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Parflange® F37 for pipe and tube connections



Parflange® F37 for pipe and tube connections



EMEA Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

US Product Information Centre

Toll-free number: 1-800-27 27 537

www.parker.com



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Approval and Certification requirements

Note! Customer has to specify needed certifications, classifications, testing and inspection requirements precisely when requesting quotation/placing an order.

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



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

Parker's Motion & Control Technologies



Aerospace
Key Markets
Aftermarket services
Commercial transports
Engines
General & business aviation
Helicopters
Launch vehicles
Military aircraft
Missiles
Power generation
Regional transports
Unmanned aerial vehicles

Key Products
AC/DC drives & systems
Accumulators
Advanced actuators
CO₂ controls
Electronic controllers
Filter driers
Hand shut-off valves
Heat exchangers
Hose & fittings
Pressure regulating valves
Refrigerant distributors
Safety relief valves
Smart pumps
Solenoid valves
Thermostatic expansion valves



Climate Control
Key Markets
Agriculture
Air conditioning
Construction Machinery
Food & beverage
Industrial machinery
Life sciences
Oil & gas
Precision cooling
Process
Refrigeration
Transportation

Key Products
AC/DC drives & systems
Accumulators
Advanced actuators
CO₂ controls
Electronic controllers
Filter driers
Hand shut-off valves
Heat exchangers
Hose & fittings
Pressure regulating valves
Refrigerant distributors
Safety relief valves
Smart pumps
Solenoid valves
Thermostatic expansion valves



Electromechanical
Key Markets
Aerospace
Factory automation
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, gantry robots & slides
Electrohydraulic actuation systems
Electromechanical actuation systems
Human machine interface
Linear motors
Stepper motors, servo motors, drives & controls
Structural extrusions



Filtration
Key Markets
Aerospace
Food & beverage
Industrial plant & equipment
Life sciences
Marine
Mobile equipment
Oil & gas
Power generation & renewable energy
Process
Transportation
Water Purification

Key Products
Analytical gas generators
Compressed air filters & dryers
Engine air, coolant, fuel & oil filtration systems
Fluid condition monitoring systems
Hydraulic & lubrication filters
Hydrogen, nitrogen & zero air generators
Instrumentation filters
Membrane & fiber filters
Microfiltration
Sterile air filtration
Water desalination & purification filters & systems



Fluid & Gas Handling
Key Markets
Aerial lift
Agriculture
Bulk chemical handling
Construction machinery
Food & beverage
Fuel & gas delivery
Industrial machinery
Life sciences
Marine
Mining
Mobile
Oil & gas
Renewable energy
Transportation

Key Products
Check valves
Connectors for low pressure fluid conveyance
Deep sea umbilicals
Diagnostic equipment
Hose couplings
Industrial hose
Mooring systems & power cables
PTFE hose & tubing
Quick couplings
Rubber & thermoplastic hose
Tube fittings & adapters
Tubing & plastic fittings



Hydraulics
Key Markets
Aerial lift
Agriculture
Alternative energy
Construction machinery
Forestry
Industrial machinery
Machine tools
Marine
Material handling
Mining
Oil & gas
Power generation
Refuse vehicles
Renewable energy
Truck hydraulics
Turf equipment

Key Products
Accumulators
Cartridge valves
Electrohydraulic actuators
Human machine interfaces
Hybrid drives
Hydraulic cylinders
Hydraulic motors & pumps
Hydraulic systems
Hydraulic valves & controls
Hydrostatic steering
Integrated hydraulic circuits
Power take-offs
Power units
Rotary actuators
Sensors



Pneumatics
Key Markets
Aerospace
Conveyor & material handling
Factory automation
Life science & medical
Machine tools
Packaging machinery
Transportation & automotive

Key Products
Air preparation
Brass fittings & valves
Manifolds
Pneumatic accessories
Pneumatic actuators & grippers
Pneumatic valves & controls
Quick disconnects
Rotary actuators
Rubber & thermoplastic hose & couplings
Structural extrusions
Thermoplastic tubing & fittings
Vacuum generators, cups & sensors



Process Control
Key Markets
Alternative fuels
Biopharmaceuticals
Chemical & refining
Food & beverage
Marine & shipbuilding
Medical & dental
Microelectronics
Nuclear Power
Offshore oil exploration
Oil & gas
Pharmaceuticals
Power generation
Pulp & paper
Steel
Water/wastewater

Key Products
Analytical Instruments
Analytical sample conditioning products & systems
Chemical injection fittings & valves
Fluoropolymer chemical delivery fittings, valves & pumps
High purity gas delivery fittings, valves, regulators & digital flow controllers
Industrial mass flow meters/ controllers
Permanent no-weld tube fittings
Precision industrial regulators & flow controllers
Process control double block & bleeds
Process control fittings, valves, regulators & manifold valves



Sealing & Shielding
Key Markets
Aerospace
Chemical processing
Consumer
Fluid power
General industrial
Information technology
Life sciences
Microelectronics
Military
Oil & gas
Power generation
Renewable energy
Telecommunications
Transportation

Key Products
Dynamic seals
Elastomeric o-rings
Electro-medical instrument design & assembly
EMI shielding
Extruded & precision-cut, fabricated elastomeric seals
High temperature metal seals
Homogeneous & inserted elastomeric shapes
Medical device fabrication & assembly
Metal & plastic retained composite seals
Shielded optical windows
Silicone tubing & extrusions
Thermal management
Vibration dampening

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High Pressure Connectors 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 High Pressure Connectors Europe division 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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Notes



General information

ENGINEERING YOUR SUCCESS.

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 168.3 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 utilizes a Retaining Ring for flange retention along with a highly-engineered seal carrier for leak free performance. It is available as a high pressure version from 1 1/2" to 10" and as a newly developed SAE 1000 (50-70 bar) version.

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.

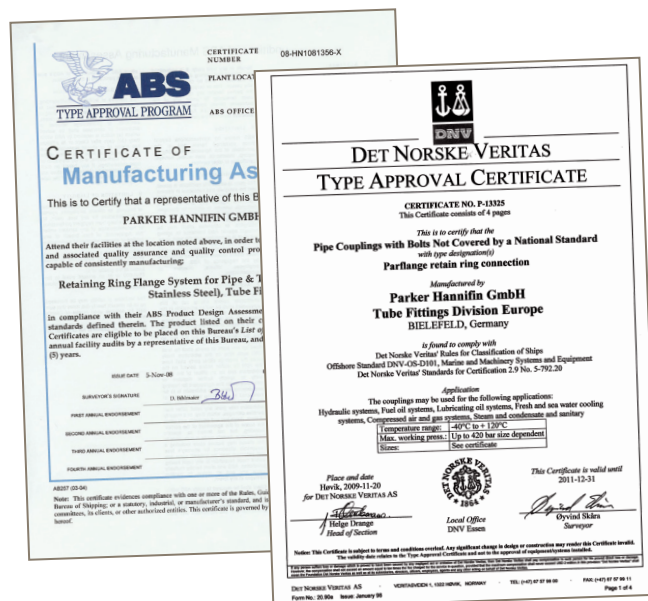
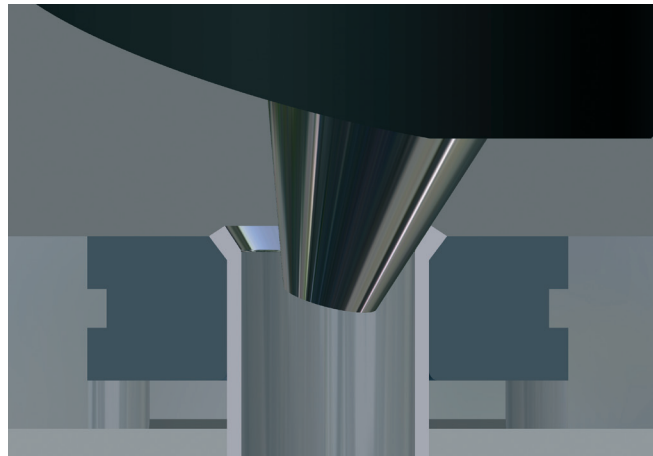
It is type approved by DNV, ABS and other major classification companies.

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.



Parflange® F37 technology

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 168.3 mm outside diameter. The maximum capacity of the machine is 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.



Complete range for virtually all diameters

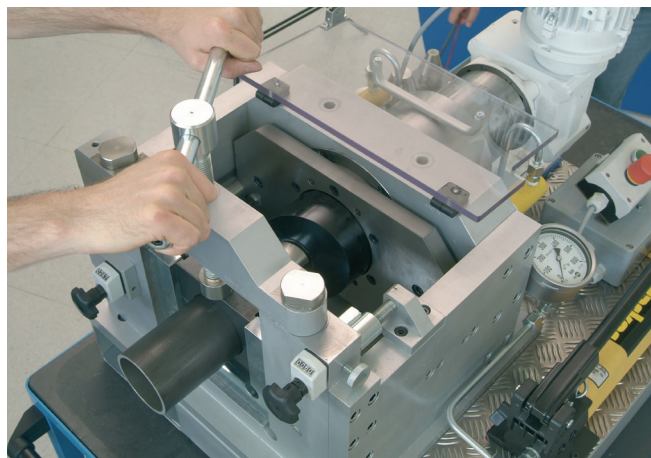
The F37 system complements the EO-2 soft sealing technology for small tube diameters; it also complements the proven Parflange® programme for the SAE product range. It offers the complete range of connectors, flange-to-flange, L- and T-Block connectors, flange-to-port, male and female thread flanges,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



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; overall in power piping systems.

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:

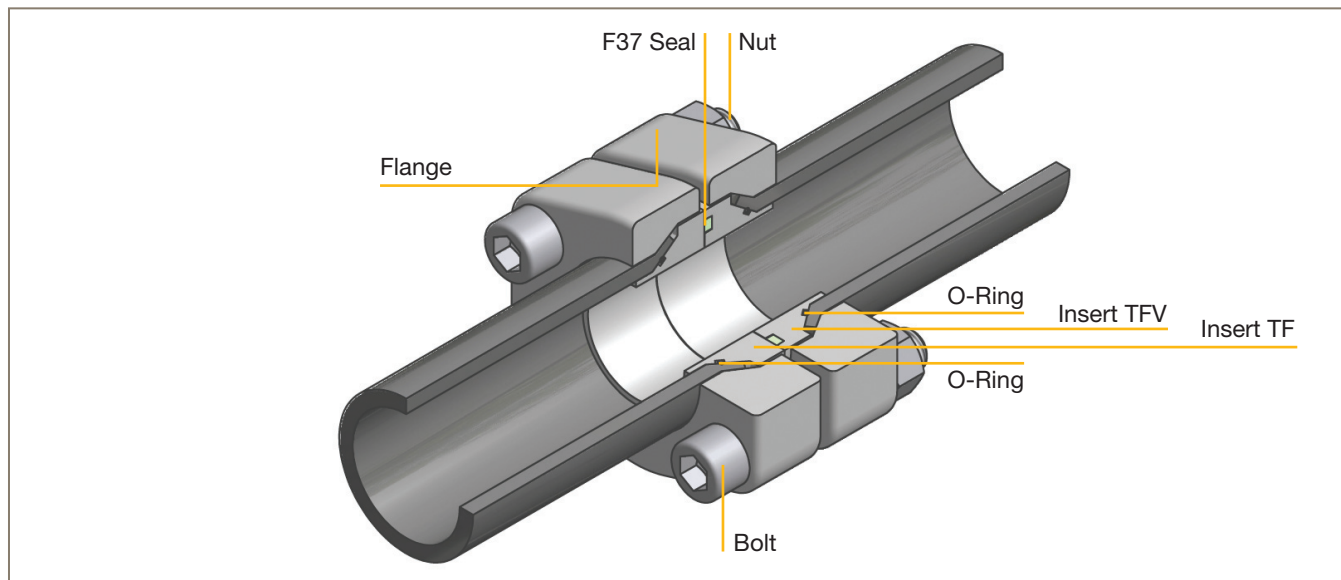
Advise	Briefing/ Design discussion
Design	Tubing layout Tube dimensioning Drawings Documentation
Pre-assemble	Tube bending Flaring Tube cleaning
Deliver	Assemble/dispatch Documentation
Install	Manufacturing On site management On site assembly Inspect and wash Documentation

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

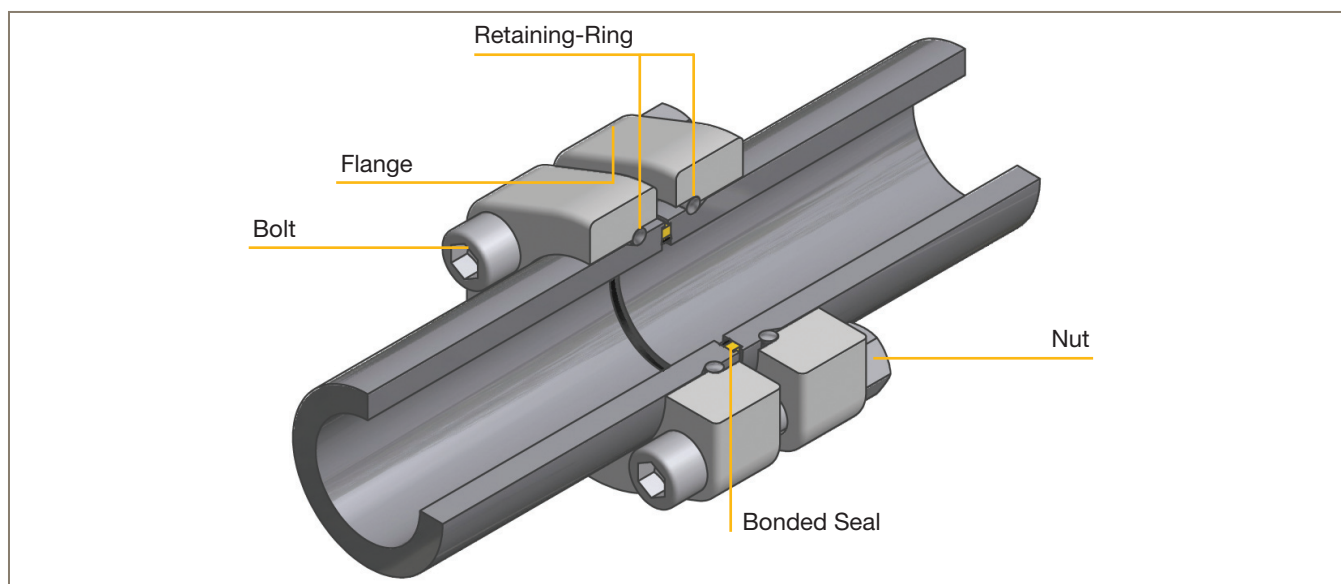


Connection technology

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

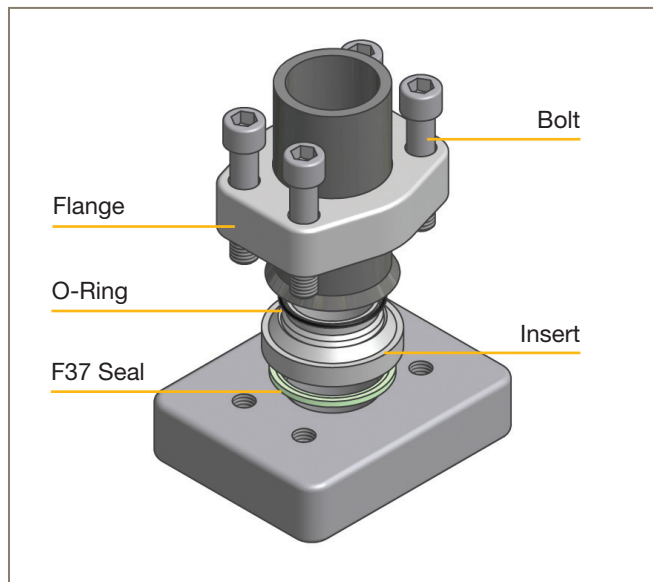


Parflange® F37 Flare Flanges – In this configuration, the deburred tube end is flared orbitally to 37° by Parflange® technology. An insert, soft sealed by an O-Ring, is located into each pipe end. In between a F37 Seal (optionally Bonded Seal or O-Ring) is placed. By tightening the flanges together,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

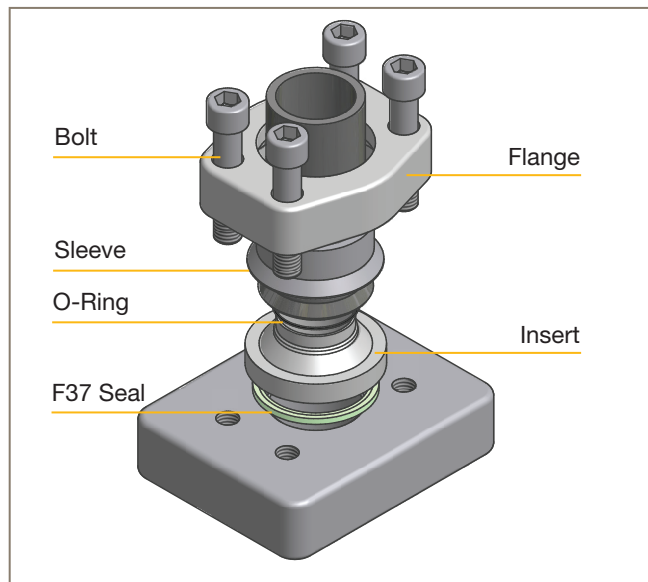


Retaining Ring Connection – The retaining ring used in this connection is a stainless steel segmented ring covered by a stainless steel spring. It is assembled in a machined groove on the tube end or adapter. When tightening this system, the flange is pushed against the retaining ring, thus giving a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

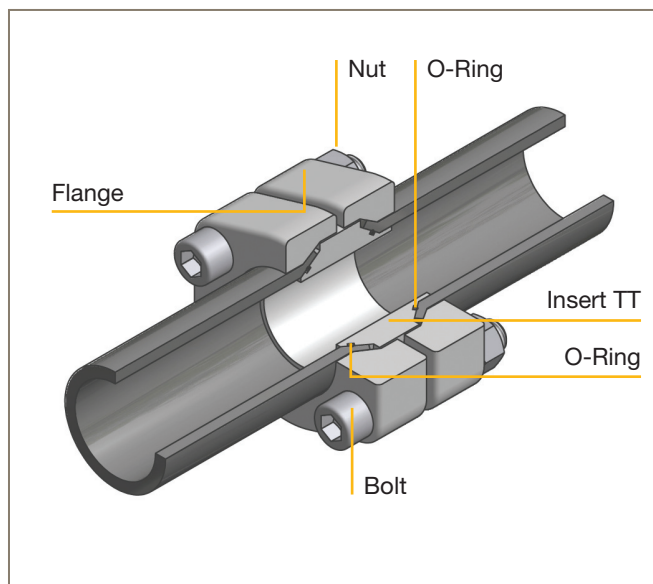
Connection methods F37 – Flared tube



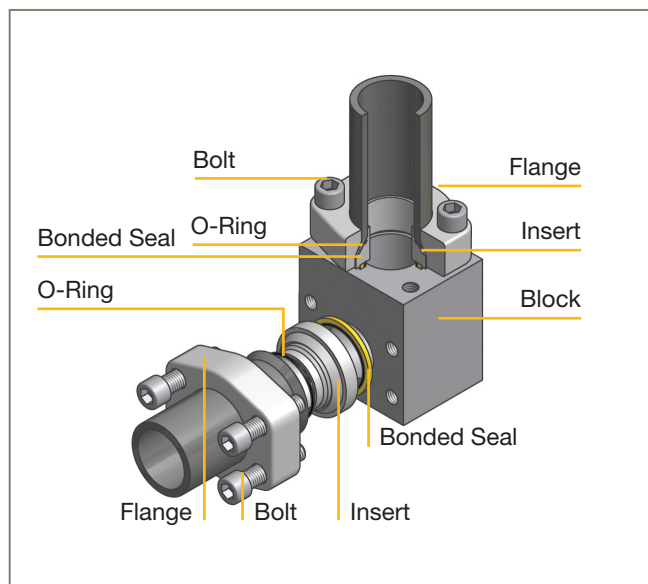
Flange to Port – the flanged tube is connected by the flange, insert and F37 seal to a port. Inserts with Bonded Seal can be used alternatively.



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



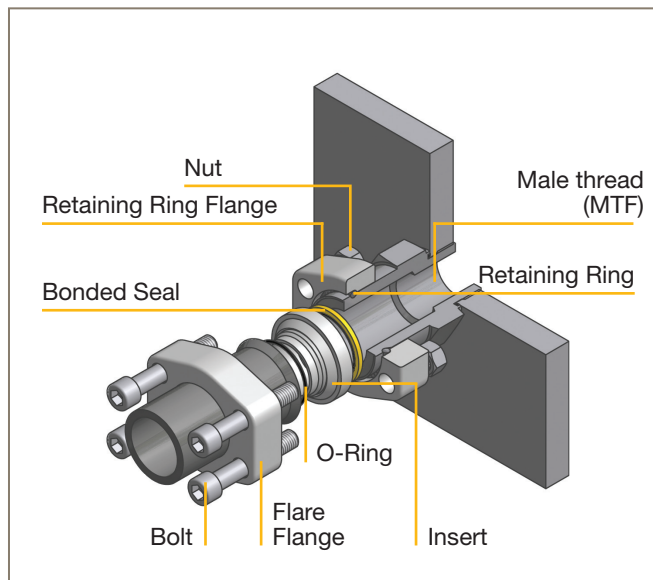
Tube to Tube – two flanges and one insert connecting two flared tubes. A two insert solution with F37 Seal or Bonded Seal is optional.



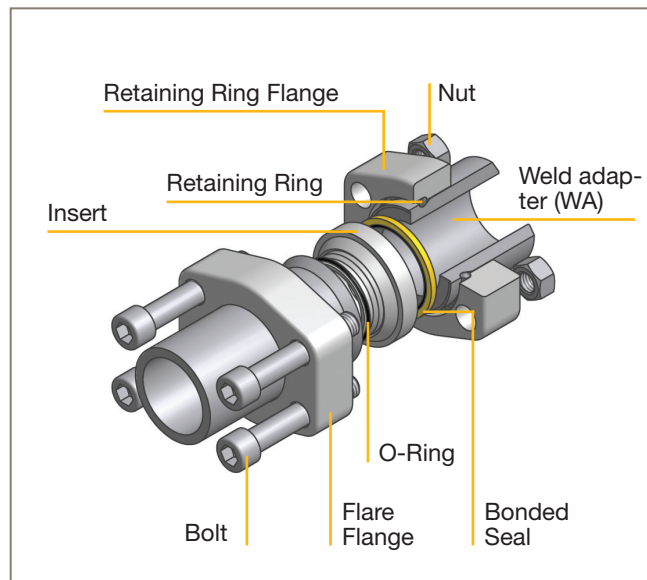
Tube to Block – instead of using flange bends compact L-Blocks are available. The range is completed by T-Blocks and Reducing Blocks. Special Manifolds according to customer design available on request.

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.

Complete Piping Solutions

Homogeneous solutions offer efficiency

From Components to full service.

Parker offers you the competent complete solution for hydraulic systems. From advice via design and pre-configuring to delivery and installation - everything with the best quality and reliability. You only have one contact. You take the pressure off your own team, release capacity and overall save a lot of time. You achieve new efficiency at high pressure.

Excellent complete solution.

Complete Piping Solutions from Parker are always to the customer's advantage. Equally high quality in all areas and available around the world.

The complete solution from a single source frees up customer capacity and lowers the need for customers to provide coordination effort. As a supplier of piping system solutions we offer our customers significant added value.

Advantages that pay off.

- High-quality system technology
- Saves time
- Saves money
- Customised user solutions
- Environmentally friendly
- Global supply
- Integration into existing systems

Advice	Briefing/design meeting
Design	Pipe layout Pipe dimensioning Drawings Documentation
Prefabrication	Pipe bending Pipe end processing Pipe cleaning
Delivery	Assembly/ Dispatch Documentation
Assembly	On-site advice On-site assembly Testing and flushing Documentation



Pipe bending



Complete Piping Solutions

The complete solution for hydraulic systems

The Parker Complete Piping Solutions concept can be used in the most varied and demanding applications. These include shipbuilding, the oil industry, steel plants and other industrial applications. Parker piping solutions offer you the competent complete solution for hydraulic systems.

Starting with the design via pre-configuring to delivery and installation,

everything produced by Parker is top quality and extremely reliable. Even at an early stage of designing machines and systems, Parker engineers and technicians are available

to you to provide ideal assistance for the development of hydraulic line systems.

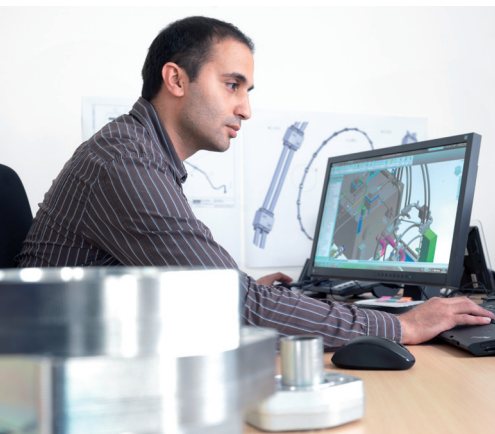
The support offered to you by Parker includes a suggestion for the type of connection (product to be used) and the choice of materials to be deployed starting with the lines and even the seals. The manufacture of special components, e.g. blocks or manifolds, is no problem for Parker.

If you have no opportunity for line configuration and assembly Parker is there and able to provide advice with its Complete Piping Solutions concept. It is completely irrelevant whether this is an initial fitting or modernising a machine or equipment. Parker's service covers measuring, preparing the pipeline flange connections, including the pipe flanges and assembling the connections.

Such customised mechanical hydraulic connections offer massive time savings during conversion, expansion or disassembly.



Machine preparation for the bending process



Delivery of components in secure packaging

ENGINEERING YOUR SUCCESS.

Our customer solutions

Achieving more together

Parker is highly successful with its weld-free piping systems for many applications.



In the Offshoremarket these are pipes for such different ship types as suction dredgers, work ships to install and supply oil platforms, ferries and installation ships for the wind industry. The most varied of hydraulic systems can be given Parflange F37 connections. Piping solutions are also created for drilling and transport towers, crane systems and hoists using Parker's weld-free systems.

It is always about fast, low-cost completion and installation. Weld-free systems enable customers to respond quickly and efficiently to new projects and generate new business. The hydraulic systems in plant and mechanical engineering are also equipped with the Parflange® F37 system. These are the hydraulic, cooling system and return lines.

Customers often have to fight against long manufacturing lead times for a new machine.

If for instance a main ring line for a cooling system needs to be welded, time passes before the final installation on the machine can take place. This is the result of such matters as the set-up and cleaning times for the pipe.

Other power piping applications include renewable energy industries (wind power, water power). Also vehicle construction (car, truck test stands) and general mechanical engineering (wood processing machines, press construction, waste processing).

Precision and flexibility are essential for all applications. Orientable flanges give the pipe fitter greater flexibility during assembly.

The Parflange® F37 machine (WCM-WorkCentre Model) offered by Parker gives the customer a high level of flexibility for on-site assembly.

In summary, the weld-free connection systems from Parker achieve a high level of financial and time savings, flexibility, precision, quality and reliability. And this is associated with extraordinary customer and delivery service.



Centrally located at the heart of Europe

Complete Piping Solutions Centre in Augustdorf

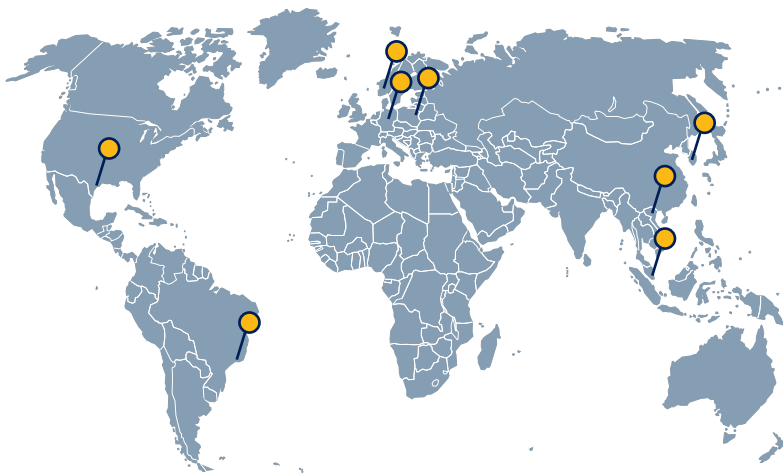


As a result of the global piping strategy introduced by Parker Hannifin some time ago, there is now also a German piping centre close to Bielefeld (in Augustdorf). The German CPS (Complete Piping Solutions) has a strategic location close to the Parker factory at Bielefeld-Windelsbleiche and the European Distribution Center (EDC). The CPS Germany offers comprehensive options for customer-specific piping system solutions. Piping

system solutions are developed in line with customer requirements and requests, in the newly designed office areas with modern IT equipment. The complete production process is characterised by optimised routes for materials ordering, manufacturing and then dispatch. The flow of goods has been copied from the existing piping centres and the associated positive experience gained.



Locations of the global Parker Piping Solutions Centres



The functional workshop can process pipes with external diameters up to 220 mm on the modern CNC bending machines. These machines can also realise 2xD to 3XD bending radii which are defined as standard for the relevant pipe diameters. The other machines also match the high quality standard used by Parker.

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The requirements increase

So does our performance

In order to comply with the market and customer requirements in this segment we have aligned our performance to this. The following overview aims to emphasise the range of services offered by CPS Germany.

Development and design:

- Modern CAD systems can process all common 3D and 2D data formats and simulate installation situations
- The projects are produced as required by or in cooperation with the customer. These may be new systems or upgrades
- It may require taking pipe measurements on-site using a modern measurement system. These data can be handed over to the CAD System
- Data from the measurement system are used later for quality control in order to ensure an ideal and secure production process

Cold bending:

- After creating the data required for production these are transferred to the machines. The available bending machines process tubes with diameters from 6 x 1 mm to 190 x 20 mm (thin-walled Ø 220 x 6 mm)

Tube end processing:

- Modern CNC controlled machines are available for processing pipe ends. Tube end processing is carried out based on internal standards

Tube cleaning:

- Tube cleaning using the ISO 4406 / NAS 1638 standard
- Permanent control of the pollution and cleanliness level with modern measuring devices

Pressure test:

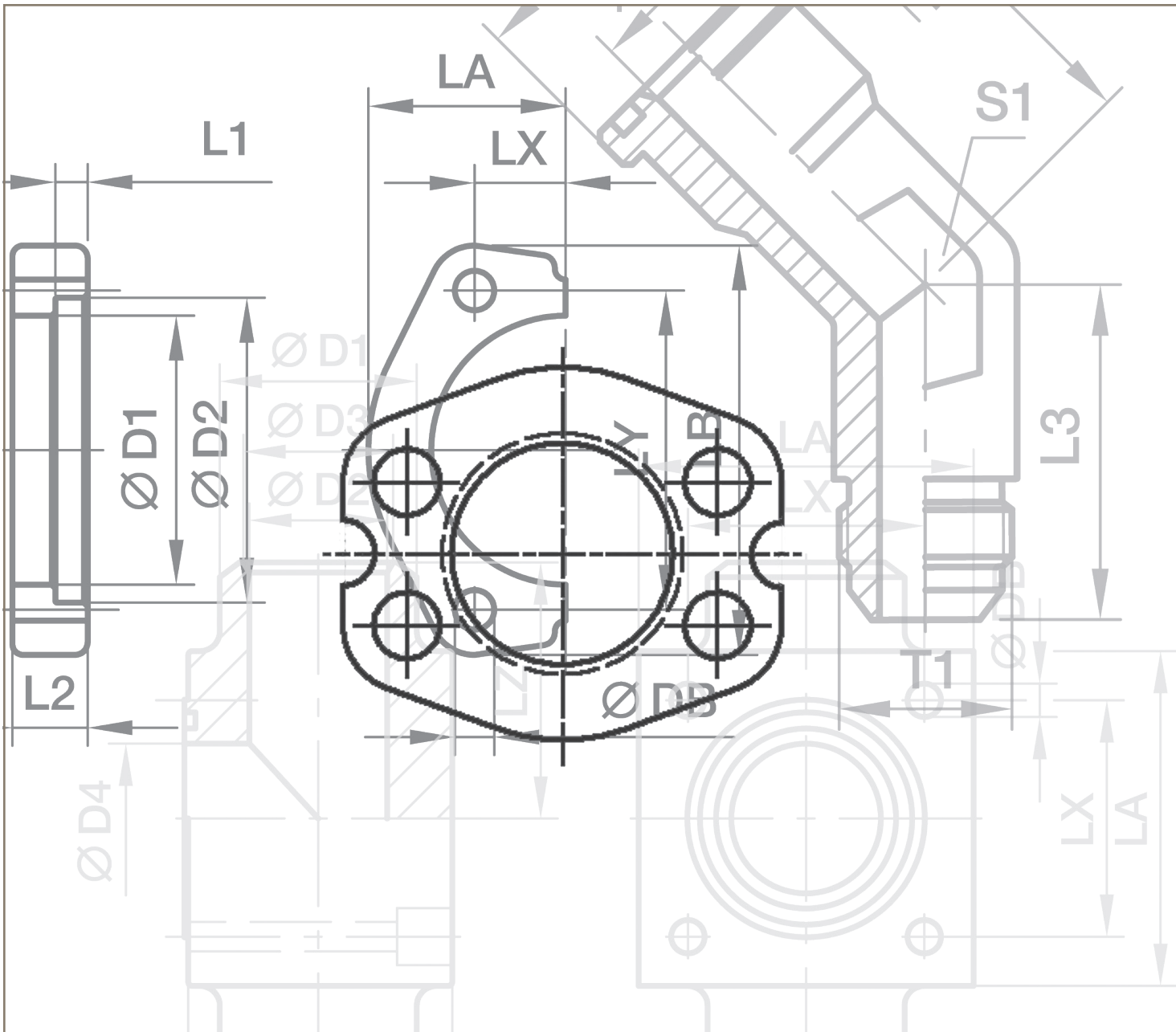
- Pressure test to customer specifications possible
- Documentation at the customer's request



Installation / support:

- Delivery of pre-configured tube systems to the customer's desired address
- Installation of tube systems whilst taking into account the parameters and work steps set in the installation manual
- Installation by end customer training conducted by Parker





Technical data

Pressure reductions and temperatures for flanges and connection components

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 components			-10%				0%			-11%	-19%				
Steel, tubes			-10%				0%			-19%			-27%		
Stainless steel components			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)															

	Permitted operating temperature
	Permitted ambient temperature of hydraulic and pneumatic applications
	Temperature not permitted

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 (e.g. P5008) 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

Sealing for SAE-Flanges

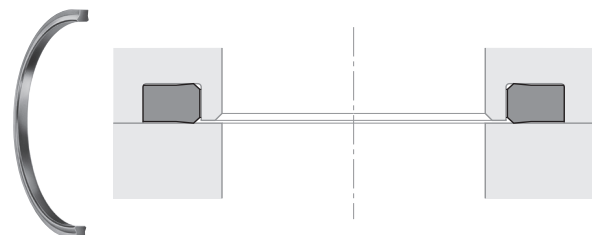
Working pressure: ≤ 600 bar

Working temperature: see table above

Materials

The F37 seal is made of a special polyurethane 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, flow speed, application in water, HFA-, HFB-fluids etc.), please contact our Consultancy Service, so that suitable materials and/or designs can be recommended.



Pressure reductions and temperatures for ball valves

Body, adapters, stem and ball materials	Pressure reduction of permissible operating temperatures TB in °C													
	-60	-50	-40	-30	-20	-10	0	+20	+80	+100	+120	+130	+150	+200
Free-Cutting steel, not suitable for gas applications!							0%							
Low-Alloy Steel			-25%				0%							
Stainless steel							0%					-11%		
Duplex Steel							0%					-20%		

Ball seat material	Pressure reduction of permissible operating temperatures TB in °C													
	-60	-50	-40	-30	-20	-10	0	+20	+80	+100	+120	+130	+150	+200
POM							0%							
Cast Iron GG25							0%							

Stem and adapter sealing materials	Pressure reduction of permissible operating temperatures TB in °C													
	-60	-50	-40	-30	-20	-10	0	+20	+80	+100	+120	+130	+150	+200
Acrylonitrile-butadienerubber (NBR, Buna N)							0%							
Low-temp NBR Compound							0%							
FKM							0%							
Low-temp FKM Compound							0%							
EPDM							0%							

	Permitted operating temperature
	Temperature not permitted

A test pressure of 1.5 x PN applies to all ball valves in accordance with DIN 3230 T5 and ISO 5108 for body.

1.1 x PN applies to ball seats.

The nominal pressure specifies the admissible working pressure at 20°C. Please consider the pressure reduction at higher temperature.

The safety factor for burst pressure tests is a minimum of 2.4 times the nominal pressure.

$P_{Burst} = 2.4 \times PN$

Leakage tests are done acc. DIN EN 12266 leakage rate A (No visually noticeable leakage during the duration of the test with fluid or air).

For other materials than listed, please contact Parker HPCE.

Tolerances and standards

Threads		
Outside diameter	Core diameter	Type of thread
8.00	6.92	M8x1
9.73	8.57	R1/8"x28
10.00	8.92	M10x1
10.27	8.77	NPTF1/8"x27
11.11	9.74	JIC7/16"x20
12.00	10.38	M12x1.5
12.70	11.33	JIC1/2"x20
13.16	11.45	R1/4"x19
13.57	11.31	NPTF1/4"x18
14.00	12.38	M14x1.5
14.27	12.76	JIC9/16"x18
15.88	14.35	SAE5/8"x18
16.00	14.38	M16x1.5
16.66	14.95	R3/8"x19
17.06	14.80	NPTF3/8"x18
18.00	16.38	M15x1.5
19.05	17.33	JIC1/4"x16
20.00	18.38	M20x1.5
20.96	18.63	R1/2"x14
21.22	18.32	NPTF1/2"x14
22.00	20.38	M22x1.5
22.23	20.26	JIC7/8"x14
22.91	20.59	R5/8"x14
24.00	22.38	M24x1.5
26.00	24.38	M26x1.5
26.44	24.12	R3/4"x14
26.57	23.67	NPTF3/4"x14
26.99	25.10	JIC1 1/16"x12
28.00	26.38	M28x1.5
30.00	27.83	M30x2
30.16	28.20	JIC1 3/16"x12
30.20	27.88	R7/8"x14
31.23	29.61	NPTF1"x11.5
33.25	30.29	R1"x11
33.34	31.40	JIC1 5/16"x12
36.00	33.83	M36x2
41.28	39.30	JIC1 5/8"x12
41.91	38.95	R1 1/4"x11.5
41.99	38.95	NPTF1 1/4"x11.5
42.00	39.83	M42x2
45.00	42.83	M45x2
47.63	45.80	JIC1 7/8"x12
47.80	44.85	R1 1/2"x11
48.05	44.52	NPTF1 1/2"x11.5
52.00	49.83	M52x2
59.61	56.66	R2"x11
60.09	56.56	NPTF2"x11.5
60.20	60.80	JIC2 1/2"x12
65.71	62.75	R2 1/4"x11
73.00	68.80	NPTF2 1/2"x8
75.18	72.23	R2 1/2"x11
87.88	84.93	R3"x11
89.00	85.00	NPTF3"x8
113.03	110.07	R4"x11
114.35	110.30	NPTF4"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

Current installation guide:

www.parker.com/hpce ↗

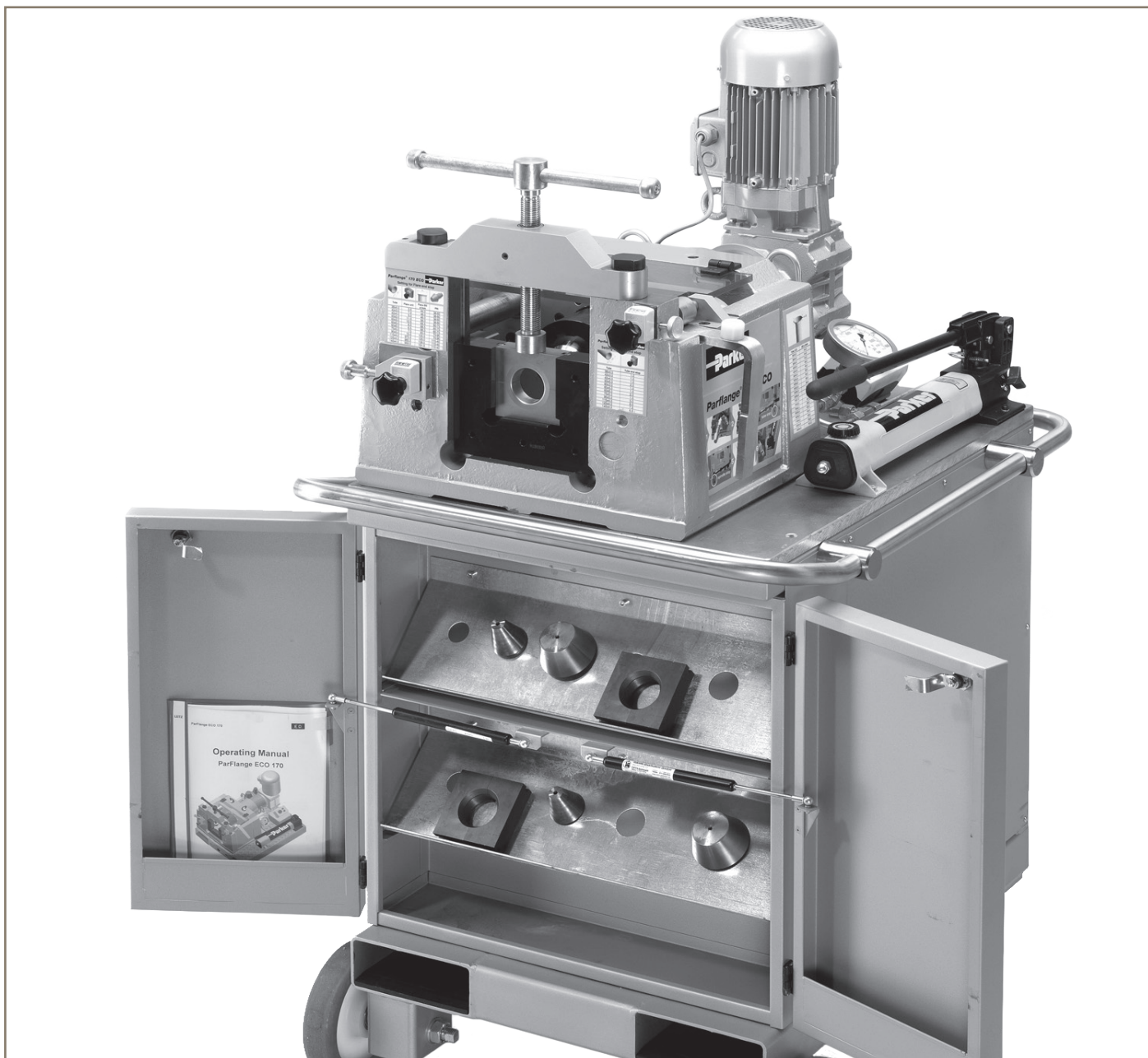
Support ↗

Literature and Reference Material ↗

Installation Guides

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Notes

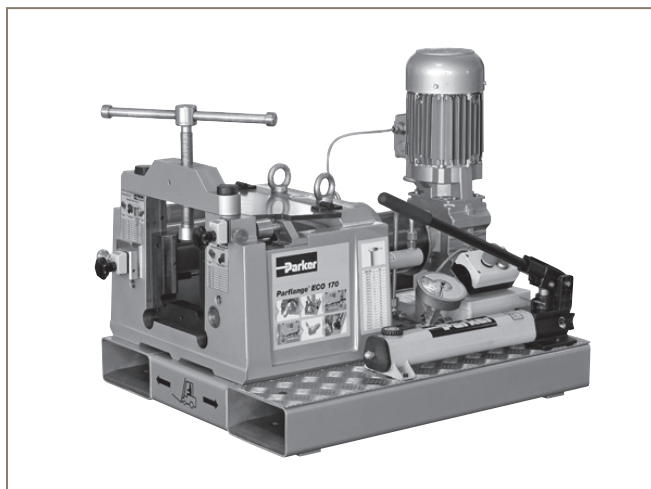


Machines, tooling and equipment

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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

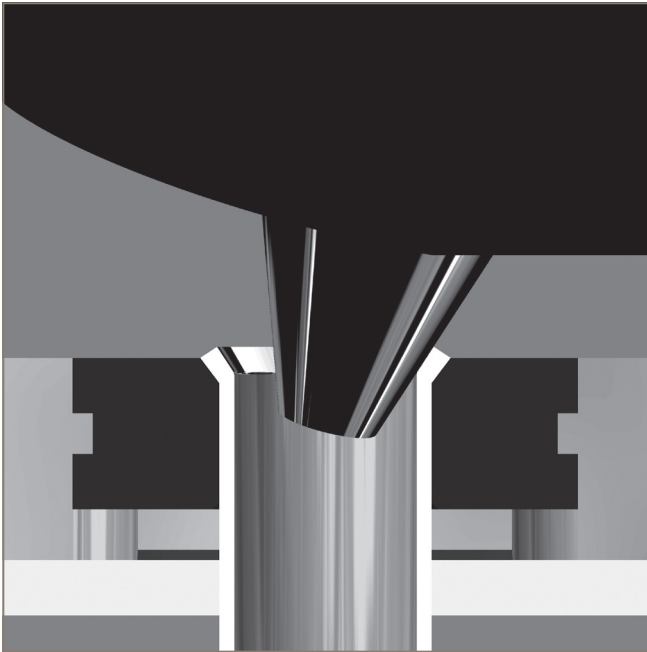


Parflange® 170 WCM WorkCenter

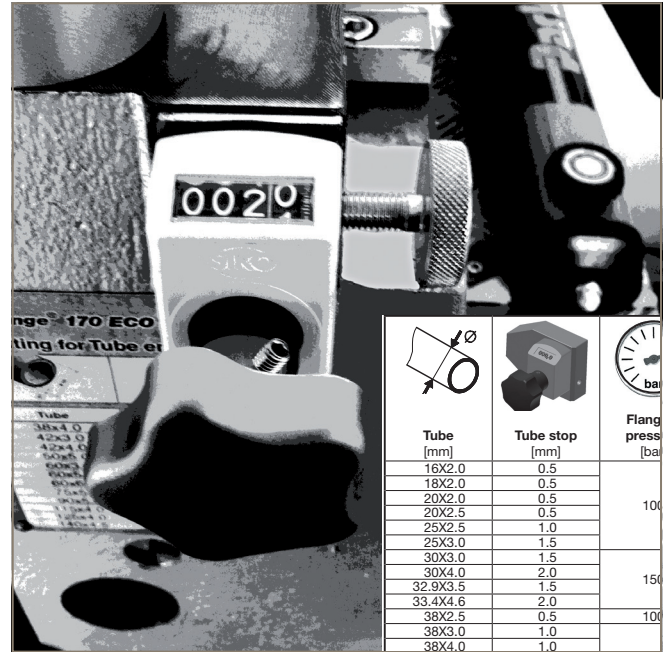
Specifications

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 use on work bench, easy to transport, optimal to use on site ● WorkCenter Parflange® 170 WCM, mounted on a movable tool cabinet, optimal to use in a production hall
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	170EU400VECO
WorkCenter with tool cabinet, 400V, 50Hz	170EU400VWCM
Promotion leaflet 4162/UK	via Parker catalogue service EMDC
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"
Order code Clamping die frame		Order code Clamping die set	Order code Extended clamping die set	Order code Flanging pin
16.0	MF37/F20-60	MF37-16		BF37-6/42
20.0		MF37-20		
25.0		MF37-25		
26.7		MF37-26.7		
30.0		MF37-30		
32.9		MF37-32.9		
33.4		MF37-33.4		
38.0		MF37-38		BF37-38/60
42.0		MF37-42		
48.3		MF37-48.3		
50.0		MF37-50		
60.0		MF37-60		BF37-60/75
60.3		MF37-60.3		
65.0	MF37/F20-90		MF37-65 E	
73.0		MF37-73	MF37-73E for Tube 73X7	BF37-75/90
75.0		MF37-75		
88.9		MF37-88.9		
90.0		MF37-90		BF37-90PREFLARE and BF37-75/90
90.9			MF37-90E	
100.0	no frame required	MF37-100		BF37-100
114.3		MF37-114.3	MF37-114.3E for Tube 114.3X6.02	BF37-115/140
115.0		MF37-115		
125.0		MF37-125		
139.7		MF37-139.7		
140.0		MF37-140		
141.3		MF37-141.3		BF37-141/165
165.0		MF37-165		
168.3		MF37-168.3		

tools for scheduled pipes on request

Tool lifetime

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

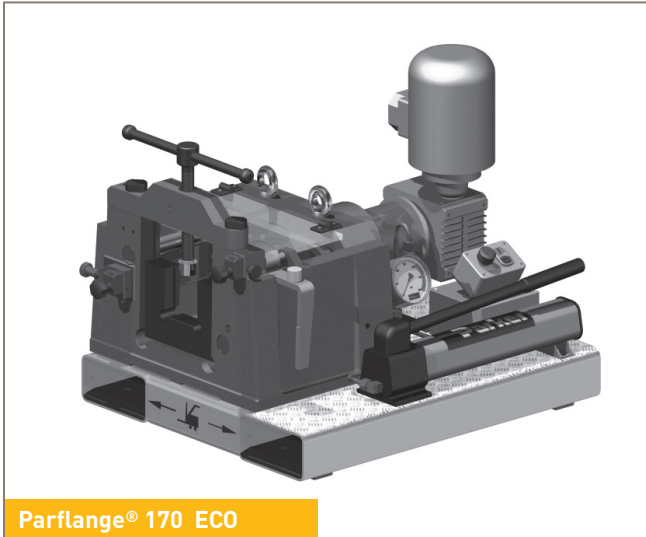
Worn out tools can cause dangerous assembly failures and must be replaced in time.

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



Parflange® 170 ECO

The Parflange® 170 is a simple flaring machine for Parker F37 connections. By using the 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: 16 – 168.3 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

The Parflange® 170 WCM is a flaring Work Centre for Parker F37 connections. By using the 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: 16 – 168.3 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

Lubricants

EO-NIROMONT lubricant for fitting assembly

EO-NIROMONT lubricant for flaring and forming tools

EO-NIROMONT are high performance lubricants specifically designed for the assembly of tube connections. They facilitate tightening using a low-torque when assembling joints by hand. In machine assembly, the use of EO-NIROMONT ensures that maximum tool-life is achieved. In forming processes, such as Parflange® or EO2-FORM, smooth and error-free sealing surfaces can be produced. Special additives prevent cold welding when working with stainless steel.

As opposed to when using Parker high performance lubricants, experience shows that the use of standard commercially available lubricants tend to lead to problems such as cold welding of forming tools, particularly when processing stainless steel tube. Parker high performance lubricants – EO-NIROMONT – are offered in different containers and viscosities so that you can purchase the appropriate product in a suitable container to meet your needs:

Liquid lubricant, plastic bottle (item: EONIROMONTFLUESSX)

Parker high performance lubricant for the lubrication of threads, progressive rings and for all cold forming processes like Parflange® or EO2-FORM. The handy plastic bottle means that it can be applied directly where the lubrication is needed. EO-NIROMONT liquid should always be available at every assembly point where hydraulic connections are being made.

Liquid lubricant, refill package (item: LUBSS)

Parker high performance lubricant for all cold forming processes like Parflange® or EO2-FORM. Its viscosity means that it is for use in automatic lubrication devices installed in Parflange machines. Absolutely essential for mechanical cold forming of stainless steel tubes.

Paste lubricant, tin (item: EONIROMONTASTX)

Parker high performance lubricant for the lubrication of the threads of the pre-assembly tool VOMO. The paste is economical and provides durable thread lubrication. Not suited for use with forming tools, as dust and swarf will stick to it.

Liquid lubricant in a brush-in-cap can (item: EONIROMONTAPPLICATOR)

Thanks to a brush built into the screw cap, the practical EO-NIROMONT APPLICATOR enables the Parker high-performance lubricant to be applied accurately on the component. The plastic bottle can be used to refill the brush-in-cap can practically.

Features, advantages and benefits of NIROMONT lubricant:

1. **Highly effective** – EO-NIROMONT dramatically reduces assembly effort. This helps to prevent fitting failure resulting from insufficient assembly.
2. **Cost saving** – Tools in assembly machines will last much longer, resulting in high-quality tube forming with excellent sealing surface.
3. **No cold welding** – Cold welding of stainless steel threads is impossible when EO-Niromont is properly applied.
4. **Liquid** – Penetrates even small gaps.
5. **Paste** – Stays in place for a while. Ideal for application on pre-assembly tools.
6. **Compatible** – EO-NIROMONT and LUBSS do not effect fitting surfaces or seal materials.

Ordering

Type	Order code
EO-NIROMONT Assembly lubricant paste (100 g e)	EONIROMONTASTX
EO-NIROMONT Assembly lubricant liquid (250 cc)	EONIROMONTFLUESSX
EO-NIROMONT Liquid lubricant in a brush-in-cap can (250 cc)	EONIROMONTAPPLICATOR
EO-NIROMONT Forming tool lubricant refill (1 L)	LUBSS



EO-NIROMONT

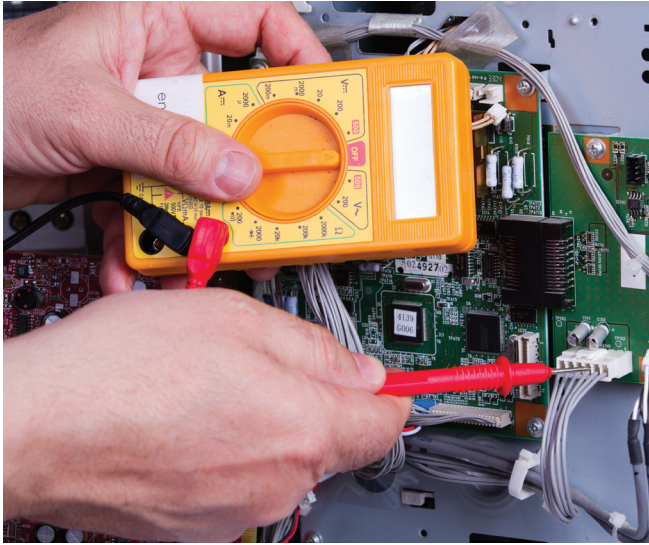


EO-NIROMONT APPLICATOR



LUBSS

Assembly machines



Technical support for Parker machines

HPCE 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 HPCE are available when it comes to special application of HPCE 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 HPCE machine repair facility. Well trained and experienced engineers take personal care that the machines return properly repaired and tested.

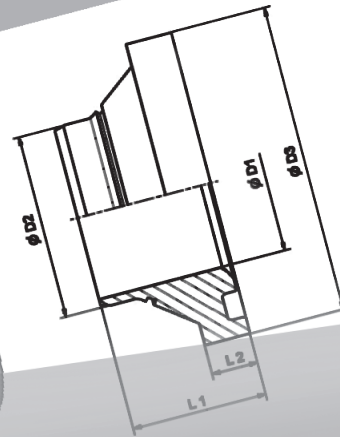
HPCE also offers a machine maintenance and calibration service. Standard spare parts like oil filters can be ordered.

Notes

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 code based on the requirements.

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	IN16-38X2.5TFVCF
35.8	35.8	60.0	25.5	10.0	0.19	F37S24X	OR37.8X1.0X	IN16-38X3.0TFVCF
33.5	33.8	60.0	25.5	10.0	0.19	F37S24X	OR34X1.0X	IN16-38X4.0TFVCF
31.5	31.5	60.0	25.5	10.0	0.20	F37S24X	OR30X1.0X	IN16-38X5.0TFVCF
42X4.0	33.5	33.8	60.0	25.5	10.0	F37S32X	OR44.1X1.78X	IN16-38X2.5TFVCF
50X3.0	36.0	39.8	60.0	25.5	10.0	F37S32X	OR41X1.78X	IN16-38X3.0TFVCF
50X6.0	35.0	37.8	60.0	27.0	10.0	F37S32X	OR53.7X1.78X	IN16-38X4.0TFVCF
50X3.0	41.5	43.8	70.0	24.0	10.0	F37S40X	OR47.37X1.78X	IN16-38X5.0TFVCF
50X5.0	37.5	37.8	70.0	26.5	10.0	F37S40X	OR50.52X1.78X	IN16-38X2.5TFVCF
50X5.0	35.0	53.8	70.0	26.5	10.0	F37S40X	OR63.22X1.78X	IN16-38X3.0TFVCF

OR41X1.78X
OR41X1.78X
OR41X1.78X
OR41X1.78X
OR53.7X1.78X

Step

Select

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face

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to

R

4

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

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

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	F37-620/38-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
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	F37-620/38-TZNX	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

Before ordering components please check requirements from the classification companies.



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
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	8-12 Bolt Flange*

Size Code	8	12	16	20	24	32	40	48	64	72	80	96	128	160
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	4 1/2"	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

*Round flange design; Footprint deviating from ISO-/SAE-Standards
 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	Stainless Steel/ 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	1	PSC128-250X25VSSX	Stainless Steel
		F37 seal	1	F37RS128X	PUR

Before ordering components please check requirements from the classification companies.

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Notes

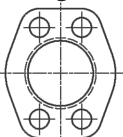
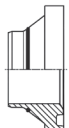
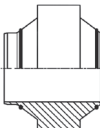
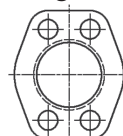
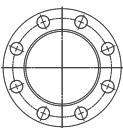
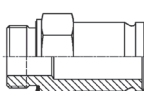
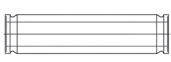
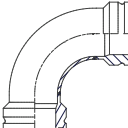
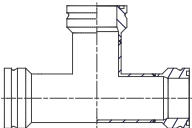
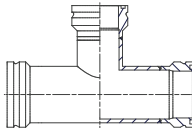
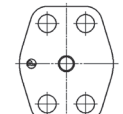
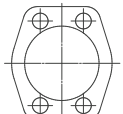
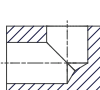
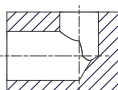
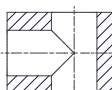
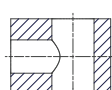
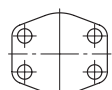


SAE 1000 System

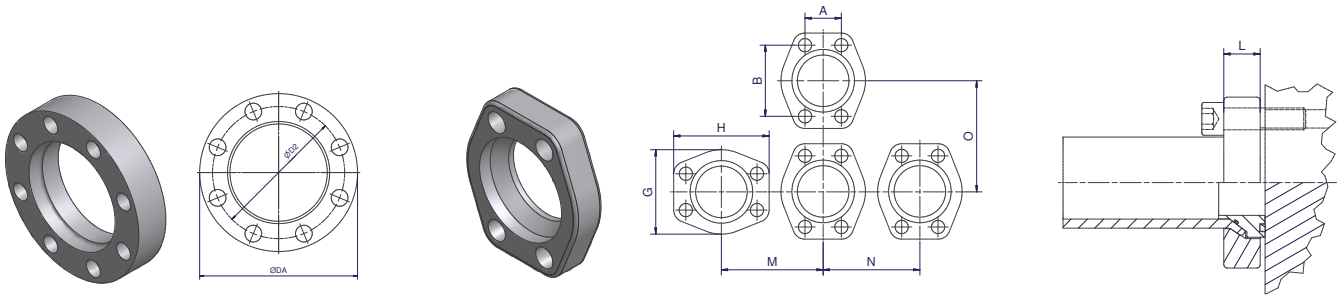
50 – 70 bar

ENGINEERING YOUR SUCCESS.

Programme overview SAE 1000/ISO 6162-1 footprint

Parflange® F37 connection parts	Flanges  F37 – p.39	
	Inserts  TFV – p.41  TF – p.42  TT – p.43	
Retaining ring connection parts	Flanges  R – p.40  R-Ring – p.44  R – p.40	
	Male / Female  MTF-R – p.45  FTF-R – p.46	Weld  WA – p.47  WA-F – p.48
	Tube to Tube  BF – p.49/50  RF – p.51/52  LF – p.53/54  TF – p.55/56  TF-R – p.55/56	
	Blind Flanges  BFV – p.57  CPML – p.58	Blocks see SAE 3000  LB  LBR  TB  TBR
Seals Adapter Bolts	Bolts and Nuts  p.59	 AP – p.60
Ball valves	 p. 61/62	

F37 – Flare flange | SAE 1000/ISO 6162-1 footprint



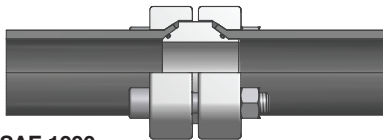
Parflange F37 flange dimensions

Size Inch	Flange Order Code	A	B	G	H	M	N	O	L	Bolts/pc.	Weight (Steel) kg/1 piece	W.P. bar
1 1/2	F37-124-CFX	35.7	69.9	83	94	93	87	99	20	4	0.52	70
2	F37-132-CFX	42.9	77.8	97	102	104	102	107	25	4	0.83	70
2 1/2	F37-140-CFX	50.8	88.9	109	114	117	114	120	30	4	1.16	70
3	F37-148-CFX	61.9	106.4	131	135	138	136	141	30	4	1.57	70
3 1/2	F37-156-CFX	69.9	120.7	140	152	151	145	158	30	4	1.99	70
4	F37-164-CFX	77.8	130.2	152	162	162	157	168	39	4	2.69	70
5	F37-180-CFX	92.1	152.4	181	184	188	186	190	39	4	3.24	50
		D2	DA									
6	F37-196-CFX	208.0	235.0						39	6	5.60	50
8	F37-1128-CFX	275.0	318.0						39	8	10.51	50
10	F37-1160-CFX	345.0	410.0						50	8	25.35	50

Pressure rates related to flanges. For all sizes also threaded flanges available (...T-CFX).

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	F37-124-CFX	
Stainless steel	SS	F37-124-SSX	
Galvanized hot dip zinc	TZN (Not for threaded flanges available)	F37-124-TZNX	on request



Part combination flaring SAE 1000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange 1000 SAE ISO 6162-1 footprint	Insert*
70	1 1/2	50X3.0	F37-124-CFX	IN24-50X3.0T...
	2	60X3.0	F37-132-CFX	IN32-60X3.0T...
	2 1/2	75X3.0	F37-140-CFX	IN40-75X3.0T...
	3	88.9X3.05	F37-14888.9-CFX	IN48-88.9X3.05T...
	3	90X3.5	F37-148-CFX	IN48-90X3.5T...
	3 1/2	100X4.0	F37-156-CFX	IN56-100X4.0T...
50	4	115X4.0	F37-164-CFX	IN64-115X4.0T...
	5	140X4.5	F37-180-CFX	IN80-140X4.5T...
	6	165X5.0	F37-196-CFX	IN96-165X5.0T...
	8	220X6.0	F37-1128-CFX	IN128-220X6.0T...
	10	273X6.0	F37-1160-CFX	IN160-273X6.0T...

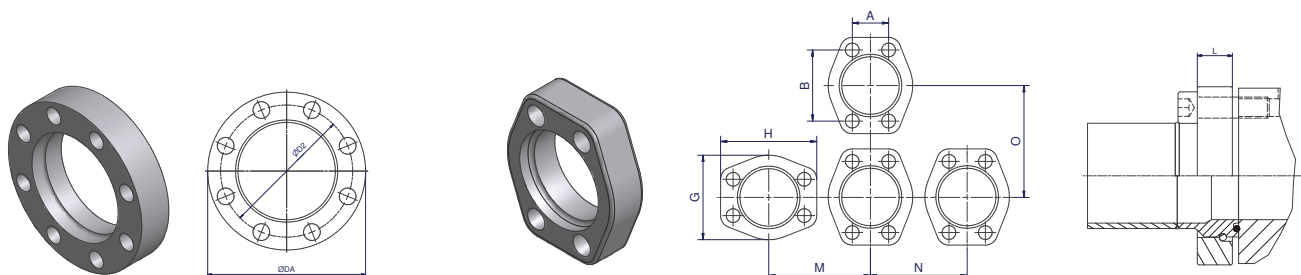
Select the complete version:

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

Other sizes on request. Bolts and nuts are not included in complete part numbers. For recommended bolts and nuts see page 59.

R – Retaining ring flange | SAE 1000/ISO 6162-1 footprint

SAE 1000/ISO 6162-1 footprint



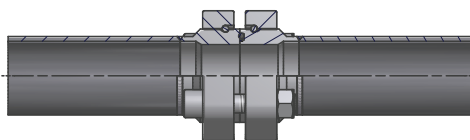
Retaining Ring Flange dimensions

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Bolts/pc.	Weight (Steel) kg/1 piece	W.P. bar
1 1/2	R-124-CFX	35.7	69.9	83	94	93	87	99	20	4	0.46	70
2	R-132-CFX	42.9	77.8	97	102	104	102	107	20	4	0.57	70
2 1/2	R-140-CFX	50.8	88.9	109	114	117	114	120	20	4	0.70	70
3	R-148-CFX	61.9	106.4	131	135	138	136	141	25	4	1.18	70
3 1/2	R-156-CFX	69.9	120.7	140	152	151	145	158	29	4	1.47	70
4	R-164-CFX	77.8	130.2	152	162	162	157	168	30	4	1.74	70
5	R-180-CFX	92.1	152.4	181	184	188	186	190	39	4	2.81	70
		D2	DA									
6	R-196-CFX	208.0	235.0						39	6	4.96	70
8	R-1128-CFX	275.0	318.0						38	8	8.95	50
10	R-1160-CFX	345.0	410.0						50	8	23.29	50

Pressure rates related to flanges. For all sizes also threaded flanges available (...T-CFX).

