30	1.97	2.13	13.11	5.08	3.90	6.50	5582120212		6582120212
6	60°	7.87	3.15	2.36	13.11	5.75	4.57	6.50	5582150212	5583150212	6582150212
7	60°	8.58	2.48	2.95	13.11	6.26	5.08	6.50	5582170112	5583170112	6582170112
8	60°	10.43	4.33	2.76	15.03	7.01	5.83	7.28	5582200112	5583200112	6582200112
10	60°	12.01	4.53	3.23	15.03	7.83	6.65	7.28	5582250112	5583250112	6582250112
12	60°	15.16	5.71	4.33	15.03	8.86	7.68	7.28	5582300212	5583300212	6582300212
14	50°	20.47	3.74	7.28	12.20	13.58	11.81	12.28	5582350112	5583350112	6582350112
16	50°	22.83	4.13	7.68	12.20	14.88	13.11	12.28	5582400112	5583400112	6582400112

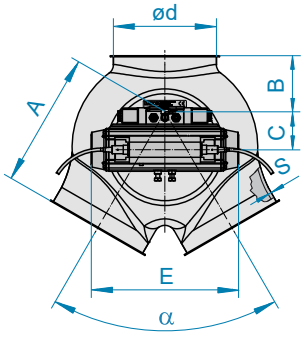
FOOD GRADE
EC 1935/2004 plus FDA compliant

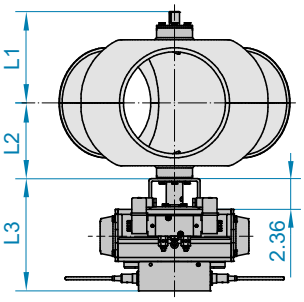


TWO-WAY VALVES WITH INNER COLLAR, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2150

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 G/D internally (gas zone 0 or dust zone 20), category 3 D externally (dust zone 22)
- Without terminal box. Available on request
- Please also read and take into account the technical information given at the beginning of this chapter



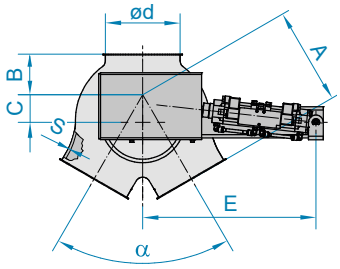


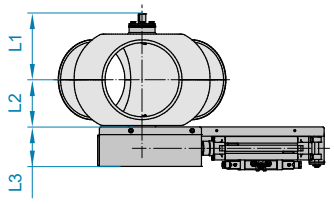
ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version											
4	60°	5.31	1.97	1.61	8.50	4.65	3.46	7.99	55821002455		65821002455
5	60°	6.30	1.97	2.13	8.50	5.08	3.90	7.99	55821202455		65821202455
6	60°	7.87	3.15	2.36	8.50	5.75	4.57	7.99	55821502455	55831502455	65821502455
7	60°	8.58	2.48	2.95	8.50	6.26	5.08	7.99	55821701455	55831701455	65821701455
8	60°	10.43	4.33	2.76	11.42	7.01	5.83	8.66	55822001455	55832001455	65822001455
10	60°	12.01	4.53	3.23	11.42	7.83	6.65	8.66	55822501455	55832501455	65822501455
12	60°	15.16	5.71	4.33	11.42	8.86	7.68	8.66	55823002455	55833002455	65823002455
14	50°	20.47	3.74	7.28	12.20	13.58	11.81	9.06	55823501455	55833501455	65823501455
16	50°	22.83	4.13	7.68	12.20	14.88	13.11	9.06	55824001455	55834001455	65824001455

FOOD GRADE
EC 1935/2004 plus FDA compliant

Two-way valves with inner collar







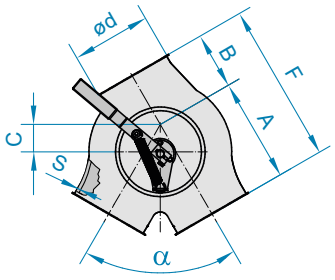
TWO-WAY VALVES WITH INNER COLLAR, SYMMETRICAL, FITTED WITH CYLINDER

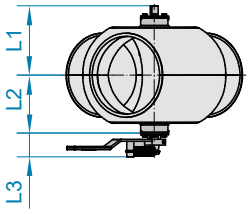
2155

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Other cylinders are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC											
4	60°	5.31	2.20	1.61	17.32	5.08	3.46	3.46	5582100221		6582100221
5	60°	6.30	1.97	2.13	17.32	5.08	3.90	3.46	5582120221		6582120221
6	60°	7.87	3.15	2.36	17.32	5.75	4.57	3.46	5582150221	5583150221	6582150221
7	60°	8.58	2.48	2.95	17.32	6.26	5.08	3.46	5582170121	5583170121	6582170121
8	60°	10.43	4.33	2.76	18.50	7.01	5.83	3.46	5582200121	5583200121	6582200121
10	60°	12.01	4.53	3.23	18.50	7.83	6.65	3.46	5582250121	5583250121	6582250121
12	60°	15.16	5.71	4.33	18.50	8.86	7.68	3.46	5582300221	5583300221	6582300221
14	50°	20.47	3.74	7.28	18.50	13.58	11.81	3.54	5582350121	5583350121	6582350121
16	50°	22.83	4.13	7.68	18.50	14.88	13.11	3.54	5582400121	5583400121	6582400121
Cylinder, make FESTO, control voltage 24 V DC											
4	60°	5.31	2.20	1.61	17.32	5.08	3.46	3.46	5582100222		6582100222
5	60°	6.30	1.97	2.13	17.32	5.08	3.90	3.46	5582120222		6582120222
6	60°	7.87	3.15	2.36	17.32	5.75	4.57	3.46	5582150222	5583150222	6582150222
7	60°	8.58	2.48	2.95	17.32	6.26	5.08	3.46	5582170122	5583170122	6582170122
8	60°	10.43	4.33	2.76	18.50	7.01	5.83	3.46	5582200122	5583200122	6582200122
10	60°	12.01	4.53	3.23	18.50	7.83	6.65	3.46	5582250122	5583250122	6582250122
12	60°	15.16	5.71	4.33	18.50	8.86	7.68	3.46	5582300222	5583300222	6582300222
14	50°	20.47	3.74	7.28	18.50	13.58	11.81	3.54	5582350122	5583350122	6582350122
16	50°	22.83	4.13	7.68	18.50	14.88	13.11	3.54	5582400122	5583400122	6582400122

FOOD GRADE
EC 1935/2004 plus FDA compliant





TWO-WAY VALVES WITH INNER COLLAR, ASYMMETRICAL, HAND-OPERATED

2140

- Standard version: Right-side mounting
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
4	60°	5.31	2.56	1.61	7.87	4.65	3.46	2.36	12101512		12103512
5	60°	6.30	2.76	2.13	9.06	5.08	3.90	2.36	12121512		12123512
6	60°	7.87	3.94	2.36	11.81	5.75	4.57	2.36	12151512	13151512	12153512
7	60°	8.58	3.54	2.95	12.13	6.26	5.08	2.36	12171517	13171517	12173517
8	60°	10.43	5.71	2.76	16.14	7.01	5.83	2.36	12201517	13201517	12203517
10	60°	12.01	6.10	3.23	18.11	7.83	6.65	2.36	12251517	13251517	12253517
12	60°	15.16	7.48	4.33	22.64	8.86	7.68	2.36	12301512	13301512	12303512
14	50°	20.47	5.91	7.28	26.38	13.58	11.81	3.54	12351515	13351515	12353515
16	50°	22.83	6.69	7.68	29.53	14.88	13.11	3.54	12401515	13401515	12403515

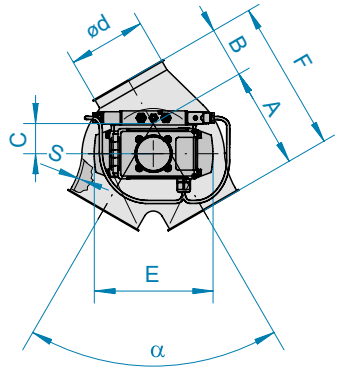


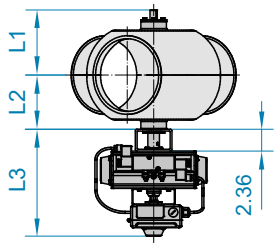
TWO-WAY VALVES WITH INNER COLLAR, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2160

- Control with 5/2-way solenoid valve (single coil)
- Standard version: Right-side mounting
- Limit switches optional
- Other rotary actuators are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
										Item no.	Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC												
4	60°	5.31	2.56	1.61	13.11	7.87	3.23	3.46	6.50	5592100211		6592100211
5	60°	6.30	2.76	2.13	13.11	9.06	3.54	3.90	6.50	5592120211		6592120211
6	60°	7.87	3.94	2.36	13.11	11.81	5.75	4.57	6.50	5592150211	5593150211	6592150211
7	60°	8.58	3.54	2.95	13.11	12.13	6.26	5.08	6.50	5592170111	5593170111	6592170111
8	60°	10.43	5.71	2.76	15.03	16.14	7.01	5.83	7.28	5592200111	5593200111	6592200111
10	60°	12.01	6.14	3.23	15.03	18.11	7.83	6.65	7.28	5592250111	5593250111	6592250111
12	60°	15.16	7.48	4.33	15.03	22.64	8.86	7.68	7.28	5592300211	5593300211	6592300211
14	50°	20.47	5.91	7.28	13.46	26.38	12.80	11.81	13.15	5592350111	5593350111	6592350111
16	50°	22.83	6.69	7.68	13.46	29.53	13.78	13.11	13.15	5592400111	5593400111	6592400111
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC												
4	60°	5.31	2.56	1.61	13.11	7.87	3.23	3.46	6.50	5592100212		6592100212
5	60°	6.30	2.76	2.13	13.11	9.06	3.54	3.90	6.50	5592120212		6592120212
6	60°	7.87	3.94	2.36	13.11	11.81	5.75	4.57	6.50	5592150212	5593150212	6592150212
7	60°	8.58	3.54	2.95	13.11	12.13	6.26	5.08	6.50	5592170112	5593170112	6592170112
8	60°	10.43	5.71	2.76	15.03	16.14	7.01	5.83	7.28	5592200112	5593200112	6592200112
10	60°	12.01	6.14	3.23	15.03	18.11	7.83	6.65	7.28	5592250112	5593250112	6592250112
12	60°	15.16	7.48	4.33	15.03	22.64	8.86	7.68	7.28	5592300212	5593300212	6592300212
14	50°	20.47	5.91	7.28	13.46	26.38	12.80	11.81	13.15	5592350112	5593350112	6592350112
16	50°	22.83	6.69	7.68	13.46	29.53	13.78	13.11	13.15	5592400112	5593400112	6592400112



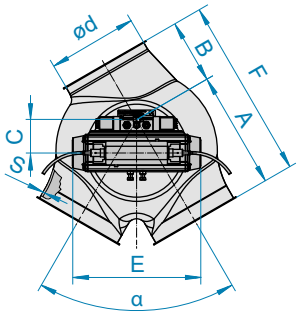


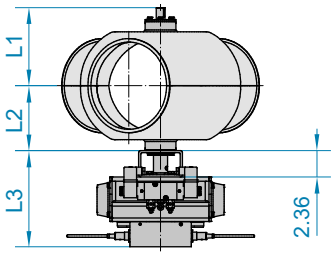
Product similar to picture

FOOD GRADE
EC 1935/2004 plus FDA compliant

Two-way valves with inner collar







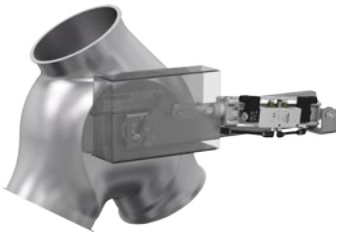
TWO-WAY VALVES WITH INNER COLLAR, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

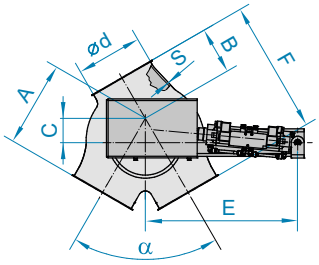
2160

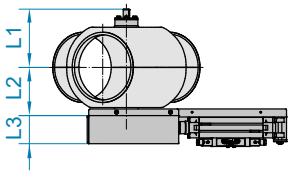
- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 G/D internally (gas zone 0 or dust zone 20), category 3 D externally (dust zone 22)
- Without terminal box. Available on request
- Standard version: Right-side mounting
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
										Item no.	Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version												
4	60°	5.31	2.56	1.61	8.50	7.87	4.65	3.46	7.99	55921002455		65921002455
5	60°	6.30	2.76	2.13	8.50	9.06	5.08	3.90	7.99	55921202455		65921202455
6	60°	7.87	3.94	2.36	8.50	11.81	5.75	4.57	7.99	55921502455	55931502455	65921502455
7	60°	8.58	3.54	2.95	8.50	12.13	6.26	5.08	7.99	55921701455	55931701455	65921701455
8	60°	10.43	5.71	2.76	11.42	16.14	7.01	5.83	8.66	55922001455	55932001455	65922001455
10	60°	12.01	6.10	3.23	11.42	18.11	7.83	6.65	8.66	55922501455	55932501455	65922501455
12	60°	15.16	7.48	4.33	11.42	22.64	8.86	7.68	8.66	55923002455	55933002455	65923002455
14	50°	20.47	5.91	7.28	12.20	26.38	13.58	11.81	9.06	55923501455	55933501455	65923501455
16	50°	22.83	6.69	7.68	12.20	29.53	14.88	13.11	9.06	55924001455	55934001455	65924001455

FOOD GRADE
EC 1935/2004 plus FDA compliant







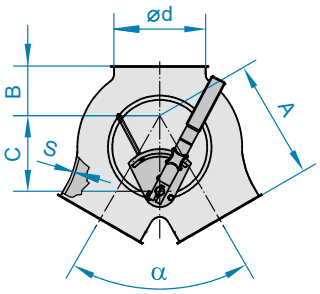
TWO-WAY VALVES WITH INNER COLLAR, ASYMMETRICAL, FITTED WITH CYLINDER

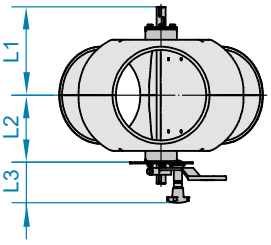
2165

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Standard version: Right-side mounting
- Other cylinders are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
										Item no.	Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC												
4	60°	5.31	2.56	1.61	17.32	7.87	3.23	3.46	3.46	5592100221		6592100221
5	60°	6.30	2.76	2.13	17.32	9.06	3.54	3.90	3.46	5592120221		6592120221
6	60°	7.87	3.94	2.36	17.32	11.81	5.75	4.57	3.46	5592150221	5593150221	6592150221
7	60°	8.58	3.54	2.95	17.32	12.13	6.26	5.08	3.46	5592170121	5593170121	6592170121
8	60°	10.43	5.71	2.76	18.50	16.14	7.01	5.83	3.46	5592200121	5593200121	6592200121
10	60°	12.01	6.14	3.23	18.50	18.11	7.83	6.65	3.46	5592250121	5593250121	6592250121
12	60°	15.16	7.48	4.33	18.50	22.64	8.86	7.68	3.46	5592300221	5593300221	6592300221
14	50°	20.47	5.91	7.28	18.50	26.38	12.80	11.81	3.54	5592350121	5593350121	6592350121
16	50°	22.83	6.69	7.68	18.50	29.53	13.78	13.11	3.54	5592400121	5593400121	6592400121
Cylinder, make FESTO, control voltage 24 V DC												
4	60°	5.31	2.56	1.61	17.32	7.87	3.23	3.46	3.46	5592100222		6592100222
5	60°	6.30	2.76	2.13	17.32	9.06	3.54	3.90	3.46	5592120222		6592120222
6	60°	7.87	3.94	2.36	17.32	11.81	5.75	4.57	3.46	5592150222	5593150222	6592150222
7	60°	8.58	3.54	2.95	17.32	12.13	6.26	5.08	3.46	5592170122	5593170122	6592170122
8	60°	10.43	5.71	2.76	18.50	16.14	7.01	5.83	3.46	5592200122	5593200122	6592200122
10	60°	12.01	6.14	3.23	18.50	18.11	7.83	6.65	3.46	5592250122	5593250122	6592250122
12	60°	15.16	7.48	4.33	18.50	22.64	8.86	7.68	3.46	5592300222	5593300222	6592300222
14	50°	20.47	5.91	7.28	18.50	26.38	12.80	11.81	3.54	5592350122	5593350122	6592350122
16	50°	22.83	6.69	7.68	18.50	29.53	13.78	13.11	3.54	5592400122	5593400122	6592400122

FOOD GRADE
EC 1935/2004 plus FDA compliant





TWO-WAY VALVES WITH SEAL, SYMMETRICAL, HAND-OPERATED

2170

- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
								Item no.	Item no.	Item no.
4	60°	5.31	1.97	3.43	5.51	3.46	3.46	12101503		121035037
5	60°	6.30	1.97	4.41	5.83	3.78	3.46	12121503		121235037
6	60°	7.87	3.15	5.35	6.61	4.69	3.46	12151503	13151503	121535037
7	60°	8.58	2.48	6.69	7.80	5.79	3.46	12171506	13171506	121735067
8	60°	10.43	4.33	6.57	7.83	5.91	3.46	12201506	13201506	122035067
10	60°	12.01	4.53	8.46	8.66	6.73	3.46	12251506	13251506	122535067
12	60°	15.16	5.71	10.24	10.39	8.39	3.46	12301503	13301503	123035037

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.



TWO-WAY VALVES WITH SEAL, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

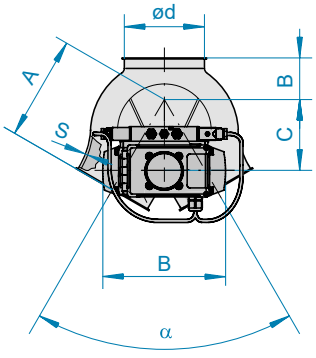
2190

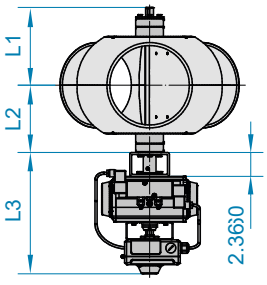
- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Other rotary actuators are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC											
4	60°	5.31	1.97	3.43	7.56	5.51	4.33	8.62	5542100211		65421002711
5	60°	6.30	1.97	4.41	7.56	5.83	4.65	8.62	5542120211		65421202711
6	60°	7.87	3.15	5.35	8.46	6.61	5.43	9.07	5542150211	5543150211	65421502711
7	60°	8.58	2.48	6.69	8.46	7.80	6.61	9.07	5542170111	5543170111	65421701711
8	60°	10.43	4.33	6.57	9.72	7.83	6.65	9.37	5542200111	5543200111	65422001711
10	60°	12.01	4.53	8.46	10.04	8.66	7.48	10.67	5542250111	5543250111	65422501711
12	60°	15.16	5.71	10.24	10.04	10.39	9.21	10.67	5542300211	5543300211	65423002711
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC											
4	60°	5.31	1.97	3.43	7.56	5.51	4.33	8.62	5542100212		65421002712
5	60°	6.30	1.97	4.41	7.56	5.83	4.65	8.62	5542120212		65421202712
6	60°	7.87	3.15	5.35	8.46	6.61	5.43	9.07	5542150212	5543150212	65421502712
7	60°	8.58	2.48	6.69	8.46	7.80	6.61	9.07	5542170112	5543170112	65421701712
8	60°	10.43	4.33	6.57	9.72	7.83	6.65	9.37	5542200112	5543200112	65422001712
10	60°	12.01	4.53	8.46	10.04	8.66	7.48	10.67	5542250112	5543250112	65422501712
12	60°	15.16	5.71	10.24	10.04	10.39	9.21	10.67	5542300212	5543300212	65423002712

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.



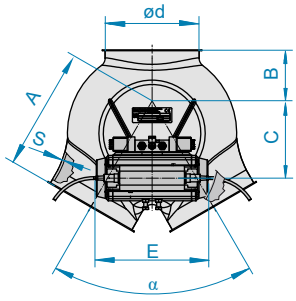


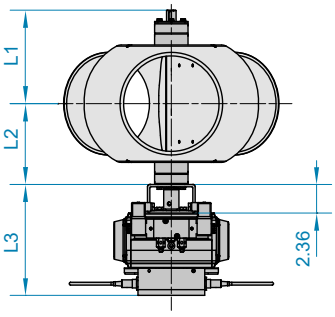
Product similar to picture

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY VALVES WITH SEAL, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2190

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 D internally (dust zone 20), and category 3 D externally (dust zone 22)
- Two-way valves available on request
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version											
4	60°	5.31	1.97	3.43	8.27	5.51	4.33	8.66	55421002455		654210027455
5	60°	6.30	1.97	4.41	8.27	5.83	4.65	8.66	55421202455		654212027455
6	60°	7.87	3.15	5.35	8.27	6.61	5.43	8.66	55421502455	55431502455	654215027455
7	60°	8.58	2.48	6.69	8.27	7.80	6.61	8.66	55421701455	55431701455	654217017455
8	60°	10.43	4.33	6.57	9.49	7.83	6.65	9.17	55422001455	55432001455	654220017455
10	60°	12.01	4.53	8.46	9.49	8.66	7.48	9.17	55422501455	55432501455	654225017455
12	60°	15.16	5.71	10.24	9.49	9.65	8.46	9.17	55423002455	55433002455	654230027455

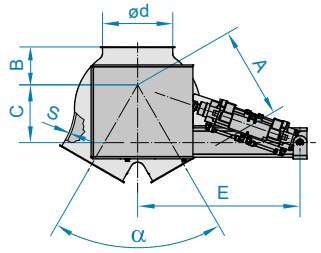
DETECTABLE DESIGN

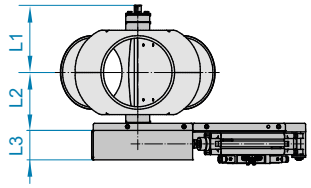
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY VALVES WITH SEAL, SYMMETRICAL, FITTED WITH CYLINDER

2195

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Other cylinders are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter

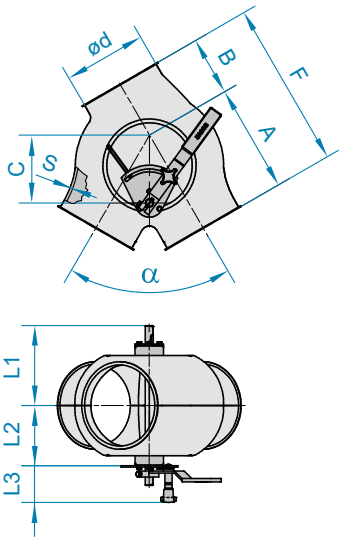
ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
									Item no.	Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC											
4	60°	5.31	1.97	3.43	17.32	5.51	4.33	3.46	5542100221		65421002721
5	60°	6.30	1.97	4.41	17.32	5.83	4.65	3.46	5542120221		65421202721
6	60°	7.87	3.15	5.35	17.32	6.61	5.43	3.46	5542150221	5543150221	65421502721
7	60°	8.58	2.48	6.69	17.32	7.80	6.61	3.46	5542170121	5543170121	65421701721
8	60°	10.43	4.33	6.57	18.50	7.83	6.65	3.46	5542200121	5543200121	65422001721
10	60°	12.01	4.53	8.46	18.50	8.66	7.48	3.46	5542250121	5543250121	65422501721
12	60°	15.16	5.71	10.24	18.50	10.39	9.21	3.46	5542300221	5543300221	65423002721
Cylinder, make FESTO, control voltage 24 V DC											
4	60°	5.31	1.97	3.43	17.32	5.51	4.33	3.46	5542100222		65421002722
5	60°	6.30	1.97	4.41	17.32	5.83	4.65	3.46	5542120222		65421202722
6	60°	7.87	3.15	5.35	17.32	6.61	5.43	3.46	5542150222	5543150222	65421502722
7	60°	8.58	2.48	6.69	17.32	7.80	6.61	3.46	5542170122	5543170122	65421701722
8	60°	10.43	4.33	6.57	18.50	7.83	6.65	3.46	5542200122	5543200122	65422001722
10	60°	12.01	4.53	8.46	18.50	8.66	7.48	3.46	5542250122	5543250122	65422501722
12	60°	15.16	5.71	10.24	18.50	10.39	9.21	3.46	5542300222	5543300222	65423002722

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable



TWO-WAY VALVES WITH SEAL, ASYMMETRICAL, HAND-OPERATED

2180

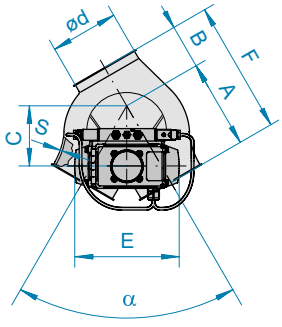
- Standard version: Right-side mounting
- Please also read and take into account the technical information given at the beginning of this chapter

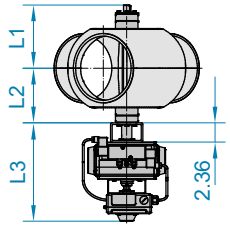
ND	α	A	B	C	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel (F)
									Item no.	Item no.	Item no.
4	60°	5.31	2.56	3.43	7.87	5.51	3.46	3.46	12101513		121035137
5	60°	6.30	2.76	4.41	9.06	5.83	3.78	3.46	12121513		121235137
6	60°	7.87	3.94	5.35	11.81	6.61	4.69	3.46	12151513	13151513	121535137
7	60°	8.58	3.54	6.69	12.13	7.80	5.87	3.46	12171516	13171516	121735167
8	60°	10.43	5.71	6.57	16.14	7.83	5.91	3.46	12201516	13201516	122035167
10	60°	12.01	6.10	8.46	18.11	8.66	6.73	3.46	12251516	13251516	122535167
12	60°	15.16	7.48	10.24	22.64	10.39	7.76	3.46	12301513	13301513	123035137

(D) DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.







Product similar to picture

TWO-WAY VALVES WITH SEAL, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2200

- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Other rotary actuators are available. Prices on request
- Standard version: Right-side mounting
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel (F)
										Item no.	Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC												
4	60°	5.31	2.56	3.43	7.56	7.87	5.51	4.33	8.62	5552100211		65521002711
5	60°	6.30	2.76	4.41	7.56	9.06	5.83	4.65	8.62	5552120211		65521202711
6	60°	7.87	3.94	5.35	8.46	11.81	6.61	5.43	9.07	5552150211	5553150211	65521502711
7	60°	8.58	3.54	6.69	8.46	12.13	7.80	6.61	9.07	5552170111	5553170111	65521701711
8	60°	10.43	5.71	6.57	9.72	16.14	7.83	6.65	9.37	5552200111	5553200111	65522001711
10	60°	12.01	6.10	8.46	10.04	18.11	8.66	7.48	10.67	5552250111	5553250111	65522501711
12	60°	15.16	7.48	10.24	10.04	22.64	10.39	9.21	10.67	5552300211	5553300211	65523002711
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC												
4	60°	5.31	2.56	3.43	7.56	7.87	5.51	4.33	8.62	5552100212		65521002712
5	60°	6.30	2.76	4.41	7.56	9.06	5.83	4.65	8.62	5552120212		65521202712
6	60°	7.87	3.94	5.35	8.46	11.81	6.61	5.43	9.07	5552150212	5553150212	65521502712
7	60°	8.58	3.54	6.69	8.46	12.13	7.80	6.61	9.07	5552170112	5553170112	65521701712
8	60°	10.43	5.71	6.57	9.72	16.14	7.83	6.65	9.37	5552200112	5553200112	65522001712
10	60°	12.01	6.10	8.46	10.04	18.11	8.66	7.48	10.67	5552250112	5553250112	65522501712
12	60°	15.16	7.48	10.24	10.04	22.64	10.39	9.21	10.67	5552300212	5553300212	65523002712

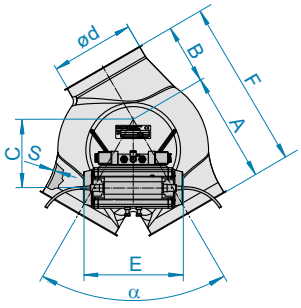
(D) DETECTABLE DESIGN

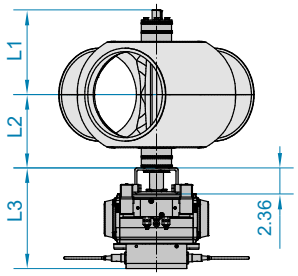
AVAILABLE IN THE DETECTABLE DESIGN LINE.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable







TWO-WAY VALVES WITH SEAL, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2200

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 D internally (dust zone 20), and category 3 D externally (dust zone 22)
- Two-way valves available on request
- Standard version: Right-side mounting
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel
										Item no.	Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version												
4	60°	5.31	2.56	3.43	8.27	7.87	5.51	4.33	8.66	55521002455		655210027455
5	60°	6.30	2.76	4.41	8.27	9.06	5.83	4.65	8.66	55521202455		655212027455
6	60°	7.87	3.94	5.35	8.27	11.81	6.61	5.43	8.66	55521502455	55531502455	655215027455
7	60°	8.58	3.54	6.69	8.27	12.13	7.80	6.61	8.66	55521701455	55531701455	655217017455
8	60°	10.43	5.71	6.57	9.49	16.14	7.83	6.65	9.17	55522001455	55532001455	655220017455
10	60°	12.01	6.10	8.46	9.49	18.11	8.66	7.48	9.17	55522501455	55532501455	655225017455
12	60°	15.16	7.48	10.24	9.49	22.64	9.65	8.46	9.17	55523002455	55533002455	655230027455

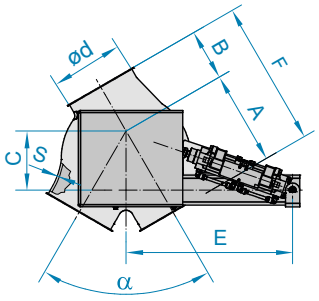
DETECTABLE DESIGN

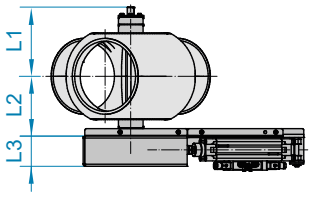
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY VALVES WITH SEAL, ASYMMETRICAL, FITTED WITH CYLINDER

2205

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Standard version: Right-side mounting
- Other cylinders are available. Prices on request
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	11 gauge primed	14 gauge stainless steel (F)
										Item no.	Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC												
4	60°	5.31	2.56	3.43	17.32	7.87	5.51	4.33	3.46	5552100221		65521002721
5	60°	6.30	2.76	4.41	17.32	9.06	5.83	4.65	3.46	5552120221		65521202721
6	60°	7.87	3.94	5.35	17.32	11.81	6.61	5.43	3.46	5552150221	5553150221	65521502721
7	60°	8.58	3.54	6.69	17.32	12.13	7.80	6.61	3.46	5552170121	5553170121	65521701721
8	60°	10.43	5.71	6.57	18.50	16.14	7.83	6.65	3.46	5552200121	5553200121	65522001721
10	60°	12.01	6.10	8.46	18.50	18.11	8.66	7.48	3.46	5552250121	5553250121	65522501721
12	60°	15.16	7.48	10.24	18.50	22.64	10.39	9.21	3.46	5552300221	5553300221	65523002721
Cylinder, make FESTO, control voltage 24 V DC												
4	60°	5.31	2.56	3.43	17.32	7.87	5.51	4.33	3.46	5552100222		65521002722
5	60°	6.30	2.76	4.41	17.32	9.06	5.83	4.65	3.46	5552120222		65521202722
6	60°	7.87	3.94	5.35	17.32	11.81	6.61	5.43	3.46	5552150222	5553150222	65521502722
7	60°	8.58	3.54	6.69	17.32	12.13	7.80	6.61	3.46	5552170122	5553170122	65521701722
8	60°	10.43	5.71	6.57	18.50	16.14	7.83	6.65	3.46	5552200122	5553200122	65522001722
10	60°	12.01	6.10	8.46	18.50	18.11	8.66	7.48	3.46	5552250122	5553250122	65522501722
12	60°	15.16	7.48	10.24	18.50	22.64	10.39	9.21	3.46	5552300222	5553300222	65523002722

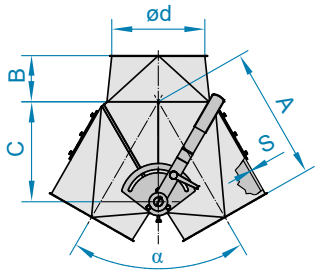
(D) DETECTABLE DESIGN

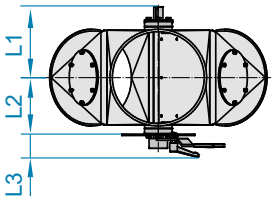
AVAILABLE IN THE DETECTABLE DESIGN LINE.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 60°, SYMMETRICAL, HAND-OPERATED

2250

- The use of pneumatic actuators is recommended as they better hold the inner flap in the end position
- Shaft and inner flap with seal
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	L1	L2	L3	14 gauge primed	14 gauge stainless steel
								Item no.	Item no.
4	60°	8.66	2.56	5.04	4.61	3.23	2.95	12101508	12103508
5	60°	9.45	2.76	5.71	5.00	3.62	2.95	12121508	12123508
6	60°	9.84	2.95	6.61	5.59	4.21	2.95	12151508	12153508
8	60°	11.81	4.13	8.58	6.46	5.20	2.95	12201508	12203508
10	60°	14.57	5.12	10.91	8.07	6.30	2.95	12251508	12253508
12	60°	17.13	5.91	12.83	9.06	7.28	2.95	12301508	12303508

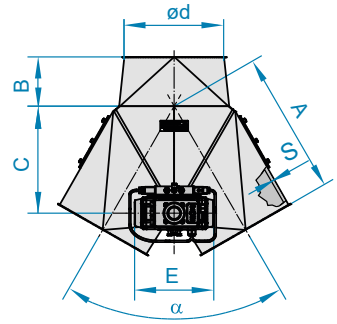
DETECTABLE DESIGN

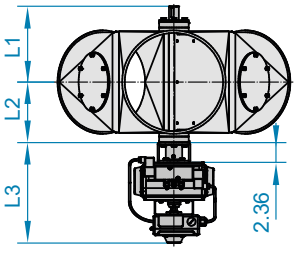
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







Product similar to picture

TWO-WAY DISTRIBUTORS 60°, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2270

- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Other rotary actuators are available. Prices on request
- Shaft and inner flap with seal
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC										
4	60°	8.66	2.56	5.04	8.46	4.61	3.23	9.06	5982100111	6982100111
5	60°	9.45	2.76	5.71	8.46	5.00	3.62	9.06	5982120111	6982120111
6	60°	9.84	2.95	6.61	8.46	5.59	4.21	9.06	5982150111	6982150111
8	60°	11.81	4.13	8.58	9.72	6.46	5.20	9.37	5982200111	6982200111
10	60°	14.57	5.12	10.91	10.04	8.07	6.30	10.67	5982250111	6982250111
12	60°	17.13	5.91	12.83	10.04	9.06	7.28	10.67	5982300111	6982300111
14	60°	19.69	7.28	14.84	15.83	10.04	8.27	13.94	5982350111	6982350111
16	60°	23.62	8.07	16.81	15.83	11.02	9.25	13.94	5982400111	6982400111
18	60°	25.59	8.86	18.66	19.13	11.85	10.28	15.43	5983450111*	6983450111*
20	60°	27.56	9.84	22.60	19.13	12.83	11.26	15.43	5983500111*	6983500111*
22	60°	31.50	11.81	23.31	19.13	17.20	14.06	15.43	5983560111*	6983560111*
25	60°	35.43	13.78	26.06	19.13	18.58	15.43	15.43	5983630111*	6983630111*
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC										
4	60°	8.66	2.56	5.04	8.46	4.61	3.23	9.06	5982100112	6982100112
5	60°	9.45	2.76	5.71	8.46	5.00	3.62	9.06	5982120112	6982120112
6	60°	9.84	2.95	6.61	8.46	5.59	4.21	9.06	5982150112	6982150112
8	60°	11.81	4.13	8.58	9.72	6.46	5.20	9.37	5982200112	6982200112
10	60°	14.57	5.12	10.91	10.04	8.07	6.30	10.67	5982250112	6982250112
12	60°	17.13	5.91	12.83	10.04	9.06	7.28	10.67	5982300112	6982300112
14	60°	19.69	7.28	14.84	15.83	10.04	8.27	13.94	5982350112	6982350112
16	60°	23.62	8.07	16.81	15.83	11.02	9.25	13.94	5982400112	6982400112
18	60°	25.59	8.86	18.66	19.13	11.85	10.28	15.43	5983450112*	6983450112*
20	60°	27.56	9.84	22.60	19.13	12.83	11.26	15.43	5983500112*	6983500112*
22	60°	31.50	11.81	23.31	19.13	17.20	14.06	15.43	5983560112*	6983560112*
25	60°	35.43	13.78	26.06	19.13	18.58	15.43	15.43	5983630112*	6983630112*

*11 gauge

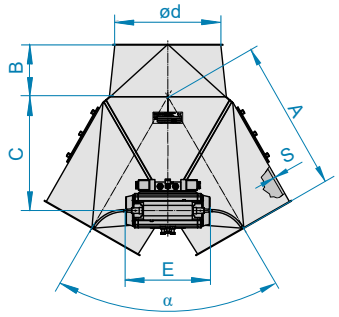
DETECTABLE DESIGN

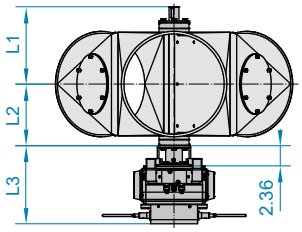
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 60°, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2270

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 G/D internally (gas zone 0 or dust zone 20), and category 3 D externally (dust zone 22)
- Without terminal box. Available on request
- Shaft and inner flap with seal
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version										
4	60°	8.66	2.56	5.04	8.27	4.61	3.23	8.66	59821001455	69821001455
5	60°	9.45	2.76	5.71	8.27	5.00	3.62	8.66	59821201455	69821201455
6	60°	9.84	2.95	6.61	9.65	5.59	4.21	9.17	59821501455	69821501455
8	60°	11.81	4.13	8.58	9.65	6.46	5.20	9.17	59822001455	69822001455
10	60°	14.57	5.12	10.91	10.24	8.07	6.30	9.65	59822501455	69822501455
12	60°	17.13	5.91	12.83	10.24	9.06	7.28	9.65	59823001455	69823001455
14	60°	19.69	7.28	14.84	13.58	10.04	8.27	10.71	59823501455	69823501455
16	60°	23.62	8.07	16.81	13.58	11.02	9.25	10.71	59824001455	69824001455
18	60°	25.59	8.86	18.66	10.24	17.72	11.89	11.89	59834501455*	69834501455*
20	60°	27.56	9.84	20.63	10.24	18.70	12.87	11.89	59835001455*	69835001455*
22	60°	31.50	11.81	23.31	10.24	19.88	14.06	11.89	59835601455*	69835601455*
25	60°	35.43	13.78	26.06	10.24	21.26	15.43	11.89	59836301455*	69836301455*

*11 gauge

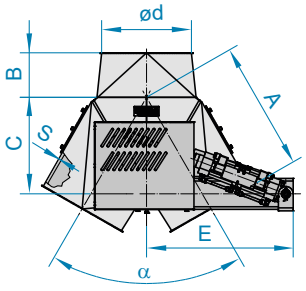
DETECTABLE DESIGN

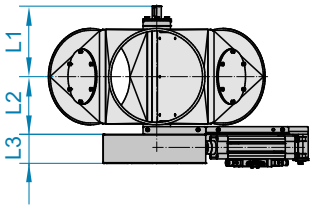
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 60°, SYMMETRICAL, FITTED WITH CYLINDER

2275

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Other cylinders are available. Prices on request
- Shaft and inner flap with seal
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC										
4	60°	8.66	2.56	5.04	17.32	4.61	3.23	3.46	5982100121	6982100121
5	60°	9.45	2.76	5.71	17.32	5.00	3.62	3.46	5982120121	6982120121
6	60°	9.84	2.95	6.61	18.50	5.59	4.21	3.46	5982150121	6982150121
8	60°	11.81	4.13	8.58	18.50	6.46	5.20	3.46	5982200121	6982200121
10	60°	14.57	5.12	10.91	18.50	8.07	6.30	3.54	5982250121	6982250121
12	60°	17.13	5.91	12.83	18.50	9.06	7.28	3.54	5982300121	6982300121
14	60°	19.69	7.28	14.84	19.29	10.04	8.27	4.33	5982350121	6982350121
16	60°	23.62	8.07	16.81	19.29	11.02	9.25	4.33	5982400121	6982400121
18	60°	25.59	8.86	18.66	21.26	11.85	10.28	4.33	5983450121*	6983450121*
20	60°	27.56	9.84	22.60	21.26	12.83	11.26	4.33	5983500121*	6983500121*
22	60°	31.50	11.81	23.31	21.26	17.20	14.06	4.33	5983560121*	6983560121*
25	60°	35.43	13.78	26.06	21.26	18.58	15.43	4.33	5983630121*	6983630121*
Cylinder, make FESTO, control voltage 24 V DC										
4	60°	8.66	2.56	5.04	17.32	4.61	3.23	3.46	5982100122	6982100122
5	60°	9.45	2.76	5.71	17.32	5.00	3.62	3.46	5982120122	6982120122
6	60°	9.84	2.95	6.61	18.50	5.59	4.21	3.46	5982150122	6982150122
8	60°	11.81	4.13	8.58	18.50	6.46	5.20	3.46	5982200122	6982200122
10	60°	14.57	5.12	10.91	18.50	8.07	6.30	3.54	5982250122	6982250122
12	60°	17.13	5.91	12.83	18.50	9.06	7.28	3.54	5982300122	6982300122
14	60°	19.69	7.28	14.84	19.29	10.04	8.27	4.33	5982350122	6982350122
16	60°	23.62	8.07	16.81	19.29	11.02	9.25	4.33	5982400122	6982400122
18	60°	25.59	8.86	18.66	21.26	11.85	10.28	4.33	5983450122*	6983450122*
20	60°	27.56	9.84	22.60	21.26	12.83	11.26	4.33	5983500122*	6983500122*
22	60°	31.50	11.81	23.31	21.26	17.20	14.06	4.33	5983560122*	6983560122*
25	60°	35.43	13.78	26.06	21.26	18.58	15.43	4.33	5983630122*	6983630122*

*11 gauge

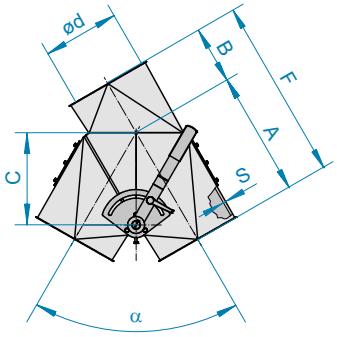
DETECTABLE DESIGN

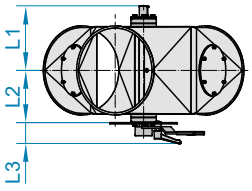
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 60°, ASYMMETRICAL, HAND-OPERATED

2260

- Standard version: Right-side mounting
- The use of pneumatic actuators is recommended as they better hold the inner flap in the end position
- Shaft and inner flap with seal
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
4	60°	8.66	3.94	5.04	12.60	4.61	3.23	2.95	12101509	12103509
5	60°	9.45	4.33	5.71	13.78	5.00	3.62	2.95	12121509	12123509
6	60°	9.84	4.53	6.61	14.37	5.59	4.21	2.95	12151509	12153509
8	60°	11.81	5.51	8.58	17.32	6.46	5.20	2.95	12201509	12203509
10	60°	14.57	6.69	10.91	21.26	8.07	6.30	2.95	12251509	12253509
12	60°	17.13	7.87	12.83	25.00	9.06	7.28	2.95	12301509	12303509

