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Parflange® F37 for pipe and tube connections



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Parflange® F37 for pipe and tube connections



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(Bonifatius)

European Product Information Centre

Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE,
IL, IS, IT, LU, MT, NL, NO, PT, SE, SK, UK)

US Product Information Centre

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Your local authorized Parker distributor



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For your safety!

Under certain circumstances, tube fittings can be subjected to extreme loadings such as vibration and uncontrolled pressure peaks.

Only by using genuine Parker components and following Parker assembly instructions can you be assured of the reliability and safety of the products and their conformity to the applicable standards.

Failure to follow this rule can adversely affect the functional safety and reliability of products, cause personal injury, property damage, and result in loss of your guarantee rights.

Subject to alteration

Parker’s Motion & Control Technologies

At Parker, we’re guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.



- AEROSPACE**
Key Markets
- Aircraft engines
 - Business & general aviation
 - Commercial transports
 - Land-based weapons systems
 - Military aircraft
 - Missiles & launch vehicles
 - Regional transports
 - Unmanned aerial vehicles

- Key Products**
- Flight control systems & components
 - Fluid conveyance systems
 - Fluid metering delivery & atomization devices
 - Fuel systems & components
 - Hydraulic systems & components
 - Inert nitrogen generating systems
 - Pneumatic systems & components
 - Wheels & brakes



- CLIMATE CONTROL**
Key Markets
- Agriculture
 - Air conditioning
 - Food, beverage & dairy
 - Life sciences & medical
 - Precision cooling
 - Processing
 - Transportation

- Key Products**
- CO₂ controls
 - Electronic controllers
 - Filter driers
 - Hand shut-off valves
 - Hose & fittings
 - Pressure regulating valves
 - Refrigerant distributors
 - Safety relief valves
 - Solenoid valves
 - Thermostatic expansion valves



- ELECTROMECHANICAL**
Key Markets
- Aerospace
 - Factory automation
 - Food & beverage
 - Life science & medical
 - Machine tools
 - Packaging machinery
 - Paper machinery
 - Plastics machinery & converting
 - Primary metals
 - Semiconductor & electronics
 - Textile
 - Wire & cable

- Key Products**
- AC/DC drives & systems
 - Electric actuators
 - Controllers
 - Gantry robots
 - Gearheads
 - Human machine interfaces
 - Industrial PCs
 - Inverters
 - Linear motors, slides and stages
 - Precision stages
 - Stepper motors
 - Servo motors, drives & controls
 - Structural extrusions



- FILTRATION**
Key Markets
- Food & beverage
 - Industrial machinery
 - Life sciences
 - Marine
 - Mobile equipment
 - Oil & gas
 - Power generation
 - Process
 - Transportation

- Key Products**
- Analytical gas generators
 - Compressed air & gas filters
 - Condition monitoring
 - Engine air, fuel & oil filtration & systems
 - Hydraulic, lubrication & coolant filters
 - Process, chemical, water & microfiltration filters
 - Nitrogen, hydrogen & zero air generators



- FLUID & GAS HANDLING**
Key Markets
- Aerospace
 - Agriculture
 - Bulk chemical handling
 - Construction machinery
 - Food & beverage
 - Fuel & gas delivery
 - Industrial machinery
 - Mobile
 - Oil & gas
 - Transportation
 - Welding

- Key Products**
- Brass fittings & valves
 - Diagnostic equipment
 - Fluid conveyance systems
 - Industrial hose
 - PTFE & PFA hose, tubing & plastic fittings
 - Rubber & thermoplastic hose & couplings
 - Tube fittings & adapters
 - Quick disconnects



- HYDRAULICS**
Key Markets
- Aerospace
 - Aerial lift
 - Agriculture
 - Construction machinery
 - Forestry
 - Industrial machinery
 - Mining
 - Oil & gas
 - Power generation & energy
 - Truck hydraulics

- Key Products**
- Diagnostic equipment
 - Hydraulic cylinders & accumulators
 - Hydraulic motors & pumps
 - Hydraulic systems
 - Hydraulic valves & controls
 - Power take-offs
 - Rubber & thermoplastic hose & couplings
 - Tube fittings & adapters
 - Quick disconnects



- PNEUMATICS**
Key Markets
- Aerospace
 - Conveyor & material handling
 - Factory automation
 - Food & beverage
 - Life science & medical
 - Machine tools
 - Packaging machinery
 - Transportation & automotive

- Key Products**
- Air preparation
 - Compact cylinders
 - Field bus valve systems
 - Grippers
 - Guided cylinders
 - Manifolds
 - Miniature fluidics
 - Pneumatic accessories
 - Pneumatic actuators & grippers
 - Pneumatic valves and controls
 - Rodless cylinders
 - Rotary actuators
 - Tie rod cylinders
 - Vacuum generators, cups & sensors



- PROCESS CONTROL**
Key Markets
- Chemical & refining
 - Food, beverage & dairy
 - Medical & dental
 - Microelectronics
 - Oil & gas
 - Power generation
- Key Products**
- Analytical sample conditioning products & systems
 - Fluoropolymer chemical delivery fittings, valves & pumps
 - High purity gas delivery fittings, valves & regulators
 - Instrumentation fittings, valves & regulators
 - Medium pressure fittings & valves
 - Process control manifolds



- SEALING & SHIELDING**
Key Markets
- Aerospace
 - Chemical processing
 - Consumer
 - Energy, oil & gas
 - Fluid power
 - General industrial
 - Information technology
 - Life sciences
 - Military
 - Semiconductor
 - Telecommunications
 - Transportation

- Key Products**
- Dynamic seals
 - Elastomeric o-rings
 - EMI shielding
 - Extruded & precision-cut, fabricated elastomeric seals
 - Homogeneous & inserted elastomeric shapes
 - High temperature metal seals
 - Metal & plastic retained composite seals
 - Thermal management



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Tube Fittings Division Europe

The Tube Fittings Authority:

Performance Plus

Since 1929, Parker Hannifin Corporation has served the marketplace with dependable fluid power technology. Today, Parker offers more than 100,000 quality products for a broad range of industries and applications. No other manufacturer presents a product line as broad as Parker's, nor an expertise as far-reaching in hydraulic and pneumatic systems and components. Much of that expertise originates with Parker's precision-made tube fittings, which were among the first products manufactured by the company. As such, they reflect Parker's ongoing commitment to excellence.

With more than seventy years of experience in product design, engineering, applications technology and manufacturing, the Tube Fittings Division Europe holds a leadership position few other manufacturers can claim. This leadership is further heightened and enhanced by the sharing of technology only possible in Parker's corporate family.

Topflight Experience

Parker has used the background data and knowledge gained from important industrial, mobile, offshore and other applications to create the broadest and best performing line of standard tube fittings in the world.

Why is Parker a topflight manufacturer of fittings?

There are many reasons, but at the heart is the design and manufacturing excellence that goes into every Parker product.

Worldwide standardizing activities

The Parker Fluid Connectors Group supports the national and international standardizing activities. Experienced engineers from certain countries and Divisions give their input to national committees like SAE, BS, and DIN committees in cooperation with the users of the products. As a result, many ISO Fluid Connector standards have been published. These ISO standards are the platform for the international trading, interchangeability and availability that is necessary for all globally operating companies using fluid power technology.





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General information

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Parflange® F37 technology

Parflange® technology

Parker is the inventor of the Parflange® system and knows well how to deal with flared tubes and flanged connectors. The excellent sealing performance and the high mechanical strength of Parflange® technology are achieved by continuous orbital tube forming. Proven millions of times, this connector system is backed by decades of experience. The Parflange® system belongs to Parker's leak-free Dry Technology programme. Dry Technology stands for leak-free systems with soft sealing at every connection point.

Parflange® F37

The Parflange® F37 flanged connector system is utilising this orbital tube forming technology for tubing assemblies from 16 to 165 mm (1/2" to 6" Flanges) outside diameter. It is intended for tube wall thickness up to 9 mm and pressure ratings up to 420 bar.

For those connections, where there is no possibility to assemble a pre-flared tube or where manufacturing is limited, Parker provides the F37 Retaining Ring System. This System utilized a Retaining Ring for flange retention along with a highly-engineered seal carrier for leak free performance.

SAE 1000 (50-70 bar) is a low pressure flaring version, which is new in our programme.

The Parflange® F37 system corresponds to hole patterns according to ISO 6162-1; SAE J518; bore pattern 3000 (code 61), ISO 6162-2; bore pattern 6000 (code 62) and also ISO 6164 bore pattern.

It is type approved by DNV, ABS and other major classification companies.

Protected from corrosion and even Cr(VI)-free

As a manufacturer of large flange connectors, Parker is employing Cr(VI)-free corrosion protection on Parflange F37, as it has already done with its other Fluid Connector Products. The removal of Cr(VI) reflects Parker's ongoing commitment to an environmentally clean and safe production process.

Different Sealing Solution

The F37 seal was developed especially for use with SAE flanges. These special seals guarantee high stability of form. Compared to standard O-Rings, their mechanical properties prevent gap extrusion, even when the flanges "breathe" under pressure. The special profile of the F37 seal is ideally adapted to higher pressures or unsuitable surface finish of the flanges. As an alternative, connectors can be equipped with bonded seal rings.

Flaring Machine (Adjustable)

For smaller tube connecting projects such as the on-site maintenance of, for example, drilling platforms or ships, the Parflange® ECO for processing steel and stainless steel tube is available.

The machine works to the Parflange® process, proven millions of times over, affording maximum mechanical accuracy and reliability. It does not require any complicated programming or operation to manufacture rapidly smaller quantities up to 165 mm outside diameter. The maximum capacity of the machine is



Parflange® F37 technology

around 5 mm wall thickness for a 165 mm tube at a remarkably short cycle time of 30 to 60 seconds for the flaring and 1 to 2 minutes for the total operation. Other tube diameter allow even thicker tube wall.

Grooving machine (Retaining Ring connection)

This kind of machine must be utilized for the Retaining Ring system. The compact lathes are clamped on OD of the tube. The tools are rotating around the tube for machining the tube end and outer diameter. Special tool bits and spacers are designed according to retaining ring groove specification from Parker. The portable tool is ideal for workshop use and on-site installation (Tube sizes 1" / 25 mm to 10" / 273 mm).

Complete range for virtually all diameters

The F37 system complements the EO-2 soft sealing technology for small tube diameters; it also complements the proven Parflange® programme for the SAE product range. It offers the complete range of connectors, flange-to-flange, L- and T-Block connectors, flange-to-port, male and female thread flanges, flange bends, reducer flanges, bulkhead flanges and manifolds on request.



The F37-Programme – a savings programme

F37 is the way to reduce manufacturing times enormously. By comparing welded connections with Parker flange connector systems, significant opportunities for cost savings become immediately obvious

1. Cutting and deburring tubes
2. Tube preparation for the "connecting process"
3. Welding and/or assembling
4. Inspection (X-ray) of welded connectors
5. Flushing the connected tubes
6. Applying corrosion protection

In comparison with this, weld-free tube forming save time and costs. Expensive cleaning and X-raying of the tube connector become immediately things of the past. The manufacturing time for a tube connector quickly reduces by more than half in comparison with conventional welding. To make this clear, Parker has developed a calculator which, on the basis of the individual input data, determines the exact cost saving from



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Parflange® F37 technology

using Parflange® F37 and/or the high-performance flange connectors. Parker flange connector systems accommodate even higher requirements, especially those from the offshore industry, shipbuilding, heavy machinery construction and press manufacture, as well as from mining, recycling plants and mobile machinery.

Personnel and environment-friendly

By comparing the individual operations for a welded line with Parker flanges connected lines, significant cost savings opportunities become immediately obvious. No vapours putting health at risk are released, in contrast to conventional welding processes. Consequently, usage is possible in locations with high requirements such as, for example, offshore oil platforms. In addition to this flaring machine design errors in the preparation of flanges are virtually unknown. Stress corrosion cracking generated during welding operations is history and the life of the finished tubing system is increased. Cold formed Parflange® technologies save power and energy compared to welding and require neither degreasers nor anti-corrosion agents. When galvanized tubes are used, post-galvanization can be omitted because the zinc-coating is not impaired by flaring. Parker flange connector components are delivered in state of the art Cr(VI)-free surfaces.

We deliver all the component parts securely packed to the required location. Reliable delivery on the date advised. And then we come to professional assembly – our specialists will willingly take it on for you. After testing and a trial run, you can press the start button to make your production a success.

Principles account for success

The concept of this system is the customer interaction with advice, design, preassembly (with fittings, flanges and machined tubes), delivery and installation as a complete package cannot be beaten. Supportive planning, high-quality products and safe working processes offer the ultimate synergy in time and cost saving. And of course, individual Piping Solutions principles are also available to you.

The Parker Piping Solutions concept principles:

Advise	Briefing/ Design discussion
Design	Tubing layout Tube dimensioning Drawings Documentation
Pre-assemble	Tube bending Flaring Tube cleaning
Deliver	Assemble/dispatch Documentation
Install	Manufacturing On site management On site assembly Inspect and wash Documentation

Feature	Customer Value
No welding	- Reduced preparation time per joint - No costly inspection of welds (X-ray)
No post-weld cleaning	- No acid cleaning costs - No waste cleaning costs - No safety risk - Environmentally friendly
No welding stress corrosion possible	- Maximum piping lifetime - Reduced maintenance costs
No „hot work“ permit required	- Operation can take place in areas with fire risk without interruption of production - Reduced downtime costs - Higher level of safety
Work shop prefabrication	- High quality joints with better accuracy due to workshop conditions - Minimized need for on-site work - Shorter installation time - Shorter maintenance/downtime - Shorter total project time
Cleanliness	- Minimized need for repair and replacement of hydraulic system components such as pumps, cylinders,... - Reduced overall flushing time and costs
Easy dismantling and reassembling	- Quicker, easier and more flexible installation - Reduced downtime costs for maintenance and repair



Parflange® F37 technology

Parker Piping Solutions - Complete hydraulic systems from a single supplier

For users worldwide Parker is a systems partner, available for tube connection systems, regardless of tube diameters and for whatever pressure.

With the Piping Solutions Parker is able to offer the customer the complete professional solution for hydraulic systems based on services: **Engineering, Prefabrication and Installation.**

Parker's Complete Piping Solutions go well beyond Parflange F37 **Technology**, offering a complete professional solution for piping systems. Parker incorporates services that provide a customized turnkey solution. They include consultation, design, preengineered tube and pipe assemblies, and even on-site installation services. Parker will **Consult** during the piping system design, providing advice to engineering and fabrication teams. This collaborative planning provides a solid foundation for the actual fabrication of piping assemblies and installation. Parker engineers will **Design** piping assemblies (spools). This can include on site measurement/surveying, development or modification of detailed piping drawings, and review of customer technical specifications.

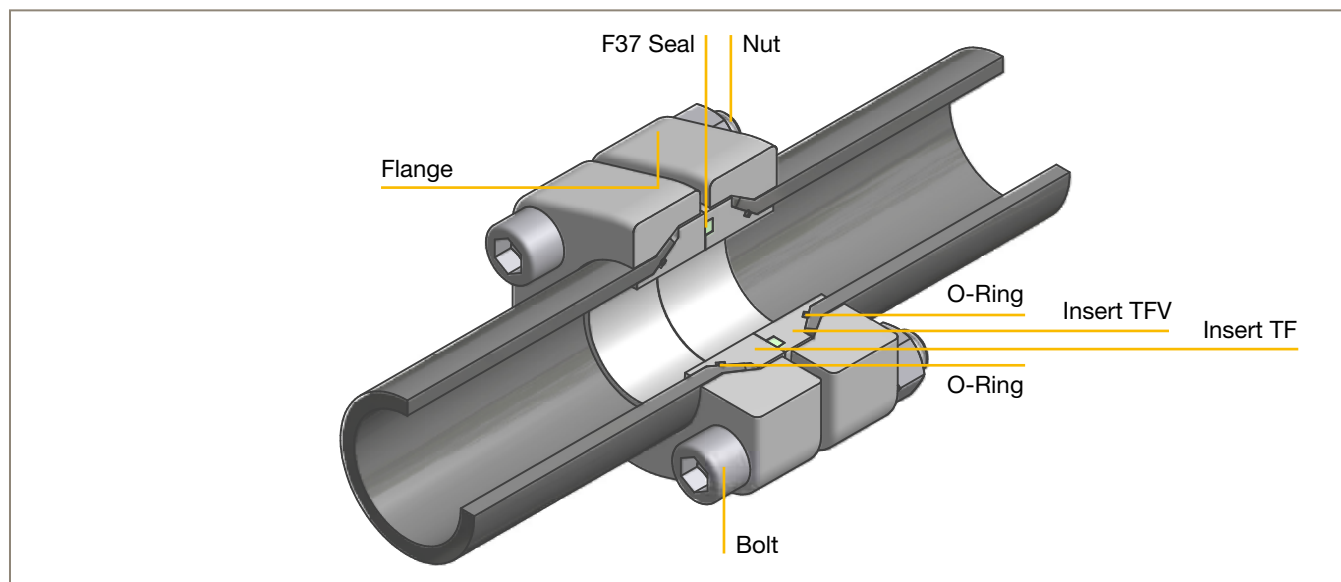
The Parker piping services team provides accurate **Preengineered** piping assemblies. While the Parflange F37 system is inherently cleaner, Parker can flush pipe spools to requirements established by the customer. Additional post fabrication services are also among the engineering services that Parker provides. Parker also is fully engaged in the **installation** of the piping assemblies. A Parker project manager leads the team of trained installers to maximize installation throughput and quality of installation work. This Parker service imparts a high degree of customer confidence as unforeseen project problems or design changes are addressed on site, minimizing costly project delays. Parker is expanding the footprint of piping solutions centers throughout the world, providing the ability to dispatch resources globally to support customers' piping requirements.

Parker's expanded Piping Systems Solutions Centers provide complete piping solutions for our customers. Whether the job requires the complete redesign and installation of a welded piping system or consultation and delivery of a preengineered non-welded piping assembly/spool, Parker's mission is to tailor a solution to maximize our customer's profitability.

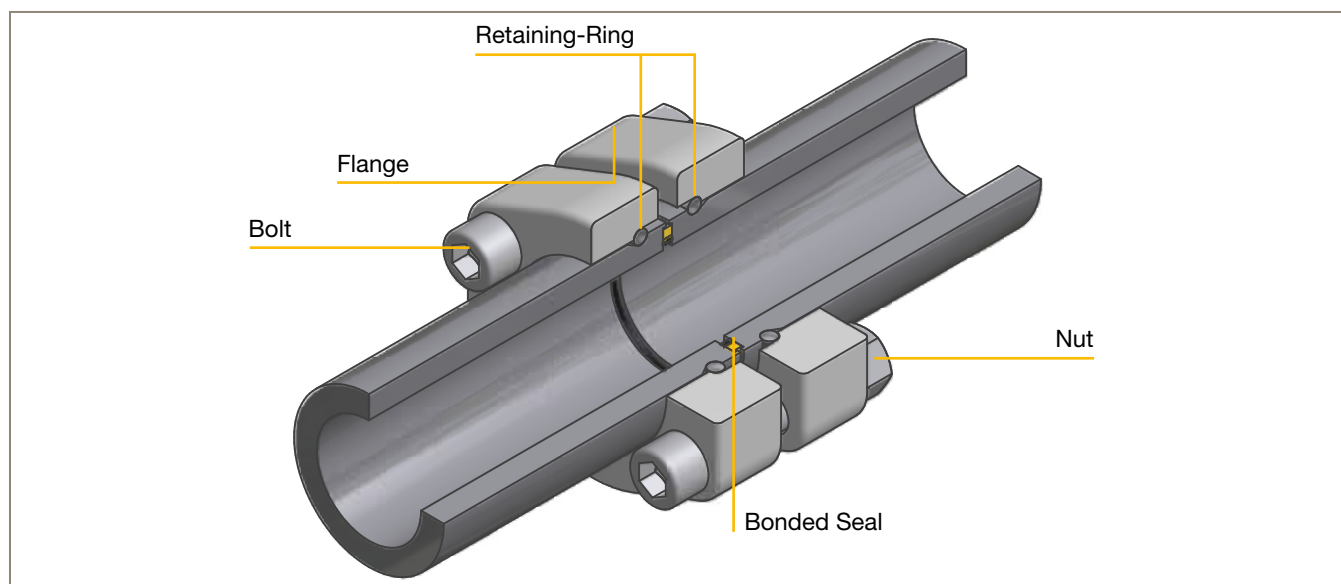


Connection technology

The Parflange® F37 Programme consists of two flange connection technologies:
The 37° Flare Flange Connection and the Retaining Ring Connection.

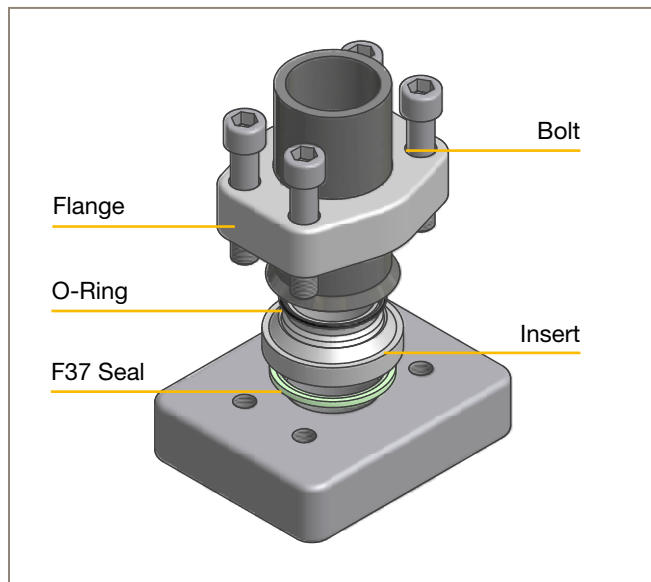


Parflange® F37 Flare Flanges – In this configuration, the deburred tube end is flared orbitally to 37° by Parflange® technology. An insert, soft sealed by an O-Ring, is located into each pipe end. In between a F37 Seal (optionally Bonded Seal or O-Ring) is placed. By tightening the flanges together, a soft sealed, high pressure tube connection is made. Available as tube-to-tube connection or tube-to-port connection.

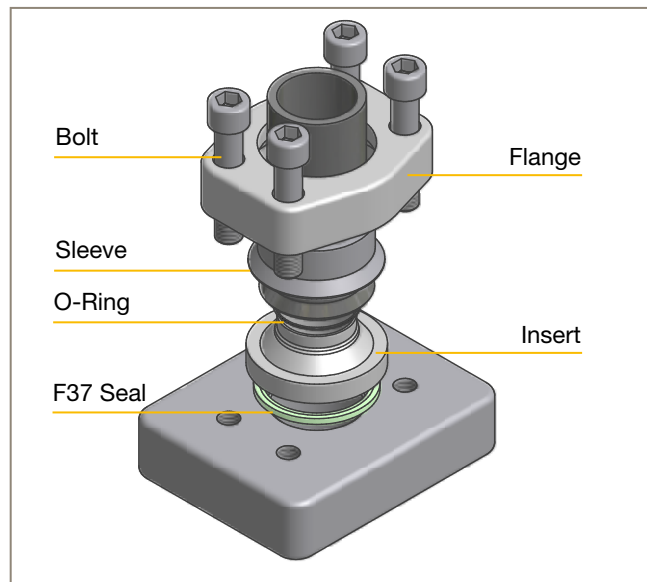


Retaining Ring Connection – The retaining ring used in this connection is a stainless steel segmented ring covered by a stainless steel spring. It is assembled in a machined groove on the tube end or adapter. When tightening this system, the flange is pushed against the retaining ring, thus giving a form tight connection. Retaining ring connections complete the Parflange® F37 range with bulkhead, male, female, weld and tube bend connections.

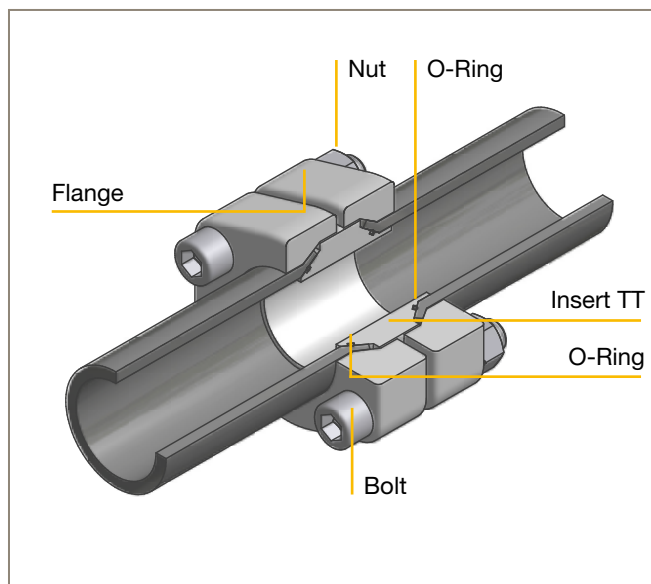
Connection methods F37 – Flared tube



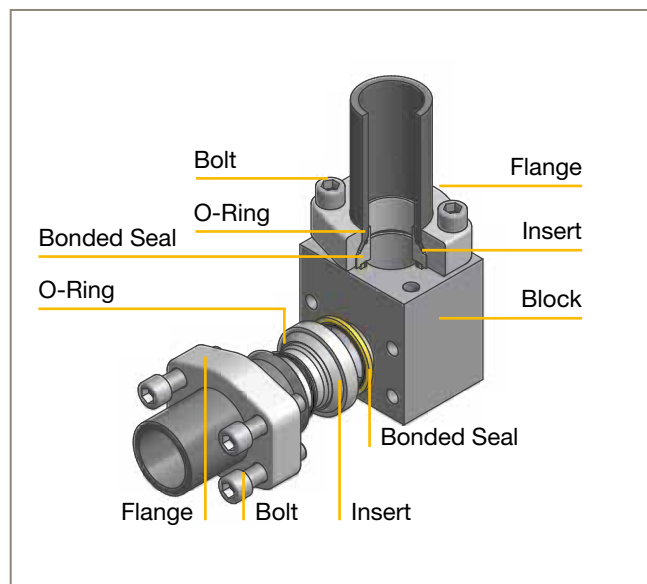
Flange to Port – the flanged tube is connected by the flange, insert and F37 seal to a port. Inserts with Bonded Seal can be used alternatively.



Flange to Port – the standard F37 Flanges can be used with adapter sleeve for smaller tube sizes as well.



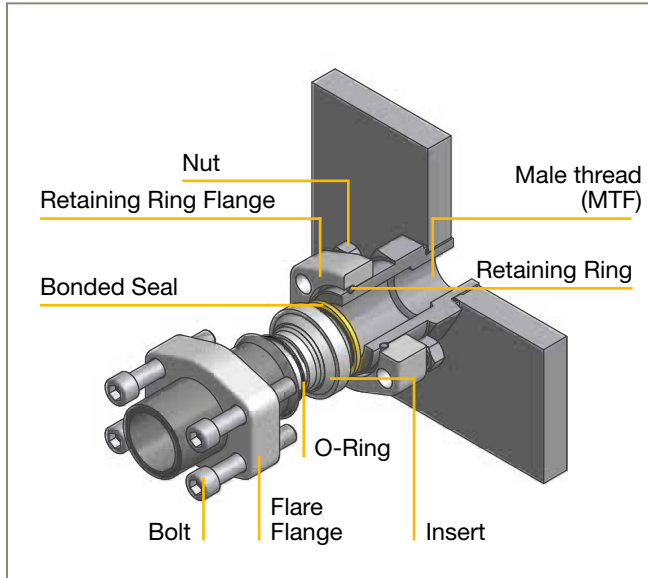
Tube to Tube – two flanges and one insert connecting two flared tubes. A two insert solution with F37 Seal or Bonded Seal is optional.



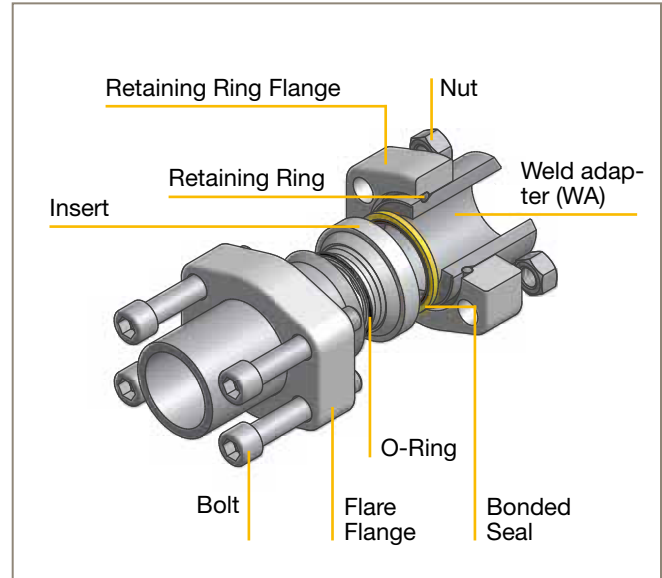
Tube to Block – instead of using flange bends compact L-Blocks are available. The range is completed by T-Blocks and Reducing Blocks. Special Manifolds according to customer design available on request.

Connection methods – Retaining ring

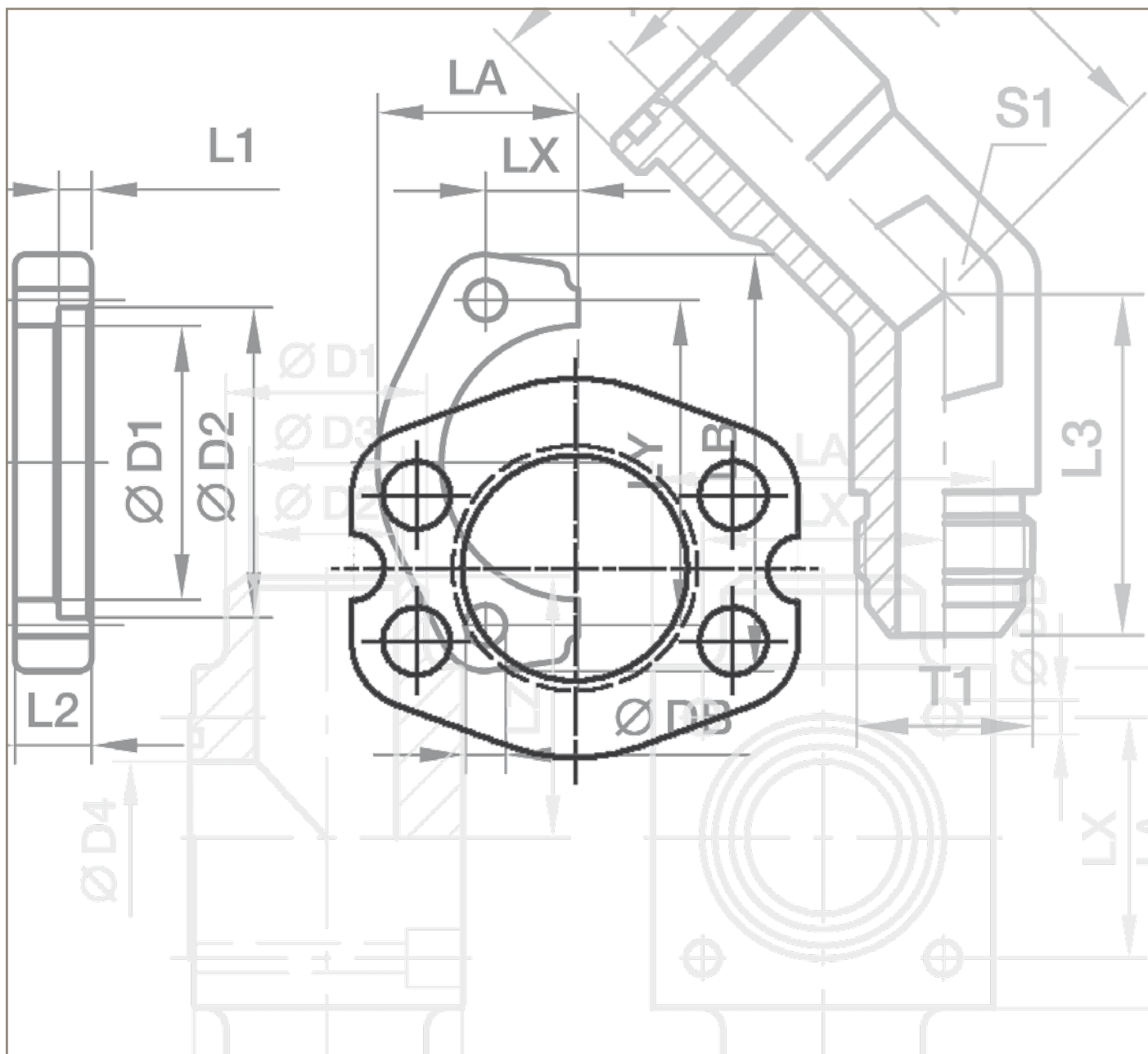
The Retaining Ring Flanges are – like the flanges for the F37 range – according to ISO 6162-1/2 and ISO 6164 footprint. Therefore any combination of the systems is possible.



Male Thread Connection – Male Stud ends are delivered with soft seal ED end on one side and the Retaining Ring connection on the other side.



Weld Adapter – Weld adapters are delivered with weld end on one side and the Retaining Ring connection on the other side.



Technical data

Pressure reductions and temperatures

Required pressure reductions (depending on the material) with reference to the catalogue pressures for higher temperatures. Both metal fitting material and elastomeric sealing compound have to be selected according to the temperature range of the system.

DNV may require different pressure reduction based on application

Material	Pressure reduction of permissible operating temperatures TB in °C														
	-60	-54	-40	-35	-25	+20	+50	+100	+120	+150	+175	+200	+250	+300	+400
Steel			-10%				0%			11%	19%				
Steel, tubes			-10%				0%			19%			27%		
Stainless steel			0%				5%	15%	23%	29%			33%	37%	42%
Stainless steel, tubes			0%				5.5%	11.5%	21.5%				29%		34%
Sealing material NBR (e.g. Perbunan)															
Sealing material FKM															
Sealing material Polyurethan (P5008)															

	Permissible operating temperature
	Ambient temperature of hydraulic and pneumatic applications
	Temperature not permissible

Calculation example:

Temperature = 200°C

Material = Stainless steel

Pressure reduction = 29%

Pressure reduction tubes = 21.5%

PN tube 16x2.5/71. DIN2413 III = 362 bar

Formula:

$$PN_{200^{\circ}\text{C}} = \frac{400 \text{ bar}}{100\%} \times (100\% - 29\%) = 284 \text{ bar}$$

$$PN_{\text{tube } 200^{\circ}\text{C}} = \frac{362 \text{ bar}}{100\%} \times (100\% - 21.5\%) = 284 \text{ bar}$$

F37 seal

The F37 seal was developed especially for use with SAE flanges. Compared to a standard O-Ring the special profile of the F37 seal is ideally adapted to higher pressures and flange surface finish.

The particularly low compression set of the polyurethane compound ensures dimensional stability of the seal over a large temperature range. Its high extrusion resistance prevents gap extrusion even if the flanges "breathe" under pressure. Due to

good abrasion resistance, less preparation is necessary on the surface finish of the sealing area of the flange. The frequently occurring "pumping" phenomenon of O-Rings is prevented by the shape of the F37 seal.

Application area

Static sealing for SAE-Flanges

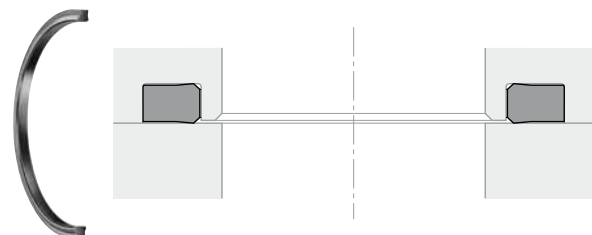
Working pressure: ≤ 600 bar

Working temperature: see table above

Materials

The F37 seal is made of a polyurethane based Parker compound with a hardness of approx. 93 Shore A. In comparison with other polyurethane materials currently available on the market, it excels because of its increased heat resistance, improved performance against hydrolysis and low compression values.

For special requirements (pressure, temperature, speed, application in water, HFA-, HFB-fluids etc.), please contact our Consultancy Service, so that suitable materials and/or designs can be recommended.



Tolerances and standards

Threads		
Outside diameter	Core diameter	Type of thread
8.00	6.92	M 8x1
9.73	8.57	R 1/8"x28
10.00	8.92	M 10x1
10.27	8.77	NPTF 1/8"x27
11.11	9.74	JIC 7/16"x20
12.00	10.38	M 12x1.5
12.70	11.33	JIC 1/2"x20
13.16	11.45	R 1/4"x19
13.57	11.31	NPTF 1/4"x18
14.00	12.38	M 14x1.5
14.27	12.76	JIC 9/16"x18
15.88	14.35	SAE 5/8"x18
16.00	14.38	M 16x1.5
16.66	14.95	R 3/8"x19
17.06	14.80	NPTF 3/8"x18
18.00	16.38	M 15x1.5
19.05	17.33	JIC 1/4"x16
20.00	18.38	M 20x1.5
20.96	18.63	R 1/2"x14
21.22	18.32	NPTF 1/2"x14
22.00	20.38	M 22x1.5
22.23	20.26	JIC 7/8"x14
22.91	20.59	R 5/8"x14
24.00	22.38	M 24x1.5
26.00	24.38	M 26x1.5
26.44	24.12	R 3/4"x14
26.57	23.67	NPTF 3/4"x14
26.99	25.10	JIC 1 1/16"x12
28.00	26.38	M 28x1.5
30.00	27.83	M 30x2
30.16	28.20	JIC 1 3/16"x12
30.20	27.88	R 7/8"x14
31.23	29.61	NPTF 1"x11.5
33.25	30.29	R 1"x11
33.34	31.40	JIC 1 5/16"x12
36.00	33.83	M 36x2
41.28	39.30	JIC 1 5/8"x12
41.91	38.95	R 1 1/4"x11.5
41.99	38.95	NPTF 1 1/4"x11.5
42.00	39.83	M 42x2
45.00	42.83	M 45x2
47.63	45.80	JIC 1 7/8"x12
47.80	44.85	R 1 1/2"x11
48.05	44.52	NPTF 1 1/2"x11.5
52.00	49.83	M 52x2
59.61	56.66	R 2"x11
60.09	56.56	NPTF 2"x11.5
60.20	60.80	JIC 2 1/2"x12
65.71	62.75	R 2 1/4"x11
73.00	68.80	NPTF 2 1/2"x8
75.18	72.23	R 2 1/2"x11
87.88	84.93	R 3"x11
89.00	85.00	NPTF 3"x8
113.03	110.07	R 4"x11
114.35	110.30	NPTF 4"x8

NOTE: NPTF thread have to be measured outside on the 4. thread from the end

A.P.I.	American Petroleum Institute Taper Thread
A.S.A.E.	American Society of Agricultural Engineers
A.S.S.P.T.	American National Straight Pipe Thread
B.S.P.	British Standard Parallel Pipe Thread
B.S.T.P.	British Standard Taper Pipe Thread
F.I.E.I.	Farm and Industrial Equipment Institute
G.H.T.	Garden Hose Threads/F.P.T.- Female Pipe Thread
I.P.T.	American Iron Pipe Thread - Straight
J.I.C.	Joint Industry Conference (SAE 37)
J.I.S.	Japanese Industrial Standard
M.	Metric Thread
M.M.	Metric Thread
N.P.S.	American National Pipe Thread - Straight
N.P.S.M.	American National Pipe Thread - Straight Mechanical
N.P.T.	American National Pipe Thread - Taper
N.P.T.F.	American National Pipe Thread - Taper/Dry seal
N.S.T.	American National Standard Thread - Straight
R.	Rörgjenger - BSP
R.T.	British Round Thread
S.A.E.	Society of Automotive Engineers (45)
U.R.T.	Dennis Urban Round Thread
U.N.C.	Unified Coarse Thread
U.N.F.	Unified Fine Thread
VEE	Shelvoke Drewry "VEE" Round Thread
W.	Withworth Thread



Installation F37 Flange system

ENGINEERING YOUR SUCCESS.

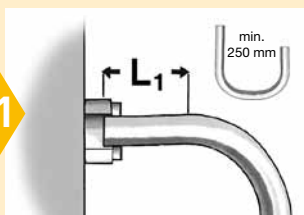
F37 Flare Flange assembly instructions

Tube selection

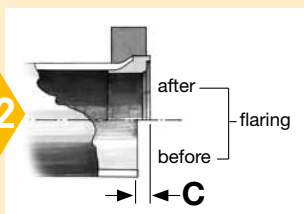


- Select suitable tube material according to catalogue

Tube preparation



- Minimum straight length **L1** before bend

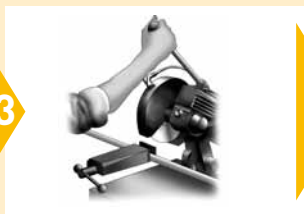


- Tube length before flaring determined by distance **C**

Flange inch	Parflange® F37 ISO 6162-1 (SAE 1000) footprint L1 [mm]	Parflange® F37 ISO 6162-1 (SAE 3000) footprint L1 [mm]	Parflange® F37 ISO 6162-2 (SAE 6000) footprint L1 [mm]	Parflange® F37 ISO 6164 Square flange L1 [mm]
1/2				
3/4				
1		108	107	
1 1/4		108	114	
1 1/2		112	119	
2		117	124	124
2 1/2		127		135
3		137		145
3 1/2	on request			
4				
5				
6				
8				
10				

All dimensions valid with Parker Parflange® 170

- All dimensions are recommendations only and must be checked with the specific tube used in the application
- Dimensions for Distance "C" see charts for tube inserts



- Cut and deburr thoroughly
- Cut tube squarely
- do not use a roller cutter or a grinder



- △ Proper deburring and cleaning of inner diameter essential for sealing surface quality

Checking instructions for Parflange® tools



- ⚠ Use of damaged, worn or non-suitable tooling may result in flange failure and damage of machine
- ⚠ Tools must be checked regularly, at least after 50 assemblies
- ⚠ Worn tools must be replaced
- ⚠ Use only genuine Parker Parts
- ⚠ Tools must always be kept clean and lubricated

1



- Clean pin for checking
- Visual check: Surface must be free of wear and damage

2



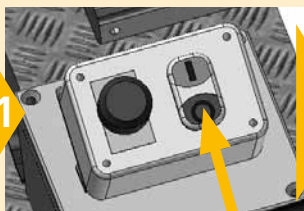
- Clean die halves for checking
- Visual check: Grip surface must be clean and free of wear
- Use wire-brush to remove metal particles from grip surface



Tube flaring with Parflange® 170

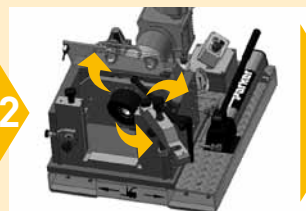
- Reliable forming method

1



- Drive must be switched off for machine setup
- Follow all safety instructions

2



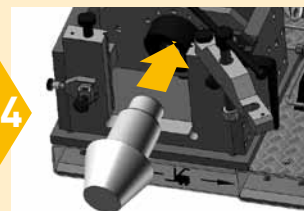
- Safety cover must be open
- Main spindle in rear position
- Open clamping bar

3



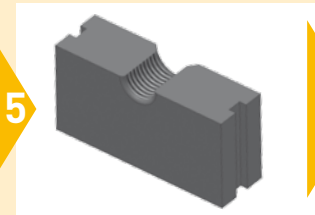
- Select suitable flanging pin according to tube dimension
- Check flanging pin for dirt, wear and damage

4

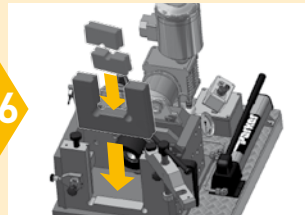


- Insert flanging pin into main spindle
- Make sure pin is all the way in

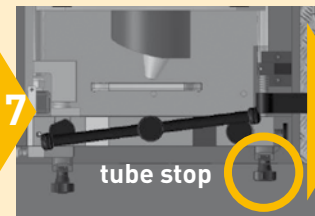
Installation



- Select suitable clamping die set according to tube dimension
- Grip surface must be clean and free of wear



- Install matching clamping die frame
- Insert clamping die set with 37° side pointing towards main spindle
- Close clamping bar but do not tighten yet



- Swing in tube stop bar
- Adjust tube stop wheel according to installation guide
- Tighten locking screw for tube stop adjustment

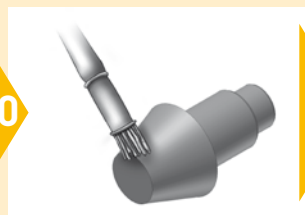


- Adjust spindle stop wheel according to chart
- Tighten locking nut for spindle stop adjustment

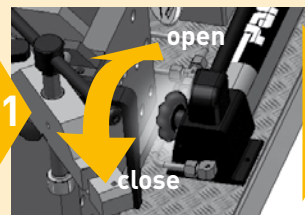
Adjustments for machine settings see in our installation guide!



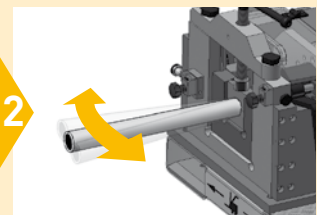
- Slide flange onto tube end
- Insert tube end in clamping dies
- Support long and heavy tubes
- Lift upper clamping die to ease insertion
- Make sure tube end touches tube stop
- Tighten tube in clamping dies
- Clean and lubricate inside of tube



- Swing out tube stop bar
- Lubricate flanging pin
- Use Parker LUBSS lubricant
- △ Other lubricants can cause rapid tool wear and result in surface welding
- △ Worn or dirty tools can cause flaring failures
- Close safety cover

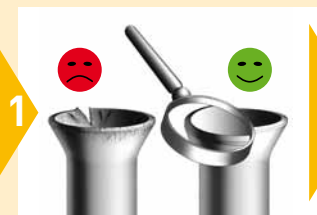


- Switch on main spindle rotation
- Close valve on handpump
- Check chart for recommended flanging pressure
- Operate handpump to move spindle towards tube end
- Continue slowly pumping until spindle stop and flanging pressure is achieved
- Open valve on handpump

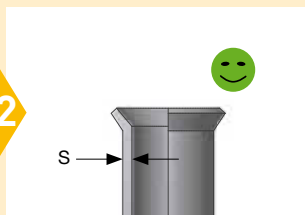


- Spindle will return to rear position
- Press "OFF" button to stop spindle rotation
- Safety cover is released for opening
- Open clamping dies to release tube
- Use blows with plastic hammer to free tube if necessary

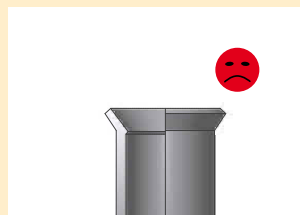
Checking of flare



- Clean flare for inspection
- △ Check sealing surface for cracks, burrs, scratches and pitting
- Flare must be at right angle and concentric with tube



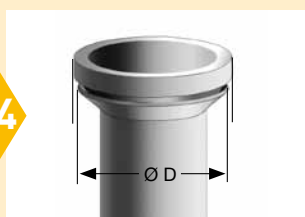
- Flaring will cause a reduction of wallthickness in the flare section



- A lip inside the flare indicates overflare
- The lip can cause problems by assembling the insert



- Dimensional check of the flare diameter according to chart



- Flare diameter should not exceed outside diameter of the insert

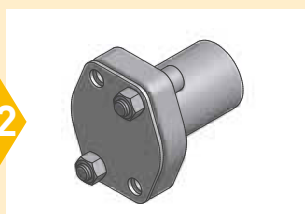
Tube cleaning and transportation preparation



- △ Recommended final cleaning procedure:
 - Place the hose, tube or pipe firmly against the nozzle to make an airtight seal.
 - Depress the trigger to fire the projectile.
 - Release the trigger when the projectile has exit the pipe
 - Shoot through at least 2 projectiles

Above 60 mm

- High pressure hot water cleaning
- Preserve the contact surfaces and the tube inside with e.g. oil
- Standard ISO 4416 and nas 1638 clean methods available on custom request

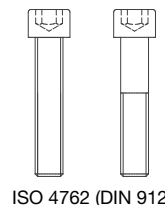


- Protect assembly with a plate and rubber in between or plug against damage and dirt (see page 113,152)

△ Pressure testing for custom request

Installation of Flare Flanges

Recommended nuts and bolts



ISO 4762 (DIN 912)



- Flared pipe must be clean
- Use plastic hammer to fix insert if necessary
- Avoid damage of sealing surfaces

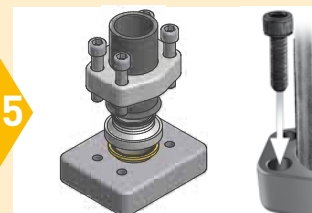


- Flared pipe must be clean
 - Make sure the seals are lubricated for easier assembly
- ⚠ Be aware that the lubricant is not sensitive to the transported medium

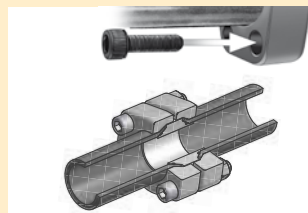


- Make sure sealing surfaces are clean and not damaged

- Be sure that the used nuts are qualified for the strength category of the bolts



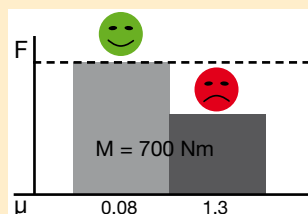
- ⚠ Check bolt length
- Position flange and place bolts



- ⚠ Use only calibrated manual or hydraulic torque tools!



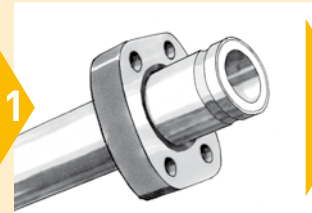
- All contact surfaces must be lubricated according to the installation guide. The lubricated nuts and bolts are to be mounted immediately to avoid pollution of the thread or the surface



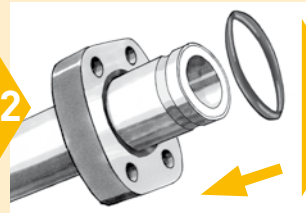
- The friction coefficient is strongly affected by proper lubrication. Using unsuitable lubrication can lead under tightend flange connections
- ⚠ Only Parker recommended lubricants are to be used

For proper installation procedures, bolt sizes and quality torque values see the installation guide!

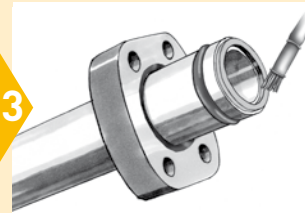
Installation of Retaining Ring Flanges



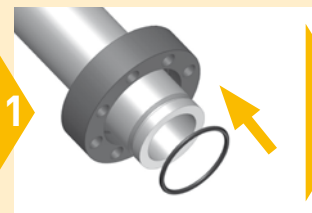
- Check for correct tube & retaining ring size (label of package)
- Slide flange onto tube end



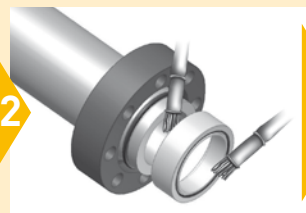
- Pipe end must be clean
- Place Retaining Ring into groove



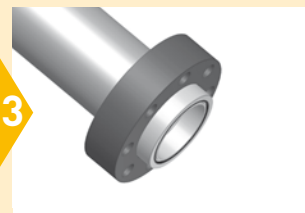
- △ Make sure sealing surfaces are clean and not damaged
- Make sure the bonded seal is lubricated for easier assembly



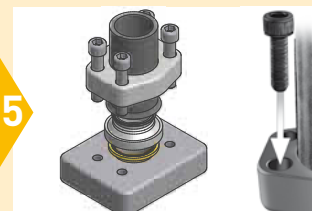
- Check for correct tube & retaining ring size (label of package)
- Slide flange onto pipe end
- Place Retaining Ring into groove



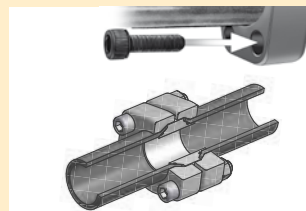
- Pipe end must be clean
- Make sure the seals are lubricated for easier assembly
- Lubricate seals in seal carrier



- △ Make sure sealing surfaces are clean and not damaged
- Place seal carrier on the tube end



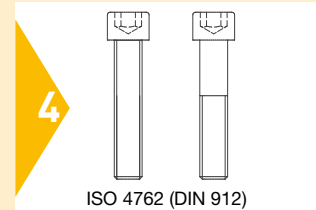
- △ Check bolt length
- Position flange and place bolts



- △ Use only calibrated manual or hydraulic torque tools!



Recommended nuts and bolts



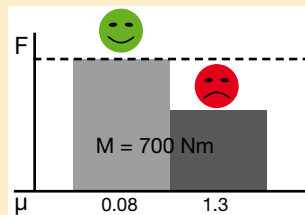
- Be sure that the used nuts are qualified for the strength category of the bolts

Installation of Retaining Ring Flanges



7

- All contact surfaces must be lubricated according to the installation guide. The lubricated nuts and bolts are to be mounted immediately to avoid pollution of the thread or the surface



- The friction coefficient is strongly affected by proper lubrication. Using unsuitable lubrication can lead under tightend flange connections
- △ Only Parker recommended lubricants are to be used

For proper installation procedures, bolt sizes and quality torque values see the installation guide!

Current installation:

www.parker.com/tfde/servicemanuals/userguides

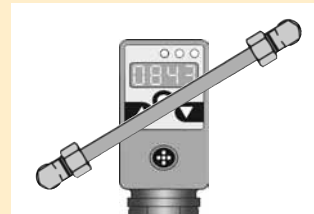
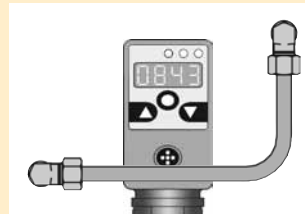
Tube line fabrication guide for leak free systems

Every hydraulic, pneumatic and lubrication system requires correctness of tube fabrication and fitting installation for completion. Proper fabrication and installation are essential for the overall efficiency, leak free performance, and general appearance of any system.

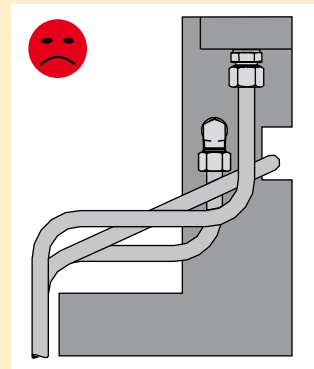
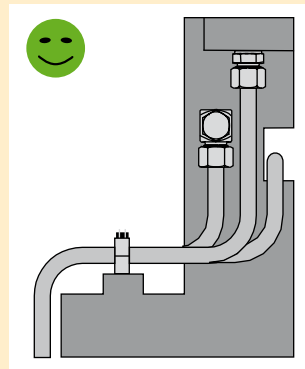
After sizing the tube lines and selecting the appropriate style of fitting, consider the following in the design of your system:

1. Accessibility of joints
2. Proper routing of lines
3. Adequate tube line supports
4. Available fabricating tools

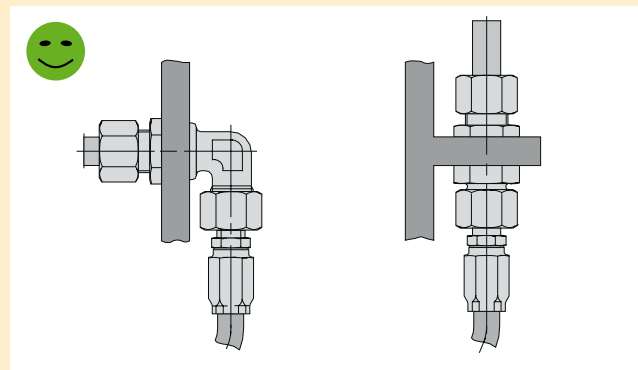
- Keep tube lines away from components that require regular maintenance



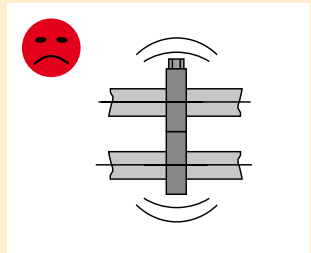
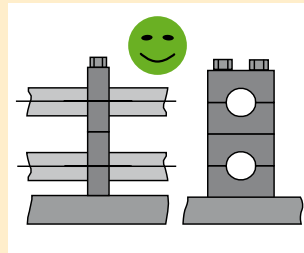
- Right-angled - parallel - clear
- Have a neat appearance and allow for easy trouble-shooting, maintenance and repair



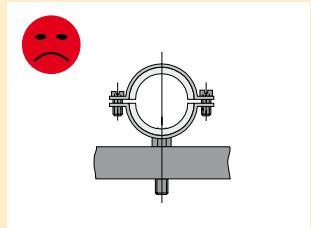
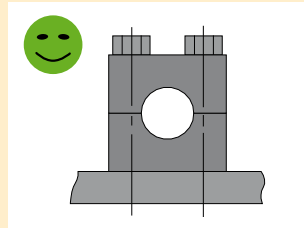
- Example for tube to hose connection



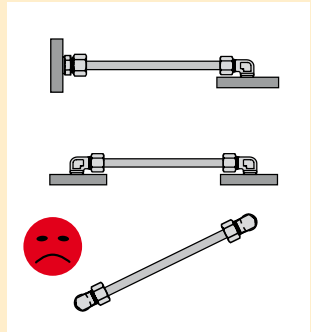
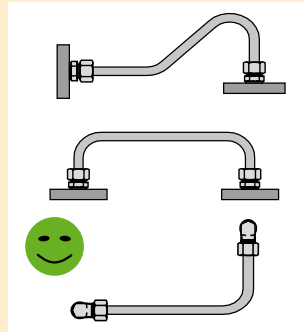
- Do not use tube lines to support other tubes
- Always fix tubes onto a rigid point with tube clamps
- Do not use cable channels to support tubes



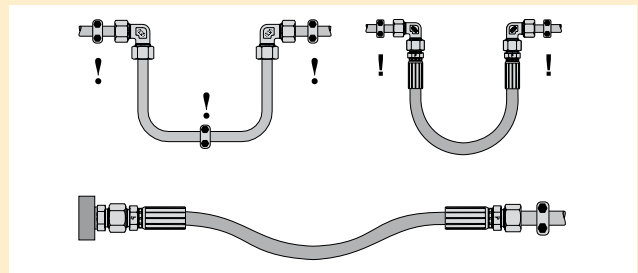
- Use appropriate tube clamps



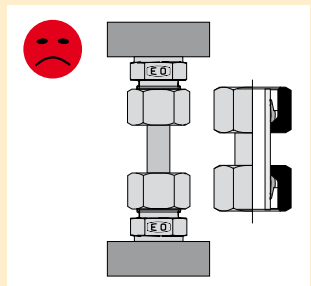
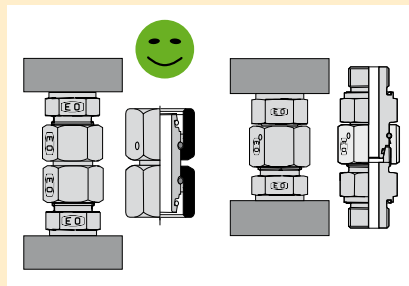
- Avoid excessive strain on joint:
A strained joint will eventually leak



- Allow for expansion effects

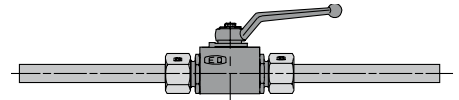
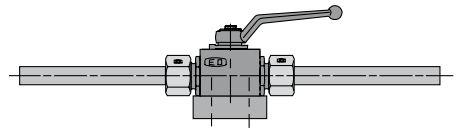


- Avoid short tube length
- ⚠ Short tube lengths increase chance of fatigue fractures
- Use adapter GZR or swivel connector for swivel fittings instead of short tube lengths

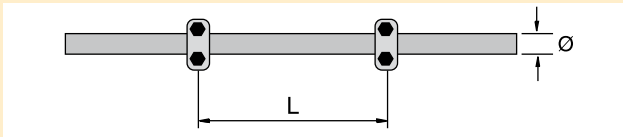


Installation

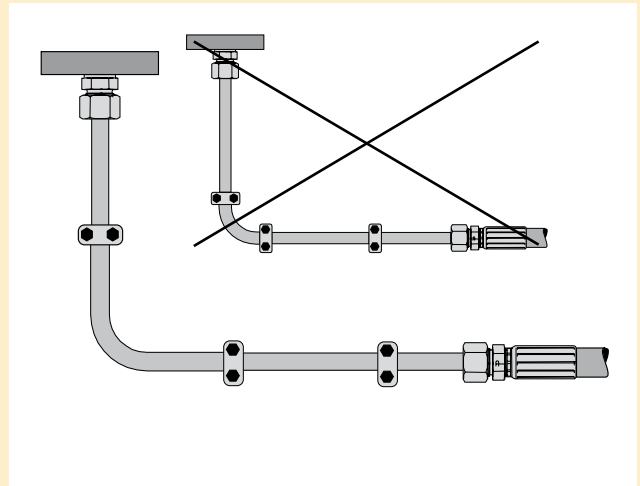
- Support against actuating forces



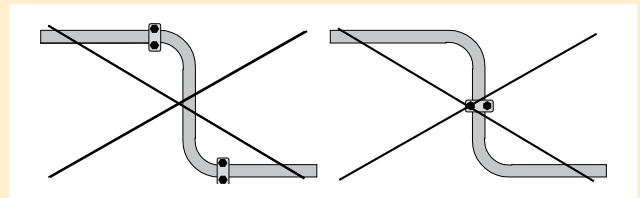
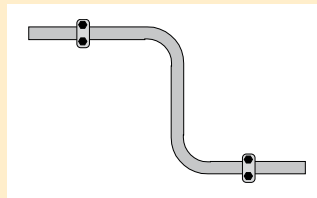
- Tube lines have to be supported in certain distances
- Use sufficient tube clamps to support weight
- Use sufficient tube clamps to protect joints from vibration
- Vibration has to be eliminated near by the connectors



Ø [mm]	Marine/Offshore L [m]	Industrial/Landbased L [m]
6.0 - 12.7	1.0	1.0
12.7 - 22.0	1.1	1.2
22.0 - 32.0	1.4	1.5
32.0 - 38.0	1.5	2.0
38.0 - 57.0	1.8	2.7
57.0 - 75.0	2.0	3.0
75.0 - 76.1	2.1	
76.1 - 88.9	2.2	
88.9 - 102.0	2.4	
102.0 - 114.0	2.6	
114.0 - 168.0	2.9	
168.0 - 219.0	3.5	



- Allow expansion and contraction. Do not hamper expansion and contraction near by tube bends:





Machines, tooling and equipment

ENGINEERING YOUR SUCCESS.

Parflange® 170

Workshop machine for F37 flange connections



Parflange® 170 ECO for workbench

The Parflange® 170 ECO is a compact workshop machine for 37° flaring of tubes for flange connections.

The orbital tube flaring is achieved by a rotating flaring unit, powered by an electro-mechanical drive. Two hydraulic cylinders operated by a hand pump generate the axial feed movement. Gas springs move the flaring unit back after the valve on the hand pump is opened. The tubes are mechanically clamped between a set of dies. The machine features an adjustable tube stop for tube positioning (Tube Stop), and an adjustable stop for the tube depth to be flared (Spindle Stop).

The machine is used to form tube ends by means of a rotational action. It is designed as a workshop machine for installations of tube connections.

The machine is available in 2 versions:

- Parflange® 170 ECO for use on work bench and
- WorkCenter Parflange® 170 WCM which is mounted on a movable tool cabinet

Parflange® machines are delivered ready for use. Tools have to be ordered separately. Clamping die sets and flanging pins are available for common tube sizes. The machine can be moved by crane or forklift.

Applications

- The F37 system is an alternative to conventional welding of flanges in shipbuilding, oil & gas exploration and similar industries
- Workshop use, project work, plant maintenance, on-site assembly
- Not recommended for mass production

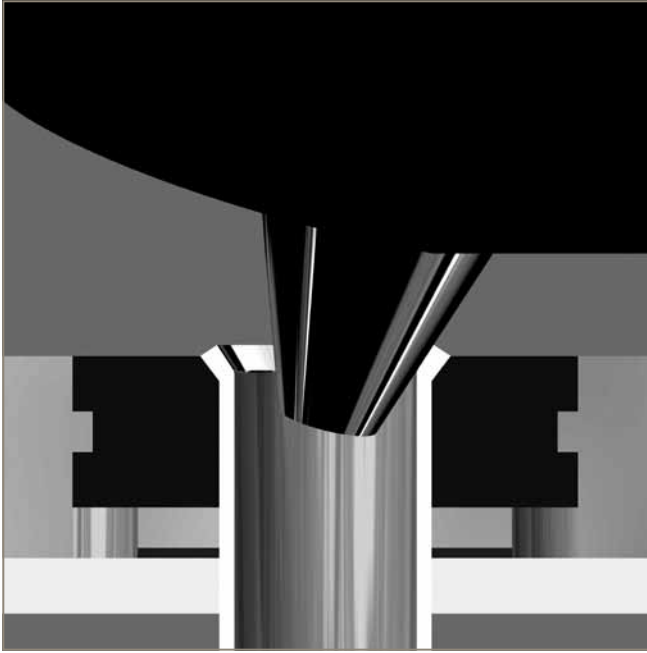


Parflange® 170 WCM WorkCenter

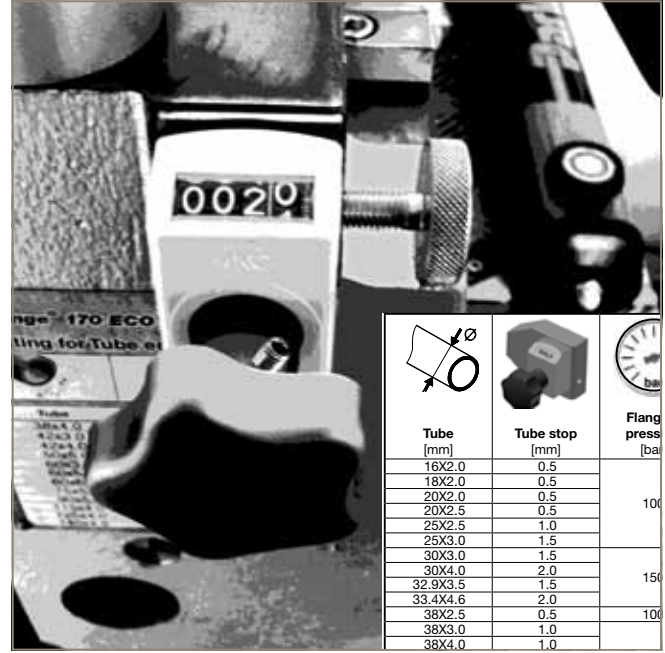
Specifications

Purpose	37° flaring for Parker F37 flange connection
Process	Tube forming by orbital flaring process
Design	On-site and workshop machine for individual tube manufacturing
Models	Parflange® 170 ECO for workbench use WorkCenter Parflange® 170 WCM
Operation	Manual tube clamping Electrically driven flaring unit Manual feed by hand-pump
Tube diameter	16 mm – 168.3 mm O.D.
Maximum capacity	168.3 x 2.77 mm
Tube material	Steel and stainless steel
Cycle time	1 – 2 minutes flaring time 3 – 5 minutes total cycle time
Economic production quantity	Up to 50 assemblies per day
Tools	Flanging pin BF37... Clamping die set MF37... Die frames required for small to medium sizes
Tool lubrication	manual
Forming lubricant for pin	LUBSS
Machine dimensions (L x W x H)	Parflange® 170 ECO: 850 x 680 x 675 mm Parflange® 170 WCM: 880 x 810 x 1470 mm
Weight	Parflange® 170 ECO: approx. 350 kg Parflange® 170 WCM: approx. 460 kg
Nominal voltage	400 V/3Ph/50 Hz/3A/1.1 KW
Connecting cable	3m/CEE 16A
Sound pressure level	Less than 70 dB (A)





Superior sealing surface is achieved by orbital flaring



Consistent flaring result is achieved by setting of Tube Stop and Spindle Stop

Features, advantages and benefits of Parflange® 170 ECO

- Cost saving** – Compared to welding or brazing, orbital flaring is much less time consuming. Special tube preparation and finishing are not necessary. Flaring uses only a fraction of the energy needed for brazing or welding.
- Zinc plated tubing** – The Parflange® process allows the use of zinc plated tubing. The cost for cleaning, post process plating or painting is saved.
- Superior sealing performance** – The orbital flaring process achieves a sealing surface of superior surface quality and mechanical strength.
- Process/Product concept** – Parflange® machines are especially designed to match Parker F37 flange standards. Machines, tools and products are fine-tuned for reliable performance.
- Workshop use** – The rigid machine design allows project work in on site piping workshops.
- Short clamping length** – Clamping dies for 37° flaring are optimized for minimum straight tube length.
- Easy to use** – All operational devices are obvious so that machine operation is intuitive.
- Quality** – Consistent quality results are achieved by recommended values for machine setting.
- Constant flare diameter** – The diameter of the 37° flare is given by the tool contour and the Tube Stop adjustment. A chart on the machine indicates recommended Tube Stop setting.
- Prevention of over-flaring** – The shape of the 37° flare is given by the tool contour and the Spindle Stop adjustment. This prevents difficulties to fit the insert into the flare.
- Flexible** – Different tube material and quality might require special setting of Tube Stop, Spindle Stop, flanging feed and flanging force. For best results, these parameters can be manually adjusted based on operators experience.
- Clean** – The Parflange® process is environmentally clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
- Perfect for on site work** – The machine has special attachments for transportation by fork lift and crane. The wide base provides a safe stand. This is particularly useful for on site pipe installation in shipyards or in oil and gas exploration.
- Ready to go** – The Parflange® 170 ECO is delivered including all necessary details like electrical plug, operator manual, declaration of CE-conformity, short instruction pictograms on machine housing and dimensional charts for tube preparation.
- Parflange® 170 WCM** – This model is mounted on a robust tool cabinet with wheels. It is easy to move and perfect for flexible workshop use.

Tool selection

Workshop machine for F37 flange connections

Ordering

Type	Order code
Parflange® 170 Basic machine Ready to use, including operation manual, filled with hydraulic oil, without tools Basic machine for workbench use, 400V, 50Hz WorkCenter with tool cabinet, 400V, 50Hz	170EU400VECO 170EU400VWCM
Promotion leaflet 4162/UK	via Parker catalogue service EMDC
Operating manual UK/DE/FR/IT/ES	170/MANUAL
Tool lubricant qty: 1 L	LUBSS

Parflange® machines are shipped in special containers which should be kept for future transportation to avoid damage.

Clamping die frame small/large		Clamping die set "MF"	Extended clamping die set "MF" for large tube wall thickness	Flanging pin "BF"
Tube O.D. mm	Order code Clamping die frame	Order code Clamping die set	Order code Extended clamping die set	Order code Flanging pin
16	MF37/FRAME20-60	MF37-16		BF37-6/42
20		MF37-20		BF37-6/42
25		MF37-25		BF37-6/42
30		MF37-30		BF37-6/42
32.9		MF37-32.9		BF37-6/42
33.4		MF37-33.4		BF37-6/42
38		MF37-38		BF37-38/60
42		MF37-42		BF37-38/60
48.3		MF37-48.3		BF37-38/60
50		MF37-50		BF37-38/60
60		MF37-60		BF37-60/75
60.3		MF37-60.3		BF37-60/75
65	MF37/FRAME73-90	MF37-65 E		BF37-60/75
73		MF37-73	MF37-73E for Tube 73X7	BF37-60/75
75		MF37-75		BF37-75/90
88.9		MF37-88.9		BF37-75/90
90		MF37-90	MF37-90E for Tube 90X9	BF37-75/90
114.3	no frame required	MF37-114.3	MF37-114.3E for Tube 114.3X6.02	BF37-115/140
115		MF37-115		BF37-115/140
125		MF37-125		BF37-115/140
139.7		MF37-139.7		BF37-115/140
140		MF37-140		BF37-115/140
141.3		MF37-141.3		BF37-141/165
165		MF37-165		BF37-141/165
168.3		MF37-168.3		BF37-141/165

*tools for scheduled pipes on request

Tool lifetime

Assembly tools are subject of wear and must be regularly cleaned and checked.

Worn out tools can cause dangerous assembly failures and must be replaced in time.

Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant



Assembly machines



EO-KARRYMAT

EO-KARRYMAT

The EO-KARRYMAT is a simple, portable device for assembly of EO Progressive Ring and EO-2 tube fittings.

The EO-KARRYMAT consists of a hydraulically powered tool and a hand-pump.

The EO-KARRYMAT is ideal for repair work.

- Assembly of: EO2 and EO Progressive Ring
- Tube-OD: 6 – 42 mm
- Total cycle time: 30 – 60 sec.
- Economic production quantity: max. 50 assemblies per day
- Dimensions (L x W x H): 750 x 360 x 260 mm
- Weight: 28 kg
- Power supply: Hand-pump

Catalogue: 4100

Bulletin: 4047



EOMAT ECO

EOMAT ECO

The EOMAT ECO is a mobile machine for the assembly of EO-2 and EO Progressive Ring fittings. This electro-hydraulic equipment is simple to use, robust and easy to move. The assembly pressure is set on a digital display.

The EOMAT ECO is ideal for hydraulic service and on-site installation.

- Assembly of: EO-2 and EO Progressive Ring
- Tube-OD: 6 – 42 mm
- Total cycle time: 15 – 20 sec.
- Economic production quantity: max. 100 assemblies per day
- Dimensions (L x W x H): 750 x 360 x 300 mm
- Weight: 30 kg
- Power supply: 230 V 1-phase 50 Hz 700 W

Catalogue: 4100

Bulletin: 4046

Assembly machines



EOMAT UNI

EOMAT UNI

The EOMAT UNI is a universal workshop machine for the assembly of EO-2 and EO Progressive Ring fittings as well as 37° flaring for Triple-Lok®. Therefore, the machine requires additional bite type or flaring heads. The equipment is very robust and easy to use.

The EOMAT UNI is ideal for workshop use and project work.

- Assembly of: EO-2 and EO Progressive Ring
- 37° Flaring of: Triple-Lok®
- Tube-OD: 6 – 42 mm
- Total cycle time: 12 – 15 sec.
- Economic production quantity: max. 300 assemblies per day
- Dimensions (L x W x H): 535 x 515 x 285 mm
- Weight: 66 kg
- Power supply: 230 V 1-phase 50 Hz 2000 W

Catalogue: 4100

Bulletin: 4042



EO2-FORM F3

EO2-FORM F3

The EO2-FORM F3 WorkCenter is designed to cold-form hydraulic tubes for EO2-FORM connections. All machine components are integrated into the machine housing, which also provides racks for tool storage. The EO2-FORM F3 represents a complete tube forming WorkCenter.

The WorkCenter EO2-FORM F3 is ideal for workshop use and project work.

- Assembly of: Parker EO2-FORM connections
- Tube-OD: 6 – 42 mm
- Total cycle time: 15 – 20 sec.
- Economic production quantity: max. 100 assemblies per hour
- With oil cooler: max. 200 assemblies per hour
- Dimensions (L x W x H): 650 x 750 x 1200 mm
- Weight: 300 kg
- Power supply: 400 V 3-phase 50 Hz 4 kW

Catalogue: 4100

Assembly machines



EO2-FORM PRO22

EO2-FORM PRO22

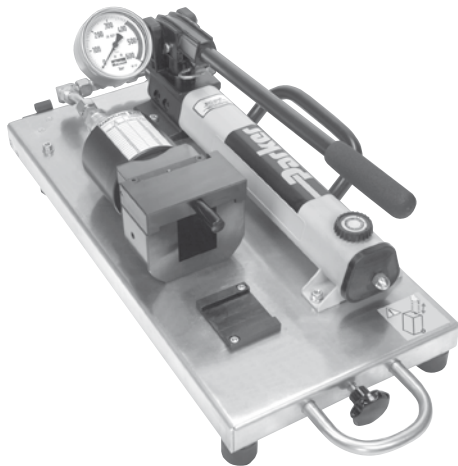
The EO2-FORM PRO22 WorkCenter is based on proven EO2FORM technology. It is much faster, allows smaller tube bends, is less noisy compared to the standard EO2-FORM F3 WorkCenter.

The WorkCenter EO2-FORM F3 is ideal for economic mass production of small to medium tube sizes.

- | | |
|---------------------------------|------------------------------|
| ● Assembly of: | Parker EO2-FORM connections |
| ● Assembly method: | Axial forming |
| ● Tube-OD: | 6 – 22 mm |
| ● Tube wall thickness: | max. 2 mm |
| ● Cycle time: | approx. 6 sec. |
| ● Economic production quantity: | max. 600 assemblies per hour |
| ● Dimensions (L x W x H): | 800 x 660 x 1150 mm |
| ● Weight: | 475 kg |
| ● Power supply: | 400 V 3-phase 50 Hz 4 kW |

Catalogue: 4100

Bulletin: 4032



KarryFlare

KarryFlare

The KarryFlare is a portable device for easy and workmanlike 37° flaring for Triple-Lok® tube connections.

The KarryFlare consists of a hydraulic flaring unit and a hand-pump. It is practical, simple to operate and easy to transport.

The KarryFlare is ideal for repair work.

- | | |
|---------------------------------|----------------------------|
| ● 37° flaring for: | Triple-Lok® |
| ● Tube-OD: | 6 – 42 mm |
| ● Total cycle time: | 30 – 60 sec. |
| ● Economic production quantity: | max. 50 assemblies per day |
| ● Dimensions (L x W x H): | 750 x 360 x 260 mm |
| ● Weight: | 29 kg |
| ● Power supply: | Hand-pump |

Catalogue: 4100

Bulletin: 4047

Assembly machines



ParFlare ECO

ParFlare ECO

The ParFlare ECO is a mobile 37° flaring machine for the assembly of Triple-Lok tube fittings. This electro-hydraulic equipment is simple to use, robust and easy to move. The assembly pressure is set on a digital display.

The ParFlare ECO is ideal for hydraulic service and on-site installation.

- | | |
|---------------------------------|-----------------------------|
| ● 37° flaring of: | Triple-Lok® |
| ● Assembly method: | Axial forming |
| ● Tube-OD: | 6 – 42 mm |
| ● Total cycle time: | 15 – 20 sec. |
| ● Economic production quantity: | max. 100 assemblies per day |
| ● Dimensions (L x W x H): | 750 x 360 x 300 mm |
| ● Weight: | 30 kg |
| ● Power supply: | 230 V 1-phase 50 Hz 700 W |

Catalogue: 4100

Bulletin: 4048



ParFlare 120 WCM

ParFlare 120 HPF

The Parflare 120 WCM is a flaring Work Centre for Parker HPF connections. The tube end is formed in HPF shape by axial pressing. Comfortable operation and adjustable tube stop provide precise and consistent forming result.