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 (Not for threaded flanges available)	R-124-TZN



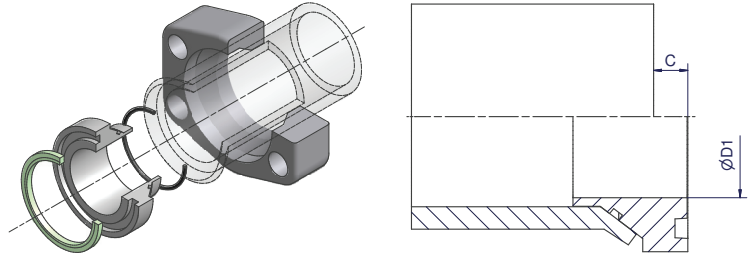
Part combination retaining ring SAE 1000 (O-Ring) connection

Flange pressure (bar)	Size Inch	Flange	Retaining Ring
70	1 1/2	R-124-CFX	R124X
	2	R-132-CFX	R132X
	2 1/2	R-140-CFX	R140X
	3	R-148-CFX	R148X
	3 1/2	R-156-CFX	R156X
	4	R-164-CFX	R164X
	5	R-180-CFX	R180X
50	6	R-196-CFX	R196X
	8	R-1128-CFX	R1128X
	10	R-1160-CFX	R1160X

Other sizes on request. Bolts and nuts are not included in complete part numbers. For recommended bolts and nuts see page 59.

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	F37 Seal Port Side Order code	Weight (Steel) kg/1 kit
1 1/2	50X3.0	F37-124-50X3.0TFVCF	36.0	11	IN24-50X3.0TFVCF	OR44.17X1.78X	F37S24X	0.72
2	60X3.0	F37-132-60X3.0TFVCF	46.0	12	IN32-60X3.0TFVCF	OR53.7X1.78X	F37S32X	1.10
2 1/2	75X3.0	F37-140-75X3.0TFVCF	60.0	10	IN40-75X3.0TFVCF	OR69.57X1.78X	F37S40X	1.46
3	90X3.5	F37-148-90X3.5TFVCF	72.0	15	IN48-90X3.5TFVCF	OR82.27X1.78X	F37S48X	2.17
3 1/2	100x4.0	F37-156-100X4.0TFVCF	88.6	15	IN56-100X4.0TFVCF	OR94.97X1.78X	F37S56X	2.60
4	115X4.0	F37-164-115X4.0TFVCF	90.0	14	IN64-115X4.0TFVCF	OR110X2X	F37S64X	3.53
5	140X4.5	F37-180-140X4.5TFVCF	122.0	15	IN80-140X4.5TFVCF	OR129.77X3.53X	F37S80X	4.09
6	165X5.0	F37-196-165X5.0TFVCF	150.8	17	IN96-165X5.0TFVCF	OR158.42X2.26X	F37S196X	6.98
8	220X6.0	F37-1128-220X6.0TFVCF	203.3	16	IN128-220X6.0TFVCF	OR209.22X2.62X	F37S1128X	12.66
10	273X6.0	F37-1160-273X6.0TFVCF	256.2	17	IN160-273X6.0TFVCF	OR262.34X3.53X	F37S1160X	28.78

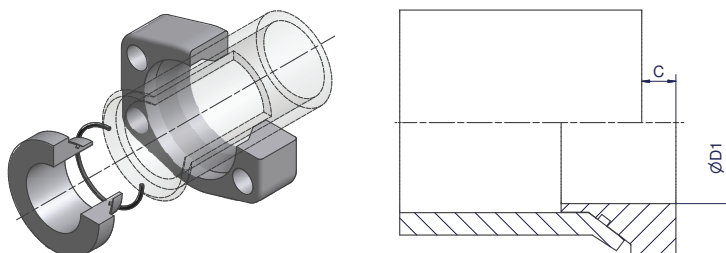
Other sizes on request.

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 kit
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	OR94.97X1.78X	2.60
4	115X4.0	F37-164-115X4.0TFCF	90.0	14	IN64-115X4.0TFCF	OR110X2X	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	OR158.42X2.62X	7.03
8	220X6.0	F37-1128-220X6.0TFCF	203.3	16	IN128-220X6.0TFCF	OR209.22X2.62X	12.85
10	273X6.0	F37-1160-273X6.0TFCF	256.2	17	IN160-273X6.0TFCF	OR262.34X3.53X	29.01

Other sizes on request.

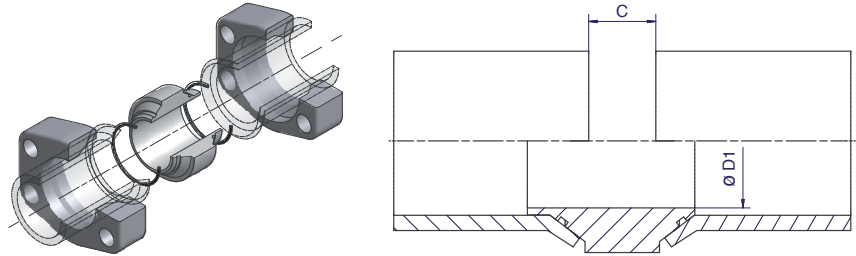
Please change suffixes according to material/surface required

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 kit
1 1/2	50X3.0	F37-124-50X3.0TTCF	36.0	22	IN24-50X3.0TTCF	OR44.17X1.78X	0.94
2	60X3.0	F37-132-60X3.0TTCF	46.0	24	IN32-60X3.0TTCF	OR53.7X1.78X	1.38
2 1/2	75X3.0	F37-140-75X3.0TTCF	60.0	20	IN40-75X3.0TTCF	OR69.57X1.78X	1.79
3	90X3.5	F37-148-90X3.5TTCF	72.0	30	IN48-90X3.5TTCF	OR82.27X1.78X	2.79
3 1/2	100X4.0	F37-156-100X4.0TTCF	88.6	30	IN56-100X4.0TTCF	OR94.97X1.78X	2.60
4	115X4.0	F37-164-115X4.0TTCF	90.0	28	IN64-115X4.0TTCF	OR110X2X	4.45
5	140X4.5	F37-180-140X4.5TTCF	122.0	30	IN80-140X4.5TTCF	OR129.77X3.53X	4.75
6	165X5.0	F37-196-165X5.0TTCF	150.8	34	IN96-165X5.0TTCF	OR158.42X2.62X	8.36
8	220X6.0	F37-1128-220X6.0TTCF			on request		
10	273X6.0	F37-1160-273X6.0TTCF			on request		

Other sizes on request.

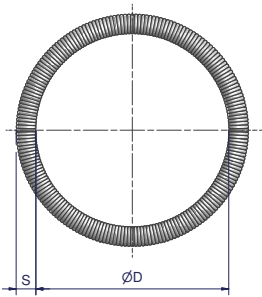
Please change suffixes according to material/surface required

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

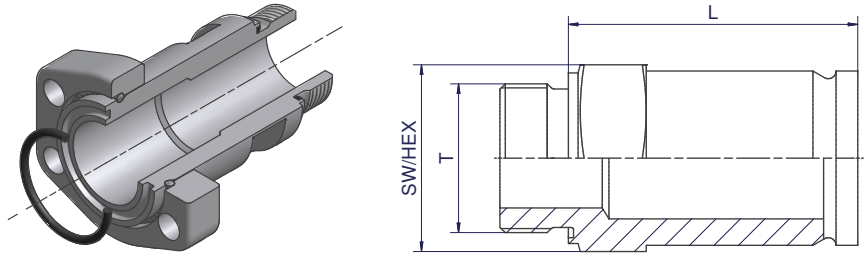
SAE 1000/ISO 6162-1 footprint

Size Inch	Order code	S	D
1 1/2	R124X	4.0	56.0
2	R132X	4.0	66.0
2 1/2	R140X	4.0	77.0
3	R148X	5.0	93.0
3 1/2	R156X	5.0	110.0
4	R164X	5.0	120.0
5	R180X	6.0	144.0
6	R196X	6.0	174.0
8	R1128X	8.0	232.0
10	R1160X	8.0	286.0



MTF-R – Male thread adapter, BSPP

SAE 1000/ISO 6162-1 footprint



Size Inch	Complete part Order code	Body incl. ED-Seal Order code	L	T	SW/ HEX	Weight body (Steel) kg/1 piece
1 1/2	R-124MTFRCF	MTF124ROMDCF	93	G 1 1/2 A	60	1.29
1 1/2	R-124MTFR11/4CF	MTF124R11/4OMDCF	95	G 1 1/4 A	60	1.32
2	R-132MTFR2CF	MTF132R2OMDCF	97	G 2 A	60	1.83
2	R-132MTFR11/2CF	MTF132R11/2OMDCF	99	G 1 1/2 A	60	1.72
2 1/2	R-140MTFR2CF	MTF140R2OMDCF	136	G 2 A	85	3.32
2 1/2	R-140MTFRCF	MTF140ROMDCF	134	G 2 1/2 A	85	3.34
3	R-148MTFR21/2CF	MTF148R21/2OMDCF	147	G 2 1/2 A	100	4.63
3	R-148MTFRCF	MTF148ROMDCF	145	G 3 A	100	4.97

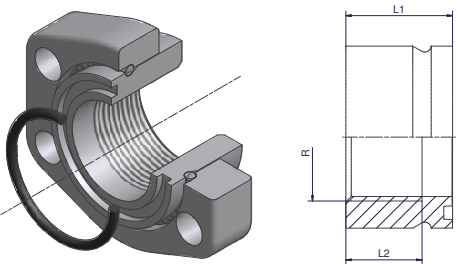
Other sizes on request.

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

SAE 1000/ISO 6162-1 footprint



Size Inch	Complete part Order code	Adapter Order code	L1	L2	R	Weight (Steel) kg/1 kit
1 1/2	R-124FTFR11/4CF	FTF124R11/4CFX	45	30	G 1 1/4	0.54
2	R-132FTFR11/2CF	FTF132R11/2CFX	55	40	G 1 1/2	0.92
2 1/2	R-140FTFR2CF	FTF140R2CFX	80	40	G 2	1.58
3	R-148FTFR21/2CF	FTF148R21/2CFX	85	50	G 2 1/2	2.18

Other sizes on request.

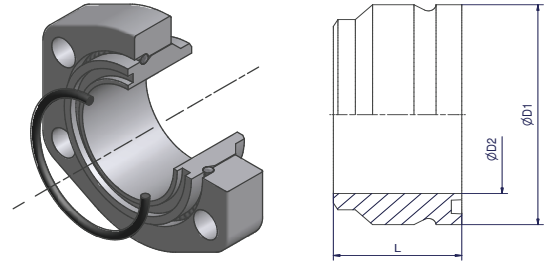
Please change suffixes according to material/surface required

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

SAE 1000/ISO 6162-1 footprint



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

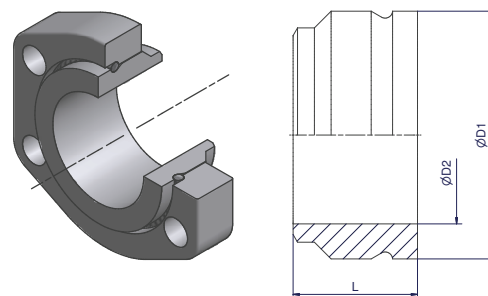
Other sizes on request.

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

SAE 1000/ISO 6162-1 footprint



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

Other sizes on request.

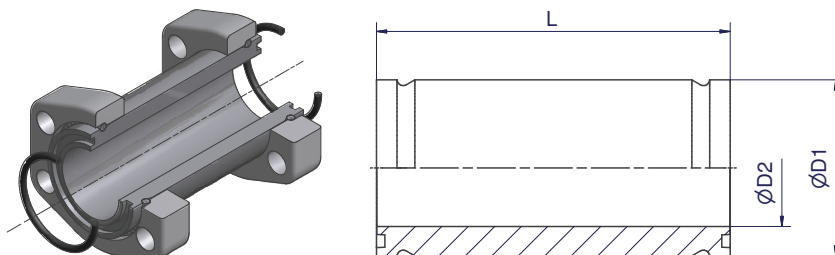
Please change suffixes according to material/surface required

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, soft sealed

SAE 1000/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Bulkhead Body Order code	O-Ring	D1	D2	L	Weight body (Steel) kg/1 piece
1 1/2	R-124LBFS	BF124SX	OR47.22X3.53X	59.7	39.8	165	1.96
2	R-132LBFS	BF132SX	OR56.75X3.53X	69.7	50.0	165	2.34
2 1/2	R-140LBFS	BF140SX	OR69.44X3.53X	80.7	62.0	175	2.81
3	R-148LBFS	BF148SX	OR85.32X3.53X	97.7	77.8	200	4.20
3 1/2	R-156LBFS	BF156SX	OR98.02X3.53X	114.7	89.8	200	6.15
4	R-164LBFS	BF164SX	OR110.72X3.53X	124.7	99.8	200	6.75
5	R-180LBFS	BF180SX	OR136.12X3.53X	149.7	124.8	200	8.22
6	R-196LBFS	BF196SX	OR158.34X3.53X	179.7	149.8	215	12.81
8	R-1128LBFS	BF1128SX	OR219.3X5.7X	239.7	206.5	240	21.18
10	R-1160LBFS	BF1160SX	OR269.3X5.7X	295.0	255.0	270	35.59

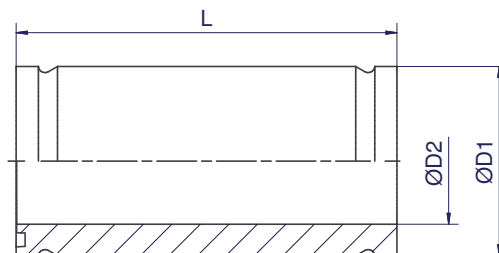
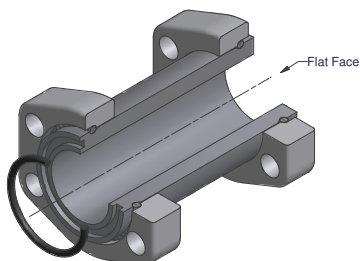
Other sizes on request.

Please change suffixes according to material/surface required

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

BF – Bulkhead flange flat face

SAE 1000/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Bulkhead Body Order code	O-Ring	D1	D2	L	Weight body (Steel) kg/1 piece
1 1/2	R-124FBFS	BF124FSX	OR47.22X3.53X	59.7	39.8	165	1.98
2	R-132FBFS	BF132FSX	OR56.75X3.53X	69.7	50.0	165	2.34
2 1/2	R-140FBFS	BF140FSX	OR69.44X3.53X	80.7	62.0	175	2.81
3	R-148FBFS	BF148FSX	OR85.32X3.53X	97.7	77.8	200	4.20
3 1/2	R-156FBFS	BF156FSX	OR98.02X3.53X	114.7	89.8	200	6.15
4	R-164FBFS	BF164FSX	OR110.72X3.53X	124.7	99.8	200	6.75
5	R-180FBFS	BF180FSX	OR136.12X3.53X	149.7	124.8	200	8.22
6	R-196FBFS	BF196FSX	OR158.34X3.53X	179.7	149.8	215	12.81
8	R-1128FBFS	BF1128FSX	OR219.3X5.7X	239.7	206.5	240	21.18
10	R-1160FBFS	BF1160FSX	OR269.3X5.7X	295.0	255.0	270	35.59

Other sizes on request.

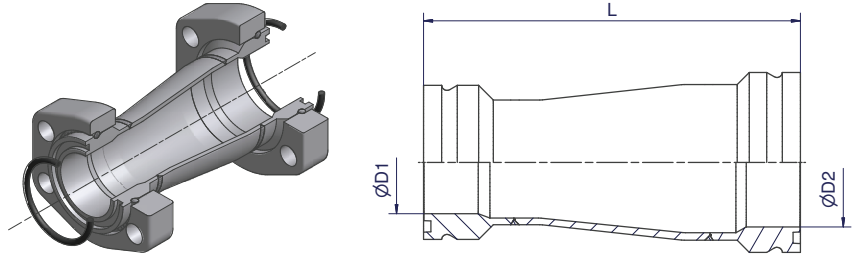
Please change suffixes according to material/surface required

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



RF – Reducer flange, soft sealed

SAE 1000/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Reducer Body Order code	O-Ring D1	O-Ring D2	D1	D2	L	Weight body (Steel) kg/1 piece	W.P. bar
2 - 1 1/2	R-132-124LRFCF	RF132-124LOMDCF	OR56.75X3.53X	OR47.22X3.53X	39.8	50.3	146	0.91	70
2 1/2 - 1 1/2	R-140-124LRFCF	RF140-124LOMDCF	OR69.44X3.53X	OR47.22X3.53X	39.8	62.0	160	1.04	70
2 1/2 - 2	R-140-132LRFCF	RF140-132LOMDCF	OR69.44X3.53X	OR56.75X3.53X	50.0	62.0	160	1.25	70
3 - 1 1/2	R-148-124LRFCF	RF148-124LOMDCF	OR85.32X3.53X	OR47.22X3.53X	39.8	77.8	165	1.34	70
3 - 2	R-148-132LRFCF	RF148-132LOMDCF	OR85.32X3.53X	OR56.75X3.53X	50.0	77.8	165	1.45	70
3 - 2 1/2	R-148-140LRFCF	RF148-140LOMDCF	OR85.32X3.53X	OR69.44X3.53X	62.0	77.8	168	1.53	70
3 1/2 - 2 1/2	R-156-140LRFCF	RF156-140LOMDCF	OR98.02X3.53X	OR69.44X3.53X	62.0	89.8	177	2.00	50
3 1/2 - 3	R-156-148LRFCF	RF156-148LOMDCF	OR98.02X3.53X	OR85.32X3.53X	77.8	89.8	182	2.32	50
4 - 3	R-164-148LRFCF	RF164-148LOMDCF	OR110.72X3.53X	OR85.32X3.53X	77.8	99.8	182	2.43	50
5 - 4	R-180-164LRFCF	RF180-164LOMDCF	OR136.12X3.53X	OR110.72X3.53X	99.8	124.8	214	3.86	50

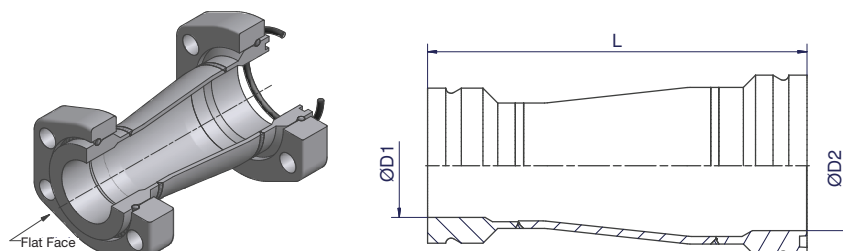
Other sizes on request.

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

SAE 1000/ISO 6162-1 footprint



Size Inch	Complete Part Order code	Reducer Body Order code	O-Ring	D1	D2	L	Weight body (Steel) kg/1 piece	W.P. bar
2 - 1 1/2	R-132-124FRFCF	RF132-124FOMDCF	OR56.75X3.53X	39.8	50.0	146	0.91	70
2 1/2 - 1 1/2	R-140-124FRFCF	RF140-124FOMDCF	OR69.44X3.53X	39.8	62.0	160	1.04	70
2 1/2 - 2	R-140-132FRFCF	RF140-132FOMDCF	OR69.44X3.53X	50.0	62.0	160	1.25	70
3 - 1 1/2	R-148-124FRFCF	RF148-124FOMDCF	OR85.32X3.53X	39.8	77.8	165	1.34	70
3 - 2	R-148-132FRFCF	RF148-132FOMDCF	OR85.32X3.53X	50.0	77.8	165	1.45	70
3 - 2 1/2	R-148-140FRFCF	RF148-140FOMDCF	OR85.32X3.53X	62.0	77.8	168	1.53	70
3 1/2 - 2 1/2	R-156-140FRFCF	RF156-140FOMDCF	OR98.02X3.53X	62.0	89.8	177	2.00	50
3 1/2 - 3	R-156-148FRFCF	RF156-148FOMDCF	OR98.02X3.53X	77.8	89.8	182	2.32	50
4 - 3	R-164-148FRFCF	RF164-148FOMDCF	OR110.72X3.53X	77.8	99.8	182	2.43	50
5 - 4	R-180-164FRFCF	RF180-164FOMDCF	OR136.12X3.53X	99.8	124.8	214	3.86	50

Other sizes on request.

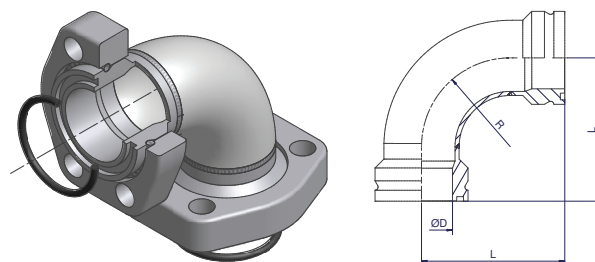
Please change suffixes according to material/surface required

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

SAE 1000/ISO 6162-1 footprint



Size Inch	Elbow Flange Complete Part Order code	Elbow Flange body Order code	O-Ring	D	L	R	Weight body (Steel) kg/1 piece	W.P. bar
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	304	229.0	11.19	50
8	R-1128LLFCF	LF1128LOMDCF	OR219.3X5.7X	206.5	390	305.0	24.13	50
10	R-1160LLFCF	LF1160LOMDCF	OR269.3X5.7X	255.0	471	381.0	38.39	50

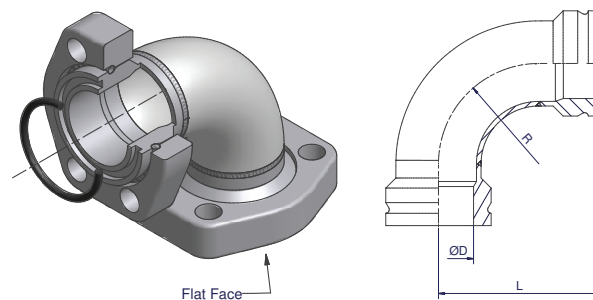
Other sizes on request.

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

SAE 1000/ISO 6162-1 footprint



Size Inch	Elbow Flange Complete Part Order code	Elbow Flange body Order code	O-Ring	D	L	R	Weight body (Steel) kg/1 piece	W.P. bar
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	304	229.0	11.19	50
8	R-1128FLFCF	LF1128FOMDCF	OR219.3X5.7X	206.5	390	305.0	24.13	50
10	R-1160FLFCF	LF1160FOMDCF	OR269.3X5.7X	255.0	471	381.0	38.39	50

Other sizes on request.

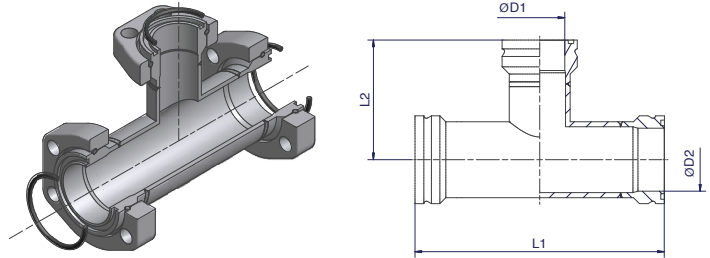
Please change suffixes according to material/surface required

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

SAE 1000/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 body (Steel) kg/1 piece	W.P. bar
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	426	188	11.49	50
6	R-196LTFCF	TF196LOMDCF	OR158.34X3.53X	OR158.34X3.53X	149.8	149.8	439	218	12.87	50
8-6-8	R-1128-196-1128LTFCF	TF1128-196-1128LOMDCF	OR158.34X3.53X	OR219.3X5.7X	149.8	206.5	528	243	22.66	50
8	R-1128LTFCF	TF1128LOMDCF	OR219.3X5.7X	OR219.3X5.7X	206.5	206.5	529	263	25.58	50
10	R-1160LTFCF	TF1160LOMDCF	OR269.3X5.7X	OR269.3X5.7X	255.0	255.0	612	306	40.16	50

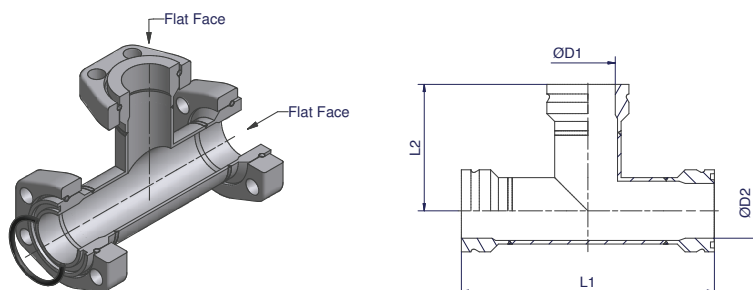
Other sizes on request

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

SAE 1000/ISO 6162-1 footprint



Size Inch	Tee Flange Complete Part Order code	Tee Flange Body Order code	O-Ring	D1	D2	L1	L2	Weight body (Steel) kg/1 piece	W.P. bar
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 1/2-2-21/2	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	426	188	11.49	50
6	R-196FTFCF	TF196FOMDCF	OR158.34X3.53X	149.8	149.8	439	218	12.87	50
8-6-8	R-1128-196-1128FTFCF	TF1128-196-1128FOMDCF	OR219.3X5.7X	149.8	206.5	528	243	22.66	50
8	R-1128FTFCF	TF1128FOMDCF	OR219.3X5.7X	206.5	206.5	529	263	25.58	50
10	R-1160FTFCF	TF1160FOMDCF	OR269.3X5.7X	255.0	255.0	612	306	40.16	50

Other sizes on request.

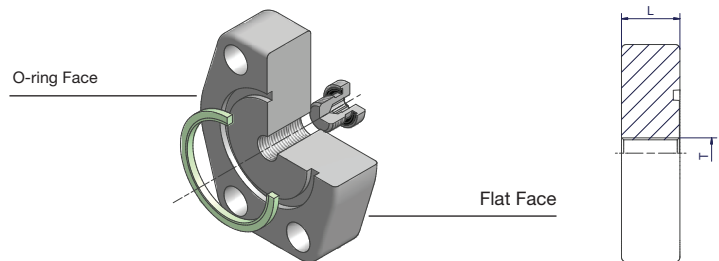
Please change suffixes according to material/surface required

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

SAE 1000/ISO 6162-1



Size Inch	Flange incl. VSTI-ED and Seal Order code	L	T	Weight body (Steel) kg/1 piece
1 1/2	F37-124BFVCF	20	G 1/4	0.9
2	F37-132BFVCF	25	G 1/4	1.5
2 1/2	F37-140BFVCF	30	G 1/4	2.3
3	F37-148BFVCF	30	G 1/4	3.2
3 1/2	F37-156BFVCF	30	G 1/4	4.0
4	F37-164BFVCF	39	G 1/4	6.1
5	F37-180BFVCF	39	G 1/4	8.3
6	F37-196BFVCF	39	G 1/4	12.9
8	F37-1128BFVCF	39	G 1/4	23.1
10	F37-1160BFVCF	50	G 1/4	50.2

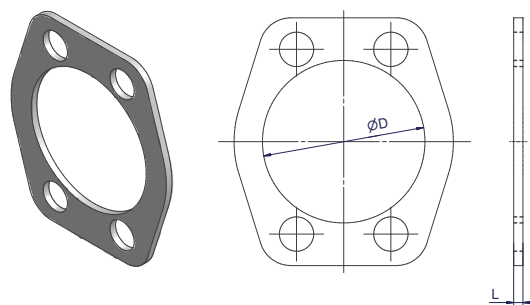
Other sizes on request.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-124BFVCF
Stainless steel	SS	F37-124BFVSS

CPML – F37 inner plate

SAE 1000/ISO 6162-1 footprint



Size Inch	F37 Inner Plate Order code	L	D	Weight (Steel) kg/1 piece
1 1/2	24CPMLCFX	3.5	39.8	0.13
2	32CPMLCFX	3.5	50.0	0.15
2 1/2	40CPMLCFX	3.5	62.0	0.19
3	48CPMLCFX	3.5	77.8	0.25
3 1/2	56CPMLCFX	3.5	89.8	0.30
4	64CPMLCFX	3.5	99.8	0.34
5	80CPMLCFX	3.5	124.8	0.41
6	96CPMLCFX	3.5	149.8	0.68
8	128CPMLCFX	4.5	206.5	1.52
10	160CPMLCFX	4.5	255.0	2.75

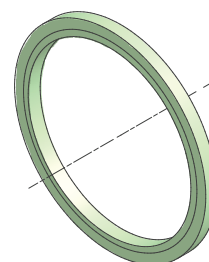
Other sizes on request.

Please change suffixes according to material/surface required.

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

F37S/F37RS – F37 seal

SAE 1000/ISO 6162-1



Size Inch	F37 Seal (F37 seal for flaring system)
1 1/2	F37S24X
2	F37S32X
2 1/2	F37S40X
3	F37S48X
3 1/4	F37S56X
4	F37S64X
5	F37S80X
6	F37S196X
8	F37S1128X
10	F37S1160X

Sealing: Polyurethane
Material properties and applications see page 20.
Other sizes on request.

Bolts and nuts for flange

SAE 1000/ISO 6162-1 footprint



F37 Flare Flange

Size Inch	Flange	Soft Seal / Flat Face		Nut
		Recommended bolts Tube to Port	Recommended bolts Tube to Tube	
1 1/2	F37-124-CFX	4 x ZYLS12X40	4 x ZYLS12X70	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 ZYLS16X100	4 x ISO4032-M16
3 1/2	F37-156-CFX	4 x ZYLS16X60	4 x ZYLS16X100	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 ZYLS16X110	6 x ISO4032-M16
8	F37-1128-CFX	8 x ZYLS20X80	8 x ZYLS20X145	8 x ISO4032-M20
10	F37-1160-CFX	8 x ZYLS20X80	8 x ZYLS20X150	8 x ISO4032-M20

Retaining Ring Flange

Size Inch	Flange	Soft Seal / Flat Face		Nut
		Recommended bolts Tube to Port	Recommended 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 are not included in complete part numbers.

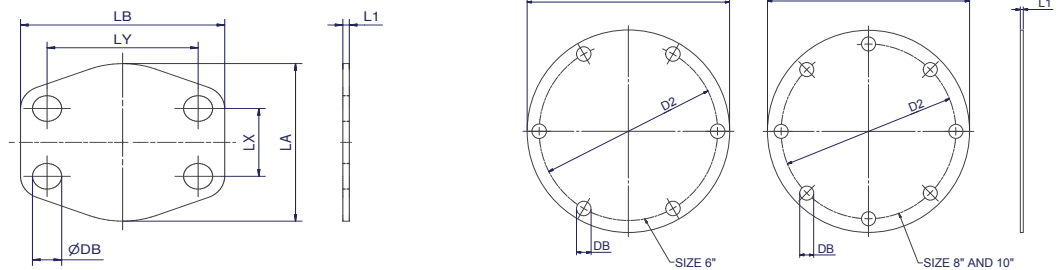
Latest information about nuts and bolts see www.parker.com/hpce -> Support -> Literature and Reference Materials -> Manuals

Please add the suffixes according to the bolt quality

	Steel		Stainless Steel
Grade	8.8	10.9	A4-80X
Bolt	ZYLS16X60VZX	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO4032-M12-8VZX	ISO4032-M12-10X	ISO4032-M12-80X

AP – SAE flange locking plate

SAE 1000/ISO 6162-1



Nom. flange size		Order code	L1	LA	LB	LX	LY	DB	Weight body (Steel) kg/1 piece
SAE (In)	ISO (DN)								
1 1/2	38	24AP1	3	83	94	35.7	69.9	13.5	0.02
2	51	32AP1	3	97	102	42.9	77.8	13.5	0.02
2 1/2	64	40AP1	3	109	114	50.8	88.9	13.5	0.03
3	76	48AP1	4	131	135	61.9	106.4	17.0	0.06
3 1/2	89	56AP1	4	140	152	69.9	120.7	17.0	0.07
4	102	64AP1	4	146	162	77.8	130.2	17.0	0.08
5	127	80AP1	4	181	184	92.1	152.4	17.0	0.11
				DA		D2		DB	
6		96AP1	3.5	236		208		17.0	1.33
8		128AP1	4	318		275		22.0	2.40
10		160AP1	4	409		345		22.0	4.04

This flange locking plate to be not used under pressure!

Please change suffixes according to material/surface required

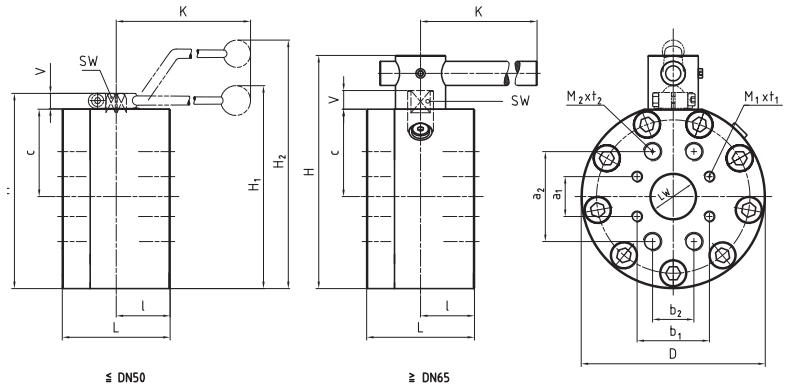
Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8AP1CF	only locking plate
Stainless steel	SS	8AP1SS	only locking plate
Steel (zinc plated, Cr(VI)-free), SBR 70 Shore A	CFSBR70	8AP1CFSBR70	locking incl. rubber plate L1 increases due to rubber plate



KH - Ball valve drilled and tapped for SAE Flanges

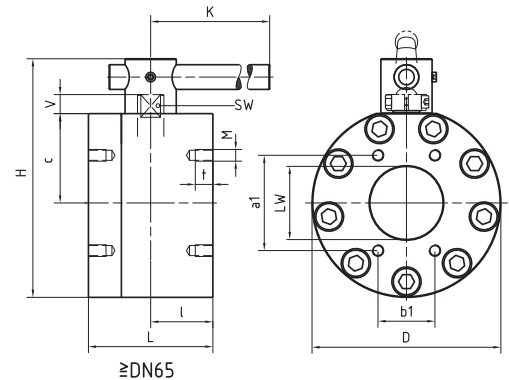
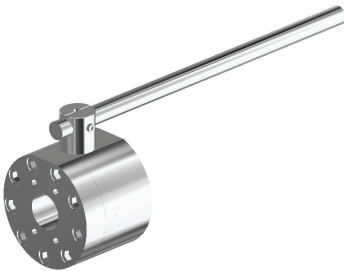
SAE 1000/ISO 6162-1 footprint

Material Steel



Size Inch	Order code	DN	LW	L	I	D	H	c	V	K	SW	SAE 3000 boring pattern				SAE 6000 boring pattern				H1	H2	Material Code	Lever	Weight- kg	W.P. bar
												a1	b1	M1	t1	a2	b2	M2	t2						
1 1/2	KH24-38CF	40	38	110	55	165	178	78	17	306	17	35.7	69.9	M12	20	79.4	36.5	M16	27	-	252	212A	St	17.10	210/420
2	KH32-48CF	50	48	116	58	198	210	94	17	306	17	42.9	77.8	M12	20	96.8	44.5	M20	28	-	284	212A	St	24.60	210/420
2 1/2	KH40-63CF	65	63	170	75	218	275	100	20	600	16	88.9	50.8	M12	19	123.8	58.7	M24	41	-	-	282A	St	44.40	175/420
3	KH48-76CF	80	76	170	79	258	315	115	26	600	19	106.4	61.9	M16	24	152.4	71.4	M30	47	-	-	282A	St	54.90	160/420

Steel ball valves 1 1/2" up to 3" with SAE 3000 and SAE 6000 boring pattern.
The bore pattern for 2 1/2" and 3" is turned to 90°.



Size Inch	Order code	DN	LW	L	I	D	H	c	V	K	SW	a1	b1	M	t	Material Code	Lever	Weight- kg	W.P. bar
4	KH364-100CF	100	100	170	85	258	326	122	27	900	24	130.2	77.8	M16	24	282A	St	60.5	35
5	KH380-118CF	125	118	210	105	295	377	140	33	900	36	152.4	92.1	M16	30	282A	St	95.5	35

Steel ball valves 4" up to 5" with SAE 3000 only boring pattern.
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	KH32-48CF

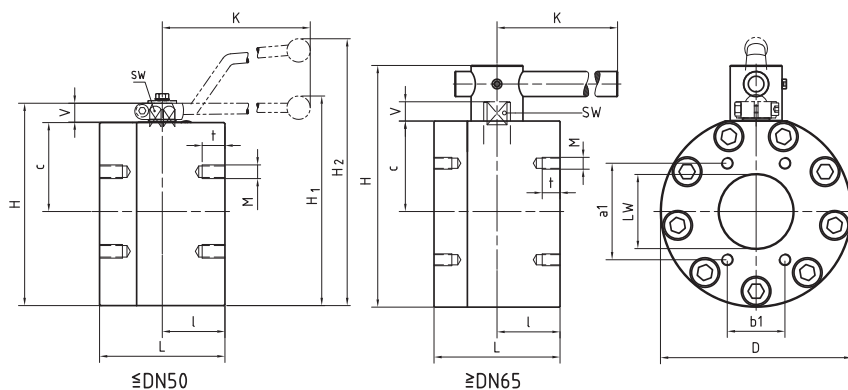
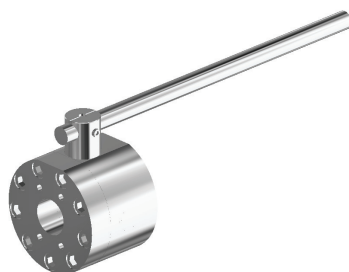
	Material 212A	Material 282A
Body	Steel	Steel
Ball	Steel	Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / Tmax	-10°C / 100°C	-10°C / 100°C

ENGINEERING YOUR SUCCESS.

KH - Ball valve drilled and tapped for SAE Flanges

SAE 1000/ISO 6162-1 footprint

Material Stainless Steel



Size Inch	Order code	DN	LW	L	I	D	H	c	V	K	SW	a1	b1	M	t	H1	H2	Material Code	Lever	Weight- kg	W.P. bar
1 1/2	KH324-38SS	40	38	110	55	165	178	78	17	320	17	69.9	35.7	M12	20	187	-	442A	Al	17.1	210
2	KH332-48SS	50	48	116	58	198	210	94	17	320	17	77.8	42.9	M12	20	219	-	442A	Al	24.6	210
2 1/2	KH340-63SS	65	63	150	75	198	259	94	20	600	16	88.9	50.8	M12	19	-	-	442A	St	33.5	175
3	KH348-76SS	80	76	150	79	218	284	104	26	600	19	106.4	61.9	M16	24	-	-	442A	St	40.0	160
4	KH364-100SS	100	100	170	85	258	326	122	27	900	24	130.2	77.8	M16	24	-	-	442A	St	60.5	35
5	KH380-118SS*	125	118	210	105	295	377	140	33	900	36	152.4	92.1	M16	30	-	-	442A	St	95.5	35

Other sizes on request.

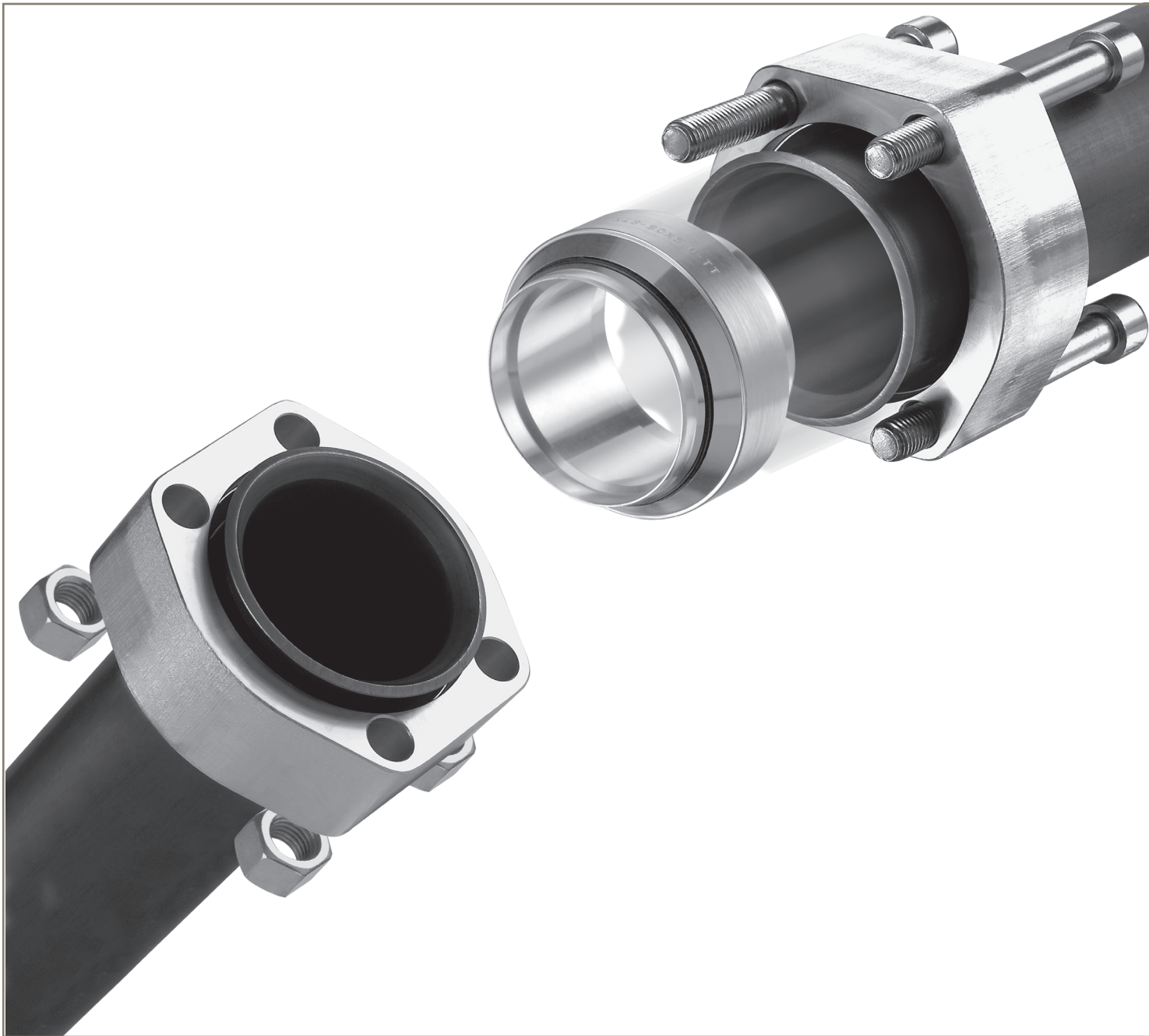
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Stainless steel	SS	KH32-48SS

	Material 442A
Body	Stainless Steel
Ball	Stainless Steel
Stem	Stainless Steel
Ball seats	POM
O-Ring	NBR
Tmin / Tmax	-30°C / 100°C

*For these ball valves Tmin / Tmax = -10°C / 100°C



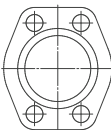
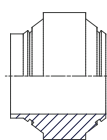
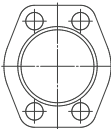
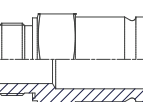
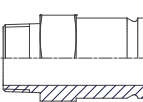
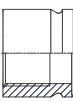
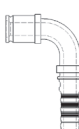
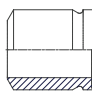
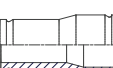
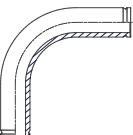
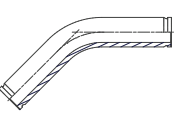
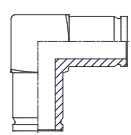
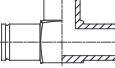
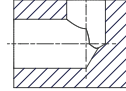
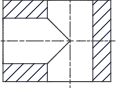
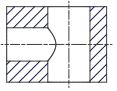
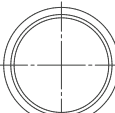
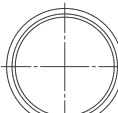
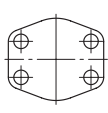
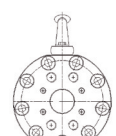
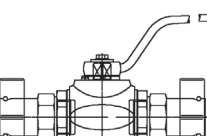
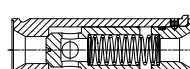


SAE 3000 System

210 – 350 bar

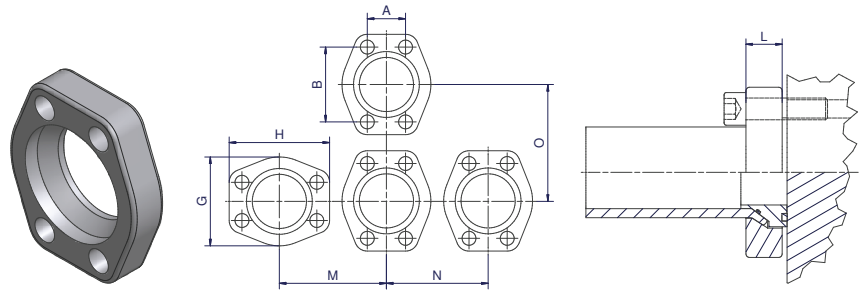
ENGINEERING YOUR SUCCESS.

Programme overview SAE 3000/ISO 6162-1 footprint

Parflange® F37 connection parts	Flanges  F37 – p.65/66					
	Inserts  TFB – p.69  TFV – p.70  TT – p.71  TF – p.72				Sleeve  SL – p.73	
Retaining ring connection parts	Flanges  R – p.67  R-Ring – p.74  PSC – p.68					
	Male / Female  MTF-R – p.75  MTF-N – p.76  FTF-R – p.77			Hose    Hose – p.78-80		Weld  WA – p.81/82
	Tube to Tube  BF – p.83  VB – p.84  RF – p.85  FB90 – p.86/88  FB45 – p.87/89  LF – p.90  TF – p.91					
SAE connection parts	Blocks  LB – p.92  LBR – p.93  TB – p.94  TBR – p.95  BFV – p.96					
	Components  BS – p.97  F37S – p.97  AO – p.98  TBT – p.99  AP – p.100					Bolts and Nuts  p.101
Ball valves	 KH – p.102/103  KH-R – p.104  RHD-R – p.105					

F37 – Flare flange | SAE 3000/ISO 6162-1 footprint

SAE 3000/ISO 6162-1



Parflange F37 flange dimensions

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

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight body (Steel) kg/1 piece	W.P. bar
1/2	F37-308-CFX	17.5	38.1	46	54	55	51	59	19	0.17	350
1/2	F37-308/16-CFX*	17.5	38.1	46	54	55	51	59	19	0.22	350
1/2	F37-308/20-CFX*	17.5	38.1	46	54	55	51	59	19	0.20	350
3/4	F37-312-CFX	22.3	47.6	52	65	63	57	70	20	0.25	350
1	F37-316-CFX	26.2	52.4	60	71	69	64	75	24	0.30	350
1	F37-316/25-CFX*	26.2	52.4	60	71	69	64	75	24	0.45	350
1	F37-316/30-CFX*	26.2	52.4	60	71	69	64	75	24	0.39	350
1 1/4	F37-320-CFX	30.2	58.7	68	79	81	78	84	22	0.46	280
1 1/4	F37-320/38-CFX*	30.2	58.7	68	79	81	78	84	22	0.46	280
1 1/2	F37-324-CFX	35.7	69.9	78	93	93	87	99	25	0.68	280
1 1/2	F37-324/42-CFX*	35.7	69.9	78	93	93	87	99	25	0.75	280
2	F37-332-CFX	42.9	77.8	97	102	104	102	107	33	0.98	280
2 1/2	F37-340-CFX	50.8	88.9	109	116	117	114	120	44	1.63	210
3	F37-348-CFX	61.9	106.4	132	135	138	136	141	50	2.79	210

Parflange F37 threaded flange dimensions

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

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Thread	Weight body (Steel) kg/1 piece	W.P. bar
1/2	F37-308T-CFX	17.5	38.1	46	54	55	51	59	19	M08	0.17	350
3/4	F37-312T-CFX	22.3	47.6	52	65	63	57	70	20	M10	0.25	350
1	F37-316T-CFX	26.2	52.4	60	71	69	64	75	24	M10	0.30	350
1	F37-316/30T-CFX*	26.2	52.4	60	71	69	64	75	24	M10	0.39	350
1 1/4	F37-320T-CFX	30.2	58.7	68	79	81	78	84	22	M10	0.46	280
1 1/4	F37-320/38T-CFX*	30.2	58.7	68	79	81	78	84	22	M10	0.46	280
1 1/2	F37-324T-CFX	35.7	69.9	78	93	93	87	99	25	M10	0.68	280
2	F37-332T-CFX	42.9	77.8	97	102	104	102	107	33	M12	0.98	280
2 1/2	F37-340T-CFX	50.8	88.9	109	116	117	114	120	44	M12	1.63	210
3	F37-348T-CFX	61.9	106.4	132	135	138	136	141	50	M16	2.87	210

Pressure rates related to flanges. Other sizes / jump 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	F37-320-CFX	
Stainless steel	SS	F37-320-SSX	
Galvanized hot dip zinc	TZN	F37-320-TZNX (Not for threaded flanges available)	on request

Parflange® F37 – SAE 3000/ISO 6162-1



Part combination flaring SAE 3000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange SAE 3000 ISO 6162-1	Insert*	Sleeve
350	1/2	16X2.0	F37-308-CFX	IN08-16X2.0T...	SL08-25-16-CFX**
	1/2	18X2.0	F37-308-CFX	IN08-18X2.0T...	SL08-25-18-CFX
	1/2	20X2.0	F37-308-CFX	IN08-20X2.0T...	SL08-25-20-CFX**
	1/2	20X2.5	F37-308-CFX	IN08-20X2.5T...	SL08-25-20-CFX**
	1/2	25X2.5	F37-308-CFX	IN08-25X2.5T...	
	1/2	25X3.0	F37-308-CFX	IN08-25X3.0T...	
	3/4	20X2.0	F37-312-CFX	IN12-20X2.0T...	SL12-30-20-CFX
	3/4	20X2.5	F37-312-CFX	IN12-20X2.5T...	SL12-30-20-CFX
	3/4	25X2.5	F37-312-CFX	IN12-25X2.5T...	SL12-30-25-CFX
	3/4	25X3.0	F37-312-CFX	IN12-25X3.0T...	SL12-30-25-CFX
	3/4	30X3.0	F37-312-CFX	IN12-30X3.0T...	
	3/4	30X4.0	F37-312-CFX	IN12-30X4.0T...	
	1	25X2.5	F37-316-CFX	IN16-25X2.5T...	SL16-38-25-CFX**
	1	25X3.0	F37-316-CFX	IN16-25X3.0T...	SL16-38-25-CFX**
	1	30X3.0	F37-316-CFX	IN16-30X3.0T...	SL16-38-30-CFX**
	1	30X4.0	F37-316-CFX	IN16-30X4.0T...	SL16-38-30-CFX**
	1	38X2.5	F37-316-CFX	IN16-38X2.5T...	
	1	38X3.0	F37-316-CFX	IN16-38X3.0T...	
	1	38X4.0	F37-316-CFX	IN16-38X4.0T...	
	1	38X5.0	F37-316-CFX	IN16-38X5.0T...	
280	1 1/4	30X3.0	F37-320-CFX	IN20-30X3.0T...	SL20-42-30-CFX
	1 1/4	30X4.0	F37-320-CFX	IN20-30X4.0T...	SL20-42-30-CFX
	1 1/4	38X3.0	F37-320-CFX	IN20-38X3.0T...	SL20-42-38-CFX**
	1 1/4	38X4.0	F37-320-CFX	IN20-38X4.0T...	SL20-42-38-CFX**
	1 1/4	38X5.0	F37-320-CFX	IN20-38X5.0T...	SL20-42-38-CFX**
	1 1/4	42X3.0	F37-320-CFX	IN20-42X3.0T...	
	1 1/4	42X4.0	F37-320-CFX	IN20-42X4.0T...	
	1 1/2	38X3.0	F37-324-CFX	IN24-38X3.0T...	SL24-50-38-CFX
	1 1/2	38X4.0	F37-324-CFX	IN24-38X4.0T...	SL24-50-38-CFX
	1 1/2	38X5.0	F37-324-CFX	IN24-38X5.0T...	SL24-50-38-CFX
	1 1/2	42X3.0	F37-324-CFX	IN24-42X3.0T...	SL24-50-42-CFX**
	1 1/2	42X4.0	F37-324-CFX	IN24-42X4.0T...	SL24-50-42-CFX**
	1 1/2	50X3.0	F37-324-CFX	IN24-50X3.0T...	
	1 1/2	50X5.0	F37-324-CFX	IN24-50X5.0T...	
	1 1/2	50X6.0	F37-324-CFX	IN24-50X6.0T...	
	2	50X3.0	F37-332-CFX	IN32-50X3.0T...	SL32-60-50-CFX
	2	50X5.0	F37-332-CFX	IN32-50X5.0T...	SL32-60-50-CFX
	2	50X6.0	F37-332-CFX	IN32-50X6.0T...	SL32-60-50-CFX
	2	60X3.0	F37-332-CFX	IN32-60X3.0T...	
	2	60X5.0	F37-332-CFX	IN32-60X5.0T...	
	2	60X6.0	F37-332-CFX	IN32-60X6.0T...	
210	2 1/2	60X3.0	F37-340-CFX	IN40-60X3.0T...	SL40-75-60-CFX
	2 1/2	60X5.0	F37-340-CFX	IN40-60X5.0T...	SL40-75-60-CFX
	2 1/2	60X6.0	F37-340-CFX	IN40-60X6.0T...	SL40-75-60-CFX
	2 1/2	75X3.0	F37-340-CFX	IN40-75X3.0T...	
	2 1/2	75X5.0	F37-340-CFX	IN40-75X5.0T...	
	3	75X3.0	F37-348-CFX	IN48-75X3.0T...	SL48-90-75-CFX
	3	75X5.0	F37-348-CFX	IN48-75X5.0T...	SL48-90-75-CFX
	3	90X3.5	F37-348-CFX	IN48-90X3.5T...	
	3	90X5.0	F37-348-CFX	IN48-90X5.0T...	

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

**Jump size flanges available alternatively to adapter sleeve, see page 65.

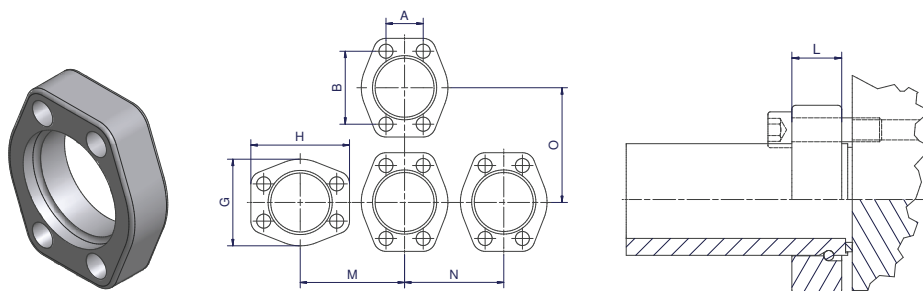
Other sizes like schedule on request.

Bolts and nuts are not included in complete part numbers. For recommended bolts and nuts see page 101.



R – Retaining ring flange | SAE 3000/ISO 6162-1 footprint

SAE 3000/ISO 6162-1



Retaining ring flange dimensions

Size Inch	Order Code	A	B	G	H	M	N	O	L	Weight body (Steel) kg/1 piece	W.P. bar
1/2	R-308-CFX	17.5	38.1	46	54	55	51	59	19	0.2	350
3/4	R-312-CFX	22.3	47.6	52	65	63	57	70	20	0.2	350
1	R-316-CFX	26.2	52.4	59	71	69	64	75	24	0.3	350
1 1/4	R-320-CFX	30.2	58.7	73	79	81	78	84	22	0.5	280
1 1/2	R-324-CFX	35.7	69.9	83	95	93	87	99	25	0.6	280
2	R-332-CFX	42.9	77.8	97	102	104	102	107	33	1.0	280
2 1/2	R-340-CFX	50.8	88.9	109	116	117	114	120	44	1.6	210
3	R-348-CFX	61.9	106.4	132	135	138	136	141	50	2.5	210

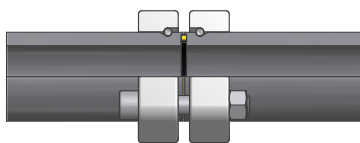
Pressure rates related to flanges.

Other sizes like schedule on request.

For all sizes also threaded flanges available (...T-CFX).

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



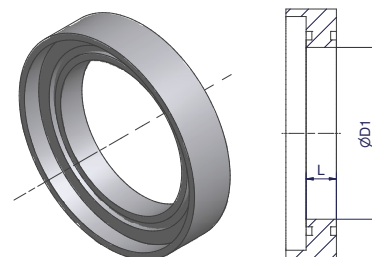
Part combination Bonded seal SAE 3000 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal
350	1/2	26X6.0	R-308-CFX	R08X	BS08SNX
	3/4	36X8.0	R-312-CFX	R12X	BS12SNX
	1	39X7.5	R-316-CFX	R16X	BS16SNX
280	1 1/4	46X8.0	R-320-CFX	R20X	BS20SNX
	1 1/2	56X8.5	R-324-CFX	R24X	BS24SNX
	2	66X8.5	R-332-CFX	R32X	BS32SNX
210	2 1/2	80X10.0	R-340-CFX	R40X	BS40SNX
	3	97X12.0	R-348-CFX	R48X	BS48SNX

Bolts and nuts are not included in complete part numbers For recommended bolts and nuts see page 101.

PSC – Pipe seal carrier | SAE 3000/ISO 6162-1 footprint

SAE 3000/ISO 6162-1

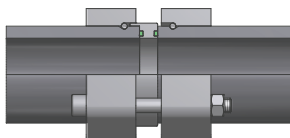


Size Inch	Pipe size	Seal carrier incl. F37 Seal	Seal carrier incl. O-Ring	L	D1	F37 Seal	O-Ring
1 1/4	46X3.0	PSC20-46X8.0VCF	PSC20-46X8.0OCF	8.0	30	F37RS20X	OR34.59X2.62X
1 1/2	56X8.5	PSC24-56X8.5VCF	PSC24-56X8.5OCF	10.0	39	F37RS24X	OR44.12X2.62X
2	66X8.5	PSC32-66X8.5VCF	PSC32-66X8.5OCF	10.0	49	F37RS32X	OR55.25X2.62X
2 1/2	80X10.0	PSC40-80X10VCF	PSC40-80X10OCF	15.0	60	F37RS40X	OR66.27X3.53X
3	97X12.0	PSC48-97X12VCF	PSC48-97X12OCF	15.0	73	F37RS48X	OR78.97X3.53X

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, F37-Seal	VCF	PSC40-80X10VCF
Stainless steel, F37-Seal	VSS	PSC40-80X10VSS
Steel, zinc plated, Cr(VI)-free, O-Ring (NBR)	OCF	PSC40-80X10OCF
Stainless steel, O-Ring (NBR)	OSS	PSC40-80X10OSS



Example of part combinations Pipe seal carrier SAE 3000 connection

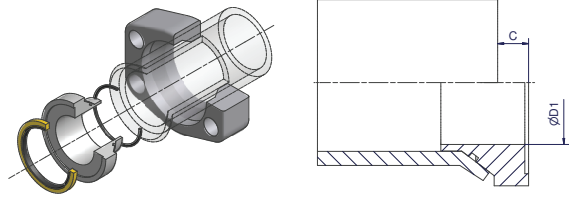
Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Pipe Seal Carrier
280	1 1/4	46X8.0	R-320-CFX	R20X	PSC20-45X8.0VCF
	1 1/2	56X8.5	R-324-CFX	R24X	PSC24-56X8.5VCF
	2	66X8.5	R-332-CFX	R32X	PSC32-66X8.5VCF
210	2 1/2	80X10.0	R-340-CFX	R40X	PSC40-80X10VCF
	3	97X12.0	R-348-CFX	R48X	PSC48-97X12VCF

Other sizes on request

Bolts and nuts are not included in complete part numbers. For recommended bolts and nuts see page 101.

