Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CH – Switzerland, Etoy
Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Asker
Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev
Tel +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

US – USA, Cleveland
Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

CN – China, Shanghai
Tel: +86 21 2899 5000

HK – Hong Kong
Tel: +852 2428 8008

IN – India, Mumbai
Tel: +91 22 6513 7081-85

JP – Japan, Tokyo
Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

SG – Singapore
Tel: +65 6887 6300

TH – Thailand, Bangkok
Tel: +662 717 8140

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos
Tel: +55 12 4009 3500

CL – Chile, Santiago
Tel: +56 2 623 1216

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

Catalogue 4162-2/UK 12/2010-K-Konzept (Bonifatius)

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

Your local authorized Parker distributor

Parker

Parflange® F37 for pipe and tube connections

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

Parflange® F37 for pipe and tube connections

Parker

ENGINEERING YOUR SUCCESS.

For your safety!

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

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

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

Subject to alteration

Parker's Motion & Control Technologies

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

AEROSPACE

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

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

CLIMATE CONTROL

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

Key Products
- CO^2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves

ELECTROMECHANICAL

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

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

FILTRATION

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

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

FLUID & GAS HANDLING

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

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

HYDRAULICS

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

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

PNEUMATICS

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

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

PROCESS CONTROL

Key Markets
- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products
- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds

SEALING & SHIELDING

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

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

ENGINEERING YOUR SUCCESS.

Table of contents

Tube Fittings Division Europe

The Tube Fittings Authority:

Performance Plus

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

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

Topflight Experience

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

Why is Parker a topflight manufacturer of fittings?

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

Worldwide standardizing activities

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

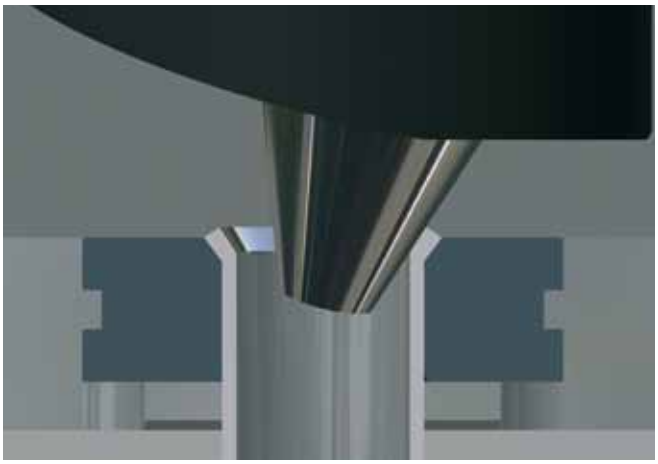
ENGINEERING YOUR SUCCESS.

Notes

General information

Parflange® F37 technology

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



Parflange® F37
The Parflange® F37 flanged connector system is utilising this orbital tube forming technology for tubing assemblies from 16 to 165 mm (1/2" to 6" Flanges) outside diameter.
It is intended for tube wall thickness up to 9 mm and pressure ratings up to 420 bar.
For those connections, where there is no possibility to assemble a pre-flared tube or where manufacturing is limited, Parker provides the F37 Retaining Ring System. This System 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.

Flaring Machine (Adjustable)
For smaller tube connecting projects such as the on-site maintenance of, for example, drilling platforms or ships, the Parflange® ECO for processing steel and stainless steel tube is available.
The machine works to the Parflange® process, proven millions of times over, affording maximum mechanical accuracy and reliability. It does not require any complicated programming or operation to manufacture rapidly smaller quantities up to 165 mm outside diameter. The maximum capacity of the

Parflange® F37 technology

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.

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

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

The F37-Programme – a savings programme
F37 is the way to reduce manufacturing times enormously. By comparing welded connections with Parker flange connector systems, significant opportunities for cost savings become immediately obvious
1. Cutting and deburring tubes
2. Tube preparation for the “connecting process“
3. Welding and/or assembling
4. Inspection (X-ray) of welded connectors
5. Flushing the connected tubes
6. Applying corrosion protection

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

Parflange® F37 technology

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

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

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

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

The Parker Piping Solutions concept principles:	
Advise	**Briefing/ Design discussion**
Design	**Tubing layout Tube dimensioning Drawings Documentation**
Pre-assemble	**Tube bending Flaring Tube cleaning**
Deliver	**Assemble/dispatch Documentation**
Install	**Manufacturing On site management On site assembly Inspect and wash Documentation**

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

Parflange® F37 technology

Parker Piping Solutions - Complete hydraulic systems from a single supplier

For users worldwide Parker is a systems partner, available for tube connection systems, regardless of tube diameters and for whatever pressure.
With the Piping Solutions Parker is able to offer the customer the complete professional solution for hydraulic systems based on services: **Engineering, Prefabrication and Installation**.

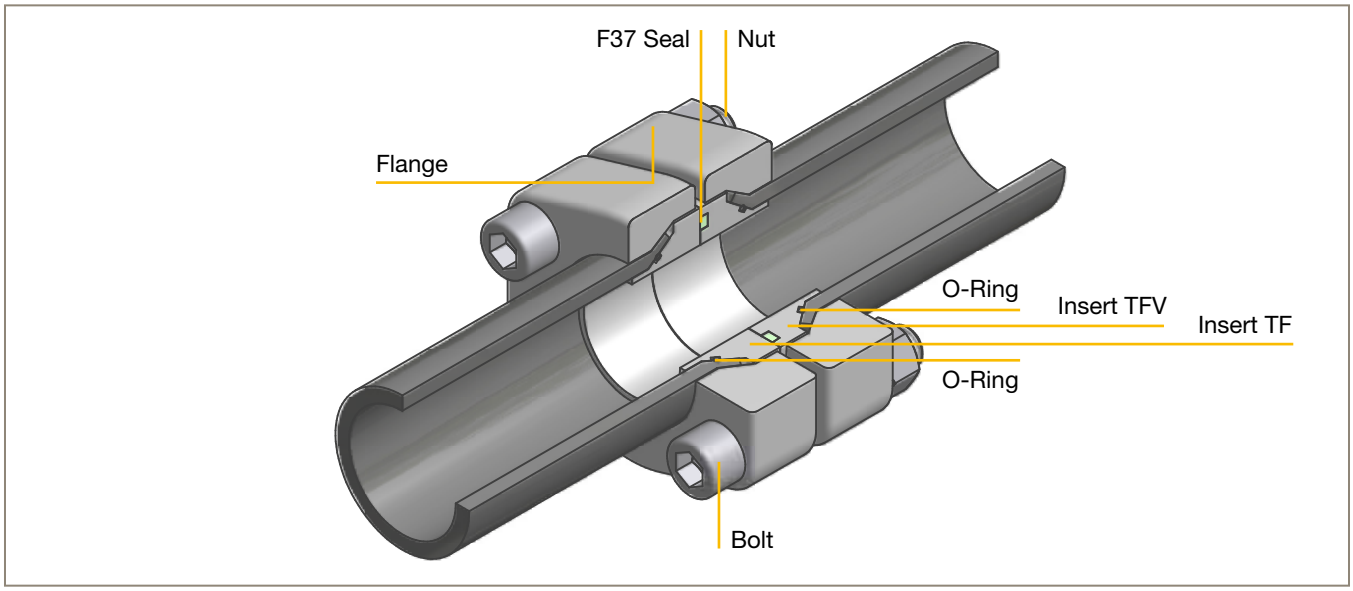
Parker's Complete Piping Solutions go well beyond Parflange F37 **Technology**, offering a complete professional solution for piping systems. Parker incorporates services that provide a customized turnkey solution. They include consultation, design, preengineered tube and pipe assemblies, and even on-site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

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

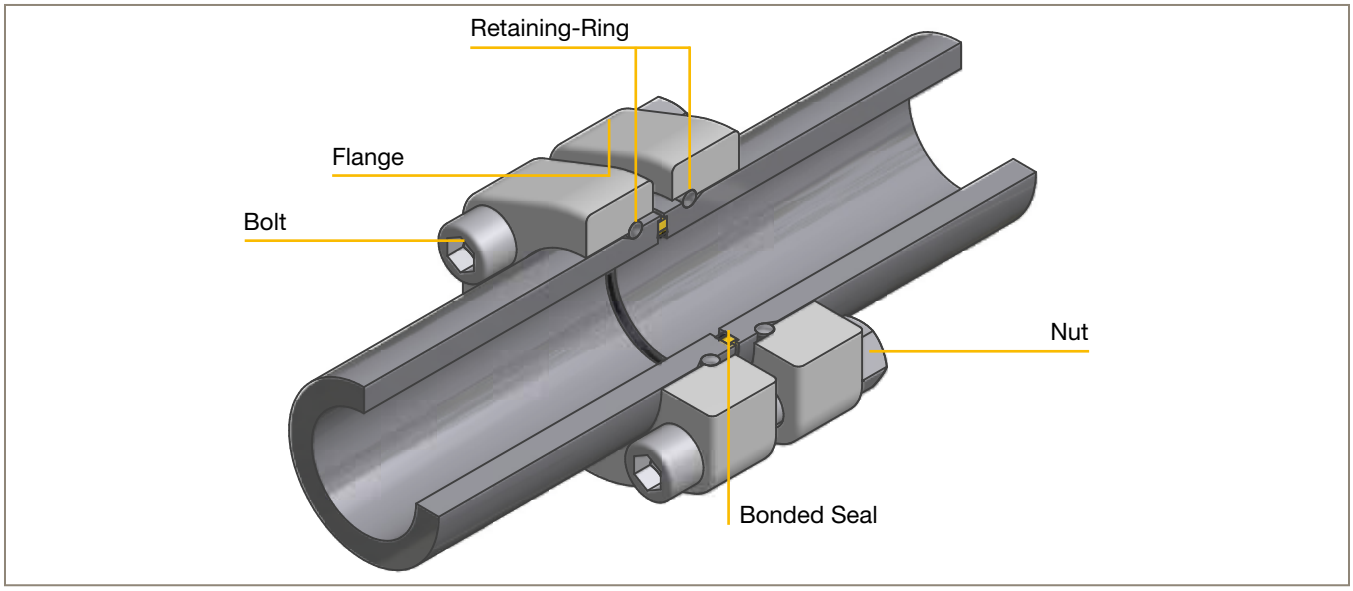
Parker's expanded Piping Systems Solutions Centers provide complete piping solutions for our customers. Whether the job requires the complete redesign and installation of a welded piping system or consultation and delivery of a preengineered non-welded piping assembly/spool, Parker's mission is to tailor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

Connection technology

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

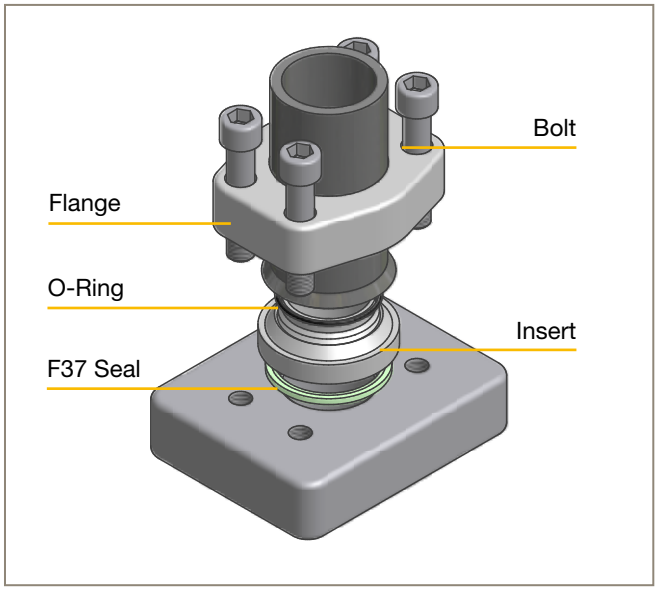


Parflange® F37 Flare Flanges – In this configuration, the deburred tube end is flared orbitally to 37° by Parflange® technology. An insert, soft sealed by an O-Ring, is located into each pipe end. In between a F37 Seal (optionally Bonded Seal or O-Ring) is placed. By tightening the flanges together,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

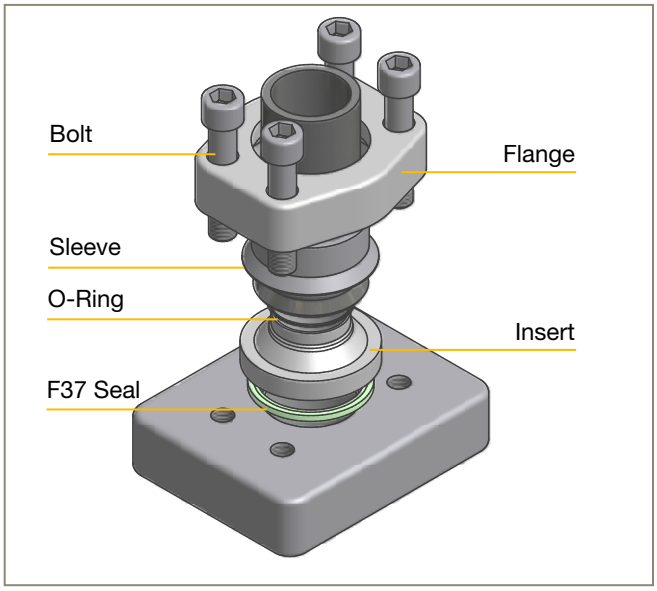


Retaining Ring Connection – The retaining ring used in this connection is a stainless steel segmented ring covered by a stainless steel spring. It is assembled in a machined groove on the tube end or adapter. When tightening this system, the flange is pushed against the retaining ring, thus giving a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

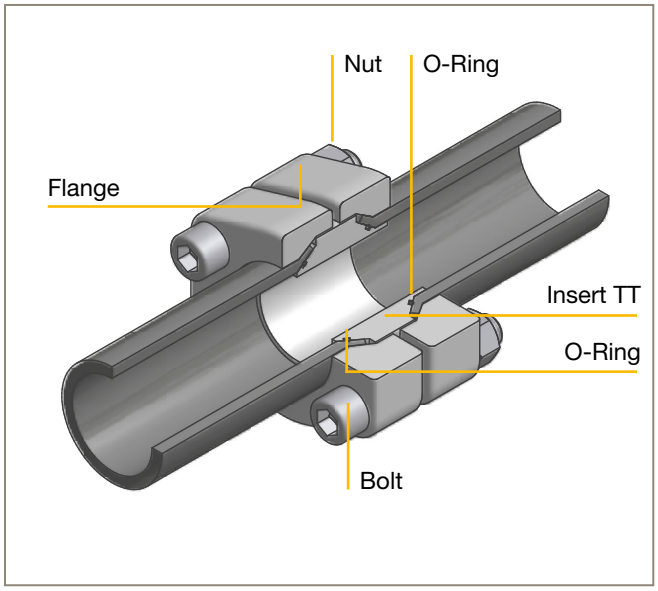
Connection methods F37 – Flared tube



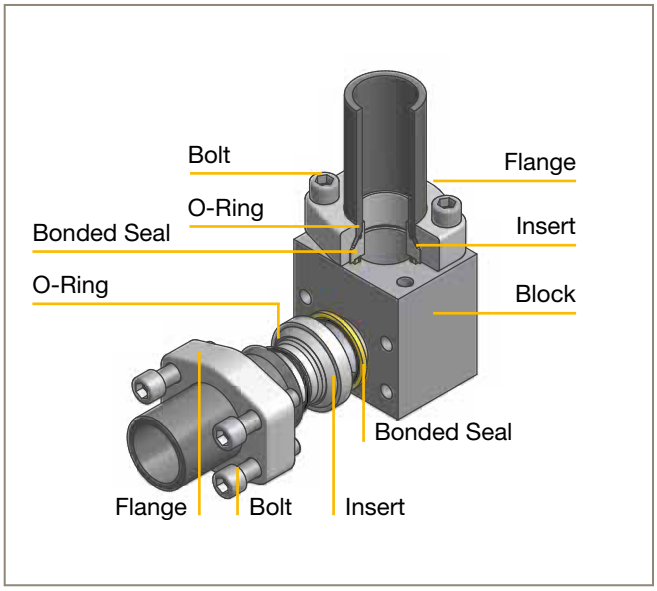
Flange to Port – the flanged tube is connected by the flange, insert and F37 seal to a port. Inserts with Bonded Seal can be used alternatively.