The machine is mounted on a robust tool cabinet with wheels. The Parflare 120 WCM represents a complete tube forming WorkCenter. It is easy to move around on wheels, by crane and forklift truck.

The Parflare 120 WCM is ideal for workshop use and on-site installation.

- | | |
|---------------------------------|------------------------------|
| ● Tube end forming for: | Parker HPF flange connection |
| ● Assembly method: | Axial pressing |
| ● Tube-OD: | 38 – 90 mm |
| ● Total cycle time: | 3 – 5 min. |
| ● Economic production quantity: | max. 150 assemblies per day |
| ● Dimensions (L x W x H): | 850 x 680 x 675 mm |
| ● Weight: | 360 kg |
| ● Power supply: | 400 V 3-phase 50 Hz 1,1 kW |

Catalogue: 4167

Bulletin: 4169



Parflange® 1025

Parflange® 1025

The Parflange® 1025 is an orbital 37° flaring and 180° flanging machine. By using the patented Parflange® process, it achieves an excellent sealing surface and a high-strength tube connection.

This electro-hydraulic machine is easy to operate and can be moved around in workshops.

The Parflange® 1025 is ideal for workshop use and project work.

- 180° flanging of: O-Lok®
- 37° flaring of: Triple-Lok®
- Tube-OD: 6 – 25 mm
- Total cycle time: 15 – 20 sec.
- Economic production quantity: max. 100 assemblies per day
- Dimensions (L x W x H): 390 x 670 x 460 mm
- Weight: 60 kg
- Power supply: 230 V 1-phase 50 Hz / 400 V 3-phase 50 Hz

Catalogue: 4100

Bulletin: 4390



Parflange® 1050

Parflange® 1050

The Parflange® 1050 is an orbital 37° flaring and 180° flanging machine. By using the patented Parflange® process, it achieves an excellent sealing surface and a high-strength tube connection.

It represents a complete tube forming WorkCenter. For professional mass production of O-Lok® connections, the Parflange® 1050 PRO can be ordered with an automatic sleeve feeder.

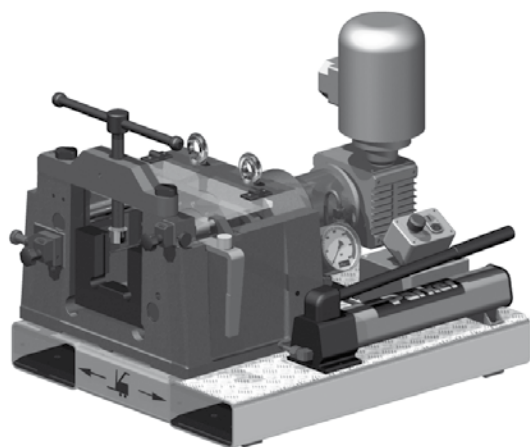
The Parflange® 1050 BASIC is ideal for workshop use and project work, the 1050 PRO is ideal for professional mass production.

- 180° flanging of: O-Lok®
- 37° flaring of: Triple-Lok®
- Tube-OD: 6 – 50 mm
- Total cycle time: 15 – 20 sec.
- Economic production quantity: max. 500 assemblies per day
- Quantity with sleeve feeder: max. 1200 assemblies per day
- Dimensions (L x W x H): 700 x 840 x 1035 mm
- Weight: 380 kg
- Power supply: 400 V 3-phase 50 Hz 4,5 kW

Catalogue: 4100

Bulletin: 4391

Assembly machines



Parflange® 170 ECO

Parflange® 170 ECO

The Parflange® 170 is a simple flaring machine for Parker F37 connections. By using the patented Parflange® process, it achieves an excellent sealing surface and a high-strength tube connection.

The equipment is very robust and easy to use. It saves time and effort compared to conventional welding of flange connections.

Parflange® 170 WCM Workcenter is ideal for workshop use. The 170 ECO is ideal for onsite installation.

- 37° flaring of: F37 flange connection
- Tube-OD: 38 – 140 mm
- Total cycle time: 30 – 60 sec.
- Economic production quantity: max. 50 assemblies per day
- Dimensions (L x W x H): ECO: 850 x 680 x 675
- Weight: 360 kg
- Power supply: 400 V 3-phase 50 Hz 1,1 kW

Catalogue: 4100



Parflange® 170 WCM

Parflange® 170 WCM

The Parflange® 170 WCM is a flaring Work Centre for Parker F37 connections. By using the patented Parflange process, it achieves an excellent sealing surface and a high-strength tube connection.

The machine is mounted on a robust tool cabinet with wheels. The EO2-FORM F3 represents a complete tube forming WorkCenter.

The Parflange 170 WCM is ideal for workshop use and on-site installation.

- 37° flaring of: F37 flange connection
- Assembly method: Orbital forming
- Tube-OD: 38 – 140 mm
- Total cycle time: 30 – 60 sec.
- Economic production quantity: max. 150 assemblies per day
- Dimensions (L x W x H): 880 x 810 x 1470

- Weight: 460 kg
- Power supply: 400 V 3-phase 50 Hz

Catalogue: 4162

Bulletin: 4165

Assembly machines



LUBSS/LUBCAN



EO-NIROMONT

Lubricants for tube forming and fitting assembly

These lubricants are approved for use in fitting installation. Compared to universal oil and grease, these high-performance lubricants achieve dramatic torque reduction and superior assembly tool lifetime.

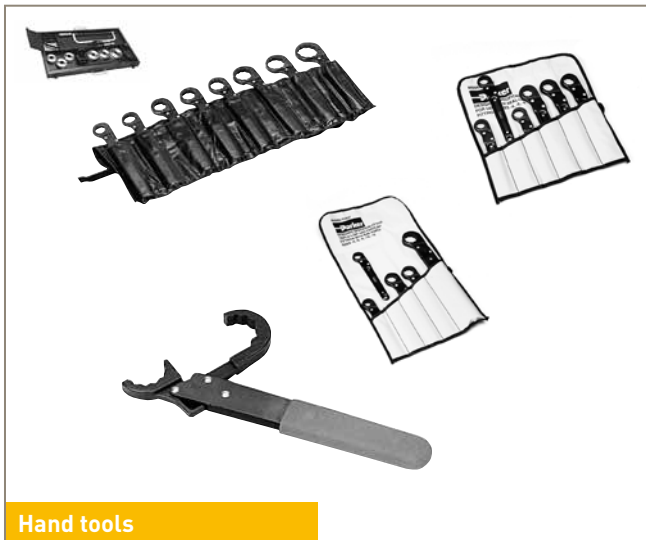
Forming lubricant LUBSS/LUBCAN

- For flaring and flanging process
- Avoids cold-welding of forming pins
- Results in smooth sealing surfaces
- For maximum tool lifetime

Bite-type lubricant EO-NIROMONT

- Preassembly tool and thread lubrication
- Safe cutting function of Progressive Ring
- Mandatory for manual tube fitting assembly
- Ideal for stainless steel thread connections
- Liquid for application on threads
- Paste for application on VOMO, MOK and MOSI tooling

Catalogue: 4100



Hand tools

Hand tools for workshop installation

These workshop tools are ideal for repair work and on-site installation. They are available in standard kits for tube fitting installation.

Bending toolbox
● Hand bending tool

WZK1
BV6/18

Cutting and bending toolbox
● Tube saw square
● Hacksaw
● Deburring tools
● Hand bending tool

WZK2
AV6/42
BV6/18

Par-Lok Wrench
● Snap-action ratchet wrench
● Inch and metric hex sizes
● Metric kit (10 wrenches)
● Inch kit (11 wrenches)
● O-Lok kit (6 wrenches)
● Triple-Lok / Ferulok kit (5 wrenches)

10 – 22 mm
3/8 – 1"

Catalogue: 4100

Assembly machines



Tube bending and cutting tools

The manual EO tube cutting and bending tools are ideal for repair work and on-site installation. They are designed for practical clamping in standard vice.

Tube saw square AV6/42

- Tube-OD: 6 – 42 mm

Combined tube bending and cutting tool BAV6/12

- Tube-OD: 6 – 12 mm

In-Ex deburring tool 226

- Tube-OD: 6 – 38 mm

Tube bending tool BV6/18

- Tube-OD: 6 – 18 mm

Tube bending tool BV20/25

- Tube-OD: 20 – 25 mm

Catalogue: 4100



Machine renting and leasing programme

Both, purchasing and leasing is possible depending on machine type and volume of business. For limited projects, assembly equipment can be provided on a rental basis.

Special “Demo” -equipment is available for sales presentations and fairs.

Ideal for project work and on-site installation.

Machine Leasing (“hire purchase”)

- Alternative to purchase
- No down payment
- Machine is payed off in 24 monthly payments
- New machine, property is passed from Parker to customer

Machine Renting (“hire”)

- Ideal for project work
- Machine is rented and returned after project
- Monthly payment for use
- Used machine, property is at Parker

Catalogue: 4100

Assembly machines



Technical support for Parker machines

TFDE machine service procedures ensure that reliable machine function and fitting performance is achieved when using genuine Parker assembly equipment.

All machines come with detailed operating manuals. Parker distributors and sales representatives are trained to give advice on operation and applications. Experienced application engineers at TFDE are available when it comes to special application of TFDE assembly equipment.

In case of machine malfunction, spare machines can be provided on short notice so that production can continue. In the meantime, damaged machinery is checked and repaired at the TFDE machine repair facility. Well trained and experienced engineers take personal care that the machines return properly repaired and tested.

TFDE also offers a machine maintenance and calibration service. Standard spare parts like oil filters can be ordered.

Assembly machines



MB 642

Mobile bending machine MB 642

The mobile bending machine MB 642 is a compact working centre for hydraulic tubes from 6-42 mm. The basic machine includes a press bender and can be equipped with many additional functions like 37° flaring unit, preassembling metal cutting saw, tube deburring and tooling storage.

The mobile bending machine MB 642 is ideal for workshop use and on-site installation.

Specifications of standard MB 642 machine

- Press bending: Tube-OD up to 42 x 6 mm
- Dimensions (L x W x H): 850 x 500 x 1000 mm
- Weight: 85 kg (standard machine)
- Power supply: 400 Volt - 50 Hz - 3 Ph.

Other MB models and various accessories available.



DB 642K

Compact mandrel bending machine DB 642K

The compact mandrel bending machine DB 642K is a robust and practical working centre for tubes from 6-42 mm. The basic machine includes a mandrel bending unit and can be equipped with many additional functions like 37° flaring unit, preassembling metal cutting saw and tube deburring.

The compact mandrel bending machine DB 642K is ideal for universal workshop use.

Specifications of standard DB 642K machine

- Mandrel bending: Tube-OD up to 42 x 6 mm
- Process control: manual
- Dimensions (L x W x H): 4350 x 900 x 1500 mm
- Weight: 1100 kg
- Power supply: 400 Volt - 50 Hz - 3 Ph.

Other K-models for tube OD up to 101mm and various accessories are available

Assembly machines



DB 650ST

Stationary mandrel bending machine DB 650ST

Stationary mandrel benders like the model DB 650ST are equipped with a PLC control for easy setup and high repeatability. ST models can also be upgraded with motoric drives for length and rotation to get an automatic bending cycle similar to a CNC machine.

Stationary mandrel benders are ideal for small batches and start-up of serial production.

Specifications of standard DB 650ST machine

- Mandrel bending: Tubes up to 50 mm
- Process control: PLC
- Dimensions (L x W x H): 6000 x 1400 x 1300 mm
- Weight: 2500 kg
- Power supply: 400 Volt - 50 Hz - 3 Ph.

Other ST-models for tube OD up to 90 mm and various accessories are available



DB 642 CNC

CNC mandrel bender DB 642-CNC

CNC machines are the professional solution for high quality tube bending for small and big tubes starting from 4 mm up to 273 mm tube diameter. Together with bending software "COLLI" the first tube will fit with high precision and repeatability. The machines can also be equipped with boosting and free forming devices and also as right/ left bender for complex geometries.

CNC mandrel benders are ideal for efficient production of small to large batches and even for flexible single piece production.

Specifications of standard DB 642-CNC machine

- Mandrel bending: Tube OD up to 42 mm
- Process control: 3-dimensional CNC
- Dimensions (L x W x H): 625 x 1550 x 1400 mm
- Weight: 3000 kg
- Power supply: 400 Volt - 50 Hz - 3 Ph.

Other CNC-models for tube OD up to 273 mm and various accessories are available

Assembly machines



RE 642 / RE 2060

Deburring machine RE 642 and RE 2060

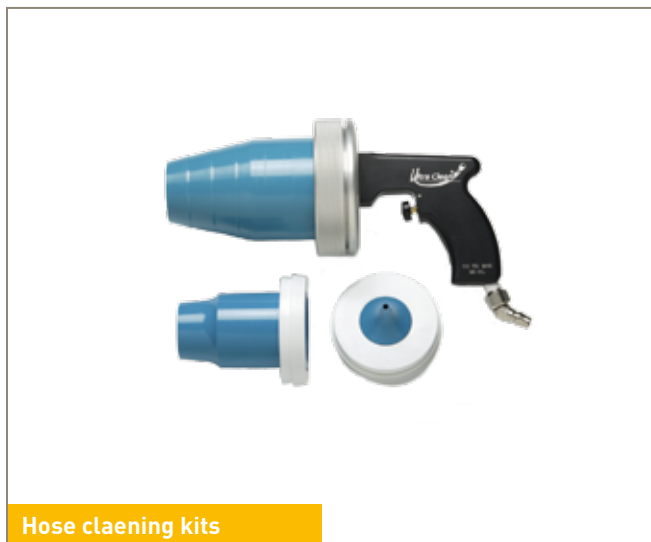
The RE 642 and RE 2060 deburring machines are portable, practical, universal and safe. Efficient milling tools with a long service life allow deburring of saw cuts in two seconds. One tool set fits for the complete tube range.

The RE 642 and RE 2060 deburring machines are ideal for universal workshop use.

Specifications for standard RE 642 machine

- Deburring: Tube-OD 6-42 mm
- Dimensions: 300 x 400 x 250 mm
- Weight: 28 kg
- Power supply: 400 Volt - 50 Cyl. - 3 Ph.

RE 2060 machine is capable for deburring of tube-OD 20-60 mm.



Hose cleaning kits

Hose cleaning kits

The TH6-10-HL-9-2 and the TH6-10-EL-7 are used to clean hose assemblies and tubes before installation. Dirt, metal particles and rubber dust are removed by blowing projectiles through the inner diameter.

Both Kits include launcher and nozzles for standard hose sizes in special case. Projectiles and other nozzles available on request.

TH6-10-EL-7 is economic launcher with plastic handle, the robust TH6-10-HL-9-2 is made of aluminium alloy.

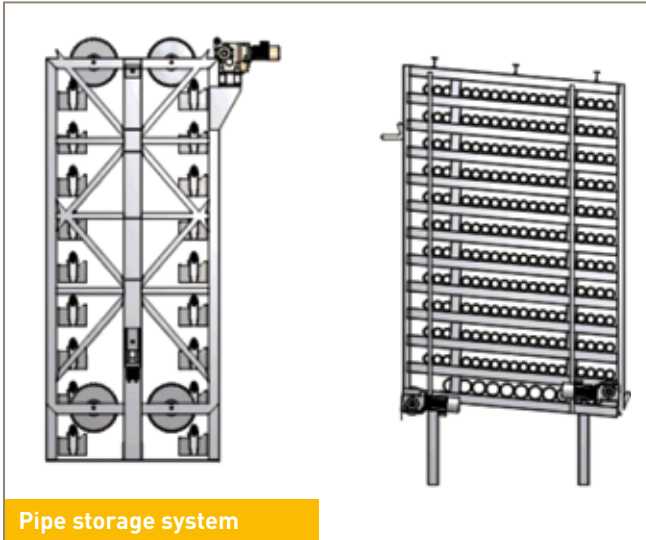
Both kits are ideal for universal workshop use.

Specifications

- TH6-10-EL-7: Hose size ¼" - 1 ¼"
- TH6-10-HL-9-2: Hose size ¼" - 2"

Bulletin: 4480-B144

Assembly machines



Pipe storage system

Pipe storage systems

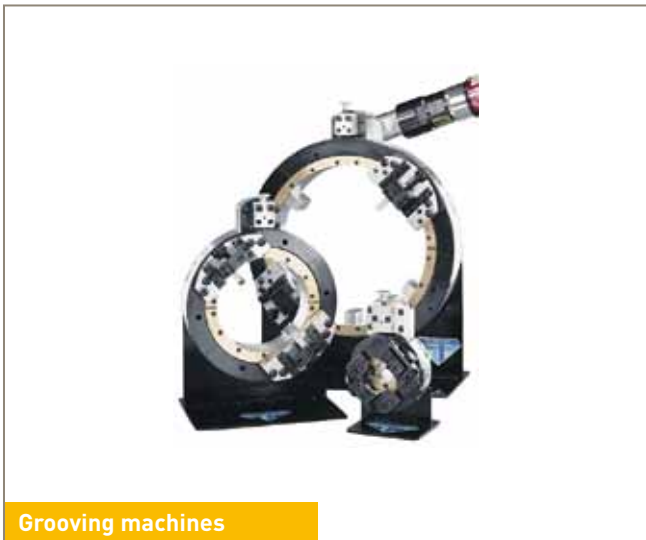
Special tables are used to separate bundles and allow easy cleaning, inspection, counting or marking of tubes and preparation of manufacturing batches.

Pipe handling and storing systems are essential for managing inventory and minimize commissioning effort.

Special conveyors and buffer tables are used for efficient workflow.

Product range

- Tables for separating tube bundles
- Conveyors and buffer tables for lean workflow
- Paternoster type PN for compact and efficient storing of small to medium tubes
- Automated storage system Type RL for inventory management and commissioning of work orders



Grooving machines

Grooving machines for retaining ring connections

These compact lathes are clamped on OD of tube. Tools are rotating around tube for machining tube end and outer diameter. Special tool bits and spacers are designed according to retaining ring groove specification from Parker.

This portable tool is ideal for workshop use and on-site installation.

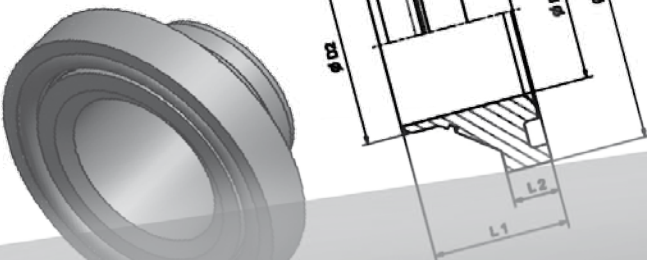
Product range

- For tube sizes 1" / 25 mm to 12" / 323.9 mm
- OD groove according Parker specification
- Machining of flat face tube end
- Beveling for welding possible
- Pneumatic or electric motor

ISO 6162-1

F37 seal

on



How to order

Selecting

1. All flange sizes are clearly listed in the catalogue.
2. Open the catalogue to find the detailed dimensions of your choice.
3. Select the correct order code based on the dimensions.

Example

D1	D2	D3	L1	L2	Weight (Steel) kg/1 piece	F37 seal Order code	O-Ring Order code	Insert incl. F37 seal + O-Ring Order code
25.0	32.8	45.0	22.0	7.0	0.11	F37S16X	OR34X1.0X	IN16-38X2.5TFVCF
25.0	31.8	45.0	22.0	7.0	0.10	F37S16X	OR34X1.0X	IN16-38X3.0TFVCF
25.0	29.8	45.0	22.0	7.0	0.10	F37S16X	OR30X1.0X	IN16-38X4.0TFVCF
25.0	27.8	45.0	21.0	7.0	0.09	F37S16X	OR28X1.0X	IN16-38X5.0TFVCF
29.5	31.8	50.0	22.0	7.5	0.10	F37S20X	OR34X1.0X	IN16-38X2.5TFVCF
27.0	29.8	50.0	22.0	7.5	0.11	F37S20X	OR30X1.0X	IN16-38X3.0TFVCF
25.5	27.8	50.0	21.0	7.5	0.10	F37S20X	OR28X1.0X	IN16-38X4.0TFVCF
31.5	35.8	50.0	22.0	7.5	0.11	F37S20X	OR34X1.0X	IN16-38X5.0TFVCF
31.5	33.8	50.0	22.0	7.5	0.10	F37S20X	OR30X1.0X	IN16-38X6.0TFVCF
35.8	35.8	60.0	25.5	10.0	0.19	F37S24X	OR37.8X1.0X	IN16-38X7.0TFVCF
33.5	33.8	60.0	25.5	10.0	0.19	F37S24X	OR34X1.0X	IN16-38X8.0TFVCF
31.5	31.5	60.0	25.5	10.0	0.20	F37S24X	OR30X1.0X	IN16-38X9.0TFVCF
42X4.0	36.0	60.0	25.5	10.0	0.20	F37S24X	OR37.8X1.0X	IN16-38X10.0TFVCF
50X3.0	36.0	60.0	25.5	10.0	0.22	F37S32X	OR44.1X1.78X	IN16-38X11.0TFVCF
50X5.0	35.0	60.0	25.5	10.0	0.24	F37S32X	OR41X1.78X	IN16-38X12.0TFVCF
50X3.0	37.5	70.0	27.0	10.0	0.27	F37S32X	OR53.7X1.78X	IN16-38X13.0TFVCF
50X5.0	35.0	70.0	27.0	10.0	0.27	F37S32X	OR50.52X1.78X	IN16-38X14.0TFVCF
50X3.0	37.5	70.0	27.0	10.0	0.24	F37S32X	OR47.37X1.78X	IN16-38X15.0TFVCF
50X5.0	35.0	70.0	27.0	10.0	0.23	F37S32X	OR44.1X1.78X	IN16-38X16.0TFVCF
50X3.0	37.5	70.0	27.0	10.0	0.24	F37S40X	OR53.7X1.78X	IN16-38X17.0TFVCF
50X5.0	35.0	70.0	27.0	10.0	0.23	F37S40X	OR50.52X1.78X	IN16-38X18.0TFVCF
50X3.0	37.5	70.0	27.0	10.0	0.24	F37S40X	OR47.37X1.78X	IN16-38X19.0TFVCF
50X5.0	35.0	70.0	27.0	10.0	0.23	F37S40X	OR44.1X1.78X	IN16-38X20.0TFVCF

Step

Select

Now

face

to

Th

to

R

4

IN16-38X2.5TFVCF

IN16-38X3.0TFVCF

IN16-38X4.0TFVCF

IN16-38X5.0TFVCF

IN16-38X6.0TFVCF

IN16-38X7.0TFVCF

IN16-38X8.0TFVCF

IN16-38X9.0TFVCF

IN16-38X10.0TFVCF

IN16-38X11.0TFVCF

IN16-38X12.0TFVCF

IN16-38X13.0TFVCF

IN16-38X14.0TFVCF

IN16-38X15.0TFVCF

IN16-38X16.0TFVCF

IN16-38X17.0TFVCF

IN16-38X18.0TFVCF

IN16-38X19.0TFVCF

IN16-38X20.0TFVCF

IN16-38X2.5TFVCF

IN16-38X3.0TFVCF

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IN16-38X5.0TFVCF

IN16-38X6.0TFVCF

IN16-38X7.0TFVCF

IN16-38X8.0TFVCF

IN16-38X9.0TFVCF

IN16-38X10.0TFVCF

IN16-38X11.0TFVCF

IN16-38X12.0TFVCF

IN16-38X13.0TFVCF

IN16-38X14.0TFVCF

IN16-38X15.0TFVCF

IN16-38X16.0TFVCF

IN16-38X17.0TFVCF

IN16-38X18.0TFVCF

IN16-38X19.0TFVCF

IN16-38X20.0TFVCF

Ordering information/Nomenclature

Parflange® F37 Code Key

Flare Flange Example:

F37-3	20	-42X3.0	TFV	CF
-------	----	---------	-----	----

Part code	Flange Type	Flange code	Footprint
F37	1	1	ISO 6162-1 SAE 1000
F37	3	3	ISO 6162-1 SAE 3000
F37	6	6	ISO 6162-2 SAE 6000
F37	4	4	ISO 6164
R	1	1	ISO 6162-1 SAE 1000
R	3	3	ISO 6162-1 SAE 3000
R	6	6	ISO 6162-2 SAE 6000
R	4	4	ISO 6164 4 Bolt Flange
R	8	8	*Code 6164 8-12 Bolt Flange

Size Code												
8	12	16	20	24	32	40	48	64	80	96	128	160
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"

Pipe size and Insert Code

42X3.0 / Pipe O. D. X wall thickness (mm)

Flange connection/Sealing system

TFV Tube to port connection, F37 seal version
 TFB Tube to port connection, Bonded seal version
 TT Tube to tube connection
 TF Tube to flange connection, Flat face version

Material and coating

CF Steel, Cr(VI)-free
 CFTZN Steel, Hot dip galvanized (only Flanges)
 SS Stainless Steel

*Code 6164: Flange range related to ISO 6164 Standard
 Bolts and nuts are not components of the complete Part code

Combination examples

	Complete Part No.	Component	No.	Code	Material
Standard combination Steel CF	F37-320-42X3.0TFVCF Tube to port (F37 seal) 1 1/4" SAE 3000 Flare Flange	Flare Flange	1	F37-320-CFX	Steel, Cr(VI)-free
		Insert incl. O-Ring and F37 Seal	1	IN20-42X3.0TFVCF	Steel, Cr(VI)-free
		O-Ring	1	OR37.82X1.78X	NBR, 90° shore
		F37 Seal	1	F37S20X	PUR
Stainless Steel	F37-620-38X4.0TFVSS Tube to port (F37 seal) 1 1/4" SAE 6000 Flare Flange, 38 mm OD tube Jump size	Flare Flange	1	F37-620-SSX	Stainless Steel
		Insert incl. O-Ring and F37 seal	1	IN20-38X4.0TFVSS	Stainless Steel
		O-Ring	1	OR30X1.0X	NBR, 90° Shore
		F37 seal	1	F37S20X	PUR
		Sleeve	1	SL20-42-38-SSX	Stainless steel
Hot. dip galv. Flange and Stainless Steel Insert	F37-620-38X4.0TFVSSTZN Tube to port (F37 seal) 1 1/4" SAE 6000 Flare Flange, 38 mm OD tube Jump size	Flare Flange	1	F37-620-TZN	Hot dip galv.
		Insert incl. O-Ring and F37 seal	1	IN20-38X4.0TFVSS	Stainless steel
		O-Ring	1	OR30X1.0X	NBR, 90° Shore
		F37 seal	1	F37S20X	PUR
		Sleeve	1	SL20-42-38-SSX	Stainless steel



Parflange® Retaining Ring Code Key

Retaining Ring Examples:

R-1	32	WA	-60.3X2.9	S
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Part code	Flange Type	Flange code	Footprint
F37		1	ISO 6162-1 SAE 1000
F37		3	ISO 6162-1 SAE 3000
F37		6	ISO 6162-2 SAE 6000
F37		4	ISO 6164
R		1	ISO 6162-1 SAE 1000
R		3	ISO 6162-1 SAE 3000
R		6	ISO 6162-2 SAE 6000
R		4	ISO 6164 4 Bolt Flange
R		8	*Code 6164 8-12 Bolt Flange

Size Code

8	12	16	20	24	32	40	48	64	80	96	128	160
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"

Weld adapter

Pipe size and Insert Code

60.3X2.9/Pipe O. D. X wall thickness (mm)

Material and coating

S Weld Adapter O-Ring Sealing by SAE 1000 (other footprints bonded seal), Steel
 FS Weld Adapter Flat, Steel
 SS Weld Adapter O-Ring sealing, Stainless Steel
 FSS Weld Adapter Flat, Stainless Steel
 SSTZN Weld Adapter O-Ring sealing, Stainless Steel and hot dip galv. Flange
 FSSTZN Weld Adapter Flat, Stainless Steel and hot dip galv. Flange

*Code 6164: Flange range related to ISO 6164 Standard
 Bolts and nuts are not components of the complete Part code

Combination examples

	Complete Part No.	Component	No.	Code	Material
Standard combination Steel CF	R-132WA-60.3X2.9S SAE 1000 Retaining Ring Weld Adapter	Retaining Ring Flange	1	R-132-CFX	Steel, Cr(VI)-free
		Retaining Ring		R32X	Stainless Steel
		Weld Adapter body O-Ring	1	WA132-60.3X2.9S OR56.75X3.53X	Steel, Cr(VI)-free NBR, 90° Shore
Stainless Steel	R-620WA-38X4.0SS SAE 6000 Retaining Ring Weld Adapter	Retaining Ring Flange	1	R-620-SSX	Stainless Steel
		Retaining Ring	1	R20X	Stainless Steel
		Weld Adapter body	1	WA20-38X4.0SSX	Stainless Steel
		Bonded seal	1	BS20SSNX	NBR, 90° Shore
Stainless Steel	R-PSC8128-250X25VSS SAE 6000 8" Retaining Ring and Pipe seal carrier, 250 mm OD tube	Retaining Ring Flange	1	R-8128-SSX	Stainless Steel
		Retaining Ring	1	R128X	Stainless Steel
		Pipe seal carrier incl. F37 seal	1	PSC128-250X25VSSX	Stainless Steel
		F37 seal	1	F37128X	PUR

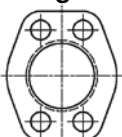
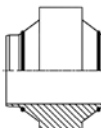
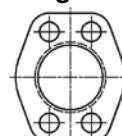
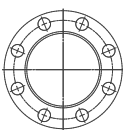
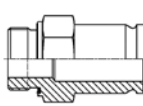
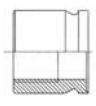
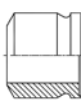
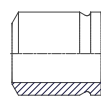
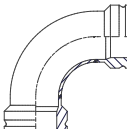
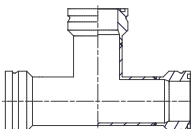
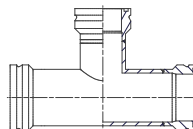
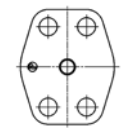
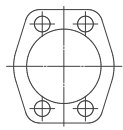
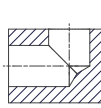
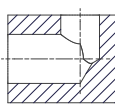
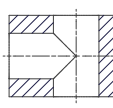
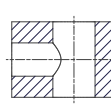


1000 PSI System

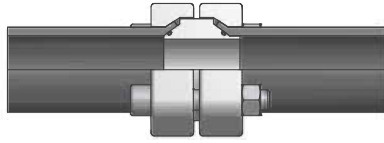
50 – 70 bar

ENGINEERING YOUR SUCCESS.

Programme overview 1000PSI/ISO 6162-1 footprint

Parflange® F37 connection parts	Flanges  F37 – p.58					
	Inserts  TFV – p.59  TF – p.60  TT – p.61					
Retaining ring connection parts	Flanges  R – p.62  R-Ring – p.62  R – p.62					
	Male / Female  MTF-R – p.63  FTF-R – p.64			Weld  WA – p.65  WA-F – p.66		
	Tube to Tube  BF – p.67/68  RF – p.69/70  LF – p.71/72  TF – p.73/74  TF-R – p.73/74					
	Blind Flanges Blocks see SAE 3000  BFV – p.75  CPML – p.76  LB  LBR  TB  TBR					
SAE connection parts						
Seals Adapter Bolts	Bolts and Nuts  p.77					

1000 PSI/ISO 6162-1 footprint



Part combination flaring SAE 1000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange 1000 SAE ISO 6162-1 footprint	Insert*	O-Ring Insert	Bolts Tube to Port	Bolts Tube to Tube	Nut
70	1 1/2	50X3.0	F37-124-CFX	IN24-50X3.0T...	OR47.22X3.53	4 x ZYLS12X40	4 x ZYLS12X70	4 x ISO4032-M12
	2	60X3.0	F37-132-CFX	IN32-60X3.0T...	OR56.75X3.53	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	2 1/2	75X3.0	F37-140-CFX	IN40-75X3.0T...	OR69.44X3.53	4 x ZYLS12X50	4 x ZYLS12X90	4 x ISO4032-M12
	3	88.9X3.05	F37-14888.9-CFX	IN48-88.9X3.05T...	OR85.32X3.53	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	3	90X3.5	F37-148-CFX	IN48-90X3.5T...	OR85.32X3.53	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	3 1/2	100X4.0	F37-156-CFX	IN56-100X4.0T...	OR98.02X3.53	4 x ZYLS16X55	4 x ZYLS16X90	4 x ISO4032-M16
50	4	115X4.0	F37-164-CFX	IN64-115X4.0T...	OR110.72X3.53	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	5	140X4.5	F37-180-CFX	IN80-140X4.5T...	OR136.12X3.53	4 x ZYLS16X65	4 x ZYLS16X120	4 x ISO4032-M16
	6	165X5.0	F37-196-CFX	IN96-165X5.0T...	OR158.34X3.53	6 x ZYLS16X65	6 x ZYLS16X110	6 x ISO4032-M16

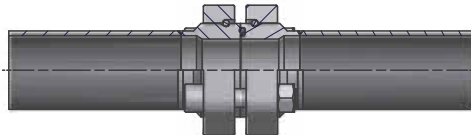
Select the complete version:

* ...FVCF Seal version

...TCF Tube to Tube version

...FCF Flat Face version

Pressure rates related to flanges
Bolt and nuts for flanges see page 77
Other sizes on request

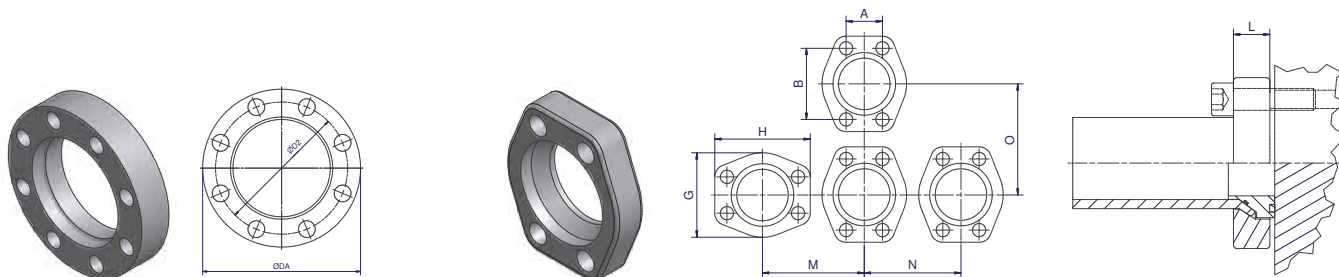


Part combination retaining ring SAE 1000 (O-Ring) connection

Flange pressure (bar)	Size Inch	Flange	Retaining Ring	O-Ring	Bolts Tube to Port	Bolts Tube to Tube	Nut
70	1 1/2	R-124-CFX	R124X	OR47.22X3.53X	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
	2	R-132-CFX	R132X	OR56.75X3.53X	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
	2 1/2	R-140-CFX	R140X	OR69.44X3.53X	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
	3	R-148-CFX	R148X	OR85.32x3.53X	4 x ZYLS16X50	4 x ZYLS16X80	4 x ISO4032-M16
	3 1/2	R-156-CFX	R156X	OR98.02X3.53X	4 x ZYLS16X55	4 x ZYLS16X90	4 x ISO4032-M16
	4	R-164-CFX	R164X	OR110.72X3.53X	4 x ZYLS16X55	4 x ZYLS16X90	4 x ISO4032-M16
	5	R-180-CFX	R180X	OR136.12X3.53X	4 x ZYLS16X70	4 x ZYLS16X110	4 x ISO4032-M16
	6	R-196-CFX	R196X	OR158.34X3.53X	6 x ZYLS16X70	6 x ZYLS16X110	6 x ISO4032-M16
50	8	R-1128-CFX	R1128X	OR219.3X5.7X	8 x ZYLS20X70	8 x ZYLS20X120	8 x ISO4032-M20
	10	R-1160-CFX	R1160X	OR269.3X5.7X	8 x ZYLS20X80	8 x ZYLS20X150	8 x ISO4032-M20

* Use only for weld adapter and T- and L-adapter flanges
Bolts and nuts are not included in a complete part

F37 – Flare flange



Parflange F37 flange dimensions

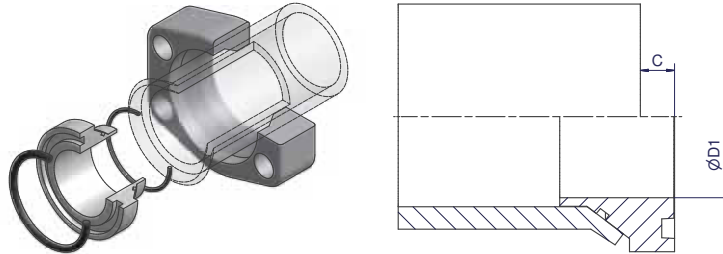
Size Inch	Flange Order Code	A	B	G	H	M	N	O	L	Weight (Steel) kg/1 piece	W.P. bar
1 1/2	F37-124-CFX	35.7	69.9	83	93.75	90	85	96	20	0.52	70
2	F37-132-CFX	42.9	77.8	97	101.6	102	99	104	25	0.83	70
2 1/2	F37-140-CFX	50.8	88.9	109	114.3	114	111	117	30	1.16	70
3	F37-148-CFX	61.9	106.4	131	135.5	136	133	137	30	1.57	70
3 1/2	F37-156-CFX	115.8	120.7	140	152.4	148	142	155	30	1.99	70
4	F37-164-CFX	77.8	130.2	152	161.95	160	155	164	39	2.69	70
5	F37-180-CFX	92.1	152.4	181	184.15	186	184	185	39	3.24	70
		D2	DA								
6	F37-196-CFX	208.0	236.0						39	5.60	50

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	F37-320-CFX	
Stainless steel	SS	F37-320-SSX	
Galvanized hot dip zinc	TZN	F37-320-TZNX	on request

TFV – Flare flange connection

Tube to port connection



Size Inch	Tube	Flange incl. Insert F37 Seal + O-Ring Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	O-Ring Tube Side Order code	O-Ring Seal Port Side Order code	Weight (Steel) kg/1 piece
1 1/2	50X3.0	F37-124-50X3.0TFVCF	36.0	11	IN24-50X3.0TFVCF	OR44.17X1.78X	OR47.22X3.53	0.72
2	60X3.0	F37-132-60X3.0TFVCF	46.0	12	IN32-60X3.0TFVCF	OR53.7X1.78X	OR56.75X3.53	1.10
2 1/2	75X3.0	F37-140-75X3.0TFVCF	60.0	10	IN40-75X3.0TFVCF	OR69.57X1.78X	OR69.44X3.53	1.46
3	90X3.5	F37-148-90X3.5TFVCF	72.0	15	IN48-90X3.5TFVCF	OR82.27X1.78X	OR85.32X3.53	2.17
3 1/2	100x4.0	F37-156-100X4.0TFVCF	88.6	15	IN56-100X4.0TFVCF	OR98.02X3.53	OR98.02X3.53	2.60
4	115X4.0	F37-164-115X4.0TFVCF	90.0	14	IN64-115X4.0TFVCF	OR114.02X1.78X	OR110.72X3.53	3.53
5	140X4.5	F37-180-140X4.5TFVCF	122.0	15	IN80-140X4.5TFVCF	OR129.77X3.53	OR136.12X3.53	4.09
6	165X5.0	F37-196-165X5.0TFVCF	150.8	17	IN96-165X5.0TFVCF	OR158.42X6.26X	OR158.34X3.53	6.98

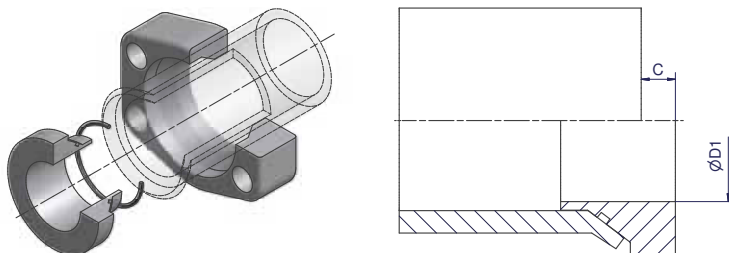
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-124-50X3.0TFVCF
Stainless steel	SS	F37-124-50X3.0TFVSS

TF – Flare flange connection

Tube to port connection, flat face



Size Inch	Tube	Flange incl. Insert + O-Ring Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Tube Side Order code	Weight (Steel) kg/1 piece
1 1/2	50X3.0	F37-124-50X3.0TFCF	36.0	11	IN24-50X3.0TFCF	OR44.17X1.78X	0.72
2	60X3.0	F37-132-60X3.0TFCF	46.0	12	IN32-60X3.0TFCF	OR53.7X1.78X	1.10
2 1/2	75X3.0	F37-140-75X3.0TFCF	60.0	10	IN40-75X3.0TFCF	OR69.57X1.78X	1.46
3	90X3.5	F37-148-90X3.5TFCF	72.0	15	IN48-90X3.5TFCF	OR82.27X1.78X	2.17
3 1/2	100X4.0	F37-156-100X4.0TFCF	88.6	15	IN56-100X4.0TFCF	OR98.02X3.53X	2.60
4	115X4.0	F37-164-115X4.0TFCF	90.0	14	IN64-115X4.0TFCF	OR114.02X1.78X	3.60
5	140X4.5	F37-180-140X4.5TFCF	122.0	15	IN80-140X4.5TFCF	OR129.77X3.53X	4.14
6	165X5.0	F37-196-165X5.0TFCF	150.8	17	IN96-165X5.0TFCF	OR158.42X6.26X	7.03

Other sizes on request

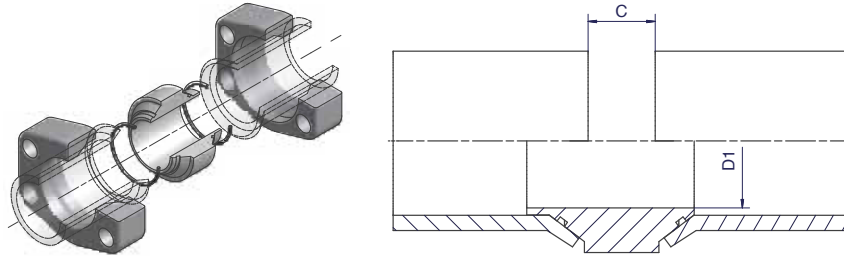
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	IN24-50X3.0TFCF
Stainless steel	SS	IN24-50X3.0TFSS



TT – Flare flange connection

Tube to tube connection



Size Inch	Tube	Flange incl. Insert + 2 x O-Ring Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Tube Side Order code	Weight (Steel) kg/1 piece
1 1/2	50X3.0	F37-124-50X3.0TTCF	36.0	11	IN24-50X3.0TTCF	OR44.17X1.78X	0.94
2	60X3.0	F37-132-60X3.0TTCF	46.0	12	IN32-60X3.0TTCF	OR53.7X1.78X	1.38
2 1/2	75X3.0	F37-140-75X3.0TTCF	60.0	10	IN40-75X3.0TTCF	OR69.57X1.78X	1.79
3	90X3.5	F37-148-90X3.5TTCF	72.0	15	IN48-90X3.5TTCF	OR82.27X1.78X	2.79
3 1/2	100X4.0	F37-156-100X4.0TTCF	88.6	15	IN56-100X4.0TTCF	OR98.02X3.53X	2.60
4	115X4.0	F37-164-115X4.0TTCF	90.0	14	IN64-115X4.0TTCF	OR114.02X1.78X	4.45
5	140X4.5	F37-180-140X4.5TTCF	122.0	15	IN80-140X4.5TTCF	OR129.77X3.53X	4.75
6	165X5.0	F37-196-165X5.0TTCF	150.8	17	IN96-165X5.0TTCF	OR158.42X6.26X	8.36

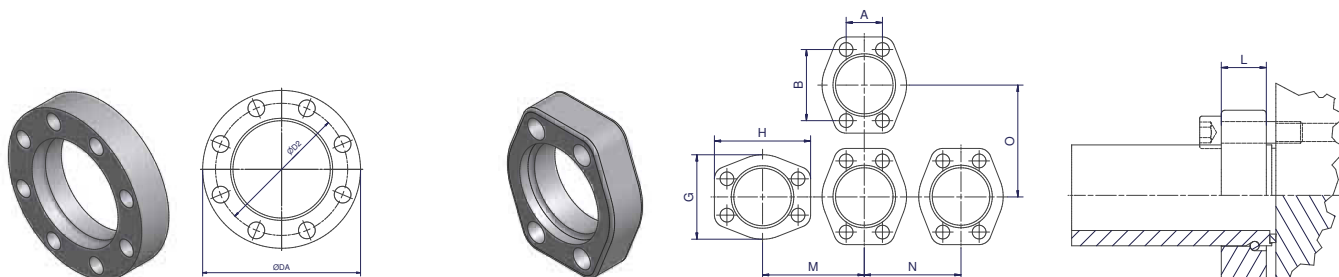
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-124-50X3.0TTCF
Stainless Steel	SS	F37-124-50X3.0TTSS

R – Retaining ring flange

1000 PSI/ISO 6162-1 footprint



Retaining Ring Flange dimensions

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight (Steel) kg/1 piece	W.P. bar
1 1/2	R-124-CFX	35.7	69.9	83	93.75	90	85	96	20	0.46	70
2	R-132-CFX	42.9	77.8	97	101.60	102	99	104	20	0.57	70
2 1/2	R-140-CFX	50.8	88.9	109	114.30	114	111	117	20	0.70	70
3	R-148-CFX	61.9	106.4	131	135.50	136	133	137	25	1.18	70
3 1/2	R-156-CFX	69.9	120.7	140	152.40	148	142	155	29	1.47	70
4	R-164-CFX	77.8	130.2	152	161.95	160	155	164	30	1.74	70
5	R-180-CFX	92.1	152.4	181	184.15	185	183	186	39	2.81	70
		D2	DA								
6	R-196-CFX	208	235.5						39	4.96	70
8	R-1128-CFX	275	318.0						38	8.95	50
10	R-1160-CFX	345	409.6						50	23.29	50

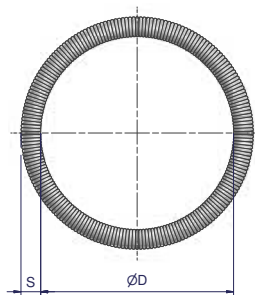
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-124-CFX
Stainless steel	SS	R-124-SSX
Galvanized hot dip zinc	TZN	R-124-TZN

R – Retaining ring

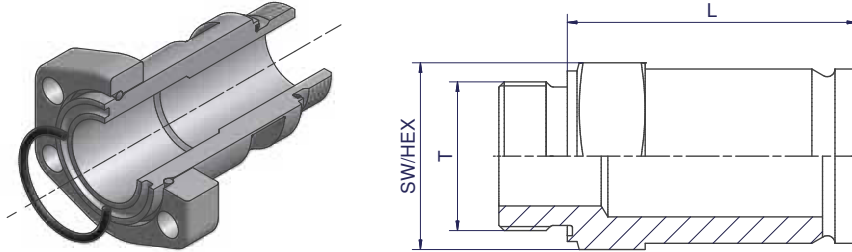
1000 PSI/ISO 6162-1 footprint

Size Inch	D	S	Order code
1 1/2	57.4	2.6	R124X
2	67.4	2.6	R132X
2 1/2	78.4	2.6	R140X
3	94.5	3.5	R148X
3 1/2	111.5	3.5	R156X
4	121.5	3.5	R164X
5	146.0	4.0	R180X
6	184.0	4.0	R196X
8	234.0	6.0	R1128X
10	286.0	8.0	R1160X



MTF-R – Male thread adapter, BSPP

1000 PSI/ISO 6162-1 footprint



Size Inch	Complete part Order code	Body incl. ED/Seal Order code	Weight body (Steel) kg/1 piece	L	T	SW/ HEX
1 1/2	R-124MTFRCF	MTF124ROMDCF	1.23	96	G 1 1/2 A	50
1 1/2	R-124MTFR11/4CF	MTF124R11/4OMDCF	1.32	96	G 1 1/4 A	50
2	R-132MTFR2CF	MTF132R2OMDCF	1.83	97	G 2 A	60
2	R-132MTFR11/2CF	MTF132R11/2OMDCF	1.72	99	G 1 1/2 A	60
2 1/2	R-140MTFR2CF	MTF140R2OMDCF	2.31	97	G 2 A	70
2 1/2	R-140MTFRCF	MTF140ROMDCF	2.31	95	G 2 1/2 A	70
3	R-148MTFR21/2CF	MTF148R21/2OMDCF	3.79	120	G 2 1/2 A	85
3	R-148MTFRCF	MTF148ROMDCF	3.80	118	G 3 A	85

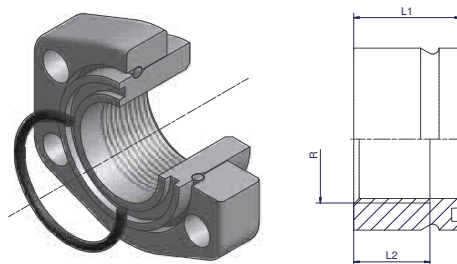
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-120MTFR1CF
Stainless steel	SS	R-120MTFR1SS

FTF-R – Female thread adapter, BSPP

1000 PSI/ISO 6162-1 footprint



Size Inch	Complete part Order code	Adapter Order code	Weight (Steel) kg/1 piece	L1	L2	R
1 1/2	R-124FTFR11/4CF	FTF124R11/4CFX	0.45	45	30	G 1 1/4
2	R-132FTFR11/2CF	FTF132R11/2CFX	0.75	55	40	G 1 1/2
2 1/2	R-140FTFR2CF	FTF140R2CFX	1.52	80	40	G 2
3	R-148FTFR21/2CF	FTF148R21/2CFX	2.11	85	50	G 2 1/2

Other sizes on request

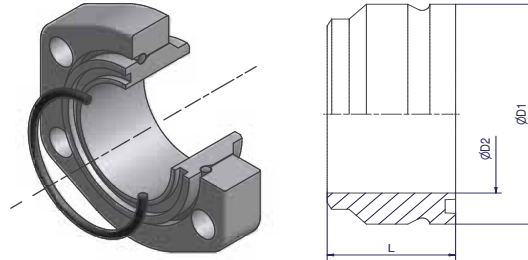
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-120FTFR1CF
Stainless steel	SS	R-120FTFR1SS



WA – Weld adapter connection

1000 PSI/ISO 6162-1 footprint



Size Inch	Tube	Complete Part Order code	Weld Adapter Body Order code	Flange Order code	Retaining Ring	O-Ring	Weight (Steel) kg/1 piece	D1	D2	L
1 1/2	50.0x3.0	R-124WA-50x3.0S	WA124-50x3.0SX	R-124-CFX	R124X	OR47.22X3.53X	0.80	59.7	39.8	35.0
1 1/2	48.3X2.6	R-124WA-48.3X2.6S	WA124-48.3X2.6SX	R-124-CFX	R124X	OR47.22X3.53X	0.80	59.7	39.8	35.0
2	60.0X3.0	R-132WA-60x3.0S	WA132-60X3.0SX	R-132-CFX	R132X	OR56.75X3.53X	0.99	69.7	50.0	35.0
2	60.3X2.9	R-132WA-60.3X2.9S	WA132-60.3X2.9SX	R-132-CFX	R132X	OR56.75X3.53X	0.99	69.7	50.0	35.0
2 1/2	75.0x3.0	R-140WA-75x3.0S	WA140-75x3.0SX	R-140-CFX	R140X	OR69.44X3.53X	1.21	80.7	62.0	35.0
2 1/2	76.1X3.2	R-140WA-76.1X3.2S	WA140-76.1X3.2SX	R-140-CFX	R140X	OR69.44X3.53X	1.21	80.7	62.0	35.0
3	88.9X3.05	R-148WA-88.9X3.05S	WA148-88.9X3.05SX	R-148-CFX	R148X	OR85.32X3.53X	1.92	97.7	77.8	40.0
3	88.9X3.6	R-148WA-88.9X3.6S	WA148-88.9X3.6SX	R-148-CFX	R148X	OR85.32X3.53X	1.92	97.7	77.8	40.0
3 1/2	100X4.0	R-156WA-100X4.0S	WA156-100X4.0SX	R-156-CFX	R156X	OR98.02X3.53X	2.70	114.7	89.8	40.0
4	114.3X4.5	R-164WA-114.3X4.5S	WA164-114.3X4.5SX	R-164-CFX	R164X	OR110.72X3.53X	3.11	124.7	99.8	40.0
4	115X4.0	R-164WA-115X4.0S	WA164-115X4.0SX	R-164-CFX	R164X	OR110.72X3.53X	3.09	124.7	99.8	40.0
5	139.7X5.6	R-180WA-139.7X5.6S	WA180-139.7X5.6SX	R-180-CFX	R180X	OR136.12X3.53X	4.92	149.7	124.8	45.0
5	140x4.5	R-180WA-140x4.5S	WA180-140x4.5SX	R-180-CFX	R180X	OR136.12X3.53X	4.87	149.7	124.8	45.0
5	141.3X3.4	R-180WA-141.3X3.4S	WA180-141.3X3.4SX	R-180-CFX	R180X	OR136.12X3.53X	4.91	149.7	124.8	45.0
6	165x5.0	R-196WA-165x5.0S	WA196-165x5.0SX	R-196-CFX	R196X	OR158.34X3.53X	8.02	179.7	149.8	50.0
6	168.3X2.77	R-196WA-168.3X2.77S	WA196-168.3X2.77SX	R-196-CFX	R196X	OR158.34X3.53X	8.06	179.7	149.8	50.0
6	168.3X3.4	R-196WA-168.3X3.4S	WA196-168.3X3.4SX	R-196-CFX	R196X	OR158.34X3.53X	8.06	179.7	149.8	50.0
8	219.1X3.76	R-1128WA-219.1X3.76S	WA1128-219.1X3.76SX	R-1128-CFX	R1128X	OR219.3X5.7X	13.55	239.7	206.5	60.0
8	219.1X8.18	R-1128WA-219.1X8.18S	WA1128-219.1X8.18SX	R-1128-CFX	R1128X	OR219.3X5.7X	13.55	239.7	206.5	60.0
8	220X6.0	R-1128WA-220X6.0S	WA1128-220X6.0SX	R-1128-CFX	R1128X	OR219.3X5.7X	13.62	239.7	208.0	60.0
10	273X6.0	R-1160WA-273X6S	WA1160-273X6SX	R-1160-CFX	R1160X	OR269.3X5.7X	32.23	295.0	255.0	70.0
10	274.1X9.27	R-1160WA-274.1X9.27S	WA1160-274.1X9.27SX	R-1160-CFX	R1160X	OR269.3X5.7X	32.39	295.0	255.0	70.0

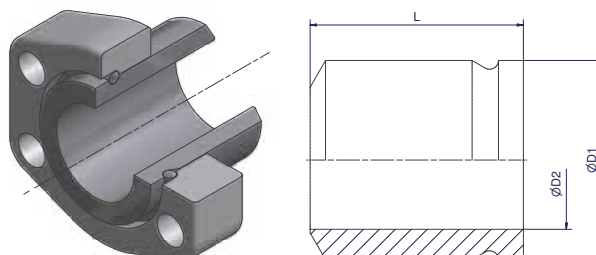
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-124WA-50x3.0S
Stainless steel	SS	R-124WA-50x3.0SS

WAF – Weld adapter flat connection

1000 PSI/ISO 6162-1 footprint



Size Inch	Tube	Complete Part Order code	Weld Adapter Body Order code	Flange Order code	Retaining Ring	O-Ring	Weight (Steel) kg/1 piece	D1	D2	L
1 1/2	50.0x3.0	R-124WA-50x3.0FS	WA124-50x3.0FSX	R-124-CFX	R124X	OR47.22X3.53X	0.80	59.7	39.8	35.0
1 1/2	48.3X2.6	R-124WA-48.3X2.6FS	WA124-48.3X2.6FSX	R-124-CFX	R124X	OR47.22X3.53X	0.80	59.7	39.8	35.0
2	60.0X3.0	R-132WA-60x3.0FS	WA132-60X3.0FSX	R-132-CFX	R132X	OR56.75X3.53X	0.99	69.7	50.0	35.0
2	60.3X2.9	R-132WA-60.3X2.9FS	WA132-60.3X2.9FSX	R-132-CFX	R132X	OR56.75X3.53X	1.01	69.7	50.0	35.0
2 1/2	75.0x3.0	R-140WA-75x3.0FS	WA140-75.0x3.0FSX	R-140-CFX	R140X	OR69.44X3.53X	1.21	80.7	62.0	35.0
2 1/2	76.1X3.2	R-140WA-76.1X3.2FS	WA140-76.1X3.2FSX	R-140-CFX	R140X	OR69.44X3.53X	1.21	80.7	62.0	35.0
3	88.9X3.05	R-148WA-88.9X3.05FS	WA148-88.9X3.05FSX	R-148-CFX	R148X	OR85.32X3.53X	1.94	97.7	77.8	40.0
3	88.9X3.6	R-148WA-88.9X3.6FS	WA148-88.9X3.6FSX	R-148-CFX	R148X	OR85.32X3.53X	1.94	97.7	77.8	40.0
3 1/2	100X4.0	R-156WA-100X4.0FS	WA156-100X4.0FSX	R-156-CFX	R156X	OR98.02X3.53X	2.73	114.7	89.8	40.0
4	114.3X4.5	R-164WA-114.3X4.5FS	WA164-114.3X4.5FSX	R-164-CFX	R164X	OR110.72X3.53X	3.15	124.7	99.8	40.0
4	115X4.0	R-164WA-115X4.0FS	WA164-115X4.0FSX	R-164-CFX	R164X	OR110.72X3.53X	3.13	124.7	99.8	40.0
5	139.7X5.6	R-180WA-139.7X5.6FS	WA180-139.7X5.6FSX	R-180-CFX	R180X	OR136.12X3.53X	4.96	149.7	124.8	45.0
5	140x4.5	R-180WA-140x4.5FS	WA180-140x4.5FSX	R-180-CFX	R180X	OR136.12X3.53X	4.92	149.7	124.8	45.0
5	141.3X3.4	R-180WA-141.3X3.4FS	WA180-141.3X3.4FSX	R-180-CFX	R180X	OR136.12X3.53X	4.93	149.7	124.8	45.0
6	165x5.0	R-196WA-165x5.0FS	WA196-165x5.0FSX	R-196-CFX	R196X	OR158.34X3.53X	8.08	179.7	149.8	50.0
6	168.3X2.77	R-196WA-168.3X2.77FS	WA196-168.3X2.77FSX	R-196-CFX	R196X	OR158.34X3.53X	8.16	179.7	149.8	50.0
6	168.3X3.4	R-196WA-168.3X3.4FS	WA196-168.3X3.4FSX	R-196-CFX	R196X	OR158.34X3.53X	8.16	179.7	149.8	50.0
8	219.1X3.76	R-1128WA-219.1X3.76FS	WA1128-219.1X3.76FSX	R-1128-CFX	R1128X	OR219.3X5.7X	13.75	239.7	206.5	60.0
8	219.1X8.18	R-1128WA-219.1X8.18FS	WA1128-219.1X8.18FSX	R-1128-CFX	R1128X	OR219.3X5.7X	13.75	239.7	206.5	60.0
8	220X6.0	R-1128WA-220X6.0FS	WA1128-220X6.0FSX	R-1128-CFX	R1128X	OR219.3X5.7X	13.81	239.7	208.0	60.0
10	273X6.0	R-1160WA-273X6FS	WA1160-273X6FSX	R-1160-CFX	R1160X	OR269.3X5.7X	32.47	295.0	255.0	70.0
10	274.1X9.27	R-1160WA-274.1X9.27FS	WA1160-274.1X9.27FSX	R-1160-CFX	R1160X	OR269.3X5.7X	32.49	295.0	255.0	70.0

Other sizes on request

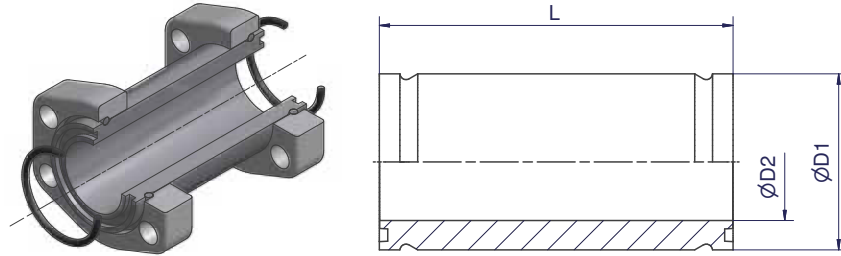
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-124WA-50x3.0FS
Stainless steel	SS	R-124WA-50x3.0FSS



BF – Bulkhead flange

1000 PSI/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Bulkhead Body Order code	O-Ring	Weight body kg/1 piece	D1	D2	L
2	R-132LBFS	BF132SX	OR56.75X3.53X	2.34	69.7	50.0	165
2 1/2	R-140LBFS	BF140SX	OR69.44X3.53X	2.81	80.7	62.0	175
3	R-148LBFS	BF148SX	OR85.32X3.53X	4.20	97.7	77.8	200
3 1/2	R-156LBFS	BF156SX	OR98.02X3.53X	6.15	114.7	89.8	200
4	R-164LBFS	BF164SX	OR110.72X3.53X	6.75	124.7	99.8	200
5	R-180LBFS	BF180SX	OR136.12X3.53X	8.22	149.7	124.8	200
6	R-196LBFS	BF196SX	OR158.34X3.53X	12.81	179.7	149.8	215
8	R-1128LBFS	BF1128SX	OR219.3X5.7X	21.18	239.7	206.5	240

Other sizes on request

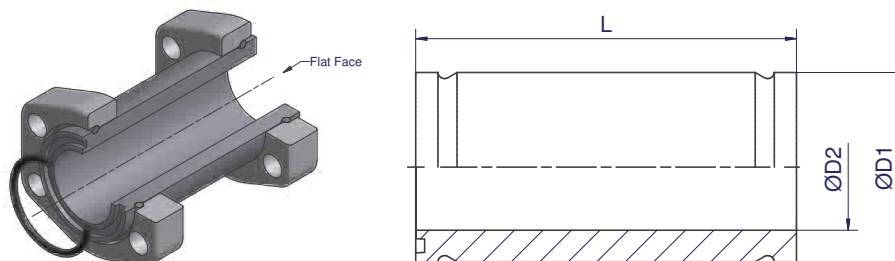
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-132BFS
Stainless steel	SS	R-132BFSS

Parflange® F37 – 1000 PSI/ISO 6162-1 footprint

BF – Bulkhead flange flat face

1000 PSI/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Bulkhead Body Order code	O-Ring	Weight body kg/1 piece	D1	D2	L
2	R-132FBFS	BF132FS	OR56.75X3.53X	2.34	69.7	50.0	165
2 1/2	R-140FBFS	BF140FS	OR69.44X3.53X	2.81	80.7	62.0	175
3	R-148FBFS	BF148FS	OR85.32X3.53X	4.20	97.7	77.8	200
3 1/2	R-156FBFS	BF156FS	OR98.02X3.53X	6.15	114.7	89.8	200
4	R-164FBFS	BF164FS	OR110.72X3.53X	6.75	124.7	99.8	200
5	R-180FBFS	BF180FS	OR136.12X3.53X	8.22	149.7	124.8	200
6	R-196FBFS	BF196FS	OR158.34X3.53X	12.81	179.7	149.8	215
8	R-1128FBFS	BF1128FS	OR219.3X5.7X	21.18	239.7	206.5	240

Other sizes on request

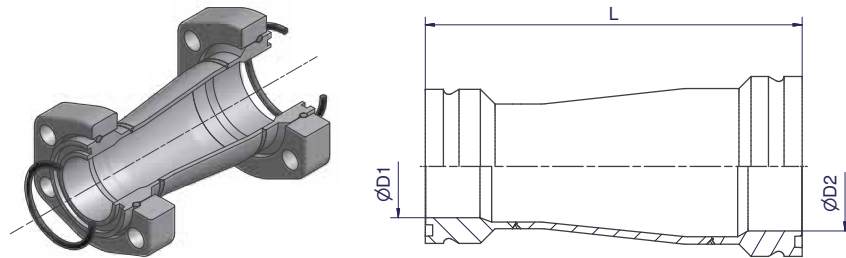
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-132BFS
Stainless steel	SS	R-132BFSS



RF – Reducer flange

1000 PSI/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Reducer Body Order code	O-Ring D1	O-Ring D2	D1	D2	L	Weight (Steel) kg/1 piece	W.P.
2 - 1 1/2	R-132-124LRFCF	RF132-124LOMDCF	OR56.75X3.53X	OR47.22X3.53X	48.3	60.3	146	0.91	70
2 1/2 - 1 1/2	R-140-124LRFCF	RF140-124LOMDCF	OR69.44X3.53X	OR47.22X3.53X	48.3	76.1	160	1.04	70
2 1/2 - 2	R-140-132LRFCF	RF140-132LOMDCF	OR69.44X3.53X	OR56.75X3.53X	60.3	76.1	160	1.25	70
3 - 1 1/2	R-148-124LRFCF	RF148-124LOMDCF	OR85.32X3.53X	OR47.22X3.53X	48.3	88.9	165	1.34	70
3 - 2	R-148-132LRFCF	RF148-132LOMDCF	OR85.32X3.53X	OR56.75X3.53X	60.3	88.9	165	1.45	70
3 - 2 1/2	R-148-140LRFCF	RF148-140LOMDCF	OR85.32X3.53X	OR69.44X3.53X	76.1	88.9	168	1.53	70
3 1/2 - 2 1/2	R-156-140LRFCF	RF156-140LOMDCF	OR98.02X3.53X	OR69.44X3.53X	79.1	108.0	177	2.00	50
3 1/2 - 3	R-156-148LRFCF	RF156-148LOMDCF	OR98.02X3.53X	OR85.32X3.53X	88.9	108.0	182	2.32	50
4 - 3	R-164-148LRFCF	RF164-148LOMDCF	OR110.72X3.53X	OR85.32X3.53X	88.9	114.3	182	2.43	50
5 - 4	R-180-164LRFCF	RF180-164LOMDCF	OR136.12X3.53X	OR110.72X3.53X	114.3	139.7	214	3.86	50

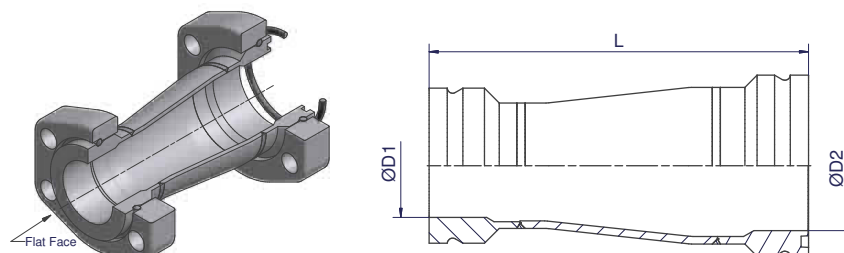
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RF-132-124-LRFCF
Stainless steel	SS	RF-132-124-LRFSS

RF – Reducer flange flat face

1000 PSI/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Reducer Body Order code	O-Ring	D1	D2	L	Weight (Steel) kg/1 piece	W.P.
2 - 1 1/2	R-132-124FRFCF	RF132-124FOMDCF	OR56.75X3.53X	48.3	60.3	146	0.91	70
2 1/2 - 1 1/2	R-140-124FRFCF	RF140-124FOMDCF	OR69.44X3.53X	48.3	76.1	160	1.04	70
2 1/2 - 2	R-140-132FRFCF	RF140-132FOMDCF	OR69.44X3.53X	60.3	76.1	160	1.25	70
3 - 1 1/2	R-148-124FRFCF	RF148-124FOMDCF	OR85.32X3.53X	48.3	88.9	165	1.34	70
3 - 2	R-148-132FRFCF	RF148-132FOMDCF	OR85.32X3.53X	60.3	88.9	165	1.45	70
3 - 2 1/2	R-148-140FRFCF	RF148-140FOMDCF	OR85.32X3.53X	76.1	88.9	168	1.53	70
3 1/2 - 2 1/2	R-156-140FRFCF	RF156-140FOMDCF	OR98.02X3.53X	79.1	108.0	177	2.00	50
3 1/2 - 3	R-156-148FRFCF	RF156-148FOMDCF	OR98.02X3.53X	88.9	108.0	182	2.32	50
4 - 3	R-164-148FRFCF	RF164-148FOMDCF	OR110.72X3.53X	88.9	114.3	182	2.43	50
5 - 4	R-180-164FRFCF	RF180-164FOMDCF	OR136.12X3.53X	114.3	139.7	214	3.86	50

Other sizes on request

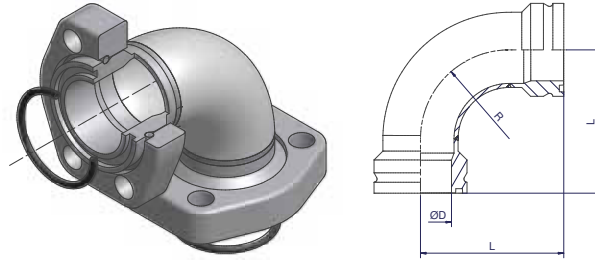
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RF132-124-FRFCF
Stainless steel	SS	RF132-124-FRFSS



LF – Elbow flange

1000 PSI/ISO 6162-1 footprint



Size Inch	Elbow Flange Complete Part Order code	Elbow Flange body Order code	O-Ring	D	L	R	Weight (Steel) kg/1 piece	W.P.
1 1/2	R-124LLFCF	LF124LOMDCF	OR47.22X3.53X	39.8	94	57.0	0.85	70
2	R-132LLFCF	LF132LOMDCF	OR56.75X3.53X	50.0	112	76.0	1.18	70
2 1/2	R-140LLFCF	LF140LOMDCF	OR69.44X3.53X	62.0	132	95.0	1.54	70
3	R-148LLFCF	LF148LOMDCF	OR85.32X3.53X	77.8	155	114.0	2.44	70
3 1/2	R-156LLFCF	LF156LOMDCF	OR98.02X3.53X	88.9	184	142.5	3.88	50
4	R-164LLFCF	LF164LOMDCF	OR110.72X3.53X	99.8	195	152.0	4.33	50
5	R-180LLFCF	LF180LOMDCF	OR136.12X3.53X	124.8	235	190.0	6.81	50
6	R-196LLFCF	LF196LOMDCF	OR158.34X3.53X	149.8	279	229.0	11.19	50
8	R-1128LLFCF	LF1128LOMDCF	OR219.3X5.7X	206.5	365	305.0	24.13	50
10	R-1160LLFCF	LF1160LOMDCF	OR269,3X5.7X	255.0	446	381.0	38.39	50

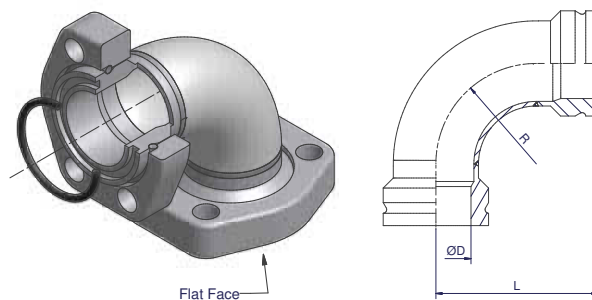
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-124LLFCF
Stainless steel	SS	R-124LLFSS

LF – Elbow flange flat face

1000 PSI/ISO 6162-1 footprint



Size Inch	Elbow Flange Complete Part Order code	Elbow Flange body Order code	O-Ring	D	L	R	Weight (Steel) kg/1 piece	W.P.
1 1/2	R-124FLFCF	LF124FOMDCF	OR47.22X3.53X	39.8	94	57.0	0.85	70
2	R-132FLFCF	LF132FOMDCF	OR56.75X3.53X	50.0	112	76.0	1.18	70
2 1/2	R-140FLFCF	LF140FOMDCF	OR69.44X3.53X	62.0	132	95.0	1.54	70
3	R-148FLFCF	LF148FOMDCF	OR85.32X3.53X	77.8	155	114.0	2.44	70
3 1/2	R-156FLFCF	LF156FOMDCF	OR98.02X3.53X	88.9	184	142.5	3.88	50
4	R-164FLFCF	LF164FOMDCF	OR110.72X3.53X	99.8	195	152.0	4.33	50
5	R-180FLFCF	LF180FOMDCF	OR136.12X3.53X	124.8	235	190.0	6.81	50
6	R-196FLFCF	LF196FOMDCF	OR158.34X3.53X	149.8	279	229.0	11.19	50
8	R-1128FLFCF	LF1128FOMDCF	OR219.3X5.7X	206.5	365	305.0	24.13	50
10	R-1160FLFCF	LF1160FOMDCF	OR269.3X5.7X	255.0	446	381.0	38.39	50

Other sizes on request

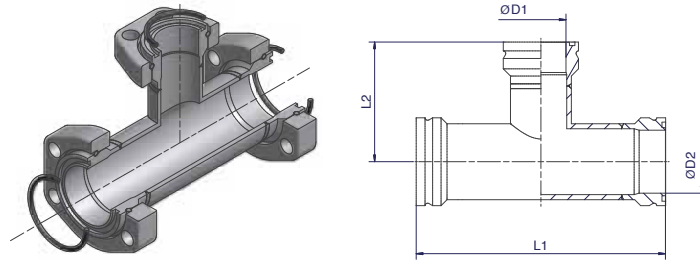
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-124FLFCF
Stainless steel	SS	R-124FLFSS



TF/TF-R – TEE flange

1000 PSI/ISO 6162-1 footprint



Size Inch	Tee Flange Complete Part Order code	Tee Flange body Order code	O-Ring D1	O-Ring D2	D1	D2	L1	L2	Weight (Steel) kg/1 piece	W.P.
1 1/2	R-124LTFCF	TF124LOMDCF	OR47.22X3.53X	OR47.22X3.53X	39.8	39.8	184	92	1.30	70
2-1 1/2-2	R-132-124-132LTFCF	TF132-124-132LOMDCF	OR47.22X3.53X	OR56.75X3.53X	39.8	50.0	200	97	1.58	70
2	R-132LTFCF	TF132LOMDCF	OR56.75X3.53X	OR56.75X3.53X	50.0	50.0	198	99	1.67	70
2 1/2-2-2 1/2	R-140-132-140LTFCF	TF140-132-140LOMDCF	OR56.75X3.53X	OR69.44X3.53X	50.0	62.0	222	105	2.02	70
2 1/2	R-140LTFCF	TF140LOMDCF	OR69.44X3.53X	OR69.44X3.53X	62.0	62.0	222	111	2.09	70
3-2 1/2-3	R-148-140-148LTFCF	TF148-140-148LOMDCF	OR69.44X3.53X	OR85.32X3.53X	62.0	77.8	252	118	2.91	70
3	R-148LTFCF	TF148LOMDCF	OR85.32X3.53X	OR85.32X3.53X	77.8	77.8	252	126	3.22	70
3 1/2-3-3 1/2	R-156-148-156LTFCF	TF156-148-156LOMDCF	OR85.32X3.53X	OR98.02X3.53X	77.8	89.8	283	137	4.47	50
3 1/2	R-156LTFCF	TF156LOMDCF	OR98.02X3.53X	OR98.02X3.53X	89.8	89.8	283	140	4.86	50
4-3-4	R-164-148-164LTFCF	TF164-148-164LOMDCF	OR85.32X3.53X	OR110.72X3.53X	77.8	99.8	293	138	4.84	50
4	R-164LTFCF	TF164LOMDCF	OR110.72X3.53X	OR110.72X3.53X	99.8	99.8	293	145	5.37	50
5-4-5	R-180-164-180LTFCF	TF180-164-180LOMDCF	OR110.72X3.53X	OR136.12X3.53X	99.8	124.8	340	157	7.39	50
5	R-180LTFCF	TF180LOMDCF	OR136.12X3.53X	OR136.12X3.53X	124.8	124.8	341	169	8.04	50
6-5-6	R-196-180-196LTFCF	TF196-180-196LOMDCF	OR136.12X3.53X	OR158.34X3.53X	124.8	149.8	376	188	11.49	50
6	R-196LTFCF	TF196LOMDCF	OR158.34X3.53X	OR158.34X3.53X	149.8	149.8	389	193	12.87	50
8-6-8	R-1128-196-1128LTFCF	TF1128-196-1128LOMDCF	OR158.34X3.53X	OR219.3X5.7X	149.8	206.5	478	218	22.66	50
8	R-1128LTFCF	TF1128LOMDCF	OR219.3X5.7X	OR219.3X5.7X	206.5	206.5	479	238	25.58	50
10	R-1160LTFCF	TF1160LOMDCF	OR269.3X5.7X	OR269.3X5.7X	255.0	255.0	562	281	40.16	50

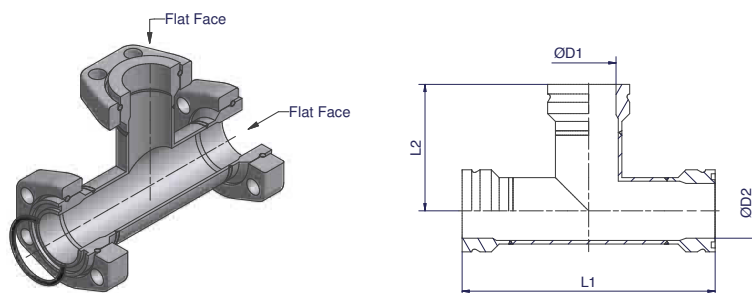
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-124LTFCF
Stainless steel	SS	R-124LTSS

TF/TF-R – TEE flange flat

1000 PSI/ISO 6162-1 footprint



Size Inch	Tee Flange Complete Part Order code	Tee Flange Body Order code	O-Ring	D1	D2	L1	L2 L3	Weight (Steel) kg/1 piece	W.P.
1 1/2	R-124FTFCF	TF124FOMDCF	OR47.22X3.53X	39.8	39.8	184	92	1.30	70
2-1 1/2-2	R-132-124-132FTFCF	TF132-124-132FOMDCF	OR56.75X3.53X	39.8	50.0	200	97	1.58	70
2	R-132FTFCF	TF132FOMDCF	OR56.75X3.53X	50.0	50.0	198	99	1.67	70
2 1/2-2-2 1/2	R-140-132-140FTFCF	TF140-132-140FOMDCF	OR69.44X3.53X	50.0	62.0	222	105	2.02	70
2 1/2	R-140FTFCF	TF140FOMDCF	OR69.44X3.53X	62.0	62.0	222	111	2.09	70
3-2 1/2-3	R-148-140-148FTFCF	TF148-140-148FOMDCF	OR85.32X3.53X	62.0	77.8	252	118	2.91	70
3	R-148FTFCF	TF148FOMDCF	OR85.32X3.53X	77.8	77.8	252	126	3.22	70
3 1/2-3-3 1/2	R-156-148-156FTFCF	TF156-148-156FOMDCF	OR98.02X3.53X	77.8	89.8	283	137	4.47	50
3 1/2	R-156FTFCF	TF156FOMDCF	OR98.02X3.53X	89.8	89.8	283	140	4.86	50
4-3-4	R-164-148-164FTFCF	TF164-148-164FOMDCF	OR110.72X3.53X	77.8	99.8	293	138	4.84	50
4	R-164FTFCF	TF164FOMDCF	OR110.72X3.53X	99.8	99.8	293	145	5.37	50
5-4-5	R-180-164-180FTFCF	TF180-164-180FOMDCF	OR136.12X3.53X	99.8	124.8	340	157	7.39	50
5	R-180FTFCF	TF180FOMDCF	OR136.12X3.53X	124.8	124.8	341	169	8.04	50
6-5-6	R-196-180-196FTFCF	TF196-180-196FOMDCF	OR158.34X3.53X	124.8	149.8	376	188	11.49	50
6	R-196FTFCF	TF196FOMDCF	OR158.34X3.53X	149.8	149.8	389	193	12.87	50
8-6-8	R-1128-196-1128FTFCF	TF1128-196-1128FOMDCF	OR219.3X5.7X	149.8	206.5	478	218	22.66	50
8	R-1128FTFCF	TF1128FOMDCF	OR219.3X5.7X	206.5	206.5	479	238	25.58	50
10	R-1160FTFCF	TF1160FOMDCF	OR269.3X5.7X	255.0	255.0	562	281	40.16	50

Other sizes on request

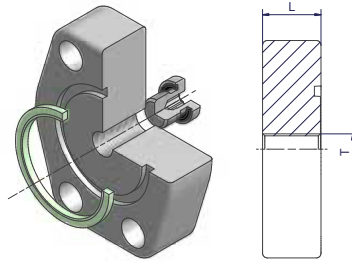
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-124FTFCF
Stainless steel	SS	R-124FTFSS



BFV – Blind flange F37 seal

1000 PSI/ISO 6162-1 footprint



Size Inch	L	T	Flange incl. VSTI-ED and F37 Seal Order code	Weight (Steel) kg/1 piece
1 1/2	20	13.3	F37-124BFVCF	0.9
2	25	13.3	F37-132BFVCF	1.5
2 1/2	30	13.3	F37-140BFVCF	2.3
3	30	13.3	F37-148BFVCF	3.2
3 1/2	30	13.3	F37-156BFVCF	4.0
4	39	13.3	F37-164BFVCF	6.1
5	39	13.3	F37-180BFVCF	8.3
6	39	13.3	F37-196BFVCF	12.9

Other sizes on request

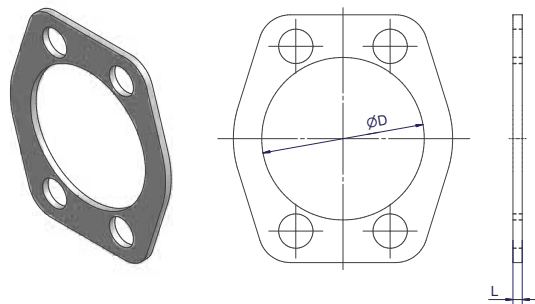
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-120BFVCF
Stainless steel	SS	F37-120BFVSS

Parflange® F37 – 1000 PSI/ISO 6162-1 footprint

CPML – F37 inner plate

1000 PSI/ISO 6162-1 footprint



Size Inch	L	D	F37 Inner Plate Order code	Weight (Steel) kg/1 piece
1 1/2	3.5	39.8	24CPMLSX	0.13
2	3.5	50.0	32CPMLSX	0.15
2 1/2	3.5	62.0	40CPMLSX	0.19
3	3.5	77.8	48CPMLSX	0.25

Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	CF	24CPMLCFX
Stainless steel	SS	24CPMLSSX



Bolts and nuts for flange

1000 PSI/ISO 6162-1 footprint



F37 Flare Flange

Size Inch	Flange	Soft Seal / Flat Face		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1 1/2	F37-124-CFX	4 x ZYLS12X40	4 x ZYLS12X75	4 x ISO4032-M12
2	F37-132-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
2 1/2	F37-140-CFX	4 x ZYLS12X50	4 x ZYLS12X90	4 x ISO4032-M12
3	F37-148-CFX	4 x ZYLS16X60	4 x ZYLS16X110	4 x ISO4032-M16
4	F37-164-CFX	4 x ZYLS16X65	4 x ZYLS16X120	4 x ISO4032-M16
5	F37-180-CFX	4 x ZYLS16X65	4 x ZYLS16X120	4 x ISO4032-M16
6	F37-196-CFX	6 x ZYLS16X65	6 x ZYLS16X130	6 x ISO4032-M16
8	F37-1128-CFX	8 x ZYLS20X80	8 x ZYLS20X145	8 x ISO4032-M20

Retaining Ring Flange

Size Inch	Flange	Soft Seal / Flat Face		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1 1/2	R-124-CFX	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
2	R-132-CFX	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
2 1/2	R-140-CFX	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
3	R-148-CFX	4 x ZYLS16X50	4 x ZYLS16X80	4 x ISO4032-M16
3 1/2	R-156-CFX	4 x ZYLS16X55	4 x ZYLS16X90	4 x ISO4032-M16
4	R-164-CFX	4 x ZYLS16X55	4 x ZYLS16X90	4 x ISO4032-M16
5	R-180-CFX	4 x ZYLS16X70	4 x ZYLS16X110	4 x ISO4032-M16
6	R-196-CFX	6 x ZYLS16X70	6 x ZYLS16X110	6 x ISO4032-M16
8	R-1128-CFX	8 x ZYLS20X70	8 x ZYLS20X120	8 x ISO4032-M20
10	R-1160-CFX	8 x ZYLS20X80	8 x ZYLS20X150	8 x ISO4032-M20

Bolts and nuts must be ordered separately.