TFB – Flare flange connection

Tube to port connection, bonded seal



Size		Flange* incl. Insert + Bonded Seal + O-Ring Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube							
1/2	16X2.0	F37-308-16X2.0TFBCF	9.5	8.0	IN08-16X2.0TFBCF	BS08SNX	OR12X1.0X	0.24
1/2	18X2.0	F37-308-18X2.0TFBCF	11.5	8.0	IN08-18X2.0TFBCF	BS08SNX	OR14X1.0X	0.24
1/2	20X2.0	F37-308-20X2.0TFBCF	13.5	8.0	IN08-20X2.0TFBCF	BS08SNX	OR16X1.0X	0.24
1/2	20X2.5	F37-308-20X2.5TFBCF	13.5	8.0	IN08-20X2.5TFBCF	BS08SNX	OR16X1.0X	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	0.31
3/4	20X2.5	F37-312-20X2.5TFBCF	12.5	8.0	IN12-20X2.5TFBCF	BS12SNX	OR16X1.0X	0.31
3/4	25X2.5	F37-312-25X2.5TFBCF	17.5	10.0	IN12-25X2.5TFBCF	BS12SNX	OR20X1.0X	0.31
3/4	25X3.0	F37-312-25X3.0TFBCF	16.5	8.0	IN12-25X3.0TFBCF	BS12SNX	OR20X1.0X	0.32
3/4	30X3.0	F37-312-30X3.0TFBCF	19.0	8.5	IN12-30X3.0TFBCF	BS12SNX	OR25X1.0X	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	0.39
1	25X3.0	F37-316-25X3.0TFBCF	16.5	8.0	IN16-25X3.0TFBCF	BS16SNX	OR20X1.0X	0.39
1	30X3.0	F37-316-30X3.0TFBCF	21.5	8.5	IN16-30X3.0TFBCF	BS16SNX	OR25X1.0X	0.39
1	30X4.0	F37-316-30X4.0TFBCF	19.5	8.5	IN16-30X4.0TFBCF	BS16SNX	OR22X1.0X	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	OR25X1.0X	0.57
1 1/4	30X4.0	F37-320-30X4.0TFBCF	19.5	8.5	IN20-30X4.0TFBCF	BS20SNX	OR22X1.0X	0.58
1 1/4	38X3.0	F37-320-38X3.0TFBCF	29.5	9.0	IN20-38X3.0TFBCF	BS20SNX	OR34X1.0X	0.56
1 1/4	38X4.0	F37-320-38X4.0TFBCF	27.0	10.0	IN20-38X4.0TFBCF	BS20SNX	OR30X1.0X	0.57
1 1/4	38X5.0	F37-320-38X5.0TFBCF	25.5	8.0	IN20-38X5.0TFBCF	BS20SNX	OR28X1.0X	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	0.65
1 1/2	38X4.0	F37-324-38X4.0TFBCF	27.5	10.0	IN24-38X4.0TFBCF	BS24SNX	OR30.X1.0X	0.87
1 1/2	38X5.0	F37-324-38X5.0TFBCF	25.0	8.0	IN24-38X5.0TFBCF	BS24SNX	OR28X1.0X	0.87
1 1/2	42X3.0	F37-324-42X3.0TFBCF	35.0	10.0	IN24-42X3.0TFBCF	BS24SNX	OR37.82X1.78X	0.88
1 1/2	42X4.0	F37-324-42X4.0TFBCF	31.5	10.0	IN24-42X4.0TFBCF	BS24SNX	OR34X1.0X	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	1.20
2	50X5.0	F37-332-50X5.0TFBCF	37.5	10.0	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	1.22
2	50X6.0	F37-332-50X6.0TFBCF	35.0	10.0	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	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	1.98
2 1/2	60X5.0	F37-340-60X5.0TFBCF	46.0	11.0	IN40-60X5.0TFBCF	BS40SNX	OR50.52X1.78X	1.99
2 1/2	60X6.0	F37-340-60X6.0TFBCF	45.5	11.0	IN40-60X6.0TFBCF	BS40SNX	OR47.37X1.78X	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	3.22
3	75X5.0	F37-348-75X5.0TFBCF	62.0	10.0	IN48-75X5.0TFBCF	BS48SNX	OR63.22X1.78X	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

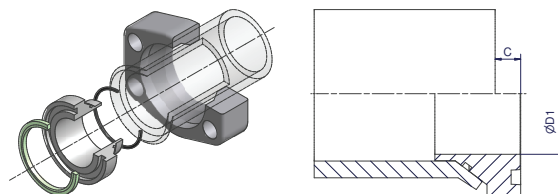
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube							
1/2	16X2.0	F37-308-16X2.0TFVCF	9.5	8.0	IN08-16X2.0TFVCF	F37S08X	OR12X1.0X	0.24
1/2	18X2.0	F37-308-18X2.0TFVCF	11.5	8.0	IN08-18X2.0TFVCF	F37S08X	OR14X1.0X	0.24
1/2	20X2.0	F37-308-20X2.0TFVCF	13.5	8.0	IN08-20X2.0TFVCF	F37S08X	OR16X1.0X	0.24
1/2	20X2.5	F37-308-20X2.5TFVCF	13.5	8.0	IN08-20X2.5TFVCF	F37S08X	OR16X1.0X	0.24
1/2	25X2.5	F37-308-25X2.5TFVCF	13.5	10.0	IN08-25X2.5TFVCF	F37S08X	OR20X1.0X	0.25
1/2	25X3.0	F37-308-25X3.0TFVCF	13.0	8.0	IN08-25X3.0TFVCF	F37S08X	OR20X1.0X	0.24
3/4	20X2.0	F37-312-20X2.0TFVCF	13.5	8.0	IN12-20X2.0TFVCF	F37S12X	OR16X1.0X	0.31
3/4	20X2.5	F37-312-20X2.5TFVCF	12.5	8.0	IN12-20X2.5TFVCF	F37S12X	OR16X1.0X	0.31
3/4	25X2.5	F37-312-25X2.5TFVCF	17.5	10.0	IN12-25X2.5TFVCF	F37S12X	OR20X1.0X	0.31
3/4	25X3.0	F37-312-25X3.0TFVCF	16.5	8.0	IN12-25X3.0TFVCF	F37S12X	OR20X1.0X	0.32
3/4	30X3.0	F37-312-30X3.0TFVCF	19.0	8.5	IN12-30X3.0TFVCF	F37S12X	OR25X1.0X	0.32
3/4	30X4.0	F37-312-30X4.0TFVCF	19.0	8.5	IN12-30X4.0TFVCF	F37S12X	OR22X1.0X	0.32
1	25X2.5	F37-316-25X2.5TFVCF	17.5	10.0	IN16-25X2.5TFVCF	F37S16X	OR20X1.0X	0.38
1	25X3.0	F37-316-25X3.0TFVCF	16.5	8.0	IN16-25X3.0TFVCF	F37S16X	OR20X1.0X	0.39
1	30X3.0	F37-316-30X3.0TFVCF	21.5	8.5	IN16-30X3.0TFVCF	F37S16X	OR25X1.0X	0.41
1	30X4.0	F37-316-30X4.0TFVCF	19.5	8.5	IN16-30X4.0TFVCF	F37S16X	OR22X1.0X	0.39
1	38X2.5	F37-316-38X2.5TFVCF	25.0	9.5	IN16-38X2.5TFVCF	F37S16X	OR34X1.0X	0.41
1	38X3.0	F37-316-38X3.0TFVCF	25.0	9.0	IN16-38X3.0TFVCF	F37S16X	OR34X1.0X	0.40
1	38X4.0	F37-316-38X4.0TFVCF	25.0	10.0	IN16-38X4.0TFVCF	F37S16X	OR30X1.0X	0.40
1	38X5.0	F37-316-38X5.0TFVCF	25.0	8.0	IN16-38X5.0TFVCF	F37S16X	OR28X1.0X	0.39
1 1/4	30X3.0	F37-320-30X3.0TFVCF	21.5	8.5	IN20-30X3.0TFVCF	F37S20X	OR25X1.0X	0.57
1 1/4	30X4.0	F37-320-30X4.0TFVCF	19.5	8.5	IN20-30X4.0TFVCF	F37S20X	OR22X1.0X	0.58
1 1/4	38X3.0	F37-320-38X3.0TFVCF	29.5	9.0	IN20-38X3.0TFVCF	F37S20X	OR34X1.0X	0.56
1 1/4	38X4.0	F37-320-38X4.0TFVCF	27.0	10.0	IN20-38X4.0TFVCF	F37S20X	OR30X1.0X	0.57
1 1/4	38X5.0	F37-320-38X5.0TFVCF	25.5	8.0	IN20-38X5.0TFVCF	F37S20X	OR28X1.0X	0.56
1 1/4	42X3.0	F37-320-42X3.0TFVCF	31.5	10.0	IN20-42X3.0TFVCF	F37S20X	OR37.82X1.78X	0.57
1 1/4	42X4.0	F37-320-42X4.0TFVCF	31.5	10.0	IN20-42X4.0TFVCF	F37S20X	OR34X1.0X	0.56
1 1/2	38X3.0	F37-324-38X3.0TFVCF	27.5	9.0	IN24-38X3.0TFVCF	F37S24X	OR34X1.0X	0.87
1 1/2	38X4.0	F37-324-38X4.0TFVCF	27.5	10.0	IN24-38X4.0TFVCF	F37S24X	OR30X1.0X	0.87
1 1/2	38X5.0	F37-324-38X5.0TFVCF	25.0	8.0	IN24-38X5.0TFVCF	F37S24X	OR41X1.78X	0.87
1 1/2	42X3.0	F37-324-42X3.0TFVCF	33.5	10.0	IN24-42X3.0TFVCF	F37S24X	OR37.82X1.78X	0.87
1 1/2	42X4.0	F37-324-42X4.0TFVCF	31.5	10.0	IN24-42X4.0TFVCF	F37S24X	OR34X1.0X	0.87
1 1/2	50X3.0	F37-324-50X3.0TFVCF	36.0	11.0	IN24-50X3.0TFVCF	F37S24X	OR44.17X1.78X	0.87
1 1/2	50X5.0	F37-324-50X5.0TFVCF	36.0	10.0	IN24-50X5.0TFVCF	F37S24X	OR41X1.78X	0.87
1 1/2	50X6.0	F37-324-50X6.0TFVCF	35.0	10.0	IN24-50X6.0TFVCF	F37S24X	OR41X1.78X	0.87
2	50X3.0	F37-332-50X3.0TFVCF	41.5	11.0	IN32-50X3.0TFVCF	F37S32X	OR44.17X1.78X	1.20
2	50X5.0	F37-332-50X5.0TFVCF	37.5	10.0	IN32-50X5.0TFVCF	F37S32X	OR41X1.78X	1.22
2	50X6.0	F37-332-50X6.0TFVCF	35.0	10.0	IN32-50X6.0TFVCF	F37S32X	OR41X1.78X	1.25
2	60X3.0	F37-332-60X3.0TFVCF	46.0	12.0	IN32-60X3.0TFVCF	F37S32X	OR53.7X1.78X	1.25
2	60X5.0	F37-332-60X5.0TFVCF	46.0	11.0	IN32-60X5.0TFVCF	F37S32X	OR50.52X1.78X	1.22
2	60X6.0	F37-332-60X6.0TFVCF	45.5	11.0	IN32-60X6.0TFVCF	F37S32X	OR47.37X1.78X	1.21
2 1/2	60X3.0	F37-340-60X3.0TFVCF	50.0	12.0	IN40-60X3.0TFVCF	F37S40X	OR53.7X1.78X	1.98
2 1/2	60X5.0	F37-340-60X5.0TFVCF	46.0	11.0	IN40-60X5.0TFVCF	F37S40X	OR50.52X1.78X	1.99
2 1/2	60X6.0	F37-340-60X6.0TFVCF	45.5	11.0	IN40-60X6.0TFVCF	F37S40X	OR47.37X1.78X	1.97
2 1/2	75X3.0	F37-340-75X3.0TFVCF	60.0	10.0	IN40-75X3.0TFVCF	F37S40X	OR69.57X1.78X	1.93
2 1/2	75X5.0	F37-340-75X5.0TFVCF	60.0	10.0	IN40-75X5.0TFVCF	F37S40X	OR63.22X1.78X	1.95
3	75X3.0	F37-348-75X3.0TFVCF	66.0	10.0	IN48-75X3.0TFVCF	F37S48X	OR69.57X1.78X	3.22
3	75X5.0	F37-348-75X5.0TFVCF	62.0	10.0	IN48-75X5.0TFVCF	F37S48X	OR63.22X1.78X	3.38
3	90X3.5	F37-348-90X3.5TFVCF	72.0	15.0	IN48-90X3.5TFVCF	F37S48X	OR82.27X1.78X	3.39
3	90X5.0	F37-348-90X5.0TFVCF	72.0	14.0	IN48-90X5.0TFVCF	F37S48X	OR79X1.78X	3.35

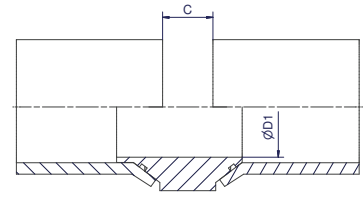
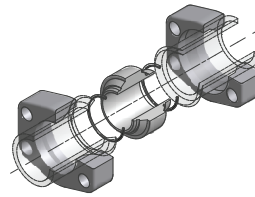
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube						
1/2	16X2.0	F37-308-16X2.0TTCF	9.5	16	IN08-16X2.0TTCF	OR12X1.0X	0.28
1/2	18X2.0	F37-308-18X2.0TTCF	11.5	16	IN08-18X2.0TTCF	OR14X1.0X	0.29
1/2	20X2.0	F37-308-20X2.0TTCF	13.5	16	IN08-20X2.0TTCF	OR16X1.0X	0.29
1/2	20X2.5	F37-308-20X2.5TTCF	13.5	16	IN08-20X2.5TTCF	OR16X1.0X	0.29
1/2	25X2.5	F37-308-25X2.5TTCF	13.5	20	IN08-25X2.5TTCF	OR20X1.0X	0.30
1/2	25X3.0	F37-308-25X3.0TTCF	13.0	16	IN08-25X3.0TTCF	OR20X1.0X	0.29
3/4	20X2.0	F37-312-20X2.0TTCF	13.5	16	IN12-20X2.0TTCF	OR16X1.0X	0.38
3/4	20X2.5	F37-312-20X2.5TTCF	12.5	16	IN12-20X2.5TTCF	OR16X1.0X	0.38
3/4	25X2.5	F37-312-25X2.5TTCF	17.5	20	IN12-25X2.5TTCF	OR20X1.0X	0.39
3/4	25X3.0	F37-312-25X3.0TTCF	16.5	16	IN12-25X3.0TTCF	OR20X1.0X	0.39
3/4	30X3.0	F37-312-30X3.0TTCF	19.0	17	IN12-30X3.0TTCF	OR25X1.0X	0.40
3/4	30X4.0	F37-312-30X4.0TTCF	19.0	17	IN12-30X4.0TTCF	OR22X1.0X	0.40
1	25X2.5	F37-316-25X2.5TTCF	17.5	20	IN16-25X2.5TTCF	OR20X1.0X	0.49
1	25X3.0	F37-316-25X3.0TTCF	16.5	16	IN16-25X3.0TTCF	OR20X1.0X	0.49
1	30X3.0	F37-316-30X3.0TTCF	21.5	17	IN16-30X3.0TTCF	OR25X1.0X	0.48
1	30X4.0	F37-316-30X4.0TTCF	19.5	17	IN16-30X4.0TTCF	OR22X1.0X	0.49
1	38X2.5	F37-316-38X2.5TTCF	25.0	19	IN16-38X2.5TTCF	OR34X1.0X	0.54
1	38X3.0	F37-316-38X3.0TTCF	25.0	18	IN16-38X3.0TTCF	OR34X1.0X	0.52
1	38X4.0	F37-316-38X4.0TTCF	25.0	20	IN16-38X4.0TTCF	OR30X1.0X	0.50
1	38X5.0	F37-316-38X5.0TTCF	25.0	16	IN16-38X5.0TTCF	OR28X1.0X	0.48
1 1/4	30X3.0	F37-320-30X3.0TTCF	21.5	17	IN20-30X3.0TTCF	OR25X1.0X	0.70
1 1/4	30X4.0	F37-320-30X4.0TTCF	19.5	17	IN20-30X4.0TTCF	OR22X1.0X	0.73
1 1/4	38X3.0	F37-320-38X3.0TTCF	29.0	18	IN20-38X3.0TTCF	OR34X1.0X	0.68
1 1/4	38X4.0	F37-320-38X4.0TTCF	27.0	20	IN20-38X4.0TTCF	OR30X1.0X	0.69
1 1/4	38X5.0	F37-320-38X5.0TTCF	25.5	16	IN20-38X5.0TTCF	OR28X1.0X	0.67
1 1/4	42X3.0	F37-320-42X3.0TTCF	31.5	20	IN20-42X3.0TTCF	OR37.82X1.78X	0.68
1 1/4	42X4.0	F37-320-42X4.0TTCF	31.5	20	IN20-42X4.0TTCF	OR34X1.0X	0.67
1 1/2	38X3.0	F37-324-38X3.0TTCF	27.5	18	IN24-38X3.0TTCF	OR34X1.0X	0.93
1 1/2	38X4.0	F37-324-38X4.0TTCF	27.5	20	IN24-38X4.0TTCF	OR30X1.0X	0.93
1 1/2	38X5.0	F37-324-38X5.0TTCF	25.0	16	IN24-38X5.0TTCF	OR41X1.78X	0.93
1 1/2	42X3.0	F37-324-42X3.0TTCF	33.5	20	IN24-42X3.0TTCF	OR37.82X1.78X	0.98
1 1/2	42X4.0	F37-324-42X4.0TTCF	31.5	20	IN24-42X4.0TTCF	OR34X1.0X	1.08
1 1/2	50X3.0	F37-324-50X3.0TTCF	36.0	22	IN24-50X3.0TTCF	OR44.17X1.78X	1.10
1 1/2	50X5.0	F37-324-50X5.0TTCF	36.0	20	IN24-50X5.0TTCF	OR41X1.78X	1.21
1 1/2	50X6.0	F37-324-50X6.0TTCF	35.0	20	IN24-50X6.0TTCF	OR41X1.78X	1.10
2	50X3.0	F37-332-50X3.0TTCF	41.5	22	IN32-50X3.0TTCF	OR44.17X1.78X	1.40
2	50X5.0	F37-332-50X5.0TTCF	37.5	20	IN32-50X5.0TTCF	OR41X1.78X	1.51
2	50X6.0	F37-332-50X6.0TTCF	35.0	20	IN32-50X6.0TTCF	OR41X1.78X	1.56
2	60X3.0	F37-332-60X3.0TTCF	46.0	24	IN32-60X3.0TTCF	OR53.7X1.78X	1.53
2	60X5.0	F37-332-60X5.0TTCF	46.0	22	IN32-60X5.0TTCF	OR50.52X1.78X	1.46
2	60X6.0	F37-332-60X6.0TTCF	45.5	22	IN32-60X6.0TTCF	OR47.37X1.78X	1.45
2 1/2	60X3.0	F37-340-60X3.0TTCF	50.0	24	IN40-60X3.0TTCF	OR53.7X1.78X	1.98
2 1/2	60X5.0	F37-340-60X5.0TTCF	46.0	22	IN40-60X5.0TTCF	OR50.52X1.78X	1.99
2 1/2	60X6.0	F37-340-60X6.0TTCF	45.0	22	IN40-60X6.0TTCF	OR47.37X1.78X	1.97
2 1/2	75X3.0	F37-340-75X3.0TTCF	60.0	20	IN40-75X3.0TTCF	OR69.57X1.78X	1.93
2 1/2	75X5.0	F37-340-75X5.0TTCF	60.0	20	IN40-75X5.0TTCF	OR63.22X1.78X	1.95
3	75X3.0	F37-348-75X3.0TTCF	66.0	20	IN48-75X3.0TTCF	OR69.57X1.78X	3.22
3	75X5.0	F37-348-75X5.0TTCF	62.0	20	IN48-75X5.0TTCF	OR63.22X1.78X	3.38
3	90X3.5	F37-348-90X3.5TTCF	72.0	30	IN48-90X3.5TTCF	OR82.27X1.78X	3.39
3	90X5.0	F37-348-90X5.0TTCF	72.0	28	IN48-90X5.0TTCF	OR79X1.78X	3.35

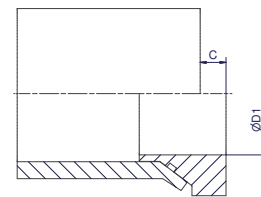
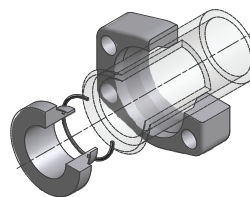
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube						
1/2	16X2.0	F37-308-16X2.0TFCF	9.5	8.0	IN08-16X2.0TFCF	OR12X1.0X	0.24
1/2	18X2.0	F37-308-18X2.0TFCF	11.5	8.0	IN08-18X2.0TFCF	OR14X1.0X	0.24
1/2	20X2.0	F37-308-20X2.0TFCF	13.5	8.0	IN08-20X2.0TFCF	OR16X1.0X	0.25
1/2	20X2.5	F37-308-20X2.5TFCF	13.5	8.0	IN08-20X2.5TFCF	OR16X1.0X	0.25
1/2	25X2.5	F37-308-25X2.5TFCF	13.5	10.0	IN08-25X2.5TFCF	OR20X1.0X	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	0.31
3/4	20X2.5	F37-312-20X2.5TFCF	12.5	8.0	IN12-20X2.5TFCF	OR16X1.0X	0.31
3/4	25X2.5	F37-312-25X2.5TFCF	17.5	10.0	IN12-25X2.5TFCF	OR20X1.0X	0.31
3/4	25X3.0	F37-312-25X3.0TFCF	16.5	8.0	IN12-25X3.0TFCF	OR20X1.0X	0.32
3/4	30X3.0	F37-312-30X3.0TFCF	19.0	8.5	IN12-30X3.0TFCF	OR25X1.0X	0.32
3/4	30X4.0	F37-312-30x4.0TFCF	19.0	8.5	IN12-30x4.0TFCF	OR22X1.0X	0.32
1	25X2.5	F37-316-25X2.5TFCF	17.5	10.0	IN16-25X2.5TFCF	OR20X1.0X	0.38
1	25X3.0	F37-316-25X3.0TFCF	16.5	8.0	IN16-25X3.0TFCF	OR20X1.0X	0.39
1	30X3.0	F37-316-30X3.0TFCF	21.5	8.5	IN16-30X3.0TFCF	OR25X1.0X	0.41
1	30X4.0	F37-316-30X4.0TFCF	19.5	8.5	IN16-30X4.0TFCF	OR22X1.0X	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	OR25X1.0X	0.57
1 1/4	30X4.0	F37-320-30X4.0TFCF	19.5	8.5	IN20-30X4.0TFCF	OR22X1.0X	0.59
1 1/4	38X3.0	F37-320-38X3.0TFCF	29.0	9.0	IN20-38X3.0TFCF	OR34X1.0X	0.56
1 1/4	38X4.0	F37-320-38X4.0TFCF	27.0	10.0	IN20-38X4.0TFCF	OR30X1.0X	0.57
1 1/4	38X5.0	F37-320-38X5.0TFCF	25.5	8.0	IN20-38X5.0TFCF	OR28X1.0X	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	0.87
1 1/2	38X4.0	F37-324-38X4.0TFCF	27.5	10.0	IN24-38X4.0TFCF	OR30X1.0X	0.87
1 1/2	38X5.0	F37-324-38X5.0TFCF	25.0	8.0	IN24-38X5.0TFCF	OR41X1.78X	0.87
1 1/2	42X3.0	F37-324-42X3.0TFCF	33.5	10.0	IN24-42X3.0TFCF	OR37.82X1.78X	0.87
1 1/2	42X4.0	F37-324-42X4.0TFCF	31.5	10.0	IN24-42X4.0TFCF	OR34X1.0X	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	1.20
2	50X5.0	F37-332-50X5.0TFCF	37.5	10.0	IN32-50X5.0TFCF	OR41X1.78X	1.22
2	50X6.0	F37-332-50X6.0TFCF	35.0	10.0	IN32-50X6.0TFCF	OR41X1.78X	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	1.98
2 1/2	60X5.0	F37-340-60X5.0TFCF	46.0	11.0	IN40-60X5.0TFCF	OR50.52X1.78X	1.99
2 1/2	60X6.0	F37-340-60X6.0TFCF	45.5	11.0	IN40-60X6.0TFCF	OR47.37X1.78X	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	3.22
3	75X5.0	F37-348-75X5.0TFCF	62.0	10.0	IN48-75X5.0TFCF	OR63.22X1.78X	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. *Incl. adapter sleeve or jump size flange if necessary.

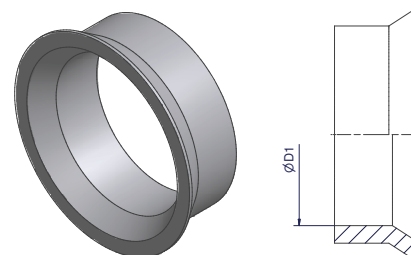
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 body (Steel) kg/1 piece
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	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

*By use of jump size flanges, no adapter sleeves necessary. For jump size flanges see page 65.

Please change suffixes according to material/surface required

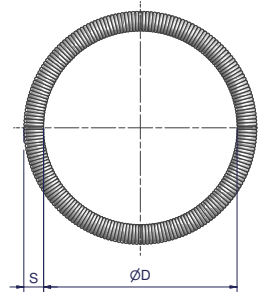
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX

R – Retaining ring

SAE 3000/ISO 6162-1

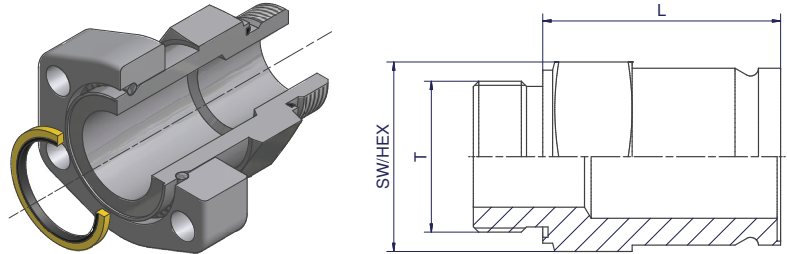
Size Inch	Tube	Order code	D	S
1/2	26X6.0	R08X	22.3	4.0
3/4	36X8.0	R12X	32.3	4.0
1	39X7.5	R16X	34.3	5.0
1 1/4	46X8.0	R20X	41.3	5.0
1 1/2	56X8.5	R24X	51.3	5.0
2	66X8.5	R32X	61.3	5.0
2 1/2	80X10.0	R40X	75.3	5.0
3	97X12.0	R48X	91.3	6.0

Material: Stainless steel



MTF-R – Male thread adapter, BSPP

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	L	T (BSPP)	SW/ HEX	Weight body (Steel) kg/1 piece
1/2	26X6.0	R-308MTFRCF	MTF08ROMDCF	61.0	G 1/2A	27	0.21
3/4	36X8.0	R-312MTFRCF	MTF12ROMDCF	61.0	G 3/4A	36	0.32
3/4	36X8.0	R-312MTFR1/2CF	MTF12R1/2OMDCF	61.0	G 1/2A	36	0.32
1	39X7.5	R-316MTFRCF	MTF16ROMDCF	69.0	G 1A	41	0.50
1	39X7.5	R-316MTFR3/4CF	MTF16R3/4OMDCF	69.0	G 3/4A	41	0.50
1 1/4	46X8.0	R-320MTFRCF	MTF20ROMDCF	80.0	G 1 1/4A	50	0.75
1 1/4	46X8.0	R-320MTFR1CF	MTF20R1OMDCF	80.0	G 1A	50	0.73
1 1/2	56X8.5	R-324MTFRCF	MTF24ROMDCF	93.0	G 1 1/2A	60	1.20
1 1/2	56X8.5	R-324MTFR11/4CF	MTF24R11/4OMDCF	93.0	G 1 1/4A	60	1.17
2	66X8.5	R-332MTFRCF	MTF32ROMDCF	104.0	G 2A	75	1.87
2	66X8.5	R-332MTFR11/2CF	MTF32R11/2OMDCF	103.5	G 1 1/2A	75	1.80
2 1/2	80X10.0	R-340MTFRCF	MTF40ROMDCF	134.0	G 2 1/2A	85	3.50
2 1/2	80X10.0	R-340MTFR2CF	MTF40R2OMDCF	136.0	G 2A	85	3.50
3	97X12.0	R-348MTFRCF	MTF48ROMDCF	145.0	G 3A	95	5.00

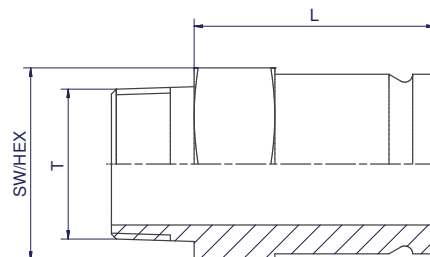
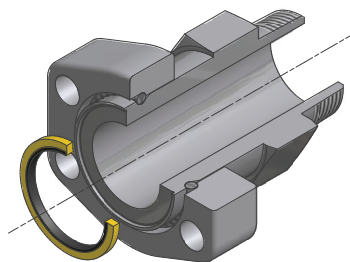
Other sizes on request.

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	L	T (NPT)	SW/ HEX	Weight body (Steel) kg/1 piece
1/2	26X6.0	R-308MTFNCF	MTF08NCFX	92.0	1/2-14	27	0.26
3/4	36X8.0	R-312MTFNCF	MTF12NCFX	72.6	3/4-14	36	0.48
1	39X7.5	R-316MTFNCF	MTF16NCFX	67.7	1-11.5	41	0.55
1 1/4	46X8.0	R-320MTFNCF	MTF20NCFX	75.0	1 1/4-11.5	50	0.70
1 1/2	56X8.5	R-324MTFNCF	MTF24NCFX	93.2	1 1/2-11.5	60	1.80
2	66X8.5	R-332MTFNCF	MTF32NCFX	100.4	2-11.5	75	2.40
2 1/2	80X10.0	R-340MTFNCF	MTF40NCFX	130.0	2 1/2-8	85	3.40
3	97X12.0	R-348MTFNCF	MTF48NCFX	141.2	3-8	95	4.90

Other sizes on request.

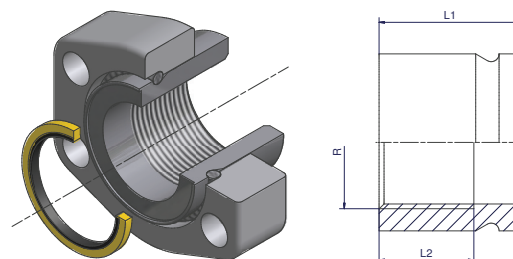
Please change suffixes according to material/surface required

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

Other sizes on request.

Please change suffixes according to material/surface required

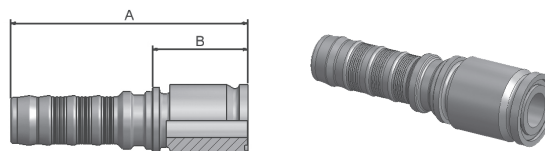
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-320FTFRCF
Stainless steel	SS	R-320FTFRSS

Retaining ring hose couplings

SAE 3000/ISO 6162-1

X5 Flange - Straight

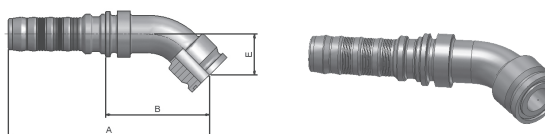
Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	Order code
	Inch	Size	mm				
31	1 1/4	-20	31.8	1 1/4	152.3	61.3	KX5V6-20-20
38	1 1/2	-24	38.1	1 1/2	159.3	63.3	KX5V6-24-24
51	2	-32	50.8	2	188.0	78.0	KX5V6-32-32
63	2 1/2	-40	63.5	2 1/2	233.0	83.0	KX5V6-40-40
63	2 1/2	-40	63.5	3	233.0	98.0	KX5V6-48-40

X7 Flange - 45° Elbow

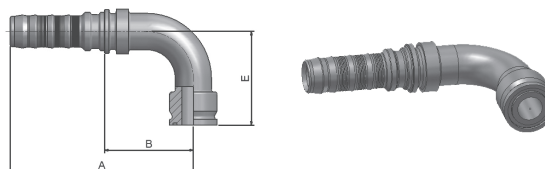
Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	E mm	Order code
	Inch	Size	mm					
31	1 1/4	-20	31.8	1 1/4	190.0	99.0	39.0	KX7V6-20-20
38	1 1/2	-24	38.1	1 1/2	221.0	125.0	44.0	KX7V6-24-24
51	2	-32	50.8	2	275.0	164.5	57.0	KX7V6-32-32

X9 Flange - 90° Elbow

Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	E mm	Order code
	Inch	Size	mm					
31	1 1/4	-20	31.8	1 1/4	176.8	85.5	90.0	KX9V6-20-20
38	1 1/2	-24	38.1	1 1/2	209.3	113.0	104.0	KX9V6-24-24
51	2	-32	50.8	2	268.0	157.0	138.0	KX9V6-32-32

Details about the associated hose types can be found in the catalog of HPDE C4400/UK.

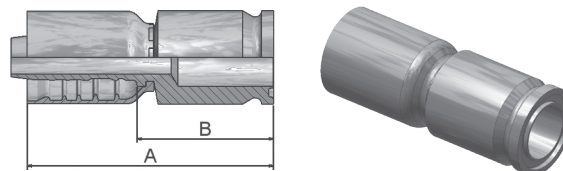


Retaining ring hose couplings

SAE 3000/ISO 6162-1

X5 Flange - Straight

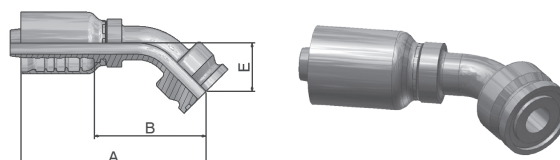
Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange	A	B	Order code
	Inch	Size	mm	Inch	mm	mm	
19	3/4	-12	19.1	3/4	103.0	57.0	1X577-12-12
19	3/4	-12	19.1	1	103.0	57.0	1X577-16-12
25	1	-16	25.4	1	113.0	59.0	1X577-16-16
25	1	-16	25.4	1 1/4	113.0	59.0	1X577-20-16
25	1	-16	25.4	1 1/2	113.0	59.0	1X577-24-16
31	1 1/4	-20	31.8	1 1/4	124.0	57.0	1X577-20-20
38	1 1/2	-24	38.1	1 1/2	129.0	62.0	1X577-24-24
51	2	-32	50.8	2	154.0	77.0	1X577-32-32

X7 Flange - 45° Elbow

Full flange system for ISO 6162-1 or ISO 6162-2



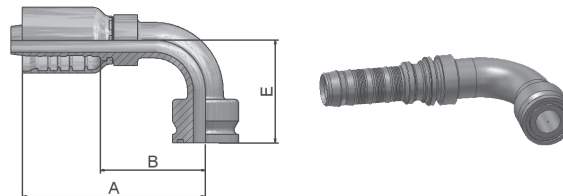
DN	Hose I.D.			Flange	A	B	E	Order code
	Inch	Size	mm	Inch	mm	mm	mm	
19	3/4	-12	19.1	3/4	119.0	73.0	29.0	1X777-12-12
19	3/4	-12	19.1	1	118.0	72.0	29.0	1X777-16-12
25	1	-16	25.4	1	141.0	87.0	32.0	1X777-16-16
25	1	-16	25.4	1 1/4	147.0	93.0	38.0	1X777-20-16
31	1 1/4	-20	31.8	1	146.0	82.0	38.0	1X777-16-20
31	1 1/4	-20	31.8	1 1/4	159.0	96.0	38.0	1X777-20-20
31	1 1/4	-20	31.8	1 1/2	165.0	102.0	44.0	1X777-24-20
38	1 1/2	-24	38.1	1 1/2	183.0	116.0	45.0	1X777-24-24

Retaining ring hose couplings

SAE 3000/ISO 6162-1

X9 Flange - 90° Elbow

Full flange system for ISO 6162-1 or ISO 6162-2

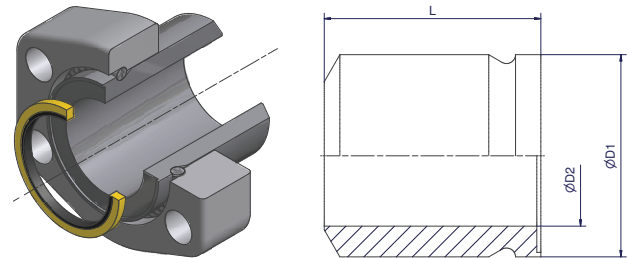


DN	Hose I.D.			Flange	A mm	B mm	E mm	Order code
	Inch	Size	mm	Inch				
12	1/2	-8	12.7	1/2	81.0	45.0	43.0	1X977-8-8
19	3/4	-12	19.1	3/4	108.0	62.0	61.0	1X977-12-12
19	3/4	-12	19.1	1	108.0	62.0	61.0	1X977-16-12
25	1	-16	25.4	3/4	110.0	56.0	70.0	1X977-12-16
25	1	-16	25.4	1	131.0	77.0	70.0	1X977-16-16
25	1	-16	25.4	1 1/4	131.0	77.0	70.0	1X977-20-16
31	1 1/4	-20	31.8	1	130.0	67.0	90.0	1X977-16-20
31	1 1/4	-20	31.8	1 1/4	148.0	84.0	90.0	1X977-20-20
31	1 1/4	-20	31.8	1 1/2	148.0	84.0	90.0	1X977-24-20
38	1 1/2	-24	38.1	1 1/2	170.0	103.0	104.0	1X977-24-24
51	2	-32	50.8	2	221.0	144.0	138.0	1X977-32-32

Details about the associated hose types can be found in the catalog of HPDE C4400/UK.

WA – Weld adapter connection

SAE 3000/ISO 6162-1



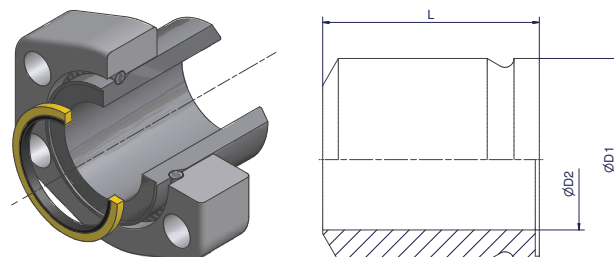
Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	D1	D2	L	Weight (Steel) kg/1 kit
1/2	12X1.5	R-308WA-12X1.5S	R08X	BS08SNX	R-308-CFX	WA08-12X1.5SX	26	9	40	0.29
1/2	16X2.0	R-308WA-16X2.0S	R08X	BS08SNX	R-308-CFX	WA08-16X2.0SX	26	12	40	0.30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

see next page

ENGINEERING YOUR SUCCESS.

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

Other sizes on request.

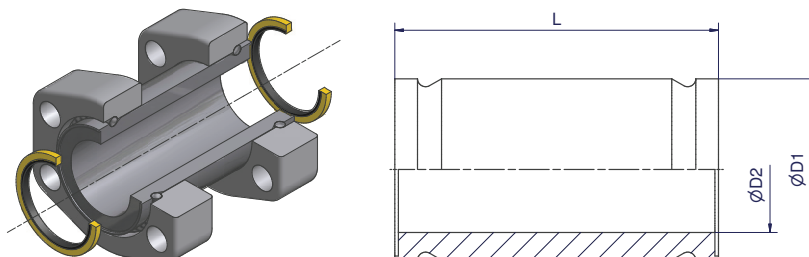
Please change suffixes according to material/surface required

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



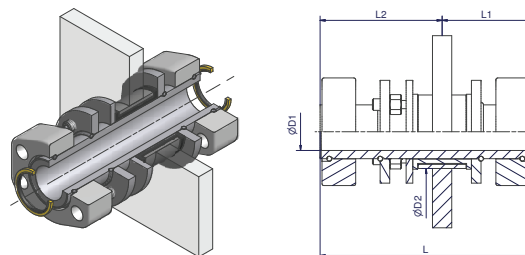
Size Inch	Complete Part Order code	Bulkhead Body Order code	D1	D2	L	Weight body (Steel) kg/1 piece
1/2	R-308BFS	BF08SX	26	14	170	0.49
3/4	R-312BFS	BF12SX	36	20	170	0.92
1	R-316BFS	BF16SX	39	24	170	0.96
1 1/4	R-320BFS	BF20SX	46	30	180	1.30
1 1/2	R-324BFS	BF24SX	56	39	180	1.75
2	R-332BFS	BF32SX	66	49	210	2.45
2 1/2	R-340BFS	BF40SX	80	60	220	3.70
3	R-348BFS	BF48SX	97	73	240	7.85

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	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 kit
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.

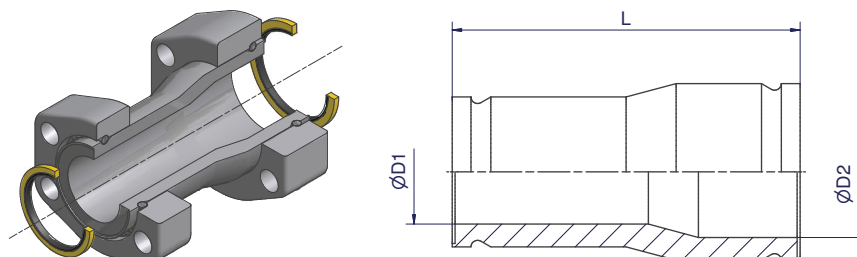
Please change suffixes according to material/surface required

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
3/4 - 1/2	R-312-308RFCF	RF12-08CFX	14	20	65	0.3
1 - 1/2	R-316-308RFCF	RF16-08CFX	14	24	100	0.4
1 - 3/4	R-316-312RFCF	RF16-12CFX	20	24	100	0.6
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

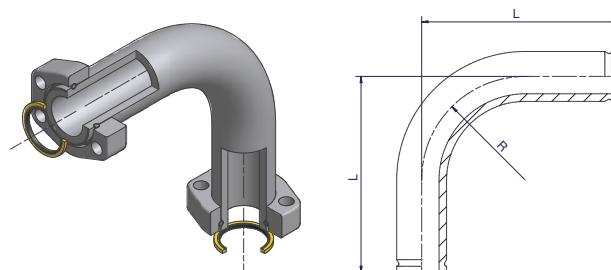
Other sizes on request.

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

Other sizes on request.

*only available as steel version

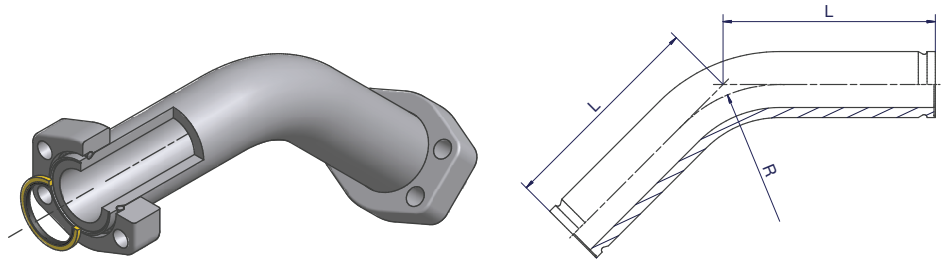
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	R-320FB90CF	
Steel	S	R-320FB90S	
Stainless steel	SS	R-320FB90SS	on request



FB45 – 45° Flange bend

SAE 3000/ISO 6162-1



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

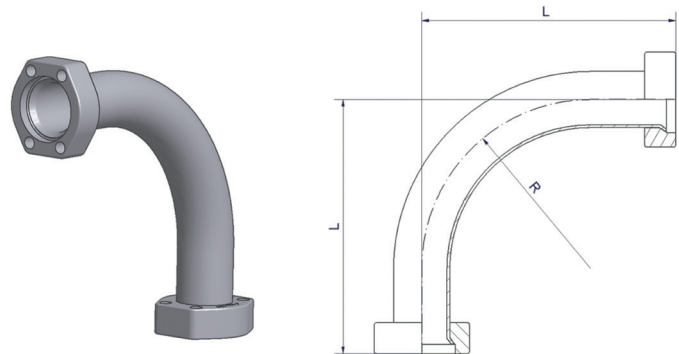
Other sizes on request.
*only available as steel version

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-320FB45CF	
Steel	S	R-320FB45S	
Stainless steel	SS	R-320FB45SS	on request

FB90 – 90° Flange bend

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete Part Order code	L	R
1 1/2	50X5.0	F37-324FB90	220	150.0
2	60X5.0	F37-332FB90	275	180.0
2 1/2	75X5.0	F37-340FB90	370	187.5
3	90X3.5	F37-348FB90*	450	225.0
3	90x5.0	F37-348905FB90*	450	225.0

Other sizes on request.
*only available as Steel version, example: F37-348FB90S

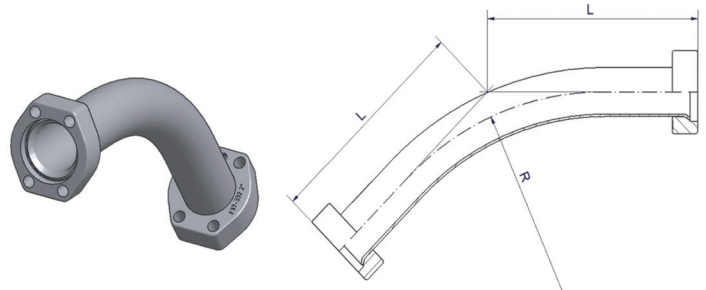
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-324FB90CF
Steel	S	F37-348FB90S
Stainless steel	SS	F37-324FB90SS



FB45 – 45° Flange bend

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete Part Order code	L	R
1 1/2	50X5.0	F37-324FB45	220	150.0
2	60X5.0	F37-332FB45	275	180.0
2 1/2	75X5.0	F37-340FB45	370	187.5
3	90X5.0	F37-348905FB45*	370	187.5

Other sizes on request.

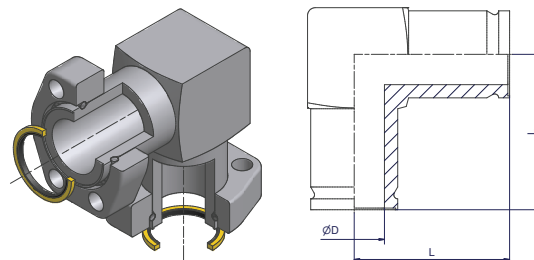
*only available as Steel Version, example: F37-348905FB45S

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-324FB45CF
Steel	S	F37-348905FB45S
Stainless steel	SS	F37-324FB45SS

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.

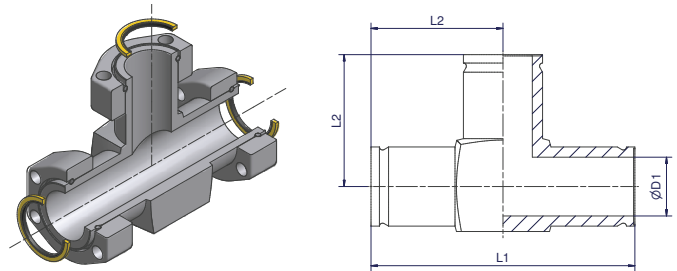
Please change suffixes according to material/surface required

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	120	60	0.75
3/4	R-312TFCF	TF12CFX	20	130	65	1.60
1	R-316TFCF	TF16CFX	24	140	70	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
2 1/2	R-340TFCF	TF40CFX	60	260	130	7.05
3	R-348TFCF	TF48CFX	73	320	160	12.81

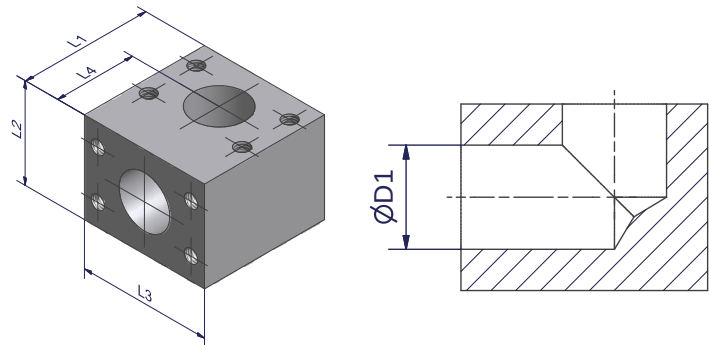
Other sizes on request.

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	48	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 and custom versions on request.

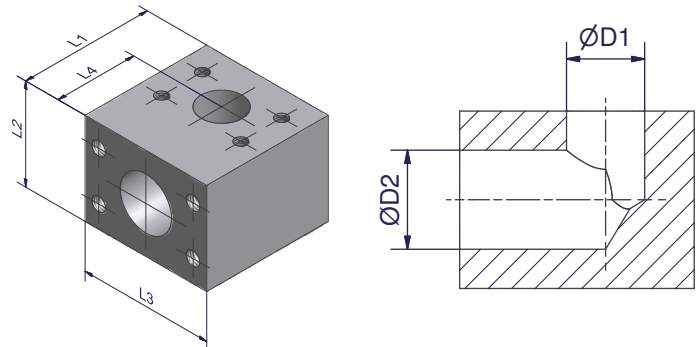
Please change suffixes according to material/surface required

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	48	96	78	100	57	4.7
2 - 1 1/4	LBR332-320CFX	30	48	96	78	100	57	4.7
2 - 1 1/2	LBR332-324CFX	38	48	96	78	100	57	4.6
2 1/2 - 1 1/2	LBR340-324CFX	38	60	110	88	110	65	6.4
2 1/2 - 2	LBR340-332CFX	48	60	110	88	110	65	6.2
3 - 2	LBR348-332CFX	48	73	135	110	135	80	12.2
3 - 2 1/2	LBR348-340CFX	60	73	135	110	135	80	11.8

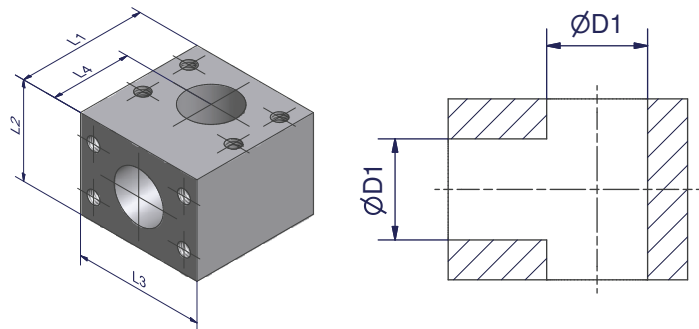
Other sizes and custom versions on request.

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	55	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	48	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 and custom versions on request.

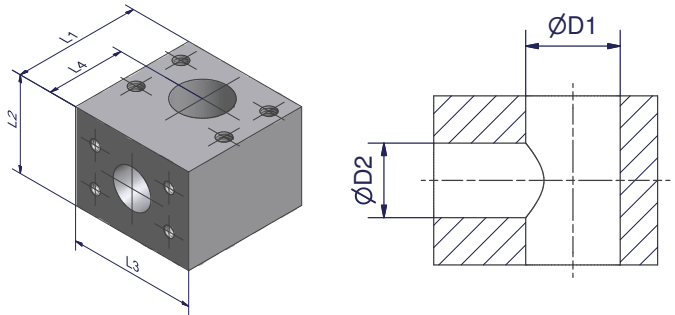
Please change suffixes according to material/surface required

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 - 3/4 - 1 1/4	TBR320-312-320CFX	30	19	80	55	80	51	2.2
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	48	38	96	78	100	57	4.2
2 - 1 1/4 - 2	TBR332-320-332CFX	48	30	96	78	100	57	4.3
2 1/2 - 2 - 2 1/2	TBR340-332-340CFX	60	48	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	48	135	110	135	80	11.0

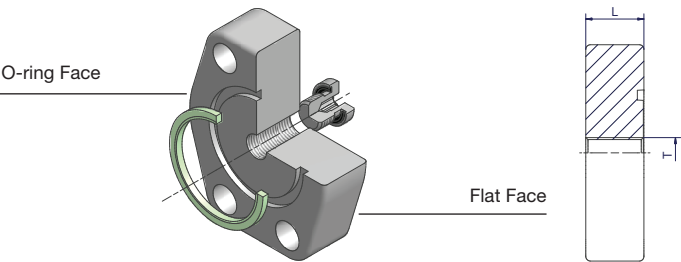
Other sizes and custom versions on request.

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	Flange incl. VSTI-ED and F37 Seal Order code	L	T	Weight body (Steel) kg/1 piece
1/2	F37-308BFVCF	19	G 1/4	0.24
3/4	F37-312BFVCF	20	G 1/4	0.37
1	F37-316BFVCF	24	G 1/4	0.60
1 1/4	F37-320BFVCF	22	G 1/4	0.70
1 1/2	F37-324BFVCF	25	G 1/4	1.10
2	F37-332BFVCF	33	G 1/4	2.00
2 1/2	F37-340BFVCF	44	G 1/4	3.45
3	F37-348BFVCF	50	G 1/4	5.45

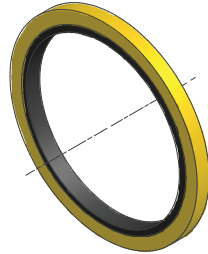
Please change suffixes according to material/surface required

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



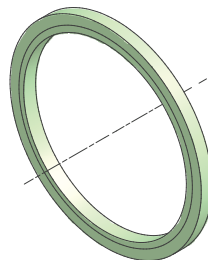
Size Inch	Steel	Stainless Steel
1/2	BS08SNX	BS08SSNX
3/4	BS12SNX	BS12SSNX
1	BS16SNX	BS16SSNX
1 1/4	BS20SNX	BS20SSNX
1 1/2	BS24SNX	BS24SSNX
2	BS32SNX	BS32SSNX
2 1/2	BS40SNX	BS40SSNX
3	BS48SNX	BS48SSNX

Sealing: NBR

Other sealing materials like FKM on request.

F37S/F37RS – F37 seal

SAE 3000/ISO 6162-1



Size Inch	F37 Seal (F37 seal for flaring system)	F37 RS (F37 seal for retaining ring system)
1/2	F37S08X	-
3/4	F37S12X	-
1	F37S16X	-
1 1/4	F37S20X	F37RS20X
1 1/2	F37S24X	F37RS24X
2	F37S32X	F37RS32X
2 1/2	F37S40X	F37RS40X
3	F37S48X	F37RS48X

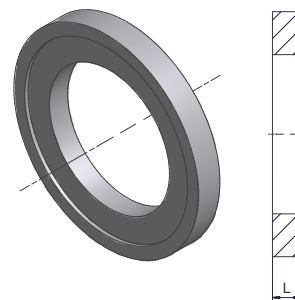
Sealing: Polyurethane

Material properties and applications see page 20.

Other sizes on request.

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

SAE 3000/ISO 6162-1



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

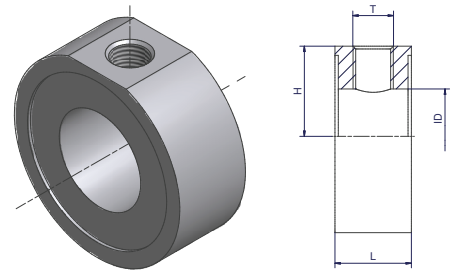
Please change suffixes according to material/surface required

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

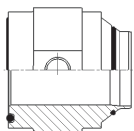
SAE 3000/ISO 6162-1



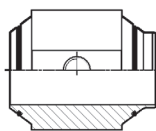
Size Inch	Order code*	L	H	T	ID	Weight body (Steel) kg/1 piece
1	TBT16-1/4CFX	25	20.5	G 1/4 A	25	0.21
1 1/4	TBT20-1/4CFX	25	24.5	G 1/4 A	27	0.30
1 1/4	TBT20-1/2CFX	40	22.5	G 1/2 A	24	0.49
1 1/2	TBT24-1/4CFX	25	29.5	G 1/4 A	31	0.42
1 1/2	TBT24-1/2CFX	40	28.0	G 1/2 A	30	0.68
2	TBT32-1/4CFX	25	35.0	G 1/4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

*For testpoints and diagnostic test equipment see catalogue 4100, Industrial Tube Fittings Europe.
For assembling add L to the corresponding bolt length.

Alternative versions on request.



TFVB



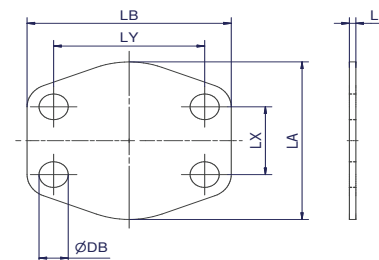
TTb

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		Order code	L1	LA	LB	LX	LY	DB	Weight body (Steel) kg/1 piece
SAE (In)	ISO (DN)								
1/2	13	8AP1	3	46	54	17.5	38.1	9.0	0.01
3/4	19	12AP1	3	52	65	22.3	47.6	11.0	0.01
1	25	16AP1	3	59	70	26.2	52.4	11.0	0.01
1 1/4	32	20AP1	3	73	79	30.2	58.7	11.5	0.01
1 1/2	38	24AP1	3	83	94	35.7	69.9	13.5	0.02
2	51	32AP1	3	97	102	42.9	77.8	13.5	0.02
2 1/2	64	40AP1	3	109	114	50.8	88.9	13.5	0.03
3	76	48AP1	4	131	135	61.9	106.4	17.0	0.06

This flange locking plate to be 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
Steel (zinc plated, Cr(VI)-free), SBR 70 Shore A	CFSBR70	8AP1CFSBR70	locking incl. rubber plate L1 increases due to rubber plate



Bolts and nuts for flange

SAE 3000/ISO 6162-1



F37 Flare Flange

Size Inch	Flange	F37 Seal / Flat Face / Bonded Seal		Nut
		Recommended bolts Tube to Port	Recommended bolts Tube to Tube	
1/2	F37-308-CFX	4x ZYLS8X35	4x ZYLS8X55	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		Pipe Seal Carrier (PSC)		Nut
		Recommended bolts Tube to Port	Recommended bolts Tube to Tube	Recommended bolts Tube to Port	Recommended 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 ZYLS10X50	4x ZYLS10X80	4x ISO4032-M10
1 1/2	R-324-CFX	4x ZYLS12X50	4x ZYLS12X80	4x ZYLS12X55	4x ZYLS12X90	4x ISO4032-M12
2	R-332-CFX	4x ZYLS12X55	4x ZYLS12X90	4x ZYLS12X65	4x ZYLS12X100	4x ISO4032-M12
2 1/2	R-340-CFX	4x ZYLS12X65	4x ZYLS12X120	4x ZYLS12X80	4x ZYLS12X130	4x ISO4032-M12
3	R-348-CFX	4x ZYLS16X80	4x ZYLS16X130	4x ZYLS16X90	4x ZYLS16X150	4x ISO4032-M16

Bolts and nuts are not included in complete part numbers.

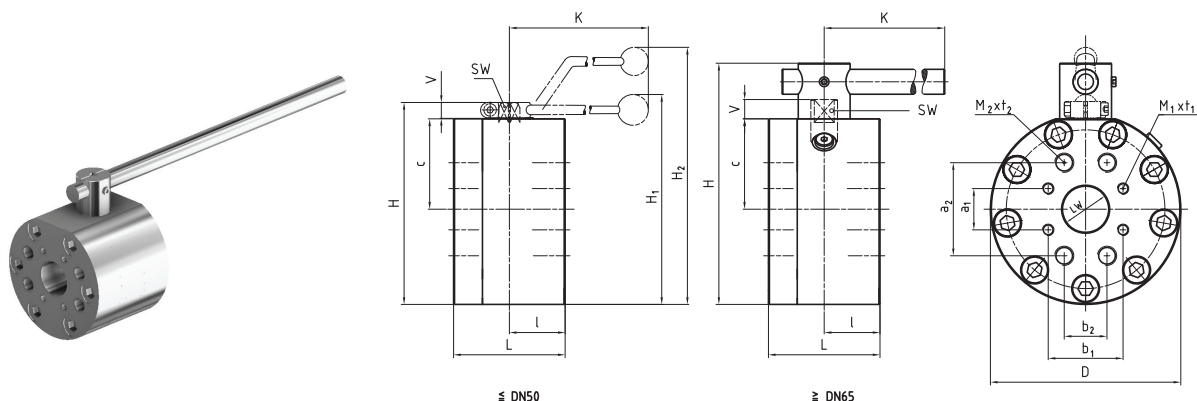
Latest information about nuts and bolts see www.parker.com/hpce -> Support -> Literature and Reference Materials -> Manuals

Please add the suffixes according to the bolt quality

	Steel		Stainless Steel
Grade	8.8	10.9	A4-80X
Bolt	ZYLS16X60VZX	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO4032-M12-8VZX	ISO4032-M12-10X	ISO4032-M12-80X

KH – Ball valve drilled and tapped for SAE 3000 and SAE 6000 Flanges

SAE 3000/ISO 6162-1



Material Steel

Size Inch	Order Code	DN	LW	L	I	D	H	c	V	K	SW	SAE 3000 boring pattern				SAE 6000 boring pattern				H1	H2	Material Code	Lever	Weight kg	W.P. (bar)
												a1	b1	M1	t1	a2	b2	M2	t2						
1/2	KH08-15CF	15	15	75	35	88	88	31.0	13	170	12	17.5	38.1	M08	18	40.5	18.2	M08	18	-	132	212A	St	2.96	350 / 420
3/4	KH12-20CF	20	20	80	35	98	100	36.5	14	170	14	22.2	47.6	M10	18	50.8	23.8	M10	18	-	150	212A	St	4.20	350 / 420
1	KH16-25CF	25	25	88	38	118	113	39.5	14	170	14	26.2	52.4	M10	20	57.2	27.8	M10	20	-	163	212A	St	6.00	320 / 420
1 1/4	KH20-32CF*	32	32	100	50	145	158	68.0	17	306	17	30.2	58.7	M10	20	66.7	31.8	M12	22	-	232	212A	St	11.70	280 / 420
1 1/4	KH20-32TM1214CF*	32	32	100	50	145	158	68.0	17	306	17	30.2	58.7	M12	20	66.7	31.8	M14	22	-	232	212A	St	11.65	210 / 400
1 1/2	KH24-38CF	40	38	110	55	165	178	78.0	17	306	17	35.7	69.9	M12	20	79.4	36.5	M16	27	-	252	212A	St	17.10	210 / 420
2	KH32-48CF	50	48	116	58	198	210	94.0	17	306	17	42.9	77.8	M12	20	96.8	44.5	M20	28	-	284	212A	St	24.60	210 / 420
2 1/2	KH40-63CF	65	63	170	75	218	275	100.0	20	600	16	88.9	50.8	M12	19	58.7	123.8	M24	41	-	-	282A	St	44.40	175 / 420
3	KH48-76CF	80	76	170	79	258	315	115.0	26	600	19	106.4	61.9	M16	24	71.4	152.4	M30	47	-	-	282A	St	54.90	160 / 420

*Please choose between KH20-32CF and KH20-32TM1214CF according to needed connection threads M1 and M2.

Steel ball valves 1/2" up to 3" with SAE 3000 and SAE 6000 boring pattern.

The bore pattern for 2 1/2" and 3" is turned to 90°.

Please change suffixes according to material/surface required

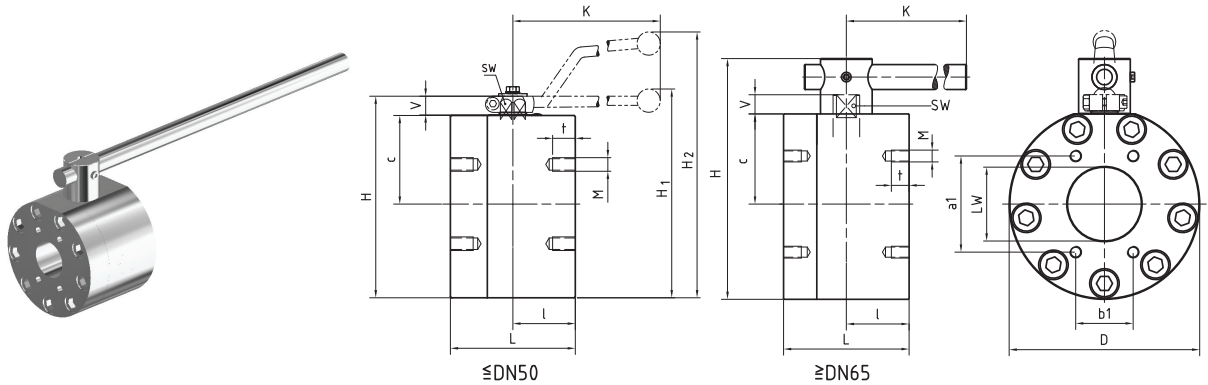
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH20-32CF

	Material 212A	Material 282A
Body	Steel	Steel
Ball	Steel	Steel
Stem	Steel	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / T max	-10°C / 100°C	-10°C / 100°C



KH – Ball valve drilled and tapped for SAE 3000 Flanges

SAE 3000/ISO 6162-1



Material Stainless Steel

Size Inch	Order Code	DN	LW	L	I	D	H	c	V	K	SW	a1	b1	M	t	H1	H2	Material Code	Lever	Weight kg	W.P. (bar)
1/2	KH308-15SS	15	15	75	35	78	83	31.0	13	160	12	38.1	17.5	M08	18	-	127	442A	Al	2.96	350
3/4	KH312-20SS	20	20	80	35	98	100	36.5	14	200	14	47.6	22.2	M10	18	103	-	442A	Zn	4.20	350
1	KH316-25SS	25	25	88	38	118	113	39.5	14	200	14	52.4	26.2	M10	20	116	-	442A	Zn	6.00	320
1 1/4	KH320-32SS*	32	32	100	50	145	158	68.0	17	320	17	58.7	30.2	M10	20	167	-	442A	Al	11.70	280
1 1/4	KH320-32TM12SS*	32	32	100	50	145	158	68.0	17	320	17	58.7	30.2	M12	20	167	-	442A	Al	11.65	210
1 1/2	KH324-38SS	40	38	110	55	165	178	78.0	17	320	17	69.9	35.7	M12	20	187	-	442A	Al	17.10	210
2	KH332-48SS	50	48	116	58	198	210	94.0	17	320	17	77.8	42.9	M12	20	219	-	442A	Al	24.60	210
2 1/2	KH340-63SS	65	63	150	75	198	259	94.0	20	600	16	88.9	50.8	M12	19	-	-	442A	St	35.50	175
3	KH348-76SS	80	76	150	79	218	284	104.0	26	600	19	106.4	61.9	M16	24	-	-	442A	St	40.00	160

*Please choose between KH320-32SS and KH320-32TM12SS according to needed connection thread M.
For 4" and 5" Ball valves see chapter Parflange® F37 - SAE 1000/ISO 6162-1 footprint.

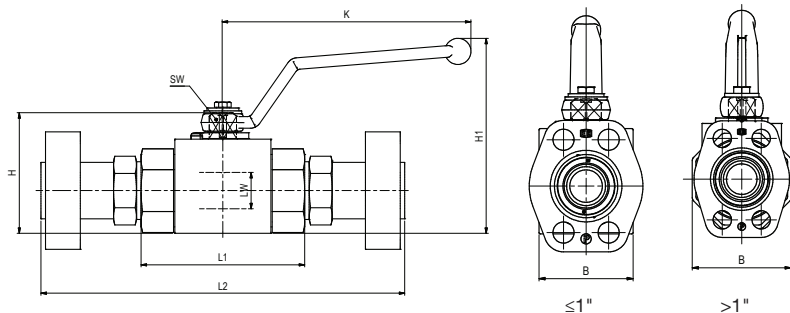
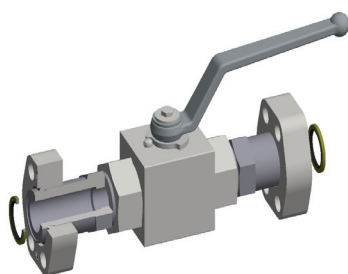
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Stainless steel	SS	KH320-32SS

	Material 442A
Body	Stainless Steel
Ball	Stainless Steel
Stem	Stainless Steel
Ball seats	POM
O-Ring	NBR
Tmin / T max	-30°C / 100°C

KH-R – Ball valve with SAE 3000 Flanges

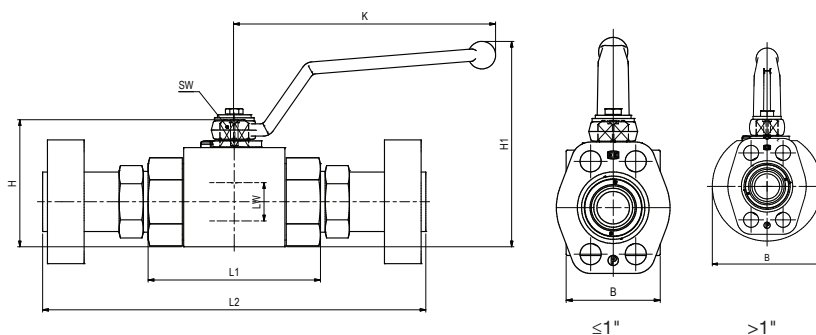
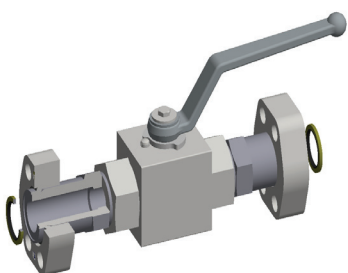
SAE 3000/ISO 6162-1



Material Steel

Size Inch	Complete part Order code	Valve body Order code	LW	L1	L2	B	H	SW	K	H1	Weight (Steel) kg/1 kit	W.P. bar
3/4	KH-R-312-20CF	KH-R-12-20CF	20	95	217	49	75	14	170	129	2.5	315
1	KH-R-316-25CF	KH-R-16-25CF	25	113	251	58	83	14	170	135	3.8	315
1 1/4	KH-R-320-32CF	KH-R-20-32CF	32	111	271	81	107	17	306	178	6.0	280
1 1/2	KH-R-324-38CF	KH-R-24-38CF	38	130	316	100	124	17	306	196	8.4	280
2	KH-R-332-48CF	KH-R-32-48CF	48	140	348	118	138	17	306	210	13.9	280

Other sizes on request.



Material Stainless Steel

Size Inch	Complete part Order code	Valve body Order code	LW	L1	L2	B	H	SW	K	H1	Weight (Steel) kg/1 kit	W.P. bar
3/4	KH-R-312-20SS	KH-R-12-20SS	20	95	217	49	75	14	170	129	2.5	315
1	KH-R-316-25SS	KH-R-16-25SS	25	113	251	58	83	14	170	135	3.8	315
1 1/4	KH-R-320-32SS	KH-R-20-32SS	32	111	271	109	121	17	306	192	8.6	280
1 1/2	KH-R-324-38SS	KH-R-24-38SS	38	130	316	124	136	17	306	207	12.0	280
2	KH-R-332-48SS	KH-R-32-48SS	48	140	348	132	145	17	306	217	16.1	280

Other sizes on request.

Please change suffixes according to material/surface required

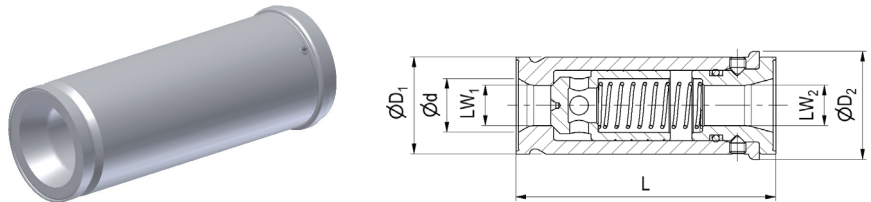
Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	KH-R-320-32CF	
Stainless steel	SS	KH-R-320-32SS	on request

	Material 112A	Material 442A
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 3000/ISO 6162-1



Size Inch	Complete part Order code	Valve body Order code	L	D1	D2	d	LW1	LW2	Weight body (Steel) kg/1 piece	W.P. bar
3/4	RHD-R-312-0.5BCF	RHD-R-12-0.5BCF	96.4	36	40.2	20.0	15	15.0	0.53	210
1	RHD-R-316-0.5BCF	RHD-R-16-0.5BCF	116.6	39	44.2	23.0	18	13.0	0.78	
1 1/4	RHD-R-320-0.5BCF	RHD-R-20-0.5BCF	135.6	46	51.1	30.0	20	17.0	1.26	
1 1/2	RHD-R-324-0.5BCF	RHD-R-24-0.5BCF	135.6	56	60.5	38.8	30	27.0	1.61	
2	RHD-R-332-0.5BCF	RHD-R-32-0.5BCF	180.1	66	70.5	49.0	40	36.4	2.54	
2 1/2	RHD-R-340-0.5BCF	RHD-R-40-0.5BCF	190.0	80	84.5	60.0	50	46.8	3.89	
3	RHD-R-348-0.5BCF	RHD-R-48-0.5BCF	200.0	97	103.2	73.0	63	62.8	5.90	

Opening pressure 0.5 bar. Other pressure rates on request.
Complete Part = body + flanges + retaining rings + bonded seals.