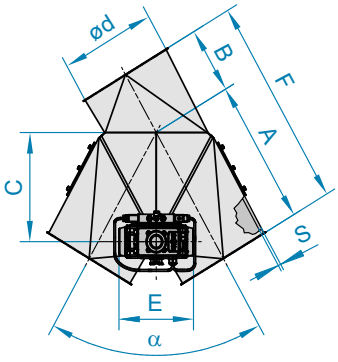
DETECTABLE DESIGN

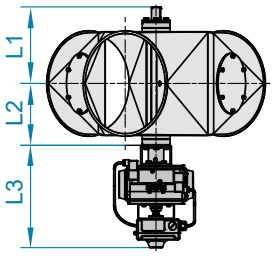
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







Product similar to picture

TWO-WAY DISTRIBUTORS 60°, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2280

- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Other rotary actuators are available. Prices on request
- Standard version: Right-side mounting
- Shaft and inner flap with seal
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
										Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC											
4	60°	8.66	3.94	5.04	8.46	12.60	4.61	3.23	9.06	5992100111	6992100111
5	60°	9.45	4.33	5.71	8.46	13.78	5.00	3.62	9.06	5992120111	6992120111
6	60°	9.84	4.53	6.61	8.46	14.37	5.59	4.21	9.06	5992150111	6992150111
8	60°	11.81	5.51	8.58	9.72	17.32	6.46	5.20	9.37	5992200111	6992200111
10	60°	14.57	6.69	10.91	10.04	21.26	8.07	6.30	10.67	5992250111	6992250111
12	60°	17.13	7.87	12.83	10.04	25.00	9.06	7.28	10.67	5992300111	6992300111
14	60°	19.69	9.06	14.84	15.83	28.74	10.04	8.27	13.94	5992350111	6992350111
16	60°	23.62	9.84	16.81	15.83	33.46	11.02	9.25	13.94	5992400111	6992400111
18	60°	25.59	10.63	18.66	19.13	36.22	11.85	10.08	15.43	5993450111*	6993450111*
20	60°	27.56	11.81	21.34	19.13	39.37	12.83	11.34	15.43	5993500111*	6993500111*
22	60°	31.50	13.78	23.31	19.13	45.28	17.20	14.06	15.43	5993560111*	6993560111*
25	60°	35.43	15.75	26.06	19.13	51.18	18.58	15.43	15.43	5993630111*	6993630111*
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC											
4	60°	8.66	3.94	5.04	8.46	12.60	4.61	3.23	9.06	5992100112	6992100112
5	60°	9.45	4.33	5.71	8.46	13.78	5.00	3.62	9.06	5992120112	6992120112
6	60°	9.84	4.53	6.61	8.46	14.37	5.59	4.21	9.06	5992150112	6992150112
8	60°	11.81	5.51	8.58	9.72	17.32	6.46	5.20	9.37	5992200112	6992200112
10	60°	14.57	6.69	10.91	10.04	21.26	8.07	6.30	10.67	5992250112	6992250112
12	60°	17.13	7.87	12.83	10.04	25.00	9.06	7.28	10.67	5992300112	6992300112
14	60°	19.69	9.06	14.84	15.83	28.74	10.04	8.27	13.94	5992350112	6992350112
16	60°	23.62	9.84	16.81	15.83	33.46	11.02	9.25	13.94	5992400112	6992400112
18	60°	25.59	10.63	18.66	19.13	36.22	11.85	10.08	15.43	5993450112*	6993450112*
20	60°	27.56	11.81	21.34	19.13	39.37	12.83	11.34	15.43	5993500112*	6993500112*
22	60°	31.50	13.78	23.31	19.13	45.28	17.20	14.06	15.43	5993560112*	6993560112*
25	60°	35.43	15.75	26.06	19.13	51.18	18.58	15.43	15.43	5993630112*	6993630112*

*11 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

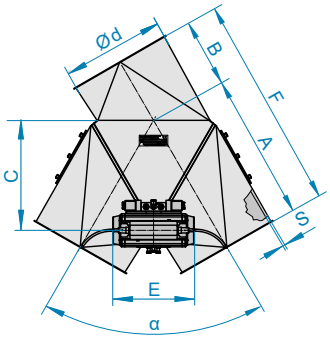
DETECTABLE DESIGN
Metal-detectable

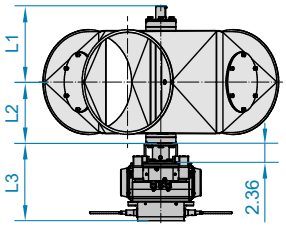


TWO-WAY DISTRIBUTORS 60°, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2280

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 G/D internally (gas zone 0 or dust zone 20), category 3 D externally (dust zone 22)
- Without terminal box. Available on request
- Shaft and inner flap with seal
- Standard version: Right-side mounting
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter





ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
										Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version											
4	60°	8.66	3.94	5.04	8.27	12.60	4.61	3.23	8.66	59921001455	69921001455
5	60°	9.45	4.33	5.71	8.27	13.78	5.00	3.62	8.66	59921201455	69921201455
6	60°	9.84	4.53	6.61	9.65	14.37	5.59	4.21	9.17	59921501455	69921501455
8	60°	11.81	5.51	8.58	9.65	17.32	6.46	5.20	9.17	59922001455	69922001455
10	60°	14.57	6.69	10.91	10.24	21.26	8.07	6.30	9.65	59922501455	69922501455
12	60°	17.13	7.87	12.83	10.24	25.00	9.06	7.28	9.65	59923001455	69923001455
14	60°	19.69	9.06	14.84	13.58	28.74	10.04	8.27	10.71	59923501455	69923501455
16	60°	23.62	9.84	16.81	13.58	33.46	11.02	9.25	10.71	59924001455	69924001455
18	60°	25.59	10.63	18.66	10.24	36.22	17.72	11.89	11.89	59934501455*	69934501455*
20	60°	27.56	11.81	20.63	10.24	39.37	18.70	12.87	11.89	59935001455*	69935001455*
22	60°	31.50	13.78	23.31	10.24	45.28	19.88	14.06	11.89	59935601455*	69935601455*
25	60°	35.43	15.75	26.06	10.24	51.18	21.26	15.43	11.89	59936301455*	69936301455*

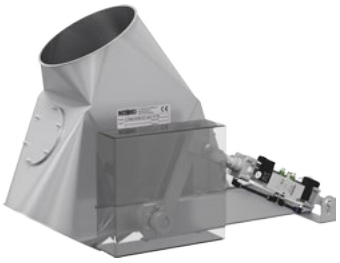
*11 gauge

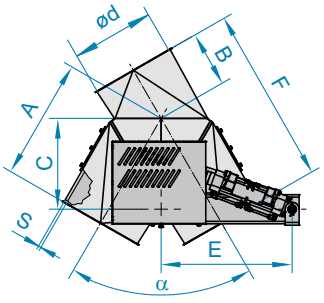
DETECTABLE DESIGN

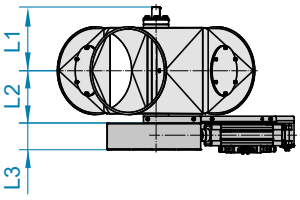
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 60°, ASYMMETRICAL, FITTED WITH CYLINDER

2285

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Standard version: Right-side mounting
- Other cylinders are available. Prices on request
- Shaft and inner flap with seal
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
										Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC											
4	60°	8.66	3.94	5.04	17.32	12.60	4.61	3.23	3.46	5992100121	6992100121
5	60°	9.45	4.33	5.71	17.32	13.78	5.00	3.62	3.46	5992120121	6992120121
6	60°	9.84	4.53	6.61	18.50	14.37	5.59	4.21	3.46	5992150121	6992150121
8	60°	11.81	5.51	8.58	18.50	17.32	6.46	5.20	3.46	5992200121	6992200121
10	60°	14.57	6.69	10.91	18.50	21.26	8.07	6.30	3.54	5992250121	6992250121
12	60°	17.13	7.87	12.83	18.50	25.00	9.06	7.28	3.54	5992300121	6992300121
14	60°	19.69	9.06	14.84	19.29	28.74	10.04	8.27	4.33	5992350121	6992350121
16	60°	23.62	9.84	16.81	19.29	33.46	11.02	9.25	4.33	5992400121	6992400121
18	60°	25.59	10.63	18.66	21.26	36.22	11.85	10.08	4.33	5993450121*	6993450121*
20	60°	27.56	11.81	21.34	21.26	39.37	12.83	11.34	4.33	5993500121*	6993500121*
22	60°	31.50	13.78	23.31	21.26	45.28	17.20	14.06	4.33	5993560121*	6993560121*
25	60°	35.43	15.75	26.06	21.26	51.18	18.58	15.43	4.33	5993630121*	6993630121*
Cylinder, make FESTO, control voltage 24 V DC											
4	60°	8.66	3.94	5.04	17.32	12.60	4.61	3.23	3.46	5992100122	6992100122
5	60°	9.45	4.33	5.71	17.32	13.78	5.00	3.62	3.46	5992120122	6992120122
6	60°	9.84	4.53	6.61	18.50	14.37	5.59	4.21	3.46	5992150122	6992150122
8	60°	11.81	5.51	8.58	18.50	17.32	6.46	5.20	3.46	5992200122	6992200122
10	60°	14.57	6.69	10.91	18.50	21.26	8.07	6.30	3.54	5992250122	6992250122
12	60°	17.13	7.87	12.83	18.50	25.00	9.06	7.28	3.54	5992300122	6992300122
14	60°	19.69	9.06	14.84	19.29	28.74	10.04	8.27	4.33	5992350122	6992350122
16	60°	23.62	9.84	16.81	19.29	33.46	11.02	9.25	4.33	5992400122	6992400122
18	60°	25.59	10.63	18.66	21.26	36.22	11.85	10.08	4.33	5993450122*	6993450122*
20	60°	27.56	11.81	21.34	21.26	39.37	12.83	11.34	4.33	5993500122*	6993500122*
22	60°	31.50	13.78	23.31	21.26	45.28	17.20	14.06	4.33	5993560122*	6993560122*
25	60°	35.43	15.75	26.06	21.26	51.18	18.58	15.43	4.33	5993630122*	6993630122*

*11 gauge

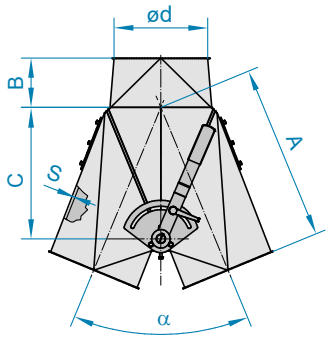
DETECTABLE DESIGN

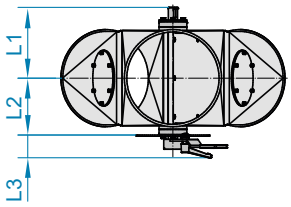
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 45°, SYMMETRICAL, HAND-OPERATED

2210

- The use of pneumatic actuators is recommended as they better hold the inner flap in the end position
- Shaft and inner flap with seal
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	L1	L2	L3	14 gauge primed	14 gauge stainless steel
								Item no.	Item no.
4	45°	10.24	2.56	6.50	4.61	3.23	2.95	12101518	12103518
5	45°	11.02	2.76	7.28	5.00	3.62	2.95	12121518	12123518
6	45°	12.40	2.95	8.86	5.59	4.21	2.95	12151518	12153518
7	45°	13.78	3.54	10.04	5.94	4.69	2.95	12171518	12173518
8	45°	15.75	4.13	11.38	6.46	5.20	2.95	12201518	12203518
10	45°	18.90	5.12	14.02	8.07	6.30	2.95	12251518	12253518
12	45°	22.44	6.30	16.77	9.06	7.28	2.95	12301518	12303518

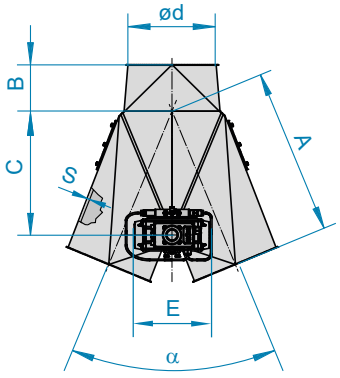
DETECTABLE DESIGN

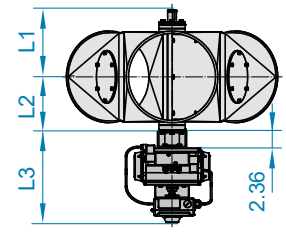
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







Product similar to picture

TWO-WAY DISTRIBUTORS 45°, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2230

- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Shaft and inner flap with seal
- Other rotary actuators are available. Prices on request
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC										
4	45°	10.24	2.56	6.50	8.46	4.61	3.23	9.06	5922100111	6922100111
5	45°	11.02	2.76	7.28	8.46	5.00	4.21	9.06	5922120111	6922120111
6	45°	12.40	2.95	8.86	8.46	5.59	4.21	9.06	5922150111	6922150111
7	45°	13.78	3.54	10.04	9.72	5.91	4.69	9.37	5922170111	6922170111
8	45°	15.75	4.13	11.38	9.72	6.46	5.20	9.37	5922200111	6922200111
10	45°	18.90	5.12	14.02	10.04	8.07	6.30	10.67	5922250111	6922250111
12	45°	22.44	6.30	16.77	10.04	9.06	7.28	10.67	5922300111	6922300111
14	45°	24.33	7.28	19.49	15.83	9.37	8.19	13.94	5922350111	6922350111
16	45°	27.48	8.07	21.97	15.83	10.35	9.17	13.94	5922400111	6922400111
18	45°	31.50	8.86	24.57	19.13	17.72	11.89	15.43	5923450111*	6923450111*
20	45°	34.65	9.84	27.01	19.13	18.70	12.87	15.43	5923500111*	6923500111*
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC										
4	45°	10.24	2.56	6.50	8.46	4.61	3.23	9.06	5922100112	6922100112
5	45°	11.02	2.76	7.28	8.46	5.00	4.21	9.06	5922120112	6922120112
6	45°	12.40	2.95	8.86	8.46	5.59	4.21	9.06	5922150112	6922150112
7	45°	13.78	3.54	10.04	9.72	5.91	4.69	9.37	5922170112	6922170112
8	45°	15.75	4.13	11.38	9.72	6.46	5.20	9.37	5922200112	6922200112
10	45°	18.90	5.12	14.02	10.04	8.07	6.30	10.67	5922250112	6922250112
12	45°	22.44	6.30	16.77	10.04	9.06	7.28	10.67	5922300112	6922300112
14	45°	24.33	7.28	19.49	15.83	9.37	8.19	13.94	5922350112	6922350112
16	45°	27.48	8.07	21.97	15.83	10.35	9.17	13.94	5922400112	6922400112
18	45°	31.50	8.86	24.57	19.13	17.72	11.89	15.43	5923450112*	6923450112*
20	45°	34.65	9.84	27.01	19.13	18.70	12.87	15.43	5923500112*	6923500112*

*11 gauge

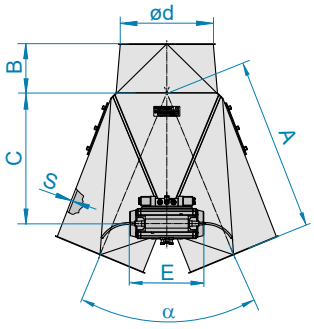
DETECTABLE DESIGN

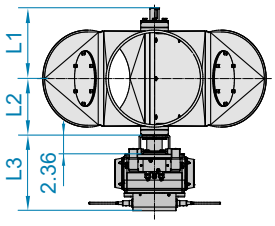
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 45°, SYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2230

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Designed to comply with ATEX category 1 G/D internally (gas zone 0 or dust zone 20), category 3 D externally (dust zone 22)
- Without terminal box. Available on request
- ND > 12" with welded-on flanges
- Shaft and inner flap with seal
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version										
4	45°	10.24	2.56	6.50	8.27	4.61	3.23	8.66	59221001455	69221001455
5	45°	11.02	2.76	7.28	8.27	5.00	3.62	8.66	59221201455	69221201455
6	45°	12.40	2.95	8.86	9.65	5.59	4.21	9.17	59221501455	69221501455
7	45°	13.78	3.54	10.04	9.65	5.94	4.69	9.17	59221701455	69221701455
8	45°	15.75	4.13	11.38	9.65	6.46	5.20	9.17	59222001455	69222001455
10	45°	18.90	5.12	14.02	10.24	8.07	6.30	9.65	59222501455	69222501455
12	45°	22.44	6.30	16.77	10.24	9.06	7.28	9.65	59223001455	69223001455
14	45°	24.33	7.28	19.49	13.58	9.37	8.27	10.71	59223501455	69223501455
16	45°	27.48	8.07	21.97	13.58	10.35	9.25	10.71	59224001455	69224001455
18	45°	31.50	8.86	24.57	10.24	17.72	11.89	11.89	59234501455*	69234501455*
20	45°	34.65	9.84	27.56	10.24	18.70	12.87	11.89	59235001455*	69235001455*

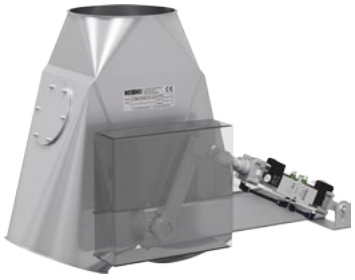
*11 gauge

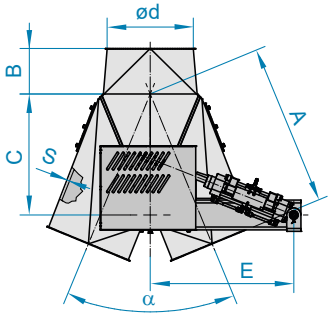
DETECTABLE DESIGN

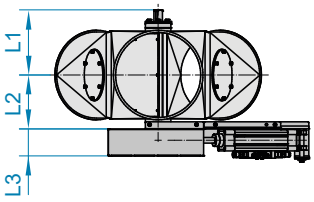
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 45°, SYMMETRICAL, FITTED WITH CYLINDER

2235

- Standard version: Right-side mounting
- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Shaft and inner flap with seal
- Other cylinders are available. Prices on request
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC										
4	45°	10.24	2.56	6.50	17.32	4.61	3.23	3.46	5922100121	6922100121
5	45°	11.02	2.76	7.28	17.32	5.00	3.62	3.46	5922120121	6922120121
6	45°	12.40	2.95	8.86	18.50	5.59	4.21	3.46	5922150121	6922150121
7	45°	13.78	3.54	10.04	18.50	5.91	4.69	3.46	5922170121	6922170121
8	45°	15.75	4.13	11.38	18.50	6.46	5.20	3.46	5922200121	6922200121
10	45°	18.90	5.12	14.02	18.50	8.07	6.30	3.54	5922250121	6922250121
12	45°	22.44	6.30	16.77	18.50	9.06	7.28	3.54	5922300121	6922300121
14	45°	24.33	7.28	19.49	19.29	9.37	8.19	4.33	5922350121	6922350121
16	45°	27.48	8.07	21.97	19.29	10.35	9.17	4.33	5922400121	6922400121
18	45°	31.50	8.07	24.57	21.26	17.72	11.89	4.33	5923450121*	6923450121*
20	45°	34.65	9.84	27.01	21.26	18.70	12.87	4.33	5923500121*	6923500121*
Cylinder, make FESTO, control voltage 24 V DC										
4	45°	10.24	2.56	6.50	17.32	4.61	3.23	3.46	5922100122	6922100122
5	45°	11.02	2.76	7.28	17.32	5.00	3.62	3.46	5922120122	6922120122
6	45°	12.40	2.95	8.86	18.50	5.59	4.21	3.46	5922150122	6922150122
7	45°	13.78	3.54	10.04	18.50	5.91	4.69	3.46	5922170122	6922170122
8	45°	15.75	4.13	11.38	18.50	6.46	5.20	3.46	5922200122	6922200122
10	45°	18.90	5.12	14.02	18.50	8.07	6.30	3.54	5922250122	6922250122
12	45°	22.44	6.30	16.77	18.50	9.06	7.28	3.54	5922300122	6922300122
14	45°	24.33	7.28	19.49	19.29	9.37	8.19	4.33	5922350122	6922350122
16	45°	27.48	8.07	21.97	19.29	10.35	9.17	4.33	5922400122	6922400122
18	45°	31.50	8.07	24.57	21.26	17.72	11.89	4.33	5923450122*	6923450122*
20	45°	34.65	9.84	27.01	21.26	18.70	12.87	4.33	5923500122*	6923500122*

*11 gauge

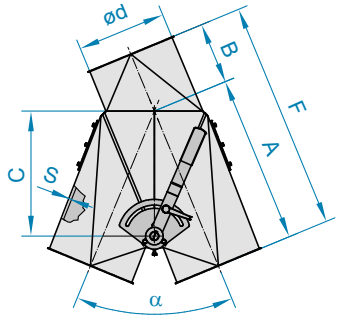
DETECTABLE DESIGN

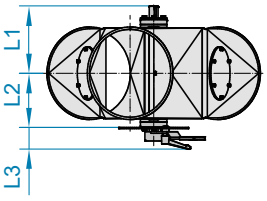
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 45°, ASYMMETRICAL, HAND-OPERATED

2220

- Standard version: Right-side mounting
- Shaft and inner flap with seal
- The use of pneumatic actuators is recommended as they better hold the inner flap in the end position
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
									Item no.	Item no.
4	45°	10.24	3.94	6.50	14.17	4.61	3.23	2.95	12101519	12103519
5	45°	11.02	4.33	7.28	15.35	5.00	3.62	2.95	12121519	12123519
6	45°	12.40	4.53	8.86	16.93	5.59	4.21	2.95	12151519	12153519
7	45°	13.78	4.92	10.04	18.70	5.94	4.69	2.95	12171519	12173519
8	45°	15.75	5.51	11.38	21.26	6.46	5.20	2.95	12201519	12203519
10	45°	18.90	6.69	14.02	25.59	8.07	6.30	2.95	12251519	12253519
12	45°	22.44	8.27	16.77	30.71	9.06	7.28	2.95	12301519	12303519

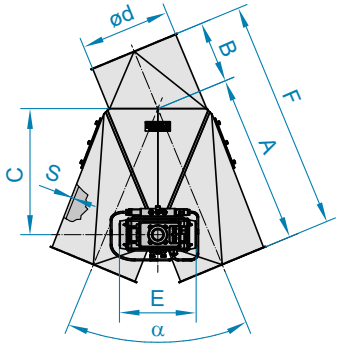
DETECTABLE DESIGN

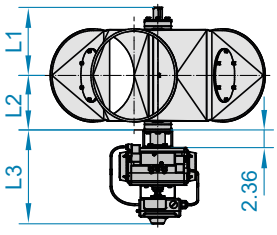
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







Product similar to picture

TWO-WAY DISTRIBUTORS 45°, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR

2240

- Control with 5/2-way solenoid valve (single coil)
- Limit switches optional
- Standard version: Right-side mounting
- Shaft and inner flap with seal
- Other rotary actuators are available. Prices on request
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
										Item no.	Item no.
Pneumatic rotary actuator, make ELOMATIC, control voltage 110 V AC											
4	45°	10.24	3.94	6.50	8.46	14.17	4.61	3.23	9.06	5912100111	6912100111
5	45°	11.02	4.33	7.28	8.46	15.35	5.00	3.62	9.06	5912120111	6912120111
6	45°	12.40	4.53	8.86	8.46	16.93	5.59	4.21	9.06	5912150111	6912150111
7	45°	13.78	4.92	10.04	9.72	18.70	5.94	4.69	9.37	5912170111	6912170111
8	45°	15.75	5.51	11.38	9.72	21.26	6.46	5.20	9.37	5912200111	6912200111
10	45°	18.90	6.69	14.02	10.04	25.59	8.07	6.30	10.67	5912250111	6912250111
12	45°	22.44	8.27	16.77	10.04	30.71	9.06	7.28	10.67	5912300111	6912300111
14	45°	24.33	9.06	19.49	15.83	33.39	9.37	8.19	13.94	5912350111	6912350111
16	45°	27.48	9.84	21.97	15.83	37.32	10.35	9.17	13.94	5912400111	6912400111
18	45°	31.50	10.63	24.57	19.13	42.13	17.72	11.89	15.43	5913450111*	6913450111*
20	45°	34.65	11.81	27.01	19.13	46.46	18.70	12.87	15.43	5913500111*	6913500111*
Pneumatic rotary actuator, make ELOMATIC, control voltage 24 V DC											
4	45°	10.24	3.94	6.50	8.46	14.17	4.61	3.23	9.06	5912100112	6912100112
5	45°	11.02	4.33	7.28	8.46	15.35	5.00	3.62	9.06	5912120112	6912120112
6	45°	12.40	4.53	8.86	8.46	16.93	5.59	4.21	9.06	5912150112	6912150112
7	45°	13.78	4.92	10.04	9.72	18.70	5.91	4.69	9.37	5912170112	6912170112
8	45°	15.75	5.51	11.38	9.72	21.26	6.46	5.20	9.37	5912200112	6912200112
10	45°	18.90	6.69	14.02	10.04	25.59	8.07	6.30	10.67	5912250112	6912250112
12	45°	22.44	8.27	16.77	10.04	30.71	9.06	7.28	10.67	5912300112	6912300112
14	45°	24.33	9.06	19.49	15.83	33.39	9.37	8.19	13.94	5912350112	6912350112
16	45°	27.48	9.84	21.97	15.83	37.32	10.35	9.17	13.94	5912400112	6912400112
18	45°	31.50	10.63	24.57	19.13	42.13	17.72	11.89	15.43	5913450112*	6913450112*
20	45°	34.65	11.81	27.01	19.13	46.46	18.70	12.87	15.43	5913500112*	6913500112*

*11 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

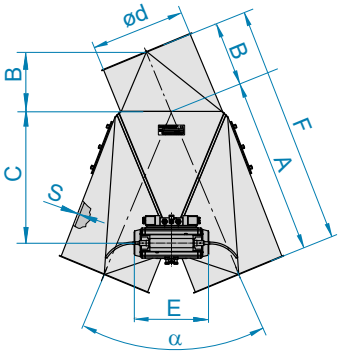
DETECTABLE DESIGN
Metal-detectable

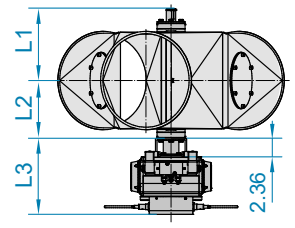


TWO-WAY DISTRIBUTORS 45°, ASYMMETRICAL, FITTED WITH PNEUMATIC ROTARY ACTUATOR, ATEX

2240

- Control with 5/2-way solenoid valve (2-coil) and 2 inductive limit switches 24 V DC
- Standard version: Right-side mounting
- Designed to comply with ATEX category 1 G/D internally (gas zone 0 or dust zone 20), category 3 D externally (dust zone 22)
- Without terminal box. Available on request
- Shaft and inner flap with seal
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter





ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
										Item no.	Item no.
Pneumatic rotary actuator, make AIR TORQUE, control voltage 24 V DC, ATEX version											
4	45°	10.24	3.94	6.50	8.27	14.17	4.61	3.23	8.66	59121001455	69121001455
5	45°	11.02	4.33	7.28	8.27	15.35	5.00	3.62	8.66	59121201455	69121201455
6	45°	12.40	4.53	8.86	9.65	16.93	5.59	4.21	9.17	59121501455	69121501455
7	45°	13.78	4.92	10.04	9.65	18.70	5.94	4.69	9.17	59121701455	69121701455
8	45°	15.75	5.51	11.38	9.65	21.26	6.46	5.20	9.17	59122001455	69122001455
10	45°	18.90	6.69	14.02	10.24	25.59	8.07	6.30	9.65	59122501455	69122501455
12	45°	22.44	8.27	16.77	10.24	30.71	9.06	7.28	9.65	59123001455	69123001455
14	45°	24.33	9.06	19.49	13.58	33.39	9.37	8.27	10.71	59123501455	69123501455
16	45°	27.48	9.84	21.97	13.58	37.32	10.35	9.25	10.71	59124001455	69124001455
18	45°	31.50	10.63	24.57	10.24	42.13	17.72	11.89	11.89	59134501455*	69134501455*
20	45°	34.65	11.81	27.56	10.24	46.46	18.70	12.87	11.89	59135001455*	69135001455*

*11 gauge

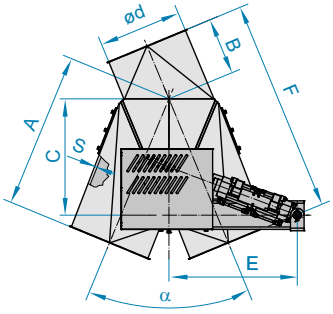
DETECTABLE DESIGN

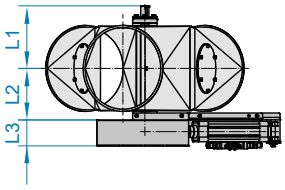
AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable







TWO-WAY DISTRIBUTORS 45°, ASYMMETRICAL, FITTED WITH CYLINDER

2245

- Control with 5/2-way solenoid valve (2-coil) and 2 limit switches on the cylinder
- Standard version: Right-side mounting
- Shaft and inner flap with seal
- Other cylinders are available. Prices on request
- ND > 12" with welded-on flanges
- Please also read and take into account the technical information given at the beginning of this chapter

ND	α	A	B	C	E	F	L1	L2	L3	14 gauge primed	14 gauge stainless steel
										Item no.	Item no.
Cylinder, make FESTO, control voltage 110 V AC											
4	45°	10.24	3.94	6.50	17.32	14.17	4.61	3.23	3.46	5912100121	6912100121
5	45°	11.02	4.33	7.28	17.32	15.35	5.00	3.62	3.46	5912120121	6912120121
6	45°	12.40	4.53	8.86	18.50	16.93	5.59	4.21	3.46	5912150121	6912150121
7	45°	13.78	4.92	10.04	18.50	18.70	5.91	4.69	3.46	5912170121	6912170121
8	45°	15.75	5.51	11.38	18.50	21.26	6.46	5.20	3.46	5912200121	6912200121
10	45°	18.90	6.69	14.02	18.50	25.59	8.07	6.30	3.54	5912250121	6912250121
12	45°	22.44	8.27	16.77	18.50	30.71	9.06	7.28	3.54	5912300121	6912300121
14	45°	24.33	9.06	19.49	19.29	33.39	9.37	8.19	4.33	5912350121	6912350121
16	45°	27.48	9.84	21.97	19.29	37.32	10.35	9.17	4.33	5912400121	6912400121
18	45°	31.50	10.63	24.57	21.26	42.13	17.72	11.89	4.33	5913450121*	6913450121*
20	45°	34.65	11.81	27.01	21.26	46.46	18.70	12.87	4.33	5913500121*	6913500121*
Cylinder, make FESTO, control voltage 24 V DC											
4	45°	10.24	3.94	6.50	17.32	14.17	4.61	3.23	3.46	5912100122	6912100122
5	45°	11.02	4.33	7.28	17.32	15.35	5.00	3.62	3.46	5912120122	6912120122
6	45°	12.40	4.53	8.86	18.50	16.93	5.59	4.21	3.46	5912150122	6912150122
7	45°	13.78	4.92	10.04	18.50	18.70	5.91	4.69	3.46	5912170122	6912170122
8	45°	15.75	5.51	11.38	18.50	21.26	6.46	5.20	3.46	5912200122	6912200122
10	45°	18.90	6.69	14.02	18.50	25.59	8.07	6.30	3.54	5912250122	6912250122
12	45°	22.44	8.27	16.77	18.50	30.71	9.06	7.28	3.54	5912300122	6912300122
14	45°	24.33	9.06	19.49	19.29	33.39	9.37	8.19	4.33	5912350122	6912350122
16	45°	27.48	9.84	21.97	19.29	37.32	10.35	9.17	4.33	5912400122	6912400122
18	45°	31.50	10.63	24.57	21.26	42.13	17.72	11.89	4.33	5913450122*	6913450122*
20	45°	34.65	11.81	27.01	21.26	46.46	18.70	12.87	4.33	5913500122*	6913500122*

*11 gauge

DETECTABLE DESIGN

AVAILABLE IN THE DETECTABLE DESIGN LINE.

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable



JACOB MULTI PORT DISTRIBUTORS – FOR FLEXIBLE DISTRIBUTION OF YOUR BULK GOODS

MULTI PORT DISTRIBUTORS

Technical information	174
Turn head distributors	178
Twin-pipe turn head distributors	182
Turn head distributors, dust-tight version	184
Multi port diverters	188

MULTI PORT DISTRIBUTORS

JACOB multi port distributors are the compact solution for conveying bulk goods to many different machines or silos in the course of the production process. JACOB has a range of multi port distributors with up to 2 x 20 outlets available in its standard product line in order to meet a variety of requirements.



TURN HEAD DISTRIBUTORS 45° AND 60°

Versions and applications

Primed steel version. For distributing granular bulk goods, such as grain, by gravity without overpressure inside the tubing system and with no demand for dust-tightness internally.

Feeding from the top through the turn-pipe towards the required outlet inside a closed casing.

Rotary tube seal pressed on with two pressure springs. Support by means of four lugs fixed to the lower funnel circumference according to data sheet.

Electrically operated with a gear motor, motor current 380 to 400 volt, 3-phase, 50 Hz.

2.3 rpm	1.2 rpm
ND 4", 4 to 18 outlets	ND 4", 20 outlets
ND 5", 4 to 14 outlets	ND 5", 16 to 20 outlets
ND 6", 4 to 12 outlets	ND 6", 14 to 20 outlets
ND 7", 4 to 10 outlets	ND 7", 12 to 20 outlets
ND 8", 4 to 10 outlets	ND 8", 12 to 20 outlets
	ND 10", 4 to 16 outlets
	ND 12", 4 to 14 outlets

Positioning with mechanical limit switches, wired on terminals in a connection box. Turn head distributor must not be operated when transporting material.

Your individual turn head distributor

We have numerous versions available on request to meet the requirements of your particular system:

- Proximity switches
- Additional electric pressing and position control of the turn-pipe outlet position with proximity switches, affixed in the lower funnel
- JACOB FOOD GRADE: Product-contact parts made of stainless steel available at additional cost
- Second inspection door available on demand
- Deliverable in blue silicone, metal-detectable
- ATEX versions on request
- Wear protection lining
- Other drives

For more technical information go to www.jacob-pipesystems.com

TWIN-PIPE TURN HEAD DISTRIBUTORS 45° AND 60°

Versions and applications

Primed steel version. For distributing granular bulk goods, such as grain, by gravity without overpressure inside the tubing system and with no demand for dust-tightness internally.

Feeding from the top through two counter-rotating turn-pipes towards the required outlet inside a closed casing.

Rotary tube seal pressed on with two pressure springs. Support by means of four lugs fixed to the lower funnel circumference according to data sheet.

Electrically operated with a gear-motor, 1.2 rpm, motor current 380 to 400 volt, 3-phase, 50 Hz. Positioning with mechanical limit switches, wired on terminals in a connection box. Turn head distributor must not be operated when transporting material.

Your individual turn head distributor

We have numerous versions available on request to meet the requirements of your particular system:

- Proximity switches
- Additional electric pressing and position control of the turn-pipe outlet position with proximity switches, affixed in the lower funnel
- JACOB FOOD GRADE: Product-contact parts made of stainless steel available at additional cost
- Second inspection door available on demand
- ATEX versions on request
- Wear protection lining
- Other drives

TURN HEAD DISTRIBUTORS 45° AND 60°, DUST-TIGHT VERSION

Versions and applications

For distributing bulk goods by gravity up to a maximum of 14.50 psi overpressure inside the tubing system.

Feeding from the top through the turn-pipe towards the required outlet inside a closed casing.

Sealing of the turn-pipe outlet by means of pneumatic pressing onto outlet sleeve. Support by means of four lugs fixed to the lower funnel circumference according to data sheet.

Electrically operated with a gear-motor, 1.2 rpm, motor current 380 to 400 volt, 3-phase, 50 Hz. Positioning with mechanical limit switches, solenoid valve and pressure controller wired on terminals in a connecting box.

Necessary operating pressure min. 87.02 psi. Turn head distributor must not be operated when transporting material.

Please indicate control voltage when ordering.

Your individual turn head distributor

We have numerous versions available on request to meet the requirements of your particular system:

- Proximity switches
- Other mounting positions
- Additional electric pressing and position control of the turn-pipe outlet position with proximity switches, affixed in the lower funnel
- JACOB FOOD GRADE: Product-contact parts made of stainless steel available at additional cost
- Second inspection door available on demand
- Seals in DETECTABLE DESIGN line: Blue silicone, metal-detectable
- ATEX versions on request
- Wear protection lining
- Other drives
- Cover to blank off outlets that are not in use

MULTI PORT DIVERTERS

Versions and applications

For pneumatic conveying of bulk goods. Overpressure inside the tubing system up to diameter 6" max. 43.51 psi, diameter 8" and 10" max. 29.00 psi. Necessary operating pressure min. 87.02 psi. Multi port diverters must not be operated when transporting material.

Feeding from the top through the multi port diverter towards the required outlet inside a closed casing. Sealing of multi-port diverter outlet by pneumatically pressing the telescopic tube onto the outlet sleeve; outlets not in use pneumatically blanked off. Support by means of four lugs fixed to the lower funnel circumference according to data sheet.

Electrically operated with a gear-motor, 1.2 rpm, motor current 380 to 400 volt, 3-phase, 50 Hz. Positioning with mechanical limit switches, solenoid valve and pressure controller wired on terminals in a connecting box.

Please indicate control voltage when ordering.