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



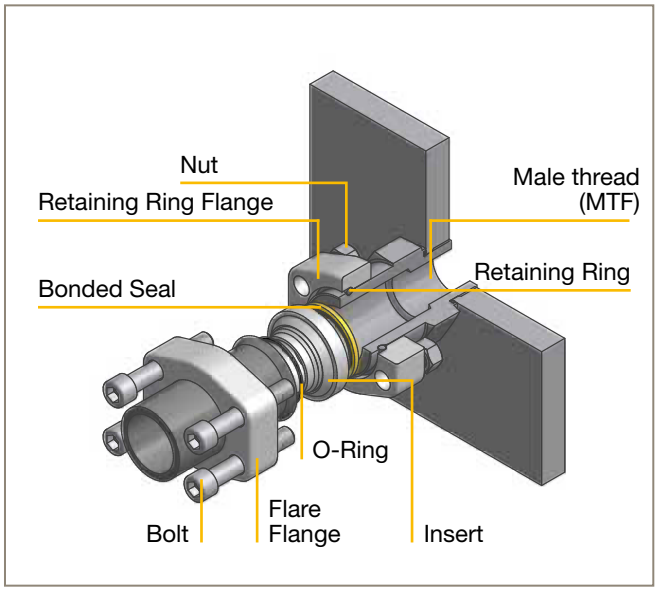
Tube to Tube – two flanges and one insert connecting two flared tubes. A two insert solution with F37 Seal or Bonded Seal is optional.



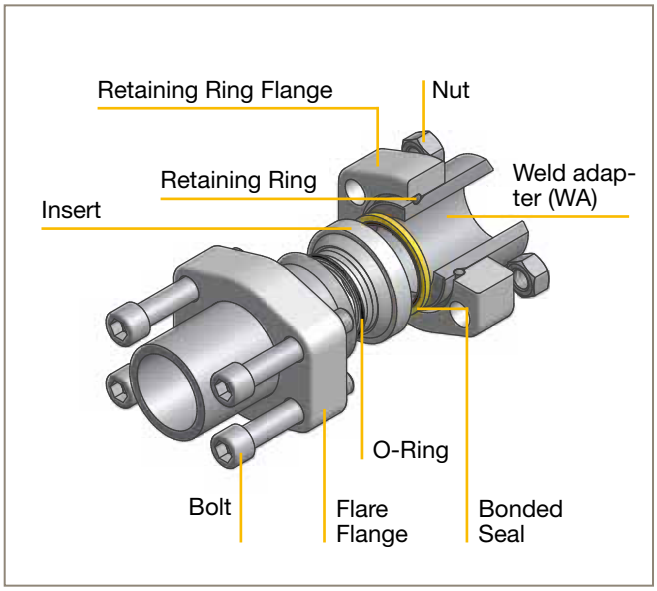
Tube to Block – instead of using flange bends compact L-Blocks are available. The range is completed by T-Blocks and Reducing Blocks. Special Manifolds according to customer design available on request.

Connection methods – Retaining ring

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

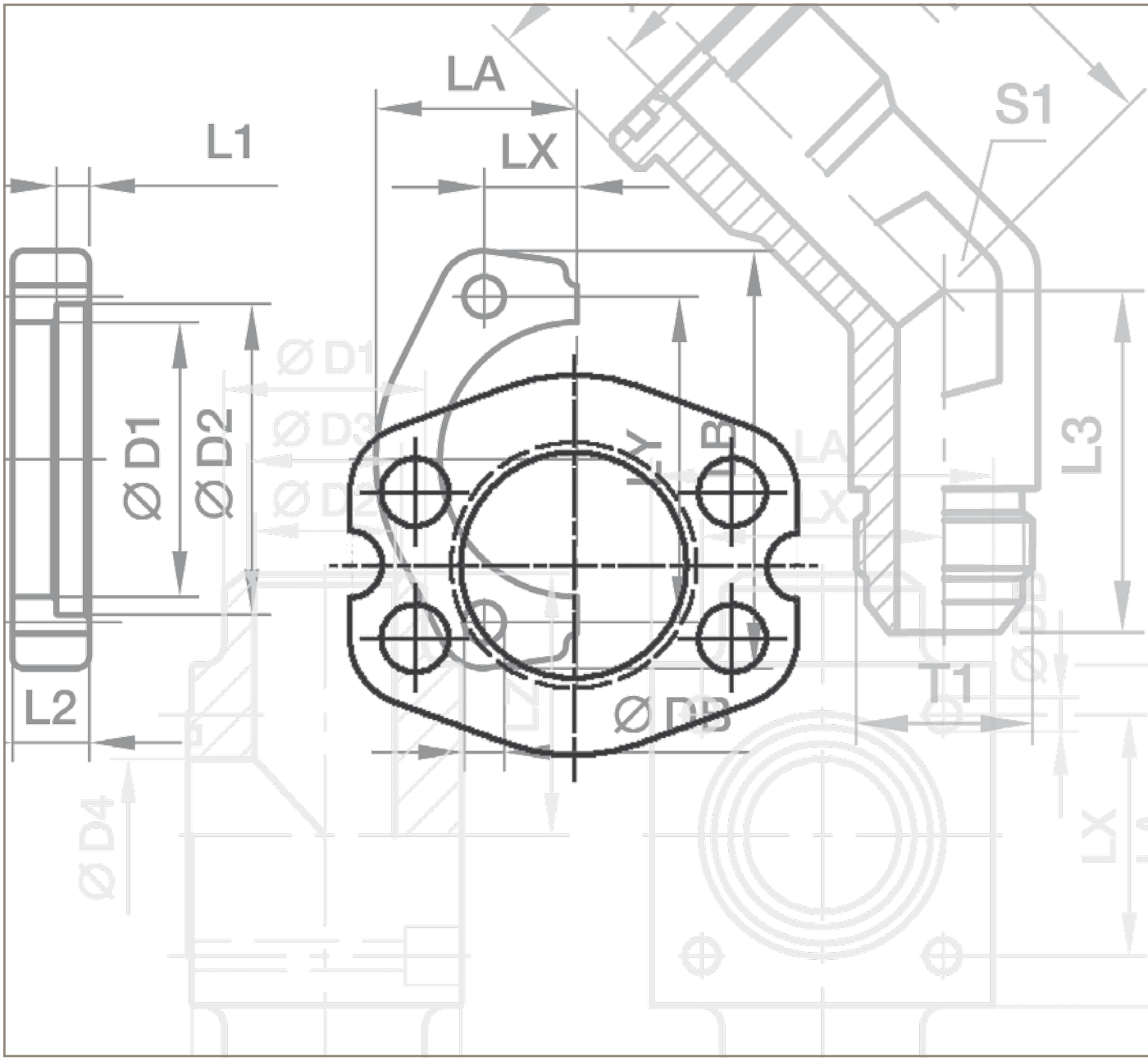


Male Thread Connection – Male Stud ends are delivered with soft seal ED end on one side and the Retaining Ring connection on the other side.



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

Notes



Technical data

Pressure reductions and temperatures

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

DNV may require different pressure reduction based on application

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

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

Calculation example:
Temperature = 200°C
Material = Stainless steel
Pressure reduction = 29%
Pressure reduction tubes = 21.5%
PN tube 16x2.5/71. DIN2413 III = 362 bar

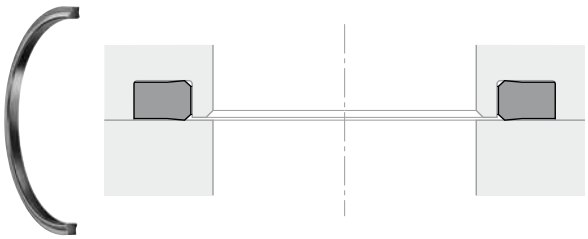
Formula:

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

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

F37 seal

The F37 seal was developed especially for use with SAE flanges. Compared to a standard O-Ring the special profile of the F37 seal is ideally adapted to higher pressures and flange surface finish.
The particularly low compression set of the polyurethane compound ensures dimensional stability of the seal over a large temperature range. Its high extrusion resistance prevents gap extrusion even if the flanges "breathe" under pressure. Due to good abrasion resistance, less preparation is necessary on the surface finish of the sealing area of the flange. The frequently occuring "pumping" phenomenon of O-Rings is prevented by the shape of the F37 seal.



Application area

Static sealing for SAE-Flanges
Working pressure: ≤ 600 bar
Working temperature: see table above

Materials

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

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

Tolerances and standards

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

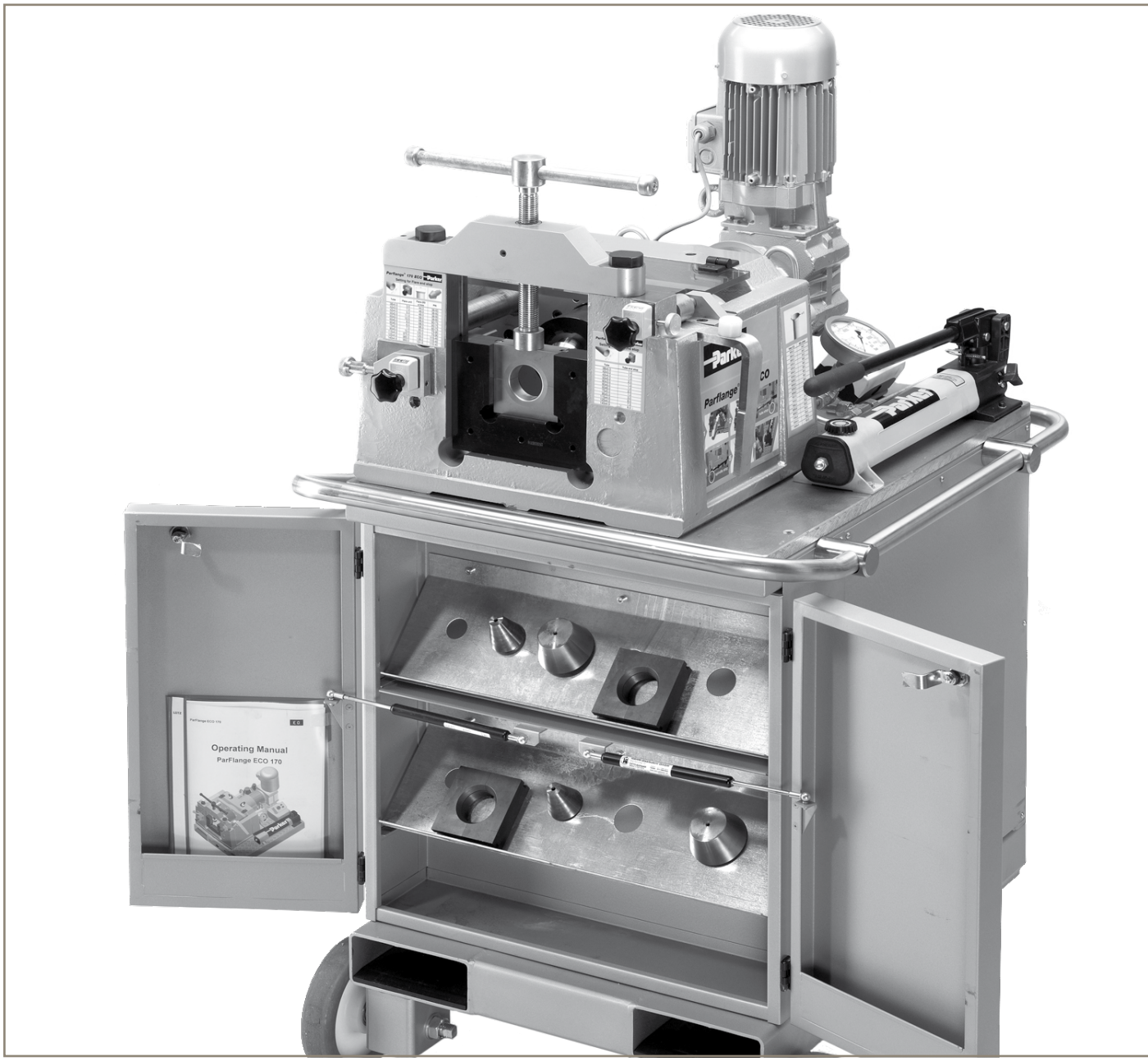
NOTE: NPTF thread have to be measured outside on the 4. thread from the end