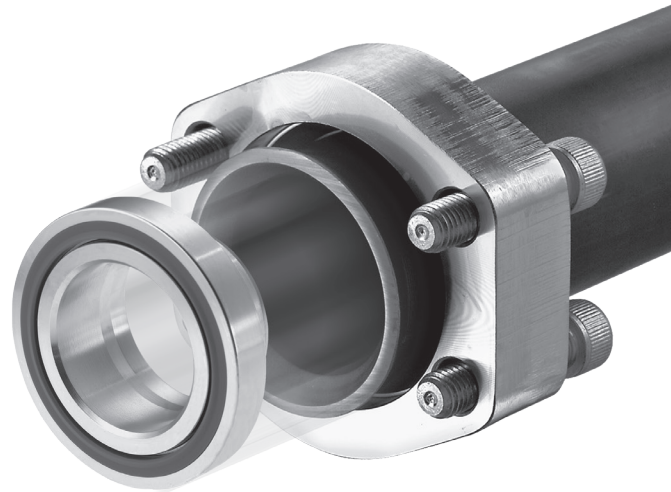
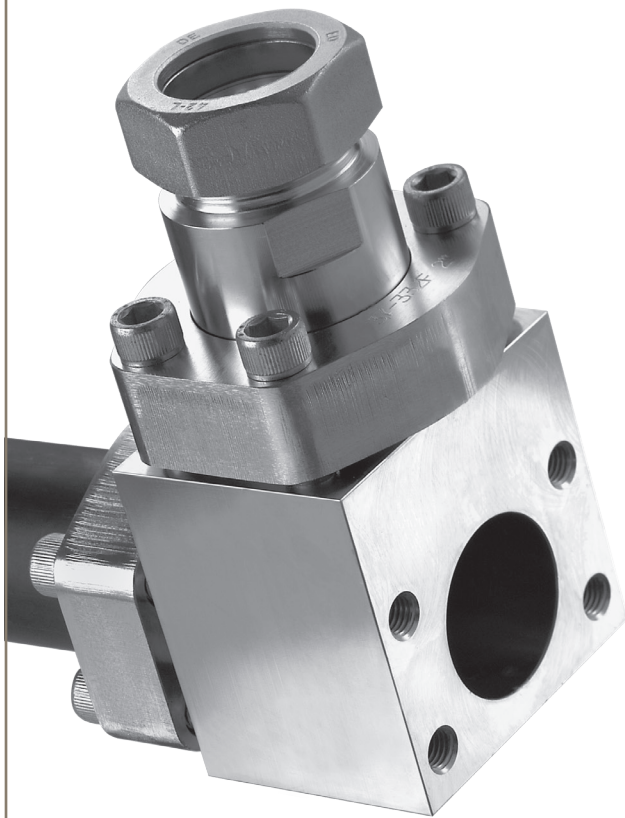
Please change suffixes according to material/surface required

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

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

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Notes

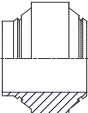
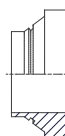
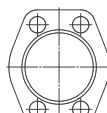
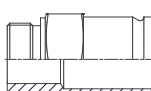
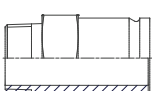
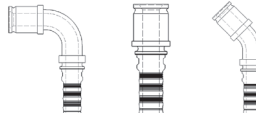
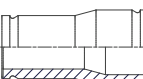
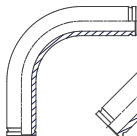
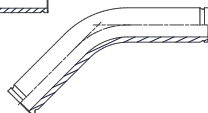
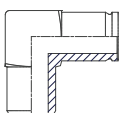
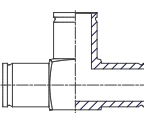
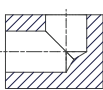
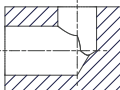
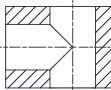
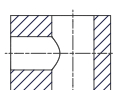
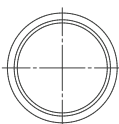
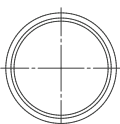
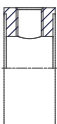
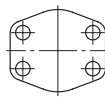
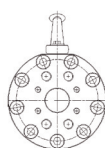
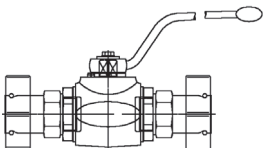
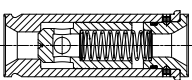


SAE 6000 System

420 bar

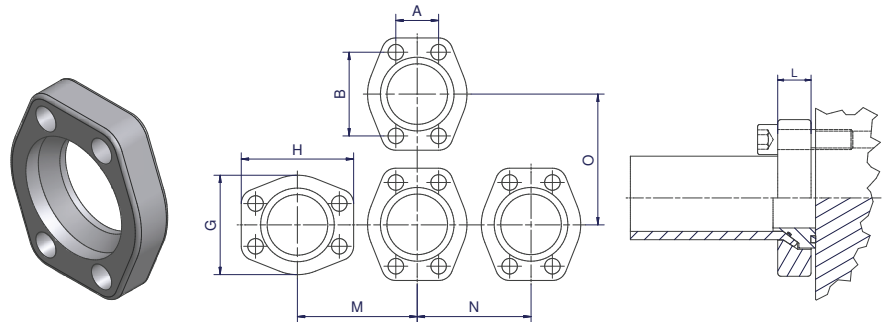
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Programme overview SAE 6000/ISO 6162-2 footprint

Parflange® F37 connection parts	Flanges  F37 – p.109/110				
	Inserts  TFB – p.113	 TFV – p.114	 TT – p.115	 TF – p.116	Sleeve  SL – p.117
Retaining ring connection parts	Flanges  R – p.111				
	 R-Ring – p.118				
	 PSC – p.112				
	Male / Female  MTF-R – p.119		 MTF-N – p.120	 FTF-R – p.121	Hose  Hose – p.122-124
	Tube to Tube  BF – p.127		 VB – p.128	 RF – p.129	 FB90 – p.130/132
	 FB45 – p.131/133		 LF – p.134	 TF – p.135	Weld  WA – p.125/126
SAE connection parts	Blocks  LB – p.136				
	 LBR – p.137	 TB – p.138	 TBR – p.139	 BFV – p.140	
Seals Adapter Bolts	Components  BS – p.141				
	 F37S – p.141	 AO – p.142	 TBT – p.143	 AP – p.144	Bolts and Nuts  p.145
Ball valves	 KH – p.146/147				
	 KH-R – p.148				
	 RHD-R – p.149				

F37 – Flare flange | SAE 6000/ISO 6162-2 footprint

SAE 6000/ISO 6162-2



Parflange F37 flange dimensions

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

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight body (Steel) kg/1 piece	W.P. bar
1/2	F37-608-CFX	18.2	40.5	48	56	57	53	61	20	0.20	420
3/4	F37-612-CFX	23.8	50.8	60	71	70	65	76	24	0.35	420
3/4	F37-612/25-CFX*	23.8	50.8	60	71	70	65	76	24	0.45	420
1	F37-616-CFX	27.8	57.2	70	81	80	75	86	24	0.53	420
1	F37-616/25-CFX*	27.8	57.2	70	81	80	75	86	24	0.64	420
1	F37-616/30-CFX*	27.8	57.2	70	81	80	75	86	24	0.59	420
1 1/4	F37-620-CFX	31.8	66.6	78	95	91	83	100	30	0.92	420
1 1/4	F37-620H12-CFX**	31.8	66.6	78	95	91	83	100	30	0.96	420
1 1/4	F37-620/38-CFX*	31.8	66.6	78	95	91	83	100	30	0.96	420
1 1/4	F37-620H12/38-CFX**	31.8	66.6	78	95	91	83	100	30	1.01	420
1 1/2	F37-624-CFX	36.5	79.3	95	112	109	100	118	35	1.54	420
1 1/2	F37-624/38-CFX*	36.5	79.3	95	112	109	100	118	35	1.74	420
1 1/2	F37-624/42-CFX*	36.5	79.3	95	112	109	100	118	35	1.72	420
2	F37-632-CFX	44.5	96.8	114	134	129	119	139	40	2.44	420
2	F37-632/50-CFX*	44.5	96.8	114	134	129	119	139	40	2.76	420

**Flange for size M12 bolts.

Parflange F37 threaded flange dimensions

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

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Thread	Weight body (Steel) kg/1 piece	W.P. bar
1/2	F37-608T-CFX	18.2	40.5	48	56	57	53	61	20	M08	0.20	420
3/4	F37-612T-CFX	23.8	50.8	60	71	70	65	76	24	M10	0.35	420
3/4	F37-612/25T-CFX	23.8	50.8	60	71	70	65	76	24	M10	0.49	420
1	F37-616T-CFX	27.8	57.2	70	81	80	75	86	24	M12	0.57	420
1	F37-616/25T-CFX*	27.8	57.2	70	81	80	75	86	24	M12	0.68	420
1	F37-616/30T-CFX*	27.8	57.2	70	81	80	75	86	24	M12	0.63	420
1 1/4	F37-620T-CFX	31.8	66.6	78	95	91	83	100	30	M14	0.92	420
1 1/4	F37-620TM12-CFX**	31.8	66.6	78	95	91	83	100	30	M12	1.01	420
1 1/4	F37-620/38T-CFX*	31.8	66.6	78	95	91	83	100	30	M14	1.03	420
1 1/4	F37-620TM12/38-CFX**	31.8	66.6	78	95	91	83	100	30	M12	1.06	420
1 1/2	F37-624T-CFX	36.5	79.3	95	112	109	100	118	35	M16	1.64	420
1 1/2	F37-624/38T-CFX*	36.5	79.3	95	112	109	100	118	35	M16	1.82	420
2	F37-632T-CFX	44.5	96.8	114	134	129	119	139	40	M20	2.44	420

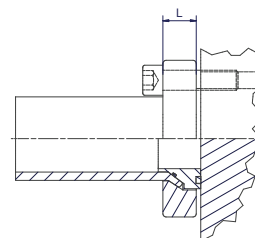
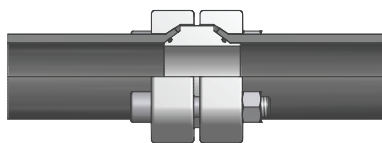
**Flange for size M12 bolts.

Pressure rates related to flanges. Other sizes / jump 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	F37-620-CFX	
Stainless steel	SS	F37-620-SSX	
Galvanized hot dip zinc	TZN	F37-620-TZNX	on request

Parflange® F37 – SAE 6000/ISO 6162-2



Part combination flaring SAE 6000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange SAE 6000 ISO 6162-2	Insert*	Sleeve
420	1/2	16X2.0	F37-608-CFX	IN08-16X2.0T...	SL08-25-16-CFX
	1/2	18X2.0	F37-608-CFX	IN08-18X2.0T...	SL08-25-18-CFX
	1/2	20X2.0	F37-608-CFX	IN08-20X2.0T...	SL08-25-20-CFX
	1/2	20X2.5	F37-608-CFX	IN08-20X2.5T...	SL08-25-20-CFX
	1/2	25X2.5	F37-608-CFX	IN08-25X2.5T...	
	1/2	25X3.0	F37-608-CFX	IN08-25X3.0T...	
	3/4	20X2.0	F37-612-CFX	IN12-20X2.0T...	SL12-30-20-CFX
	3/4	20X2.5	F37-612-CFX	IN12-20X2.5T...	SL12-30-20-CFX
	3/4	25X2.5	F37-612-CFX	IN12-25X2.5T...	SL12-30-25-CFX**
	3/4	25X3.0	F37-612-CFX	IN12-25X3.0T...	SL12-30-25-CFX**
	3/4	30X3.0	F37-612-CFX	IN12-30X3.0T...	
	3/4	30X4.0	F37-612-CFX	IN12-30X4.0T...	
	1	25X2.5	F37-616-CFX	IN16-25X2.5T...	SL16-38-25-CFX**
	1	25X3.0	F37-616-CFX	IN16-25X3.0T...	SL16-38-25-CFX**
	1	30X3.0	F37-616-CFX	IN16-30X3.0T...	SL16-38-30-CFX**
	1	30X4.0	F37-616-CFX	IN16-30X4.0T...	SL16-38-30-CFX**
	1	38X2.5	F37-616-CFX	IN16-38X2.5T...	
	1	38X3.0	F37-616-CFX	IN16-38X3.0T...	
	1	38X4.0	F37-616-CFX	IN16-38X4.0T...	
	1	38X5.0	F37-616-CFX	IN16-38X5.0T...	
	1 1/4	30X3.0	F37-620-CFX***	IN20-30X3.0T...	SL20-42-30-CFX
	1 1/4	30X4.0	F37-620-CFX***	IN20-30X4.0T...	SL20-42-30-CFX
	1 1/4	38X3.0	F37-620-CFX***	IN20-38X3.0T...	SL20-42-38-CFX**
	1 1/4	38X4.0	F37-620-CFX***	IN20-38X4.0T...	SL20-42-38-CFX**
	1 1/4	38X5.0	F37-620-CFX***	IN20-38X5.0T...	SL20-42-38-CFX**
	1 1/4	42X3.0	F37-620-CFX***	IN20-42X3.0T...	
	1 1/4	42X4.0	F37-620-CFX***	IN20-42X4.0T...	
	1 1/2	38X3.0	F37-624-CFX	IN24-38X3.0T...	SL24-50-38-CFX**
	1 1/2	38X4.0	F37-624-CFX	IN24-38X4.0T...	SL24-50-38-CFX**
	1 1/2	38X5.0	F37-624-CFX	IN24-38X5.0T...	SL24-50-38-CFX**
	1 1/2	42X3.0	F37-624-CFX	IN24-42X3.0T...	SL24-50-42-CFX**
	1 1/2	42X4.0	F37-624-CFX	IN24-42X4.0T...	SL24-50-42-CFX**
	1 1/2	50X3.0	F37-624-CFX	IN24-50X3.0T...	
	1 1/2	50X5.0	F37-624-CFX	IN24-50X5.0T...	
	1 1/2	50X6.0	F37-624-CFX	IN24-50X6.0T...	
	2	50X3.0	F37-632-CFX	IN32-50X3.0T...	SL32-60-50-CFX**
	2	50X5.0	F37-632-CFX	IN32-50X5.0T...	SL32-60-50-CFX**
	2	50X6.0	F37-632-CFX	IN32-50X6.0T...	SL32-60-50-CFX**
	2	60X3.0	F37-632-CFX	IN32-60X3.0T...	
	2	60X5.0	F37-632-CFX	IN32-60X5.0T...	
	2	60X6.0	F37-632-CFX	IN32-60X6.0T...	

Select the complete version:

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

**Jump size flanges available alternatively to adapter sleeve, see page 109.

***Flanges for M12 bolts also available (F37-620H12-CFX).

Other sizes like schedule on request.

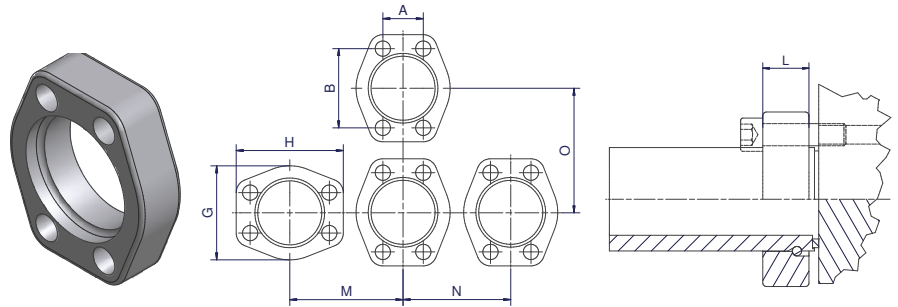
Bolts and nuts are not included in complete part numbers.

For recommended bolts and nuts see page 145.



R – Retaining ring flange | SAE 6000/ISO 6162-2 footprint

SAE 6000/ISO 6162-2



Retaining ring flange dimensions

Size Inch	Flange Order code	A	B	G	H	M	N	O	L	Weight body (Steel) kg/1 piece	W.P. bar
1/2	R-608-CFX	18.2	40.5	48	56	57	53	61	20	0.22	420
3/4	R-612-CFX	23.8	50.8	60	71	70	65	76	24	0.39	420
1	R-616-CFX	27.8	57.2	70	81	80	75	86	24	0.55	420
1 1/4	R-620-CFX	31.8	66.6	78	95	91	83	100	30	0.89	420
1 1/4	R-620H12-CFX*	31.8	66.6	78	95	91	83	100	30	0.92	420
1 1/2	R-624-CFX	36.5	79.3	95	112	109	100	118	35	1.46	420
2	R-632-CFX	44.5	96.8	114	134	129	119	139	40	2.35	420
2 1/2	R-640-CFX	58.7	123.8	150	176	169	156	183	50	5.96	420
3	R-648-CFX	71.4	152.4	176	212	202	184	218	52	8.41	420

*Flange for size M12 bolts.

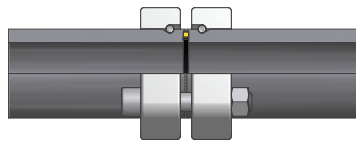
Pressure rates related to flanges.

Other sizes like schedule on request.

For all sizes also threaded flanges available (...T-CFX, R-620TM12-CFX).

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



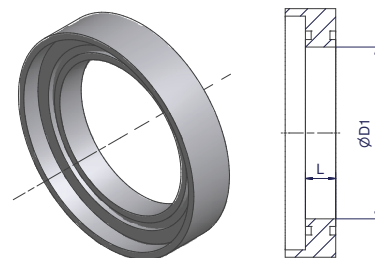
Part combination Bonded seal SAE 6000 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal
420	1/2	26X6.0	R-608-CFX	R08X	BS08SNX
	3/4	36X8.0	R-612-CFX	R12X	BS12SNX
	1	39X7.5	R-616-CFX	R16X	BS16SNX
	1 1/4	46X8.0	R-620-CFX	R20X	BS20SNX
	1 1/2	56X8.5	R-624-CFX	R24X	BS24SNX
	2	66X8.5	R-632-CFX	R32X	BS32SNX
	2 1/2	80X10.0	R-640-CFX	R40X	BS40SNX
	3	97X12.0	R-648-CFX	R48X	BS48SNX

For recommended bolts and nuts see page 145.

PSC – Pipe seal carrier | SAE 6000/ISO 6162-2 footprint

SAE 6000/ISO 6162-2

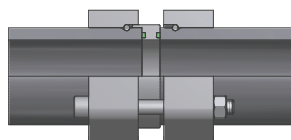


Size Inch	Pipe size	Seal carrier incl. F37 Seal	Seal carrier incl. O-Ring	L	D1	F37 Seal	O-Ring
1 1/4	46X8.0	PSC20-46X8.0VCF	PSC20-46X8.0OCF	8.0	30	F37RS20X	OR34.59X2.62X
1 1/2	56X8.5	PSC24-56X8.5VCF	PSC24-56X8.5OCF	10.0	39	F37RS24X	OR44.12X2.62X
2	66X8.5	PSC32-66X8.5VCF	PSC32-66X8.5OCF	10.0	49	F37RS32X	OR55.25X2.62X
2 1/2	80X10.0	PSC40-80X10VCF	PSC40-80X10OCF	15.0	60	F37RS40X	OR66.27X3.53X
3	97X12.0	PSC48-97X12VCF	PSC48-97X12OCF	15.0	73	F37RS48X	OR78.97X3.53X

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, F37-Seal	VCF	PSC40-80X10VCF
Stainless steel, F37-Seal	VSS	PSC40-80X10VSS
Steel, zinc plated, Cr(VI)-free, O-Ring (NBR)	OCF	PSC40-80X10OCF
Stainless steel, O-Ring (NBR)	OSS	PSC40-80X10OSS



Example of Part combination Pipe seal carrier SAE 6000 connection

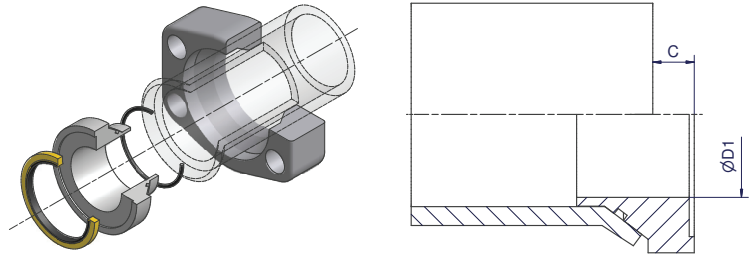
Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Seal Carrier
420	1 1/4	46X8.0	R-620-CFX or R-620H12-CFX	R20X	PSC20-46X8.0VCF
	1 1/2	56X8.5	R-624-CFX	R24X	PSC24-56X8.5VCF
	2	66X8.5	R-632-CFX	R32X	PSC32-66X8.5VCF
	2 1/2	80X10.0	R-640-CFX	R40X	PSC40-80X10VCF
	3	97X12.0	R-648-CFX	R48X	PSC48-97X12VCF

Other sizes on request.

Bolts and nuts are not included in complete part numbers. For recommended bolts and nuts see page 145.

TFB – Flare flange connection

Tube to port connection, bonded seal



Size		Flange* incl. Insert + Bonded Seal + O-Ring Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube							
1/2	16X2.0	F37-608-16X2.0TFBCF	9.5	8.0	IN08-16X2.0TFBCF	BS08SNX	OR12X1.0X	0.24
1/2	18X2.0	F37-608-18X2.0TFBCF	11.5	8.0	IN08-18X2.0TFBCF	BS08SNX	OR14X1.0X	0.24
1/2	20X2.0	F37-608-20X2.0TFBCF	13.5	8.0	IN08-20X2.0TFBCF	BS08SNX	OR16X1.0X	0.24
1/2	20X2.5	F37-608-20x2.5TFBCF	13.5	8.0	IN08-20X2.5TFBCF	BS08SNX	OR16X1.0X	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	0.41
3/4	20X2.5	F37-612-20X2.5TFBCF	12.5	8.0	IN12-20X2.5TFBCF	BS12SNX	OR16X1.0X	0.41
3/4	25X2.5	F37-612-25X2.5TFBCF	17.5	10.0	IN12-25X2.5TFBCF	BS12SNX	OR20X1.0X	0.41
3/4	25X3.0	F37-612-25X3.0TFBCF	16.5	8.0	IN12-25X3.0TFBCF	BS12SNX	OR20X1.0X	0.42
3/4	30X3.0	F37-612-30X3.0TFBCF	19.0	8.5	IN12-30X3.0TFBCF	BS12SNX	OR25X1.0X	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	0.62
1	25X3.0	F37-616-25X3.0TFBCF	16.5	8.0	IN16-25X3.0TFBCF	BS16SNX	OR20X1.0X	0.62
1	30X3.0	F37-616-30X3.0TFBCF	21.5	8.5	IN16-30X3.0TFBCF	BS16SNX	OR25X1.0X	0.62
1	30X4.0	F37-616-30X4.0TFBCF	19.5	8.5	IN16-30X4.0TFBCF	BS16SNX	OR22X1.0X	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	OR25X1.0X	1.03
1 1/4	30X4.0	F37-620-30X4.0TFBCF**	19.5	8.5	IN20-30X4.0TFBCF	BS20SNX	OR22X1.0X	1.04
1 1/4	38X3.0	F37-620-38X3.0TFBCF**	29.5	9.0	IN20-38X3.0TFBCF	BS20SNX	OR34X1.0X	1.02
1 1/4	38X4.0	F37-620-38X4.0TFBCF**	27.0	10.0	IN20-38X4.0TFBCF	BS20SNX	OR30X1.0X	1.03
1 1/4	38X5.0	F37-620-38X5.0TFBCF**	25.5	8.0	IN20-38X5.0TFBCF	BS20SNX	OR28X1.0X	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	1.11
1 1/2	38X4.0	F37-624-38X4.0TFBCF	27.5	10.0	IN24-38X4.0TFBCF	BS24SNX	OR30X1.0X	1.73
1 1/2	38X5.0	F37-624-38X5.0TFBCF	25.0	8.0	IN24-38X5.0TFBCF	BS24SNX	OR28X1.0X	1.73
1 1/2	42X3.0	F37-624-42X3.0TFBCF	35.0	10.0	IN24-42X3.0TFBCF	BS24SNX	OR37.82X1.78X	1.74
1 1/2	42X4.0	F37-624-42X4.0TFBCF	31.5	10.0	IN24-42X4.0TFBCF	BS24SNX	OR34X1.0X	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	2.66
2	50X5.0	F37-632-50X5.0TFBCF	37.5	10.0	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	2.68
2	50X6.0	F37-632-50X6.0TFBCF	35.0	10.0	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	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

**Flanges for M12 bolts also available (F37-620H12-...TFBCF).

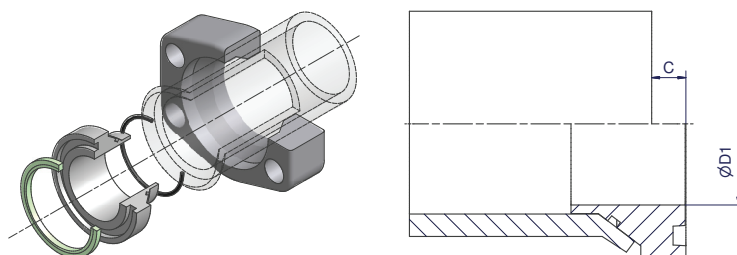
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube							
1/2	16X2.0	F37-608-16X2.0TFVCF	9.5	8.0	IN08-16X2.0TFVCF	F37S08X	OR12X1.0X	0.24
1/2	18X2.0	F37-608-18X2.0TFVCF	11.5	8.0	IN08-18X2.0TFVCF	F37S08X	OR14X1.0X	0.24
1/2	20X2.0	F37-608-20X2.0TFVCF	13.5	8.0	IN08-20X2.0TFVCF	F37S08X	OR16X1.0X	0.24
1/2	20X2.5	F37-608-20X2.5TFVCF	13.5	8.0	IN08-20X2.5TFVCF	F37S08X	OR16X1.0X	0.24
1/2	25X2.5	F37-608-25X2.5TFVCF	13.5	10.0	IN08-25X2.5TFVCF	F37S08X	OR20X1.0X	0.25
1/2	25X3.0	F37-608-25X3.0TFVCF	13.0	8.0	IN08-25X3.0TFVCF	F37S08X	OR20X1.0X	0.24
3/4	20X2.0	F37-612-20X2.0TFVCF	13.5	8.0	IN12-20X2.0TFVCF	F37S12X	OR16X1.0X	0.41
3/4	20X2.5	F37-612-20X2.5TFVCF	12.5	8.0	IN12-20X2.5TFVCF	F37S12X	OR16X1.0X	0.41
3/4	25X2.5	F37-612-25X2.5TFVCF	17.5	10.0	IN12-25X2.5TFVCF	F37S12X	OR20X1.0X	0.41
3/4	25X3.0	F37-612-25X3.0TFVCF	16.5	8.0	IN12-25X3.0TFVCF	F37S12X	OR20X1.0X	0.42
3/4	30X3.0	F37-612-30X3.0TFVCF	19.0	8.5	IN12-30X3.0TFVCF	F37S12X	OR25X1.0X	0.42
3/4	30X4.0	F37-612-30X4.0TFVCF	19.5	8.5	IN12-30X4.0TFVCF	F37S12X	OR22X1.0X	0.42
1	25X2.5	F37-616-25X2.5TFVCF	17.5	10.0	IN16-25X2.5TFVCF	F37S16X	OR20X1.0X	0.61
1	25X3.0	F37-616-25X3.0TFVCF	16.5	8.0	IN16-25X3.0TFVCF	F37S16X	OR20X1.0X	0.62
1	30X3.0	F37-616-30X3.0TFVCF	21.5	8.5	IN16-30X3.0TFVCF	F37S16X	OR25X1.0X	0.64
1	30X4.0	F37-616-30X4.0TFVCF	19.5	8.5	IN16-30X4.0TFVCF	F37S16X	OR22X1.0X	0.62
1	38X2.5	F37-616-38X2.5TFVCF	25.0	9.5	IN16-38X2.5TFVCF	F37S16X	OR34X1.0X	0.64
1	38X3.0	F37-616-38X3.0TFVCF	25.0	9.0	IN16-38X3.0TFVCF	F37S16X	OR34X1.0X	0.63
1	38X4.0	F37-616-38X4.0TFVCF	25.0	10.0	IN16-38X4.0TFVCF	F37S16X	OR30X1.0X	0.63
1	38X5.0	F37-616-38X5.0TFVCF	25.0	8.0	IN16-38X5.0TFVCF	F37S16X	OR28X1.0X	0.62
1 1/4	30X3.0	F37-620-30X3.0TFVCF**	21.5	8.5	IN20-30X3.0TFVCF	F37S20X	OR25X1.0X	1.03
1 1/4	30X4.0	F37-620-30X4.0TFVCF**	19.5	8.5	IN20-30X4.0TFVCF	F37S20X	OR22X1.0X	1.04
1 1/4	38X3.0	F37-620-38X3.0TFVCF**	29.5	9.0	IN20-38X3.0TFVCF	F37S20X	OR34X1.0X	1.02
1 1/4	38X4.0	F37-620-38X4.0TFVCF**	27.0	10.0	IN20-38X4.0TFVCF	F37S20X	OR30X1.0X	1.03
1 1/4	38X5.0	F37-620-38X5.0TFVCF**	25.5	8.0	IN20-38X5.0TFVCF	F37S20X	OR28X1.0X	1.02
1 1/4	42X3.0	F37-620-42X3.0TFVCF**	31.5	10.0	IN20-42X3.0TFVCF	F37S20X	OR37.82X1.78X	1.03
1 1/4	42X4.0	F37-620-42X4.0TFVCF**	31.5	10.0	IN20-42X4.0TFVCF	F37S20X	OR34X1.0X	1.02
1 1/2	38X3.0	F37-624-38X3.0TFVCF	27.5	9.0	IN24-38X3.0TFVCF	F37S24X	OR34X1.0X	1.73
1 1/2	38X4.0	F37-624-38X4.0TFVCF	27.5	10.0	IN24-38X4.0TFVCF	F37S24X	OR30X1.0X	1.73
1 1/2	38X5.0	F37-624-38X5.0TFVCF	25.0	8.0	IN24-38X5.0TFVCF	F37S24X	OR28X1.0X	1.73
1 1/2	42X3.0	F37-624-42X3.0TFVCF	33.5	10.0	IN24-42X3.0TFVCF	F37S24X	OR37.82X1.78X	1.73
1 1/2	42X4.0	F37-624-42X4.0TFVCF	31.5	10.0	IN24-42X4.0TFVCF	F37S24X	OR34X1.0X	1.73
1 1/2	50X3.0	F37-624-50X3.0TFVCF	36.0	11.0	IN24-50X3.0TFVCF	F37S24X	OR44.17X1.78X	1.73
1 1/2	50X5.0	F37-624-50X5.0TFVCF	36.0	10.0	IN24-50X5.0TFVCF	F37S24X	OR41X1.78X	1.73
1 1/2	50X6.0	F37-624-50X6.0TFVCF	35.0	10.0	IN24-50X6.0TFVCF	F37S24X	OR41X1.78X	1.73
2	50X3.0	F37-632-50X3.0TFVCF	41.5	11.0	IN32-50X3.0TFVCF	F37S32X	OR44.17X1.78X	2.66
2	50X5.0	F37-632-50X5.0TFVCF	37.5	10.0	IN32-50X5.0TFVCF	F37S32X	OR41X1.78X	2.68
2	50X6.0	F37-632-50X6.0TFVCF	35.0	10.0	IN32-50X6.0TFVCF	F37S32X	OR41X1.78X	2.71
2	60X3.0	F37-632-60X3.0TFVCF	46.0	12.0	IN32-60X3.0TFVCF	F37S32X	OR53.7X1.78X	2.71
2	60X5.0	F37-632-60X5.0TFVCF	46.0	11.0	IN32-60X5.0TFVCF	F37S32X	OR50.52X1.78X	2.68
2	60X6.0	F37-632-60X6.0TFVCF	45.5	11.0	IN32-60X6.0TFVCF	F37S32X	OR47.37X1.78X	2.67

**Flanges for M12 bolts also available (F37-620H12-...TFVCF).

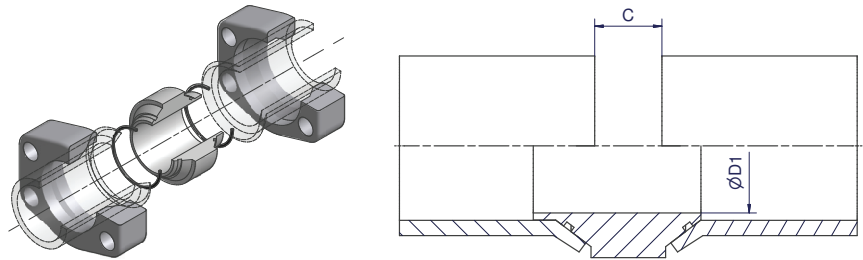
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube						
1/2	16X2.0	F37-608-16X2.0TTCF	9.5	16	IN08-16X2.0TTCF	OR12X1.0X	0.28
1/2	18X2.0	F37-608-18X2.0TTCF	11.5	16	IN08-18X2.0TTCF	OR14X1.0X	0.29
1/2	20X2.0	F37-608-20X2.0TTCF	13.5	16	IN08-20X2.0TTCF	OR16X1.0X	0.29
1/2	20X2.5	F37-608-20X2.5TTCF	13.5	16	IN08-20X2.5TTCF	OR16X1.0X	0.29
1/2	25X2.5	F37-608-25X2.5TTCF	13.5	20	IN08-25X2.5TTCF	OR20X1.0X	0.30
1/2	25X3.0	F37-608-25X3.0TTCF	13.5	16	IN08-25X3.0TTCF	OR20X1.0X	0.29
3/4	20X2.0	F37-612-20X2.0TTCF	13.5	16	IN12-20X2.0TTCF	OR16X1.0X	0.48
3/4	20X2.5	F37-612-20X2.5TTCF	12.5	16	IN12-20X2.5TTCF	OR16X1.0X	0.48
3/4	25X2.5	F37-612-25X2.5TTCF	17.5	20	IN12-25X2.5TTCF	OR20X1.0X	0.49
3/4	25X3.0	F37-612-25X3.0TTCF	16.5	16	IN12-25X3.0TTCF	OR20X1.0X	0.49
3/4	30X3.0	F37-612-30X3.0TTCF	19.0	17	IN12-30X3.0TTCF	OR25X1.0X	0.50
3/4	30X4.0	F37-612-30X4.0TTCF	19.5	17	IN12-30X4.0TTCF	OR22X1.0X	0.50
1	25X2.5	F37-616-25X2.5TTCF	17.5	20	IN16-25X2.5TTCF	OR20X1.0X	0.72
1	25X3.0	F37-616-25X3.0TTCF	16.5	16	IN16-25X3.0TTCF	OR20X1.0X	0.72
1	30X3.0	F37-616-30X3.0TTCF	21.5	17	IN16-30X3.0TTCF	OR25X1.0X	0.71
1	30X4.0	F37-616-30X4.0TTCF	19.5	17	IN16-30X4.0TTCF	OR22X1.0X	0.72
1	38X2.5	F37-616-38X2.5TTCF	25.0	19	IN16-38X2.5TTCF	OR34X1.0X	0.77
1	38X3.0	F37-616-38X3.0TTCF	25.0	18	IN16-38X3.0TTCF	OR34X1.0X	0.75
1	38X4.0	F37-616-38X4.0TTCF	25.0	20	IN16-38X4.0TTCF	OR30X1.0X	0.73
1	38X5.0	F37-616-38X5.0TTCF	25.0	16	IN16-38X5.0TTCF	OR28X1.0X	0.71
1 1/4	30X3.0	F37-620-30X3.0TTCF**	21.5	17	IN20-30X3.0TTCF	OR25X1.0X	1.16
1 1/4	30X4.0	F37-620-30X4.0TTCF**	19.5	17	IN20-30X4.0TTCF	OR22X1.0X	1.19
1 1/4	38X3.0	F37-620-38X3.0TTCF**	25.0	18	IN20-38X3.0TTCF	OR34X1.0X	1.14
1 1/4	38X4.0	F37-620-38X4.0TTCF**	27.0	20	IN20-38X4.0TTCF	OR30X1.0X	1.15
1 1/4	38X5.0	F37-620-38X5.0TTCF**	25.5	16	IN20-38X5.0TTCF	OR28X1.0X	1.13
1 1/4	42X3.0	F37-620-42X3.0TTCF**	31.5	20	IN20-42X3.0TTCF	OR37.82X1.78X	1.14
1 1/4	42X4.0	F37-620-42X4.0TTCF**	31.5	20	IN20-42X4.0TTCF	OR34X1.0X	1.13
1 1/2	38X3.0	F37-624-38X3.0TTCF	27.5	18	IN24-38X3.0TTCF	OR34X1.0X	1.79
1 1/2	38X4.0	F37-624-38X4.0TTCF	27.5	20	IN24-38X4.0TTCF	OR30X1.0X	1.79
1 1/2	38X5.0	F37-624-38X5.0TTCF	25.0	16	IN24-38X5.0TTCF	OR28X1.0X	1.79
1 1/2	42X3.0	F37-624-42X3.0TTCF	33.5	20	IN24-42X3.0TTCF	OR37.82X1.78X	1.84
1 1/2	42X4.0	F37-624-42X4.0TTCF	31.5	20	IN24-42X4.0TTCF	OR34X1.0X	1.94
1 1/2	50X3.0	F37-624-50X3.0TTCF	36.0	22	IN24-50X3.0TTCF	OR44.17X1.78X	1.96
1 1/2	50X5.0	F37-624-50X5.0TTCF	36.0	20	IN24-50X5.0TTCF	OR41X1.78X	2.07
1 1/2	50X6.0	F37-624-50X6.0TTCF	35.0	20	IN24-50X6.0TTCF	OR41X1.78X	1.96
2	50X3.0	F37-632-50X3.0TTCF	41.5	22	IN32-50X3.0TTCF	OR44.17X1.78X	2.86
2	50X5.0	F37-632-50X5.0TTCF	37.5	20	IN32-50X5.0TTCF	OR41X1.78X	2.97
2	50X6.0	F37-632-50X6.0TTCF	35.0	20	IN32-50X6.0TTCF	OR41X1.78X	3.02
2	60X3.0	F37-632-60X3.0TTCF	46.0	24	IN32-60X3.0TTCF	OR53.7X1.78X	2.99
2	60X5.0	F37-632-60X5.0TTCF	46.0	22	IN32-60X5.0TTCF	OR50.52X1.78X	2.92
2	60X6.0	F37-632-60X6.0TTCF	45.5	22	IN32-60X6.0TTCF	OR47.37X1.78X	2.91

**Flanges for M12 bolts also available (F37-620H12-...TTCF).

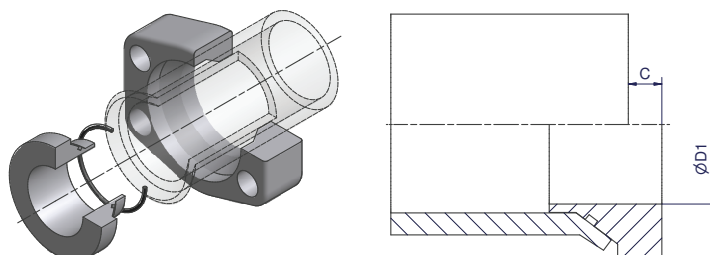
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube						
1/2	16X2.0	F37-608-16X2.0TFCF	9.5	8.0	IN08-16X2.0TFCF	OR12X1.0X	0.24
1/2	18X2.0	F37-608-18X2.0TFCF	11.5	8.0	IN08-18X2.0TFCF	OR14X1.0X	0.24
1/2	20X2.0	F37-608-20X2.0TFCF	13.5	8.0	IN08-20X2.0TFCF	OR16X1.0X	0.25
1/2	20X2.5	F37-608-20X2.5TFCF	13.5	8.0	IN08-20X2.5TFCF	OR16X1.0X	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	0.41
3/4	20X2.5	F37-612-20X2.5TFCF	12.5	8.0	IN12-20X2.5TFCF	OR16X1.0X	0.41
3/4	25X2.5	F37-612-25X2.5TFCF	17.5	10.0	IN12-25X2.5TFCF	OR20X1.0X	0.41
3/4	25X3.0	F37-612-25X3.0TFCF	16.5	8.0	IN12-25X3.0TFCF	OR20X1.0X	0.42
3/4	30X3.0	F37-612-30X3.0TFCF	19.0	8.5	IN12-30X3.0TFCF	OR25X1.0X	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	0.61
1	25X3.0	F37-616-25X3.0TFCF	16.5	8.0	IN16-25X3.0TFCF	OR20X1.0X	0.62
1	30X3.0	F37-616-30X3.0TFCF	21.5	8.5	IN16-30X3.0TFCF	OR25X1.0X	0.64
1	30X4.0	F37-616-30X4.0TFCF	19.5	8.5	IN16-30X4.0TFCF	OR22X1.0X	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	OR25X1.0X	1.03
1 1/4	30X4.0	F37-620-30X4.0TFCF**	19.5	8.5	IN20-30X4.0TFCF	OR22X1.0X	1.05
1 1/4	38X3.0	F37-620-38X3.0TFCF**	29.0	9.0	IN20-38X3.0TFCF	OR34X1.0X	1.02
1 1/4	38X4.0	F37-620-38X4.0TFCF**	27.0	10.0	IN20-38X4.0TFCF	OR30X1.0X	1.03
1 1/4	38X5.0	F37-620-38X5.0TFCF**	25.5	8.0	IN20-38X5.0TFCF	OR28X1.0X	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	1.73
1 1/2	38X4.0	F37-624-38X4.0TFCF	27.5	10.0	IN24-38X4.0TFCF	OR30X1.0X	1.73
1 1/2	38X5.0	F37-624-38X5.0TFCF	25.0	8.0	IN24-38X5.0TFCF	OR28X1.0X	1.73
1 1/2	42X3.0	F37-624-42X3.0TFCF	33.5	10.0	IN24-42X3.0TFCF	OR37.82X1.78X	1.73
1 1/2	42X4.0	F37-624-42X4.0TFCF	31.5	10.0	IN24-42X4.0TFCF	OR34X1.0X	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	2.66
2	50X5.0	F37-632-50X5.0TFCF	37.5	10.0	IN32-50X5.0TFCF	OR41X1.78X	2.68
2	50X6.0	F37-632-50X6.0TFCF	35.0	10.0	IN32-50X6.0TFCF	OR41X1.78X	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

**Flanges for M12 bolts also available (F37-620H12-...TFCF).

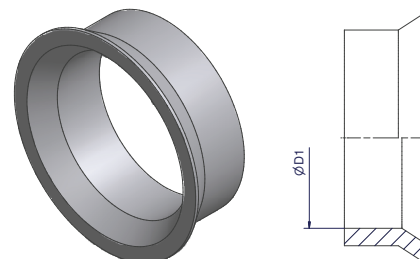
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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 body (Steel) kg/1 piece
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	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 use of jump size flanges, no adapter sleeves necessary. For jump size flanges see page 109.

Please change suffixes according to material/surface required

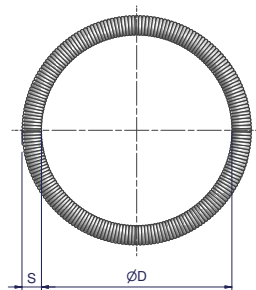
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX

R – Retaining ring

SAE 6000/ISO 6162-2

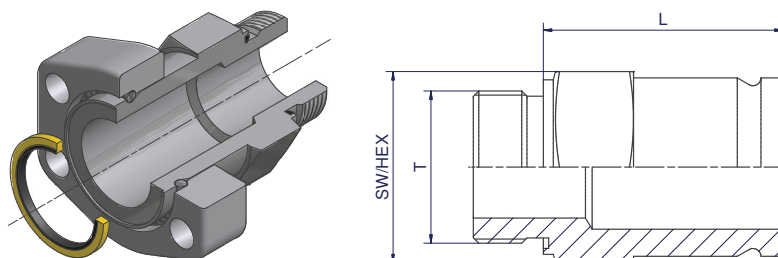
Size Inch	Tube	Order code	D	S
1/2	26X6.0	R08X	22.3	4.0
3/4	36X8.0	R12X	32.3	4.0
1	39X7.5	R16X	34.3	5.0
1 1/4	46X8.0	R20X	41.3	5.0
1 1/2	56X8.5	R24X	51.3	5.0
2	66X8.5	R32X	61.3	5.0
2 1/2	80X10.0	R40X	75.3	5.0
3	97X12.0	R48X	91.3	6.0

Material: Stainless steel



MTF-R – Male thread adapter, BSPP

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	L	T (BSPP)	SW/ HEX	Weight body (Steel) kg/1 piece
1/2	26X6.0	R-608MTFRCF	MTF08ROMDCF	61.0	G 1/2 A	27	0.21
3/4	36X8.0	R-612MTFRCF	MTF12ROMDCF	61.0	G 3/4 A	36	0.32
3/4	36X8.0	R-612MTFR1/2CF	MTF12R1/2OMDCF	61.0	G 1/2 A	36	0.32
1	39X7.5	R-616MTFRCF	MTF16ROMDCF	69.0	G 1 A	41	0.50
1	39X7.5	R-616MTFR3/4CF	MTF16R3/4OMDCF	69.0	G 3/4 A	41	0.50
1 1/4	46X8.0	R-620MTFRCF	MTF20ROMDCF	80.0	G 1 1/4 A	50	0.75
1 1/4	46X8.0	R-620MTFR1CF	MTF20R1OMDCF	80.0	G 1 A	50	0.73
1 1/2	56X8.5	R-624MTFRCF	MTF24ROMDCF	93.0	G 1 1/2 A	60	1.20
1 1/2	56X8.5	R-624MTFR11/4CF	MTF24R11/4OMDCF	93.0	G 1 1/4 A	60	1.17
2	66X8.5	R-632MTFRCF	MTF32ROMDCF	104.0	G 2 A	75	1.87
2	66X8.5	R-632MTFR11/2CF	MTF32R11/2OMDCF	103.5	G 1 1/2 A	75	1.80
2 1/2	80X10.0	R-640MTFRCF	MTF40ROMDCF	134.0	G 2 1/2 A	85	3.50
2 1/2	80X10.0	R-640MTFR2CF	MTF40R2OMDCF	136.0	G 2 A	85	3.50
3	97X12.0	R-648MTFRCF	MTF48ROMDCF	145.0	G 3 A	95	5.00

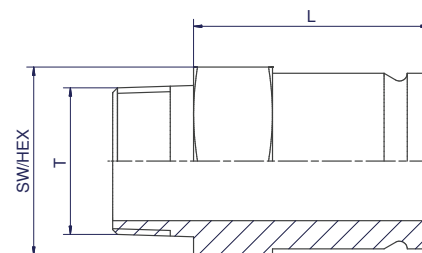
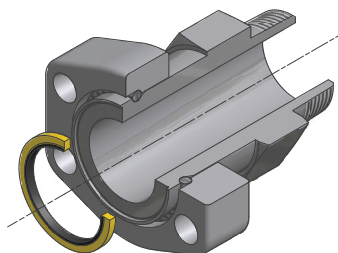
Other sizes on request.

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-620MTFROMDCF
Stainless steel	SS	R-620MTFROMDSS

MTF-N – Male thread adapter, NPT

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body Order code	L	T (NPT)	SW/ HEX	Weight body (Steel) kg/1 piece
1/2	26X6.0	R-608MTFNCF	MTF08NCFX	72.6	1/2-14	27	0.26
3/4	36X8.0	R-612MTFNCF	MTF12NCFX	72.6	3/4-14	36	0.48
1	39X7.5	R-616MTFNCF	MTF16NCFX	67.7	1-11.5	41	0.55
1 1/4	46X8.0	R-620MTFNCF	MTF20NCFX	75.0	1 1/4-11.5	50	0.70
1 1/2	56X8.5	R-624MTFNCF	MTF24NCFX	93.2	1 1/2-11.5	60	1.80
2	66X8.5	R-632MTFNCF	MTF32NCFX	100.4	2-11.5	75	2.40
2 1/2	80X10.0	R-640MTFNCF	MTF40NCFX	130.0	2 1/2-8	85	3.40
3	97X12.0	R-648MTFNCF	MTF48NCFX	141.2	3-8	95	4.90

Other sizes on request.

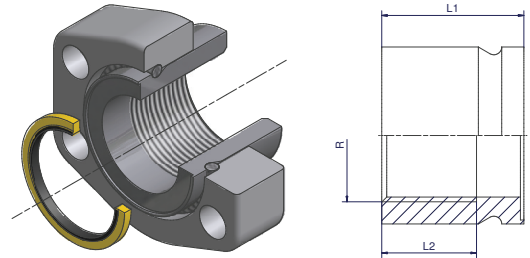
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-620MT0NCF
Stainless steel	SS	R-620MTFNSS



FTF-R – Female thread adapter, BSPP

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete part Order code	Body Order code	L1	L2	R (BSPP)	Weight body (Steel) kg/1 piece
1/2	26X6.0	R-608FTFRCF	FTF08RCFX	35	25	G 1/4	0.11
3/4	36X8.0	R-612FTFRCF	FTF12RCFX	40	25	G 1/2	0.22
1	39X7.5	R-616FTFRCF	FTF16RCFX	40	25	G 3/4	0.20
1 1/4	46X8.0	R-620FTFRCF	FTF20RCFX	42	30	G 1	0.30
1 1/2	56X8.5	R-624FTFRCF	FTF24RCFX	45	30	G 1 1/4	0.45
2	66X8.5	R-632FTFRCF	FTF32RCFX	55	40	G 1 1/2	0.75
2 1/2	80X10.0	R-640FTFRCF	FTF40RCFX	80	40	G 2	1.52
3	97X12.0	R-648FTFRCF	FTF48RCFX	85	50	G 2 1/2	2.11

Other sizes on request.

Please change suffixes according to material/surface required

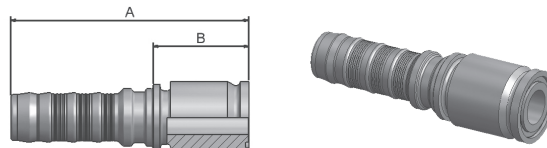
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	R-620FTFRCF
Stainless steel	SS	R-620FTFRSS

Retaining ring hose couplings

SAE 6000/ISO 6162-2

X5 Flange - Straight

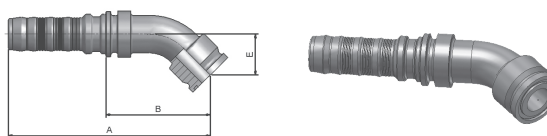
Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	Order code
	Inch	Size	mm				
31	1 1/4	-20	31.8	1 1/4	152.3	61.3	KX5V6-20-20
38	1 1/2	-24	38.1	1 1/2	159.3	63.3	KX5V6-24-24
51	2	-32	50.8	2	188.0	78.0	KX5V6-32-32
63	2 1/2	-40	63.5	2 1/2	233.0	83.0	KX5V6-40-40
63	2 1/2	-40	63.5	3	233.0	98.0	KX5V6-48-40

X7 Flange - 45° Elbow

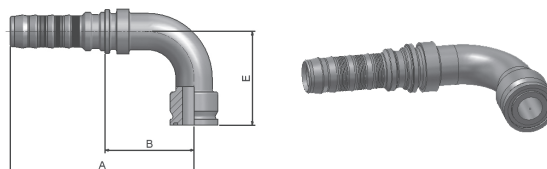
Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	E mm	Order code
	Inch	Size	mm					
31	1 1/4	-20	31.8	1 1/4	190.0	99.0	39.0	KX7V6-20-20
38	1 1/2	-24	38.1	1 1/2	221.0	125.0	44.0	KX7V6-24-24
51	2	-32	50.8	2	275.0	164.5	57.0	KX7V6-32-32

X9 Flange - 90° Elbow

Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	E mm	Order code
	Inch	Size	mm					
31	1 1/4	-20	31.8	1 1/4	176.8	85.5	90.0	KX9V6-20-20
38	1 1/2	-24	38.1	1 1/2	209.3	113.0	104.0	KX9V6-24-24
51	2	-32	50.8	2	268.0	157.0	138.0	KX9V6-32-32

Details about the associated hose types can be found in the catalog of HPDE C4400/UK.

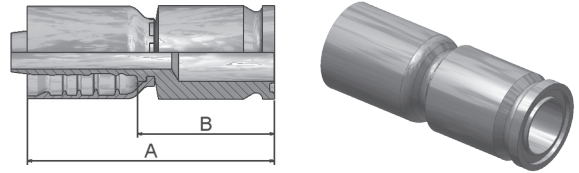


Retaining ring hose couplings

SAE 6000/ISO 6162-2

X5 Flange - Straight

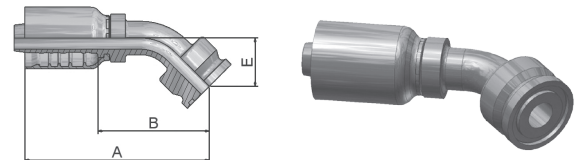
Full flange system for ISO 6162-1 or ISO 6162-2



DN	Hose I.D.			Flange Inch	A mm	B mm	Order code
	Inch	Size	mm				
19	3/4	-12	19.1	3/4	103.0	57.0	1X577-12-12
19	3/4	-12	19.1	1	103.0	57.0	1X577-16-12
25	1	-16	25.4	1	113.0	59.0	1X577-16-16
25	1	-16	25.4	1 1/4	113.0	59.0	1X577-20-16
25	1	-16	25.4	1 1/2	113.0	59.0	1X577-24-16
31	1 1/4	-20	31.8	1 1/4	124.0	57.0	1X577-20-20
38	1 1/2	-24	38.1	1 1/2	129.0	62.0	1X577-24-24
51	2	-32	50.8	2	154.0	77.0	1X57732-32

X7 Flange - 45° Elbow

Full flange system for ISO 6162-1 or ISO 6162-2



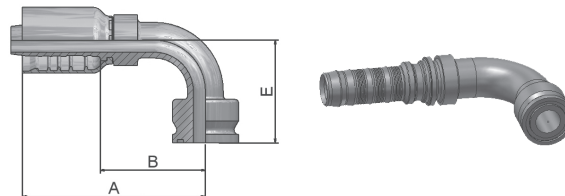
DN	Hose I.D.			Flange Inch	A mm	B mm	E mm	Order code
	Inch	Size	mm					
19	3/4	-12	19.1	3/4	119.0	73.0	29.0	1X777-12-12
19	3/4	-12	19.1	1	118.0	72.0	29.0	1X777-16-12
25	1	-16	25.4	1	141.0	87.0	32.0	1X777-16-16
25	1	-16	25.4	1 1/4	147.0	93.0	38.0	1X777-20-16
31	1 1/4	-20	31.8	1	146.0	82.0	38.0	1X777-16-20
31	1 1/4	-20	31.8	1 1/4	159.0	96.0	38.0	1X777-20-20
31	1 1/4	-20	31.8	1 1/2	165.0	102.0	44.0	1X777-24-20
38	1 1/2	-24	38.1	1 1/2	183.0	116.0	45.0	1X777-24-24

Retaining ring hose couplings

SAE 6000/ISO 6162-2

X9 Flange - 90° Elbow

Full flange system for ISO 6162-1 or ISO 6162-2

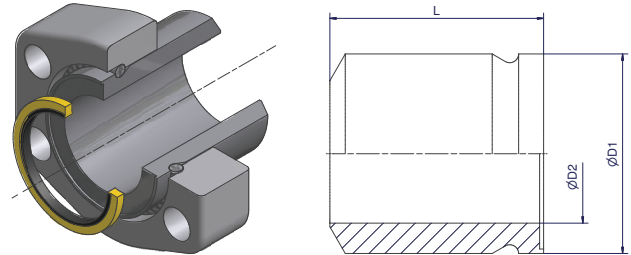


DN	Hose I.D.			Flange Inch	A mm	B mm	E mm	Order code
	Inch	Size	mm					
12	1/2	-8	12.7	1/2	81.0	45.0	43.0	1X977-8-8
19	3/4	-12	19.1	3/4	108.0	62.0	61.0	1X977-12-12
19	3/4	-12	19.1	1	108.0	62.0	61.0	1X977-16-12
25	1	-16	25.4	3/4	110.0	56.0	70.0	1X977-12-16
25	1	-16	25.4	1	131.0	77.0	70.0	1X977-16-16
25	1	-16	25.4	1 1/4	131.0	77.0	70.0	1X977-20-16
31	1 1/4	-20	31.8	1	130.0	67.0	90.0	1X977-16-20
31	1 1/4	-20	31.8	1 1/4	148.0	84.0	90.0	1X977-20-20
31	1 1/4	-20	31.8	1 1/2	148.0	84.0	90.0	1X977-24-20
38	1 1/2	-24	38.1	1 1/2	170.0	103.0	104.0	1X977-24-24
51	2	-32	50.8	2	221.0	144.0	138.0	1X977-32-32

Details about the associated hose types can be found in the catalog of HPDE C4400/UK.

WA – Weld adapter connection

SAE 6000/ISO 6162-2

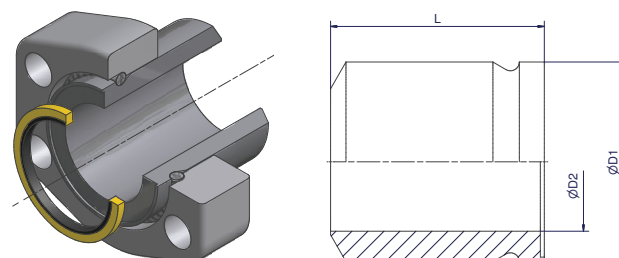


Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	D1	D2	L	Weight (Steel) kg/1 kit
1/2	12X1.5	R-608WA-12X1.5S	R08X	BS08SNX	R-608-CFX	WA08-12X1.5SX	26	14	40	0.29
1/2	16X2.0	R-608WA-16X2.0S	R08X	BS08SNX	R-608-CFX	WA08-16X2.0SX	26	14	40	0.30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

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	D1	D2	L	Weight (Steel) kg/1 kit
1 1/2	38X5.0	R-624WA-38X5.0S	R24X	BS24SNX	R-624-CFX	WA24-38X5.0SX	56	28	75	1.48
1 1/2	48.3X2.8	R-624WA-48.3X2.8S	R24X	BS24SNX	R-624-CFX	WA24-48.3X2.8SX	56	39	70	1.14
1 1/2	48.3X3.7	R-624WA-48.3X3.7S	R24X	BS24SNX	R-624-CFX	WA24-48.3X3.7SX	56	39	70	1.18
1 1/2	48.3X5.1	R-624WA-48.3X5.1S	R24X	BS24SNX	R-624-CFX	WA24-48.3X5.1SX	56	38	70	1.24
1 1/2	48.3X7.1	R-624WA-48.3X7.1S	R24X	BS24SNX	R-624-CFX	WA24-48.3X7.1SX	56	34	70	1.36
1 1/2	48.3X10.2	R-624WA-48.3X10.2S	R24X	BS24SNX	R-624-CFX	WA24-48.3X10.2SX	56	30	70	1.32
1 1/2	50X3.0	R-624WA-50X3.0S	R24X	BS24SNX	R-624-CFX	WA24-50X3.0SX	56	39	70	1.13
1 1/2	50X5.0	R-624WA-50X5.0S	R24X	BS24SNX	R-624-CFX	WA24-50X5.0SX	56	40	70	1.20
1 1/2	50X6.0	R-624WA-50X6.0S	R24X	BS24SNX	R-624-CFX	WA24-50X6.0SX	56	38	70	1.26
1 1/2	50X9.0	R-624WA-50X9.0S	R24X	BS24SNX	R-624-CFX	WA24-50X9.0SX	56	32	70	1.42
1 1/2	56X8.5	R-624WA-56X8.5S	R24X	BS24SNX	R-624-CFX	WA24-56X8.5SX	56	39	60	1.18
2	48.3X5.6	R-632WA-48.3X5.6S	R32X	BS32SNX	R-632-CFX	WA32-48.3X5.6SX	66	37	90	2.40
2	50X9.0	R-632WA-50X9.0S	R32X	BS32SNX	R-632-CFX	WA32-50X9.0SX	66	32	90	2.61
2	60X3.0	R-632WA-60X3.0S	R32X	BS32SNX	R-632-CFX	WA32-60X3.0SX	66	49	90	1.89
2	60X5.0	R-632WA-60X5.0S	R32X	BS32SNX	R-632-CFX	WA32-60X5.0SX	66	50	90	1.99
2	60X6.0	R-632WA-60X6.0S	R32X	BS32SNX	R-632-CFX	WA32-60X6.0SX	66	48	90	2.10
2	60X8.0	R-632WA-60X8.0S	R32X	BS32SNX	R-632-CFX	WA32-60X8.0SX	66	44	90	2.28
2	60X10.0	R-632WA-60X10.0S	R32X	BS32SNX	R-632-CFX	WA32-60X10.0SX	66	40	90	2.46
2	60.3X2.8	R-632WA-60.3X2.8S	R32X	BS32SNX	R-632-CFX	WA32-60.3X2.8SX	66	49	90	1.87
2	60.3X3.9	R-632WA-60.3X3.9S	R32X	BS32SNX	R-632-CFX	WA32-60.3X3.9SX	66	49	90	1.95
2	60.3X5.5	R-632WA-60.3X5.5S	R32X	BS32SNX	R-632-CFX	WA32-60.3X5.5SX	66	49	90	2.04
2	60.3X8.7	R-632WA-60.3X8.7S	R32X	BS32SNX	R-632-CFX	WA32-60.3X8.7SX	66	43	90	2.34
2	60.3X11.1	R-632WA-60.3X11.1S	R32X	BS32SNX	R-632-CFX	WA32-60.3X11.1SX	66	38	90	2.54
2	66X8.5	R-632WA-66X8.5S	R32X	BS32SNX	R-632-CFX	WA32-66X8.5SX	66	49	75	1.95
2 1/2	65X8.5	R-640WA-65X8.5S	R40X	BS40SNX	R-640-CFX	WA40-65X8.5SX	80	49	105	8.20
2 1/2	73X7.0	R-640WA-73X7.0S	R40X	BS40SNX	R-640-CFX	WA40-73X7.0SX	80	59	105	7.69
2 1/2	75X3.0	R-640WA-75X3.0S	R40X	BS40SNX	R-640-CFX	WA40-75X3.0SX	80	60	105	7.30
2 1/2	75X5.0	R-640WA-75X5.0S	R40X	BS40SNX	R-640-CFX	WA40-75X5.0SX	80	60	105	7.47
2 1/2	76.1X6.3	R-640WA-76.1X6.3S	R40X	BS40SNX	R-640-CFX	WA40-76.1X6.3SX	80	60	105	7.55
2 1/2	76.1X12.5	R-640WA-76.1X12.5S	R40X	BS40SNX	R-640-CFX	WA40-76.1X12.5SX	80	51	105	8.27
2 1/2	80X10.0	R-640WA-80X10.0S	R40X	BS40SNX	R-640-CFX	WA40-80X10.0SX	80	60	90	7.50
3	76.1X12.5	R-648WA-76.1X12.5S	R48X	BS48SNX	R-648-CFX	WA48-76.1X12.5SX	97	51	120	11.58
3	80X10.0	R-648WA-80X10.0S	R48X	BS48SNX	R-648-CFX	WA48-80X10.0SX	97	60	120	11.47
3	88.9X3.1	R-648WA-88.9X3.1S	R48X	BS48SNX	R-648-CFX	WA48-88.9X3.1SX	97	73	120	10.58
3	88.9X5.5	R-648WA-88.9X5.5S	R48X	BS48SNX	R-648-CFX	WA48-88.9X5.5SX	97	73	120	10.87
3	88.9X7.7	R-648WA-88.9X7.7S	R48X	BS48SNX	R-648-CFX	WA48-88.9X7.7SX	97	74	120	11.07
3	88.9X8.8	R-648WA-88.9X8.8S	R48X	BS48SNX	R-648-CFX	WA48-88.9X8.8SX	97	71	120	11.30
3	88.9X11.1	R-648WA-88.9X11.1S	R48X	BS48SNX	R-648-CFX	WA48-88.9X11.1SX	97	67	120	11.74
3	88.9X12.5	R-648WA-88.9X12.5S	R48X	BS48SNX	R-648-CFX	WA48-88.9X12.5SX	97	64	120	12.00
3	88.9X15.2	R-648WA-88.9X15.2S	R48X	BS48SNX	R-648-CFX	WA48-88.9X15.2SX	97	59	120	12.40
3	90X3.5	R-648WA-90X3.5S	R48X	BS48SNX	R-648-CFX	WA48-90X3.5SX	97	73	120	10.59
3	90X5.0	R-648WA-90X5.0S	R48X	BS48SNX	R-648-CFX	WA48-90X5.0SX	97	80	120	10.90
3	90X9.0	R-648WA-90X9.0S	R48X	BS48SNX	R-648-CFX	WA48-90X9.0SX	97	72	120	11.25
3	97X12.0	R-648WA-97X12.0S	R48X	BS48SNX	R-648-CFX	WA48-97X12.0SX	97	73	110	11.05

Other sizes on request.