Your individual multi port diverters

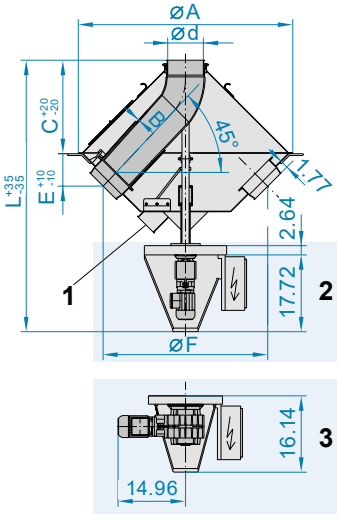
We have numerous versions available on request to meet the requirements of your particular system:

- Proximity switches
- Other mounting positions
- Additional electric pressing and position control of the turn-pipe outlet position with proximity switches, affixed in the lower funnel
- FOOD GRADE: Product-contact parts made of stainless steel available at additional cost
- Second inspection door available on demand
- ATEX versions on request
- Wear protection lining
- Other drives

For more technical information go to www.jacob-pipesystems.com







1 Drain nozzle
2 Gear-motor 2.3 rpm
3 Gear-motor 1.2 rpm

TURN HEAD DISTRIBUTORS 45°

2320

- All dimensions are approximate
- Standard values for flow rates for granular products with a bulk density of 46.82 lb/ft³, with a moisture content of max. 15%
- A = 31½": Drain nozzle = ND 4"
- A > 31½": Drain nozzle = ND 5"
- Lower funnel circumference according to data sheet
- Please also read and take into account the technical information given at the beginning of this chapter

4 and 6 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	4 outlets	6 outlets
										Item no.	Item no.
4	3.86	31.50	1.42	14.37	5.43	24.65	53.46	169.75	8	5104104501	5106104501
5	4.65	31.50	1.57	13.98	6.10	23.23	53.07	174.16	12	5104124501	5106124501
6	5.83	31.50	1.77	13.39	6.10	23.23	52.48	176.37	25	5104154501	5106154501
7	6.81	47.24	2.13	20.47	6.81	37.01	62.05	295.42	45	5104174501	5106174501
8	7.80	47.24	2.48	20.08	7.20	36.22	61.73	310.85	65	5104204501	5106204501
10	9.76	47.24	2.48	19.09	8.62	33.46	60.63	341.71	100	5104254501	5106254501
12	11.73	47.24	2.80	18.90	8.35	33.86	60.55	363.76	150	5104304501	5106304501

8 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	31.50	1.42	14.37	5.43	24.65	53.46	169.75	8	5108104501
5	4.65	31.50	1.57	13.98	6.10	23.23	53.07	174.16	12	5108124501
6	5.83	47.24	1.77	21.06	6.10	38.35	62.72	284.39	25	5108154501
7	6.81	47.24	2.13	20.47	6.81	37.01	62.05	295.42	45	5108174501
8	7.80	47.24	2.48	20.08	7.20	36.22	61.73	310.85	65	5108204501
10	9.76	62.99	2.48	26.97	8.62	49.21	76.57	546.74	100	5108254501
12	11.73	62.99	2.80	26.77	8.35	49.61	76.38	573.20	150	5108304501

10 outlets

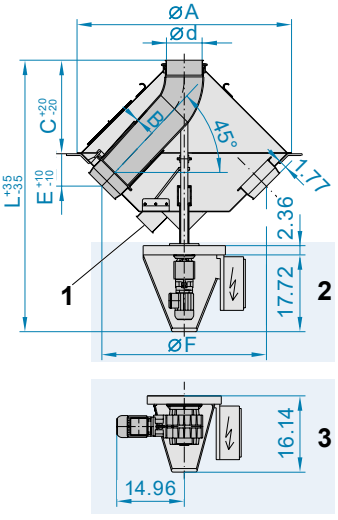
ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	31.50	1.42	14.37	5.43	24.65	53.46	169.75	8	5110104501
5	4.65	47.24	1.57	21.65	6.10	38.35	63.31	264.55	12	5110124501
6	5.83	47.24	1.77	21.06	6.10	38.35	62.72	284.39	25	5110154501
7	6.81	47.24	2.13	20.47	6.81	37.01	62.05	295.42	45	5110174501
8	7.80	47.24	2.48	20.08	7.20	36.22	61.73	310.85	65	5110204501
10	9.76	62.99	2.48	26.97	8.62	49.21	76.57	546.74	100	5110254501
12	11.73	62.99	2.80	26.77	8.35	49.61	76.38	573.20	150	5110304501

12 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	47.24	1.42	22.05	5.43	39.72	63.62	255.73	8	5112104501
5	4.65	47.24	1.57	21.65	6.10	38.35	63.31	264.55	12	5112124501
6	5.83	47.24	1.77	21.06	6.10	38.35	62.72	284.39	25	5112154501
7	6.81	62.99	2.13	28.35	6.81	52.76	77.95	529.10	45	5112174501
8	7.80	62.99	2.48	27.95	7.20	51.97	77.56	551.15	65	5112204501
10	9.76	89.76	2.48	40.75	8.62	75.98	87.80	903.89	100	5112254501
12	11.73	89.76	2.80	39.76	8.35	76.57	86.81	947.98	150	5112304501

For more technical information go to www.jacob-pipesystems.com





1 Drain nozzle

2 Gear-motor 2.3 rpm

3 Gear-motor 1.2 rpm

14 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	47.24	1.42	22.05	5.43	39.72	63.62	255.73	8	5114104501
5	4.65	47.24	1.57	21.65	6.10	38.35	63.31	264.55	12	5114124501
6	5.83	62.99	1.77	28.94	6.10	54.06	77.05	507.06	25	5114154501
7	6.81	62.99	2.13	28.35	6.81	52.76	77.95	529.10	45	5114174501
8	7.80	62.99	2.48	27.95	7.20	51.97	77.56	551.15	65	5114204501
10	9.76	89.76	2.48	40.75	8.62	75.98	87.80	903.89	100	5114254501
12	11.73	89.76	2.80	39.76	8.35	76.57	86.81	947.98	150	5114304501

16 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	47.24	1.42	22.05	5.43	39.72	63.62	255.73	8	5116104501
5	4.65	62.99	1.57	29.53	6.10	54.09	77.64	496.04	12	5116124501
6	5.83	62.99	1.77	28.94	6.10	54.06	77.05	507.06	25	5116154501
7	6.81	62.99	2.13	28.35	6.81	52.76	77.95	529.10	45	5116174501
8	7.80	89.76	2.48	41.73	7.20	78.74	88.78	881.84	65	5116204501
10	9.76	89.76	2.48	40.75	8.62	75.98	87.80	903.89	100	5116254501

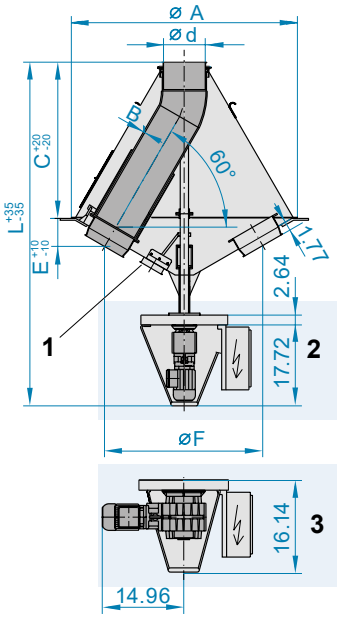
18 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	47.24	1.42	22.05	5.43	39.72	63.62	255.73	8	5118104501
5	4.65	62.99	1.57	29.53	6.10	54.09	77.64	496.04	12	5118124501
6	5.83	62.99	1.77	28.94	6.10	54.06	77.05	507.06	25	5118154501
7	6.81	89.76	2.13	42.13	6.81	79.61	88.78	842.16	45	5118174501
8	7.80	89.76	2.48	41.73	7.20	78.74	88.78	881.84	65	5118204501

20 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	62.99	1.42	29.92	5.43	55.43	78.07	485.01	8	5120104501
5	4.65	62.99	1.57	29.53	6.10	54.09	77.64	496.04	12	5120124501
6	5.83	89.76	1.77	42.72	6.10	80.98	88.19	798.07	25	5120154501
7	6.81	89.76	2.13	42.13	6.81	79.61	88.78	842.16	45	5120174501
8	7.80	89.76	2.48	41.73	7.20	78.74	88.78	881.84	65	5120204501





1 Drain nozzle
2 Gear-motor 2.3 rpm
3 Gear-motor 1.2 rpm

TURN HEAD DISTRIBUTORS 60°

2330

- All dimensions are approximate
- Standard values for flow rates for granular products with a bulk density of 31.21 lb/ft³, with a moisture content of max. 15%
- A = 31½": Drain nozzle = ND 4"
- A > 31½": Drain nozzle = ND 5"
- Lower funnel circumference according to data sheet
- Please also read and take into account the technical information given at the beginning of this chapter

4 and 6 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	4 outlets	6 outlets
										Item no.	Item no.
4	3.86	31.50	1.42	23.23	4.41	22.05	59.76	180.78	4	5104106001	5106106001
5	4.65	31.50	1.57	22.44	4.72	21.26	58.98	185.19	6	5104126001	5106126001
6	5.83	31.50	1.77	21.46	4.92	20.47	57.99	187.39	12	5104156001	5106156001
7	6.81	47.24	2.13	33.86	5.12	34.45	74.72	337.30	22	5104176001	5106176001
8	7.80	47.24	2.48	32.87	5.31	33.66	73.74	337.30	32	5104206001	5106206001
10	9.76	47.24	2.48	31.10	5.91	31.69	66.46	368.17	50	5104256001	5106256001
12	11.73	47.24	2.80	29.33	6.30	30.31	64.69	401.24	75	5104306001	5106306001

8 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	31.50	1.42	23.23	4.41	22.05	59.76	180.78	4	5108106001
5	4.65	31.50	1.57	22.44	4.72	21.26	58.98	185.19	6	5108126001
6	5.83	47.24	1.77	34.65	4.92	35.83	75.51	308.64	12	5108156001
7	6.81	47.24	2.13	33.86	5.12	34.45	74.72	337.30	22	5108176001
8	7.80	47.24	2.48	32.87	5.31	33.66	73.74	337.30	32	5108206001
10	9.76	62.99	2.48	44.88	5.91	47.44	84.96	588.63	50	5108256001
12	11.73	62.99	2.80	43.11	6.30	46.06	83.19	632.72	75	5108306001

10 outlets

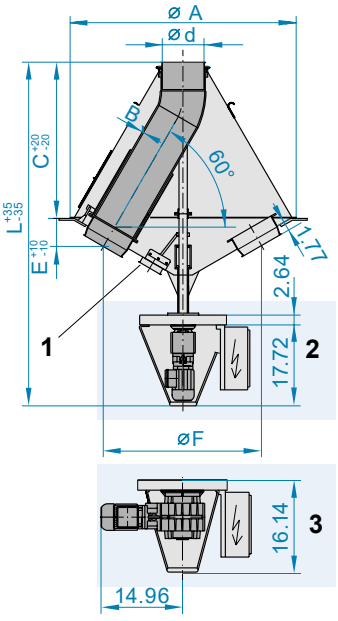
ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	31.50	1.42	23.23	4.41	22.05	59.76	180.78	4	5110106001
5	4.65	47.24	1.57	35.63	4.72	36.61	76.50	295.42	6	5110126001
6	5.83	47.24	1.77	34.65	4.92	35.83	75.51	308.64	12	5110156001
7	6.81	47.24	2.13	33.86	5.12	34.45	74.72	337.30	22	5110176001
8	7.80	62.99	2.48	46.65	5.31	49.41	90.67	584.22	32	5110206001
10	9.76	62.99	2.48	44.88	5.91	47.44	84.96	588.63	50	5110256001
12	11.73	89.76	2.80	66.93	6.30	72.83	114.88	1,014.12	75	5110306001

12 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	47.24	1.42	36.42	4.41	37.40	77.28	279.98	4	5112106001
5	4.65	47.24	1.57	35.63	4.72	36.61	76.50	295.42	6	5112126001
6	5.83	47.24	1.77	34.65	4.92	35.83	75.51	308.64	12	5112156001
7	6.81	62.99	2.13	47.64	5.12	50.20	91.65	551.15	22	5112176001
8	7.80	62.99	2.48	46.65	5.31	49.41	90.67	584.22	32	5112206001
10	9.76	89.76	2.48	68.70	5.91	74.21	116.65	959.00	50	5112256001
12	11.73	89.76	2.80	66.93	6.30	72.83	114.88	1,014.12	75	5112306001

For more technical information go to www.jacob-pipesystems.com





1 Drain nozzle

2 Gear-motor 2.3 rpm

3 Gear-motor 1.2 rpm

14 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	47.24	1.42	36.42	4.41	37.40	77.28	279.98	4	5114106001
5	4.65	47.24	1.57	35.63	4.72	36.61	76.50	295.42	6	5114126001
6	5.83	62.99	1.77	48.43	4.92	51.57	92.44	529.10	12	5114156001
7	6.81	62.99	2.13	47.64	5.12	50.20	91.65	551.15	22	5114176001
8	7.80	62.99	2.48	46.65	5.31	49.41	90.67	584.22	32	5114206001
10	9.76	89.76	2.48	68.70	5.91	74.21	116.65	959.00	50	5114256001
12	11.73	89.76	2.80	66.93	6.30	72.83	114.88	1,014.12	75	5114306001

16 and 18 outlets

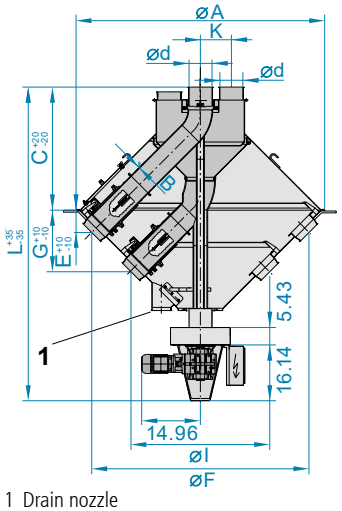
ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	16 outlets	18 outlets
										Item no.	Item no.
4	3.86	47.24	1.42	36.42	4.41	37.40	77.28	279.98	4	5116106001	5118106001
5	4.65	62.99	1.57	49.41	4.72	52.36	93.43	518.08	6	5116126001	5118126001
6	5.83	62.99	1.77	48.43	4.92	51.57	92.44	529.10	12	5116156001	5118156001
7	6.81	89.76	2.13	71.46	5.12	76.93	123.35	892.86	22	5116176001	5118176001
8	7.80	89.76	2.48	70.47	5.31	76.26	122.36	947.98	32	5116206001	5118206001
10	9.76	89.76	2.48	68.70	5.91	74.21	116.65	959.00	50	5116256001	

20 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	lb	t/h	Item no.
4	3.86	62.99	1.42	50.20	4.41	53.15	94.21	500.44	4	5120106001
5	4.65	62.99	1.57	49.41	4.72	52.36	93.43	518.08	6	5120126001
6	5.83	89.76	1.77	72.24	4.92	79.49	124.13	837.75	12	5120156001
7	6.81	89.76	2.13	71.46	5.12	76.93	123.35	892.86	22	5120176001
8	7.80	89.76	2.48	70.47	5.31	76.26	122.36	947.98	32	5120206001

Twin-pipe turn head distributors





1 Drain nozzle

TWIN-PIPE TURN HEAD DISTRIBUTORS 45°

2340

- All dimensions are approximate
- Standard values for flow rates for granular products with a bulk density of 46.82 lb/ft³, with a moisture content of max. 15%
- Lower funnel circumference according to data sheet
- Drain nozzle ND 5"
- Please also read and take into account the technical information given at the beginning of this chapter

2 x 8 and 2 x 10 outlets

ND	Ø d	Ø A	B	C	E	Ø F	G	I	K	L	lb	t/h	2 x 8 outlets	2 x 10 outlets
													Item no.	Item no.
5	4.65	62.99	1.57	32.28	5.91	54.13	13.58	38.98	6.30	87.40	760.59	12	52081245	52101245
6	5.83	62.99	1.77	31.89	6.30	53.94	15.55	35.24	7.48	87.01	771.61	25	52081545	52101545
7	6.81	89.76	2.13	45.08	6.69	80.32	16.93	59.65	8.46	93.90	1,212.53	45	52081745	52101745
8	7.80	89.76	2.48	44.69	7.09	79.53	18.70	56.50	9.45	93.50	1,238.99	65	52082045	52102045
10	9.76	89.76	2.48	43.70	8.27	77.17	20.87	52.17	11.42	114.17	1,272.05	100	52082545	52102545

2 x 12 outlets

ND	Ø d	Ø A	B	C	E	Ø F	G	I	K	L	lb	t/h	Item no.
5	4.65	62.99	1.57	32.28	5.91	54.13	13.58	38.98	6.30	87.40	760.59	12	52121245
6	5.83	62.99	1.77	31.89	6.30	53.94	15.55	35.24	7.48	87.01	771.61	25	52121545
7	6.81	89.76	2.13	45.08	6.69	80.32	16.93	59.65	8.46	93.90	1,212.53	45	52121745
8	7.80	89.76	2.48	44.69	7.09	79.53	18.70	56.50	9.45	93.50	1,238.99	65	52122045

2 x 14 and 2 x 16 outlets

ND	Ø d	Ø A	B	C	E	Ø F	G	I	K	L	lb	t/h	2 x 14 outlets	2 x 16 outlets
													Item no.	Item no.
5	4.65	62.99	1.57	32.28	5.91	54.13	13.58	38.98	6.30	87.40	760.59	12	52141245	52161245
6	5.83	89.76	1.77	45.67	6.30	81.69	15.55	62.80	7.48	94.49	1,190.48	25	52141545	52161545
7	6.81	89.76	2.13	45.08	6.69	80.32	16.93	59.65	8.46	93.90	1,212.53	45	52141745	52161745
8	7.80	89.76	2.48	44.69	7.09	79.53	18.70	56.50	9.45	93.50	1,238.99	65	52142045	52162045

2 x 18 and 2 x 20 outlets

ND	Ø d	Ø A	B	C	E	Ø F	G	I	K	L	lb	t/h	2 x 18 outlets	2 x 20 outlets
													Item no.	Item no.
5	4.65	89.76	1.57	46.06	5.91	81.69	13.58	66.54	6.30	94.88	1,172.85	12	52181245	52201245
6	5.83	89.76	1.77	45.67	6.30	81.69	15.55	62.80	7.48	94.49	1,190.48	25	52181545	52201545
7	6.81	89.76	2.13	45.08	6.69	80.32	16.93	59.65	8.46	93.90	1,212.53	45	52181745	

TWIN-PIPE TURN HEAD DISTRIBUTORS 60°

2350

- All dimensions are approximate
- Standard values for flow rates for granular products with a bulk density of 31.21 lb/ft³, with a moisture content of max. 15%
- Lower funnel circumference according to data sheet
- Drain nozzle ND 5"
- Please also read and take into account the technical information given at the beginning of this chapter

2 x 8 outlets

ND	Ø d	ØA	B	C	E	Ø F	G	I	K	L	lb	t/h	Item no.
5	4.65	62.99	1.57	50.59	4.53	52.17	10.43	31.69	6.30	95.28	771.61	6	52081260
6	5.83	62.99	1.77	49.41	4.72	51.57	12.01	26.77	7.48	94.09	782.63	12	52081560
7	6.81	89.76	2.13	72.24	5.12	77.76	13.19	50.59	8.46	124.80	1,247.80	22	52081760
8	7.80	89.76	2.48	71.85	5.31	77.17	14.37	46.06	9.45	124.41	1,278.67	32	52082060
10	9.76	89.76	2.48	69.49	6.10	74.41	16.73	39.37	11.42	122.05	1,316.15	50	52082560

2 x 10 and 2 x 12 outlets

ND	Ø d	ØA	B	C	E	Ø F	G	I	K	L	lb	t/h	2 x 10 outlets	2 x 12 outlets
													Item no.	Item no.
5	4.65	62.99	1.57	50.59	4.53	52.17	10.43	31.69	6.30	95.28	771.61	6	52101260	52121260
6	5.83	89.76	1.77	73.23	4.72	79.13	12.01	54.33	7.48	125.79	1,223.55	12	52101560	52121560
7	6.81	89.76	2.13	72.24	5.12	77.76	13.19	50.59	8.46	124.80	1,247.80	22	52101760	52121760
8	7.80	89.76	2.48	71.85	5.31	77.17	14.37	46.06	9.45	124.41	1,278.67	32	52102060	52122060

2 x 14 and 2 x 16 outlets

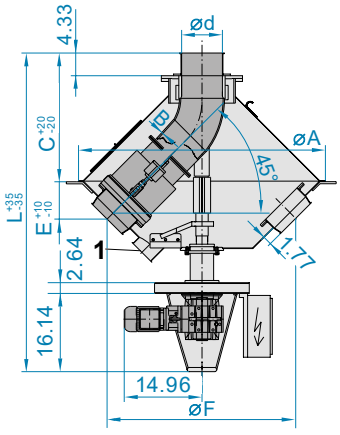
ND	Ø d	ØA	B	C	E	Ø F	G	I	K	L	lb	t/h	2 x 14 outlets	2 x 16 outlets
													Item no.	Item no.
5	4.65	89.76	1.57	74.41	4.53	79.72	10.43	59.25	6.30	126.97	1,201.51	6	52141260	52161260
6	5.83	89.76	1.77	73.23	4.72	79.13	12.01	54.33	7.48	125.79	1,223.55	12	52141560	52161560
7	6.81	89.76	2.13	72.24	5.12	77.76	13.19	50.59	8.46	124.80	1,247.80	22	52141760	52161760

2 x 18 and 2 x 20 outlets

ND	Ø d	ØA	B	C	E	Ø F	G	I	K	L	lb	t/h	2 x 18 outlets	2 x 20 outlets
													Item no.	Item no.
5	4.65	89.76	1.57	74.41	4.53	79.72	10.43	59.25	6.30	126.97	1,201.51	6	52181260	52201260
6	5.83	89.76	1.77	73.23	4.72	79.13	12.01	54.33	7.48	125.79	1,223.55	12	52181560	52201560

Turn head distributors, dust-tight version





1 Drain nozzle

TURN HEAD DISTRIBUTORS, DUST-TIGHT 45°

2360

- All dimensions are approximate
- Drain nozzle = ND 5"
- Lower funnel circumference according to data sheet
- Please also read and take into account the technical information given at the beginning of this chapter

4 and 6 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	4 outlets	6 outlets
								Item no.	Item no.
4	3.86	47.24	1.97	25.31	5.43	39.92	63.66	54041045	54061045
5	4.65	47.24	1.97	24.45	6.10	38.58	62.80	54041245	54061245
6	5.83	47.24	2.20	25.20	6.10	38.58	63.54	54041545	54061545
7	6.81	47.24	2.13	24.49	6.81	37.17	62.83	54041745	54061745
8	7.80	47.24	2.48	24.65	7.20	36.38	62.99	54042045	54062045
10	9.76	62.99	2.48	30.87	8.62	49.29	77.17	54042545	54062545
12	11.73	62.99	2.80	32.17	8.62	49.29	78.46	54043045	54063045

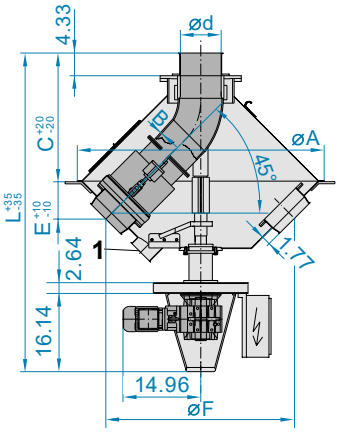
8 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	25.31	5.43	39.92	63.66	54081045
5	4.65	47.24	1.97	24.45	6.10	38.58	62.80	54081245
6	5.83	47.24	2.20	25.20	6.10	38.58	63.54	54081545
7	6.81	47.24	2.13	24.49	6.81	37.17	62.83	54081745
8	7.80	47.24	2.48	24.65	7.20	36.38	62.99	54082045
10	9.76	62.99	2.48	30.87	8.62	49.29	77.17	54082545
12	11.73	62.99	2.80	32.17	8.62	49.29	78.46	54083045

10 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	25.31	5.43	39.92	63.66	54101045
5	4.65	47.24	1.97	24.45	6.10	38.58	62.80	54101245
6	5.83	47.24	2.20	25.20	6.10	38.58	63.54	54101545
7	6.81	47.24	2.13	24.49	6.81	37.17	62.83	54101745
8	7.80	62.99	2.48	32.52	7.20	52.13	78.82	54102045
10	9.76	62.99	2.48	30.87	8.62	49.29	77.17	54102545





1 Drain nozzle

12 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	25.31	5.43	39.92	63.66	54121045
5	4.65	47.24	1.97	24.45	6.10	38.58	62.80	54121245
6	5.83	47.24	2.20	25.20	6.10	38.58	63.54	54121545
7	6.81	62.99	2.13	32.36	6.81	52.91	78.66	54121745
8	7.80	62.99	2.48	32.52	7.20	52.13	78.82	54122045

14 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	25.31	5.43	39.92	63.66	54141045
5	4.65	47.24	1.97	24.45	6.10	38.58	62.80	54141245
6	5.83	62.99	2.20	33.07	6.10	54.33	79.37	54141545
7	6.81	62.99	2.13	32.36	6.81	52.91	78.66	54141745

16 outlets

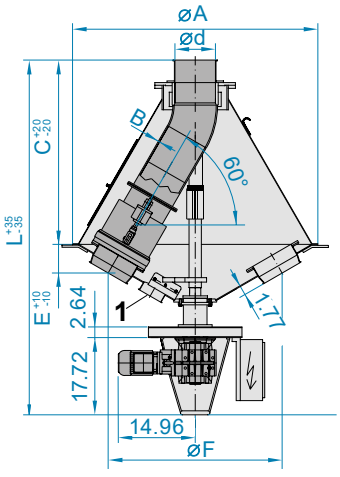
ND	Ø d	Ø A	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	25.31	5.43	39.92	63.66	54161045
5	4.65	62.99	1.97	32.32	6.10	54.33	78.62	54161245
6	5.83	62.99	2.20	33.07	6.10	54.33	79.37	54161545
7	6.81	62.99	2.13	32.36	6.81	52.91	78.66	54161745

18 and 20 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	18 outlets	20 outlets
								Item no.	Item no.
4	3.86	62.99	1.97	33.19	5.43	55.67	79.49	54181045	54201045
5	4.65	62.99	1.97	32.32	6.10	54.33	78.62	54181245	54201245

Turn head distributors, dust-tight version





1 Drain nozzle

TURN HEAD DISTRIBUTORS, DUST-TIGHT 60°

2370

- All dimensions are approximate
- Drain nozzle = ND 5"
- Lower funnel circumference according to data sheet
- Please also read and take into account the technical information given at the beginning of this chapter

4 and 6 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	4 outlets	6 outlets
								Item no.	Item no.
4	3.86	47.24	1.97	38.19	4.41	37.72	74.37	54041060	54061060
5	4.65	47.24	1.97	37.24	4.72	36.69	73.43	54041260	54061260
6	5.83	47.24	2.20	36.97	4.92	35.98	73.15	54041560	54061560
7	6.81	47.24	2.13	35.83	5.31	34.65	72.01	54041760	54061760
8	7.80	47.24	2.48	35.83	5.51	33.94	72.01	54042060	54062060
10	9.76	62.99	2.48	47.83	6.10	47.64	88.58	54042560	54062560
12	11.73	62.99	2.80	47.09	6.50	46.30	87.83	54043060	54063060

8 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	38.19	4.41	37.72	74.37	54081060
5	4.65	47.24	1.97	37.24	4.72	36.69	73.43	54081260
6	5.83	47.24	2.20	36.97	4.92	35.98	73.15	54081560
7	6.81	47.24	2.13	35.83	5.31	34.65	72.01	54081760
8	7.80	47.24	2.48	35.83	5.51	33.94	72.01	54082060
10	9.76	62.99	2.48	47.83	6.10	47.64	88.58	54082560
12	11.73	62.99	2.80	47.09	6.50	46.30	87.83	54083060

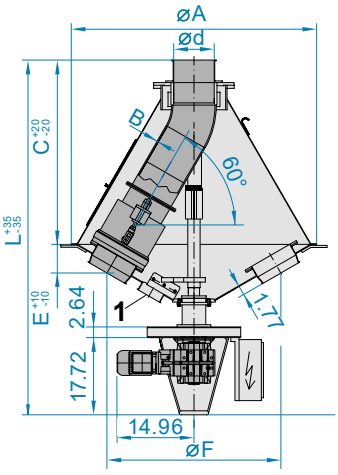
10 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	38.19	4.41	37.72	74.37	54101060
5	4.65	47.24	1.97	37.24	4.72	36.69	73.43	54101260
6	5.83	47.24	2.20	36.97	4.92	35.98	73.15	54101560
7	6.81	47.24	2.13	35.83	5.31	34.65	72.01	54101760
8	7.80	62.99	2.48	49.45	5.51	49.69	90.20	54102060
10	9.76	62.99	2.48	47.83	6.10	47.64	88.58	54102560
12	11.73	89.76	2.80	70.28	6.50	73.07	118.74	54103060

12 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	38.19	4.41	37.72	74.37	54121060
5	4.65	47.24	1.97	37.24	4.72	36.69	73.43	54121260
6	5.83	62.99	2.20	50.59	4.92	51.73	91.34	54121560
7	6.81	62.99	2.13	49.49	5.31	50.39	90.24	54121760
8	7.80	62.99	2.48	49.45	5.51	49.69	90.20	54122060
10	9.76	89.76	2.48	71.02	6.10	74.41	119.49	54122560
12	11.73	89.76	2.80	70.28	6.50	73.07	118.74	54123060





1 Drain nozzle

14 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	38.19	4.41	37.72	74.37	54141060
5	4.65	47.24	1.97	37.24	4.72	36.69	73.43	54141260
6	5.83	62.99	2.20	50.59	4.92	51.73	91.34	54141560
7	6.81	62.99	2.13	49.49	5.31	50.39	90.24	54141760
8	7.80	89.76	2.48	72.64	5.51	76.46	121.10	54142060
10	9.76	89.76	2.48	71.02	6.10	74.41	119.49	54142560
12	11.73	89.76	2.80	70.28	6.50	73.07	118.74	54143060

16 outlets

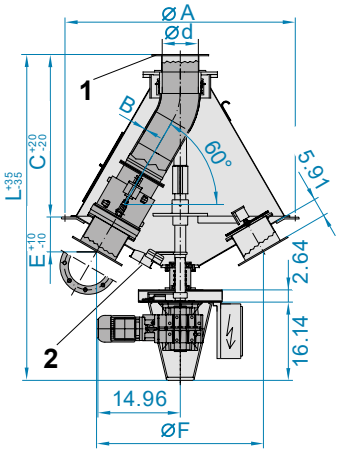
ND	Ø d	Ø A	B	C	E	Ø F	L	Item no.
4	3.86	47.24	1.97	38.19	4.41	37.72	74.37	54161060
5	4.65	62.99	1.97	50.91	4.72	52.44	91.65	54161260
6	5.83	62.99	2.20	50.59	4.92	51.73	91.34	54161560
7	6.81	89.76	2.13	72.64	5.31	77.17	121.10	54161760
8	7.80	89.76	2.48	72.64	5.51	76.46	121.10	54162060
10	9.76	89.76	2.48	71.02	6.10	74.41	119.49	54162560

18 and 20 outlets

ND	Ø d	Ø A	B	C	E	Ø F	L	18 outlets	20 outlets
								Item no.	Item no.
4	3.86	62.99	1.97	51.81	4.41	53.46	92.56	54181060	54201060
5	4.65	62.99	1.97	50.91	4.72	52.44	91.65	54181260	54201260
6	5.83	89.76	2.20	73.78	4.92	78.50	122.24	54181560	54201560
7	6.81	89.76	2.13	72.64	5.31	77.17	121.10	54181760	54201760
8	7.80	89.76	2.48	72.64	5.51	76.46	121.10	54182060	54202060

Multi port diverters





1 Inlets and outlets with welded-on flanges according to DIN 1092-1, PN 10

2 Drain nozzle

MULTI PORT DIVERTERS 60°

2340

- All dimensions are approximate
- Inlets and outlets with welded-on flanges according to DIN EN 1092-1, PN 10, 3/8" thick
- Hole pattern axial-free to inspection flap (without counter flange)
- Drain nozzle = ND 5"
- Lower funnel circumference according to data sheet
- Please also read and take into account the technical information given at the beginning of this chapter

4 and 6 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	4 outlets	6 outlets
								Item no.	Item no.
3	3.15	47.24	1.97	39.29	7.60	43.15	75.47	53040860	53060860
4	3.90	47.24	3.15	38.19	7.99	41.89	74.37	53041060	53061060
5	4.65	47.24	3.15	37.24	8.31	40.87	73.43	53041260	53061260
6	5.83	47.24	3.94	36.97	8.50	40.16	73.15	53041560	53061560
8	7.76	47.24	4.33	35.83	9.09	38.11	72.01	53042060	53062060

8 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	8 outlets
								Item no.
3	3.15	47.24	1.97	39.29	7.60	43.15	75.47	53080860
4	3.90	47.24	3.15	38.19	7.99	41.89	74.37	53081060
5	4.65	47.24	3.15	37.24	8.31	40.87	73.43	53081260
6	5.83	47.24	3.94	36.97	8.50	40.16	73.15	53081560
8	7.76	47.24	4.33	35.83	9.09	38.11	72.01	53082060

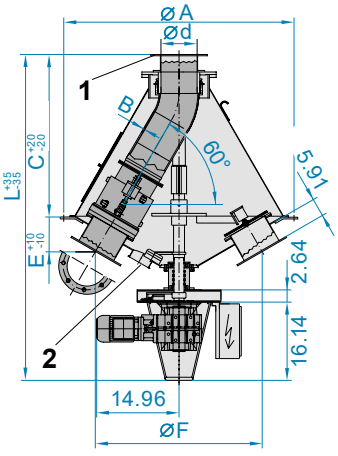
10 and 12 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	10 outlets	12 outlets
								Item no.	Item no.
3	3.15	47.24	1.97	39.29	7.60	43.15	75.47	53100860	53120860
4	3.90	47.24	3.15	38.19	7.99	41.89	74.37	53101060	53121060
5	4.65	47.24	3.15	37.24	8.31	40.87	73.43	53101260	53121260
6	5.83	47.24	3.94	36.97	8.50	40.16	73.15	53101560	
8	7.76	62.99	4.33	49.45	9.09	53.86	90.20	53102060	53122060

14 outlets

ND	Ø d	ØA	B	C	E	Ø F	L	14 outlets
								Item no.
3	3.15	47.24	1.97	39.29	7.60	43.15	75.47	53140860
4	3.90	47.24	3.15	38.19	7.99	41.89	74.37	53141060





1 Inlets and outlets with welded-on flanges according to DIN 1092-1, PN 10

2 Drain nozzle

4 and 6 outlets, product-contact parts made of stainless steel

ND	Ød	ØA	B	C	E	ØF	L	4 outlets	6 outlets
								Item no.	Item no.
3	3.15	47.24	1.77	39.29	7.60	43.15	75.47	63040860	63060860
4	3.90	47.24	2.80	38.19	7.99	41.89	74.37	63041060	63061060
5	4.65	47.24	3.74	37.24	8.31	40.87	73.43	63041260	63061260
6	5.83	47.24	3.35	36.97	8.50	40.16	73.15	63041560	63061560
8	7.76	47.24	4.33	35.83	9.09	38.11	72.01	63042060	63062060

8 outlets, product-contact parts made of stainless steel

ND	Ød	ØA	B	C	E	ØF	L	8 outlets
								Item no.
3	3.15	47.24	1.77	39.29	7.60	43.15	75.47	63080860
4	3.90	47.24	2.80	38.19	7.99	41.89	74.37	63081060
5	4.65	47.24	3.74	37.24	8.31	40.87	73.43	63081260
6	5.83	47.24	3.35	36.97	8.50	40.16	73.15	63081560
8	7.76	47.24	4.33	35.83	9.09	38.11	72.01	63082060

10 and 12 outlets, product-contact parts made of stainless steel

ND	Ød	ØA	B	C	E	ØF	L	10 outlets	12 outlets
								Item no.	Item no.
3	3.15	47.24	1.77	39.29	7.60	43.15	75.47	63100860	63120860
4	3.90	47.24	2.80	38.19	7.99	41.89	74.37	63101060	63121060
5	4.65	47.24	3.74	37.24	8.31	40.87	73.43	63101260	63121260
6	5.83	47.24	3.35	36.97	8.50	40.16	73.15	63101560	
8	7.76	62.99	4.33	49.45	9.09	53.86	90.20	63102060	63122060

14 outlets, product-contact parts made of stainless steel

ND	Ød	ØA	B	C	E	ØF	L	14 outlets
								Item no.
3	3.15	47.24	1.77	39.29	7.60	43.15	75.47	63140860
4	3.90	47.24	2.80	38.19	7.99	41.89	74.37	63141060

FOOD GRADE
EC 1935/2004 plus FDA compliant



THE ENTIRE JACOB VARIETY – WITH LOOSE AND WELDED FLANGES

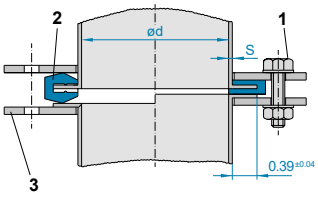
THE FLANGE PRODUCT RANGE

Technical information	192
Welded tubes	196
Slip tubes and accessories	199
Segments and bends	201
Form pieces	213
Transition pieces and adapters	220
Cleaning sections	224
Throttle valves	226
Flanges, seals and installation kit	227

FOR LARGE DIAMETERS: FLANGES

The entirety of the Jacob variety is also available with a flange connection. Larger diameters with a high level of tightness are available specifically for large ventilation systems extracting dust, oil mist, or other condensates. JACOB's range of flanges provides the ideal solution for this purpose.





JACOB loose flange system
1 Mounting bolts
2 U-shaped gasket for a 0.39" lip
3 Loose flange to DIN 24154-2
S = Wall thickness
Ød = Internal diameter

IMPLEMENTATION

JACOB flanged tubing is available in wall thicknesses from 19 to 11 gauge. Tubing components and pressed components for loose flange connections from ND 14" to 49" are provided with a 0.39" lip. The flanges are pre-fitted and are connected with a U-shaped gasket, nuts, and bolts. The U-shaped gasket for loose flanges is fitted over one of the lipped ends. The flanges are then bolted to each other. Diameters 55" and 63" are provided with welded-on flanges in the standard version.

Mild steel:

ND 14" to 25":
- Surface primed, RAL 7032 (pebble gray) or galvanized
- Electrostatic grounding can be achieved through the use of the EPDM U-shaped gasket or the grounding lug with grounding wire

ND 28" to 63":
- Corrosion protection: Surface primed in color RAL 7032 (pebble gray) or galvanized
- Priming coat is not conductive
- Electrostatic grounding can be achieved through the use of grounding lugs in conjunction with grounding wire

ND 55" to 63":
- Standard version with 11 gauge wall thickness
- With welded-on flanges
- Surface primed in color RAL 7032 (pebble gray) or galvanized

All mass-produced parts made of mild steel are delivered with grounding lugs to safeguard the loose flanges.

Stainless steel:
- ND 14" to 49":
  - Version with galvanized loose flanges
  - Alternatively: Loose flange in CrNi-blasted stainless steel
  - Surface CrNi-blasted
  - For diameters >ND 25", surface pickled and passivated, depending on order volume
- ND 55" to 63"
  - Standard version with 11 gauge wall thickness
  - With welded-on stainless steel flanges
  - All stainless steel parts >ND 49" are pickled and passivated

Refer to chapter 1, Materials and finishing, for more information on materials and tolerances.
See chapter 1, types of connection and dimensions, for an overview of internal diameters.

SEALS

JACOB has U-shaped gaskets and ring seals in a variety of materials to obtain the best possible seal even with the loose flange system.

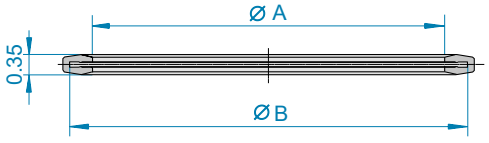
- Tear-resistant, FOOD GRADE and resistant to many aggressive chemicals due to heat-sealing
- Maximum tightness through an ideal profile
- Resistance to a broad range of substances due to large selection of materials available
- Metal-detectable and FOOD GRADE due to special materials (DETECTABLE DESIGN line)

U-shaped gaskets for loose flange system with a 0.39" lip



NBR	Silicone (F)	Silicone (F) (D)	EPDM	Viton (FKM) (F)
gray white	beige	blue	black	reddish brown
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant	EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant
-20 °C to +212°F	-76°F to +482°F	-76°F to +482°F	-22°F to +248°F	-0.4°F to +446°F
glued	heat-sealed	heat-sealed	heat-sealed	heat-sealed
		metal-detectable	electrostatically conductive	

Profile for loose flange tubing with a 0.39" lip



Use for 19 to 11 gauge tubing system

For connecting:
- 2 tubing components with loose flange from > ND 14" with a 0.39" lip
- Tubing component with a welded flange in conjunction with a tubing component with a loose flange

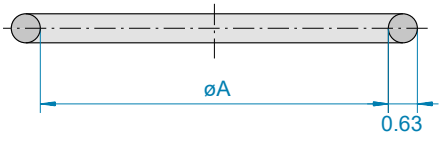
A U-shaped gasket (chapter 2) must be used for tubing components with a loose flange diameter of up to 14" and a 0.24" lip

Ring seals for slip tubes with a flange connection



NBR	Silicone (F)	Silicone (F) (D)	EPDM	Viton (FKM) (F)
gray white	beige	blue	black	reddish brown
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant	EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant
-20 °C to +212°F	-76°F to +482°F	-76°F to +482°F	-22°F to +248°F	-0.4°F to +446°F
glued	heat-sealed	heat-sealed	heat-sealed	heat-sealed
		metal-detectable	electrostatically conductive	

Profile diameter: 5/8"



Use for 19 to 11 gauge tubing system

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

Flat seals for loose flanges and welded flanges



NBR	Silicone (F)	Silicone (F) (D)	EPDM
gray white	transparent	blue	black
EC 1935/2004 up to ND 39"	FOOD GRADE: EC 1935/2004 plus FDA up to ND 39"	FOOD GRADE: EC 1935/2004 plus FDA up to ND 39"	
-22°F to +176°F	-76°F to +446°F	-76°F to +446°F	-40 °C to +212°F
Adhesive-free up to ND 39"	Adhesive-free up to ND 39"	Adhesive-free up to ND 39"	Adhesive-free up to ND 39"
from ND 44" glued from segments	from ND 44" glued from segments	from ND 44" glued from segments	from ND 44" glued from segments
		metal-detectable	electrostatically conductive

- Thickness: ND 14" to 31½": 11 gauge, ND 35½" to 63": 6 gauge
- Temperatures apply for adhesive-free silicone seals up to ND 39"

Seals for cleaning sections

- In stainless steel version, door sealed with silicone seal (beige)
- Alternatively, also available in DETECTABLE DESIGN line with blue silicone seal
- In version with primed or galvanized surfaces, door sealed with NBR seal



NBR	Silicone (F)	Silicone (F) (D)
gray white	beige	blue
EC 1935/2004	FOOD GRADE: EC 1935/2004 plus FDA compliant	FOOD GRADE: EC 1935/2004 plus FDA compliant
-20 °C to +212°F	-76°F to +482°F	-76°F to +482°F
glued	heat-sealed	heat-sealed
		metal-detectable

APPLICATIONS

Use in the area of bulk goods conveying and ventilation systems at over-pressures of 50,000 Pa (7.25 psi, 197" WC). ND 35½" to 49" with loose flanges are only recommended for use in air. In the case of higher tightness requirements, we recommend welded flanges from diameters of 35½".

Tubes in 19 gauge wall thickness and cleaning sections for ventilation systems up to 1.45 psi overpressure can be used.

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable

EXPLOSION PROTECTION

Flanged tubing was tested in the following configuration up to 43.51 psi overpressure:

Tubes	14 gauge thick up to ND 31½"
Segments 5°to 45°	14 gauge thick up to ND 31½"
Bends 30° to 90°	14 gauge thick up to ND 31½"
T-pieces	14 gauge thick up to ND 20", 11 gauge thick up to ND 31½"
Laterals 30° and 45°	14 gauge thick up to ND 20", 11 gauge thick up to ND 25"
Cone adapters	14 gauge thick up to ND 25", 11 gauge thick up to ND 31½"
Symmetrical Y-branches 60°	14 gauge thick up to ND 20", 11 gauge thick up to ND 31½"
Symmetrical Y-branches 90°	11 gauge thick up to ND 25"

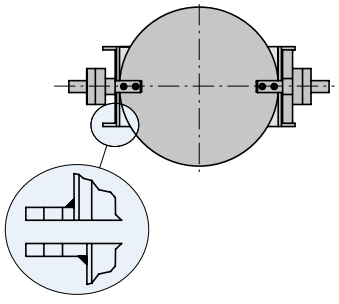
- For shock explosion proof tube connections, grade 8.8 bolts are required
- Bolt torque: M 10 = 29.50 ft lb, M 12 = 44.25 ft lb

Cleaning sections are not available in a shock explosion proof version. Alternatively, inspection sections (diameter of opening 4½") up to ND 25" tube diameter can be delivered in a special version.

YOUR INDIVIDUAL TUBING SYSTEM

We can supply your individual tubing system on request. Prices on request.