Please add the suffixes according to the bolt quality

Quality	Steel		Stainless Steel
	8.8	10.9	A4-80X
Bolt	ZYLS16X60X	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO-4032-M12-8VZX	ISO-4032-M12-10VZX	ISO-4032-M12-80X

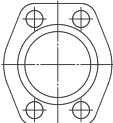
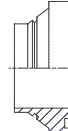
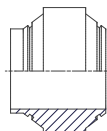
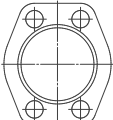
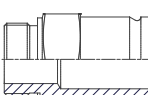
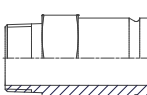
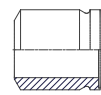
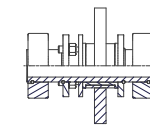
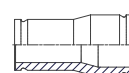
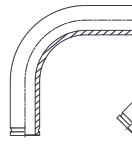
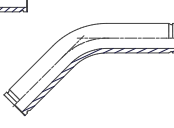
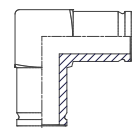
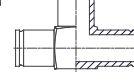
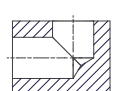
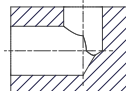
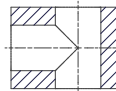
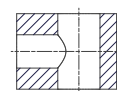
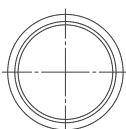
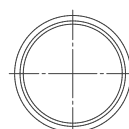
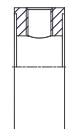
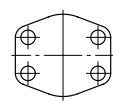
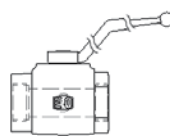
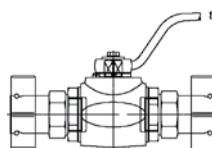
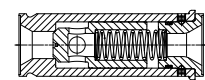


SAE 3000 System

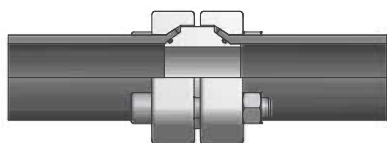
210 – 350 bar

ENGINEERING YOUR SUCCESS.

Programme overview SAE 3000/ISO 6162-1 footprint

Parflange® F37 connection parts	Flanges  F37 – p.84				
	Inserts  TFB – p.85  TFV – p.86  TT – p.87  TF – p.88				Sleeve  SL – p.89
Retaining ring connection parts	Flanges  R – p.90  R-Ring – p.90  PSC – p.91				
	Male / Female  MTF-R – p.92  MTF-N – p.93  FTF-R – p.94		Hose    Hose – p.95		Weld  WA – p.96
	Tube to Tube  BF – p.98  VB – p.99  RF – p.100  FB90 – p.101  FB45 – p.102  LF – p.103  TF – p.104				
SAE connection parts	Blocks  LB – p.105  LBR – p.106  TB – p.107  TBR – p.108  BFV – p.109				
	Components  BS – p.110  F37S – p.110  AO – p.111  TBT – p.112  AP – p.113				
Ball valves	 KH – p.115  KH – p.116  KH-R – p.117  RHD-R – p.118				

SAE 3000/ISO 6162-1 footprint



Part combination flaring SAE 3000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange SAE 3000 ISO 6162-1	Insert*	F37 Seal	Sleeve	F37 Seal / Flat Face Bonded Seal		
							Bolts Tube to Port	Bolts Tube to Tube	Nut
350	1/2	16X2.0	F37-308-CFX	IN08-16X2.0T...	F37S08X	SL08-25-16-CFX	4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	1/2	18X2.0	F37-308-CFX	IN08-18X2.0T...	F37S08X	SL08-25-18-CFX	4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	1/2	20X2.0	F37-308-CFX	IN08-20X2.0T...	F37S08X	SL08-25-20-CFX	4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	1/2	20X2.5	F37-308-CFX	IN08-20X2.5T...	F37S08X	SL08-25-20-CFX	4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	1/2	25X2.5	F37-308-CFX	IN08-25X2.5T...	F37S08X		4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	1/2	25X3.0	F37-308-CFX	IN08-25X3.0T...	F37S08X		4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	3/4	20X2.0	F37-312-CFX	IN12-20X2.0T...	F37S12X	SL12-30-20-CFX	4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	3/4	20X2.5	F37-312-CFX	IN12-20X2.5T...	F37S12X	SL12-30-20-CFX	4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	3/4	25X2.5	F37-312-CFX	IN12-25X2.5T...	F37S12X	SL12-30-25-CFX	4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	3/4	25X3.0	F37-312-CFX	IN12-25X3.0T...	F37S12X	SL12-30-25-CFX	4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	3/4	30X3.0	F37-312-CFX	IN12-30X3.0T...	F37S12X		4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	3/4	30X4.0	F37-312-CFX	IN12-30X4.0T...	F37S12X		4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	1	25X2.5	F37-316-CFX	IN16-25X2.5T...	F37S16X	SL16-38-25-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	25X3.0	F37-316-CFX	IN16-25X3.0T...	F37S16X	SL16-38-25-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	30X3.0	F37-316-CFX	IN16-30X3.0T...	F37S16X	SL16-38-30-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	30X4.0	F37-316-CFX	IN16-30X4.0T...	F37S16X	SL16-38-30-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	38X2.5	F37-316-CFX	IN16-38X2.5T...	F37S16X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	38X3.0	F37-316-CFX	IN16-38X3.0T...	F37S16X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	38X4.0	F37-316-CFX	IN16-38X4.0T...	F37S16X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	38X5.0	F37-316-CFX	IN16-38X5.0T...	F37S16X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
280	1 1/4	30X3.0	F37-320-CFX	IN20-30X3.0T...	F37S20X	SL20-42-30-CFX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/4	30X4.0	F37-320-CFX	IN20-30X4.0T...	F37S20X	SL20-42-30-CFX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/4	38X3.0	F37-320-CFX	IN20-38X3.0T...	F37S20X	SL20-42-38-CFX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/4	38X4.0	F37-320-CFX	IN20-38X4.0T...	F37S20X	SL20-42-38-CFX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/4	38X5.0	F37-320-CFX	IN20-38X5.0T...	F37S20X	SL20-42-38-CFX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/4	42X3.0	F37-320-CFX	IN20-42X3.0T...	F37S20X		4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/4	42X4.0	F37-320-CFX	IN20-42X4.0T...	F37S20X		4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/2	38X3.0	F37-324-CFX	IN24-38X3.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	38X4.0	F37-324-CFX	IN24-38X4.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	38X5.0	F37-324-CFX	IN24-38X5.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	42X3.0	F37-324-CFX	IN24-42X3.0T...	F37S24X	SL24-50-42-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	42X4.0	F37-324-CFX	IN24-42X4.0T...	F37S24X	SL24-50-42-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	50X3.0	F37-324-CFX	IN24-50X3.0T...	F37S24X		4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	50X5.0	F37-324-CFX	IN24-50X5.0T...	F37S24X		4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/2	50X6.0	F37-324-CFX	IN24-50X6.0T...	F37S24X		4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	2	50X3.0	F37-332-CFX	IN32-50X3.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12
	2	50X5.0	F37-332-CFX	IN32-50X5.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12
	2	50X6.0	F37-332-CFX	IN32-50X6.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12
	2	60X3.0	F37-332-CFX	IN32-60X3.0T...	F37S32X		4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12
	2	60X5.0	F37-332-CFX	IN32-60X5.0T...	F37S32X		4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12
	2	60X6.0	F37-332-CFX	IN32-60X6.0T...	F37S32X		4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12
210	2 1/2	60X3.0	F37-340-CFX	IN40-60X3.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS12X65	4 x ZYLS12X120	4 x ISO4032-M12
	2 1/2	60X5.0	F37-340-CFX	IN40-60X5.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS12X65	4 x ZYLS12X120	4 x ISO4032-M12
	2 1/2	60X6.0	F37-340-CFX	IN40-60X6.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS12X65	4 x ZYLS12X120	4 x ISO4032-M12
	2 1/2	75X3.0	F37-340-CFX	IN40-75X3.0T...	F37S40X		4 x ZYLS12X65	4 x ZYLS12X120	4 x ISO4032-M12
	2 1/2	75X5.0	F37-340-CFX	IN40-75X5.0T...	F37S40X		4 x ZYLS12X65	4 x ZYLS12X120	4 x ISO4032-M12
	3	75X3.0	F37-348-CFX	IN48-75X3.0T...	F37S48X	SL48-90-75-CFX	4 x ZYLS16X80	4 x ZYLS16X140	4 x ISO4032-M16
	3	75X5.0	F37-348-CFX	IN48-75X5.0T...	F37S48X	SL48-90-75-CFX	4 x ZYLS16X80	4 x ZYLS16X140	4 x ISO4032-M16
	3	90X3.5	F37-348-CFX	IN48-90X3.5T...	F37S48X		4 x ZYLS16X80	4 x ZYLS16X140	4 x ISO4032-M16
	3	90X5.0	F37-348-CFX	IN48-90X5.0T...	F37S48X		4 x ZYLS16X80	4 x ZYLS16X140	4 x ISO4032-M16

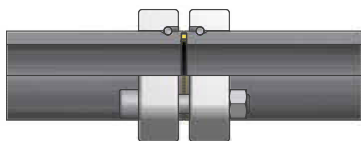
Select the complete version: * ...FBCF Bonded Seal version ...FVCF F37 Seal version ...TCF Tube to Tube version ...FCF Flat Face version

Pressure rates related to flanges. Other sizes like schedule on request.

Bolts and nuts are not included in complete part numbers. Bolts and nuts for flanges see page 114

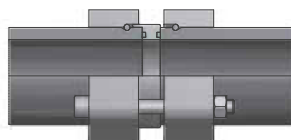


SAE 3000/ISO 6162-1 footprint



Part combination retaining ring SAE 3000 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal	Bolts Tube to Port	Bolts Tube to Tube	Nut
350	1/2	26X6.0	R-308-CFX	R08X	BS08SNX	4 x ZYLS8X35	4 x ZYLS8X60	4 x ISO4032-M8
	3/4	36X8.0	R-312-CFX	R12X	BS12SNX	4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
	1	39X7.5	R-316-CFX	R16X	BS16SNX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
280	1 1/4	46X8.0	R-320-CFX	R20X	BS20SNX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
	1 1/2	56X8.5	R-324-CFX	R24X	BS24SNX	4 x ZYLS12X50	4 x ZYLS12X80	4 x ISO4032-M12
	2	66X8.5	R-332-CFX	R32X	BS32SNX	4 x ZYLS12X55	4 x ZYLS12X90	4 x ISO4032-M12
210	2 1/2	80x10.0	R-340-CFX	R40X	BS40SNX	4 x ZYLS12X65	4 x ZYLS12X120	4 x ISO4032-M12
	3	97X12.0	R-348-CFX	R48X	BS48SNX	4 x ZYLS16X80	4 x ZYLS16X130	4 x ISO4032-M16



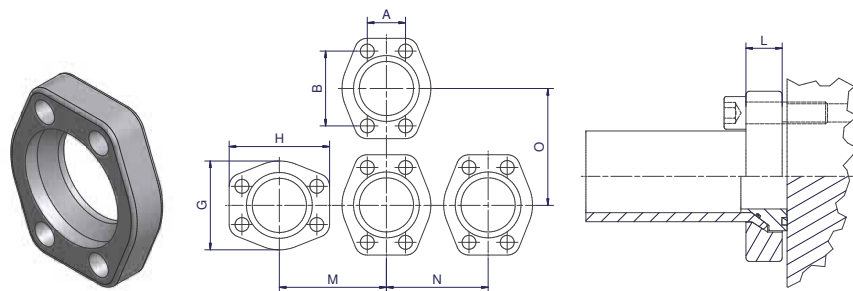
Part combination pipe seal carrier SAE 3000 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Pipe Seal Carrier	Bolts Tube to Port	Bolts Tube to Tube	Nut
280	1 1/2	56X8.5	R-324-CFX	R24X	PSC24-56X8.5VCF	on request	on request	on request
	2	66X8.5	R-332-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS12X60	4 x ZYLS12X100	4 x ISO4032-M12
210	2 1/2	80X10	R-340-CFX	R40X	PSC40-80X10VCF	4 x ZYLS12X85	4 x ZYLS12X125	4 x ISO4032-M12
	3	97X12	R-348-CFX	R48X	PSC48-97X12VCF	4 x ZYLS16X100	4 x ZYLS16X140	4 x ISO4032-M16

Stainless Steel on request
Other sizes on request

F37 – Flare flange

SAE 3000/ISO 6162-1



Parflange F37 flange dimensions

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight (Steel) kg/1 piece	W.P. bar
1/2	F37-308-CFX	17.5	38.1	46	54.0	52	49	56	19	0.20	350
3/4	F37-312-CFX	22.3	47.6	52	65.0	61	55	68	20	0.25	350
3/4	F37-312T-CFX*	22.3	47.6	52	65.0	61	55	68	20	0.25	350
1	F37-316-CFX	26.2	52.4	60	71.0	67	61	72	24	0.30	350
1	F37-316T-CFX*	26.2	52.4	60	71.0	67	61	72	24	0.30	350
1 1/4	F37-320-CFX	30.2	58.7	68	79.0	78	75	82	22	0.46	280
1 1/4	F37-320T-CFX*	30.2	58.7	68	79.0	78	75	82	22	0.46	280
1 1/2	F37-324-CFX	35.7	69.9	78	93.0	90	85	96	25	0.68	280
1 1/2	F37-324T-CFX*	35.7	69.9	78	93.0	90	85	96	25	0.68	280
2	F37-332-CFX	42.9	77.8	97	101.5	102	99	104	33	0.98	280
2	F37-332T-CFX*	42.9	77.8	97	101.5	102	99	104	33	0.98	280
2 1/2	F37-340-CFX	50.8	88.9	109	115.5	114	111	117	44	1.63	210
2 1/2	F37-340T-CFX*	50.8	88.9	109	115.5	114	111	117	44	1.63	210
3	F37-348-CFX	61.9	106.4	132	135.0	136	133	137	50	2.79	210

* Threaded flanges

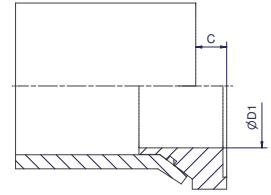
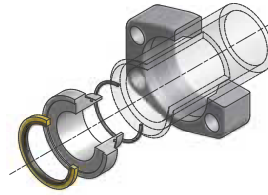
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	F37-320-CFX	
Stainless steel	SS	F37-320-SSX	
Galvanized hot dip zinc	TZN	F37-320-TZNX	on request



TFB – Flare flange connection

Tube to port connection, bonded seal



Size		Flange incl. Insert + Bonded Seal + O-Ring + (Sleeve) Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	F37-308-16X2.0TFBCF	9.5	8.0	IN08-16X2.0TFBCF	BS08SNX	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	F37-308-18X2.0TFBCF	11.5	8.0	IN08-18X2.0TFBCF	BS08SNX	OR14X1.0X	SL08-25-18-CFX	0.24
1/2	20X2.0	F37-308-20X2.0TFBCF	13.5	8.0	IN08-20X2.0TFBCF	BS08SNX	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	F37-308-20X2.5TFBCF	13.5	8.0	IN08-20X2.5TFBCF	BS08SNX	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	F37-308-25X2.5TFBCF	13.5	10.0	IN08-25X2.5TFBCF	BS08SNX	OR20X1.0X		0.25
1/2	25X3.0	F37-308-25X3.0TFBCF	13.0	8.0	IN08-25X3.0TFBCF	BS08SNX	OR20X1.0X		0.24
3/4	20X2.0	F37-312-20X2.0TFBCF	13.5	8.0	IN12-20X2.0TFBCF	BS12SNX	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	20X2.5	F37-312-20X2.5TFBCF	12.5	8.0	IN12-20X2.5TFBCF	BS12SNX	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	25X2.5	F37-312-25X2.5TFBCF	17.5	10.0	IN12-25X2.5TFBCF	BS12SNX	OR20X1.0X	SL12-30-25-CFX	0.31
3/4	25X3.0	F37-312-25X3.0TFBCF	16.5	8.0	IN12-25X3.0TFBCF	BS12SNX	OR20X1.0X	SL12-30-25-CFX	0.32
3/4	30X3.0	F37-312-30X3.0TFBCF	19.0	8.5	IN12-30X3.0TFBCF	BS12SNX	OR24X1.0X		0.32
3/4	30X4.0	F37-312-30X4.0TFBCF	19.0	8.5	IN12-30X4.0TFBCF	BS12SNX	OR22X1.0X		1.32
1	25X2.5	F37-316-25X2.5TFBCF	17.5	10.0	IN16-25X2.5TFBCF	BS16SNX	OR20X1.0X	SL16-38-25-CFX	0.39
1	25X3.0	F37-316-25X3.0TFBCF	16.5	8.0	IN16-25X3.0TFBCF	BS16SNX	OR20X1.0X	SL16-38-25-CFX	0.39
1	30X3.0	F37-316-30X3.0TFBCF	21.5	8.5	IN16-30X3.0TFBCF	BS16SNX	OR24X1.0X	SL16-38-30-CFX	0.39
1	30X4.0	F37-316-30X4.0TFBCF	19.5	8.5	IN16-30X4.0TFBCF	BS16SNX	OR22X1.0X	SL16-38-30-CFX	0.39
1	38X2.5	F37-316-38X2.5TFBCF	25.0	9.5	IN16-38X2.5TFBCF	BS16SNX	OR34X1.0X		0.41
1	38X3.0	F37-316-38X3.0TFBCF	25.0	9.0	IN16-38X3.0TFBCF	BS16SNX	OR34X1.0X		0.40
1	38X4.0	F37-316-38X4.0TFBCF	25.0	10.0	IN16-38X4.0TFBCF	BS16SNX	OR30X1.0X		0.40
1	38X5.0	F37-316-38X5.0TFBCF	25.0	8.0	IN16-38X5.0TFBCF	BS16SNX	OR28X1.0X		0.39
1 1/4	30X3.0	F37-320-30X3.0TFBCF	21.5	8.5	IN20-30X3.0TFBCF	BS20SNX	OR24X1.0X	SL20-42-30-CFX	0.57
1 1/4	30X4.0	F37-320-30X4.0TFBCF	19.5	8.5	IN20-30X4.0TFBCF	BS20SNX	OR22X1.0X	SL20-42-30-CFX	0.58
1 1/4	38X3.0	F37-320-38X3.0TFBCF	29.5	9.0	IN20-38X3.0TFBCF	BS20SNX	OR34X1.0X	SL20-42-38-CFX	0.56
1 1/4	38X4.0	F37-320-38X4.0TFBCF	27.0	10.0	IN20-38X4.0TFBCF	BS20SNX	OR30X1.0X	SL20-42-38-CFX	0.57
1 1/4	38X5.0	F37-320-38X5.0TFBCF	25.5	8.0	IN20-38X5.0TFBCF	BS20SNX	OR28X1.0X	SL20-42-38-CFX	0.56
1 1/4	42X3.0	F37-320-42X3.0TFBCF	31.5	10.0	IN20-42X3.0TFBCF	BS20SNX	OR37.82X1.78X		0.57
1 1/4	42X4.0	F37-320-42X4.0TFBCF	31.5	10.0	IN20-42X4.0TFBCF	BS20SNX	OR34X1.0X		0.56
1 1/2	38X3.0	F37-324-38X3.0TFBCF	27.5	9.0	IN24-38X3.0TFBCF	BS20SNX	OR34X1.0X	SL24-50-38-CFX	0.65
1 1/2	38X4.0	F37-324-38X4.0TFBCF	27.5	10.0	IN24-38X4.0TFBCF	BS24SNX	OR44.17X1.78X	SL24-50-38-CFX	0.87
1 1/2	38X5.0	F37-324-38X5.0TFBCF	25.0	8.0	IN24-38X5.0TFBCF	BS24SNX	OR28X1.0X	SL24-50-38-CFX	0.87
1 1/2	42X3.0	F37-324-42X3.0TFBCF	35.0	10.0	IN24-42X3.0TFBCF	BS24SNX	OR37.82X1.78X	SL24-50-42-CFX	0.88
1 1/2	42X4.0	F37-324-42X4.0TFBCF	31.5	10.0	IN24-42X4.0TFBCF	BS24SNX	OR34X1.0X	SL24-50-42-CFX	0.87
1 1/2	50X3.0	F37-324-50X3.0TFBCF	36.0	11.0	IN24-50X3.0TFBCF	BS24SNX	OR44.17X1.78X		0.87
1 1/2	50X5.0	F37-324-50X5.0TFBCF	36.0	10.0	IN24-50X5.0TFBCF	BS24SNX	OR41X1.78X		0.87
1 1/2	50X6.0	F37-324-50X6.0TFBCF	35.0	10.0	IN24-50X6.0TFBCF	BS24SNX	OR41X1.78X		0.87
2	50X3.0	F37-332-50X3.0TFBCF	41.5	11.0	IN32-50X3.0TFBCF	BS32SNX	OR44.17X1.78X	SL32-60-50-CFX	1.20
2	50X5.0	F37-332-50X5.0TFBCF	37.5	10.0	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	1.22
2	50X6.0	F37-332-50X6.0TFBCF	35.0	10.0	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	1.25
2	60X3.0	F37-332-60X3.0TFBCF	46.0	12.0	IN32-60X3.0TFBCF	BS32SNX	OR53.7X1.78X		1.25
2	60X5.0	F37-332-60X5.0TFBCF	46.0	11.0	IN32-60X5.0TFBCF	BS32SNX	OR50.52X1.78X		1.22
2	60X6.0	F37-332-60X6.0TFBCF	45.5	11.0	IN32-60X6.0TFBCF	BS32SNX	OR47.37X1.78X		1.21
2 1/2	60X3.0	F37-340-60X3.0TFBCF	50.0	12.0	IN40-60X3.0TFBCF	BS40SNX	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	F37-340-60X5.0TFBCF	46.0	11.0	IN40-60X5.0TFBCF	BS40SNX	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	F37-340-60X6.0TFBCF	45.5	11.0	IN40-60X6.0TFBCF	BS40SNX	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	F37-340-75X3.0TFBCF	60.0	10.0	IN40-75X3.0TFBCF	BS40SNX	OR69.57X1.78X		1.93
2 1/2	75X5.0	F37-340-75X5.0TFBCF	60.0	10.0	IN40-75X5.0TFBCF	BS40SNX	OR63.22X1.78X		1.95
3	75X3.0	F37-348-75X3.0TFBCF	66.0	10.0	IN48-75X3.0TFBCF	BS48SNX	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	F37-348-75X5.0TFBCF	62.0	10.0	IN48-75X5.0TFBCF	BS48SNX	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	F37-348-90X3.5TFBCF	72.0	15.0	IN48-90X3.5TFBCF	BS48SNX	OR82.27X1.78X		3.39
3	90X5.0	F37-348-90X5.0TFBCF	72.0	14.0	IN48-90X5.0TFBCF	BS48SNX	OR79X1.78X		3.35

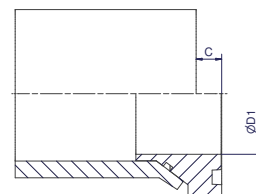
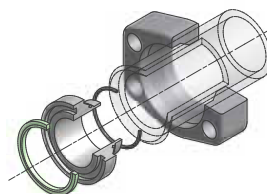
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-324-50X5.0TFBCF
Stainless steel	SS	F37-324-50X5.0TFBSS

TFV – Flare flange connection

Tube to port connection, F37 seal



Size		Flange incl. Insert + F37 Seal + O-Ring (Sleeve) Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	F37-308-16X2.0TFVCF	9.5	8.0	IN08-16X2.0TFVCF	F3708X	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	F37-308-18X2.0TFVCF	11.5	8.0	IN08-18X2.0TFVCF	F3708X	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	F37-308-20X2.0TFVCF	13.5	8.0	IN08-20X2.0TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	F37-308-20X2.5TFVCF	13.5	8.0	IN08-20X2.5TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	F37-308-25X2.5TFVCF	13.5	10.0	IN08-25X2.5TFVCF	F3708X	OR20X1.0X		0.25
1/2	25X3.0	F37-308-25X3.0TFVCF	13.0	8.0	IN08-25X3.0TFVCF	F3708X	OR20X1.0X		0.24
3/4	20X2.0	F37-312-20X2.0TFVCF	13.5	8.0	IN12-20X2.0TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	20X2.5	F37-312-20X2.5TFVCF	12.5	8.0	IN12-20X2.5TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	25X2.5	F37-312-25X2.5TFVCF	17.5	10.0	IN12-25X2.5TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.31
3/4	25X3.0	F37-312-25X3.0TFVCF	16.5	8.0	IN12-25X3.0TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.32
3/4	30X3.0	F37-312-30X3.0TFVCF	19.0	8.5	IN12-30X3.0TFVCF	F3712X	OR24X1.0X		0.32
3/4	30X4.0	F37-312-30X4.0TFVCF	19.0	8.5	IN12-30X4.0TFVCF	F3712X	OR24X1.0X		0.32
1	25X2.5	F37-316-25X2.5TFVCF	17.5	10.0	IN16-25X2.5TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.38
1	25X3.0	F37-316-25X3.0TFVCF	16.5	8.0	IN16-25X3.0TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.39
1	30X3.0	F37-316-30X3.0TFVCF	21.5	8.5	IN16-30X3.0TFVCF	F3716X	OR24X1.0X	SL16-38-30-CFX	0.41
1	30X4.0	F37-316-30X4.0TFVCF	19.5	8.5	IN16-30X4.0TFVCF	F3716X	OR22X1.0X	SL16-38-30-CFX	0.39
1	38X2.5	F37-316-38X2.5TFVCF	25.0	9.5	IN16-38X2.5TFVCF	F3716X	OR34X1.0X		0.41
1	38X3.0	F37-316-38X3.0TFVCF	25.0	9.0	IN16-38X3.0TFVCF	F3716X	OR34X1.0X		0.40
1	38X4.0	F37-316-38X4.0TFVCF	25.0	10.0	IN16-38X4.0TFVCF	F3716X	OR30X1.0X		0.40
1	38X5.0	F37-316-38X5.0TFVCF	25.0	8.0	IN16-38X5.0TFVCF	F3716X	OR28X1.0X		0.39
1 1/4	30X3.0	F37-320-30X3.0TFVCF	21.5	8.5	IN20-30X3.0TFVCF	F3720X	OR24X1.0X	SL20-42-30-CFX	0.57
1 1/4	30X4.0	F37-320-30X4.0TFVCF	19.5	8.5	IN20-30X4.0TFVCF	F3720X	OR22X1.0X	SL20-42-30-CFX	0.58
1 1/4	38X3.0	F37-320-38X3.0TFVCF	29.5	9.0	IN20-38X3.0TFVCF	F3720X	OR34X1.0X	SL20-42-38-CFX	0.56
1 1/4	38X4.0	F37-320-38X4.0TFVCF	27.0	10.0	IN20-38X4.0TFVCF	F3720X	OR30X1.0X	SL20-42-38-CFX	0.57
1 1/4	38X5.0	F37-320-38X5.0TFVCF	25.5	8.0	IN20-38X5.0TFVCF	F3720X	OR28X1.0X	SL20-42-38-CFX	0.56
1 1/4	42X3.0	F37-320-42X3.0TFVCF	31.5	10.0	IN20-42X3.0TFVCF	F3720X	OR37.82X1.78X		0.57
1 1/4	42X4.0	F37-320-42X4.0TFVCF	31.5	10.0	IN20-42X4.0TFVCF	F3720X	OR34X1.0X		0.56
1 1/2	38X3.0	F37-324-38X3.0TFVCF	27.5	9.0	IN24-38X3.0TFVCF	F3724X	OR34X1.0X	SL24-50-38-CFX	0.87
1 1/2	38X4.0	F37-324-38X4.0TFVCF	27.5	10.0	IN24-38X4.0TFVCF	F3724X	OR44.17X1.78X	SL24-50-38-CFX	0.87
1 1/2	38X5.0	F37-324-38X5.0TFVCF	25.0	8.0	IN24-38X5.0TFVCF	F3724X	OR41X1.78X	SL24-50-38-CFX	0.87
1 1/2	42X3.0	F37-324-42X3.0TFVCF	33.5	10.0	IN24-42X3.0TFVCF	F3724X	OR37.82X1.78X	SL24-50-42-CFX	0.87
1 1/2	42X4.0	F37-324-42X4.0TFVCF	31.5	10.0	IN24-42X4.0TFVCF	F3724X	OR34X1.0X	SL24-50-42-CFX	0.87
1 1/2	50X3.0	F37-324-50X3.0TFVCF	36.0	11.0	IN24-50X3.0TFVCF	F3724X	OR44.17X1.78X		0.87
1 1/2	50X5.0	F37-324-50X5.0TFVCF	36.0	10.0	IN24-50X5.0TFVCF	F3724X	OR41X1.78X		0.87
1 1/2	50X6.0	F37-324-50X6.0TFVCF	35.0	10.0	IN24-50X6.0TFVCF	F3724X	OR41X1.78X		0.87
2	50X3.0	F37-332-50X3.0TFVCF	41.5	11.0	IN32-50X3.0TFVCF	F3732X	OR44.17X1.78X	SL32-60-50-CFX	1.20
2	50X5.0	F37-332-50X5.0TFVCF	37.5	10.0	IN32-50X5.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	1.22
2	50X6.0	F37-332-50X6.0TFVCF	35.0	10.0	IN32-50X6.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	1.25
2	60X3.0	F37-332-60X3.0TFVCF	46.0	12.0	IN32-60X3.0TFVCF	F3732X	OR53.7X1.78X		1.25
2	60X5.0	F37-332-60X5.0TFVCF	46.0	11.0	IN32-60X5.0TFVCF	F3732X	OR50.52X1.78X		1.22
2	60X6.0	F37-332-60X6.0TFVCF	45.5	11.0	IN32-60X6.0TFVCF	F3732X	OR47.37X1.78X		1.21
2 1/2	60X3.0	F37-340-60X3.0TFVCF	50.0	12.0	IN40-60X3.0TFVCF	F3740X	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	F37-340-60X5.0TFVCF	46.0	11.0	IN40-60X5.0TFVCF	F3740X	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	F37-340-60X6.0TFVCF	45.5	11.0	IN40-60X6.0TFVCF	F3740X	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	F37-340-75X3.0TFVCF	60.0	10.0	IN40-75X3.0TFVCF	F3740X	OR69.57X1.78X		1.93
2 1/2	75X5.0	F37-340-75X5.0TFVCF	60.0	10.0	IN40-75X5.0TFVCF	F3740X	OR63.22X1.78X		1.95
3	75X3.0	F37-348-75X3.0TFVCF	66.0	10.0	IN48-75X3.0TFVCF	F3748X	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	F37-348-75X5.0TFVCF	62.0	10.0	IN48-75X5.0TFVCF	F3748X	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	F37-348-90X3.5TFVCF	72.0	15.0	IN48-90X3.5TFVCF	F3748X	OR82.27X1.78X		3.39
3	90X5.0	F37-348-90X5.0TFVCF	72.0	14.0	IN48-90X5.0TFVCF	F3748X	OR79X1.78X		3.35

Other sizes on request

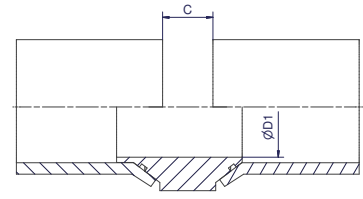
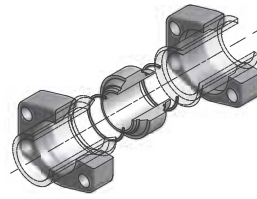
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-324-50X5.0TFVCF
Stainless steel	SS	F37-324-50X5.0TFVSS



TT – Flare flange connection

Tube to tube connection



Size		2 Flanges incl. Insert + 2 x O-Ring (+ 2 x Sleeve) Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
1/2	16X2.0	F37-308-16X2.0TTCF	9.5	8.0	IN08-16X2.0TTCF	OR12X1.0X	SL08-25-16-CFX	0.28
1/2	18X2.0	F37-308-18X2.0TTCF	11.5	8.0	IN08-18X2.0TTCF	OR14X1.1X	SL08-25-18-CFX	0.29
1/2	20X2.0	F37-308-20X2.0TTCF	13.5	8.0	IN08-20X2.0TTCF	OR16X1.0X	SL08-25-20-CFX	0.29
1/2	20X2.5	F37-308-20X2.5TTCF	13.5	8.0	IN08-20X2.5TTCF	OR16X1.0X	SL08-25-20-CFX	0.29
1/2	25X2.5	F37-308-25X2.5TTCF	13.5	10.0	IN08-25X2.5TTCF	OR20X1.0X		0.30
1/2	25X3.0	F37-308-25X3.0TTCF	13.0	8.0	IN08-25X3.0TTCF	OR20X1.0X		0.29
3/4	20X2.0	F37-312-20X2.0TTCF	13.5	8.0	IN12-20X2.0TTCF	OR16X1.0X	SL12-30-20-CFX	0.38
3/4	20X2.5	F37-312-20X2.5TTCF	12.5	8.0	IN12-20X2.5TTCF	OR16X1.0X	SL12-30-20-CFX	0.38
3/4	25X2.5	F37-312-25X2.5TTCF	17.5	10.0	IN12-25X2.5TTCF	OR20X1.0X	SL12-30-25-CFX	0.39
3/4	25X3.0	F37-312-25X3.0TTCF	16.5	8.0	IN12-25X3.0TTCF	OR20X1.0X	SL12-30-25-CFX	0.39
3/4	30X3.0	F37-312-30X3.0TTCF	19.0	8.5	IN12-30X3.0TTCF	OR24X1.0X		0.40
3/4	30X4.0	F37-312-30X4.0TTCF	19.0	8.5	IN12-30X4.0TTCF	OR24X1.0X		0.40
1	25X2.5	F37-316-25X2.5TTCF	17.5	10.0	IN16-25X2.5TTCF	OR20X1.0X	SL16-38-25-CFX	0.49
1	25X3.0	F37-316-25X3.0TTCF	16.5	8.0	IN16-25X3.0TTCF	OR20X1.0X	SL16-38-25-CFX	0.49
1	30X3.0	F37-316-30X3.0TTCF	21.5	8.5	IN16-30X3.0TTCF	OR24X1.0X	SL16-38-30-CFX	0.48
1	30X4.0	F37-316-30X4.0TTCF	19.5	8.5	IN16-30X4.0TTCF	OR22X1.0X	SL16-38-30-CFX	0.49
1	38X2.5	F37-316-38X2.5TTCF	25.0	9.5	IN16-38X2.5TTCF	OR34X1.0X		0.54
1	38X3.0	F37-316-38X3.0TTCF	25.0	9.0	IN16-38X3.0TTCF	OR34X1.0X		0.52
1	38X4.0	F37-316-38X4.0TTCF	25.0	10.0	IN16-38X4.0TTCF	OR30X1.0X		0.50
1	38X5.0	F37-316-38X5.0TTCF	25.0	8.0	IN16-38X5.0TTCF	OR28X1.0X		0.48
1 1/4	30X3.0	F37-320-30X3.0TTCF	21.5	8.5	IN20-30X3.0TTCF	OR24X1.0X	SL20-42-30-CFX	0.70
1 1/4	30X4.0	F37-320-30X4.0TTCF	19.5	8.5	IN20-30X4.0TTCF	OR22X1.0X	SL20-42-30-CFX	0.73
1 1/4	38X3.0	F37-320-38X3.0TTCF	29.0	9.0	IN20-38X3.0TTCF	OR34X1.0X	SL20-42-38-CFX	0.68
1 1/4	38X4.0	F37-320-38X4.0TTCF	27.0	10.0	IN20-38X4.0TTCF	OR30X1.0X	SL20-42-38-CFX	0.69
1 1/4	38X5.0	F37-320-38X5.0TTCF	25.5	8.0	IN20-38X5.0TTCF	OR28X1.0X	SL20-42-38-CFX	0.67
1 1/4	42X3.0	F37-320-42X3.0TTCF	31.5	10.0	IN20-42X3.0TTCF	OR37.82X1.78X		0.68
1 1/4	42X4.0	F37-320-42X4.0TTCF	31.5	10.0	IN20-42X4.0TTCF	OR34X1.0X		0.67
1 1/2	38X3.0	F37-324-38X3.0TTCF	27.5	9.0	IN24-38X3.0TTCF	OR34X1.0X	SL24-50-38-CFX	0.93
1 1/2	38X4.0	F37-324-38X4.0TTCF	27.5	10.0	IN24-38X4.0TTCF	OR44.17X1.78X	SL24-50-38-CFX	0.93
1 1/2	38X5.0	F37-324-38X5.0TTCF	25.0	8.0	IN24-38X5.0TTCF	OR41X1.78X	SL24-50-38-CFX	0.93
1 1/2	42X3.0	F37-324-42X3.0TTCF	33.5	10.0	IN24-42X3.0TTCF	OR37.82X1.78X	SL24-50-42-CFX	0.98
1 1/2	42X4.0	F37-324-42X4.0TTCF	31.5	10.0	IN24-42X4.0TTCF	OR34X1.0X	SL24-50-42-CFX	1.08
1 1/2	50X3.0	F37-324-50X3.0TTCF	36.0	11.0	IN24-50X3.0TTCF	OR44.17X1.78X		1.10
1 1/2	50X5.0	F37-324-50X5.0TTCF	36.0	10.0	IN24-50X5.0TTCF	OR41X1.78X		1.21
1 1/2	50X6.0	F37-324-50X6.0TTCF	35.0	10.0	IN24-50X6.0TTCF	OR41X1.78X		1.10
2	50X3.0	F37-332-50X3.0TTCF	41.5	11.0	IN32-50X3.0TTCF	OR44.17X1.78X	SL32-60-50-CFX	1.40
2	50X5.0	F37-332-50X5.0TTCF	37.5	10.0	IN32-50X5.0TTCF	OR41X1.78X	SL32-60-50-CFX	1.51
2	50X6.0	F37-332-50X6.0TTCF	35.0	10.0	IN32-50X6.0TTCF	OR41X1.78X	SL32-60-50-CFX	1.56
2	60X3.0	F37-332-60X3.0TTCF	46.0	12.0	IN32-60X3.0TTCF	OR53.7X1.78X		1.53
2	60X5.0	F37-332-60X5.0TTCF	46.0	11.0	IN32-60X5.0TTCF	OR50.52X1.78X		1.46
2	60X6.0	F37-332-60X6.0TTCF	45.5	11.0	IN32-60X6.0TTCF	OR47.37X1.78X		1.45
2 1/2	60X3.0	F37-340-60X3.0TTCF	50.0	12.0	IN40-60X3.0TTCF	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	F37-340-60X5.0TTCF	46.0	11.0	IN40-60X5.0TTCF	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	F37-340-60X6.0TTCF	45.0	11.0	IN40-60X6.0TTCF	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	F37-340-75X3.0TTCF	60.0	10.0	IN40-75X3.0TTCF	OR69.57X1.78X		1.93
2 1/2	75X5.0	F37-340-75X5.0TTCF	60.0	10.0	IN40-75X5.0TTCF	OR63.22X1.78X		1.95
3	75X3.0	F37-348-75X3.0TTCF	66.0	10.0	IN48-75X3.0TTCF	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	F37-348-75X5.0TTCF	62.0	10.0	IN48-75X5.0TTCF	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	F37-348-90X3.5TTCF	72.0	15.0	IN48-90X3.5TTCF	OR82.27X1.78X		3.39
3	90X5.0	F37-348-90X5.0TTCF	72.0	14.0	IN48-90X5.0TTCF	OR79X1.78X		3.35

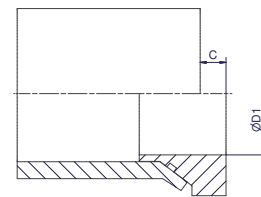
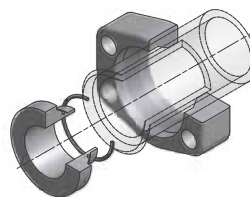
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-324-50X5.0TTCF
Stainless steel	SS	F37-324-50X5.0TTSS

TF – Flare flange connection

Tube to flange connection, flat face



Size		Flange incl. Insert + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
1/2	16X2.0	F37-308-16X2.0TFCF	9.5	8.0	IN08-16X2.0TFCF	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	F37-308-18X2.0TFCF	11.5	8.0	IN08-18X2.0TFCF	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	F37-308-20X2.0TFCF	13.5	8.0	IN08-20X2.0TFCF	OR16X1.0X	SL08-25-20-CFX	0.25
1/2	20X2.5	F37-308-20X2.5TFCF	13.5	8.0	IN08-20X2.5TFCF	OR16X1.0X	SL08-25-20-CFX	0.25
1/2	25X2.5	F37-308-25X2.5TFCF	13.5	10.0	IN08-25X2.5TFCF	OR20X1.0X	SL08-25-20-CFX	0.25
1/2	25X3.0	F37-308-25X3.0TFCF	13.0	8.0	IN08-25X3.0TFCF	OR20X1.0X		0.24
3/4	20X2.0	F37-312-20X2.0TFCF	13.5	8.0	IN12-20X2.0TFCF	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	20X2.5	F37-312-20X2.5TFCF	12.5	8.0	IN12-20X2.5TFCF	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	25X2.5	F37-312-25X2.5TFCF	17.5	10.0	IN12-25X2.5TFCF	OR20X1.0X	SL12-30-25-CFX	0.31
3/4	25X3.0	F37-312-25X3.0TFCF	16.5	8.0	IN12-25X3.0TFCF	OR20X1.0X	SL12-30-25-CFX	0.32
3/4	30X3.0	F37-312-30X3.0TFCF	19.0	8.5	IN12-30X3.0TFCF	OR24X1.0X		0.32
3/4	30X4.0	F37-312-30X4.0TFCF	19.0	8.5	IN12-30X4.0TFCF	OR24X1.0X		0.32
1	25X2.5	F37-316-25X2.5TFCF	17.5	10.0	IN16-25X2.5TFCF	OR20X1.0X	SL16-38-25-CFX	0.38
1	25X3.0	F37-316-25X3.0TFCF	16.5	8.0	IN16-25X3.0TFCF	OR20X1.0X	SL16-38-25-CFX	0.39
1	30X3.0	F37-316-30X3.0TFCF	21.5	8.5	IN16-30X3.0TFCF	OR24X1.0X	SL16-38-30-CFX	0.41
1	30X4.0	F37-316-30X4.0TFCF	19.5	8.5	IN16-30X4.0TFCF	OR22X1.0X	SL16-38-30-CFX	0.39
1	38X2.5	F37-316-38X2.5TFCF	25.0	9.5	IN16-38X2.5TFCF	OR34X1.0X		0.41
1	38X3.0	F37-316-38X3.0TFCF	25.0	9.0	IN16-38X3.0TFCF	OR34X1.0X		0.40
1	38X4.0	F37-316-38X4.0TFCF	25.0	10.0	IN16-38X4.0TFCF	OR30X1.0X		0.40
1	38X5.0	F37-316-38X5.0TFCF	25.0	8.0	IN16-38X5.0TFCF	OR28X1.0X		0.39
1 1/4	30X3.0	F37-320-30X3.0TFCF	21.5	8.5	IN20-30X3.0TFCF	OR24X1.0X	SL20-42-30-CFX	0.57
1 1/4	30X4.0	F37-320-30X4.0TFCF	19.5	8.5	IN20-30X4.0TFCF	OR22X1.0X	SL20-42-30-CFX	0.59
1 1/4	38X3.0	F37-320-38X3.0TFCF	29.0	9.0	IN20-38X3.0TFCF	OR34X1.0X	SL20-42-38-CFX	0.56
1 1/4	38X4.0	F37-320-38X4.0TFCF	27.0	10.0	IN20-38X4.0TFCF	OR30X1.0X	SL20-42-38-CFX	0.57
1 1/4	38X5.0	F37-320-38X5.0TFCF	25.5	8.0	IN20-38X5.0TFCF	OR28X1.0X	SL20-42-38-CFX	0.56
1 1/4	42X3.0	F37-320-42X3.0TFCF	31.5	10.0	IN20-42X3.0TFCF	OR37.82X1.78X		0.57
1 1/4	42X4.0	F37-320-42X4.0TFCF	31.5	10.0	IN20-42X4.0TFCF	OR34X1.0X		0.56
1 1/2	38X3.0	F37-324-38X3.0TFCF	27.5	9.0	IN24-38X3.0TFCF	OR34X1.0X	SL24-50-38-CFX	0.87
1 1/2	38X4.0	F37-324-38X4.0TFCF	27.5	10.0	IN24-38X4.0TFCF	OR44.17X1.78X	SL24-50-38-CFX	0.87
1 1/2	38X5.0	F37-324-38X5.0TFCF	25.0	8.0	IN24-38X5.0TFCF	OR41X1.78X	SL24-50-38-CFX	0.87
1 1/2	42X3.0	F37-324-42X3.0TFCF	33.5	10.0	IN24-42X3.0TFCF	OR37.82X1.78X	SL24-50-42-CFX	0.87
1 1/2	42X4.0	F37-324-42X4.0TFCF	31.5	10.0	IN24-42X4.0TFCF	OR34X1.0X	SL24-50-42-CFX	0.87
1 1/2	50X3.0	F37-324-50X3.0TFCF	36.0	11.0	IN24-50X3.0TFCF	OR44.17X1.78X		0.87
1 1/2	50X5.0	F37-324-50X5.0TFCF	36.0	10.0	IN24-50X5.0TFCF	OR41X1.78X		0.87
1 1/2	50X6.0	F37-324-50X6.0TFCF	35.0	10.0	IN24-50X6.0TFCF	OR41X1.78X		0.87
2	50X3.0	F37-332-50X3.0TFCF	41.5	11.0	IN32-50X3.0TFCF	OR44.17X1.78X	SL32-60-50-CFX	1.20
2	50X5.0	F37-332-50X5.0TFCF	37.5	10.0	IN32-50X5.0TFCF	OR41X1.78X	SL32-60-50-CFX	1.22
2	50X6.0	F37-332-50X6.0TFCF	35.0	10.0	IN32-50X6.0TFCF	OR41X1.78X	SL32-60-50-CFX	1.25
2	60X3.0	F37-332-60X3.0TFCF	46.0	12.0	IN32-60X3.0TFCF	OR53.7X1.78X		1.25
2	60X5.0	F37-332-60X5.0TFCF	46.0	11.0	IN32-60X5.0TFCF	OR50.52X1.78X		1.22
2	60X6.0	F37-332-60X6.0TFCF	45.5	11.0	IN32-60X6.0TFCF	OR47.37X1.78X		1.21
2 1/2	60X3.0	F37-340-60X3.0TFCF	50.0	12.0	IN40-60X3.0TFCF	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	F37-340-60X5.0TFCF	46.0	11.0	IN40-60X5.0TFCF	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	F37-340-60X6.0TFCF	45.5	11.0	IN40-60X6.0TFCF	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	F37-340-75X3.0TFCF	60.0	10.0	IN40-75X3.0TFCF	OR69.57X1.78X		1.93
2 1/2	75X5.0	F37-340-75X5.0TFCF	60.0	10.0	IN40-75X5.0TFCF	OR63.22X1.78X		1.95
3	75X3.0	F37-348-75X3.0TFCF	66.0	10.0	IN48-75X3.0TFCF	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	F37-348-75X5.0TFCF	62.0	10.0	IN48-75X5.0TFCF	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	F37-348-90X3.5TFCF	72.0	15.0	IN48-90X3.5TFCF	OR82.27X1.78X		3.39
3	90X5.0	F37-348-90X5.0TFCF	72.0	14.0	IN48-90X5.0TFCF	OR79X1.78X		3.35

Other sizes on request

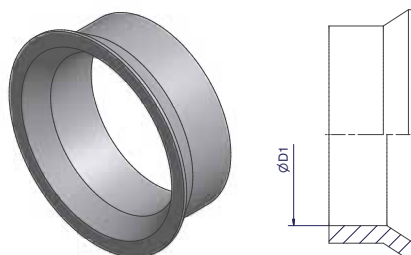
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-324-50X5.0TFCF
Stainless steel	SS	F37-324-50X5.0TFSS



SL – Sleeve

SAE 3000/ISO 6162-1



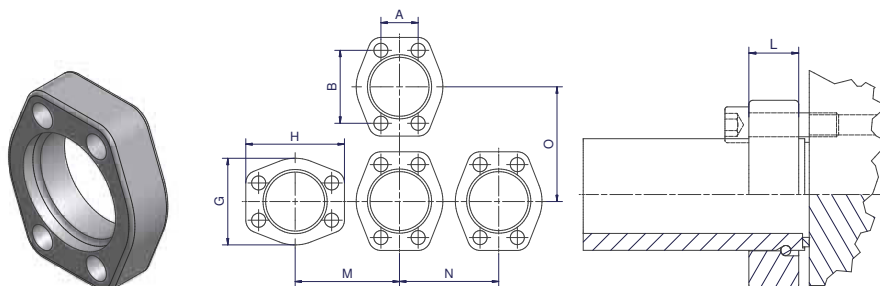
Size Inch	Tube OD	Order code	D1	Weight (Steel) kg/1 piece
1/2	12	SL08-25-12-CFX	12.30	0.04
1/2	16	SL08-25-16-CFX	16.30	0.04
1/2	18	SL08-25-18-CFX	18.30	0.04
1/2	20	SL08-25-20-CFX	20.30	0.04
3/4	20	SL12-30-20-CFX	20.30	0.04
3/4	25	SL12-30-25-CFX	25.20	0.04
1	25	SL16-38-25-CFX	25.20	0.04
1	30	SL16-38-30-CFX	30.20	0.04
1 1/4	30	SL20-42-30-CFX	30.20	0.04
1 1/4	38	SL20-42-38-CFX	38.25	0.04
1 1/2	30	SL24-50-30-CFX	25.20	0.14
1 1/2	38	SL24-50-38-CFX	38.25	0.14
1 1/2	42	SL24-50-42-CFX	42.30	0.10
2	50	SL32-60-50-CFX	50.30	0.16
2 1/2	60	SL40-75-60-CFX	60.45	0.36
3	75	SL48-90-75-CFX	75.45	0.52

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX

R – Retaining ring flange

SAE 3000/ISO 6162-1



Retaining Ring Flange dimensions

Size Inch	Order Code	A	B	G	H	M	N	O	L	Weight (Steel) kg/1 piece	W.P. bar
1/2	R-308-CFX	17.5	38.1	46	54.0	52	49	56	19	0.2	350
3/4	R-312-CFX	22.3	47.6	52	65.0	61	55	68	20	0.2	350
1	R-316-CFX	26.2	52.4	59	70.5	67	61	72	24	0.3	350
1 1/4	R-320-CFX	30.2	58.7	73	80.5	78	75	82	22	0.5	280
1 1/2	R-324-CFX	35.7	69.9	83	94.5	90	85	96	25	0.6	280
2	R-332-CFX	42.9	77.8	97	101.5	102	99	104	33	1.0	280
2 1/2	R-340-CFX	50.8	88.9	109	115.5	114	111	117	44	1.6	210
3	R-348-CFX	61.9	106.4	132	135.0	136	133	137	50	2.5	210

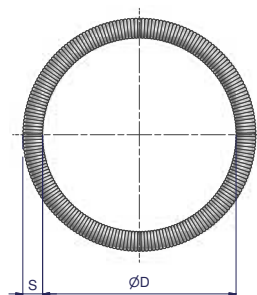
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	R-320-CFX	
Stainless steel	SS	R-320-SSX	
Galvanized hot dip zinc	TZN	R-320-TZNX	on request

R – Retaining ring

SAE 3000/ISO 6162-1

Size Inch	Tube	D	S	Order code
1/2	26X6.0	23.7	2.6	R08X
3/4	36X8.0	33.7	2.6	R12X
1	39X7.5	35.8	3.5	R16X
1 1/4	46X8.0	42.8	3.5	R20X
1 1/2	56X8.5	52.8	3.5	R24X
2	66X8.5	62.8	3.5	R32X
2 1/2	80X10.0	76.8	3.5	R40X
3	97X12.0	93.3	4.0	R48X

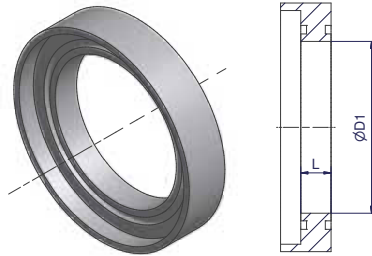


Material: Stainless steel



PSC – Pipe seal carrier

SAE 3000/ISO 6162-1



Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
1 1/2	56X8.5			on request	
2	66X8.5	6.5	49	PSC32-66X8.5VCF	
2 1/2	80X10	15.0	60	PSC40-80X10VCF	210
3	97X12	15.0	73	PSC48-97X12VCF	

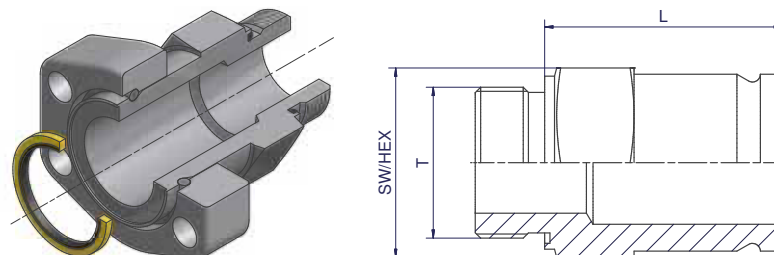
Other sizes on request
Stainless steel on request
Included seals

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	PSC40-80X10VCF
Stainless steel	SS	PSC40-80X10VSS

MTF-R – Male thread adapter, BSPP

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	Weight body (Steel) kg/1 piece	L	T (BSPP)	SW/ HEX
3/4	36X8.0	R-312MTFRCF	MTF12ROMDCF	0.32	61.0	G 3/4A	36
3/4	36X8.0	R-312MTFR1/2CF	MTF12R1/2OMDCF	0.32	61.0	G 1/2A	36
1	39X7.5	R-316MTFRCF	MTF16ROMDCF	0.50	68.3	G 1A	41
1	39X7.5	R-316MTFR3/4CF	MTF16R3/4OMDCF	0.50	68.3	G 3/4A	41
1 1/4	46X8.0	R-320MTFRCF	MTF20ROMDCF	0.75	71.3	G 1 1/4A	50
1 1/4	46X8.0	R-320MTFR1CF	MTF20R1OMDCF	0.75	71.3	G 1A	50
1 1/2	56X8.5	R-324MTFRCF	MTF24ROMDCF	1.80	75.3	G 1 1/2A	60
1 1/2	56X8.5	R-324MTFR11/4CF	MTF24R11/4OMDCF	1.80	75.3	G 1 1/4A	60
2	66X8.5	R-332MTFRCF	MTF32ROMDCF	2.50	86.8	G 2A	75
2	66X8.5	R-332MTFR11/2CF	MTF32R11/2OMDCF	2.50	86.8	G 1 1/2A	75
2 1/2	80X10.0	R-340MTFRCF	MTF40ROMDCF	3.50	134.0	G 2 1/2A	85
2 1/2	80X10.0	R-340MTFR2CF	MTF40R2OMDCF	3.50	134.0	G 2A	85
3	97X12.0	R-348MTFRCF	MTF48MTFRCF	5.00	145.0	G 3A	95

Other sizes on request

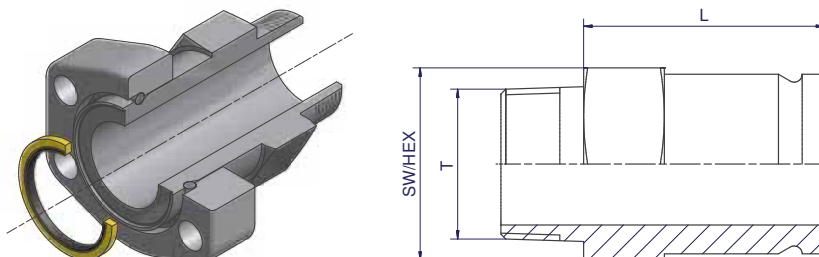
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320MTFRCF
Stainless steel	SS	R-320MTFRSS



MTF-N – Male thread adapter, NPT

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete part Order code	Body Order code	Weight body (Steel) kg/1 piece	L	T (NPT)	SW/ HEX
1/2	26X6.0	R-308MTFNCF	MTF08NCFX	0.26	72.6	1/2-14	27
3/4	36X8.0	R-312MTFNCF	MTF12NCFX	0.48	72.6	3/4-14	36
1	39X7.5	R-316MTFNCF	MTF16NCFX	0.45	63.0	1-11.5	41
1 1/4	46X8.0	R-320MTFNCF	MTF20NCFX	0.70	67.0	1 1/4-11.5	50
1 1/2	56X8.5	R-324MTFNCF	MTF24NCFX	1.80	75.0	1 1/2-11.5	60
2	66X8.5	R-332MTFNCF	MTF32NCFX	2.40	80.0	2-11.5	75
2 1/2	80X10.0	R-340MTFNCF	MTF40NCFX	2.50	130.0	2 1/2-8	85
3	97X12.0	R-348MTFNCF	MTF48NCFX	2.50	141.0	3-8	95

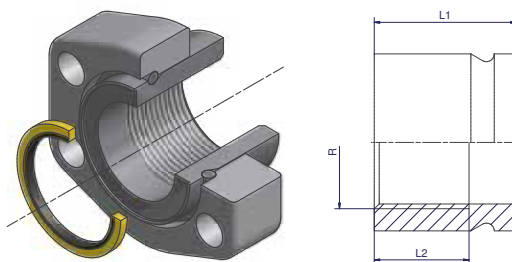
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320MTFNCF
Stainless steel	SS	R-320MTFNSS

FTF-R – Female thread adapter, BSPP

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete part Order code	Body Order code	Weight body (Steel) kg/1 piece	L1	L2	R (BSPP)
1/2	26X6.0	R-308FTFRCF	FTF08RCFX	0.11	35	25	G 1/4
3/4	36X8.0	R-312FTFRCF	FTF12RCFX	0.22	40	25	G 1/2
1	39X7.5	R-316FTFRCF	FTF16RCFX	0.20	40	25	G 3/4
1 1/4	46X8.0	R-320FTFRCF	FTF20RCFX	0.30	42	30	G 1
1 1/2	56X8.5	R-324FTFRCF	FTF24RCFX	0.45	45	30	G 1 1/4
2	66X8.5	R-332FTFRCF	FTF32RCFX	0.75	55	40	G 1 1/2
2 1/2	80X10.0	R-340FTFRCF	FTF40RCFX	1.52	80	40	G 2
3	97X12.0	R-348FTFRCF	FTF48RCFX	2.11	85	50	G 2 1/2

Other sizes on request

Please change suffixes according to material/surface required

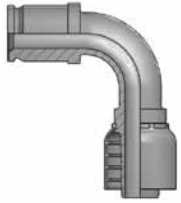
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320FTFRCF
Stainless steel	SS	R-320FTFRSS



Retaining ring hose couplings

SAE 3000/ISO 6162-1

One Piece No-Skive Hose fittings 48 Series for Parker hose types 301SN (2 wire braid) & 421SN (one wire braid)

				
Connection		Order code	Order code	Order code
Flange	Hose			
1 1/4	1 1/4	1X548-20-20	1X748-20-20	1X948-20-20
1 1/2	1 1/2	1X548-24-24	1X748-24-24	1X948-24-24
2	2	1X548-32-32	1X748-32-32	1X948-32-32

Interlock Hose nipples V6 series for Parker hose types H82 & R42 (6 spiral)

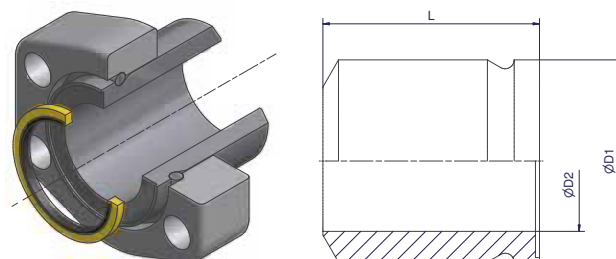
				
Connection		Order code	Order code	Order code
Flange	Hose			
1 1/4	1 1/4	KX5V6-20-20	KX7V6-20-20	KX9V6-20-20
1 1/2	1 1/2	KX5V6-24-24	KX7V6-24-24	KX9V6-24-24
2	2	KX5V6-32-32	KX7V6-32-32	KX9V6-32-32

Interlock Shells V6 Series for Parker hose types H82 & R42

		
Connection		Order code
Hose		
1 1/4		100V6-20
1 1/2		100V6-24
2		100V6-32

WA – Weld adapter connection

SAE 3000/ISO 6162-1

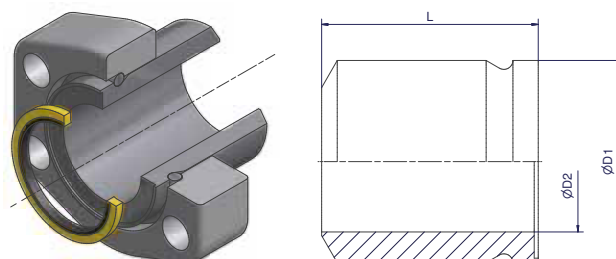


Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1/2	12X1.5	R-308WA-12X1.5S	R08X	BS08SNX	R-308-CFX	WA08-12X1.5SX	0.29	26	9	40
1/2	16X2.0	R-308WA-16X2.0S	R08X	BS08SNX	R-308-CFX	WA08-16X2.0SX	0.30	26	12	40
1/2	18X2.0	R-308WA-18X2.0S	R08X	BS08SNX	R-308-CFX	WA08-18X2.0SX	0.30	26	14	40
1/2	20X2.0	R-308WA-20X2.5S	R08X	BS08SNX	R-308-CFX	WA08-20X2.5SX	0.30	26	15	40
1/2	21.3X2.1	R-308WA-21.3X2.1S	R08X	BS08SNX	R-308-CFX	WA08-21.3X2.1SX	0.30	26	17	40
1/2	21.3X2.8	R-308WA-21.3X2.8S	R08X	BS08SNX	R-308-CFX	WA08-21.3X2.8SX	0.30	26	16	40
1/2	21.3X3.7	R-308WA-21.3X3.7S	R08X	BS08SNX	R-308-CFX	WA08-21.3X3.7SX	0.31	26	14	45
1/2	21.3X4.8	R-308WA-21.3X4.8S	R08X	BS08SNX	R-308-CFX	WA08-21.3X4.8SX	0.32	26	12	45
1/2	21.3X7.5	R-308WA-21.3X7.5S	R08X	BS08SNX	R-308-CFX	WA08-21.3X7.5SX	0.32	26	6	45
1/2	25X2.5	R-308WA-25X2.5S	R08X	BS08SNX	R-308-CFX	WA08-25X2.5SX	0.29	26	14	40
1/2	26X6.0	R-308WA-26X6.0S	R08X	BS08SNX	R-308-CFX	WA08-26X6.0SX	0.31	26	14	40
3/4	20X2.5	R-312WA-20X2.5S	R12X	BS12SNX	R-312-CFX	WA12-20X2.5SX	0.41	36	15	45
3/4	25X3.0	R-312WA-25X3.0S	R12X	BS12SNX	R-312-CFX	WA12-25X3.0SX	0.41	36	19	45
3/4	26.7X2.1	R-312WA-26.7X2.1S	R12X	BS12SNX	R-312-CFX	WA12-26.7X2.1SX	0.40	36	20	45
3/4	26.7X2.8	R-312WA-26.7X2.8S	R12X	BS12SNX	R-312-CFX	WA12-26.7X2.8SX	0.41	36	20	45
3/4	26.7X3.9	R-312WA-26.7X3.9S	R12X	BS12SNX	R-312-CFX	WA12-26.7X3.9SX	0.41	36	19	45
3/4	26.7X5.6	R-312WA-26.7X5.6S	R12X	BS12SNX	R-312-CFX	WA12-26.7X5.6SX	0.44	36	16	50
3/4	26.7X7.8	R-312WA-26.7X7.8S	R12X	BS12SNX	R-312-CFX	WA12-26.7X7.8SX	0.45	36	11	50
3/4	30X3.0	R-312WA-30X3.0S	R12X	BS12SNX	R-312-CFX	WA12-30X3.0SX	0.41	36	20	50
3/4	30X4.0	R-312WA-30X4.0S	R12X	BS12SNX	R-312-CFX	WA12-30X4.0SX	0.42	36	20	50
3/4	30X6.0	R-312WA-30X6.0S	R12X	BS12SNX	R-312-CFX	WA12-30X6.0SX	0.44	36	18	50
3/4	30X8.0	R-312WA-30X8.0S	R12X	BS12SNX	R-312-CFX	WA12-30X8.0SX	0.46	36	14	50
1	25X3.0	R-316WA-25X3.0S	R16X	BS16SNX	R-316-CFX	WA16-25X3.0SX	0.61	39	19	60
1	30X4.0	R-316WA-30X4.0S	R16X	BS16SNX	R-316-CFX	WA16-30X4.0SX	0.60	39	20	60
1	33.4X2.8	R-316WA-33.4X2.8S	R16X	BS16SNX	R-316-CFX	WA16-33.4X2.8SX	0.56	39	24	60
1	33.4X3.4	R-316WA-33.4X3.4S	R16X	BS16SNX	R-316-CFX	WA16-33.4X3.4SX	0.57	39	24	60
1	33.4X4.6	R-316WA-33.4X4.6S	R16X	BS16SNX	R-316-CFX	WA16-33.4X4.6SX	0.59	39	24	60
1	33.4X6.5	R-316WA-33.4X6.5S	R16X	BS16SNX	R-316-CFX	WA16-33.4X6.5SX	0.65	39	20	60
1	33.4X9.1	R-316WA-33.4X9.1S	R16X	BS16SNX	R-316-CFX	WA16-33.4X9.1SX	0.64	39	15	60
1	38X4.0	R-316WA-38X4.0S	R16X	BS16SNX	R-316-CFX	WA16-38X4.0SX	0.54	39	24	55
1	38X5.0	R-316WA-38X5.0S	R16X	BS16SNX	R-316-CFX	WA16-38X5.0SX	0.56	39	24	55
1	38X7.0	R-316WA-38X7.0S	R16X	BS16SNX	R-316-CFX	WA16-38X7.0SX	0.62	39	24	60
1	39X7.5	R-316WA-39X7.5S	R16X	BS16SNX	R-316-CFX	WA16-39X7.5SX	0.57	39	24	50
1 1/4	30X4.0	R-320WA-30X4.0S	R20X	BS20SNX	R-320-CFX	WA20-30X4.0SX	1.04	46	22	70
1 1/4	38X4.0	R-320WA-38X4.0S	R20X	BS20SNX	R-320-CFX	WA20-38X4.0SX	0.89	46	30	65
1 1/4	38X5.0	R-320WA-38X5.0S	R20X	BS20SNX	R-320-CFX	WA20-38X5.0SX	0.94	46	28	65
1 1/4	42X3.0	R-320WA-42X3.0S	R20X	BS20SNX	R-320-CFX	WA20-42X3.0SX	0.84	46	30	65
1 1/4	42X4.0	R-320WA-42X4.0S	R20X	BS20SNX	R-320-CFX	WA20-42X4.0SX	0.87	46	30	65
1 1/4	42X6.0	R-320WA-42X6.0S	R20X	BS20SNX	R-320-CFX	WA20-42X6.0SX	0.93	46	30	65
1 1/4	42.2X2.7	R-320WA-42.2X2.7S	R20X	BS20SNX	R-320-CFX	WA20-42.2X2.7SX	0.83	46	30	65
1 1/4	42.2X3.6	R-320WA-42.2X3.6S	R20X	BS20SNX	R-320-CFX	WA20-42.2X3.6SX	0.86	46	30	65
1 1/4	42.2X4.9	R-320WA-42.2X4.9S	R20X	BS20SNX	R-320-CFX	WA20-42.2X4.9SX	0.90	46	30	65
1 1/4	42.2X6.4	R-320WA-42.2X6.4S	R20X	BS20SNX	R-320-CFX	WA20-42.2X6.4SX	0.94	46	29	65
1 1/4	42.2X9.7	R-320WA-42.2X9.7S	R20X	BS20SNX	R-320-CFX	WA20-42.2X9.7SX	1.06	46	23	65
1 1/4	46X7.0	R-320WA-46X7.0S	R20X	BS20SNX	R-320-CFX	WA20-46X7.0SX	0.95	46	30	65
1 1/4	46X8.0	R-320WA-46X8.0S	R20X	BS20SNX	R-320-CFX	WA20-46X8.0SX	0.88	46	30	55
1 1/2	38X5.0	R-324WA-38X5.0S	R24X	BS24SNX	R-324-CFX	WA24-38X5.0SX	1.45	56	28	75
1 1/2	48.3X2.8	R-324WA-48.3X2.8S	R24X	BS24SNX	R-324-CFX	WA24-48.3X2.8SX	1.11	56	39	70
1 1/2	48.3X3.7	R-324WA-48.3X3.7S	R24X	BS24SNX	R-324-CFX	WA24-48.3X3.7SX	1.15	56	39	70
1 1/2	48.3X5.1	R-324WA-48.3X5.1S	R24X	BS24SNX	R-324-CFX	WA24-48.3X5.1SX	1.21	56	38	70

see next page

WA – Weld adapter connection continued

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1 1/2	48.3X7.1	R-324WA-48.3X7.1S	R24X	BS24SNX	R-324-CFX	WA24-48.3X7.1SX	1.33	56	34	70
1 1/2	48.3X10.2	R-324WA-48.3X10.2S	R24X	BS24SNX	R-324-CFX	WA24-48.3X10.2SX	1.29	56	28	70
1 1/2	50X3.0	R-324WA-50X3.0S	R24X	BS24SNX	R-324-CFX	WA24-50X3.0SX	1.10	56	39	70
1 1/2	50X5.0	R-324WA-50X5.0S	R24X	BS24SNX	R-324-CFX	WA24-50X5.0SX	1.17	56	40	70
1 1/2	50X6.0	R-324WA-50X6.0S	R24X	BS24SNX	R-324-CFX	WA24-50X6.0SX	1.23	56	38	70
1 1/2	50X9.0	R-324WA-50X9.0S	R24X	BS24SNX	R-324-CFX	WA24-50X9.0SX	1.39	56	32	70
1 1/2	56X8.5	R-324WA-56X8.5S	R24X	BS24SNX	R-324-CFX	WA24-56X8.5SX	1.15	56	39	60
2	48.3X5.6	R-332WA-48.3X5.6S	R32X	BS32SNX	R-332-CFX	WA32-48.3X5.6SX	2.30	66	37	90
2	50X9.0	R-332WA-50X9.0S	R32X	BS32SNX	R-332-CFX	WA32-50X9.0SX	2.51	66	32	90
2	60X3.0	R-332WA-60X3.0S	R32X	BS32SNX	R-332-CFX	WA32-60X3.0SX	1.79	66	49	90
2	60X5.0	R-332WA-60X5.0S	R32X	BS32SNX	R-332-CFX	WA32-60X5.0SX	1.89	66	50	90
2	60X6.0	R-332WA-60X6.0S	R32X	BS32SNX	R-332-CFX	WA32-60X6.0SX	2.00	66	48	90
2	60X8.0	R-332WA-60X8.0S	R32X	BS32SNX	R-332-CFX	WA32-60X8.0SX	2.18	66	44	90
2	60X10.0	R-332WA-60X10.0S	R32X	BS32SNX	R-332-CFX	WA32-60X10.0SX	2.36	66	40	90
2	60.3X2.8	R-332WA-60.3X2.8S	R32X	BS32SNX	R-332-CFX	WA32-60.3X2.8SX	1.77	66	49	90
2	60.3X3.9	R-332WA-60.3X3.9S	R32X	BS32SNX	R-332-CFX	WA32-60.3X3.9SX	1.85	66	49	90
2	60.3X5.5	R-332WA-60.3X5.5S	R32X	BS32SNX	R-332-CFX	WA32-60.3X5.5SX	1.94	66	49	90
2	60.3X8.7	R-332WA-60.3X8.7S	R32X	BS32SNX	R-332-CFX	WA32-60.3X8.7SX	2.24	66	43	90
2	60.3X11.1	R-332WA-60.3X11.1S	R32X	BS32SNX	R-332-CFX	WA32-60.3X11.1SX	2.44	66	38	90
2	66X8.5	R-332WA-66X8.5S	R32X	BS32SNX	R-332-CFX	WA32-66X8.5SX	1.85	66	49	75
2 1/2	65X8.5	R-340WA-65X8.5S	R40X	BS40SNX	R-340-CFX	WA40-65X8.5SX	3.80	80	49	105
2 1/2	73X7.0	R-340WA-73X7.0S	R40X	BS40SNX	R-340-CFX	WA40-73X7.0SX	3.29	80	59	105
2 1/2	75X3.0	R-340WA-75X3.0S	R40X	BS40SNX	R-340-CFX	WA40-75X3.0SX	2.90	80	60	105
2 1/2	75X5.0	R-340WA-75X5.0S	R40X	BS40SNX	R-340-CFX	WA40-75X5.0SX	3.07	80	60	105
2 1/2	76.1X6.3	R-340WA-76.1X6.3S	R40X	BS40SNX	R-340-CFX	WA40-76.1X6.3SX	3.15	80	60	105
2 1/2	76.1X12.5	R-340WA-76.1X12.5S	R40X	BS40SNX	R-340-CFX	WA40-76.1X12.5SX	3.87	80	51	105
2 1/2	80X10.0	R-340WA-80X10.0S	R40X	BS40SNX	R-340-CFX	WA40-80X10.0SX	3.10	80	60	90
3	76.1X12.5	R-348WA-76.1X12.5S	R48X	BS48SNX	R-348-CFX	WA48-76.1X12.5SX	5.68	97	51	120
3	80X10.0	R-348WA-80X10.0S	R48X	BS48SNX	R-348-CFX	WA48-80X10.0SX	5.57	97	60	120
3	88.9X3.1	R-348WA-88.9X3.1S	R48X	BS48SNX	R-348-CFX	WA48-88.9X3.1SX	4.68	97	73	120
3	88.9X5.5	R-348WA-88.9X5.5S	R48X	BS48SNX	R-348-CFX	WA48-88.9X5.5SX	4.97	97	73	120
3	88.9X7.7	R-348WA-88.9X7.7S	R48X	BS48SNX	R-348-CFX	WA48-88.9X7.7SX	5.17	97	74	120
3	88.9X8.8	R-348WA-88.9X8.8S	R48X	BS48SNX	R-348-CFX	WA48-88.9X8.8SX	5.40	97	71	120
3	88.9X11.1	R-348WA-88.9X11.1S	R48X	BS48SNX	R-348-CFX	WA48-88.9X11.1SX	5.84	97	67	120
3	88.9X12.5	R-348WA-88.9X12.5S	R48X	BS48SNX	R-348-CFX	WA48-88.9X12.5SX	6.10	97	64	120
3	88.9X15.2	R-348WA-88.9X15.2S	R48X	BS48SNX	R-348-CFX	WA48-88.9X15.2SX	6.50	97	59	120
3	90X3.5	R-348WA-90X3.5S	R48X	BS48SNX	R-348-CFX	WA48-90X3.5SX	4.69	97	73	120
3	90X5.0	R-348WA-90X5.0S	R48X	BS48SNX	R-348-CFX	WA48-90X5.0SX	5.00	97	80	120
3	90X9.0	R-348WA-90X9.0S	R48X	BS48SNX	R-348-CFX	WA48-90X9.0SX	5.35	97	72	120
3	97X12.0	R-348WA-97X12.0S	R48X	BS48SNX	R-348-CFX	WA48-97X12.0SX	5.15	97	73	110