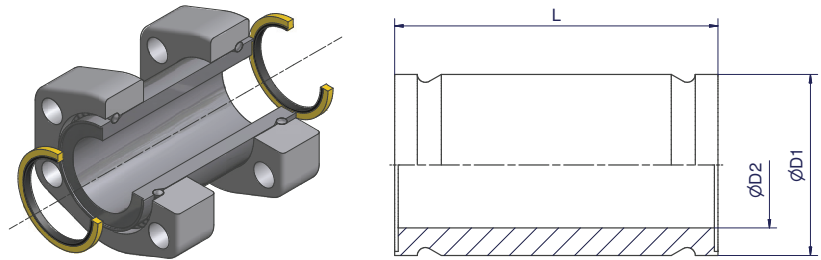
Please change suffixes according to material/surface required

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	Complete Part Order code	Bulkhead Body Order code	D1	D2	L	Weight body (Steel) kg/1 piece
1/2	R-608BFS	BF08SX	26	14	170	0.49
3/4	R-612BFS	BF12SX	36	20	170	0.92
1	R-616BFS	BF16SX	39	24	170	0.96
1 1/4	R-620BFS	BF20SX	46	30	180	1.30
1 1/2	R-624BFS	BF24SX	56	39	180	1.75
2	R-632BFS	BF32SX	66	49	210	2.45
2 1/2	R-640BFS	BF40SX	80	60	220	3.70
3	R-648BFS	BF48SX	97	73	240	7.85

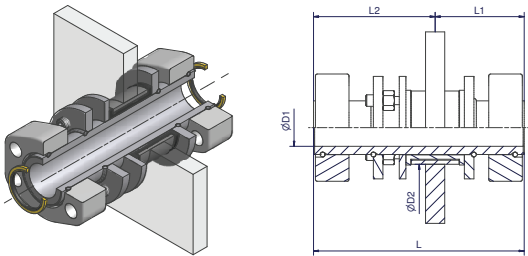
Other sizes on request.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-620BFS
Stainless steel	SS	R-620BFSS

VB – Vibra bulkhead

SAE 6000/ISO 6162-2



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

Other sizes on request.

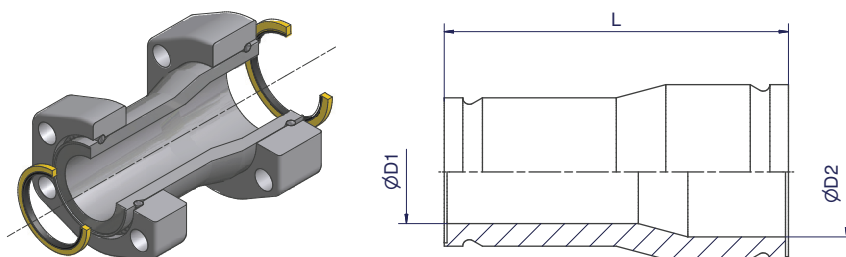
Please change suffixes according to material/surface required

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	Complete Part Order code	Reducer Body Order code	D1	D2	L	Weight body (Steel) kg/1 piece
3/4 - 1/2	R-612-608RFCF	RF12-08CFX	14	20	65	0.3
1 - 1/2	R-616-608RFCF	RF16-08CFX	14	24	100	0.4
1 - 3/4	R-616-612RFCF	RF16-12CFX	20	24	100	0.6
1 1/4 - 1	R-620-616RFCF	RF20-16CFX	24	30	110	0.7
1 1/2 - 1	R-624-616RFCF	RF24-16CFX	24	39	115	0.9
1 1/2 - 1 1/4	R-624-620RFCF	RF24-20CFX	30	39	130	1.1
2 - 1 1/4	R-632-620RFCF	RF32-20CFX	30	49	130	1.3
2 - 1 1/2	R-632-624RFCF	RF32-24CFX	39	49	130	1.4
2 1/2 - 1 1/2	R-640-624RFCF	RF40-24CFX	39	60	150	2.1
2 1/2 - 2	R-640-632RFCF	RF40-32CFX	49	60	150	2.2
3 - 2	R-648-632RFCF	RF48-32CFX	49	73	180	3.4
3 - 2 1/2	R-648-640RFCF	RF48-40CFX	60	73	180	3.7

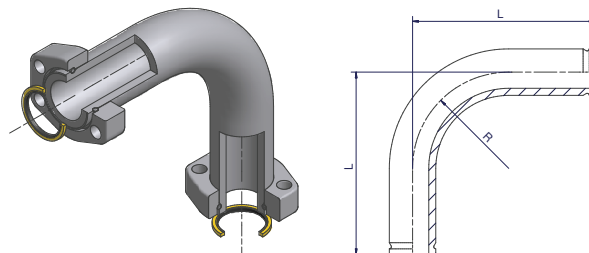
Other sizes on request.

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-620-616RFCF
Stainless steel	SS	R-620-616RFSS

FB90 – 90° Flange bend

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete Part Order code	90° Flange Bend Order code	L	R	Weight body (Steel) kg/1 piece
1	39X7.5	R-616FB90S	FB90-16SX	160	98	1.59
1 1/4	46X8.0	R-620FB90S	FB90-20SX	180	96	2.35
1 1/2	56X8.5	R-624FB90S	FB90-24SX	220	116	3.84
2	66X8.5	R-632FB90S	FB90-32SX	275	165	5.72
2 1/2	80X10.0	R-640FB90S*	FB90-40SX*	370	200	11.20
3	97X12.0	R-648FB90S*	FB90-48SX*	450	243	19.90

*only available as Steel version.

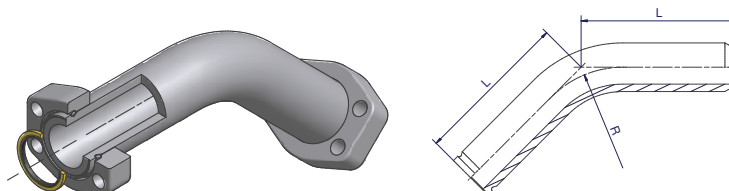
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	R-620FB90CF	
Steel	S	R-620FB90S	
Stainless steel	SS	R-620FB90SS	on request



FB45 – 45° Flange bend

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete Part Order code	45° Flange Bend Order code	L	R	Weight body (Steel) kg/1 piece
1	39X7.5	R-616FB45S	FB45-16SX	140	80	1.58
1 1/4	46X8.0	R-620FB45S	FB45-20SX	150	96	2.18
1 1/2	56X8.5	R-624FB45S	FB45-24SX	180	116	3.49
2	66X8.5	R-632FB45S	FB45-32SX	220	165	5.16
2 1/2	80X10.0	R-640FB45S*	FB45-40SX*	240	200	8.07
3	97X12.0	R-648FB45S*	FB45-48SX*	260	243	12.70

Other sizes on request.

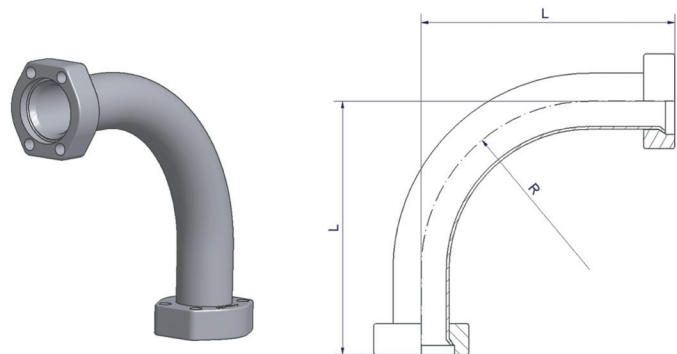
*only available as Steel version.

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-620FB45CF	
Steel	S	R-620FB45S	
Stainless steel	SS	R-620FB45SS	on request

FB90 – 90° Flange bend

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete Part Order code	L	R
1 1/2	50X5.0	F37-624FB90	220	150
2	60X5.0	F37-632FB90	275	180

Other sizes on request.

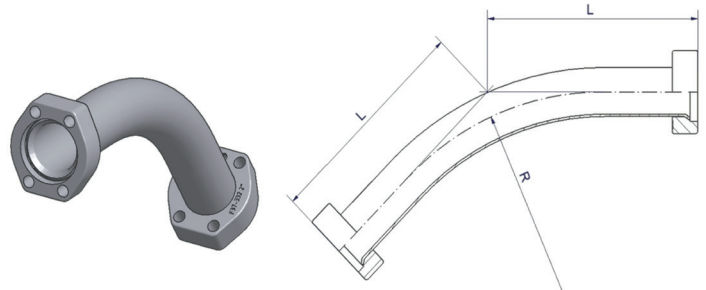
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-624FB90CF
Stainless steel	SS	F37-624FB90SS



FB45 – 45° Flange bend

SAE 6000/ISO 6162-2



Size Inch	Tube	Complete Part Order code	L	R
1 1/2	50X5.0	F37-624FB45	180	150
2	60X5.0	F37-632FB45	220	180

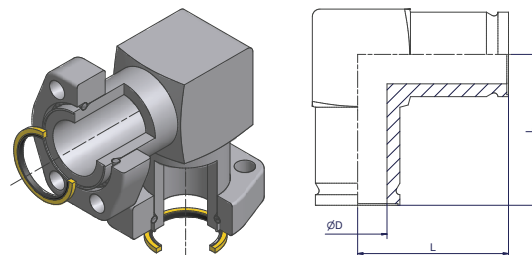
Other sizes on request.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	F37-624FB45CF
Stainless steel	SS	F37-624FB45SS

LF – Elbow flange

SAE 6000/ISO 6162-2



Size Inch	Complete Part Order code	Elbow Flange body Order code	D	L	Weight body (Steel) kg/1 piece
1/2	R-608LFCF	LF08CFX	14	70	0.50
3/4	R-612LFCF	LF12CFX	20	80	1.07
1	R-616LFCF	LF16CFX	24	85	1.32
1 1/4	R-620LFCF	LF20CFX	30	90	1.72
1 1/2	R-624LFCF	LF24CFX	39	100	2.60
2	R-632LFCF	LF32CFX	49	110	4.02
2 1/2	R-640LFCF	LF40CFX	60	140	6.40
3	R-648LFCF	LF48CFX	73	160	10.80

Other sizes on request.

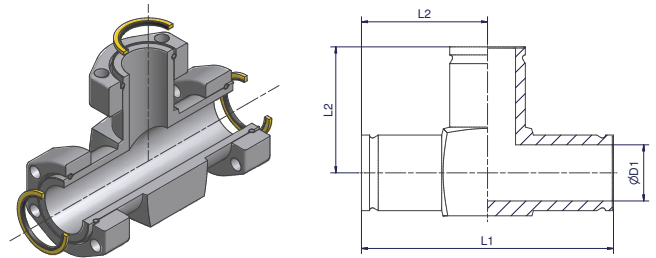
Please change suffixes according to material/surface required

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



TF – TEE flange

SAE 6000/ISO 6162-2



Size Inch	Complete Part Order code	Tee Flange body Order code	D1	L1	L2	Weight body (Steel) kg/1 piece
1/2	R-608TFCF	TF08CFX	14	120	60	0.75
3/4	R-612TFCF	TF12CFX	20	130	65	3.20
1	R-616TFCF	TF16CFX	24	140	70	2.00
1 1/4	R-620TFCF	TF20CFX	30	180	90	2.03
1 1/2	R-624TFCF	TF24CFX	39	200	100	3.13
2	R-632TFCF	TF32CFX	49	220	110	4.53
2 1/2	R-640TFCF	TF40CFX	60	260	130	7.05
3	R-648TFCF	TF48CFX	73	320	160	12.81

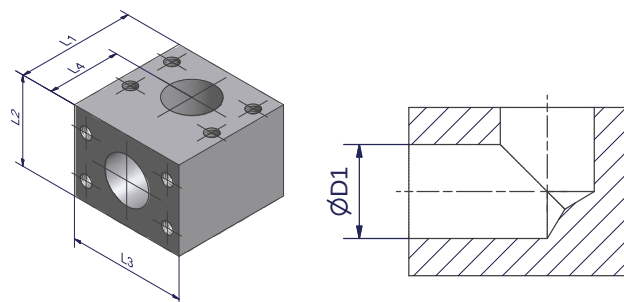
Other sizes on request.

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-620TFCF
Stainless steel	SS	R-620TFSS

LB – Flange L-block

SAE 6000/ISO 6162-2



Size Inch	Order code	D1	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1/2	LB608CFX	13	61	46	61	38	1.3
3/4	LB612CFX	19	75	60	75	49	2.4
1	LB616CFX	25	80	65	80	54	2.8
1 1/4	LB620CFX	30	86	64	90	57	3.2
1 1/2	LB624CFX	38	100	74	100	66	4.6
2	LB632CFX	48	122	88	132	78	8.8

Other sizes and custom versions on request.

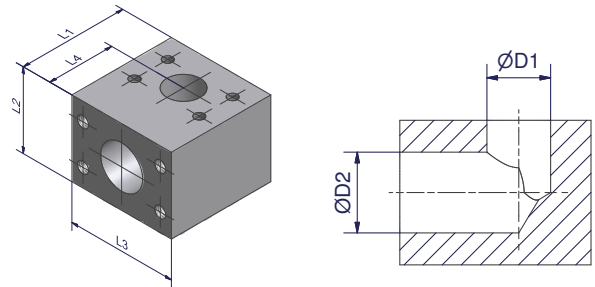
Please change suffixes according to material/surface required

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	Order code	D1	D2	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1 - 3/4	LBR616-612CFX	19	25	80	65	80	54	2.6
1 1/4 - 3/4	LBR620-612CFX	19	30	86	64	90	57	3.0
1 1/4 - 1	LBR620-616CFX	25	30	86	64	90	57	3.3
1 1/2 - 1	LBR624-616CFX	25	38	100	74	100	66	4.9
1 1/2 - 1 1/4	LBR624-620CFX	30	38	100	74	100	66	4.8
2 - 1	LBR632-616CFX	25	48	122	88	132	78	9.4
2 - 1 1/4	LBR632-620CFX	30	48	122	88	132	78	9.3
2 - 1 1/2	LBR632-624CFX	38	48	122	88	132	78	9.1

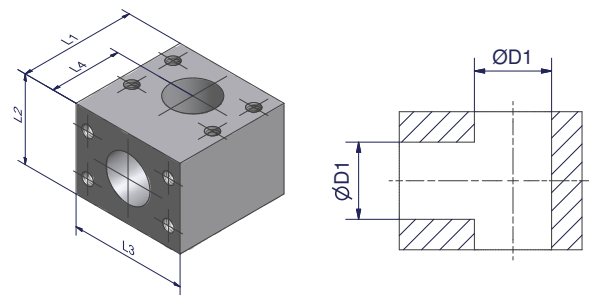
Other sizes and custom versions on request.

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	Order code	D1	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1/2	TB608CFX	13	61	46	61	38	1.10
3/4	TB612CFX	19	75	60	75	49	2.27
1	TB616CFX	25	80	65	80	54	2.46
1 1/4	TB620CFX	30	86	64	90	57	3.04
1 1/2	TB624CFX	38	100	74	100	66	4.40
2	TB632CFX	50	122	88	132	78	8.07

Other sizes and custom versions on request.

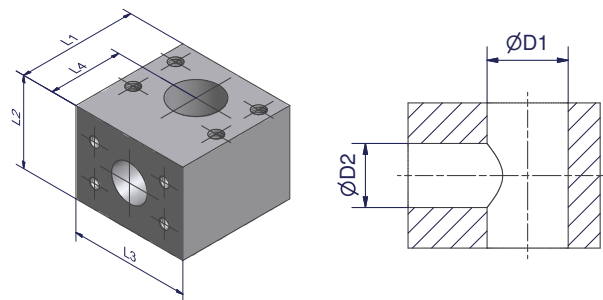
Please change suffixes according to material/surface required

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	Order code	D1	D2	L1	L2	L3	L4	Weight (Steel) kg/1 piece
1 - 3/4 - 1	TBR616-612-616CFX	25	19	80	65	80	54	2.7
1 1/4 - 1 - 1 1/4	TBR620-616-620CFX	30	25	86	64	90	57	3.1
1 1/2 - 1 - 1 1/2	TBR624-616-624CFX	38	25	100	74	100	66	4.6
1 1/2 - 1 1/4 - 1 1/2	TBR624-620-624CFX	38	30	100	74	100	66	4.4
2 - 1 1/4 - 2	TBR632-620-632CFX	48	30	122	88	132	78	8.7
2 - 1 1/2 - 2	TBR632-624-632CFX	48	38	122	88	132	78	8.5

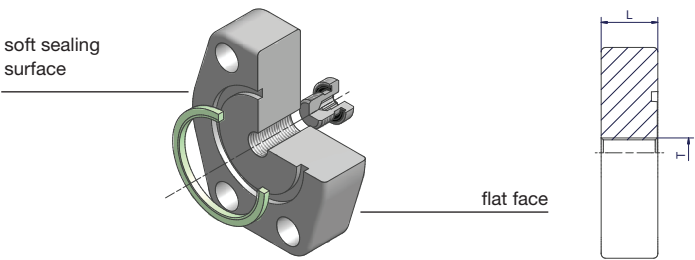
Other sizes and custom versions on request.

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	Flange incl. VSTI-ED and Seal Order code	L	T1	Weight body (Steel) kg/1 piece
1/2	F37-608BFVCF	20	G 1/4	0.29
3/4	F37-612BFVCF	24	G 1/4	0.57
1	F37-616BFVCF	24	G 1/4	0.76
1 1/4	F37-620BFVCF	30	G 1/4	1.27
1 1/4	F37-620H12BFVCF	30	G 1/4	1.31
1 1/2	F37-624BFVCF	35	G 1/4	2.16
2	F37-632BFVCF	40	G 1/4	3.40
2 1/2	F37-640BFVCF	50	G 1/4	7.74
3	F37-648BFVCF	52	G 1/4	11.65

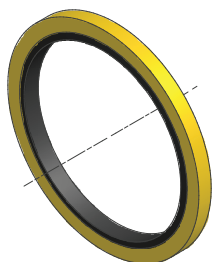
Please change suffixes according to material/surface required

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



BS – Bonded seal

SAE 6000/ISO 6162-2



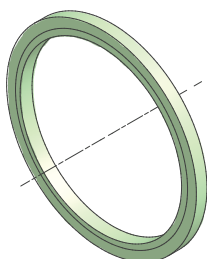
Size Inch	Steel	Stainless Steel
1/2	BS08SNX	BS08SSNX
3/4	BS12SNX	BS12SSNX
1	BS16SNX	BS16SSNX
1 1/4	BS20SNX	BS20SSNX
1 1/2	BS24SNX	BS24SSNX
2	BS32SNX	BS32SSNX
2 1/2	BS40SNX	BS40SSNX
3	BS48SNX	BS48SSNX

Sealing: NBR

Other sealing materials like FKM on request.

F37S/F37RS – F37 Seal

SAE 6000/ISO 6162-2



Size Inch	F37 Seal (F37 seal for flaring system)	F37RS (F37 seal for retaining ring system)
1/2	F37S08X	-
3/4	F37S12X	-
1	F37S16X	-
1 1/4	F37S20X	F37RS20X
1 1/2	F37S24X	F37RS24X
2	F37S32X	F37RS32X
2 1/2	F37S40X	F37RS40X
3	F37S48X	F37RS48X

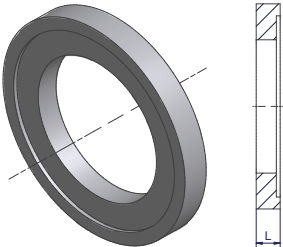
Other sizes on request

Sealing: Polyurethane

Material properties and applications see page 20.

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

SAE 6000/ISO 6162-2



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

*Part excluding seals.
Other sizes on request.
For assembling add L to the corresponding bolt length.

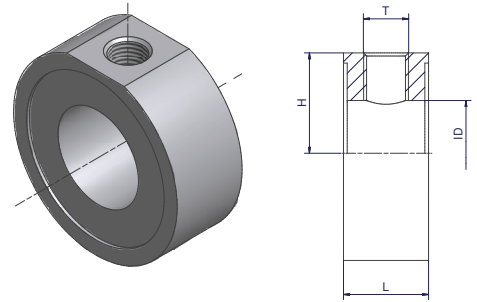
Please change suffixes according to material/surface required

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



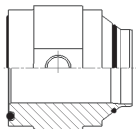
Size Inch	Order code*	L	H	T	ID	Weight (Steel) kg/1 piece
1	TBT16-1/4CFX	25	20.5	G 1/4	25	0.21
1 1/4	TBT20-1/4CFX	25	24.5	G 1/4	27	0.30
1 1/4	TBT20-1/2CFX	40	22.5	G 1/2	24	0.49
1 1/2	TBT24-1/4CFX	25	29.5	G 1/4	31	0.42
1 1/2	TBT24-1/2CFX	40	28.0	G 1/2	30	0.68
2	TBT32-1/4CFX	25	35.0	G 1/4	41	0.51
2	TBT32-1/2CFX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

*Part excluding seals.

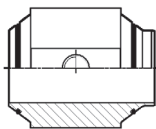
For assembling add L to the corresponding bolt length.

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

Alternative versions on request.



TFVB



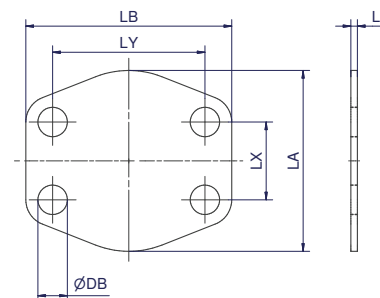
TTB

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		Order code	L1	LA	LB	LX	LY	DB	Weight body (Steel) kg/1 piece
SAE (In)	ISO (DN)								
1/2	13	8AP2	4	47	57	18.2	40.5	9.0	0.02
3/4	19	12AP2	4	53	71	23.8	50.8	11.0	0.02
1	25	16AP2	4	66	80	27.8	57.1	13.0	0.03
1 1/4	32	20AP2	4	77	94	31.8	66.7	15.0	0.04
1 1/2	38	24AP2	4	89	103	36.5	79.4	17.0	0.05
2	51	32AP2	4	123	135	44.5	96.8	21.0	0.06
2 1/2	64	40AP2	4	150	166	58.7	123.8	25.0	0.08
3	76	48AP2	4	178	208	71.4	125.4	32.0	0.10

This flange locking plate is not to be 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	8AP2CF	only locking plate
Stainless steel	SS	8AP2SS	only locking plate
Steel (zinc plated, Cr(VI)-free), SBR 70 Shore A	CFSBR70	8AP2CFSBR70	locking incl. rubber plate L1 increase due to rubber plate

Bolts and nuts for flange

SAE 6000/ISO 6162-2



F37 Flare Flange

Size Inch	Flange	F37 Seal/Flat Face/Bonded Seal		Nut
		Recommended bolts Tube to Port	Recommended bolts Tube to Tube	
1/2	F37-608-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
3/4	F37-612-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
1	F37-616-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
1 1/4	F37-620-CFX	4 x ZYLS14X55	4 x ZYLS14X90	4 x ISO4032-M14
1 1/4	F37-620H12-CFX	4 x ZYLS12X55	4 x ZYLS12X90	4 x ISO4032-M12
1 1/2	F37-624-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
2	F37-632-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20

Retaining Ring Flange

Size Inch	Flange	Flat Face/Bonded Seal		Pipe Seal Carrier (PSC)		Nut
		Recommended bolts Tube to Port	Recommended bolts Tube to Tube	Recommended bolts Tube to Port	Recommended 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 ZYLS10X70	-	-	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 ZYLS14X55	4 x ZYLS14X90	4 x ZYLS14X60	4 x ZYLS14X100	4 x ISO4032-M14
1 1/4	R-620H12-CFX	4 x ZYLS12X55	4 x ZYLS12X90	4 x ZYLS12X60	4 x ZYLS12X100	4 x ISO4032-M12
1 1/2	R-624-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ZYLS16X70	4 x ZYLS16X110	4 x ISO4032-M16
2	R-632-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ZYLS20X80	4 x ZYLS20X130	4 x ISO4032-M20
2 1/2	R-640-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ZYLS24X110	4 x ZYLS24X160	4 x ISO4032-M24
3	R-648-CFX	4 x ZYLS30X100	4 x ZYLS30X160	4 x ZYLS30X120	4 x ZYLS30X170	4 x ISO4032-M30

Bolts and nuts are not included in complete part numbers.

Latest information about nuts and bolts see www.parker.com/hpce -> Support -> Literature and Reference Materials -> Manuals

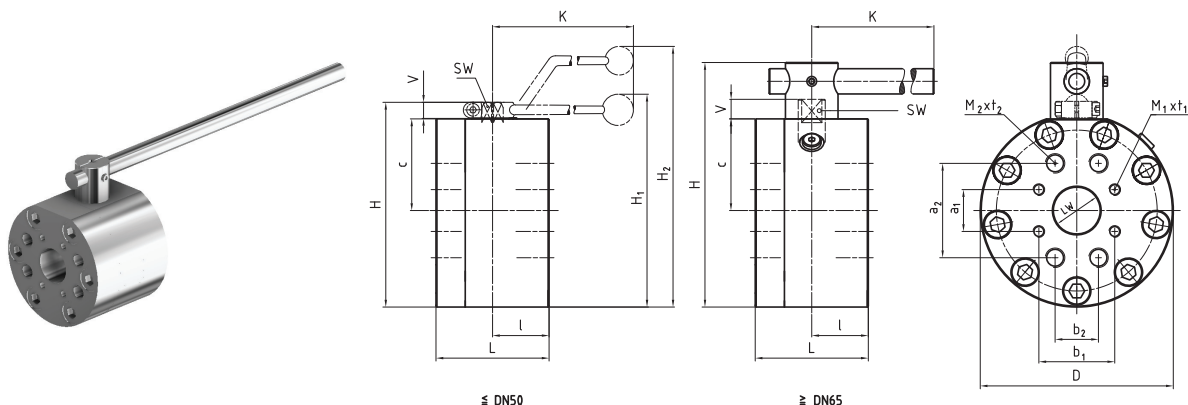
Please add the suffixes according to the bolt quality

	Steel		0Stainless Steel
Grade	8.8	10.9	A4-80X
Bolt	ZYLS16X60VZX	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO4032-M12-8VZX	ISO4032-M12-10VZX	ISO4032-M12-80X

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

KH – Ball valve drilled and tapped for SAE 6000 and SAE 3000 flanges

SAE 6000/ISO 6162-2



Material Steel

Size Inch	Order Code	DN	LW	L	I	D	H	c	V	K	SW	SAE 3000 boring pattern				SAE 6000 boring pattern				H1	H2	Material Code	Lever	Weight kg	W.P. bar
												a1	b1	M1	t1	a2	b2	M2	t2						
1/2	KH08-15CF	15	15	75	35	88	88	31.0	13	170	12	17.5	38.1	M08	18	40.5	18.2	M08	18	-	132	212A	St	2.96	350 / 420
3/4	KH12-20CF	20	20	80	35	98	100	36.5	14	170	14	22.2	47.6	M10	18	50.8	23.8	M10	18	-	150	212A	St	4.20	350 / 420
1	KH16-25CF	25	25	88	38	118	113	39.5	14	170	14	26.2	52.4	M10	20	57.2	27.8	M10	20	-	163	212A	St	6.00	320 / 420
1 1/4	KH20-32CF*	32	32	100	50	145	158	68.0	17	306	17	30.2	58.7	M10	20	66.7	31.8	M12	22	-	232	212A	St	11.70	280 / 420
1 1/4	KH20-32TM1214CF*	32	32	100	50	145	158	68.0	17	306	17	30.2	58.7	M12	20	66.7	31.8	M14	22	-	232	212A	St	11.65	210 / 400
1 1/2	KH24-38CF	40	38	110	55	165	178	78.0	17	306	17	35.7	69.9	M12	20	79.4	36.5	M16	27	-	252	212A	St	17.10	210 / 420
2	KH32-48CF	50	48	116	58	198	210	94.0	17	306	17	42.9	77.8	M12	20	96.8	44.5	M20	28	-	284-	212A	St	24.60	210 / 420
2 1/2	KH40-63CF	65	63	170	75	218	275	100.0	20	600	16	88.9	50.8	M12	19	58.7	123.8	M24	41	-	-	282A	St	44.40	175 / 420
3	KH48-76CF	80	76	170	79	258	315	115.0	26	600	19	106.4	61.9	M16	24	71.4	152.4	M30	47	-	-	282A	St	54.90	160 / 420

*Please choose between KH20-32CF and KH20-32TM1214CF according to needed connection threads M1 and M2.

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

The bore pattern for 2 1/2" and 3" is turned to 90°.

Please change suffixes according to material/surface required

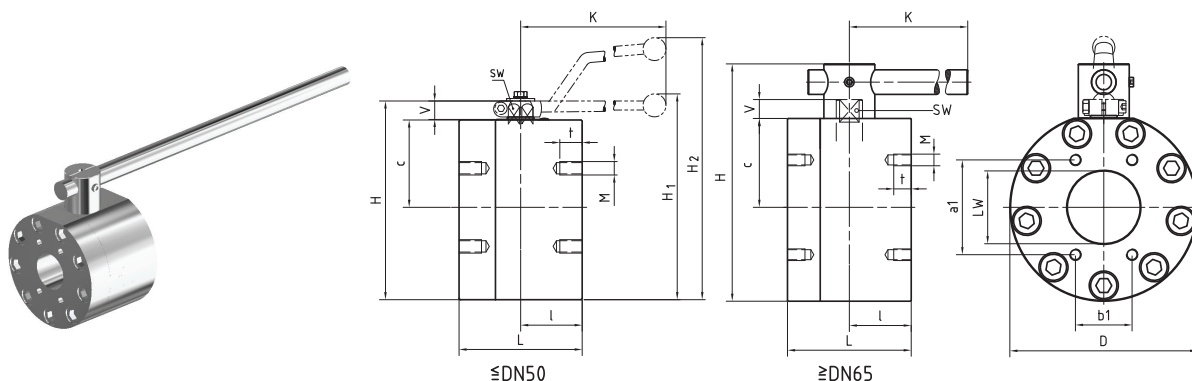
Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	KH20-32CF	

	Material 221A	Material 282A
Body	Stahl	Steel
Ball	Stahl	Steel
Stem	Stahl	Stainless Steel
Ball seats	POM	POM
O-Ring	NBR	NBR
Tmin / Tmax	-10°C / 100°C	-10°C / 100°C



KH – Ball valve drilled and tapped for SAE 6000 flanges

SAE 6000/ISO 6162-2



Material Stainless Steel

Size Inch	Order Code	DN	LW	L	I	D	H	c	V	K	SW	a1	b1	M	t	H1	H2	Material Code	Lever	Weight kg	W.P. (bar)
1/2	KH608-15SS	15	15	75	35	78	88	31.0	13	160	12	40.5	18.2	M08	18	-	127	442A	Al	2.50	420
3/4	KH612-20SS	20	20	80	35	98	100	36.5	14	200	14	50.8	23.8	M10	18	103	-	442A	Zn	4.25	420
1	KH616-25SS	25	25	88	38	118	113	39.5	14	200	14	57.2	27.8	M12	20	116	-	442A	Zn	6.30	420
1 1/4	KH620-32SS*	32	32	100	50	145	158	68.0	17	320	17	66.7	31.8	M12	22	167	-	442A	Al	11.80	420
1 1/4	KH620-32TM14SS*	32	32	100	50	145	158	68.0	17	320	17	66.7	31.8	M14	22	167	-	442A	Al	11.80	400
1 1/2	KH624-38SS	40	38	110	55	165	178	78.0	17	320	17	79.4	36.5	M16	27	187	-	442A	Al	16.90	420
2	KH632-48SS	50	48	116	58	198	210	94.0	17	320	17	96.8	44.5	M20	28	219	-	442A	Al	24.60	420
2 1/2	KH640-63SS	65	63	170	75	218	275	100.0	20	600	16	58.7	123.8	M24	41	-	-	442A	St	44.50	420
3	KH648-76SS	80	76	170	79	258	315	114.5	26	600	19	71.4	152.4	M30	47	-	-	442A	St	63.50	420

*Please choose between KH620-32SS and KH620-32TM14SS according to needed connection threads M.

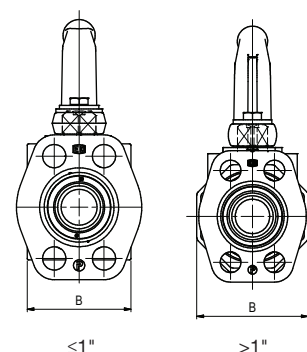
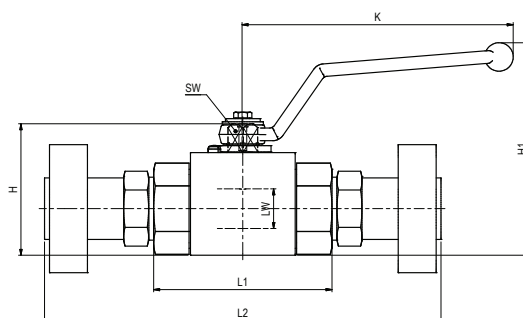
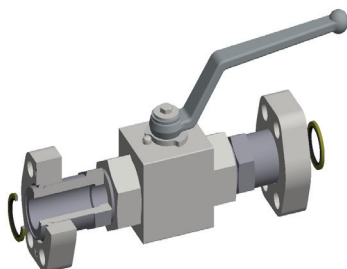
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Stainless steel	SS	KH620-32SS	

	Material 442A
Body	Stainless Steel
Ball	Stainless Steel
Stem	Stainless Steel
Ball seats	POM
O-Ring	NBR
Tmin / Tmax	-30°C / 100°C

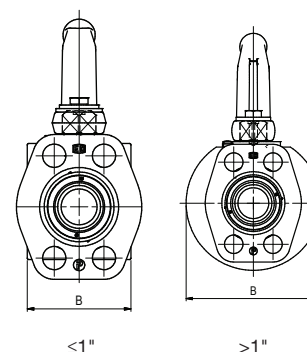
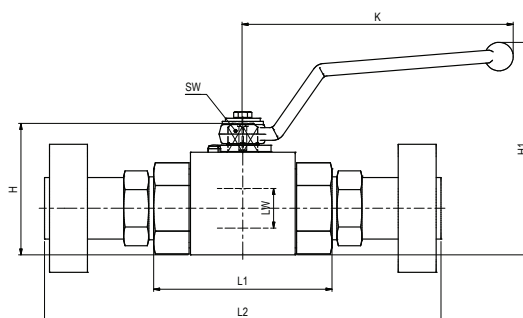
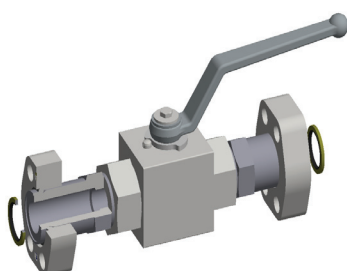
KH-R – Ball valve with SAE 6000 Flanges

SAE 6000/ISO 6162-2



Material Steel

Size Inch	Complete part Order code	Valve body Order code	LW	L1	L2	B	H	SW	K	H1	Weight (Steel) kg/1 kit	W.P. bar
3/4	KH-R-612-20CF	KH-R-12-20CF	20	95	217	49	75	14	170	129	2.8	420
1	KH-R-616-25CF	KH-R-16-25CF	25	113	251	58	83	14	170	135	4.2	315
1	KH-R-616-420BDN25CF	KH-R-16-420BDN25CF	25	113	251	70	88	14	170	140	5.1	420
1 1/4	KH-R-620-32CF	KH-R-20-32CF	32	111	271	81	107	17	306	178	6.8	420
1 1/2	KH-R-624-38CF	KH-R-24-38CF	38	130	316	100	124	17	306	196	10.8	420
2	KH-R-632-48CF	KH-R-32-48CF	48	140	348	118	138	17	306	210	16.5	420



Material Stainless Steel

Size Inch	Complete part Order code	Valve body Order code	LW	L1	L2	B	H	SW	K	H1	Weight (Steel) kg/1 kit	W.P. bar
3/4	KH-R-612-20SS	KH-R-12-20SS	20	95	217	49	75	14	170	129	2.8	420
1	KH-R-616-25SS	KH-R-16-25SS	25	113	251	58	83	14	170	135	4.2	315
1	KH-R-616-420BDN25SS	KH-R-16-420BDN25SS	25	131	268	70	88	14	170	140	6.8	420
1 1/4	KH-R-620-32SS	KH-R-20-32SS	32	111	271	109	121	17	306	192	9.4	420
1 1/2	KH-R-624-38SS	KH-R-24-38SS	38	130	316	124	136	17	306	207	13.8	420
2	KH-R-632-48SS	KH-R-32-48SS	48	140	348	132	145	17	306	217	18.7	420

Other sizes on request.

Please change suffixes according to material/surface required

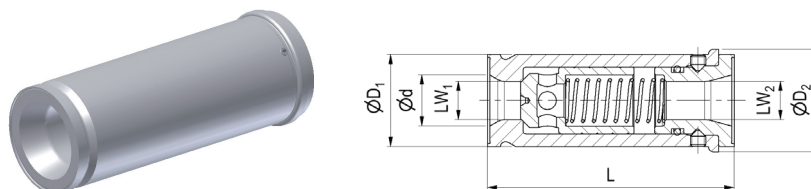
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH-R-620-32CF
Stainless steel	SS	KH-R-620-32SS

	Material 112A	Material 442A
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	Complete part Order code	Valve body Order code	L	D1	D2	d	LW1	LW2	Weight body (Steel) kg/1 piece	W.P. bar
3/4	RHD-R-612-0.5BCF	RHD-R-12-0.5BCF	96.4	36	40.2	20.0	15	15.0	0.53	420
1	RHD-R-616-0.5BCF	RHD-R-16-0.5BCF	116.6	39	44.2	23.0	18	13.0	0.78	
1 1/4	RHD-R-620-0.5BCF	RHD-R-20-0.5BCF	135.6	46	51.1	30.0	20	17.0	1.26	
1 1/2	RHD-R-624-0.5BCF	RHD-R-24-0.5BCF	135.6	56	60.5	38.8	30	27.0	1.61	
2	RHD-R-632-0.5BCF	RHD-R-32-0.5BCF	180.1	66	70.5	49.0	40	36.4	2.54	

Opening pressure 0.5 bar.

Other pressure rates on request.

Complete Part = body + flanges + retaining rings + bonded seals.

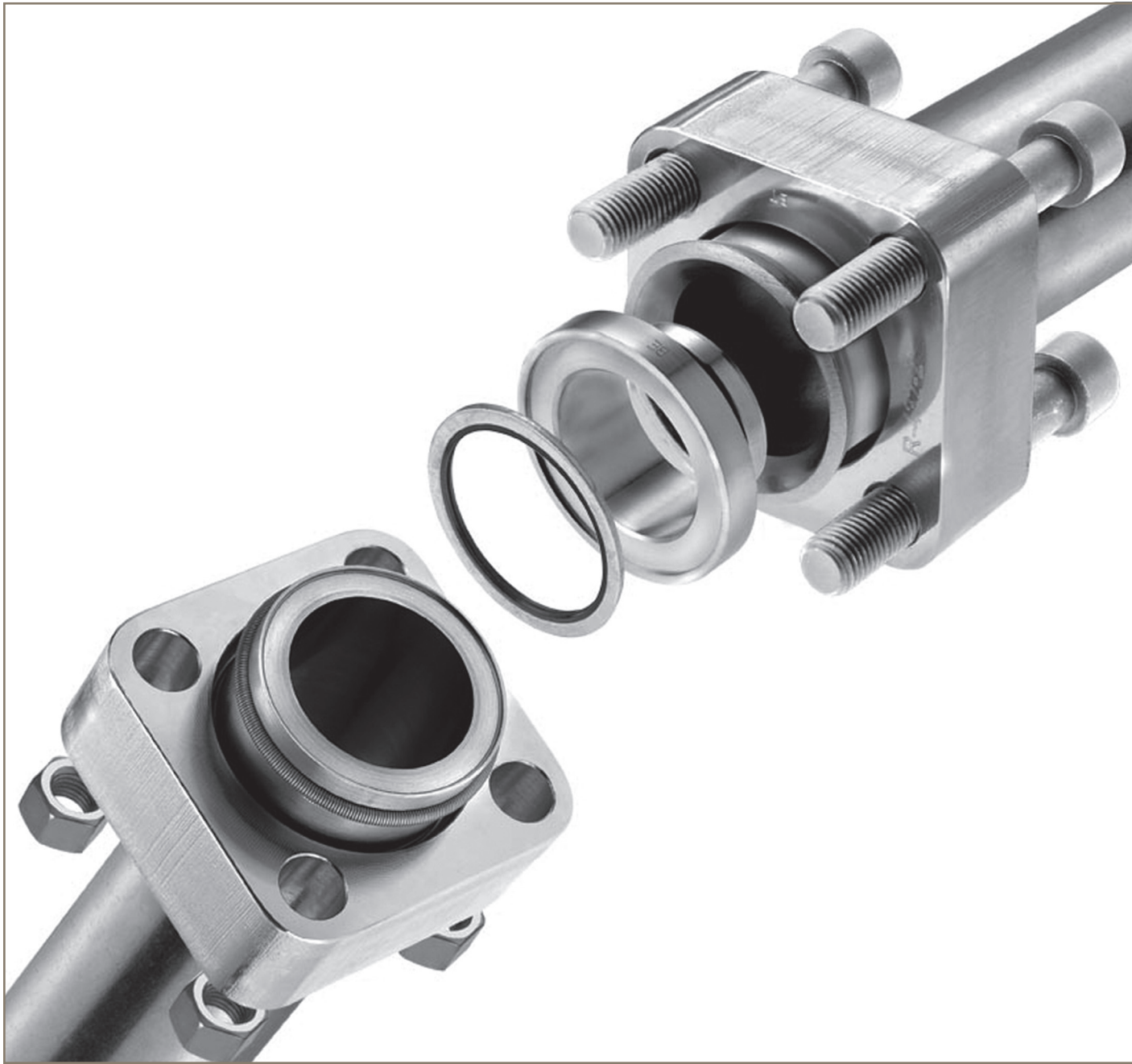
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RHD-R-620-0.5BCF
Stainless steel (inner parts steel)	SS	RHD-R-620-0.5BSS

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

ENGINEERING YOUR SUCCESS.

Notes

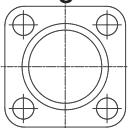
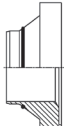
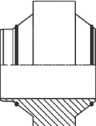
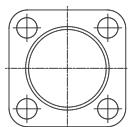
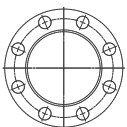
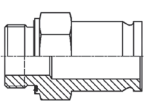
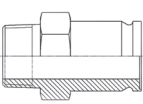
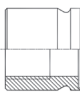
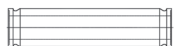
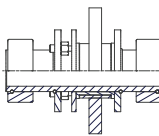
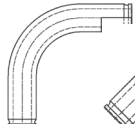
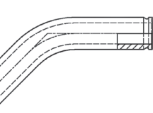
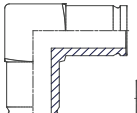
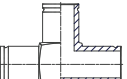
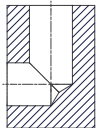
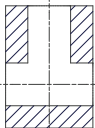
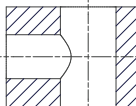
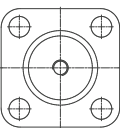
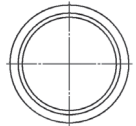
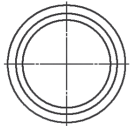
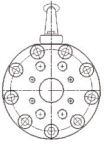
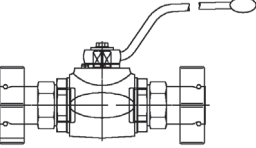
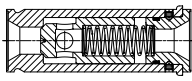


ISO 6164 System

250 – 400 bar

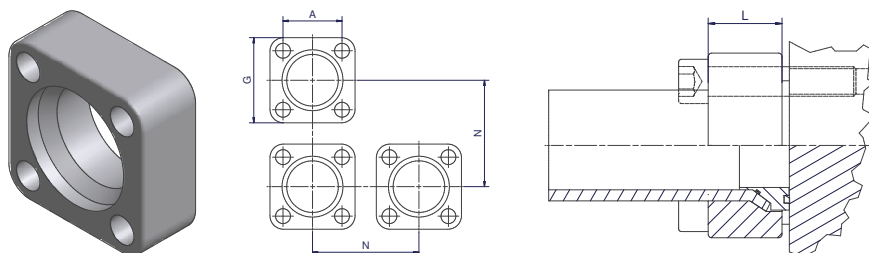
ENGINEERING YOUR SUCCESS.

Programme overview ISO 6164 footprint

Parflange® F37 connection parts	Flanges 			
	F37 – p.153/154			
Retaining ring connection parts	Inserts    			
	TFB – p.157	TFV – p.158	TT – p.159	TF – p.160
	Sleeve 			
	SL – p.161			
	Flanges    			
	R – p.155	R – p.155	R-Ring – p.162	PSC – p.156
	Male / Female   		Weld 	
	MTF-R – p.163	MTF-N – p.164	FTF-R – p.165	WA – p.166
	Tube to Tube       			
	BF – p.167	VB – p.168	RF – p.169	FB90 – p.170 FB45 – p.171 LF – p.172 TF – p.173
SAE connection parts	Blocks    			
	LB – p.174	TB – p.175	TBR – p.176	BFV – p.177
Seals Adapter Bolts	Components    			
	BS – p.178	F37S – p.178	AO – p.179	TBT – p.180
Ball valves	Bolts and Nuts 			
	p.181			
	  			
	KH – p.182/183	KH-R – p.184	RHD-R – p.185	

F37 – Flare flange | ISO 6164 footprint

ISO 6164



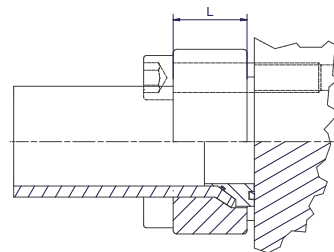
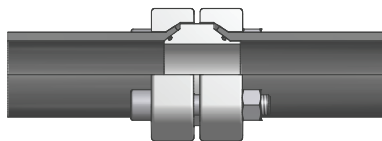
Parflange F37 flange dimensions

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 lockring).

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



Part combination flaring ISO 6164

Flange Pressure (bar)	Size Inch	Pipe Size	Flange ISO 6164	Insert*	Sleeve
400	2	50X3.0	F37-432-CFX	IN32-50X3.0T...	SL32-60-50-CFX
	2	50X5.0	F37-432-CFX	IN32-50X5.0T...	SL32-60-50-CFX
	2	50X6.0	F37-432-CFX	IN32-50X6.0T...	SL32-60-50-CFX
	2	60X3.0	F37-432-CFX	IN32-60X3.0T...	
	2	60X5.0	F37-432-CFX	IN32-60X5.0T...	
	2	60X6.0	F37-432-CFX	IN32-60X6.0T...	
	2 1/2	60X3.0	F37-440-CFX	IN40-60X3.0T...	SL40-75-60-CFX
	2 1/2	60X5.0	F37-440-CFX	IN40-60X5.0T...	SL40-75-60-CFX
	2 1/2	60X6.0	F37-440-CFX	IN40-60X6.0T...	SL40-75-60-CFX
	2 1/2	73X7.0	F37-44073-CF	IN40-73X7.0T...	
	2 1/2	75X3.0	F37-440-CFX	IN40-75X3.0T...	
	2 1/2	75X5.0	F37-440-CFX	IN40-75X5.0T...	
	3	75X3.0	F37-448-CFX	IN48-75X3.0T...	SL48-90-75-CFX
	3	75X5.0	F37-448-CFX	IN48-75X5.0T...	SL48-90-75-CFX
	3	90X3.5	F37-448-CFX	IN48-90X3.5T...	
	3	90X5.0	F37-448-CFX	IN48-90X5.0T...	
	3	90X9.0	F37-448909-CF	IN48-90X9.0T...	

Select the complete version:

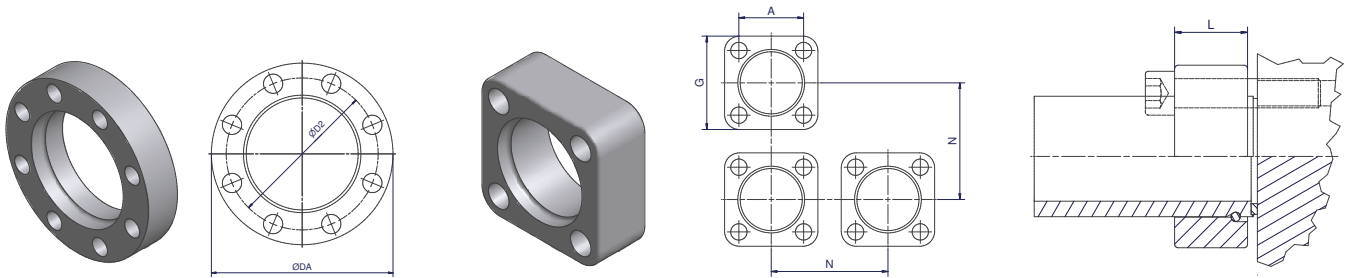
- * ...FBCF Bonded Seal version
- ...FVCF F37 Seal version
- ...TCF Tube to Tube version
- ...FCF Flat Face version

Other sizes like schedule on request.

Bolts and nuts are not included in complete part numbers.
For recommended bolts and nuts see page 181.

R – Retaining ring flange | ISO 6164 footprint

ISO 6164



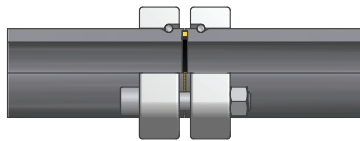
Retaining ring flange dimensions

Size Inch	Flange Order Code	A	G	N	L	Weight body (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	175.0	214		60	8.97	350
5	R-880-CFX	205.0	245		70	13.44	350
6	R-896-CFX	245.0	300		80	21.22	350
8	R-8128-CFX	315.0	385		92	39.27	250
10	R-8160273-CFX	375.0	450		90	59.31	250

Pressure rates related to flanges.
Other sizes like schedule 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-CFX
Stainless steel	SS	R-432-SSX
Galvanized hot dip zinc	TZN	R-432-TZNX



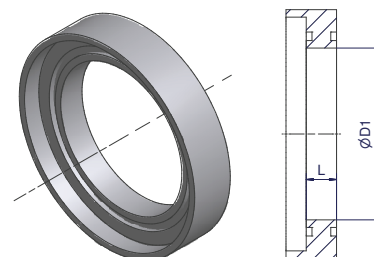
Part combination Bonded seal ISO 6164 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal
400	2	66X8.5	R-432-CFX	R32X	BS32SNX
	2 1/2	80X10.0	R-440-CFX	R40X	BS40SNX
	3	97X12.0	R-448-CFX	R48X	BS48SNX
	4	115X15.0	R-464-CFX	R64X	BS64SNX
350	4 1/2	130X15.0	R-872-CFX	R72X	BS72SNX
	5	150X15.0	R-880-CFX	R80X	BS80SNX

Bolts and nuts are not included in complete part numbers.
For recommended bolts and nuts see page 181.

PSC – Pipe seal carrier | ISO 6164 footprint

ISO 6164

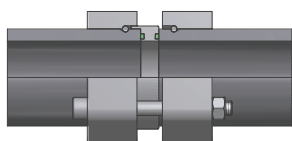


Size Inch	Pipe size	Seal carrier incl. F37 Seal	Seal carrier incl. O-Ring	L	D1	F37 Seal	O-Ring
2	66X8.5	PSC32-66X8.5VCF	PSC32-66X8.5OCF	10.0	49	F37RS32X	OR55.25X2.62X
2 1/2	80X10.0	PSC40-80X10VCF	PSC40-80X10OCF	15.0	60	F37RS40X	OR66.27X3.53X
3	97X12.0	PSC48-97X12VCF	PSC48-97X12OCF	15.0	73	F37RS48X	OR78.97X3.53X
4	115X15.0	PSC64-115X15VCF	PSC64-115X15OCF	15.0	85	F37RS64X	OR94.84X3.53X
4 1/2	130X15.0	PSC72-130X15VCF	PSC72-130X15OCF	25.5	100	F37RS72X	OR107.54X3.53X
5	150X15.0	PSC80-150X15VCF	PSC80-150X15OCF	38.0	120	F37RS80X	OR129.77X3.53X
6	190X20.0	PSC96-190X20VCF	PSC96-190X20OCF	40.0	150	F37RS96X	OR164.47X5.33X
8	250X25.0	PSC128-250X25VCF	PSC128-250X25OCF	40.0	200	F37RS128X	OR215.27X5.33X
10	273X25.4	PSC160-273X25.4VCF	PSC160-273X25.4OCF	40.0	222	F37RS160SCHXXSX	OR234.34X5.33X

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, F37-Seal	VCF	PSC40-80X10VCF
Stainless steel, F37-Seal	VSS	PSC40-80X10VSS
Steel, zinc plated, Cr(VI)-free, O-Ring (NBR)	OCF	PSC40-80X10OCF
Stainless steel, O-Ring (NBR)	OSS	PSC40-80X10OSS



Example of part combination Pipe seal carrier ISO 6164 connection

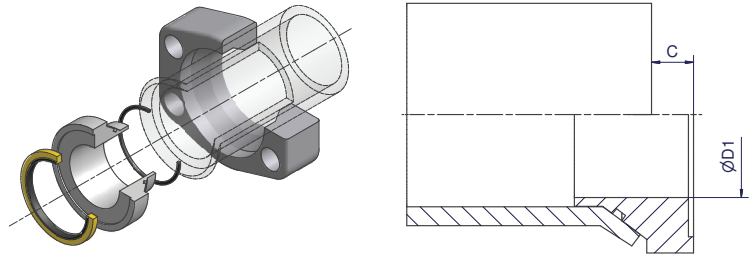
Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Pipe seal carrier
400	2	66X8.5	R-432-CFX	R32X	PSC32-66X8.5VCF
	2 1/2	80X10.0	R-440-CFX	R40X	PSC40-80X10VCF
	3	97X12.0	R-448-CFX	R48X	PSC48-97X12VCF
	4	115X15.0	R-464-CFX	R64X	PSC64-115X15VCF
350	4 1/2	130X15.0	R-872-CFX	R72X	PSC72-130X15VCF
	5	150X15.0	R-880-CFX	R80X	PSC80-150X15VCF
	6	190X20.0	R-896-CFX	R96X	PSC96-190X20VCF
250	8	250X25.0	R-8128-CFX	R128X	PSC128-250X25VCF
	10	273X25.4	R-8160273-CFX	R160X	PSC160-273X25.4VCF

Other sizes on request

Bolts and nuts are not included in a complete part. For recommended bolts and nuts see page 181.

TFB – Flare flange connection

Tube to port connection, bonded seal



Size		Flange* incl. Insert + Bonded Seal + O-Ring Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Weight (Steel) kg/1kit
Inch	Tube							
2	50X3.0	F37-432-50X3.0TFBCF	42	11	IN32-50X3.0TFBCF	BS32SNX	OR44.17X1.78X	2.02
2	50X5.0	F37-432-50X5.0TFBCF	38	10	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	2.04
2	50X6.0	F37-432-50X6.0TFBCF	35	10	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	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	3.35
2 1/2	60X5.0	F37-440-60X5.0TFBCF	46	11	IN40-60X5.0TFBCF	BS40SNX	OR50.52X1.78X	3.36
2 1/2	60X6.0	F37-440-60X6.0TFBCF	46	11	IN40-60X6.0TFBCF	BS40SNX	OR47.37X1.78X	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	5.83
3	75X5.0	F37-448-75X5.0TFBCF	62	10	IN48-75X5.0TFBCF	BS48SNX	OR63.22X1.78X	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

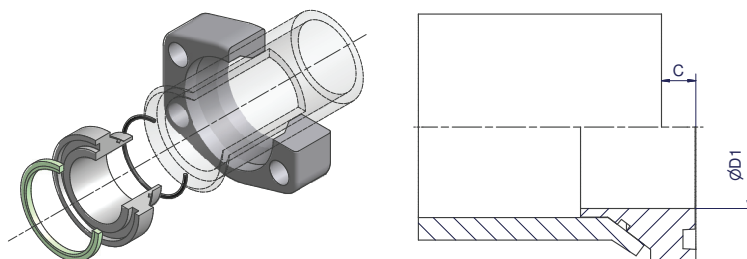
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

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 Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube							
2	50X3.0	F37-432-50X3.0TFVCF	42	11	IN32-50X3.0TFVCF	F37S32X	OR44.17X1.78X	2.02
2	50X5.0	F37-432-50X5.0TFVCF	38	10	IN32-50X5.0TFVCF	F37S32X	OR41X1.78X	2.04
2	50X6.0	F37-432-50X6.0TFVCF	35	10	IN32-50X6.0TFVCF	F37S32X	OR41X1.78X	2.07
2	60X3.0	F37-432-60X3.0TFVCF	46	12	IN32-60X3.0TFVCF	F37S32X	OR53.7X1.78X	2.07
2	60X5.0	F37-432-60X5.0TFVCF	46	11	IN32-60X5.0TFVCF	F37S32X	OR50.52X1.78X	2.04
2	60X6.0	F37-432-60X6.0TFVCF	46	11	IN32-60X6.0TFVCF	F37S32X	OR47.37X1.78X	2.03
2 1/2	60X3.0	F37-440-60X3.0TFVCF	50	12	IN40-60X3.0TFVCF	F37S40X	OR53.7X1.78X	3.35
2 1/2	60X5.0	F37-440-60X5.0TFVCF	46	11	IN40-60X5.0TFVCF	F37S40X	OR50.52X1.78X	3.36
2 1/2	60X6.0	F37-440-60X6.0TFVCF	46	11	IN40-60X6.0TFVCF	F37S40X	OR47.37X1.78X	3.34
2 1/2	73X7.0	F37-440-73X7.0TFVCF	56	13	IN40-73X7.0TFVCF	F37S40X	OR63.22X1.78X	3.33
2 1/2	75X3.0	F37-440-75X3.0TFVCF	60	10	IN40-75X3.0TFVCF	F37S40X	OR69.57X1.78X	3.30
2 1/2	75X5.0	F37-440-75X5.0TFVCF	60	10	IN40-75X5.0TFVCF	F37S40X	OR63.22X1.78X	3.32
3	75X3.0	F37-448-75X3.0TFVCF	66	10	IN48-75X3.0TFVCF	F37S48X	OR69.57X1.78X	5.83
3	75X5.0	F37-448-75X5.0TFVCF	62	10	IN48-75X5.0TFVCF	F37S48X	OR63.22X1.78X	5.99
3	90X3.5	F37-448-90X3.5TFVCF	72	15	IN48-90X3.5TFVCF	F37S48X	OR82.27X1.78X	6.00
3	90X5.0	F37-448-90X5.0TFVCF	72	14	IN48-90X5.0TFVCF	F37S48X	OR79X1.78X	5.96
3	90X9.0	F37-448-90X9.0TFVCF	69	17	IN48-90X9.0TFVCF	F37S48X	OR72.75X1.78X	5.82

Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

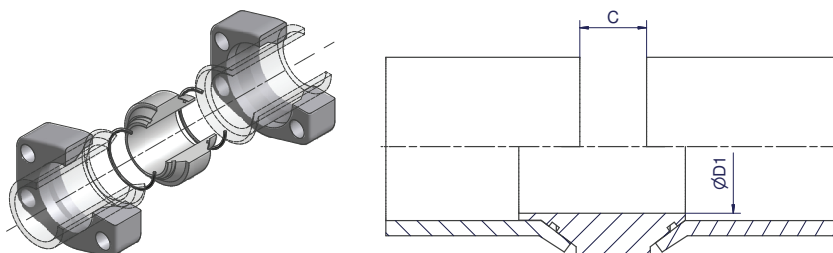
Please change suffixes according to material/surface required

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



TT – Flare Flange Connection

Tube to tube connection



Size		2 Flanges* incl. Insert + 2 x O-Ring Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Weight (Steel) kg/1 kit
Inch	Tube						
2	50X3.0	F37-432-50X3.0TTCF	42	22	IN32-50X3.0TTCF	OR44.17X1.78X	3.82
2	50X5.0	F37-432-50X5.0TTCF	38	20	IN32-50X5.0TTCF	OR41X1.78X	3.93
2	50X6.0	F37-432-50X6.0TTCF	35	20	IN32-50X6.0TTCF	OR41X1.78X	3.98
2	60X3.0	F37-432-60X3.0TTCF	46	24	IN32-60X3.0TTCF	OR53.7X1.78X	3.95
2	60X5.0	F37-432-60X5.0TTCF	46	22	IN32-60X5.0TTCF	OR50.52X1.78X	3.88
2	60X6.0	F37-432-60X6.0TTCF	46	22	IN32-60X6.0TTCF	OR47.37X1.78X	3.87
2 1/2	60X3.0	F37-440-60X3.0TTCF	50	24	IN40-60X3.0TTCF	OR53.7X1.78X	6.25
2 1/2	60X5.0	F37-440-60X5.0TTCF	46	22	IN40-60X5.0TTCF	OR50.52X1.78X	6.26
2 1/2	60X6.0	F37-440-60X6.0TTCF	45	22	IN40-60X6.0TTCF	OR47.37X1.78X	6.24
2 1/2	73X7.0	F37-440-73X7.0TTCF	56	26	IN40-73X7.0TTCF	OR63.22X1.78X	6.23
2 1/2	75X3.0	F37-440-75X3.0TTCF	60	20	IN40-75X3.0TTCF	OR69.57X1.78X	6.20
2 1/2	75X5.0	F37-440-75X5.0TTCF	60	20	IN40-75X5.0TTCF	OR63.22X1.78X	6.22
3	75X3.0	F37-448-75X3.0TTCF	66	20	IN48-75X3.0TTCF	OR69.57X1.78X	10.83
3	75X5.0	F37-448-75X5.0TTCF	62	20	IN48-75X5.0TTCF	OR63.22X1.78X	10.99
3	90X3.5	F37-448-90X3.5TTCF	72	30	IN48-90X3.5TTCF	OR82.27X1.78X	11.00
3	90X5.0	F37-448-90X5.0TTCF	72	28	IN48-90X5.0TTCF	OR79X1.78X	10.96
3	90X9.0	F37-448-90X9.0TTCF	69	34	IN48-90X9.0TTCF	OR72.75X1.78X	10.85

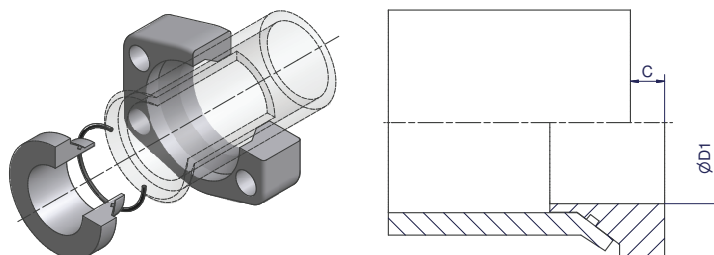
Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	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	Weight (Steel) kg/1 kit
Inch	Tube						
2	50X3.0	F37-432-50X3.0TFCF	42	11	IN32-50X3.0TFCF	OR44.17X1.78X	2.02
2	50X5.0	F37-432-50X5.0TFCF	38	10	IN32-50X5.0TFCF	OR41X1.78X	2.04
2	50X6.0	F37-432-50X6.0TFCF	35	10	IN32-50X6.0TFCF	OR41X1.78X	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	3.35
2 1/2	60X5.0	F37-440-60X5.0TFCF	46	11	IN40-60X5.0TFCF	OR50.52X1.78X	3.36
2 1/2	60X6.0	F37-440-60X6.0TFCF	46	11	IN40-60X6.0TFCF	OR47.37X1.78X	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	5.83
3	75X5.0	F37-448-75X5.0TFCF	62	10	IN48-75X5.0TFCF	OR63.22X1.78X	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

Other sizes on request. *Incl. adapter sleeve or jump size flange if necessary.

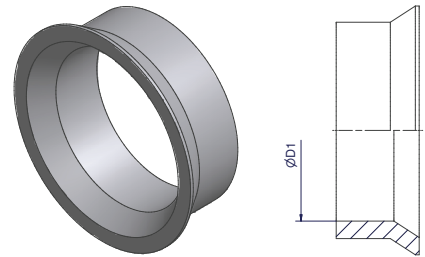
Please change suffixes according to material/surface required

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



SL – Sleeve

ISO 6164



Size Inch	Tube OD	Order code	D1	Weight body (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

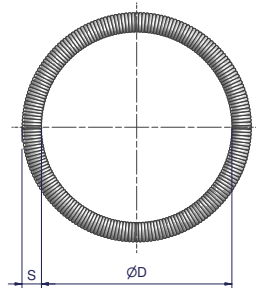
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX

R – Retaining ring

ISO 6164

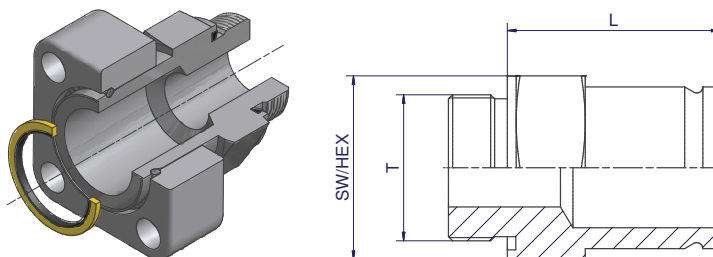
Size Inch	Tube	Order code	D	S
2	66X8.5	R32X	61.3	5.0
2 1/2	80X10.0	R40X	75.3	5.0
3	97X12.0	R48X	91.3	6.0
4	115X15.0	R64X	107.3	8.0
4 1/2	130x15.0	R72X	122.3	8.0
5	150X15.0	R80X	142.3	8.0
6	190x20.0	R96X	180.3	10.0
8	250X25.0	R128X	238.3	12.0
10	273X25.0	R160X	261.4	12.0

Material: Stainless steel



MTF-R – Male thread adapter, BSPP

ISO 6164



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	L	T (BSPP)	SW/ HEX	Weight body (Steel) kg/1 piece
2	66X8.5	R-432MTFRCF	MTF32ROMDCF	104.0	G 2 A	75	1.90
2	66X8.5	R-440MTFR112CF	MTFR32R112OMDCF	103.5	G 1 1/2 A	75	1.80
2 1/2	80X10.0	R-440MTFRCF	MTFR40ROMDCF	134.0	G 2 1/2 A	85	3.50
2 1/2	80X10.0	R-440MTFR2CF	MTFR40R2OMDCF	136.0	G 2 A	85	3.50
3	97X12.0	R-448MTFRCF	MTFR48ROMDCF	145.0	G 3 A	95	5.00

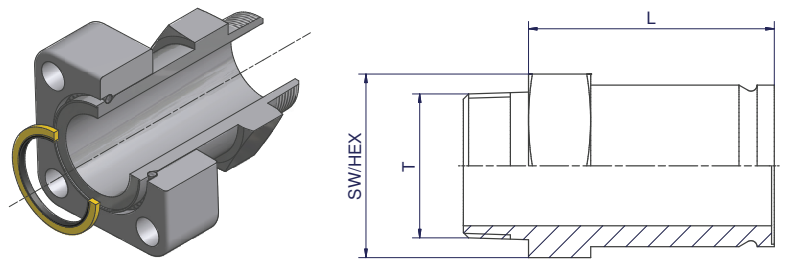
Other sizes on request.