- JACOB tubing system with welded-on flanges
- Over 3,000 special colors
- Grounding lugs on request
- Additional diameters and wall thicknesses
- Stainless steel with pickled and passivated surface, including up to a diameter of 49"
- Stainless steel in other steel qualities,
  e.g. 1.4571, AISI 316Ti with flanges in pickled and passivated stainless steel
- 11 gauge tubes and pressed components on request, stainless steel only available with welded-on flanges



Special version:
Throttle valve from ND 16"
and up with glued silicone seal
– Without cross-section constriction
– Shaft with ball bearings and sealed with a Viton O-ring

THROTTLE VALVES

- Diameters: ND 14" to 49"
- ND 14" to 31½" available with loose flange according to DIN 24154-2
- From ND 35½", 11 gauge wall thickness with welded-on flanges according to DIN 24154-2
- Shafts with ball bearings and sealed with Viton O-rings
- ND 14" and 16" also available with a 0.24" lip, see chapter 8

Special versions available – prices on request

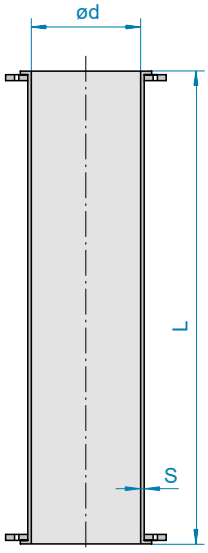
- From ND 16" to ND 39" with glued silicone inner flap seal and welded-on flanges according to DIN 24154-2, but without counter-flange (see drawing)
- Version with pneumatic or electric actuator

INSTALLATION INFORMATION

- Mounting bolts in installation kit: refer to page 226
- Bolt torque: M 10 = 29.50 ft lb, M 12 = 44.25 ft lb

Welded tubes





The tube length and diameter ND are nominal dimensions, the actual length is indicated in L

TUBES 79"

6010

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed, and galvanized (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	19 gauge galvanized	14 gauge galvanized
				Item no.	Item no.	Item no.	Item no.
14	13.74	77.80	89.51	21351010	22351010	21352010	22352010
16	15.67	77.80	101.85	21401010	22401010	21402010	22402010
18	17.64	77.80	114.86	21451010	22451010	21452010	22452010
20	19.61	77.80	127.65	21501010	22501010	21502010	22502010
22	21.97	77.80	142.64		22561010		22562010
25	24.72	77.95	165.35		22631010		22632010
28	27.83	77.95	185.19		22711010		22712010
31½	31.38	77.95	220.46		22801010		22802010
35½	35.31	77.95	240.13		229910104090		229920104090
39	39.29	77.95	267.07		229910104100		229920104100
44	44.02	77.95	323.19		229910104112		229920104112
49	49.13	77.95	360.36		229910104125		229920104125
55	55.04	78.74	557.98		239910105140 *		239920105140 *
63	62.91	78.74	636.82		239910105160 *		239920105160 *

*11 gauge

Stainless steel (dimensions for 14 gauge tubing)

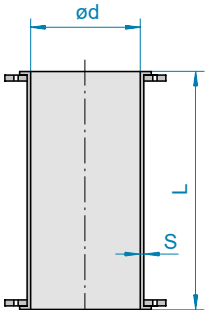
ND	Ø d	L	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless steel loose flange, CrNi-blasted	
				19 gauge	14 gauge	19 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	77.80	89.51	21353010	22353010	213530103	223530103
16	15.67	77.80	101.85	21403010	22403010	214030103	224030103
18	17.64	77.80	114.86	21453010	22453010	214530103	224530103
20	19.61	77.80	127.65	21503010	22503010	215030103	225030103
22	21.97	77.80	142.64		22563010		225630103
25	24.72	77.95	165.35		22633010		226330103
28	27.83	77.95	185.19		22713010		227130103
31½	31.38	77.95	220.46		22803010		
35½	35.31	77.95	240.13		229930104090		
39	39.29	77.95	267.07		229930104100		
44	44.02	77.95	323.19		229930104112		
49	49.13	77.95	360.36		229930104125		
55	55.04	78.74	557.98				239930105140 *
63	62.91	78.74	636.82				239930105160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





The tube length and diameter ND are nominal dimensions, the actual length is indicated in L

TUBES 39"

6010

Powder-coated or primed, and galvanized (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	19 gauge galvanized	14 gauge galvanized
				Item no.	Item no.	Item no.	Item no.
14	13.74	38.43	50.04	21351020	22351020	21352020	22352020
16	15.67	38.43	55.78	21401020	22401020	21402020	22402020
18	17.64	38.43	64.82	21451020	22451020	21452020	22452020
20	19.61	38.43	73.19	21501020	22501020	21502020	22502020
22	21.97	38.43	80.69		22561020		22562020
25	24.72	38.43	99.21		22631020		22632020
28	27.83	38.58	105.82		22711020		22712020
31½	31.38	38.58	123.46		22801020		22802020
35½	35.31	38.58	140.28		229910204090		229920204090
39	39.29	38.58	156.02		229910204100		229920204100
44	44.02	38.58	198.85		229910204112		229920204112
49	49.13	38.58	221.63		229910204125		229920204125
55	55.04	39.37	325.29		239910205140 *		239920205140 *
63	62.91	39.37	370.88		239910205160 *		239920205160 *

*11 gauge

Stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless steel loose flange, CrNi-blasted	
				19 gauge	14 gauge	19 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	38.43	50.04	21353020	22353020	213530203	223530203
16	15.67	38.43	55.78	21403020	22403020	214030203	224030203
18	17.64	38.43	64.82	21453020	22453020	214530203	224530203
20	19.61	38.43	73.19	21503020	22503020	215030203	225030203
22	21.97	38.43	80.69		22563020		225630203
25	24.72	38.43	99.21		22633020		226330203
28	27.83	38.58	105.82		22713020		227130203
31½	31.38	38.58	123.46		22803020		
35½	35.31	38.58	140.28		229930204090		
39	39.29	38.58	156.02		229930204100		
44	44.02	38.58	198.85		229930204112		
49	49.13	38.58	221.63		229930204125		
55	55.04	39.37	325.29				239930205140 *
63	62.91	39.37	370.88				239930205160 *

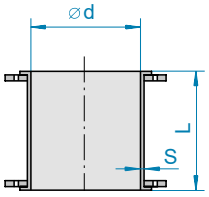
*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi

Welded tubes





The tube length and diameter ND are nominal dimensions, the actual length is indicated in L

TUBES 20"

6010

Powder-coated or primed, and galvanized (dimensions for 14 gauge tubing)

ND	Ø d	L	lb	19 gauge primed	14 gauge primed	19 gauge galvanized	14 gauge galvanized
				Item no.	Item no.	Item no.	Item no.
14	13.74	18.82	32.19	21351030	22351030	21352030	22352030
16	15.67	18.82	35.93	21401030	22401030	21402030	22402030
18	17.64	18.82	40.79	21451030	22451030	21452030	22452030
20	19.61	18.82	45.41	21501030	22501030	21502030	22502030
22	21.97	18.82	49.82		22561030		22562030
25	24.72	18.82	56.00		22631030		22632030
28	27.83	18.90	70.55		22711030		22712030
31½	31.38	18.90	79.37		22801030		22802030
35½	35.31	18.90	90.34		229910304090		229920304090
39	39.29	18.90	100.53		229910304100		229920304100
44	44.02	18.90	136.69		229910304112		229920304112
49	49.13	18.90	152.27		229910304125		229920304125
55	55.04	19.69	208.95		239910305140 *		239920305140 *
63	62.91	19.69	237.92		239910305160 *		239920305160 *

*11 gauge

Stainless steel (dimensions for 14 gauge tubing)

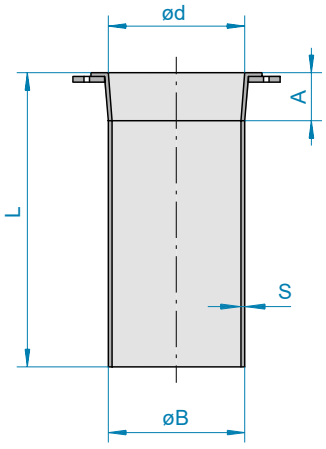
ND	Ø d	L	lb	19 gauge stainless steel with galvanized loose flanges		14 gauge stainless steel with CrNi-blasted loose flange	
				19 gauge	14 gauge	19 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	18.82	32.19	21353030	22353030	213530303	223530303
16	15.67	18.82	35.93	21403030	22403030	214030303	224030303
18	17.64	18.82	40.79	21453030	22453030	214530303	224530303
20	19.61	18.82	45.41	21503030	22503030	215030303	225030303
22	21.97	18.82	49.82		22563030		225630303
25	24.72	18.82	56.00		22633030		226330303
28	27.83	18.90	70.55		22713030		227130303
31½	31.38	18.90	79.37		22803030		
35½	35.31	18.90	90.34		229930304090		
39	39.29	18.90	100.53		229930304100		
44	44.02	18.90	136.69		229930304112		
49	49.13	18.90	152.27		229930304125		
55	55.04	19.69	208.95				239930305140 *
63	62.91	19.69	237.92				239930305160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof tested up to 43.51 psi





SLIP TUBES 39"

6020

- For information on slip tube applications, see chapter 3
- One side with loose flange
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed
- Use in conjunction with ring seal and flange for slip tube

Powder-coated or primed, and galvanized (dimensions for 14 gauge tubing)

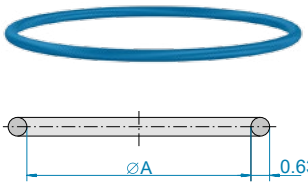
ND	Ø d	A	Ø B	L	lb	16 gauge primed	14 gauge primed	16 gauge galvanized	14 gauge galvanized
						Item no.	Item no.	Item no.	Item no.
14	13.78	1.97	13.58	38.82	39.68	21351110	22351110	21352110	22352110
16	15.71	1.97	15.51	38.82	48.50	21401110	22401110	21402110	22402110
18	17.64	1.97	17.48	38.82	64.93	21451110	22451110	21452110	22452110
20	19.61	1.97	19.45	38.82	64.82	21501110	22501110	21502110	22502110
22	21.97	1.97	21.81	38.82	70.55		22561110		22562110
25	24.72	1.97	24.57	38.82	79.37		22631110		22632110
28	27.83	1.97	27.68	38.82	92.59		22711110		22712110
31½	31.38	3.94	31.18	38.82	88.18		22801110		22802110

Stainless steel (dimensions for 19 gauge tubing)

ND	Ø d	A	Ø B	L	lb	19 gauge stainless steel with galvanized loose flanges	14 gauge stainless steel with galvanized loose flange
						Item no.	Item no.
14	13.78	1.97	13.58	38.82	39.68	21353110	22353110
16	15.71	1.97	15.51	38.82	48.50	21403110	22403110
18	17.64	1.97	17.48	38.82	64.93	21453110	22453110
20	19.61	1.97	19.45	38.82	64.82	21503110	22503110
22	21.97	1.97	21.81	38.82	70.55		22563110
25	24.72	1.97	24.57	38.82	79.37		22633110
28	27.83	1.97	27.68	38.82	92.59		22713110
31½	31.38	3.94	31.18	38.82	88.18		22803110

FOOD GRADE
EC 1935/2004 plus FDA compliant

Slip tubes and accessories



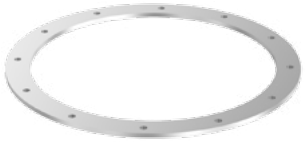
RING SEALS FOR SLIP TUBES WITH A FLANGE CONNECTION

6030

- Usable for 19 to 11 gauge tubing system
- Use in conjunction with slip tube and flange for slip tube
- Protect tubing against axial misalignment
- Admissible differential pressure: approx. 0.73 psi
- Please also read and take into account the technical information given at the beginning of this chapter

Use for 19 to 11 gauge tubing system

ND	ØA	lb	NBR gray	Silicone beige (F)	Silicone blue (F)(D)	EPDM black	Viton reddish brown (F)
			Item no.	Item no.	Item no.	Item no.	Item no.
14	12.87	0.75	203561177	2035711709	20357117091	2035811759	203591179
16	14.69	0.84	204061177	2040711709	20407117091	2040811759	204091179
18	16.57	0.93	204561177	2045711709	20457117091	2045811759	204591179
20	18.43	1.06	205061177	2050711709	20507117091	2050811759	205091179
22	20.63	1.19	205661177	2056711709	20567117091	2056811759	205691179
25	23.27	1.32	206361177	2063711709	20637117091	2063811759	206391179
28	26.22	1.52	207161177	2071711709	20717117091	2071811759	207191179
31½	29.96	1.72	208061177	2080711709	20807117091	2080811759	208091179



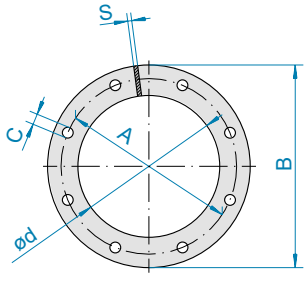
FLANGES FOR SLIP TUBES

6040

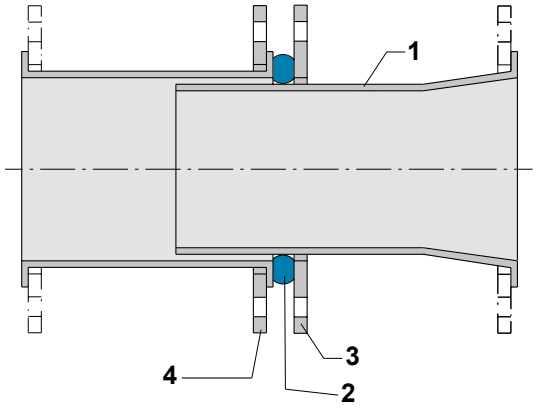
- Use in conjunction with ring seal for slip tube and standard tube with loose flange
- Use 2" long mounting bolts

Powder-coated or primed, galvanized and stainless steel

ND	Ød	A	B	C	E	S	lb	Primed	Galvanized	Stainless steel
								Item no.	Item no.	Item no.
14	13.70	15.94	17.24	4.53	8	0.31	7.63	20351724	20352724	20353724
16	15.67	17.64	19.21	4.53	12	0.31	8.55	20401724	20402724	20403724
18	17.64	19.57	21.18	4.53	12	0.31	9.55	20451724	20452724	20453724
20	19.61	21.69	23.15	4.53	12	0.31	10.52	20501724	20502724	20503724
22	21.89	24.76	25.83	0.55	16	0.31	12.92	20561724	20562724	20563724
25	24.65	27.48	28.58	0.55	16	0.31	14.46	20631724	20632724	20633724
28	27.76	30.51	31.69	0.55	16	0.31	16.18	20711724	20712724	20713724
31½	31.30	33.90	35.24	0.55	24	0.31	17.99	20801724	20802724	20803724



E = No. of holes

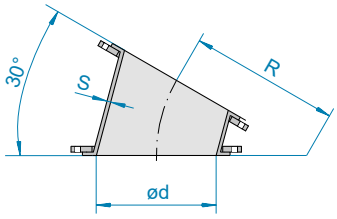


1 Slip tube
2 Ring seal for slip tube
3 Flange for slip tube
4 Straight tube with loose flange

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable





SEGMENTS 30°

6100

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	17.24	20.72	21351320	22351320
16	15.67	19.69	24.69	21401320	22401320
18	17.64	22.17	31.75	21451320	22451320
20	19.61	24.61	37.70	21501320	22501320
22	21.97	27.56	37.48		22561320
25	24.72	31.02	57.32		22631320
28	27.83	34.96	66.14		22711320
31½	31.38	39.37	83.77		22801320
35½	35.31	44.33	96.74		229913204090
39	39.29	49.21	114.40		229913204100
44	44.02	55.12	161.55		229913204112
49	49.13	61.54	191.34		229913204125
55	55.04	68.94	296.70		239913205140 *
63	62.91	78.74	371.28		239913205160 *

*11 gauge

Galvanized (dimensions for 14 gauge tubing)

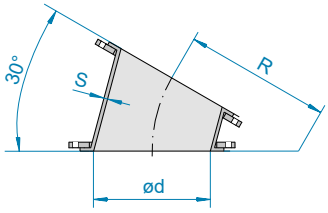
ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	17.24	20.72	21352320	22352320
16	15.67	19.69	24.69	21402320	22402320
18	17.64	22.17	31.75	21452320	22452320
20	19.61	24.61	37.70	21502320	22502320
22	21.97	27.56	37.48		22562320
25	24.72	31.02	57.32		22632320
28	27.83	34.96	66.14		22712320
31½	31.38	39.37	83.77		22802320
35½	35.31	44.33	96.74		229923204090
39	39.29	49.21	114.40		229923204100
44	44.02	55.12	161.55		229923204112
49	49.13	61.54	191.34		229923204125
55	55.04	68.94	296.70		239923205140 *
63	62.91	78.74	371.28		239923205160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi

Segments and bends



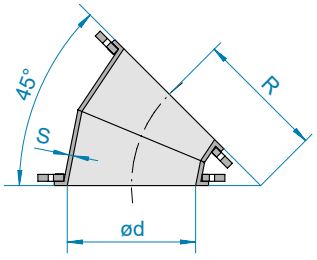


Stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless loose flange, CrNi-blasted
				16 gauge	14 gauge	14 gauge
				Item no.	Item no.	Item no.
14	13.74	17.24	20.72	21353320	22353320	223533203
16	15.67	19.69	24.69	21403320	22403320	224033203
18	17.64	22.17	31.75	21453320	22453320	224533203
20	19.61	24.61	37.70	21503320	22503320	225033203
22	21.97	27.56	37.48		22563320	225633203
25	24.72	31.02	57.32		22633320	226333203
28	27.83	34.96	66.14		22713320	227133203
31½	31.38	39.37	83.77		22803320	
35½	35.31	44.33	96.74		229933204090	
39	39.29	49.21	114.40		229933204100	
44	44.02	55.12	161.55		229933204112	
49	49.13	61.54	191.34		229933204125	
55	55.04	68.94	296.70			239933205140 *
63	62.91	78.74	371.28			239933205160 *

*11 gauge





2 flat back segments 22.5°

SEGMENTS 45°

6110

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed (dimensions for 14 gauge tubing)

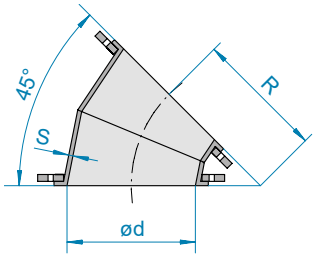
ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	13.78	25.13	21351330	22351330
16	15.67	15.75	29.32	21401330	22401330
18	17.64	17.72	36.16	21451330	22451330
20	19.61	19.69	41.89	21501330	22501330
22	21.97	22.05	46.30		22561330
25	24.72	24.80	59.52		22631330
28	27.83	27.95	74.96		22711330
31½	31.38	31.50	92.59		22801330
35½	35.31	35.43	113.60		229913304090
39	39.29	39.37	135.14		229913304100
44	44.02	44.09	187.72		229913304112
49	49.13	49.21	223.97		229913304125
55	55.04	55.12	357.81		239913305140 *
63	62.91	62.99	451.24		239913305160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





2 flat back segments 22.5°

Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	13.78	25.13	21352330	22352330
16	15.67	15.75	29.32	21402330	22402330
18	17.64	17.72	36.16	21452330	22452330
20	19.61	19.69	41.89	21502330	22502330
22	21.97	22.05	46.30		22562330
25	24.72	24.80	59.52		22632330
28	27.83	27.95	74.96		22712330
31½	31.38	31.50	92.59		22802330
35½	35.31	35.43	113.60		229923304090
39	39.29	39.37	135.14		229923304100
44	44.02	44.09	187.72		229923304112
49	49.13	49.21	223.97		229923304125
55	55.04	55.12	357.81		239923305140 *
63	62.91	62.99	451.24		239923305160 *

*11 gauge

Stainless steel (dimensions for 14 gauge tubing)

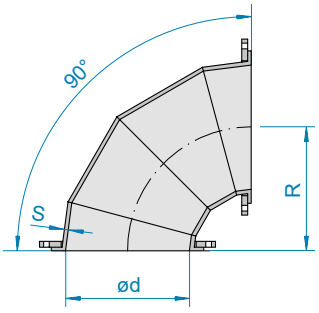
ND	Ø d	R	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless loose flange, CrNi-blasted	
				16 gauge	14 gauge	16 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	13.78	25.13	21353330	22353330	213533303	223533303
16	15.67	15.75	29.32	21403330	22403330	214033303	224033303
18	17.64	17.72	36.16	21453330	22453330	214533303	224533303
20	19.61	19.69	41.89	21503330	22503330	215033303	225033303
22	21.97	22.05	46.30		22563330		225633303
25	24.72	24.80	59.52		22633330		226333303
28	27.83	27.95	74.96		22713330		227133303
31½	31.38	31.50	92.59		22803330		
35½	35.31	35.43	113.60		229933304090		
39	39.29	39.37	135.14		229933304100		
44	44.02	44.09	187.72		229933304112		
49	49.13	49.21	223.97		229933304125		
55	55.04	55.12	357.81				239933305140 *
63	62.91	62.99	451.24				239933305160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





4 flat back segments:
2 x 30° / 2 x 15°

BENDS R = 1 D, 90°

6120

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	13.78	35.27	21351339	22351339
16	15.67	15.75	44.97	21401339	22401339
18	17.64	17.72	53.79	21451339	22451339
20	19.61	19.69	54.23	21501339	22501339
22	21.97	22.05	79.37		22561339
25	24.72	24.80	101.41		22631339
28	27.83	27.95	123.46		22711339
31½	31.38	31.50	145.50		22801339
35½	35.31	35.43	182.47		229913394090
39	39.29	39.37	220.13		229913394100
44	44.02	44.09	294.20		229913394112
49	49.13	49.21	356.57		229913394125
55	55.04	55.12	607.10		239913395140 *
63	62.91	62.99	776.83		239913395160 *

*11 gauge

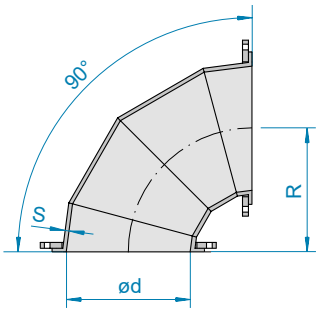
Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	13.78	35.27	21352339	22352339
16	15.67	15.75	44.97	21402339	22402339
18	17.64	17.72	53.79	21452339	22452339
20	19.61	19.69	54.23	21502339	22502339
22	21.97	22.05	79.37		22562339
25	24.72	24.80	101.41		22632339
28	27.83	27.95	123.46		22712339
31½	31.38	31.50	145.50		22802339
35½	35.31	35.43	182.47		229923394090
39	39.29	39.37	220.13		229923394100
44	44.02	44.09	294.20		229923394112
49	49.13	49.21	356.57		229923394125
55	55.04	55.12	607.10		239923395140 *
63	62.91	62.99	776.83		239923395160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi





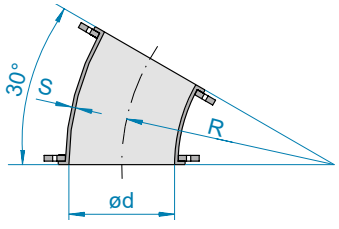
4 flat back segments:
2 x 30° / 2 x 15°

Stainless steel (dimensions for 14 gauge tubing)

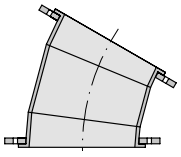
ND	Ø d	R	lb	Stainless steel with galvanized loose flanges (F)		Stainless steel with stainless loose flange, CrNi-blasted (F)	
				16 gauge	14 gauge	16 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	13.78	35.27	21353339	22353339	213533393	223533393
16	15.67	15.75	44.97	21403339	22403339	214033393	224033393
18	17.64	17.72	53.79	21453339	22453339	214533393	224533393
20	19.61	19.69	54.23	21503339	22503339	215033393	225033393
22	21.97	22.05	79.37		22563339		225633393
25	24.72	24.80	101.41		22633339		226333393
28	27.83	27.95	123.46		22713339		227133393
31½	31.38	31.50	145.50		22803339		228033393
35½	35.31	35.43	182.47		229933394090		
39	39.29	39.37	220.13		229933394100		
44	44.02	44.09	294.20		229933394112		
49	49.13	49.21	356.57		229933394125		
55	55.04	55.12	607.10				239933395140 *
63	62.91	62.99	776.83				239933395160 *

*11 gauge





1 pressed bend 30°



3 flat back segments:
1 x 15° / 2 x 7.5°

BENDS R = 2 D, 30°

6130

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	27.56	29.10		22351343
16	15.67	31.50	33.51		22401343
18	17.64	35.43	41.89	21451343	22451343
20	19.61	39.37	61.73	21501343	22501343
22	21.97	44.09	61.73		22561343
25	24.72	49.61	74.96		22631343
28	27.83	55.91	92.59		22711343
31½	31.38	62.99	111.33		22801343
35½	35.31	70.87	133.53		229913434090
39	39.29	78.74	159.72		229913434100
44	44.02	88.19	218.43		229913434112
49	49.13	98.43	262.22		229913434125
55	55.04	110.24	429.72		239913435140 *
63	62.91	125.98	545.15		239913435160 *

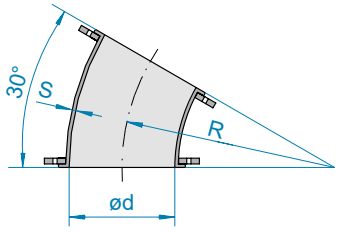
*11 gauge

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

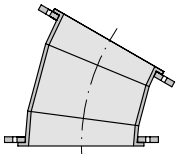
Shock explosion proof
tested up to 43.51 psi

Segments and bends





1 pressed bend 30°



3 flat back segments:
1 x 15° / 2 x 7.5°

Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	27.56	29.10		22352343
16	15.67	31.50	33.51		22402343
18	17.64	35.43	41.89	21452343	22452343
20	19.61	39.37	50.71	21502343	22502343
22	21.97	44.09	61.73		22562343
25	24.72	49.61	74.96		22632343
28	27.83	55.91	92.59		22712343
31½	31.38	62.99	111.33		22802343
35½	35.31	70.87	133.53		229923434090
39	39.29	78.74	159.72		229923434100
44	44.02	88.19	218.43		229923434112
49	49.13	98.43	262.22		229923434125
55	55.04	110.24	429.72		239923435140 *
63	62.91	125.98	545.15		239923435160 *

*11 gauge

Stainless steel (dimensions for 14 gauge tubing)

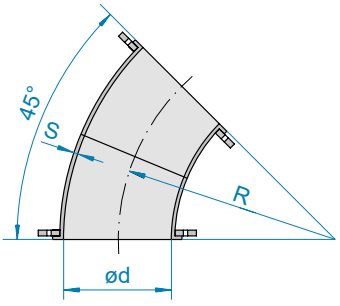
ND	Ø d	R	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless loose flange, CrNi-blasted	
				16 gauge	14 gauge	16 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	27.56	29.10		22353343	213533433	223533433
16	15.67	31.50	33.51		22403343	214033433	224033433
18	17.64	35.43	41.89	21453343	22453343	214533433	224533433
20	19.61	39.37	50.71	21503343	22503343	215033433	225033433
22	21.97	44.09	61.73		22563343		225633433
25	24.72	49.61	74.96		22633343		226333433
28	27.83	55.91	92.59		22713343		227133433
31½	31.38	62.99	111.33		22803343		
35½	35.31	70.87	133.53		229933434090		
39	39.29	78.74	159.72		229933434100		
44	44.02	88.19	218.43		229933434112		
49	49.13	98.43	262.22		229933434125		
55	55.04	110.24	429.72				239933435140 *
63	62.91	125.98	545.15				239933435160 *

*11 gauge

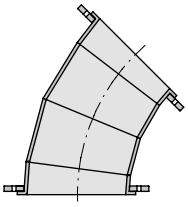
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





2 pressed segments 45°



4 flat back segments:
2 x 15° / 2 x 7.5°

BENDS R = 2 D, 45°

6140

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	27.56	37.74		22351344
16	15.67	31.50	44.09		22401344
18	17.64	35.43	53.35	21451344	22451344
20	19.61	39.37	65.04	21501344	22501344
22	21.97	44.09	81.57		22561344
25	24.72	49.61	86.42		22631344
28	27.83	55.91	119.05		22711344
31½	31.38	62.99	160.41		22801344
35½	35.31	70.87	180.03		229913444090
39	39.29	78.74	217.11		229913444100
44	44.02	88.19	290.39		229913444112
49	49.13	98.43	351.83		229913444125
55	55.04	110.24	598.17		239913445140 *
63	62.91	125.98	765.19		239913445160 *

*11 gauge

Galvanized (dimensions for 14 gauge tubing)

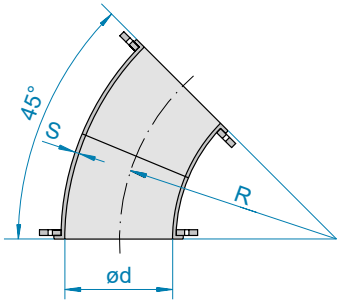
ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	27.56	37.74		22352344
16	15.67	31.50	44.09		22402344
18	17.64	35.43	53.35	21452344	22452344
20	19.61	39.37	65.04	21502344	22502344
22	21.97	44.09	81.57		22562344
25	24.72	49.61	86.42		22632344
28	27.83	55.91	119.05		22712344
31½	31.38	62.99	160.41		22802344
35½	35.31	70.87	180.03		229923444090
39	39.29	78.74	217.11		229923444100
44	44.02	88.19	290.39		229923444112
49	49.13	98.43	351.83		229923444125
55	55.04	110.24	598.17		239923445140 *
63	62.91	125.98	765.19		239923445160 *

*11 gauge

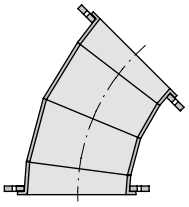
Shock explosion proof tested up to 43.51 psi

Segments and bends





2 pressed segments 45°



4 flat back segments:
2 x 15° / 2 x 7.5°

Stainless steel (dimensions for 14 gauge tubing)

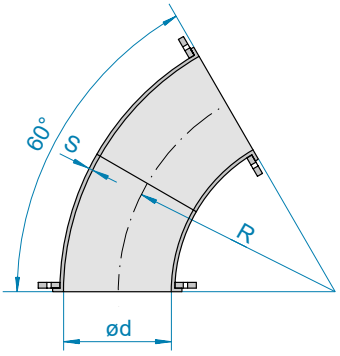
ND	Ø d	R	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless loose flange, CrNi-blasted	
				16 gauge	14 gauge	16 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	27.56	37.74		22353344	213533443	223533443
16	15.67	31.50	44.09		22403344	214033443	224033443
18	17.64	35.43	53.35	21453344	22453344	214533443	224533443
20	19.61	39.37	65.04	21503344	22503344	215033443	225033443
22	21.97	44.09	81.57		22563344		225633443
25	24.72	49.61	86.42		22633344		226333443
28	27.83	55.91	119.05		22713344		227133443
31½	31.38	62.99	160.41		22803344		
35½	35.31	70.87	180.03		229933444090		
39	39.29	78.74	217.11		229933444100		
44	44.02	88.19	290.39		229933444112		
49	49.13	98.43	351.83		229933444125		
55	55.04	110.24	598.17				239933445140 *
63	62.91	125.98	765.19				239933445160 *

*11 gauge

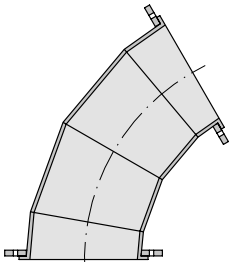
FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





2 pressed segments 30°



4 flat back segments:
2 x 20° / 2 x 10°

BENDS R = 2 D, 60°

6150

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	27.56	42.77		22351346
16	15.67	31.50	52.47		22401346
18	17.64	35.43	64.82	21451346	22451346
20	19.61	39.37	79.37	21501346	22501346
22	21.97	44.09	99.21		22561346
25	24.72	49.61	123.46		22631346
28	27.83	55.91	152.12		22711346
31½	31.38	62.99	185.19		22801346
35½	35.31	70.87	227.34		229913464090
39	39.29	78.74	275.51		229913464100
44	44.02	88.19	363.65		229913464112
49	49.13	98.43	443.06		229913464125
55	55.04	110.24	769.69		239913465140 *
63	62.91	125.98	989.18		239913465160 *

*11 gauge

Galvanized (dimensions for 14 gauge tubing)

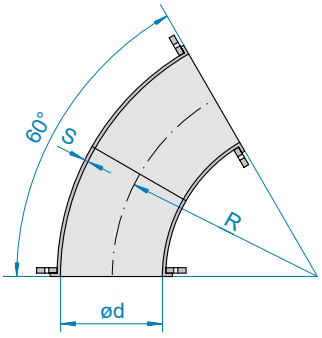
ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	27.56	42.77		22352346
16	15.67	31.50	52.47		22402346
18	17.64	35.43	64.82	21452346	22452346
20	19.61	39.37	79.37	21502346	22502346
22	21.97	44.09	99.21		22562346
25	24.72	49.61	123.46		22632346
28	27.83	55.91	152.12		22712346
31½	31.38	62.99	185.19		22802346
35½	35.31	70.87	227.34		229923464090
39	39.29	78.74	275.51		229923464100
44	44.02	88.19	363.65		229923464112
49	49.13	98.43	443.06		229923464125
55	55.04	110.24	769.69		239923465140 *
63	62.91	125.98	989.18		239923465160 *

*11 gauge

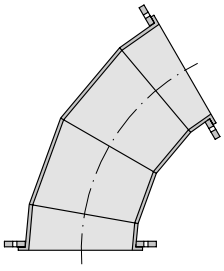
Shock explosion proof tested up to 43.51 psi

Segments and bends





2 pressed segments 30°



4 flat back segments:
2 x 20° / 2 x 10°

Stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless loose flange, CrNi-blasted	
				16 gauge	14 gauge	16 gauge	14 gauge
				Item no.	Item no.	Item no.	Item no.
14	13.74	27.56	42.77		22353346	213533463	223533463
16	15.67	31.50	52.47		22403346	214033463	224033463
18	17.64	35.43	64.82	21453346	22453346	214533463	224533463
20	19.61	39.37	79.37	21503346	22503346	215033463	225033463
22	21.97	44.09	99.21		22563346		225633463
25	24.72	49.61	123.46		22633346		226333463
28	27.83	55.91	152.12		22713346		227133463
31½	31.38	62.99	185.19		22803346		
35½	35.31	70.87	227.34		229933464090		
39	39.29	78.74	275.51		229933464100		
44	44.02	88.19	363.65		229933464112		
49	49.13	98.43	443.06		229933464125		
55	55.04	110.24	769.69				239933465140 *
63	62.91	125.98	989.18				239933465160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

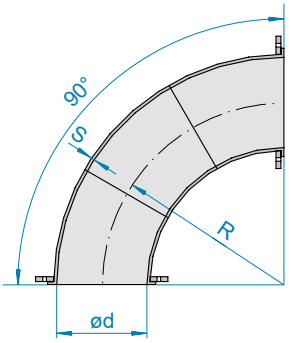
Shock explosion proof
tested up to 43.51 psi



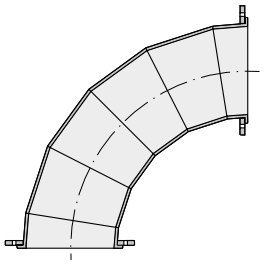
BENDS R = 2 D, 90°

6160

- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed



3 pressed segments 30°



6 flat back segments: 4 x 18° / 2 x 9°

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	16 gauge primed	14 gauge primed
				Item no.	Item no.
14	13.74	27.56	55.56		22351349
16	15.67	31.50	70.11		22401349
18	17.64	35.43	91.49	21451349	22451349
20	19.61	39.37	107.14	21501349	22501349
22	21.97	44.09	136.69		22561349
25	24.72	49.61	151.68		22631349
28	27.83	55.91	207.23		22711349
31½	31.38	62.99	264.55		22801349
35½	35.31	70.87	320.20		229913494090
39	39.29	78.74	390.10		229913494100
44	44.02	88.19	507.37		229913494112
49	49.13	98.43	622.05		229913494125
55	55.04	110.24	1,106.16		239913495140 *
63	62.91	125.98	1,428.62		239913495160 *

*11 gauge

Galvanized (dimensions for 14 gauge tubing)

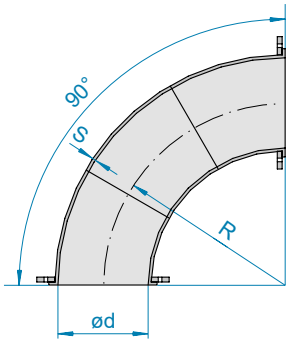
ND	Ø d	R	lb	16 gauge galvanized	14 gauge galvanized
				Item no.	Item no.
14	13.74	27.56	55.56		22352349
16	15.67	31.50	70.11		22402349
18	17.64	35.43	91.49	21452349	22452349
20	19.61	39.37	107.14	21502349	22502349
22	21.97	44.09	136.69		22562349
25	24.72	49.61	151.68		22632349
28	27.83	55.91	207.23		22712349
31½	31.38	62.99	264.55		22802349
35½	35.31	70.87	320.20		229923494090
39	39.29	78.74	390.10		229923494100
44	44.02	88.19	507.37		229923494112
49	49.13	98.43	622.05		229923494125
55	55.04	110.24	1,106.16		239923495140 *
63	62.91	125.98	1,428.62		239923495160 *

*11 gauge

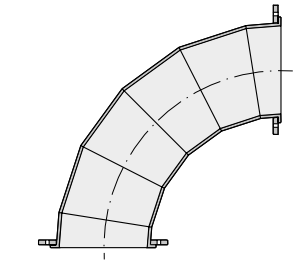
Shock explosion proof tested up to 43.51 psi

Segments and bends





3 pressed segments 30°



6 flat back segments:
4 x 18° / 2 x 9°

Stainless steel with galvanized loose flanges (dimensions for 14 gauge tubing)

ND	Ø d	R	lb	Stainless steel with galvanized loose flanges	
				16 gauge	14 gauge
				Item no.	Item no.
14	13.74	27.56	55.56		22353349
16	15.67	31.50	70.11		22403349
18	17.64	35.43	91.49	21453349	22453349
20	19.61	39.37	107.14	21503349	22503349
22	21.97	44.09	136.69		22563349
25	24.72	49.61	151.68		22633349
28	27.83	55.91	207.23		22713349
31½	31.38	62.99	264.55		22803349
35½	35.31	70.87	320.20		229933494090
39	39.29	78.74	390.10		229933494100
44	44.02	88.19	507.37		229933494112
49	49.13	98.43	622.05		229933494125

*11 gauge

Stainless steel with stainless steel loose flange, CrNi-blasted (dimensions for 14 gauge tubing)

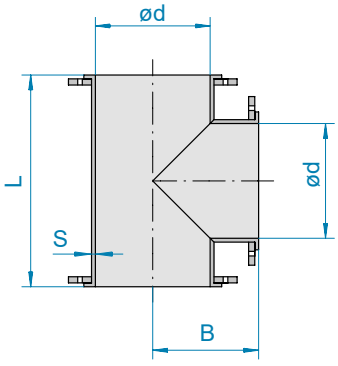
ND	Ø d	R	lb	Stainless steel with stainless loose flange, CrNi-blasted	
				16 gauge	14 gauge
				Item no.	Item no.
14	13.74	27.56	57.32	213533493	223533493
16	15.67	31.50	70.55	214033493	224033493
18	17.64	35.43	90.39	214533493	224533493
20	19.61	39.37	110.23	215033493	225033493
22	21.97	44.09	136.69		225633493
25	24.72	49.61	167.55		226333493
28	27.83	55.91	207.23		227133493
31½	31.38	62.99	264.55		228033493
55	55.04	110.24	1,106.16		239933495140 *
63	62.91	125.98	1,428.62		239933495160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





T-PIECES

6060

- With loose flange on all sides
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed
- ND 22 and 31½": 11 gauge wall thickness, available in shock explosion proof version up to 43.51 psi, prices on request

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	B	L	lb	16 gauge primed	14 gauge primed
					Item no.	Item no.
14	13.74	10.83	21.65	43.65	21351240	22351240
16	15.67	11.81	23.62	52.91	21401240	22401240
18	17.64	12.80	25.59	59.97	21451240	22451240
20	19.61	13.78	27.56	70.99	21501240	22501240
22	21.97	14.96	29.92	88.18		22561240
25	24.72	16.34	32.68	102.29		22631240
28	27.83	18.11	35.83	127.87		22711240
31½	31.38	19.69	39.37	141.09		22801240
35½	35.31	21.65	43.31	171.67		229912404090
39	39.29	23.62	47.24	200.27		229912404100
44	44.02	25.98	51.97	273.50		229912404112
49	49.13	28.54	57.09	320.68		229912404125
55	55.04	31.50	62.99	496.76		239912405140 *
63	62.91	35.43	70.87	612.77		239912405160 *

*11 gauge

Galvanized (dimensions for 14 gauge tubing)

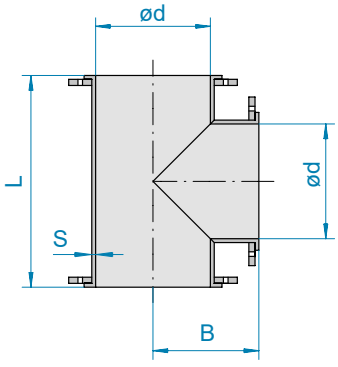
ND	Ø d	B	L	lb	16 gauge galvanized	14 gauge galvanized
					Item no.	Item no.
14	13.74	10.83	21.65	43.65	21352240	22352240
16	15.67	11.81	23.62	52.91	21402240	22402240
18	17.64	12.80	25.59	59.97	21452240	22452240
20	19.61	13.78	27.56	70.99	21502240	22502240
22	21.97	14.96	29.92	88.18		22562240
25	24.72	16.34	32.68	102.29		22632240
28	27.83	18.11	35.83	127.87		22712240
31½	31.38	19.69	39.37	141.09		22802240
35½	35.31	21.65	43.31	171.67		229922404090
39	39.29	23.62	47.24	200.27		229922404100
44	44.02	25.98	51.97	273.50		229922404112
49	49.13	28.54	57.09	320.68		229922404125
55	55.04	31.50	62.99	496.76		239922405140 *
63	62.91	35.43	70.87	612.77		239922405160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi

Form pieces





Stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	B	L	lb	Stainless steel with galvanized loose flanges		Stainless steel with stainless loose flange, CrNi-blasted	
					16 gauge	14 gauge	16 gauge	14 gauge
					Item no.	Item no.	Item no.	Item no.
14	13.74	10.83	21.65	43.65	21353240	22353240	213532403	223532403
16	15.67	11.81	23.62	52.91	21403240	22403240	214032403	224032403
18	17.64	12.80	25.59	59.97	21453240	22453240	214532403	224532403
20	19.61	13.78	27.56	70.99	21503240	22503240	215032403	225032403
22	21.97	14.96	29.92	88.18		22563240		225632403
25	24.72	16.34	32.68	102.29		22633240		226332403
28	27.83	18.11	35.83	127.87		22713240		227132403
31½	31.38	19.69	39.37	141.09		22803240		
35½	35.31	21.65	43.31	171.67		229932404090		
39	39.29	23.62	47.24	200.27		229932404100		
44	44.02	25.98	51.97	273.50		229932404112		
49	49.13	28.54	57.09	320.68		229932404125		
55	55.04	31.50	62.99	496.76				239932405140 *
63	62.91	35.43	70.87	612.77				239932405160 *

*11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

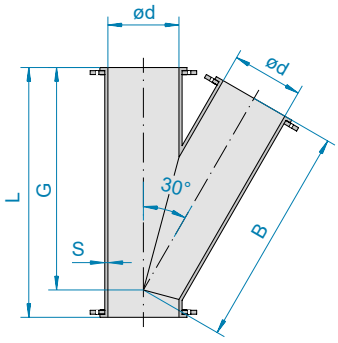
Shock explosion proof
tested up to 43.51 psi

LATERALS AND CONICAL LATERALS 30°

6080

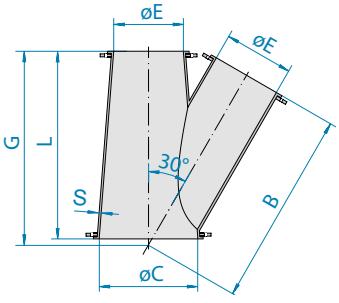


- ND < 14" with a 0.24" lip for pull ring connection (without flange)
- ND 22" and 25": 11 gauge wall thickness, available in shock explosion proof version up to 43.51 psi, prices on request
- With loose flange on all sides
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed
- Other combinations of diameters available on request



Lateral 30°





Conical lateral 30°

Powder-coated or primed (dimensions for 14 gauge tubing)

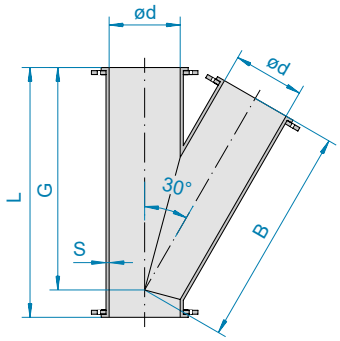
ND	Ø d	B	Ø C	Ø E	G	L	lb	16 gauge primed	14 gauge primed
								Item no.	Item no.
14 -10 -10		28.62	13.78	9.84	28.62	24.41	34.39	21351255	22351255
14 -14 -14	13.74	32.17			32.60	36.22	61.18	21351230	22351230
16 -12 -12		32.44	15.71	11.81	32.32	28.35	44.97	21401255	22401255
16 -16 -16	15.67	36.42			36.46	40.35	85.54	21401230	22401230
18 -14 -14		35.87	17.68	13.78	35.79	36.22	80.25	21451255	22451255
18 -18 -18	17.64	40.55			41.14	45.28	105.82	21451230	22451230
20 -16 -16		39.92	19.65	15.71	39.72	40.35	97.00	21501255	22501255
20 -20 -20	19.61	44.37			44.80	49.21	123.46	21501230	22501230
22 -16 -16		42.17	21.97	15.71	41.69	40.35	104.94		22561255
22 -22 -22	21.97	50.20			50.39	55.12	158.73		22561230
25 -18 -18		47.76	24.72	17.64	47.05	45.28	129.63		22631255
25 -25 -25	24.72	55.28			55.16	60.24	186.51		22631230
28 -20 -20		52.24	27.83	19.61	51.61	49.21	158.73		22711255
28 -28 -28	27.83	65.55			65.35	70.87	255.73		22711230
31½-22 -22		59.33	31.38	21.97	58.31	55.12	191.80		22801255
31½-31½-31½	31.38	71.77			71.57	77.56	308.64		22801230
35½-35½-35½	35.31	79.92			79.53	86.61	365.08		229912304090
39 -39 -39	39.29	86.22			86.81	94.49	429.02		229912304100
44 -44 -44	44.02	97.64			98.03	106.30	570.33		229912304112
49 -49 -49	49.13	106.69			106.89	116.14	680.03		229912304125
55 -55 -55	55.04	116.14			116.34	125.98	1,137.84		239912305140 *
63 -63 -63	62.91	130.71			131.30	141.73	1,434.14		239912305160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi