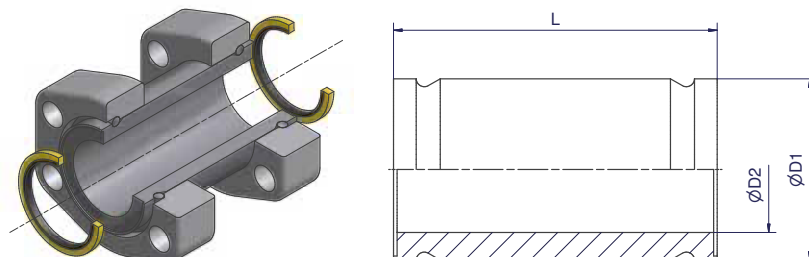
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-320WA-42X3.0S
Stainless steel	SS	R-320WA-42X3.SS

BF – Bulkhead flange

SAE 3000/ISO 6162-1



Size Inch	D1	D2	L	Complete Part Order code	Bulkhead Body Order code	Weight body (Steel) kg/1 piece
1	39	24	170	R-316BFS	BF16SX	0.96
1 1/4	46	30	180	R-320BFS	BF20SX	1.30
1 1/2	56	39	180	R-324BFS	BF24SX	1.75
2	66	49	210	R-332BFS	BF32SX	2.45
2 1/2	80	60	220	R-340BFS	BF40SX	3.70
3	97	73	240	R-348BFS	BF48SX	7.85

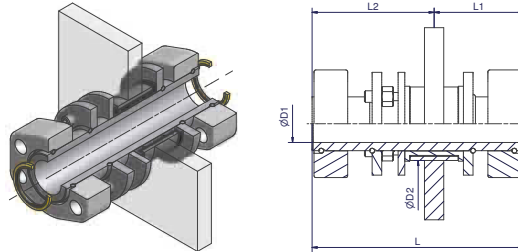
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	S	R-320BFS
Stainless steel	SS	R-320BFSS



VB – Vibra bulkhead

SAE 3000/ISO 6162-1



Size Inch	Complete Part Order code	Tube	D1	D2	L	L1	L2	Weight (Steel) kg/1 piece
3/4	R-312VBCF	36X8.0	20	55.5	220	95	125	2.90
1	R-316VBCF	39X7.5	24	59.5	220	95	125	3.15
1 1/4	R-320VBCF	46X8.0	30	66.5	220	95	125	4.10
1 1/2	R-324VBCF	56X8.5	39	76.5	220	95	125	4.90
2	R-332VBCF	66X8.5	49	86.5	250	110	140	6.19
2 1/2	R-340VBCF	80X10.0	60	100.5	260	115	145	9.22
3	R-348VBCF	97X12.0	73	117.5	280	125	155	15.32

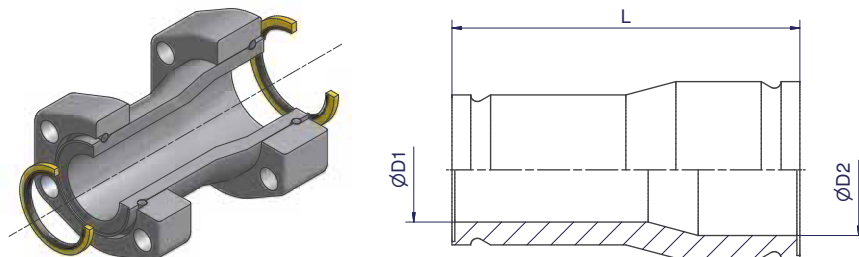
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320VBCF
Stainless steel	SS	R-320VBSS

RF – Reducer flange

SAE 3000/ISO 6162-1



Size Inch	Complete Part Order code	Reducer Body Order code	D1	D2	L	Weight body (Steel) kg/1 piece
1 1/4 - 1	R-320-316RFCF	RF20-16CFX	24	30	110	0.7
1 1/2 - 1	R-324-316RFCF	RF24-16CFX	24	39	115	0.9
1 1/2 - 1 1/4	R-324-320RFCF	RF24-20CFX	30	39	130	1.1
2 - 1 1/4	R-332-320RFCF	RF32-20CFX	30	49	130	1.3
2 - 1 1/2	R-332-324RFCF	RF32-24CFX	39	49	130	1.4
2 1/2 - 1 1/2	R-340-324RFCF	RF40-24CFX	39	60	150	2.1
2 1/2 - 2	R-340-332RFCF	RF40-32CFX	49	60	150	2.2
3 - 2	R-348-332RFCF	RF48-32CFX	49	73	180	3.4
3 - 2 1/2	R-348-340RFCF	RF48-40CFX	60	73	180	3.7

Other sizes on request

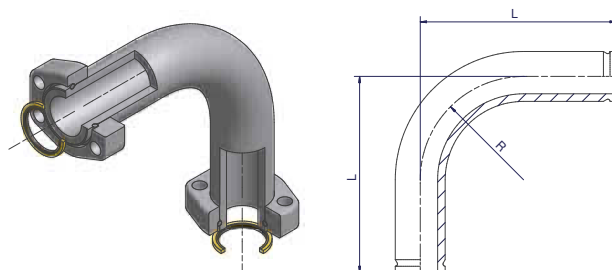
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320-316RFCF
Stainless steel	SS	R-320-316RFSS



FB90 – 90° Flange bend

SAE 3000/ISO 6162-1



Size Inch	Complete Part Order code	90° Flange Bend Order code	Tube	L	R	Weight body (Steel) kg/1 piece
1	R-316FB90S	FB90-16SX	39X7.5	160	98	1.59
1 1/4	R-320FB90S	FB90-20SX	46X8.0	180	96	2.35
1 1/2	R-324FB90S	FB90-24SX	56X8.5	220	116	3.84
2	R-332FB90S	FB90-32SX	66X8.5	275	165	5.72
2 1/2	R-340FB90S	FB90-40SX	80X10.0	370	200	11.20
3	R-348FB90S	FB90-48SX	97X12.0	450	243	19.90

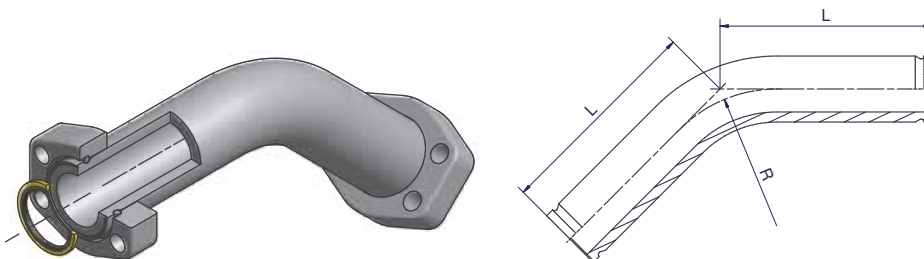
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	SX	R-320FB90SX	
Stainless steel	SS	R-320FB90SS	on request

FB45 – 45° Flange bend

SAE 3000/ISO 6162-1



Size Inch	Complete Part Order code	45° Flange Bend Order code	Tube	L	R	Weight body (Steel) kg/1 piece
1	R-316FB45S	FB45-16SX	39X7.5	140	80	1.58
1 1/4	R-320FB45S	FB45-20SX	46X8.0	150	96	2.18
1 1/2	R-324FB45S	FB45-24SX	56X8.5	180	116	3.49
2	R-332FB45S	FB45-32SX	66X8.5	220	165	5.16
2 1/2	R-340FB45S	FB45-40SX	80X10.0	240	200	8.07
3	R-348FB45S	FB45-48SX	97X12.0	260	243	12.70

Other sizes on request

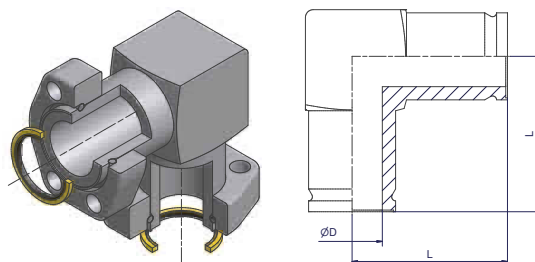
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	SX	FB45-320Sx	
Stainless steel	SS	FB45-320SSX	on request



LF – Elbow flange

SAE 3000/ISO 6162-1



Size Inch	Complete Part Order code	Elbow Flange body Order code	D	L	Weight body (Steel) kg/1 piece
1/2	R-308LFCF	LF08CFX	14	70	0.50
3/4	R-312LFCF	LF12CFX	20	80	1.07
1	R-316LFCF	LF16CFX	24	85	1.32
1 1/4	R-320LFCF	LF20CFX	30	90	1.72
1 1/2	R-324LFCF	LF24CFX	39	100	2.60
2	R-332LFCF	LF32CFX	49	110	4.00
2 1/2	R-340LFCF	LF40CFX	60	140	6.40
3	R-348LFCF	LF48CFX	73	160	10.80

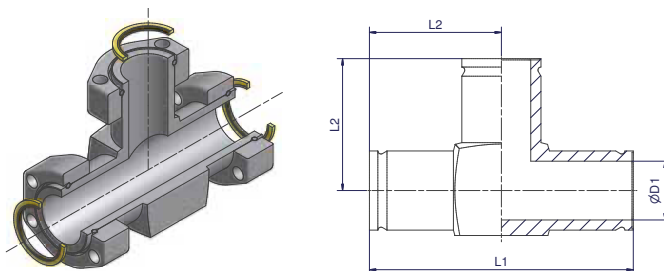
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320LFCF
Stainless steel	SS	R-320LFSS

TF – TEE flange

SAE 3000/ISO 6162-1



Size Inch	Complete Part Order code	Tee Flange body Order code	D1	L1	L2	Weight body (Steel) kg/1 piece
1/2	R-308TFCF	TF08CFX	14	140	70	0.75
3/4	R-312TFCF	TF12CFX	20	160	80	1.60
1	R-316TFCF	TF16CFX	24	170	85	2.00
1 1/4	R-320TFCF	TF20CFX	30	180	90	2.03
1 1/2	R-324TFCF	TF24CFX	39	200	100	3.13
2	R-332TFCF	TF32CFX	49	220	110	4.53
3	R-348TFCF	TF48CFX	73	320	160	12.81

Other sizes on request

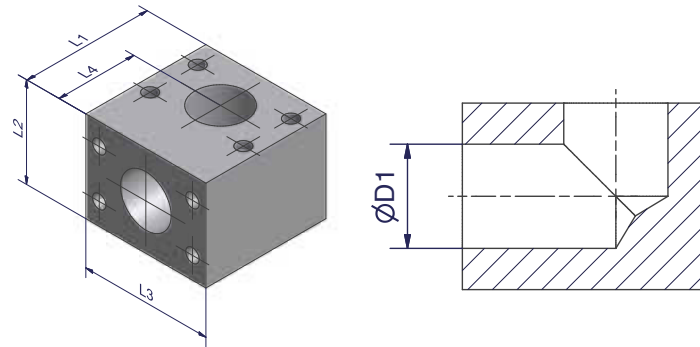
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320TFCF
Stainless steel	SS	R-320TFSS



LB – Flange L-block

SAE 3000/ISO 6162-1



Size Inch	Order code	D1	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1	LB316CFX	25	70	48	70	46	1.5
1 1/4	LB320CFX	30	80	58	80	51	2.4
1 1/2	LB324CFX	38	90	68	90	56	3.4
2	LB332CFX	50	96	78	100	57	4.4
2 1/2	LB340CFX	60	110	88	110	65	6.0
3	LB348CFX	73	135	110	135	80	11.3

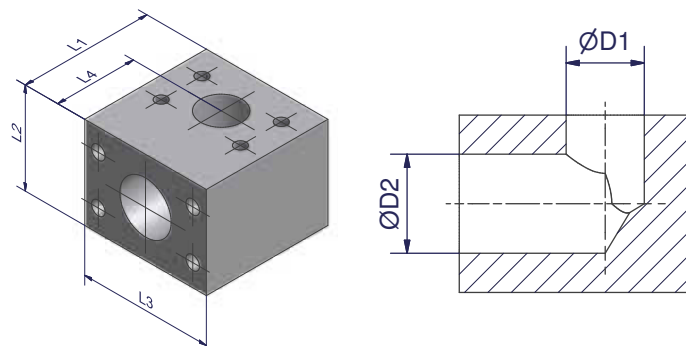
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	LB320CFX
Stainless steel	SS	LB320SSX

LBR – Flange L-block reducer

SAE 3000/ISO 6162-1



Size Inch	Order code	D1	D2	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1 1/4 - 1	LBR320-316CFX	25	30	80	58	80	51	2.4
1 1/2 - 1	LBR324-316CFX	25	38	90	68	90	56	3.6
1 1/2 - 1 1/4	LBR324-320CFX	30	38	90	68	90	56	3.6
2 - 1	LBR332-316CFX	25	50	96	78	100	57	4.7
2 - 1 1/4	LBR332-320CFX	30	50	96	78	100	57	4.7
2 - 1 1/2	LBR332-324CFX	38	50	96	78	100	57	4.6

Other sizes on request

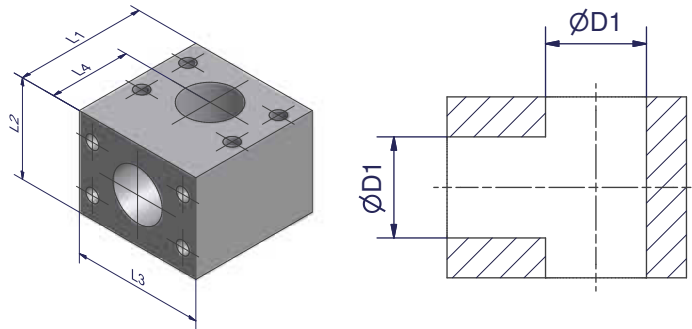
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	LBR320-316CFX
Stainless steel	SS	LBR320-316SSX



TB – Flange T-block

SAE 3000/ISO 6162-1



Size Inch	Order code	D1	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1/2	TB308CFX	13	60	50	60	37	1.2
3/4	TB312CFX	19	68	55	66	44	1.6
1	TB316CFX	25	70	48	70	46	1.6
1 1/4	TB320CFX	30	80	58	80	51	2.2
1 1/2	TB324CFX	38	90	68	90	56	3.1
2	TB332CFX	50	96	78	100	57	3.9
2 1/2	TB340CFX	60	110	88	110	65	5.3
3	TB348CFX	73	135	110	135	80	10.0

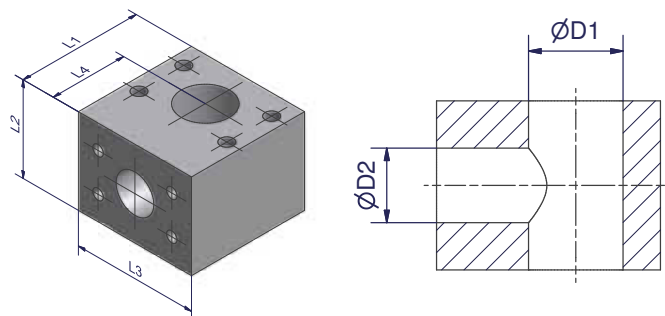
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TB320CFX
Stainless steel	SS	TB320SSX

TBR – Flange T-block reducer

SAE 3000/ISO 6162-1



Size Inch	Order code	D1	D2	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1 1/4 - 1 - 1 1/4	TBR320-316-320CFX	30	25	80	58	80	51	2.3
1 1/2 - 1 1/4 - 1 1/2	TBR324-320-324CFX	38	30	90	68	90	56	3.3
1 1/2 - 1 - 1 1/2	TBR324-316-324CFX	38	25	90	68	90	56	3.4
2 - 1 1/2 - 2	TBR332-324-332CFX	50	38	96	78	100	57	4.2
2 - 1 1/4 - 2	TBR332-320-332CFX	50	30	96	78	100	57	4.3
2 1/2 - 2 - 2 1/2	TBR340-332-340CFX	60	50	110	88	110	65	5.6
2 1/2 - 1 1/2 - 2 1/2	TBR340-324-340CFX	60	38	110	88	110	65	5.9
3 - 2 1/2 - 3	TBR348-340-348CFX	73	60	135	110	135	80	10.6
3 - 2 - 3	TBR348-332-348CFX	73	50	135	110	135	80	11.0

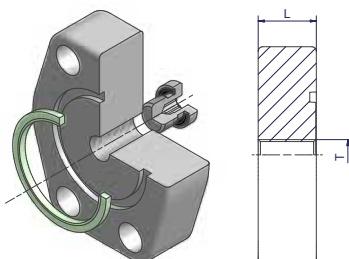
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TBR320-316-320CFX
Stainless steel	SS	TBR320-316-320SSX

BFV – Blind flange

SAE 3000/ISO 6162-1



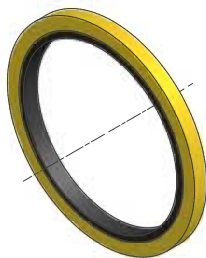
Size Inch	L	T	Weight (Steel) kg/1 piece	Flange incl. VSTI-ED and F37 Seal Order code
1	24	G 1/4	0.60	F37-316BFVCF
1 1/4	22	G 1/4	0.70	F37-320BFVCF
1 1/2	25	G 1/4	1.10	F37-324BFVCF
2	33	G 1/4	2.00	F37-332BFVCF
2 1/2	44	G 1/4	3.45	F37-340BFVCF
3	50	G 1/4	5.45	F37-348BFVCF

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-320BFVCF
Stainless steel	SS	F37-320BFVSS

BS – Bonded seal

SAE 3000/ISO 6162-1



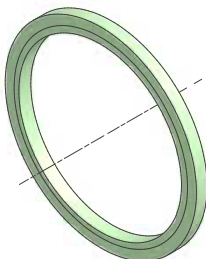
Size Inch	Steel	Stainless Steel
1/2	BS08SNX	BS08SSNX
3/4	BS12SNX	BS12SSNX
1	BS16SNX	BS16SSNX
1 1/4	BS20SNX	BS20SSNX
1 1/2	BS24SNX	BS24SSNX
2	BS32SNX	BS32SSNX
2 1/2	BS40SNX	BS40SSNX
3	BS48SNX	BS48SSNX

Sealing: NBR

Other sealing materials like FKM on request

F37S – F37 seal

SAE 3000/ISO 6162-1



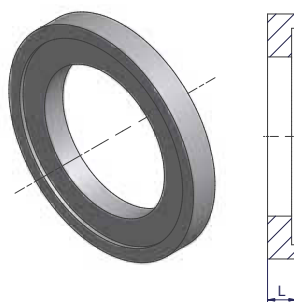
Size Inch	F37 Seal
1/2	F37S08X
3/4	F37S12X
1	F37S16X
1 1/4	F37S20X
1 1/2	F37S24X
2	F37S32X
2 1/2	F37S40X
3	F37S48X

Sealing: Polyurethane

Material properties and applications see page 18

A0 – Adapter bonded seal to F37 seal/O-Ring

SAE 3000/ISO 6162-1



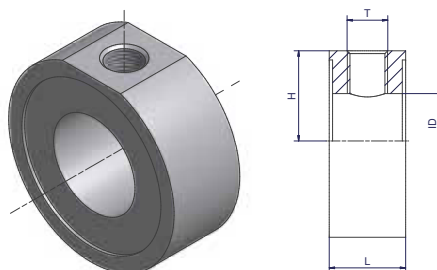
Size Inch	L	Weight (Steel) kg/1 piece	Adapter Order code
1/2	5	0.01	AO08CFX
3/4	5	0.02	AO12CFX
1	7	0.06	AO16CFX
1 1/4	7	0.06	AO20CFX
1 1/2	7	0.08	AO24CFX
2	7	0.10	AO32CFX
2 1/2	7	0.14	AO40CFX
3	7	0.20	AO48CFX

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	AO32CFX
Stainless steel	SS	AO32SSX

TBT – TEE between bonded seal

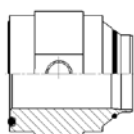
SAE 3000/ISO 6162-1



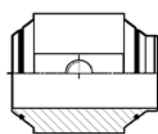
Size Inch	Order code*	L	H	T	ID	Bolt ISO 4762	Weight body (Steel) kg/1 piece
1	TBT16-1/4CFX	25	20.5	G 1/4 A	25	ZYLS10X90	0.21
1 1/4	TBT20-1/4CFX	25	24.5	G 1/4 A	27	ZYLS10X100	0.30
1 1/4	TBT20-1/2CFX	40	22.5	G 1/2 A	24	ZYLS10X120	0.49
1 1/2	TBT24-1/4CFX	25	29.5	G 1/4 A	31	ZYLS12X110	0.42
1 1/2	TBT24-1/2CFX	40	28.0	G 1/2 A	30	ZYLS12X130	0.68
2	TBT32-1/4CFX	25	35.0	G 1/4 A	41	ZYLS12X110	0.51
2	TBT32-1/2CFX	40	34.0	G 1/2 A	38	ZYLS12X130	0.87
2 1/2	TBT40-1/4CFX	30	41.5	G 1/4 A	60	ZYLS12X150	0.63
3	TBT48-1/4CFX	30	50.0	G 1/4 A	72	ZYLS12X150	0.90

*For testpoints and diagnostic test equipment see catalogue 4100, Industrial Tube Fittings Europe

Alternative versions on request



TFVB



TTB

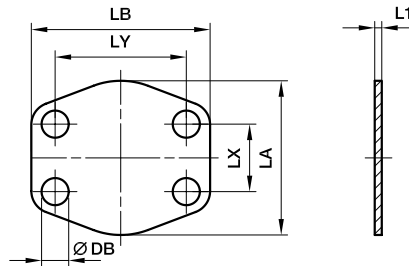
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TBT24-1/4CFX
Stainless steel	SS	TBT24-1/4SSX



AP – SAE flange locking plate

SAE 3000/ISO 6162-1



Nom. flange size		L1	LA	LB	LX	LY	DB	Weight body (Steel) kg/1 piece	Order code	PN (bar) ¹⁾	
SAE (in)	ISO (DN)									CF	SS
1/2	13	3	47	57	17.5	38.1	9.0	0.02	8AP1		
3/4	19	3	49	66	22.3	47.6	11.0	0.02	12AP1		
1	25	3	53	71	26.2	52.4	11.0	0.02	16AP1		
1 1/4	32	3	69	80	30.2	58.7	11.5	0.03	20AP1		
1 1/2	38	3	77	95	35.7	69.9	13.5	0.03	24AP1		
2	51	3	89	103	42.9	77.8	13.5	0.04	32AP1		
2 1/2	64	3	101	116	50.8	89.9	13.5	0.04	40AP1		
3	76	4	124	136	61.9	106.4	17.0	0.07	48AP1		
3 1/2	89	4	136	152	69.9	102.7	17.0	0.07	56AP1		
4	102	4	146	162	77.8	130.2	17.0	0.09	64AP1		
5	127	4	180	184	92.1	152.4	17.0	0.10	80AP1		

¹⁾ Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

This flange locking plate is not used under pressure

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8AP1CF	only locking plate
Stainless steel	SS	8AP1SS	only locking plate

Bolts and nuts for flange

SAE 3000/ISO 6162-1



F37 Flare Flange

Size Inch	Flange	F37 Seal / Flat Face / Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1/2	F37-308-CFX	4x ZYLS8X35	4x ZYLS8X50	4x ISO4032-M8
3/4	F37-312-CFX	4x ZYLS10X40	4x ZYLS10X65	4x ISO4032-M10
1	F37-316-CFX	4x ZYLS10X45	4x ZYLS10X75	4x ISO4032-M10
1 1/4	F37-320-CFX	4x ZYLS10X40	4x ZYLS10X70	4x ISO4032-M10
1 1/2	F37-324-CFX	4x ZYLS12X45	4x ZYLS12X80	4x ISO4032-M12
2	F37-332-CFX	4x ZYLS12X55	4x ZYLS12X100	4x ISO4032-M12
2 1/2	F37-340-CFX	4x ZYLS12X65	4x ZYLS12X120	4x ISO4032-M12
3	F37-348-CFX	4x ZYLS16X80	4x ZYLS16X140	4x ISO4032-M16

Retaining Ring Flange

Size Inch	Flange	F37 Seal / Flat Face / Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1/2	R-308-CFX	4x ZYLS8X35	4x ZYLS8X60	4x ISO4032-M8
3/4	R-312-CFX	4x ZYLS10X40	4x ZYLS10X65	4x ISO4032-M10
1	R-316-CFX	4x ZYLS10X40	4x ZYLS10X70	4x ISO4032-M10
1 1/4	R-320-CFX	4x ZYLS10X40	4x ZYLS10X70	4x ISO4032-M10
1 1/2	R-324-CFX	4x ZYLS12X50	4x ZYLS12X80	4x ISO4032-M12
2	R-332-CFX	4x ZYLS12X55	4x ZYLS12X90	4x ISO4032-M12
2 1/2	R-340-CFX	4x ZYLS12X65	4x ZYLS12X120	4x ISO4032-M12
3	R-348-CFX	4x ZYLS16X80	4x ZYLS16X130	4x ISO4032-M16

Bolts and nuts must be ordered seperately

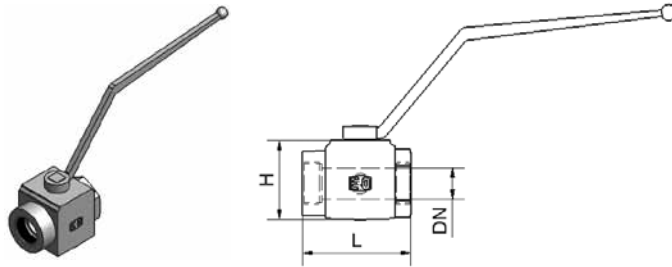
Please add the suffixes according to the bolt quality

Quality	Steel		Stainless Steel
	8.8	10.9	A4-80X
Bolt	ZYLS16X60X	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO-4032-M12-8VZX	ISO-4032-M12-10VZX	ISO-4032-M12-80X



KH – Ball valve

Female BSPP thread (ISO 1179-1)



Material Steel

Size Inch	DN	L	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
1 ¼	32	110	80	KH11/4X	3	315
1 1/2	40	114	90	KH11/2X	4	315
2	50	129	104	KH2X	5	400

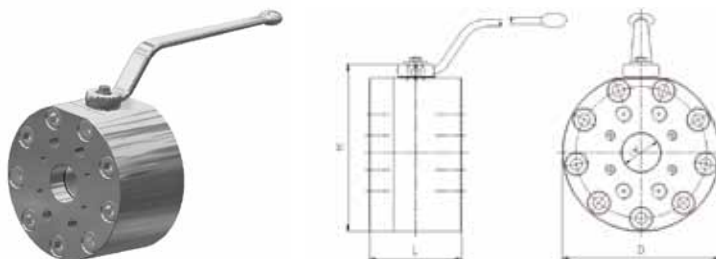
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH11/4CFX
Steel		KH11/4
Stainless steel	71	KH11/471X

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-10°C / 100 °C	-30°C / 100°C

KH – Ball valve drilled and tapped for SAE 3000 Flanges

SAE 3000/ISO 6162-1



Material Steel

Size Inch	LW	L	Flange Part	D	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
1/2	15	75	308	88	88	KH08-15CF	3.00	350
3/4	20	80	312	98	100	KH12-20CF	4.20	350
1	25	88	316	118	113	KH16-25CF	6.00	350
1 1/4	32	100	320	145	158	KH20-32CF	11.70	280
1 1/2	38	110	324	165	178	KH24-48CF	17.10	280
2	48	116	332	198	210	KH32-63CF	24.60	280
2 1/2	63	170	340	218	275	KH40-63CF	44.40	210
3	76	170	348	248	307	KH48-76CF	54.90	210
4	100	170	364	258	326	KH64-100CF	60.50	50
5	118	210	380	295	377	KH80-118CF	95.50	50

Material Stainless Steel

Size Inch	LW	L	Flange Part	D	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
1/2	15	75	308	78	83	KH08-15SS	3.00	350
3/4	20	80	312	98	100	KH12-20SS	4.20	350
1	25	88	316	118	113	KH16-25SS	6.00	350
1 1/4	32	100	320	145	158	KH20-32SS	11.70	280
1 1/2	38	110	324	165	178	KH24-48SS	17.10	280
2	48	116	332	198	210	KH32-63SS	24.60	280
2 1/2	63	150	340	198	259	KH40-63SS	44.40	210
3	76	140	348	210	277	KH48-76SS	54.90	210
4	100	170	364	258	326	KH64-100SS	60.50	50
5	118	210	380	295	377	KH80-118SS	95.50	50

Steel ball valves 1/2" up to 2" with SAE 3000 and SAE 6000 boring pattern

Please change suffixes according to material/surface required

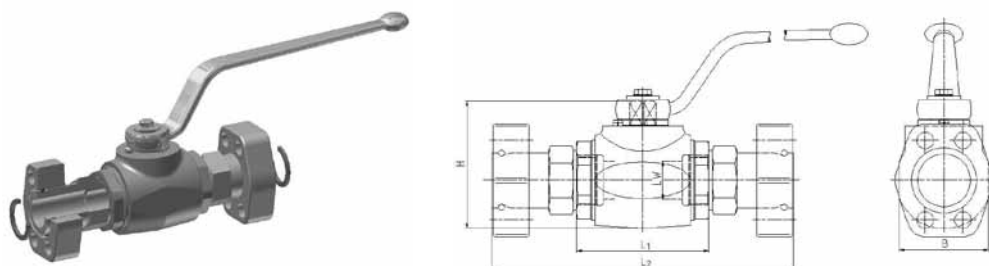
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH20-25CF
Stainless steel	SS	KH20-25SS

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-10°C / 100 °C	-30°C / 100°C



KH-R – Ball valve with SAE 3000 Flanges

SAE 3000/ISO 6162-1



Material Steel

Size Inch	LW	L1	L2	B	H	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
3/4	20	95	217.0	49	75	KH-R-312-20CF	KH-R-12-20CF	2.5	350
1	25	113	249.6	58	83	KH-R-316-25CF	KH-R-16-25CF	3.8	350
1 1/4	32	111	253.6	81	107	KH-R-320-32CF	KH-R-20-32CF	6.0	280
1 1/2	38	130	280.6	100	124	KH-R-324-38CF	KH-R-24-38CF	8.4	280
2	48	140	313.6	118	138	KH-R-332-48CF	KH-R-32-48CF	13.9	280

Other sizes on request

Material Stainless Steel

Size Inch	LW	L1	L2	B	H	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
3/4	20	95	217.0	49	75	KH-R-312-20SS	KH-R-12-20SS	2.5	350
1	25	113	249.6	58	83	KH-R-316-25SS	KH-R-16-25SS	3.8	350
1 1/4	32	111	253.6	81	107	KH-R-320-32SS	KH-R-20-32SS	8.6	280
1 1/2	38	130	280.6	100	124	KH-R-324-38SS	KH-R-24-38SS	12.0	280
2	48	140	313.6	118	138	KH-R-332-48SS	KH-R-32-48SS	16.1	280

Other sizes on request

Please change suffixes according to material/surface required

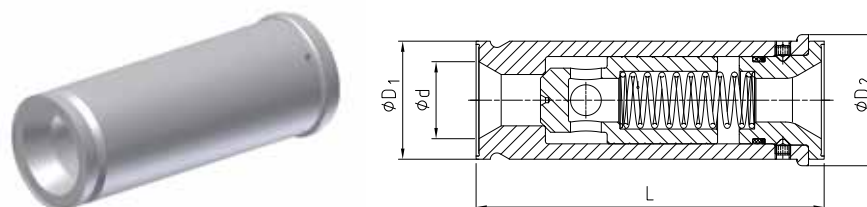
Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	KH-R-320-25CF	
Stainless steel	SS	KH-R-320-25SS	on request

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-20°C / 100 °C	-30°C / 100°C

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RHD-R – Non return valves

SAE 3000 / ISO 6162-1



Material Steel

Size Inch	L	D1	D2	d	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
3/4	96.4	36	40.2	20.0	RHD-R-312-0.5BCF	RHD-R-12-0.5BCF	0.53	210
1	116.6	39	44.2	23.0	RHD-R-316-0.5BCF	RHD-R-16-0.5BCF	0.78	
1 1/4	135.6	46	51.1	30.0	RHD-R-320-0.5BCF	RHD-R-20-0.5BCF	1.26	
1 1/2	135.6	56	60.5	38.8	RHD-R-324-0.5BCF	RHD-R-24-0.5BCF	1.61	
2	180.1	66	70.5	49.0	RHD-R-332-0.5BCF	RHD-R-32-0.5BCF	2.54	
2 1/2	190.0	80	84.5	60.0	RHD-R-340-0.5BCF	RHD-R-12-0.5BCF	3.89	
3	200.0	97	103.2	73.0	RHD-R-348-0.5BCF	RHD-R-48-0.5BCF	5.90	

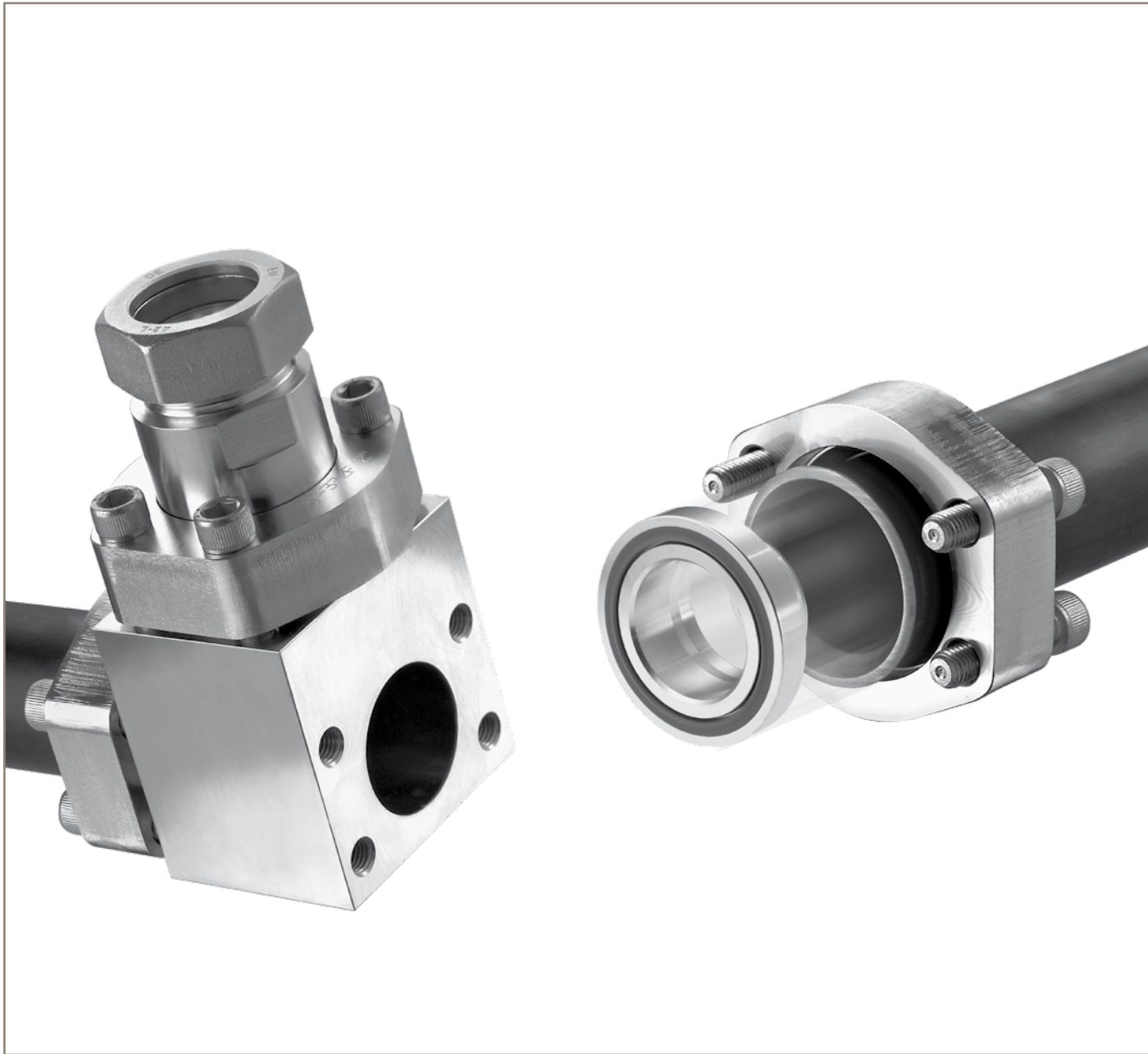
Opening pressure 0.5 bar. Other pressure rates on request.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RHD-R-320-0.5BCF
Stainless steel (inner parts steel)	SS	RHD-R-320-0.5BSS

	Materials
Body	Steel
O-Ring	NBR
Tmin / T max	-10°C / 100 °C



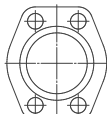
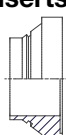
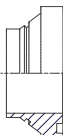
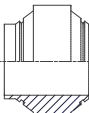
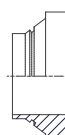
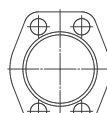
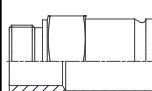
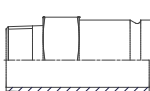
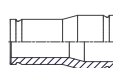
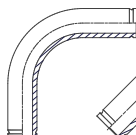
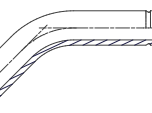
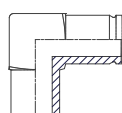
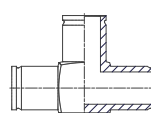
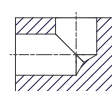
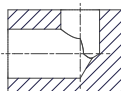
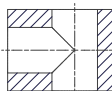
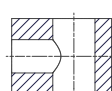
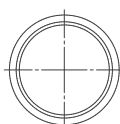
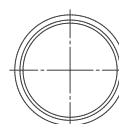
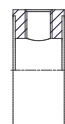
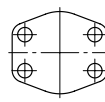
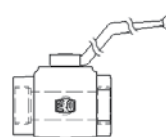
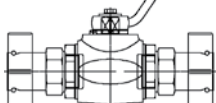
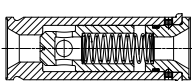


SAE 6000 System

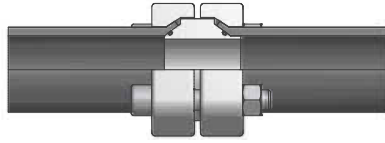
420 bar

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Programme overview SAE 6000/ISO 6162-2 footprint

Parflange® F37 connection parts	Flanges  F37 – p.123						
	Inserts  TFB – p.124  TFV – p.125  TT – p.126  TF – p.127						Sleeve  SL – p.128
Retaining ring connection parts	Flanges  R – p.129  R-Ring – p.129  PSC – p.130						
	Male / Female  MTF-R – p.131  MTF-N – p.132  FTF-R – p.133			Hose    Hose – p.134		Weld  WA – p.135	
	Tube to Tube  BF – p.137  VB – p.138  RF – p.139  FB90 – p.140  FB45 – p.141  LF – p.142  TF – p.143						
SAE connection parts	Blocks  LB – p.144  LBR – p.145  TB – p.146  TBR – p.147  BFV – p.148						
Seals Adapter Bolts	Components  BS – p.149  F37S – p.149  AO – p.150  TBT – p.151  AP – p.152					Bolts and Nuts  p.153	
Ball valves	 KH – p.154  KH – p.155  KH-R – p.156  RHD-R – p.157						

SAE 6000/ISO 6162-2 footprint



Part combination flaring SAE 6000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange SAE 6000 ISO 6162-2	Insert*	F37 Seal	Sleeve	F37 Seal / Flat Face / Bonded Seal		Nuts
							Bolts Tube to Port	Bolts Tube to Tube	
420	1/2	16X2.0	F37-608-CFX	IN08-16X2.0T...	F37S08X	SL08-25-16-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	18X2.0	F37-608-CFX	IN08-18X2.0T...	F37S08X	SL08-25-18-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	20X2.0	F37-608-CFX	IN08-20X2.0T...	F37S08X	SL08-25-20-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	20X2.5	F37-608-CFX	IN08-20X2.5T...	F37S08X	SL08-25-20-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	25X2.5	F37-608-CFX	IN08-25X2.5T...	F37S08X		4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	25X3.0	F37-608-CFX	IN08-25X3.0T...	F37S08X		4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	3/4	20X2.0	F37-612-CFX	IN12-20X2.0T...	F37S12X	SL12-30-20-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	20X2.5	F37-612-CFX	IN12-20X2.5T...	F37S12X	SL12-30-20-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	25X2.5	F37-612-CFX	IN12-25X2.5T...	F37S12X	SL12-30-25-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	25X3.0	F37-612-CFX	IN12-25X3.0T...	F37S12X	SL12-30-25-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	30X3.0	F37-612-CFX	IN12-30X3.0T...	F37S12X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	30X4.0	F37-612-CFX	IN12-30X4.0T...	F37S12X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	25X2.5	F37-616-CFX	IN16-25X2.5T...	F37S16X	SL16-38-25-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	25X3.0	F37-616-CFX	IN16-25X3.0T...	F37S16X	SL16-38-25-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	30X3.0	F37-616-CFX	IN16-30X3.0T...	F37S16X	SL16-38-30-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	30X4.0	F37-616-CFX	IN16-30X4.0T...	F37S16X	SL16-38-30-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	38X2.5	F37-616-CFX	IN16-38X2.5T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	38X3.0	F37-616-CFX	IN16-38X3.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	38X4.0	F37-616-CFX	IN16-38X4.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1	38X5.0	F37-616-CFX	IN16-38X5.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M10
	1 1/4	30X3.0	F37-620-CFX	IN20-30X3.0T...	F37S20X	SL20-42-30-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/4	30X4.0	F37-620-CFX	IN20-30X4.0T...	F37S20X	SL20-42-30-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/4	38X3.0	F37-620-CFX	IN20-38X3.0T...	F37S20X	SL20-42-38-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/4	38X4.0	F37-620-CFX	IN20-38X4.0T...	F37S20X	SL20-42-38-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/4	38X5.0	F37-620-CFX	IN20-38X5.0T...	F37S20X	SL20-42-38-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/4	42X3.0	F37-620-CFX	IN20-42X3.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/4	42X4.0	F37-620-CFX	IN20-42X4.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M10
	1 1/2	38X3.0	F37-624-CFX	IN24-38X3.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	38X4.0	F37-624-CFX	IN24-38X4.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	38X5.0	F37-624-CFX	IN24-38X5.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	42X3.0	F37-624-CFX	IN24-42X3.0T...	F37S24X	SL24-50-42-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	42X4.0	F37-624-CFX	IN24-42X4.0T...	F37S24X	SL24-50-42-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	50X3.0	F37-624-CFX	IN24-50X3.0T...	F37S24X		4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	50X5.0	F37-624-CFX	IN24-50X5.0T...	F37S24X		4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	1 1/2	50X6.0	F37-624-CFX	IN24-50X6.0T...	F37S24X		4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M12
	2	50X3.0	F37-632-CFX	IN32-50X3.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M12
	2	50X5.0	F37-632-CFX	IN32-50X5.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M12
	2	50X6.0	F37-632-CFX	IN32-50X6.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M12
	2	60X3.0	F37-632-CFX	IN32-60X3.0T...	F37S32X		4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M12
	2	60X5.0	F37-632-CFX	IN32-60X5.0T...	F37S32X		4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M12
	2	60X6.0	F37-632-CFX	IN32-60X6.0T...	F37S32X		4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M12

Select the complete version:

- * ...FBCF Bonded Seal version
- ...FVCF F37 Seal version
- ...TCF Tube to Tube version
- ...FCF Flat Face version

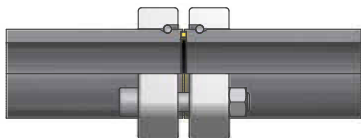
Pressure rates related to flanges.

Other sizes like schedule on request

Bolts and nuts are not included in a complete part.

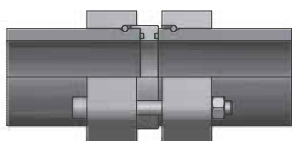
Bolt and nuts for flanges see page 153

SAE 6000/ISO 6162-2 footprint



Part combination Retaining Ring SAE 6000 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal	Bolts Tube to Port	Bolts Tube to Tube	Nut
420	1/2	26X6.0	R-608-CFX	R08X	BS08SNX	4 x ZYLS8X35	4 x ZYLS8X60	4 x ISO4032-M8
	3/4	36X8.0	R-612-CFX	R12X	BS12SNX	4 x ZYLS10X45	4 x ZYLS10X80	4 x ISO4032-M10
	1	39X7.5	R-616-CFX	R16X	BS16SNX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
	1 1/4	46X8.0	R-620-CFX	R20X	BS20SNX	4 x ZYLS14X50	4 x ZYLS14X90	4 x ISO4032-M14
	1 1/2	56X8.5	R-624-CFX	R24X	BS24SNX	4 x ZYLS16X60	4 x ZYLS16X110	4 x ISO4032-M16
	2	66X8.5	R-632-CFX	R32X	BS32SNX	4 x ZYLS20X70	4 x ZYLS20X110	4 x ISO4032-M20



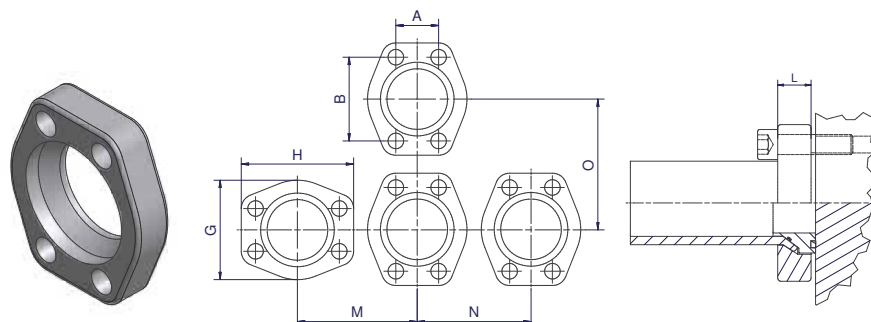
Part combination Pipe seal carrier SAE 6000 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Seal Carrier	Bolts Tube to Port	Bolts Tube to Tube	Nut
420	2	66X8.5	R-632-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS24X80	4 x ZYLS24X120	ISO4032-M24
	2 1/2	80X10	R-640-CFX	R40X	PSC40-80X10VCF	4 x ZYLS24X100	4 x ZYLS24X150	ISO4032-M24
	3	97X12	R-648-CFX	R48X	PSC48-97X12VCF	4 x ZYLS30X110	4 x ZYLS30X160	ISO4032-M30

Stainless steel on request
Other sizes on request

F37 – Flare flange

SAE 6000/ISO 6162-2



Parflange F37 flange dimensions

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight (Steel) kg/1 piece	W.P. bar
1/2	F37-608-CFX	18.2	40.5	48	56.40	56	53	59	20	0.20	420
3/4	F37-612-CFX	23.8	50.8	60	71.35	70	66	75	24	0.35	420
3/4	F37-612T-CFX*	23.8	50.8	60	71.35	70	66	75	24	0.35	420
3/4	F37-612/25-CFX**	23.8	50.8	60	71.35	70	66	75	24	0.45	420
1	F37-616-CFX	27.8	57.2	70	81.00	80	75	84	24	0.53	420
1	F37-616T-CFX*	27.8	57.2	70	81.00	80	75	84	24	0.53	420
1	F37-616/30-CFX**	27.8	57.2	70	81.00	80	75	84	24	0.53	420
1 1/4	F37-620-CFX	31.8	66.6	78	95.50	90	83	99	30	0.92	420
1 1/4	F37-620T-CFX*	31.8	66.6	78	95.50	90	83	99	30	0.92	420
1 1/4	F37-620/38-CFX*	31.8	66.6	78	95.50	90	83	99	30	0.92	420
1 1/4	F37-620/38T-CFX***	31.8	66.6	78	95.50	90	83	99	30	0.92	420
1 1/2	F37-624-CFX	36.5	79.3	95	112.00	108	101	116	35	1.54	420
1 1/2	F37-624T-CFX*	36.5	79.3	95	112.00	108	101	116	35	1.54	420
2	F37-632-CFX	44.5	96.8	114	133.50	128	120	137	40	2.44	420
2	F37-632T-CFX*	44.5	96.8	114	133.50	128	120	137	40	2.44	420
2	F37-632/25-CFX**	44.5	96.8	114	133.50	128	120	137	40	2.44	420

* Threaded flanges

** Jump size flanges (no adapter sleeves (SL...) necessary)

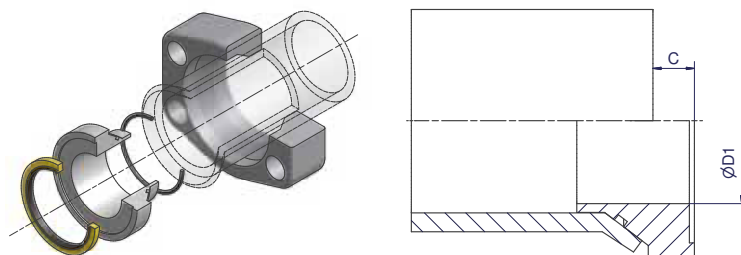
*** Threaded flanges for jump sizes (without sleeves)

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	F37-620-CFX	
Stainless steel	SS	F37-620-SSX	
Galvanized hot dip zinc	TZN	F37-620-TZNX	on request

TFB – Flare flange connection

Tube to port connection, bonded seal



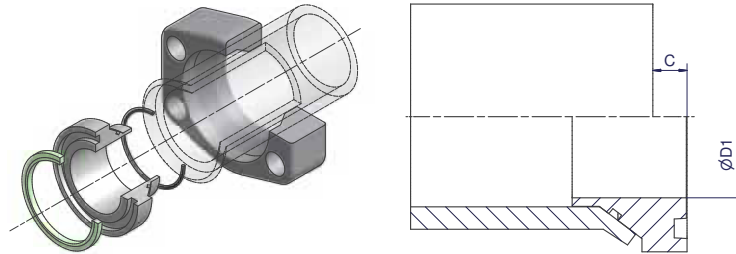
Size		Flange incl. Insert + Bonded Seal + O-Ring (+Sleeve) Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	F37-608-16X2.0TFBCF	9.5	8.0	IN08-16X2.0TFBCF	BS08SNX	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	F37-608-18X2.0TFBCF	11.5	8.0	IN08-18X2.0TFBCF	BS08SNX	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	F37-608-20X2.0TFBCF	13.5	8.0	IN08-20X2.0TFBCF	BS08SNX	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	F37-608-20x2.5TFBCF	13.5	8.0	IN08-20X2.5TFBCF	BS08SNX	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	F37-608-25X2.5TFBCF	13.5	10.0	IN08-25X2.5TFBCF	BS08SNX	OR20X1.0X		0.25
1/2	25X3.0	F37-608-25X3.0TFBCF	13.0	8.0	IN08-25X3.0TFBCF	BS08SNX	OR20X1.0X		0.24
3/4	20X2.0	F37-612-20X2.0TFBCF	13.5	8.0	IN12-20X2.0TFBCF	BS12SNX	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	20X2.5	F37-612-20X2.5TFBCF	12.5	8.0	IN12-20X2.5TFBCF	BS12SNX	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	25X2.5	F37-612-25X2.5TFBCF	17.5	10.0	IN12-25X2.5TFBCF	BS12SNX	OR20X1.0X	SL12-30-25-CFX	0.41
3/4	25X3.0	F37-612-25X3.0TFBCF	16.5	8.0	IN12-25X3.0TFBCF	BS12SNX	OR20X1.0X	SL12-30-25-CFX	0.42
3/4	30X3.0	F37-612-30X3.0TFBCF	19.0	8.5	IN12-30X3.0TFBCF	BS12SNX	OR24X1.0X		0.42
3/4	30X4.0	F37-612-30X4.0TFBCF	19.5	8.5	IN12-30X4.0TFBCF	BS12SNX	OR22X1.0X		0.42
1	25X2.5	F37-616-25X2.5TFBCF	17.5	10.0	IN16-25X2.5TFBCF	BS16SNX	OR20X1.0X	SL16-38-25-CFX	0.62
1	25X3.0	F37-616-25X3.0TFBCF	16.5	8.0	IN16-25X3.0TFBCF	BS16SNX	OR20X1.0X	SL16-38-25-CFX	0.62
1	30X3.0	F37-616-30X3.0TFBCF	21.5	8.5	IN16-30X3.0TFBCF	BS16SNX	OR24X1.0X	SL16-38-30-CFX	0.62
1	30X4.0	F37-616-30X4.0TFBCF	19.5	8.5	IN16-30X4.0TFBCF	BS16SNX	OR22X1.0X	SL16-38-30-CFX	0.62
1	38X2.5	F37-616-38X2.5TFBCF	25.0	9.5	IN16-38X2.5TFBCF	BS16SNX	OR34X1.0X		0.64
1	38X3.0	F37-616-38X3.0TFBCF	25.0	9.0	IN16-38X3.0TFBCF	BS16SNX	OR34X1.0X		0.63
1	38X4.0	F37-616-38X4.0TFBCF	25.0	10.0	IN16-38X4.0TFBCF	BS16SNX	OR30X1.0X		0.63
1	38X5.0	F37-616-38X5.0TFBCF	25.0	8.0	IN16-38X5.0TFBCF	BS16SNX	OR28X1.0X		0.62
1 1/4	30X3.0	F37-620-30X3.0TFBCF	21.5	8.5	IN20-30X3.0TFBCF	BS20SNX	OR24X1.0X	SL20-42-30-CFX	1.03
1 1/4	30X4.0	F37-620-30X4.0TFBCF	19.5	8.5	IN20-30X4.0TFBCF	BS20SNX	OR22X1.0X	SL20-42-30-CFX	1.04
1 1/4	38X3.0	F37-620-38X3.0TFBCF	29.5	9.0	IN20-38X3.0TFBCF	BS20SNX	OR34X1.0X	SL20-42-38-CFX	1.02
1 1/4	38X4.0	F37-620-38X4.0TFBCF	27.0	10.0	IN20-38X4.0TFBCF	BS20SNX	OR30X1.0X	SL20-42-38-CFX	1.03
1 1/4	38X5.0	F37-620-38X5.0TFBCF	25.5	8.0	IN20-38X5.0TFBCF	BS20SNX	OR28X1.0X	SL20-42-38-CFX	1.02
1 1/4	42X3.0	F37-620-42X3.0TFBCF	31.5	10.0	IN20-42X3.0TFBCF	BS20SNX	OR37.82X1.78X		1.03
1 1/4	42X4.0	F37-620-42X4.0TFBCF	31.5	10.0	IN20-42X4.0TFBCF	BS20SNX	OR34X1.0X		1.02
1 1/2	38X3.0	F37-624-38X3.0TFBCF	27.5	9.0	IN24-38X3.0TFBCF	BS24SNX	OR34X1.0X	SL24-50-38-CFX	1.11
1 1/2	38X4.0	F37-624-38X4.0TFBCF	27.5	10.0	IN24-38X4.0TFBCF	BS24SNX	OR30X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X5.0	F37-624-38X5.0TFBCF	25.0	8.0	IN24-38X5.0TFBCF	BS24SNX	OR28X1.0X	SL24-50-38-CFX	1.73
1 1/2	42X3.0	F37-624-42X3.0TFBCF	35.0	10.0	IN24-42X3.0TFBCF	BS24SNX	OR37.82X1.78X	SL24-50-42-CFX	1.74
1 1/2	42X4.0	F37-624-42X4.0TFBCF	31.5	10.0	IN24-42X4.0TFBCF	BS24SNX	OR34X1.0X	SL24-50-42-CFX	1.73
1 1/2	50X3.0	F37-624-50X3.0TFBCF	36.0	11.0	IN24-50X3.0TFBCF	BS24SNX	OR44.17X1.78X		1.73
1 1/2	50X5.0	F37-624-50X5.0TFBCF	36.0	10.0	IN24-50X5.0TFBCF	BS24SNX	OR41X1.78X		1.73
1 1/2	50X6.0	F37-624-50X6.0TFBCF	35.0	10.0	IN24-50X6.0TFBCF	BS24SNX	OR41X1.78X		1.73
2	50X3.0	F37-632-50X3.0TFBCF	41.5	11.0	IN32-50X3.0TFBCF	BS32SNX	OR44.17X1.78X	SL32-60-50-CFX	2.66
2	50X5.0	F37-632-50X5.0TFBCF	37.5	10.0	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	2.68
2	50X6.0	F37-632-50X6.0TFBCF	35.0	10.0	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	2.71
2	60X3.0	F37-632-60X3.0TFBCF	46.0	12.0	IN32-60X3.0TFBCF	BS32SNX	OR53.7X1.78X		2.71
2	60X5.0	F37-632-60X5.0TFBCF	46.0	11.0	IN32-60X5.0TFBCF	BS32SNX	OR50.52X1.78X		2.68
2	60X6.0	F37-632-60X6.0TFBCF	45.5	11.0	IN32-60X6.0TFBCF	BS32SNX	OR47.37X1.78X		2.67

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-624-50X5.0TFBCF
Stainless steel	SS	F37-624-50X5.0TFBSS

TFV – Flare flange connection

Tube to port connection, F37 seal



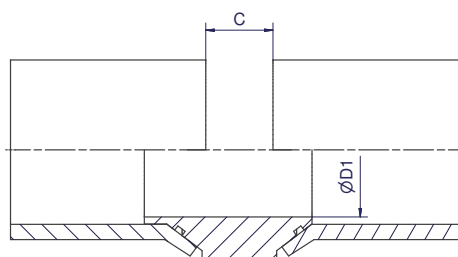
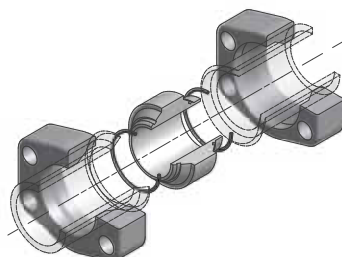
Size		Flange incl. Insert + F37 Seal + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	F37-608-16X2.0TFVCF	9.5	8.0	IN08-16X2.0TFVCF	F3708X	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	F37-608-18X2.0TFVCF	9.5	8.0	IN08-18X2.0TFVCF	F3708X	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	F37-608-20X2.0TFVCF	11.5	8.0	IN08-20X2.0TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	F37-608-20X2.5TFVCF	13.5	8.0	IN08-20X2.5TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	F37-608-25X2.5TFVCF	13.5	10.0	IN08-25X2.5TFVCF	F3708X	OR20X1.0X	SL08-25-20-CFX	0.25
1/2	25X3.0	F37-608-25X3.0TFVCF	13.5	8.0	IN08-25X3.0TFVCF	F3708X	OR20X1.0X		0.24
3/4	20X2.0	F37-612-20X2.0TFVCF	13.0	8.0	IN12-20X2.0TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	20X2.5	F37-612-20X2.5TFVCF	13.5	8.0	IN12-20X2.5TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	25X2.5	F37-612-25X2.5TFVCF	12.5	10.0	IN12-25X2.5TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.41
3/4	25X3.0	F37-612-25X3.0TFVCF	17.5	8.0	IN12-25X3.0TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.42
3/4	30X3.0	F37-612-30X3.0TFVCF	16.5	8.5	IN12-30X3.0TFVCF	F3712X	OR24X1.0X		0.42
3/4	30X4.0	F37-612-30X4.0TFVCF	19.0	8.5	IN12-30X4.0TFVCF	F3712X	OR22X1.0X		0.42
1	25X2.5	F37-616-25X2.5TFVCF	19.5	10.0	IN16-25X2.5TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.61
1	25X3.0	F37-616-25X3.0TFVCF	17.5	8.0	IN16-25X3.0TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.62
1	30X3.0	F37-616-30X3.0TFVCF	16.5	8.5	IN16-30X3.0TFVCF	F3716X	OR24X1.0X	SL16-38-30-CFX	0.64
1	30X4.0	F37-616-30X4.0TFVCF	21.5	8.5	IN16-30X4.0TFVCF	F3716X	OR22X1.0X	SL16-38-30-CFX	0.62
1	38X2.5	F37-616-38X2.5TFVCF	19.5	9.5	IN16-38X2.5TFVCF	F3716X	OR34X1.0X		0.64
1	38X3.0	F37-616-38X3.0TFVCF	25.0	9.0	IN16-38X3.0TFVCF	F3716X	OR34X1.0X		0.63
1	38X4.0	F37-616-38X4.0TFVCF	25.0	10.0	IN16-38X4.0TFVCF	F3716X	OR30X1.0X		0.63
1	38X5.0	F37-616-38X5.0TFVCF	25.0	8.0	IN16-38X5.0TFVCF	F3716X	OR28X1.0X		0.62
1 1/4	30X3.0	F37-620-30X3.0TFVCF	25.0	8.5	IN20-30X3.0TFVCF	F3720X	OR24X1.0X	SL20-42-30-CFX	1.03
1 1/4	30X4.0	F37-620-30X4.0TFVCF	21.5	8.5	IN20-30X4.0TFVCF	F3720X	OR22X1.0X	SL20-42-30-CFX	1.04
1 1/4	38X3.0	F37-620-38X3.0TFVCF	19.5	9.0	IN20-38X3.0TFVCF	F3720X	OR34X1.0X	SL20-42-38-CFX	1.02
1 1/4	38X4.0	F37-620-38X4.0TFVCF	29.5	10.0	IN20-38X4.0TFVCF	F3720X	OR30X1.0X	SL20-42-38-CFX	1.03
1 1/4	38X5.0	F37-620-38X5.0TFVCF	27.0	8.0	IN20-38X5.0TFVCF	F3720X	OR28X1.0X	SL20-42-38-CFX	1.02
1 1/4	42X3.0	F37-620-42X3.0TFVCF	25.5	10.0	IN20-42X3.0TFVCF	F3720X	OR37.82X1.78X		1.03
1 1/4	42X4.0	F37-620-42X4.0TFVCF	31.5	10.0	IN20-42X4.0TFVCF	F3720X	OR34X1.0X		1.02
1 1/2	38X3.0	F37-624-38X3.0TFVCF	31.5	9.0	IN24-38X3.0TFVCF	F3724X	OR34X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X4.0	F37-624-38X4.0TFVCF	27.5	10.0	IN24-38X4.0TFVCF	F3724X	OR30X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X5.0	F37-624-38X5.0TFVCF	27.5	8.0	IN24-38X5.0TFVCF	F3724X	OR28X1.0X	SL24-50-38-CFX	1.73
1 1/2	42X3.0	F37-624-42X3.0TFVCF	25.0	10.0	IN24-42X3.0TFVCF	F3724X	OR37.82X1.78X	SL24-50-42-CFX	1.73
1 1/2	42X4.0	F37-624-42X4.0TFVCF	33.5	10.0	IN24-42X4.0TFVCF	F3724X	OR34X1.0X	SL24-50-42-CFX	1.73
1 1/2	50X3.0	F37-624-50X3.0TFVCF	31.5	11.0	IN24-50X3.0TFVCF	F3724X	OR44.17X1.78X		1.73
1 1/2	50X5.0	F37-624-50X5.0TFVCF	36.0	10.0	IN24-50X5.0TFVCF	F3724X	OR41X1.78X		1.73
1 1/2	50X6.0	F37-624-50X6.0TFVCF	36.0	10.0	IN24-50X6.0TFVCF	F3724X	OR41X1.78X		1.73
2	50X3.0	F37-632-50X3.0TFVCF	35.0	11.0	IN32-50X3.0TFVCF	F3732X	OR44.17X1.78X	SL32-60-50-CFX	2.66
2	50X5.0	F37-632-50X5.0TFVCF	41.5	10.0	IN32-50X5.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	2.68
2	50X6.0	F37-632-50X6.0TFVCF	37.5	10.0	IN32-50X6.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	2.71
2	60X3.0	F37-632-60X3.0TFVCF	35.0	12.0	IN32-60X3.0TFVCF	F3732X	OR53.7X1.78X		2.71
2	60X5.0	F37-632-60X5.0TFVCF	46.0	11.0	IN32-60X5.0TFVCF	F3732X	OR50.52X1.78X		2.68
2	60X6.0	F37-632-60X6.0TFVCF	46.0	11.0	IN32-60X6.0TFVCF	F3732X	OR47.37X1.78X		2.67

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-624-50X5.0TFVCF
Stainless steel	SS	F37-624-50X5.0TFVSS

TT – Flare flange connection

Tube to tube connection



Size		2 x Flanges incl. Insert + 2 x O-Ring (+ 2 x Sleeve) Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
1/2	16X2.0	F37-608-16X2.0TTCF	9.5	8.0	IN08-16X2.0TTCF	OR12X1.0X	SL08-25-16-CFX	0.28
1/2	18X2.0	F37-608-18X2.0TTCF	11.5	8.0	IN08-18X2.0TTCF	OR14X1.1X	SL08-25-18-CFX	0.29
1/2	20X2.0	F37-608-20X2.0TTCF	13.5	8.0	IN08-20X2.0TTCF	OR16X1.0X	SL08-25-20-CFX	0.29
1/2	20X2.5	F37-608-20X2.5TTCF	13.5	8.0	IN08-20X2.5TTCF	OR16X1.0X	SL08-25-20-CFX	0.29
1/2	25X2.5	F37-608-25X2.5TTCF	13.5	10.0	IN08-25X2.5TTCF	OR20X1.0X		0.30
1/2	25X3.0	F37-608-25X3.0TTCF	13.5	8.0	IN08-25X3.0TTCF	OR20X1.0X		0.29
3/4	20X2.0	F37-612-20X2.0TTCF	13.5	8.0	IN12-20X2.0TTCF	OR16X1.0X	SL12-30-20-CFX	0.48
3/4	20X2.5	F37-612-20X2.5TTCF	12.5	8.0	IN12-20X2.5TTCF	OR16X1.0X	SL12-30-20-CFX	0.48
3/4	25X2.5	F37-612-25X2.5TTCF	17.5	10.0	IN12-25X2.5TTCF	OR20X1.0X	SL12-30-25-CFX	0.49
3/4	25X3.0	F37-612-25X3.0TTCF	16.5	8.0	IN12-25X3.0TTCF	OR20X1.0X	SL12-30-25-CFX	0.49
3/4	30X3.0	F37-612-30X3.0TTCF	19.0	8.5	IN12-30X3.0TTCF	OR24X1.0X		0.50
3/4	30X4.0	F37-612-30X4.0TTCF	19.5	8.5	IN12-30X4.0TTCF	OR22X1.0X		0.50
1	25X2.5	F37-616-25X2.5TTCF	17.5	10.0	IN16-25X2.5TTCF	OR20X1.0X	SL16-38-25-CFX	0.72
1	25X3.0	F37-616-25X3.0TTCF	16.5	8.0	IN16-25X3.0TTCF	OR20X1.0X	SL16-38-25-CFX	0.72
1	30X3.0	F37-616-30X3.0TTCF	21.5	8.5	IN16-30X3.0TTCF	OR24X1.0X	SL16-38-30-CFX	0.71
1	30X4.0	F37-616-30X4.0TTCF	19.5	8.5	IN16-30X4.0TTCF	OR22X1.0X	SL16-38-30-CFX	0.72
1	38X2.5	F37-616-38X2.5TTCF	25.0	9.5	IN16-38X2.5TTCF	OR34X1.0X		0.77
1	38X3.0	F37-616-38X3.0TTCF	25.0	9.0	IN16-38X3.0TTCF	OR34X1.0X		0.75
1	38X4.0	F37-616-38X4.0TTCF	25.0	10.0	IN16-38X4.0TTCF	OR30X1.0X		0.73
1	38X5.0	F37-616-38X5.0TTCF	25.0	8.0	IN16-38X5.0TTCF	OR28X1.0X		0.71
1 1/4	30X3.0	F37-620-30X3.0TTCF	21.5	8.5	IN20-30X3.0TTCF	OR24X1.0X	SL20-42-30-CFX	1.16
1 1/4	30X4.0	F37-620-30X4.0TTCF	19.5	8.5	IN20-30X4.0TTCF	OR22X1.0X	SL20-42-30-CFX	1.19
1 1/4	38X3.0	F37-620-38X3.0TTCF	25.0	9.0	IN20-38X3.0TTCF	OR34X1.0X	SL20-42-38-CFX	1.14
1 1/4	38X4.0	F37-620-38X4.0TTCF	27.0	10.0	IN20-38X4.0TTCF	OR30X1.0X	SL20-42-38-CFX	1.15
1 1/4	38X5.0	F37-620-38X5.0TTCF	25.5	8.0	IN20-38X5.0TTCF	OR28X1.0X	SL20-42-38-CFX	1.13
1 1/4	42X3.0	F37-620-42X3.0TTCF	31.5	10.0	IN20-42X3.0TTCF	OR37.82X1.78X		1.14
1 1/4	42X4.0	F37-620-42X4.0TTCF	31.5	10.0	IN20-42X4.0TTCF	OR34X1.0X		1.13
1 1/2	38X3.0	F37-624-38X3.0TTCF	27.5	9.0	IN24-38X3.0TTCF	OR34X1.0X	SL24-50-38-CFX	1.79
1 1/2	38X4.0	F37-624-38X4.0TTCF	27.5	10.0	IN24-38X4.0TTCF	OR30X1.0X	SL24-50-38-CFX	1.79
1 1/2	38X5.0	F37-624-38X5.0TTCF	25.0	8.0	IN24-38X5.0TTCF	OR28X1.0X	SL24-50-38-CFX	1.79
1 1/2	42X3.0	F37-624-42X3.0TTCF	33.5	10.0	IN24-42X3.0TTCF	OR37.82X1.78X	SL24-50-42-CFX	1.84
1 1/2	42X4.0	F37-624-42X4.0TTCF	31.5	10.0	IN24-42X4.0TTCF	OR34X1.0X	SL24-50-42-CFX	1.94
1 1/2	50X3.0	F37-624-50X3.0TTCF	36.0	11.0	IN24-50X3.0TTCF	OR44.17X1.78X		1.96
1 1/2	50X5.0	F37-624-50X5.0TTCF	36.0	10.0	IN24-50X5.0TTCF	OR41X1.78X		2.07
1 1/2	50X6.0	F37-624-50X6.0TTCF	35.0	10.0	IN24-50X6.0TTCF	OR41X1.78X		1.96
2	50X3.0	F37-632-50X3.0TTCF	41.5	11.0	IN32-50X3.0TTCF	OR44.17X1.78X	SL32-60-50-CFX	2.86
2	50X5.0	F37-632-50X5.0TTCF	37.5	10.0	IN32-50X5.0TTCF	OR41X1.78X	SL32-60-50-CFX	2.97
2	50X6.0	F37-632-50X6.0TTCF	35.0	10.0	IN32-50X6.0TTCF	OR41X1.78X	SL32-60-50-CFX	3.02
2	60X3.0	F37-632-60X3.0TTCF	46.0	12.0	IN32-60X3.0TTCF	OR53.7X1.78X		2.99
2	60X5.0	F37-632-60X5.0TTCF	46.0	11.0	IN32-60X5.0TTCF	OR50.52X1.78X		2.92
2	60X6.0	F37-632-60X6.0TTCF	45.5	11.0	IN32-60X6.0TTCF	OR47.37X1.78X		2.91

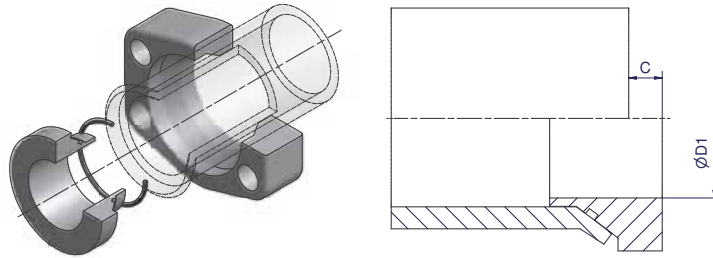
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-624-50X5.0TTCF
Stainless steel	SS	F37-624-50X5.0TTSS



TF – Flare flange connection

Tube to port connection, flat face



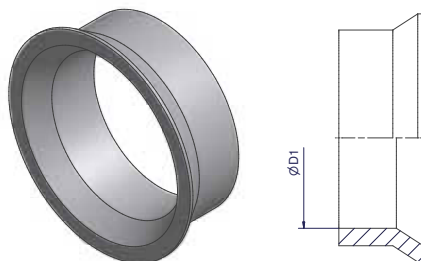
Size		Flange incl. Insert + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
1/2	16X2.0	F37-608-16X2.0TFCF	9.5	8.0	IN08-16X2.0TFCF	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	F37-608-18X2.0TFCF	11.5	8.0	IN08-18X2.0TFCF	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	F37-608-20X2.0TFCF	13.5	8.0	IN08-20X2.0TFCF	OR16X1.0X	SL08-25-20-CFX	0.25
1/2	20X2.5	F37-608-20X2.5TFCF	13.5	8.0	IN08-20X2.5TFCF	OR16X1.0X	SL08-25-20-CFX	0.25
1/2	25X2.5	F37-608-25X2.5TFCF	13.5	10.0	IN08-25X2.5TFCF	OR20X1.0X		0.25
1/2	25X3.0	F37-608-25X3.0TFCF	13.0	8.0	IN08-25X3.0TFCF	OR20X1.0X		0.24
3/4	20X2.0	F37-612-20X2.0TFCF	13.5	8.0	IN12-20X2.0TFCF	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	20X2.5	F37-612-20X2.5TFCF	12.5	8.0	IN12-20X2.5TFCF	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	25X2.5	F37-612-25X2.5TFCF	17.5	10.0	IN12-25X2.5TFCF	OR20X1.0X	SL12-30-25-CFX	0.41
3/4	25X3.0	F37-612-25X3.0TFCF	16.5	8.0	IN12-25X3.0TFCF	OR20X1.0X	SL12-30-25-CFX	0.42
3/4	30X3.0	F37-612-30X3.0TFCF	19.0	8.5	IN12-30X3.0TFCF	OR24X1.0X		0.42
3/4	30X4.0	F37-612-30X4.0TFCF	19.5	8.5	IN12-30X4.0TFCF	OR22X1.0X		0.42
1	25X2.5	F37-616-25X2.5TFCF	17.5	10.0	IN16-25X2.5TFCF	OR20X1.0X	SL16-38-25-CFX	0.61
1	25X3.0	F37-616-25X3.0TFCF	16.5	8.0	IN16-25X3.0TFCF	OR20X1.0X	SL16-38-25-CFX	0.62
1	30X3.0	F37-616-30X3.0TFCF	21.5	8.5	IN16-30X3.0TFCF	OR24X1.0X	SL16-38-30-CFX	0.64
1	30X4.0	F37-616-30X4.0TFCF	19.5	8.5	IN16-30X4.0TFCF	OR22X1.0X	SL16-38-30-CFX	0.62
1	38X2.5	F37-616-38X2.5TFCF	25.0	9.5	IN16-38X2.5TFCF	OR34X1.0X		0.64
1	38X3.0	F37-616-38X3.0TFCF	25.0	9.0	IN16-38X3.0TFCF	OR34X1.0X		0.63
1	38X4.0	F37-616-38X4.0TFCF	25.0	10.0	IN16-38X4.0TFCF	OR30X1.0X		0.63
1	38X5.0	F37-616-38X5.0TFCF	25.0	8.0	IN16-38X5.0TFCF	OR28X1.0X		0.62
1 1/4	30X3.0	F37-620-30X3.0TFCF	21.5	8.5	IN20-30X3.0TFCF	OR24X1.0X	SL20-42-30-CFX	1.03
1 1/4	30X4.0	F37-620-30X4.0TFCF	19.5	8.5	IN20-30X4.0TFCF	OR22X1.0X	SL20-42-30-CFX	1.05
1 1/4	38X3.0	F37-620-38X3.0TFCF	29.0	9.0	IN20-38X3.0TFCF	OR34X1.0X	SL20-42-38-CFX	1.02
1 1/4	38X4.0	F37-620-38X4.0TFCF	27.0	10.0	IN20-38X4.0TFCF	OR30X1.0X	SL20-42-38-CFX	1.03
1 1/4	38X5.0	F37-620-38X5.0TFCF	25.5	8.0	IN20-38X5.0TFCF	OR28X1.0X	SL20-42-38-CFX	1.02
1 1/4	42X3.0	F37-620-42X3.0TFCF	31.5	10.0	IN20-42X3.0TFCF	OR37.82X1.78X		1.03
1 1/4	42X4.0	F37-620-42X4.0TFCF	31.5	10.0	IN20-42X4.0TFCF	OR34X1.0X		1.02
1 1/2	38X3.0	F37-624-38X3.0TFCF	27.5	9.0	IN24-38X3.0TFCF	OR34X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X4.0	F37-624-38X4.0TFCF	27.5	10.0	IN24-38X4.0TFCF	OR30X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X5.0	F37-624-38X5.0TFCF	25.0	8.0	IN24-38X5.0TFCF	OR28X1.0X	SL24-50-38-CFX	1.73
1 1/2	42X3.0	F37-624-42X3.0TFCF	33.5	10.0	IN24-42X3.0TFCF	OR37.82X1.78X	SL24-50-42-CFX	1.73
1 1/2	42X4.0	F37-624-42X4.0TFCF	31.5	10.0	IN24-42X4.0TFCF	OR34X1.0X	SL24-50-42-CFX	1.73
1 1/2	50X3.0	F37-624-50X3.0TFCF	36.0	11.0	IN24-50X3.0TFCF	OR44.17X1.78X		1.73
1 1/2	50X5.0	F37-624-50X5.0TFCF	36.0	10.0	IN24-50X5.0TFCF	OR41X1.78X		1.73
1 1/2	50X6.0	F37-624-50X6.0TFCF	35.0	10.0	IN24-50X6.0TFCF	OR41X1.78X		1.73
2	50X3.0	F37-632-50X3.0TFCF	41.5	11.0	IN32-50X3.0TFCF	OR44.17X1.78X	SL32-60-50-CFX	2.66
2	50X5.0	F37-632-50X5.0TFCF	37.5	10.0	IN32-50X5.0TFCF	OR41X1.78X	SL32-60-50-CFX	2.68
2	50X6.0	F37-632-50X6.0TFCF	35.0	10.0	IN32-50X6.0TFCF	OR41X1.78X	SL32-60-50-CFX	2.71
2	60X3.0	F37-632-60X3.0TFCF	46.0	12.0	IN32-60X3.0TFCF	OR53.7X1.78X		2.71
2	60X5.0	F37-632-60X5.0TFCF	46.0	11.0	IN32-60X5.0TFCF	OR50.52X1.78X		2.68
2	60X6.0	F37-632-60X6.0TFCF	45.5	11.0	IN32-60X6.0TFCF	OR47.37X1.78X		2.67