A.P.I.	American Petroleum Institute Taper Thread
A.S.A.E.	American Society of Agricultural Engineers
A.S.S.P.T.	American National Straight Pipe Thread
B.S.P.	British Standard Parallel Pipe Thread
B.S.T.P.	British Standard Taper Pipe Thread
F.I.E.I.	Farm and Industrial Equipment Institute
G.H.T.	Garden Hose Threads/F.P.T.- Female Pipe Thread
I.P.T.	American Iron Pipe Thread - Straight
J.I.C.	Joint Industry Conference (SAE 37)
J.I.S.	Japanese Industrial Standard
M.	Metric Thread
M.M.	Metric Thread
N.P.S.	American National Pipe Thread - Straight
N.P.S.M.	American National Pipe Thread - Straight Mechanical
N.P.T.	American National Pipe Thread - Taper
N.P.T.F.	American National Pipe Thread - Taper/Dry seal
N.S.T.	American National Standard Thread - Straight
R.	Rörgjenger - BSP
R.T.	British Round Thread
S.A.E.	Society of Automative 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

Notes

Installation F37 Flange system

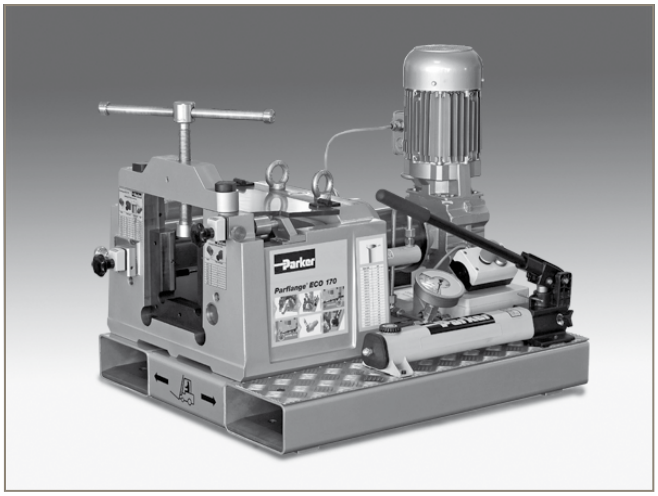
Current installation guide:
www.parker.com/tfde/servicemanuals/userguides



Machines, tooling and equipment

Parflange® 170

Workshop machine for F37 flange connections



Parflange® 170 ECO for workbench

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

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

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

The machine is available in 2 versions:

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

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

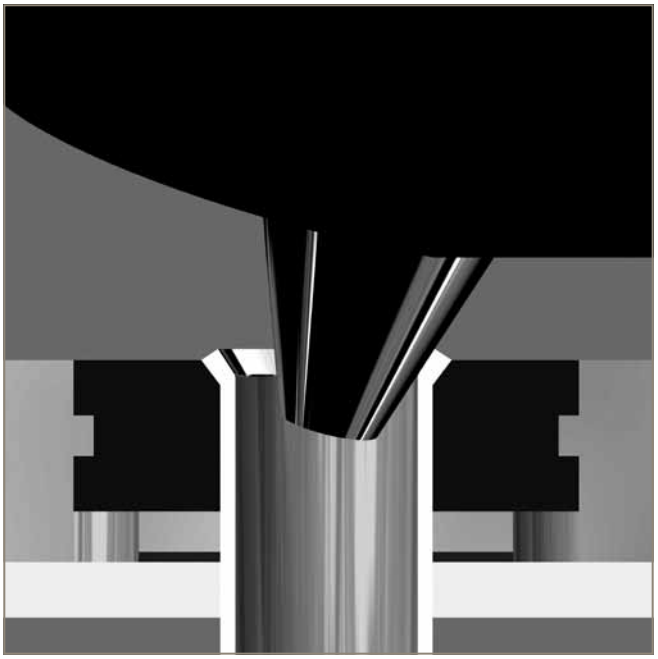
Applications

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

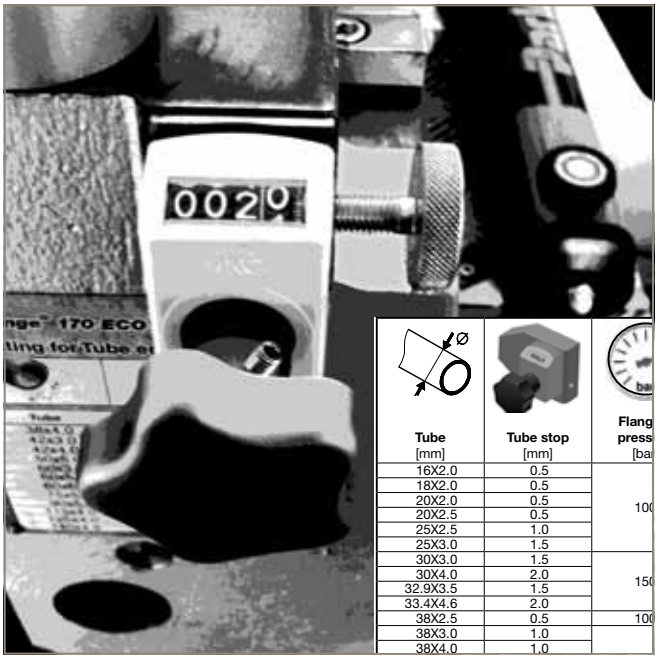
Parflange® 170 WCM WorkCenter

Specifications

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



Superior sealing surface is achieved by orbital flaring



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

Features, advantages and benefits of Parflange® 170 ECO

1. **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.

2. **Zinc plated tubing** – The Parflange® process allows the use of zinc plated tubing. The cost for cleaning, post process plating or painting is saved.

3. **Superior sealing performance** – The orbital flaring process achieves a sealing surface of superior surface quality and mechanical strength.

4. **Process/Product concept** – Parflange® machines are especially designed to match Parker F37 flange standards. Machines, tools and products are fine-tuned for reliable performance.

5. **Workshop use** – The rigid machine design allows project work in on site piping workshops.

6. **Short clamping length** – Clamping dies for 37° flaring are optimized for minimum straight tube length.

7. **Easy to use** – All operational devices are obvious so that machine operation is intuitive.

8. **Quality** – Consistent quality results are achieved by recommended values for machine setting.

9. **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.

10. **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.

11. **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.

12. **Clean** – The Parflange® process is environmentally clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.

13. **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.

14. **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.

15. **Parflange® 170 WCM –** This model is mounted on a robust tool cabinet with wheels. It is easy to move and perfect for flexible workshop use.

Tool selection

Workshop machine for F37 flange connections

Ordering

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

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

	Clamping die frame small/large 	Clamping die set "MF" 	Extended clamping die set "MF" for large tube wall thickness 	Flanging pin "BF" 
Tube O.D. mm	Order code Clamping die frame	Order code Clamping die set	Order code Extended clamping die set	Order code Flanging pin
16.0	MF37/FRAME20-60	MF37-16		BF37-6/42
20.0		MF37-20		BF37-6/42
25.0		MF37-25		BF37-6/42
30.0		MF37-30		BF37-6/42
32.9		MF37-32.9		BF37-6/42
33.4		MF37-33.4		BF37-6/42
38.0		MF37-38		BF37-38/60
42.0		MF37-42		BF37-38/60
48.3		MF37-48.3		BF37-38/60
50.0		MF37-50		BF37-38/60
60.0		MF37-60		BF37-60/75
60.3		MF37-60.3		BF37-60/75
65.0	MF37/FRAME73-90	MF37-65 E		BF37-60/75
73.0		MF37-73	MF37-73E for Tube 73X7	BF37-60/75
75.0		MF37-75		BF37-75/90
88.9		MF37-88.9		BF37-75/90
90.0		MF37-90	MF37-90E for Tube 90X9	BF37-75/90*
114.3	no frame required	MF37-114.3	MF37-114.3E for Tube 114.3X6.02	BF37-115/140
115.0		MF37-115		BF37-115/140
125.0		MF37-125		BF37-115/140
139.7		MF37-139.7		BF37-115/140
140.0		MF37-140		BF37-115/140
141.3		MF37-141.3		BF37-141/165
165.0		MF37-165		BF37-141/165
168.3		MF37-168.3		BF37-141/165

tools for scheduled pipes on request
* for the first flaring step, tool BF37-90PREFLARE necessary

Tool lifetime

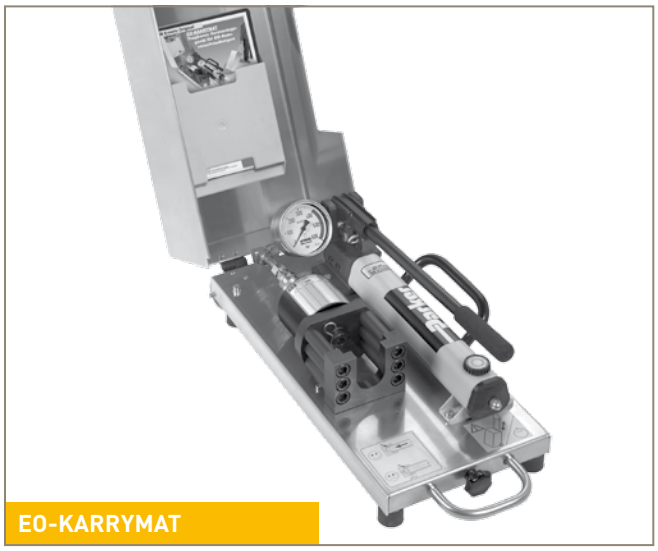
Assembly tools are subject of wear and must be regularly cleaned and checked.

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

Maximum lifetime can be achieved by following factors:

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

Assembly machines



EO-KARRYMAT

EO-KARRYMAT

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

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

The EO-KARRYMAT is ideal for repair work.

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

Catalogue: 4100
Bulletin: 4047

EOMAT ECO

EOMAT ECO

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

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

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

Catalogue: 4100
Bulletin: 4046

Assembly machines

EOMAT UNI

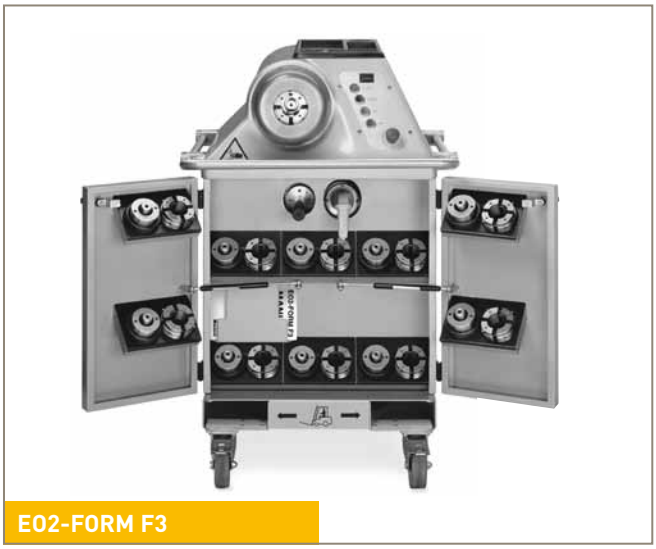
EOMAT UNI

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

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

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

Catalogue: 4100
Bulletin: 4042



EO2-FORM F3

EO2-FORM F3

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

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

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

Catalogue: 4100

Assembly machines

EO2-FORM PRO22

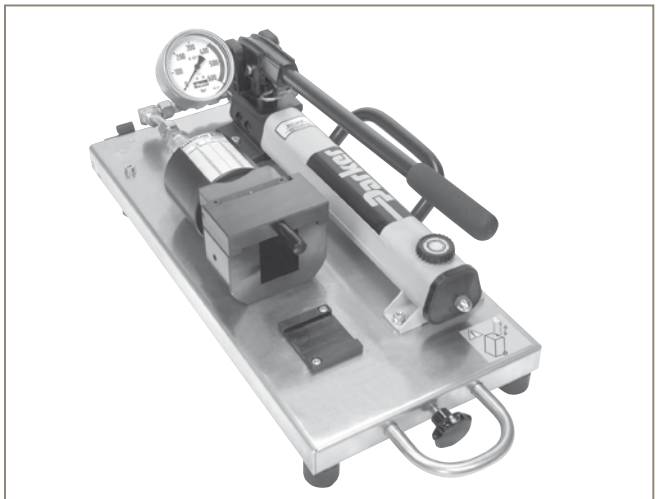
EO2-FORM PRO22

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

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

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

Catalogue: 4100
Bulletin: 4032



KarryFlare

KarryFlare

The KarryFlare is a portable device for easy and workmanlike 37° flaring for Triple-Lok® tube connections.
The KarryFlare consists of a hydraulic flaring unit and a hand-pump. It is practical, simple to operate and easy to transport.

The KarryFlare is ideal for repair work.

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

Catalogue: 4100
Bulletin: 4047

Assembly machines

ParFlare ECO

ParFlare ECO

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

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

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

Catalogue: 4100
Bulletin: 4048

ParFlare 120 WCM

ParFlare 120 HPF

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

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

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

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

Catalogue: 4167
Bulletin: 4169

Parflange® 1025

Parflange® 1025

The Parflange® 1025 is an orbital 37° flaring and 180° flanging machine. By using the patented Parflange® process, it achieves an excellent sealing surface and a high-strength tube connection.
This electro-hydraulic machine is easy to operate and can be moved around in workshops.

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

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

Catalogue: 4100
Bulletin: 4390

Parflange® 1050

Parflange® 1050

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

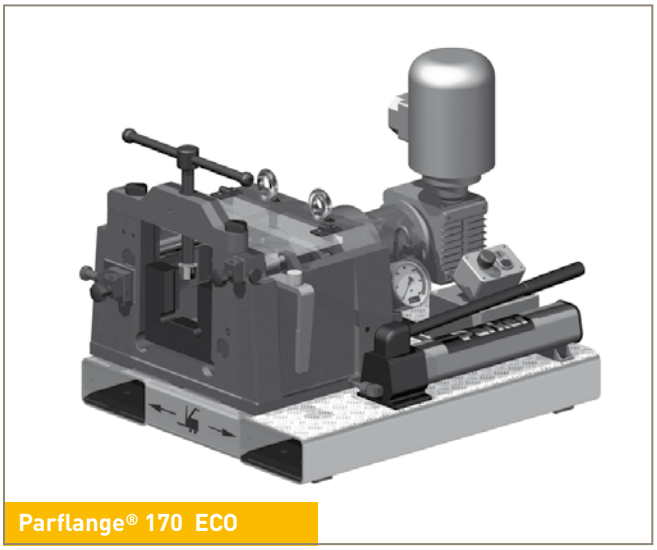
It represents a complete tube forming WorkCenter. For professional mass production of O-Lok® connections, the Parflange® 1050 PRO can be ordered with an automatic sleeve feeder.