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-432MTFRCF
Stainless steel	SS	R-432MTFRSS

MTF-N – Male thread adapter, NPT

ISO 6164



Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	L	T (NPT)	SW/ HEX	Weight body (Steel) kg/1 piece
2	66X8.5	R-432MTFNCF	MTF32NCFX	100.4	2-11.5	75	2.40
2 1/2	80X10.0	R-440MTFNCF	MTF40NCFX	130.0	2 1/2-8	85	3.40
3	97X12.0	R-448MTFNCF	MTF48NCFX	141.2	3-8	95	4.90

Other sizes on request.

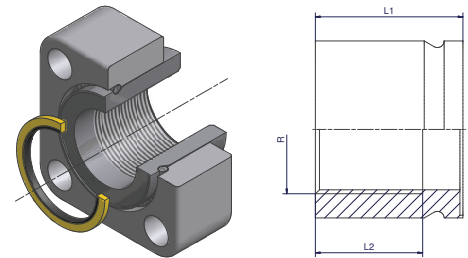
Please change suffixes according to material/surface required

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



FTF-R – Female thread adapter, BSPP

ISO 6164



Size Inch	Tube	Complete part Order code	Body Order code	L1	L2	R (BSPP)	Weight body (Steel) kg/1 piece
2	66X8.5	R-432FTFRCF	FTF32RCFX	55	40	G 1 1/2	0.75
2 1/2	80X10.0	R-440FTFRCF	FTF40RCFX	80	40	G 2	1.52
3	97X12.0	R-448FTFRCF	FTF48RCFX	85	50	G 2 1/2	2.11

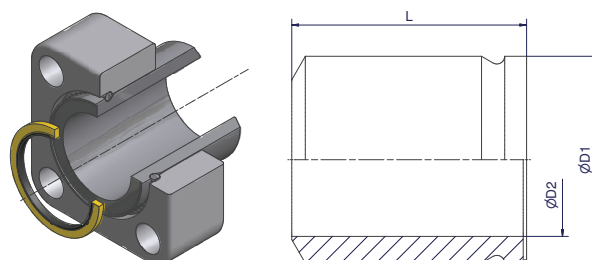
Other sizes on request.

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-432FTFRCF
Stainless steel	SS	R-432FTFRSS

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	D1	D2	L	Weight (Steel) kg/1 kit
2	48.3X5.6	R-432WA-48.3X5.6S	R32X	BS32SNX	R-432-CFX	WA32-48.3X5.6SX	66	37	90	2.90
2	50X9.0	R-432WA-50X9.0S	R32X	BS32SNX	R-432-CFX	WA32-50X9.0SX	66	32	90	3.11
2	60X3.0	R-432WA-60X3.0S	R32X	BS32SNX	R-432-CFX	WA32-60X3.0SX	66	49	90	2.39
2	60X5.0	R-432WA-60X5.0S	R32X	BS32SNX	R-432-CFX	WA32-60X5.0SX	66	50	90	2.49
2	60X6.0	R-432WA-60X6.0S	R32X	BS32SNX	R-432-CFX	WA32-60X6.0SX	66	48	90	2.60
2	60X8.0	R-432WA-60X8.0S	R32X	BS32SNX	R-432-CFX	WA32-60X8.0SX	66	44	90	2.78
2	60X10.0	R-432WA-60X10.0S	R32X	BS32SNX	R-432-CFX	WA32-60X10.0SX	66	40	90	2.96
2	60.3X2.8	R-432WA-60.3X2.8S	R32X	BS32SNX	R-432-CFX	WA32-60.3X2.8SX	66	49	90	2.37
2	60.3X3.9	R-432WA-60.3X3.9S	R32X	BS32SNX	R-432-CFX	WA32-60.3X3.9SX	66	49	90	2.45
2	60.3X5.5	R-432WA-60.3X5.5S	R32X	BS32SNX	R-432-CFX	WA32-60.3X5.5SX	66	49	90	2.54
2	60.3X8.7	R-432WA-60.3X8.7S	R32X	BS32SNX	R-432-CFX	WA32-60.3X8.7SX	66	43	90	2.84
2	60.3X11.1	R-432WA-60.3X11.1S	R32X	BS32SNX	R-432-CFX	WA32-60.3X11.1SX	66	38	90	3.04
2	66X8.5	R-432WA-66X8.5S	R32X	BS32SNX	R-432-CFX	WA32-66X8.5SX	66	49	75	2.45
2 1/2	65X8.0	R-440WA-65X8.0S	R40X	BS40SNX	R-440-CFX	WA40-65X8.0SX	80	49	105	5.10
2 1/2	65X8.5	R-440WA-65X8.5S	R40X	BS40SNX	R-440-CFX	WA40-65X8.5SX	80	59	105	4.59
2 1/2	73X7.0	R-440WA-73X7.0S	R40X	BS40SNX	R-440-CFX	WA40-73X7.0SX	80	59	105	4.20
2 1/2	75X5.0	R-440WA-75X5.0S	R40X	BS40SNX	R-440-CFX	WA40-75X5.0SX	80	60	105	4.37
2 1/2	76.1X6.3	R-440WA-76.1X6.3S	R40X	BS40SNX	R-440-CFX	WA40-76.1X6.3SX	80	60	105	4.45
2 1/2	76.1X12.5	R-440WA-76.1X12.5S	R40X	BS40SNX	R-440-CFX	WA40-76.1X12.5SX	80	51	105	5.17
2 1/2	80X10.0	R-440WA-80X10.0S	R40X	BS40SNX	R-440-CFX	WA40-80X10.0SX	80	60	90	4.40
3	76.1X12.5	R-448WA-76.1X12.5S	R48X	BS48SNX	R-448-CFX	WA48-76.1X12.5SX	97	51	120	8.18
3	80X10.0	R-448WA-80X10.0S	R48X	BS48SNX	R-448-CFX	WA48-80X10.0SX	97	60	120	8.07
3	88.9X3.1	R-448WA-88.9X3.1S	R48X	BS48SNX	R-448-CFX	WA48-88.9X3.1SX	97	73	120	7.18
3	88.9X5.5	R-448WA-88.9X5.5S	R48X	BS48SNX	R-448-CFX	WA48-88.9X5.5SX	97	73	120	7.47
3	88.9X7.7	R-448WA-88.9X7.7S	R48X	BS48SNX	R-448-CFX	WA48-88.9X7.7SX	97	74	120	7.67
3	88.9X8.8	R-448WA-88.9X8.8S	R48X	BS48SNX	R-448-CFX	WA48-88.9X8.8SX	97	71	120	7.90
3	88.9X11.1	R-448WA-88.9X11.1S	R48X	BS48SNX	R-448-CFX	WA48-88.9X11.1SX	97	67	120	8.34
3	88.9X12.5	R-448WA-88.9X12.5S	R48X	BS48SNX	R-448-CFX	WA48-88.9X12.5SX	97	64	120	8.60
3	88.9X15.2	R-448WA-88.9X15.2S	R48X	BS48SNX	R-448-CFX	WA48-88.9X15.2SX	97	59	120	9.00
3	90X3.5	R-448WA-90X3.5S	R48X	BS48SNX	R-448-CFX	WA48-90X3.5SX	97	73	120	7.19
3	90X5.0	R-448WA-90X5.0S	R48X	BS48SNX	R-448-CFX	WA48-90X5.0SX	97	73	120	7.50
3	90X9.0	R-448WA-90X9.0S	R48X	BS48SNX	R-448-CFX	WA48-90X9.0SX	97	72	120	7.85
3	97X12.0	R-448WA-97X12.0S	R48X	BS48SNX	R-448-CFX	WA48-97X12.0SX	97	73	110	7.65
4	100X4.0	R-464WA-100X4.0S	R64X	BS64SNX	R-464-CFX	WA64-100X4.0SX	115	85	130	13.44
4	101.6X8.1	R-464WA-101.6X8.1S	R64X	BS64SNX	R-464-CFX	WA64-101.6X8.1SX	115	85	130	12.49
4	101.6X16.0	R-464WA-101.6X16.0S	R64X	BS64SNX	R-464-CFX	WA64-101.6X16.0SX	115	85	120	13.73
4	114.3X4.5	R-464WA-114.3X4.5S	R64X	BS64SNX	R-464-CFX	WA64-114.3X4.5SX	115	80	120	14.40
4	114.3X12.5	R-464WA-114.3X12.5S	R64X	BS64SNX	R-464-CFX	WA64-114.3X12.5SX	115	85	120	12.37
4	114.3X17.1	R-464WA-114.3X17.1S	R64X	BS64SNX	R-464-CFX	WA64-114.3X17.1SX	115	85	120	13.90
4	115X4.0	R-464WA-115X4.0S	R64X	BS64SNX	R-464-CFX	WA64-115X4.0SX	115	85	120	12.36
4	115X15.0	R-464WA-115X15.0S	R64X	BS64SNX	R-464-CFX	WA64-115X15.0SX	115	85	120	13.87
4 1/2	130X15.0	R-872WA-130X15.0S	R72X	BS72SNX	R-872-CFX	WA72-130X15SX	130	100	125	14.02
5	150X15.0	R-880WA-150X15.0S	R80X	BS80SNX	R-880-CFX	WA80-150X15SX	150	120	110	18.55
6	190X20.0	R-896WA-190X20.0S	R96X	PSC96-190x20CFX	R-896-CFX	WA96-190x20.0SX	190	150	175	32.70

Other sizes on request.

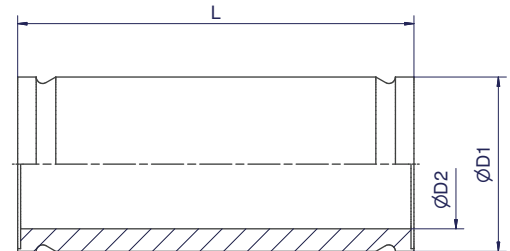
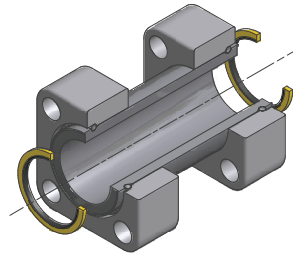
Please change suffixes according to material/surface required

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	Complete Part Order code	Bulkhead Body Order code	D1	D2	L	Weight body (Steel) kg/1 piece
2	R-432BFS	BF32SX	66	49	210	2.45
2 1/2	R-440BFS	BF40SX	80	60	220	3.70
3	R-448BFS	BF48SX	97	73	240	7.85
4	R-464BFS	BF64SX	115	85	260	9.35
5	R-880BFS	BF80SX	150	120	260	10.53

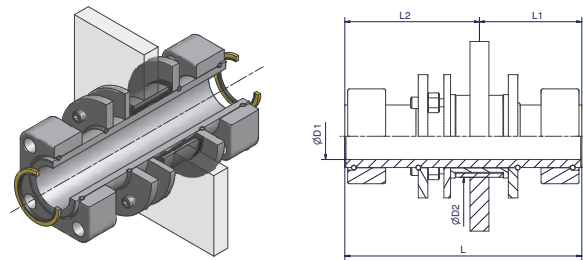
Other sizes on request.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel	S	R-432BFS
Stainless steel	SS	R-432BFSS

VB – Vibra bulkhead

ISO 6164



Size Inch	Tube	Complete Part Order code	D1	D2	L	L1	L2	Weight (Steel) kg/1 piece
2	66X8.5	R-432VBCF	66	86.5	250	110	140	6.52
2 1/2	80X10.0	R-440VBCF	80	100.5	260	115	145	9.32
3	97X12.0	R-448VBCF	97	117.5	280	125	155	16.12
4	115X15.0	R-464VBCF	115	135.5	300	135	165	27.62

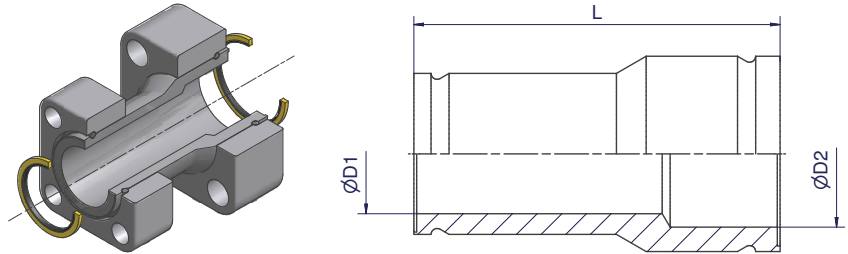
Please change suffixes according to material/surface required

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	Complete Part Order code	Reducer Body Order code	D1	D2	L	Weight body (Steel) kg/1 piece
2 1/2 - 2	R-440-432RFCF	RF40-32CFX	49	60	150	2.2
3 - 2	R-448-432RFCF	RF48-32CFX	49	73	180	3.4
3 - 2 1/2	R-448-440RFCF	RF48-40CFX	60	73	180	3.7
4 - 3	R-464-448RFCF	RF64-48CFX	73	85	200	6.1
5 - 3	R-880-448RFCF	RF80-48CFX	73	120	200	8.0
5 - 4	R-880-464RFCF	RF80-64CFX	85	120	220	10.3
6 - 5	R-896-880RFCF	RF96-80CFX	120	150	250	18.3

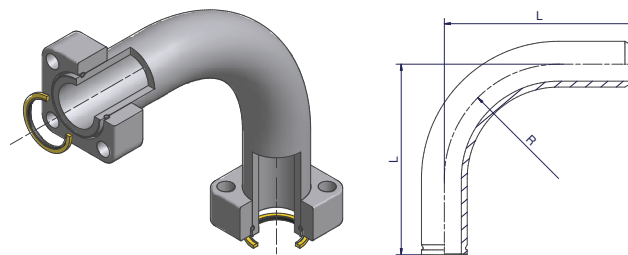
Other sizes on request.

Please change suffixes according to material/surface required

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

FB90 – 90° Flange bend

ISO 6164



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

*only available as Steel version

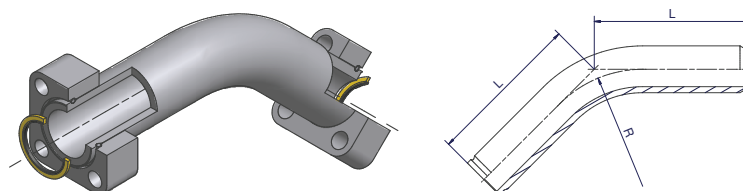
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Comments
Steel, zinc plated, Cr(VI)-free	CF	R-432FB90CF	
Steel	S	R-432FB90S	
Stainless steel	SS	R-432FB90SS	on request



FB45 – 45° Flange bend

ISO 6164



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

Available on request.

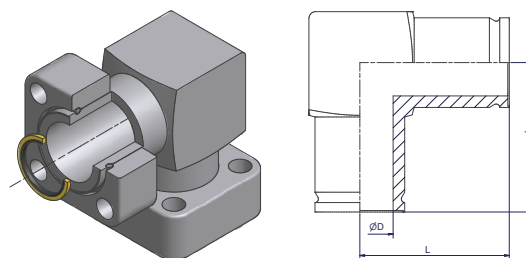
*only available as Steel version

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-432FB45CF	
Steel	S	R-432FB45S	
Stainless steel	SS	R-432FB45SS	on request

LF – Elbow flange

ISO 6164



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

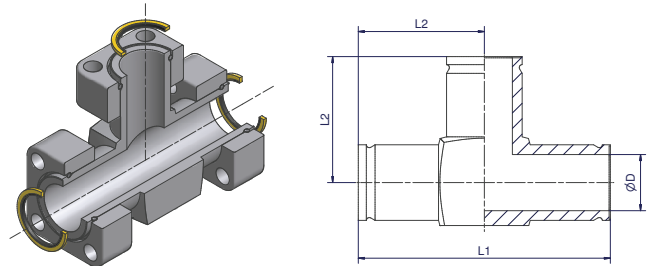
Please change suffixes according to material/surface required

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



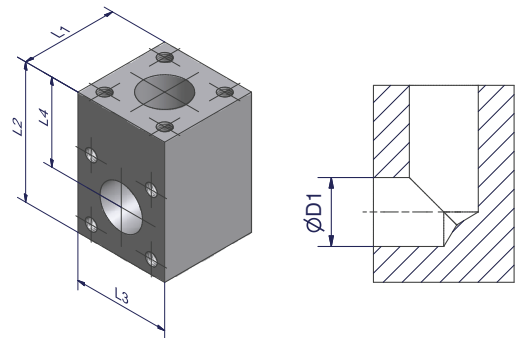
Size Inch	Complete Part Order code	Tee Flange body Order code	D	L1	L2	Weight body (Steel) kg/1 piece
2	R-432TFCF	TF32CFX	49	220	110	4.53
2 1/2	R-440TFCF	TF40CFX	60	260	130	8.70
3	R-448TFCF	TF48CFX	73	320	160	12.81

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	Order code	D1	L1	L2	L3	L4	Weight (Steel) kg/1 piece
2	LB432CFX	49	100	140	100	90	8.72
2 1/2	LB440CFX	60	120	160	120	100	14.10
3	LB448SX	73	150	200	150	125	28.10
4	LB464SX	99	180	240	180	150	48.80
5	LB880SX*	120	260	300	260	170	131.65
6	LB896SX*	150	300	360	300	210	203.00

Other sizes on request.
Blocks only for use with F37 Components

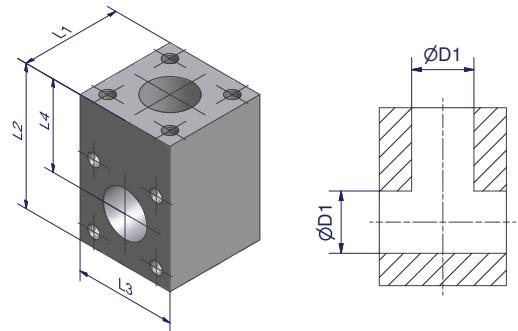
Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	LB432CFX *not in CF available
Steel	S	LB432SX
Stainless steel	SS	LB432SSX



TB – Flange T-block

ISO 6164



Size Inch	Order code	D1	L1	L2	L3	L4	Weight (Steel) kg/1 piece
2	TB432CFX	49	100	140	100	90	8.03
2 1/2	TB440CFX	60	120	160	120	100	12.90
3	TB448SX	73	150	200	150	125	25.80
4	TB464SX	85	180	240	180	150	40.70
4 1/2	TB872SX	100	220	250	220	140	74.00
5	TB880SX*	120	260	300	260	170	122.00
6	TB896SX*	150	300	360	300	210	186.00

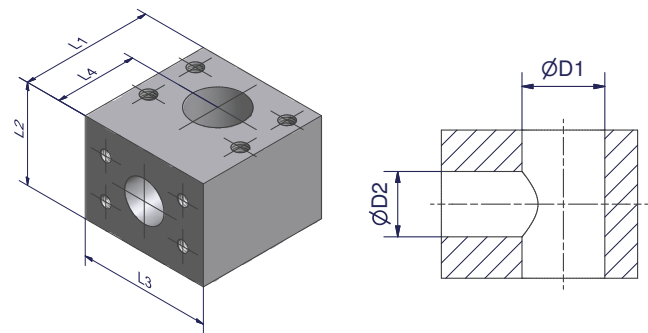
Other sizes on request.
Blocks only for use with F37 Components

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 *not in CF available
Steel	S	TB432SX
Stainless steel	SS	TB432SSX

TBR – Flange T-block reducer

ISO 6164



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

Other sizes on request.
Bkocks only for use with F37 Components

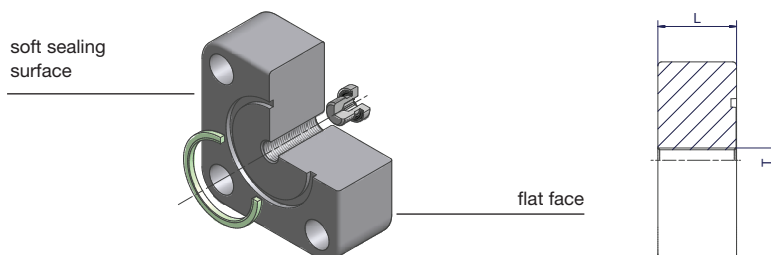
Please change suffixes according to material/surface required

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	Flange incl. VSTI-ED and Soft Seal Order code	L	T	Weight (Steel) kg/1 piece
2	F37-432BFVCF	40.0	G 1/4	2.75
2 1/2	F37-440BFVCF	50.0	G 1/4	4.90
3	F37-448BFVCF	52.0	G 1/4	8.15
4	F37-464BFVCF	70.0	G 1/4	11.55
4 1/2	F37-872BFVCF	60.0	G 1/4	15.41
5	F37-880BFVCF	50.0	G 1/4	16.74
6	F37-896BFVCF	80.0	G 1/4	39.95
8	F37-8128BFVCF	92.0	G 1/4	76.87
10	F37-8160BFVCF	90.0	G 1/4	102.43

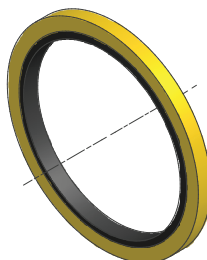
Other sizes on request.

Please change suffixes according to material/surface required

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

BS – Bonded seal

ISO 6164



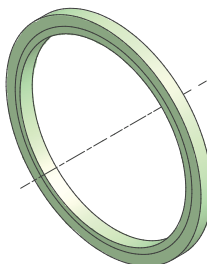
Size Inch	Steel	Stainless Steel
2	BS32SNX	BS32SSNX
2 1/2	BS40SNX	BS40SSNX
3	BS48SNX	BS48SSNX
4	BS64SNX	BS64SSNX
4 1/2	BS72SNX	BS72SSNX
5	BS80SNX	BS80SSNX

Sealing: NBR

Other sealing materials like FKM on request.

F37S/F37RS – F37 Seal

ISO 6164



Size Inch	F37S (F37 seal for flaring system)	F37RS (F37 seal for retaining ring system)
2	F37S32X	F37RS32X
2 1/2	F37S40X	F37RS40X
3	F37S48X	F37RS48X
4	-	F37RS64X
4 1/2	-	F37RS72X
5	-	F37RS80X
6	-	F37RS96X
8	-	F37RS128X
10	-	F37RS160SCHXXSX

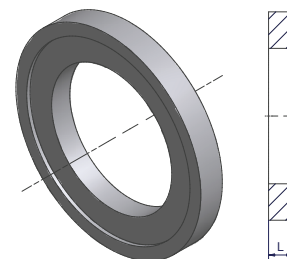
Other sizes on request.

Sealing: Polyurethane

Material properties and applications see page 20.

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

ISO 6164



Size Inch	Adapter* Order code	L	Weight (Steel) kg/1 piece
2	AO32CFX	7	0.10
2 1/2	AO40CFX	7	0.14
3	AO48CFX	7	0.20
4	AO64CFX	7	0.35
4 1/2	AO72CFX	7	0.30
5	AO80CFX	7	0.32

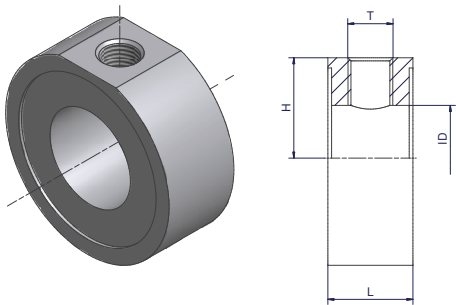
*Part excluding seals.
For assembling add L to the corresponding bolt length.

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

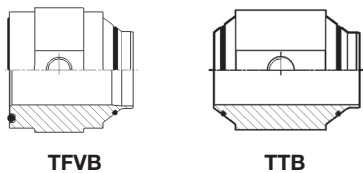
ISO 6164



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

*Part excluding seals.
For testpoints and diagnostic test equipment see catalogue 4100, Industrial Tube Fittings Europe.
For assembling add L to the corresponding bolt length.

Alternative versions 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	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
		Recommended bolts Tube to Port	Recommended 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	F37-448-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24

Retaining Ring Flange

Size Inch	Flange	Flat Face/Bonded Seal		Pipe Seal Carrier (PSC)		Nut
		Recommended bolts Tube to Port	Recommended bolts Tube to Tube	Recommended bolts Tube to Port	Recommended bolts Tube to Tube	
2	R-432-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ZYLS16X75	4 x ZYLS16X130	4 x ISO4032-M16
2 1/2	R-440-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ZYLS20X95	4 x ZYLS20X150	4 x ISO4032-M20
3	R-448-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ZYLS24X100	4 x ZYLS24X160	4 x ISO4032-M24
4	R-464-CFX	4 x ZYLS30X120	4 x ZYLS30X190	4 x ZYLS30X130	4 x ZYLS30X200	4 x ISO4032-M30
4 1/2	R-872-CFX	8 x ZYLS20X90	8 x ZYLS20X160	8 x ZYLS20X115	8 x ZYLS20X190	8 x ISO4032-M20
5	R-880-CFX	8 x ZYLS24X110	8 x ZYLS24X190	8 x ZYLS24X145	8 x ZYLS24X220	8 x ISO4032-M24
6	R-896-CFX	-	-	8 x ZYLS30X155	8 x ZYLS30X230	8 x ISO4032-M30
8	R-8128-CFX	-	-	8 x ZYLS36X180	8 x ZYLS36X260	8 x ISO4032-M36
10	R-8160273-CFX	-	-	12 x ZYLS36X170	12 x ZYLS36X250	12 x ISO4032-M36

Bolts and nuts are not included in complete part numbers.

Latest information about nuts and bolts see www.parker.com/hpce -> Support -> Literature and Reference Materials -> Manuals

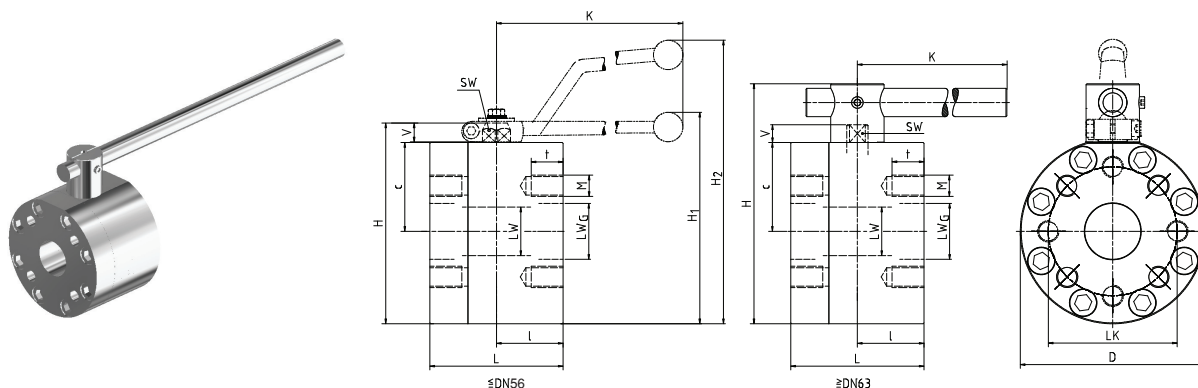
Please add the suffixes according to the bolt quality

	Steel		Stainless Steel
Grade	8.8	10.9	A4-80X
Bolt	ZYLS16X60VZX	ZYLS16X60109X	ZYLS16X60A4-80X
Nut	ISO4032-M12-8VZX	ISO4032-M12-10X	ISO4032-M12-80X

Bolt grade 10.9 recommended.
Bolt grade 8.8 can affect the pressure capability.

KH – Ball valve drilled and tapped for ISO 6164 flanges

ISO 6164



Material Steel

Size Inch	Order Code	DN	LW	LWG	L	I	D	H	c	V	K	SW	LK	M	t	H2	Material Code	Lever	Weight kg	W.P. bar
2	KH432-48CF	50	48	43	123	58	198	210	94	17	306	17	98	4x M16	25.5	283	212A	St	24.90	400
2 1/2	KH440-48CF	56	48	53	123	58	198	210	94	17	306	17	118	4x M20	31.0	283	212A	St	26.60	400
3	KH448-63CF	65	65	63	150	75	208	270	100	20	600	16	145	4x M24	36.0	-	282A	St	36.00	350
4	KH464-76CF	80	76	76	170	78	258	315	115	26	600	19	175	4x M30	35.0	-	282A	St	63.00	400
4	KH464-88CF	90	100	86	170	85	260	327	122	26	900	24	175	4x M30	31.0	-	282A	St	61.00	350
4 1/2	KH872-100CF	100	100	100	170	85	260	327	122	26	900	24	175	8x M20	33.0	-	282A	St	70.00	350
5	KH880-118CF	125	118	118	210	105	300	380	140	32	900	36	205	8x M24	34.0	-	282A	St	99.00	350
6	KH896-150CF	150	150	150	285	130	390	475	190	32	900	36	245	8x M30	46.0	-	282A	St	225.00	350
8	KH8128-200CF	200	192	200	378	150	456	598	223	61	940	46	315	8x M36	55.0	-	242A	St	395.00	350

Other sizes on request.

Please change suffixes according to material/surface required

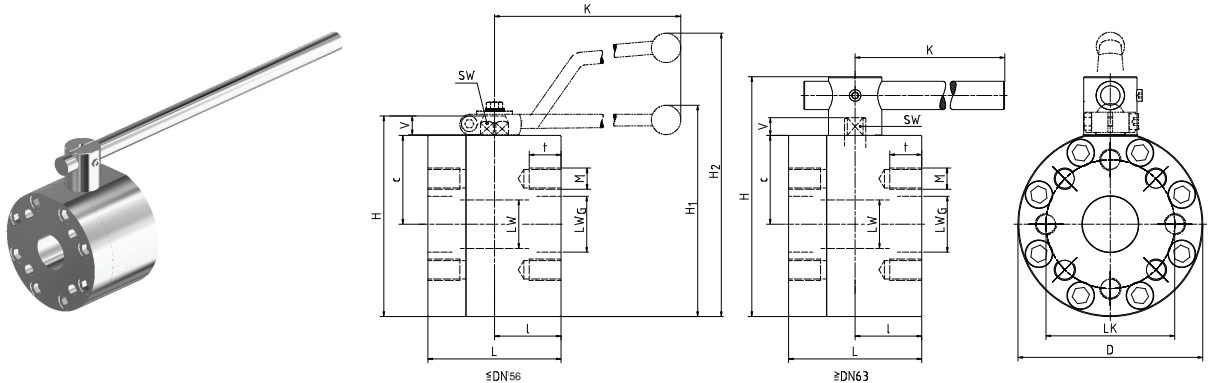
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH432-48CF

	Material		
	212A	282A	242A
Body	Steel	Steel	Steel
Ball	Steel	Steel	Stainless Steel
Stem	Steel	Stainless Steel	Stainless Steel
Ball seats	POM	POM	POM
O-Ring	NBR	NBR	NBR
Tmin / T max	-10°C / 100°C	-10°C / 100°C	-10°C / 100°C



KH – Ball valve drilled and tapped for ISO 6164 flanges

ISO 6164



Material Stainless Steel

Size Inch	Order Code	DN	LW	LWG	L	I	D	H	c	V	K	SW	LK	M	t	H1	Lever	Weight kg	W.P. bar
2	KH432-48SS	50	48	43	123	58	198	210	94	17	320	17	98	4x M16	25.5	219	Al	24.90	400
2 1/2	KH440-48SS	56	48	53	123	58	198	210	94	17	320	17	118	4x M20	31.0	219	Al	26.60	400
3	KH448-63SS	65	65	63	150	75	208	270	100	20	600	16	145	4x M24	36.0	-	St	36.00	350
4	KH464-76SS	80	76	76	170	78	258	315	115	26	600	19	175	4x M30	35.0	-	St	63.00	400
4	KH464-88SS	90	100	86	170	85	260	327	122	26	900	24	175	4x M30	31.0	-	St	61.00	350
4 1/2	KH872-100SS	100	100	100	170	85	260	327	122	26	900	24	175	8x M20	33.0	-	St	70.00	350
5	KH880-118SS	125	118	118	210	105	300	380	140	32	900	36	205	8x M24	34.0	-	St	99.00	350
6	KH896-132SS*	150	150	132	285	130	390	475	190	32	900	36	245	8x M30	46.0	-	St	225.00	350
6	KH896-150SS	150	150	150	285	130	390	475	190	32	900	36	245	8x M30	46.0	-	St	225.00	350
8	KH8128-200SS*	200	192	200	378	150	456	598	223	61	940	46	315	8x M36	55.0	-	St	395.00	350

Other sizes on request.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Stainless steel	SS	KH432-48SS

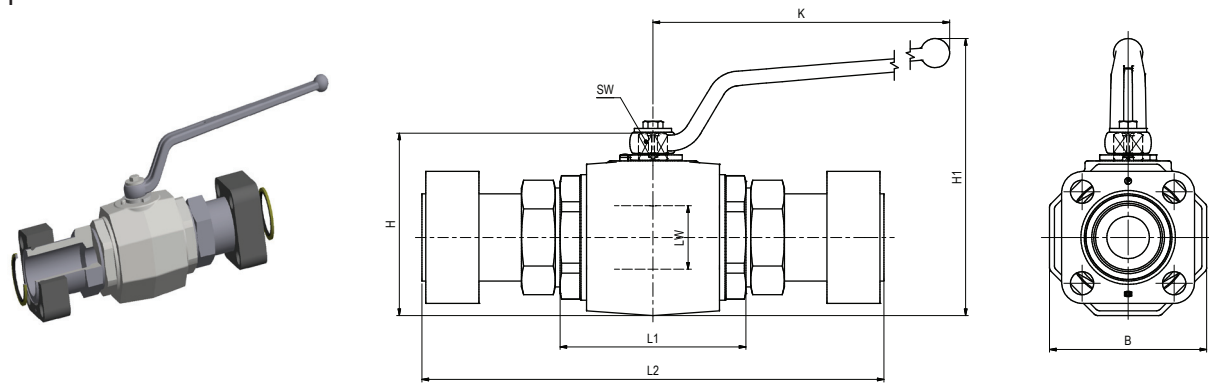
	Material 442A
Body	Stainless Steel
Ball	Stainless Steel
Stem	Stainless Steel
Ball seats	POM
O-Ring	NBR
Tmin / T max	-30°C / 100°C

*For these ball valves Tmin / Tmax = -10°C / 100°C

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KH-R – Ball valve with ISO 6164 flanges

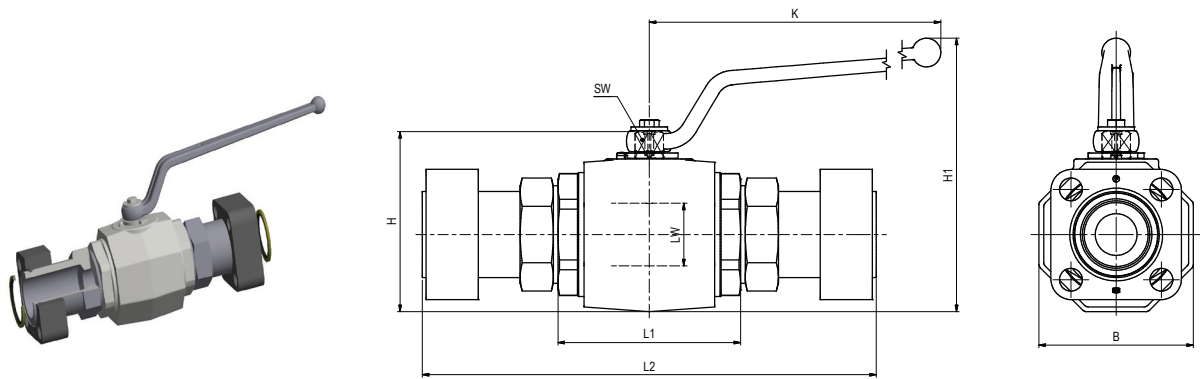
ISO 6164



Material Steel

Size Inch	Complete part Order code	Valve body Order code	LW	L1	L2	B	H	SW	K	H1	Weight (Steel) kg/1 kit	W.P. bar
2	KH-R-432-48CF	KH-R-32-48CF	48	140	348.0	118	138	17	306	210	15.2	400

Other sizes on request.



Material Stainless Steel

Size Inch	Complete part Order code	Valve body Order code	LW	L1	L2	B	H	SW	K	H1	Weight (Steel) kg/1 kit	W.P. bar
2	KH-R-432-48SS	KH-R-32-48SS	48	140	348.0	132	145	17	306	217	17.3	400

Other sizes on request.

Please change suffixes according to material/surface required

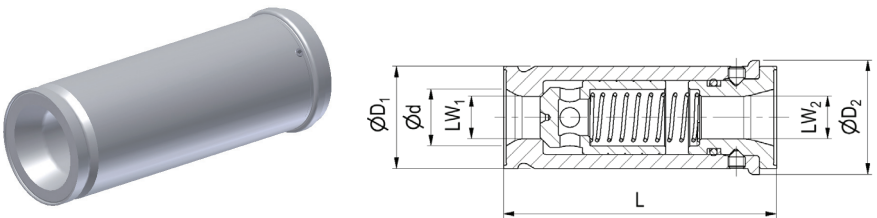
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KH-R-432-48CF
Stainless steel	SS	KH-R-432-48SS

	Material 112A	Material 442A
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

ISO 6164



Size Inch	Complete part Order code	Valve body Order code	L	D1	D2	d	LW1	LW2	Weight body (Steel) kg/1 piece	W.P. bar
2	RHD-R-432-0.5BCF	RHD-R-32-0.5BCF	180.1	66	70.5	49	40	36.4	2.54	420

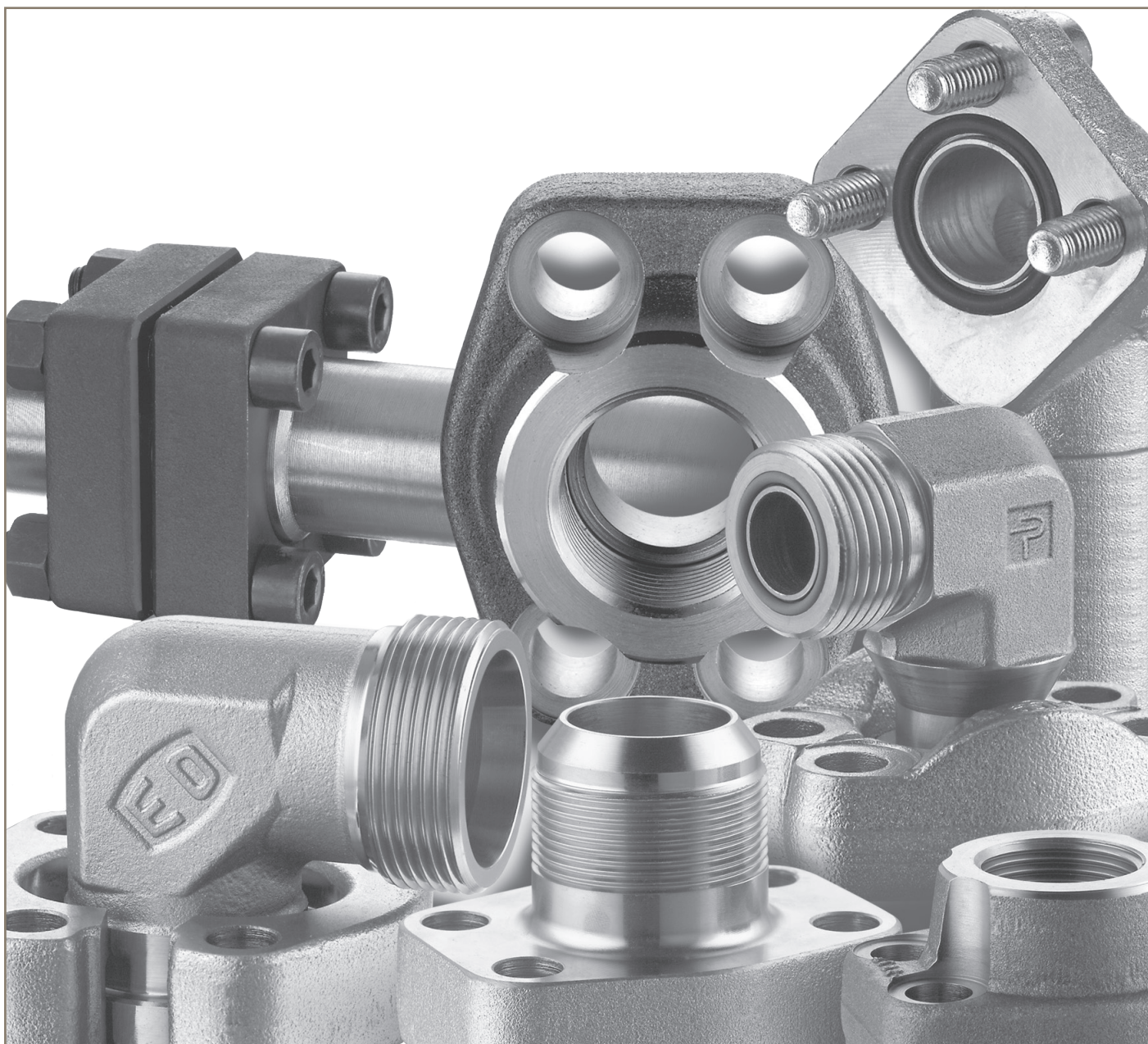
Opening pressure 0.5 bar.
Other pressure rates on request.
Complete Part = body + flanges + retaining rings + bonded seals.

Please change suffixes according to material/surface required

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	RHD-R-432-0.5BCF
Stainless steel	SS	RHD-R-432-0.5BSS

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

Notes



SAE Flange adapters

This chapter contains only a small selection.
An extended part range and more details can be found in chapter N of the
catalogue 4100.

ENGINEERING YOUR SUCCESS.

Technical data

Flange screws

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

- metric bolts according to ISO 4762-10.9 (DIN 912-10.9) or higher quality
- UNC bolts according to ANSI/ASME B 18.3

Square flanges according to ISO 6164 (1994) and Cetop

- metric bolts according to (ISO 4762-8.8) DIN 912-8.8 or (ISO 4762-10.9) DIN 912-10.9

Gear pump flanges

- metric bolts according to DIN 912-8.8 (ISO 4762-8.8)

Used Sealing

Materials

Flanges according **SAE J518 (ISO 6162-1 and -2)**, **ISO 6164**, **Cetop** and all **gear pump flanges** in this catalogue are sealed with an O-ring. The seals of our flanges are out of the following materials:

- NBR (e.g. perbunan) 90 shore A durometer is our standard seal material for hydraulic **steel** flange applications.
- FKM 85 or 90 shore A durometer is our standard seal material for hydraulic **stainless steel** flange applications.

Perbunan = registered trademark of Bayer

Dimensions

O-ring dimensions of ISO 6164 flanges, Cetop flanges and gear pump flanges are shown direct on the product catalogue page. For all flanges according to **ISO 6162-1/2 (SAE J518 Code 61/62)** the O-ring dimension are according to the following table:

Nominal flange size	Nominal-inch tube size (in inches)	ISO 3601-1 SAE J515 O-ring	O-ring size number
13	1/2	18.64×3.53	210
19	3/4	24.99×3.53	214
25	1	32.92×3.53	219
32	1 1/4	37.69×3.53	222
38	1 1/2	47.22×3.53	225
51	2	56.74×3.53	228
64	2 1/2	69.44×3.53	232
76	3	85.32×3.53	237
89	3 1/2	98.02×3.53	241
102	4	110.72×3.53	245
127	5	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).

Square flanges according to ISO 6164 (1994) and Cetop

Steel construction: ST52.3, C40 or compatible

Stainless steel construction: 1.4571 (316Ti) or compatible

Gear pump flanges

Steel forged construction: GTW40 or compatible

Steel construction: ST52.3, 11SMnPb30 or compatible

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 CF (type CF, CR3, CFL) with same or better corrosion resistance than yellow zinc chromated surface protection (A3C).

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	ZYLS8X25109X	UNC5/16-18X11/4	ZYLS8X30109X *	UNC5/16-18X11/4
3000 PSI	19	3/4	ZYLS10X30109X	UNC3/8-16X11/4	ZYLS10X35109X *	UNC3/8-16X11/2 *
3000 PSI	25	1	ZYLS10X30109X	UNC3/8-16X11/4	ZYLS10X35109X *	UNC3/8-16X11/2 *
3000 PSI	32	1 1/4	ZYLS10X30109X	UNC7/16-14X11/2	ZYLS10X40109X *	UNC7/16-14X11/2
3000 PSI	32	1 1/4	ZYLS10X35109X *	—	—	—
3000 PSI	32	1 1/4	ZYLS12X35109X *	—	—	—
3000 PSI	38	1 1/2	ZYLS12X35109X	UNC1/2-13X11/2	ZYLS12X45109X *	UNC1/2-13X13/4 *
3000 PSI	38	1 1/2	ZYLS14X35109X *	—	—	—
3000 PSI	51	2	ZYLS12X35109X	UNC1/2-13X11/2	ZYLS12X45109X *	UNC1/2-13X13/4 *
3000 PSI	51	2	ZYLS14X35109X *	—	—	—
3000 PSI	64	2 1/2	ZYLS12X40109X	UNC1/2-13X13/4	ZYLS12X45109X *	UNC1/2-13X13/4 *
3000 PSI	64	2 1/2	ZYLS14X35109X *	UNC1/2-13X11/2 *	—	—
3000 PSI	76	3	ZYLS16X50109X	UNC5/8-11X13/4	ZYLS16X55109X *	UNC5/8-11X21/4 *
3000 PSI	76	3	ZYLS16X45109X *	UNC5/8-11X2 *	—	—
3000 PSI	89	3 1/2	ZYLS16X50109X	UNC5/8-11X2	ZYLS16X55109X *	UNC5/8-11X21/4 *
3000 PSI	89	3 1/2	ZYLS16X45109X *	—	—	—
3000 PSI	102	4	ZYLS16X50109X	UNC5/8-11X2	ZYLS16X55109X *	UNC5/8-11X21/4 *
3000 PSI	102	4	ZYLS16X45109X *	—	—	—
3000 PSI	127	5	ZYLS16X55109X	UNC5/8-11X21/4	ZYLS16X55109X	UNC5/8-11X21/4
3000 PSI	127	5	ZYLS16X50109X *	UNC5/8-11X2 *	—	—
Serie	ISO	SAE	metr.	UNC	metr.	UNC
6000 PSI	13	1/2	ZYLS8X30109X	UNC5/16-18X11/4	ZYLS8X30109X	UNC5/16-18X11/4
6000 PSI	19	3/4	ZYLS10X35109X	UNC3/8-16X11/2	ZYLS10X35109X	UNC3/8-16X11/2
6000 PSI	25	1	ZYLS12X45109X	UNC7/16-14X13/4	ZYLS12X45109X	UNC7/16-14X11/2 *
6000 PSI	25	1	—	UNC7/16-14X11/2 *	—	—
6000 PSI	32	1 1/4	ZYLS12X45109X	UNC1/2-13X13/4	ZYLS12X50109X	UNC1/2-13X13/4
6000 PSI	32	1 1/4	ZYLS14X50109X *	—	ZYLS14X50109X *	—
6000 PSI	38	1 1/2	ZYLS16X55109X	UNC5/8-11X21/4	ZYLS16X55109X	UNC5/8-11X21/4
6000 PSI	38	1 1/2	—	UNC5/8-11X2 *	—	—
6000 PSI	51	2	ZYLS20X70109X	UNC3/4-10X23/4	ZYLS20X70109X	UNC3/4-10X23/4
6000 PSI	51	2	ZYLS20X65109X *	UNC3/4-10X21/2 *	—	—
6000 PSI	64	2 1/2	ZYLS24X75109X *	—	ZYLS24X90109X *	—
6000 PSI	76	3	ZYLS30X90109X	—	ZYLS30X110109X *	—

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

Bolts for hydraulic flanges

(BFG, BFW)

Typ	Bolts Order code	Description
BFG (10L-28L)	ZYLS6X22VZX	4 pieces
BFG (20S)	ZYLS8X25VZX	4 pieces

Type		LK	Bolts		Description
			Order code	Order code	
BFW	10L	35	ZYLS6X22VZX	ZYLS6X35VZX	2 Pieces of each bolt
BFW	12L	35	ZYLS6X22VZX	ZYLS6X35VZX	2 Pieces of each bolt
BFW	15L	35	ZYLS6X22VZX	ZYLS6X35VZX	2 Pieces of each bolt
BFW	16S	35	ZYLS6X22VZX	ZYLS6X40VZX	2 Pieces of each bolt
BFW	20S	35	ZYLS6X22VZX	ZYLS6X45VZX	2 Pieces of each bolt
BFW	15L	40	ZYLS6X22VZX	—	4 Pieces
BFW	18L	40	ZYLS6X22VZX	—	4 Pieces
BFW	22L	40	ZYLS6X22VZX	—	4 Pieces
BFW	28L	40	ZYLS6X20VZX	ZYLS6X50VZX	2 Pieces of each bolt
BFW	35L	40	ZYLS6X22VZX	ZYLS6X60VZX	2 Pieces of each bolt
BFW	20S	40	ZYLS6X22VZX	ZYLS6X45VZX	2 Pieces of each bolt
BFW	35L	55	ZYLS8X25VZX	ZYLS8X60VZX	2 Pieces of each bolt
BFW	42L	55	ZYLS8X25VZX	ZYLS8X70VZX	2 Pieces of each bolt
BFW	20S	55	ZYLS8X25VZX	ZYLS8X50VZX	2 Pieces of each bolt
BFW	25S	55	ZYLS8X25VZX	ZYLS8X55VZX	2 Pieces of each bolt
BFW	30S	55	ZYLS8X25VZX	ZYLS8X50VZX	2 Pieces of each bolt

O-rings for flanges

SAE J518

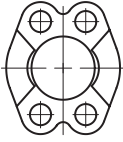
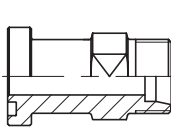
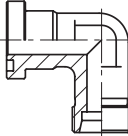
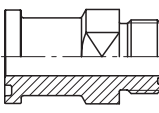
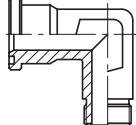
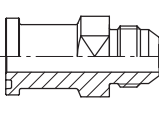
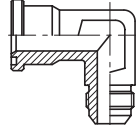
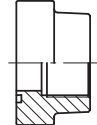
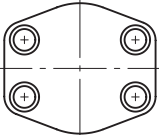
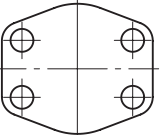
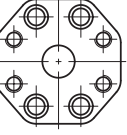
ISO (DN)	SAE (Inch)	O-ring	
		NBR Order code	FKM Order code
13	1/2	OR18.64X3.53X	OR18.64X3.53VITX
19	3/4	OR25X3.53X	OR25X3.53VITX
25	1	OR32.92X3.53X	OR32.92X3.53VITX
32	1 1/4	OR37.69X3.53X	OR37.69X3.53VITX
38	1 1/2	OR47.22X3.53X	OR47.22X3.53VITX
51	2	OR56.75X3.53X	OR56.75X3.53VITX
64	2 1/2	OR69.44X3.53X	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

O-rings for hydraulic flanges

(BFG, BFW)

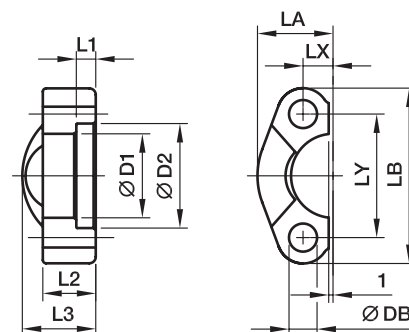
LK	O-ring size	Order code
35	20×2.5	OR20X2.5X
40	26×2.5	OR26X2.5X
55	32×2.5	OR32X2.5X

Programme overview

SAE Flange clamps	  FHS – p.191 FUS – p.192
SAE Flange adapters	EO 24° cone end   GFS – p.193/194 WFS – p.195/196
	O-Lok® ORFS end Triple-Lok® 37° flare end     L(O)HQ – p.197 L(O)EMQ – p.198 XHQ – p.199 XEMQ – p.200
SAE 4 Bolt flanges	BSPP Female thread    PFF-G – p.201 PAFSF-G – p.202 PEFF-G – p.203
SAE Flange accessories	   PCFF – p.204 AP – p.205 PRF – p.206

FHS – SAE Split flange halves

SAE 3000/6000
ISO 6162-1/-2



3000 PSI Series

Nom. flange size		D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	SS
1/2	13	24.3	31.0	6.2	13	19	23.0	54.0	8.7	38.1	8.9	M 08×25	5/16×1 1/4	0.07	FHS32	345	345
3/4	19	32.2	38.9	6.2	14	22	25.9	65.0	11.1	47.6	10.6	M 10×30	3/8×1 1/4	0.09	FHS33	345	345
1	25	38.5	45.2	7.5	16	24	29.2	69.9	13.1	52.4	10.6	M 10×30	3/8×1 1/4	0.11	FHS34	345	345
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	10.6	M 10×35	–	0.17	FHS35/10	276	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	0.17	FHS35/12	276	276
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	12.5	M 12×35	–	0.17	FHS35	276	276
1 1/2	38	50.8	61.1	7.5	16	25	41.1	93.8	17.9	69.9	13.5	M 12×35	1/2×1 1/2	0.24	FHS36	207	207
1 1/2	38	50.8	61.1	7.5	16	25	41.1	93.8	17.9	69.9	14.5	M 14×35	–	0.24	FHS36/14	207	207
2	51	62.8	72.3	9.0	16	26	48.2	101.6	21.4	77.8	13.5	M 12×35	1/2×1 1/2	0.27	FHS38/12	207	207
2	51	62.8	72.3	9.0	16	26	48.2	101.6	21.4	77.8	14.5	M 14×35	–	0.27	FHS38	207	207
2 1/2	64	74.9	84.9	9.0	19	38	54.1	114.3	25.4	88.9	13.5	M 12×40	1/2×1 3/4	0.45	FHS310	172	172
2 1/2	64	74.9	84.9	9.0	19	38	54.1	114.3	25.4	88.9	14.5	M 14×40	–	0.45	FHS310/14	172	172
3	76	90.9	102.4	9.0	22	41	65.3	135.0	31.0	106.4	16.7	M 16×45	5/8×1 3/4	0.71	FHS312	138	138
3 1/2	89	102.4	115.0	10.7	22	28	68.6	152.4	34.9	120.7	16.7	M 16×45	5/8×2	0.65	FHS314	34	34
4	102	115.1	127.8	10.7	25	35	74.9	162.0	38.9	130.2	16.7	M 16×50	5/8×2	0.87	FHS316	34	34
5	127	140.5	153.2	10.7	28	41	89.4	184.2	46.0	152.4	16.7	M 16×50	5/8×2 1/4	1.25	FHS320	34	34

6000 PSI Series

1/2	13	24.6	32.5	7.2	16	22	24.0	56.4	9.1	40.5	9.0	M 08×30	5/16×1 1/4	0.08	FHS62	420	420
3/4	19	32.5	42.0	8.3	19	28	30.0	72.0	11.9	50.8	11.0	M 10×35	3/8×1 1/2	0.18	FHS63	420	420
1	25	38.8	48.4	9.0	24	33	34.8	81.0	13.9	57.2	13.0	M 12×45	–	0.27	FHS64	420	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	420
1 1/4	32	44.5	54.8	9.8	27	38	38.6	95.3	15.9	66.6	15.0	M 14×50	–	0.27	FHS65	420	420
1 1/4	32	44.5	54.8	9.8	27	38	38.6	95.3	15.9	66.6	13.0	M 12×45	1/2×1 3/4	0.27	FHS65/12	420	420
1 1/2	38	51.6	64.3	12.1	30	43	47.5	112.8	18.3	79.3	17.0	M 16×55	5/8×2 1/4	0.40	FHS66	420	420
2	51	67.6	80.2	12.1	37	52	56.9	133.4	22.2	96.8	22.0	M 20×65	3/4×2 3/4	0.40	FHS68	420	420
2 1/2	64	90.0	108.0	20.0	45	45	75.1	180.0	29.4	123.8	25.0	M 24×75	–	0.68	FHS610	420	420
3	76	115.0	132.5	25.0	55	55	99.1	215.0	35.7	152.4	31.5	M 30×90	–	1.05	FHS612	420	420

¹⁾ Pressure shown = Item deliverable

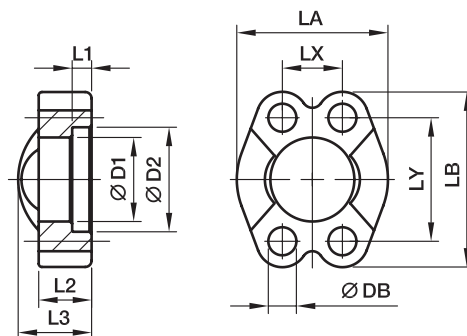
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

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	FHS32SSX	only flange half

FUS – SAE Flange clamps

SAE 3000/6000
ISO 6162-1/-2



3000 PSI Series

Nom. flange size		D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	SS
1/2	13	24.3	31.0	6.2	13	19	46	54.0	17.5	38.1	8.9	M 08x25	5/16x1 1/4	0.13	FUS32	345	345
3/4	19	32.2	38.9	6.2	14	22	52	65.0	22.3	47.6	10.6	M 10x30	3/8x1 1/4	0.18	FUS33	345	345
1	25	38.5	45.2	7.5	16	24	59	69.9	26.2	52.4	10.6	M 10x30	3/8x1 1/4	0.22	FUS34	345	345
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	10.6	M 10x35	–	0.30	FUS35/10	276	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	12.0	–	7/16x1 1/2	0.29	FUS35/12	276	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	12.5	M 12x35	–	0.29	FUS35	276	276
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.8	69.9	13.5	M 12x35	1/2x1 1/2	0.45	FUS36	207	207
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.8	69.9	14.5	M 14x35	–	0.44	FUS36/14	207	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.8	77.8	13.5	M 12x35	1/2x1 1/2	0.53	FUS38/12	207	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.8	77.8	14.5	M 14x35	–	0.51	FUS38	207	207
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	13.5	M 12x40	1/2x1 3/4	0.85	FUS310	172	172
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	14.5	M 14x40	–	0.82	FUS310/14	172	172
3	76	90.9	102.4	9.0	22	41	131	135.0	61.9	106.4	16.7	M 16x45	5/8x1 3/4	1.30	FUS312	138	138
3 1/2	89	102.4	115.0	10.7	22	28	140	152.4	69.9	120.7	16.7	M 16x45	5/8x2	1.57	FUS314	34	34
4	102	115.1	127.8	10.7	25	35	150	162.0	77.8	130.2	16.7	M 16x50	5/8x2	1.82	FUS316	34	34
5	127	140.5	153.2	10.7	28	41	180	184.2	92.1	152.4	16.7	M 16x50	5/8x2 1/4	2.63	FUS320	34	34

6000 PSI Series

1/2	13	24.6	32.5	7.2	16	22	48	56.4	18.2	40.5	8.9	M 08x30	5/16x1 1/4	0.16	FUS62	420	420
3/4	19	32.5	42.0	8.3	19	28	60	71.4	23.8	50.8	10.6	M 10x35	3/8x1 1/2	0.31	FUS63	420	420
1	25	38.8	48.4	9.0	24	33	70	81.0	27.8	57.2	13.3	M 12x45	–	0.49	FUS64	420	420
1	25	38.9	48.4	9.0	24	33	70	81.0	27.8	57.2	12.0	–	7/16x1 3/4	0.51	FUS64/12	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	15.0	M 14x50	–	0.77	FUS65	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	13.3	M 12x45	1/2x1 3/4	0.81	FUS65/12	420	420
1 1/2	38	51.6	64.3	12.1	30	43	96	112.8	36.5	79.3	16.7	M 16x55	5/8x2 1/4	1.31	FUS66	420	420
2	51	67.6	80.2	12.1	37	52	114	133.4	44.5	96.8	20.6	M 20x65	3/4x2 3/4	2.00	FUS68	420	420
2 1/2	64	90.0	108.9	20.5	45	45	150	180.0	58.7	123.8	25.0	M 24x75	–	3.95	FUS610	420	420
3	76	115.0	132.5	25.5	55	55	178	215.0	71.4	152.4	31.0	M 30x90	–	6.73	FUS612	420	420

¹⁾ Pressure shown = Item deliverable

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

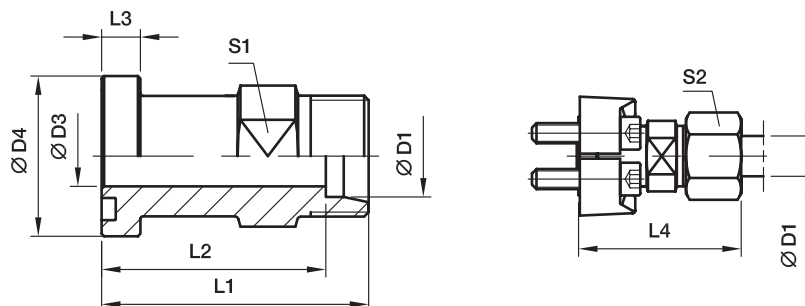
Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FUS32CFX	only flange clamp
Stainless steel	SS	FUS32SSX	only flange clamp



GFS – SAE Straight flange adapter

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



3000 PSI Series

Nom. flange size		D1 ²⁾											Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)					CF	71
1/2	13	15L	12.0	30.2	48.0	41.0	6.7	56.0	24	27	M 08×25	5/16×1 1/4	0.13	GFS32/15L			315	315
1/2	13	16S	12.0	30.2	50.0	41.5	6.7	60.0	24	30	M 08×25	5/16×1 1/4	0.14	GFS32/16S			350	350
1/2	13	18L	14.0	30.2	50.0	42.5	6.7	61.0	19	32	M 08×25	5/16×1 1/4	0.12	GFS32/18L			315	315
3/4	19	16S	12.0	38.1	55.0	46.5	6.7	64.5	27	30	M 10×30	3/8×1 1/4	0.22	GFS33/16S			350	350
3/4	19	18L	17.0	38.1	53.0	45.5	6.7	62.0	30	32	M 10×30	3/8×1 1/4	0.22	GFS33/18L			315	315
3/4	19	22L	19.0	38.1	53.0	45.5	6.7	62.0	30	36	M 10×30	3/8×1 1/4	0.20	GFS33/22L			160	160
3/4	19	28L	19.0	38.1	55.0	41.0	6.7	64.0	32	41	M 10×30	3/8×1 1/4	0.23	GFS33/28L			160	160
3/4	19	20S	17.0	38.1	57.0	46.5	6.7	68.0	30	36	M 10×30	3/8×1 1/4	0.25	GFS33/20S			350	350
3/4	19	25S	17.0	38.1	57.0	45.0	6.7	69.0	30	46	M 10×30	3/8×1 1/4	0.27	GFS33/25S			350	350
1	25	20S	25.0	44.5	60.0	48.5	8.0	71.0	32	36	M 10×30	3/8×1 1/4	0.34	GFS34/20S			350	350
1	25	28L	24.0	44.5	54.0	46.5	8.0	63.0	36	41	M 10×30	3/8×1 1/4	0.28	GFS34/28L			160	160
1	25	25S	20.0	44.5	58.0	46.5	8.0	60.0	36	46	M 10×30	3/8×1 1/4	0.35	GFS34/25S			350	350
1	25	30S	24.0	44.5	63.0	49.5	8.0	76.0	36	50	M 10×30	3/8×1 1/4	0.36	GFS34/30S			250	250
1	25	42L	24.0	44.5	76.0	65.0	8.0	87.5	41	60	M 10×30	3/8×1 1/4	0.49	GFS34/42L			160	160
1 1/4	32	35L	32.0	50.8	58.0	47.5	8.0	69.0	41	50	M 10×35	–	0.36	GFS35/35L/10 ³⁾			160	160
1 1/4	32	25S	27.0	50.8	60.0	48.0	8.0	72.0	41	46	M 10×35	–	0.44	GFS35/25S/10 ³⁾			200	200
1 1/4	32	30S	28.5	50.8	62.0	48.5	8.0	75.0	41	50	M 10×35	–	0.44	GFS35/30S/10 ³⁾			200	200
1 1/4	32	38S	28.0	50.8	66.0	50.0	8.0	81.0	46	60	M 10×35	–	0.46	GFS35/38S/10 ³⁾			200	200
1 1/4	32	28L	23.0	50.8	60.0	52.5	8.0	67.0	36	41	M 12×40	7/16×1 1/2	0.41	GFS35/28L			160	160
1 1/4	32	35L	32.0	50.8	58.0	47.5	8.0	69.0	41	50	M 12×40	7/16×1 1/2	0.36	GFS35/35L			160	160
1 1/4	32	25S	27.0	50.8	60.0	48.0	8.0	72.0	41	46	M 12×40	7/16×1 1/2	0.44	GFS35/25S			200	200
1 1/4	32	30S	28.5	50.8	62.0	48.5	8.0	75.0	41	50	M 12×40	7/16×1 1/2	0.44	GFS35/30S			200	200
1 1/4	32	38S	28.0	50.8	66.0	50.0	8.0	81.0	46	60	M 12×40	7/16×1 1/2	0.46	GFS35/38S			200	200
1 1/2	38	35L	30.0	60.3	65.0	54.5	8.0	76.0	46	50	M 12×35	1/2×1 1/2	0.55	GFS36/35L			160	160
1 1/2	38	42L	36.0	60.3	64.0	53.0	8.0	76.0	46	60	M 12×35	1/2×1 1/2	0.49	GFS36/42L			160	160
1 1/2	38	38S	32.0	60.3	70.0	54.0	8.0	85.0	46	60	M 12×35	1/2×1 1/2	0.64	GFS36/38S			200	200

¹⁾ Pressure shown = Item deliverable

²⁾ L = light series; S = heavy series

PN (bar) = PN (MPa)
10

Delivery without nut and ring. For nuts and cutting rings see also Industrial Tube Fittings Europe Catalogue 4100.