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-624-50X5.0TFCF
Stainless steel	SS	F37-624-50X5.0TFSS

SL – Sleeve

SAE 6000/ISO 6162-2



Size Inch	Tube OD	Order code	D1	Weight (Steel) kg/1 piece
1/2	12	SL08-25-12-CFX	12.3	0.04
1/2	16	SL08-25-16-CFX	16.3	0.04
1/2	18	SL08-25-18-CFX	18.3	0.04
1/2	20	SL08-25-20-CFX	20.3	0.04
3/4	20	SL12-30-20-CFX	20.3	0.04
3/4	25	SL12-30-25-CFX*	25.2	0.04
1	25	SL16-38-25-CFX	25.2	0.04
1	30	SL16-38-30-CFX*	30.2	0.04
1 1/4	30	SL20-42-30-CFX	30.2	0.04
1 1/4	38	SL20-42-38-CFX*	38.3	0.04
1 1/2	25	SL24-50-30-CFX	25.2	0.14
1 1/2	38	SL24-50-38-CFX	38.3	0.14
1 1/2	42	SL24-50-42-CFX	42.3	0.10
2	50	SL32-60-50-CFX	50.3	0.16

* by application from jump size flanges, sleeves are not necessary

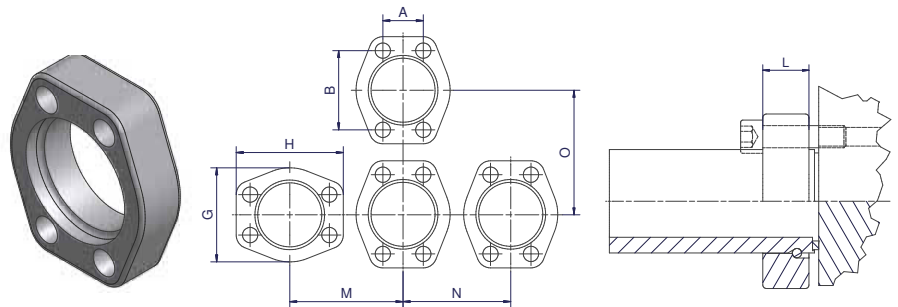
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX



R – Retaining ring flange

SAE 6000/ISO 6162-2



Retaining Ring Flange dimensions

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight (Steel) kg/1 piece	W.P. bar
1/2	R-608-CFX	18.2	40.5	48	56.4	56	53	59	20	0.18	420
3/4	R-612-CFX	23.8	50.8	60	71.35	70	66	75	24	0.20	420
1	R-616-CFX	27.8	57.2	70	81	80	75	84	24	0.35	420
1 1/4	R-620-CFX	31.8	66.6	78	95.5	90	83	99	30	0.52	420
1 1/2	R-624-CFX	36.5	79.3	95	112	108	101	116	35	0.63	420
2	R-632-CFX	44.5	96.8	114	133.5	128	120	137	40	1.10	420

Please change suffixes according to material/surface required

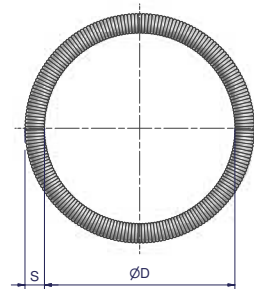
Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	R-620-CFX	
Stainless steel	SS	R-620-SSX	
Galvanized hot dip zinc	TZN	R-620-TZNX	on request

R – Retaining ring

SAE 6000/ISO 6162-2

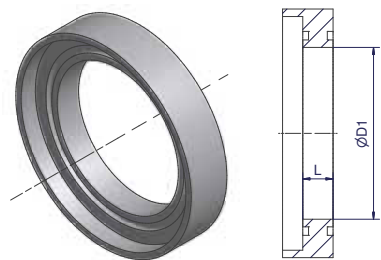
Size Inch	Tube	D	S	Order code
1/2	26X6.0	23.7	2.6	R08X
3/4	36X8.0	33.7	2.6	R12X
1	39X7.5	35.8	3.5	R16X
1 1/4	46X8.0	42.8	3.5	R20X
1 1/2	56X8.5	52.8	3.5	R24X
2	66X8.5	62.8	3.5	R32X

Material: Stainless steel



PSC – Pipe seal carrier

SAE 6000/ISO 6162-2



Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
2	66X8.5	6.5	49	PSC32-66X8.5VCF	420
2 1/2	80X10	15.0	60	PSC40-80X10VCF	
3	97X12	15.0	73	PSC48-97X12VCF	

Other sizes on request
Stainless steel on request
Included seals

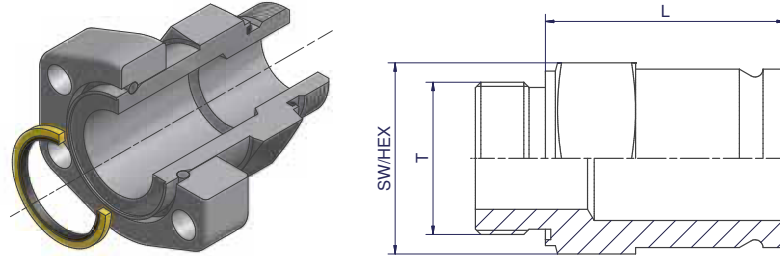
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	PSC40-80X10VCF
Stainless steel	SS	PSC40-80X10VSS



MTF-R – Male thread adapter, BSPP

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	Weight body (Steel) kg/1 piece	L	T (BSPP)	SW/ HEX
3/4	36X8.0	R-612MTFRCF	MTF12ROMDCF	0.32	61.0	G 3/4 A	36
3/4	36X8.0	R-612MTFR1/2CF	MTF12R1/2OMDCF	0.32	61.0	G 1/2 A	36
1	39X7.5	R-616MTFRCF	MTF16ROMDCF	0.50	68.3	G 1 A	41
1	39X7.5	R-616MTFR3/4CF	MTF16R3/4OMDCF	0.50	68.3	G 3/4 A	41
1 1/4	46X8.0	R-620MTFRCF	MTF20ROMDCF	0.75	71.3	G 1 1/4 A	50
1 1/4	46X8.0	R-620MTFR1CF	MTF20R1OMDCF	0.75	71.3	G 1 A	50
1 1/2	56X8.5	R-624MTFRCF	MTF24ROMDCF	1.80	75.3	G 1 1/2 A	60
1 1/2	56X8.5	R-624MTFR11/4CF	MTF24R11/4OMDCF	1.80	75.3	G 1 1/4 A	60
2	66X8.5	R-632MTFRCF	MTF32ROMDCF	2.50	86.8	G 2 A	75
2	66X8.5	R-632MTFR11/2CF	MTF32R11/2OMDCF	2.50	86.8	G 1 1/2 A	75

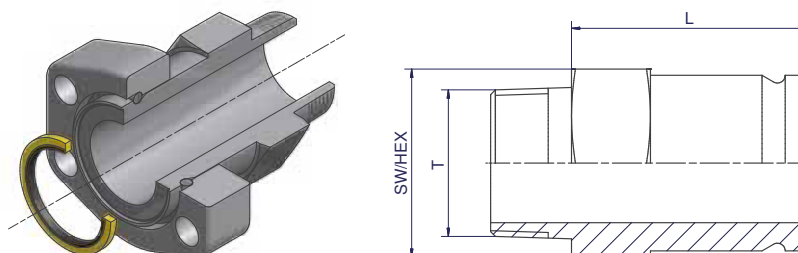
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	MTF20ROMDCF
Stainless steel	SS	MTF20ROMDSS

MTF-N – Male thread adapter, NPT

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body Order code	Weight body (Steel) kg/1 piece	L	T (NPT)	SW/ HEX
1/2	26X6.0	R-608MTFNCF	MTF08NCFX	0.26	72.6	1/2-14	27
3/4	36X8.0	R-612MTFNCF	MTF12NCFX	0.48	72.6	3/4-14	36
1	39X7.5	R-616MTFNCF	MTF16NCFX	0.45	63.0	1-11.5	41
1 1/4	46X8.0	R-620MTFNCF	MTF20NCFX	0.70	67.0	1 1/4-11.5	50
1 1/2	56X8.5	R-624MTFNCF	MTF24NCFX	1.80	75.0	1 1/2-11.5	60
2	66X8.5	R-632MTFNCF	MTF32NCFX	2.40	80.0	2-11.5	75

Other sizes on request

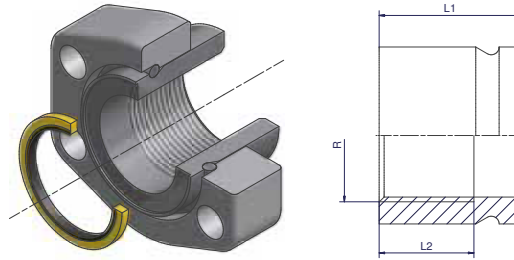
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	MTF20NCFX
Stainless steel	SS	MTF20NCFSS



FTF-R – Female thread adapter, BSPP

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body Order code	Weight body (Steel) kg/1 piece	L1	L2	R (BSPP)
1/2	26X6.0	R-608FTFRCF	FTF08RCFX	0.11	35	25	G 1/4
3/4	36X8.0	R-612FTFRCF	FTF12RCFX	0.22	40	25	G 1/2
1	39X7.5	R-616FTFRCF	FTF16RCFX	0.20	40	25	G 3/4
1 1/4	46X8.0	R-620FTFRCF	FTF20RCFX	0.30	42	30	G 1
1 1/2	56X8.5	R-624FTFRCF	FTF24RCFX	0.45	45	30	G 1 1/4
2	66X8.5	R-632FTFRCF	FTF32RCFX	0.75	55	40	G 1 1/2

Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	FTF20RCFX
Stainless steel	SS	FTF20RCFSS

Retaining ring hose couplings

SAE 6000/ISO 6162-2

One Piece No-Skive Hose fittings 48 Series for Parker hose types 301SN (2 wire braid) & 421SN (one wire braid)

				
Connection		Order code	Order code	Order code
Flange	Hose			
1 1/4	1 1/4	1X548-20-20	1X748-20-20	1X948-20-20
1 1/2	1 1/2	1X548-24-24	1X748-24-24	1X948-24-24
2	2	1X548-32-32	1X748-32-32	1X948-32-32

Interlock Hose nipples V6 series for Parker hose types H82 & R42 (6 spiral)

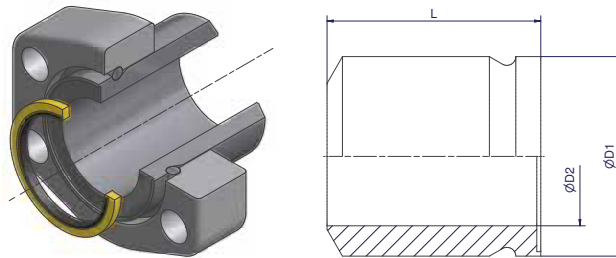
				
Connection		Order code	Order code	Order code
Flange	Hose			
1 1/4	1 1/4	KX5V6-20-20	KX7V6-20-20	KX9V6-20-20
1 1/2	1 1/2	KX5V6-24-24	KX7V6-24-24	KX9V6-24-24
2	2	KX5V6-32-32	KX7V6-32-32	KX9V6-32-32

Interlock Shells V6 Series for Parker hose types H82 & R42

		
Connection		Order code
Hose		
1 1/4		100V6-20
1 1/2		100V6-24
2		100V6-32

WA – Weld adapter connection

SAE 6000/ISO 6162-2

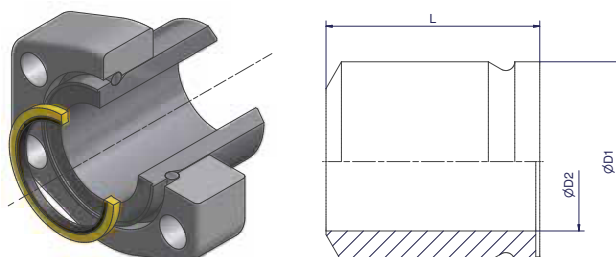


Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1/2	12X1.5	R-608WA-12X1.5S	R08X	BS08SNX	R-608-CFX	WA08-12X1.5SX	0.29	26	14	40
1/2	16X2.0	R-608WA-16X2.0S	R08X	BS08SNX	R-608-CFX	WA08-16X2.0SX	0.30	26	14	40
1/2	18X2.0	R-608WA-18X2.0S	R08X	BS08SNX	R-608-CFX	WA08-18X2.0SX	0.30	26	14	40
1/2	20X2.0	R-608WA-20X2.5S	R08X	BS08SNX	R-608-CFX	WA08-20X2.5SX	0.30	26	14	40
1/2	21.3X2.1	R-608WA-21.3X2.1S	R08X	BS08SNX	R-608-CFX	WA08-21.3X2.1SX	0.30	26	14	40
1/2	21.3X2.8	R-608WA-21.3X2.8S	R08X	BS08SNX	R-608-CFX	WA08-21.3X2.8SX	0.30	26	14	40
1/2	21.3X3.7	R-608WA-21.3X3.7S	R08X	BS08SNX	R-608-CFX	WA08-21.3X3.7SX	0.31	26	14	45
1/2	21.3X4.8	R-608WA-21.3X4.8S	R08X	BS08SNX	R-608-CFX	WA08-21.3X4.8SX	0.32	26	14	45
1/2	21.3X7.5	R-608WA-21.3X7.5S	R08X	BS08SNX	R-608-CFX	WA08-21.3X7.5SX	0.32	26	14	45
1/2	25X2.5	R-608WA-25X2.5S	R08X	BS08SNX	R-608-CFX	WA08-25X2.5SX	0.29	26	14	40
1/2	26X6.0	R-608WA-26X6.0S	R08X	BS08SNX	R-608-CFX	WA08-26X6.0SX	0.31	26	14	40
3/4	20X2.5	R-612WA-20X2.5S	R12X	BS12SNX	R-612-CFX	WA12-20X2.5SX	0.41	36	20	45
3/4	25X3.0	R-612WA-25X3.0S	R12X	BS12SNX	R-612-CFX	WA12-25X3.0SX	0.41	36	20	45
3/4	26.7X2.1	R-612WA-26.7X2.1S	R12X	BS12SNX	R-612-CFX	WA12-26.7X2.1SX	0.40	36	20	45
3/4	26.7X2.8	R-612WA-26.7X2.8S	R12X	BS12SNX	R-612-CFX	WA12-26.7X2.8SX	0.41	36	20	45
3/4	26.7X3.9	R-612WA-26.7X3.9S	R12X	BS12SNX	R-612-CFX	WA12-26.7X3.9SX	0.41	36	20	45
3/4	26.7X5.6	R-612WA-26.7X5.6S	R12X	BS12SNX	R-612-CFX	WA12-26.7X5.6SX	0.44	36	20	50
3/4	26.7X7.8	R-612WA-26.7X7.8S	R12X	BS12SNX	R-612-CFX	WA12-26.7X7.8SX	0.45	36	20	50
3/4	30X3.0	R-612WA-30X3.0S	R12X	BS12SNX	R-612-CFX	WA12-30X3.0SX	0.41	36	20	50
3/4	30X4.0	R-612WA-30X4.0S	R12X	BS12SNX	R-612-CFX	WA12-30X4.0SX	0.42	36	20	50
3/4	30X6.0	R-612WA-30X6.0S	R12X	BS12SNX	R-612-CFX	WA12-30X6.0SX	0.44	36	20	50
3/4	36X8.0	R-612WA-36X8.0S	R12X	BS12SNX	R-612-CFX	WA12-36X8.0SX	0.46	36	20	50
1	25X3.0	R-616WA-25X3.0S	R16X	BS16SNX	R-616-CFX	WA16-25X3.0SX	0.66	39	19	60
1	30X4.0	R-616WA-30X4.0S	R16X	BS16SNX	R-616-CFX	WA16-30X4.0SX	0.65	39	20	60
1	33.4X2.8	R-616WA-33.4X2.8S	R16X	BS16SNX	R-616-CFX	WA16-33.4X2.8SX	0.61	39	24	60
1	33.4X3.4	R-616WA-33.4X3.4S	R16X	BS16SNX	R-616-CFX	WA16-33.4X3.4SX	0.62	39	24	60
1	33.4X4.6	R-616WA-33.4X4.6S	R16X	BS16SNX	R-616-CFX	WA16-33.4X4.6SX	0.64	39	24	60
1	33.4X6.5	R-616WA-33.4X6.5S	R16X	BS16SNX	R-616-CFX	WA16-33.4X6.5SX	0.70	39	20	60
1	33.4X9.1	R-616WA-33.4X9.1S	R16X	BS16SNX	R-616-CFX	WA16-33.4X9.1SX	0.69	39	24	60
1	38X4.0	R-616WA-38X4.0S	R16X	BS16SNX	R-616-CFX	WA16-38X4.0SX	0.59	39	24	55
1	38X5.0	R-616WA-38X5.0S	R16X	BS16SNX	R-616-CFX	WA16-38X5.0SX	0.61	39	24	55
1	38X7.0	R-616WA-38X7.0S	R16X	BS16SNX	R-616-CFX	WA16-38X7.0SX	0.67	39	24	60
1	39X7.5	R-616WA-39X7.5S	R16X	BS16SNX	R-616-CFX	WA16-39X7.5SX	0.62	39	24	50
1 1/4	30X4.0	R-620WA-30X4.0S	R20X	BS20SNX	R-620-CFX	WA20-30X4.0SX	1.06	46	22	70
1 1/4	38X4.0	R-620WA-38X4.0S	R20X	BS20SNX	R-620-CFX	WA20-38X4.0SX	0.91	46	30	65
1 1/4	38X5.0	R-620WA-38X5.0S	R20X	BS20SNX	R-620-CFX	WA20-38X5.0SX	0.96	46	28	65
1 1/4	42X3.0	R-620WA-42X3.0S	R20X	BS20SNX	R-620-CFX	WA20-42X3.0SX	0.86	46	30	65
1 1/4	42X4.0	R-620WA-42X4.0S	R20X	BS20SNX	R-620-CFX	WA20-42X4.0SX	0.89	46	30	65
1 1/4	42X6.0	R-620WA-42X6.0S	R20X	BS20SNX	R-620-CFX	WA20-42X6.0SX	0.95	46	30	65
1 1/4	42.2X2.7	R-620WA-42.2X2.7S	R20X	BS20SNX	R-620-CFX	WA20-42.2X2.7SX	0.85	46	30	65
1 1/4	42.2X3.6	R-620WA-42.2X3.6S	R20X	BS20SNX	R-620-CFX	WA20-42.2X3.6SX	0.88	46	30	65
1 1/4	42.2X4.9	R-620WA-42.2X4.9S	R20X	BS20SNX	R-620-CFX	WA20-42.2X4.9SX	0.92	46	30	65
1 1/4	42.2X6.4	R-620WA-42.2X6.4S	R20X	BS20SNX	R-620-CFX	WA20-42.2X6.4SX	0.96	46	29	65
1 1/4	42.2X9.7	R-620WA-42.2X9.7S	R20X	BS20SNX	R-620-CFX	WA20-42.2X9.7SX	1.08	46	23	65
1 1/4	46X7.0	R-620WA-46X7.0S	R20X	BS20SNX	R-620-CFX	WA20-46X7.0SX	0.97	46	30	65
1 1/4	46X8.0	R-620WA-46X8.0S	R20X	BS20SNX	R-620-CFX	WA20-46X8.0SX	0.90	46	30	55

See next page

WA – Weld adapter connection continued

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1 1/2	38X5.0	R-624WA-38X5.0S	R24X	BS24SNX	R-624-CFX	WA24-38X5.0SX	1.48	56	28	75
1 1/2	48.3X2.8	R-624WA-48.3X2.8S	R24X	BS24SNX	R-624-CFX	WA24-48.3X2.8SX	1.14	56	39	70
1 1/2	48.3X3.7	R-624WA-48.3X3.7S	R24X	BS24SNX	R-624-CFX	WA24-48.3X3.7SX	1.18	56	39	70
1 1/2	48.3X5.1	R-624WA-48.3X5.1S	R24X	BS24SNX	R-624-CFX	WA24-48.3X5.1SX	1.24	56	38	70
1 1/2	48.3X7.1	R-624WA-48.3X7.1S	R24X	BS24SNX	R-624-CFX	WA24-48.3X7.1SX	1.36	56	34	70
1 1/2	48.3X10.2	R-624WA-48.3X10.2S	R24X	BS24SNX	R-624-CFX	WA24-48.3X10.2SX	1.32	56	30	70
1 1/2	50X3.0	R-624WA-50X3.0S	R24X	BS24SNX	R-624-CFX	WA24-50X3.0SX	1.13	56	39	70
1 1/2	50X5.0	R-624WA-50X5.0S	R24X	BS24SNX	R-624-CFX	WA24-50X5.0SX	1.20	56	40	70
1 1/2	50X6.0	R-624WA-50X6.0S	R24X	BS24SNX	R-624-CFX	WA24-50X6.0SX	1.26	56	38	70
1 1/2	50x9.0	R-624WA-50X9.0S	R24X	BS24SNX	R-624-CFX	WA24-50X9.0SX	1.42	56	32	70
1 1/2	56X8.5	R-624WA-56X8.5S	R24X	BS24SNX	R-624-CFX	WA24-56X8.5SX	1.18	56	39	60
2	48.3X5.6	R-632WA-48.3X5.6S	R32X	BS32SNX	R-632-CFX	WA32-48.3X5.6SX	2.40	66	37	90
2	50X9.0	R-632WA-50X9.0S	R32X	BS32SNX	R-632-CFX	WA32-50X9.0SX	2.61	66	32	90
2	60X3.0	R-632WA-60X3.0S	R32X	BS32SNX	R-632-CFX	WA32-60X3.0SX	1.89	66	49	90
2	60X5.0	R-632WA-60X5.0S	R32X	BS32SNX	R-632-CFX	WA32-60X5.0SX	1.99	66	50	90
2	60X6.0	R-632WA-60X6.0S	R32X	BS32SNX	R-632-CFX	WA32-60X6.0SX	2.10	66	48	90
2	60X8.0	R-632WA-60X8.0S	R32X	BS32SNX	R-632-CFX	WA32-60X8.0SX	2.28	66	44	90
2	60x10.0	R-632WA-60X10.0S	R32X	BS32SNX	R-632-CFX	WA32-60X10.0SX	2.46	66	40	90
2	60.3X2.8	R-632WA-60.3X2.8S	R32X	BS32SNX	R-632-CFX	WA32-60.3X2.8SX	1.87	66	49	90
2	60.3X3.9	R-632WA-60.3X3.9S	R32X	BS32SNX	R-632-CFX	WA32-60.3X3.9SX	1.95	66	49	90
2	60.3X5.5	R-632WA-60.3X5.5S	R32X	BS32SNX	R-632-CFX	WA32-60.3X5.5SX	2.04	66	49	90
2	60.3X8.7	R-632WA-60.3X8.7S	R32X	BS32SNX	R-632-CFX	WA32-60.3X8.7SX	2.34	66	43	90
2	60.3X11.1	R-632WA-60.3X11.1S	R32X	BS32SNX	R-632-CFX	WA32-60.3X11.1SX	2.54	66	38	90
2	66X8.5	R-632WA-66X8.5S	R32X	BS32SNX	R-632-CFX	WA32-66X8.5SX	1.95	66	49	75

Other sizes on request

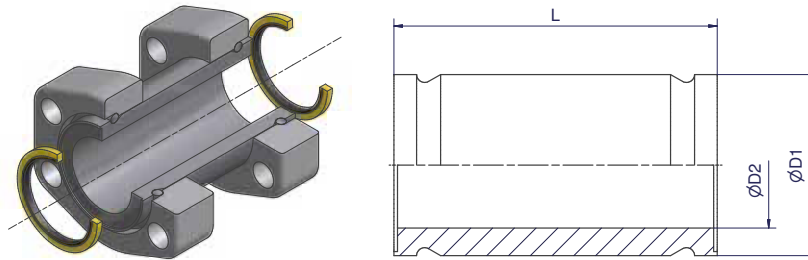
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-620WA-46X8.0S
Stainless steel	SS	R-620WA-46X8.0SS



BF – Bulkhead flange

SAE 6000/ISO 6162-2



Size Inch	D1	D2	L	Complete Part Order code	Bulkhead Body Order code	Weight body (Steel) kg/1 piece
1	39	24	170	R-616BFS	BF16SX	0.96
1 1/4	46	30	180	R-620BFS	BF20SX	1.30
1 1/2	56	39	180	R-624BFS	BF24SX	1.75
2	66	49	210	R-632BFS	BF32SX	2.45

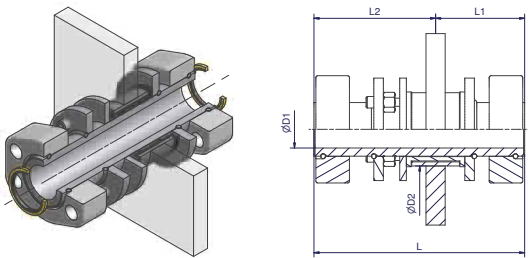
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	S	R-620BFS
Stainless steel	SS	R-620BFSS

VB – Vibra bulkhead

SAE 6000/ISO 6162-2



Size Inch	Tube	D1	D2	L	L1	L2	Complete Part Order code	Weight (Steel) kg/1 piece
1	39X7.5	24	59.5	220	95	125	R-616VBCF	3.20
1 1/4	46X8.0	30	66.5	220	95	125	R-620VBCF	4.10
1 1/2	56X8.5	39	76.5	220	95	125	R-624VBCF	4.90
2	66X8.5	49	86.5	250	110	140	R-632VBCF	6.19

Other sizes on request

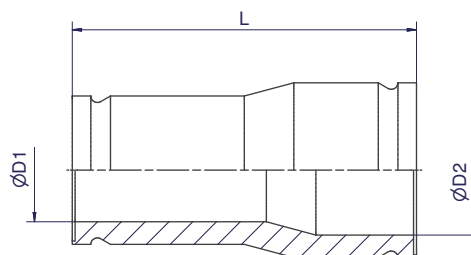
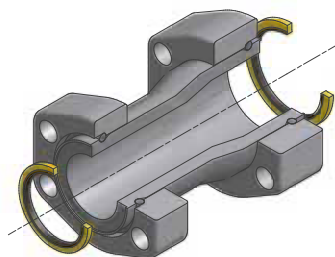
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-620VBCF
Stainless steel	SS	R-620VBSS



RF – Reducer flange

SAE 6000/ISO 6162-2



Size Inch	D1	D2	L	Complete Part Order code	Reducer Body Order code	Weight body (Steel) kg/1 piece
1 1/4 - 1	24	30	110	R-620-616RFCF	RF20-16CFX	0.7
1 1/2 - 1	24	39	115	R-624-616RFCF	RF24-16CFX	0.9
1 1/2 - 1 1/4	30	39	130	R-624-620RFCF	RF24-20CFX	1.1
2 - 1 1/4	30	49	130	R-632-620RFCF	RF32-20CFX	1.3
2 - 1 1/2	39	49	130	R-632-624RFCF	RF32-24CFX	1.4

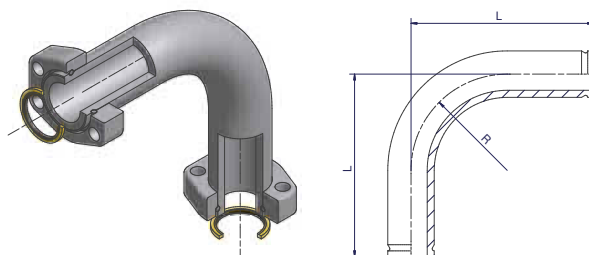
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-620-616RFCF
Stainless steel	SS	R-620-616RFSS

FB90 – 90° Flange bend

SAE 6000/ISO 6162-2



Size Inch	Tube	L	R	Complete Part Order code	90° Flange Bend Order code	Weight body (Steel) kg/1 piece
1	39X7.5	160	98	R-616FB90S	FB90-16SX	1.59
1 1/4	46X8.0	180	96	R-620FB90S	FB90-20SX	2.35
1 1/2	56X8.5	220	116	R-624FB90S	FB90-24SX	3.84
2	66X8.5	275	165	R-632FB90S	FB90-32SX	5.72

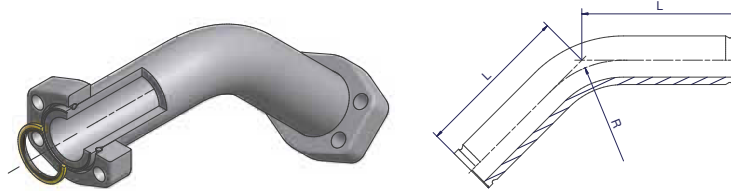
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	S	R-620FB90S	
Stainless steel	SS	R-620FB90SS	on request



FB45 – 45° Flange bend

SAE 6000/ISO 6162-2



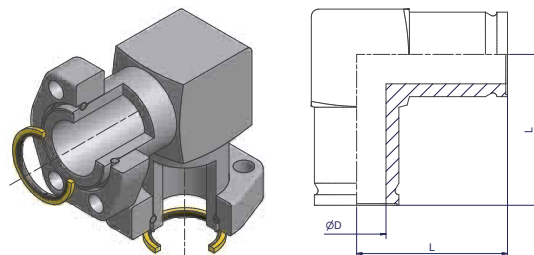
Size Inch	Tube	L	R	Complete Part Order code	45° Flange Bend Order code	Weight body (Steel) kg/1 piece
1	39X7.5	140	80	R-616FB45S	FB45-16SX	1.58
1 1/4	46X8.0	150	96	R-620FB45S	FB45-20SX	2.18
1 1/2	56X8.5	180	116	R-624FB45S	FB45-24SX	3.49
2	66X8.5	220	165	R-632FB45S	FB45-32SX	5.16

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	S	R-620FB45S	
Stainless steel	SS	R-620FB45SS	on request

LF – Elbow flange

SAE 6000/ISO 6162-2



Size Inch	D	L	Complete Part Order code	Elbow Flange body Order code	Weight body (Steel) kg/1 piece
1/2	14	70	R-608LFCF	LF08CFX	0.50
3/4	20	80	R-612LFCF	LF12CFX	1.07
1	24	85	R-616LFCF	LF16CFX	1.32
1 1/4	30	90	R-620LFCF	LF20CFX	1.72
1 1/2	39	100	R-624LFCF	LF24CFX	2.60
2	49	110	R-632LFCF	LF32CFX	4.02

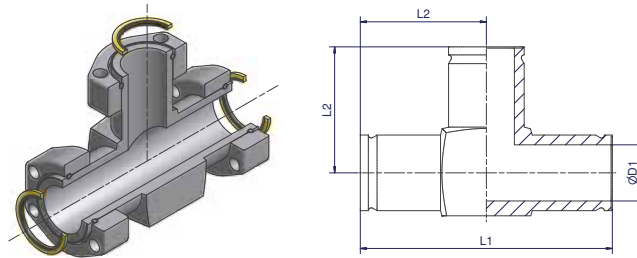
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-620LFCF
Stainless steel	SS	R-620LFSS



TF – TEE flange

SAE 6000/ISO 6162-2



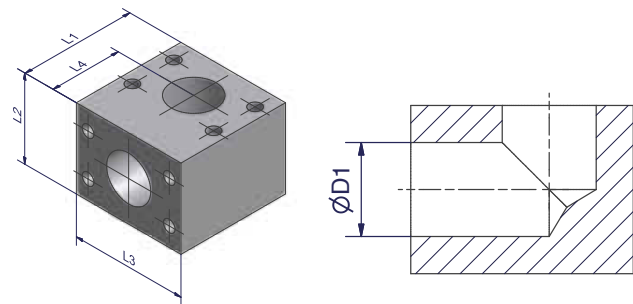
Size Inch	D1	L1	L2	Complete Part Order code	Tee Flange body Order code	Weight body (Steel) kg/1 piece
1/2	14	140	70	R-608TFCF	TF08CFX	0.75
3/4	20	160	80	R-612TFCF	TF12CFX	3.20
1	24	170	85	R-616TFCF	TF16CFX	2.00
1 1/4	30	180	90	R-620TFCF	TF20CFX	2.03
1 1/2	39	200	100	R-624TFCF	TF24CFX	3.13
2	49	220	110	R-632TFCF	TF32CFX	4.53

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-620TFCF
Stainless steel	SS	R-620TFSS

LB – Flange L-block

SAE 6000/ISO 6162-2



Size Inch	D1	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
1	25	80	65	80	54	2.8	LB616CFX
1 1/4	30	86	64	90	57	3.2	LB620CFX
1 1/2	38	90	74	100	66	4.6	LB624CFX
2	50	122	88	132	78	8.8	LB632CFX

Other sizes on request

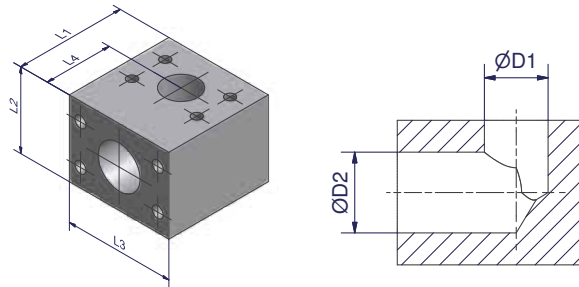
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	LB620CFX
Stainless steel	SS	LB620SSX



LBR – Flange L-block reducer

SAE 6000/ISO 6162-2



Size Inch	D1	D2	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
1 1/4 - 1	25	30	86	64	90	57	3.3	LBR620-616CFX
1 1/2 - 1	25	38	100	74	100	66	4.9	LBR624-616CFX
1 1/2 - 1 1/4	30	38	100	74	100	66	4.8	LBR624-620CFX
2 - 1	25	50	122	88	132	78	9.4	LBR632-616CFX
2 - 1 1/4	30	50	122	88	132	78	9.3	LBR632-620CFX
2 - 1 1/2	38	50	122	88	132	78	9.1	LBR632-624CFX

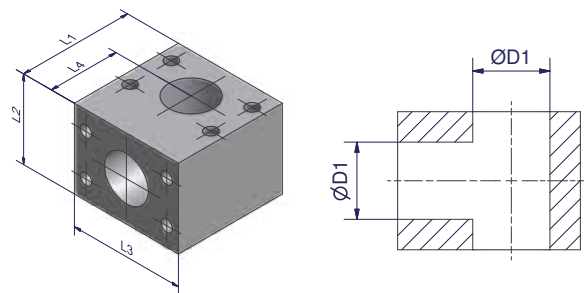
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	LBR620-616CFX
Stainless steel	SS	LBR620-616SSX

TB – Flange T-block

SAE 6000/ISO 6162-2



Size Inch	D1	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
3/4	19	75	60	75	49	2.27	TB612CFX
1	25	80	65	80	54	1.60	TB616CFX
1 1/4	30	86	64	90	57	2.20	TB620CFX
1 1/2	38	100	74	100	66	3.10	TB624CFX
2	50	122	88	132	78	3.90	TB632CFX

Other sizes an combinations on request

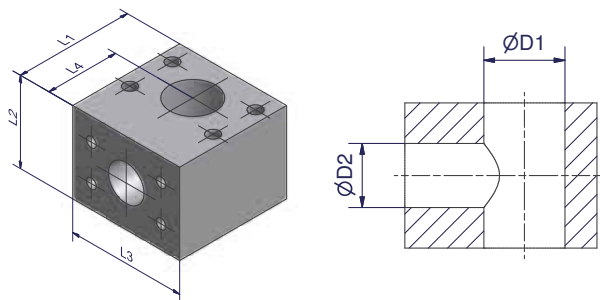
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TB620CFX
Stainless steel	SS	TB620SSX



TBR – Flange T-block reducer

SAE 6000/ISO 6162-2



Size Inch	D1	D2	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
1 1/4 - 1 - 1 1/4	30	25	86	64	90	57	3.1	TBR620-616-620CFX
1 1/2 - 1 1/4 - 1 1/2	38	30	100	74	100	66	4.4	TBR624-620-624CFX
1 1/2 - 1 - 1 1/2	38	25	100	74	100	66	4.6	TBR624-616-624CFX
2 - 1 1/2 - 2	50	38	122	88	132	78	8.5	TBR632-624-632CFX
2 - 1 1/4 - 2	50	30	122	88	132	78	8.8	TBR632-620-632CFX

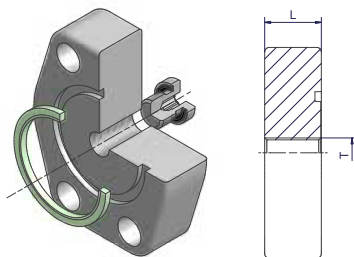
Other sizes on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TBR620-616-620CFX
Stainless steel	SS	TBR620-616-620SSX

BFV – Blind flange

SAE 6000/ISO 6162-2



Size Inch	L	T1	Weight (Steel) kg/1 piece	Flange incl. VSTI-ED and F37 Seal Order code
1/2	20	G 1/4	0.29	F37-608BFVCF
3/4	24	G 1/4	0.57	F37-612BFVCF
1	24	G 1/4	0.60	F37-616BFVCF
1 1/4	22	G 1/4	0.70	F37-620BFVCF
1 1/2	25	G 1/4	1.10	F37-624BFVCF
2	33	G 1/4	2.00	F37-632BFVCF

Other sizes on request

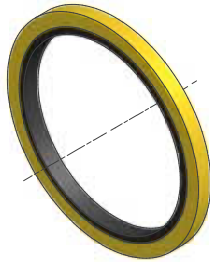
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-620BFCF
Stainless steel	SS	F37-620BFSS



BS – Bonded seal

SAE 6000/ISO 6162-2

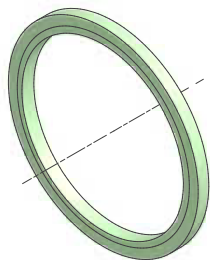


Size Inch	Steel	Stainless Steel
1/2	BS08SNX	BS08SSNX
3/4	BS12SNX	BS12SSNX
1	BS16SNX	BS16SSNX
1 1/4	BS20SNX	BS20SSNX
1 1/2	BS24SNX	BS24SSNX
2	BS32SNX	BS32SSNX

Sealing: NBR
Other sealing materials like FKM on request

F37S – F37 Seal

SAE 6000/ISO 6162-2

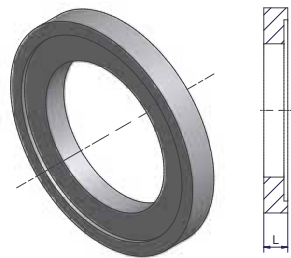


Size Inch	F37 Seal
1/2	F37S08X
3/4	F37S12X
1	F37S16X
1 1/4	F37S20X
1 1/2	F37S24X
2	F37S32X

Sealing: Polyurethane
Material properties and applications see page 18

A0 – Adapter bonded seal to F37 seal/O-Ring

SAE 6000/ISO 6162-2



Size Inch	L	Weight (Steel) kg/1 piece	Adapter* Order code
1/2	5	0.02	AO08CFX
3/4	5	0.02	AO12CFX
1	7	0.06	AO16CFX
1 1/4	7	0.06	AO20CFX
1 1/2	7	0.08	AO24CFX
2	7	0.10	AO32CFX

*Part excluding seals

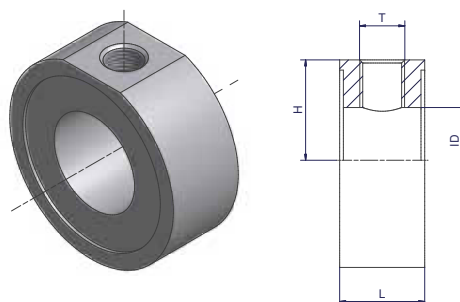
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	AO32CFX
Stainless steel	SS	AO32SSX



TBT – Tee between bonded seal

SAE 6000/ISO 6162-2

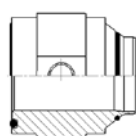


Size Inch	L	H	T	ID	Bolt ISO 4762	Weight (Steel) kg/1 piece	Order code*
1	25	20.5	G 1/4	25	ZYLS10X90	0.21	TBT16-1/4CFX
1 1/4	25	24.5	G 1/4	27	ZYLS10X100	0.30	TBT20-1/4CFX
1 1/4	40	22.5	G 1/2	24	ZYLS10X120	0.49	TBT20-1/2CFX
1 1/2	25	29.5	G 1/4	31	ZYLS12X110	0.42	TBT24-1/4CFX
1 1/2	40	28.0	G 1/2	30	ZYLS12X130	0.68	TBT24-1/2CFX
2	25	35.0	G 1/4	41	ZYLS12X110	0.51	TBT32-1/4CFX
2	40	34.0	G 1/2	38	ZYLS12X130	0.87	TBT32-1/2CFX

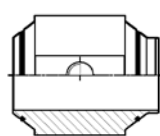
*Part excluding seals

For testpoints and diagnostic test equipment see catalogue 4100, Industrial Tube Fittings Europe

Alternative versions on request



TFVB



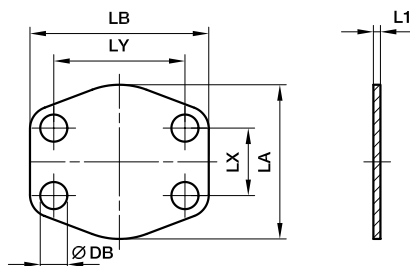
TTB

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TBT24-1/4CFX
Stainless steel	SS	TBT24-1/4SSX

AP – SAE flange locking plate

SAE 6000/ISO 6162-2



Nom. flange size		L1	LA	LB	LX	LY	DB	Weight body (Steel) kg/1 piece	Order code	PN (bar) ¹⁾	
SAE (in)	ISO (DN)									CF	SS
1/2	13	4	47	57	18.2	40.5	9.0	0.02	8AP2		
3/4	19	4	53	71	23.8	50.8	11.0	0.02	12AP2		
1	25	4	66	80	27.8	57.1	13.0	0.03	16AP2		
1 1/4	32	4	77	94	31.8	66.1	15.0	0.04	20AP2		
1 1/2	38	4	89	103	36.5	79.4	17.0	0.05	24AP2		
2	51	4	123	135	44.5	96.8	21.0	0.06	32AP2		
2 1/2	64	4	150	166	58.7	123.8	25.0	0.08	40AP2		
3	76	4	178	208	71.4	125.4	32.0	0.10	48AP2		

¹⁾ Pressure shown = Item deliverable

PN (bar) = PN (MPa)
10

This flange locking plate is not used under pressure

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8AP1CF	only locking plate
Stainless steel	SS	8AP1SS	only locking plate



Bolts and nuts for flange

SAE 6000/ISO 6162-2



F37 Flare Flange

Size Inch	Flange	F37 Seal/Flat Face/Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1/2	F37-608-CFX	4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
3/4	F37-612-CFX	4 x ZYLS10X40	4 x ZYLS10X65	4 x ISO4032-M10
1	F37-616-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
1 1/4	F37-620-CFX	4 x ZYLS10X40	4 x ZYLS10X70	4 x ISO4032-M10
1 1/2	F37-624-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M10
2	F37-632-CFX	4 x ZYLS12X55	4 x ZYLS12X100	4 x ISO4032-M12

Retaining Ring Flange

Size Inch	Flange	Flat Face/Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1/2	R-608-CFX	4 x ZYLS8X35	4 x ZYLS8X60	4 x ISO4032-M8
3/4	R-612-CFX	4 x ZYLS10X45	4 x ZYLS10X80	4 x ISO4032-M10
1	R-616-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
1 1/4	R-620-CFX	4 x ZYLS14X50	4 x ZYLS14X90	4 x ISO4032-M14
1 1/2	R-624-CFX	4 x ZYLS16X60	4 x ZYLS16X110	4 x ISO4032-M16
2	R-632-CFX	4 x ZYLS20X70	4 x ZYLS20X110	4 x ISO4032-M20
2 1/2	R-640-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
3	R-648-CFX	4 x ZYLS30X100	4 x ZYLS30X160	4 x ISO4032-M30

Bolts and nuts must be ordered separately

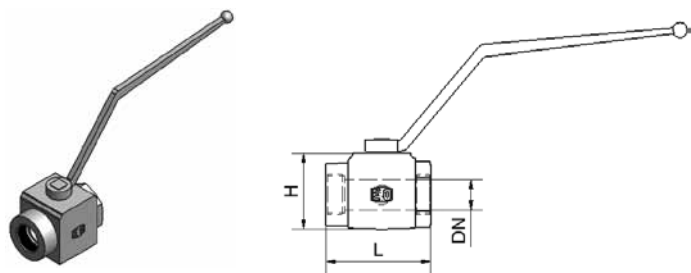
Please add the suffixes according to the bolt quality

Quality	Steel		0Stainless Steel
	8.8	10.9	A4-80X
Bolt	ZYLS16X60X	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO-4032-M12-8VZX	ISO-4032-M12-10VZX	ISO-4032-M12-80X

* Bolt quality 10.9 recommended.
Bolt quality 8.8 can affect the pressure capability.

KH – Ball valve

400 bar female BSPP thread (ISO 1179-1)



Material Steel

Size Inch	DN	L	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
1 1/4	32	110	80	KH11/4X	3	400
1 1/2	40	114	90	KH11/2X	4	
2	50	129	104	KH2X	5	

Please change suffixes according to material/surface required

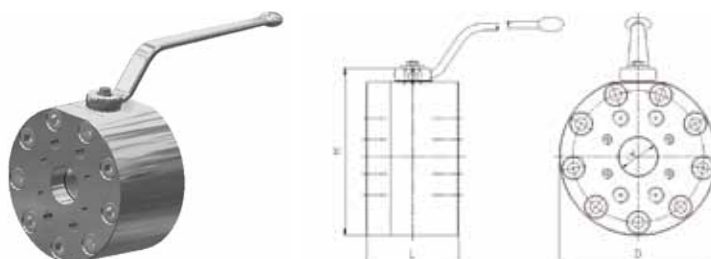
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH11/4CFX
Steel		KH11/4X
Stainless steel	71	KH11/471X

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-30°C / 100 °C	-30°C / 100°C



KH – Ball valve drilled and tapped for SAE 6000 flanges

SAE 6000/ISO 6162-2



Material Steel

Size Inch	LW	L	Flange Part	D	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
1/2	15	75	608	88	88	KH08-15CF	2.96	420
3/4	20	80	612	98	100	KH12-20CF	4.20	
1	25	88	616	118	113	KH16-25CF	6.00	
1 1/4	32	100	620	145	158	KH20-32CF	11.70	
1 1/2	38	110	624	165	178	KH24-38CF	17.10	
2	48	116	632	198	210	KH32-48CF	24.60	

Material Stainless Steel

Size Inch	LW	L	Flange Part	D	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
1/2	15	75	608	78	83	KH08-15SS	3.0	420
3/4	20	80	612	98	100	KH12-20SS	4.2	
1	25	88	616	118	113	KH16-25SS	6.0	
1 1/4	32	100	620	145	158	KH20-32SS	11.7	
1 1/2	38	110	624	165	178	KH24-38SS	17.1	
2	48	116	632	198	210	KH32-48SS	24.6	

Steel ball valves 1/2" up to 2" with SAE 3000 and SAE 6000 boring pattern

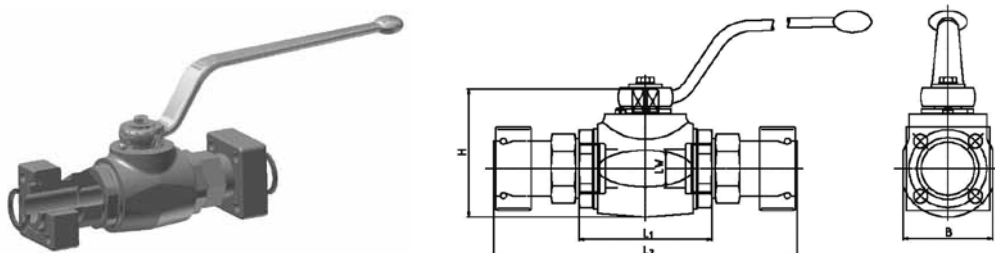
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	KH20-32CF	on request
Stainless steel	SS	KH20-32SS	

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-10°C / 100 °C	-30°C / 100°C

KH-R – Ball valve with SAE 6000 Flanges

SAE 6000/ISO 6162-2



Material Steel

Size Inch	LW	L1	L2	B	H	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
3/4	20	95	217.0	49	75	KH-R-612-20CF	KH-R-12-20CF	2.8	420
1	25	113	249.6	58	83	KH-R-616-25CF	KH-R-16-25CF	4.2	315
1 1/4	32	111	253.6	81	107	KH-R-620-32CF	KH-R-20-32CF	6.8	420
1 1/2	38	130	280.6	100	124	KH-R-624-38CF	KH-R-24-38CF	10.8	420
2	48	140	313.6	118	138	KH-R-632-48CF	KH-R-32-48CF	16.5	420

Material Stainless Steel

Size Inch	LW	L1	L2	B	H	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
3/4	20	95	217.0	49	75	KH-R-612-20SS	KH-R-12-20SS	2.8	420
1	25	113	249.6	58	83	KH-R-616-25SS	KH-R-16-25SS	4.2	315
1 1/4	32	111	253.6	81	107	KH-R-620-32SS	KH-R-20-32SS	9.4	420
1 1/2	38	130	280.6	100	124	KH-R-624-38SS	KH-R-24-38SS	13.8	420
2	48	140	313.6	118	138	KH-R-632-48SS	KH-R-32-48SS	18.7	420

Please change suffixes according to material/surface required

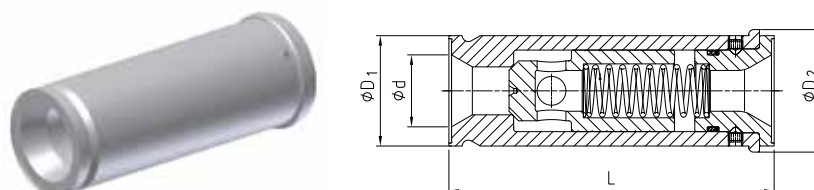
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH-R-620-32CF
Stainless steel	SS	KH-R-620-32SS

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-20°C / 100 °C	-30°C / 100°C



RHD-R – Non return valves

SAE 6000/ISO 6162-2



Material Steel

Size Inch	L	D1	D2	d	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
1	116.6	39	44.2	23.0	RHD-R-616-0.5BCF	RHD-R-16-0.5BCF	0.78	420
1 1/4	135.6	46	51.1	30.0	RHD-R-620-0.5BCF	RHD-R-20-0.5BCF	1.26	
1 1/2	135.6	56	60.5	38.8	RHD-R-624-0.5BCF	RHD-R-24-0.5BCF	1.61	
2	180.1	66	70.5	49.0	RHD-R-632-0.5BCF	RHD-R-32-0.5BCF	2.54	

Opening pressure 0.5 bar
Other pressure rates on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RHD-R-620-32CF
Stainless steel (inner parts steel)	SS	RHD-R-620-32SS

	Materials
Body	Steel
O-Ring	NBR
Tmin / T max	-10°C / 100 °C

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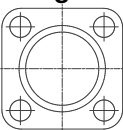
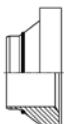
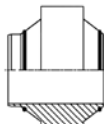
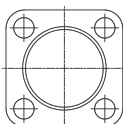
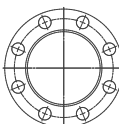
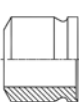
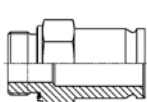
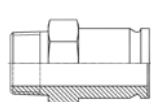
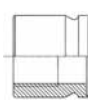
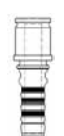
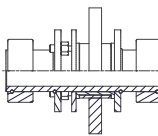
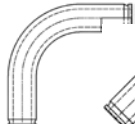
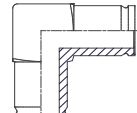
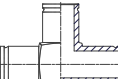
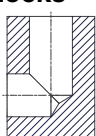
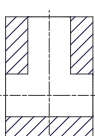
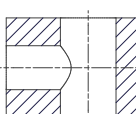
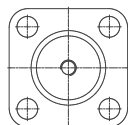
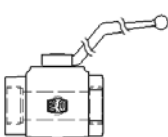
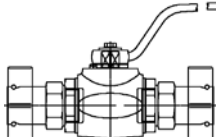
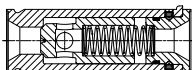


ISO 6164 System

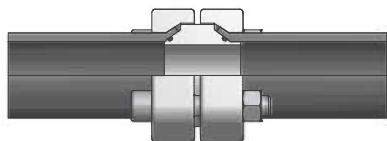
350 – 400 bar

ENGINEERING YOUR SUCCESS.

Programme overview ISO 6164 footprint

Parflange® F37 connection parts	Flanges  F37 – p.163							Sleeve  SL – p.168
	Inserts  TFB – p.164  TFV – p.165  TT – p.166  TF – p.167							
Retaining ring connection parts	Flanges  R – p.169  R – p.169  R-Ring – p.169  PSC – p.170							Weld  WA – p.175
	Male / Female  MTF-R – p.171  MTF-N – p.172  FTF-R – p.173				Hose    Hose – p.174			
	Tube to Tube  BF – p.176  VB – p.177  RF – p.178  FB90 – p.179  FB45 – p.180  LF – p.181  TF – p.182							
SAE connection parts	Blocks  LB – p.183  TB – p.184  TBR – p.185  BFV – p.186							
Seals Adapter Bolts	Components  BS – p.187  F37S – p.187  AO – p.188  TBT – p.189							Bolts and Nuts  p.190
Ball valves	 KH – p.191  KH – p.192  KH-R – p.193  RHD-R – p.194							

Programme overview ISO 6164 footprint



Part combination flaring ISO 6164

Flange Pressure (bar)	Size Inch	Pipe Size	Flange ISO 6164	Insert*	F37 Seal	Sleeve	F37 Seal / Flat Face / Bonded Seal		Nut
							Bolts Tube to Port	Bolts Tube to Tube	
420	2	50X3.0	F37-432-CFX	IN32-50X3.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M12
	2	50X5.0	F37-432-CFX	IN32-50X5.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M12
	2	50X6.0	F37-432-CFX	IN32-50X6.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M12
	2	60X3.0	F37-432-CFX	IN32-60X3.0T...	F37S32X		4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M12
	2	60X5.0	F37-432-CFX	IN32-60X5.0T...	F37S32X		4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M12
	2	60X6.0	F37-432-CFX	IN32-60X6.0T...	F37S32X		4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M12
	2 1/2	60X3.0	F37-440-CFX	IN40-60X3.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M12
	2 1/2	60X5.0	F37-440-CFX	IN40-60X5.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M12
	2 1/2	60X6.0	F37-440-CFX	IN40-60X6.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M12
	2 1/2	73X7.0	F37-44073-CF	IN40-73X7.0T...	F37S40X		4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M12
	2 1/2	75X3.0	F37-440-CFX	IN40-75X3.0T...	F37S40X		4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M12
	2 1/2	75X5.0	F37-440-CFX	IN40-75X5.0T...	F37S40X		4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M12
	3	75X3.0	F37-440-CFX	IN48-75X3.0T...	F37S48X	SL48-90-75-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M16
	3	75X5.0	F37-448-CFX	IN48-75X5.0T...	F37S48X	SL48-90-75-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M16
	3	90X3.5	F37-448-CFX	IN48-90X3.5T...	F37S48X		4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M16
	3	90X5.0	F37-448-CFX	IN48-90X5.0T...	F37S48X		4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M16
	3	90X9.0	F37-448909-CF	IN48-90X9.0T...	F37S48X		4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M16

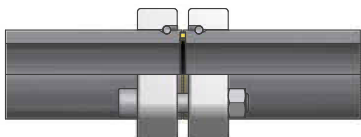
Select the complete version:

- * ...FBCF Bonded Seal version
- ...FVCF F37 Seal version
- ...TCF Tube to Tube version
- ...FCF Flat Face version

Pressure rates related to flanges
Other sizes like schedule on request
Bolts and nuts for flanges see page 190

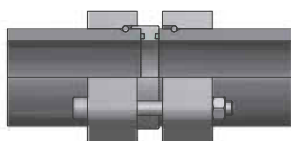
Bolts and nuts are not included in a complete part.

ISO 6164 footprint



Part combination Retaining Ring ISO 6164 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal	Bolts Tube to Port	Bolts Tube to Tube	Nut
420	2	66X8.5	R-432-CFX	R32X	BS32SNX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2 1/2	80X10	R-440-CFX	R40X	BS40SNX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	3	97X12	R-448-CFX	R48X	BS48SNX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
	4	115X16	R-464-CFX	R64X	BS64SNX	4 x ZYLS30X120	4 x ZYLS30X190	4 x ISO4032-M30
	5	150X15	R-880-CFX	R80X	BS80SNX	8 x ZYLS24X90	8 x ZYLS24X150	8 x ISO4032-M24



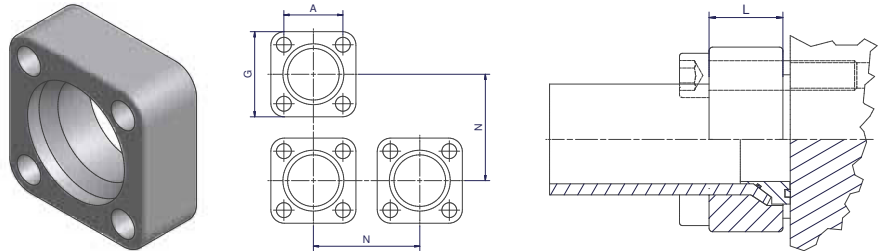
Part combination Pipe seal carrier ISO 6164 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal	Bolts Tube to Port	Bolts Tube to Tube	Nut
400	2	66X8.5	R-432-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS16X75	4 x ZYLS16X110	ISO4032-M16
	2 1/2	80X10	R-440-CFX	R40X	PSC40-80X10VCF	4 x ZYLS20X100	4 x ZYLS20X140	ISO4032-M20
	3	97X12	R-448-CFX	R48X	PSC48-97X12VCF	4 x ZYLS24X120	4 x ZYLS24X150	ISO4032-M24
	4	115X15	R-464-CFX	R64X	PSC64-115X15VCF	4 x ZYLS30X140	4 x ZYLS30X190	ISO4032-M30
320	6	190X20	R-896-CFX	R96X	PSC96-190X20VCF	8 x ZYLS30X160	8 x ZYLS30X220	ISO4032-M30

Stainless steel on request
Other sizes on request

F37 – Flare flange

ISO 6164



Parflange F37 flange dimensions

Size Inch	Flange Order code	A	G	N	L	Weight (Steel) kg/1 piece	W.P. bar
2	F37-432-CFX	69.3	100	105	40	1.80	400
2 1/2	F37-440-CFX	83.4	120	125	50	3.00	
2 1/2	F37-44073-CF*	83.4	120	125	50	3.10	
3	F37-448-CFX	102.5	150	155	52	5.40	
3	F37-448909-CF*	102.5	150	155	52	5.29	

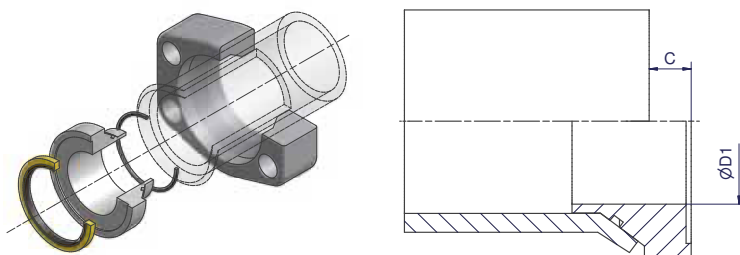
* Heavy series (with locking)

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	F37-432-CFX	
Stainless steel	SS	F37-432-SSX	
Galvanized hot dip zinc	TZN	F37-432-TZNX	on request

TFB – Flare flange connection

Tube to port connection, bonded seal



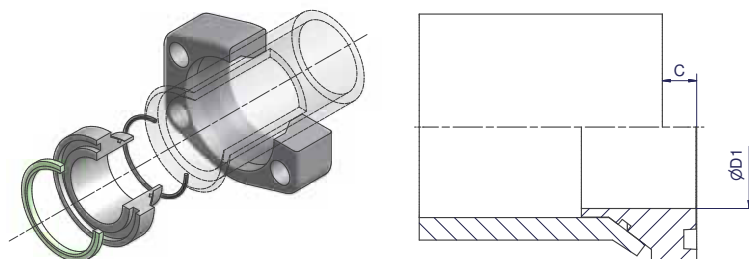
Size		Flange incl. Insert + Bonded Seal + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
2	50X3.0	F37-432-50X3.0TFBCF	42	11	IN32-50X3.0TFBCF	BS32SNX	OR44.17X1.78X	SL32-60-50-CFX	2.02
2	50X5.0	F37-432-50X5.0TFBCF	38	10	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	2.04
2	50X6.0	F37-432-50X6.0TFBCF	35	10	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	2.07
2	60X3.0	F37-432-60X3.0TFBCF	46	12	IN32-60X3.0TFBCF	BS32SNX	OR53.7X1.78X		2.07
2	60X5.0	F37-432-60X5.0TFBCF	46	11	IN32-60X5.0TFBCF	BS32SNX	OR50.52X1.78X		2.04
2	60X6.0	F37-432-60X6.0TFBCF	46	11	IN32-60X6.0TFBCF	BS32SNX	OR47.37X1.78X		2.03
2 1/2	60X3.0	F37-440-60X3.0TFBCF	50	12	IN40-60X3.0TFBCF	BS40SNX	OR53.7X1.78X	SL40-75-60-CFX	3.35
2 1/2	60X5.0	F37-440-60X5.0TFBCF	46	11	IN40-60X5.0TFBCF	BS40SNX	OR50.52X1.78X	SL40-75-60-CFX	3.36
2 1/2	60X6.0	F37-440-60X6.0TFBCF	46	11	IN40-60X6.0TFBCF	BS40SNX	OR47.37X1.78X	SL40-75-60-CFX	3.34
2 1/2	73X7.0	F37-440-73X7.0TFBCF	56	13	IN40-73X7.0TFBCF	BS40SNX	OR63.22X1.78X		3.33
2 1/2	75X3.0	F37-440-75X3.0TFBCF	60	10	IN40-75X3.0TFBCF	BS40SNX	OR69.57X1.78X		3.30
2 1/2	75X5.0	F37-440-75X5.0TFBCF	60	10	IN40-75X5.0TFBCF	BS40SNX	OR63.22X1.78X		3.32
3	75X3.0	F37-448-75X3.0TFBCF	66	10	IN48-75X3.0TFBCF	BS48SNX	OR69.57X1.78X	SL48-90-75-CFX	5.83
3	75X5.0	F37-448-75X5.0TFBCF	62	10	IN48-75X5.0TFBCF	BS48SNX	OR63.22X1.78X	SL48-90-75-CFX	5.99
3	90X3.5	F37-448-90X3.5TFBCF	72	15	IN48-90X3.5TFBCF	BS48SNX	OR82.27X1.78X		6.00
3	90X5.0	F37-448-90X5.0TFBCF	72	14	IN48-90X5.0TFBCF	BS48SNX	OR79X1.78X		5.96
3	90X9.0	F37-448-90X9.0TFBCF	69	17	IN48-90X9.0TFBCF	BS48SNX	OR72.75X1.78X		5.91

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	IN24-50X5.0TFBCF	
Stainless steel	SS	IN24-50X5.0TFBSS	

TFV – Flare flange connection

Tube to port connection, F37 seal



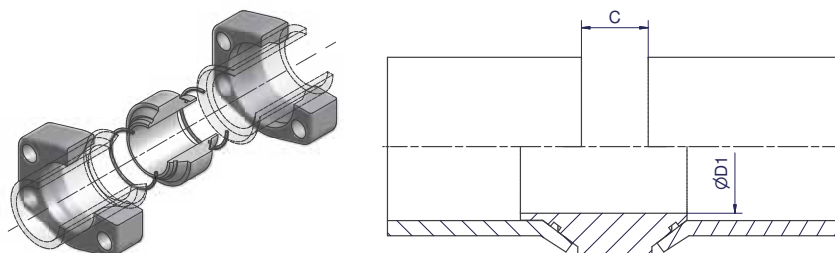
Size		Flange incl. Insert + F37 Seal + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
2	50X3.0	F37-432-50X3.0TFVCF	42	11	IN32-50X3.0TFVCF	F3732X	OR44.17X1.78X	SL32-60-50-CFX	2.02
2	50X5.0	F37-432-50X5.0TFVCF	38	10	IN32-50X5.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	2.04
2	50X6.0	F37-432-50X6.0TFVCF	35	10	IN32-50X6.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	2.07
2	60X3.0	F37-432-60X3.0TFVCF	46	12	IN32-60X3.0TFVCF	F3732X	OR53.7X1.78X		2.07
2	60X5.0	F37-432-60X5.0TFVCF	46	11	IN32-60X5.0TFVCF	F3732X	OR50.52X1.78X		2.04
2	60X6.0	F37-432-60X6.0TFVCF	46	11	IN32-60X6.0TFVCF	F3732X	OR47.37X1.78X		2.03
2 1/2	60X3.0	F37-440-60X3.0TFVCF	50	12	IN40-60X3.0TFVCF	F3740X	OR53.7X1.78X	SL40-75-60-CFX	3.35
2 1/2	60X5.0	F37-440-60X5.0TFVCF	46	11	IN40-60X5.0TFVCF	F3740X	OR50.52X1.78X	SL40-75-60-CFX	3.36
2 1/2	60X6.0	F37-440-60X6.0TFVCF	46	11	IN40-60X6.0TFVCF	F3740X	OR47.37X1.78X	SL40-75-60-CFX	3.34
2 1/2	73X7.0	F37-440-73X7.0TFVCF	56	13	IN40-73X7.0TFVCF	F3740X	OR63.22X1.78X		3.33
2 1/2	75X3.0	F37-440-75X3.0TFVCF	60	10	IN40-75X3.0TFVCF	F3740X	OR69.57X1.78X		3.30
2 1/2	75X5.0	F37-440-75X5.0TFVCF	60	10	IN40-75X5.0TFVCF	F3740X	OR63.22X1.78X		3.32
3	75X3.0	F37-448-75X3.0TFVCF	66	10	IN48-75X3.0TFVCF	F3748X	OR69.57X1.78X	SL48-90-75-CFX	5.83
3	75X5.0	F37-448-75X5.0TFVCF	62	10	IN48-75X5.0TFVCF	F3748X	OR63.22X1.78X	SL48-90-75-CFX	5.99
3	90X3.5	F37-448-90X3.5TFVCF	72	15	IN48-90X3.5TFVCF	F3748X	OR82.27X1.78X		6.00
3	90X5.0	F37-448-90X5.0TFVCF	72	14	IN48-90X5.0TFVCF	F3748X	OR79X1.78X		5.96
3	90X9.0	F37-448-90X9.0TFVCF	69	17	IN48-90X9.0TFVCF	F3748X	OR72.75X1.78X		5.82

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	IN32-50X5.0TFVCF
Stainless steel	SS	IN32-50X5.0TFVSS

TT – Flare Flange Connection

Tube to tube connection



Size		2 Flange incl. Insert + 2 x O-Ring (2 x Sleeve) Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
2	50X3.0	F37-432-50X3.0TTCF	42	11	IN32-50X3.0TTCF	OR44.17X1.78X	SL32-60-50-CFX	2.22
2	50X5.0	F37-432-50X5.0TTCF	38	10	IN32-50X5.0TTCF	OR41X1.78X	SL32-60-50-CFX	2.33
2	50X6.0	F37-432-50X6.0TTCF	35	10	IN32-50X6.0TTCF	OR41X1.78X	SL32-60-50-CFX	2.38
2	60X3.0	F37-432-60X3.0TTCF	46	12	IN32-60X3.0TTCF	OR53.7X1.78X		2.35
2	60X5.0	F37-432-60X5.0TTCF	46	11	IN32-60X5.0TTCF	OR50.52X1.78X		2.28
2	60X6.0	F37-432-60X6.0TTCF	46	11	IN32-60X6.0TTCF	OR47.37X1.78X		2.27
2 1/2	60X3.0	F37-440-60X3.0TTCF	50	12	IN40-60X3.0TTCF	OR53.7X1.78X	SL40-75-60-CFX	3.35
2 1/2	60X5.0	F37-440-60X5.0TTCF	46	11	IN40-60X5.0TTCF	OR50.52X1.78X	SL40-75-60-CFX	3.36
2 1/2	60X6.0	F37-440-60X6.0TTCF	45	11	IN40-60X6.0TTCF	OR47.37X1.78X	SL40-75-60-CFX	3.34
2 1/2	73X7.0	F37-440-73X7.0TTCF	56	13	IN40-73X7.0TTCF	OR63.22X1.78X		3.33
2 1/2	75X3.0	F37-440-75X3.0TTCF	60	10	IN40-75X3.0TTCF	OR69.57X1.78X		3.30
2 1/2	75X5.0	F37-440-75X5.0TTCF	60	10	IN40-75X5.0TTCF	OR63.22X1.78X		3.32
3	75X3.0	F37-448-75X3.0TTCF	66	10	IN48-75X3.0TTCF	OR69.57X1.78X	SL48-90-75-CFX	5.83
3	75X5.0	F37-448-75X5.0TTCF	62	10	IN48-75X5.0TTCF	OR63.22X1.78X	SL48-90-75-CFX	5.99
3	90X3.5	F37-448-90X3.5TTCF	72	15	IN48-90X3.5TTCF	OR82.27X1.78X		6.00
3	90X5.0	F37-448-90X5.0TTCF	72	14	IN48-90X5.0TTCF	OR79X1.78X		5.96
3	90X9.0	F37-448-90X9.0TTCF	69	17	IN48-90X9.0TTCF	OR72.75X1.78X		5.85

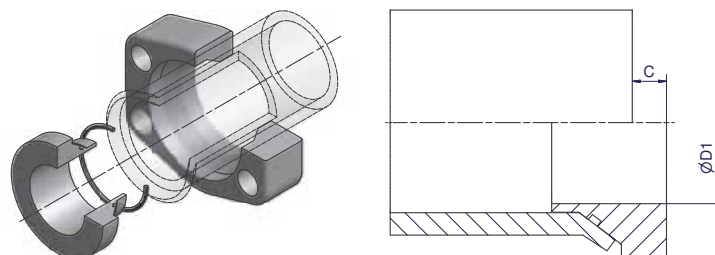
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	IN32-50X5.0TTCF
Stainless steel	SS	IN32-50X5.0TTSS



TF – Flare Flange Connection

Tube to port connection, flat face



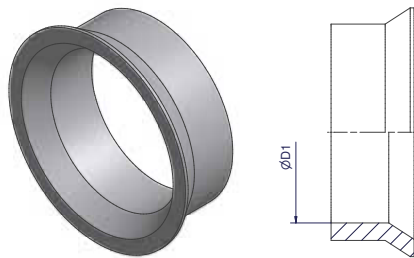
Size		Flange incl. Insert + O-Ring Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
2	50X3.0	F37-432-50X3.0TFCF	42	11	IN32-50X3.0TFCF	OR44.17X1.78X	SL32-60-50-CFX	2.02
2	50X5.0	F37-432-50X5.0TFCF	38	10	IN32-50X5.0TFCF	OR41X1.78X	SL32-60-50-CFX	2.04
2	50X6.0	F37-432-50X6.0TFCF	35	10	IN32-50X6.0TFCF	OR41X1.78X	SL32-60-50-CFX	2.07
2	60X3.0	F37-432-60X3.0TFCF	46	12	IN32-60X3.0TFCF	OR53.7X1.78X		2.07
2	60X5.0	F37-432-60X5.0TFCF	46	11	IN32-60X5.0TFCF	OR50.52X1.78X		2.04
2	60X6.0	F37-432-60X6.0TFCF	46	11	IN32-60X6.0TFCF	OR47.37X1.78X		2.03
2 1/2	60X3.0	F37-440-60X3.0TFCF	50	12	IN40-60X3.0TFCF	OR53.7X1.78X	SL40-75-60-CFX	3.35
2 1/2	60X5.0	F37-440-60X5.0TFCF	46	11	IN40-60X5.0TFCF	OR50.52X1.78X	SL40-75-60-CFX	3.36
2 1/2	60X6.0	F37-440-60X6.0TFCF	46	11	IN40-60X6.0TFCF	OR47.37X1.78X	SL40-75-60-CFX	3.34
2 1/2	73X7.0	F37-440-73X7.0TFCF	56	13	IN40-73X7.0TFCF	OR63.22X1.78X		3.33
2 1/2	75X3.0	F37-440-75X3.0TFCF	60	10	IN40-75X3.0TFCF	OR69.57X1.78X		3.30
2 1/2	75X5.0	F37-440-75X5.0TFCF	60	10	IN40-75X5.0TFCF	OR63.22X1.78X		3.32
3	75X3.0	F37-448-75X3.0TFCF	66	10	IN48-75X3.0TFCF	OR69.57X1.78X	SL48-90-75-CFX	5.83
3	75X5.0	F37-448-75X5.0TFCF	62	10	IN48-75X5.0TFCF	OR63.22X1.78X	SL48-90-75-CFX	5.99
3	90X3.5	F37-448-90X3.5TFCF	72	15	IN48-90X3.5TFCF	OR82.27X1.78X		6.00
3	90X5.0	F37-448-90X5.0TFCF	72	14	IN48-90X5.0TFCF	OR79X1.78X		5.96
3	90X9.0	F37-448-90X9.0TFCF	69	17	IN48-90X9.0TFCF	OR72.75X1.78X		5.82

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	IN32-50X5.0TFCF
Stainless steel	SS	IN32-50X5.0TFSS

SL – Sleeve

ISO 6164



Size Inch	Tube OD	Order code	D1	Weight (Steel) kg/1 piece
2	50	SL32-60-50-CFX	50.30	0.16
2 1/2	60	SL40-75-60-CFX	60.45	0.36
3	75	SL48-90-75-CFX	75.45	0.52

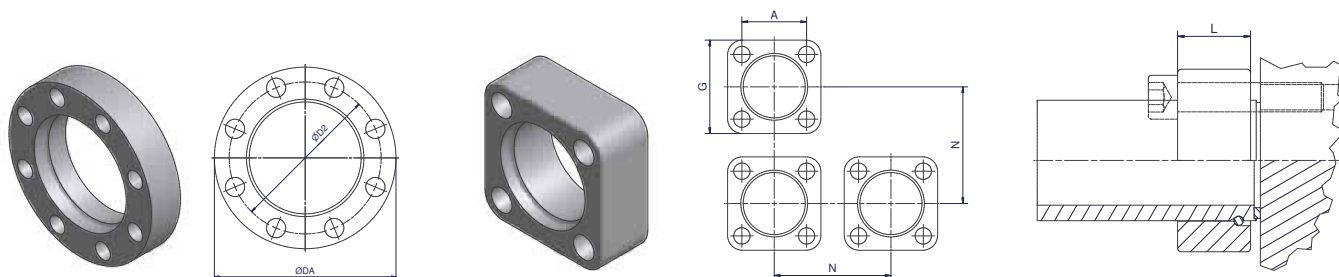
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX



R – Retaining ring flange

ISO 6164



Retaining ring flange dimensions

Size Inch	Flange Order Code	A	G	N	L	Weight (Steel) kg/1 piece	W.P. bar
2	R-432-CFX	69.3	100	105	40	1.60	400
2 1/2	R-440-CFX	83.4	120	125	50	2.90	
3	R-448-CFX	102.5	150	155	52	5.00	
4	R-464-CFX	123.7	180	185	70	9.70	
		D2	DA				
4 1/2	R-872-CFX	315	385		50	7.44	400
5	R-880-CFX	205	245		50	9.52	400
6	R-896-CFX	245	300		80	21.22	350
8	R-8128-CFX	315	385		92	39.27	250
10	R-8160273-CFX	375	450		90	59.31	250

Please change suffixes according to material/surface required

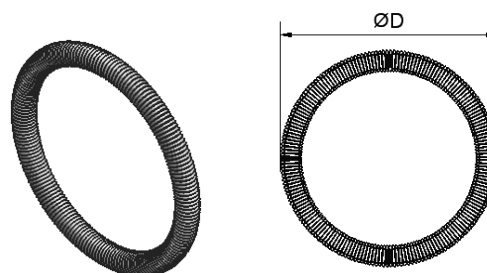
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432-CFX
Stainless steel	SS	R-432-SSX
Galvanized hot dip zinc	TZN	R-432-TZNX

R – Retaining ring

ISO 6164

Size Inch	Tube	D	S	Order code
2	66X8.5	62.8	3.5	R32X
2 1/2	80X10	76.8	3.5	R40X
3	97X12	93.3	4.0	R48X
4	115X15	109.3	6.0	R64X
4 1/2	130x15	136.3	6.0	R72X
5	150X15	156.3	6.0	R80X
6	190x20	197.3	7.0	R96X
8	250X25	238.3	12.0	R128X
10	273X25	261.4	12.0	R160X

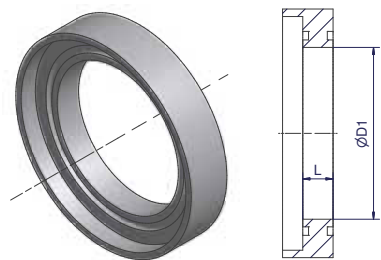
Material: Stainless steel



ENGINEERING YOUR SUCCESS.