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

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

Catalogue: 4100
Bulletin: 4391

Assembly machines



Parflange® 170 ECO

Parflange® 170 ECO

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

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

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

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

Catalogue: 4100

Parflange® 170 WCM

Parflange® 170 WCM

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

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

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

- 37° flaring of: F37 flange connection
- Assembly method: Orbital forming
- Tube-OD: 38 – 140 mm
- Total cycle time: 30 – 60 sec.
- Economic production quantity: max. 150 assemblies per day
- Dimensions (L x W x H): 880 x 810 x 1470
- Weight: 460 kg
- Power supply: 400 V 3-phase 50 Hz

Catalogue: 4162
Bulletin: 4165

Assembly machines

LUBSS/LUBCAN


EO-NIROMONT

Lubricants for tube forming and fitting assembly

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

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

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

Cataloge: 4100


Hand tools

Hand tools for workshop installation

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

Bending toolbox	WZK1
● Hand bending tool	BV6/18
Cutting and bending toolbox	WZK2
● Tube saw square	AV6/42
● Hacksaw	
● Deburring tools	
● Hand bending tool	BV6/18
Par-Lok Wrench	
● Snap-action ratchet wrench	
● Inch and metric hex sizes	
● Metric kit (10 wrenches)	10 – 22 mmm
● Inch kit (11 wrenches)	3/8 – 1”
● O-Lok kit (6 wrenches)	
● Triple-Lok / Ferulok kit (5 wrenches)	

Cataloge: 4100

Assembly machines

Tube bending and cutting tools

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

Tube saw square AV6/42
- Tube-OD: 6 – 42 mm

Combined tube bending and cutting tool BAV6/12
- Tube-OD: 6 – 12 mm

In-Ex deburring tool 226
- Tube-OD: 6 – 38 mm

Tube bending tool BV6/18
- Tube-OD: 6 – 18 mm

Tube bending tool BV20/25
- Tube-OD: 20 – 25 mm

Cataloge: 4100

Machine renting and leasing programme

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

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

Ideal for project work and on-site installation.

Machine Leasing (“hire purchase”)
- Alternative to purchase
- No down payment
- Machine is payed off in 24 monthly payments
- New machine, property is passed from Parker to customer

Machine Renting (“hire”)
- Ideal for project work
- Machine is rented and returned after project
- Monthly payment for use
- Used machine, property is at Parker

Cataloge: 4100

Assembly machines

Technical support for Parker machines

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

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

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

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

Assembly machines

Mobile bending machine MB 642

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

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

Specifications of standard MB 642 machine

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

Other MB models and various accessories available.

Compact mandrel bending machine DB 642K

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

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

Specifications of standard DB 642K machine

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

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

Assembly machines

DB 650ST

Stationary mandrel bending machine DB 650ST

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

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

Specifications of standard DB 650ST machine

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

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

DB 642 CNC

CNC mandrel bender DB 642-CNC

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

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

Specifications of standard DB 642-CNC machine

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

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

Assembly machines

RE 642 / RE 2060

Deburring machine RE 642 and RE 2060

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

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

Specifications for standard RE 642 machine

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

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

Hose cleaning kits

Hose cleaning kits

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

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

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

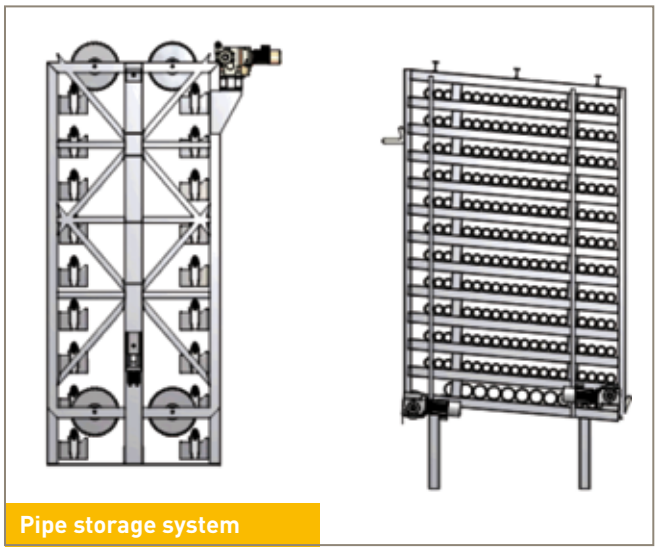
Both kits are ideal for universal workshop use.

Specifications

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

Bulletin: 4480-B144

Assembly machines



Pipe storage system

Pipe storage systems

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

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

Special conveyors and buffer tables are used for efficient workflow.

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

Grooving machines

Grooving machines for retaining ring connections

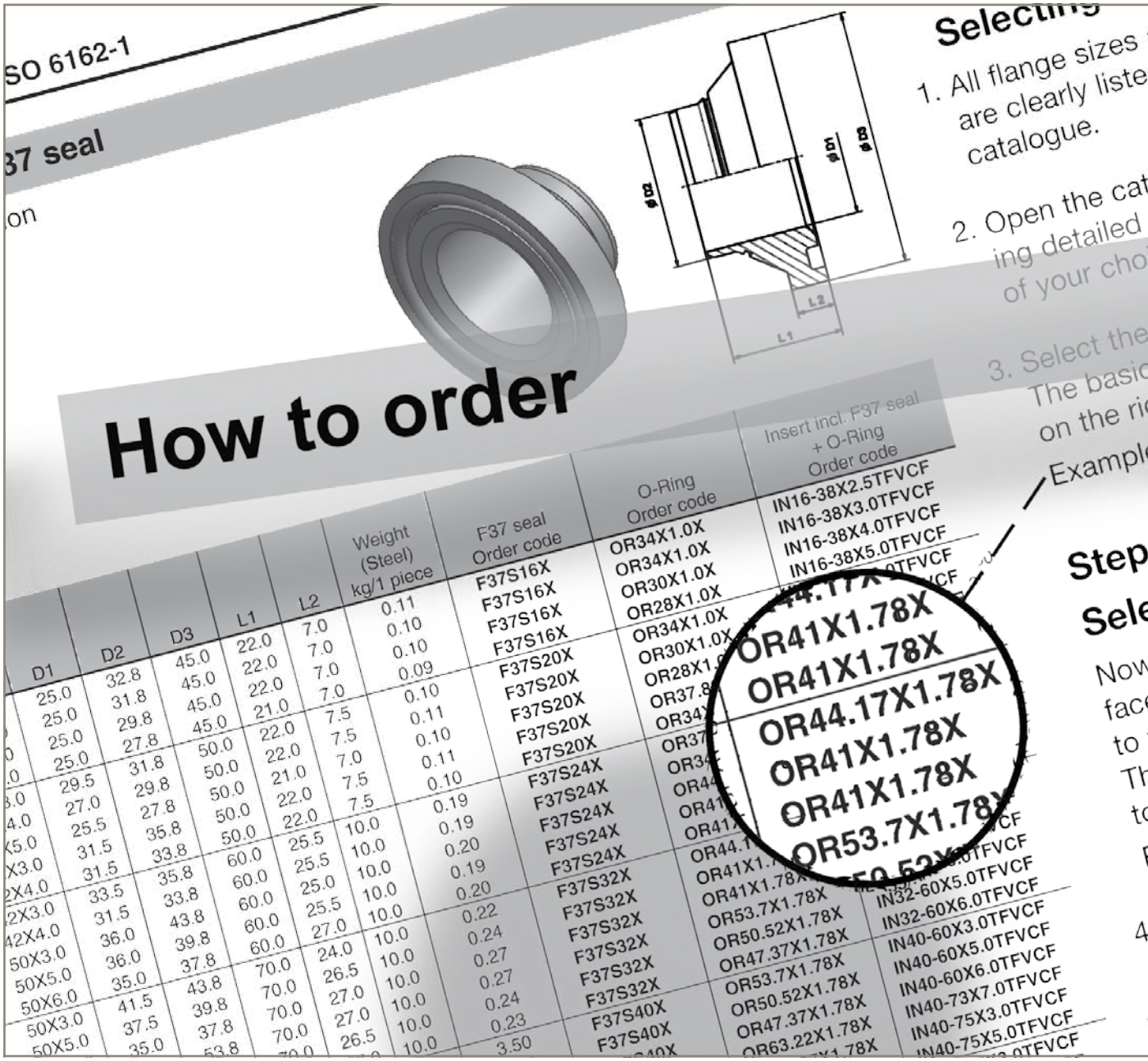
These compact lathes are clamped on OD of tube. Tools are rotating around tube for machining tube end and outer diameter. Special tool bits and spacers are designed according to retaining ring groove specification from Parker.

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

Product range

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

Notes



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

Size Code

8	12	16	20	24	32	40	48	64	80	96	128	160
1/2"	3/4"	1"	11/4"	11/2"	2"	21/2"	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 connnection, Flat face version

Material and coating

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

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

Combination examples

	Complete Part No.	Component	No.	Code	Material
Standard combination Steel CF	F37-320-42X3.0TFVCF	Flare Flange	1	F37-320-CFX	Steel, Cr(VI)-free
	Tube to port (F37 seal) 1 ¼" SAE 3000 Flare Flange	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	Flare Flange	1	F37-620-SSX	Stainless Steel
	Tube to port (F37 seal) 1 ¼" SAE 6000 Flare Flange, 38 mm OD tube Jump size	Insert incl. O-Ring and F37 seal	1	IN20-38X4.0TFVSS	Stainless Steel
		O-Ring	1	OR30X1.0X	NBR, 90° Shore
		F37 seal	1	F37S20X	PUR
		Sleeve	1	SL20-42-38-SSX	Stainless steel
Hot. dip galv. Flange and Stainless Steel Insert	F37-620-38X4.0TFVSSTZN	Flare Flange	1	F37-620-TZN	Hot dip galv.
	Tube to port (F37 seal) 1 ¼" SAE 6000 Flare Flange, 38 mm OD tube Jump size	Insert incl. O-Ring and F37 seal	1	IN20-38X4.0TFVSS	Stainless steel
		O-Ring	1	OR30X1.0X	NBR, 90° Shore
		F37 seal	1	F37S20X	PUR
		Sleeve	1	SL20-42-38-SSX	Stainless steel

Parflange® Retaining Ring Code Key

Retaining Ring Examples: R-1 | 32 | WA | -60.3X2.9 | S

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

Size Code

8	12	16	20	24	32	40	48	64	80	96	128	160
1/2"	3/4"	1"	11/4"	11/2"	2"	21/2"	3"	4"	5"	6"	8"	10"

Weld adapter

Pipe size and Insert Code
60.3X2.9/Pipe O. D. X wall thickness (mm)

Material and coating

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

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

Combination examples

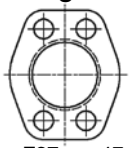
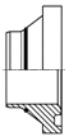
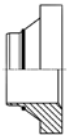
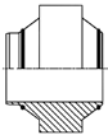
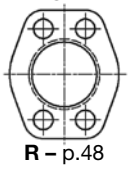
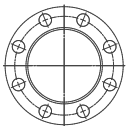
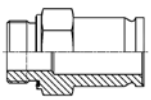
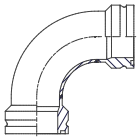
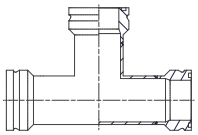
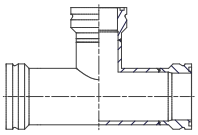
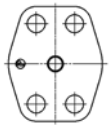
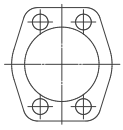
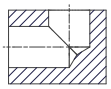
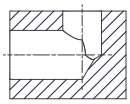
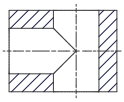
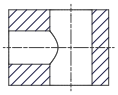
	Complete Part No.	Component	No.	Code	Material
Standard combination Steel CF	R-132WA-60.3X2.9S SAE 1000 Retaining Ring Weld Adapter	Retaining Ring Flange	1	R-132-CFX	Steel, Cr(VI)-free
		Retaining Ring		R32X	Stainless Steel
		Weld Adapter body	1	WA132-60.3X2.9S	Steel, Cr(VI)-free
		O-Ring		OR56.75X3.53X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

Notes

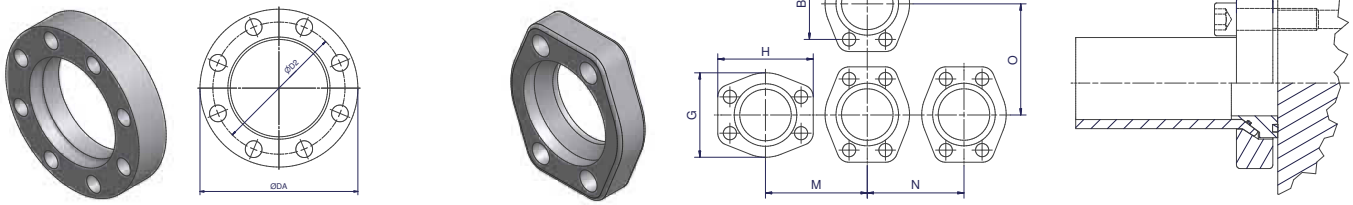
SAE 1000 System

50 – 70 bar

Programme overview SAE 1000/ISO 6162-1 footprint

Parflange® F37 connection parts	**Flanges**	 **F37 –** p.47
	Inserts	 **TFV –** p.49  **TF –** p.50  **TT –** p.51
Retaining ring connection parts	**Flanges**	 **R –** p.48  **R-Ring –** p.52  **R –** p.48
	Male / Female	 **MTF-R –** p.53  **FTF-R –** p.54
	Weld	 **WA –** p.55  **WA-F –** p.56
	Tube to Tube	 **BF –** p.57/58  **RF –** p.59/60  **LF –** p.61/62  **TF –** p.63/64  **TF-R–** p.63/64
SAE connection parts	**Blind Flanges**	 **BFV –** p.65  **CPML –** p.66
	Blocks see SAE 3000	 **LB**  **LBR**  **TB**  **TBR**
Seals Adapter Bolts	**Bolts and Nuts**	 p.67