³⁾ Order code for the flange adapter assembled with FHS35/10CFX and M10×35 bolts.

For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

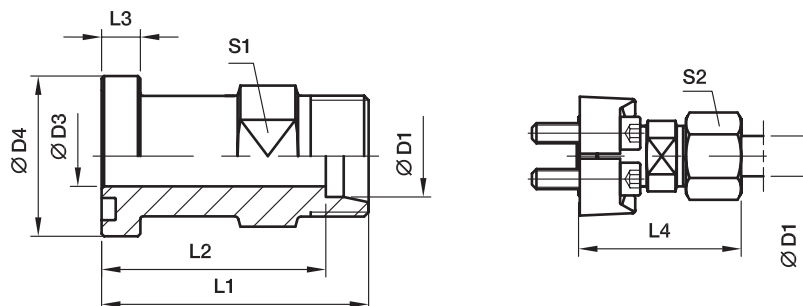
Stainless steel parts may have dimensional deviations. Additional information on request.

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	-	VIT

GFS – SAE Straight flange adapter

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



SAE 6000

Nom. flange size		D1 ²⁾									Bolts		Weight (steel) kg/1 piece		PN (bar) ¹⁾	
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)			Order code	CF
1/2	13	12S	8	31.8	50.0	42.5	7.7	57.5	19	24	M 08x30	5/16x1 1/4	0.14	GFS62/12S	420	420
1/2	13	14S	10	31.8	50.0	42.0	7.7	59.5	19	27	M 08x30	5/16x1 1/4	0.17	GFS62/14S	420	420
1/2	13	16S	12	31.8	50.0	41.5	7.7	49.5	19	30	M 08x30	5/16x1 1/4	0.15	GFS62/16S	420	420
3/4	19	16S	17	41.3	59.0	50.5	8.7	68.5	30	30	M 10x35	3/8x1 1/2	0.28	GFS63/16S	420	420
3/4	19	20S	17	41.3	61.0	50.5	8.7	72.0	30	36	M 10x35	3/8x1 1/2	0.27	GFS63/20S	420	400
3/4	19	25S	17	41.3	63.0	51.0	8.7	75.0	30	46	M 10x35	3/8x1 1/2	0.31	GFS63/25S	420	400
3/4	19	30S	18	41.3	76.0	62.0	8.7	89.0	30	50	M 10x35	3/8x1 1/2	0.42	GFS63/30S	420	400
3/4	19	38S	19	41.3	80.0	64.0	8.7	94.5	41	60	M 10x35	3/8x1 1/2	0.57	GFS63/38S	420	315
1	25	20S	16	47.6	75.0	64.5	9.5	88.0	36	36	M 12x45	7/16x1 3/4	0.49	GFS64/20S	420	400
1	25	25S	20	47.6	72.0	60.0	9.5	84.0	36	46	M 12x45	7/16x1 3/4	0.46	GFS64/25S	420	400
1	25	30S	24	47.6	74.0	62.0	9.5	87.0	36	50	M 12x45	7/16x1 3/4	0.43	GFS64/30S	420	400
1	25	38S	25	47.6	90.0	74.0	9.5	105.0	41	60	M 12x45	7/16x1 3/4	0.65	GFS64/38S	420	315
1 1/4	32	25S	20	54.0	80.0	68.0	10.2	92.0	41	46	M 14x50	-	0.68	GFS65/25S	420	400
1 1/4	32	25S	20	54.0	80.0	68.0	10.2	92.0	41	46	M 12x50	1/2x1 3/4	0.68	GFS65/25S/12³⁾	420	400
1 1/4	32	30S	30	54.0	79.0	65.5	10.2	92.0	41	50	M 12x50	1/2x1 3/4	0.58	GFS65/30S/12³⁾	420	400
1 1/4	32	38S	31	54.0	80.0	64.0	10.2	94.5	46	60	M 12x50	1/2x1 3/4	0.58	GFS65/38S/12³⁾	420	315
1 1/4	32	30S	30	54.0	79.0	65.5	10.2	92.0	41	50	M 14x50	-	0.58	GFS65/30S	420	400
1 1/4	32	38S	31	54.0	80.0	64.0	10.2	94.5	46	60	M 14x50	-	0.58	GFS65/38S	420	315
1 1/2	38	30S	30	63.5	90.0	74.0	12.5	103.0	46	50	M 16x55	5/8x2 1/4	1.00	GFS66/30S	420	400
1 1/2	38	38S	32	63.5	90.0	74.0	12.5	104.5	46	60	M 16x55	5/8x2 1/4	0.93	GFS66/38S	420	315

¹⁾ Pressure shown = Item deliverable

²⁾ L = light series; S = heavy series

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

Delivery without nut and ring. For nuts and cutting rings see also Industrial Tube Fittings Europe Catalogue 4100.

³⁾ Order code for the flange adapter assembled with FHS65/12CFX and M12X50 bolts.

For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

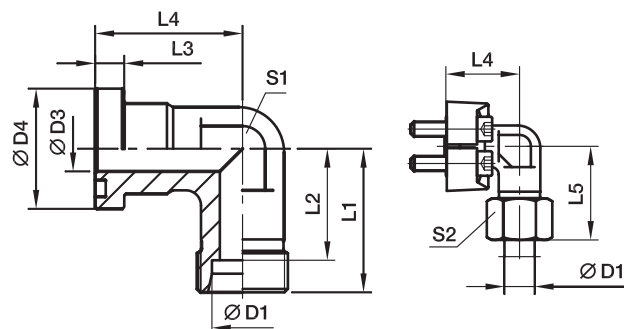
Stainless steel parts may have dimensional deviations. Additional information on request.

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	-	VIT

WFS – SAE 90° Elbow flange adapter

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



3000 PSI Series

Nom. flange size		D1 ²⁾	D3	D4	L1	L2	L3	L4	L5	S1	S2	Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	71
1/2	13	12S	12	30.2	50	42.5	6.7	44	58.5	22	24	M 08×25	5/16×1 1/4	0.24	WFS32/12S	210	210
1/2	13	15L	12	30.2	36	29.0	6.7	36	44.0	24	27	M 08×25	5/16×1 1/4	0.16	WFS32/15L	315	315
1/2	13	16S	12	30.2	38	29.5	6.7	36	48.0	24	30	M 08×25	5/16×1 1/4	0.17	WFS32/16S	350	350
1/2	13	18L	12	30.2	50	42.5	6.7	44	59.0	22	32	M 08×25	5/16×1 1/4	0.20	WFS32/18L	315	315
3/4	19	16S	19	38.1	64	55.5	6.7	53	73.5	27	30	M 10×30	3/8×1 1/4	0.36	WFS33/16S	350	350
3/4	19	18L	19	38.1	39	31.5	6.7	42	48.0	30	32	M 10×30	3/8×1 1/4	0.30	WFS33/18L	315	315
3/4	19	22L	19	38.1	41	33.5	6.7	42	50.0	30	36	M 10×30	3/8×1 1/4	0.28	WFS33/22L	160	160
3/4	19	20S	17	38.1	43	32.5	6.7	42	54.0	30	36	M 10×30	3/8×1 1/4	0.33	WFS33/20S	350	350
3/4	19	25S	17	38.1	45	33.0	6.7	42	57.0	30	46	M 10×30	3/8×1 1/4	0.32	WFS33/25S	350	350
1	25	20S	20	44.5	65	54.5	8.0	60	77.0	34	36	M 10×30	3/8×1 1/4	0.55	WFS34/20S	350	350
1	25	22L	18	44.5	65	57.5	8.0	60	74.0	34	36	M 10×30	3/8×1 1/4	0.53	WFS34/22L	160	160
1	25	28L	25	44.5	44	36.5	8.0	45	53.0	36	41	M 10×30	3/8×1 1/4	0.41	WFS34/28L	160	160
1	25	25S	20	44.5	48	36.5	8.0	45	57.0	36	46	M 10×30	3/8×1 1/4	0.52	WFS34/25S	350	350
1	25	30S	24	44.5	50	36.5	8.0	45	63.0	36	50	M 10×30	3/8×1 1/4	0.48	WFS34/30S	250	250
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68.0	41	50	M 10×35	–	0.53	WFS35/35L/10³⁾	160	160
1 1/4	32	25S	27	50.8	55	43.0	8.0	60	67.0	41	46	M 10×35	–	0.72	WFS35/25S/10³⁾	200	200
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70.0	41	50	M 10×35	–	0.67	WFS35/30S/10³⁾	200	200
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74.0	46	60	M 10×35	–	0.71	WFS35/38S/10³⁾	200	200
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68.0	41	50	M 12×40	7/16×1 1/2	0.53	WFS35/35L	160	160
1 1/4	32	25S	27	50.8	55	43.0	8.0	50	67.0	41	46	M 12×40	7/16×1 1/2	0.72	WFS35/25S	200	200
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70.0	41	50	M 12×40	7/16×1 1/2	0.67	WFS35/30S	200	200
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74.0	41	60	M 12×40	7/16×1 1/2	0.71	WFS35/38S	200	200
1 1/2	38	35L	30	60.3	78	67.5	8.0	66	83.0	50	50	M 12×35	1/2×1 1/2	1.36	WFS36/35L	160	160
1 1/2	38	42L	36	60.3	58	47.0	8.0	55	70.0	50	60	M 12×35	1/2×1 1/2	0.73	WFS36/42L	160	160
1 1/2	38	38S	36	60.3	64	48.0	8.0	55	79.0	50	60	M 12×35	1/2×1 1/2	0.95	WFS36/38S	200	200

1) Pressure shown = Item deliverable

2) L = light series; S = heavy series

PN (bar)
10 = PN (MPa)

Delivery without nut and ring. For nuts and cutting rings see also Industrial Tube Fittings Europe Catalogue 4100.

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

For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

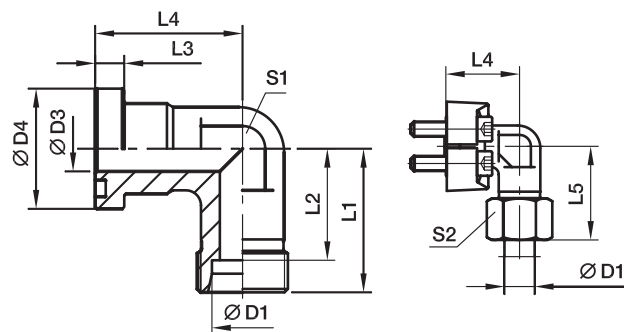
Stainless steel parts may have dimensional deviations. Additional information on requs.

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	-	VIT

WFS – SAE 90° Elbow flange adapter

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



6000 PSI Series

Nom. flange size		D1 ²⁾										Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2	(metr.)	(unc.)			CF	71
1/2	13	12S	12	31.8	50	42.5	7.7	44	58.5	22	24	M 08×30	5/16×1 1/4	0.22	WFS62/12S	420	420
1/2	13	14S	12	31.8	50	42.0	7.7	44	59.5	22	27	M 08×30	5/16×1 1/4	0.27	WFS62/14S	420	420
1/2	13	16S	12	31.8	38	29.5	7.7	39	48.0	24	30	M 08×30	5/16×1 1/4	0.19	WFS62/16S	420	420
3/4	19	16S	17	41.3	45	36.5	8.7	48	55.0	32	30	M 10×35	3/8×1 1/2	0.42	WFS63/16S	420	420
3/4	19	20S	17	41.3	46	35.5	8.7	48	57.0	32	36	M 10×35	3/8×1 1/2	0.42	WFS63/20S	420	400
3/4	19	25S	17	41.3	48	36.0	8.7	48	60.0	32	46	M 10×35	3/8×1 1/2	0.46	WFS63/25S	420	400
1	25	20S	16	47.6	65	54.5	9.5	62	75.0	34	36	M 12×45	7/16×1 3/4	0.60	WFS64/20S	420	400
1	25	25S	20	47.6	53	44.0	9.5	60	65.0	41	46	M 12×45	7/16×1 3/4	0.74	WFS64/25S	420	400
1	25	30S	25	47.6	55	41.5	9.5	60	68.0	41	50	M 12×45	7/16×1 3/4	0.64	WFS64/30S	420	400
1 1/4	32	25S	25	54.0	64	52.0	10.2	55	76.0	42	46	M 12×45	–	1.06	WFS65/25S/12 ³⁾	420	400
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71.0	46	50	M 12×45	–	0.88	WFS65/30S/12 ³⁾	420	400
1 1/4	32	38S	30	54.0	72	56.0	10.2	70	87.0	46	60	M 12×45	–	0.93	WFS65/38S/12 ³⁾	420	315
1 1/4	32	25S	20/28	54.0	72	60.0	10.3	70	84.0	42	46	M 14×50	1/2×1 3/4	1.06	WFS65/25S	420	400
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71.0	46	50	M 14×50	1/2×1 3/4	0.88	WFS65/30S	420	400
1 1/4	32	38S	30	54.0	72	56.0	10.2	70	87.0	46	60	M 14×50	1/2×1 3/4	0.93	WFS65/38S	420	315
1 1/2	38	30S	25	63.5	76	63.5	12.5	77	90.0	50	50	M 16×55	5/8×2 1/4	1.75	WFS66/30S	420	400
1 1/2	38	38S	32	63.5	84	68.0	12.5	80	99.0	50	60	M 16×55	5/8×2 1/4	1.46	WFS66/38S	420	315

¹⁾ Pressure shown = Item deliverable

²⁾ S = heavy series

PN (bar) = PN (MPa)
10

Delivery without nut and ring. For nuts and cutting rings see also Industrial Tube Fittings Europe Catalogue 4100.

³⁾ Order code for the elbow flange adapter assembled with FHS65/12CFX and M12X45 bolts.

For associated flange halves depending on bolt sets, Industrial Tube Fittings Europe Catalogue 4100.

Stainless steel parts may have dimensional deviations. Additional information on request.

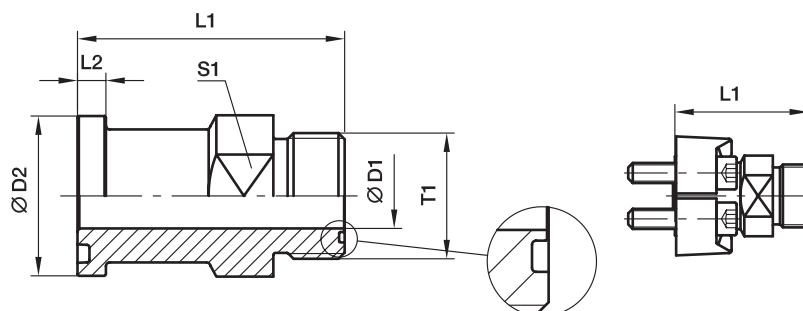
Please change suffixes according to material/surface required

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	-	VIT



L(O)HQ – SAE Straight flange adapter

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



3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	S1	Weight (steel) kg/piece	O-ring face without ORFS	O-ring face include ORFS	PN (bar) ¹⁾
SAE (in.)	ISO (DN)	(metr.)	(in.)								O-ring Order code	O-ring Order code	
3/4	19	18, 20	3/4	1 3/16-12UN	15.5	38.1	70.9	6.7	35.0	0.21	12LHQ1	12LOHQ1	350
1	25	22, 25	7/8, 1	1 7/16-12UN	20.6	44.5	71.4	8.0	41.0	0.30	16LHQ1	16LOHQ1	350
1 1/4	32	28, 30, 32	1 1/4	1 11/16-12UN	26.0	50.8	81.5	8.0	47.5	0.31	20LHQ1	20LOHQ1	280
1 1/2	38	35, 38	1 1/2	2-12UN	32.0	60.3	83.6	8.0	54.0	0.56	24LHQ1	24LOHQ1	210

6000 PSI Series

3/4	19	18, 20	3/4	1 3/16-12UN	15.5	41.3	76.7	8.8	35.0	0.21	12LHQ2	12LOHQ2	420
1	25	18, 20	3/4	1 3/16-12UN	15.5	47.6	84.8	9.5	35.0	0.26	12-16LHQ2	12-16LOHQ2	420
1	25	22, 27	3/4, 7/8	1 7/16-12UN	20.6	47.6	85.3	9.5	41.0	0.30	16LHQ2	16LOHQ2	420
1 1/4	32	28, 30, 32	1 1/4	1 11/16-12UN	26.0	54.0	88.4	10.3	47.5	0.31	20LHQ2	20LOHQ2	345
1 1/2	38	35, 38	1 1/2	2-12UN	32.0	63.5	105.2	12.6	54.0	0.56	24LHQ2	24LOHQ2	310

¹⁾ Pressure shown = Item deliverable

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

For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

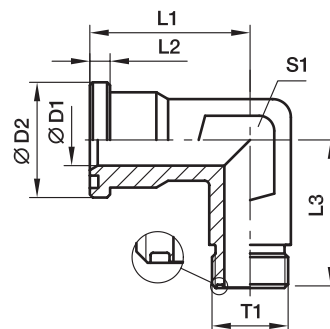
Stainless steel parts may have dimensional deviations. Additional information on request.

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, oiled	S	12LHQ1-S	12LOHQ1-S	NBR

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

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



3000 PSI Series

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

6000 PSI Series

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

¹) Pressure shown = Item deliverable

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

For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

Stainless steel parts may have dimensional deviations. Additional information on request.

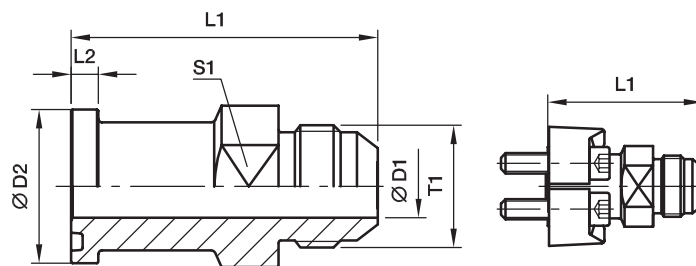
Please change suffixes according to material/surface required

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)



3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	S1	Weight (steel) kg/piece	Order code	PN (bar) ¹⁾
SAE (in.)	ISO (DN)	(metr.)	(in.)									S
3/4	19	18, 20	3/4	1 1/16-12UN	15.5	38.1	70.4	6.7	35.0	0.21	12XHQ1	350
1	25	22, 25	7/8, 1	1 5/16-12UN	21.5	44.5	73.9	8.0	41.0	0.30	16XHQ1	350
1 1/4	32	28, 30, 32	1 1/4	1 5/8-12UN	27.5	50.8	85.3	8.0	47.5	0.31	20XHQ1	275
1 1/2	38	35, 38	1 1/2	1 7/8-12UN	33.5	60.3	90.7	8.0	54.0	0.56	24XHQ1	210
2	51	50	2	2 1/2-12UN	45.0	71.4	102.6	9.5	66.5	1.10	32XHQ1	138

6000 PSI Series

3/4	19	18, 20	3/4	1 1/16-12UN	15.5	41.3	78.2	8.8	35.0	0.21	12XHQ2	350
1	25	22, 25	7/8, 1	1 5/16-12UN	21.5	47.6	87.1	9.5	41.0	0.30	16XHQ2	350
1 1/4	32	28, 30, 32	1 1/4	1 5/8-12UN	27.5	54.0	91.4	10.3	47.5	0.31	20XHQ2	275
1 1/2	38	35, 38	1 1/2	1 7/8-12UN	33.5	63.5	110.2	12.6	54.0	0.56	24XHQ2	210

¹⁾ Pressure shown = Item deliverable

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

Stainless steel on request.

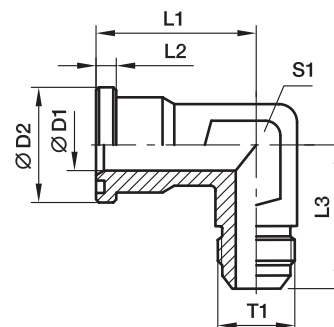
For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

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, oiled	S	12XHQ1-S	NBR

XEMQ – SAE 90° Elbow flange adapter

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



3000 PSI Series

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

6000 PSI Series

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

¹⁾ Pressure shown = Item deliverable

PN (bar) = PN (MPa)
10

For associated flange halves depending on bolt sets, see Industrial Tube Fittings Europe Catalogue 4100.

Stainless steel parts may have dimensional deviations. Additional information on request.

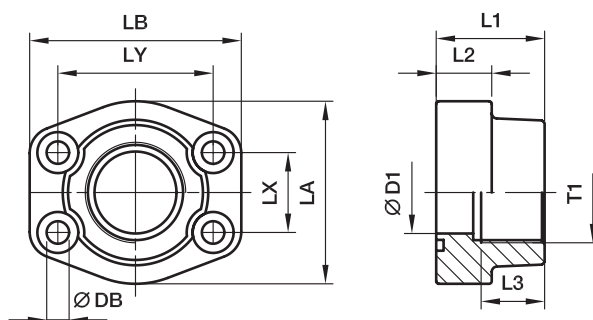
Please change suffixes according to material/surface required

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)



3000 PSI Series

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)													S	SS
1/2	13	G 3/8	13	36	16	19.0	46	57	17.5	38.1	8.9	0.31	PFF32G38	345	345
1/2	13	G 1/2	13	36	16	19.0	46	57	17.5	38.1	8.9	0.28	PFF32G	345	345
3/4	19	G 3/4	19	36	18	19.0	50	65	22.3	47.6	10.6	0.39	PFF33G	345	345
3/4	19	G 1/2	13	36	18	19.0	50	65	22.3	47.6	10.6	0.42	PFF33G12	345	345
1	25	G 1	25	38	18	20.5	55	70	26.2	52.4	10.6	0.48	PFF34G	345	345
1	25	G 3/4	19	35	21	19.0	55	70	26.2	52.4	10.6	0.56	PFF34G34	345	345
1 1/4	32	G 1 1/4	31	41	21	22.0	68	79	30.2	58.7	10.6***	0.69	PFF35G	276	276
1 1/4	32	G 1	25	42	25	22.0	65	80	30.2	58.7	10.6***	0.82	PFF35G1	276	276
1 1/2	38	G 1 1/2	38	44	25	24.0	78	93	35.7	69.9	13.3	1.12	PFF36G	207	207
1 1/2	38	G 1 1/4	32	45	27	24.0	78	95	35.7	69.9	13.3	1.21	PFF36G114	207	207
2	51	G 2	50	45	25	26.0	89	103	42.9	77.8	13.5	1.27	PFF38G	207	207
2	51	G 1 1/2	38	45	25	26.0	89	103	42.9	77.8	13.5	1.44	PFF38G112	207	207
2 1/2	64	G 2 1/2	63	50	25	30.0	101	115	50.8	88.9	13.5	1.54	PFF310G	172	172
2 1/2	64	G 2	51	50	25	30.0	101	115	50.8	88.9	13.5	2.04	PFF310G2	172	172
3	76	G 3	73	50	27	34.0	124	135	61.9	106.4	16.7	2.28	PFF312G	138	138
3	76	G 2 1/2	63	50	27	30.0	124	135	61.9	106.4	16.7	2.57	PFF312G212	138	138
3 1/2	89	G 3 1/2	89	48	27	34.0	136	152	69.9	120.7	16.7	2.50	PFF314G	34	34
3 1/2	89	G 3	73	48	27	34.0	136	152	69.9	120.7	16.7	3.10	PFF314G3	34	34
4	102	G 4	99	48	27	34.0	146	162	77.8	130.2	16.7	2.65	PFF316G	34	34
4	102	G 3 1/2	89	48	27	34.0	146	162	77.8	130.2	16.7	3.30	PFF316G312	34	34
5	127	G 5	120	50	28	30.0	180	184	92.1	152.4	16.7	5.80	PFF320G	34	34

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1/2	13	G 3/8	13	36	16	19	46	57	18.2	40.5	8.9	0.29	PFF62G38	420	420
1/2	13	G 1/2	13	36	16	15	46	57	18.2	40.5	8.9	0.30	PFF62G	420	420
3/4	19	G 3/4	19	35	21	22	55	71	23.8	50.8	10.6	0.53	PFF63G	420	420
3/4	19	G 1/2	13	35	21	22	55	71	23.8	50.8	10.6	0.56	PFF63G12	420	420
1	25	G 1	25	44	25	20	69	82	27.8	57.2	13.3***	0.83	PFF64G	420	420
1	25	G 3/4	19	42	25	24	65	81	27.8	57.2	13.3***	0.94	PFF64G34	420	420
1 1/4	32	G 1 1/4	31	44	27	22	79	96	31.8	66.6	15.0**	1.16	PFF65G	420	420
1 1/4	32	G 1 1/4	32	45	27	25	78	95	31.8	66.6	13.3	1.23	PFF65/12G	420	420
1 1/4	32	G 1	25	45	27	25	78	95	31.8	66.6	15.0**	1.26	PFF65G1	420	420
1 1/4	32	G 1	25	45	27	25	78	95	31.8	66.6	13.3	1.26	PFF65/12G1	420	420
1 1/2	38	G 1 1/2	38	51	30	24	88	107	36.5	79.3	16.7	1.64	PFF66G	420	420
1 1/2	38	G 1 1/4	32	50	30	28	94	112	36.5	79.3	16.7	1.97	PFF66G114	420	420
2	51	G 2	50	70	37	33	117	136	44.5	96.8	20.6	3.31	PFF68G	420	420
2	51	G 1 1/2	38	65	37	30	114	134	44.5	96.8	20.6	3.54	PFF68G112	420	420
2 1/2	64	G 2 1/2	63	80	45	32	152	180	58.7	123.8	25.0	3.05	PFF610G	420	420
3	76	G 3	73	90	55	40	178	208	71.4	152.4	31.0	3.45	PFF612G	420	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	NBR
Stainless steel	SS	PFF32G38SS	PFF32G38SSM	-	VIT
Steel, zinc plated, Cr(VI)-free	CF	PFF32G38CF	PFF32G38CFM	PFF32G38CFU	NBR

** DB = 13.3 for UNC bolts

*** = 12 for UNC bolts

¹⁾ Pressure shown =
Item deliverable

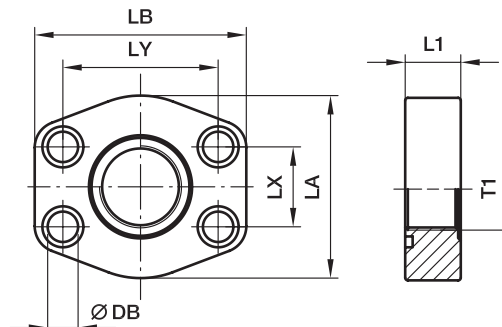
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Stainless steel parts may have
dimensional deviations.
Additional information on
request.

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



3000 PSI Series

Nom. flange size		T1	L1	LA	LB	LX	LY	DB	Bolts		O-ring	Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)								(metr.)	(unc.)				S	SS
1/2	13	G 3/8	16	46	58	17.5	38.1	8.9	M 08×30	5/16×1 1/4	Standard	0.20	PAFSF080G38	40	40
1/2	13	G 1/2	16	46	58	17.5	38.1	8.9	M 08×30	5/16×1 1/4	OR25.07x2.62x	0.27	PAFSF080G	40	40
3/4	19	G 1/2	18	49	66	22.3	47.6	10.6	M 10×35	3/8×1 1/2	Standard	0.29	PAFSF100G12	40	40
3/4	19	G 3/4	18	49	66	22.3	47.6	10.6	M 10×35	3/8×1 1/2	OR31.34X3.53X	0.27	PAFSF100G	40	40
1	25	G 3/4	19	53	71	26.2	52.4	10.6	M 10×35	3/8×1 1/2	Standard	0.37	PAFSF102G34	40	40
1	25	G 1	19	53	71	26.2	52.4	10.6	M 10×35	3/8×1 1/2	OR37.7X3.53X	0.32	PAFSF102G	40	40
1 1/4	32	G 1	21	69	80	30.2	58.7	10.6***	M 10×35	7/16×1 1/2	Standard	0.57	PAFSF104G1	40	40
1 1/4	32	G 1 1/4	21	69	80	30.2	58.7	10.6***	M 10×35	7/16×1 1/2	OR44.45X3.53X	0.62	PAFSF104G	40	40
1 1/2	38	G 1 1/4	24	77	95	35.7	69.9	13.3	M 12×45	1/2×1 3/4	Standard	0.83	PAFSF106G114	40	40
1 1/2	38	G 1 1/2	24	77	95	35.7	69.9	13.3	M 12×45	1/2×1 3/4	OR52.39X3.53X	0.79	PAFSF106G	40	40
2	51	G 1 1/2	24	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	Standard	1.00	PAFSF108G112	40	40
2	51	G 2	24	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	OR65.09X3.53X	0.90	PAFSF108G	40	40
2 1/2	64	G 2	25	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	Standard	1.30	PAFSF110G2	40	40
2 1/2	64	G 2 1/2	25	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	OR78.97X3.53X	1.25	PAFSF110G	40	40
3	76	G 2 1/2	25	124	136	61.9	106.4	16.7	M 16×55	5/8×2 1/4	Standard	1.86	PAFSF112G212	30	30
3	76	G 3	25	124	136	61.9	106.4	16.7	M 16×55	5/8×2 1/4	OR94.84X3.53X	1.49	PAFSF112G	30	30
3 1/2	89	G 3	25	136	152	69.9	120.7	16.7	M 16×55	5/8×2 1/4	Standard	1.68	PAFSF114G3	30	30
3 1/2	89	G 3 1/2	25	136	152	69.9	120.7	16.7	M 16×55	5/8×2 1/4	OR107.5X3.53X	1.59	PAFSF114G	30	30
4	102	G 3 1/2	25	146	162	77.8	130.2	16.7	M 16×55	5/8×2 1/4	Standard	2.35	PAFSF116G312	30	30
4	102	G 4	25	146	162	77.8	130.2	16.7	M 16×55	5/8×2 1/4	OR117.1X3.53X	2.25	PAFSF116G	30	30
5	127	G 4	25	180	184	92.1	152.4	16.7	M 16×55	5/8×2 1/4	Standard	3.45	PAFSF118G4	30	30
5	127	G 5	25	180	184	92.1	152.4	16.7	M 16×55	5/8×2 1/4	OR145.6X3.53X	3.15	PAFSF118G	30	30

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1/2	13	G 3/8	16	46	58	18.2	40.5	8.9	M 08×30	5/16×1 1/4	Standard	0.25	PAFSF401G38	40	40
1/2	13	G 1/2	16	46	58	18.2	40.5	8.9	M 08×30	5/16×1 1/4	OR25.07X2.62X	0.20	PAFSF401G	40	40
3/4	19	G 1/2	19	53	71	23.8	50.8	10.6	M 10×35	3/8×1 1/2	Standard	0.37	PAFSF402G12	40	40
3/4	19	G 3/4	19	60	71	23.8	50.8	10.6	M 10×35	3/8×1 1/2	OR32.92X3.53X	0.36	PAFSF402G	40	40
1	25	G 3/4	24	66	80	27.8	57.2	13.3***	M 12×45	7/16×1 1/2	Standard	0.64	PAFSF403G34	40	40
1	25	G 1	24	66	80	27.8	57.2	13.3***	M 12×45	7/16×1 1/2	OR37.7X3.53X	0.60	PAFSF403G	40	40
1 1/4	32	G 1	27	77	94	31.8	66.6	15.0**	M 14×50	1/2×1 3/4	Standard	0.88	PAFSF404G1	40	40
1 1/4	32	G 1	27	77	94	31.8	66.6	13.3	M 12×50	–	Standard	0.88	PAFSF404/12G1	40	40
1 1/4	32	G 1 1/4	27	77	94	31.8	66.6	15.0**	M 14×50	1/2×1 3/4	OR44.45X3.53X	0.87	PAFSF404G	40	40
1 1/4	32	G 1 1/4	27	77	94	31.8	66.6	13.3	M 12×50	–	OR44.45X3.53X	0.87	PAFSF404/12G	40	40
1 1/2	38	G 1 1/4	30	89	103	36.5	79.3	16.7	M 16×55	5/8×2 1/4	Standard	1.14	PAFSF405G114	40	40
1 1/2	38	G 1 1/2	30	89	103	36.5	79.3	16.7	M 16×55	5/8×2 1/4	OR52.39X3.53X	1.01	PAFSF405G	40	40
2	51	G 1 1/2	35	123	135	44.5	96.8	20.6	M 20×70	3/4×2 3/4	Standard	2.94	PAFSF406G112	40	40
2	51	G 2	35	123	135	44.5	96.8	20.6	M 20×70	3/4×2 3/4	OR65.09X3.53X	2.84	PAFSF406G	40	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	–	VIT

** DB = 13.3 for UNC bolts

*** = 12 for UNC bolts

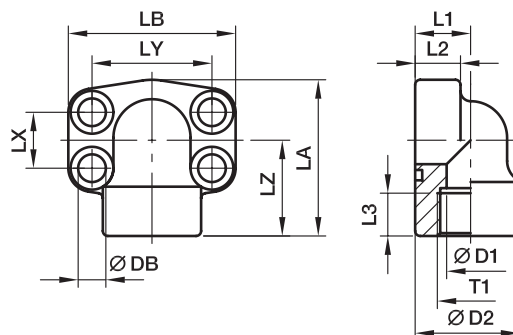
¹⁾ Pressure shown = Item deliverable

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

Stainless steel parts may have dimensional deviations. Additional information on request.

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

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



3000 PSI Series

Nom. flange size														Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)	T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)			S	SS
1/2	13	G 1/2	13	34.0	18	16	16	59	57	17.5	38.1	36	8.9	M 08×30	5/16×1 1/4	0.33	PEFF32G	348	348
3/4	19	G 3/4	19	38.5	22	18	19	63	68	22.3	47.6	38	10.6	M 10×35	3/8×1 1/2	0.52	PEFF33G	348	348
1	25	G 1	25	44.5	28	19	19	68	72	26.2	52.4	41	10.6	M 10×35	3/8×1 1/2	0.64	PEFF34G	348	348
1 1/4	32	G 1 1/4	31	53.5	30	22	22	84	81	30.2	58.7	50	10.6***	M 10×35	7/16×1 1/2	0.99	PEFF35G	278	278
1 1/2	38	G 1 1/2	38	62.5	36	25	24	97	93	35.7	69.9	58	13.3	M 12×45	1/2×1 3/4	1.42	PEFF36G	210	210
2	51	G 2	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M 12×45	1/2×1 3/4	2.00	PEFF38G	210	210
2 1/2	64	G 2 1/2	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M 12×45	1/2×1 3/4	2.90	PEFF310G	175	175

6000 PSI Series

1/2	13	G 1/2	13	34.0	18	16	16	59	57	18.2	40.5	36	8.9	M 08×30	5/16×1 1/4	0.33	PEFF62G	420	420
3/4	19	G 3/4	19	44.5	28	20	22	68	72	23.8	50.8	41	10.6	M 10×35	3/8×1 1/2	0.80	PEFF63G	420	420
1	25	G 1	25	53.5	30	24	24	84	82	27.8	57.2	50	13.3***	M 12×45	7/16×1 1/2	1.16	PEFF64G	420	420
1 1/4	32	G 1 1/4	31	62.5	36	25	25	97	97	31.8	66.6	58	15.0**	M 14×50	1/2×1 3/4	1.66	PEFF65G	420	420
1 1/4	32	G 1 1/4	31	62.5	36	25	25	97	97	31.8	66.6	58	13.3	M 12×50	–	1.66	PEFF65/12G	420	420
1 1/2	38	G 1 1/2	38	62.0	41	26	23	109	109	36.5	79.3	65	16.7	M 16×55	5/8×2 1/4	2.24	PEFF66G	420	420
2	51	G 2	50	87.0	45	35	34	133	133	44.5	96.8	75	20.6	M 20×70	3/4×2 3/4	3.85	PEFF68G	420	420

**DB = 13.3 for UNC Bolts

***DB = 12 for UNC Bolts

¹⁾ Pressure shown = Item deliverable

PN (bar)
10 = PN (MPa)

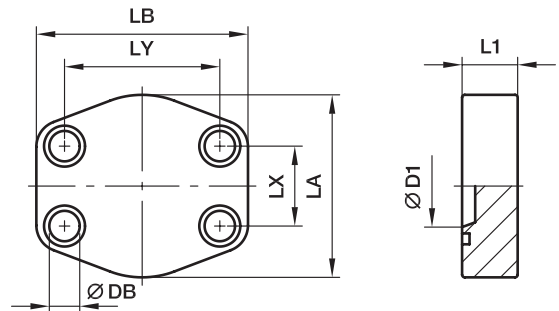
Stainless steel parts may have dimensional deviations. Additional information on request.

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	-	VIT

PCFF – SAE Closed flange

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



3000 PSI Series

Nom. flange size		D1	L1	LA	LB	LX	LY	DB	Bolts		Weight (steel) kg/piece	Order code	PN (bar) ¹⁾	
SAE (in.)	ISO (DN)								(metr.)	(unc.)			S	SS
1/2	13	13	16	47	58	17.5	38.1	8.9	M 08×30	5/16×1 1/4	0.25	PCFF32	345	345
3/4	19	16	18	49	66	22.3	47.6	10.6	M 10×35	3/8×1 1/2	0.36	PCFF33	345	345
1	25	25	19	53	71	26.2	52.4	10.6	M 10×35	3/8×1 1/2	0.43	PCFF34	345	345
1 1/4	32	25	21	69	80	30.2	58.7	10.6***	M 10×40	7/16×1 1/2	0.71	PCFF35	276	276
1 1/2	38	34	25	77	95	35.7	69.9	13.3	M 12×45	1/2×1 3/4	1.11	PCFF36	207	207
2	51	43	25	89	103	42.9	77.8	13.3	M 12×45	1/2×1 3/4	1.38	PCFF38	207	207
2 1/2	64	61	25	101	116	50.8	88.9	13.3	M 12×45	1/2×1 3/4	1.77	PCFF310	172	172
3	76	60	27	124	136	61.9	106.4	16.7	M 16×55	5/8×2 1/4	2.72	PCFF312	138	138
3 1/2	89	73	27	136	152	69.9	120.7	16.7	M 16×55	5/8×2 1/4	3.77	PCFF314	34	34
4	102	87	27	146	162	77.8	130.2	16.7	M 16×55	5/8×2 1/4	4.20	PCFF316	34	34
5	127	127	25	180	184	92.1	152.4	16.7	M 16×55	5/8×2 1/4	6.42	PCFF320	34	34

6000 PSI Series

1/2	13	13	16	47	58	18.2	40.5	8.9	M 08×30	5/16×1 1/4	0.25	PCFF62	420	420
3/4	19	20	19	53	71	23.8	50.8	10.6	M 10×35	3/8×1 1/2	0.46	PCFF63	420	420
1	25	25	24	66	80	27.8	57.2	13.3***	M 12×45	7/16×1 1/2	0.78	PCFF64	420	420
1 1/4	32	25	27	77	94	31.8	66.6	15.0**	M 14×50	1/2×1 3/4	1.17	PCFF65	420	420
1 1/4	32	25	27	77	94	31.8	66.6	13.3	M 12×50	–	1.17	PCFF65/12	420	420
1 1/2	38	34	30	89	107	36.5	79.3	16.7	M 16×55	5/8×2 1/4	1.62	PCFF66	420	420
2	51	46	37	116	135	44.5	96.8	20.6	M 20×70	3/4×2 3/4	3.40	PCFF68	420	420
2 1/2	64	56	45	150	166	58.7	123.8	25.0	M 24×90	–	6.77	PCFF610	420	420
3	76	81	55	178	208	71.4	152.4	32.0	M 30×110	–	12.36	PCFF612	420	420

** DB = 13.3 for UNC Bolts

***DB = 12 for UNC Bolts

¹⁾ Pressure shown = Item deliverable

PN (bar)
10 = PN (MPa)

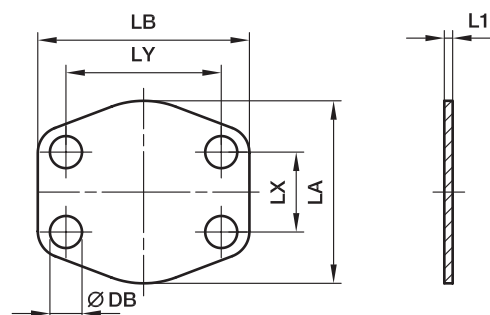
Stainless steel parts may have dimensional deviations. Additional information on request.

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	–	VIT

AP – SAE Flange locking plate

ISO 6162-1/-2



3000 PSI Series

Nom. flange size		L1	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code	PN (bar)	
SAE (in.)	ISO (DN)									CF	SS
1/2	13	3	47	57	17.5	38.1	9.0	0.05	8AP1	–	–
3/4	19	3	49	66	22.3	47.6	11.0	0.06	12AP1	–	–
1	25	3	59	71	26.2	52.4	11.0	0.07	16AP1	–	–
1 1/4	32	3	69	80	30.2	58.7	11.5	0.10	20AP1	–	–
1 1/2	38	3	77	95	35.7	69.9	13.5	0.15	24AP1	–	–
2	51	3	97	103	42.9	77.8	13.5	0.19	32AP1	–	–
2 1/2	64	3	109	116	50.8	89.9	13.5	0.22	40AP1	–	–
3	76	4	131	136	61.9	106.4	17.0	0.40	48AP1	–	–
3 1/2	89	4	136	152	69.9	102.7	17.0	0.53	56AP1	–	–
4	102	4	146	162	77.8	130.2	17.0	0.61	64AP1	–	–
5	127	4	181	184	92.1	152.4	17.0	0.86	80AP1	–	–

6000 PSI Series

1/2	13	4	48	57	18.2	40.5	9.0	0.02	8AP2	–	–
3/4	19	4	60	71	23.8	50.8	11.0	0.10	12AP2	–	–
1	25	4	70	81	27.8	57.2	13.0	0.12	16AP2	–	–
1 1/4	32	4	78	95	31.8	66.6	15.0	0.17	20AP2	–	–
1 1/2	38	4	95	113	36.5	79.4	17.0	0.22	24AP2	–	–
2	51	4	117	135	44.5	96.8	21.0	0.36	32AP2	–	–
2 1/2	64	4	150	176	58.7	123.8	25.0	0.58	40AP2	–	–
3	76	4	178	210	71.4	152.4	32.0	0.86	48AP2	–	–

This flange locking plate is not used under pressure.

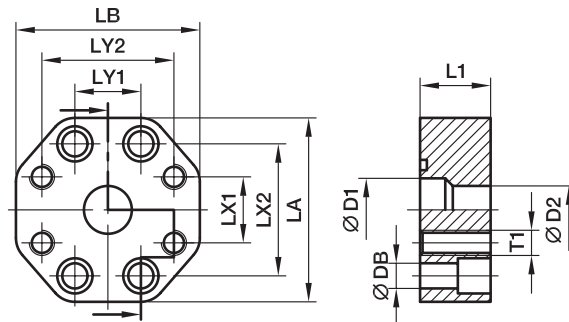
Stainless steel parts may have dimensional deviations. Additional information on request.

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



3000 PSI Series

Nom. flange size		D1	D2	L1	LA	LB	LX1	LX2	LY1	LY2	DB	Bolts (metr.)	T1	Weight (steel) kg/piece	Order code	PN (bar) ¹⁾ S
SAE (in.)	ISO (DN)															
1×1	25/25	25	25	28	73	73	26.2	52.4	26.2	52.4	10.6	M 10×30	M10	0.75	PRF102/102	210
1×3/4	25/19	25	19	28	73	73	22.3	52.4	26.2	47.6	10.6	M 10×30	M10	0.76	PRF102/100	210
1 1/4×1 1/4	32/32	30	30	28	80	80	30.2	58.7	30.2	58.7	10.6	M 10×30	M10	0.83	PRF104/104	210
1 1/4×1	32/25	30	25	28	80	71	26.2	58.7	30.2	52.4	10.6	M 10×30	M10	0.95	PRF104/102	210
1 1/2×1 1/2	38/38	38	38	32	94	94	35.7	69.9	35.7	69.9	13.3	M 12×35	M12	1.20	PRF106/106	210
1 1/2×1 1/4	38/32	38	30	32	94	80	30.2	69.9	35.7	58.7	13.3	M 12×35	M10	1.36	PRF106/104	210
2×2	51/51	50	50	33	103	103	42.9	77.8	42.9	77.8	13.3	M 12×35	M12	1.56	PRF108/108	210
2×1 1/2	51/38	50	38	33	103	94	35.7	77.8	42.9	70.0	13.3	M 12×35	M12	1.69	PRF108/106	210
2 1/2×2 1/2	64/64	63	63	33	115	115	50.8	88.9	50.8	88.9	13.3	M 12×35	M12	2.05	PRF110/110	175
2 1/2×2	64/51	63	50	33	115	103	42.9	88.9	50.8	77.8	13.3	M 12×35	M12	2.04	PRF110/108	175
3×3	76/76	73	73	36	135	135	61.9	106.4	61.9	106.4	16.7	M 16×40	M16	2.61	PRF112/112	138
3×2 1/2	76/64	73	63	36	135	115	50.8	106.4	61.9	89.0	16.7	M 16×40	M12	2.61	PRF112/110	138

6000 PSI Series

3/4×3/4	19/19	19	19	28	73	73	23.8	50.8	23.8	50.8	10.6	M 10×30	M10	0.80	PRF402/402	420
1×1	25/25	25	25	33	80	80	27.8	57.2	27.8	57.2	13.3	M 12×35	M12	1.03	PRF403/403	420
1×3/4	25/19	25	19	33	80	71	23.8	57.2	27.8	50.8	13.3	M 12×35	M10	0.98	PRF403/402	420
1 1/4×1 1/4	32/32	30	30	33	94	94	31.8	66.6	31.8	66.6	15.0	M 14×35	M14	1.47	PRF404/404	420
1 1/4×1 1/4	32/32	30	30	33	94	94	31.8	66.6	31.8	66.6	13.3	M 12×32	M12	1.47	PRF404/12/404/12	420
1 1/4×1	32/25	30	25	33	94	80	27.8	66.6	31.8	57.2	15.0	M 14×35	M12	1.26	PRF404/403	420
1 1/4×1	32/25	30	25	33	94	80	27.8	66.6	31.8	57.2	13.3	M 12×35	M12	1.26	PRF404/12/403	420
1 1/2×1 1/2	38/38	38	38	48	106	106	36.5	79.3	36.5	79.3	16.7	M 16×50	M16	1.72	PRF405/405	420
1 1/2×1 1/4	38/32	38	30	48	106	94	31.8	79.3	36.5	66.6	16.7	M 16×50	M14	2.32	PRF405/404	420
1 1/2×1 1/4	38/32	38	30	48	106	94	31.8	79.3	36.5	66.6	16.7	M 16×50	M12	2.32	PRF405/404/12	420
2×2	51/51	50	50	48	135	135	44.5	96.8	44.5	96.8	20.6	M 20×55	M20	4.20	PRF406/406	420
2×1 1/2	51/38	50	38	48	135	106	36.5	96.8	44.5	79.3	20.6	M 20×55	M16	3.35	PRF406/405	420
2 1/2×2	64/64	63	63	53	166	166	50.8	123.8	50.8	123.8	25.0	M 24×60	M24	6.40	PRF408/408	420
3×2	76/51	73	50	58	208	178	44.5	152.4	71.4	96.8	31.0	M 30×70	M30	10.40	PRF410/406	420

¹⁾ Pressure shown = Item deliverable

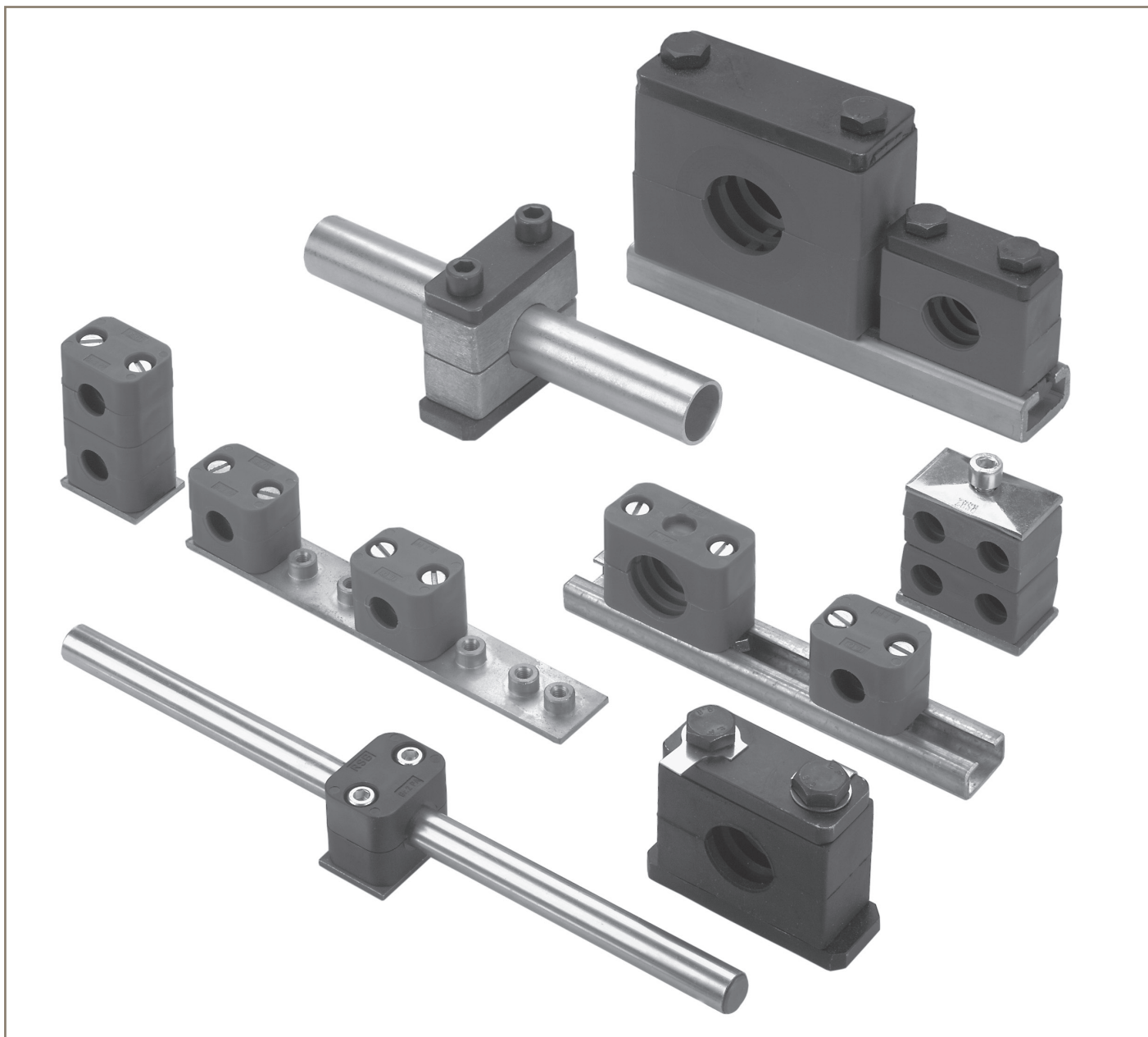
PN (bar)
10 = PN (MPa)

Stainless steel parts may have dimensional deviations. Additional information on request.

Please change suffixes according to material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PRF102/102S	only flange
Stainless steel	SS	PRF102/102SS	only flange

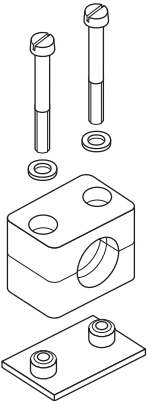
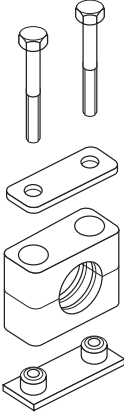
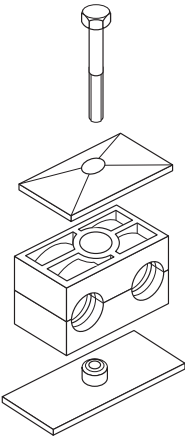
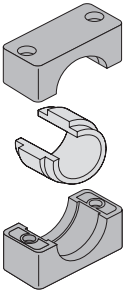




Tube clamps

This chapter contains only a small selection.
An extended part range and more details can be found in chapter T of the catalogue 4100.

Programme overview

Tube clamps series A	 Page 212 - 221	Tube clamps series C	 Page 227- 237
Tube clamps series B	 Page 222 - 226	Tube clamps series C with absorbing noise insert	 Page 238-240

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.

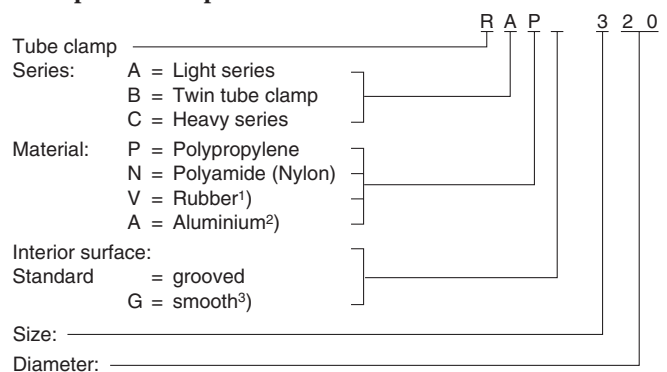
Resistance to stress:

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

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

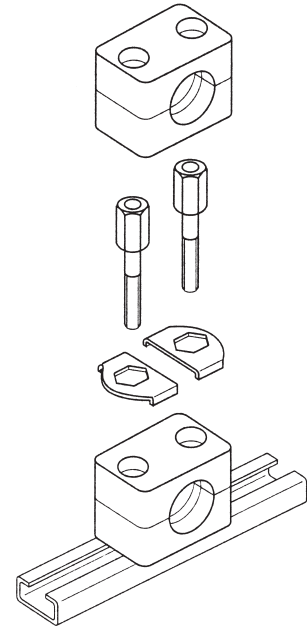
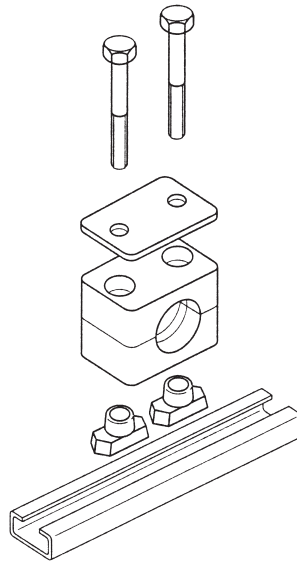
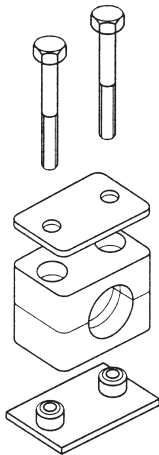
The outlined particulars are approximate values and are only shown for reference, which are not binding, and with regard to possible protection of third parties. They do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in 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 series A (Light construction series) – Components

DIN 3015, part 1

Order code for clamp halves:

Polypropylene – **RAP**

Inside smooth – **RAPG**

Polyamide 6 – **RAN**

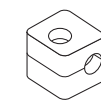
Inside smooth – **RANG**

Rubber – **RAVG**

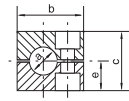
Aluminium – **RAA¹⁾**

(Please exchange as required standard abbreviation

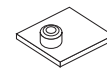
RAP in column for “clamp halves”)



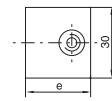
size 0



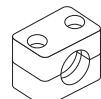
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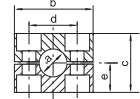
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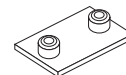
size 0



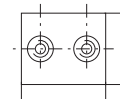
size 1-6



size 1-6
Width: 30 mm



size 1-6



size 1-6
Thickness:
3 mm

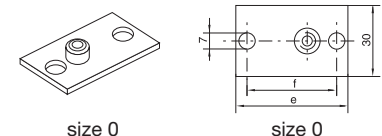
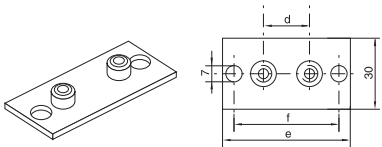
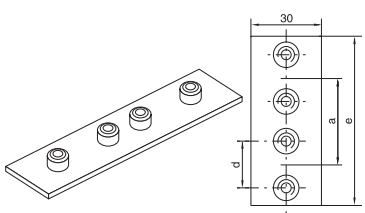
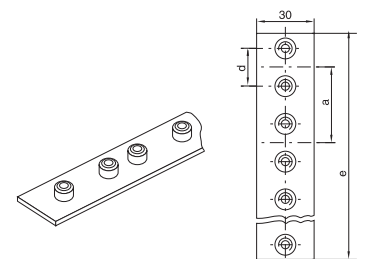
clamp size	Tube O.D. mm a	Tube NB	Tube O.D.	1 part 2 clamp halves				welding plate, short			
				RAP... Order code	dimensions: b c d e				APK A... Order code	dimensions: d e	
0	6.0	G 1/8	1/4 5/16 3/8	RAP006X	28	27	–	13.5	APKA0X	30	
	6.4			RAP006.4X							
	8.0			RAP008X							
	9.5			RAP009.5X							
	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							
18.0	RAP218X										
3	19.0	G 1/2	3/4	RAP319X	48	35	33	17.5	APKA3X	33 50	
	20.0			RAP320X							
	21.3			RAP321.3X							
	22.0		1	RAP322X							
	23.0			RAP323X							
	25.0			RAP325X							
4	26.9	G 3/4		RAP426.9X	57	42	40	21	APKA4X	40 59	
	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

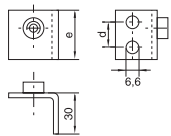
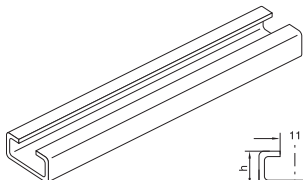
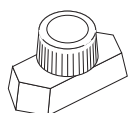
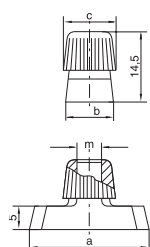
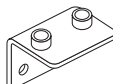
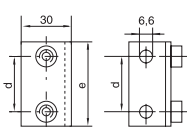
 size 0			 size 1-6 Thickness: 3 mm			 Thickness: 3 mm			 Thickness: 3 mm		
weld/screw plate, long			twin welding plate			multiple weld plate					
APL A...	dimensions:			APD A...	dimensions:			APR A...	dimensions:		
Order code	d	e	f	Order code	d	a	e	Order code	d	a	e
APLA0X	58	44		APDA0X	30	61		APRA0X (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

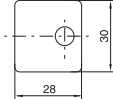
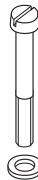
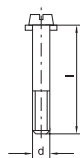
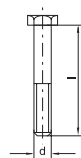
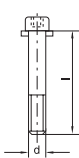
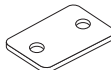
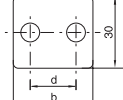
DIN 3015, part 1

	 size 0			 size 0			 1 or 2 mtr			 		
	 size 1-6			 size 1-6 Thickness: 3mm								
clamp size	weld plate, angled			mounting rail			rail nut					
	APW A... Order code	dimensions: d e		TS...A/B Order code	dimensions: h		TM...A/B1 Order code	dimensions: 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

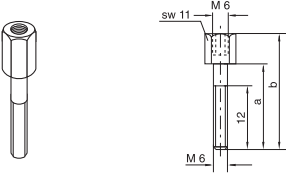
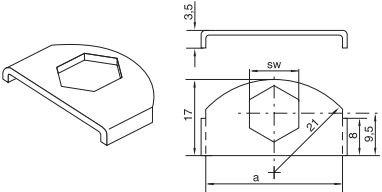
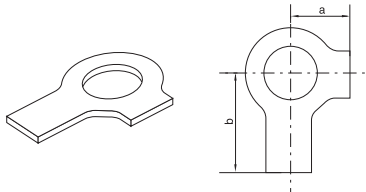
DIN 3015, part 1

	 size 0		 size 0		  DIN 84		  DIN 931/933		  DIN912	
	 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	SSLA0X	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.

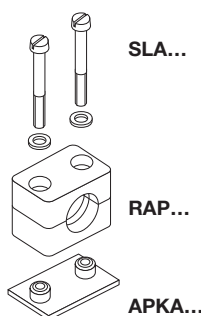
²⁾ When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

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

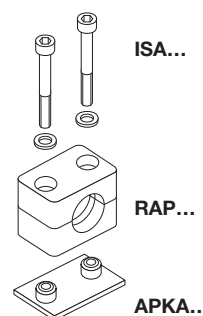
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

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

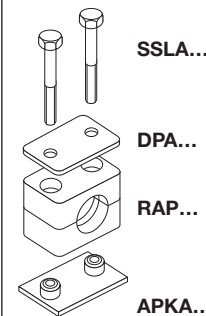
2 clamp halves, weld plate **short**, slot head bolts and bushes



2 clamp halves, weld plate **short**, socket head bolts and bushes



2 clamp halves, weld plate **short**, cover plate 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	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			RAP1-657	RAP2-657	RAP3-657
			2 1/4			

Delivery in unassembled individual components.

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

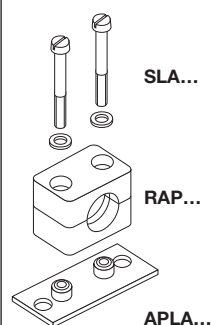
* Only with cover plate, hexagon screws and locking washers.

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

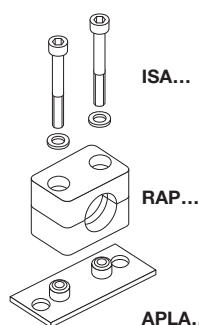
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

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

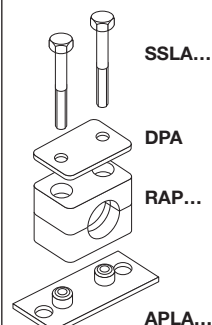
2 clamp halves, weld/
screw plate, slot head
bolts and bushes



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		1 1/2	RAP4-538	RAP5-538	RAP6-538
	40.0	G 1 1/4		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.

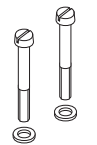
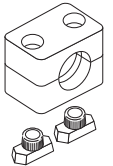
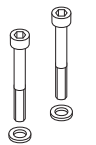
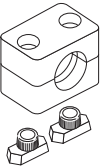
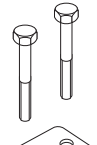
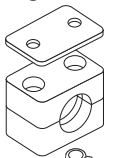
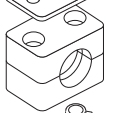
¹⁾ Contrary to the illustration size 0 clamps are secured by only one screw.

* 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	G 3/8	5/8	RAP9-215	RAP10-215	RAP12-215
	16.0			RAP9-216	RAP10-216	RAP12-216
	17.2			RAP9-217.2	RAP10-217.2	RAP12-217.2
3	18.0	G 1/2	3/4 1	RAP9-218	RAP10-218	RAP12-218
	19.0			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			RAP9-322	RAP10-322	RAP12-322
	23.0			RAP9-323	RAP10-323	RAP12-323
4	25.0			RAP9-325	RAP10-325	RAP12-325
	26.9	G 3/4		RAP9-426.9	RAP10-426.9	RAP12-426.9
	28.0			RAP9-428	RAP10-428	RAP12-428
5	30.0			RAP9-430	RAP10-430	RAP12-430
	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	G 1 1/4	1 1/2	RAP9-538	RAP10-538	RAP12-538
	40.0			RAP9-540	RAP10-540	RAP12-540
6	42.0			RAP9-542	RAP10-542	RAP12-542
	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			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.

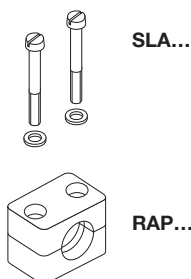
Tube clamps

Tube clamps series A – Complete range

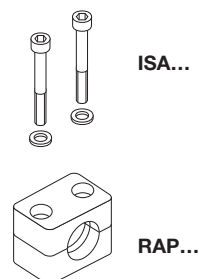
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(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			RAP13-215	RAP14-215
	16.0	G 3/8	5/8	RAP13-216	RAP14-216
	17.2			RAP13-217.2	RAP14-217.2
	18.0			RAP13-218	RAP14-218
3	19.0	G 1/2	3/4 1	RAP13-319	RAP14-319
	20.0			RAP13-320	RAP14-320
	21.3			RAP13-321.3	RAP14-321.3
	22.0			RAP13-322	RAP14-322
	23.0			RAP13-323	RAP14-323
	25.0			RAP13-325	RAP14-325
4	26.9	G 3/4		RAP13-426.9	RAP14-426.9
	28.0			RAP13-428	RAP14-428
	30.0			RAP13-430	RAP14-430
5	32.0	G 1	1 1/4	RAP13-532	RAP14-532
	33.7			RAP13-533.7	RAP14-533.7
	35.0			RAP13-535	RAP14-535
	38.0			RAP13-538	RAP14-538
	40.0	G 1 1/4	1 1/2	RAP13-540	RAP14-540
	42.0			RAP13-542	RAP14-542
6	44.5	G 1 1/2	1 3/4	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		2	RAP13-650.8	RAP14-650.8
	52.0			RAP13-652	RAP14-652
	55.0			RAP13-655	RAP14-655
	57.0			RAP13-657	RAP14-657
			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.