PSC – Pipe seal carrier

ISO 6164



Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
2	66X8.5	6.5	49	PSC32-66X8.5VCF	400
2 1/2	80X10	15.0	60	PSC40-80X10VCF	400
3	97X12	15.0	73	PSC48-97X12VCF	400
4	115X15	15.0	85	PSC64-115X15VCF	400
4 1/2	130X15	25.5	100	PSC72-130X15VCF	400
6	190X20	40.0	150	PSC96-190X20VCF	350

Other sizes on request
Stainless steel on request
Included seals

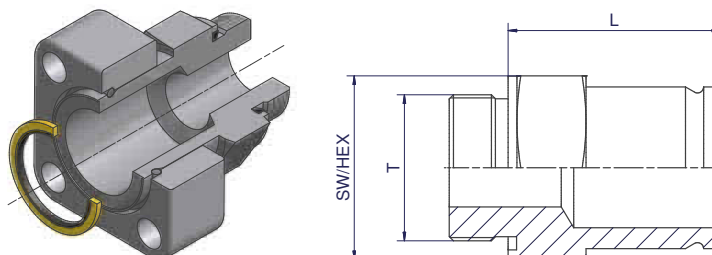
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	PSC40-80X10VCF
Stainless steel	SS	PSC40-80X10VSS



MTF-R – Male thread adapter, BSPP

ISO 6164



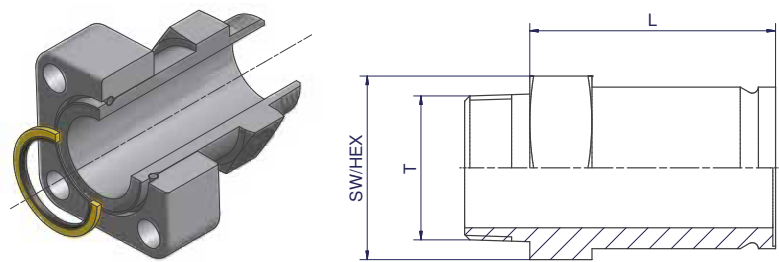
Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	Weight body (Steel) kg/1 piece	L	T (BSPP)	SW/ HEX
2	66X8.5	R-432MTFRCF	MTF32ROMDCF	1.90	86.8	G 2 A	75

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432MTFRCF
Stainless steel	SS	R-432MTFRSS

MTF-N – Male thread adapter, NPT

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	Weight body (Steel) kg/1 piece	L	T (NPT)	SW/ HEX
2	66X8.5	R-432MTFNCF	MTF32NCFX	1.40	80	2-11.5	75

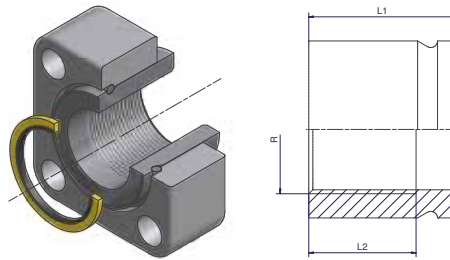
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432MTFNCF
Stainless steel	SS	R-432MTFNSS



FTF-R – Female thread adapter, BSPP

ISO 6164



Size Inch	Tube	Complete part Order code	Body Order code	Weight body (Steel) kg/1 piece	L1	L2	R (BSPP)
2	66X8.5	R-432FTFRCF	FTF32RCFX	0.75	55	40	G 1 1/2
2 1/2	80X10	R-440FTFRCF	FTF40RCFX	1.52	80	40	G 2
3	97X12	R-448FTFRCF	FTF48RCFX	2.11	85	50	G 2 1/2

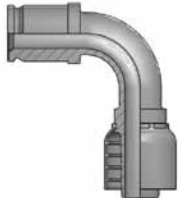
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432FTFRCF
Stainless steel	SS	R-432FTFRSS

Retaining ring hose couplings

SAE 3000/ISO 6162-1

One Piece No-Skive Hose fittings 48 Series for Parker hose types 301SN (2 wire braid) & 421SN (one wire braid)

				
Connection		Order code	Order code	Order code
Flange	Hose			
1 1/4	1 1/4	1X548-20-20	1X748-20-20	1X948-20-20
1 1/2	1 1/2	1X548-24-24	1X748-24-24	1X948-24-24
2	2	1X548-32-32	1X748-32-32	1X948-32-32

Interlock Hose nipples V6 series for Parker hose types H82 & R42 (6 spiral)

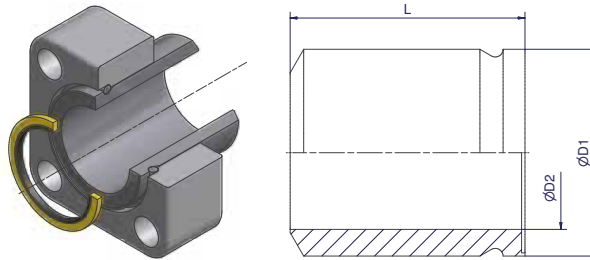
				
Connection		Order code	Order code	Order code
Flange	Hose			
1 1/4	1 1/4	KX5V6-20-20	KX7V6-20-20	KX9V6-20-20
1 1/2	1 1/2	KX5V6-24-24	KX7V6-24-24	KX9V6-24-24
2	2	KX5V6-32-32	KX7V6-32-32	KX9V6-32-32

Interlock Shells V6 Series for Parker hose types H82 & R42

		
Connection		Order code
Hose		
1 1/4		100V6-20
1 1/2		100V6-24
2		100V6-32

WA – Weld adapter connection

ISO 6164



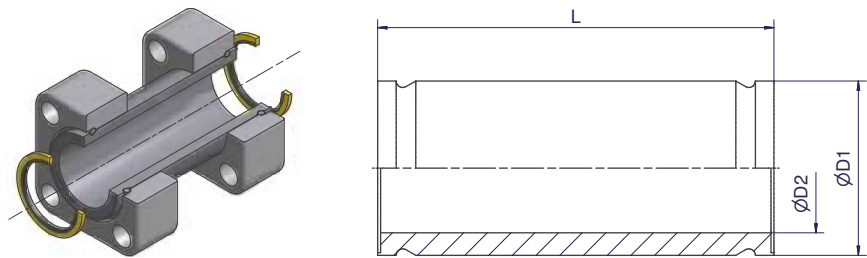
Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
2	48.3X5.6	R-432WA-48.3X5.6S	R32X	BS32SNX	R-432-CFX	WA32-48.3X5.6SX	2.90	66	37	90
2	50X9.0	R-432WA-50X9.0S	R32X	BS32SNX	R-432-CFX	WA32-50X9.0SX	3.11	66	32	90
2	60X3.0	R-432WA-60X3.0S	R32X	BS32SNX	R-432-CFX	WA32-60X3.0SX	2.39	66	49	90
2	60X5.0	R-432WA-60X5.0S	R32X	BS32SNX	R-432-CFX	WA32-60X5.0SX	2.49	66	50	90
2	60X6.0	R-432WA-60X6.0S	R32X	BS32SNX	R-432-CFX	WA32-60X6.0SX	2.60	66	48	90
2	60X8.0	R-432WA-60X8.0S	R32X	BS32SNX	R-432-CFX	WA32-60X8.0SX	2.78	66	44	90
2	60X10.0	R-432WA-60X10.0S	R32X	BS32SNX	R-432-CFX	WA32-60X10.0SX	2.96	66	40	90
2	60.3X2.8	R-432WA-60.3X2.8S	R32X	BS32SNX	R-432-CFX	WA32-60.3X2.8SX	2.37	66	49	90
2	60.3X3.9	R-432WA-60.3X3.9S	R32X	BS32SNX	R-432-CFX	WA32-60.3X3.9SX	2.45	66	49	90
2	60.3X5.5	R-432WA-60.3X5.5S	R32X	BS32SNX	R-432-CFX	WA32-60.3X5.5SX	2.54	66	49	90
2	60.3X8.7	R-432WA-60.3X8.7S	R32X	BS32SNX	R-432-CFX	WA32-60.3X8.7SX	2.84	66	43	90
2	60.3X11.1	R-432WA-60.3X11.1S	R32X	BS32SNX	R-432-CFX	WA32-60.3X11.1SX	3.04	66	38	90
2	66X8.5	R-432WA-66X8.5S	R32X	BS32SNX	R-432-CFX	WA32-66X8.5SX	2.45	66	49	75
2 1/2	65X8.0	R-440WA-65X8.0S	R40X	BS40SNX	R-440-CFX	WA40-65X8.0SX	5.10	80	49	105
2 1/2	65X8.5	R-440WA-65X8.5S	R40X	BS40SNX	R-440-CFX	WA40-65X8.5SX	4.59	80	59	105
2 1/2	73X7.0	R-440WA-73X7.0S	R40X	BS40SNX	R-440-CFX	WA40-73X7.0SX	4.20	80	59	105
2 1/2	75X5.0	R-440WA-75X5.0S	R40X	BS40SNX	R-440-CFX	WA40-75X5.0SX	4.37	80	60	105
2 1/2	76.1X6.3	R-440WA-76.1X6.3S	R40X	BS40SNX	R-440-CFX	WA40-76.1X6.3SX	4.45	80	60	105
2 1/2	76.1X12.5	R-440WA-76.1X12.5S	R40X	BS40SNX	R-440-CFX	WA40-76.1X12.5SX	5.17	80	51	105
2 1/2	80X10.0	R-440WA-80X10.0S	R40X	BS40SNX	R-440-CFX	WA40-80X10.0SX	4.40	80	60	90
3	76.1X12.5	R-448WA-76.1X12.5S	R48X	BS48SNX	R-448-CFX	WA48-76.1X12.5SX	8.18	97	51	120
3	80X10.0	R-448WA-80X10.0S	R48X	BS48SNX	R-448-CFX	WA48-80X10.0SX	8.07	97	60	120
3	88.9X3.1	R-448WA-88.9X3.1S	R48X	BS48SNX	R-448-CFX	WA48-88.9X3.1SX	7.18	97	73	120
3	88.9X5.5	R-448WA-88.9X5.5S	R48X	BS48SNX	R-448-CFX	WA48-88.9X5.5SX	7.47	97	73	120
3	88.9X7.7	R-448WA-88.9X7.7S	R48X	BS48SNX	R-448-CFX	WA48-88.9X7.7SX	7.67	97	74	120
3	88.9X8.8	R-448WA-88.9X8.8S	R48X	BS48SNX	R-448-CFX	WA48-88.9X8.8SX	7.90	97	71	120
3	88.9X11.1	R-448WA-88.9X11.1S	R48X	BS48SNX	R-448-CFX	WA48-88.9X11.1SX	8.34	97	67	120
3	88.9X12.5	R-448WA-88.9X12.5S	R48X	BS48SNX	R-448-CFX	WA48-88.9X12.5SX	8.60	97	64	120
3	88.9X15.2	R-448WA-88.9X15.2S	R48X	BS48SNX	R-448-CFX	WA48-88.9X15.2SX	9.00	97	59	120
3	90X3.5	R-448WA-90X3.5S	R48X	BS48SNX	R-448-CFX	WA48-90X3.5SX	7.19	97	73	120
3	90X5.0	R-448WA-90X5.0S	R48X	BS48SNX	R-448-CFX	WA48-90X5.0SX	7.50	97	73	120
3	90X9.0	R-448WA-90X9.0S	R48X	BS48SNX	R-448-CFX	WA48-90X9.0SX	7.85	97	72	120
3	97X12.0	R-448WA-97X12.0S	R48X	BS48SNX	R-448-CFX	WA48-97X12.0SX	7.65	97	73	110
4	100X4.0	R-464WA-100X4.0S	R64X	BS64SNX	R-464-CFX	WA64-100X4.0SX	13.44	115	85	130
4	101.6X8.1	R-464WA-101.6X8.1S	R64X	BS64SNX	R-464-CFX	WA64-101.6X8.1SX	12.49	115	85	130
4	101.6X16.0	R-464WA-101.6X16.0S	R64X	BS64SNX	R-464-CFX	WA64-101.6X16.0SX	13.73	115	85	120
4	114.3X4.5	R-464WA-114.3X4.5S	R64X	BS64SNX	R-464-CFX	WA64-114.3X4.5SX	14.40	115	80	120
4	114.3X12.5	R-464WA-114.3X12.5S	R64X	BS64SNX	R-464-CFX	WA64-114.3X12.5SX	12.37	115	85	120
4	114.3X17.1	R-464WA-114.3X17.1S	R64X	BS64SNX	R-464-CFX	WA64-114.3X17.1SX	13.90	115	85	120
4	115X4.0	R-464WA-115X4.0S	R64X	BS64SNX	R-464-CFX	WA64-115X4.0SX	12.36	115	85	120
4	115X15.0	R-464WA-115X15.0S	R64X	BS64SNX	R-464-CFX	WA64-115X15.0SX	13.87	115	85	120
4 1/2	130X15	R-872WA-130X15.0S	R72X	BS72SNX	R-872-CFX	WA72-130X15SX	12.50	130	100	125
5	150X15	R-880WA-150X15.0S	R80X	BS80SNX	R-880-CFX	WA80-150X15SX	14.60	150	120	110

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-432WA-66X8.5S
Stainless steel	SS	R-432WA-66X8.5SS

BF – Bulkhead flange

ISO 6164



Size Inch	D1	D2	L	Complete Part Order code	Bulkhead Body Order code	Weight body (Steel) kg/1 piece
1 1/2	56	39	180	R-424BFS	BF24SX	1.75
2	66	49	210	R-432BFS	BF32SX	2.45
2 1/2	80	60	220	R-440BFS	BF40SX	3.70
3	97	73	240	R-448BFS	BF48SX	7.85
4	115	85	260	R-864BFS	BF64SX	9.35
5	150	120	260	R-880BFS	BF80SX	10.53

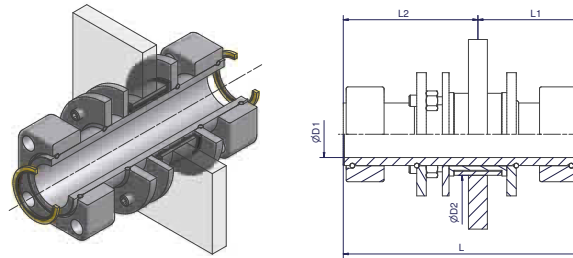
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	S	R-432BFS
Stainless steel	SS	R-432BFSS



VB – Vibra bulkhead

ISO 6164



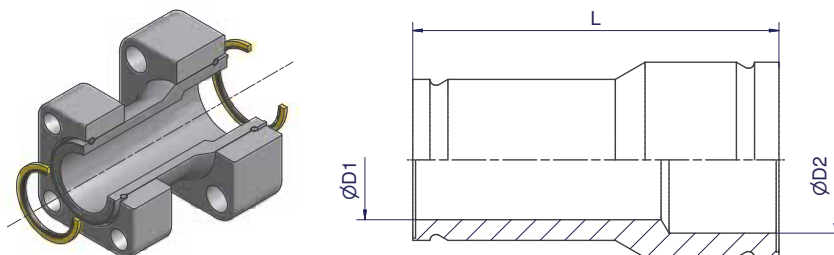
Size Inch	Tube	D1	D2	L	L1	L2	Complete Part Order code	Weight (Steel) kg/1 piece
2	66X8.5	66	86.5	250	110	140	R-432VBCF	6.52
2 1/2	80X10	80	100.5	260	115	145	R-440VBCF	9.32
3	97X12	97	117.5	280	125	155	R-448VBCF	16.12
4	115X15	115	135.5	300	135	165	R-464VBCF	27.62

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432VBCF
Stainless steel	SS	R-432VBSS

RF – Reducer flange

ISO 6164



Size Inch	D1	D2	L	Complete Part Order code	Reducer Body Order code	Weight body (Steel) kg/1 piece
2 - 1 1/4	30	49	130	R-432-420RFCF	RF32-20CFX	1.3
2 - 1 1/2	39	49	130	R-432-424RFCF	RF32-24CFX	1.4
2 1/2 - 1 1/2	39	60	150	R-440-424RFCF	RF40-24CFX	2.1
2 1/2 - 2	49	60	150	R-440-432RFCF	RF40-32CFX	2.2
3 - 2	49	73	180	R-448-432RFCF	RF48-32CFX	3.4
3 - 2 1/2	60	73	180	R-448-440RFCF	RF48-40CFX	3.7
4 - 3	73	85	200	R-464-448RFCF	RF64-48CFX	6.1
5 - 3	97	150	200	R-880-448RFCF	RF80-48CFX	8.0

Other sizes on request

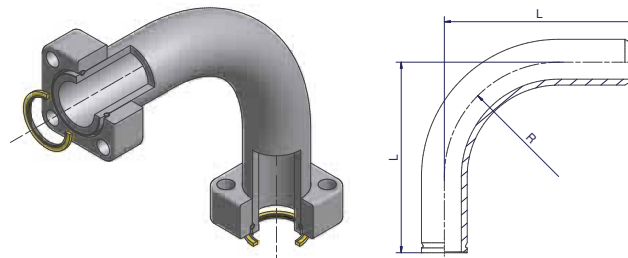
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432-424RFCF
Stainless steel	SS	R-432-424RFSS



FB90 – 90° Flange bend

ISO 6164



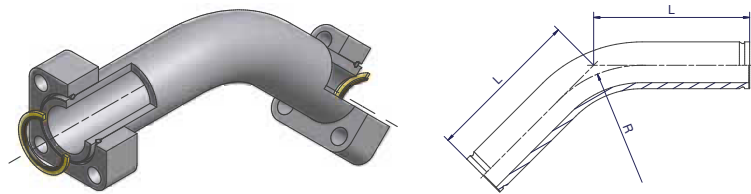
Size Inch	Tube	L	R	Complete Part Order code	90° Flange Bend Order code	Weight body (Steel) kg/1 piece
2	66X8.5	275	165	R-432FB90S	FB90-32SX	5.72
2 1/2	80X10.0	370	200	R-440FB90S	FB90-40SX	11.20
3	97X12	450	243	R-448FB90S	FB90-48SX	19.90

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	S	R-432FB90S	
Stainless steel	SS	R-432FB90SS	on request

FB45 – 45° Flange bend

ISO 6164



Size Inch	Tube	L	R	Complete Part Order code	45° Flange Bend Order code	Weight body (Steel) kg/1 piece
2	66X8.5	220	165	R-432FB45S	FB45-32SX	5.16
2 1/2	80X10.0	240	200	R-440FB45S	FB45-40SX	8.07
3	97X12	260	243	R-448FB45S	FB45-48SX	12.70

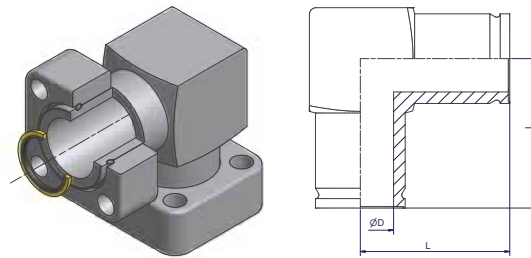
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	S	R-432FB45S	
Stainless steel	SS	R-432FB45SS	on request



LF – Elbow flange

ISO 6164



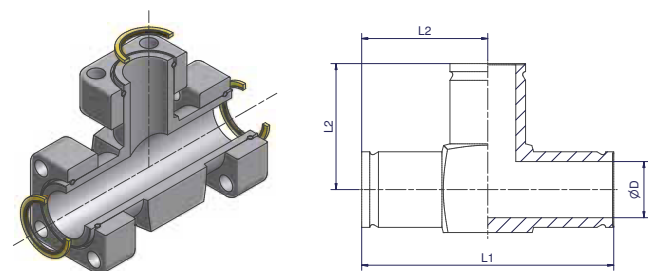
Size Inch	D	L	Complete Part Order code	Elbow Flange body Order code	Weight body (Steel) kg/1 piece
2	49	110	R-432LFCF	LF32CFX	4.02
2 1/2	60	130	R-440LFCF	LF40CFX	5.79
3	73	160	R-448LFCF	LF48CFX	10.76

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432LFCF
Stainless steel	SS	R-432LFSS

TF – TEE flange

ISO 6164



Size Inch	D	L1	L2	Complete Part Order code	Tee Flange body Order code	Weight body (Steel) kg/1 piece
2	49	220	110	R-432TFCF	TF32CFX	4.53
2 1/2	60	260	130	R-440TFCF	TF40CFX	8.70
3	73	320	160	R-448TFCF	TF48CFX	12.81

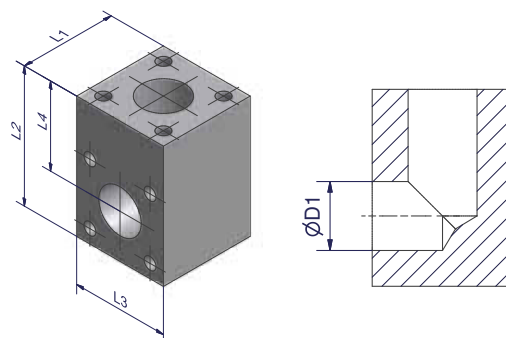
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-432TFCF
Stainless steel	SS	R-432TFSS



LB – Flange L-block

ISO 6164



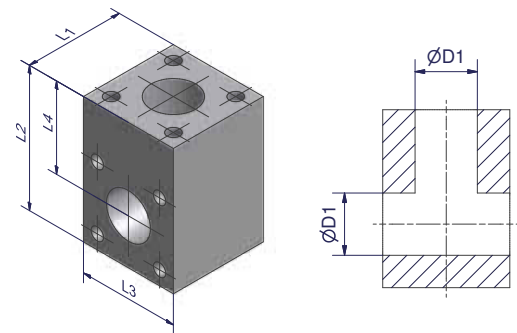
Size Inch	D1	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
2	50	100	140	100	90	8.72	LB432CFX
2 1/2	60	120	160	120	100	14.10	LB440CFX
3	73	150	200	150	125	28.10	LB448SX
4	99	180	240	180	150	48.80	LB464SX

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	LB432CFX
Steel	S	LB432SX
Stainless steel	SS	LB432SSX

TB – Flange T-block

ISO 6164



Size Inch	D1	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
2	49	100	140	100	90	8.03	TB432CFX
2 1/2	60	120	160	120	100	12.90	TB440CFX
3	73	150	200	150	125	25.80	TB448SX
4	85	180	240	180	150	40.70	TB464SX
5	120	260	300	260	170	122.0	TB880SX

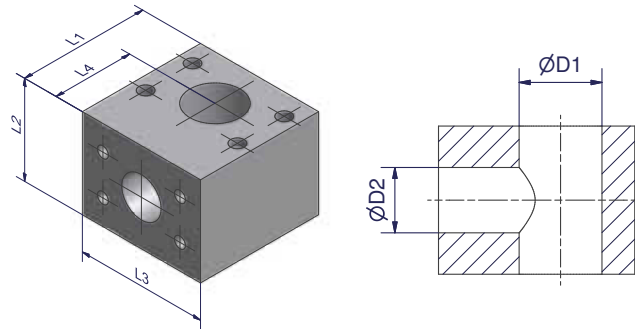
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TB432CFX
Steel	S	TB432SX
Stainless steel	SS	TB432SSX



TBR – Flange T-block reducer

ISO 6164



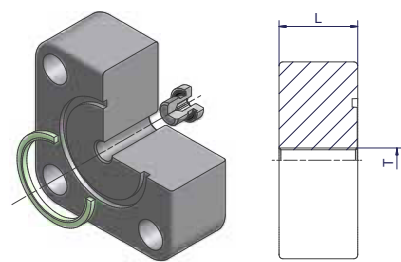
Size Inch	D1	D2	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
2 1/2 - 2	60	49	150	100	120	90	10.2	TBR440-432-440CFX
3 - 2 1/2	73	60	185	120	150	110	19.2	TBR448-440-448CFX
3 - 2	73	49	175	100	150	100	15.2	TBR448-432-448CFX
4 - 3	85	73	225	150	150	135	35.2	TBR464-448-464SX
4 - 2 1/2	85	60	215	120	180	125	26.9	TBR464-440-464SX
4 - 2	85	49	200	100	180	110	21.0	TBR464-432-464SX

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TBR448-432-448CFX
Steel	S	TBR448-432-448SX
Stainless steel	SS	TBR448-432-448SSX

BFV – Blind flange

ISO 6164



Size Inch	L	T	Weight (Steel) kg/1 piece	Flange incl. VSTI-ED and F37 Seal Order code
2	40.0	G 1/4	2.75	F37-432BFVCF
2 1/2	50.0	G 1/4	4.90	F37-440BFVCF
3	52.0	G 1/4	8.15	F37-448BFVCF
4	70.0	G 1/4	11.55	F37-464BFVCF
5	50.0	G 1/4	16.74	F37-880BFVCF

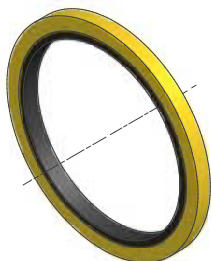
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-432BFVCF
Stainless steel	SS	F37-432BFVSS



BS – Bonded seal

ISO 6164



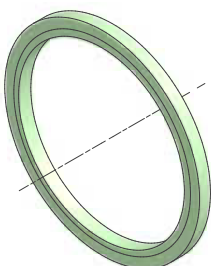
Size Inch	Steel	Stainless Steel
2	BS32SNX	BS32SSNX
2 1/2	BS40SNX	BS40SSNX
3	BS48SNX	BS48SSNX
4	BS64SNX	BS64SSNX
5	BS80SNX	BS80SSNX

Sealing: NBR

Other sealing materials like FKM on request

F37S – F37 Seal

ISO 6164



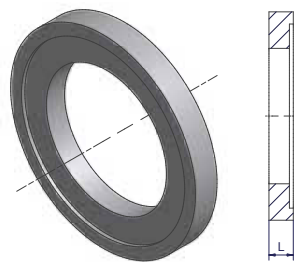
Size Inch	F37 Seal
2	F37S32X
2 1/2	F37S40X
3	F37S48X
4	F37S64X
5	F37S80X

Sealing: Polyurethane

Material properties and applications see page 18

A0 – Adapter bonded seal/F37 seal/O-Ring

ISO 6164



Size Inch	L	Weight (Steel) kg/1 piece	Adapter* Order code
2	7	0.10	AO32CFX
2 1/2	7	0.14	AO40CFX
3	7	0.20	AO48CFX
4	7	0.35	AO64CFX
5	7	0.32	AO80CFX

*Part excluding seals

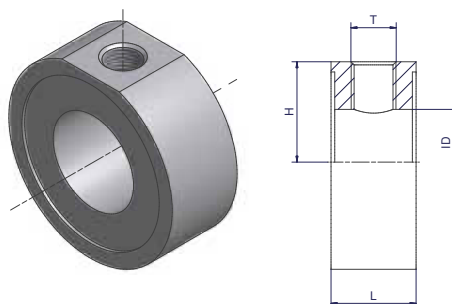
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	AO32CFX
Stainless steel	SS	AO32SSX



TBT – Tee between bonded seal

ISO 6164

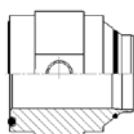


Size Inch	L	H	T	ID	Bolt ISO 4762	Weight (Steel) kg/1 piece	Order code
2	25	35	G 1/4	41	ZYLS12X110	0.51	TBT32-1/4CFX
2	40	34	G 1/2	38	ZYLS12X130	0.87	TBT32-1/2CFX
2 1/2	30	42	G 1/4	60	ZYLS12X150	0.63	TBT40-1/4CFX
3	30	50	G 1/4	72	ZYLS12x150	0.90	TBT48-1/4CFX

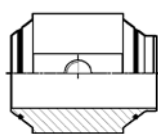
*Part excluding seals

For testpoints and diagnostic test equipment see catalogue 4100, Industrial Tube Fittings Europe

Alternative versions on request



TFVB



TTB

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	TBT32-1/2CFX
Stainless steel	SS	TBT32-1/2SSX

Bolts and nuts for flange

ISO 6164



F37 Flare Flange

Size Inch	Flange	F37 Seal/Flat Face/Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
2	F37-432-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
2 1/2	F37-440-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
3	F37-440-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24

Retaining Ring Flange

Size Inch	Flange	Flat Face/Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
2	R-432-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
2 1/2	R-440-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
3	R-448-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
4	R-464-CFX	4 x ZYLS30X120	4 x ZYLS30X190	4 x ISO4032-M30
4 1/2	R-872-CFX	4 x ZYLS30X120	4 x ZYLS30X190	4 x ISO4032-M30
5	R-880-CFX	8 x ZYLS24X90	8 x ZYLS24X150	8 x ISO4032-M24

Bolts and nuts must be ordered separately

Please add the suffixes according to the bolt quality

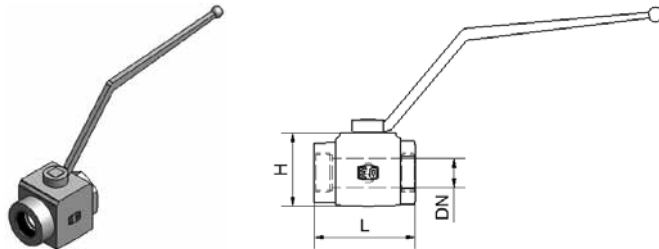
Quality	Steel		Stainless Steel
	8.8	10.9	A4-80X
Bolt	ZYLS16X60X	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO-4032-M12-8VZX	ISO-4032-M12-10VZX	ISO-4032-M12-80X

* Bolt quality 10.9 recommended.
Bolt quality 8.8 can affect the pressure capability.



KH – Ball valve

400 bar Female BSPP Thread (ISO 1179-1)



Material Steel

Size Inch	DN	L	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
2	50	129	104	KH2X	5	400

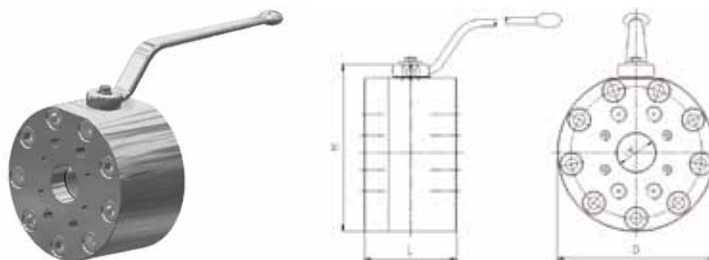
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	KH2CFX	only ball valve
Steel		KH2X	only ball valve
Stainless steel	71	KH271X	only ball valve

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-30°C / 100 °C	-30°C / 100°C

KH – Ball valve drilled and tapped for ISO 6164 flanges

ISO 6164



Material Steel

Size Inch	LW	L	Flange Part	D	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
2	38	110	432	165	178	KH32-38CF	25.8	400
2	48	116	432	198	210	KH32-48CF	25.5	400
2 1/2	48	116	440	198	210	KH40-48CF	24.9	400
3	63	150	448	198	259	KH48-63CF	36.0	350
4	76	140	464	210	277	KH64-76CF	34.3	350
4	88	170	464	260	327	KH64-88CF	60.4	350
4 1/2	100	170	472	260	327	KH72-100CF	60.4	350
5	118	210	880	300	379	KH80-118CF	96.8	350
6	132	285	896	390	475	KH96-132CF	227.0	350
6	150	285	896	390	475	KH96-150CF	225.0	350
8	192	378	8128	456	598	KH128-200CF	395.0	350

Please change suffixes according to material/surface required

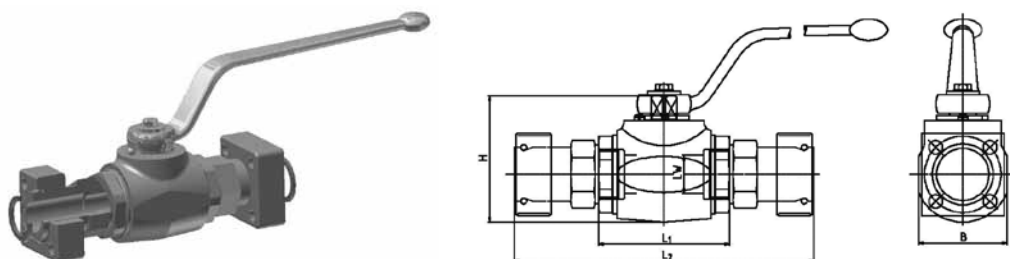
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH432-38CF
Stainless steel	SS	KH432-38SS

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-10°C / 100 °C	-30°C / 100°C



KH-R – Ball valve with ISO 6164 flanges

ISO 6164



Material Steel

Size Inch	LW	L1	L2	B	H	Complete part Order code	Valve body Order code	Weight (Steel) kg/1 piece	W.P. bar
2	48	140	313.6	118	138	KH-R-432-48CF	KH-R-32-48CF	15.2	400

Material Stainless Steel

Size Inch	LW	L1	L2	B	H	Complete part Order code	Valve body Order code	Weight (Steel) kg/1 piece	W.P. bar
2	48	140	313.6	132	145	KH-R-432-48SS	KH-R-32-48SS	17.3	400

Please change suffixes according to material/surface required

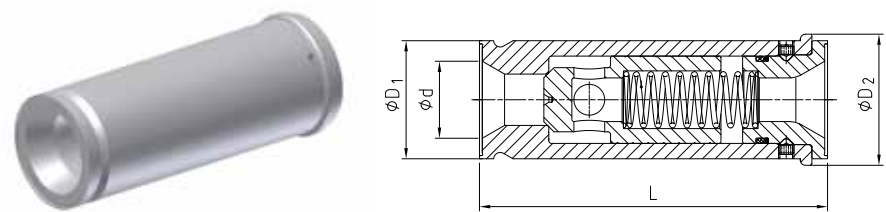
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH-R-432-48CF
Stainless steel	SS	KH-R-432-48SS

	Materials	
Body	Steel	Stainless Steel
Ball	Steel	Stainless Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-20°C / 100 °C	-30°C / 100°C

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RHD-R – Non return valves

ISO 6164



Material Steel

Size Inch	L	D1	D2	d	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
2	180.1	66	70.5	49	RHD-R-432-0.5BCF	RHD-R-32-0.5BCF	2.54	420
2 1/2	210.0	80	84.5	60	RHD-R-440-0.5BCF	RHD-R-40-0.5BCF	3.89	

Opening pressure 0.5 bar
Other pressure rates on request

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RHD-R-32-0.5BCF
Stainless steel	SS	RHD-R-32-0.5BSS

	Materials
Body	Steel
O-Ring	NBR
Tmin / T max	-10°C / 100 °C





Flange mounted valves

ENGINEERING YOUR SUCCESS.

Flange mounted valves

Characteristics

Flange Mounted Valves

Parker offers a wide range of flange mounted valves in four sizes (3/4", 1", 1 1/4", 1 1/2") and various functions.



Pressure relief valves

2- and 3-port configurations
SAE 3000 (SAE 61) and SAE 6000 (SAE 62)

Functions:

- | | |
|----------------------------|-----|
| ● Pressure relief valve | R5V |
| ● Pressure reducing valve | R5R |
| ● Pressure unloading valve | R5U |



Check valves

2-port configuration
SAE 3000 (SAE 61) and SAE 6000 (SAE 62)

Functions:

- | | |
|-------------------------------|-----|
| ● Direct operated check valve | C5V |
| ● Pilot operated check valve | C5P |



Flow valves

2- and 3-port configurations
SAE 3000 (SAE 61)

Functions:

- | | |
|-------------------------------|-----|
| ● Proportional throttle valve | F5C |
| ● Pressure compensators | |
| – 2-port | R5A |
| – 3-port | R5P |



Logic valves

2- and 3-port configurations
SAE 3000 (SAE 61)

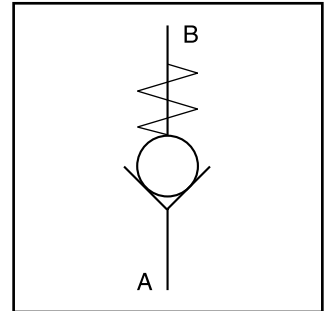
Function:

- | | |
|----------------------|-----|
| ● 2/2-way seat valve | D5S |
|----------------------|-----|



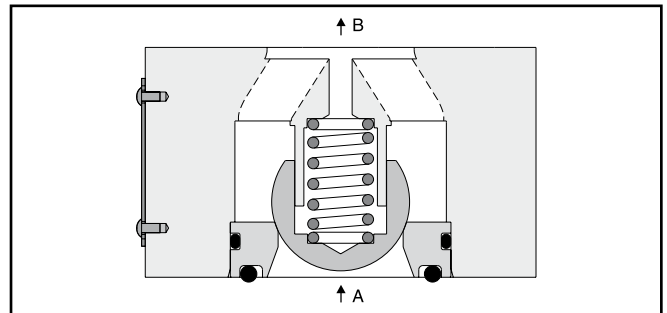
Characteristics C5V

Direct operated check valves series C5V provide free flow in one direction and block the flow in the counter direction. The SAE flanges allow to mount the C5V directly on the pressure port of pumps for protection against pressure shocks from the system.



Features

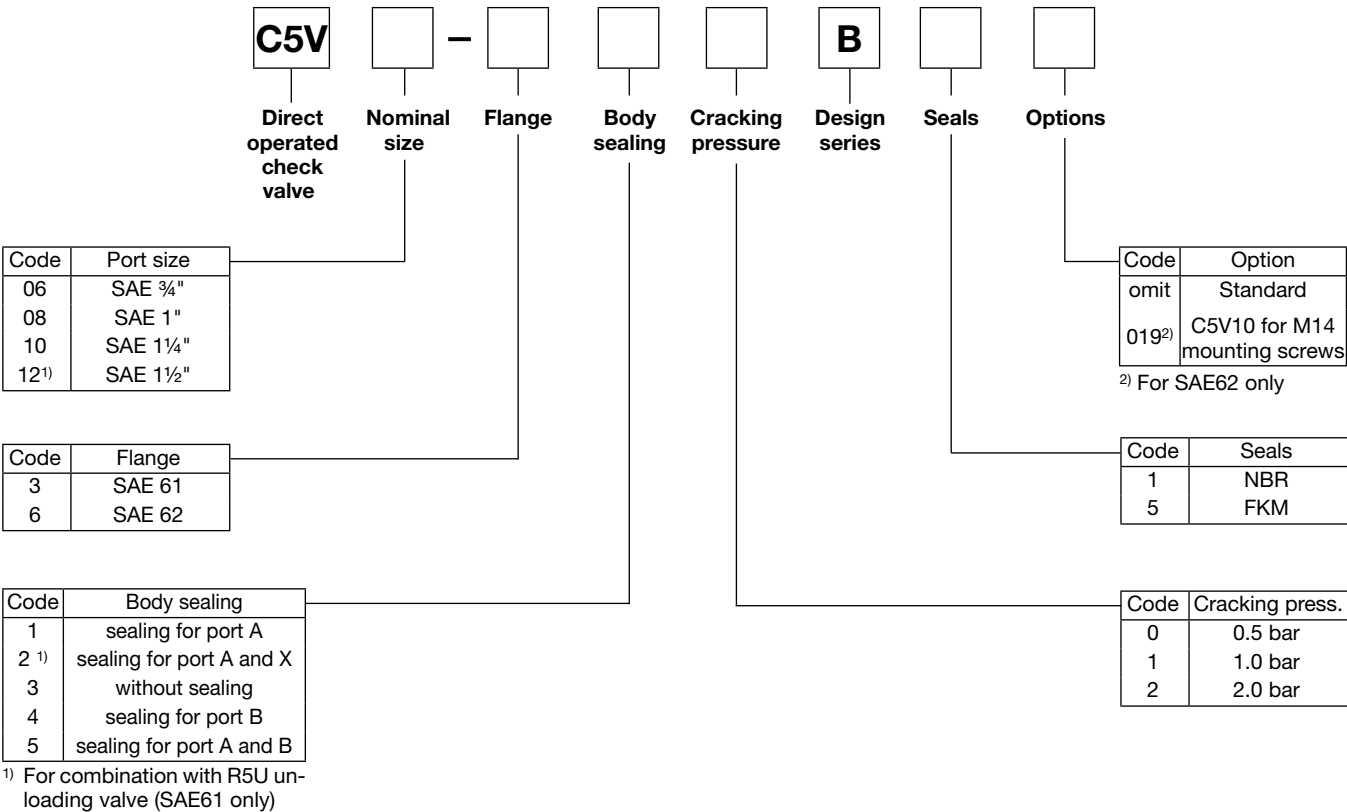
- Direct operated check valve
- SAE61 and SAE62 flange
- 4 sizes (SAE 3/4", 1", 1 1/4", 1 1/2")
- 3 springs
- 5 options for body sealing



Technical data

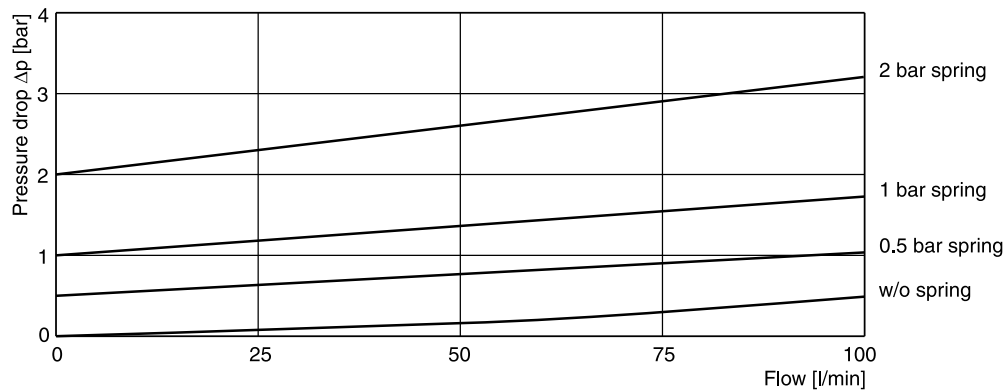
General		06 (3/4")	08 (1")	10 (1 1/4")	12 (1 1/2")
Size					
Mounting		2-port inline flange (SAE61 and 62)			
Mounting position		unrestricted			
Ambient temperature	[°C]	-20...+50			
MTTFD value	[years]	150			
Weight	[kg]	0.6	0.9	1.3	1.8
Hydraulic					
Max. operating pressure	[bar]				
	SAE61	350	350	280	210
	SAE62	420	420	420	420
Pressure stages	[bar]				
Nominal flow	[l/min]	100	200	400	750
Fluid		Hydraulic oil as per DIN 51524...525			
Fluid temperature	[°C]	-20...+80			
Viscosity permitted	[cSt]/[mm²/s]	10...650			
Viscosity recommended	[cSt]/[mm²/s]	30			
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			

Characteristics C5V

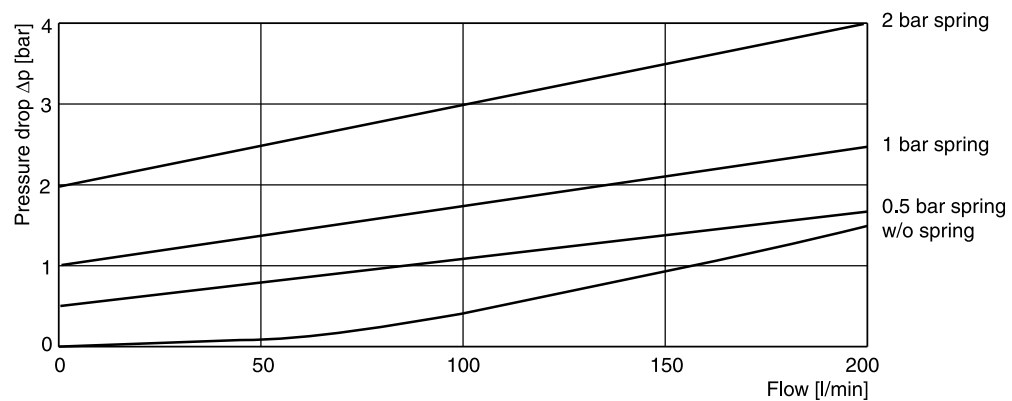


Characteristics C5V

C5V06



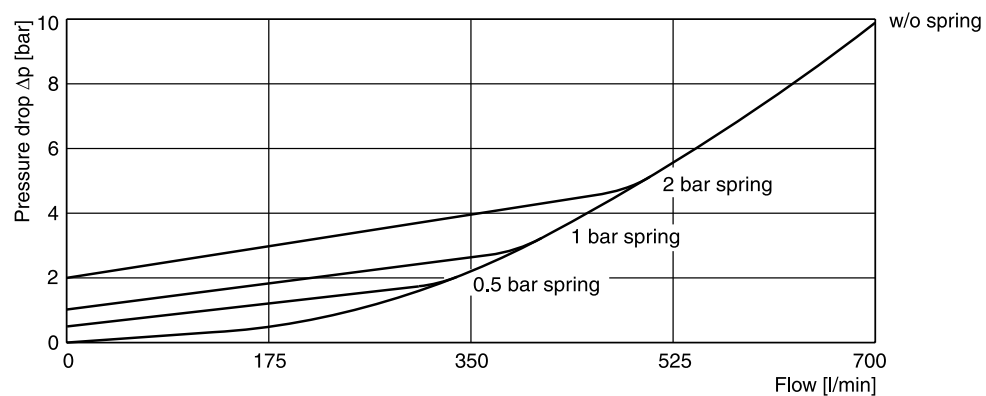
C5V08



C5V10

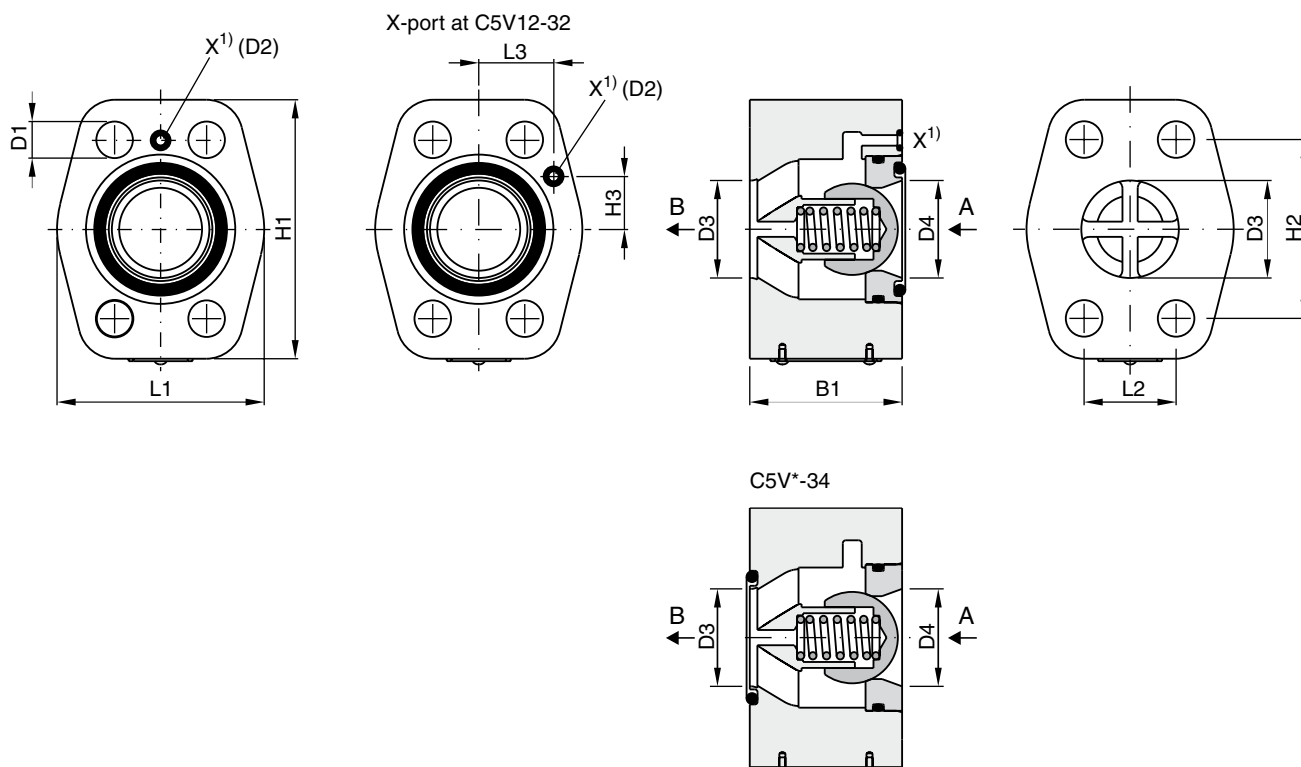


C5V12



All characteristic curves measured with HLP46 at 50°C.

Characteristics C5V



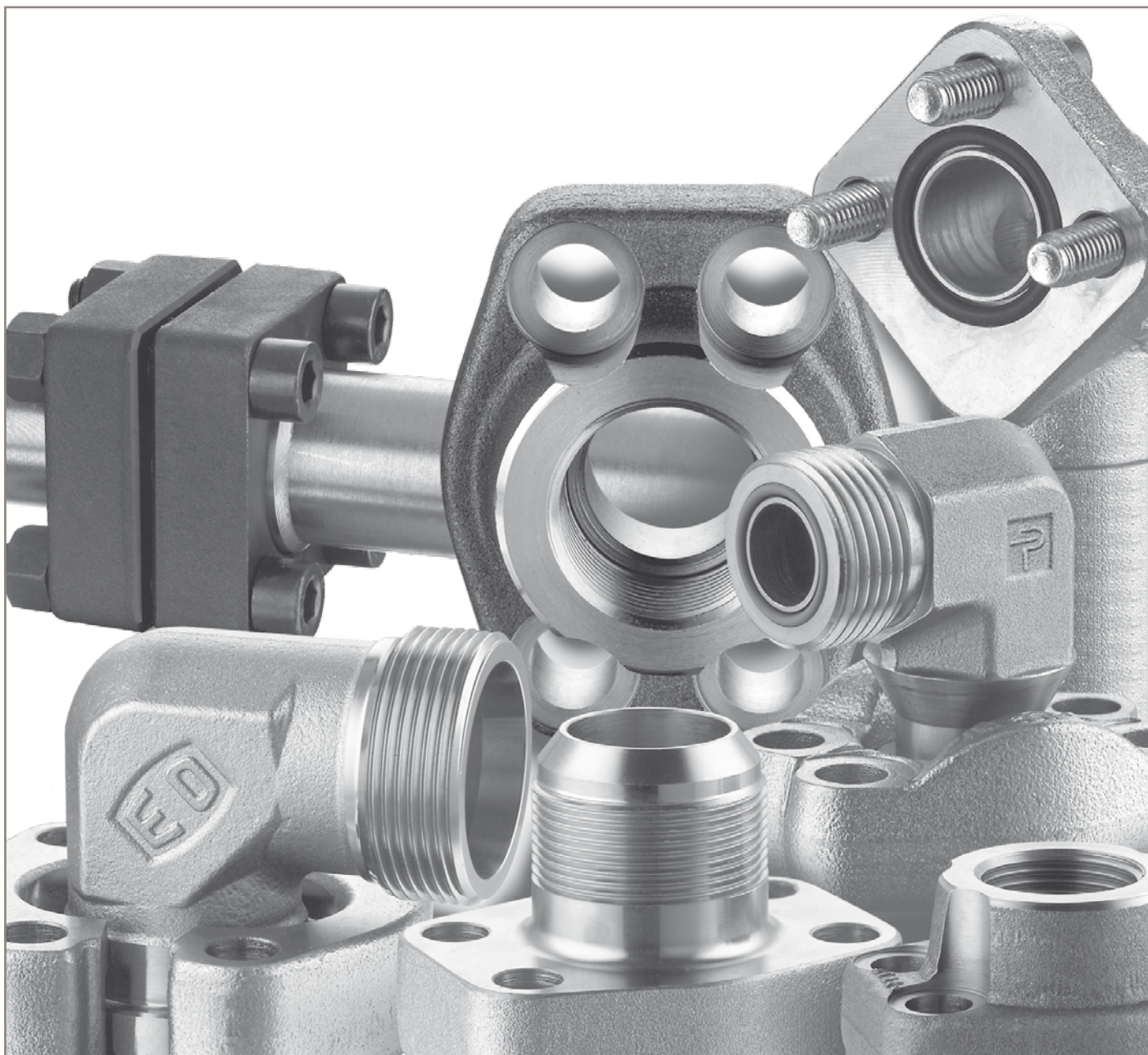
Position of O-ring seal according to ordering code.

1) X1 port for C5V*32* (for use with unloading valve R5U)

Series	Nominal Size		L1	L2	L3	H1	H2	H3	B1	D1	D2	D3 + 0.8	D4
C5V06	3/4	SAE61	48	22.2	27.2	64	47.6	22.4	45	10.5	Ø3	19	19
		SAE62	48	23.8	27.2	64	50.8	22.4	45	10.5		19	19
C5V08	1	SAE61	60	26.2	27.2	74	52.4	22.4	45	10.5	Ø3	25	25
		SAE62	60	27.8	27.2	74	57.2	22.4	45	12.5		25	25
C5V10	1 1/4	SAE61	68	30.2	27.2	85	58.7	22.4	50	12.5	Ø3	32	32
		SAE62	68	31.8	27.2	85	66.7	22.4	50	13.5 ²⁾		32	32
C5V12	1 1/2	SAE61	80	35.7	27.2	104	69.8	22.4	50	13.5	Ø3	42	38
		SAE62	80	36.5	27.2	104	79.4	22.4	50	17.0		42	38

2) D1 = 15 at option code 019 for M14 mounting screws

Seal kits		
NG	NBR	FKM
06	S26-75409-0	S26-75409-5
08	S26-75410-0	S26-75410-5
10	S26-75411-0	S26-75411-5
12	S26-75412-0	S26-75412-5



SAE Flange adapters

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Technical data

Flange bolts

SAE Flanges according to ISO 6162-1 and -2 (SAE J518)

- metric bolts according to
DIN 912-8.8 (ISO 4762-8.8) or
DIN 912-10.9 (ISO 4762-10.9)¹
- UNC bolts according to ASA B 18.3

¹ Bolts with grade 10.9/12.9 are to be used, when the material for the flanges is high tempered!

Used Sealing

Materials

Flanges according **SAE J518 (ISO 6162-1 and -2)** are sealed with an O-Ring. The seals of our flanges are out of the following materials:

- NBR 90 durometer is our standard seal material for hydraulic **steel** flange applications.
- FKM 85 or 90 durometer is our standard seal material for hydraulic **stainless steel** flange applications.

Dimensions

For all flanges according to **SAE J518 (ISO 6162-1 and -2)** the O-Ring dimension are according to the following table:

Nominal flange size	Nominal inch tube size (in inches)	ISO 3601-1 O-Ring	SAE J515 O-Ring	SAE J515 O-Ring size number
13	1/2	19×3.55	18.64×3.53	210
19	3/4	25×3.55	24.99×3.53	214
25	1	32.5×3.55	32.92×3.53	219
32	1 1/4	37.5×3.55	37.69×3.53	222
38	1 1/2	47.5×3.55	47.22×3.53	225
51	2	56×3.55	56.74×3.53	228
64	2 1/2	69×3.55	69.44×3.53	232
76	3	85×3.55	85.32×3.53	237
89	3 1/2	97.5×3.55	98.02×3.53	241
102	4	112×3.55	110.72×3.53	245
127	5	136×3.55	136.12×3.53	253

Pressure ratings

The maximum recommended working pressure is indicated for each article.

Before using a part, please take notice of the pressure ratings. All pressure indications are based on a working temperature from -20° celsius up to +100° celsius (resp. ambient temperature from -40° celsius up to +120° celsius). Outside of this temperature range the physical properties of the material is affected and the maximum recommended working pressure is reduced.

The indicated working pressures refer only to the flange itself. For the tubes, fittings and connections the pressure ratings of the specific manufacturer must also be taken into account.

Materials

SAE flanges according to ISO 6162-1 and -2 (SAE 518)

Flange clamps, flange adapter and forged 4 bolt flanges are made of the material ST 52.3 or compatible for **steel** construction. For **stainless steel** constructions we are using for flange clamps, flange adapters and 4 bolt forged flanges the material 1.4401 (316) or compatible. For special applications it is also possible to get the flange adapters made from the material 1.4571 (316Ti).

If different materials are used for manufacturing, this will be shown on the catalogue product page.

Surface protection

All surface order possibilities are described on each catalogue page!

Surface possibilities are:

1. Oil dipped
2. silver surface protection type A3K according to DIN EN ISO 4042
3. Cr(VI)-free surface protection type CF with better corrosion resistance than A3C surface protection

Order codes bolts and O-Rings

Bolts for flanges

according ISO 6162-1 and -2 (SAE J518)

Nominal flange size			Bolts for flange halves		Bolts for full flanges	
Series	ISO	SAE	metr. Order code	UNC Order code	metr. Order code	UNC Order code
3000 PSI	13	1/2	ZYLS8X25VZX	UNC5/16-18X11/4	ZYLS8X30VZX	UNC5/16-18X11/4
3000 PSI	19	3/4	ZYLS10X30VZX	UNC3/8-16X11/4	ZYLS10X35VZX	UNC3/8-16X11/2
3000 PSI	25	1	ZYLS10X30VZX	UNC3/8-16X11/4	ZYLS10X35VZX	UNC3/8-16X11/2
3000 PSI	32	1 1/4	ZYLS10X30VZX	UNC7/16-14X11/2	ZYLS10X40VZX	UNC7/16-14X11/2
3000 PSI	32	1 1/4	ZYLS10X35VZX *			
3000 PSI	32	1 1/4	ZYLS12X35VZX *			
3000 PSI	38	1 1/2	ZYLS12X35VZX	UNC1/2-13X11/2	ZYLS12X45VZX	UNC1/2-13X13/4
3000 PSI	38	1 1/2	ZYLS14X35VZX *			
3000 PSI	51	2	ZYLS12X35VZX	UNC1/2-13X11/2	ZYLS12X45VZX	UNC1/2-13X13/4
3000 PSI	51	2	ZYLS14X35VZX *			
3000 PSI	64	2 1/2	ZYLS12X40VZX	UNC1/2-13X11/2 *	ZYLS12X45VZX	UNC1/2-13X13/4
3000 PSI	64	2 1/2	ZYLS14X35VZX *	UNC1/2-13X13/4		
3000 PSI	76	3	ZYLS16X50VZX	UNC5/8-11X2 *	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	76	3	ZYLS16X45VZX *	UNC5/8-11X13/4		
3000 PSI	89	3 1/2	ZYLS16X50VZX	UNC5/8-11X2 *	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	89	3 1/2	ZYLS16X45VZX *			
3000 PSI	102	4	ZYLS16X50VZX	UNC5/8-11X2	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	102	4	ZYLS16X45VZX *			
3000 PSI	127	5	ZYLS16X50VZX *	UNC5/8-11X21/4	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	127	5	ZYLS16X55VZX	UNC5/8-11X2 *		
Series	ISO	SAE	metr.	UNC	metr.	UNC
6000 PSI	13	1/2	ZYLS8X30VZX	UNC5/16-18X11/4	ZYLS8X30VZX	UNC5/16-18X11/4
6000 PSI	19	3/4	ZYLS10X35VZX	UNC3/8-16X11/2	ZYLS10X35VZX	UNC3/8-16X11/2
6000 PSI	25	1	ZYLS12X45VZX	UNC7/16-14X11/2 *	ZYLS12X45VZX	UNC7/16-14X11/2
6000 PSI	25	1		UNC7/16-14X13/4		
6000 PSI	32	1 1/4	ZYLS14X50VZX *	UNC1/2-13X13/4	ZYLS14X50VZX	UNC1/2-13X13/4
6000 PSI	32	1 1/4	ZYLS12X45VZX			
6000 PSI	38	1 1/2	ZYLS16X55VZX	UNC5/8-11X21/4	ZYLS16X55VZX	UNC5/8-11X21X4
6000 PSI	38	1 1/2		UNC5/8-11X2 *		
6000 PSI	51	2	ZYLS20X65VZX *	UNC3/4-10X23/4	ZYLS20X70VZX	UNC3/4-10X23X4
6000 PSI	51	2	ZYLS20X70VZ	UNC3/4-10X21/2 *		
6000 PSI	64	2 1/2	ZYLS24X75VZX		ZYLS24X90VZX	
6000 PSI	76	3	ZYLS30X90VZX		ZYLS30X110VZX	

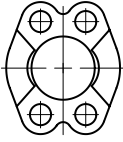
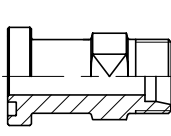
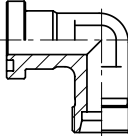
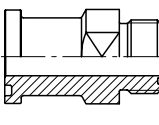
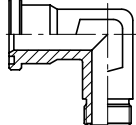
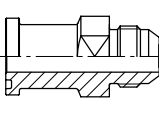
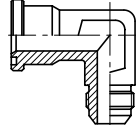
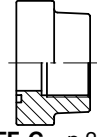
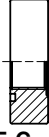
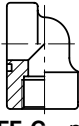
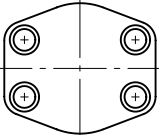
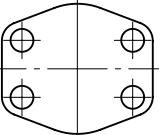
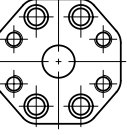
* = are not implemented in the ISO 6162 -1 and ISO 6162-2.

O-Rings for flanges

SAE J518

ISO (DN)	SAE (Inch)	O-Ring	
		NBR Order code	FKM Order code
13	1/2	OR18.64X3.53X	OR18.64X3.53VITX
19	3/4	OR25X3.53X	OR25X3.53VITX
25	1	OR32.92X3.53X	OR32.92X3.53VITX
32	1 1/4	OR37.69X3.53X	OR37.69X3.53VITX
38	1 1/2	OR47.22X3.53X	OR47.22X3.53VITX
51	2	OR56.75X3.53X	OR56.75X3.53VITX
64	2 1/2	OR69.44X3.53X	OR69.44X3.53VITX
76	3	OR85.32X3.53X	OR85.32X3.53VITX
89	3 1/2	OR98.02X3.53X	OR98.02X3.53VITX
102	4	OR110.72X3.53X	OR110.72X3.53VITX
127	5	OR136.12X3.53X	OR136.12X3.53VITX

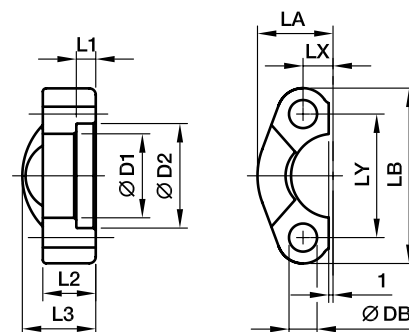
Programme overview

SAE Flange clamps	  FHS – p.207 FUS – p.208
SAE Flange adapters	EO 24° cone end   GFS – p.209 WFS – p.211
	O-Lok® ORFS end Triple-Lok® 37° flare end     L(O)HQ – p.213 L(O)EMQ – p.214 XHQ – p.215 XEMQ – p.216
SAE 4 Bolt flanges	BSPP Female thread    PFF-G – p.217 PAFSF-G – p.218 PEFF-G – p.219
SAE Flange accessories	   PCFF – p.220 AP – p.221 PRF – p.222

FHS – SAE Split flange halves

SAE 3000/6000

ISO 6162-1/-2



SAE 3000

Nom. flange size												Bolts		Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)			
1/2	13	24.3	31.0	6.2	13	19	23.0	54.0	8.7	38.1	9.0	M 8×25	5/16×1 1/4	0.07	FHS32	345
3/4	19	32.2	38.9	6.2	14	22	25.9	65.0	11.1	47.6	11.0	M10×30	3/8×1 1/4	0.09	FHS33	345
1	25	38.5	45.2	7.5	16	24	29.2	69.9	13.1	52.4	11.0	M10×30	3/8×1 1/4	0.11	FHS34	345
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	11.0	M10×35		0.15	FHS35/10	276
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	12.0		7/16×1 1/2	0.15	FHS35/12	276
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	12.5	M12×35		0.15	FHS35	276
1 1/2	38	50.8	61.1	7.5	16	25	41.1	93.8	17.9	69.9	13.0	M12×35	1/2×1 1/2	0.23	FHS36	207
1 1/2	38	50.8	61.1	7.5	16	25	41.1	93.8	17.9	69.9	14.5	M14×35		0.23	FHS36/14	207
2	51	62.8	72.3	9.0	16	26	48.2	101.6	21.4	77.8	13.0	M12×35	1/2×1 1/2	0.25	FHS38/12	207
2	51	62.8	72.3	9.0	16	26	48.2	101.6	21.4	77.8	14.5	M14×35		0.25	FHS38	207
2 1/2	64	74.9	84.9	9.0	19	38	54.1	114.3	25.4	88.9	13.0	M12×40	1/2×1 3/4	0.37	FHS310	172
2 1/2	64	74.9	84.9	9.0	19	38	54.1	114.3	25.4	88.9	14.5	M14×40		0.37	FHS310/14	172
3	76	90.9	102.4	9.0	22	41	65.3	135.0	31.0	106.4	17.0	M16×45	5/8×1 3/4	0.65	FHS312	138
3 1/2	89	102.4	115.1	10.7	22	28	68.6	152.4	35.0	120.7	17.0	M16×45	5/8×2	0.75	FHS314	34
4	102	115.1	127.8	10.7	25	35	74.9	162.0	39.0	130.2	17.0	M16×50	5/8×2	0.84	FHS316	34
5	127	140.5	153.2	10.7	28	41	89.4	184.2	46.0	152.4	17.0	M16×50	5/8×2 1/4	1.25	FHS320	34

SAE 6000

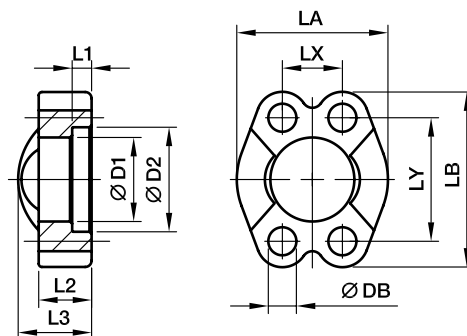
1/2	13	24.6	32.5	7.2	16	22	24.0	56.4	9.1	40.5	9.0	M 8×30	5/16×1 1/4	0.08	FHS62	420
3/4	19	32.5	42.0	8.2	19	28	30.0	71.4	11.9	50.8	11.0	M10×35	3/8×1 1/2	0.18	FHS63	420
1	25	38.8	48.4	9.0	24	33	34.8	81.0	13.9	57.2	13.0	M12×45		0.27	FHS64	420
1	25	38.9	48.4	9.0	24	33	34.8	81.0	13.9	57.2	12.0		7/16×1 3/4	0.27	FHS64/12	420
1 1/4	32	44.5	54.8	9.8	27	38	38.6	95.3	15.9	66.6	15.0	M14×50		0.40	FHS65	420
1 1/4	32	44.5	54.8	9.8	27	38	38.6	95.3	15.9	66.6	13.0	M12×45	1/2×1 3/4	0.40	FHS65/12	420
1 1/2	38	51.6	64.3	12.1	30	43	47.5	112.8	18.3	79.3	17.0	M16×55	5/8×2 1/4	0.68	FHS66	420
2	51	67.6	80.2	12.1	37	52	56.9	133.4	22.2	96.8	22.0	M20×65	3/4×2 3/4	1.05	FHS68	420
2 1/2	64	90.0	108.9	20.5	45	45	75.1	180.0	29.4	123.8	25.0	M24×75		1.96	FHS610	420
3	76	115.0	132.5	25.5	55	55	99.1	215.0	35.8	152.4	31.5	M30×90		3.37	FHS612	420

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FHS32CFX	only flange half
Stainless steel	SS	FHS32SS	only flange half

FUS – SAE Flange clamps

SAE 3000/6000
ISO 6162-1/-2



SAE 3000

Nom. flange size												Bolts		Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)			
1/2	13	24.3	31.0	6.2	13	19	46	54.0	17.5	38.1	9.0	M 8×25	5/16×1 1/4	0.15	FUS32	345
3/4	19	32.2	38.9	6.2	14	22	52	65.0	22.3	47.6	11.0	M10×30	3/8×1 1/4	0.17	FUS33	345
1	25	38.5	45.2	7.5	16	24	59	69.9	26.2	52.4	11.0	M10×30	3/8×1 1/4	0.22	FUS34	345
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	11.0	M10×35		0.30	FUS35/10	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	12.0		7/16×1 1/2	0.29	FUS35/12	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	12.5	M12×35		0.29	FUS35	276
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.7	69.9	13.0	M12×35	1/2×1 1/2	0.45	FUS36	207
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.7	69.9	14.5	M14×35		0.44	FUS36/14	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.9	77.8	13.0	M12×35	1/2×1 1/2	0.50	FUS38/12	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.9	77.8	14.5	M14×35		0.49	FUS38	207
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	13.0	M12×40	1/2×1 3/4	0.74	FUS310	172
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	14.5	M14×40		0.73	FUS310/14	172
3	76	90.9	102.4	9.0	22	41	131	135.0	61.9	106.4	17.0	M16×45	5/8×1 3/4	1.30	FUS312	138
3 1/2	89	102.4	115.1	10.7	22	28	140	152.4	69.9	120.7	17.0	M16×45	5/8×2	1.50	FUS314	34
4	102	115.1	127.8	10.7	25	35	150	162.0	77.8	130.2	17.0	M16×50	5/8×2	1.65	FUS316	34
5	127	140.5	153.2	10.7	28	41	180	184.2	92.1	152.4	17.0	M16×50	5/8×2 1/4	2.50	FUS320	34

SAE 6000

1/2	13	24.6	32.5	7.2	16	22	48	56.4	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.16	FUS62	420
3/4	19	32.5	42.0	8.2	19	28	60	71.4	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.35	FUS63	420
1	25	38.8	48.4	9.0	24	33	70	81.0	27.8	57.2	13.0	M12×45		0.53	FUS64	420
1	25	38.9	48.4	9.0	24	33	70	81.0	27.8	57.2	12.0		7/16×1 3/4	0.53	FUS64/12	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	15.0	M14×50		0.80	FUS65	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	13.0	M12×45	1/2×1 3/4	0.80	FUS65/12	420
1 1/2	38	51.6	64.3	12.1	30	43	96	112.8	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.35	FUS66	420
2	51	67.6	80.2	12.1	37	52	114	133.4	44.5	96.8	22.0	M20×65	3/4×2 3/4	2.10	FUS68	420
2 1/2	64	90.0	108.9	20.5	45	45	150	180.0	58.7	123.8	25.0	M24×75		4.10	FUS610	420
3	76	115.0	132.5	25.5	55	55	178	215.0	71.4	152.4	31.5	M30×90		8.60	FUS612	420

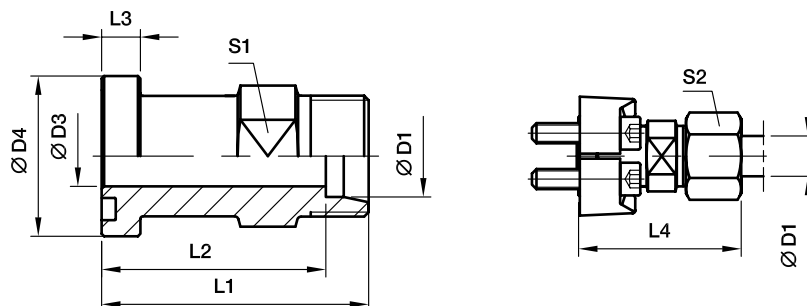
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FUS32CFX	only flange clamp
Stainless steel	SS	FUS32SS	only flange clamp



GFS – SAE Straight flange adapter

SAE Flange/ EO 24° cone end
(ISO 6162-1)



SAE 3000

Nom. flange size		D1 ¹⁾									Bolts		Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)			
1/2	13	15L	12.0	30.2	48.0	41.0	6.7	56.0	24	27	M 8×25	5/16×1 1/4	0.36	GFS32/15L	315
1/2	13	16S	12.0	30.2	50.0	41.5	6.7	60.0	24	30	M 8×25	5/16×1 1/4	0.40	GFS32/16S	350
1/2	13	18L	14.0	30.2	50.0	42.5	6.7	61.0	19	32	M 8×25	5/16×1 1/4	0.42	GFS32/18L	315
3/4	19	16S	12.0	38.1	55.0	46.5	6.7	64.5	27	30	M10×30	3/8×1 1/4	0.52	GFS33/16S	350
3/4	19	18L	17.0	38.1	53.0	45.5	6.7	62.0	30	32	M10×30	3/8×1 1/4	0.59	GFS33/18L	315
3/4	19	22L	19.0	38.1	53.0	45.5	6.7	62.0	30	36	M10×30	3/8×1 1/4	0.59	GFS33/22L	160
3/4	19	28L	19.0	38.1	55.0	41.0	6.7	64.0	32	41	M10×30	3/8×1 1/4	0.60	GFS33/28L	160
3/4	19	20S	17.0	38.1	57.0	46.5	6.7	68.0	30	36	M10×30	3/8×1 1/4	0.65	GFS33/20S	350
3/4	19	25S	17.0	38.1	57.0	45.0	6.7	69.0	30	46	M10×30	3/8×1 1/4	0.78	GFS33/25S	350
1	25	20S	25.0	44.5	60.0	48.5	8.0	71.0	32	36	M10×30	3/8×1 1/4	0.70	GFS34/20S	350
1	25	28L	24.0	44.5	54.0	46.5	8.0	63.0	36	41	M10×30	3/8×1 1/4	0.73	GFS34/28L	160
1	25	25S	20.0	44.5	58.0	46.5	8.0	60.0	36	46	M10×30	3/8×1 1/4	0.84	GFS34/25S	350
1	25	30S	24.0	44.5	63.0	49.5	8.0	76.0	36	50	M10×30	3/8×1 1/4	0.94	GFS34/30S	250
1	25	42L	24.0	44.5	76.0	65.0	8.0	87.5	41	60	M10×30	3/8×1 1/4	0.95	GFS34/42L	160
1 1/4	32	35L	32.0	50.8	58.0	47.5	8.0	69.0	41	50	M10×35		0.96	GFS35/35L/10²⁾	160
1 1/4	32	25S	27.0	50.8	60.0	48.0	8.0	72.0	41	46	M10×35		1.11	GFS35/25S/10	200
1 1/4	32	30S	28.5	50.8	62.0	48.5	8.0	75.0	41	50	M10×35		1.13	GFS35/30S/10	200
1 1/4	32	38S	28.0	50.8	66.0	50.0	8.0	81.0	46	60	M10×35		1.36	GFS35/38S/10	200
1 1/4	32	28L	23.0	50.8	60.0	52.5	8.0	67.0	36	41	M12×40	7/16×1 1/2	1.12	GFS35/28L	160
1 1/4	32	35L	32.0	50.8	58.0	47.5	8.0	69.0	41	50	M12×40	7/16×1 1/2	1.02	GFS35/35L	160
1 1/4	32	25S	27.0	50.8	60.0	48.0	8.0	72.0	41	46	M12×40	7/16×1 1/2	1.17	GFS35/25S	200
1 1/4	32	30S	28.5	50.8	62.0	48.5	8.0	75.0	41	50	M12×40	7/16×1 1/2	1.20	GFS35/30S	200
1 1/4	32	38S	28.0	50.8	66.0	50.0	8.0	81.0	46	60	M12×40	7/16×1 1/2	1.41	GFS35/38S	200
1 1/2	38	35L	30.0	60.3	65.0	54.5	8.0	76.0	46	50	M12×35	1/2×1 1/2	1.20	GFS36/35L	160
1 1/2	38	42L	36.0	60.3	64.0	53.0	8.0	76.0	46	60	M12×35	1/2×1 1/2	1.36	GFS36/42L	160
1 1/2	38	38S	32.0	60.3	70.0	54.0	8.0	85.0	46	60	M12×35	1/2×1 1/2	1.63	GFS36/38S	200

¹⁾L = light series; S = heavy series

Delivery without nut and ring.

For nuts and cutting rings see also

Industrial Tube Fittings Europe Catalogue 4100.

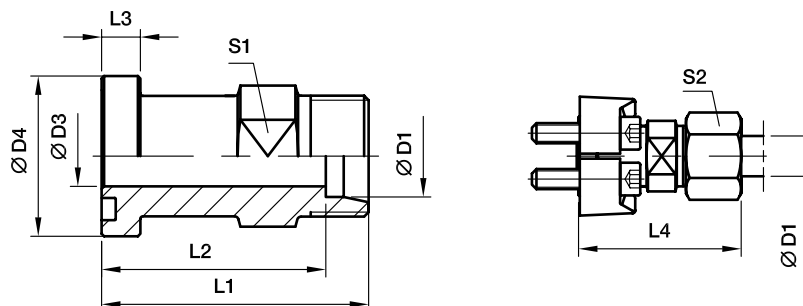
²⁾Order code for the flange adapter assembled with FHS35/10CFX and M10X35 bolts.

Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. bolts and O-Ring	Example incl. splitflanges, UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GFS32/16SCFX	GFS32/16SOMDCF	GFS32/16SOMDCFU	NBR
Stainless steel	71	GFS32/16S71X	GFS32/16SOMD71	GFS32/16SOMD71U	VIT

GFS – SAE Straight flange adapter

SAE Flange/EO 24° cone end
(ISO 6162-2)



SAE 6000

Nom. flange size		D1 ¹⁾									Bolts		Weight (steel)	Order code	W.P. CF
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)	kg/1 piece		
1/2	13	12S	8	31.8	50.0	42.5	7.7	57.5	19	24	M 8x30	5/16x1 1/4	0.35	GFS62/12S	420
1/2	13	14S	10	31.8	50.0	42.0	7.7	59.5	19	27	M 8x30	5/16x1 1/4	0.39	GFS62/14S	420
1/2	13	16S	12	31.8	53.0	44.5	7.7	62.5	24	30	M 8x30	5/16x1 1/4	0.47	GFS62/16S	420
3/4	19	16S	17	41.3	59.0	50.5	8.7	68.5	30	30	M10x35	3/8x1 1/2	0.79	GFS63/16S	420
3/4	19	20S	17	41.3	61.0	50.5	8.7	72.0	30	36	M10x35	3/8x1 1/2	0.86	GFS63/20S	420
3/4	19	25S	17	41.3	63.0	51.0	8.7	75.0	30	46	M10x35	3/8x1 1/2	0.97	GFS63/25S	420
3/4	19	30S	18	41.3	76.0	62.0	8.7	89.0	36	50	M10x35	3/8x1 1/2	1.15	GFS63/30S	420
3/4	19	38S	18	41.3	85.0	69.0	8.7	99.5	41	60	M10x35	3/8x1 1/2	1.15	GFS63/38S	315
1	25	20S	16	47.6	75.0	64.5	9.5	88.0	36	36	M12x45	7/16x1 3/4	0.97	GFS64/20S	420
1	25	25S	20	47.6	72.0	60.0	9.5	84.0	36	46	M12x45	7/16x1 3/4	1.42	GFS64/25S	420
1	25	30S	24	47.6	74.0	62.0	9.5	87.0	36	50	M12x45	7/16x1 3/4	1.40	GFS64/30S	420
1	25	38S	24	47.6	84.5	68.0	9.5	99.0	46	60	M12x45	7/16x1 3/4	1.40	GFS64/38S	315
1 1/4	32	25S	20	54.0	80.0	68.0	10.2	92.0	41	46	M14x50	1/2x1 3/4	1.85	GFS65/25S	420
1 1/4	32	30S	30	54.0	79.0	65.5	10.2	92.0	41	50	M12x45		1.95	GFS65/30S/12²⁾	420
1 1/4	32	38S	30	54.0	83.0	67.0	10.2	97.5	46	60	M12x45		2.16	GFS65/38S/12	315
1 1/4	32	30S	30	54.0	79.0	65.5	10.2	92.0	41	50	M14x50	1/2x1 3/4	1.90	GFS65/30S	420
1 1/4	32	38S	30	54.0	83.0	67.0	10.2	97.5	46	60	M14x50	1/2x1 3/4	2.10	GFS65/38S	315
1 1/2	38	30S	30	63.5	90.0	74.0	12.5	103.0	46	50	M16x55	5/8x2 1/4	2.10	GFS66/30S	420
1 1/2	38	38S	30	63.5	89.0	73.0	12.5	103.5	46	60	M16x55	5/8x2 1/4	3.06	GFS66/38S	315

¹⁾S = heavy series

Delivery without nut and ring.