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

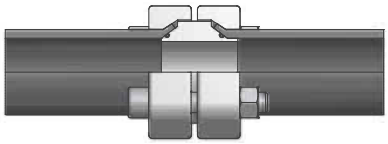


Parflange F37 flange dimensions

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	93.75	90	85	96	20	4	0.52	70
2	**F37-132-CFX**	42.9	77.8	97	101.60	102	99	104	25	4	0.83	70
2 1/2	**F37-140-CFX**	50.8	88.9	109	114.30	114	111	117	30	4	1.16	70
3	**F37-148-CFX**	61.9	106.4	131	135.50	136	133	137	30	4	1.57	70
3 1/2	**F37-156-CFX**	69.9	120.7	140	152.40	148	142	155	30	4	1.99	70
4	**F37-164-CFX**	77.8	130.2	152	161.95	160	155	164	39	4	2.69	70
5	**F37-180-CFX**	92.1	152.4	181	184.15	186	184	185	39	4	3.24	70
		D2	DA									
6	**F37-196-CFX**	208.0	236.0						39	6	5.60	50

Please change suffixes according to material/surface required

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



Part combination flaring SAE 1000

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

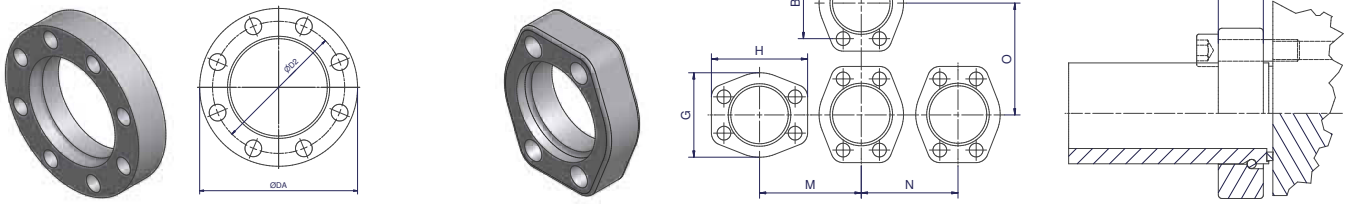
Select the complete version:

* …FVCF Seal version
…TCF Tube to Tube version
…FCF Flat Face version

Pressure rates related to flanges | Bolt and nuts for flanges see page 67 | Other sizes on request

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

SAE 1000/ISO 6162-1 footprint

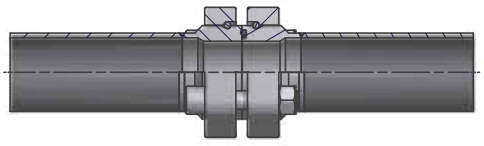


Retaining Ring Flange dimensions

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	93.75	90	85	96	20	4	0.46	70
2	**R-132-CFX**	42.9	77.8	97	101.60	102	99	104	20	4	0.57	70
2 1/2	**R-140-CFX**	50.8	88.9	109	114.30	114	111	117	20	4	0.70	70
3	**R-148-CFX**	61.9	106.4	131	135.50	136	133	137	25	4	1.18	70
3 1/2	**R-156-CFX**	69.9	120.7	140	152.40	148	142	155	29	4	1.47	70
4	**R-164-CFX**	77.8	130.2	152	161.95	160	155	164	30	4	1.74	70
5	**R-180-CFX**	92.1	152.4	181	184.15	185	183	186	39	4	2.81	70
		D2	DA									
6	**R-196-CFX**	208	235.5						39	6	4.96	70
8	**R-1128-CFX**	275	318.0						38	8	8.95	50
10	**R-1160-CFX**	345	409.6						50	8	23.29	50

Please change suffixes according to material/surface required

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



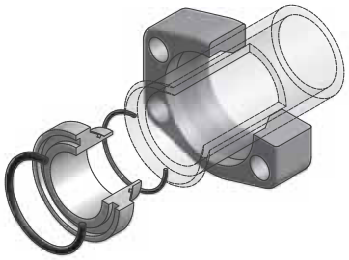
Part combination retaining ring SAE 1000 (O-Ring) connection

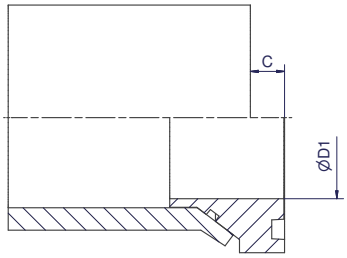
Flange pressure (bar)	Size Inch	Flange	Retaining Ring	O-Ring	Bolts Tube to Port	Bolts Tube to Tube	Nut
70	1 1/2	R-124-CFX	R124X	OR47.22X3.53X	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
	2	R-132-CFX	R132X	OR56.75X3.53X	4 x ZYLS12X40	4 x ZYLS12X65	4 x ISO4032-M12
	2 1/2	R-140-CFX	R140X	OR69.44X3.53X	4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

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

TFV – Flare flange connection

Tube to port connection





Size Inch	Tube	Flange incl. Insert F37 Seal + O-Ring Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Tube Side Order code	O-Ring Seal Port Side Order code	Weight (Steel) kg/1 piece
1 1/2	50X3.0	**F37-124-50X3.0TFVCF**	36.0	11	IN24-50X3.0TFVCF	OR44.17X1.78X	OR47.22X3.53	0.72
2	60X3.0	**F37-132-60X3.0TFVCF**	46.0	12	IN32-60X3.0TFVCF	OR53.7X1.78X	OR56.75X3.53	1.10
2 1/2	75X3.0	**F37-140-75X3.0TFVCF**	60.0	10	IN40-75X3.0TFVCF	OR69.57X1.78X	OR69.44X3.53	1.46
3	90X3.5	**F37-148-90X3.5TFVCF**	72.0	15	IN48-90X3.5TFVCF	OR82.27X1.78X	OR85.32X3.53	2.17
3 1/2	100x4.0	**F37-156-100X4.0TFVCF**	88.6	15	IN56-100X4.0TFVCF	OR98.02X3.53	OR98.02X3.53	2.60
4	115X4.0	**F37-164-115X4.0TFVCF**	90.0	14	IN64-115X4.0TFVCF	OR110X2X	OR110.72X3.53	3.53
5	140X4.5	**F37-180-140X4.5TFVCF**	122.0	15	IN80-140X4.5TFVCF	OR129.77X3.53	OR136.12X3.53	4.09
6	165X5.0	**F37-196-165X5.0TFVCF**	150.8	17	IN96-165X5.0TFVCF	OR158.42X6.26X	OR158.34X3.53	6.98

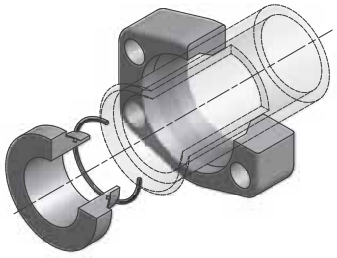
Other sizes on request

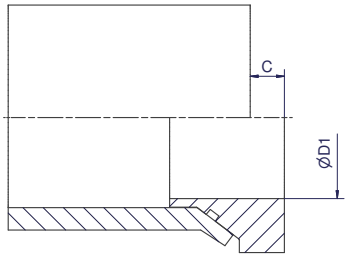
Please change suffixes according to material/surface required

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

TF – Flare flange connection

Tube to port connection, flat face





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

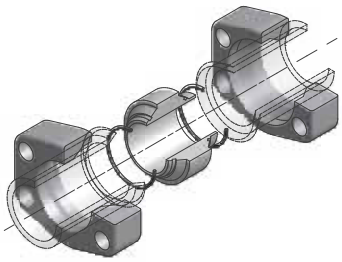
Other sizes on request

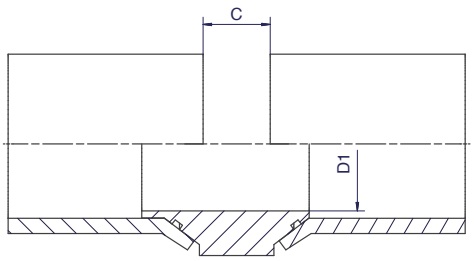
Please change suffixes according to material/surface required

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

TT – Flare flange connection

Tube to tube connection





Size Inch	Tube	Flange incl. Insert + 2 x O-Ring Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Tube Side Order code	Weight (Steel) kg/1 piece
1 1/2	50X3.0	**F37-124-50X3.0TTCF**	36.0	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	OR98.02X3.53X	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	OR158.42X6.26X	8.36

Other sizes on request

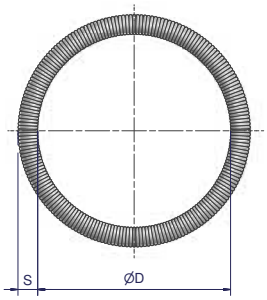
Please change suffixes according to material/surface required

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

R – Retaining ring

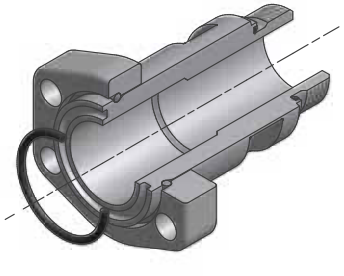
SAE 1000/ISO 6162-1 footprint

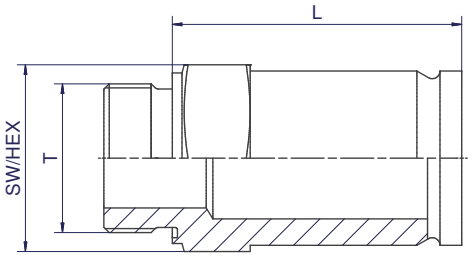
Size Inch	D	S	Order code
1 1/2	57.4	2.6	**R124X**
2	67.4	2.6	**R132X**
2 1/2	78.4	2.6	**R140X**
3	94.5	3.5	**R148X**
3 1/2	111.5	3.5	**R156X**
4	121.5	3.5	**R164X**
5	146.0	4.0	**R180X**
6	184.0	4.0	**R196X**
8	234.0	6.0	**R1128X**
10	286.0	8.0	**R1160X**



MTF-R – Male thread adapter, BSPP

SAE 1000/ISO 6162-1 footprint





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

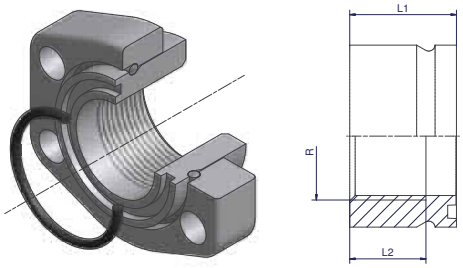
Other sizes on request

Please change suffixes according to material/surface required

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

FTF-R – Female thread adapter, BSPP

SAE 1000/ISO 6162-1 footprint



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

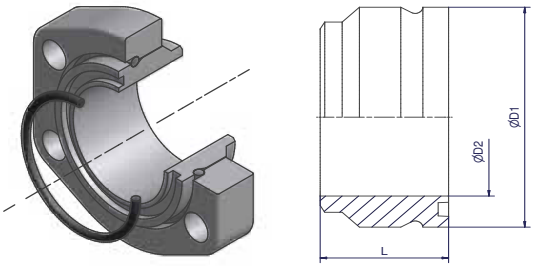
Other sizes on request

Please change suffixes according to material/surface required

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

WA – Weld adapter connection

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

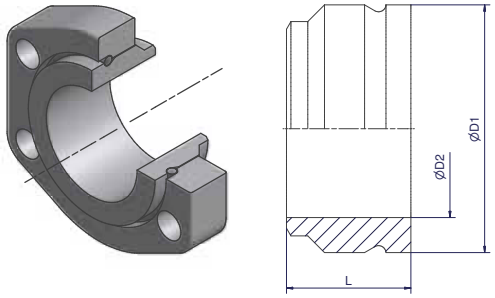
Other sizes on request

Please change suffixes according to material/surface required

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

WAF – Weld adapter flat connection

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

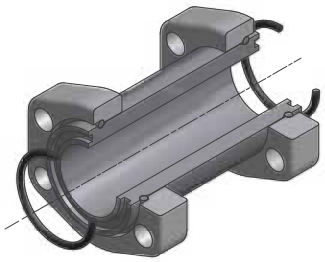
Other sizes on request

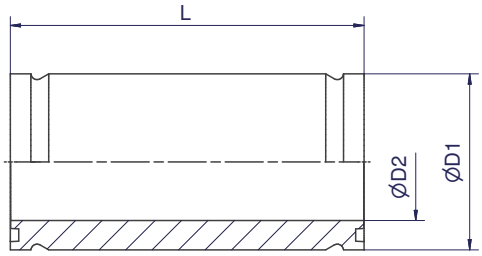
Please change suffixes according to material/surface required

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

BF – Bulkhead flange

SAE 1000/ISO 6162-1 footprint





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

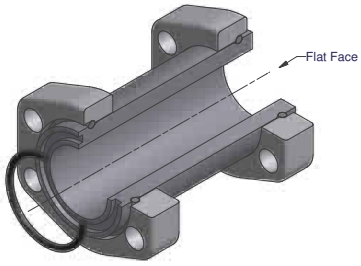
Other sizes on request

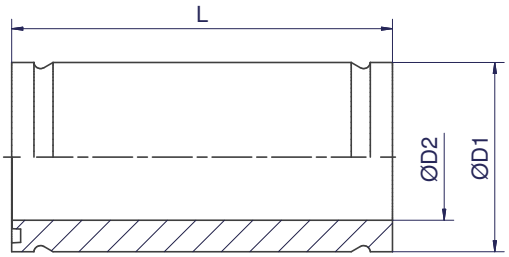
Please change suffixes according to material/surface required

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

BF – Bulkhead flange flat face

SAE 1000/ISO 6162-1 footprint





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

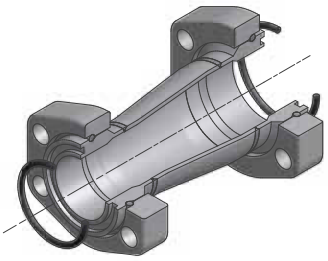
Other sizes on request

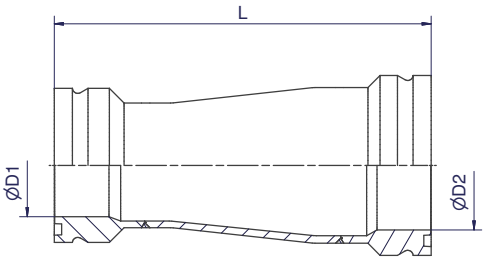
Please change suffixes according to material/surface required