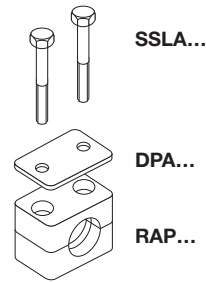


Tube clamps series A – Complete range

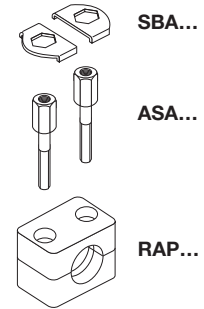
Polypropylene – **RAP**
 Inside smooth – **RAPG**
 Polyamide 6 – **RAN**
 Inside smooth – **RANG**
 Rubber – **RAVG***
 Aluminium – **RAA**

(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	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		2	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

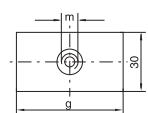
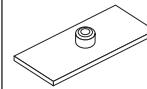
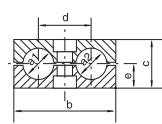
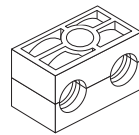
Tube clamps series B (Twin-tube clamps) – Components

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

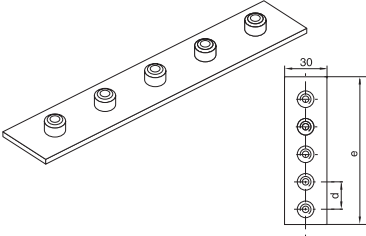
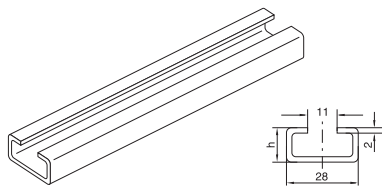
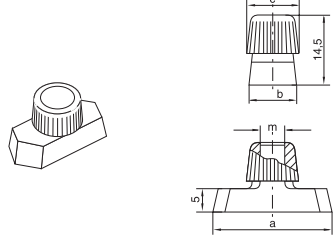
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves ¹⁾					weld plate	
				RBP... Order code	dimensions: b c d e				APB... Order code	dimensions: g m
1	6.0	G 1/8	1/4 5/16 3/8	RBP106X RBP106.4X RBP108X RBP109.5X RBP110X RBP112X	36	27	20	13.5	APB1X	37 M 6 Thickness: 3 mm
	6.4									
	8.0									
	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

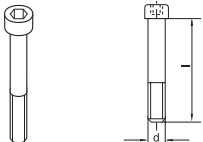
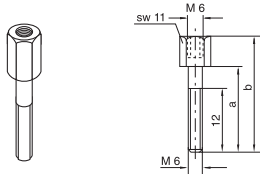
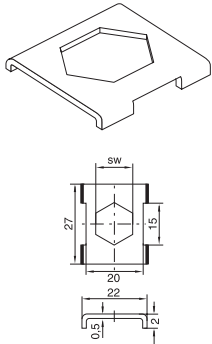
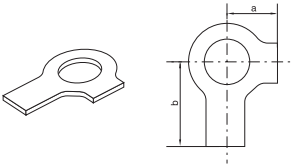
DIN 3015, part 3

				
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!

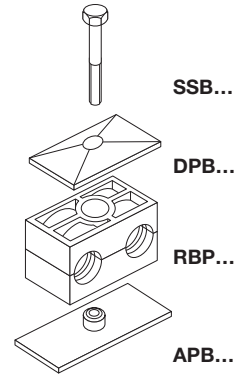
²⁾ When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series B – Complete range

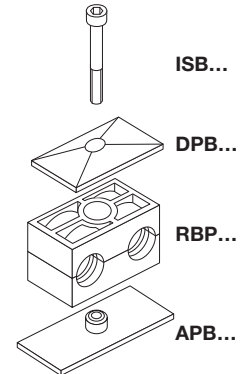
Polypropylene – **RBP**
 Inside smooth – **RBP**
 Polyamide 6 – **RBN**
 Rubber – **RBVG***

(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 ¹ / ₈	1/4 5/16 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 ¹ / ₄	1/2	RBP1-212.7	RBP3-212.7
	13.5			RBP1-213.5	RBP3-213.5
	14.0			RBP1-214	RBP3-214
	15.0	G ³ / ₈	5/8	RBP1-215	RBP3-215
	16.0			RBP1-216	RBP3-216
	17.2			RBP1-217.2	RBP3-217.2
3	18.0	G ¹ / ₂	3/4 1	RBP1-218	RBP3-218
	19.0			RBP1-319	RBP3-319
	20.0			RBP1-320	RBP3-320
	21.3			RBP1-321.3	RBP3-321.3
	22.0			RBP1-322	RBP3-322
4	25.0	G ³ / ₄		RBP1-325	RBP3-325
	26.9			RBP1-426.9	RBP3-426.9
	28.0			RBP1-428	RBP3-428
5	30.0	G1 G ¹ / ₄	1 1/4 1 1/2	RBP1-430	RBP3-430
	32.0			RBP1-532	RBP3-532
	33.7			RBP1-533.7	RBP3-533.7
	35.0			RBP1-535	RBP3-535
	38.0			RBP1-538	RBP3-538
	42.0			RBP1-542	RBP3-542

Delivery in unassembled individual components.

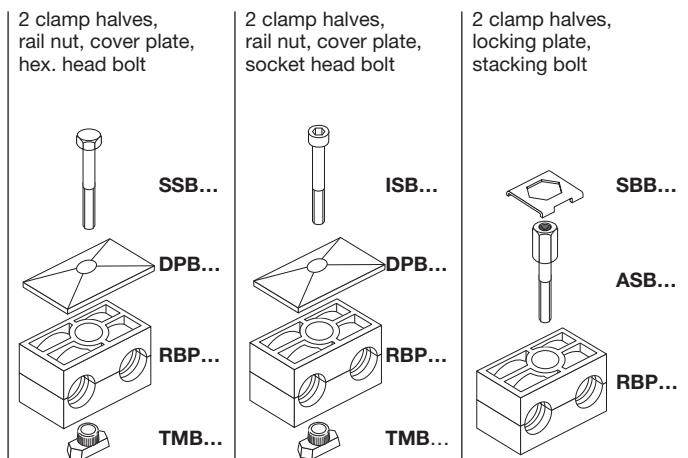
*Only with cover plate, hexagon screws and locking washers.

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”)



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	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	G 3/8	5/8	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
18.0			RBP4-218	RBP5-218	RBP8-218	
3	19.0	G 1/2	3/4	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		1	RBP4-322	RBP5-322	RBP8-322
	25.0			RBP4-325	RBP5-325	RBP8-325
4	26.9	G 3/4		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.

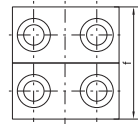
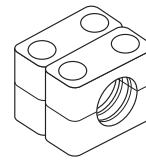
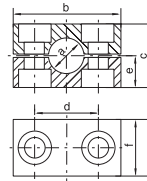
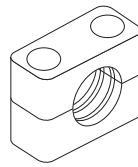
Tube clamps series C (Heavy series) – Components

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 RCP... Order code						1 part 4 clamp halves RCPD... Order code					
				dimensions: b c d e f						dimensions: b c d e f					
1	6.0	G 1/8	5/16	RCP106X	55	32	33	16	30	RCPD106	55	32	33	16	60
	8.0			RCP108X						RCPD108					
	10.0			RCP110X						RCPD110					
	12.0			RCP112X						RCPD112					
	12.7	G 1/4	1/2	RCP112.7X						RCPD112.7					
	13.5			RCP113.5X						RCPD113.5					
	14.0			RCP114X						RCPD114					
	15.0			RCP115X						RCPD115					
	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
	20.0			RCP220X						RCPD220					
	21.3			RCP221.3X						RCPD221.3					
	22.0			RCP222X						RCPD222					
	23.0	G 3/4	1	RCP223X						RCPD223					
	25.0			RCP225X						RCPD225					
	26.9			RCP226.9X						RCPD226.9					
	28.0			RCP228X						RCPD228					
	30.0			RCP230X						RCPD230					
3	30.0	G 1	1 1/4	RCP330X	85	60	60	30	30	RCPD330	85	60	60	30	60
	32.0			RCP332X						RCPD332					
	33.7			RCP333.7X						RCPD333.7					
	35.0			RCP335X						RCPD335					
	38.0	G 1 1/4	1 1/2	RCP338X						RCPD338					
	39.0			RCP339X						RCPD339					
	40.0			RCP340X						RCPD340					
	42.0			RCP342X						RCPD342					
4	38.0	G 1 1/4	1 1/2	RCP438X	115	90	90	45	45	RCPD428	115	90	90	45	90
	40.0			RCP440X						RCPD440					
	42.0			RCP442X						RCPD442					
	45.0			RCP445X						RCPD445					
	46.0	G 1 1/2	2	RCP446X						RCPD446					
	48.3			RCP448.3X						RCPD448.3					
	50.0			RCP450X						RCPD450					
	51.0			RCP451X						RCPD451					
	52.0	G 2	2 1/4	RCP452X						RCPD452					
	55.0			RCP455X						RCPD455					
	56.0			RCP456X						RCPD456					
	57.0			RCP457X						RCPD457					
	60.3			RCP460.3X						RCPD460.3					
	63.0			RCP463X						RCPD463					
	65.0		2 1/2	RCP465X						RCPD465					
	66.0			RCP466X						RCPD466					
	70.0			RCP470X						RCPD470					

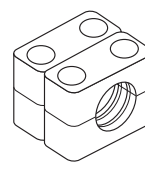
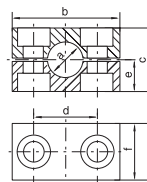
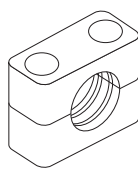
Continuation see next page ...

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

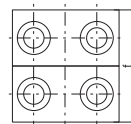
Order code for clamp halves:

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...)



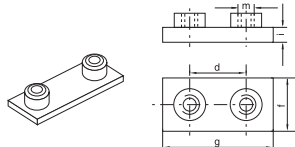
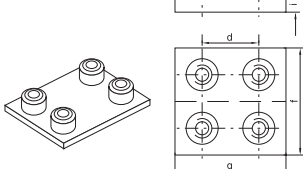
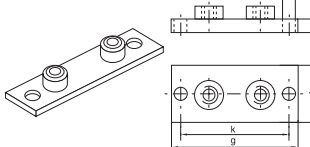
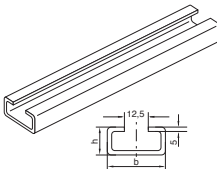
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves						1 part 4 clamp halves					
				RCP... Order code	dimensions:					RCPD... Order code	dimensions:				
					b	c	d	e	f		b	c	d	e	f
5	70.0	G 2½	3	RCP570X	152	120	122	60	60	RCPD570	152	120	122	60	120
	73.0			RCP573X						RCPD573					
	75.0			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					
	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					
	220.0			RCP8220X						RCPD8220					
	220.0			RCP8220X						RCPD8220					
9	219.1	G8		RCP9219.1X	466	410	395	205	160						
	244.5			RCP9244.5X											
	250.0			RCP9250X											
	273.0			RCP9273X											
	323.9			RCP9323.9X											
10	355.6	G10		RCP10355.6X	630	530	530	265	180						
	406.4	G12		RCP10406.4X											

Metal parts also available in stainless steel.

¹⁾ Only sizes 1–4

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

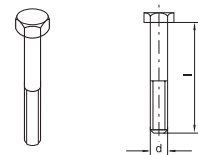
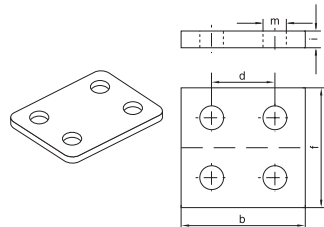
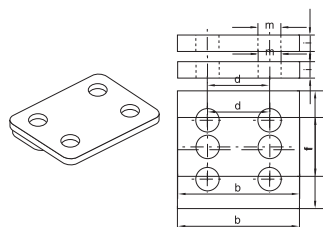
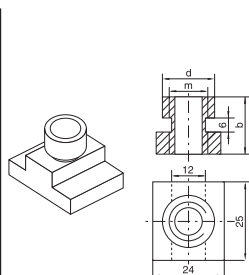
																					
clamp size	AP C...	weld plate dimensions:					APD C...	double weld plate dimensions:					APL C...	weld/screw plate dimensions:					mounting rail dim.:		
	Order code	d	f	g	i	m	Order code	d	f	g	i	m	Order code	g	f	i	k	n	TS C... Order code	b	h
1	APC1X	33	30	73	8	M10	APDC1X	33	60	73	8	M10	APLC1X	113	30	8	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			
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	TSC2X (2 Meter)		
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 240.

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2



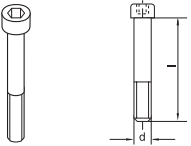
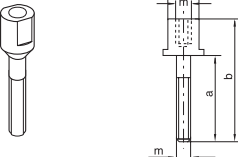
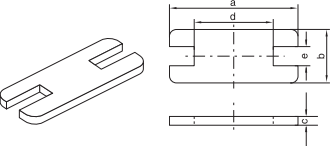
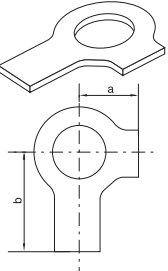
DIN 931/933

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.

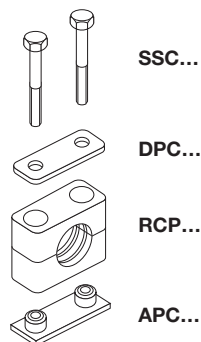
Tube clamps

Tube clamps series C – Complete range

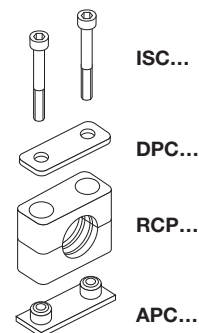
Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

(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	G 3/8	5/8	RCP1-116	RCP2-116
	17.2			RCP1-117.2	RCP2-117.2
2	18.0			RCP1-118	RCP2-118
	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
3	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
	40.0	G 1 1/4	1 1/2	RCP1-340	RCP2-340
	42.0			RCP1-342	RCP2-342
	42.0			RCP1-438	RCP2-438
4	40.0	G 1 1/4	1 1/2	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	G 2	2 1/4	RCP1-452	RCP2-452
	55.0			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			RCP1-465	RCP2-465
	70.0			RCP1-470	RCP2-470

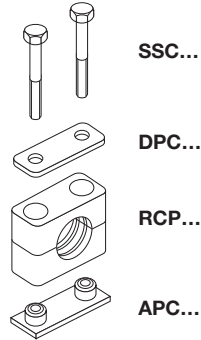
Continuation see next page ...

Tube clamps series C – Complete range (Continued)

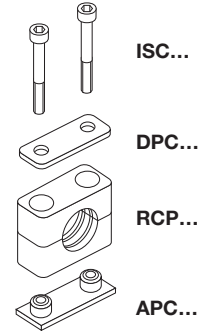
Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

(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	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).

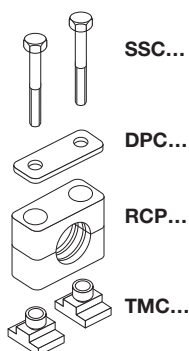
Tube clamps

Tube clamps series C – Complete range

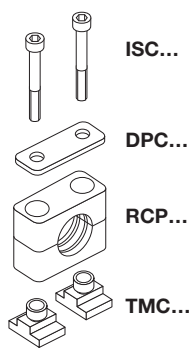
Polypropylene – **RCP**
 Inside smooth – **RCPG¹⁾**
 Polyamide 6 – **RCN**
 Rubber – **RCVR***
 Aluminium – **RCA**

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

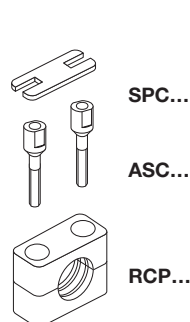
2 clamp halves,
 rail nuts, cover plate,
 hex. head bolts



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	G 3/8	5/8	RCP3-116	RCP4-116	RCP5-116
	17.2			RCP3-117.2	RCP4-117.2	RCP5-117.2
2	18.0			RCP3-118	RCP4-118	RCP5-118
	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
	30.0			RCP3-330	RCP4-330	RCP5-330
3	32.0	G 1	1 1/4	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			RCP3-338	RCP4-338	RCP5-338
	40.0	G 1 1/4	1 1/2	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

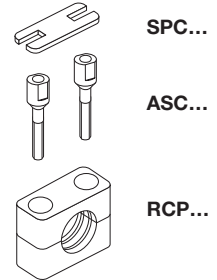
Continuation see next page ...

Tube clamps series C – Complete range (Continued)

Polypropylene – **RCP**
 Inside smooth – **RCPG**¹⁾
 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	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).

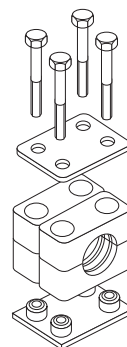
Tube clamps

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



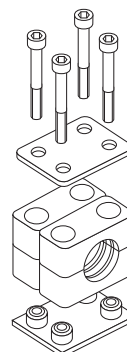
SSC...

DPDC...

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

APDC...

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



ISC...

DPDC...

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

APDC...

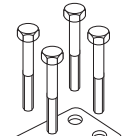
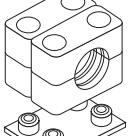
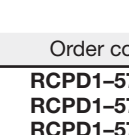
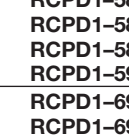
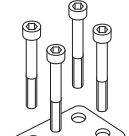
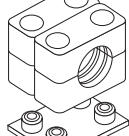
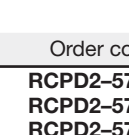
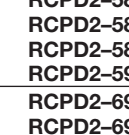
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6.0	G 1/8	5/16	RCPD1-106	RCPD2-106
	8.0			RCPD1-108	RCPD2-108
	10.0			RCPD1-110	RCPD2-110
	12.0			RCPD1-112	RCPD2-112
	12.7	G 1/4	1/2	RCPD1-112.7	RCPD2-112.7
	13.5			RCPD1-113.5	RCPD2-113.5
	14.0			RCPD1-114	RCPD2-114
	15.0			RCPD1-115	RCPD2-115
	16.0	G 3/8	5/8	RCPD1-116	RCPD2-116
	17.2			RCPD1-117.2	RCPD2-117.2
2	18.0			RCPD1-118	RCPD2-118
	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
3	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
	40.0	G 1 1/4	1 1/2	RCPD1-340	RCPD2-340
	42.0			RCPD1-342	RCPD2-342
	42.0			RCPD1-438	RCPD2-438
4	40.0	G 1 1/4	1 1/2	RCPD1-440	RCPD2-440
	42.0			RCPD1-442	RCPD2-442
	45.0			RCPD1-445	RCPD2-445
	48.3	G 1 1/2	2	RCPD1-448.3	RCPD2-448.3
	50.0			RCPD1-450	RCPD2-450
	51.0			RCPD1-451	RCPD2-451
	52.0	G 2	2 1/4	RCPD1-452	RCPD2-452
	55.0			RCPD1-455	RCPD2-455
	57.0			RCPD1-457	RCPD2-457
	60.3		2 1/2	RCPD1-460.3	RCPD2-460.3
	63.0			RCPD1-463	RCPD2-463
	65.0			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")

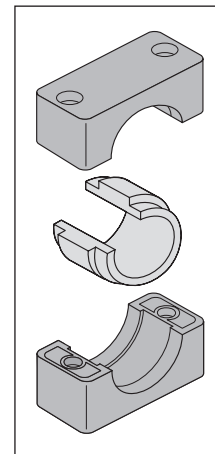
				4 clamp halves, double weld plate, double cover plate, hex. head bolts	4 clamp halves, double weld plate, double cover plate, socket head bolts
				 SSC...  DPDC...  RCPD... (=2XRCP...)  APDC...	 ISC...  DPDC...  RCPD... (=2XRCP...)  APDC...
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order 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 3½	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 4½ 5	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 5¼ 5½	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 6¼ 6½ 6⅝	RCPD1-7150	RCPD2-7150
	159.0			RCPD1-7152.4	RCPD2-7152.4
	165.1			RCPD1-7159	RCPD2-7159
8	168.3	G 6	6⅝ 7 7⅝ 8⅝	RCPD1-7165.1	RCPD2-7165.1
	177.8			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
		G 8	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 with Elastomer Inlay Serie A



Light Constr. Series

Order codes for clamp-halves:

Polypropylene – **RAPE**
Polyamide 6 – **RANE**

Elastomer Inlay

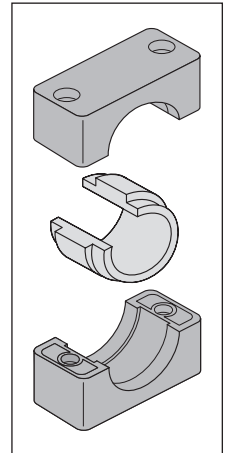
Order code: **EE-***

*complete with clamp size and outside tube diameter

Clamp size Serie A	Tube O.D. mm	Series A		Elastomer inlay
		Clamp body	Clamp body with elastomer inlay	
4	6.0	RAPE4X	RAPE406X	EE206/406X
	8.0		RAPE408X	EE208/408X
	10.0		RAPE410X	EE210/410X
	12.0		RAPE412X	EE212/412X
	12.7		RAPE412.7X	EE212.7/412.7X
	14.0		RAPE414X	EE214/414X
	15.0		RAPE415X	EE215/415X
	16.0		RAPE416X	EE216/416X
	17.2		RAPE417.2X	EE217.2/417.2X
	18.0		RAPE418X	EE218/418X
	19.0		RAPE419X	EE219/419X
5	20.0	RAPE5X	RAPE520X	EE520X
	22.0		RAPE522X	EE522X
	25.0		RAPE525X	EE525X
	28.0		RAPE528X	EE528X
	30.0		RAPE530X	EE530X
6	20.0	RAPE6X	RAPE620X	EE320/620X
	21.3		RAPE621.3X	EE321.3/621.3X
	22.0		RAPE622X	EE322/622X
	23.0		RAPE623X	EE323/623X
	25.0		RAPE625X	EE325/625X
	26.9		RAPE626.9X	EE326.9/626.9X
	28.0		RAPE628X	EE328/628X
	30.0		RAPE630X	EE330/630X
	32.0		RAPE632X	EE332/632X
6	35.0	RAPE6X	RAPE635X	EE635X
	38.0		RAPE638X	EE638X
	42.0		RAPE642X	EE642X
	45.0		RAPE645X	EE645X

Attention! For clamps with elastomer inlay, the relation of diameter and size is not identical with the profile design or smooth design.

Tube Clamps with Elastomer Inlay Serie C



Heavy Series

Order codes for clamp-halves:

Polypropylene – **RCPE**
Polyamide 6 – **RCNE**

Elastomer Inlay

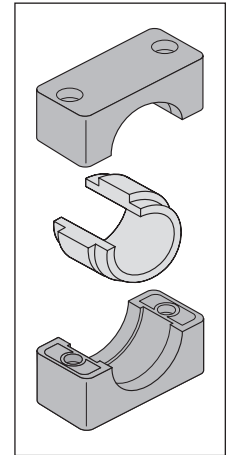
Order code: EE-*

*complete with clamp size and outside tube diameter

Clamp size Serie C	Tube O.D. mm	Series C		Elastomer inlay
		Clamp body	Clamp body with elastomer inlay	
2	6.0	RCPE2X	RCPE206X	EE206/406X
	8.0		RCPE208X	EE208/408X
	10.0		RCPE210X	EE210/410X
	12.0		RCPE212X	EE212/412X
	12.7		RCPE212.7X	EE212.7/412.7X
	14.0		RCPE214X	EE214/414X
	15.0		RCPE215X	EE215/415X
	16.0		RCPE216X	EE216/416X
	17.2		RCPE217.2X	EE217.2/417.2X
	18.0		RCPE218X	EE218/418X
	19.0		RCPE219X	EE219/419X
3	20.0	RCPE3X	RCPE320X	EE320/620X
	21.3		RCPE321.3X	EE321.3/621.3X
	22.0		RCPE322X	EE322/622X
	23.0		RCPE323X	EE323/623X
	25.0		RCPE325X	EE325/625X
	26.9		RCPE326.9X	EE326.9/626.9X
	28.0		RCPE328X	EE328/628X
	30.0		RCPE330X	EE330/630X
	32.0		RCPE332X	EE332/632X
4	32.0	RCPE4X	RCPE432X	EE432X
	33.7		RCPE433.7X	EE433.7X
	35.0		RCPE435X	EE435X
	38.0		RCPE438X	EE438X
	40.0		RCPE440X	EE440X
	42.0		RCPE442X	EE442X
	45.5		RCPE445.5X	EE445.5X
	48.0		RCPE448X	EE448X
	51.0		RCPE451X	EE451X
	53.4		RCPE453.4X	EE453.4X
	56.4		RCPE456.4X	EE456.4X
	60.3		RCPE460.3X	EE460.3X
5	57.0	RCPE5X	RCPE557X	EE557X
	60.3		RCPE560.3X	EE560.3X
	63.5		RCPE563.5X	EE563.5X
	65.0		RCPE565X	EE565X
	70.0		RCPE570X	EE570X
	73.0		RCPE573X	EE573X
	76.1		RCPE576.1X	EE576.1X

Attention! For clamps with elastomer inlay, the relation of diameter and size is not identical with the profile design or smooth design.

Tube Clamps with Elastomer Inlay Serie C



Heavy Series

Order codes for clamp-halves:

Polypropylene – **RCPE**
Polyamide 6 – **RCNE**

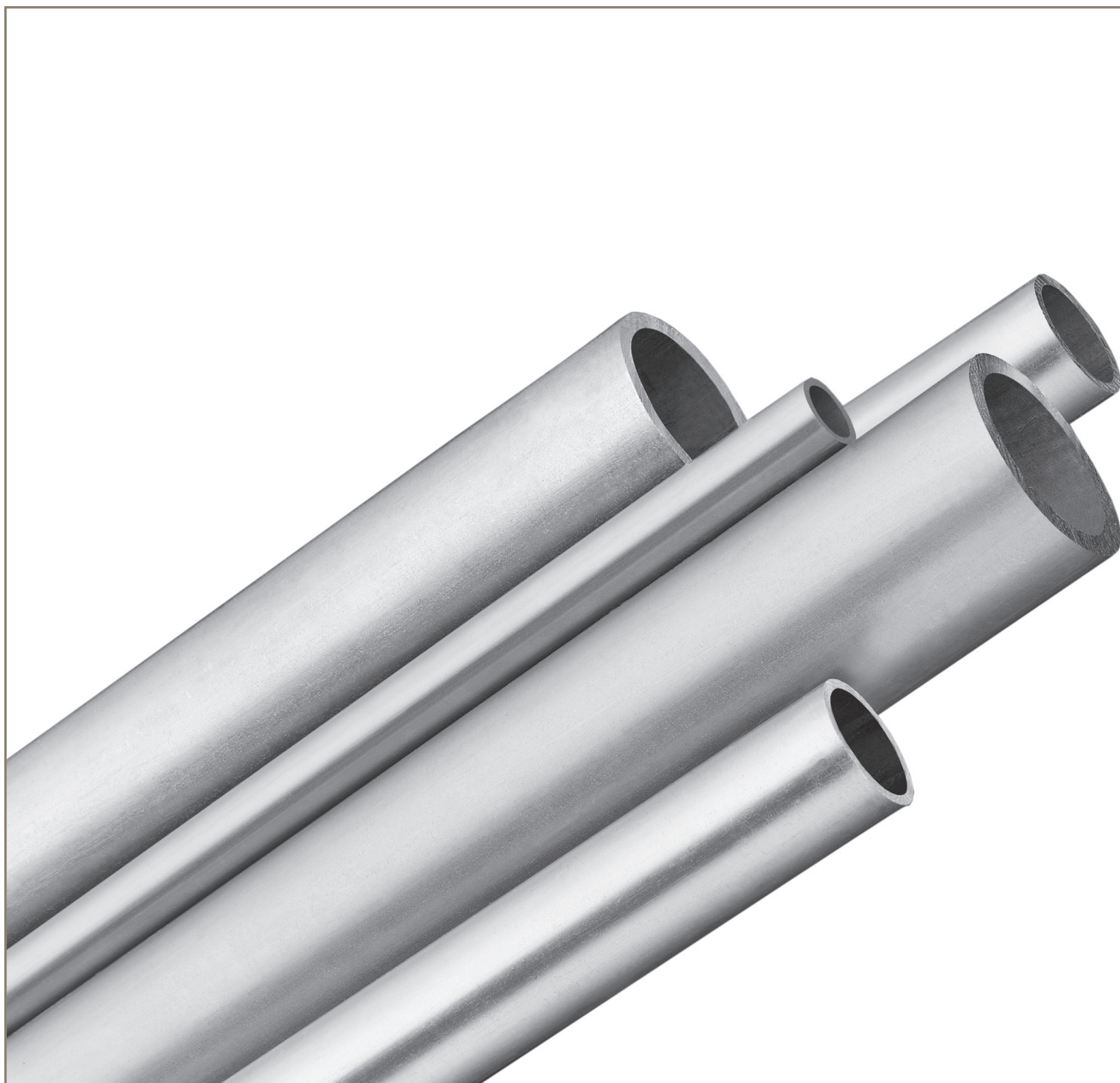
Elastomer Inlay

Order code: **EE-***

*complete with clamp size and outside tube diameter

Clamp size Serie C	Tube O.D. mm	Series C		Elastomer inlay
		Clamp body	Clamp body with elastomer inlay	
6	80.0	RCPE6X	RCPE680X	EE680X
	82.5		RCPE682.5X	EE682.5X
	88.9		RCPE688.9X	EE688.9X
	100.0		RCPE6100X	EE6100X
	101.6		RCPE6101.6X	EE6101.6X
7	101.6	RCPE7X	RCPE7101.6X	EE7101.6X
	108.0		RCPE7108X	EE7108X
	114.3		RCPE7114.3X	EE7114.3X
	127.0		RCPE7127X	EE7127X
	133.0		RCPE7133X	EE7133X

Attention! For clamps with elastomer inlay, the relation of diameter and size is not identical with the profile design or smooth design.



Pipes and tubes

This chapter contains only a small selection.
An extended part range and more details can be found in chapter S of the catalogue 4100.

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Tube and pipe specification

Recommended carbon steel tubes and pipes

Parker recommends the use of cold drawn seamless and regular annealed (abbreviation +N) hydraulic tubes and pipes acc.:

DIN-EN 10305 (old DIN 2391) and ISO 3304

For the assembly of steel fittings, steel tubes made of material E235 (ST37.4 +N) and E355 (ST52.4 +N) are recommended.

- | | |
|-----------------------------|--|
| + precision dimension/shape | + clean inside (no scale) |
| + high pressure capability | + 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:

DIN EN 10216-5, ASTM A269/A213, ASTM A312.

EO precision stainless steel tube meets and exceeds these standards. The tolerances of the pipe outer diameter and wall thickness are even closer to ensure a safe interplay with our fitting systems.

For the assembly of stainless steel tube fittings, EO precision stainless steel tubes made of material 316 Ti and 316L are recommended.

- | | |
|-----------------------------|-----------------------------|
| + precision dimension/shape | + excellent scaling surface |
| + high pressure capability | after roll flaring |

Welded tubes and pipes

Tubes and pipes acc. to below specification but welded and cold redrawn instead of seamless drawn are usually 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 and reduces fatigue levels. 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 DIN or DNV.

Material Specifications & Values

E235+N / St.37.4 (1.0308) 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 ¹⁾
Elongation at break	min.. 25%

E355+N / St.52.4 (1.0580) 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 ²⁾
Elongation at break	min.. 22 %

316Ti (1.4571) cold drawn (CFA) acc. to DIN EN 10216-5

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 ²⁾
Elongation at break	min. 35 %

316L (1.4404) cold drawn (CFA)³⁾ acc. to DIN EN 10216-5

Tensile strength	min. 500 N/mm ²
0.2 % proof stress	min. 210 N/mm ²
1 % proof stress	min. 245 N/mm ²
Elongation at break	min. 35 %

316L (1.4404) acc. to ASTM A269 / A213

Tensile strength	min. 530 N/mm ²
Yield strength	min. 276 N/mm ²
0.2 % proof stress / 1.6 ⁴⁾	172.5 N/mm ²

316L (1.4404) acc. to ASTM A312 / A530

Tensile strength	min. 515 N/mm ²
Yield strength	min. 234 N/mm ²
0.2 % proof stress / 1.6 ⁴⁾	146 N/mm ²

¹⁾ DIN 2413, 6.331

²⁾ No standard value, Experience value

³⁾ Strength increase due to cold forming following 1.4571

⁴⁾ Pressure rating calculation based on this mechanical properties require certification according to 3.1 - EN 10204 that confirms the mechanical properties.

Tube calculation for industrial and mobile applications acc. to DIN rules

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 of static burst pressure for seamless tubes acc. to Faupel-von-Mises.

$$BP = R_{p0.2} \cdot 10 \cdot \frac{2}{\sqrt{3}} \ln \frac{D}{d} \cdot \left(2 - \frac{R_{p0.2}}{R_m}\right)$$

BP = Min. static burst pressure [bar]
 R = tensile strength [N/mm²]
 R_{p0.2} = 0.2% proof stress, yield strength [N/mm²]
 D = Tube outside diameter [mm]
 d = Tube inside diameter [mm]

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]
 BP = approximate burst pressure [bar]
 σ_t = permissible stress [N/mm²]
 calculated from the lower value off:

t₀ = tube wall thickness without allowances [mm]

t_n = tube wall thickness nominal [mm]

a = 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
 = 0.875 for Schedule Pipes
 = 0.9 for all stainless steel tubes

b = bending allowance

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]

Calculation of burst pressure:

$$BP = \frac{20 \cdot R_m \cdot t_n \cdot a}{D - t_n \cdot a}$$

stainless steel:

$$\sigma_t = \frac{R_m}{2.7} \text{ or } \frac{K}{1.6}$$

carbon steel:

$$\sigma_t = \frac{R_m}{2.7} \text{ or } \frac{K}{1.8}$$

$$t_0 = t_n \cdot a - c - b$$

$$b = \frac{1}{2.5} \cdot \frac{D}{R} \cdot t_0$$

$$b = 0.1333 \cdot t_0 \text{ (at } R/D=3) \rightarrow t_0 = \frac{t_n \cdot a - c}{1.1333}$$

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 components			-10%				0%			-11 %		-19 %						
Steel, tubes			-10%				0%			-19 %			-27 %					
Stainless steel components	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:

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

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

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 = Flow velocity []

d = Pipe inside diameter [m]

L = Pipe length [m]

p = Pressure [Pa], 1 bar = 100000 Pa

V = Flow rate [], 1 = 60000

λ = Pipe friction factor

$\nu(T)$ = Kinematic viscosity of the medium depending on temperature [$\frac{m^2}{s}$]

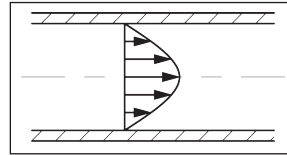
$\rho(T)$ = Density of the medium depending on temperature [$\frac{kg}{m^3}$]

ζ = Individual pressure loss coefficient

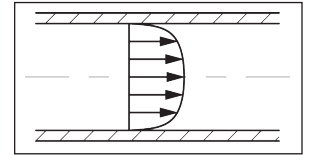
Only base units have been used. This has the advantage that the formula do not contain correction factors and there is no danger of confusion, e.g. that values are used with the wrong unit. In case values are given in other units – the flow rate is e.g. often given in l/min – it is advisable to convert 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:

$$\Delta p = \zeta \cdot \rho(T) \cdot \frac{c^2}{2} \text{ [Pa]}$$

E0-Tubes – Marine and offshore applications (DNV Rules)

1 DNV Bended pipe including manufacturing and corrosion tolerances.

2 DNV Straight pipe including manufacturing and corrosion tolerances.

3 Burst pressure (B.P.) calculation = Based on Tensile value, wall thickness tolerance not included.

Seamless EO steel tubes - Material E235+N / St. 37.4 (1.0308) acc. to DIN EN 10305-4

Material E235+N / St.37.4 (1.0308)		da Outer-Ø (mm)	Outer-Ø Tolerance (mm)	s Wall- thickness (mm)	di Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
Surface						1 DNV PN bar	2 DNV PN bar		
Phosphated and oiled	Cr(VI)-free								
R12X1.5	R12X1.5CF	12	±0.08	1.5	9.0	218	250	1114	0.388
R16X2	R16X2CF	16	±0.08	2.0	12.0	235	270	1114	0.691
R18X2	R18X2CF	18	±0.08	2.0	14.0	207	237	975	0.789
R20X2	R20X2CF	20	±0.08	2.0	16.0	185	212	867	0.888
R20X2.5	R20X2.5CF	20		2.5	15.0	246	282	1114	1.079
R25X2.5	R25X2.5CF	25	±0.08	2.5	20.0	193	221	867	1.387
R25X3	R25X3CF	25		3.0	19.0	242	277	1064	1.628
R30X3	R30X3CF	30	±0.08	3.0	24.0	198	227	867	1.998
R30X4	R30X4CF	30		4.0	22.0	281	323	1200	2.565
R38X3 R38X4 R38X5	R38X2.5CF	38	±0.15	2.5	33.0	124	141	549	2.189
	R38X3CF	38		3.0	32.0	154	176	669	2.589
	R38X4CF	38		4.0	30.0	217	248	918	3.354
	R38X5CF	38		5.0	28.0	282	324	1182	4.069
R42X2	R42X2CF	42	±0.20	2.0	38.0	85	97	390	1.973
R42X3	R42X3CF	42		3.0	36.0	139	158	600	2.885
R42X4	R42X4CF	42		4.0	34.0	194	223	821	3.748
R50X3	R50X3CF	50	±0.20	3.0	44.0	115	132	498	3.477
R50X6		50		6.0	38.0	258	296	1064	6.511
R60X3	R60X3CF	60	±0.25	3.0	54.0	95	109	411	4.217
R65X8		65	±0.30	8.0	49.0	270	310	1095	11.245
R75X3	R75X3CF	75	±0.35	3.0	69.0	76	86	325	5.327
R90X3.5	R90X3.5CF	90	±0.40	3.5	83.0	75	85	316	7.466
R100X4		100	±0.45	4.0	92.0	78	89	325	9.470
R115X4		115	±0.50	4.0	107.0	68	77	281	10.949
R140X4.5		140	±0.70	4.5	131.0	63	72	259	15.037
R165X5		165	±0.90	5.0	155.0	60	68	244	19.729
R220X6		220	±1.10	6.0	208.0	55	62	219	31.665
R273X6		273	±1.40	6.0	261.0	44	50	175	39.507

Other sizes on request

Surface finish:

- Tubes with I.D. 1.5-5 mm: outside and inside oiled.
- Tubes from 6 mm I.D.: outside and inside phosphated and oiled.

• Cr(VI)-free:

These dimensions are externally thick coat passivated (thickness of coat 8-12µm), inside oiled.

EO-Tubes – Landbased and industrial applications (DIN Rules)

1 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance.

2 DIN 2413 III dynamic pressure (W.P.) capability for straight pipe including manufacturing tolerance.

3 Burst pressure (B.P.) calculation acc. to Faupel-von-Mises.

Seamless EO steel tubes - Material E235+N / St.37.4 (1.0308) acc. to DIN EN 10305-4

Material E235+N / St.37.4 (1.0308)		da Outer-Ø (mm)	Outer-Ø Tolerance (mm)	s Wall- thickness (mm)	di Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
Surface						1 DIN 2413 I static PN bar	2 DIN 2413 III dynamic PN bar		
Phosphated and oiled	Cr(VI)-free								
R12X1.5	R12X1.5CF	12	±0.08	1.5	9.0	353	303	1022	0.388
R16X2	R16X2CF	16	±0.08	2.0	12.0	353	303	1022	0.691
R18X2	R18X2CF	18	±0.08	2.0	14.0	313	273	893	0.789
R20X2	R20X2CF	20	±0.08	2.0	16.0	282	248	793	0.888
R20X2.5	R20X2.5CF	20		2.5	15.0	353	303	1022	1.079
R25X2.5	R25X2.5CF	25	±0.08	2.5	20.0	282	248	793	1.387
R25X3	R25X3CF	25		3.0	19.0	338	292	975	1.628
R30X3	R30X3CF	30	±0.08	3.0	24.0	282	248	793	1.998
R30X4	R30X4CF	30		4.0	22.0	376	321	1102	2.565
R38X3	R38X2.5CF	38	±0.15	2.5	33.0	186	168	501	2.189
	R38X3CF	38		3.0	32.0	223	199	610	2.589
	R38X4CF	38		4.0	30.0	297	260	840	3.354
	R38X5	R38X5CF		38	5.0	28.0	371	318	1085
R42X2	R42X2CF	42	±0.20	2.0	38.0	134	123	355	1.973
R42X3	R42X3CF	42		3.0	36.0	201	181	547	2.885
R42X4	R42X4CF	42		4.0	34.0	269	237	750	3.748
R50X3	R50X3CF	50	±0.20	3.0	44.0	169	154	454	3.477
R50X6		50		6.0	38.0	338	292	975	6.511
R60X3	R60X3CF	60	±0.25	3.0	54.0	141	129	374	4.217
R65X8		65	±0.30	8.0	49.0	347	299	1004	11.245
R75X3	R75X3CF	75	±0.35	3.0	69.0	113	104	296	5.327
R90X3.5	R90X3.5CF	90	±0.40	3.5	83.0	110	101	288	7.466
R100X4		100	±0.45	4.0	92.0	113	104	296	9.470
R115X4		115	±0.50	4.0	107.0	98	91	256	10.949
R140X4.5		140	±0.70	4.5	131.0	91	84	236	15.037
R165X5		165	±0.90	5.0	155.0	85	80	222	19.729
R220X6		220	±1.10	6.0	208.0	77	72	199	31.665
R273X6		273	±1.40	6.0	261.0	62	58	160	39.507

Other sizes on request

Surface finish:

- Tubes with I.D. 1.5-5 mm: outside and inside oiled.
- Tubes from 6 mm I.D.: outside and inside phosphated and oiled.

• Cr(VI)-free:

These dimensions are externally thick coat passivated (thickness of coat 8-12µm), inside oiled.

E0-Tubes – Marine and Offshore applications (DNV Rules)

1 DNV Bended pipe including manufacturing and corrosion tolerances.

2 DNV Straight pipe including manufacturing and corrosion tolerances.

3 Burst pressure (B.P.) calculation = Based on Tensile value, wall thickness tolerance not included.

Seamless EO steel tubes - Material E355+N / St. 52.4 (1.0580) acc. to DIN EN 10305-4

Material E355+N / St. 52.4 (1.0580)		d _a Outer-Ø (mm)	Outer-Ø Tolerance (mm)	s Wall- thickness (mm)	d _i Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
Surface						1 DNV PN bar	2 DNV PN bar		
Phosphated and oiled	Cr(VI)-free								
Order code									
	R12X1.5ST52CF	12	±0.08	1.5	9.0	330	378	1523	0.388
R16X2ST52	R16X2ST52CF	16	±0.08	2.0	12.0	355	408	1523	0.691
	R18X2ST52CF	18	±0.08	2.0	14.0	313	358	1333	0.789
R20X2ST52	R20X2ST52CF	20	±0.08	2.0	16.0	279	319	1184	0.888
R20X2.5ST52	R20X2.5ST52CF	20		2.5	15.0	371	426	1523	1.079
R25X3ST52	R25X2.5ST52CF	25	±0.08	2.5	20.0	291	333	1184	1.387
	R25X3ST52CF	25		3.0	19.0	365	418	1454	1.628
	R25X4ST52CF	25		4.0	17.0	519	599	2030	2.072
R30X3ST52	R30X3ST52CF	30	±0.08	3.0	24.0	299	343	1184	1.998
	R30X4ST52CF	30		4.0	22.0	424	487	1640	2.565
	R30X5ST52CF	30		5.0	20.0	555	641	2132	3.083
R38X4ST52	R38X3ST52CF	38	±0.15	3.0	32.0	233	266	914	2,589
	R38X4ST52CF	38		4.0	30.0	327	375	1254	3.354
	R38X5ST52CF	38		5.0	28.0	426	490	1615	4.069
	R38X6ST52CF	38		6.0	26.0	529	611	1999	4.735
	R39X7.5ST52CF	39	±0.15	7.5	24.0	673	781	2538	5.826
	R42X3ST52CF	42	±0.20	3.0	36.0	209	239	820	2.885
	R42X4ST52CF	42		4.0	34.0	294	336	1122	3.748
	R42X5ST52CF	42		5.0	32.0	381	438	1441	4.562
	R46X8ST52CF	46	±0.20	8.0	30.0	601	695	2244	7.497
R50X5ST52	R50X3ST52CF	50	±0.20	3.0	44.0	174	199	680	3.477
	R50X5ST52CF	50		5.0	40.0	315	361	1184	5.549
	R50X6ST52CF	50		6.0	38.0	390	448	1454	6.511
	R50X8ST52CF	50		8.0	34.0	546	631	2030	8.286
R56X8.5ST52	R56X8.5ST52CF	56	±0.25	8.5	39.0	516	595	1908	9.957
R60X6ST52	R60X3ST52CF	60	±0.25	3.0	54.0	144	164	561	4.217
	R60X5ST52CF	60		5.0	50.0	259	297	969	6.782
	R60X6ST52CF	60		6.0	48.0	319	366	1184	7.990
	R60X8ST52CF	60		8.0	44.0	445	512	1640	10.259
	R65X8ST52CF	65	±0.30	8.0	49.0	407	468	1496	11.245
R66X8.5ST52	R66X8.5ST52CF	66	±0.30	8.5	49.0	429	494	1576	12.053
R73X7ST52	R73X7ST52CF	73	±0.35	7.0	59.0	308	353	1131	11.393
R75X5ST52	R75X5ST52CF	75	±0.35	5.0	65.0	205	234	761	8.631
R75X12.5ST52		75		12.5	50.0	583	674	2132	19.266
R80X3ST52		80	±0.35	3.0	74.0	107	122	415	5.697
R80X8ST52		80		8.0	64.0	325	372	1184	14.205
R80X10ST52		80		10.0	60.0	418	481	1523	17.263
R88X14ST52		88	±0.40	14.0	60.0	554	640	2017	25.549
R90X3.5ST52		90	±0.40	3.5	83.0	113	129	431	7.466
R90X5ST52		90		5.0	80.0	169	193	627	10.481
R90X9ST52		90		9.0	72.0	326	374	1184	17.978
R97X12ST52		97	±0.45	12.0	73.0	416	478	1505	25.154
R115X15ST52		115	±0.50	15.0	85.0	444	511	1599	36.992
R120X20ST52		120	±0.50	20.0	80.0	590	682	2132	49.322
R130X15ST52		130	±0.70	15.0	100.0	388	445	1390	42.540
R150X15ST52		150	±0.80	15.0	120.0	332	380	1184	49.939
R190X20ST52		190	±1.00	20.0	150.0	353	405	1254	83.847
R250X25ST52		250	±1.30	25.0	200.0	335	384	1184	138.718

Other sizes on request

E0-Tubes – Landbased and industrial applications (DIN Rules)

1 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance.

2 DIN 2413 III dynamic pressure (W.P.) capability for straight pipe including manufacturing tolerance.

3 Burst pressure (B.P.) calculation acc. to Faupel-von-Mises.

Seamless EO steel tubes - Material E355+N / St. 52.4 (1.0580) acc. to DIN EN 10305-4

Material E355+N / St. 52.4 (1.0580)		da Outer-Ø (mm)	OuterØ Tolerance (mm)	s Wal- thickness (mm)	di Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
Surface						1 DIN 2413 I static PN bar	2 DIN 2413 III dynamic PN bar		
Phosphated and oiled	Cr(VI)-free								
Order code									
	R12X1.5ST52CF	12	±0.08	1,5	9.0	533	357	1504	0.388
R16X2ST52	R16X2ST52CF	16	±0.08	2.0	12.0	533	357	1504	0.691
	R18X2ST52CF	18	±0.08	2.0	14.0	473	321	1314	0.789
R20X2ST52	R20X2ST52CF	20	±0.08	2.0	16.0	426	292	1167	0.888
R20X2.5ST52	R20X2.5ST52CF	20		2.5	15.0	533	357	1504	1.079
R25X3ST52	R25X2.5ST52CF	25	±0.08	2.5	20.0	426	292	1167	1.387
	R25X3ST52CF	25		3.0	19.0	511	344	1435	1.628
	R25X4ST52CF	25		4.0	17.0	682	445	2016	2.072
R30X3ST52	R30X3ST52CF	30	±0.08	3.0	24.0	426	292	1167	1.998
	R30X4ST52CF	30		4.0	22.0	568	379	1622	2.565
	R30X5ST52CF	30		5.0	20.0	710	461	2120	3.083
R38X4ST52	R38X3ST52CF	38	±0.15	3.0	32.0	336	234	899	2.589
	R38X4ST52CF	38		4.0	30.0	448	306	1236	3.354
	R38X5ST52CF	38		5.0	28.0	561	374	1597	4.069
	R38X6ST52CF	38		6.0	26.0	673	440	1984	4.735
	R39X7.5ST52CF	39	±0.15	7.5	24.0	819	521	2539	5.826
	R42X3ST52CF	42	±0.20	3.0	36.0	304	213	806	2.885
	R42X4ST52CF	42		4.0	34.0	406	279	1105	3.748
	R42X5ST52CF	42		5.0	32.0	507	342	1422	4.562
	R46X8ST52CF	46	±0.20	8.0	30.0	741	478	2235	7.497
R50X5ST52	R50X3ST52CF	50	±0.20	3.0	44.0	256	181	668	3.477
	R50X5ST52CF	50		5.0	40.0	426	292	1167	5.549
	R50X6ST52CF	50		6.0	38.0	511	344	1435	6.511
	R50X8ST52CF	50		8.0	34.0	682	445	2016	8.286
R56X8.5ST52	R56X8.5ST52CF	56	±0.25	8.5	39.0	647	425	1892	9.957
R60X6ST52	R60X3ST52CF	60	±0.25	3.0	54.0	213	152	551	4.217
	R60X5ST52CF	60		5.0	50.0	355	247	953	6.782
	R60X6ST52CF	60		6.0	48.0	426	292	1167	7.990
	R60X8ST52CF	60		8.0	44.0	568	379	1622	10.259
	R65X8ST52CF	65	±0.30	8.0	49.0	524	352	1477	11.245
R66X8.5ST52	R66X8.5ST52CF	66	±0.30	8.5	49.0	549	367	1557	12.053
R73X7ST52	R73X7ST52CF	73	±0.35	7.0	59.0	408	281	1113	11.393
R75X5ST52	R75X5ST52CF	75	±0.35	5.0	65.0	284	200	748	8.631
R75X12.5ST52		75		12.5	50.0	710	461	2120	19.266
R80X3ST52		80	±0.35	3.0	74.0	160	115	408	5.697
R80X8ST52		80		8.0	64.0	426	292	1167	14.205
R80X10ST52		80		10.0	60.0	533	357	1504	17.263
R88X14ST52		88	±0.40	14.0	60.0	678	443	2002	25.549
R90X3.5ST52		90	±0.40	3.5	83.0	166	119	423	7.466
R90X5ST52		90		5.0	80.0	237	168	616	10.481
R90X9ST52		90		9.0	72.0	426	292	1167	17.978
R97X12ST52		97	±0.45	12.0	73.0	527	354	1486	25.154
R115X15ST52		115	±0.50	15.0	85.0	556	371	1580	36.992
R120X20ST52		120	±0.50	20.0	80.0	710	461	2120	49.322
R130X15ST52		130	±0.70	15.0	100.0	492	332	1372	42.540
R150X15ST52		150	±0.80	15.0	120.0	426	292	1167	49.939
R190X20ST52		190	±1.00	20.0	150.0	448	306	1236	83.847
R250X25ST52		250	±1.30	25.0	200.0	426	292	1167	138.718

Other sizes on request

E0-Tubes – Marine and Offshore applications (DNV Rules)

1 DNV Bended pipe including manufacturing and corrosion tolerances.

2 DNV Straight pipe including manufacturing and corrosion resistance.

3 Burst pressure (B.P.) calculation = Based on Tensile value, wall thickness tolerance not included.

Seamless cold drawn EO stainless steel tube - Material 316 Ti (1.4571) acc. to ASTM A269/A213, DIN EN 10305-4

Material 316Ti (1.4571)	d _a Outer-Ø (mm)	OuterAußen-Ø Tolerance (mm)	s Wall- thickness (mm)	d _i Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
Surface bright annealed					1 DNV PN bar	2 DNV PN bar		
Order code								
R12X1.571	12	±0.08	1.5	9.0	380	437	1514	0.394
R16X271	16	±0.08	2.0	12.0	380	437	1514	0.701
R18X271	18	±0.08	2.0	14.0	334	383	1325	0.801
R20X271	20	±0.08	2.0	16.0	298	341	1178	0.901
R20X2.571	20		2.5	15.0	380	437	1514	1.096
R25X2.571	25	±0.08	2.5	20.0	298	341	1178	1.409
R25X371	25		3.0	19.0	363	418	1445	1.653
R30X371	30	±0.08	3.0	24.0	298	341	1178	2.028
R30X471	30		4.0	22.0	409	470	1631	2.604
R38X2.571	38	±0.15	2.5	33.0	190	217	746	2.222
R38X471	38		4.0	30.0	315	361	1247	3.405
R42X371	42	±0.20	3.0	36.0	207	237	815	2.930

Other sizes on request

EO-Tubes - Landbased and industrial applications (DIN Rules)

1 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance.

2 DIN 2413 III dynamic pressure (W.P.) capability for straight pipe including manufacturing tolerance.

3 Burst pressure (B.P.) calculation acc. to Faupel-von-Mises.

Seamless cold drawn EO stainless steel tube - Material 316 Ti (1.4571) acc. to ASTM A269/A213, DIN EN 10305-4

Material 316Ti (1.4571)	d _a Outer-Ø (mm)	Outer-Ø Tolerance (mm)	s Wall- thickness (mm)	d _i Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
					1	2		
					DIN 2413 I static PN bar	DIN 2413 III dynamic PN bar		
R12X1.571	12	±0.08	1.5	9.0	368	297	1229	0.394
R16X271	16	±0.08	2.0	12.0	368	297	1229	0.701
R18X271	18	±0.08	2.0	14.0	327	267	1074	0.801
R20X271	20	±0.08	2.0	16.0	294	242	953	0.901
R20X2.571	20	±0.08	2.5	15.0	368	297	1229	1.096
R25X2.571	25	±0.08	2.5	20.0	294	242	953	1.409
R25X371	25	±0.08	3.0	19.0	353	286	1172	1.653
R30X371	30	±0.08	3.0	24.0	294	242	958	2.028
R30X471	30	±0.08	4.0	22.0	392	314	1325	2.604
R38X2.571	38	±0.15	2.5	33.0	193	164	603	2.222
R38X471	38	±0.15	4.0	30.0	309	254	1010	3.405
R42X371	42	±0.20	3.0	36.0	210	177	659	2.930

Other sizes on request

E0-Tubes – Marine and Offshore applications (DNV Rules)

1 DNV Bended pipe including manufacturing and corrosion tolerances.

2 DNV Straight pipe including manufacturing and corrosion tolerances.

3 Burst pressure (B.P.) calculation = Based on Tensile value, wall thickness tolerance not included.

Seamless cold drawn EO stainless steel tube - Material 316L (1.4404) acc. to ASTM A269/A213, DIN EN 10305-4

Material 316L (1.4404)		da Outer-Ø (mm)	Outer-Ø Tolerance (mm)	s Wall- thickness (mm)	di Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
Surface						1 DNV PN bar	2 DNV PN bar		
pickled	bright annealed								
Order code									
	R12X1.5-316BA	12	±0.08	1.5	9.0	380	437	1514	0.394
R16X2-316		16	±0.08	2.0	12.0	380	437	1514	0.701
R18X2-316		18	±0.08	2.0	14.0	334	383	1325	0.801
R20X2-316		20	±0.08	2.0	16.0	298	341	1178	0.901
R20X2.5-316		20		2.5	15.0	380	437	1514	1.096
R25X2.5-316		25	±0.08	2.5	20.0	298	341	1178	1.409
R25X3-316		25		3.0	19.0	363	418	1445	1.653
R30X3-316		30	±0.08	3.0	24.0	298	341	1178	2.028
R30X4-316		30		4.0	22.0	409	470	1631	2.604
R38X2.5-316		38	±0.15	2.5	33.0	190	217	746	2.222
R38X3-316		38		3.0	32.0	231	264	909	2.629
R38X4-316		38		4.0	30.0	315	361	1247	3.405
R38X5-316		38		5.0	28.0	403	463	1606	4.132
R42X3-316		42	±0.20	3.0	36.0	207	237	815	2.930
R50X3-316		50	±0.20	3.0	44.0	173	197	677	3.531
R50X5-316		50		5.0	40.0	298	341	1178	5.634
R50X6-316		50		6.0	38.0	363	418	1445	6.611
R60X3-316		60	±0.25	3.0	54.0	143	163	558	4.282
R60X5-316		60		5.0	50.0	244	280	964	6.886
R60X6-316		60		6.0	48.0	298	341	1178	8.113
R66X8.5-316		66	±0.30	8.5	49.0	393	452	1567	12.238
R73X7-316		73	±0.35	7.0	59.0	284	326	1124	11.568
R75X3-316		75	±0.35	3.0	69.0	113	129	442	5.409
R75X5-316		75		5.0	65.0	193	220	757	8.764
R80X10-316		80	±0.35	10.0	60.0	380	437	1514	17.528

Other sizes on request

EO-Tubes - Landbased and industrial applications (DIN Rules)

1 DIN 2413 I static pressure (W.P.) capability for straight pipe including manufacturing tolerance.

2 DIN 2413 III dynamic pressure (W.P.) capability for straight pipe including manufacturing tolerance.

3 Burst pressure (B.P.) calculation acc. to Faupel-von-Mises.

Seamless cold drawn EO stainless steel tube - Material 316L (1.4404) acc. to ASTM A269/A213, DIN EN 10305-4

Material 316L (1.4404)		d _a Outer-Ø (mm)	Outer-Ø Tolerance (mm)	s Wall- thickness (mm)	d _i Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
						1	2		
Surface						DIN 2413 I static PN bar	DIN 2413 III dynamic PN bar		
pickled	bright annealed					Order code			
	R12X1.5-316BA	12	±0.08	1.5	9.0	368	297	1229	0.394
R16X2-316		16	±0.08	2.0	12.0	368	297	1229	0.701
R18X2-316		18	±0.08	2.0	14.0	327	267	1074	0.801
R20X2-316		20	±0.08	2.0	16.0	294	242	953	0.901
R20X2.5-316		20		2.5	15.0	368	297	1229	1.096
R25X2.5-316		25	±0.08	2.5	20.0	294	242	953	1.409
R25X3-316		25		3.0	19.0	353	286	1172	1.653
R30X3-316		30	±0.08	3.0	24.0	294	242	953	2.028
R30X4-316		30		4.0	22.0	392	314	1325	2.604
R38X2.5-316		38	±0.15	2.5	33.0	193	164	603	2.222
R38X3-316		38		3.0	32.0	232	195	734	2.629
R38X4-316		38		4.0	30.0	309	254	1010	3.405
R38X5-316		38		5.0	28.0	387	311	1305	4.132
R42X3-316		42	±0.20	3.0	36.0	210	177	659	2.930
R50X3-316		50	±0.20	3.0	44.0	176	150	546	3.531
R50X5-316		50		5.0	40.0	294	242	953	5.634
R50X6-316		50		6.0	38.0	353	286	1172	6.611
R60X3-316		60	±0.25	3.0	54.0	147	126	450	4.282
R60X5-316		60		5.0	50.0	245	205	779	6.886
R60X6-316		60		6.0	48.0	294	242	953	8.113
R66X8.5-316		66	±0.30	8.5	49.0	379	305	1272	12.238
R73X7-316		73	±0.35	7.0	59.0	282	233	910	11.568
R75X3-316		75	±0.35	3.0	69.0	118	102	356	5.409
R75X5-316		75		5.0	65.0	196	166	611	8.764
R80X10-316		80	±0.35	10.0	60.0	368	297	1229	17.528

Other sizes on request

E0-Tubes - Scheduled sizes

Pressure table acc. to DNV Rules for Classification for Ships Newbuilding and Mobile Offshore Units Drilling Plants.

1 DNV Bended pipe including manufacturing and corrosion tolerances.

2 DNV Straight pipe including manufacturing and corrosion tolerances.

3 Burst pressure (B.P.) calculation = Based on Tensile value, wall thickness tolerance not included.

Seamless stainless steel tubes - Material 316L (1.4404) acc. to ASTM A 312/A999

Material 316L (1.4404)	d _a Outer-Ø		s Wallthickness		d _i Inner-Ø (mm)	Design pressure		3 Burst pressure bar	Weight kg/m
	SCH	mm	SCH	mm		1 DNV PN bar	2 DNV PN bar		
Surface pickled									
Order code									
R21.34X2.11-316	1/2"	21.34	SCH 10	2.11	17.12	241	277	1130	1.014
R21.34X2.77-316			SCH 40	2.77	15.80	325	374	1536	1.285
R21.34X3.73-316			SCH 80	3.73	13.88	456	527	2182	1.641
R21.34X4.78-316			SCH 160	4.78	11.78	611	712	2973	1.977
R26.67X2.11-316	3/4"	26.67	SCH 10	2.11	24.56	190	217	885	1.299
R26.67X2.81-316			SCH 40	2.81	21.05	259	297	1213	1.713
R26.67X3.91-316			SCH 80	3.91	18.85	373	430	1769	2.231
R26.67X5.56-316			SCH 160	5.56	15.55	560	651	2713	2.943
R33.40X2.77-316-A999	1"	33.40	SCH 10	2.77	27.86	200	228	931	2.125
R33.40X3.38-316-A999			SCH 40	3.38	30.02	247	284	1160	2.541
R33.40X4.55-316-A999			SCH 80	4.55	24.30	343	395	1624	3.287
R33.40X6.35-316-A999			SCH 160	6.35	20.70	502	583	2418	4.301
R42.16X2.77-316-A999	1 1/4"	42.16	SCH 10	2.77	36.62	156	178	724	2.735
R42.16X3.56-316-A999			SCH 40	3.56	35.04	204	233	950	3.444
R42.16X4.85-316-A999			SCH 80	4.85	32.46	285	327	1339	4.536
R42.16X6.35-316-A999			SCH 160	6.35	29.46	384	443	1826	5.700
R48.26X2.77-316-A999	1 1/2"	48.26	SCH 10	2.77	42.72	135	154	627	3.158
R48.26X3.68-316-A999			SCH 40	3.68	40.90	183	209	850	4.112
R48.26X5.08-316-A999			SCH 80	5.08	38.10	258	296	1212	5.498
R48.26X7.14-316-A999			SCH 160	7.14	33.98	377	434	1788	7.359
R60.33X2.77-316-A999	2"	60.33	SCH 10	2.77	54.76	107	122	496	3.990
R60.33X3.91-316-A999			SCH 40	3.91	52.48	154	176	714	5.521
R60.33X5.54-316-A999			SCH 80	5.54	49.22	223	255	1041	7.596
R60.33X8.74-316-A999			SCH 160	8.74	42.82	368	424	1745	11.284
R73.03X3.05-316-A999	2 1/2"	73.03	SCH 10	3.05	66.90	97	111	449	5.342
R73.03X5.16-316-A999			SCH 40	5.16	62.68	168	192	783	8.765
R73.03X7.01-316-A999			SCH 80	7.01	58.98	234	268	1094	11.583
R73.03X9.53-316-A999			SCH 160	9.53	53.94	327	376	1546	15.146
R88.90X3.05-316	3"	88.90	SCH 10	3.05	82.80	79	90	366	6.557
R88.90X5.49-316-A999			SCH 40	5.49	77.92	146	167	678	11.466
R88.90X7.62-316-A999			SCH 80	7.62	73.56	207	237	966	15.509
R88.90X11.13-316-A999			SCH 160	11.13	66.64	312	359	1474	21.674
R114.30X3.05-316	4"	114.30	SCH 10	3.05	108.20	61	70	282	8.496
R114.30X6.02-316-A999			SCH 40	6.02	102.16	124	141	573	16.322
R114.30X8.56-316-A999			SCH 80	8.56	97.18	179	205	834	22.665
R114.30X13.49-316-A999			SCH 160	13.49	87.32	293	336	1378	34.053
R141.30X6.55-316-A999	5"	141.30	SCH 40	6.55	128.20	108	123	501	22.101
R141.30X9.53-316-A999			SCH 80	9.53	122.24	160	183	745	31.444
R141.30X15.88-316-A999			SCH 160	15.88	109.54	277	318	1304	49.871
R168.28X3.40-316	6"	168.28	SCH 10	3.40	161.48	46	53	212	14.039
R168.28X7.11-316-A999			SCH 40	7.11	154.08	98	112	454	28.697
R168.28X18.26-316-A999			SCH 160	18.26	131.78	267	306	1254	68.603
R219.08X8.18-316	8"	219.08	SCH 40	8.18	202.74	87	99	399	43.202
R219.08X23.01-316-A999			SCH 160	23.01	173.08	258	296	1209	112.981

Other sizes on request

Temperature conversion table

Celsius to Fahrenheit

°C	°F
150	302
145	293
140	284
135	275
130	266
125	257
120	248
115	239
110	230
105	221
100	212
95	203
90	194
85	185
80	176
75	167
70	158
65	149
60	140
55	131
50	122
45	113
40	104
35	95
30	86
25	77
20	68
15	59
10	50
5	41
0	32
-5	23
-10	14
-15	5
-20	-4
-25	-13
-30	-22
-35	-31
-40	-40
-45	-49
-50	-58

Fahrenheit to Celsius

°F	°C
340	171
330	166
320	160
310	154
300	149
290	143
280	138
270	132
260	127
250	121
240	116
230	110
220	104
210	99
200	93
190	88
180	82
170	77
160	71
150	66
140	60
130	54
120	49
110	43
100	38
90	32
80	27
70	21
60	16
50	10
40	4
30	-1
20	-7
10	-12
0	-18
-10	-23
-20	-29
-30	-34
-40	-40
-50	-46
-60	-51

Pressure conversion table

bar to psi

bar	psi
1000	14505
800	11604
600	8703
500	7253
400	5802
250	3626
160	2321
100	1451
60	870
40	580
35	508
25	363
16	232
10	145
6	87
4	58
2.5	36
1.6	23
1	15

psi to bar

psi	bar
10000	689
9000	620
7000	483
6000	414
4000	276
3000	207
2500	172
1000	69
900	62
600	41
500	34
400	28
250	17
150	10.3
100	6.9
90	6.2
60	4.1
40	2.8
25	1.7
10	0.7

Examples

Temperature conversion

Initial value: 100

°C in °F: 212 °F

°F in °C: 37.78 °C

Pressure conversion

Initial value: 35

bar in psi: 507.675 psi

psi in bar: 2.41296 bar