For nuts and cutting rings see also

Industrial Tube Fittings Europe Catalogue 4100.

²⁾Order code for the flange adapter assembled with FHS35/12CFX and M12X45 bolts.

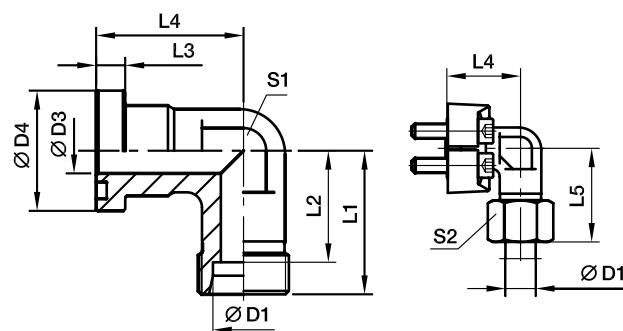
Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. bolts and O-Ring	Example incl. splitflanges, UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GFS62/16SCFX	GFS62/16SOMDCF	GFS62/16SOMDCFU	NBR
Stainless steel	71	GFS62/16S71X	GFS62/16SOMD71	GFS62/16SOMD71U	VIT



WFS – SAE 90° Elbow flange adapter

SAE Flange/EO 24° cone end
(ISO 6162-1)



SAE 3000

Nom. flange size		D1 ¹⁾										Bolts		Weight (steel)		
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2	(metr.)	(unc.)	kg/1 piece	Order code	W.P.
1/2	13	12S	12	30.2	50	42.5	6.7	44	58.5	22	24	M 8×25	5/16×1 1/4	0.38	WFS32/12S	210
1/2	13	15L	12	30.2	36	29.0	6.7	36	44	24	27	M 8×25	5/16×1 1/4	0.40	WFS32/15L	315
1/2	13	16S	12	30.2	38	29.5	6.7	36	48	24	30	M 8×25	5/16×1 1/4	0.43	WFS32/16S	350
1/2	13	18L	12	30.2	50	42.5	6.7	44	59	22	32	M 8×25	5/16×1 1/4	0.44	WFS32/18L	315
3/4	19	16S	19	38.1	64	55.5	6.7	53	73.5	27	30	M10×30	3/8×1 1/4	0.60	WFS33/16S	350
3/4	19	18L	19	38.1	39	31.5	6.7	42	48	30	32	M10×30	3/8×1 1/4	0.66	WFS33/18L	315
3/4	19	22L	19	38.1	41	33.5	6.7	42	50	30	36	M10×30	3/8×1 1/4	0.66	WFS33/22L	160
3/4	19	20S	17	38.1	43	32.5	6.7	42	54	30	36	M10×30	3/8×1 1/4	0.76	WFS33/20S	350
3/4	19	25S	17	38.1	45	33.0	6.7	42	57	30	46	M10×30	3/8×1 1/4	0.89	WFS33/25S	350
1	25	20S	20	44.5	65	54.5	8.0	60	77	34	36	M10×30	3/8×1 1/4	0.78	WFS34/20S	350
1	25	22L	18	44.5	65	57.5	8.0	60	74	34	36	M10×30	3/8×1 1/4	0.81	WFS34/22L	160
1	25	28L	25	44.5	44	36.5	8.0	45	53	36	41	M10×30	3/8×1 1/4	0.85	WFS34/28L	160
1	25	25S	20	44.5	48	36.5	8.0	45	57	36	46	M10×30	3/8×1 1/4	0.95	WFS34/25S	350
1	25	30S	24	44.5	50	36.5	8.0	45	63	36	50	M10×30	3/8×1 1/4	1.06	WFS34/30S	250
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68	41	50	M10×35	3/8×1 1/4	1.15	WFS35/35L/10²⁾	160
1 1/4	32	25S	27	50.8	55	43.0	8.0	60	67	41	46	M10×35	3/8×1 1/4	1.35	WFS35/25S/10	200
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70	41	50	M10×35	3/8×1 1/4	1.40	WFS35/30S/10	200
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74	46	60	M10×35	3/8×1 1/4	1.53	WFS35/38S/10	200
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68	41	50	M12×40	7/16×1 1/2	1.15	WFS35/35L	160
1 1/4	32	25S	27	50.8	55	43.0	8.0	50	67	41	46	M12×40	7/16×1 1/2	1.35	WFS35/25S	200
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70	41	50	M12×40	7/16×1 1/2	1.40	WFS35/30S	200
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74	41	60	M12×40	7/16×1 1/2	1.53	WFS35/38S	200
1 1/2	38	35L	30	60.3	78	67.5	8.0	66	83	50	50	M12×35	1/2×1 1/2	1.55	WFS36/35L	160
1 1/2	38	42L	36	60.3	58	47.0	8.0	55	70	50	60	M12×35	1/2×1 1/2	1.60	WFS36/42L	160
1 1/2	38	38S	36	60.3	64	48.0	8.0	55	79	50	60	M12×35	1/2×1 1/2	1.95	WFS36/38S	200

¹⁾ L = light series; S = heavy series

Delivery without nut and ring.

For nuts and cutting rings see also

Industrial Tube Fittings Europe Catalogue 4100.

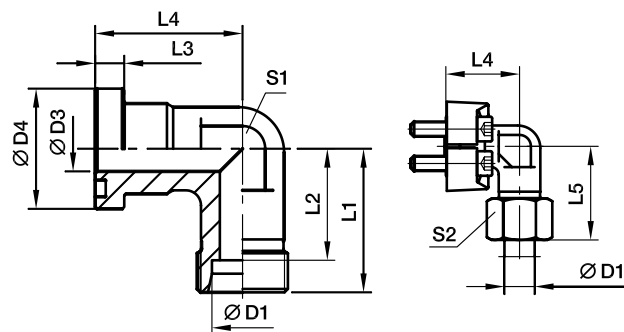
²⁾ Order code for the elbow flange adapter assembled with FHS35/10CFX and M10X35 bolts.

Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. bolts and O-Ring	Example incl. splitflanges, UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WFS32/16SCFX	WFS32/16SOMDCF	WFS32/16SOMDCFU	NBR
Stainless steel	71	WFS32/16S71X	WFS32/16SOMD71	WFS32/16SOMD71U	VIT

WFS – SAE 90° Elbow flange adapter

SAE Flange/EO 24° cone end
(ISO 6162-2)



SAE 6000

Nom. flange size		D1 ¹⁾											Bolts		Weight (steel)	Order code	W.P.
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2		(metr.)	(unc.)	kg/1 piece		
1/2	13	12S	12	31.8	50	43.0	7.7	44	58.5	22	24		M 8×30	5/16×1 1/4	0.37	WFS62/12S	420
1/2	13	14S	12	31.8	50	43.5	7.7	44	59.5	22	27		M 8×30	5/16×1 1/4	0.39	WFS62/14S	420
1/2	13	16S	12	31.8	38	29.5	7.7	39	48	24	30		M 8×30	5/16×1 1/4	0.49	WFS62/16S	420
3/4	19	16S	17	41.3	45	36.5	8.7	48	55	32	30		M10×35	3/8×1 1/2	0.92	WFS63/16S	420
3/4	19	20S	17	41.3	46	35.5	8.7	48	57	32	36		M10×35	3/8×1 1/2	0.97	WFS63/20S	420
3/4	19	25S	17	41.3	48	36.0	8.7	48	60	32	46		M10×35	3/8×1 1/2	1.19	WFS63/25S	420
1	25	20S	16	47.6	65	54.5	9.5	62	75	34	36		M12×45	7/16×1 3/4	1.69	WFS64/20S	420
1	25	25S	20	47.6	53	44.0	9.5	60	65	41	46		M12×45	7/16×1 3/4	1.67	WFS64/25S	420
1	25	30S	25	47.6	55	41.5	9.5	60	68	41	50		M12×45	7/16×1 3/4	1.63	WFS64/30S	420
1 1/4	32	25S	25	54.0	64	52.0	10.2	55	76	42	46		M12×45	7/16×1 1/2	2.23	WFS65/25S/12²⁾	420
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71	46	50		M12×45	7/16×1 1/2	2.20	WFS65/30S/12	420
1 1/4	32	38S	30	54.0	61	45.0	10.2	68	76	46	60		M12×45	7/16×1 1/2	2.39	WFS65/38S/12	315
1 1/4	32	25S	25	54.0	64	52.0	10.2	55	76	42	46		M14×50	1/2×1 3/4	2.23	WFS65/25S	420
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71	46	50		M14×50	1/2×1 3/4	2.20	WFS65/30S	420
1 1/4	32	38S	30	54.0	61	45.0	10.2	68	76	46	60		M14×50	1/2×1 3/4	2.39	WFS65/38S	315
1 1/2	38	30S	25	63.5	76	63.5	12.5	77	90	50	50		M16×55	5/8×2 1/4	2.38	WFS66/30S	420
1 1/2	38	38S	32	63.5	72	56.0	12.5	76	87	50	60		M16×55	5/8×2 1/4	2.58	WFS66/38S	315

¹⁾S = heavy series

Delivery without nut and ring.

For nuts and cutting rings see also
Industrial Tube Fittings Europe Catalogue
4100.

²⁾ Order code for the elbow flange adapter assembled with FHS65/12CFX and M12X45 bolts.

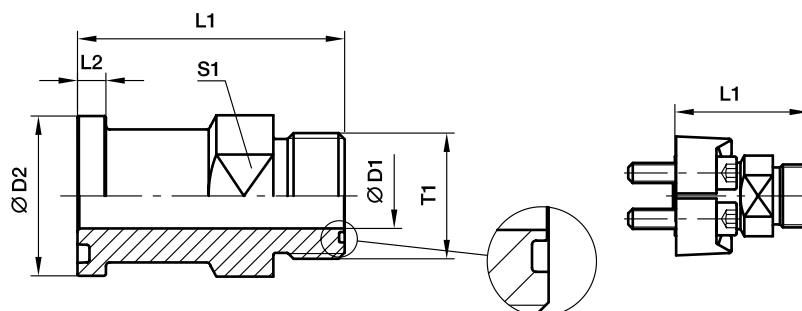
Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. bolts and O-Ring	Example incl. splitflanges, UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WFS62/16SCFX	WFS62/16SOMDCF	WFS62/16SOMDCFU	NBR
Stainless steel	71	WFS62/16S71X	WFS62/16SOMD71	WFS62/16SOMD71U	VIT



L(0)HQ – SAE Straight flange adapter

SAE Flange/O-Lok® ORFS end
(ISO 6162-1/-2)



SAE 3000

Nom. flange size										O-Ring face without ORFS	O-Ring face include ORFS	
SAE (in)	ISO (DN)	Tube		T1	D1	D2	L1	L2	Weight (steel) kg/1 piece	O-Ring Order code	O-Ring Order code	W.P.
		(metr.)	(in)									
3/4	19	18, 20	3/4	1 3/16-12UN-2A	15.5	38.1	69.6	6.7	0.21	12LHQ1	12LOHQ1	350
1	25	22, 25	7/8, 1	1 7/16-12UN-2A	20.6	44.5	71.4	8.0	0.30	16LHQ1	16LOHQ1	350
1 1/4	32	28, 30, 32	1 1/4	1 11/16-12UN-2A	26.0	50.8	81.5	8.0	0.31	20LHQ1	20LOHQ1	280
1 1/2	38	35, 38	1 1/2	2-12UN-2A	32.0	60.3	83.6	8.0	0.56	24LHQ1	24LOHQ1	210

SAE 6000

3/4	19	18, 20	3/4	1 3/16-12UN-2A	15.5	41.3	76.7	8.8	0.21	12LHQ2	12LOHQ2	420
1	25	18, 20	3/4	1 3/16-12UN-2A	15.5	47.6	84.8	9.5	0.26	12-16LHQ2	12-16LOHQ2	420
1	25	22, 27	3/4, 7/8	1 7/16-12UN-2A	20.6	47.6	85.3	9.5	0.30	16LHQ2	16LOHQ2	420
1 1/4	32	28, 30, 32	1 1/4	1 11/16-12UN-2A	26.0	54.0	88.4	10.3	0.31	20LHQ2	20LOHQ2	345
1 1/2	38	35, 38	1 1/2	2-12UN-2A	32.0	63.5	105.2	12.6	0.56	24LHQ2	24LOHQ2	310

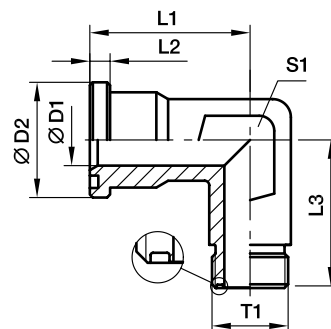
Please change suffixes according to material/surface required

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-Ring	Example only flange adapter incl. ORFS O-Ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12LHQ1-CF	12LOHQ1-CF	NBR
Stainless steel	SS	12LHQ1-SS	12LOHQ1-SS	VIT

SAE Flange adapters

L(O)EMQ – SAE 90° Elbow flange adapter

SAE Flange/O-Lok® ORFS end
(ISO 6162-1/-2)



SAE 3000

Nom. flange size														
SAE (in)	ISO (DN)	Tube		T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/1 piece	O-Ring face without ORFS	O-Ring face include ORFS	W.P.
		(metr.)	(in)									O-Ring Order code	O-Ring Order code	
1/2	13	8, 10	3/8	11/16-16UN-2A	6	30.2	44	6.7	50	22	0.40	6-8LEMQ1	6-8LOEMQ1	350
1/2	13	12	1/2	13/16-16UN-2A	9	30.2	44	6.7	50	22	0.36	8LEMQ1	8LOEMQ1	350
1/2	13	14, 15, 16	5/8	1-14UN-2A	12	30.2	44	6.7	50	22	0.32	10-8LEMQ1	10-8LOEMQ1	350
3/4	19	14, 15, 16	5/8	1-14UN-2A	12	38.1	53	6.7	64	27	0.47	10-12LEMQ1	10-12LOEMQ1	350
3/4	19	18, 20	3/4	1 3/16-12UN-2A	15	38.1	53	6.7	64	27	0.44	12LEMQ1	12LOEMQ1	350
1	25	18, 20	3/4	1 3/16-12UN-2A	15	44.4	60	8.0	65	34	0.52	12-16LEMQ1	12-16LOEMQ1	350
1	25	22, 25	7/8, 1	1 7/16-12UN-2A	20	44.4	60	8.0	65	34	0.50	16LEMQ1	16LOEMQ1	350
1 1/4	32	22, 25	7/8, 1	1 7/16-12UN-2A	20	50.8	55	8.0	64	42	0.48	16-20LEMQ1	16-20LOEMQ1	278
1 1/4	32	28, 30, 32	1 1/4	1 11/16-12UN-2A	26	50.8	55	8.0	64	42	0.56	20LEMQ1	20LOEMQ1	278
1 1/2	38	28, 30, 32	1 1/4	1 11/16-12UN-2A	26	60.3	66	8.0	78	50	0.73	20-24LEMQ1	20-24LOEMQ1	207
1 1/2	38	35, 38	1 1/2	2-12UN-2A	32	60.3	66	8.0	78	50	0.69	24LEMQ1	24LOEMQ1	207

SAE 6000

1/2	13	8, 10	3/8	11/16-16UN-2A	6	31.8	44	7.7	50	22	0.40	6-8LEMQ2	6-8LOEMQ2	420
1/2	13	12	1/2	13/16-16UN-2A	9	31.8	44	7.7	50	22	0.36	8LEMQ2	8LOEMQ2	420
1/2	13	14, 15, 16	5/8	1-14UN-2A	12	31.8	44	7.7	50	22	0.32	10-8LEMQ2	10-8LOEMQ2	420
3/4	19	14, 15, 16	5/8	1-14UN-2A	12	41.3	53	8.7	64	27	0.47	10-12LEMQ2	10-12LOEMQ2	420
3/4	19	18, 20	3/4	1 3/16-12UN-2A	15	41.3	53	8.7	64	27	0.44	12LEMQ2	12LOEMQ2	420
1	25	18, 20	3/4	1 3/16-12UN-2A	15	47.6	60	9.5	62	34	0.52	12-16LEMQ2	12-16LOEMQ2	420
1	25	22, 25	7/8, 1	1 7/16-12UN-2A	20	47.6	60	9.5	62	34	0.50	16LEMQ2	16LOEMQ2	420
1 1/4	32	22, 25	7/8, 1	1 7/16-12UN-2A	20	54.0	70	10.3	72	42	0.48	16-20LEMQ2	16-20LOEMQ2	420
1 1/4	32	28, 30, 32	1 1/4	1 11/16-12UN-2A	26	54.0	70	10.3	72	42	0.56	20LEMQ2	20LOEMQ2	345
1 1/2	38	28, 30, 32	1 1/4	1 11/16-12UN-2A	26	63.5	80	12.5	84	50	0.73	20-24LEMQ2	20-24LOEMQ2	345
1 1/2	38	35, 38	1 1/2	2-12UN-2A	32	63.5	80	12.5	84	50	0.69	24LEMQ2	24LOEMQ2	310

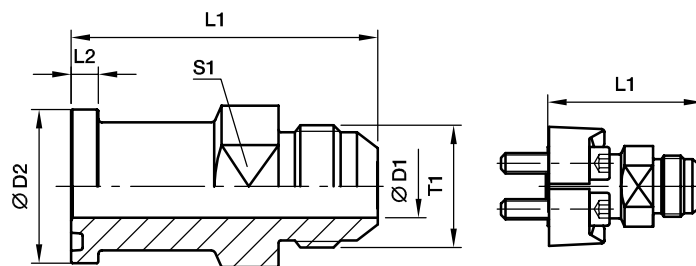
Please change suffixes according to material/surface required

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-Ring	Example only flange adapter incl. ORFS O-Ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12LEMQ1CF	12LOEMQ1CF	NBR
Stainless steel	SS	12LEMQ1SS	12LOEMQ1SS	VIT



XHQ – SAE Straight flange adapter

SAE Flange/Triple-Lok® 37° flare end
(ISO 6162-1/-2)



SAE 3000

Nom. flange size		Tube		T1	D1	D2	L1	L2	Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	(metr.)	(in)								
3/4	19	18, 20	3/4	1 1/16-12UN-2A	15.5	38.1	70.4	6.7	0.21	12XHQ1	350
1	25	22, 25	7/8, 1	1 5/16-12UN-2A	21.5	44.5	73.9	8.0	0.30	16XHQ1	350
1 1/4	32	28, 30, 32	1 1/4	1 5/8-12UN-2A	27.5	50.8	85.3	8.0	0.31	20XHQ1	275
1 1/2	38	35, 38	1 1/2	1 7/8-12UN-2A	33.5	60.3	90.7	8.0	0.56	24XHQ1	210
2	51	50	2	2 1/2-12UN-2A	45.0	71.4	102.6	9.5	1.10	32XHQ1	210

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3/4	19	18, 20	3/4	1 1/16-12UN-2A	15.5	41.3	78.2	8.8	0.21	12XHQ2	350
1	25	22, 25	7/8, 1	1 5/16-12UN-2A	21.5	47.6	87.1	9.5	0.30	16XHQ2	350
1 1/4	32	28, 30, 32	1 1/4	1 5/8-12UN-2A	27.5	54.0	91.4	10.3	0.31	20XHQ2	275
1 1/2	38	35, 38	1 1/2	1 7/8-12UN-2A	33.5	63.5	110.2	12.6	0.56	24XHQ2	210

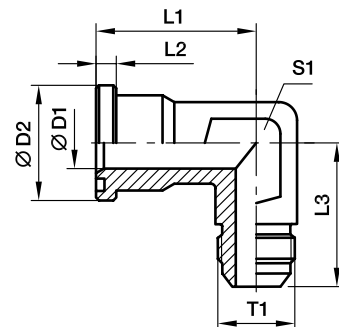
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12XHQ1-CF	NBR
Stainless steel	SS	12XHQ1-SS	VIT

SAE Flange adapters

XEMQ – SAE 90° Elbow flange adapter

SAE Flange/Triple-Lok® 37° flare end
(ISO 6162-1/-2)



SAE 3000

Nom. flange size		Tube		T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	(metr.)	(in)										
1/2	13	12	1/2	3/4-16UNF-2A	10	30.2	44	6.7	50	22	0.20	8XEMQ1	350
1/2	13	14, 15, 16	5/8	7/8-14UNF-2A	12	30.2	44	6.7	50	22	0.20	10-8XEMQ1	350
3/4	19	14, 15, 16	5/8	7/8-14UNF-2A	19	38.1	53	6.7	64	27	0.29	10-12XEMQ1	350
3/4	19	18, 20	3/4	1 1/16-12UN-2A	19	38.1	53	6.7	64	27	0.29	12XEMQ1	350
3/4	19	25	1	1 5/16-12UN-2A	19	38.1	53	6.7	64	27	0.29	16-12XEMQ1	350
1	25	18, 20	3/4	1 1/16-12UN-2A	22	44.4	60	8.0	65	34	0.39	12-16XEMQ1	350
1	25	25	1	1 5/16-12UN-2A	22	44.4	60	8.0	65	34	0.39	16XEMQ1	350
1	25	30, 32	1 1/4	1 5/8-12UN-2A	22	44.4	60	8.0	65	34	0.39	20-16XEMQ1	275
1 1/4	32	25	1	1 5/16-12UN-2A	28	50.8	55	8.0	64	42	0.45	16-20XEMQ1	275
1 1/4	32	30, 32	1 1/4	1 5/8-12UN-2A	28	50.8	55	8.0	64	42	0.45	20XEMQ1	275
1 1/2	38	30, 32	1 1/4	1 5/8-12UN-2A	35	60.3	66	8.0	78	50	0.57	20-24XEMQ1	210
1 1/2	38	38	1 1/2	1 7/8-12UN-2A	35	60.3	66	8.0	78	50	0.57	24XEMQ1	210

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1/2	13	12	1/2	3/4-16UNF-2A	12	31.8	44	7.7	50	22	0.20	8XEMQ2	350
1/2	13	14, 15, 16	5/8	7/8-14UNF-2A	12	31.8	44	7.7	50	22	0.20	10-8XEMQ2	350
3/4	19	14, 15, 16	5/8	7/8-14UNF-2A	18	41.3	53	8.7	64	27	0.29	10-12XEMQ2	350
3/4	19	18, 20	3/4	1 1/16-12UN-2A	18	41.3	53	8.7	64	27	0.29	12XEMQ2	350
3/4	19	25	1	1 5/16-12UN-2A	18	41.3	53	8.7	64	27	0.29	16-12XEMQ2	350
1	25	18, 20	3/4	1 1/16-12UN-2A	22	47.6	60	9.5	62	34	0.39	12-16XEMQ2	350
1	25	25	1	1 5/16-12UN-2A	22	47.6	60	9.5	62	34	0.39	16XEMQ2	350
1	25	30, 32	1 1/4	1 5/8-12UN-2A	22	47.6	60	9.5	62	34	0.39	20-16XEMQ2	275
1 1/4	32	25	1	1 5/16-12UN-2A	27	54.0	70	10.3	70	42	0.45	16-20XEMQ2	350
1 1/4	32	30, 32	1 1/4	1 5/8-12UN-2A	27	54.0	70	10.3	72	42	0.45	20XEMQ2	275
1 1/2	38	30, 32	1 1/4	1 5/8-12UN-2A	32	63.5	80	12.5	87	50	0.57	20-24XEMQ2	275
1 1/2	38	38	1 1/2	1 7/8-12UN-2A	32	63.5	80	12.5	87	50	0.57	24XEMQ2	210

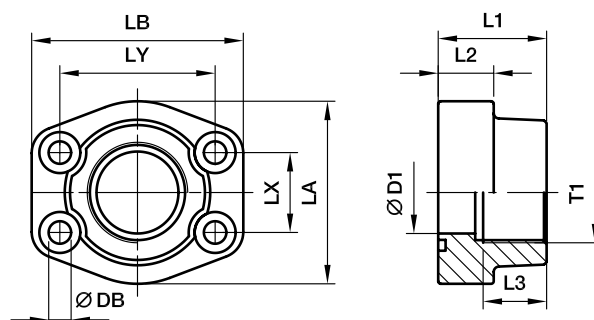
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	8XEMQ1CF	NBR
Stainless steel	SS	8XEMQ1SS	VIT



PFF-G – SAE Straight 4 bolt flange with BSPP thread

SAE Flange/Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)



SAE 3000

Nom. flange size												Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	DB			
1/2	13	G 3/8	13	36	16	19	46	57	17.5	38.1	9.0	0.27	PFF32G38	345
1/2	13	G 1/2	13	36	16	19	46	57	17.5	38.1	9.0	0.25	PFF32G	345
3/4	19	G 3/4	19	36	18	19	50	65	22.3	47.6	11.0	0.37	PFF33G	345
3/4	13	G 1/2	13	36	18	19	50	65	22.3	47.6	11.0	0.40	PFF33G12	345
1	25	G 1	25	38	18	22	55	70	26.2	52.4	11.0	0.45	PFF34G	345
1	19	G 3/4	19	35	21	19	55	70	26.2	52.4	11.0	0.45	PFF34G34	345
1 1/4	32	G 1 1/4	32	40	21	22	68	79	30.2	58.7	11.5	0.66	PFF35G	276
1 1/4	25	G 1	25	42	25	22	65	80	30.2	58.7	11.5	0.80	PFF35G1	276
1 1/2	38	G 1 1/2	38	45	25	24	78	93	35.7	69.9	13.5	1.05	PFF36G	207
1 1/2	32	G 1 1/4	32	45	27	24	78	95	35.7	69.9	13.5	1.17	PFF36G114	207
2	51	G 2	51	45	25	30	89	103	42.9	77.8	13.5	1.17	PFF38G	207
2	38	G 1 1/2	38	45	25	26	89	103	42.9	77.8	13.5	1.52	PFF38G112	207
2 1/2	63	G 2 1/2	63	50	25	30	101	115	50.8	88.9	13.5	1.59	PFF310G	172
2 1/2	51	G 2	51	50	25	30	101	115	50.8	88.9	13.5	2.13	PFF310G2	172
3	73	G 3	73	50	27	34	124	135	61.9	106.4	17.5	2.28	PFF312G	138
3	63	G 2 1/2	63	50	27	30	124	135	61.9	106.4	17.5	2.56	PFF312G212	138
3 1/2	89	G 3 1/2	89	48	27	34	136	152	69.9	120.7	17.5	2.42	PFF314G	34
3 1/2	73	G 3	73	48	27	34	136	152	69.9	120.7	17.5	3.28	PFF314G3	34
4	99	G 4	99	48	27	34	146	162	77.8	130.2	17.5	2.78	PFF316G	34
4	89	G 3 1/2	89	48	27	34	146	162	77.8	130.2	17.5	3.30	PFF316G312	34
5	120	G 5	120	50	28	30	180	184	92.1	152.4	17.5	5.80	PFF320G	34

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1/2	13	G 3/8	13	36	16	19	46	57	18.2	40.5	9.0	0.26	PFF62G38	420
1/2	13	G 1/2	13	36	16	19	46	57	18.2	40.5	9.0	0.29	PFF62G	420
3/4	19	G 3/4	19	35	21	22	55	71	23.8	50.8	11.0	0.50	PFF63G	420
3/4	13	G 1/2	13	35	21	22	55	71	23.8	50.8	11.0	0.50	PFF63G12	420
1	25	G 1	25	42	25	24	65	81	27.8	57.2	13.0	0.76	PFF64G	420
1	19	G 3/4	19	42	25	24	65	81	27.8	57.2	13.0	0.76	PFF64G34	420
1 1/4	32	G 1 1/4	32	45	27	25	78	95	31.8	66.6	15.0*	1.20	PFF65G	420
1 1/4	25	G 1	25	45	27	25	78	95	31.8	66.6	15.0*	1.20	PFF65G1	420
1 1/2	38	G 1 1/2	38	50	30	28	94	112	36.5	79.3	17.0	1.65	PFF66G	420
1 1/2	32	G 1 1/4	32	50	30	28	94	112	36.5	79.3	17.0	1.65	PFF66G114	420
2	51	G 2	51	65	37	30	114	134	44.5	96.8	21.0	2.45	PFF68G	420
2	38	G 1 1/2	38	65	37	30	114	134	44.5	96.8	21.0	2.45	PFF68G112	420
2 1/2	63	G 2 1/2	63	80	45	32	152	180	58.7	123.8	25.0	3.05	PFF610G	420
3	73	G 3	73	90	55	40	178	208	71.4	152.4	32.0	3.45	PFF612G	420

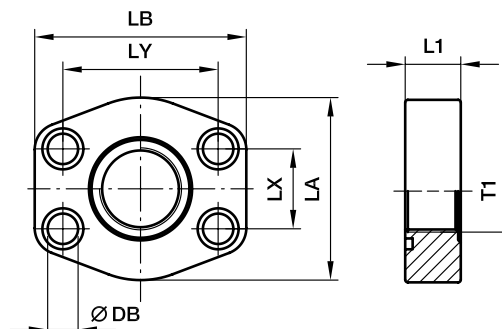
Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. bolts and O-Ring	Example 4 bolt flange incl. UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PFF32G38S	PFF32G38SM	PFF32G38SU	
Stainless steel	SS	PFF32G38SS	PFF32G38SSM	PFF32G38SSU	VIT

PAFSF-G – SAE Straight 4 bolt flange flat with BSPP thread

SAE Flange/Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)

only for low pressure applications



SAE 3000

Nom. flange size									Bolts		O-Ring	Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	T1	L1	LA	LB	LX	LY	DB	(metr.)	(unc.)				
1/2	13	G 3/8	16	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	Standard	0.20	PAFSF080G38	40
1/2	13	G 1/2	16	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	OR25.07X2.62X	0.27	PAFSF080G	40
3/4	19	G 1/2	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	Standard	0.29	PAFSF100G12	40
3/4	19	G 3/4	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	OR31.34X3.53X	0.27	PAFSF100G	40
1	25	G 3/4	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	Standard	0.32	PAFSF102G34	40
1	25	G 1	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	OR37.7X3.53X	0.31	PAFSF102G	40
1 1/4	32	G 1	21	69	80	30.2	58.7	10.5	M10×35	7/16×1 1/2	Standard	0.44	PAFSF104G1	40
1 1/4	32	G 1 1/4	21	69	80	30.2	58.7	10.5	M10×35	7/16×1 1/2	OR44.45X3.53X	0.56	PAFSF104G	40
1 1/2	38	G 1 1/4	24	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	Standard	0.83	PAFSF106G114	40
1 1/2	38	G 1 1/2	24	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	OR52.39X3.53X	0.76	PAFSF106G	40
2	51	G 1 1/2	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	Standard	1.00	PAFSF108G112	40
2	51	G 2	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	OR65.09X3.53X	0.90	PAFSF108G	40
2 1/2	64	G 2	25	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	Standard	1.30	PAFSF110G2	40
2 1/2	64	G 2 1/2	25	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	OR78.97X3.53X	1.25	PAFSF110G	40
3	76	G 2 1/2	25	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	Standard	1.86	PAFSF112G212	30
3	76	G 3	25	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	OR94.84X3.53X	1.49	PAFSF112G	30
3 1/2	89	G 3	25	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	Standard	1.68	PAFSF114G3	30
3 1/2	89	G 3 1/2	25	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	OR107.5X3.53X	1.59	PAFSF114G	30
4	102	G 3 1/2	25	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	Standard	2.35	PAFSF116G312	30
4	102	G 4	25	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	OR117.1X3.53X	2.25	PAFSF116G	30
5	127	G 4	25	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	Standard	3.45	PAFSF118G4	30
5	127	G 5	25	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	OR145.6X3.53X	3.15	PAFSF118G	30

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1/2	13	G 3/8	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	Standard	0.25	PAFSF401G38	40
1/2	13	G 1/2	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	OR25.07X2.62X	0.20	PAFSF401G	40
3/4	19	G 1/2	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	Standard	0.37	PAFSF402G12	40
3/4	19	G 3/4	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	OR32.92X3.53X	0.36	PAFSF402G	40
1	25	G 3/4	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	Standard	0.64	PAFSF403G34	40
1	25	G 1	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	OR37.7X3.53X	0.60	PAFSF403G	40
1 1/4	32	G 1	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	Standard	0.88	PAFSF404G1	40
1 1/4	32	G 1 1/4	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	OR44.45X3.53X	0.87	PAFSF404G	40
1 1/2	38	G 1 1/4	30	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	Standard	1.14	PAFSF405G114	40
1 1/2	38	G 1 1/2	30	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	OR52.39X3.53X	1.01	PAFSF405G	40
2	51	G 1 1/2	35	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	Standard	2.94	PAFSF406G112	40
2	51	G 2	35	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	OR65.09X3.53X	2.84	PAFSF406G	40

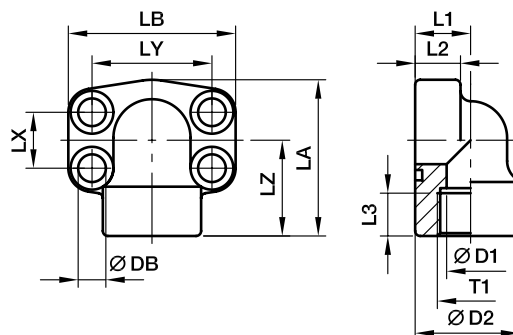
Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. bolts and O-Ring	Example 4 bolt flange incl. UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFSF080GS	PAFSF080GSM	PAFSF080GSU	NBR
Stainless steel	SS	PAFSF080GSS	PAFSF080GSSM	PAFSF080GSSU	VIT



PEFF-G – SAE 90° 4 bolt flange with BSPP thread

SAE 90° Flange/Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)



SAE 3000

Nom. flange size														Bolts		Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)	T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)			
1/2	13	G 1/2	13	34.0	18	16	16	59	57	17.5	38.1	36	9.0	M 8x30	5/16x1 1/4	0.35	PEFF32G	348
3/4	19	G 3/4	19	38.5	22	18	19	63	68	22.3	47.6	38	10.5	M10x35	3/8x1 1/2	0.55	PEFF33G	348
1	25	G 1	25	44.5	28	19	19	68	74	26.2	52.4	41	10.5	M10x35	3/8x1 1/2	0.80	PEFF34G	348
1 1/4	32	G 1 1/4	31	53.5	30	22	22	84	81	30.2	58.7	50	10.5	M10x35	7/16x1 1/2	1.30	PEFF35G	278
1 1/2	38	G 1 1/2	38	62.5	36	25	24	97	95	35.7	69.9	58	13.5	M12x45	1/2x1 3/4	1.60	PEFF36G	210
2	51	G 2	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M12x45	1/2x1 3/4	2.00	PEFF38G	210
2 1/2	64	G 2 1/2	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M12x45	1/2x1 3/4	2.40	PEFF310G	175

SAE 6000

1/2	13	G 1/2	13	34.0	18	16	16	59	57	18.2	40.5	36	8.8	M 8x30	5/16x1 1/4	0.35	PEFF62G	420
3/4	19	G 3/4	19	44.5	28	20	22	68	72	23.8	50.8	41	10.5	M10x35	3/8x1 1/2	0.80	PEFF63G	420
1	25	G 1	25	53.5	30	24	24	84	82	27.8	57.2	50	13.5	M12x45	7/16x1 1/2	1.30	PEFF64G	420
1 1/4	32	G 1 1/4	31	62.5	36	25	25	97	95	31.8	66.6	58	15.0**	M14x50	1/2x1 3/4	1.60	PEFF65G	420
1 1/2	38	G 1 1/2	38	77.0	51	26	28	109	110	36.5	79.3	65	17.0	M16x55	5/8x2 1/4	2.00	PEFF66G	420
2	51	G 2	50	87.0	45	35	34	133	134	44.5	96.8	75	21.0	M20x70	3/4x2 3/4	2.50	PEFF68G	420

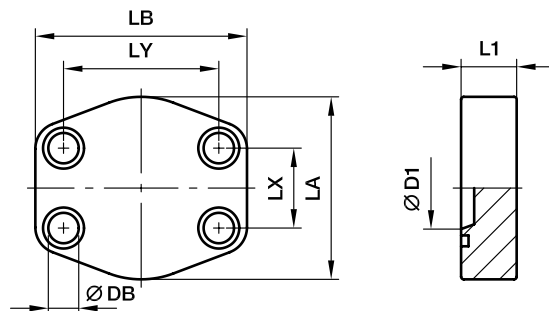
**DB = 13.5 for UNC Bolts

Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. bolts and O-Ring	Example 4 bolt flange incl. UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PEFF32GS	PEFF32GSM	PEFF32GSU	NBR
Stainless steel	SS	PEFF32GSS	PEFF32GSSM	PEFF32GSSU	VIT

PCFF – SAE Closed flange

SAE Closed flange
(ISO 6162-1/-2)



SAE 3000

Nom. flange size		D1	L1	LA	LB	LX	LY	DB	Bolts		Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)								(metr.)	(unc.)			
1/2	13	13	16	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.30	PCFF32	345
3/4	19	15	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.37	PCFF33	345
1	25	18	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.54	PCFF34	345
1 1/4	32	23	21	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.90	PCFF35	276
1 1/2	38	28	24	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.03	PCFF36	207
2	51	45	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.30	PCFF38	207
2 1/2	64	58	25	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.45	PCFF310	172
3	76	70	25	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	2.72	PCFF312	138
3 1/2	89	85	25	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	2.90	PCFF314	34
4	102	95	25	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	3.85	PCFF316	34
5	127	110	25	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	4.20	PCFF320	34

SAE 6000

1/2	13	13	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	PCFF62	420
3/4	19	15	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.44	PCFF63	420
1	25	22	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.73	PCFF64	420
1 1/4	32	30	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.85	PCFF65	420
1 1/2	38	35	30	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.61	PCFF66	420
2	51	48	35	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	3.31	PCFF68	420

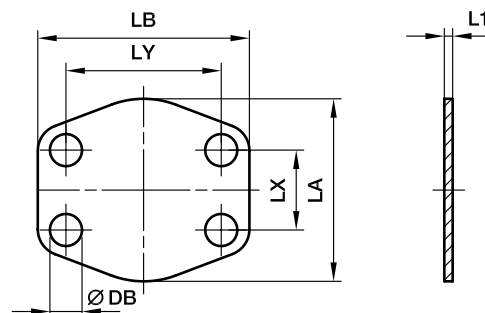
Please change suffixes according to material/surface required

Order code suffixes					
Material	Suffix surface and material	Example only closed flange	Example closed flange incl. metr. bolts and O-Ring	Example closed flange incl. UNC bolts and O-Ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCFF32S	PCFF32SM	PCFF32SU	NBR
Stainless steel	SS	PCFF32SS	PCFF32SSM	PCFF32SSU	VIT



AP – SAE Flange locking plate

ISO 6162-1/-2



SAE 3000

Nom. flange size		L1	LA	LB	LX	LY	DB	Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)									
1/2	13	3	47	57	17.5	38.1	9.0	0.02	8AP1	
3/4	19	3	49	66	22.3	47.6	11.0	0.02	12AP1	
1	25	3	53	71	26.2	52.4	11.0	0.02	16AP1	
1 1/4	32	3	69	80	30.2	58.7	11.5	0.03	20AP1	
1 1/2	38	3	77	95	35.7	69.9	13.5	0.03	24AP1	
2	51	3	89	103	42.9	77.8	13.5	0.04	32AP1	
2 1/2	64	3	101	116	50.8	89.9	13.5	0.04	40AP1	
3	76	4	124	136	61.9	106.4	17.0	0.07	48AP1	
3 1/2	89	4	136	152	69.9	102.7	17.0	0.07	56AP1	
4	102	4	146	162	77.8	130.2	17.0	0.09	64AP1	
5	127	4	180	184	92.1	152.4	17.0	0.10	80AP1	

SAE 6000

1/2	13	4	47	57	18.2	40.5	9.0	0.02	8AP2	
3/4	19	4	53	71	23.8	50.8	11.0	0.02	12AP2	
1	25	4	66	80	27.8	57.1	13.0	0.03	16AP2	
1 1/4	32	4	77	94	31.8	66.7	15.0	0.04	20AP2	
1 1/2	38	4	89	103	36.5	79.4	17.0	0.05	24AP2	
2	51	4	123	135	44.5	96.8	21.0	0.06	32AP2	
2 1/2	64	4	150	166	58.7	123.8	25.0	0.08	40AP2	
3	76	4	178	208	71.4	152.4	32.0	0.10	48AP2	

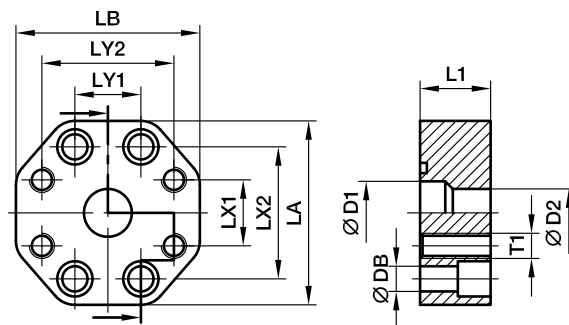
This flange locking plate is not used under pressure.

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8AP1CF	only locking plate
Stainless steel	SS	8AP1SS	only locking plate

PRF – SAE Straight reducing flange adapter

SAE 3000
ISO 6162-1



SAE 3000

Nom. flange size		D1	D2	L1	LA	LB	LX1	LX2	LY1	LY2	DB	Bolts (metr.)	T1	Weight (steel) kg/1 piece	Order code	W.P.
SAE (in)	ISO (DN)															
1x1	25/25	25	25	28	73	73	26.2	52.4	26.2	52.4	11	M10x35	M10	1.10	PRF102/102	210
1x3/4	25/19	25	19	28	73	73	22.3	52.4	26.2	47.6	11	M10x35	M10	1.15	PRF102/100	210
1 1/4x1 1/4	32/32	30	30	28	80	80	30.2	58.7	30.2	58.7	11	M10x35	M10	1.55	PRF104/104	210
1 1/4x1	32/25	30	25	28	80	71	26.2	58.7	30.2	52.4	11	M10x35	M10	1.55	PRF104/102	210
1 1/2x1 1/2	38/38	38	38	32	94	94	35.7	69.9	35.7	69.9	13	M12x45	M12	2.25	PRF106/106	210
1 1/2x1 1/4	38/32	38	30	32	94	80	30.2	69.9	35.7	58.7	13	M10x35	M10	2.40	PRF106/104	210
2x2	51/51	50	50	33	103	103	42.9	77.8	42.9	77.8	13	M12x45	M12	3.00	PRF108/108	210
2x1 1/2	51/38	50	38	33	103	94	35.7	77.8	42.9	70.0	13	M12x45	M12	3.15	PRF108/106	210
2 1/2x2 1/2	64/64	63	63	33	115	115	50.8	88.9	50.8	88.9	13	M12x45	M12	3.85	PRF110/110	175
2 1/2x2	64/51	63	50	33	115	103	42.9	88.9	50.8	77.8	13	M12x45	M12	3.95	PRF110/108	175
3x3	76/76	73	73	36	135	135	61.9	106.4	61.9	106.4	17	M16x50	M16	4.25	PRF112/112	138
3x2 1/2	76/64	73	63	36	135	115	50.8	106.4	61.9	89.0	17	M12x45	M12	4.45	PRF112/110	138

6000 PSI Series

3/4x3/4	19/19	19	19	28	71	71	23.8	50.8	23.8	50.8	11	M10x35	M10	0.80	PRF402/402	420
1x1	25/25	25	25	33	80	80	27.8	57.2	27.8	57.2	13	M12x45	M12	1.10	PRF403/403	420
1x3/4	25/19	25	19	33	80	71	23.8	57.2	27.8	50.8	13	M10x35	M10	1.10	PRF403/402	420
1 1/4x1 1/4	32/32	30	30	33	94	94	31.8	66.6	31.8	66.6	15	M14x45	M14	1.40	PRF404/404	420
1 1/4x1	32/25	30	25	33	94	80	27.8	66.6	31.8	57.2	15	M12x45	M12	1.60	PRF404/403	420
1 1/2x1 1/2	38/38	38	38	48	106	106	36.5	79.3	36.5	79.3	17	M16x50	M16	3.30	PRF405/405	420
1 1/2x1 1/4	38/32	38	30	48	106	94	31.8	79.3	36.5	66.6	17	M14x45	M14	3.60	PRF405/404	420
2x2	51/51	50	50	48	135	135	44.5	96.8	44.5	96.8	21	M20x65	M20	5.00	PRF406/406	420
2x1 1/2	51/38	50	38	48	135	106	36.5	96.8	44.5	79.3	21	M16x50	M16	5.25	PRF406/405	420
2 1/2x2	64/51	63	50	53	166	150	44.5	123.8	58.7	96.8	25	M20x65	M20	6.50	PRF408/406	420
3x2	76/51	73	50	58	208	178	44.5	152.4	71.4	96.8	31	M20x65	M20	7.50	PRF410/406	420

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	S	PRF102/102S	only flange
Stainless steel	SS	PRF102/102SS	only flange

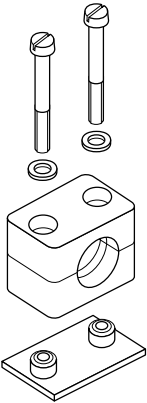
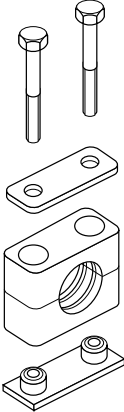
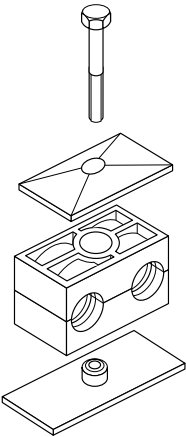
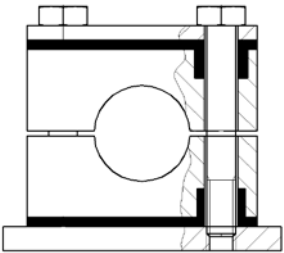




Tube clamps

ENGINEERING YOUR SUCCESS.

Programme overview

Tube clamps series A	 Page 228 - 237	Tube clamps series C	 Page 243 - 253
Tube clamps series B	 Page 238 - 242	Tube clamps series C with absorbing noise insert	 Page 254 - 255

Tube clamps

DIN 3015

Programme:

Tube clamps series A (according to DIN 3015 Part 1)

Available in seven standard sizes for normal mechanical requirements.

- Outer tube diameter for the metric series 6 to 57 mm
- Outer tube diameter for the inch-size series R 1/8" to R 1 1/2"
- Outer tube diameter for the imperial size series 1/4" to 2 1/2"

The clamp body is available in a round/closed version.

Welding plates, rail-supports, cover plates and construction types.

Tube clamps series B (according to DIN 3015 Part 3)

Available as a twin tube clamp in five standard sizes for normal mechanical requirements.

Outer tube diameter 6 to 42 mm.

The clamp body is available in a square/open design.

Welding plates, rail-supports, cover plates and construction types.

Clamp halves with different diameters are only possible when used together.

Tube clamps series C (according to DIN 3015 Part 2)

Specially designed for high mechanical requirements, and available in eight standard sizes.

- Outer tube diameter 6 to 220 mm.

The clamp body is available in a square/closed design.

Welding plates, rail-supports, cover plates and construction types.

Design:

According to DIN 3015:

Both upper and lower clamp-halves are identical.

Webs inside the bore of the clamps provide an impact and vibration deadening effect, and absorb the forces towards the direction of the tube axis.

When using hoses and cables, we recommend the use of clamp halves with a smooth bore.

Clamp material:

Polypropylene	-30°C up to	+ 90° C	colour dark green
Polyamide	-40°C up to	+ 120° C	colour black
Rubber	-50°C up to	+ 120° C	colour black
Aluminium	up to	+ 300° C	

All metal parts available also in stainless steel.

Other materials upon request.

Stainless steel qualities

Stainless steel 1.4401/1.4571 (AISI 316/316 TI), resistant against rust and acid.

Accessories material:

Steel. Screws as well as cover plates of series A and B are galvanized.

Rail-supports are also available with zinc plated surface.

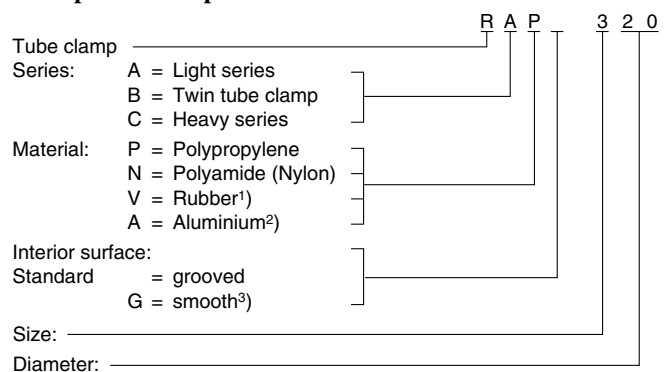
Resistance to stress:

The remarkable features of Tube Clamps are their considerable re-set capability, high tensile strength, as well as their very high output strength and excellent resistance to cold. The choice of design and clamp material depends on the specific demands of the mechanical and thermal requirements.

Order code:

The order code for clamp halves as well as the reference No. for complete tube clamps incorporates the serial indication, material description and interior surface.

Example of description:



¹⁾ Rubber only available for series A and B, inside smooth and series C grooved design

²⁾ Aluminium only available for series A size 1 to 6 and series C size 1 to 8

³⁾ Smooth interior surface in series C only to size 4
Aluminium clamps only available in a grooved design
Inside smooth series A only size 1 to 6

Registration:

On request

Tube clamps

Tube clamps material properties

DIN 3015

Mechanical properties		Polypropylene (PP)	Polyamide 6 (PA 6)	Aluminium	Rubber
Density		0.906 g/cm ³	1.12–1.15g/cm ³	2.65 g/cm ³	0.98 g/cm ³
Flexural deflection	DIN 53452	36 N/mm ²	130...200 N/mm ²	70 N/mm ²	–
Impact resistance	DIN 53453	no break	no break	–	
Compressive strength	DIN 53454	90 N/mm ²	120 N/mm ²	HB 500...600 N/mm ²	A and B: 64° shore C: 73° shore
Modulus of elasticity	DIN 53452	1500 N/mm ²	3000 N/mm ²	70.000 N/mm ²	
Tensile strength					A and B: 6.1 N/mm ²
without breakage	DIN 53454	25–35 N/mm ²	80–90 N/mm ²	180 N/mm ²	C: 8.5 N/mm ²

Thermal properties					
Temp. resistance		–30 ... + 90°C	–40 ... + 120°C	300°C	–50 ... +120°C

Chemical properties					
Weak acids		limited resistant	limited resistant		resistant
Weak alkalis		limited resistant	limited resistant		resistant
Alcohol		resistant	resistant		resistant
Petrol		limited resistant	resistant		limited resistant
Mineral oils		resistant	resistant		resistant
Other oils		resistant	resistant		resistant

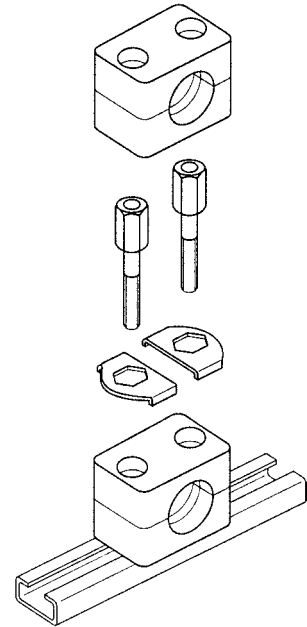
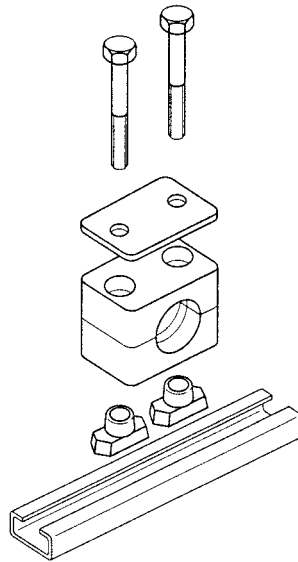
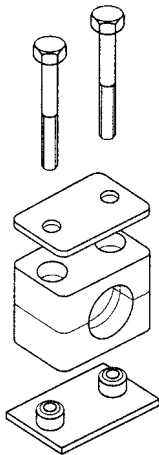
The outlined particulars are approximate values and are only shown for reference, which are not binding, and with regard to possible protection of third parties. They do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in a limited way for guidance only.

The application of the products is carried out outside of our control and, therefore, is exclusively subject to your own area of responsibility. Any claim however would be limited for all damages to the value of the goods supplied by us and in use by you.

It goes without saying, that we guarantee the perfect quality of our products according to our general sales and delivery conditions.

Tube clamps assembly instruction

DIN 3015



Assembly:

Assembly on to metal welding plates

Place welding plates on a base appropriate for the load. Make sure that the clamps are properly aligned. Clamp lower clamp half onto welding plate, insert tube, place upper clamp half onto lower half and fasten with the screws. Attention must be paid to the bias (after completed assembly, clamp halves may not be in contact)! Do not weld with fitted plastic clamp! Extended welding plates may be screw-fastened to the base.

Assembly on support rails

Support rails are available in four different heights and come in pieces of 1 m or 2 m length, as required. Weld on support rail or screw-fasten with fastening angle bracket. Insert support rail nuts in rail and turn until stoppage. For heavy duty construction series, nuts are simply pushed in. Clamp lower clamp half on support rail nuts, insert tube, place upper clamp half onto lower half and fasten with the screws. Before fastening the screws the clamp may still be positioned. Attention must be paid to the bias (after completed assembly, the clamp halves may not be in contact)!

Construction assembly

Clamps allow the assembly of multiple clamps of the same construction size and of different tube diameters one above the other. The construction assembly is carried out with special fixing screws that are secured against twisting by applying a locking plate. Clamp lower clamp half on welding plate or support rail respectively, insert tube, place upper clamp half on lower half and fasten with fixing screws. The fixing screw juts out from the upper clamp half. The application of a locking plate securely fastens the fixing screw and prevents twisting. Clamp on second clamp half on to the fixing screws etc.

Tube clamps

Tube clamps series A (Light construction series) – Components

DIN 3015, part 1

Order code for clamp halves:

Polypropylene – **RAP**

Inside smooth – **RAPG**

Polyamide 6 – **RAN**

Inside smooth – **RANG**

Rubber – **RAVG**

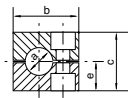
Aluminium – **RAA¹⁾**

(Please exchange as required standard abbreviation

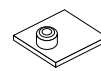
RAP in column for “clamp halves”)



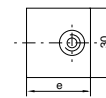
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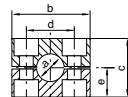
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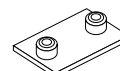
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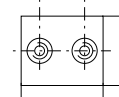
size 1-6



size 1-6
Width: 30 mm



size 1-6



size 1-6
Thickness:
3 mm

clamp size	Tube O.D. mm a	Tube NB	Tube O.D.	1 part 2 clamp halves					welding plate, short	
				RAP... Order code	dimensions: b c d e				APK A... Order code	dimensions: d e
0	6.0	G 1/8	1/4 5/16 3/8	RAP006X	28	27	–	13.5	APKA0X	30
	6.4			RAP006.4X						
	8.0			RAP008X						
	9.5			RAP009.5X						
	10.0			RAP010X						
	12.0			RAP012X						
1	6.0	G 1/8	1/4 5/16 3/8	RAP106X	34	27	20	13.5	APKA1X	20 36
	6.4			RAP106.4X						
	8.0			RAP108X						
	9.5			RAP109.5X						
	10.0			RAP110X						
	12.0			RAP112X						
2	12.7	G 1/4	1/2	RAP212.7X	40	33	26	16.5	APKA2X	26 42
	13.5			RAP213.5X						
	14.0			RAP214X						
	15.0	G 3/8	5/8	RAP215X						
	16.0			RAP216X						
	17.2			RAP217.2X						
3	18.0	G 1/2	3/4	RAP218X	48	35	33	17.5	APKA3X	33 50
	19.0			RAP319X						
	20.0			RAP320X						
	21.3		1	RAP321.3X						
	22.0			RAP322X						
	23.0			RAP323X						
4	25.0	G 3/4	1	RAP325X	57	42	40	21	APKA4X	40 59
	26.9			RAP426.9X						
	28.0			RAP428X						
	30.0			RAP430X						
5	32.0	G 1	1 1/4	RAP532X	70	58	52	29	APKA5X	52 72
	33.7			RAP533.7X						
	35.0			RAP535X						
	38.0	G 1 1/4	1 1/2	RAP538X						
	40.0			RAP540X						
	42.0			RAP542X						
6	44.5	G 1 1/2	1 3/4	RAP644.5X	86	66	66	33	APKA6X	66 88
	45.0			RAP645X						
	48.0			RAP648X						
	50.0		2	RAP650X						
	50.8			RAP650.8X						
	52.0			RAP652X						
	55.0		2 1/4	RAP655X						
	57.0			RAP657X						

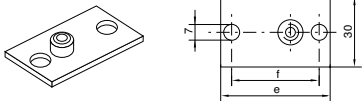
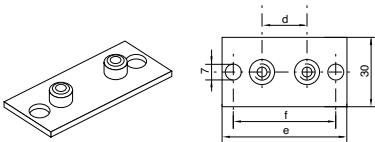
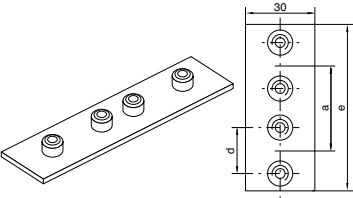
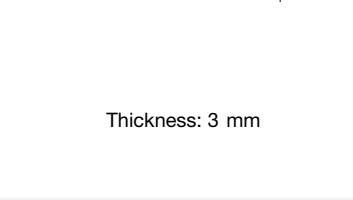
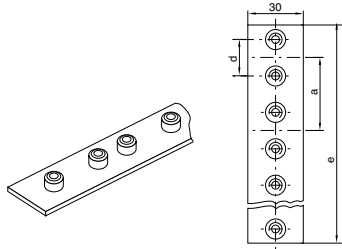
When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used. All metal parts available in stainless steel.

¹⁾ Aluminium only sizes 1 to 6.



Tube clamps series A (Light construction series) – Components

DIN 3015, part 1

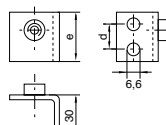
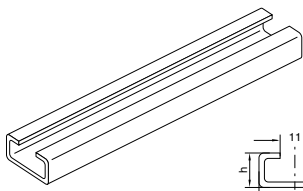
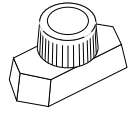
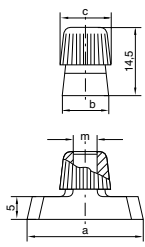
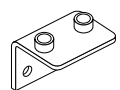
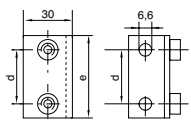
 size 0			 size 1-6 Thickness: 3 mm			 Thickness: 3 mm			 Thickness: 3 mm			 Thickness: 3 mm		
weld/screw plate, long			twin welding plate			multiple weld plate								
APL A...	dimensions:		APD A...	dimensions:		APR A...	dimensions:							
Order code	d	e f	Order code	d a e		Order code	d a e							
APLA0X	58	44	APDA0X	30	61	APRA0X (10 clamps)	30	298						
APLA1X	20	64 50	APDA1X	20	35 69	APRA1X (10 clamps)	20	35 349						
APLA2X	26	70 56	APDA2X	26	43 86	APRA2X (10 clamps)	26	43 427						
APLA3X	33	78 64	APDA3X	33	52 104	APRA3X (10 clamps)	33	52 516						
APLA4X	40	87 73	APDA4X	40	60 117	APRA4X (5 clamps)	40	60 297						
APLA5X	52	100 86	APDA5X	52	75 145	APRA5X (5 clamps)	52	75 370						
APLA6X	66	116 100	APDA6X	66	90 176	APRA6X (5 clamps)	66	90 446						

Metal parts also available in stainless steel.

Tube clamps

Tube clamps series A (Light construction series) – Components

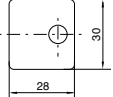
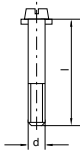
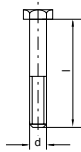
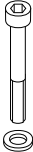
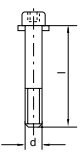
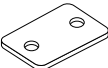
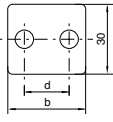
DIN 3015, part 1

	 size 0			 size 0			 1 or 2 mtr			 			
	 size 1-6			 size 1-6 Thickness: 3mm									
clamp size	weld plate, angled		dimensions:		TS...A/B Order code	dimensions: h	mounting rail		TM...A/B1 Order code	rail nut		dimensions:	
	APW A... Order code		d	e						a	b	c	m
0	APWA0X		14	30	TS11A/B1X TS11A/B2X TS14A/B1X TS14A/B2X TS30A/B1X TS30A/B2X	TS11: 11 TS14: 14 TS30: 30		TMA/TMB1VERZX		25.4	10.4	12	M6
1	APWA1X		20	36									
2	APWA2X		26	42									
3	APWA3X		33	50									
4	APWA4X		40	59									
5	APWA5X		52	72									
6	APWA6X		66	88									

Metal parts also available in stainless steel.

Tube clamps series A (Light construction series) – Components

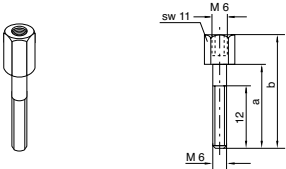
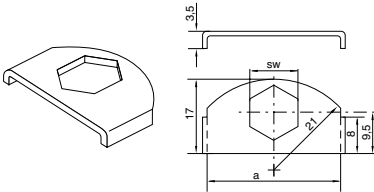
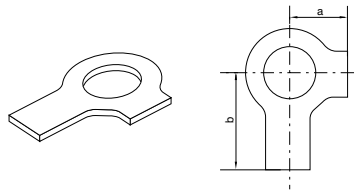
DIN 3015, part 1

	 		 		 		 	
	size 0 size 0		DIN 84		DIN 931/933		DIN 912	
	 							
	size 1–6 Thickness: 3 mm size 1–6							
clamp size	cover plate		slot head		hexagon head		socket head	
	DP A... Order code	dimensions: b d	SL A... Order code	dimensions: d × L	SSL A... Order code	dimensions: d × L	IS A... Order code	dimensions: d × L
0	DPA0X	– –	SLA0X	M 6 × 20	SSL10X	M 6 × 30	ISA0X	M 6 × 20
1	DPA1X	34 20	SLA1X	M 6 × 20	SSLA0X	M 6 × 30	ISA1X	M 6 × 20
2	DPA2X	40 26	SLA2X	M 6 × 25	SSLA2/SSB1X	M 6 × 35	ISA2X	M 6 × 25
3	DPA3X	48 33	SLA3X	M 6 × 30	SSLA3X	M 6 × 40	ISA3X	M 6 × 30
4	DPA4X	57 40	SLA4X	M 6 × 35	SSLA4X	M 6 × 45	ISA4X	M 6 × 35
5	DPA5X	70 52	SLA5X	M 6 × 50	SSLA5X	M 6 × 60	ISA5X	M 6 × 50
6	DPA6X	86 66	SLA6X	M 6 × 60	SSLA6X	M 6 × 70	ISA6X	M 6 × 60

All metal parts available in stainless steel.

Tube clamps series A (Light construction series) – Components

DIN 3015, part 1

						
clamp size	stacking ¹⁾		locking plate ¹⁾		locking washer ²⁾	
	AS A... Order code	dimensions: a b	SB A Order code	dimensions: a SW	US A Order code	dimensions: a b
0	ASA0X (AS B1X)	20 34	SBAX	30 11	USA/USB1X	9 18
1	ASA0X (ASB1X)	20 34				
2	ASA2X	25 39				
3	ASA3X	30 44				
4	ASA4X	35 49				
5	ASA5X	50 64				
6	ASA6X	60 74				

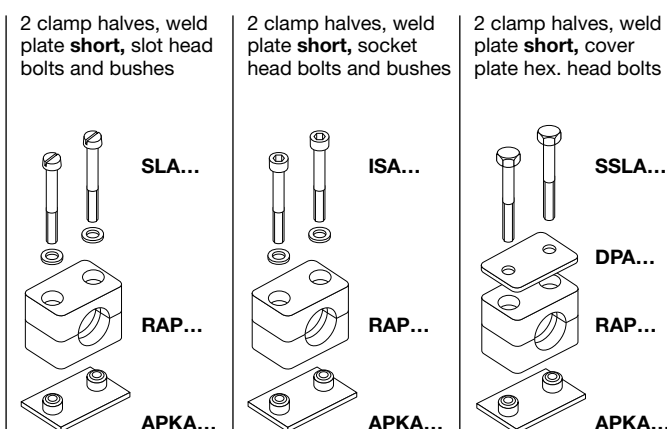
¹⁾ The use of stacking bolts necessitates the use of locking plates in the construction assembly.

²⁾ When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series A (Light construction series) – Complete range

Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0 ¹⁾	6.0	G 1/8	1/4 5/16 3/8	RAP1-006	RAP2-006	RAP3-006
	6.4			RAP1-006.4	RAP2-006.4	RAP3-006.4
	8.0			RAP1-008	RAP2-008	RAP3-008
	9.5			RAP1-009.5	RAP2-009.5	RAP3-009.5
	10.0			RAP1-010	RAP2-010	RAP3-010
	12.0			RAP1-012	RAP2-012	RAP3-012
1	6.0	G 1/8	1/4 5/16 3/8	RAP1-106	RAP2-106	RAP3-106
	6.4			RAP1-106.4	RAP2-106.4	RAP3-106.4
	8.0			RAP1-108	RAP2-108	RAP3-108
	9.5			RAP1-109.5	RAP2-109.5	RAP3-109.5
	10.0			RAP1-110	RAP2-110	RAP3-110
	12.0			RAP1-112	RAP2-112	RAP3-112
2	12.7	G 1/4	1/2	RAP1-212.7	RAP2-212.7	RAP3-212.7
	13.5			RAP1-213.5	RAP2-213.5	RAP3-213.5
	14.0			RAP1-214	RAP2-214	RAP3-214
	15.0			RAP1-215	RAP2-215	RAP3-215
	16.0	G 3/8	5/8	RAP1-216	RAP2-216	RAP3-216
	17.2			RAP1-217.2	RAP2-217.2	RAP3-217.2
	18.0			RAP1-218	RAP2-218	RAP3-218
3	19.0	G 1/2	3/4	RAP1-319	RAP2-319	RAP3-319
	20.0			RAP1-320	RAP2-320	RAP3-320
	21.3			RAP1-321.3	RAP2-321.3	RAP3-321.3
	22.0		1	RAP1-322	RAP2-322	RAP3-322
	23.0			RAP1-323	RAP2-323	RAP3-323
	25.0			RAP1-325	RAP2-325	RAP3-325
4	26.9	G 3/4		RAP1-426.9	RAP2-426.9	RAP3-426.9
	28.0			RAP1-428	RAP2-428	RAP3-428
	30.0			RAP1-430	RAP2-430	RAP3-430
5	32.0	G 1	1 1/4	RAP1-532	RAP2-532	RAP3-532
	33.7			RAP1-533.7	RAP2-533.7	RAP3-533.7
	35.0			RAP1-535	RAP2-535	RAP3-535
	38.0		1 1/2	RAP1-538	RAP2-538	RAP3-538
	40.0	G 1 1/4		RAP1-540	RAP2-540	RAP3-540
	42.0			RAP1-542	RAP2-542	RAP3-542
6	44.5	G 1 1/2	1 3/4	RAP1-644.5	RAP2-644.5	RAP3-644.5
	45.0			RAP1-645	RAP2-645	RAP3-645
	48.0			RAP1-648	RAP2-648	RAP3-648
	50.0			RAP1-650	RAP2-650	RAP3-650
	50.8		2	RAP1-650.8	RAP2-650.8	RAP3-650.8
	52.0			RAP1-652	RAP2-652	RAP3-652
	55.0			RAP1-655	RAP2-655	RAP3-655
	57.0		2 1/4	RAP1-657	RAP2-657	RAP3-657

Delivery in unassembled individual components.

¹⁾ Contrary to the illustration size 0 clamps are secured by only one screw.

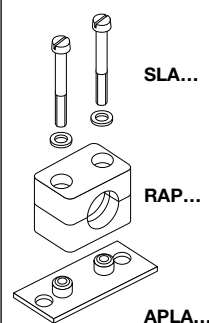
* Only with cover plate, hexagon screws and locking washers.

Tube clamps series A (Light construction series) – Complete range

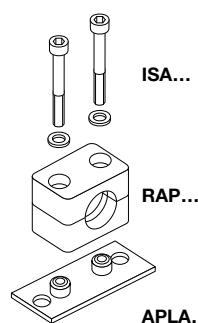
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

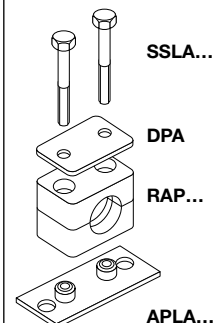
2 clamp halves, weld/
screw plate, slot head
bolts and bushes



2 clamp halves, weld/
screw plate, socket
head bolts and bushes



2 clamp halves, weld/
screw plate, cover pla-
te and hex. head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0 ¹⁾	6.0	G 1/8	1/4 5/16 3/8	RAP4-006	RAP5-006	RAP6-006
	6.4			RAP4-006.4	RAP5-006.4	RAP6-006.4
	8.0			RAP4-008	RAP5-008	RAP6-008
	9.5			RAP4-009.5	RAP5-009.5	RAP6-009.5
	10.0			RAP4-010	RAP5-010	RAP6-010
	12.0			RAP4-012	RAP5-012	RAP6-012
1	6.0	G 1/8	1/4 5/16 3/8	RAP4-106	RAP5-106	RAP6-106
	6.4			RAP4-106.4	RAP5-106.4	RAP6-106.4
	8.0			RAP4-108	RAP5-108	RAP6-108
	9.5			RAP4-109.5	RAP5-109.5	RAP6-109.5
	10.0			RAP4-110	RAP5-110	RAP6-110
	12.0			RAP4-112	RAP5-112	RAP6-112
2	12.7	G 1/4	1/2	RAP4-212.7	RAP5-212.7	RAP6-212.7
	13.5			RAP4-213.5	RAP5-213.5	RAP6-213.5
	14.0			RAP4-214	RAP5-214	RAP6-214
	15.0			RAP4-215	RAP5-215	RAP6-215
	16.0	G 3/8	5/8	RAP4-216	RAP5-216	RAP6-216
	17.2			RAP4-217.2	RAP5-217.2	RAP6-217.2
	18.0			RAP4-218	RAP5-218	RAP6-218
3	19.0	G 1/2	3/4	RAP4-319	RAP5-319	RAP6-319
	20.0			RAP4-320	RAP5-320	RAP6-320
	21.3			RAP4-321.3	RAP5-321.3	RAP6-321.3
	22.0		1	RAP4-322	RAP5-322	RAP6-322
	23.0			RAP4-323	RAP5-323	RAP6-323
	25.0			RAP4-325	RAP5-325	RAP6-325
4	26.9	G 3/4		RAP4-426.9	RAP5-426.9	RAP6-426.9
	28.0			RAP4-428	RAP5-428	RAP6-428
	30.0			RAP4-430	RAP5-430	RAP6-430
5	32.0	G 1	1 1/4	RAP4-532	RAP5-532	RAP6-532
	33.7			RAP4-533.7	RAP5-533.7	RAP6-533.7
	35.0			RAP4-535	RAP5-535	RAP6-535
	38.0			RAP4-538	RAP5-538	RAP6-538
	40.0	G 1 1/4	1 1/2	RAP4-540	RAP5-540	RAP6-540
	42.0			RAP4-542	RAP5-542	RAP6-542
6	44.5	G 1 1/2	1 3/4	RAP4-644.5	RAP5-644.5	RAP6-644.5
	45.0			RAP4-645	RAP5-645	RAP6-645
	48.0			RAP4-648	RAP5-648	RAP6-648
	50.0			RAP4-650	RAP5-650	RAP6-650
	50.8			RAP4-650.8	RAP5-650.8	RAP6-650.8
	52.0		2	RAP4-652	RAP5-652	RAP6-652
	55.0			RAP4-655	RAP5-655	RAP6-655
	57.0			RAP4-657	RAP5-657	RAP6-657
			2 1/4			

Delivery in unassembled individual components.

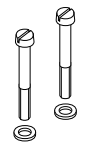
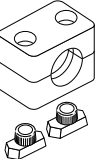
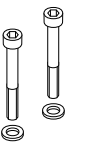
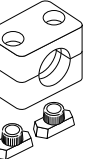
¹⁾ Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

Tube clamps series A (Light construction series) – Complete range

Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

				2 clamp halves, rail nuts, slot head bolts and bushes	2 clamp halves, rail nuts, socket head bolts and bushes	2 clamp halves, rail nuts, cover plate and hex. head bolts
				 SLA...  RAP...  TMA...	 ISA...  RAP...  TMA...	 SSLA...  DPA  RAP...  TMA...
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0 ¹⁾	6.0	G 1/8	1/4 5/16 3/8	RAP9-006	RAP10-006	RAP12-006
	6.4			RAP9-006.4	RAP10-006.4	RAP12-006.4
	8.0			RAP9-008	RAP10-008	RAP12-008
	9.5			RAP9-009.5	RAP10-009.5	RAP12-009.5
	10.0			RAP9-010	RAP10-010	RAP12-010
	12.0			RAP9-012	RAP10-012	RAP12-012
1	6.0	G 1/8	1/4 5/16 3/8	RAP9-106	RAP10-106	RAP12-106
	6.4			RAP9-106.4	RAP10-106.4	RAP12-106.4
	8.0			RAP9-108	RAP10-108	RAP12-108
	9.5			RAP9-109.5	RAP10-109.5	RAP12-109.5
	10.0			RAP9-110	RAP10-110	RAP12-110
	12.0			RAP9-112	RAP10-112	RAP12-112
2	12.7	G 1/4	1/2	RAP9-212.7	RAP10-212.7	RAP12-212.7
	13.5			RAP9-213.5	RAP10-213.5	RAP12-213.5
	14.0			RAP9-214	RAP10-214	RAP12-214
	15.0			RAP9-215	RAP10-215	RAP12-215
	16.0	G 3/8	5/8	RAP9-216	RAP10-216	RAP12-216
	17.2			RAP9-217.2	RAP10-217.2	RAP12-217.2
	18.0			RAP9-218	RAP10-218	RAP12-218
3	19.0	G 1/2	3/4	RAP9-319	RAP10-319	RAP12-319
	20.0			RAP9-320	RAP10-320	RAP12-320
	21.3			RAP9-321.3	RAP10-321.3	RAP12-321.3
	22.0		1	RAP9-322	RAP10-322	RAP12-322
	23.0			RAP9-323	RAP10-323	RAP12-323
	25.0			RAP9-325	RAP10-325	RAP12-325
4	26.9	G 3/4		RAP9-426.9	RAP10-426.9	RAP12-426.9
	28.0			RAP9-428	RAP10-428	RAP12-428
	30.0			RAP9-430	RAP10-430	RAP12-430
5	32.0	G 1	1 1/4	RAP9-532	RAP10-532	RAP12-532
	33.7			RAP9-533.7	RAP10-533.7	RAP12-533.7
	35.0			RAP9-535	RAP10-535	RAP12-535
	38.0		1 1/2	RAP9-538	RAP10-538	RAP12-538
	40.0	G 1 1/4		RAP9-540	RAP10-540	RAP12-540
	42.0			RAP9-542	RAP10-542	RAP12-542
6	44.5	G 1 1/2	1 3/4	RAP9-644.5	RAP10-644.5	RAP12-644.5
	45.0			RAP9-645	RAP10-645	RAP12-645
	48.0			RAP9-648	RAP10-648	RAP12-648
	50.0			RAP9-650	RAP10-650	RAP12-650
	50.8		2	RAP9-650.8	RAP10-650.8	RAP12-650.8
	52.0			RAP9-652	RAP10-652	RAP12-652
	55.0			RAP9-655	RAP10-655	RAP12-655
	57.0		2 1/4	RAP9-657	RAP10-657	RAP12-657

Delivery in unassembled individual components.

¹⁾ Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

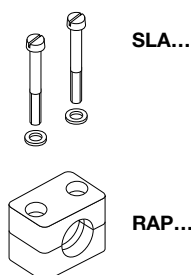
Tube clamps

Tube clamps series A – Complete range

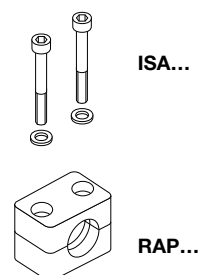
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

2 clamp halves, slot heads and bushes



2 clamp halves, socket head bolts and bushes



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0 ¹⁾	6.0	G 1/8	1/4 5/16 3/8	RAP13-006	RAP14-006
	6.4			RAP13-006.4	RAP14-006.4
	8.0			RAP13-008	RAP14-008
	9.5			RAP13-009.5	RAP14-009.5
	10.0			RAP13-010	RAP14-010
	12.0			RAP13-012	RAP14-012
1	6.0	G 1/8	1/4 5/16 3/8	RAP13-106	RAP14-106
	6.4			RAP13-106.4	RAP14-106.4
	8.0			RAP13-108	RAP14-108
	9.5			RAP13-109.5	RAP14-109.5
	10.0			RAP13-110	RAP14-110
	12.0			RAP13-112	RAP14-112
2	12.7	G 1/4	1/2	RAP13-212.7	RAP14-212.7
	13.5			RAP13-213.5	RAP14-213.5
	14.0			RAP13-214	RAP14-214
	15.0	G 3/8	5/8	RAP13-215	RAP14-215
	16.0			RAP13-216	RAP14-216
	17.2			RAP13-217.2	RAP14-217.2
3	18.0	G 1/2	3/4	RAP13-218	RAP14-218
	19.0			RAP13-319	RAP14-319
	20.0			RAP13-320	RAP14-320
	21.3		1	RAP13-321.3	RAP14-321.3
	22.0			RAP13-322	RAP14-322
	23.0			RAP13-323	RAP14-323
4	25.0	G 3/4		RAP13-325	RAP14-325
	26.9			RAP13-426.9	RAP14-426.9
	28.0			RAP13-428	RAP14-428
5	30.0	G 1	1 1/4	RAP13-430	RAP14-430
	32.0			RAP13-532	RAP14-532
	33.7			RAP13-533.7	RAP14-533.7
	35.0		1 1/2	RAP13-535	RAP14-535
	38.0			RAP13-538	RAP14-538
	40.0			RAP13-540	RAP14-540
6	42.0	G 1 1/4	2 1/4	RAP13-542	RAP14-542
	44.5			RAP13-644.5	RAP14-644.5
	45.0			RAP13-645	RAP14-645
	48.0			RAP13-648	RAP14-648
	50.0			RAP13-650	RAP14-650
	50.8			RAP13-650.8	RAP14-650.8
	52.0			RAP13-652	RAP14-652
	55.0			RAP13-655	RAP14-655
	57.0			RAP13-657	RAP14-657

Delivery in unassembled individual components.