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

RF – Reducer flange

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 (Steel) kg/1 piece	W.P.
2 - 1 1/2	**R-132-124LRFCF**	RF132-124LOMDCF	0R56.75X3.53X	0R47.22X3.53X	48.3	60.3	146	0.91	70
2 1/2 - 1 1/2	**R-140-124LRFCF**	RF140-124LOMDCF	0R69.44X3.53X	0R47.22X3.53X	48.3	76.1	160	1.04	70
2 1/2 - 2	**R-140-132LRFCF**	RF140-132LOMDCF	0R69.44X3.53X	0R56.75X3.53X	60.3	76.1	160	1.25	70
3 - 1 1/2	**R-148-124LRFCF**	RF148-124LOMDCF	0R85.32X3.53X	0R47.22X3.53X	48.3	88.9	165	1.34	70
3 - 2	**R-148-132LRFCF**	RF148-132LOMDCF	0R85.32X3.53X	0R56.75X3.53X	60.3	88.9	165	1.45	70
3 - 2 1/2	**R-148-140LRFCF**	RF148-140LOMDCF	0R85.32X3.53X	0R69.44X3.53X	76.1	88.9	168	1.53	70
3 1/2 - 2 1/2	**R-156-140LRFCF**	RF156-140LOMDCF	0R98.02X3.53X	0R69.44X3.53X	79.1	108.0	177	2.00	50
3 1/2 - 3	**R-156-148LRFCF**	RF156-148LOMDCF	0R98.02X3.53X	0R85.32X3.53X	88.9	108.0	182	2.32	50
4 - 3	**R-164-148LRFCF**	RF164-148LOMDCF	0R110.72X3.53X	0R85.32X3.53X	88.9	114.3	182	2.43	50
5 - 4	**R-180-164LRFCF**	RF180-164LOMDCF	0R136.12X3.53X	0R110.72X3.53X	114.3	139.7	214	3.86	50

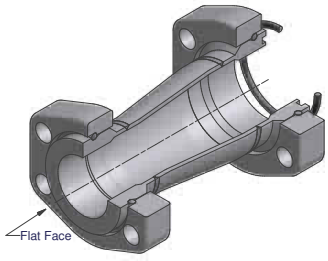
Other sizes on request

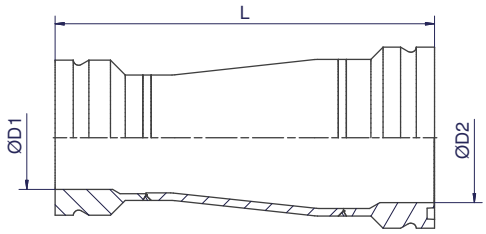
Please change suffixes according to material/surface required

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

RF – Reducer flange flat face

SAE 1000/ISO 6162-1 footprint





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

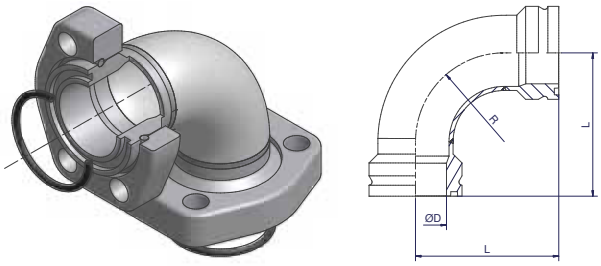
Other sizes on request

Please change suffixes according to material/surface required

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

LF – Elbow flange

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 (Steel) kg/1 piece	W.P.
1 1/2	**R-124LLFCF**	LF124LOMDCF	OR47.22X3.53X	**39.8**	94	57.0	0.85	70
2	**R-132LLFCF**	LF132LOMDCF	OR56.75X3.53X	**50.0**	112	76.0	1.18	70
2 1/2	**R-140LLFCF**	LF140LOMDCF	OR69.44X3.53X	**62.0**	132	95.0	1.54	70
3	**R-148LLFCF**	LF148LOMDCF	OR85.32X3.53X	**77.8**	155	114.0	2.44	70
3 1/2	**R-156LLFCF**	LF156LOMDCF	OR98.02X3.53X	**88.9**	184	142.5	3.88	50
4	**R-164LLFCF**	LF164LOMDCF	OR110.72X3.53X	**99.8**	195	152.0	4.33	50
5	**R-180LLFCF**	LF180LOMDCF	OR136.12X3.53X	**124.8**	235	190.0	6.81	50
6	**R-196LLFCF**	LF196LOMDCF	OR158.34X3.53X	**149.8**	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

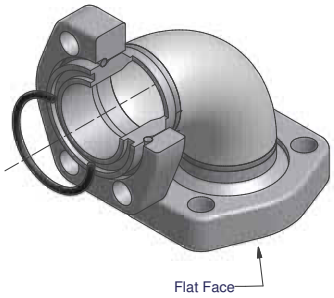
Other sizes on request

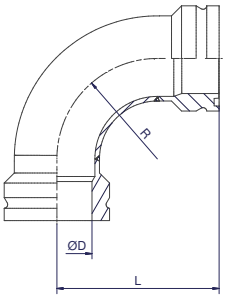
Please change suffixes according to material/surface required

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 (Steel) kg/1 piece	W.P.
1 1/2	**R-124FLFCF**	LF124FOMDCF	OR47.22X3.53X	39.8	94	57.0	0.85	70
2	**R-132FLFCF**	LF132FOMDCF	OR56.75X3.53X	50.0	112	76.0	1.18	70
2 1/2	**R-140FLFCF**	LF140FOMDCF	OR69.44X3.53X	62.0	132	95.0	1.54	70
3	**R-148FLFCF**	LF148FOMDCF	OR85.32X3.53X	77.8	155	114.0	2.44	70
3 1/2	**R-156FLFCF**	LF156FOMDCF	OR98.02X3.53X	88.9	184	142.5	3.88	50
4	**R-164FLFCF**	LF164FOMDCF	OR110.72X3.53X	99.8	195	152.0	4.33	50
5	**R-180FLFCF**	LF180FOMDCF	OR136.12X3.53X	124.8	235	190.0	6.81	50
6	**R-196FLFCF**	LF196FOMDCF	OR158.34X3.53X	149.8	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

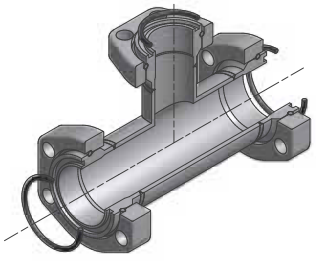
Other sizes on request

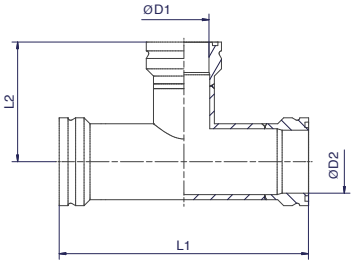
Please change suffixes according to material/surface required

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 (Steel) kg/1 piece	W.P.
1 1/2	**R-124LTFCF**	TF124LOMDCF	OR47.22X3.53X	OR47.22X3.53X	39.8	39.8	184	92	1.30	70
2-1 1/2-2	**R-132-124-132LTFCF**	TF132-124-132LOMDCF	OR47.22X3.53X	OR56.75X3.53X	39.8	50.0	200	97	1.58	70
2	**R-132LTFCF**	TF132LOMDCF	OR56.75X3.53X	OR56.75X3.53X	50.0	50.0	198	99	1.67	70
2 1/2-2-2 1/2	**R-140-132-140LTFCF**	TF140-132-140LOMDCF	OR56.75X3.53X	OR69.44X3.53X	50.0	62.0	222	105	2.02	70
2 1/2	**R-140LTFCF**	TF140LOMDCF	OR69.44X3.53X	OR69.44X3.53X	62.0	62.0	222	111	2.09	70
3-2 1/2-3	**R-148-140-148LTFCF**	TF148-140-148LOMDCF	OR69.44X3.53X	OR85.32X3.53X	62.0	77.8	252	118	2.91	70
3	**R-148LTFCF**	TF148LOMDCF	OR85.32X3.53X	OR85.32X3.53X	77.8	77.8	252	126	3.22	70
3 1/2-3-3 1/2	**R-156-148-156LTFCF**	TF156-148-156LOMDCF	OR85.32X3.53X	OR98.02X3.53X	77.8	89.8	283	137	4.47	50
3 1/2	**R-156LTFCF**	TF156LOMDCF	OR98.02X3.53X	OR98.02X3.53X	89.8	89.8	283	140	4.86	50
4-3-4	**R-164-148-164LTFCF**	TF164-148-164LOMDCF	OR85.32X3.53X	OR110.72X3.53X	77.8	99.8	293	138	4.84	50
4	**R-164LTFCF**	TF164LOMDCF	OR110.72X3.53X	OR110.72X3.53X	99.8	99.8	293	145	5.37	50
5-4-5	**R-180-164-180LTFCF**	TF180-164-180LOMDCF	OR110.72X3.53X	OR136.12X3.53X	99.8	124.8	340	157	7.39	50
5	**R-180LTFCF**	TF180LOMDCF	OR136.12X3.53X	OR136.12X3.53X	124.8	124.8	341	169	8.04	50
6-5-6	**R-196-180-196LTFCF**	TF196-180-196LOMDCF	OR136.12X3.53X	OR158.34X3.53X	124.8	149.8	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

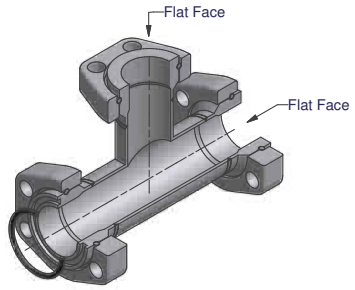
Other sizes on request

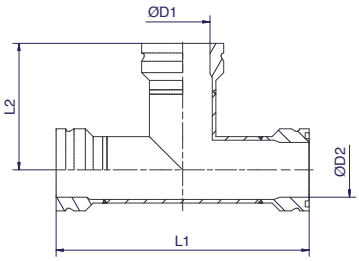
Please change suffixes according to material/surface required

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

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 (Steel) kg/1 piece	W.P.
1 1/2	**R-124FTFCF**	TF124F0MDCF	0R47.22X3.53X	39.8	39.8	184	92	1.30	70
2-1 1/2-2	**R-132-124-132FTFCF**	TF132-124-132F0MDCF	0R56.75X3.53X	39.8	50.0	200	97	1.58	70
2	**R-132FTFCF**	TF132F0MDCF	0R56.75X3.53X	50.0	50.0	198	99	1.67	70
2 1/2-2-21/2	**R-140-132-140FTFCF**	TF140-132-140F0MDCF	0R69.44X3.53X	50.0	62.0	222	105	2.02	70
2 1/2	**R-140FTFCF**	TF140F0MDCF	0R69.44X3.53X	62.0	62.0	222	111	2.09	70
3-2 1/2-3	**R-148-140-148FTFCF**	TF148-140-148F0MDCF	0R85.32X3.53X	62.0	77.8	252	118	2.91	70
3	**R-148FTFCF**	TF148F0MDCF	0R85.32X3.53X	77.8	77.8	252	126	3.22	70
3 1/2-3-3 1/2	**R-156-148-156FTFCF**	TF156-148-156F0MDCF	0R98.02X3.53X	77.8	89.8	283	137	4.47	50
3 1/2	**R-156FTFCF**	TF156F0MDCF	0R98.02X3.53X	89.8	89.8	283	140	4.86	50
4-3-4	**R-164-148-164FTFCF**	TF164-148-164F0MDCF	0R110.72X3.53X	77.8	99.8	293	138	4.84	50
4	**R-164FTFCF**	TF164F0MDCF	0R110.72X3.53X	99.8	99.8	293	145	5.37	50
5-4-5	**R-180-164-180FTFCF**	TF180-164-180F0MDCF	0R136.12X3.53X	99.8	124.8	340	157	7.39	50
5	**R-180FTFCF**	TF180F0MDCF	0R136.12X3.53X	124.8	124.8	341	169	8.04	50
6-5-6	**R-196-180-196FTFCF**	TF196-180-196F0MDCF	0R158.34X3.53X	124.8	149.8	426	188	11.49	50
6	**R-196FTFCF**	TF196F0MDCF	0R158.34X3.53X	149.8	149.8	439	218	12.87	50
8-6-8	**R-1128-196-1128FTFCF**	TF1128-196-1128F0MDCF	0R219.3X5.7X	149.8	206.5	528	243	22.66	50
8	**R-1128FTFCF**	TF1128F0MDCF	0R219.3X5.7X	206.5	206.5	529	263	25.58	50
10	**R-1160FTFCF**	TF1160F0MDCF	0R269.3X5.7X	255.0	255.0	612	306	40.16	50

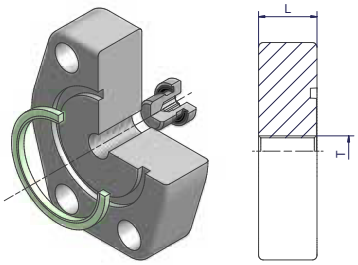
Other sizes on request

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 F37 seal

SAE 1000/ISO 6162-1 footprint



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

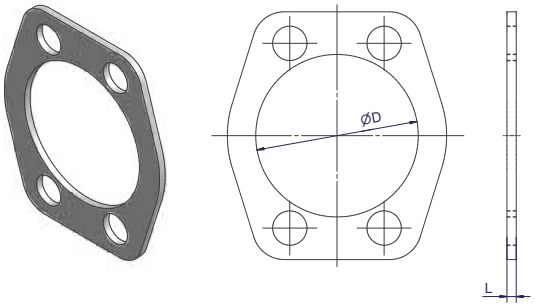
Other sizes on request

Please change suffixes according to material/surface required

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

CPML – F37 inner plate

SAE 1000/ISO 6162-1 footprint



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

Other sizes on request

Please change suffixes according to material/surface required

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

Bolts and nuts for flange

SAE 1000/ISO 6162-1 footprint

F37 Flare Flange

Size Inch	Flange	Soft Seal / Flat Face Bolts Tube to Port	Soft Seal / Flat Face Bolts Tube to Tube	Nut
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
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