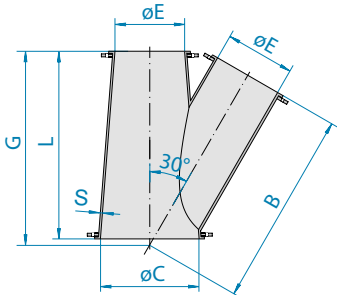
Form pieces





Lateral 30°





Conical lateral 30°

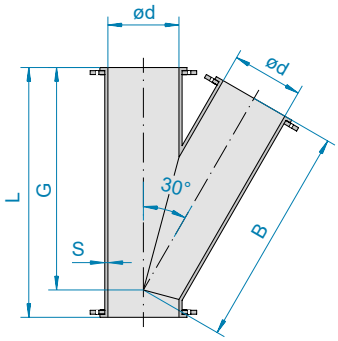
Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	B	Ø C	Ø E	G	L	lb	16 gauge galvanized	14 gauge galvanized
								Item no.	Item no.
14 -10 -10		28.62	13.78	9.84	28.62	24.41	34.39	21352255	22352255
14 -14 -14	13.74	32.17			32.60	36.22	61.18	21352230	22352230
16 -12 -12		32.44	15.71	11.81	32.32	28.35	44.97	21402255	22402255
16 -16 -16	15.67	36.42			36.46	40.35	85.54	21402230	22402230
18 -14 -14		35.87	17.68	13.78	35.79	36.22	80.25	21452255	22452255
18 -18 -18	17.64	40.55			41.14	45.28	105.82	21452230	22452230
20 -16 -16		39.92	19.65	15.71	39.72	40.35	97.00	21502255	22502255
20 -20 -20	19.61	44.37			44.80	49.21	123.46	21502230	22502230
22 -16 -16		42.17	21.97	15.71	41.69	40.35	104.94		22562255
22 -22 -22	21.97	50.20			50.39	55.12	158.73		22562230
25 -18 -18		47.76	24.72	17.64	47.05	45.28	129.63		22632255
25 -25 -25	24.72	55.28			55.16	60.24	186.51		22632230
28 -20 -20		52.24	27.83	19.61	51.61	49.21	158.73		22712255
28 -28 -28	27.83	65.55			65.35	70.87	255.73		22712230
31½-22 -22		59.33	31.38	21.97	58.31	55.12	191.80		22802255
31½-31½-31½	31.38	71.77			71.57	77.56	308.64		22802230
35½-35½-35½	35.31	79.92			79.53	86.61	365.08		229922304090
39 -39 -39	39.29	86.22			86.81	94.49	429.02		229922304100
44 -44 -44	44.02	97.64			98.03	106.30	570.33		229922304112
49 -49 -49	49.13	106.69			106.89	116.14	680.03		229922304125
55 -55 -55	55.04	116.14			116.34	125.98	1,137.84		239922305140 *
63 -63 -63	62.91	130.71			131.30	141.73	1,434.14		239922305160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi





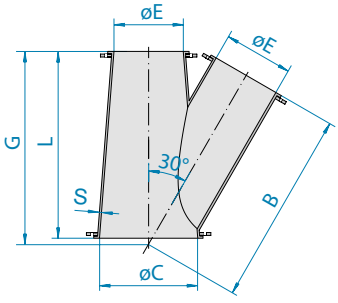
Lateral 30°

Stainless steel with galvanized loose flanges (dimensions for 14 gauge tubing)

ND	Ø d	B	Ø C	Ø E	G	L	lb	Stainless steel with galvanized loose flanges	
								16 gauge	14 gauge
								Item no.	Item no.
14 -10 -10		28.62	13.78	9.84	28.62	24.41	34.39	21353255	22353255
14 -14 -14	13.74	32.17			32.60	36.22	61.18	21353230	22353230
16 -12 -12		32.44	15.71	11.81	32.32	28.35	44.97	21403255	22403255
16 -16 -16	15.67	36.42			36.46	40.35	85.54	21403230	22403230
18 -14 -14		35.87	17.68	13.78	35.79	36.22	80.25	21453255	22453255
18 -18 -18	17.64	40.55			41.14	45.28	105.82	21453230	22453230
20 -16 -16		39.92	19.65	15.71	39.72	40.35	97.00	21503255	22503255
20 -20 -20	19.61	44.37			44.80	49.21	123.46	21503230	22503230
22 -16 -16		42.17	21.97	15.71	41.69	40.35	104.94		22563255
22 -22 -22	21.97	50.20			50.39	55.12	158.73		22563230
25 -18 -18		47.76	24.72	17.64	47.05	45.28	129.63		22633255
25 -25 -25	24.72	55.28			55.16	60.24	186.51		22633230
28 -20 -20		52.24	27.83	19.61	51.61	49.21	158.73		22713255
28 -28 -28	27.83	65.55			65.35	70.87	255.73		22713230
31½-22 -22		59.33	31.38	21.97	58.31	55.12	191.80		22803255
31½-31½-31½	31.38	71.77			71.57	77.56	308.64		22803230
35½-35½-35½	35.31	79.92			79.53	86.61	365.08		229932304090
39 -39 -39	39.29	86.22			86.81	94.49	429.02		229932304100
44 -44 -44	44.02	97.64			98.03	106.30	570.33		229932304112
49 -49 -49	49.13	106.69			106.89	116.14	680.03		229932304125
55 -55 -55	55.04	116.14			116.34	125.98	1,137.84		239932305140 *
63 -63 -63	62.91	130.71			131.30	141.73	1,434.14		239932305160 *

*11 gauge with welded-on stainless steel flange, CrNi-blasted





Conical lateral 30°

Stainless steel with stainless steel loose flange, CrNi-blasted (dimensions for 14 gauge tubing)

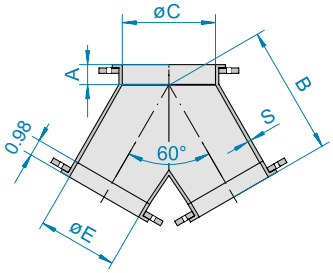
ND	Ø d	B	Ø C	Ø E	G	L	lb	Stainless steel with stainless steel loose flange, CrNi-blasted	
								16 gauge	14 gauge
								Item no.	Item no.
14-10-10		28.62	13.78	9.84	28.62	24.41	34.39	213532553	223532553
14-14-14	13.74	32.17			32.60	36.22	61.73	213532303	223532303
16-12-12		32.44	15.71	11.81	32.32	28.35	44.09	214032553	224032553
16-16-16	15.67	36.42			36.46	40.35	86.86	214032303	224032303
18-14-14		35.87	17.68	13.78	35.79	36.22	84.22	214532553	224532553
18-18-18	17.64	40.55			41.14	45.28	105.82	214532303	224532303
20-16-16		39.92	19.65	15.71	39.72	40.35	97.00	215032553	225032553
20-20-20	19.61	44.37			44.80	49.21	134.48	215032303	225032303
22-16-16		42.17	21.97	15.71	41.69	40.35	104.94		225632553
22-22-22	21.97	50.20			50.39	55.12	165.35		225632303
25-18-18		47.76	24.72	17.64	47.05	45.28	125.66		226332553
25-25-25	24.72	55.28			55.16	60.24	186.29	226332303*	236332303*
28-20-20		52.24	27.83	19.61	51.61	49.21	158.73		227132553
28-28-28	27.83	65.55			65.35	70.87	249.12	227132303*	237132303*

* 14 gauge * 11 gauge

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





CONICAL Y-BRANCH 60°

6090

- ND < 14" with a 0.24" lip for pull ring connection (without flange)
- ND 22" to 31½": 11 gauge wall thickness, available in shock explosion proof version up to 43.51 psi, prices on request
- With loose flange on all sides
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed
- Other combinations of diameters available on request

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	A	B	Ø C	Ø E	lb	16 gauge primed	14 gauge primed
						Item no.	Item no.
14 -10 -10	2.76	11.81	13.78	9.84	25.02	21351275	22351275
16 -12 -12	2.76	13.78	15.71	11.81	26.46	21401275	22401275
18 -14 -14	3.15	16.73	17.68	13.78	50.71	21451275	22451275
20 -16 -16	3.15	18.70	19.65	15.71	73.85	21501275	22501275
22 -16 -16	3.15	21.65	21.97	15.71	81.57		22561275
25 -18 -18	5.91	23.62	24.72	17.64	89.07		22631275
28 -20 -20	7.87	25.59	27.83	19.61	104.94		22711275
31½-22 -22	7.87	27.56	31.38	21.97	130.07		22801275
35½-25 -25	8.27	33.46	35.31	24.72	164.02		229912754090
39 -28 -28	8.66	36.61	39.29	27.83	193.92		229912754100
44 -31½-31½	8.66	40.94	44.02	31.38	243.17		229912754112
49 -35½-35½	8.66	44.49	49.13	35.31	282.67		229912754125
55 -39 -39	9.65	48.43	55.04	39.29	455.91		239912755140 *
63 -44 -44	9.65	51.97	62.91	44.02	554.77		239912755160 *

*11 gauge

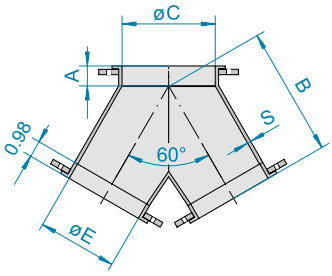
Galvanized (dimensions for 14 gauge tubing)

ND	A	B	Ø C	Ø E	lb	16 gauge galvanized	14 gauge galvanized
						Item no.	Item no.
14 -10 -10	2.76	11.81	13.78	9.84	25.02	21352275	22352275
16 -12 -12	2.76	13.78	15.71	11.81	26.46	21402275	22402275
18 -14 -14	3.15	16.73	17.68	13.78	50.71	21452275	22452275
20 -16 -16	3.15	18.70	19.65	15.71	73.85	21502275	22502275
22 -16 -16	3.15	21.65	21.97	15.71	81.57		22562275
25 -18 -18	5.91	23.62	24.72	17.64	89.07		22632275
28 -20 -20	7.87	25.59	27.83	19.61	104.94		22712275
31½-22 -22	7.87	27.56	31.38	21.97	130.07		22802275
35½-25 -25	8.27	33.46	35.31	24.72	164.02		229922754090
39 -28 -28	8.66	36.61	39.29	27.83	193.92		229922754100
44 -31½-31½	8.66	40.94	44.02	31.38	243.17		229922754112
49 -35½-35½	8.66	44.49	49.13	35.31	282.67		229922754125
55 -39 -39	9.65	48.43	55.04	39.29	455.91		239922755140 *
63 -44 -44	9.65	51.97	62.91	44.02	554.77		239922755160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi





Stainless steel with galvanized loose flanges (dimensions for 14 gauge tubing)

ND	A	B	Ø C	Ø E	lb	Stainless steel with galvanized loose flanges	
						16 gauge	14 gauge
						Item no.	Item no.
14 -10 -10	2.76	11.81	13.78	9.84	25.02	21353275	22353275
16 -12 -12	2.76	13.78	15.71	11.81	26.46	21403275	22403275
18 -14 -14	3.15	16.73	17.68	13.78	50.71	21453275	22453275
20 -16 -16	3.15	18.70	19.65	15.71	73.85	21503275	22503275
22 -16 -16	3.15	21.65	21.97	15.71	81.57		22563275
25 -18 -18	5.91	23.62	24.72	17.64	89.07		22633275
28 -20 -20	7.87	25.59	27.83	19.61	104.94		22713275
31½-22 -22	7.87	27.56	31.38	21.97	130.07		22803275
35½-25 -25	8.27	33.46	35.31	24.72	164.02		229932754090
39 -28 -28	8.66	36.61	39.29	27.83	193.92		229932754100
44 -31½-31½	8.66	40.94	44.02	31.38	243.17		229932754112
49 -35½-35½	8.66	44.49	49.13	35.31	282.67		229932754125
55 -39 -39	9.65	48.43	55.04	39.29	455.91		239932755140*
63 -44 -44	9.65	51.97	62.91	44.02	554.77		239932755160*

*11 gauge with welded-on stainless steel flange, CrNi-blasted

Stainless steel with stainless steel loose flange, CrNi-blasted (dimensions for 14 gauge tubing)

ND	A	B	Ø C	Ø E	lb	Stainless steel with stainless steel loose flange, CrNi-blasted	
						16 gauge	14 gauge
						Item no.	Item no.
14-10-10	2.76	11.81	13.78	9.84	31.68	213532753	223532753
16-12-12	2.76	13.78	15.71	11.81	25.93	214032753	224032753
18-14-14	3.15	16.73	17.68	13.78	72.53	214532753	224532753
20-16-16	3.15	18.70	19.65	15.71	60.41	215032753	225032753
22-16-16	3.15	21.65	21.97	15.71	81.57		225632753
25-18-18	5.91	23.62	24.72	17.64	90.39		226332753
28-20-20	7.87	25.59	27.83	19.61	104.94		227132753

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi

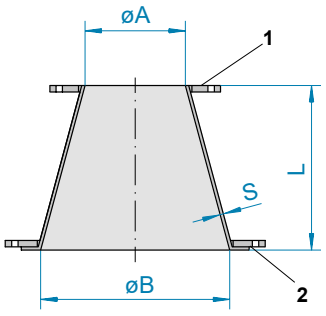
Transition pieces and adapters



CONE ADAPTERS

6170

- ND < 14" with 0.24" lip for pull ring connection (without flange)
- ND 25" to 28": 11 gauge wall thickness, available in shock explosion proof version up to 43.51 psi, prices on request
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges on both sides, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed
- Other combinations of diameters available on request



1 With welded-on flange to DIN 24154-2

2 With loose flange to DIN 24154-2

Powder-coated or primed (dimensions for 14 gauge tubing)

ND	ØA	Ø B	L	lb	16 gauge primed	14 gauge primed
					Item no.	Item no.
12 -14	11.77	13.74	7.87	14.99	21001480	22001480
12 -16	11.77	15.67	7.87	16.31	21001481	22001481
14 -16	13.74	15.67	7.87	22.05	21001482	22001482
14 -18	13.74	17.64	7.87	24.69	21001483	22001483
16 -18	15.67	17.64	7.87	26.01	21001485	22001485
16 -20	15.67	19.61	9.84	29.54	21001486	22001486
18 -20	17.64	19.61	7.87	31.31	21001487	22001487
18 -22	17.64	21.97	9.84	36.60		22001495
20 -22	19.61	21.97	9.84	38.36		22001496
20 -25	19.61	24.72	11.81	43.21		22001497
22 -25	21.97	24.72	11.81	48.06		22001498
25 -28	24.72	27.83	11.81	53.79		22001499
28 -31½	27.83	31.38	11.81	61.73		22001500
35½-31½	35.31	31.46	11.81	68.81		229918104090
39 -35½	39.29	35.39	11.81	76.79		229918114100
44 -39	44.02	39.37	11.81	97.47		229918124112
49 -44	49.13	44.09	11.81	121.56		229918134125
55 -49	55.04	49.21	15.75	181.53		239918145140 *
63 -55	62.91	55.04	15.75	206.31		239918155160 *

*11 gauge

Galvanized (dimensions for 14 gauge tubing)

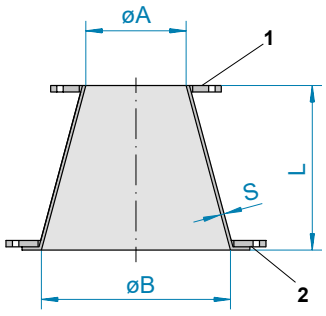
ND	ØA	Ø B	L	lb	16 gauge galvanized	14 gauge galvanized
					Item no.	Item no.
12 -14	11.77	13.74	7.87	14.99	21002480	22002480
12 -16	11.77	15.67	7.87	16.31	21002481	22002481
14 -16	13.74	15.67	7.87	22.05	21002482	22002482
14 -18	13.74	17.64	7.87	24.69	21002483	22002483
16 -18	15.67	17.64	7.87	26.01	21002485	22002485
16 -20	15.67	19.61	9.84	29.54	21002486	22002486
18 -20	17.64	19.61	7.87	31.31	21002487	22002487
18 -22	17.64	21.97	9.84	36.60		22002495
20 -22	19.61	21.97	9.84	38.36		22002496
20 -25	19.61	24.72	11.81	43.21		22002497
22 -25	21.97	24.72	11.81	48.06		22002498
25 -28	24.72	27.83	11.81	53.79		22002499
28 -31½	27.83	31.38	11.81	61.73		22002500
35½-31½	35.31	31.46	11.81	68.81		229928104090
39 -35½	39.29	35.39	11.81	76.79		229928114100
44 -39	44.02	39.37	11.81	97.47		229928124112
49 -44	49.13	44.09	11.81	121.56		229928134125
55 -49	55.04	49.21	15.75	181.53		239928145140 *
63 -55	62.91	55.04	15.75	206.31		239928155160 *

*11 gauge

Shock explosion proof tested up to 43.51 psi

For more technical information go to www.jacob-pipesystems.com





1 With welded-on stainless steel flange to DIN 24154-2

2 With loose flange to DIN 24154-2

Stainless steel with galvanized loose flanges (dimensions for 14 gauge tubing)

ND	ØA	ØB	L	lb	Stainless steel with galvanized loose flanges	
					16 gauge	14 gauge
					Item no.	Item no.
12 -14	11.77	13.74	7.87	14.99	21003480	22003480
12 -16	11.77	15.67	7.87	16.31	21003481	22003481
14 -16	13.74	15.67	7.87	22.05	21003482	22003482
14 -18	13.74	17.64	7.87	24.69	21003483	22003483
16 -18	15.67	17.64	7.87	26.01	21003485	22003485
16 -20	15.67	19.61	9.84	29.54	21003486	22003486
18 -20	17.64	19.61	7.87	31.31	21003487	22003487
18 -22	17.64	21.97	9.84	36.60		22003495
20 -22	19.61	21.97	9.84	38.36		22003496
20 -25	19.61	24.72	11.81	43.21		22003497
22 -25	21.97	24.72	11.81	48.06		22003498
25 -28	24.72	27.83	11.81	53.79		22003499
28 -31½	27.83	31.38	11.81	61.73		22003500
35½-31½	35.31	31.46	11.81	68.81		229938104090
39 -35½	39.29	35.39	11.81	76.79		229938114100
44 -39	44.02	39.37	11.81	97.47		229938124112
49 -44	49.13	44.09	11.81	121.56		229938134125
55 -49	55.04	49.21	15.75	181.53		239938145140 *
63 -55	62.91	55.04	15.75	206.31		239938155160 *

*11 gauge with welded-on stainless steel flange, CrNi-blasted

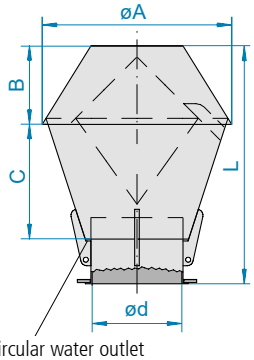
Stainless steel with stainless steel loose flange, CrNi-blasted (dimensions for 14 gauge tubing)

ND	ØA	ØB	L	lb	Stainless steel with stainless loose flange, CrNi-blasted	
					16 gauge	14 gauge
					Item no.	Item no.
12-14	11.77	13.74	7.87	14.99	210034803	220034803
12-16	11.77	15.67	7.87	16.31	210034813	220034813
14-16	13.74	15.67	7.87	22.05	210034823	220034823
14-18	13.74	17.64	7.87	24.25	210034833	220034833
16-18	15.67	17.64	7.87	26.01	210034853	220034853
16-20	15.67	19.61	9.84	29.54	210034863	220034863
18-20	17.64	19.61	7.87	31.31	210034873	220034873
18-22	17.64	21.97	9.84	36.60		220034953
20-22	19.61	21.97	9.84	38.36		220034963
20-25	19.61	24.72	11.81	43.21		220034973
22-25	21.97	24.72	11.81	48.06		220034983
25-28	24.72	27.83	11.81	53.79		220034993

FOOD GRADE
EC 1935/2004 plus FDA compliant

Shock explosion proof
tested up to 43.51 psi





Circular water outlet

JET CAPS

1430

- With welded-on flange to DIN 24154-2

Galvanized and stainless steel (dimensions for 14 gauge tubing)

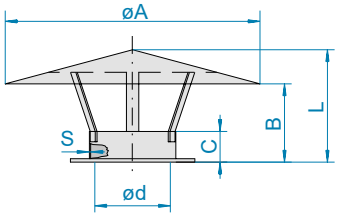
ND	Ø d	Ø A	B	C	L	lb	14 gauge galvanized	14 gauge galvanized
							Item no.	Item no.
14	13.74	25.39	10.83	17.64	34.06	72.75	12352805	12353805
16	15.67	28.15	11.61	18.90	36.02	92.59	12402805	12403805
18	17.64	32.28	12.60	23.15	40.94	112.43	12452805	12453805
20	19.61	34.25	12.60	23.15	40.94	135.58	12502805	12503805
22	21.97	38.98	14.65	27.68	47.56	179.67	12562805	12563805
25	24.72	44.88	17.40	30.55	56.46	246.92	12632805	12633805
28	27.83	50.79	19.76	35.47	64.06	304.23	12712805	12713805
31½	31.38	56.69	20.47	40.16	70.47	361.55	12802805	12803805
35½	35.31	61.02	23.62	45.28	84.65	573.20	239928055090 *	239938055090 *
39	39.29	70.87	27.56	52.36	94.49	723.11	239928055100 *	239938055100 *
44	44.02	71.85	44.09	43.31	93.31	928.14	239928055112 *	239938055112 *
49	49.13	76.97	46.85	45.28	97.24	996.48	239928055125 *	239938055125 *
55	55.04	87.01	49.21	48.03	102.36	1,102.30	239928055140 *	239938055140 *
63	62.91	102.76	57.87	57.87	123.62	1,298.51	239928055160 *	239938055160 *

*11 gauge

RAIN CAPS

6190





- With loose flange up to ND 39"
- ND 44": 11 gauge wall thickness, with welded-on flange to DIN 24154-2
- From ND 49", we recommend the use of jet caps
- Take local building regulations into account, alternatively use a jet cap

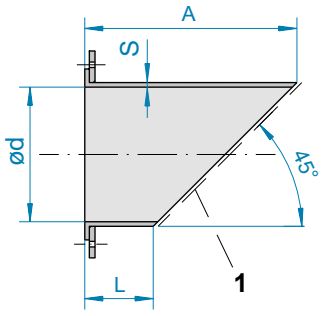
Galvanized and stainless steel (dimensions for 14 gauge tubing)

ND	Ø d	Ø A	B	C	L	lb	14 gauge galvanized	14 gauge stainless steel with galvanized loose flanges	14 gauge stainless steel with loose flange, CrNi-blasted
							Item no.	Item no.	Item no.
14	13.74	29.53	11.81	5.91	15.55	52.25	22352850	22353850	223538503
16	15.67	33.46	12.60	5.91	17.13	37.04	22402850	22403850	224038503
18	17.64	37.40	13.39	5.91	18.50	57.10	22452850	22453850	224538503
20	19.61	41.34	16.14	7.87	21.65	69.44	22502850	22503850	225038503
22	21.97	45.28	17.13	7.87	23.23	74.96	22562850	22563850	225638503
25	24.72	51.18	18.50	7.87	25.39	92.59	22632850	22633850	226338503
28	27.83	55.12	19.69	9.84	27.56	114.64	22712850	22713850	227138503
31½	31.38	59.06	20.87	9.84	29.92	132.10	22802850	22803850	228038503
35½	35.31	70.87	21.65	9.84	31.22	192.24	229928504090	229938504090	
39	39.29	78.74	23.62	9.84	34.25	227.51	229928504100	229938504100	
44	44.02	88.19	25.59	11.81	37.40	412.04	239928505112 *		239938505112 *

*11 gauge

For more technical information go to www.jacob-pipesystems.com





1 Bird-guard

EXHAUST STUBS 45°

6200

- Bird-guard: Material thickness 14 gauge, mesh size 13/16"x 13/16"
- One side with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel

Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	A	L	lb	16 gauge galvanized	14 gauge galvanized
					Item no.	Item no.
14	13.78	21.65	7.87	20.28	21352880	
16	15.71	23.62	7.87	23.81	21402880	
18	17.68	25.59	7.87	27.12	21452880	
20	19.65	27.56	7.87	23.37	21502880	
22	21.97	29.92	7.87	48.50		22562880
25	24.72	32.68	7.87	57.32		22632880
28	27.83	35.83	7.87	66.14		22712880
31½	31.38	39.37	7.87	79.37		22802880
35½	35.31	43.31	7.87	129.63		239928804090 *
39	39.29	47.24	7.87	152.38		239928804100 *
44	44.02	51.97	7.87	200.07		239928804112 *
49	49.13	57.09	7.87	236.77		239928804125 *
55	55.04	62.99	7.87	258.58		239928805140 *
63	62.91	70.87	7.87	321.94		239928805160 *

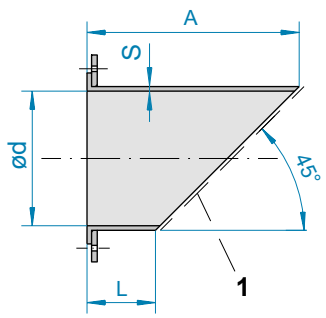
*11 gauge

Stainless steel with galvanized loose flanges (dimensions for 14 gauge tubing)

ND	Ø d	A	L	lb	Stainless steel with galvanized loose flanges	
					19 gauge	14 gauge
					Item no.	Item no.
14	13.78	21.65	7.87	20.28	21353880	
16	15.71	23.62	7.87	23.81	21403880	
18	17.68	25.59	7.87	27.12	21453880	
20	19.65	27.56	7.87	23.37	21503880	
22	21.97	29.92	7.87	48.50		22563880
25	24.72	32.68	7.87	57.32		22633880
28	27.83	35.83	7.87	66.14		22713880
31½	31.38	39.37	7.87	79.37		22803880
35½	35.31	43.31	7.87	129.63		239938804090 *
39	39.29	47.24	7.87	152.38		239938804100 *
44	44.02	51.97	7.87	200.07		239938804112 *
49	49.13	57.09	7.87	236.77		239938804125 *
55	55.04	62.99	7.87	258.58		239938805140 *
63	62.91	70.87	7.87	321.94		239938805160 *

*11 gauge





1 Bird-guard mesh size:
13/16" x 13/16" x 1/16"

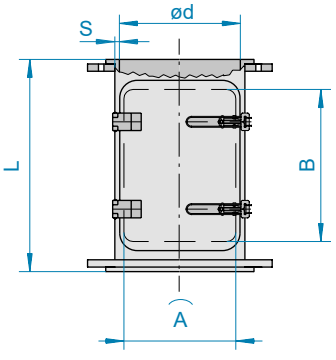
EXHAUST STUBS 45°

6200

Stainless steel with stainless steel loose flange, CrNi-blasted (dimensions for 14 gauge tubing)

ND	Ø d	A	L	lb	Stainless steel with stainless steel loose flange, CrNi-blasted	
					19 gauge	14 gauge
					Item no.	Item no.
14	13.78	21.65	7.87	20.28	213538803	
16	15.71	23.62	7.87	23.81	214038803	
18	17.68	25.59	7.87	27.12	214538803	
20	19.65	27.56	7.87	23.37	215038803	
25	24.72	32.68	7.87	57.32		226338803
28	27.83	35.83	7.87	66.14		227138803
31½	31.38	39.37	7.87	79.37		228038803





CLEANING SECTIONS

6050

- For seals, please also read and take into account the technical information given at the beginning of this chapter
- Both sides with loose flange
- ND 55" and 63": 11 gauge wall thickness, with welded-on flanges, in pickled and passivated stainless steel
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed
- Not recommended for extracting exhaust air containing condensates

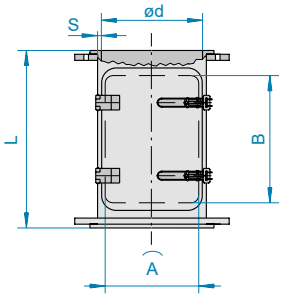
Powder-coated or primed (dimensions for 14 gauge tubing)

ND	Ø d	⌒A	B	L	lb	16 gauge primed	14 gauge primed
						Item no.	Item no.
14	13.78	13.78	13.78	18.82	31.97	21351195	
16	15.71	13.78	13.78	18.82	35.05	21401195	
18	17.64	19.69	13.78	18.82	44.09		22451195
20	19.61	19.69	13.78	18.82	47.62		22501195
22	21.97	19.69	13.78	18.82	55.12		22561195
25	24.72	19.69	13.78	18.82	66.14		22631195
28	27.83	19.69	13.78	18.82	74.96		22711195
31½	31.38	19.69	13.78	18.82	83.77		22801195
35½	35.31	19.69	13.78	18.82	91.45		229911954090
39	39.29	19.69	13.78	18.82	101.63		229911954100
44	44.02	19.69	13.78	18.82	137.79		229911954112
49	49.13	19.69	13.78	18.82	153.37		229911954125
55	55.04	19.69	13.78	19.69	210.05		239911955140 *
63	62.91	19.69	13.78	19.69	239.02		239911955160 *

*11 gauge

For more technical information go to www.jacob-pipesystems.com





Galvanized (dimensions for 14 gauge tubing)

ND	Ø d	Ⓐ	B	L	lb	16 gauge galvanized	14 gauge galvanized
						Item no.	Item no.
14	13.78	13.78	13.78	18.82	31.97	21352195	
16	15.71	13.78	13.78	18.82	35.05	21402195	
18	17.64	19.69	13.78	18.82	44.09		22452195
20	19.61	19.69	13.78	18.82	47.62		22502195
22	21.97	19.69	13.78	18.82	55.12		22562195
25	24.72	19.69	13.78	18.82	66.14		22632195
28	27.83	19.69	13.78	18.82	74.96		22712195
31½	31.38	19.69	13.78	18.82	83.77		22802195
35½	35.31	19.69	13.78	18.82	91.45		229921954090
39	39.29	19.69	13.78	18.82	101.63		229921954100
44	44.02	19.69	13.78	18.82	137.79		229921954112
49	49.13	19.69	13.78	18.82	153.37		229921954125
55	55.04	19.69	13.78	19.69	210.05		239921955140 *
63	62.91	19.69	13.78	19.69	239.02		239921955160 *

*11 gauge

Stainless steel with galvanized loose flanges (dimensions for 14 gauge tubing)

ND	Ø d	Ⓐ	B	L	lb	Stainless steel with galvanized loose flanges Ⓕ	
						16 gauge	14 gauge
						Item no.	Item no.
14	13.78	13.78	13.78	18.82	31.97	21353195	
16	15.71	13.78	13.78	18.82	35.05	21403195	
18	17.64	19.69	13.78	18.82	44.09		22453195
20	19.61	19.69	13.78	18.82	47.62		22503195
22	21.97	19.69	13.78	18.82	55.12		22563195
25	24.72	19.69	13.78	18.82	66.14		22633195
28	27.83	19.69	13.78	18.82	74.96		22713195
31½	31.38	19.69	13.78	18.82	83.77		22803195
35½	35.31	19.69	13.78	18.82	91.45		229931954090
39	39.29	19.69	13.78	18.82	101.63		229931954100
44	44.02	19.69	13.78	18.82	137.79		229931954112
49	49.13	19.69	13.78	18.82	153.37		229931954125
55	55.04	19.69	13.78	19.69	210.05		239931955140 *
63	62.91	19.69	13.78	19.69	239.02		239931955160 *

*11 gauge with welded-on stainless steel flange, CrNi-blasted

Stainless steel with stainless steel loose flange, CrNi-blasted (dimensions for 14 gauge tubing)

ND	Ø d	Ⓐ	B	L	lb	Stainless steel with stainless steel loose flange, CrNi-blasted Ⓕ	
						16 gauge	14 gauge
						Item no.	Item no.
14	13.78	13.78	13.78	18.82	31.97	213531953	
16	15.71	13.78	13.78	18.82	34.39	214031953	
18	17.64	19.69	13.78	18.82	35.27		224531953
20	19.61	19.69	13.78	18.82	50.71		225031953
22	21.97	19.69	13.78	18.82	65.04		225631953
25	24.72	19.69	13.78	18.82	76.72		226331953
28	27.83	19.69	13.78	18.82	84.88		227131953

Ⓕ FOOD GRADE
EC 1935/2004 plus FDA compliant

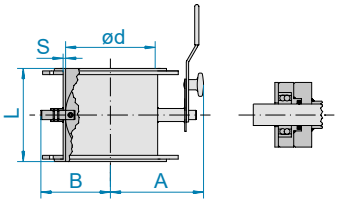
Ⓓ DETECTABLE DESIGN
Metal-detectable

Ⓓ **DETECTABLE DESIGN**

AVAILABLE IN THE DETECTABLE DESIGN LINE.

Throttle valves





Additionally with ball bearings and Viton O-ring seal

THROTTLE VALVES

6180

- Special version available with glued silicone inner seal, no cross-section constriction, prices on request
- Version with pneumatic or electric actuator
- Both sides with loose flange
- From ND 35½": 11 gauge wall thickness, with welded-on flange to DIN 24154-2
- RAL 7032 (pebble gray): up to ND 25" powder-coated or primed, from ND 28" primed

Powder-coated or primed, galvanized and stainless steel (dimensions for 14 gauge tubing)

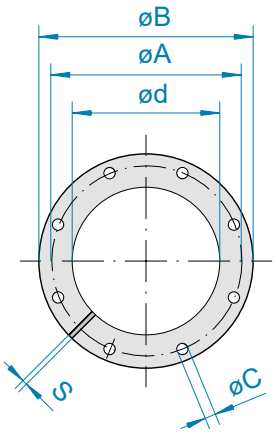
ND	Ø d	A	B	L	lb	14 gauge primed	14 gauge galvanized	14 gauge stainless steel with stainless steel loose flange, CrNi-blasted
						Item no.	Item no.	Item no.
14	13.74	9.45	9.17	7.87	30.86	22351560		223535603
16	15.67	10.43	10.16	7.87	35.71	22401560		224035603
18	18.03	15.59	14.37	7.87	58.42	22451560		224535603
20	19.61	16.57	15.39	7.87	65.26	22501560		225035603
22	21.97	17.76	16.57	7.87	79.37	22561560		225635603
25	24.72	19.13	17.95	7.87	90.39	22631560		226335603
28	27.83	20.67	19.49	7.87	101.41	22711560		227135603
31½	31.38	22.44	21.26	7.87	114.64	22801560		
35½	35.31	24.41	23.23	7.87	143.30	239915605090 *	239925605090 *	
39	39.29	26.38	25.20	7.87	182.98	239915605100 *	239925605100 *	
44	44.02	31.89	26.57	7.87	229.28	239915605112 *	239925605112 *	
49	49.13	34.45	29.13	7.87	271.17	239915605125 *	239925605125 *	

*11 gauge

ND	Ø d	A	B	L	lb	14 gauge stainless steel with galvanized loose flanges	14 gauge stainless steel with stainless steel loose flange, CrNi-blasted
						Item no.	Item no.
14	13.74	9.45	9.17	7.87	30.86	22353560	223535603
16	15.67	10.43	10.16	7.87	35.71	22403560	224035603
18	18.03	15.59	14.37	7.87	58.42	22453560	224535603
20	19.61	16.57	15.39	7.87	65.26	22503560	225035603
22	21.97	17.76	16.57	7.87	79.37	22563560	225635603
25	24.72	19.13	17.95	7.87	90.39	22633560	226335603
28	27.83	20.67	19.49	7.87	101.41	22713560	227135603
31½	31.38	22.44	21.26	7.87	114.64	22803560	
35½	35.31	24.41	23.23	7.87	143.30		239935605090 *
39	39.29	26.38	25.20	7.87	182.98		239935605100 *
44	44.02	31.89	26.57	7.87	229.28		239935605112 *
49	49.13	34.45	29.13	7.87	271.17		239935605125 *

FOOD GRADE
EC 1935/2004 plus FDA compliant





E = No. of holes

FLANGES

1360

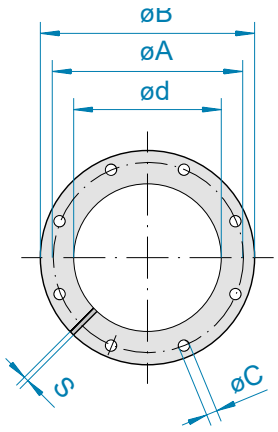
- Similar to DIN 24154-2
- ND 14"-DIN 24154-2, Diameter 14"

Powder-coated or primed, and galvanized

ND	Ø d	Ø A	Ø B	Ø C	E	S	lb	Primed	Galvanized
								Item no.	Item no.
2¼	2.44	4.02	5.04	0.37	4	0.20	0.88	10061711	
3	3.23	4.65	5.59	0.37	4	0.20	0.88	10081711	10082711
4	4.13	5.47	6.50	0.37	4	0.20	1.01	10101711	10102711
5	4.92	6.50	7.28	0.37	4	0.20	1.26	10121711	10122711
5½	5.59	7.17	8.35	0.45	8	0.20	1.61	10141711	10142711
6	6.10	7.87	8.86	0.45	8	0.20	1.72	10151711	10152711
6¼	6.38	7.87	9.13	0.45	8	0.20	1.81	10161711	10162711
7	7.09	8.62	9.84	0.45	8	0.20	2.05	10171711	10172711
8	8.07	9.49	10.83	0.45	8	0.20	2.18	10201711	10202711
9	8.86	10.43	11.61	0.45	8	0.20	2.43	10221711	10222711
10	10.04	11.50	12.80	0.45	8	0.20	2.67	10251711	10252711
11	11.14	13.07	14.29	0.45	8	0.31	5.53	10281711	10282711
12	12.01	14.41	15.55	0.45	8	0.31	6.61	10301711	10302711
12½	12.52	14.41	15.67	0.45	8	0.31	6.57	10311711	10312711
14	14.02	15.94	17.17	0.45	8	0.31	6.83	10351711	10352711
16	15.94	17.64	19.09	0.45	12	0.31	7.58	10401711	10402711
18	17.91	19.57	21.06	0.45	12	0.31	8.60	10451711	10452711
20	19.88	21.69	23.03	0.45	12	0.31	9.10	10501711	10502711
22	22.24	24.76	26.18	0.55	16	0.31	13.01	10561711	10562711
25	25.00	27.48	28.94	0.55	16	0.31	14.55	10631711	10632711
28	28.15	30.51	32.09	0.55	16	0.31	16.31	10711711	10712711
31½	31.69	33.90	35.63	0.55	24	0.31	17.53	10801711	10802711
35½	35.59	37.72	39.53	0.55	24	0.31	20.22	109917110090	109927110090
39	39.57	42.01	43.50	0.55	24	0.31	22.49	109917110100	109927110100
44	44.29	47.24	49.02	0.71	32	0.39	37.26	109917110112	109927110112
49	49.41	52.64	54.13	0.71	32	0.39	41.45	109917110125	109927110125
55	55.31	58.07	60.04	0.71	32	0.39	46.30	109917110140	109927110140
63	63.19	65.94	67.91	0.71	40	0.39	52.47	109917110160	109927110160

Flanges, seals and installation kit

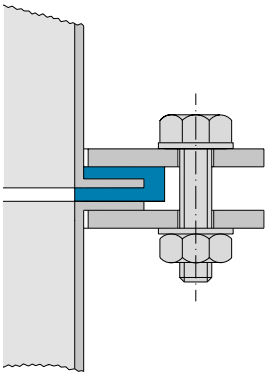




E = No. of holes

Stainless steel

ND	Ø d	ØA	Ø B	Ø C	E	S	lb	Stainless steel
								Item no.
2¼	2.44	4.02	5.04	0.37	4	0.20	0.88	10063711
3	3.23	4.65	5.59	0.37	4	0.20	0.88	10083711
4	4.13	5.47	6.50	0.37	4	0.20	1.01	10103711
5	4.92	6.50	7.28	0.37	4	0.20	1.26	10123711
5½	5.59	7.17	8.35	0.45	8	0.20	1.61	10143711
6	6.10	7.87	8.86	0.45	8	0.20	1.72	10153711
6¼	6.38	7.87	9.13	0.45	8	0.20	1.81	10163711
7	7.09	8.62	9.84	0.45	8	0.20	2.05	10173711
8	8.07	9.49	10.83	0.45	8	0.20	2.18	10203711
9	8.86	10.43	11.61	0.45	8	0.20	2.43	10223711
10	10.04	11.50	12.80	0.45	8	0.20	2.67	10253711
11	11.14	13.07	14.29	0.45	8	0.31	5.53	10283711
12	12.01	14.41	15.55	0.45	8	0.31	6.61	10303711
12½	12.52	14.41	15.67	0.45	8	0.31	6.57	10313711
14	14.02	15.94	17.17	0.45	8	0.31	6.83	10353711
16	15.94	17.64	19.09	0.45	12	0.31	7.58	10403711
18	17.91	19.57	21.06	0.45	12	0.31	8.60	10453711
20	19.88	21.69	23.03	0.45	12	0.31	9.10	10503711
22	22.24	24.76	26.18	0.55	16	0.31	13.01	10563711
25	25.00	27.48	28.94	0.55	16	0.31	14.55	10633711
28	28.15	30.51	32.09	0.55	16	0.31	16.31	10713711
31½	31.69	33.90	35.63	0.55	24	0.31	17.53	10803711
35½	35.59	37.72	39.53	0.55	24	0.31	20.22	109937110090
39	39.57	42.01	43.50	0.55	24	0.31	22.49	109937110100
44	44.29	47.24	49.02	0.71	32	0.39	37.26	109937110112
49	49.41	52.64	54.13	0.71	32	0.39	41.45	109937110125
55	55.31	58.07	60.04	0.71	32	0.39	46.30	109937110140
63	63.19	65.94	67.91	0.71	40	0.39	52.47	109937110160



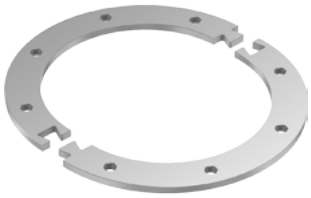
INSTALLATION KIT FOR JACOB FLANGES

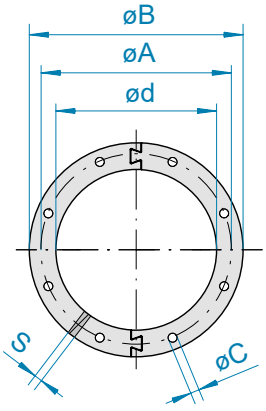
1510

- Installation kit consisting of bolts, nuts and washers
- Quantity to match the number of holes and flange thicknesses
- Bolts in compliance with DIN EN ISO 4017 (formerly DIN 933)
- Washers in compliance with DIN EN ISO 7090 (formerly DIN 125), 2 each per bolt
- Nuts in compliance with DIN EN SO 4032 (formerly DIN 934)

Galvanized bolts, nuts and washers

ND	Bolts	Number	Item no.
2¼-5	M 8x30	4	10062788
5½-10	M10x35	8	10142788
11-14	M10x40	8	10282788
16-20	M10x40	12	10402788
22-28	M12x45	16	10562788
31½-39	M12x45	24	10802788
44-55	M16x50	32	109927880112
63	M16x50	40	109927880160





E = No. of holes

FLANGES 2-PARTED

1362

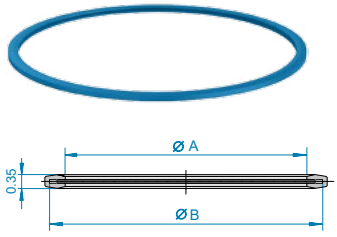
- Similar to DIN 24154-2

Powder-coated or primed, and galvanized

ND	Ø d	ØA	Ø B	Ø C	E	S	lb	Primed	Galvanized
								Item no.	Item no.
3	3.23	4.65	5.59	0.37	4	0.31	0.88	10081713	10082713
4	4.13	5.47	6.50	0.37	4	0.31	1.01	10101713	10102713
5	4.92	6.50	7.28	0.37	4	0.31	1.26	10121713	10122713
5½	5.59	7.17	8.35	0.45	8	0.31	1.61	10141713	10142713
6	6.10	7.87	8.86	0.45	8	0.31	2.76	10151713	10152713
7	7.09	8.62	9.84	0.45	8	0.31	3.31	10171713	10172713
8	8.07	9.49	10.83	0.45	8	0.31	3.53	10201713	10202713
9	8.86	10.43	11.61	0.45	8	0.31	3.88	10221713	10222713
10	10.04	11.50	12.80	0.45	8	0.31	4.28	10251713	10252713
11	11.14	13.07	14.29	0.45	8	0.31	5.53	10281713	10282713
12	12.01	14.41	15.55	0.45	8	0.31	6.61	10301713	10302713
12½	12.52	14.41	15.67	0.45	8	0.31	6.83	10311713	10312713
14	13.98	15.94	17.13	0.45	8	0.31	7.05	10351713	10352713
16	15.91	17.64	19.06	0.45	12	0.31	7.58	10401713	10402713