¹⁾ Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

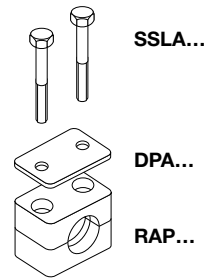


Tube clamps series A – Complete range

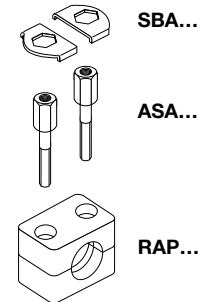
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

2 clamp halves, cover plate and hex. head bolts



2 clamp halves, stacking bolts and locking plate



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0 ¹⁾	6.0	G 1/8	1/4 5/16 3/8	RAP16-006	RAP18-006
	6.4			RAP16-006.4	RAP18-006.4
	8.0			RAP16-008	RAP18-008
	9.5			RAP16-009.5	RAP18-009.5
	10.0			RAP16-010	RAP18-010
	12.0			RAP16-012	RAP18-012
1	6.0	G 1/8	1/4 5/16 3/8	RAP16-106	RAP18-106
	6.4			RAP16-106.4	RAP18-106.4
	8.0			RAP16-108	RAP18-108
	9.5			RAP16-109.5	RAP18-109.5
	10.0			RAP16-110	RAP18-110
	12.0			RAP16-112	RAP18-112
2	12.7	G 1/4	1/2	RAP16-212.7	RAP18-212.7
	13.5			RAP16-213.5	RAP18-213.5
	14.0			RAP16-214	RAP18-214
	15.0	G 3/8	5/8	RAP16-215	RAP18-215
	16.0			RAP16-216	RAP18-216
	17.2			RAP16-217.2	RAP18-217.2
3	18.0	G 1/2	3/4 1	RAP16-218	RAP18-218
	19.0			RAP16-319	RAP18-319
	20.0			RAP16-320	RAP18-320
	21.3			RAP16-321.3	RAP18-321.3
	22.0			RAP16-322	RAP18-322
	23.0			RAP16-323	RAP18-323
4	25.0			RAP16-325	RAP18-325
	26.9	G 3/4		RAP16-426.9	RAP18-426.9
	28.0			RAP16-428	RAP18-428
5	30.0			RAP16-430	RAP18-430
	32.0	G 1	1 1/4	RAP16-532	RAP18-532
	33.7			RAP16-533.7	RAP18-533.7
	35.0			RAP16-535	RAP18-535
	38.0	G 1 1/4	1 1/2	RAP16-538	RAP18-538
	40.0			RAP16-540	RAP18-540
6	42.0			RAP16-542	RAP18-542
	44.5	G 1 1/2	1 3/4 2 2 1/4	RAP16-644.5	RAP18-644.5
	45.0			RAP16-645	RAP18-645
	48.0			RAP16-648	RAP18-648
	50.0			RAP16-650	RAP18-650
	50.8			RAP16-650.8	RAP18-650.8
	52.0			RAP16-652	RAP18-652
	55.0			RAP16-655	RAP18-655
	57.0			RAP16-657	RAP18-657

Delivery in unassembled individual components.

¹⁾ Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

Tube clamps

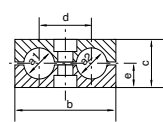
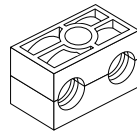
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3

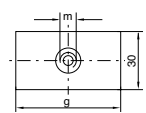
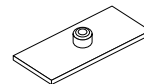
Order code for clamp halves:

Polypropylene – **RBP**
 Inside smooth – **RBP**
 Polyamide 6 – **RBN**
 Rubber – **RBVG**

(Please exchange standard abbreviation RBP in column for “clamp halves” as required.)



Width: 30 mm



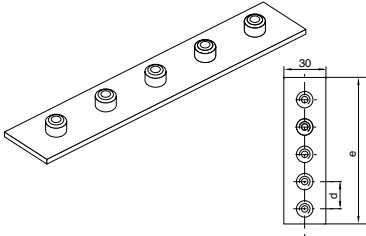
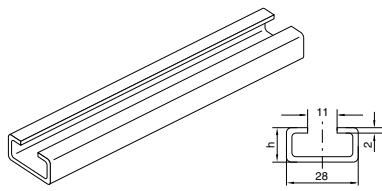
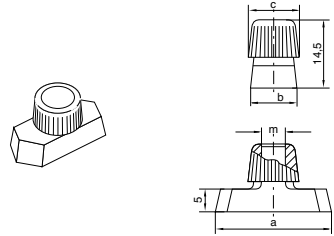
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves ¹⁾					weld plate	
				RBP... Order code	dimensions: b c d e				APB... Order code	dimensions: g m
1	6.0	G 1/8	1/4 5/16 3/8	RBP106X RBP106.4X RBP108X RBP109.5X RBP110X RBP112X	36	27	20	13.5	APB1X	37 M 6 Thickness: 3 mm
	6.4									
	8.0									
	9.5									
	10.0									
2	12.0	G 1/4 G 3/8	1/2 5/8	RBP212.7X RBP213.5X RBP214X RBP215X RBP216X RBP217.2X RBP218X	53	26	29	13	APB2X	55 M 8 Thickness: 5 mm
	12.7									
	13.5									
	14.0									
	15.0									
3	16.0	G 1/2	3/4 1	RBP319X RBP320X RBP321.3X RBP322X RBP325X	67	37	36	18.5	APB3X	70 M 8 Thickness: 5 mm
	17.2									
	18.0									
	19.0									
	20.0									
4	21.3	G 3/4		RBP426.9X RBP428X RBP430X	82	42	45	21	APB4X	85 M 8 Thickness: 5 mm
	22.0									
	25.0									
5	26.9	G 1 G 1 1/4	1 1/4 1 1/2	RBP532X RBP533.7X RBP535X RBP538X RBP542X	106	54	56	27	APB5X	110 M 8 Thickness: 5 mm
	28.0									
	30.0									
	32.0									
	33.7									

Metal parts also available in stainless steel.

¹⁾ Twin-tube clamps with different outer tube diameters upon request.

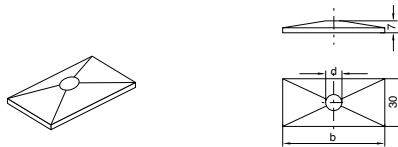
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3

						
clamp size	multiple weld plate APRB... Order code	dimensions: d e Thickness: 3 mm	mounting rail TS...A/B Order code	dimensions: h	rail nut TM... Order code	dimensions: a b c m
1	APRB1X (5 clamps)	40 196 Thickness: 3 mm	TS11A/B1X TS11A/B2X TS14A/B1X TS14A/B2X TS30A/B1X TS30A/B2X	TS11: 11 TS14: 14 TS30: 30	TMA/TMB1VERZX	25.4 10.4 12 M 6
2	APRB2X (5 clamps)	58 288 Thickness: 5 mm			TMB2X	25.4 10.4 12 M 8
3	APRB3X (5 clamps)	72 358 Thickness: 5 mm				
4	APRB4X (5 clamps)	90 446 Thickness: 5 mm				
5	APRB5X (5 clamps)	112 558 Thickness: 5 mm				

Tube clamps series B (Twin-tube clamps) – Components

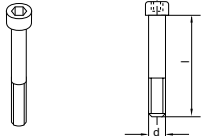
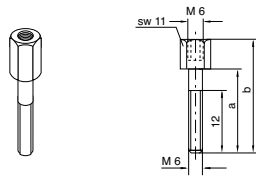
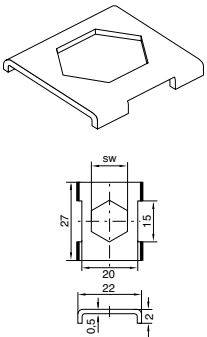
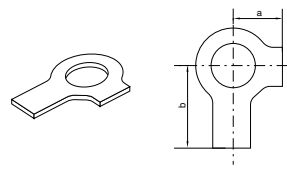
DIN 3015, part 3

				
clamp size	cover plate DP B... Order code	dimensions: b d	hexagonal head SS B... Order code	dimensions: d x L
1	DPB1X	34 6.6	SSLA2/SSB1X	M 6 x 35
2	DPB2X	51 8.6	SSB2X	M 8 x 35
3	DPB3X	64 8.6	SSB3X	M 8 x 45
4	DPB4X	78 8.6	SSB4X	M 8 x 50
5	DPB5X	102 8.6	SSB5X	M 8 x 60

Metal parts also available in stainless steel.

Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3

	 DIN 912										
clamp size	socket head IS B... Order code	dimensions: d × L	stacking AS B... Order code	dimensions: a b m SW			locking plate ¹⁾ SB B... Order code	dimensions: SW	locking washer ²⁾ US... Order code	dimensions: a b	
1	ISA4X (ISB1X)	M 6 × 35	ASA0X (ASB1X)	20	34	M 6	11	SBB1X	11	USA/USB1X	9 18
2	ISB2X	M 8 × 35	ASB2X	20	33	M 8	12	SBB2X	12	USB2X	11 20
3	ISB3X	M 8 × 45	ASB3X	29	44	M 8	12				
4	ISB4X	M 8 × 50	ASB4X	34	49	M 8	12				
5	ISB5X	M 8 × 60	ASB5X	47	62	M 8	12				

¹⁾ The use of stacking screws necessitates the use of locking plates in the construction assembly!

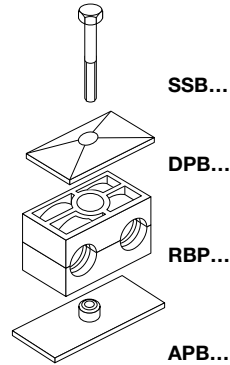
²⁾ When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series B – Complete range

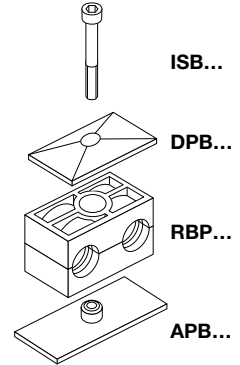
Polypropylene – **RBP**
 Inside smooth – **RBP**
 Polyamide 6 – **RBN**
 Rubber – **RBVG***

(As required please exchange standard abbreviation RBP in column for “Order code”)

2 clamp halves, weld plate, cover plate, hex. head bolt



2 clamp halves, weld plate, cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6.0	G $\frac{1}{8}$	$\frac{1}{4}$ $\frac{5}{16}$ $\frac{3}{8}$	RBP1-106	RBP3-106
	6.4			RBP1-106.4	RBP3-106.4
	8.0			RBP1-108	RBP3-108
	9.5			RBP1-109.5	RBP3-109.5
	10.0			RBP1-110	RBP3-110
	12.0			RBP1-112	RBP3-112
2	12.7	G $\frac{1}{4}$	$\frac{1}{2}$	RBP1-212.7	RBP3-212.7
	13.5			RBP1-213.5	RBP3-213.5
	14.0			RBP1-214	RBP3-214
	15.0			RBP1-215	RBP3-215
	16.0	G $\frac{3}{8}$	$\frac{5}{8}$	RBP1-216	RBP3-216
	17.2			RBP1-217.2	RBP3-217.2
3	18.0			RBP1-218	RBP3-218
	19.0	G $\frac{1}{2}$	$\frac{3}{4}$	RBP1-319	RBP3-319
	20.0			RBP1-320	RBP3-320
	21.3			RBP1-321.3	RBP3-321.3
	22.0			RBP1-322	RBP3-322
	25.0			RBP1-325	RBP3-325
4	26.9	G $\frac{3}{4}$		RBP1-426.9	RBP3-426.9
	28.0			RBP1-428	RBP3-428
	30.0			RBP1-430	RBP3-430
5	32.0	G1	$1\frac{1}{4}$	RBP1-532	RBP3-532
	33.7			RBP1-533.7	RBP3-533.7
	35.0			RBP1-535	RBP3-535
	38.0	G $1\frac{1}{4}$	$1\frac{1}{2}$	RBP1-538	RBP3-538
	42.0			RBP1-542	RBP3-542

Delivery in unassembled individual components.

*Only with cover plate, hexagon screws and locking washers.

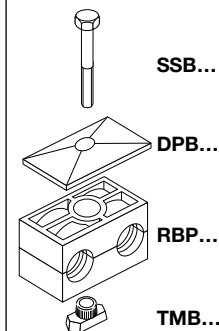
Tube clamps

Tube clamps series B – Complete range

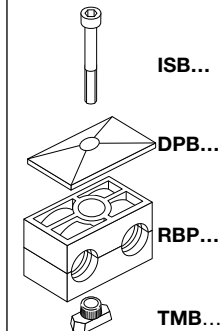
Polypropylene – **RBP**
 Inside smooth – **RBP**
 Polyamide 6 – **RBN**
 Rubber – **RBVG***

(As required please exchange standard abbreviation RBP in column for “Order code”)

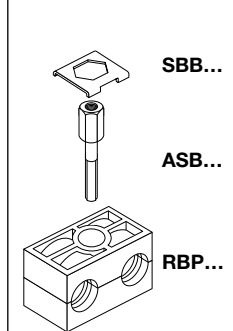
2 clamp halves,
rail nut, cover plate,
hex. head bolt



2 clamp halves,
rail nut, cover plate,
socket head bolt



2 clamp halves,
locking plate,
stacking bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
1	6.0	G 1/8	1/4 5/16 3/8	RBP4-106	RBP5-106	RBP8-106
	6.4			RBP4-106.4	RBP5-106.4	RBP8-106.4
	8.0			RBP4-108	RBP5-108	RBP8-108
	9.5			RBP4-109.5	RBP5-109.5	RBP8-109.5
	10.0			RBP4-110	RBP5-110	RBP8-110
	12.0			RBP4-112	RBP5-112	RBP8-112
2	12.7	G 1/4	1/2 5/8	RBP4-212.7	RBP5-212.7	RBP8-212.7
	13.5			RBP4-213.5	RBP5-213.5	RBP8-213.5
	14.0			RBP4-214	RBP5-214	RBP8-214
	15.0			RBP4-215	RBP5-215	RBP8-215
	16.0			RBP4-216	RBP5-216	RBP8-216
	17.2			RBP4-217.2	RBP5-217.2	RBP8-217.2
3	18.0	G 3/8	5/8	RBP4-218	RBP5-218	RBP8-218
	19.0			RBP4-319	RBP5-319	RBP8-319
	20.0			RBP4-320	RBP5-320	RBP8-320
	21.3			RBP4-321.3	RBP5-321.3	RBP8-321.3
	22.0			RBP4-322	RBP5-322	RBP8-322
	25.0			RBP4-325	RBP5-325	RBP8-325
4	26.9	G 3/4	1	RBP4-426.9	RBP5-426.9	RBP8-426.9
	28.0			RBP4-428	RBP5-428	RBP8-428
	30.0			RBP4-430	RBP5-430	RBP8-430
5	32.0	G 1	1 1/4	RBP4-532	RBP5-532	RBP8-532
	33.7			RBP4-533.7	RBP5-533.7	RBP8-533.7
	35.0			RBP4-535	RBP5-535	RBP8-535
	38.0	G 1 1/4	1 1/2	RBP4-538	RBP5-538	RBP8-538
	42.0			RBP4-542	RBP5-542	RBP8-542

Delivery in unassembled individual components.

*Only with cover plate, hexagon screws and locking washers.

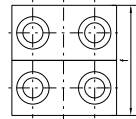
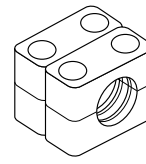
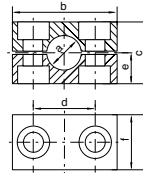
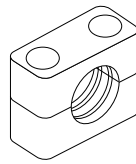
Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

Order code for clamp halves:

Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN¹⁾**
 Rubber – **RCVR**
 Aluminium – **RCA**

(Please exchange as required standard abbreviation
 RCP in column for “clamp halves”)



RCPD
 (= 2XRCP...)

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves						1 part 4 clamp halves																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				RCP... Order code	dimensions:					RCPD... Order code	dimensions:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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1	6.0	G 1/8	5/16	RCP106X	55	32	33	16	30	RCPD106	55	32	33	16	60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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	12.7	G 1/4	1/2	RCP112.7X						RCPD112.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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	16.0	G 3/8	5/8	RCP116X						RCPD116																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	17.2			RCP117.2X						RCPD117.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	18.0			RCP118X						RCPD118																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
2	19.0	G 1/2	3/4	RCP219X	70	48	45	24	30	RCPD219	70	48	45	24	60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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	21.3			RCP221.3X						RCPD221.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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	23.0	G 3/4	1	RCP223X						RCPD223																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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	26.9			RCP226.9X						RCPD226.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	28.0			RCP228X						RCPD228																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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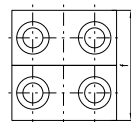
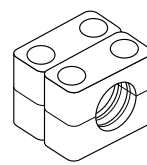
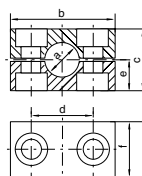
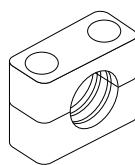
Continuation see next page ...

Tube clamps series C (Heavy series) – Components (Continued)

Order code for clamp halves:

Polypropylene – **RCP**
 Inside smooth – **RCPG**¹⁾
 Polyamide 6 – **RCN**¹⁾
 Rubber – **RCVR**
 Aluminium – **RCA**

(Please exchange as required standard abbreviation
 RCP in column for “clamp halves”)



RCPD
 (= 2XRCP...)

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves						1 part 4 clamp halves					
				RCP... Order code	dimensions:					RCPD... Order code	dimensions:				
					b	c	d	e	f		b	c	d	e	f
5	70.0	G 2½	3	RCP570X	152	120	122	60	60	RCPD570	152	120	122	60	120
	73.0			RCP573X						RCPD573					
	75.0			RCP575X						RCPD575					
	76.1			RCP576.1X						RCPD576.1					
	80.0	G 3	3¼	RCP580X						RCPD580					
	82.5			RCP582.5X						RCPD582.5					
	88.9			RCP588.9X						RCPD588.9					
	90.0			RCP590X						RCPD590					
6	90.0	G 3½	4	RCP690X	205	170	168	85	80	RCPD690	205	170	168	85	160
	97.0			RCP697X						RCPD697					
	100.0			RCP6100X						RCPD6100					
	101.6			RCP6101.6X						RCPD6101.6					
	108.0	G 4	4¼	RCP6108X						RCPD6108					
	114.3			RCP6114.3X						RCPD6114.3					
	127.0			RCP6127X						RCPD6127					
7	127.0	G 5	5¼	RCP7127X	250	200	205	100	90	RCPD7127	250	200	205	100	180
	133.0			RCP7133X						RCPD7133					
	140.0			RCP7140X						RCPD7140					
	150.0			RCP7150X						RCPD7150					
	152.4	G 5½	6	RCP7152.4X						RCPD7152.4					
	159.0			RCP7159X						RCPD7159					
	165.1			RCP7165.1X						RCPD7165.1					
	168.3			RCP7168.3X						RCPD7168.3					
8	168.3	G 8	6⅝	RCP8168.3X	320	270	265	135	120	RCPD8168.3	320	270	265	135	240
	177.8			RCP8177.8X						RCPD8177.8					
	193.7			RCP8193.7X						RCPD8193.7					
	203.0			RCP8203X						RCPD8203					
	219.1			RCP8219.1X						RCPD8219.1					
	220.0			RCP8220X						RCPD8220					
9	219.1	8		RCP9219.1X	466	410	395	20	160						
	244.5			RCP244.5X											
	250.0			RCP250X											
	273.0			RCP273X											
	323.9			RCP323.9X											
10	355.6	14		RCP355.6X	630	530	530	20	180						
	406.4			RCP406.4X											

Metal parts also available in stainless steel.

¹⁾ Only sizes 1–4

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

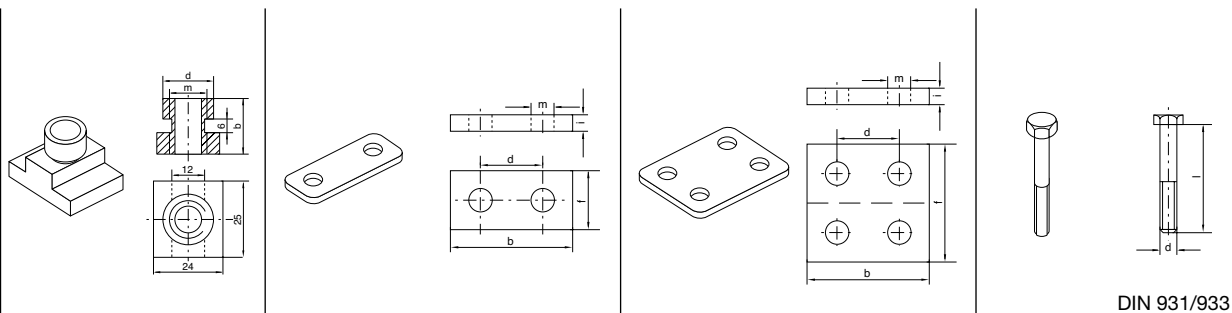
clamp size	AP C... Order code	weld plate dimensions:					APD C... Order code	double weld plate dimensions:					APL C... Order code	weld/screw plate dimensions:					mounting rail dim.:	
		d	f	g	i	m		d	f	g	i	m		g	f	i	k	n	TS C... Order code	b h
1	APC1X	33	30	73	8	M10	APDC1X	33	60	73	8	M10	APLC1X	113	30	8	85	11	TSC1X (1 Meter)	40 22
2	APC2X	45	30	85	8	M10	APDC2X	45	60	85	8	M10	APLC2X	125	30	8	97	11		
3	APC3X	60	30	100	8	M10	APDC3X	60	60	100	8	M10	APLC3X	140	30	8	112	11	TSC2X (2 Meter)	
4	APC4X	90	45	140	10	M12	APDC4X	90	90	140	10	M12	APLC4X	190	45	10	160	14		
5	APC5X	122	60	180	10	M16	APDC5X	122	120	180	10	M16	APLC5X	240	60	10	205	18		
6	APC6X	168	80	225	15	M20	APDC6X	168	160	225	15	M20	APLC6X	310	80	15	270	22		
7	APC7X	205	90	270	15	M24	APDC7X	205	180	270	15	M24	APLC7X	370	90	15	320	26		
8	APC8X	265	120	340	25	M30	APDC8X	265	240	340	25	M30	APLC8X	450	120	25	390	33		
9	APC9X	395	160	520	30	M30	APDC9X	395	324	520	30	M30								
10	APC10X	530	180	680	30	M30	APDC10X	530	364	680	30	M30								

Metal parts also available in stainless steel.

Complete programme range please refer to page 248.

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

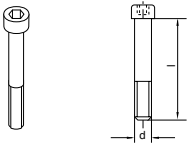
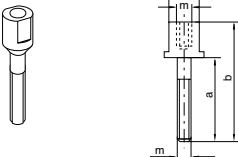
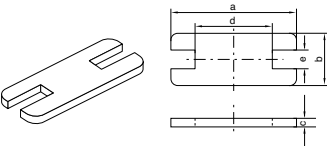
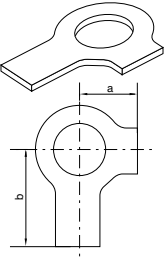


clamp size	rail nut			cover plate						double cover plate						hexagon head		
	TM C... Order code	dimensions:			DP C... Order code	dimensions:					DPD C... Order code	dimensions:					SS C... Order code	dimensions: d × L
		b	d	m		b	d	f	i	m		b	d	f	i	m		
1	TMC1X	20	17.8	M 10	DPC1X	55	33	30	8	11	DPDC1X	55	33	60	8	11	SSC1X	M 10 × 45
2					DPC2X	70	45	30	8	11	DPDC2X	70	45	60	8	11	SSC2X	M 10 × 60
3					DPC3X	85	60	30	8	11	DPDC3X	85	60	60	8	11	SSC3X	M 10 × 70
4	TMC4X	23	19.8	M 12	DPC4X	115	90	45	10	14	DPDC4X	115	90	90	10	14	SSC4X	M 12 × 100
5					DPC5X	152	122	60	10	18	DPDC5X	152	122	120	10	18	SSC5X	M 16 × 130
6					DPC6X	205	168	80	15	22	DPDC6X	205	168	160	15	22	SSC6X	M 20 × 190
7					DPC7X	250	205	90	15	26	DPDC7X	250	205	180	15	26	SSC7X	M 24 × 220
8					DPC8X	320	265	120	25	33	DPDC8X	320	265	240	25	33	SSC8X	M 30 × 300
9					DPC9X	466	395	160	30	35	DPDC9X	466	395	324	30	35	SSC9X	M 30 × 450
10					DPC10X	630	530	180	30	35	DPDC10X	630	530	364	30	35	SSC10X	M 30 × 560

Metal parts also available in stainless steel.

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

	 DIN 912							
clamp size	socket head		stacking		locking plate ¹⁾		locking washer ²⁾	
	IS C... Order code	dimensions: d × L	AS C... Order code	dimensions: a b m SW	SP C... Order code	dimensions: a b c d e	US C... Order code	dimensions: a b
1	ISC1X	M 10 × 45	ASC1X	25 51 M 10 15	SPC1X	55 30 8 14 15.5	USC1X	13 22
2	ISC2X	M 10 × 60	ASC2X	40 66 M 10 15	SPC2X	70 30 8 26 15.5		
3	ISC3X	M 10 × 70	ASC3X	50 76 M 10 15	SPC3X	85 30 8 41 15.5		
4	ISC4X	M 12 × 100	ASC4X	85 112 M 12 17	SPC4X	115 45 10 69 17.5	USC4X	15 28
5	ISC5X	M 16 × 130	ASC5X	110 146 M 16 21	SPC5X	152 60 10 97 21.5	USC5X	18 32
6	ISC6X	M 20 × 190	ASC6X	155 206 M 20 27	SPC6X	205 80 15 137 27.5	USC6X	21 36
7	ISC7X	M 24 × 220	ASC7X	185 245 M 24 30	SPC7X	250 90 15 169 30.5	USC7X	25 42
8	ISC8X	M 30 × 300	ASC8X	250 330 M 30 36	SPC8X	320 120 25 219 36.5	USC8X	32 52

¹⁾ The use of stacking screws necessitates the use of locking plates in the construction assembly!

²⁾ When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

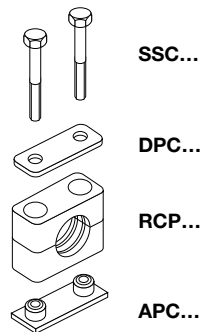
Tube clamps

Tube clamps series C – Complete range

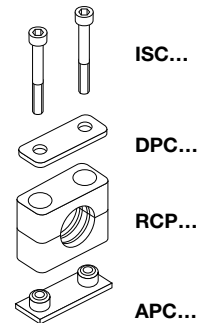
Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

(As required please exchange standard abbreviation
 RCP in column for "Order code")

2 clamp halves, weld plate,
 cover plate, hex. head bolt



2 clamp halves, weld plate,
 cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6.0	G 1/8	5/16	RCP1-106	RCP2-106
	8.0			RCP1-108	RCP2-108
	10.0			RCP1-110	RCP2-110
	12.0			RCP1-112	RCP2-112
	12.7	G 1/4	1/2	RCP1-112.7	RCP2-112.7
	13.5			RCP1-113.5	RCP2-113.5
	14.0			RCP1-114	RCP2-114
	15.0			RCP1-115	RCP2-115
	16.0			RCP1-116	RCP2-116
	17.2	G 3/8	5/8	RCP1-117.2	RCP2-117.2
	18.0			RCP1-118	RCP2-118
2	19.0	G 1/2	3/4	RCP1-219	RCP2-219
	20.0			RCP1-220	RCP2-220
	21.3			RCP1-221.3	RCP2-221.3
	22.0			RCP1-222	RCP2-222
	23.0	G 3/4	1	RCP1-223	RCP2-223
	25.0			RCP1-225	RCP2-225
	26.9			RCP1-226.9	RCP2-226.9
	28.0			RCP1-228	RCP2-228
	30.0			RCP1-230	RCP2-230
	30.0			RCP1-330	RCP2-330
	32.0	G 1	1 1/4	RCP1-332	RCP2-332
	33.7			RCP1-333.7	RCP2-333.7
	35.0			RCP1-335	RCP2-335
	38.0			RCP1-338	RCP2-338
3	40.0	G 1 1/4	1 1/2	RCP1-340	RCP2-340
	42.0			RCP1-342	RCP2-342
	38.0	G 1 1/4	1 1/2	RCP1-438	RCP2-438
	40.0			RCP1-440	RCP2-440
	42.0			RCP1-442	RCP2-442
	45.0			RCP1-445	RCP2-445
	48.3	G 1 1/2	2	RCP1-448.3	RCP2-448.3
	50.0			RCP1-450	RCP2-450
	51.0			RCP1-451	RCP2-451
	52.0			RCP1-452	RCP2-452
4	55.0	G 2	2 1/4	RCP1-455	RCP2-455
	57.0			RCP1-457	RCP2-457
	60.3			RCP1-460.3	RCP2-460.3
	63.0			RCP1-463	RCP2-463
	65.0	G 2	2 1/2	RCP1-465	RCP2-465
	70.0			RCP1-470	RCP2-470

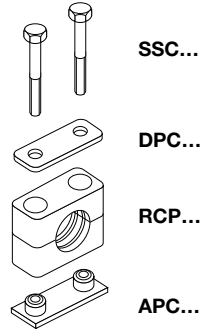
Continuation see next page ...

Tube clamps series C – Complete range (Continued)

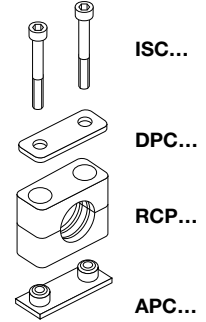
Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

(As required please exchange standard abbreviation
 RCP in column for “Order code”)

2 clamp halves, weld plate,
 cover plate, hex. head bolt



2 clamp halves, weld plate,
 cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
5	70.0	G 2½	3	RCP1-570	RCP2-570
	73.0			RCP1-573	RCP2-573
	75.0			RCP1-575	RCP2-575
	76.1			RCP1-576.1	RCP2-576.1
	80.0	G 3	3¼ 3½	RCP1-580	RCP2-580
	82.5			RCP1-582.5	RCP2-582.5
	88.9			RCP1-588.9	RCP2-588.9
	90.0			RCP1-590	RCP2-590
6	90.0	G 3½	4	RCP1-690	RCP2-690
	97.0			RCP1-697	RCP2-697
	100.0			RCP1-6100	RCP2-6100
	101.6			RCP1-6101.6	RCP2-6101.6
	108.0	G 4	4¼ 4½ 5	RCP1-6108	RCP2-6108
	114.3			RCP1-6114.3	RCP2-6114.3
	127.0			RCP1-6127	RCP2-6127
	127.0			RCP1-7127	RCP2-7127
7	133.0	G 5	5¼ 5½	RCP1-7133	RCP2-7133
	140.0			RCP1-7140	RCP2-7140
	150.0			RCP1-7150	RCP2-7150
	152.4			RCP1-7152.4	RCP2-7152.4
	159.0	G 6	6 6¼ 6½ 6⅝	RCP1-7159	RCP2-7159
	165.1			RCP1-7165.1	RCP2-7165.1
	168.3			RCP1-7168.3	RCP2-7168.3
	168.3			RCP1-8168.3	RCP2-8168.3
8	177.8	G 8	7 7⅝ 8⅝	RCP1-8177.8	RCP2-8177.8
	193.7			RCP1-8193.7	RCP2-8193.7
	203.0			RCP1-8203	RCP2-8203
	219.1			RCP1-8219.1	RCP2-8219.1
	220.0			RCP1-8220	RCP2-8220

Delivery in unassembled individual components.

¹⁾ Only sizes 1–4

* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

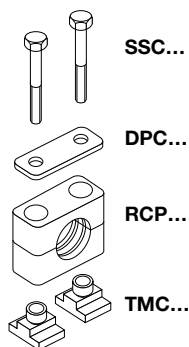
Tube clamps

Tube clamps series C – Complete range

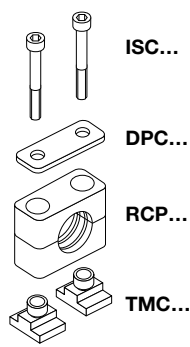
Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

(As required please exchange standard abbreviation
 RCP in column for “Order code”)

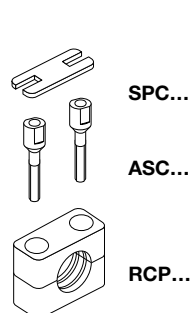
2 clamp halves,
 rail nuts, cover plate,
 hex. head bolts



2 clamp halves,
 rail nuts, cover plate,
 socket head bolts



2 clamp halves,
 locking plate, stacking
 bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
1	6.0	G 1/8	5/16	RCP3-106	RCP4-106	RCP5-106
	8.0			RCP3-108	RCP4-108	RCP5-108
	10.0			RCP3-110	RCP4-110	RCP5-110
	12.0			RCP3-112	RCP4-112	RCP5-112
	12.7	G 1/4	1/2	RCP3-112.7	RCP4-112.7	RCP5-112.7
	13.5			RCP3-113.5	RCP4-113.5	RCP5-113.5
	14.0			RCP3-114	RCP4-114	RCP5-114
	15.0			RCP3-115	RCP4-115	RCP5-115
	16.0			RCP3-116	RCP4-116	RCP5-116
	17.2	G 3/8	5/8	RCP3-117.2	RCP4-117.2	RCP5-117.2
	18.0			RCP3-118	RCP4-118	RCP5-118
2	19.0	G 1/2	3/4	RCP3-219	RCP4-219	RCP5-219
	20.0			RCP3-220	RCP4-220	RCP5-220
	21.3			RCP3-221.3	RCP4-221.3	RCP5-221.3
	22.0			RCP3-222	RCP4-222	RCP5-222
	23.0	G 3/4	1	RCP3-223	RCP4-223	RCP5-223
	25.0			RCP3-225	RCP4-225	RCP5-225
	26.9			RCP3-226.9	RCP4-226.9	RCP5-226.9
	28.0			RCP3-228	RCP4-228	RCP5-228
	30.0			RCP3-230	RCP4-230	RCP5-230
3	30.0	G 1	1 1/4	RCP3-330	RCP4-330	RCP5-330
	32.0			RCP3-332	RCP4-332	RCP5-332
	33.7			RCP3-333.7	RCP4-333.7	RCP5-333.7
	35.0			RCP3-335	RCP4-335	RCP5-335
	38.0	G 1 1/4	1 1/2	RCP3-338	RCP4-338	RCP5-338
	40.0			RCP3-340	RCP4-340	RCP5-340
	42.0			RCP3-342	RCP4-342	RCP5-342
4	38.0	G 1 1/4	1 1/2	RCP3-438	RCP4-438	RCP5-438
	40.0			RCP3-440	RCP4-440	RCP5-440
	42.0			RCP3-442	RCP4-442	RCP5-442
	45.0			RCP3-445	RCP4-445	RCP5-445
	48.3	G 1 1/2	2	RCP3-448.3	RCP4-448.3	RCP5-448.3
	50.0			RCP3-450	RCP4-450	RCP5-450
	51.0			RCP3-451	RCP4-451	RCP5-451
	52.0			RCP3-452	RCP4-452	RCP5-452
	55.0	G 2	2 1/4	RCP3-455	RCP4-455	RCP5-455
	57.0			RCP3-457	RCP4-457	RCP5-457
	60.3			RCP3-460.3	RCP4-460.3	RCP5-460.3
	63.0			RCP3-463	RCP4-463	RCP5-463
	65.0		2 1/2	RCP3-465	RCP4-465	RCP5-465
	70.0			RCP3-470	RCP4-470	RCP5-470

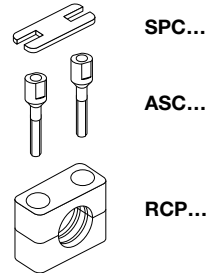
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Tube clamps series C – Complete range (Continued)

Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

(As required please exchange standard abbreviation
 RCP in column for “Order code”)

2 clamp halves, locking
 plate, stacking bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code
5	70.0	G 2½	3	RCP5-570
	73.0			RCP5-573
	75.0			RCP5-575
	76.1			RCP5-576.1
	80.0	G 3	3¼ 3½	RCP5-580
	82.5			RCP5-582.5
	88.9			RCP5-588.9
	90.0			RCP5-590
6	90.0	G 3½	4 4¼ 4½	RCP5-690
	97.0			RCP5-697
	100.0			RCP5-6100
	101.6			RCP5-6101.6
	108.0	G 4	5	RCP5-6108
	114.3			RCP5-6114.3
	127.0			RCP5-6127
7	127.0	G 5	5¼ 5½	RCP5-7127
	133.0			RCP5-7133
	140.0			RCP5-7140
	150.0	G 5½	6 6¼	RCP5-7150
	152.4			RCP5-7152.4
	159.0	G 6	6½ 6⅝	RCP5-7159
	165.1			RCP5-7165.1
	168.3			RCP5-7168.3
8	168.3	G 8	6⅝ 7	RCP5-8168.3
	177.8			RCP5-8177.8
	193.7		8⅝	RCP5-8193.7
	203.0			RCP5-8203
	219.1			RCP5-8219.1
	220.0			RCP5-8220

Delivery in unassembled individual components.

¹⁾ Only sizes 1–4

* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

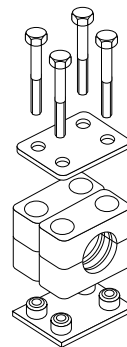
Tube clamps

Tube clamps series C – Complete range

Polypropylene – **RCPD**
 Inside smooth – **RCPDG¹⁾**
 Polyamide 6 – **RCND**
 Rubber – **RCVDR***
 Aluminium – **RCAD**

(As required please exchange standard abbreviation
 RCP in column for "Order code")

4 clamp halves, double weld plate,
 double cover plate, hex. head bolts



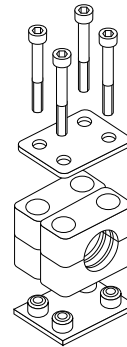
SSC...

DPDC...

RCPD...
 (=2XRCP...)

APDC...

4 clamp halves, double weld
 plate, double cover plate, socket
 head bolts



ISC...

DPDC...

RCPD...
 (=2XRCP...)

APDC...

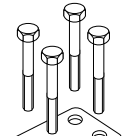
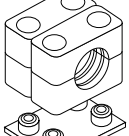
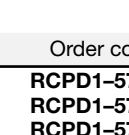
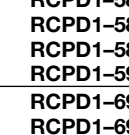
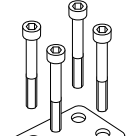
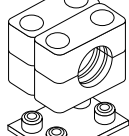
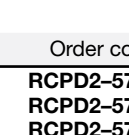
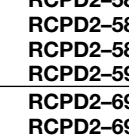
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6.0	G 1/8	5/16	RCPD1-106	RCPD2-106
	8.0			RCPD1-108	RCPD2-108
	10.0			RCPD1-110	RCPD2-110
	12.0			RCPD1-112	RCPD2-112
	12.7	G 1/4	1/2	RCPD1-112.7	RCPD2-112.7
	13.5			RCPD1-113.5	RCPD2-113.5
	14.0			RCPD1-114	RCPD2-114
	15.0			RCPD1-115	RCPD2-115
	16.0			RCPD1-116	RCPD2-116
	17.2	G 3/8	5/8	RCPD1-117.2	RCPD2-117.2
	18.0			RCPD1-118	RCPD2-118
2	19.0	G 1/2	3/4	RCPD1-219	RCPD2-219
	20.0			RCPD1-220	RCPD2-220
	21.3			RCPD1-221.3	RCPD2-221.3
	22.0			RCPD1-222	RCPD2-222
	23.0	G 3/4	1	RCPD1-223	RCPD2-223
	25.0			RCPD1-225	RCPD2-225
	26.9			RCPD1-226.9	RCPD2-226.9
	28.0			RCPD1-228	RCPD2-228
	30.0			RCPD1-230	RCPD2-230
	30.0			RCPD1-330	RCPD2-330
	32.0	G 1	1 1/4	RCPD1-332	RCPD2-332
	33.7			RCPD1-333.7	RCPD2-333.7
	35.0			RCPD1-335	RCPD2-335
	38.0			RCPD1-338	RCPD2-338
3	40.0	G 1 1/4	1 1/2	RCPD1-340	RCPD2-340
	42.0			RCPD1-342	RCPD2-342
	38.0	G 1 1/2	2	RCPD1-438	RCPD2-438
	40.0			RCPD1-440	RCPD2-440
	42.0			RCPD1-442	RCPD2-442
	45.0			RCPD1-445	RCPD2-445
	48.3	G 2	2 1/4	RCPD1-448.3	RCPD2-448.3
	50.0			RCPD1-450	RCPD2-450
	51.0			RCPD1-451	RCPD2-451
	52.0			RCPD1-452	RCPD2-452
4	55.0	G 2 1/2	2 1/2	RCPD1-455	RCPD2-455
	57.0			RCPD1-457	RCPD2-457
	60.3			RCPD1-460.3	RCPD2-460.3
	63.0			RCPD1-463	RCPD2-463
	65.0	G 2 1/2	2 1/2	RCPD1-465	RCPD2-465
	70.0			RCPD1-470	RCPD2-470

Continuation see next page ...

Tube clamps series C – Complete range (Continued)

Polypropylene – **RCPD**
 Inside smooth – **RCPDG¹⁾**
 Polyamide 6 – **RCND**
 Rubber – **RCVDR***
 Aluminium – **RCAD**

(As required please exchange standard abbreviation
 RCP in column for “Order code”)

				4 clamp halves, double weld plate, double cover plate, hex. head bolts	4 clamp halves, double weld plate, double cover plate, socket head bolts
				 SSC...  DPDC...  RCPD... (=2XRCP...)  APDC...	 ISC...  DPDC...  RCPD... (=2XRCP...)  APDC...
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
5	70.0	G 2½	3	RCPD1-570	RCPD2-570
	73.0			RCPD1-573	RCPD2-573
	75.0			RCPD1-575	RCPD2-575
	76.1			RCPD1-576.1	RCPD2-576.1
	80.0	G 3	3¼	RCPD1-580	RCPD2-580
	82.5			RCPD1-582.5	RCPD2-582.5
	88.9			RCPD1-588.9	RCPD2-588.9
6	90.0	G 3½	4	RCPD1-590	RCPD2-590
	97.0			RCPD1-690	RCPD2-690
	100.0			RCPD1-697	RCPD2-697
	101.6			RCPD1-6100	RCPD2-6100
	108.0	G 4	4¼	RCPD1-6101.6	RCPD2-6101.6
	114.3			RCPD1-6108	RCPD2-6108
	127.0			RCPD1-6114.3	RCPD2-6114.3
7	127.0	G 5	5	RCPD1-6127	RCPD2-6127
	133.0			RCPD1-7127	RCPD2-7127
	140.0			RCPD1-7133	RCPD2-7133
	150.0			RCPD1-7140	RCPD2-7140
	152.4	G 5½	6	RCPD1-7150	RCPD2-7150
	159.0			RCPD1-7152.4	RCPD2-7152.4
	165.1	G 6	6¼	RCPD1-7159	RCPD2-7159
8	168.3			RCPD1-7165.1	RCPD2-7165.1
	177.8	G 8	6⅝	RCPD1-7168.3	RCPD2-7168.3
	193.7			RCPD1-8168.3	RCPD2-8168.3
	203.0			RCPD1-8177.8	RCPD2-8177.8
	219.1			RCPD1-8193.7	RCPD2-8193.7
	220.0			RCPD1-8203	RCPD2-8203
			7⅝	RCPD1-8203	RCPD2-8203
			8⅝	RCPD1-8219.1	RCPD2-8219.1
				RCPD1-8220	RCPD2-8220

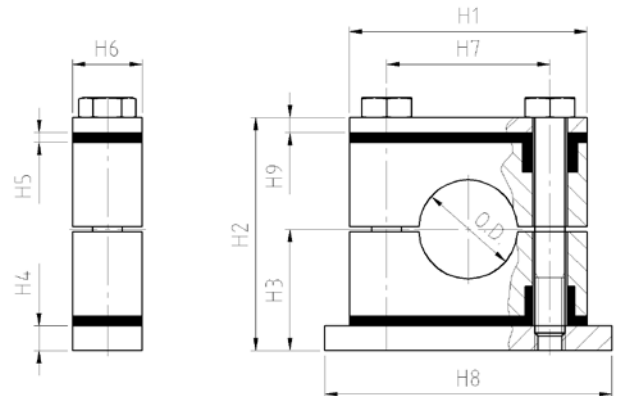
Delivery in unassembled individual components.

¹⁾ Only sizes 1–4

* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

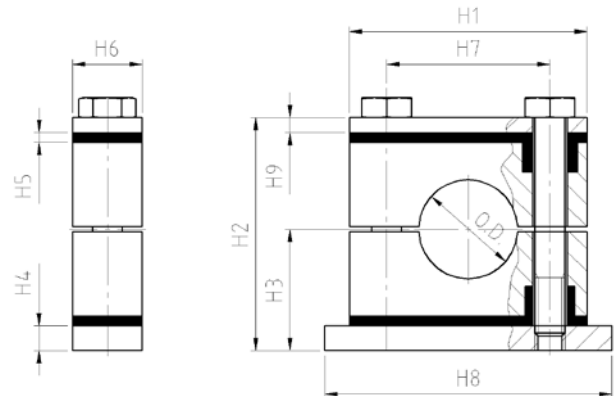
Tube clamps

Tube clamp series C with absorbing noise insert



Clamp size	Tube O.D.mm	Absorbing plate	Weld plate	Bolt ISO 4014	H1	H2	H3	H4	H5	H6	H7	H8	H9
1	6.0	DPEC1X	APCD1X	M10X65	55	69	38	15	7	30	33	70	8
	8.0												
	9.5												
	10.0												
	12.0												
	12.7												
	13.5												
	14.0												
	15.0												
	16.0												
	17.2												
	18.0												
2	19.0	DPEC2X	APCD2X	M10X80	70	85	46	15	7	30	45	85	8
	20.0												
	21.3												
	22.0												
	23.0												
	25.0												
	26.9												
	28.0												
	30.0												
3	30.0	DPEC3X	APCD3X	M10X90	85	97	52	15	7	30	60	100	8
	32.0												
	33.7												
	35.0												
	38.0												
	40.0												
	42.0												
4	38.0	DPEC4X	APCD4X	M12X130	115	134	72	20	7	45	90	140	10
	40.0												
	42.0												
	45.0												
	48.3												
	50.0												
	51.0												
	52.0												
	54.0												
	55.0												
	57.0												
	60.3												
	63.5												
	65.0												
	70.0												

Tube clamp series C with absorbing noise insert



Clamp size	Tube O.D.mm	Absorbing plate	Weld plate	Bolt ISO 4014	H1	H2	H3	H4	H5	H6	H7	H8	H9
5	70.0	DPEC5X	APCD5X	M16X160	152	165	90	25	7	60	122	180	10
	73.0												
	75.0												
	76.1												
	80.0												
	82.5												
	88.9												
	90.0												
6	90.0	DPEC6X	APCD6X	M20X230	205	237	126	30	11	80	168	228	15
	97.0												
	100.0												
	101.6												
	108.0												
	114.3												
	127.0												
7	127.0	DPEC7X	APCD7X	M24X260	250	287	161	50	11	90	205	270	15
	130.0												
	133.0												
	140.0												
	141.3												
	150.0												
	152.4												
	159.0												
	165.1												
	168.3												
8	168.3	DPEC8X	APCD8X	M30X360	322	407	231	80	16	120	265	340	25
	177.8												
	193.7												
	203.0												
	219.1												
	220.0												



Pipes and tubes

ENGINEERING YOUR SUCCESS.

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Flow diameter of tube lines

Determining tube sizes for hydraulic systems

Proper tube material, type and size for a given application and type of fitting are critical for efficient and trouble-free operation of the fluid system. Selection of proper tubing involves choosing the right tube material, and determining the optimum tube size (O.D. and wall thickness).

Proper sizing of the tube for various parts of a hydraulic system results in an optimum combination of efficient and cost effective performance.

A tube that is too small causes high fluid velocity, which has many detrimental effects. In pressure lines, it causes high friction losses and turbulence, both resulting in high pressure drops and heat generation. High heat accelerates wear in moving parts and rapid aging of seals and hoses, all resulting in reduced component life. High heat generation also means wasted energy, and hence, low efficiency.

Too large tubes increase system cost. Thus, optimum tube sizing is very critical. The following is a simple procedure for sizing tubes.

Determine required flow diameter

Use table to determine recommended flow diameter for the required flow rate and type of line.

The table is based on the following recommended flow rates that are common in the shipbuilding and offshore engineering:

Pressure lines	– 3	→ 7.2	$\left[\frac{\text{m}}{\text{s}} \right]$
Return lines	– 2	→ 4.5	$\left[\frac{\text{m}}{\text{s}} \right]$
Suction lines	– 1	→ 1.8	$\left[\frac{\text{m}}{\text{s}} \right]$

Avoid flow rates > 8 m/s!

The resulting forces are high and can destroy the tube lines.

If you desire to use different velocities than the above, use the following formula to determine the required flow diameter.

$$\text{Tube - I.D. [mm]} = 4,61 \times \sqrt{\frac{\text{Flow} \left[\frac{\text{ltr.}}{\text{min}} \right]}{\text{Velocity} \left[\frac{\text{m}}{\text{s}} \right]}}$$

Determine required wall thickness

Use tube/pressure calculation tables shown in the tube chapter to determine recommended wall thickness for the required working pressure and flow diameter of the line. Therefore choose a working pressure which is equal or higher than the required working pressure.

Flow characteristics

Hydraulic systems are in most cases only rated with a flow velocity defined on the basis of experience. The pressure losses in lines are not taken into account, or measured later on when testing the system. As the pressure losses increase proportionally greater than the flow resistance, it is important to achieve the best rating of the system, so that they are already taken into account when planning the tube connections. Calculation is not as difficult as it is often thought, and this chapter is intended to provide a guideline. Besides, it provides information on how excessive pressure losses can be avoided, because pressure losses result in losses in performance and excessive heat. Noise occurs and possibly cavitation in suction lines.

Medium

All indication given with regard to flow restrictions and to flow properties refer exclusively to liquids. For gaseous media, the variable density of the gas must additionally be taken into account.

Units

$$c = \text{Flow velocity} \left[\frac{\text{m}}{\text{s}} \right]$$

$$d = \text{Pipe inside diameter [m]}$$

$$L = \text{Pipe length [m]}$$

$$p = \text{Pressure [Pa], 1 bar = 100000 Pa}$$

$$\dot{V} = \text{Flow rate} \left[\frac{\text{m}^3}{\text{s}} \right], 1 \frac{\text{m}^3}{\text{s}} = 6000 \frac{\text{l}}{\text{min}}$$

$$\lambda = \text{Pipe friction factor}$$

$$\nu(T) = \text{Kinematic viscosity of the medium depending on temperature} \left[\frac{\text{m}^2}{\text{s}} \right]$$

$$\rho(T) = \text{Density of the medium depending on temperature} \left[\frac{\text{kg}}{\text{m}^3} \right]$$

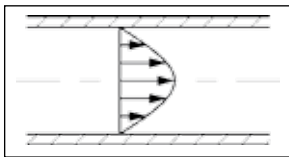
$$\zeta = \text{Individual pressure loss coefficient}$$

Flow characteristics

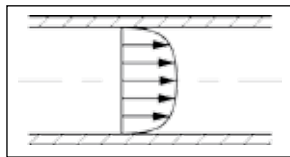
Only base units have been used. This has the advantage that the formula do not contain correction factors and there is no danger of confusion, e.g. that values are used with the wrong unit. In case values are given in other units – the flow rate is e.g. often given in l/min – it is advisable to convert them into the base units before starting calculation.

Pressure losses in pipe lines

To calculate pressure losses in pipe lines, it must first be determined whether there is a laminar or a turbulent flow. Laminar flow is homogenous and without turbulence. In case of turbulent flow, the losses increase much more quickly.



Flow profile
with laminar flow



Flow profile
with turbulent flow

The kind of flow is defined by the Reynolds' number. With a Reynolds' number of more than 2320, the flow changes to turbulent. The Reynolds' number is calculated according to the formula:

$$Re = \frac{c \cdot d}{\nu(T)}$$

The Reynolds' number is a non-dimensional number. The critical fluid velocity at which the flow regime can change, is thus calculated from:

$$c_{cr} = 2320 \cdot \frac{\nu(T)}{d} \left[\frac{m}{s} \right]$$

With a given flow rate, the fluid velocity can be calculated according to the formula:

$$c = \frac{\dot{V} \cdot 4}{d^2 \cdot \pi} \left[\frac{m}{s} \right]$$

Subsequently, the pipe friction factor λ can be calculated. The pipe friction factor λ is a function of the Reynolds' number and also depends on the roughness of the pipe. As hydraulically smooth pipes can generally be assumed in hydraulic applications, the pipe friction factor λ is calculated according to the following formula:

$$\text{laminar flow, } (Re < 2320): \lambda = \frac{64}{Re}$$

$$\text{turbulent flow, } (Re > 2320): \lambda = \frac{0.3164}{\sqrt[4]{Re}}$$

Finally, if all factors are known, the pressure loss in a certain pipe line can be calculated according to the formula:

$$\Delta p = \lambda \cdot \frac{L}{d} \cdot \frac{\rho(T) \cdot c^2}{2} \text{ [Pa]}$$

Calculation of individual losses

A hydraulic system does not only incorporate pipes, but also valves, fittings, pipe bends etc. that cause flow losses. These individual losses are often much higher than the pipe losses and are calculated according to the following formula:

$$\Delta p = \zeta \cdot \rho(T) \cdot \frac{c^2}{2} \text{ [Pa]}$$

Tube and pipe specification

Recommended carbon steel tubes and pipes

Parker recommends the use of cold drawn seamless hydraulic tubes and pipes acc. to DIN EN 10305-4.

E 355N (St. 52.4 NBK) or E 235N (St. 37.4 NBK).

- + precision dimension/shape
- + high pressure capability
- + clean inside (no scale)
- + excellent scaling surface after roll flaring

Recommended stainless steel tubes and pipes

Parker recommends the use of seamless cold drawn stainless steel tubes and pipes acc. to

ASTM A269/A213

Grade TP316L (1.4404)

- + precision dimension/shape
- + high pressure capability
- + excellent scaling surface after roll flaring

Welded tubes and pipes

Tubes and pipes acc. to above specification but welded and cold redrawn instead of seamless drawn are suitable. Pressure capability might be reduced due to the welding seam zone.

Welding seam quality might effect roll flaring surface results.

Hot rolled pipes

Hot rolled pipes are not recommended for the following reasons:

Hot rolled pipes do not have precision dimensions and may slip in machine dies.

They have scales inside and outside. The inside scales effect the cleanliness level of the fluid.

Used in roll flaring process the scales will contaminate the flaring tools (high cleaning effort) and cause poor flare surface quality.

The required maximum working pressure is calculated either acc. to DNV, DIN or ANSI.

Oil flow and pressure loss

All calculations based on Tube acc. to EN 10305-4, viscosity 37cst. specific gravity 0.860.
Following formula used and to determine other required tube or pipe sizes:

$$\text{Tube/Pipe I.D.} = 4.61 \times \sqrt{\frac{\text{flow/min}}{\text{velocity m/s}}}$$

Tube	Oil flow capacity l/min			Pressure loss in tube bar/m		
	1.8 m/s	4.5 m/s	7.2 m/s	1.8 m/s	4.5 m/s	7.2 m/s
6x1.0		3.4	5.4		1.90	4.10
6x1.5		1.9	3.1		2.80	5.90
8x1.0		7.6	12.2		1.10	2.30
8x1.5		5.3	8.5		1.40	3.00
8x2.0		3.4	5.4		1.90	4.10
8x2.5		1.9	3.1		2.80	5.90
10x1.0		13.6	21.7		0.70	1.60
10x1.5		10.4	16.6		0.90	1.90
10x2.0		7.6	12.2		1.10	2.30
10x2.5		5.3	8.5		1.40	3.00
12x1.0		21.2	33.9		0.50	1.20
12x1.5		17.2	27.4		0.60	1.30
12x2.0		13.6	21.7		0.70	1.60
12x2.5		10.4	16.6		0.90	1.90
14x1.5		25.6	41.0		0.50	1.00
14x2.0		21.2	33.9		0.50	1.20
15x1.5		30.5	48.8		0.40	0.90
15x2.0		25.6	41.0		0.50	1.00
16x1.5		35.8	57.3		0.40	0.80
16x2.0		30.5	48.8		0.40	0.90
16x2.5		25.6	41.0		0.50	1.00
16x3.0		21.2	33.9		0.50	1.20
18x1.5		47.6	76.2		0.30	0.70
18x2.0		41.5	66.4		0.30	0.70
20x2.0		54.2	86.7		0.30	0.70
20x2.5		47.6	76.2		0.30	0.70
20x3.0		41.5	66.4		0.30	0.70
20x4.0		30.5	48.8		0.40	0.90
22x1.5		76.4	122.3		0.20	0.50
22x2.0		68.6	109.8		0.20	0.50
22x2.5		61.2	97.9		0.30	0.60
25x2.0		93.4	149.4		0.20	0.40
25x2.5		84.7	135.5		0.20	0.50
25x3.0		76.4	122.3		0.20	0.50
25x4.0		61.2	97.9		3.00	0.06
28x2.0		122.0	195.1		0.20	0.40
28x2.5		112.0	179.2		0.20	0.40
28x3.0		102.5	164.0		0.20	0.40

Tube	Oil flow capacity l/min			Pressure loss in tube bar/m		
	1.8 m/s	4.5 m/s	7.2 m/s	1.8 m/s	4.5 m/s	7.2 m/s
30x2.0		143.1	229.0		0.10	0.30
30x3.0		122.0	195.1		0.10	0.40
30x4.0		102.5	164.0		0.10	0.40
35x2.0	81.4	203.5	325.6	0.024	0.10	0.30
35x3.0		178.1	284.9		0.10	0.30
38x2.5		230.6	368.9		0.10	0.20
38x3.0		216.8	346.9		0.10	0.30
38x4.0		190.6	304.9		0.10	0.30
38x5.0		166.0	265.6		0.10	0.30
42x2.0	122.3	305.8	489.2	0.018	0.09	0.20
42x3.0		274.4	439.1		0.10	0.20
42x4.0		244.8	391.6		0.10	0.20
46x8.5		178.1	284.9		0.06	0.14
50x3.0	164.0	410.0	656.0	0.012	0.07	0.17
50x5.0		338.8	542.1		0.08	0.19
50x6.0		305.8	489.2		0.09	0.19
56x8.5		322.1	515.3		0.09	0.19
60x3.0		617.4	987.9	0.012	0.06	0.13
60x5.0		529.4	847.0		0.06	0.14
65x8.0		508.4	813.4		0.06	0.14
66x8.5		508.4	813.4		0.06	0.14
73x7.0		737.1	1179.3		0.05	0.11
75x3.0		1008.1	1613.0	0.008	0.04	0.09
75x5.0		894.6	1431.4		0.03	0.10
80x10.0		762.3	1219.6		0.05	0.11
90x3.5		1458.7	2333.9	0.006	0.03	0.07
90x5.0		1355.2	2168.3		0.03	0.08
90x9.0		1097.7	1756.3		0.04	0.09
97x12.0		1128.4	1805.4		0.04	0.09
115x4.0		2424.3	3878.8	0.004	0.03	0.05
115x15.0		1529.8	2447.8		0.03	0.07
125x4.0		2898.6	4637.7		0.03	0.05
130x15.0		2117.4	3387.9		0.03	0.06
140x4.5	1453.5	3633.7	5814.0	0.004	0.02	0.04

Tube calculation for marine and offshore acc. to DNV rules

Calculation of working pressure of steel and stainless steel tubes for ship building acc. to DNV Part 4, Chapter 6, Section 6.

$$P = \frac{20 \cdot \sigma_t \cdot e \cdot t_0}{D - t_0}$$

P = permissible working pressure [bar]

σ_t = permissible stress [N/mm²]

calculated from the lower value off:

stainless steel:

$$\sigma_t = \frac{R_m}{2.7} \text{ or } \frac{K}{1.6}$$

carbon steel:

$$\sigma_t = \frac{R_m}{2.7} \text{ or } \frac{K}{1.8}$$

t_0 = tube wall thickness without allowances [mm]

$$t_0 = t_n \cdot a - c - b$$

t_n = tube wall thickness nominal [mm]

a = factor for wall thickness allowance [mm]

= 0.8 for Tube-OD 4-5, 0.85 for Tube-OD 6-8, 0.9 for Tube OD ≥ 10

= 0.9 for all stainless steel tubes

b = bending allowance

$$b = 0.1333 \cdot t_0 \text{ (at } R/D=3) \rightarrow t_0 = \frac{t_n \cdot a - c}{1.1333}$$

c = corrosion tolerance, c = 0.3 mm for hydraulic steel tube, c = 0 mm for SS tubes

e = strength ratio: for seamless tubes e = 1

D = tube outside diameter [mm]

R_m = min. tensile strength [N/mm²]

K = min. yield strength or min 0.2% proof stress [N/mm²]

Material specifications

Material	Data Source	Yield/Tensile	Permissible stress
E235N (St37.4)	DIN EN 10305-4	min. 235/340 N/mm ²	126 N/mm ² (tensile strength / 2.7)
	Tube certification	min. 235/390 N/mm ²	130.5 N/mm ² (yield strength / 1.8) ⁵⁾
E355N (St52.4)	DIN EN 10305-4	min. 355/490 N/mm ²	181.5 N/mm ² (tensile strength / 2.7)
	Tube certification	min. 355/533 N/mm ²	197 N/mm ² (yield strength / 1.8) ⁵⁾
1.4404 (316L)	DIN EN 10216-5	min. 210/500 N/mm ²	131 N/mm ² (0.2%proof stress / 1.6)
	ASTM 269 / A213 – TP 316 L and tube certification	min. 276/530 N/mm ²	172.5 N/mm ² (0.2%proof stress / 1.6) ⁵⁾
1.4404 (316L)	Schedule Pipe ASTM A312 / A530 – TP 316 L and tube certification	min. 234/515 N/mm ²	146 N/mm ² (0.2%proof stress / 1.6) ⁵⁾

5) Pressure rating calculation based on this mechanical properties require certification according to 3.1 - EN 10204 that confirms the mechanical properties.

Tube calculation for landbased and industrial applications

DIN 2413 I, only for static load

Calculation of working pressure of steel tubes for static stress up to 120°C. Corrosion – additional allowances are not considered for the calculation of pressures. Tubes with a diameter of OD/ID > 2 are calculated for static stress in accordance with DIN 2413 III, but with K = yield strength.

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot D}$$

P = permissible working pressure [bar]
 K = yield strength [N/mm²]
 s = tube wall thickness [mm]
 c = factor for wall thickness allowance
 = 0.8 for Tube-OD 4-5, 0.85 for Tube-OD 6-8,
 0.9 for Tube-OD 10
 = 0.9 for all stainless steel tubes
 S = Safety factor = 1.5
 D = tube outside diameter [mm]

DIN 2413 III, for dynamic load

Calculation of working pressure of steel tubes for dynamic stress up to 120°C.
 Corrosion – additional allowances are not considered for the calculation of pressures.

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot (D + s \cdot c)}$$

P = permissible working pressure [bar]
 K = fatigue strength [N/mm²]
 s = tube wall thickness [mm]
 c = factor for wall thickness allowance
 = 0.8 for Tube-OD 4-5, 0.85 for Tube-OD 6-8,
 0.9 for Tube-OD 10-80
 = 0.9 for all stainless steel tubes
 S = Safety factor = 1.5
 D = tube outside diameter [mm]

Burst Pressure calculation

Calculation acc. to Formula of DIN 24131 but without safety

BP = Burst Pressure
 Rm = min tensile strength
 s = tube wall thickness
 c = factor for wall thickness allowance
 = 0.8 for Tube-OD 4-5,
 0.85 for Tube-OD 6-8,
 0.9 for Tube-OD 10
 0.9 for all stainless steel tubes
 D = tube outside diameter [mm]

$$BP = \frac{20 \cdot Rm \cdot s \cdot c}{D}$$

Material specifications

E235N (St37.4) acc. to DIN EN 10305-4

Tensile strength	min. 340 N/mm ²
Yield strength	min. 235 N/mm ²
Fatigue strength	225 N/mm ²
Elongation at break	min. 25%

E355N (St52.4) acc. to DIN EN 10305-4

Tensile strength	min. 490 N/mm ²
Yield strength	min. 355 N/mm ²
Fatigue strength	265 N/mm ²
Elongation at break	min. 22%

1.4404 cold drawn (CFA) acc. to DIN EN 10216-5 (316L)

Tensile strength	min. 500 N/mm ²
0.2% proof stress	min. 210 N/mm ²
1% proof stress	min. 245 N/mm ²
Fatigue strength	220 N/mm ²
Elongation at break	min. 35%

Tubes – Marine and offshore or landbased and industrial applications

1 DNV: Bended pipe including manufacturing and corrosion tolerances*

2 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance**

3 DIN 2413 III dynamic pressure (W.P.) capability for straight pipe including manufacturing tolerance**

4 Burst pressure (B.P.) calculation including manufacturing tolerance**

Tube E 235N /St. 37.4 NBK) - Cr(VI)-free plated or phosphated and oiled

Tube O.D. x W.T.	1 DNV W.P. bar	2 DIN 2413 I W.P. bar	3 DIN 2413 III W.P. bar	4 B.P. bar	Weight kg/mtr.	Phosphated and oiled Order code	Cr(VI)-free Order code
06X1.0	230	444	372	1105	0.07	R06X1.0	R06X1.0CF
06X1.5	437	666	526	1658	0.17	R06X1.5	R06X1.5CF
08X1.0	169	333	288	829	0.17	R08X1.0	R08X1.0CF
08X1.5	315	499	412	1243	0.24	R08X1.5	R08X1.5CF
10X1.0	146	282	248	702	0.22	R10X1.0	R10X1.0CF
10X1.5	267	423	357	1053	0.31	R10X1.5	R10X1.5CF
12X1.5	218	353	303	878	0.39	R12X1.5	R12X1.5CF
12X2.0	324	470	391	1170	0.49	R12X2.0	R12X2.0CF
14X2.0	273	403	342	1003	0.59	R14X2.0	R14X2.0CF
15X1.5	172	282	248	702	0.50	R15X1.5	R15X1.5CF
15X2.0	253	376	321	936	0.64	R15X2.0	R15X2.0CF
16X1.5	160	264	233	658	0.54	R16X1.5	R16X1.5CF
16X2.0	235	353	303	878	0.69	R16X2.0	R16X2.0CF
16X2.5	315	441	370	1097	0.83	R16X2.5	R16X2.5CF
18X1.5	142	235	209	585	0.61	R18X1.5	R18X1.5CF
18X2.0	207	313	273	780	0.79	R18X2.0	R18X2.0CF
20X2.0	185	282	248	702	0.89	R20X2.0	R20X2.0CF
20X2.5	246	353	303	878	1.08	R20X2.5	R20X2.5CF
20X3.0	309	423	357	1053	1.26	R20X3.0	R20X3.0CF
20X4.0	445	564	458	1404	1.58		R20X4.0CF
22X1.5	115	192	173	479	0.76	R22X1.5	R22X1.5CF
22X2.0	167	256	227	638	0.99	R22X2.0	R22X2.0CF
22X2.5	221	320	278	798	1.20	R22X2.5	R22X2.5CF
25X2.0	146	226	201	562	1.13	R25X2.0	R25X2.0CF
25X2.5	193	282	248	702	1.39	R25X2.5	R25X2.5CF
25X3.0	242	338	292	842	1.63	R25X3.0	R25X3.0CF
25X4.0	344	451	378	1123	2.07	R25X4.0	R25X4.0CF
28X2.0	129	201	181	501	1.28	R28X2.0	R28X2.0CF
28X3.0	214	302	264	752	1.85	R28X3.0	R28X3.0CF
30X2.0	120	188	170	468	1.38		R30X2.0CF
30X3.0	198	282	248	702	2.00	R30X3.0	R30X3.0CF
30X4.0	281	376	321	936	2.56	R30X4.0	R30X4.0CF
30X5.0	368	470	391	1170	3.08	R30X5.0	R30X5.0CF
35X2.0	103	161	147	401	1.63	R35X2.0	R35X2.0CF
35X3.0	168	242	215	602	2.37	R35X3.0	R35X3.0CF
38X2.5	124	186	168	462	2.19		R38X2.5CF
38X3.0	154	223	199	554	2.59	R38X3.0	R38X3.0CF
38X4.0	217	297	260	739	3.35	R38X4.0	R38X4.0CF
38X5.0	282	371	318	924	4.07	R38X5.0	R38X5.0CF
42X2.0	85	134	123	334	1.97	R42X2.0	R42X2.0CF
42X3.0	139	201	181	501	2.89	R42X3.0	R42X3.0CF
42X4.0	194	269	237	669	3.75	R42X4.0	R42X4.0CF
50X3.0	115	169	154	421	3.48	R50X3.0	R50X3.0CF
60X3.0	95	141	129	351	4.22	R60X3.0	R60X3.0CF
75X3.0	76	113	104	281	5.32	R75X3.0	R75X3.0CF
90X3.5	75	110	101	273	7.47	R90X3.5	
100X4.0	78	113	104	281	9.47	R100X4.0	
115X4.0	68	98	91	244	10.98	R115X4.0	
140X4.5	63	91	84	226	15.04	R140X4.5	
165X5.0	60	85	80	213	19.73	R165X5.0	
220X6.0	55	77	72	191	31.66	R220X6.0	
273X6.0	44	62	58	154	39.51	R273X6.0	

Other sizes on request

*calculated for marine/offshore applications

**calculated for landbased/industrial applications



Tubes – Marine and offshore or landbased and industrial applications

1 DNV Bended pipe including manufacturing and corrosion tolerances*

2 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance**

3 DIN 2413 III dynamic pressure (W.P.) capability for straight pipe including manufacturing tolerance**

4 Burst pressure (B.P.) calculation including manufacturing tolerance**

Tube E 355N /St.52.4 NBK) - Cr(VI)-free plated or phosphated and oiled

Tube O.D. x W.T.	1 DNV W.P. bar	2 DIN 2413 I W.P. bar	3 DIN 2413 III W.P. bar	4 B.P. bar	Weight kg/mtr.	Phosphated and oiled Order code	Cr(VI)-free Order code
15X1.5	259	426	292	959	0.50		R15X1.5ST52CF
15X2.0	381	568	379	1279	0.61		R15X2.0ST52CF
16X2.0	355	533	357	1199	0.69		R16X2.0ST52CF
16X2.5	475	666	436	1499	0.83		R16X2.5ST52CF
18X1.5	214	355	247	800	0.61		R18X1.5ST52CF
18X2.0	313	473	321	1066	0.79		R18X2.0ST52CF
20X2.0	279	426	292	959	0.89		R20X2.0ST52CF
20X2.5	371	533	357	1199	1.08		R20X2.5ST52CF
20X3.0	467	639	420	1439	1.25		R20X3.0ST52CF
22X1.5	173	290	204	654	0.76		R22X1.5ST52CF
22X2.0	252	387	267	872	0.99		R22X2.0ST52CF
25X2.5	291	426	292	959	1.39		R25X2.5ST52CF
25X3.0	365	511	344	1151	1.63		R25X3.0ST52CF
25X4.0	519	682	445	1535	2.07		R25X4.0ST52CF
28X2.0	195	304	213	685	1.28		R28X2.0ST52CF
30X3.0	299	426	292	959	2.00		R30X3.0ST52CF
30X4.0	424	568	379	1279	2.56		R30X4.0ST52CF
30X5.0	555	710	461	1599	3.08		R30X5.0ST52CF
35X3.0	254	365	253	822	2.37		R35X3.0ST52CF
38X3.0	233	336	234	757	2.37		R38X3.0ST52CF
38X4.0	327	448	306	1010	3.35		R38X4.0ST52CF
38X5.0	426	561	374	1262	4.07		R38X5.0ST52CF
39X7.5	673	819	521	1845	8.53		R39X7.5ST52CF
42X3.0	209	304	213	685	2.89		R42X3.0ST52CF
42X4.0	294	406	279	914	3.75		R42X4.0ST52CF
46X8.0	601	741	478	1669	7.50		R46X8.0ST52CF
50X3.0	174	256	181	576	3.48		R50X3.0ST52CF
50X5.0	315	426	292	959	5.55	R50X5.0ST52	R50X5.0ST52CF
50X6.0	309	511	344	1151	6.50	R50X6.0ST52	R50X6.0ST52CF
56X8.5	516	647	425	1456	9.96	R56X8.5ST52	
60X5.0	259	355	247	800	6.78		R60X5.0ST52CF
60X6.0	319	426	292	959	7.97	R60X6.0ST52	R60X6.0ST52CF
65X8.0	407	524	352	1121	11.25		R65X8.0ST52CF
66X8.5	429	549	367	1236	12.05	R66X8.5ST52	
73X7.0	309	408	281	920	11.22	R73X7.0ST52	
75X5.0	205	284	200	640	8.63	R75X5.0ST52	
80X10	418	533	357	1199	17.21	R80X10ST52	
90X5.0	169	237	168	533	10.48	R90X5.0ST52	
90x9.0	326	426	292	959	17.98	R90X9.0ST52	
97X12	416	527	354	1187	25.15	R97X12ST52	
115X15	444	556	371	1251	36.95	R115X15ST52	
130X15	388	492	332	1107	42.54	R130X15ST52	
150X15	332	426	292	959	49.94	R150X15ST52	
190X20	353	448	306	1010	83.84	R190X20ST52	
220X20	301	387	267	872	98.64	R220X20ST52	
250X25	335	426	292	959	138.72	R250X25ST52	

Other sizes on request

*calculated for marine/offshore applications

**calculated for landbased/industrial applications

Tubes – Marine and Offshore applications

1 DNV Bended pipe including manufacturing and corrosion tolerances*

2 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance**

3 Burst pressure (B.P.) calculation including manufacturing tolerance**

Seamless Coldrawn Stainless Steel Tube ASTM A269/A213 - AISI 316L

Tube O.D. x W.T.	1 DNV W.P. bar	2 DIN 2413 I W.P. bar	3 B.P. bar	Weight m/mtr.	AISI 316L Order code
06X1.0	493	490	1590	0.13	R06X1-316
08X1.0	357	368	1193	0.18	R08X1-316
10X1.0	298	294	954	0.23	R10X1-316
10X1.5	467	441	1431	0.32	R10X1.5-316
12X1.0	244	245	795	0.28	R12X1-316
12X1.5	380	368	1193	0.39	R12X1.5-316
12X2.0	526	490	1590	0.50	R12X2-316
15X1.5	298	294	954	0.51	R15X1.5-316
16X2.0	380	368	1193	0.70	R16X2-316
16X2.5	489	459	1491	0.85	R16X2.5-316
18X1.5	244	245	795	0.62	R18X1.5-316
18X2.0	334	327	1060	0.80	R18X2-316
20X2.0	298	294	954	0.90	R20X2-316
20X2.5	380	368	1193	1.10	R20X2.5-316
20X3.0	467	441	1431	1.28	R20X3-316
22X2.0	268	267	867	1.00	R22X2-316
25X2.0	234	235	763	1.13	R25X2-316
25X2.5	298	294	954	1.41	R25X2.5-316
25X3.0	363	353	1145	1.65	R25X3-316
28X2.0	207	210	681	1.30	R28X2-316
30X2.5	244	245	795	1.70	R30X2.5-316
30X3.0	298	294	954	2.03	R30X3-316
30X4.0	409	392	1272	2.60	R30X4-316
35X2.0	164	168	545	1.65	R35X2-316
35X3.0	252	252	818	2.40	R35X3-316
38X3.0	231	232	753	2.63	R38X3-316
38X4.0	315	309	1004	3.41	R38X4-316
38X5.0	403	387	1255	4.12	R38X5-316
38X6.0	495	464	1506	4.81	R38X6-316
42X2.0	136	140	454	1.97	R42X2-316
42X3.0	207	210	681	2.93	R42X3-316
50X3.0	173	176	572	3.53	R50X3-316
50X5.0	298	294	954	5.63	R50X5-316
50X6.0	363	353	1145	6.61	R50X6-316
60X3.0	143	147	477	4.28	R60X3-316
60X5.0	244	245	795	6.89	R60X5-316
66X8.5	393	379	1229	12.24	R66X8.5-316
73X7.0	284	282	915	11.57	R73X7-316
75X3.0	113	118	382	5.41	R75X3-316
75X5.0	193	196	636	8.76	R75X5-316
80X10.0	380	368	1193	17.53	R80X10-316
97X12.0	376	364	1180	25.54	R97X12-316

Other sizes on request

*calculated for marine/offshore applications

**calculated for landbased/industrial applications

Pipe according to ANSI B36.19 ASTM - A - 312 - TP - 316L

Working pressure tabel acc. to DNV Rules for Classification of Ships Newbuilding and Mobile
Offshore Units Drilling Plants: See page 262 Technical section for calculations.

1 ANSI B313 straight pipe including manufacturing tolerance

2 Burst pressure including manufacturing tolerance

Nom. Pipe Size SCH size	Tube/Pipe O.D-x W.T.	1 W.P. bar	2 W.P. bar	Weight kg/mtr.	Order code
2" SCH 10	60.30X2.77	111	426	3.99	on request
2" SCH 40	60.30X3.91	159	601	5.52	on request
2" SCH 80	60.30X5.54	230	852	7.60	on request
2" SCH 160	60.30X8.74	380	1344	11.28	on request
2" SCH xxs	60.30X11.07	498	1702	13.44	on request
2 1/2" SCH 10	73.00X3.05	100	387	5.37	on request
2 1/2" SCH 80	73.00X7.01	241	890	11.64	on request
2 1/2" SCH xxs	73.00X14.02	526	1780	20.50	on request
3" SCH 10	88.90X3.05	81	318	6.45	on request
3" SCH 160	88.90X11.13	322	1161	21.67	on request
3" SCH xxs	88.90X15.24	460	1589	27.68	on request
4" SCH 10	114.30X3.05	63	247	8.50	on request
4" SCH 160	114.30X13.49	302	1094	34.05	on request
4" SCH xxs	114.30X17.12	394	1388	41.03	on request
5" SCH 10	141.30X3.40	57	223	41.03	on request
5" SCH 160	141.30X15.88	286	1042	41.03	on request
5" SCH xxs	141.30X19.05	350	1250	41.03	on request
6" SCH 40	168.3x7.11	101	392	28,69	on request
6" SCH 160	168.3x18.26	275	1006	67,56	on request
6" SCH xxs	168.3X21.95	337	1209	79.21	on request
8" SCH 40	219.1X8,18	89	346	43,2	on request
8" SCH 160	219.1X23.01	266	974	111,3	on request
8" SCH xxs	219.10X22.00	253	931	106.88	on request
10" SCH xxs	273X25.04	233	862	101,9	on request

Other sizes on request