Retaining Ring Flange

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

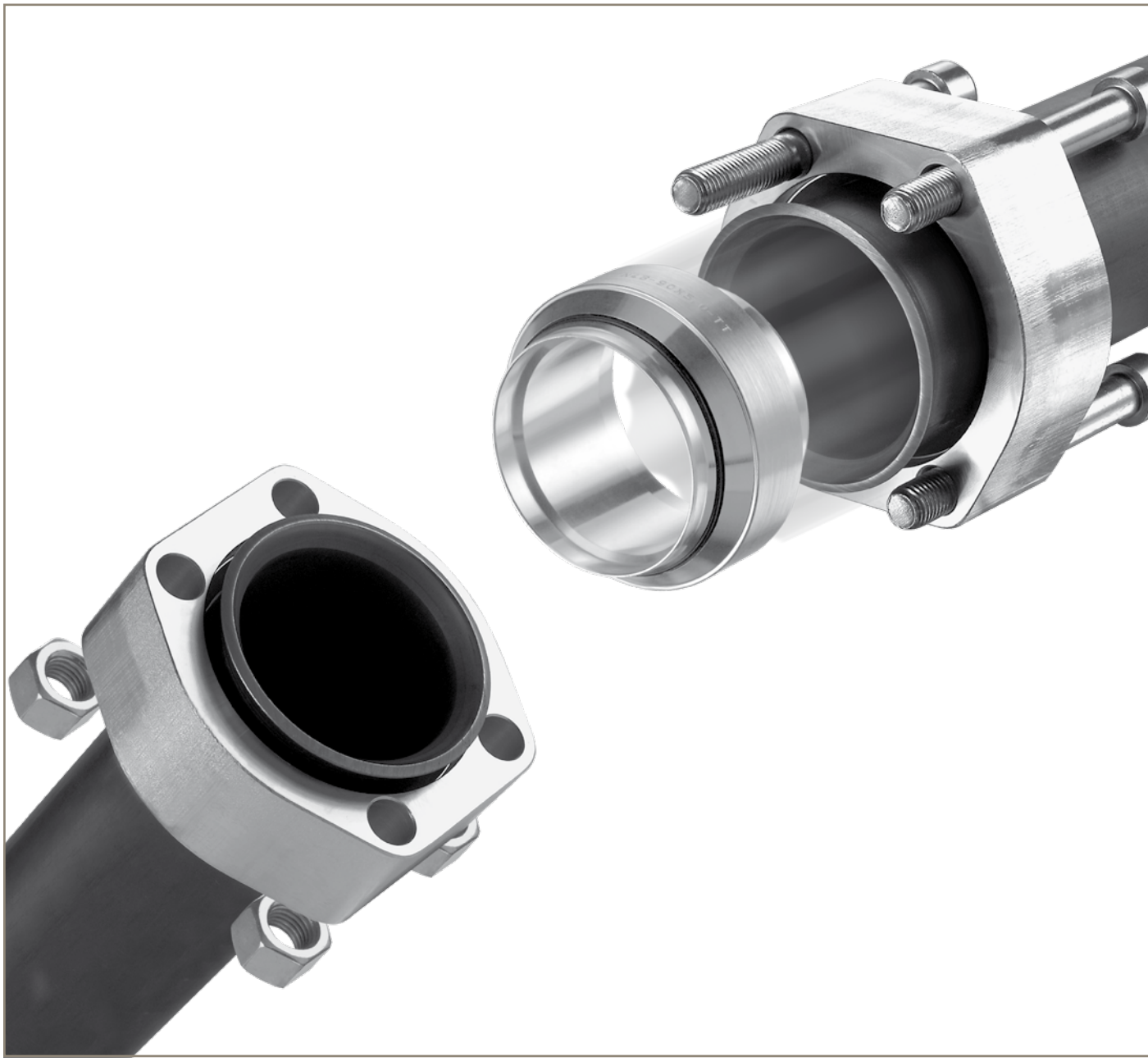
Bolts and nuts must be ordered seperately.

Latest information about nuts and bolts see www.parker.com/tfde/servicemanuals/userguides

Please add the suffixes according to the bolt quality

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

Notes



SAE 3000 System

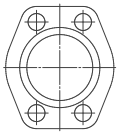
210 – 350 bar

Notes

Programme overview SAE 3000/ISO 6162-1 footprint

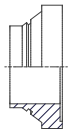
Parflange® F37 connection parts

Flanges

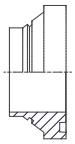


F37 – p.72/73

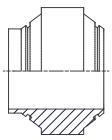
Inserts



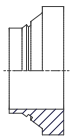
TFB – p.76



TFV – p.77



TT – p.78



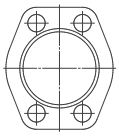
TF – p.79

Sleeve

SL – p.80

Retaining ring connection parts

Flanges

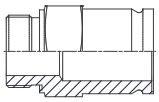


R – p.74

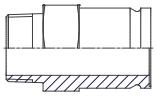
R-Ring – p.81

PSC – p.75

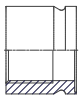
Male / Female



MTF-R – p.82

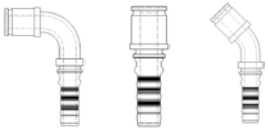


MTF-N – p.83



FTF-R – p.84

Hose



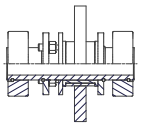
Hose – p.85

Weld

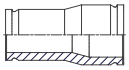
WA – p.86/87

Tube to Tube

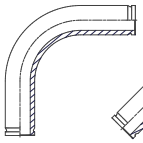
BF – p.88



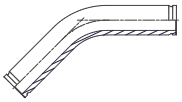
VB – p.89



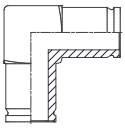
RF – p.90



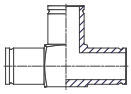
FB90 – p.91



FB45 – p.92



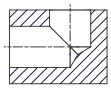
LF – p.93



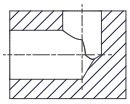
TF – p.94

SAE connection parts

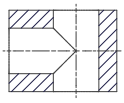
Blocks



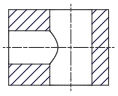
LB – p.95



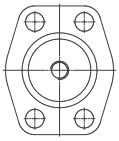
LBR – p.96



TB – p.97



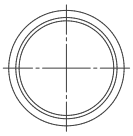
TBR – p.98



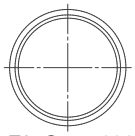
BFV – p.99

Seals Adapter Bolts

Components

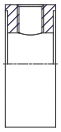


BS – p.100

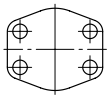


F37S – p.100

AO – p.101



TBT – p.102

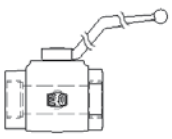


AP– p.103

Bolts and Nuts

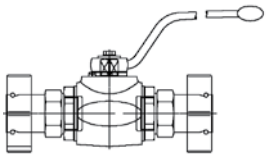
p.104

Ball valves

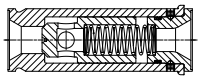


KH – p.105

KH – p.106



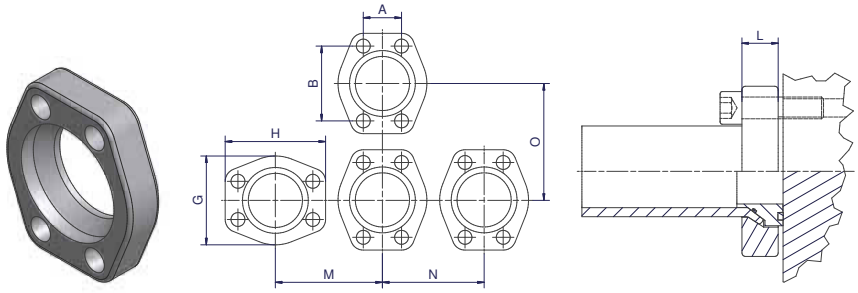
KH-R – p.107



RHD-R – p.108

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

SAE 3000/ISO 6162-1



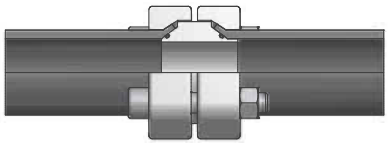
Parflange F37 flange dimensions

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

* Threaded flanges

Please change suffixes according to material/surface required

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



Part combination flaring SAE 3000

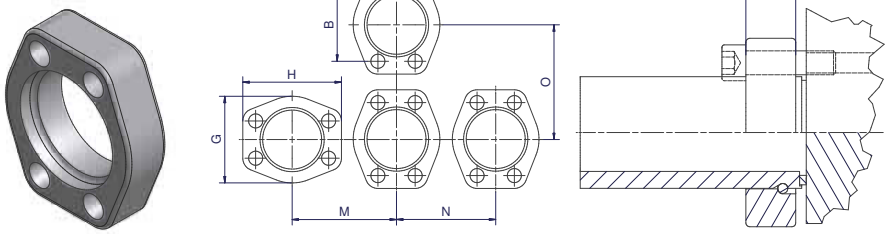
Flange Pressure (bar)	Size Inch	Pipe Size	Flange SAE 3000 ISO 6162-1	Insert*	F37 Seal	Sleeve	F37 Seal / Flat Face Bonded Seal		Nut
							Bolts Tube to Port	Bolts Tube to Tube	
350	1/2	16X2.0	F37-308-CFX	IN08-16X2.0T...	F37S08X	SL08-25-16-CFX	4 x ZYLS8X35	4 x ZYLS8X55	4 x ISO4032-M8
	1/2	18X2.0	F37-308-CFX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

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

Pressure rates related to flanges. Other sizes like schedule on request.
Bolts and nuts are noct included in complete part numbers. Bolts and nuts for flanges see page 104

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

SAE 3000/ISO 6162-1

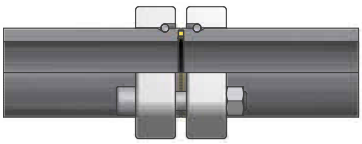


Retaining ring flange dimensions

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

Please change suffixes according to material/surface required

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

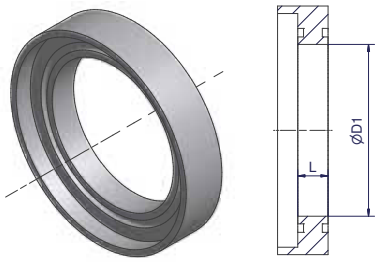


Part combination Bonded seal SAE 3000 connection

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

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

SAE 3000/ISO 6162-1

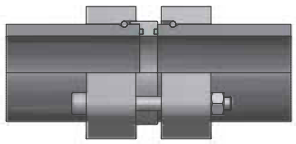


Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
1 1/2	56X8.5			on request	
2	66X8.5	6.5	49	PSC32-66X8.5VCF	
2 1/2	80X10	15.0	60	PSC40-80X10VCF	210
3	97X12	15.0	73	PSC48-97X12VCF	

Other sizes on request
Stainless steel on request
Included seals

Please change suffixes according to material/surface required

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



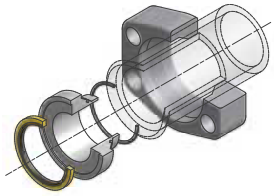
Part combination Pipe seal carrier SAE 3000 connection

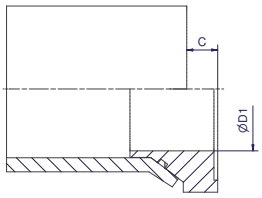
Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Pipe Seal Carrier	Bolts Tube to Port	Bolts Tube to Tube	Nut
280	1 1/2	56X8.5	R-324-CFX	R24X	PSC24-56X8.5VCF	on request	on request	on request
	2	66X8.5	R-332-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS12X60	4 x ZYLS12X100	4 x ISO4032-M12
210	2 1/2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