Stainless steel

ND	Ø d	ØA	Ø B	Ø C	E	S	lb	Stainless steel
								Item no.
3	3.23	4.65	5.59	0.37	4	0.31	0.88	10083713
4	4.13	5.47	6.50	0.37	4	0.31	1.01	10103713
5	4.92	6.50	7.28	0.37	4	0.31	1.26	10123713
5½	5.59	7.17	8.35	0.45	8	0.31	1.61	10143713
6	6.10	7.87	8.86	0.45	8	0.31	2.76	10153713
7	7.09	8.62	9.84	0.45	8	0.31	3.31	10173713
8	8.07	9.49	10.83	0.45	8	0.31	3.53	10203713
9	8.86	10.43	11.61	0.45	8	0.31	3.88	10223713
10	10.04	11.50	12.80	0.45	8	0.31	4.28	10253713
11	11.14	13.07	14.29	0.45	8	0.31	5.53	10283713
12	12.01	14.41	15.55	0.45	8	0.31	6.61	10303713
12½	12.52	14.41	15.67	0.45	8	0.31	6.83	10313713
14	13.98	15.94	17.13	0.45	8	0.31	7.05	10353713
16	15.91	17.64	19.06	0.45	12	0.31	7.58	10403713



U-SHAPED GASKETS FOR 3/8" TUBING SYSTEM

6210

- Please also read and take into account the technical information given at the beginning of this chapter
- Profile for loose flange tubing with a 0.39" lip
- Use for 19 to 11 gauge tubing system
- A U-shaped gasket (chapter 2) must be used for tube components with a loose flange diameter of up to 14" and a 0.24" lip
- For connecting:
  - 2 tubing components with loose flange from ND 14" with a 0.39" lip
  - A tubing component with a welded flange in conjunction with a tubing component with a loose flange

NBR and silicone

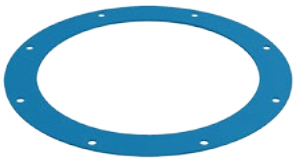
ND	Ø A	Ø B	lb	NBR gray white	Silicone beige	Silicone blue
				Item no.	Item no.	Item no.
14	13.90	14.69	0.24	103567177	1035771709	10357717091
16	15.87	16.65	0.29	104067177	1040771709	10407717091
18	17.83	18.62	0.33	104567177	1045771709	10457717091
20	19.80	20.59	0.37	105067177	1050771709	10507717091
22	22.09	22.87	0.40	105667177	1056771709	10567717091
25	24.84	25.63	0.46	106367177	1063771709	10637717091
28	27.99	28.78	0.53	107167177	1071771709	10717717091
31½	31.54	32.32	0.57	108067177	1080771709	10807717091

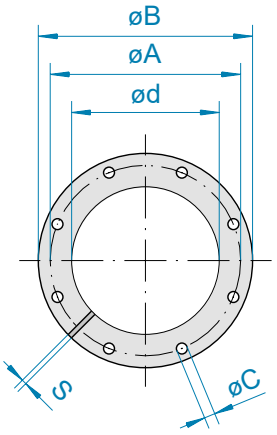
EPDM and Viton

ND	Ø A	Ø B	lb	EPDM black	Viton reddish brown
				Item no.	Item no.
14	13.90	14.69	0.24	1035871759	103597179
16	15.87	16.65	0.29	1040871759	104097179
18	17.83	18.62	0.33	1045871759	104597179
20	19.80	20.59	0.37	1050871759	105097179
22	22.09	22.87	0.40	1056871759	105697179
25	24.84	25.63	0.46	1063871759	106397179
28	27.99	28.78	0.53	1071871759	107197179
31½	31.54	32.32	0.57	1080871759	108097179

FOOD GRADE
EC 1935/2004 plus FDA compliant

DETECTABLE DESIGN
Metal-detectable





E = No. of holes

FLAT SEALS FOR LOOSE FLANGES AND WELDED FLANGES

6220

- Similar to DIN 24154-2
- Please also read and take into account the technical information given at the beginning of this chapter

NBR and silicone

ND	Ød	ØA	ØB	ØC	E	S	lb	NBR gray white	Silicone beige (F)	Silicone blue (F)(D)
								Item no.	Item no.	Item no.
14	13.98	15.94	17.13	0.45	8	0.12	0.44	10356718	10357718	1035771801
16	15.75	17.64	19.06	0.45	12	0.12	0.53	10406718	10407718	1040771801
18	17.72	19.57	21.02	0.45	12	0.12	0.57	10456718	10457718	1045771801
20	19.69	21.69	22.99	0.45	12	0.12	0.62	10506718	10507718	1050771801
22	22.05	24.76	26.14	0.55	16	0.12	0.84	10566718	10567718	1056771801
25	24.80	27.48	28.90	0.55	16	0.12	0.93	10636718	10637718	1063771801
28	27.95	30.51	32.05	0.55	16	0.12	1.15	10716718	10717718	1071771801
31½	31.50	33.90	35.59	0.55	24	0.12	1.23	10806718	10807718	1080771801
35½	35.31	37.72	39.53	0.55	24	0.16	3.33	109967180090	109977180090	10997718009001
39	39.29	42.01	43.50	0.55	24	0.16	3.70	109967180100	109977180100	10997718010001
44	44.02	47.24	49.02	0.71	32	0.16	6.15	109967180112	109977180112	10997718011201
49	49.13	52.64	54.13	0.71	32	0.16	6.83	109967180125	109977180125	10997718012501
55	55.04	58.07	60.04	0.71	32	0.16	7.65	109967180140	109977180140	10997718014001
63	62.91	65.94	67.91	0.71	40	0.16	8.66	109967180160	109977180160	10997718016001

EPDM

ND	Ød	ØA	ØB	ØC	E	S	lb	EPDM black
								Item no.
14	13.98	15.94	17.13	0.45	8	0.12	0.44	10358718
16	15.75	17.64	19.06	0.45	12	0.12	0.53	10408718
18	17.72	19.57	21.02	0.45	12	0.12	0.57	10458718
20	19.69	21.69	22.99	0.45	12	0.12	0.62	10508718
22	22.05	24.76	26.14	0.55	16	0.12	0.84	10568718
25	24.80	27.48	28.90	0.55	16	0.12	0.93	10638718
28	27.95	30.51	32.05	0.55	16	0.12	1.15	10718718
31½	31.50	33.90	35.59	0.55	24	0.12	1.23	10808718
35½	35.31	37.72	39.53	0.55	24	0.16	3.33	109987180090
39	39.29	42.01	43.50	0.55	24	0.16	3.70	109987180100
44	44.02	47.24	49.02	0.71	32	0.16	6.15	109987180112
49	49.13	52.64	54.13	0.71	32	0.16	6.83	109987180125
55	55.04	58.07	60.04	0.71	32	0.16	7.65	109987180140
63	62.91	65.94	67.91	0.71	40	0.16	8.66	109987180160

(F) FOOD GRADE
EC 1935/2004 plus FDA compliant

(D) DETECTABLE DESIGN
Metal-detectable



JACOB FITTINGS AND ACCESSORIES – THE QUICK AND EASY WAY TO INSTALL YOUR TUBING SYSTEM

FITTINGS AND ACCESSORIES

Technical information	234
Flanging tools	236
Spray paint and paint can	236
Grounding wires and grounding lugs	237
Tube hangers	238
Mounting accessories	240
Blank-off cover	241

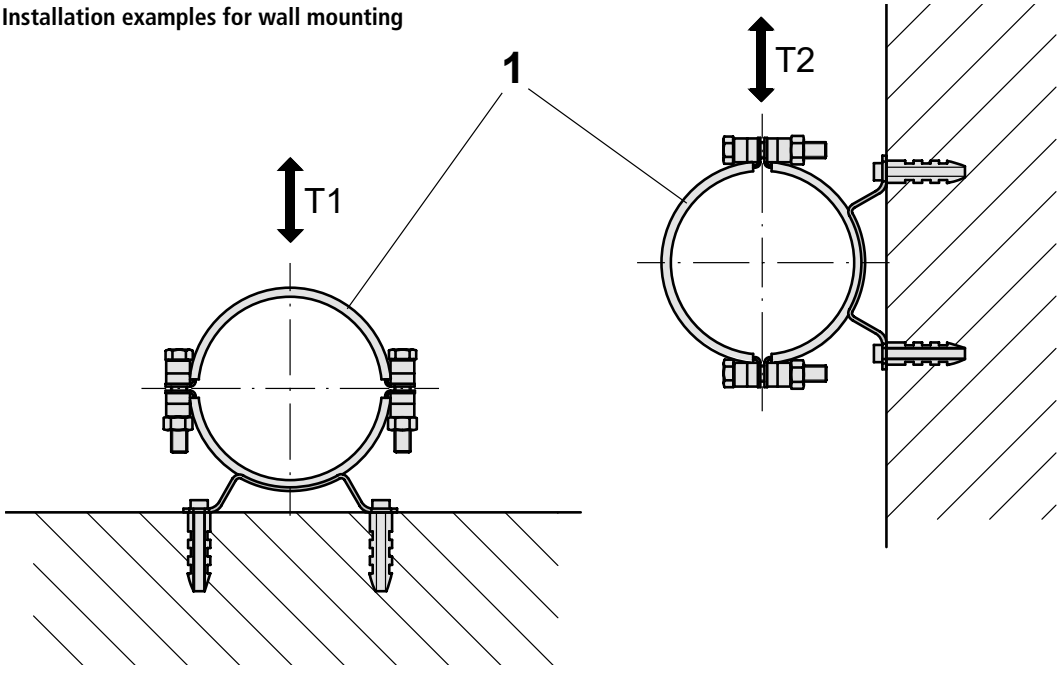
JACOB ACCESSORIES

Your tubing system entirely from one source and easily installed with our accessories, from the flanging tools for cutting exact lengths on site to tube hangers.

INSTALLATION EXAMPLES OF TUBE HANGERS FOR FLOOR AND WALL MOUNTING

Whether for floor or wall mounting – JACOB has the right tube hangers in its product range.

Installation examples for wall mounting



1 Tube hangers for wall mounting with rubber insert

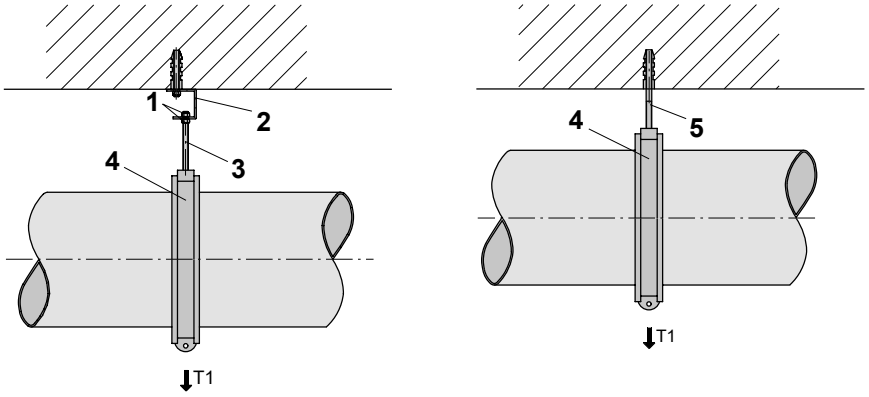
T1 Load with a deformation of 3/16"

T2 Load with a deformation of 3/8"

For details of loads, refer to the tables on pages 238 and 239

Installation examples for ceiling mounting

1 Hexagon nuts, metric
2 Fixing clips
3 Threaded bolt, metric
4 Tube hangers for wall mounting with rubber insert
5 Hanger bolt, metric
T1 Load with a deformation of 3/16"



For details of loads, refer to the tables on pages 238 and 239

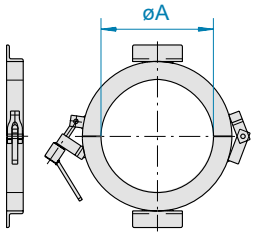


GROUNDING WIRE

Creates electrostatic grounding through connecting two tubing components with a grounding lug using a JACOB grounding wire. Alternatively, the earthing bridge (see chapter 2) can be used to create electrostatic grounding.

Flanging tools / spray paint and paint can





Operating instructions
for flanging tools

FLANGING TOOLS

4020

- To create exact lengths on site
- Please also read and take into account our operating instructions
- From ND 3" to 7" only 1 angle piece welded
- From ND 8" to 16" 2 angle pieces welded

ND	ØA	lb	Primed
			Item no.
2¼	2.28	6.83	10061740
3	3.15	7.28	10081740
4	4.06	7.94	10101740
5	4.84	10.36	10121740
5½	5.47	11.46	10141740
6	6.02	12.35	10151740
7	7.01	14.11	10171740
8	7.99	14.99	10201740
9	8.78	16.09	10221740
10	9.96	19.29	10251740
11	11.14	20.06	10281740
12	11.93	20.61	10301740
12½	12.52	21.61	10311740
14	13.90	22.71	10351740
16	15.87	26.46	10401740
18	17.83	31.97	10451740
20	19.80	37.48	10501740



SPRAY PAINT AND PAINT CAN

4040/4050

- Spray paint for re-touching powder-coated or galvanized tubing (RAL 7032)
- 1 gal paint and paintbrush for powder-coated tubing (RAL 7032)
- Please note: Paint is a hazardous substance – separate packaging provided!
- Non-conductive

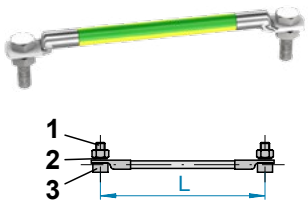
Paint and zinc spray

RAL 7032	Galvanized
Item no.	Item no.
100019900	10002990



1 gal paint and paintbrush

RAL 7032
Item no.
100019910



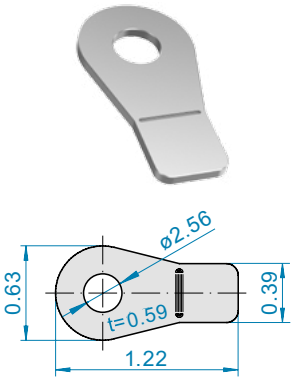
1 Hexagon nut, metric M 6, A2
2 Lock washer 6.4, A2
3 Hexagon bolt, metric M 6 x 16, A2

GROUNDING WIRE 5/8 INCH²

1420

- To create electrostatic grounding
- For use in conjunction with tubing with grounding lugs
- Including hexagon nut M 6, A2, lock washer 6.4, A2 and hexagon bolt M 6 x 16, A2

L = 5"	L = 9 1/16"	L = 13"	L = 16 15/16"
Item no.	Item no.	Item no.	Item no.
1000079510	1000079610	1000079705	1000079805

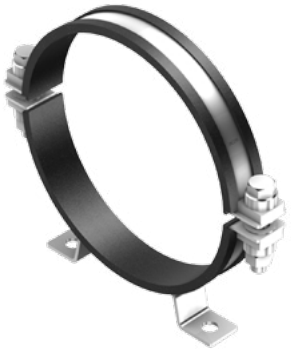


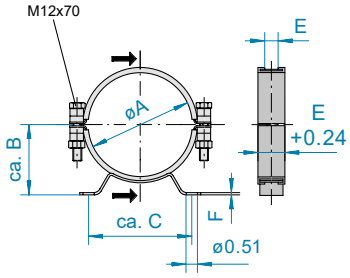
GROUNDING LUGS

1415/1410

- To create electrostatic grounding in conjunction with the grounding wire
- Material 304SS, material thickness 16 gauge
- Available as a loose grounding lug for installation on site
- Including application through spot welding to tubing

Grounding lug, loose	Grounding lug, spot-welded
Item no.	Item no.
1100379020	11003791





TUBE HANGERS FOR WALL MOUNTING

3100

- With EPDM insert, -40°F to +248°F
- Silicone insert, -76°F to +338°F, on request
- Refer to the beginning of the chapter for installation examples of ceiling mounting

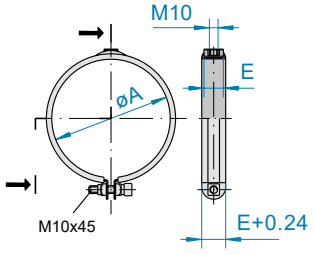
ND	ØA	B	C	E	F	Load (kN)		lb	Electro-galvanized	Stainless steel
						T1	T2		Item no.	Item no.
2¼	2.36	1.97	3.94	0.79x0.04	0.08			0.44	10062780	10063780
3	3.15	2.52	5.43	1.18x0.98	0.12	0.44	0.22	1.54	10082780	10083780
4	4.02	2.95	5.43	1.18x0.98	0.12	0.55	0.22	1.76	10102780	10103780
5	4.84	3.39	5.43	1.18x0.98	0.12	0.55	0.22	1.87	10122780	10123780
5½	5.47	3.70	5.43	1.18x0.98	0.12	0.55	0.22	1.87	10142780	10143780
6	6.02	3.98	5.83	1.18x0.98	0.12	0.66	0.26	2.09	10152780	10153780
7	7.01	4.45	5.83	1.18x0.98	0.12	0.66	0.26	2.20	10172780	10173780
8	7.99	4.96	5.83	1.18x0.98	0.12	0.66	0.26	2.31	10202780	10203780
9	8.78	5.35	5.83	1.18x0.98	0.12	0.66	0.26	2.43	10222780	10223780
10	9.96	5.94	9.06	1.18x0.98	0.12	0.66	0.26	2.76	10252780	10253780
11	11.02	6.54	9.06	1.18x0.98	0.12	0.66	0.26	3.09	10282780	10283780
12	11.93	6.93	9.06	1.18x0.98	0.12	0.66	0.26	3.09	10302780	10303780
12½	12.40	7.17	9.06	1.18x0.98	0.12	0.66	0.26	3.09	10312780	10313780
14	13.90	8.03	10.24	1.18x0.12	0.16	0.77	0.26	3.42	10352780	10353780
16	15.83	8.98	10.24	1.18x0.12	0.16	0.77	0.26	4.63	10402780	10403780
18	17.80	10.00	11.81	1.18x0.12	0.16	0.99	0.33	6.50	10452780	10453780
20	19.76	10.98	11.81	1.18x0.12	0.16	0.99	0.33	6.72	10502780	10503780
22	22.13	12.17	13.78	1.18x0.12	0.16	1.10	0.37	8.82	10562780	10563780
25	24.88	13.54	13.78	1.18x0.12	0.16	1.10	0.37	11.02	10632780	10633780
28	28.03	15.16	13.78	1.57x0.16	0.20			12.13	10712780	10713780
31½	31.50	17.72	13.78	1.57x0.16	0.20			14.33	10802780	10803780

For more technical information go to www.jacob-pipesystems.com

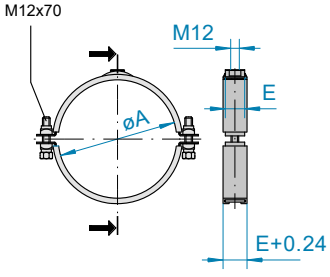
TUBE HANGERS FOR CEILING MOUNTING



- With EPDM insert, -40°F to +248°F
- Silicone insert, -76°F to +248°F, on request
- Refer to the beginning of the chapter for installation examples of ceiling mounting



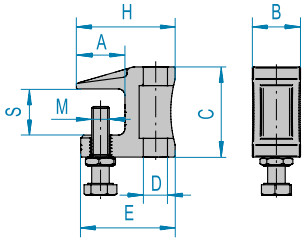
ND 2¼" to 12"



ND 12½" to 31½"

ND	ØA	E	Load (kN)	lb	Electro-galvanized	Stainless steel
			T1		Item no.	Item no.
2¼	2.36	0.79x0.39		0.24	10062770	10063770
3	3.15	0.98x0.59	0.44	0.44	10082770	10083770
4	4.02	0.98x0.59	0.44	0.53	10102770	10103770
5	4.84	0.98x0.59	0.44	0.60	10122770	10123770
5½	5.47	0.98x0.59	0.44	0.64	10142770	10143770
6	6.02	0.98x0.59	0.44	0.68	10152770	10153770
7	7.01	0.98x0.59	0.44	0.75	10172770	10173770
8	7.99	0.98x0.59	0.44	0.82	10202770	10203770
9	8.78	0.98x0.59	0.44	0.90	10222770	10223770
10	9.96	0.98x0.59	0.44	0.97	10252770	10253770
11	11.02	0.98x0.59	0.44	1.12	10282770	10283770
12	11.93	0.98x0.59	0.44	1.32	10302770	10303770
12½	12.40	1.18x0.98	0.44	2.76	10312770	10313770
14	13.90	1.18x0.98	0.66	2.89	10352770	10353770
16	15.83	1.18x0.98	0.66	3.13	10402770	10403770
18	17.80	1.18x0.98	0.66	3.53	10452770	10453770
20	19.76	1.18x0.98	0.66	3.66	10502770	10503770
22	22.13	1.18x0.98	0.66	3.95	10562770	10563770
25	24.88	1.18x0.98	0.66	3.97	10632770	10633770
28	28.03	1.18x0.98		5.51	10712770	10713770
31½	31.57	1.18x0.98		7.72	10802770	10803770





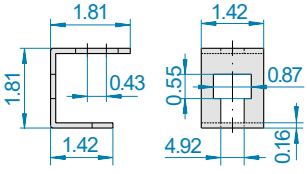
BEARING CLAMPS

3190

- For mounting tubes to steel girders (no welding or drilling required)
- Galvanized cast-iron bearing clamps (clamping width 0" to 3/16")
- Bearing clamps, 304SS (clamping width 0" to 5/8")
- Fully equipped for the suspension of ND 2¼" to ND 12" tubes, M10 connection

S	A	B	C	D	E	H	M	Cast iron, galvanized	Stainless steel
								Item no.	Item no.
0-0.79	0.91	0.83	1.65	0.43	1.61	1.73	0.39	1008277610	
0-0.63	8.46	0.83	1.50	0.43	1.34	16.34	0.39		10083776





FIXING CLIPS

3110

- Electro-galvanized
- Load 3.0 kN with a deformation of 3/16"

Item no.
1008277110



Hanger screw, metric

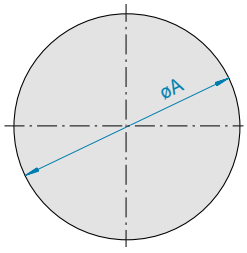
HANGER SCREW, METRIC

3120/3140/3150/3130

Article		Electro-galvanized	Stainless steel
		Item no.	Item no.
Threaded fastener, metric 39" long	M 10	10082772	10083772
	M 12	10102772	10103772
Hexagon nuts, metric DIN EN ISO 4032	M 10	10082774	10083774
	M 12	10102774	10103774
Extended hex nut, metric 1 3/16" long	M 10	10082775	10083775
	M 12	10102775	10103775
Hanger screw, metric M 10 x 4"	M 10	10082773	10083773
	M 12	10102773	10103773

For more technical information go to www.jacob-pipesystems.com





BLANK-OFF COVER

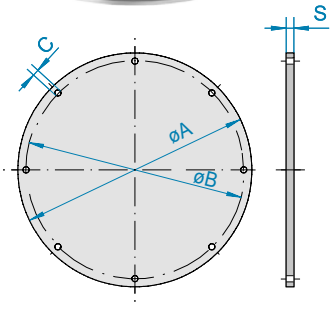
1370

- For permanently closing off a tubing system
- For use in conjunction with U-shaped gasket and pull ring
- From ND 14", also available for flange connections
- Pressure range restricted, particularly in the case of large diameters

Blank-off covers for pull ring connections

ND	ØA	lb	16 gauge stainless steel	14 gauge stainless steel
			Item no.	Item no.
2¼	2.76	0.09	110637151	
3	3.62	0.11	110837151	
4	4.49	0.22	111037151	
5	5.28	0.22	111237151	
5½	5.91	0.33	111437151	
6	6.46	0.33	111537151	
7	7.44	0.44	111737151	
8	8.43	0.66	112037151	
9	9.21	0.66	112237151	
10	10.39	0.99	112537151	
11	11.50	1.83	112837151	
12	12.36	1.21	113037151	
12½	12.87	2.43	113137151	
14	14.33	3.53		123537151
16	16.30	3.31		124037151
18	18.27	3.31		124537151
20	20.24	7.16		125037151
22	22.60	8.93		125637151
25	25.35	11.35		126337151



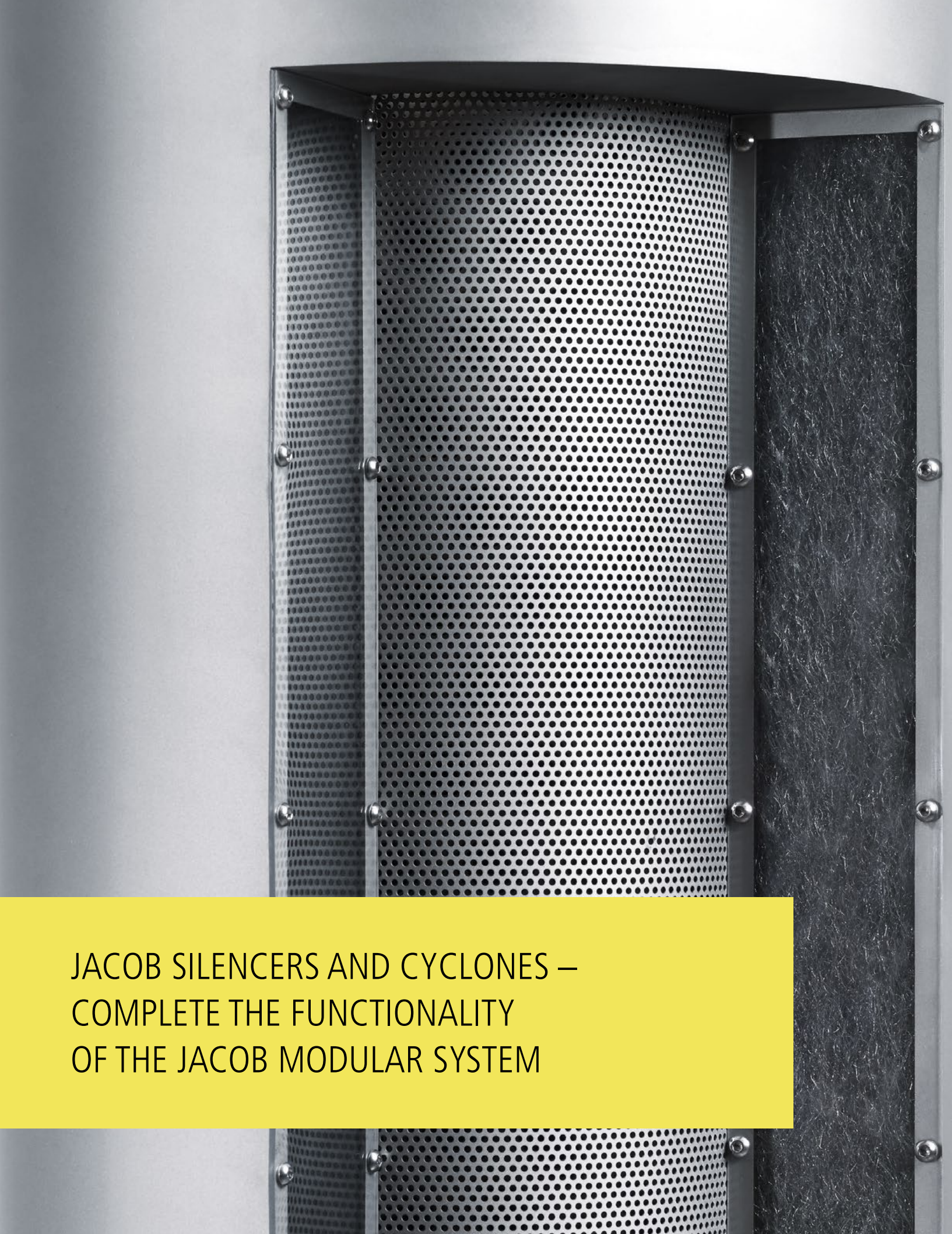


E = No. of holes

Blank-off cover for flange connections

ND	ØA	Ø B	C	E	S	lb	Stainless steel
							Item no.
14	17.13	15.94	4.53	8	0.24	15.43	20353723
16	19.06	17.64	4.53	12	0.24	19.18	20403723
18	21.02	19.57	4.53	12	0.24	23.37	20453723
20	22.99	21.69	4.53	12	0.24	28.00	20503723
22	26.14	24.76	5.51	16	0.24	35.93	20563723
25	28.90	27.48	5.51	16	0.24	44.09	20633723
28	32.05	30.51	5.51	16	0.24	54.01	20713723
31½	35.59	33.90	5.51	24	0.24	66.80	20803723
35½	39.53	37.72	5.51	24	0.24	82.23	209937230090
39	43.50	42.01	5.51	24	0.24	99.65	209937230100
44	49.02	47.24	7.09	32	0.24	126.32	209937230112
49	54.13	52.64	7.09	32	0.24	154.10	209937230125
55	60.04	58.07	7.09	32	0.24	189.60	209937230140
63	67.91	65.94	7.09	32	0.24	242.73	209937230160

FOOD GRADE
EC 1935/2004 plus FDA compliant



JACOB SILENCERS AND CYCLONES – COMPLETE THE FUNCTIONALITY OF THE JACOB MODULAR SYSTEM

SILENCERS AND CYCLONES

Technical information	244
Silencers	246
Cyclones	249

SILENCERS AND CYCLONES
Technical information



SILENCERS

In tubing systems, noticeable noise cannot be avoided. To get your production systems to whisper, we offer silencers with JACOB-compatible elements in our standard product range. Silencers are available in lengths of 20", 39" and 59" and in diameters of 3" to 25". They are made in a variety of materials with a wall thickness of 14 gauge. The ends are lipped and are alternately available with a loose flange connection from a diameter of 14". The sound-absorbing material applied on the inside consists of non-flammable mineral wool with a non-woven glass covering. As a component of the JACOB modular tubing system, the silencers are easy to disassemble and assemble for cleaning or to replace the mineral wool.

We are pleased to accommodate special customer requirements. If desired, we can also assist you in selecting the right design variation and the correct dimensions for your acoustic insulation.

The advantages for you:
- Easy to incorporate in the JACOB modular system
- Broad range of standard products with a variety of different diameters, materials and damping lengths
- Replaceable insulation through the use of our pull ring system
- Accommodation of special customer requirements, such as special lengths
- Special colors



CYCLONES

Utilizing centrifugal force, cyclones within a tubing system ensure that solid particles are separated out. Cyclones are often used in industry to recover raw materials from the production process or generally to remove solid particles before recirculating the air. Accordingly, the range of applications is wide. Our cyclones are used in the lumber, plastics, and tobacco industries to name a few. Our standard cyclones are available in diameters ranging from 10" to 39" with lipped connections, and with diameters from 44" to 90½" with welded-on flanges. For diameters up to 49", the material thickness can be 14 or 11 gauge, and larger diameters are manufactured with a material thickness of 11 gauge. Cyclones are available in powder-coated or primed, galvanized, or stainless steel versions. Please note that cyclones are passive components. The functionality depends on the volumetric flow, the pressure loss, the material load and particle size.

The nominal diameters refer to the diameter of the cyclone body. The size of the cyclone inlet can be dimensioned with a diameter of between 3" and 35½".

The volumetric flow indicated applies for a flow velocity in the tubing system of approx. 65.62 to 78.74 ft/sec at the cyclone connection.
The separation rate and pressure loss was determined on the basis of a material load of 0.062 lbs/ft³.

We custom-build cyclones according to your individual requirements and we also help you to select the right cyclone for the job. Further models and diameters are available on request. Please call us for further information.

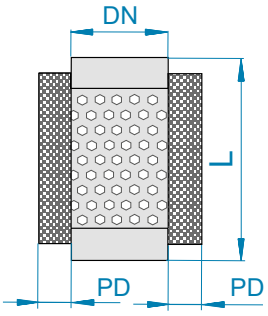
The advantages for you:
- Easy to incorporate in the JACOB modular system
- Easy maintenance through modular design
- Also available in stainless steel for contact with food
- Accommodation of special customer requirements
- Special colors
- Stands available on request

Explanatory video about cyclones









PD = insulation thickness

SILENCERS, DAMPING LENGTH 16"

1470/ 6470

Technical data

ND	L	PD	Volumetric flow at v_{max} (m³/h)	Air speed v_{max} (m/s)	Damping at 250 Hz D_e (dB)	Acoustic power L_W (A)	Pressure loss (Pa)
3	19.13	3.94	250	15	18	32	17
4	19.13	3.94	400	15	15	34	14
5	19.13	3.94	600	15	13	35	11
5½	19.13	3.94	800	15	12	36	10
6	19.13	3.94	900	15	11	37	9
7	19.13	3.94	1200	15	10	38	8
8	19.13	3.94	1700	15	9	40	7
9	19.13	3.94	2100	15	9	41	6
10	19.13	3.94	2600	15	7	42	5
12	19.13	3.94	3800	15	6	43	5
14	19.13	3.94	5100	15	5	44	4
16	19.13	3.94	6700	15	5	46	3

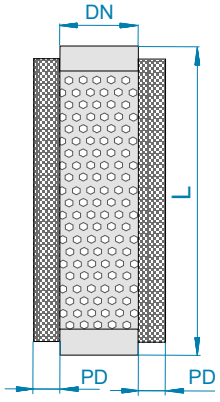
ND	14 gauge, primed, with lipped end	14 gauge, primed, with welded-on flange	14 gauge, hot-dip galvanized, with lipped end	14 gauge, hot-dip galvanized, with welded-on flange
	Item no.	Item no.	Item no.	Item no.
3	4200805012500		4200805022500	
4	4201005012500		4201005022500	
5	4201205012500		4201205022500	
5½	4201405012500		4201405022500	
6	4201505012500		4201505022500	
7	4201705012500		4201705022500	
8	4202005012500		4202005022500	
9	4202205012500		4202205022500	
10	4202505012500		4202505022500	
12	4203005012500		4203005022500	
14	4203505012500	4203505012503	4203505022500	4203505022503
16	4204005012500	4204005012503	4204005022500	4204005022503

ND	14 gauge stainless steel with lipped end	14 gauge stainless steel with loose flange
	Item no.	Item no.
3	4200805032500	
4	4201005032500	
5	4201205032500	
5½	4201405032500	
6	4201505032500	
7	4201705032500	
8	4202005032500	
9	4202205032500	
10	4202505032500	
12	4203005032500	
14	4203505032500	4203505032503
16	4204005032500	4204005032503

For more technical information go to www.jacob-pipesystems.com







PD = insulation thickness

SILENCERS, DAMPING LENGTH 35½"

Technical data

ND	L	PD	Volumetric flow at v_{max} (m³/h)	Air speed v_{max} (m/s)	Damping at 250 Hz D_e (dB)	Acoustic power L_W (A)	Pressure loss (Pa)
3	38.74	3.94	270	15	37	32	38
4	38.74	3.94	400	15	30	34	31
5	38.74	3.94	600	15	25	35	26
5½	38.74	3.94	800	15	24	36	22
6	38.74	3.94	900	15	22	37	20
7	38.74	3.94	1200	15	21	38	18
8	38.74	3.94	1700	15	18	40	15
9	38.74	3.94	2100	15	17	41	14
10	38.74	3.94	2600	15	15	42	12
12	38.74	3.94	3800	15	13	43	10
14	38.74	3.94	5100	15	12	44	9
16	38.74	3.94	6700	15	11	46	8
18	38.74	3.94	8500	15	8	47	7

ND	14 gauge, primed, with lipped end	14 gauge, primed, with welded-on flange	14 gauge, hot-dip galvanized, with lipped end	14 gauge, hot-dip galvanized, with welded-on flange
	Item no.	Item no.	Item no.	Item no.
3	4200810012500		4200810022500	
4	4201010012500		4201010022500	
5	4201210012500		4201210022500	
5½	4201410012500		4201410022500	
6	4201510012500		4201510022500	
7	4201710012500		4201710022500	
8	4202010012500		4202010022500	
9	4202210012500		4202210022500	
10	4202510012500		4202510022500	
12	4203010012500		4203010022500	
14	4203510012500	4203510012503	4203510022500	4203510022503
16	4204010012500	4204010012503	4204010022500	4204010022503
18	4204510012500	4204510012503	4204510022500	4204510022503

ND	14 gauge stainless steel with lipped end	14 gauge stainless steel with loose flange
	Item no.	Item no.
3	4200810032500	
4	4201010032500	
5	4201210032500	
5½	4201410032500	
6	4201510032500	
7	4201710032500	
8	4202010032500	
9	4202210032500	
10	4202510032500	
12	4203010032500	
14	4203510032500	4203510032503
16	4204010032500	4204010032503
18	4204510032500	4204510032503



SILENCERS, DAMPING LENGTH 55"

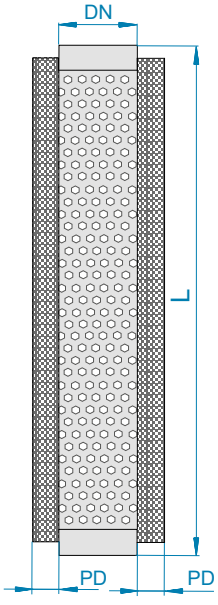
1470

Technical data

ND	L	PD	Volumetric flow at v_{max} (m³/h)	Air speed v_{max} (m/s)	Damping at 250 Hz D_e (dB)	Acoustic power L_W (A)	Pressure loss (Pa)
6	58.43	3.94	900	15	34	37	32
7	58.43	3.94	1200	15	32	38	27
8	58.43	3.94	1700	15	27	40	24
9	58.43	3.94	2100	15	26	41	21
10	58.43	3.94	2600	15	23	42	19
12	58.43	3.94	3800	15	30	43	16
14	58.43	3.94	5100	15	18	44	14
16	58.43	3.94	6700	15	16	46	12
18	58.43	3.94	8500	15	13	47	11
20	58.43	3.94	10600	15	12	48	10
22	58.43	3.94	13300	15	12	49	9
25	58.43	3.94	15800	15	11	50	8



ND	14 gauge, primed, with lipped end	14 gauge, primed, with welded-on flange	14 gauge, hot-dip galvanized, with lipped end	14 gauge, hot-dip galvanized, with welded-on flange
	Item no.	Item no.	Item no.	Item no.
6	4201515012500		4201515022500	
7	4201715012500		4201715022500	
8	4202015012500		4202015022500	
9	4202215012500		4202215022500	
10	4202515012500		4202515022500	
12	4203015012500		4203015022500	
14	4203515012500	4203515012503	4203515022500	4203515022503
16	4204015012500	4204015012503	4204015022500	4204015022503
18	4204515012500	4204515012503	4204515022500	4204515022503
20	4205015012500	4205015012503	4205015022500	4205015022503
22	4205615012500	4205615012503	4205615022500	4205615022503
25	4206315012500	4206315012503	4206315022500	4206315022503

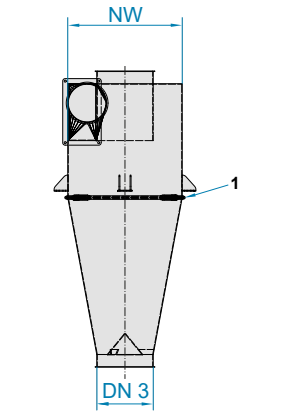


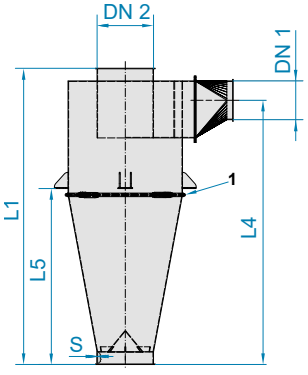
ND	14 gauge stainless steel with lipped end	14 gauge stainless steel with loose flange
	Item no.	Item no.
6	4201515032500	
7	4201715032500	
8	4202015032500	
9	4202215032500	
10	4202515032500	
12	4203015032500	
14	4203515032500	4203515032503
16	4204015032500	4204015032503
18	4204515032500	4204515032503
20	4205015032500	4205015032503
22	4205615032500	4205615032503
25	4206315032500	4206315032503

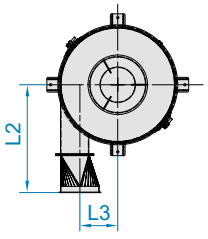
PD = insulation thickness

For more technical information go to www.jacob-pipesystems.com









1 Connection between top and bottom section of cyclone:

– Pull ring connection NW 10" – 25"

– Welded flanges NW 28" – 90½"

– From ND 28" with pressed cover

CYCLONES

1480

- Please also read and take into account the technical information given at the beginning of this chapter
- Up to NW 1800 mm powder-coated
- NW 2000 and 2300 mm primed

Technical data

NW	ND 1	ND 2	ND 3	L1	L2	L3	L4	L5	Volumetric flow (m^3/h)	Pressure loss (Pa)	Separation rate 95% for particle size (µm):
10	3.15	4.72	4.72	25.50	10.31	3.43	22.05	14.76	407	1020	>10
12	3.94	5.91	5.91	31.50	11.89	4.02	27.52	18.70	636	1012	>10
14	4.72	6.89	6.89	36.42	13.66	4.61	32.05	21.65	865	924	>12
16	5.51	7.87	7.87	41.34	15.20	5.16	36.65	24.61	1130	980	>12
18	5.91	8.82	8.82	46.06	16.77	5.94	41.10	27.36	1418	984	>13
20	6.89	9.84	9.84	51.18	18.54	6.46	45.71	30.51	1766	980	>13
22	7.87	11.02	11.02	57.09	20.31	7.13	51.14	34.06	2216	980	>14
25	8.82	11.81	11.81	61.02	22.68	8.03	54.69	35.24	2543	975	>15
28	9.84	13.78	13.78	70.87	25.47	9.13	58.03	40.94	3462	978	>16
31½	11.02	15.75	15.75	80.71	28.23	10.31	67.32	47.24	4522	980	>18
35½	11.81	17.72	17.72	90.55	31.57	11.89	76.73	53.15	5723	980	>18
39	13.78	19.69	19.69	100.39	34.92	12.87	85.59	59.06	7065	980	>19

Inlets and outlets with a 0.24" lip, powder-coated or primed RAL 7032 and galvanized

NW	14 gauge primed	11 gauge primed	14 gauge galvanized	11 gauge galvanized
	Item no.	Item no.	Item no.	Item no.
10	4202002512255	4203002512255	4202002522255	4203002522255
12	4202003012255	4203003012255	4202003022255	4203003022255
14	4202003512255	4203003512255	4202003522255	4203003522255
16	4202004012255	4203004012255	4202004022255	4203004022255
18	4202004512255	4203004512255	4202004522255	4203004522255
20	4202005012255	4203005012255	4202005022255	4203005022255
22	4202005612255	4203005612255	4202005622255	4203005622255
25	4202006312255	4203006312255	4202006322255	4203006322255
28	4202007112255	4203007112255	4202007122255	4203007122255
31½	4202008012255	4203008012255	4202008022255	4203008022255
35½	4202009012255	4203009012255	4202009022255	4203009022255
39	4202010012255	4203010012255	4202010022255	4203010022255

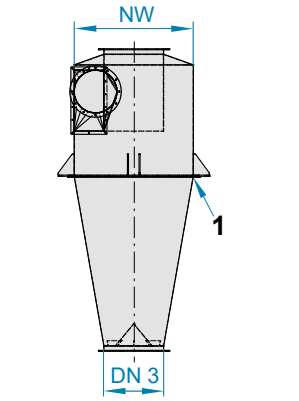
Inlets and outlets with a 0.24" lip, stainless steel, CrNi-blasted or pickled and passivated

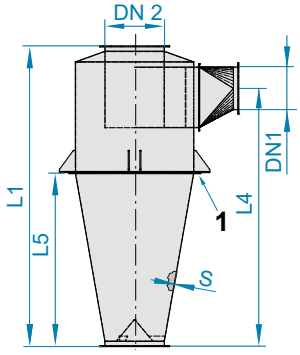
NW	14 gauge 1.4301 (304) CrNi-blasted	14 gauge 1.4571 (316Ti) pickled and passivated
	Item no.	Item no.
10	4202002532255	4202002542255
12	4202003032255	4202003042255
14	4202003532255	4202003542255
16	4202004032255	4202004042255
18	4202004532255	4202004542255
20	4202005032255	4202005042255
22	4202005632255	4202005642255
25	4202006332255	4202006342255
28	4202007132255	4202007142255
31½	4202008032255	4202008042255
35½	4202009032255	4202009042255
39	4202010032255	4202010042255

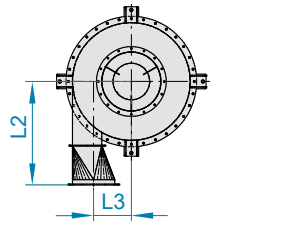
Cyclones



Product similar to picture







1 Connection between top and bottom section with JACOB flanges
- ND 1, 2 and 3 with welded flanges; flanges welded off-radius
- Dimensions of JACOB flanges see chapter 12
- From a nominal diameter of 79": Three-part cyclone

Technical data

NW	ND 1	ND 2	ND 3	L1	L2	L3	L4	L5	Volumetric flow (m³/h)	Pressure loss (Pa)	Separation rate 95% for particle size (µm):
44	15.75	22.05	22.05	114.17	38.86	14.25	96.42	64.96	8862	1003	>19
49	17.72	24.80	24.80	127.95	43.19	15.83	109.21	74.80	11216	998	>21
55	19.69	27.95	27.95	143.70	47.91	17.80	123.98	83.86	14246	980	>22
63	22.05	31.50	31.50	161.42	54.61	20.55	140.51	94.49	18086	980	>24
71	24.80	35.43	35.43	181.10	61.10	23.11	158.82	106.30	22891	980	>25
78¾	27.95	39.37	39.37	200.79	67.60	25.47	176.89	118.11	28260	980	>28
90½	31.50	44.09	44.09	230.32	77.44	29.61	204.65	135.83	37374	980	>29

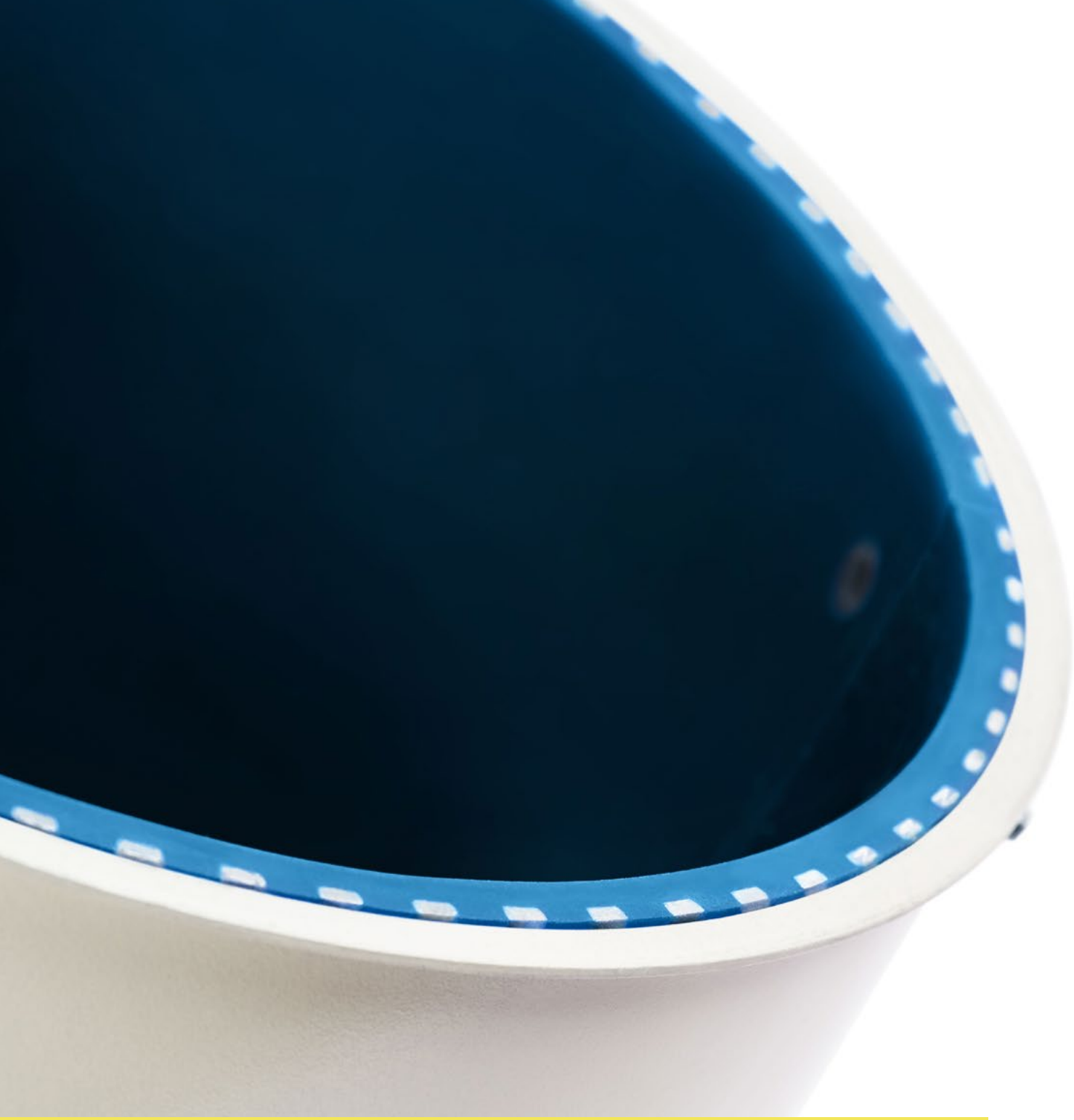
Inlets and outlets with welded-on flanges, powder-coated or primed RAL 7032 and galvanized

NW	14 gauge primed	11 gauge primed	14 gauge galvanized	11 gauge galvanized
	Item no.	Item no.	Item no.	Item no.
44	4202011212255	4203011212255	4202011222255	4203011222255
49	4202012512255	4203012512255	4202012522255	4203012522255
55		4203014012255		4203014022255
63		4203016012255		4203016022255
71		4203018012255		4203018022255
78¾		4203020012255		4203020022255
90½		4203023012255		4203023022255

Inlets and outlets with welded-on flanges, stainless steel, CrNi-blasted or pickled and passivated

NW	14 gauge 1.4301 (304) pickled and passivated	11 gauge 1.4301 (304) pickled and passivated	14 gauge 1.4571 (316Ti) pickled and passivated	11 gauge 1.4571 (316Ti) pickled and passivated
	Item no.	Item no.	Item no.	Item no.
44	4202011232255	4203011232255	4202011242255	4203011242255
49	4202012532255	4203012532255	4202012542255	4203012542255
55		4203014032255		4203014042255
63		4203016032255		4203016042255
71		4203018032255		4203018042255
78¾		4203020032255		4203020042255
90½		4203023032255		4203023042255





GREATER EFFICIENCY WITH THE JACOB WEAR PROTECTION PRODUCT RANGE

WEAR PROTECTION

Technical information	254
Transition components	256
Tubes	256
Segments	258
Laterals	260
Cone adapters	260
Two-way valves with inner collar	261
Cast-iron tubing	262
Special product range hot-dip galvanized 11 gauge	264



JACOB WEAR PROTECTION PRODUCT RANGE

More efficient industrial installations lead to an increase in the weight conveyed by the JACOB tubing system. Therefore, we have developed the new wear protection product range.

You have the choice between several branded products. These consist basically of polyurethane, but vary due to their different material properties. The products are combined with our modular tubing system. We offer you diameters 6" – 14" as standard. The advantage of polyurethane is its elastic yet wear-resistant structure. As a result, the impact energy due to deflections is absorbed and thereby extends the lifetime.

Due to the modular JACOB system, you can simply replace worn tubing components with lined tubes. You can still use pull rings and seals from the standard product range. To prevent separation of the wear protection lining, we have a transition component in our product range with a beveled lining which is fixed securely in place. It is recommended that this piece is used at every place where lined tubing begins.

We also continue to supply ceramic linings, a non-stick coating such as PTFE or a lining of your choice, such as PU in glued form, upon request.

As an alternative to lined tubing, JACOB offers cast iron tubing components (see page 262) or hot-dip galvanized tubing components with 11 gauge wall thickness (see page 264).

Our team would be pleased to assist you with selecting the right wear protection.

The advantages for you

- Wear protection in a modular system
- Perfect for combining with the JACOB pull ring system
- Flexibly replaceable
- Easy to assemble
- Longer lasting when conveying abrasive materials
- Choice between several materials in the standard product range
- Other linings available on request

For more technical information go to www.jacob-pipesystems.com



JACOB WEAR PROTECTION PRODUCT RANGE

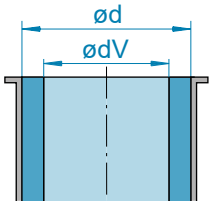
For the wear protection product range, JACOB uses tubing components from the modular system which are lined with different materials:

- 14 gauge wall thickness
- Galvanized or powder-coated
- ND 6" to 14"
- Straight tubes: 8", 20" and 39" long
- Transition component: 2" long, with beveled lining
- Segments: 5°, 15°, 30°, 45°
- Laterals
- Cone adapters (partly 16 gauge wall thickness)
- Two-way valves with inner collar (powder-coated only)

See chapter 1 for dimensions and materials of JACOB tubing.

JACOB tubing galvanized or powder-coated

Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
Polyurethane with expanded metal	Polyurethane with expanded metal	Polyurethane with expanded metal	Polyurethane with expanded metal
Material thickness approx. 1.5 gauge	Material thickness approx. 2 gauge	Material thickness approx. 0 gauge	Material thickness approx. 0 gauge
	FDA and EC 1935/2004 for handling bulk dry feed	FDA	FDA
		conductive	conductive
up to 176°F	up to 176°F	up to 140°F	up to 176°F
blue	green	orange	blue
Shore hardness A 85°	Shore hardness A 83°	Shore hardness A 85°	Shore hardness A 85°
bolted	bolted	bolted	bolted
Lining recommended solely for the grain and concentrated feed industry, for light to medium wear	Recommended use for linings for conveying non-sharp-edged bulk materials up to a conveying speed of 65.62 ft/sec – agricultural industry, e.g. to convey grains, soy, corn, etc. – Industry: e.g. to convey cement, lime, sand, gravel, concrete		



Internal diameter 1/16" tubing with wear protection lining

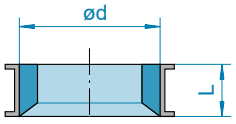
ND	Ø d	Ø dVS		
		Kryptane Material thickness approx. 2 gauge	Blue Ox Material thickness approx. 1.5 gauge	Rhino Hyde orange and blue Material thickness approx. 0 gauge
6	5.91	5.43	5.39	5.28
8	7.87	7.40	7.36	7.24
10	9.84	9.37	9.33	9.21
12	11.81	11.34	11.30	11.18
14	13.78	13.31	13.27	13.15

Internal diameter 1/16" tubing with wear protection lining

ND	Ø d	Ø dVS		
		Kryptane Material thickness approx. 2 gauge	Blue Ox Material thickness approx. 1.5 gauge	Rhino Hyde orange and blue Material thickness approx. 0 gauge
6	5.87	5.39	5.35	5.24
8	7.83	7.36	7.32	7.20
10	9.80	9.33	9.29	9.17
12	11.77	11.30	11.26	11.14
14	13.74	13.27	13.23	13.11

All internal diameters (dVS) are approximate dimensions





L = 2"

TRANSITION COMPONENT WEAR PROTECTION

1490

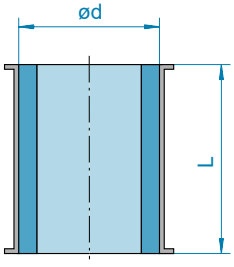
2" long, 14 gauge powder-coated

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121514000952	121514000951	121514000953	121514000950
8	122014000952	122014000951	122014000953	122014000950
10	122514000952	122514000951	122514000953	122514000950
12	123014000952	123014000951	123014000953	123014000950
14	123514000952	123514000951	123514000953	123514000950

2" long, 14 gauge galvanized

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121524000952	121524000951	121524000953	121524000950
8	122024000952	122024000951	122024000953	122024000950
10	122524000952	122524000951	122524000953	122524000950
12	123024000952	123024000951	123024000953	123024000950
14	123524000952	123524000951	123524000953	123524000950





8" long: L = 8"
20" long: L = 19"
39" long: L = 38¾"

TUBES – WEAR PROTECTION

1492

8" long, 14 gauge powder-coated

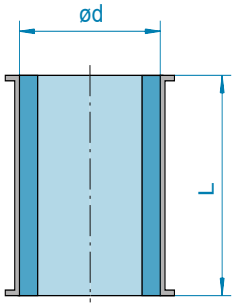
ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121510400952	121510400951	121510400953	121510400950
8	122010400952	122010400951	122010400953	122010400950
10	122510400952	122510400951	122510400953	122510400950
12	123010400952	123010400951	123010400953	123010400950
14	123510400952	123510400951	123510400953	123510400950

8" long, 14 gauge galvanized

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121520400952	121520400951	121520400953	121520400950
8	122020400952	122020400951	122020400953	122020400950
10	122520400952	122520400951	122520400953	122520400950
12	123020400952	123020400951	123020400953	123020400950
14	123520400952	123520400951	123520400953	123520400950

For more technical information go to www.jacob-pipesystems.com





8" long: L = 8"
20" long: L = 19"
39" long: L = 38¾"

20" long, 14 gauge powder-coated

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121510300952	121510300951	121510300953	121510300950
8	122010300952	122010300951	122010300953	122010300950
10	122510300952	122510300951	122510300953	122510300950
12	123010300952	123010300951	123010300953	123010300950
14	123510300952	123510300951	123510300953	123510300950

20" long, 14 gauge galvanized

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121520300952	121520300951	121520300953	121520300950
8	122020300952	122020300951	122020300953	122020300950
10	122520300952	122520300951	122520300953	122520300950
12	123020300952	123020300951	123020300953	123020300950
14	123520300952	123520300951	123520300953	123520300950

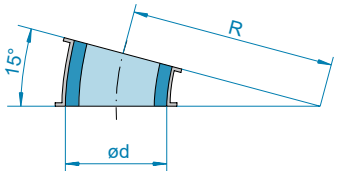
39" long, 14 gauge powder-coated

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121510200952	121510200951	121510200953	121510200950
8	122010200952	122010200951	122010200953	122010200950
10	122510200952	122510200951	122510200953	122510200950
12	123010200952	123010200951	123010200953	123010200950
14	123510200952	123510200951	123510200953	123510200950

39" long, 14 gauge galvanized

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121520200952	121520200951	121520200953	121520200950
8	122020200952	122020200951	122020200953	122020200950
10	122520200952	122520200951	122520200953	122520200950
12	123020200952	123020200951	123020200953	123020200950
14	123520200952	123520200951	123520200953	123520200950





SEGMENTS – WEAR PROTECTION

1494/1496/1498/1500

5°, 14 gauge powder-coated

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	19.69	121513000952	121513000951	121513000953	121513000950
8	27.17	122013000952	122013000951	122013000953	122013000950
10	25.00	122513000952	122513000951	122513000953	122513000950
12	24.61	123013000952	123013000951	123013000953	123013000950
14	13.78	123513000952	123513000951	123513000953	123513000950

5°, 14 gauge galvanized

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	19.69	121523000952	121523000951	121523000953	121523000950
8	27.17	122023000952	122023000951	122023000953	122023000950
10	25.00	122523000952	122523000951	122523000953	122523000950
12	24.61	123023000952	123023000951	123023000953	123023000950
14	13.78	123523000952	123523000951	123523000953	123523000950

15°, 14 gauge powder-coated

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	9.84	121513100952	121513100951	121513100953	121513100950
8	10.63	122013100952	122013100951	122013100953	122013100950
10	12.20	122513100952	122513100951	122513100953	122513100950
12	12.20	123013100952	123013100951	123013100953	123013100950
14	13.78	123513100952	123513100951	123513100953	123513100950

15°, 14 gauge galvanized

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	9.84	121523100952	121523100951	121523100953	121523100950
8	10.63	122023100952	122023100951	122023100953	122023100950
10	12.20	122523100952	122523100951	122523100953	122523100950
12	12.20	123023100952	123023100951	123023100953	123023100950
14	13.78	123523100952	123523100951	123523100953	123523100950

30°, 14 gauge powder-coated

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	6.89	121513200952	121513200951	121513200953	121513200950
8	7.09	122013200952	122013200951	122013200953	122013200950
10	9.06	122513200952	122513200951	122513200953	122513200950
12	9.06	123013200952	123013200951	123013200953	123013200950
14	13.78	123513200952	123513200951	123513200953	123513200950

30°, 14 gauge galvanized

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	6.89	121523200952	121523200951	121523200953	121523200950
8	7.09	122023200952	122023200951	122023200953	122023200950
10	9.06	122523200952	122523200951	122523200953	122523200950
12	9.06	123023200952	123023200951	123023200953	123023200950
14	13.78	123523200952	123523200951	123523200953	123523200950

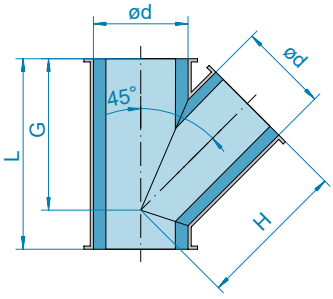
45°, 14 gauge powder-coated

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	5.91	121513300952	121513300951	121513300953	121513300950
8	7.68	122013300952	122013300951	122013300953	122013300950
10	7.68	122513300952	122513300951	122513300953	122513300950
12	8.07	123013300952	123013300951	123013300953	123013300950
14	13.78	123513300952	123513300951	123513300953	123513300950

45°, 14 gauge galvanized

ND	R	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6	5.91	121523300952	121523300951	121523300953	121523300950
8	7.68	122023300952	122023300951	122023300953	122023300950
10	7.68	122523300952	122523300951	122523300953	122523300950
12	8.07	123023300952	123023300951	123023300953	123023300950
14	13.78	123523300952	123523300951	123523300953	123523300950





See chapter 5 for dimensions of laterals

LATERALS – WEAR PROTECTION

1502

45°, 14 gauge powder-coated

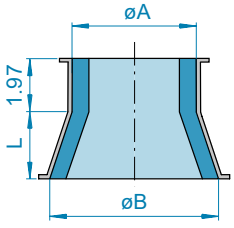
ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121512200952	121512200951	121512200953	121512200950
8	122012200952	122012200951	122012200953	122012200950
10	122512200952	122512200951	122512200953	122512200950
12	123012200952	123012200951	123012200953	123012200950
14	123512200952	123512200951	123512200953	123512200950

45°, 14 gauge galvanized

ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121522200952	121522200951	121522200953	121522200950
8	122022200952	122022200951	122022200953	122022200950
10	122522200952	122522200951	122522200953	122522200950
12	123022200952	123022200951	123022200953	123022200950
14	123522200952	123522200951	123522200953	123522200950



Product similar to picture



CONE ADAPTERS – WEAR PROTECTION

1504

14 gauge primed

ND	L	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6- 8	3.94	110014610952*	110014610951*	110014610953*	110014610950*
6-10	5.91	110014620952*	110014620951*	110014620953*	110014620950*
6-12	7.87	110014630952*	110014630951*	110014630953*	110014630950*
8-10	4.72	120014700952	120014700951	120014700953	120014700950
8-12	5.91	120014710952	120014710951	120014710953	120014710950
10-12	5.91	120014750952	120014750951	120014750953	120014750950
10-14	7.87	120014840952	120014840951	120014840953	120014840950
12-14	7.87	120014800952	120014800951	120014800953	120014800950

*16 gauge

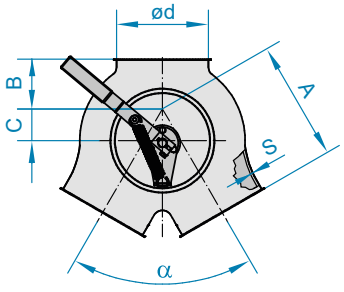
14 gauge galvanized

ND	L	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
		Item no.	Item no.	Item no.	Item no.
6- 8	3.94	110024610952*	110024610951*	110024610953*	110024610950*
6-10	5.91	110024620952*	110024620951*	110024620953*	110024620950*
6-12	7.87	110024630952*	110024630951*	110024630953*	110024630950*
8-10	4.72	120024700952	120024700951	120024700953	120024700950
8-12	5.91	120024710952	120024710951	120024710953	120024710950
10-12	5.91	120024750952	120024750951	120024750953	120024750950
10-14	7.87	120024840952	120024840951	120024840953	120024840950
12-14	7.87	120024800952	120024800951	120024800953	120024800950

*16 gauge

For more technical information go to www.jacob-pipesystems.com





Inlet and inner flap lined

Refer to chapter 9 for dimensions of two-way valve with inner collar

TWO-WAY VALVES WITH INNER COLLAR WEAR PROTECTION

1506

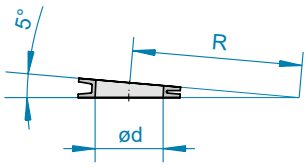
- For gravity-flow tube systems for coarse bulk goods

Asymmetrical 60°, hand-operated, 14 gauge powder-coated

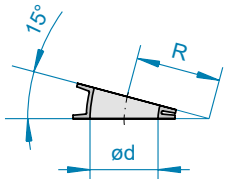
ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121515120952	121515120951	121515120953	121515120950
8	122015170952	122015170951	122015170953	122015170950
10	122515170952	122515170951	122515170953	122515170950
12	123015120952	123015120951	123015120953	123015120950
14	123515150952	123515150951	123515150953	123515150950

Symmetrical 60°, hand-operated, 14 gauge powder-coated

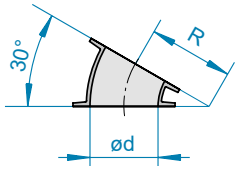
ND	Lined with Blue Ox	Lined with Kryptane green	Lined with Rhino Hyde orange	Lined with Rhino Hyde blue
	Item no.	Item no.	Item no.	Item no.
6	121515020952	121515020951	121515020953	121515020950
8	122015050952	122015050951	122015050953	122015050950
10	122515050952	122515050951	122515050953	122515050950
12	123015020952	123015020951	123015020953	123015020950
14	123515050952	123515050951	123515050953	123515050950



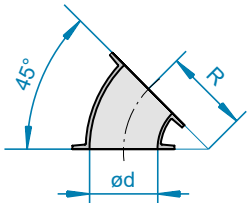
Cast-iron segment 5°



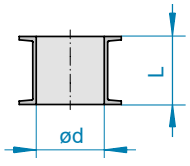
Cast-iron segment 15°



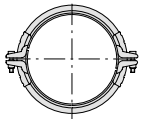
Cast-iron segment 30°

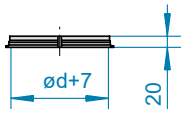


Cast-iron segment 45°

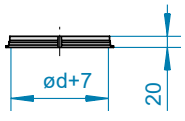


Cast-iron tubes


Pull rings for cast-iron tubing



Angle flanges



Angle flanges, 1 cut

CAST-IRON TUBING

1160/1170/1180/1190/1150/1200/7000/1210

- Cast-iron tubing made from modular spheroidal graphite cast iron
- 0.5 gauge wall thickness
- Powder-coated (RAL 7032)
- Internal diameters correspond to 11 gauge thick tubing
- Connection using pull rings for cast-iron tubes
- Combination with JACOB tubing with lip using angle flange

Cast-iron segments 5° and 15°

ND	Ø d	R	Cast-iron segments 5°	R	Cast-iron segments 15°
			Item no.		Item no.
5	4.65			6.10	17121310
6	5.83	23.62	17151300	9.84	17151310
8	7.80	27.17	17201300	10.63	17201310
10	9.76	25.00	17251300	12.20	17251310
12	11.73	24.61	17301300	12.20	17301310

Cast-iron segments 30° and 45°

ND	Ø d	R	Cast-iron segments 30°	R	Cast-iron segments 45°
			Item no.		Item no.
5	4.65	4.33	17121320		
6	5.83	6.89	17151320	5.91	17151330
8	7.80	7.09	17201320	7.68	17201330
10	9.76	9.06	17251320	7.68	17251330
12	11.73	9.06	17301320	8.07	17301330

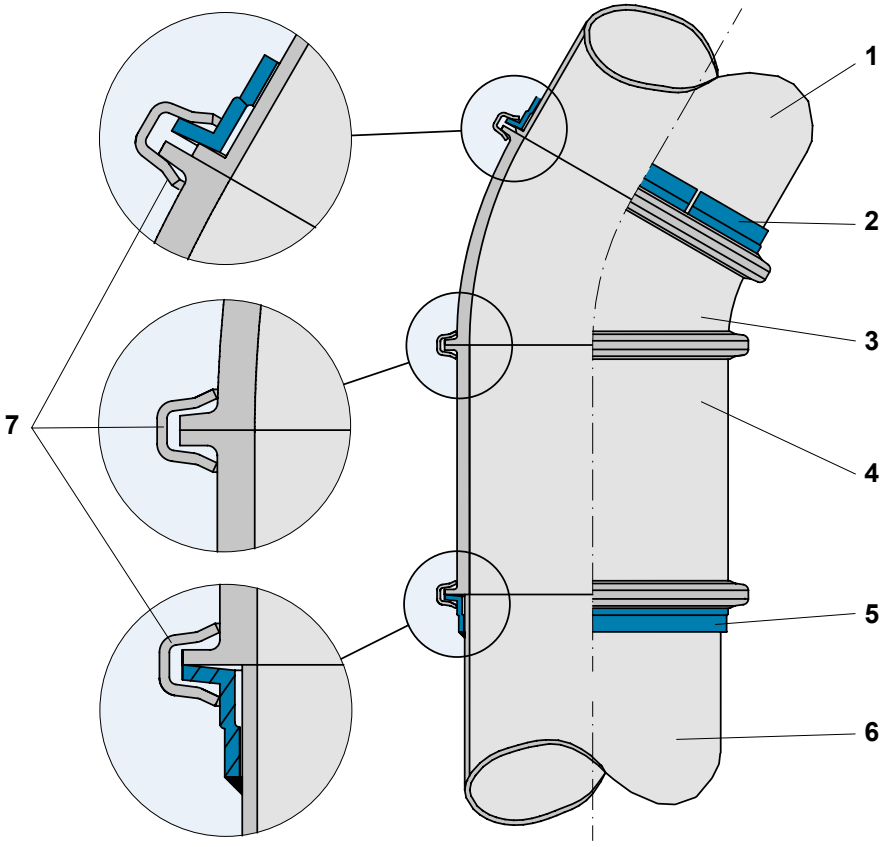
Cast-iron tubes and pull rings

ND	Ø d	L	Cast-iron tubes	Pull rings for cast-iron tubing, galvanized, with mastic sealant
			Item no.	Item no.
5	4.65	5.91	17121040	17122382
6	5.83	5.91	17151040	17152382
8	7.80	7.87	17201040	17202382
10	9.76	9.84	17251040	17252382
12	11.73	11.81	17301040	17302382

Angle flanges

ND	Ø d	Angle flanges for welding-on on site	Angle flanges, 1 cut
		Item no.	Item no.
5	4.65	33121705	17121705
6	5.83	33151705	17151705
8	7.80	33201705	17201705
10	9.76	33251705	17251705
12	11.73	33301705	17301705

For more technical information go to www.jacob-pipesystems.com



1 Steel tube with lip
2 Angle flange (1 cut)
3 Cast-iron segment
4 Cast-iron tube
5 Angle flange welded-on
6 Steel tube
7 Pull rings for cast-iron tubing

- Angle flange, 1 cut, is rotated on behind the lipped end of the existing JACOB tubing component and connected to the cast-iron tube with the pull ring for cast-iron tubes.
- Alternatively: Use of an angle flange for welding-on on site. One tube end without a lip is necessary to enable the angle flange to be fitted. This can be created when connecting tubes are shortened, for example.

Special product range hot-dip galvanized 11 gauge



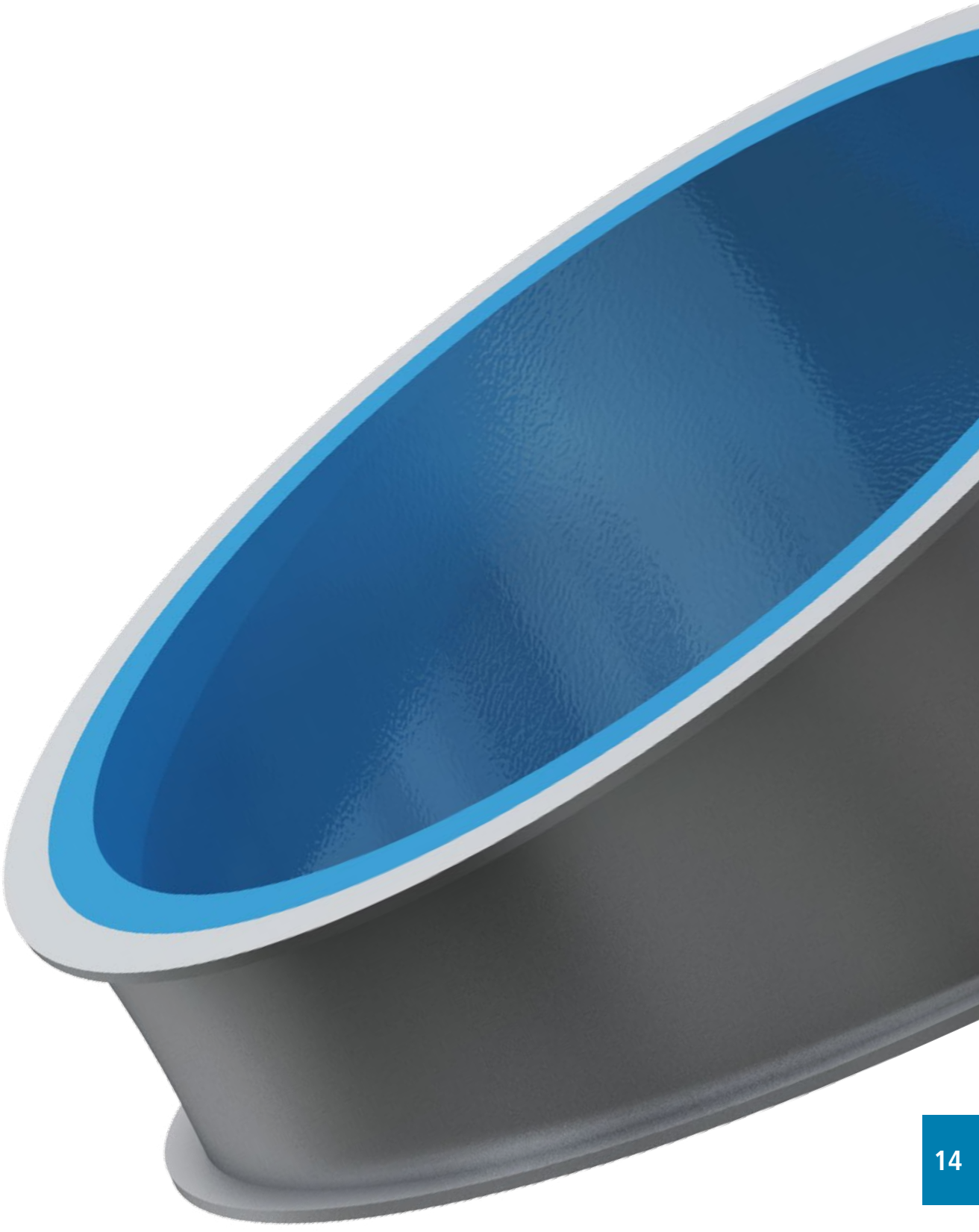
TUBING SYSTEM HOT-DIP GALVANIZED 11 GAUGE

The hot-dip galvanized tubing system that JACOB delivers from stock is specially designed for conveying bulk goods in outdoor areas. It is particularly suitable for conveying goods with abrasive characteristics.

The components can be mounted fast and provide a tight seal due to the use of our proven pull ring system. The hot-dip galvanized tubing components and pressed components are available in the popular diameters ND 8", 10" and 12". With a wall thickness of 11 gauge, the system remains installation-friendly yet is still suitable for abrasive bulk goods, such as coarse-grained products like grains or pellets.

Please refer to chapter 2 for technical information and instructions for assembling the JACOB pull ring system.

Hot-dip galvanized product range All tubing with a 0.24" lip for pull ring system	ND 8"	ND 10"	ND 12"
	Item no.	Item no.	Item no.
Welded tubes 79" long	13202010	13252010	13302010
Welded tubes 39" long	13202020	13252020	13302020
Welded tubes 20" long	13202030	13252030	13302030
Segments 5°	13202300	13252300	13302300
Segments 15°	13202310	13252310	13302310
Segments 30°	13202320	13252320	13302320
Segments 45°	13202330	13252330	13302330
Cone adapters 8"– 10"	13002470		
Cone adapters 8"– 12"	13002471		
Cone adapters 10"– 12"		13002475	
Laterals 45°	13202220	13252220	13302220
Connecting flanges with loose flange drilled according to DIN 24154-2	13202432	13252432	13302432
Spouts without an angle from square to round	13202400	13252400	13302400
Spouts with a 45° angle from square to round	13202420	13252420	13302420
Inspection sections without a rubber cover	13202200	13252200	13302200
Two-way valves with inner collar, symmetrical, hand-operated	13202505	13252505	13302502
Two-way valves with inner collar, asymmetrical, hand-operated	13202517	13252517	13302512





JACOB MANUFACTURING TECHNOLOGY: TOP QUALITY CUSTOMIZED PRODUCT SOLUTIONS

SPECIAL MANUFACTURE

Technical information	268
Special parts	270
Special product range shock explosion proof to 145.03 psi	274
Dimensions	278

SPECIAL PART MANUFACTURE

JACOB manufacturing technology stands not only for top quality mass-produced standard parts but also for top quality special part manufacture.
From manufacturing product variations, small-lot production, made-to-order production and customers' drawings: You can depend on the comprehensive expertise and many years of experience of our technicians, design engineers, and production staff. We also invest in production equipment on an ongoing basis to guarantee the highest possible quality using modern technology.

Take advantage of our professional expertise, providing you with advice and solutions that are tailored to your specific product requirements. We guarantee integration and compatibility with our modular system. For you, this means: mass-produced standard products and special manufacture from a single source, which is the No. 1 for modular tubing systems.
This chapter merely shows a small selection of our manufacturing capabilities for special parts and customized solutions.
We would be pleased to fulfill your specific requests on an individual basis.

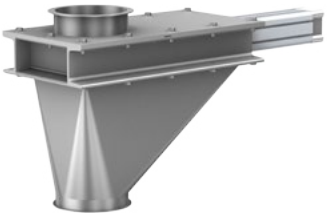
Individual product solutions: Variations, small-lot production, made-to-order production, customers' drawings

DIVERTERS/THROTTLE VALVES	Dust-tight slide gate
	Louvre valve
	Square two-way valve
MEASUREMENT TECHNOLOGY AND ACTUATORS	Preparation and integration for measurement technology
	Actuators and limit switches
	Venturi tube
WEAR PROTECTION AND NON-ADHESION PROTECTION	Wear protection linings
	Baffle boxes/tubes
	Non-adhesion protection
ADAPTERS / SYSTEMS	Adapters for connection to the JACOB system
	Connector system with guide rings
EXHAUST AIR	Air outlets for roofs
	Air inlet / outlet hoods
	Air quality / air conditioning and ventilation
MATERIALS AND SPECIAL FINISHES	Innovative powder coating
	Special colors
	Grinding or electrolytic polishing
TUBE LENGTHS OF UP TO 40'	









DIVERTERS / THROTTLE VALVES

Dust-tight slide gate

The range of products in the valve and gate catalog (see chapter 8) has been extended with the addition of the sealed slide gate. This slide gate is sealed to prevent dust from leaking out. It is used for floury or granular goods in gravity-flow tubing systems.



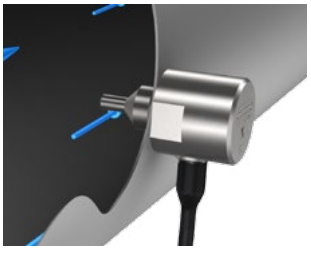
Louvre valve

The louvre valve is mostly used in hot air tube runs. The valve is available with either one or several louvre valves. Louvre valves with larger dimensions of 39" or more are used in industrial buildings and similar applications. The size of the valve required depends on the hot air flow capacity. The valve can withstand temperatures of up to 608°F.



Square two-way valves

The square two-way valve is an extension of the design-optimized two-way distributor unit (see chapter 9). It is used in many industries, including for processing granular materials and distributing bulk goods.



MEASUREMENT TECHNOLOGY AND ACTUATORS

Preparation and integration of measurement technology

Our modular tubing system makes it possible to integrate various types of measurement technology. At the customer's request, we can prepare our modular tubing system for the integration of measurement systems, to measure pressure, temperature or flow rate, for example. We install adapters, transition pieces or other special connection systems in order to facilitate the installation of measurement devices on site. To enable our customers to integrate measurement technology in a modular system as standard, in chapter 3 we offer tubes in 8" lengths in a variety of materials and with various ports.



Actuators and limit switches

With regard to automatic control technology, we offer a wide selection of tried-and-tested drives for two-way distributors and valves (see chapter 9) and for throttle valves (see chapter 8). Whether electrically or pneumatically actuated: Our tubing system components can be fitted with many different brands of actuator due to the DIN EN ISO attachment system. The same applies to a wide range of different mechanical or inductive limit switches.



Venturi tube

Pressure changes through alteration of the speed in a constricted section allow the volumetric flow to be determined. One example of use is in waste management, where other measurement methods are unsuitable due to the presence of aggressive gases.

WEAR PROTECTION AND NON-ADHESION PROTECTION



Wear protection linings

Besides the JACOB wear protection product range (chapter 14), we have numerous materials available in a range of thicknesses for lining our products (from ND 4"). Examples of these materials are PUR, Linatex, ceramic, Correx, and Philan. With many materials, you have the choice between layer thicknesses of 14, 9, 2 and 0 gauge. Thicker layers are possible on request. We are also happy to fulfill special requirements, such as for food grade quality, electrostatic conductivity or higher temperature resistance.



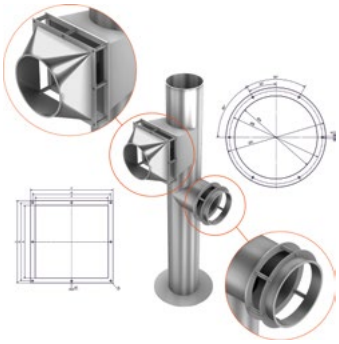
Baffle boxes/tubes

Baffle boxes can be installed to reduce the speed of abrasive or sensitive bulk goods as they fall, thereby lessen their abrasive effect. This increases the lifetime of the tubing and reduces wear on the product. Typically, baffle boxes are installed just upstream of direction changes in gravity-flow down spouts.



Non-adhesion protection coating

The addition of a non-adhesion coating improves the flow properties of dry products that do not tend to flow freely. Examples of these are coffee powder varieties with a high oil content, or products used in the manufacture and recycling of car tires. This type of coating is typically used in the food industry, mechanical engineering applications, polymer processing and the printing and paper industry. Other lining materials are available on request.



ADAPTERS / SYSTEMS

Adapters for connection to the JACOB system

Do you require special transitions or adapter connections for the JACOB tubing system? We have a wide range of adapters and transitions available as standard components. Special customer-specific solutions can also be produced if required. Please refer to chapter 6 of this catalog for details of standardized adapters and transitions. These include connecting flanges, together with loose flanges, used as spouts for connecting square sections to round tubes, or used as single round or square flanges for connecting to machine inlets or outlets.



Connector system with guide rings

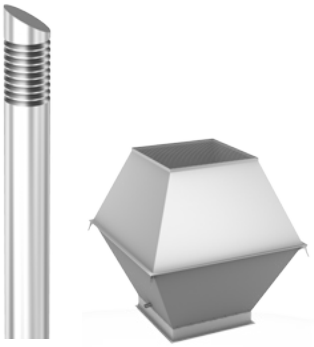
Our connector system with guide rings allows you to make virtually step-free transitions to the various tubing components. This is a big advantage if your product is susceptible to problematic turbulent flow at tube transitions. It is suitable for ensuring that the product is conveyed particularly carefully and gently. The system is used in applications such as extraction tube runs in the tobacco industry or pulp industry. We would be pleased to advise you as to whether this system would be suitable as a specific solution for your particular application.



EXHAUST AIR

Air outlets for roofs

The roof air outlet is used as a connection element for on-roof exhaust components. It consists of a tube with a circular roof sealing plate. The roof outlets are available in stainless steel and can also be surface-coated if required.



Air inlet / outlet hoods

Deflector hoods and rain hoods for industrial applications can be found in chapter 6 of this catalog. In addition to these, we offer a wide range of stylish and attractive design variations for heat exchange and air exchange applications. Whether you would like a striking tower and hood construction or a discreet weather protection screen for wall or on-roof installation, a square or round form, or perhaps a design-optimized outlet head – there is a wide range of options to choose from. The air inlet towers can be installed on roofs as well as at ground level.



Air quality / air conditioning and ventilation

Our source air outlets are design-oriented customized solutions for use in air-conditioning systems. In areas where the system is visible, the source air is introduced through a system of tubes. The picture shows our customized solution created for the entrance area of a hospital.



MATERIALS AND SPECIAL FINISHES

Innovative powder coating

JACOB uses an ultra-modern, automated powder-coating system in order to ensure superior and uniform product quality. The advantages of our standard powder coating (similar to RAL 7032) are:

- Electrostatically conductive
- Its constituents comply with the requirements of the Food and Drug Administration (FDA)
- Coating thickness on the outside: average layer thickness 55 µm
- Coating thickness on the inside: optically covered as temporary corrosion protection
- Optimum surface quality and long service life due to three-stage pretreatment
- Temperature resistance: from -76°F to +248°F

3,000 special colors

JACOB can provide powder coatings on request in any color from the wide RAL spectrum. In this case, the products are first coated with our standard RAL 7032 powder coating and then powder coated again in the color of your choice. This creates a layer thickness of at least 80 µm. We also offer further special features on request. These include high-gloss effects. Also, liquid paint coatings can be provided as an alternative to powder coating, if required.

Grinding or electrolytic polishing

At our customers' request, we also offer electrolytic polishing or grinding of our stainless steel tubing. Surface roughness of 0.8 µm or less is possible.

TUBE LENGTHS

Tube lengths of up to 40'

We produce special tubes up to 40' in length in diameters of ND 2¼" to 12" and in different materials with a wall thickness of 19 to 11 gauge. We normally supply tubes in lengths of 20' to 40' with untreated and unlipped ends. Tubes of up to 20' in length can optionally be supplied with lipped ends for quick assembly with JACOB pull rings. For tubes of up to 40' in length, we also offer special connections on request.



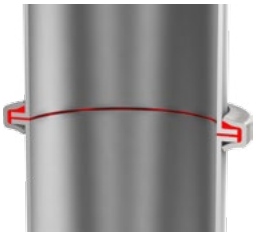
Special product range shock explosion proof to 145.03 psi



SHOCK EXPLOSION PROOF TUBING SYSTEM 145.03 PSI

Particularly exacting demands for up to 145.03 psi shock explosion resistance are met by the special range certified by DEKRA EXAM GmbH and/or the Forschungsgesellschaft für angewandte Systemsicherheit und Arbeitsmedizin (FSA) (Research Society for Applied System Security and Occupational Medicine).

We have dimension sheets available to aid your planning and design work. Test reports are available on request.

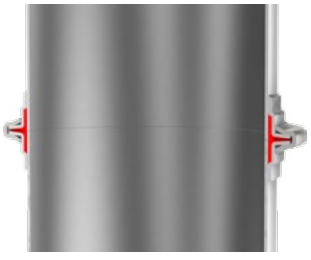


ND 4" to 8"
tubing with lip, shock explosion proof to 145.03 psi:

- Tubes, bends and laterals tested by DEKRA EXAM in conjunction with a reinforced two-part pull ring and a U-shaped gasket
- ND 4", 5", 6", 7" and 8"
- Refer to chapters 3 and 4 for tubes, bends with 14 gauge wall thickness, ND 4" and 5" with a lip (except: laterals and inspection ports with 14 gauge wall thickness; these are tested with angle flange only)
- Refer to chapters 3 and 4 for tubes, bends with 11 gauge wall thickness with a lip, ND 6", 7", and 8", laterals available on request
- Connection with two-part pull ring (reinforced version) and U-shaped gaskets for 14" gauge tubing
- The pull ring bolts must be tightened to a torque of 18.44 ft lb to meet 145.03 psi certified shock explosion resistance

Pull rings, reinforced version

ND	Two-parted pull ring (reinforced version)	
	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.
4	32102383	
5	32122383	
6		32152926
7		32172926
8		32202926



ND 3" to 12"
Tubing with angle flange, shock explosion proof to 145.03 psi:

- Tubing components ND 3", 4", 5", 6", 7", 8", 10" and 12" with angle flange
- Depending on the diameter, available with 14 and/or 11 gauge wall thickness
- Straight tubes up to 79" in length, inspection ports with end cover in reinforced version, laterals 30° and 45° and bends R = 2 D, 30° to 90°
- Tubing components connected with special pull ring for angle flange
- The seal is incorporated in the tubing
- Mastic sealant approved for food use in accordance with NSF, commodities directive 2002/72/EC, temperature resistance -40°F to +194°F
- The pull ring bolts must be tightened to a torque of 18.44 ft lb to meet 145.03 psi certified shock explosion resistance
- Grounding lugs are spot-welded to all angle flange tubing

ND 14" to 25":

ND 14" to 25" with welded-on special flanges for 145.03 psi shock explosion resistance available on request



PULL RINGS FOR ANGLE FLANGE TUBING

7010

- 145.03 psi shock explosion proof
- Electro-galvanized
- The pull ring bolts must be tightened to a torque of 18.44 ft lb to meet 145.03 psi certified shock explosion resistance

Pull rings for angle flange

ND	Pull ring for angle flange	
	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.
3	32082382	
4	32102382	
5	32122382	
6		32152382
7		32172382
8		32202382
10		32252382
12		32302382



WELDED TUBES

7020

- With angle flange
- Powder-coated

ND	78½" long		38¾" long	
	14 gauge wall thickness	11 gauge wall thickness	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.	Item no.	Item no.
3	32081010		32081020	
4	32101010		32101020	
5	32121010		32121020	
6	32151010	33151010	32151020	33151020
7	32171010	33171010	32171020	33171020
8	32201010	33201010	32201020	33201020
10	32251010	33251010	32251020	33251020
12	32301010	33301010	32301020	33301020

ND	19½" long		8¼" long	
	14 gauge wall thickness	11 gauge wall thickness	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.	Item no.	Item no.
3	32081030		32081040	
4	32101030		32101040	
5	32121030		32121040	
6	32151030	33151030	32151040	33151040
7	32171030	33171030	32171040	33171040
8	32201030	33201030	32201040	33201040
10	32251030	33251030	32251040	33251040
12	32301030	33301030	32301040	33301040

SPECIAL MANUFACTURE

Special product range shock explosion proof to 145.03 psi



WELDING ENDS

7030

- With angle flange
- Powder-coated

ND	2¼" long	
	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.
3	32081060	
4	32101060	
5	32121060	
6	32151060	33151060
7	32171060	33171060
8	32201060	33201060
10	32251060	33251060
12	32301060	33301060



INSPECTION PORTS

7040

- With angle flange pull ring and end cover
- Powder-coated

ND	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.
3	32081200	
4	32101200	
5	32121200	
6	32151200	33151200
7	32171200	33171200
8	32201200	33201200
10	32251200	33251200
12	32301200	33301200





LATERALS

7050/7052

- With angle flange
- Powder-coated

ND	30° primed		45° primed	
	14 gauge wall thickness	11 gauge wall thickness	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.	Item no.	Item no.
3	32081230		32081220	
4	32101230		32101220	
5	32121230		32121220	
6	32151230	33151230	32151220	33151220
7	32171230	33171230	32171220	33171220
8	32201230	33201230	32201220	33201220
10	32251230	33251230	32251220	33251220
12	32301230	33301230	32301220	33301220



BENDS R = 2 D

7060/7062/7064/7066/7068

- With angle flange
- Powder-coated

ND	30° primed		45° primed	
	14 gauge wall thickness	11 gauge wall thickness	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.	Item no.	Item no.
3	32081343		32081344	
4	32101343		32101344	
5	32121343		32121344	
6	32151343	33151343	32151344	33151344
7	32171343	33171343	32171344	33171344
8	32201343	33201343	32201344	33201344
10	32251343	33251343	32251344	33251344
12	32301343	33301343	32301344	33301344

ND	60° primed		90° primed	
	14 gauge wall thickness	11 gauge wall thickness	14 gauge wall thickness	11 gauge wall thickness
	Item no.	Item no.	Item no.	Item no.
3	32081346		32081349	
4	32101346		32101349	
5	32121346		32121349	
6	32151346	33151346	32151349	33151349
7	32171346	33171346	32171349	33171349
8	32201346	33201346	32201349	33201349
10	32251346	33251346	32251349	33251349
12	32301346	33301346	32301349	33301349

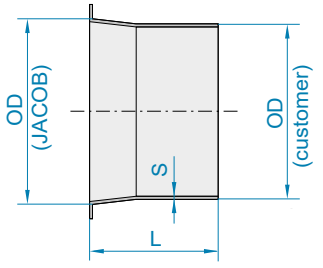
ADAPTER SERIES

For the adapting of the JACOB metric system to the customer's non-metric system we offer the following solution:
The JACOB connection is designed for use with pull rings. The customer connection can be designed as a butt-weld stub or a flanger.

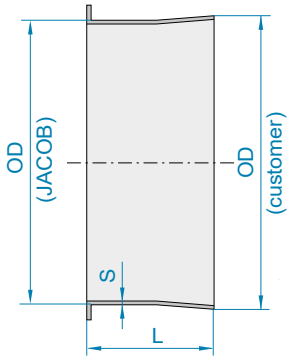
The adapter series consist of the following products:

80 mm – 3"
100 mm – 4"
120 mm – 5"
150 mm – 6"
200 mm – 8"
250 mm – 10"
300 mm – 12"

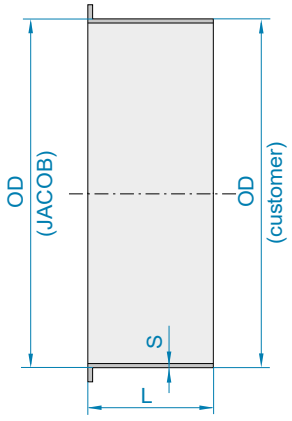
80/3"



120/5"



100/4", 150/6", 200/8", 250/10", 300/12"



s 19 gauge for 80/3" application
s 14 gauge for all others
L 2.17" standard

Product will be manufactured to customer's specifications. Prices on request

All JACOB components are manufactured to Metric dimensions; any Imperial/English units listed are for reference only.

CONVERSION CHARTS FROM METRIC: US UNITS

- Gauges/schedules:
  wall thickness s = 1.0 mm equal to gauge 19
  wall thickness s = 1.5 mm equal to gauge 16
  wall thickness s = 2.0 mm equal to gauge 14
  wall thickness s = 3.0 mm equal to gauge 11
  wall thickness s = 7.5 mm equal to schedule 40

Chart OD/ID for nominal diameters of the Modular System

Nominal		s = 1 mm / gauge 19				s = 1.5 mm / gauge 16				s = 2 mm / gauge 14				s = 2 mm / gauge 11				s = 7.5 mm / schedule 40			
dia		OD		ID		OD		ID		OD		ID		OD		ID		OD		ID	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
60	2.36	60	2.36	58	2.30	60	2.36	57	2.27	60	2.36	57	2.24								
80	3.15	80	3.15	78	3.07	80	3.15	77	3.03	80	3.15	76	2.99								
100	3.94	102	4.02	100	3.94	103	4.06	100	3.94	103	4.06	99	3.90								
120	4.72	122	4.80	120	4.72	123	4.84	120	4.72	123	4.84	119	4.69	124	4.88	118	4.65	133	5.24	118	4.65
140	5.51	138	5.43	136	5.35	139	5.47	136	5.35	139	5.47	135	5.31								
150	6.90	152	5.98	150	5.90	153	6.02	150	5.91	153	6.02	149	5.87	154	6.06	148	5.83	163	6.42	148	5.83
175	6.89	177	6.97	175	6.89	178	7.01	175	6.89	178	7.01	174	6.85	179	7.05	173	6.81				
200	7.87	202	7.95	200	7.87	203	7.99	200	7.87	203	7.99	199	7.83	204	8.03	198	7.80	13	8.39	198	7.80
224	8.82	222	8.74	220	8.66	223	8.78	220	8.66	223	8.78	219	8.62	224	8.82	218	8.58				
250	9.84	252	9.92	250	9.84	253	9.96	250	9.84	253	9.96	249	9.80	254	10.00	248	9.76	263	10.35	248	9.76
280	11.02	282	11.10	280	11.01	283	11.14	280	11.02	283	11.14	279	10.98	284	11.18	278	10.94				
300	11.81	302	11.89	300	11.81	303	11.93	300	11.81	303	11.93	299	11.77	304	11.97	298	11.73	313	12.32	298	11.73
315	12.40	317	12.48	315	11.25	318	12.52	315	12.40	318	12.52	313	12.32	319	12.56	313	12.32				
350	13.78	352	13.86	350	13.78	353	13.90	350	13.78	353	13.90	349	13.74	354	13.94	348	13.70				
400	15.75	402	15.83	400	15.75	402	15.83	399	15.71	402	15.83	398	15.67	402	15.83	396	15.59				
450	17.72	452	17.80	450	17.72	452	17.80	449	17.68	452	17.80	448	17.64	452	17.80	446	17.56				
500	19.69	502	19.76	500	19.69	502	19.76	499	19.65	502	19.76	498	19.61	502	19.76	496	19.53				
560	22.05					562	22.13	559	22.01	562	22.13	558	21.97	562	22.13	556	21.89				
630	24.80					632	24.88	629	24.76	632	24.88	628	24.72	632	24.88	626	24.65				
710	27.95					711	27.99	708	27.87	711	27.99	707	27.83	711	27.99	705	27.76				
800	31.50									801	31.54	797	31.38	801	31.54	795	31.30				
900	35.43									901	35.47	897	35.31	901	35.41	895	35.24				
1000	39.37									1002	39.45	998	39.29	1002	39.45	996	39.21				
1120	44.09									1122	44.17	1118	44.01	1122	44.17	1116	43.93				
1250	49.21									1252	49.29	1248	49.13	1252	49.29	1246	49.05				
1400	55.12									1402	55.20	1398	55.04	1402	55.20	1396	54.95				
1600	62.99									1602	63.07	1598	62.91	1602	63.07	1596	62.82				

CONVERSION CHARTS FROM METRIC : US UNITS

Length								
Metric units : US units					US units : metric units			
	inch	feet	yard	mile		mm	m	km
1 mm	.0394				**1 inch**	25.4		
1 m	39.4	3.28	1.094		**1 foot**	304.8	.3048	
1 km				.6215	**1 yard**	914.4	.9144	
					1 mile			1.60934

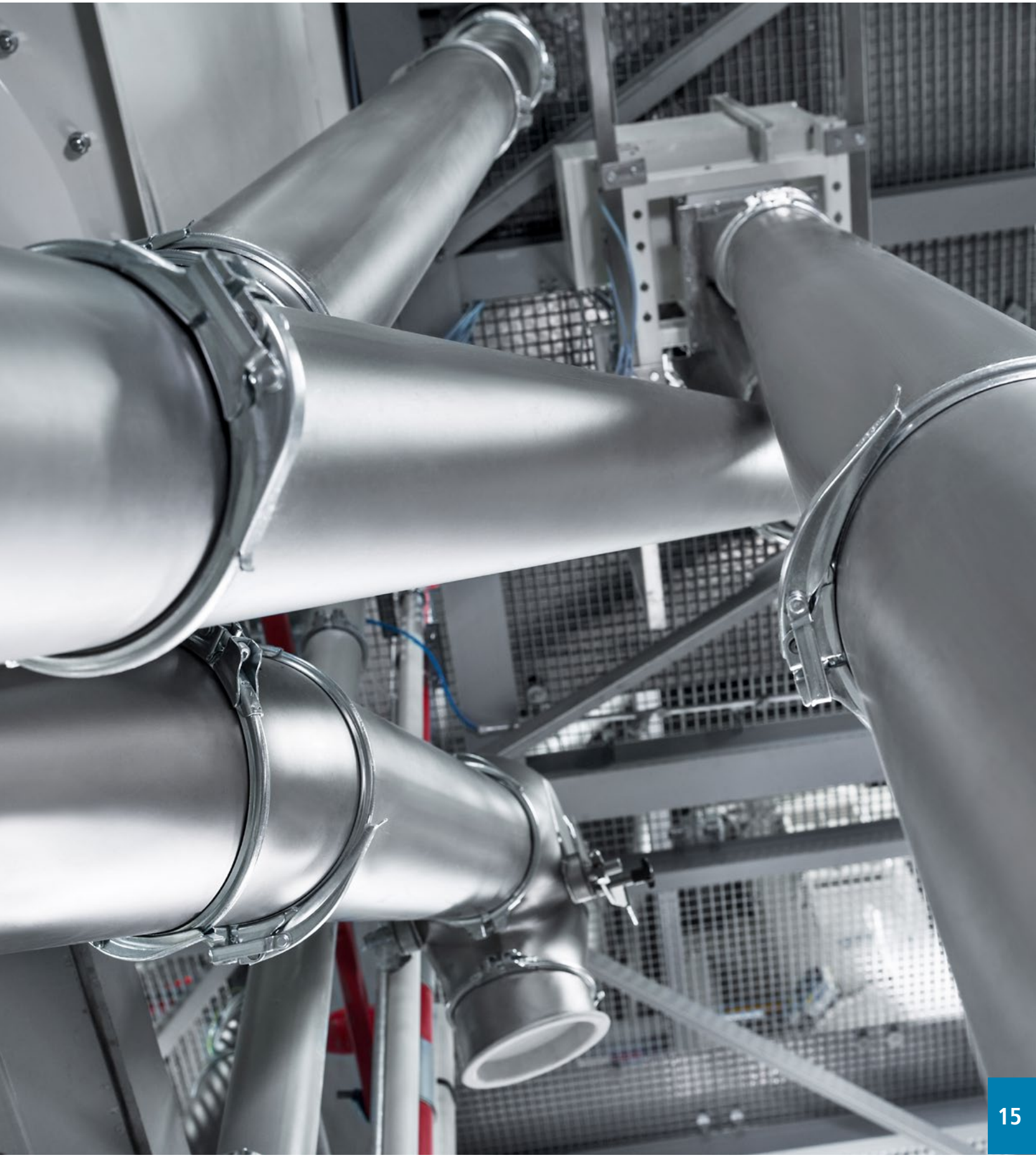
Area						
Metric units : US units				US units : metric units		
	sq inch	sq feet	sq yard		cm^2	m^2
1 cm^2	.155			**1 sq inch**	6.4516	
1 m^2		10.764	1.19599	**1 sq foot**	929.03	
				1 sq yard		.836

Volume						
Metric units : US units				US units : metric units		
	cu inch	cu feet	gal		l	m^3
1 l	61.024			**1 cu inch**	.0164	
1 m^3		35.314	264.205	**1 cu foot**		.0283
				1 gal	3.785	

Mass					
Metric units : US units			US units : metric units		
	ounces	lb		g	kg
g	.0353		**ounces**	28.35	.0284
kg	35.273	2.205	**lb**	453.6	.4536

Pressure							
Metric units : US units				US units : metric units			
	inch H_2O	inch HG	psi		mm H_2O	mm Hg	bar
mm H_2O	.0394			**inch H_2O**	25.4	1.868	
mm Hg		.0394		**inch HG**	1.868	25.4	
bar			14.514	**psi**	703.1	51.7	.0689

1 psi = 27.58 in H_2O = 2.035 in HG



Standard terms and conditions of sale

June 2017

1. General.

The sale, delivery, and quotations by Jacob Tubing L.P. (the "Seller") of all goods, products, or services (the "Product") are subject to the terms set forth below (the "Contract"). These terms and conditions shall not be superseded by any other terms or conditions in the purchase order or any other document of the purchaser of the Product (the "Buyer"). This Contract merges and supersedes all prior negotiations or agreements of the parties, either written or oral, made either prior to or contemporaneous with this Contract. This Contract cannot be modified or amended except by a subsequent written instrument executed by the parties which expressly supersedes the provisions of this Contract. This Contract, together with its attachments, constitutes the complete, exclusive and final agreement between Buyer and Seller. Any additional or different terms provided by Buyer in subsequent purchase orders or other documents shall not be binding. The rights and obligations under Sections 3, and 5 through 22 will survive the cancellation, termination or expiration of this Contract.

2. Deliveries.

Unless stated otherwise in the order confirmation, deliveries are made FOB (pursuant to Incoterms 2010 or the current version) Seller's facility or warehouse as selected by Seller in its sole discretion. Unless otherwise agreed in writing, details on delivery times are only approximate. A delivery period only commences when all details of the execution have been clarified and both parties agree on the terms of the order. Agreed delivery dates shall be shifted accordingly. Any change made to the scope shall result in a corresponding extension of the delivery period once the order has been accepted by Seller. All quantities are subject to Seller's reasonable production capabilities. Seller has the right to make partial deliveries, and where reasonable or customary, ship overages and underages of weight, length, size and/or quantity and may invoice for same. Seller's delivery obligation is subject to the timely and proper fulfilment of Buyer's obligations. Seller is entitled to postpone delivery as long as Buyer has failed to fulfil due payment obligations arising out of previous deliveries without justification. In the event that prepayment has been agreed, the deadline for delivery begins to start only after receipt of the full invoice amount. In the event of call-off contracts, binding quantities are to be notified at least (one) 1 month prior to the delivery date by call-offs. Additional costs arising as a result of delayed call-offs or subsequent amendments to a call-off regarding time or quantity by the Buyer shall be borne by Buyer.

3. Price, Payment, Setoff.

Unless stated otherwise in the order confirmation, all prices are FOB (pursuant to Incoterms 2010 or the current version) Seller's facility or warehouse as selected by Seller in its sole discretion and include packaging and handling. Prices do not include installation, commissioning and assembly costs nor freight, postage and insurance costs. In the event that no other prices are agreed in writing, Seller's current list prices shall apply. Seller may, by giving thirty (30) days' prior written notice thereof to Buyer at any time during the Contract period, change the price of the Product and terms of delivery and shipment. Such changes shall be applicable to any Product shipped hereunder on and after the date the changes become effective, notwithstanding the fact that Buyer may have requested delivery of such Product prior to Seller's notice to Buyer of such changes. This provision shall not apply to fixed price contracts. Deliveries in excess of the order will be invoiced separately. All payments shall be made in U.S. dollars in cash, without any deductions within thirty 30 days from the date of the invoice. Payments are only considered settled if Seller can dispose of the amount. For any post-due balances a service charge of 1.5% per month will be charged until final payment is received. Buyer is not entitled to retain, setoff, and deduct any amounts due under this Contract or any other agreement in the event Seller is in breach of this Contract or any other agreement with Buyer, or provides defective or nonconforming goods or services. Notwithstanding any dissenting provisions by the Buyer, Seller is entitled to offset the Buyer's payments first with older claims due against the Buyer under the Contract or any other agreement between Seller and Buyer; Seller will inform Buyer of any type of offsetting.

4. Transportation.

Seller may, at its option, deliver from points other than that specified (but shall not be obligated to do so) provided that such delivery shall not result in a higher delivered cost to Buyer. The Buyer shall inform in its order if transport insurance is desired; if so, transport insurance will be concluded at Seller's reasonable discretion in favor of the Buyer. Any costs incurred in this respect shall be borne by Buyer. Where the Contract price provides for absorption by Seller of freight charges, wholly or in part, Seller shall have the right to select the means of transportation. If Buyer requires a means of transportation other than that selected by Seller, any extra cost incurred by reason of using such other means shall be paid by Buyer. If freight or other transportation costs are increased, Seller may add any such increase to the Contract price without prior notice thereof to Buyer. Unless stated otherwise in the order confirmation, the type of packaging will be left to Seller's reasonable discretion. The weights, tares and tests fixed by Seller's invoice shall govern unless proven to be incorrect. Buyer shall be responsible for asserting claims for losses or damages in transit directly against the carrier.

5. Inspection; Notice of Claims.

All claims must be received by Seller in writing within thirty (30) days after Buyer's receipt of the Product and Buyer shall be conclusively deemed to have inspected and accepted the Product. Any deficiency in the quality or quantity of Products must be reported within five (5) days after such deficiency is or should have been discovered during the 30-days inspection-period. With respect to any defects incapable of discovery by Buyer (with the exercise of reasonable diligence) until in use or in processing in the manufacture of other products, all claims must be received by Seller in writing within five (5) days after Buyer learns (or, with the exercise of reasonable diligence, could have learned) of the alleged defect. Where the parties agree to inspection by Buyer at Seller's plant, such inspection, acceptance and deficiency report must be made prior to delivery. All claims must be received by Seller at its address specified in the Contract. All claims not made in writing as specified above and received by Seller within the time periods specified above shall be deemed waived. Upon receipt of Buyer's notification, Seller shall have the option of making inspection, analyses, and tests of the Product at Buyer's premises or of requiring Buyer to send the Product or adequate samples thereof, at Buyer's expense, to Seller or to a person designated by Seller for inspection, analyses and tests. No Product or sample shall be returned to Seller without prior written authorization from Seller. No inspection or any other actions by third parties are authorized or will be paid for by Seller, without Seller's prior consent in writing.

6. Warranties; Limitation of Liability; Remedies; Damages.

Seller warrants to Buyer that (a) all new and unused goods and products furnished by Seller are (i) free from any security interest, lien or encumbrance (other than in favor of Seller for the unpaid balance of all amounts due Seller from Buyer with respect to the Product), (ii) non-infringing (with respect to United States patents and foreign patents corresponding thereto), and (iii) are free from defect in workmanship and material as of the time and place of delivery by Seller and that (b) all services furnished by Seller are performed properly under applicable industry standards as of the time and place of performance. As a matter of general warranty policy, Seller honors an original purchaser's warranty claims in the event of failure, within six (6) months from the date of shipment by Seller, of warranted Products which have been used under normal conditions and in accordance with generally accepted industry practices. The foregoing are general policies only and may be expanded or limited for particular categories of goods and products or customers by written agreement signed by Seller from time to time. Such warranties extend only to Buyer.

EXCEPT AS EXPRESSLY SET FORTH IN THE FIRST SENTENCE OF THIS SECTION 6, SELLER MAKES NO EXPRESS OR IMPLIED WARRANTY THAT THE PRODUCT SOLD HEREUDER IS NON-INFRINGING, IS OF MERCHANTABLE QUALITY, OR THAT THE PRODUCT SHALL BE FIT FOR ANY PARTICULAR PURPOSE. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE.

SELLER SHALL NOT BE LIABLE TO BUYER OR ANYONE ELSE FOR ANY SPECIAL, INDIRECT, ECONOMIC, INCIDENTAL, EXEMPLARY, PUNITIVE, OR CONSEQUENTIAL DAMAGES OF ANY KIND ARISING OUT OF OR IN CONNECTION WITH THE PRODUCT, THIS CONTRACT, OR ANY BREACH OF THIS CONTRACT INCLUDING, BUT NOT LIMITED TO, ANY LOSS OR DAMAGE RESULTING FROM THE USE OF THE PRODUCT IN BUYER'S MANUFACTURING PROCESSES OR IN COMBINATION WITH OTHER MATERIALS.

IF THE GOOD OR PRODUCT DOES NOT CONFORM TO THE WARRANTIES SET FORTH IN THIS SECTION, OR IF BUYER MAKES ANY OTHER CLAIM OF ANY SORT WHATSOEVER, INCLUDING THE CLAIMS SET FORTH ABOVE, AGAINST SELLER, BUYER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO, AT SELLER'S OPTION, REPLACEMENT OR REPAIR OF THE PRODUCT OR REPAYMENT OF THE PURCHASE PRICE PAID BY BUYER (LESS REASONABLE DEPRECIATION BASED UPON ACTUAL USE), PROVIDED THAT IN THE EVENT OF SELLER'S BREACH OF WARRANTY OF ANY OTHER DUTY WITH RESPECT TO THE QUALITY OF ANY SERVICES (INCLUDING REPAIR UNDER WARRANTY), BUYERS EXCLUSIVE REMEDY THEREFORE SHALL BE PAYMENT OR CREDIT FOR SELLER'S ACTUAL CHARGE THEREFORE OR, IN THE ABSENCE OF AN ACTUAL CHARGE, THE CUSTOMARY OR REASONABLE CHARGE FOR SUCH SERVICES, AND, IF SUCH BREACH ALSO INVOLVES IMPAIRMENT OF GOODS AND PRODUCTS, THE EXCLUSIVE REMEDIES AVAILABLE FOR BREACH OF WARRANTY WITH RESPECT TO THE GOOD OR PRODUCT. Any Product supplied by Seller hereunder to replace a Product shall be deemed supplied to Buyer subject to all of the terms and conditions of this Contract, including, without limitation, those concerning warranties, limitation of liability, remedies and damages, to the same extent as the Product. In the event Seller agrees to replace any Product or agrees to repay to Buyer the purchase price of any Product supplied by Seller to Buyer under this Contract pursuant to this portion of this Contract, Buyer agrees that it shall take reasonable steps, at Seller's written request, to return to Seller (at Seller's expense) the product for which replacement or repayment is sought.

SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AS TO THE ACCURACY OR ADEQUACY OF INFORMATION FURNISHED TO BUYER CONCERNING THE PHYSICAL CHARACTERISTICS AND MATERIALS OF, AND PROTECTIVE MEASURES TO BE TAKEN REGARDING THE PRODUCT. SELLER SHALL NOT BE LIABLE FOR ANY ERROR OR OMISSION IN THE PREPARATION OF SUCH INFORMATION. SELLER SHALL NOT BE LIABLE TO BUYER, BUYER'S EMPLOYEES, OR ANYONE IN CONNECTION WITH THE ACCURACY, ADEQUACY OR FURNISHING OF SUCH INFORMATION.

7. Limitation of Actions.

Any action for Seller's breach of this Contract (including breach of warranties) must be commenced by Buyer within one year after the cause of action accrues, and no such action may be maintained which is not commenced within such period.

8. Buyer's Handling of Product.

Buyer assumes all risks and liability, and Seller assumes no risk and no liability, with respect to unloading and discharge of the Product (including failure of discharge or unloading implements or material used by Buyer, whether or not supplied by Seller), storage, handling, sales, and use of the product, and the compliance or noncompliance with all federal and local laws and regulations with respect thereto.

9. Infringement.

Buyer assumes all risk of patent infringement by reason of any use Buyer makes of the Product in combination with other material or in the operation of any process.

10. Indemnity.

Buyer shall defend (including attorneys fees), indemnify and hold Seller harmless from and against all damages, causes of action, claims, liabilities, penalties, personal injuries (including death), environmental damages and tangible property damage caused by Buyer's negligence, strict liability, breach of warranty, breach of this Contract, fault, omissions, and willful or wanton conduct arising, without limitation, from the handling, transportation, blending, modification, processing, storage, and use of the Products.

11. Credit.

Seller may recover for each shipment hereunder as a separate transaction, without reference to any other shipment. If Buyer fails to pay any invoice in accordance with the terms of this Contract or is past due in payment of any other amount owing to Seller, Seller may, at its option (and without liability and without prejudice to any other remedies) defer further shipments until all payments owing to Seller by Buyer have been made (in which event Seller may elect to extend the Contract period for a time equal to that for which shipments were so deferred), stop any Product in transit, and/or decline further performance of this Contract. If at any time in the judgment of Seller, the financial responsibility of Buyer is impaired, Seller may change the terms of payment and may require advance payment as a condition of shipment.

12. Taxes.

All payments under this Contract are exclusive of all applicable taxes and governmental charges (such as duties), all of which shall be paid by Buyer regardless of which party such taxes are imposed upon (with the exception of any taxes computed with regard to Seller's income). In the event Buyer is required by law to withhold taxes, Buyer agrees to furnish Seller all required receipts and documentation substantiating such payment. If Seller is required by law to remit any tax or governmental charge on behalf of or for the account of Buyer, Buyer agrees to reimburse Seller within thirty (30) days after Seller notifies Buyer in writing of such remittance. Buyer agrees to provide Seller with valid tax exemption certificates in advance of any remittance otherwise required to be made by Seller on behalf of or for the account of Buyer, where such certificates are applicable.

13. Title And Risk 0f Loss.

Unless stated otherwise in the order confirmation, all sales are made FOB (pursuant to Incoterms 2010 or the current version) Seller's facility or warehouse as selected by Seller in its sole discretion. Title to and risk of loss of all Product sold hereunder shall pass to Buyer upon Seller's delivery to carrier, freight forwarder or any other third party entrusted with the execution of shipment at point of shipment whether or not Seller pays all of any part of the freight, and notwithstanding any designation in this Contract of any other shipping point. If delivery is delayed for reasons attributable to Buyer, the risk will pass to Buyer at the time the goods are ready for dispatch and Seller notified Buyer thereof. Seller shall retain a first priority security interest in and a lien on such Product until payment by Buyer of all amounts due Seller from Buyer with respect to such Product. Buyer shall insure the Products for an amount sufficient to cover any balance owed to Seller and buyer hereby grants Seller an assignment of insurance benefits payable in the event of loss of the Products.

14. Confidentiality and Proprietary Rights.

Buyer agrees to treat Confidential Information (as defined below) disclosed to it by Seller (or its authorized representatives or agents) in strict confidence, but at a minimum, to treat the Confidential Information with the same degree of care that it exercises in protecting its own confidential and/or proprietary information or not less than a reasonable degree of care, and to disclose such Confidential Information within Buyer (employees or its authorized representatives or agents) only on a need-to-know basis. The type and quantity of Confidential Information disclosed is within the sole discretion of Seller. Ownership of the Confidential Information shall remain the property of Seller. Use of Confidential Information by Buyer is limited to the purpose of this Contract. Buyer shall not commercially utilize, manufacture, sell or otherwise exploit, said Confidential Information received from Seller without the prior written consent of Seller. By way of illustration, and not limitation, Buyer may not file any patent applications using the Confidential Information of Seller without prior written consent of Seller. Nothing in this Contract shall be construed as creating an obligation on the part of Seller to disclose any proprietary information to Buyer.
ALL INFORMATION, PROPRIETARY INFORMATION, DATA, PRODUCTS, FORMULAE AND SAMPLES ARE PROVIDED "AS IS" WITHOUT ANY WARRANTIES, EXPRESS OR IMPLIED. ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY USE OF THE INFORMATION, DATA OR SAMPLES ARE DISCLAIMED AND EXPRESSLY EXCLUDED FROM THIS CONTRACT.

Buyer agrees and accepts that ownership of any intellectual property (under trademark, trade secret, patent, copyright or other law) of Seller shall remain with Seller. No right or license, express or implied, under any patent, copyright, trade secret or other proprietary right is granted hereunder.

For purposes of this Contract, "Confidential Information" means (i) any trade secrets which shall include, without limitation, all information of any nature considered a trade secret under law and (ii) proprietary information, which as used in this Contract, without limitation, means any non-public technical, scientific or business information of Seller, including without limitation any information relating to Seller's designs, formulas, samples, processes, laboratory or testing procedures, manufacturing processes, techniques or procedures, trade secrets, know-how, current and future products and services, research, financial information, procurement requirements, customer lists, business forecasts, marketing plans and information, relationships with third parties, and all terms and conditions and any other information relating to this Contract.

15. Force Majeure.

Neither party shall be liable for its failure to perform hereunder if due to any event beyond the reasonable control of the party affected, including but not limited to acts of God, war, fire, bad weather, flood, accident, labor trouble or shortage, terrorism, civil disturbance, plant shutdown, equipment failure, voluntary or involuntary compliance with any applicable governmental regulation or order, or shortage or inability to obtain (on terms deemed reasonable by the party affected) any raw material (including energy), equipment or transportation, which materially impairs such party's ability to so perform. Any quantities not delivered or accepted because of any such event shall be eliminated from the Contract without liability. Seller shall not be obligated to deliver the Product from other than the production or shipping points designated herein and shall not be obligated to rebuild or repair any damage or destruction to such production or shipping points in order to fulfill this Contract. Seller shall also not be obligated to obtain any raw materials or Product from sources other than its usual sources. During any period when Seller is unable to supply the Contract quantity of the Product, whether caused by the circumstances above or otherwise, Seller may allocate any available Product, among its customers, including its own subsidiaries, divisions and departments, on such basis as Seller deems fair and reasonable, and its failure, partial or otherwise, to make deliveries to Buyer shall not be a breach of this Contract.

16. Termination of Contract.

Should Seller for any reason elect to suspend manufacture of any Product which is the subject of this Contract, or curtail production or sale of the Product in consequence of the application of any governmental regulation or order which will, in the reasonable judgment of Seller, render the production, marketing or transportation of the Product economically, technically or commercially impracticable, Seller may terminate this Contract upon thirty (30) days prior written notice to Buyer. Contracts with an undefined term may be terminated by either party by providing three (3) months' prior written notice to the end of a calendar month to the other party.

17. Assignment.

This Contract and the rights and obligations of Buyer hereunder shall not be assignable by Buyer, either by act of Buyer or by operation of law without the prior written consent of Seller, and shall not be deemed an asset of Buyer in, and at the option of Seller shall terminate in the event of, the commencement of any case or proceeding in respect of Buyer under any bankruptcy, insolvency or similar law or any assignment for the benefit of creditors. At the option of Seller, this Contract shall terminate in the event of the insolvency of Buyer. Any purported assignment of this Contract without the prior consent of Seller shall be null and void.

18. Governing Law and Venue Selection.

This Contract is made under and shall be governed by, construed in conformance with, and all disputes shall be governed by the internal laws (exclusive of the conflicts of law principles) of the State of Tennessee. The United Nations Convention on Contracts for the International Sale of Goods (CIGS) shall not apply. Venue shall always be in Shelby County, Tennessee.

19. Severability.

If any provision of this Contract shall be invalid or unenforceable, such invalidity or unenforceability shall not invalidate or render unenforceable the entire Contract. The entire Contract shall be construed as if not containing the particular invalid or unenforceable provision and the rights and obligations of each party shall be construed and enforced accordingly.

20. Buyer's Breach of Contract.

If Buyer fails to perform any of the terms of this Contract, Seller may at its option defer shipments until the default is remedied and/or treat such default as a breach of the entire Contract.

21. Non-Waiver.

Seller's waiver of any breach or failure to enforce any of the terms or conditions of this Contract at any time shall not in any way affect, limit or waive its right thereafter to enforce strict compliance with every term and condition hereof.

22. OFAC Lists.

None of Buyer or any of its officers, directors or employees is on any list of prohibited countries, individuals, organizations or entities that is administered or maintained by the U.S. Office of Foreign Assets Control ("OFAC"), including but not limited to the List of Specially Designated Nationals and Blocked Persons, or on any similar list not maintained by the OFAC. Buyer has and will maintain a process to ensure compliance with this Section 22.



JACOB A to Z index

A

Actuators and limit switches 117, 270
Adapters 91
Adapters and transition pieces 272
Adjustable blank-off covers 128
Adjustable elbows 67
Air intake regulators 128
Air outlets/roof air outlets 272
Air regulator slide gates 131
Angle flange 274–277
Applications 11
ATEX 117

B

Baffle boxes 271
Bag clamps 99
Bagging spouts 99
Ball joints 67
Bearing clamps 240
Bends 60–66
Bends with loose flange 204–212
Blank-off covers for flange connections 241

C

Cast-iron parts 262–263
Clamps 238–239
Cleaning sections 109
Cleaning sections with loose flange 224–225
Coatings 273
Compensators 83, 88
Cone adapters 82, 84–87
Cone adapters – wear protection 260
Cone pieces with loose flange 220–221
Conical Y-branches 78, 218–219
Connecting flanges 88, 90
Counter flanges for connecting flanges 89
Cover locks 111
Cyclones 244, 249–250

D

DETECTABLE DESIGN 13
Distributors 138–171
Dust separators 249–250

E

Earthing bridges 29, 35
Electrostatic potential equalization 13, 29, 35
Exhaust stubs with bird-guard 102
Exhaust stubs with loose flange 223, 224
Extended hex nut 240

F

Fill couplings 99
Fittings 234–241
Fixing clips 240
Flanges 192, 227–229
Flanges for slip tubes 200
Flanges/loose flange connections 192–195
Flanges/machine adapters 91–93
Flanges, separate, alternative 227–229
Flanging tools 236
Flat gaskets 83, 89, 94, 194, 231
Flexible sleeves for hose connections 97
FOOD GRADE EC 1935/2004 13

G

Gates 129–134
Grounding lugs 237
Grounding wires 235, 237

H

Hanger screw, metric 240
Hexagon cap screwdriver 35
Hexagon nuts, metric 228, 240
Hose clamps 95, 97
Hose connections 95
Hose plugs 98
Hoses 96
Hose sockets 98
Hot-dip galvanized parts 264

I

Inline slide gates 130
Inline slide gates, pneumatically operated 132
Inspection ports 110
Inspection sections 108

J

Jet caps 100
Jet caps with flange 222

L

Laterals 70, 73–77
Laterals, conical 74–77
Laterals, conical with loose flange 215–217
Laterals – wear protection 260
Laterals, with loose flange 215–217
Louvre valve 270

M

Multi-port diverters 176, 188–189

N

Non-return valves 129
Non-stick protection 271

O

Outlet hoods 272

P

Paint/spray paint 236
Ports 49–50
Product slide gates 129
Pull rings 20, 28, 30–32, 34
Pull rings for cast iron 262

Q

QUICK CONNECT 13

R

Rain caps 101
Rain covers with loose-type flange 222
Ring seals for slip tubes 39, 49, 193, 200
Rubber covers 106, 111

S

Safety grate 103
Sealed/dust-tight slide gates 270
Seals 194
Seals/flat gaskets 83, 194
Segments 54–59
Segments – wear protection 258–259
Segments with loose flange 201–203
Shock explosion proof 13
Shock explosion proof 145.03 psi 274
Sight glasses 112
Silencers 244, 246–248
Silo/Redler outlet slide gates 133–134
Slip tubes 38, 46–48
Slip tubes with loose flange 199
Special colors 18, 273
Special manufacture 268–277
Square flanges 94
Square two-way valve 270
Symmetrical Y-branches 70, 78–79
Symmetrical Y-branches, conical with loose flange 218–219

T

Threaded bolts, metric 240
Throttle valves 116–127, 195
Throttle valves with loose flange 226
T-pieces 70, 72
T-pieces with loose flange 213–214
Transition component wear protection 256
Transition pieces/spouts 82, 91–93
Tube connector system 272
Tube hangers 234–235, 238–239
Tubes of up to 40' 273
Tubes – wear protection 256–257
Tubes, welded 38, 40–44, 275
Tubes with loose flange 196–198
Turn-head distributors 174–176, 178–181
Turn-head distributors, dust-tight 184–187
Twin-pipe head distributors 182–183
Two-way distributors 138, 140, 156–171
Two-way valves with inner collar . . . 138, 144–149
Two-way valves with inner collar
wear protection 261
Two-way valves with seal 139, 150–155

U

U-shaped gaskets 29, 30, 33
U-shaped gaskets for a 0.39" lip 193, 230

V

Vacuum couplings 99
Venturi tube 270

W

Wear protection 254–261, 271
Welded-on flanges 192–195
Welding ends 45



ORDER NUMBER KEY

TUBING AND PRESSED COMPONENTS ND 2¼" TO 31½"

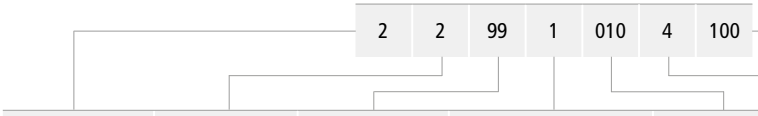
- e.g. 1 2 10 1 010 = tube with a 0.24" lip for pull ring connection, 14 gauge primed, ND 4", 79" long



System	Material thickness	Diameter	Material	Item no.
1 = pull ring	1 = 19 gauge + 16 gauge	08 = 3"	1 = powder-coated / primed	
2 = loose flange	2 = 14 gauge	10 = 4"	2 = galvanized	
3 = angle flange	3 = 11 gauge	12 = 5"	3 = stainless steel (1.4301)	
		...		

TUBING AND PRESSED COMPONENTS FROM ND 35½"

- e.g. 2 2 99 1 010 4 100 = tube with loose flange, 14 gauge primed, ND 39", 79" long



System	Material thickness	Diameter code	Material	Item no.	Flange	Diameter
2 = loose flange	2 = 14 gauge	from 35½"	1 = primed		4 = loose flange	090 = 35½"
	3 = 11 gauge		2 = galvanized		5 = welded flange	100 = 39"
			3 = stainless steel			112 = 44"
						125 = 49"
						140 = 55"
						160 = 63"

JACOB
NO.1 IN TUBING SYSTEMS

FR. JACOB SÖHNE GMBH & CO. KG
Niedernfeldweg 14
32457 Porta Westfalica
Germany
T +49 571 9558-0
F +49 571 9558-160
post@jacob-rohre.de
www.jacob-rohre.de

GERMANY SALES
T +49 571 9558-200
F +49 571 9558-127
vertrieb@jacob-rohre.de
www.jacob-shop.com

INTERNATIONAL SALES
T +49 571 9558-201
F +49 571 9558-240
sales@jacob-rohre.de
www.jacob-shop.com

JACOB (UK) LIMITED
Unit 2, Laundry Bank
Church Stretton SY6 6PH
Shropshire
United Kingdom
T +44 1694 722841
sales@jacob-uk.com

JACOB TUBING L.P.
3948 Willow Lake Blvd.
Memphis, TN 38118
USA
T +1 901 566-1110
F +1 901 566-1910
info@jacob-tubing.com

JACOB DOSATEC SARL
7, rue Louis Armand
Zone Activité Economique
95600 Eaubonne
France
T +33 1 39594758
F +33 1 39594759
infos@jacob-dosatec.fr

EUROTUBI S.R.L.
Via Marangona, 1
46020 Borgofranco Po (Mantova)
Italy
T +39 0386 41997
F +39 0386 41882
info@eurotubi.it

PP 1707 Valid from 07/01/2017