Stainless Steel on request
Other sizes on request

TFB – Flare flange connection

Tube to port connection, bonded seal





Size		Flange incl. Insert + Bonded Seal + O-Ring + (Sleeve) Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	**F37-308-16X2.0TFBCF**	9.5	8.0	IN08-16X2.0TFBCF	BS08SNX	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	**F37-308-18X2.0TFBCF**	11.5	8.0	IN08-18X2.0TFBCF	BS08SNX	OR14X1.0X	SL08-25-18-CFX	0.24
1/2	20X2.0	**F37-308-20X2.0TFBCF**	13.5	8.0	IN08-20X2.0TFBCF	BS08SNX	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	**F37-308-20X2.5TFBCF**	13.5	8.0	IN08-20X2.5TFBCF	BS08SNX	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	**F37-308-25X2.5TFBCF**	13.5	10.0	IN08-25X2.5TFBCF	BS08SNX	OR20X1.0X		0.25
1/2	25X3.0	**F37-308-25X3.0TFBCF**	13.0	8.0	IN08-25X3.0TFBCF	BS08SNX	OR20X1.0X		0.24
3/4	20X2.0	**F37-312-20X2.0TFBCF**	13.5	8.0	IN12-20X2.0TFBCF	BS12SNX	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	20X2.5	**F37-312-20X2.5TFBCF**	12.5	8.0	IN12-20X2.5TFBCF	BS12SNX	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	25X2.5	**F37-312-25X2.5TFBCF**	17.5	10.0	IN12-25X2.5TFBCF	BS12SNX	OR20X1.0X	SL12-30-25-CFX	0.31
3/4	25X3.0	**F37-312-25X3.0TFBCF**	16.5	8.0	IN12-25X3.0TFBCF	BS12SNX	OR20X1.0X	SL12-30-25-CFX	0.32
3/4	30X3.0	**F37-312-30X3.0TFBCF**	19.0	8.5	IN12-30X3.0TFBCF	BS12SNX	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	SL16-38-25-CFX	0.39
1	25X3.0	**F37-316-25X3.0TFBCF**	16.5	8.0	IN16-25X3.0TFBCF	BS16SNX	OR20X1.0X	SL16-38-25-CFX	0.39
1	30X3.0	**F37-316-30X3.0TFBCF**	21.5	8.5	IN16-30X3.0TFBCF	BS16SNX	OR25X1.0X	SL16-38-30-CFX	0.39
1	30X4.0	**F37-316-30X4.0TFBCF**	19.5	8.5	IN16-30X4.0TFBCF	BS16SNX	OR22X1.0X	SL16-38-30-CFX	0.39
1	38X2.5	**F37-316-38X2.5TFBCF**	25.0	9.5	IN16-38X2.5TFBCF	BS16SNX	OR34X1.0X		0.41
1	38X3.0	**F37-316-38X3.0TFBCF**	25.0	9.0	IN16-38X3.0TFBCF	BS16SNX	OR34X1.0X		0.40
1	38X4.0	**F37-316-38X4.0TFBCF**	25.0	10.0	IN16-38X4.0TFBCF	BS16SNX	OR30X1.0X		0.40
1	38X5.0	**F37-316-38X5.0TFBCF**	25.0	8.0	IN16-38X5.0TFBCF	BS16SNX	OR28X1.0X		0.39
1 1/4	30X3.0	**F37-320-30X3.0TFBCF**	21.5	8.5	IN20-30X3.0TFBCF	BS20SNX	OR25X1.0X	SL20-42-30-CFX	0.57
1 1/4	30X4.0	**F37-320-30X4.0TFBCF**	19.5	8.5	IN20-30X4.0TFBCF	BS20SNX	OR22X1.0X	SL20-42-30-CFX	0.58
1 1/4	38X3.0	**F37-320-38X3.0TFBCF**	29.5	9.0	IN20-38X3.0TFBCF	BS20SNX	OR34X1.0X	SL20-42-38-CFX	0.56
1 1/4	38X4.0	**F37-320-38X4.0TFBCF**	27.0	10.0	IN20-38X4.0TFBCF	BS20SNX	OR30X1.0X	SL20-42-38-CFX	0.57
1 1/4	38X5.0	**F37-320-38X5.0TFBCF**	25.5	8.0	IN20-38X5.0TFBCF	BS20SNX	OR28X1.0X	SL20-42-38-CFX	0.56
1 1/4	42X3.0	**F37-320-42X3.0TFBCF**	31.5	10.0	IN20-42X3.0TFBCF	BS20SNX	OR37.82X1.78X		0.57
1 1/4	42X4.0	**F37-320-42X4.0TFBCF**	31.5	10.0	IN20-42X4.0TFBCF	BS20SNX	OR34X1.0X		0.56
1 1/2	38x3.0	**F37-324-38X3.0TFBCF**	27.5	9.0	IN24-38X3.0TFBCF	BS20SNX	OR34X1.0X	SL24-50-38-CFX	0.65
1 1/2	38X4.0	**F37-324-38X4.0TFBCF**	27.5	10.0	IN24-38X4.0TFBCF	BS24SNX	OR44.17X1.78X	SL24-50-38-CFX	0.87
1 1/2	38X5.0	**F37-324-38X5.0TFBCF**	25.0	8.0	IN24-38X5.0TFBCF	BS24SNX	OR28X1.0X	SL24-50-38-CFX	0.87
1 1/2	42X3.0	**F37-324-42X3.0TFBCF**	35.0	10.0	IN24-42X3.0TFBCF	BS24SNX	OR37.82X1.78X	SL24-50-42-CFX	0.88
1 1/2	42X4.0	**F37-324-42X4.0TFBCF**	31.5	10.0	IN24-42X4.0TFBCF	BS24SNX	OR34X1.0X	SL24-50-42-CFX	0.87
1 1/2	50X3.0	**F37-324-50X3.0TFBCF**	36.0	11.0	IN24-50X3.0TFBCF	BS24SNX	OR44.17X1.78X		0.87
1 1/2	50X5.0	**F37-324-50X5.0TFBCF**	36.0	10.0	IN24-50X5.0TFBCF	BS24SNX	OR41X1.78X		0.87
1 1/2	50X6.0	**F37-324-50X6.0TFBCF**	35.0	10.0	IN24-50X6.0TFBCF	BS24SNX	OR41X1.78X		0.87
2	50X3.0	**F37-332-50X3.0TFBCF**	41.5	11.0	IN32-50X3.0TFBCF	BS32SNX	OR44.17X1.78X	SL32-60-50-CFX	1.20
2	50X5.0	**F37-332-50X5.0TFBCF**	37.5	10.0	IN32-50X5.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	1.22
2	50X6.0	**F37-332-50X6.0TFBCF**	35.0	10.0	IN32-50X6.0TFBCF	BS32SNX	OR41X1.78X	SL32-60-50-CFX	1.25
2	60X3.0	**F37-332-60X3.0TFBCF**	46.0	12.0	IN32-60X3.0TFBCF	BS32SNX	OR53.7X1.78X		1.25
2	60X5.0	**F37-332-60X5.0TFBCF**	46.0	11.0	IN32-60X5.0TFBCF	BS32SNX	OR50.52X1.78X		1.22
2	60X6.0	**F37-332-60X6.0TFBCF**	45.5	11.0	IN32-60X6.0TFBCF	BS32SNX	OR47.37X1.78X		1.21
2 1/2	60X3.0	**F37-340-60X3.0TFBCF**	50.0	12.0	IN40-60X3.0TFBCF	BS40SNX	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	**F37-340-60X5.0TFBCF**	46.0	11.0	IN40-60X5.0TFBCF	BS40SNX	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	**F37-340-60X6.0TFBCF**	45.5	11.0	IN40-60X6.0TFBCF	BS40SNX	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	**F37-340-75X3.0TFBCF**	60.0	10.0	IN40-75X3.0TFBCF	BS40SNX	OR69.57X1.78X		1.93
2 1/2	75X5.0	**F37-340-75X5.0TFBCF**	60.0	10.0	IN40-75X5.0TFBCF	BS40SNX	OR63.22X1.78X		1.95
3	75X3.0	**F37-348-75X3.0TFBCF**	66.0	10.0	IN48-75X3.0TFBCF	BS48SNX	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	**F37-348-75X5.0TFBCF**	62.0	10.0	IN48-75X5.0TFBCF	BS48SNX	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	**F37-348-90X3.5TFBCF**	72.0	15.0	IN48-90X3.5TFBCF	BS48SNX	OR82.27X1.78X		3.39
3	90X5.0	**F37-348-90X5.0TFBCF**	72.0	14.0	IN48-90X5.0TFBCF	BS48SNX	OR79X1.78X		3.35

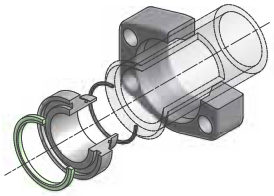
Other sizes on request

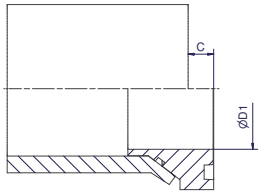
Please change suffixes according to material/surface required

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

TFV – Flare flange connection

Tube to port connection, F37 seal





Size		Flange incl. Insert + F37 Seal + O-Ring (Sleeve)			Insert incl. F37 Seal + O-Ring	F37 Seal	O-Ring		Weight (Steel)
Inch	Tube	Order code	D1	C	Order code	Order code	Order code	Sleeve	kg/1 piece
1/2	16X2.0	**F37-308-16X2.0TFVCF**	9.5	8.0	IN08-16X2.0TFVCF	F3708X	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	**F37-308-18X2.0TFVCF**	11.5	8.0	IN08-18X2.0TFVCF	F3708X	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	**F37-308-20X2.0TFVCF**	13.5	8.0	IN08-20X2.0TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	**F37-308-20X2.5TFVCF**	13.5	8.0	IN08-20X2.5TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	**F37-308-25X2.5TFVCF**	13.5	10.0	IN08-25X2.5TFVCF	F3708X	OR20X1.0X		0.25
1/2	25X3.0	**F37-308-25X3.0TFVCF**	13.0	8.0	IN08-25X3.0TFVCF	F3708X	OR20X1.0X		0.24
3/4	20X2.0	**F37-312-20X2.0TFVCF**	13.5	8.0	IN12-20X2.0TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	20X2.5	**F37-312-20X2.5TFVCF**	12.5	8.0	IN12-20X2.5TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	25X2.5	**F37-312-25X2.5TFVCF**	17.5	10.0	IN12-25X2.5TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.31
3/4	25X3.0	**F37-312-25X3.0TFVCF**	16.5	8.0	IN12-25X3.0TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.32
3/4	30X3.0	**F37-312-30X3.0TFVCF**	19.0	8.5	IN12-30X3.0TFVCF	F3712X	OR25X1.0X		0.32
3/4	30X4.0	**F37-312-30X4.0TFVCF**	19.0	8.5	IN12-30X4.0TFVCF	F3712X	OR24X1.0X		0.32
1	25X2.5	**F37-316-25X2.5TFVCF**	17.5	10.0	IN16-25X2.5TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.38
1	25X3.0	**F37-316-25X3.0TFVCF**	16.5	8.0	IN16-25X3.0TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.39
1	30X3.0	**F37-316-30X3.0TFVCF**	21.5	8.5	IN16-30X3.0TFVCF	F3716X	OR25X1.0X	SL16-38-30-CFX	0.41
1	30X4.0	**F37-316-30X4.0TFVCF**	19.5	8.5	IN16-30X4.0TFVCF	F3716X	OR22X1.0X	SL16-38-30-CFX	0.39
1	38X2.5	**F37-316-38X2.5TFVCF**	25.0	9.5	IN16-38X2.5TFVCF	F3716X	OR34X1.0X		0.41
1	38X3.0	**F37-316-38X3.0TFVCF**	25.0	9.0	IN16-38X3.0TFVCF	F3716X	OR34X1.0X		0.40
1	38X4.0	**F37-316-38X4.0TFVCF**	25.0	10.0	IN16-38X4.0TFVCF	F3716X	OR30X1.0X		0.40
1	38X5.0	**F37-316-38X5.0TFVCF**	25.0	8.0	IN16-38X5.0TFVCF	F3716X	OR28X1.0X		0.39
1 1/4	30X3.0	**F37-320-30X3.0TFVCF**	21.5	8.5	IN20-30X3.0TFVCF	F3720X	OR25X1.0X	SL20-42-30-CFX	0.57
1 1/4	30X4.0	**F37-320-30X4.0TFVCF**	19.5	8.5	IN20-30X4.0TFVCF	F3720X	OR22X1.0X	SL20-42-30-CFX	0.58
1 1/4	38X3.0	**F37-320-38X3.0TFVCF**	29.5	9.0	IN20-38X3.0TFVCF	F3720X	OR34X1.0X	SL20-42-38-CFX	0.56
1 1/4	38X4.0	**F37-320-38X4.0TFVCF**	27.0	10.0	IN20-38X4.0TFVCF	F3720X	OR30X1.0X	SL20-42-38-CFX	0.57
1 1/4	38X5.0	**F37-320-38X5.0TFVCF**	25.5	8.0	IN20-38X5.0TFVCF	F3720X	OR28X1.0X	SL20-42-38-CFX	0.56
1 1/4	42X3.0	**F37-320-42X3.0TFVCF**	31.5	10.0	IN20-42X3.0TFVCF	F3720X	OR37.82X1.78X		0.57
1 1/4	42X4.0	**F37-320-42X4.0TFVCF**	31.5	10.0	IN20-42X4.0TFVCF	F3720X	OR34X1.0X		0.56
1 1/2	38X3.0	**F37-324-38X3.0TFVCF**	27.5	9.0	IN24-38X3.0TFVCF	F3724X	OR34X1.0X	SL24-50-38-CFX	0.87
1 1/2	38X4.0	**F37-324-38X4.0TFVCF**	27.5	10.0	IN24-38X4.0TFVCF	F3724X	OR44.17X1.78X	SL24-50-38-CFX	0.87
1 1/2	38X5.0	**F37-324-38X5.0TFVCF**	25.0	8.0	IN24-38X5.0TFVCF	F3724X	OR41X1.78X	SL24-50-38-CFX	0.87
1 1/2	42X3.0	**F37-324-42X3.0TFVCF**	33.5	10.0	IN24-42X3.0TFVCF	F3724X	OR37.82X1.78X	SL24-50-42-CFX	0.87
1 1/2	42X4.0	**F37-324-42X4.0TFVCF**	31.5	10.0	IN24-42X4.0TFVCF	F3724X	OR34X1.0X	SL24-50-42-CFX	0.87
1 1/2	50X3.0	**F37-324-50X3.0TFVCF**	36.0	11.0	IN24-50X3.0TFVCF	F3724X	OR44.17X1.78X		0.87
1 1/2	50X5.0	**F37-324-50X5.0TFVCF**	36.0	10.0	IN24-50X5.0TFVCF	F3724X	OR41X1.78X		0.87
1 1/2	50X6.0	**F37-324-50X6.0TFVCF**	35.0	10.0	IN24-50X6.0TFVCF	F3724X	OR41X1.78X		0.87
2	50X3.0	**F37-332-50X3.0TFVCF**	41.5	11.0	IN32-50X3.0TFVCF	F3732X	OR44.17X1.78X	SL32-60-50-CFX	1.20
2	50X5.0	**F37-332-50X5.0TFVCF**	37.5	10.0	IN32-50X5.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	1.22
2	50X6.0	**F37-332-50X6.0TFVCF**	35.0	10.0	IN32-50X6.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	1.25
2	60X3.0	**F37-332-60X3.0TFVCF**	46.0	12.0	IN32-60X3.0TFVCF	F3732X	OR53.7X1.78X		1.25
2	60X5.0	**F37-332-60X5.0TFVCF**	46.0	11.0	IN32-60X5.0TFVCF	F3732X	OR50.52X1.78X		1.22
2	60X6.0	**F37-332-60X6.0TFVCF**	45.5	11.0	IN32-60X6.0TFVCF	F3732X	OR47.37X1.78X		1.21
2 1/2	60X3.0	**F37-340-60X3.0TFVCF**	50.0	12.0	IN40-60X3.0TFVCF	F3740X	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	**F37-340-60X5.0TFVCF**	46.0	11.0	IN40-60X5.0TFVCF	F3740X	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	**F37-340-60X6.0TFVCF**	45.5	11.0	IN40-60X6.0TFVCF	F3740X	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	**F37-340-75X3.0TFVCF**	60.0	10.0	IN40-75X3.0TFVCF	F3740X	OR69.57X1.78X		1.93
2 1/2	75X5.0	**F37-340-75X5.0TFVCF**	60.0	10.0	IN40-75X5.0TFVCF	F3740X	OR63.22X1.78X		1.95
3	75X3.0	**F37-348-75X3.0TFVCF**	66.0	10.0	IN48-75X3.0TFVCF	F3748X	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	**F37-348-75X5.0TFVCF**	62.0	10.0	IN48-75X5.0TFVCF	F3748X	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	**F37-348-90X3.5TFVCF**	72.0	15.0	IN48-90X3.5TFVCF	F3748X	OR82.27X1.78X		3.39
3	90X5.0	**F37-348-90X5.0TFVCF**	72.0	14.0	IN48-90X5.0TFVCF	F3748X	OR79X1.78X		3.35

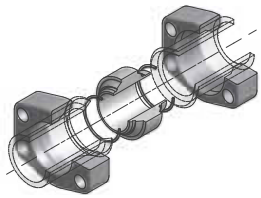
Other sizes on request

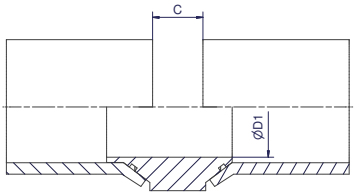
Please change suffixes according to material/surface required

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

TT – Flare flange connection

Tube to tube connection





Size		2 Flanges incl. Insert + 2 x O-Ring (+ 2 x Sleeve)			Insert incl. 2 x O-Ring	O-Ring		Weight (Steel)
Inch	Tube	Order code	D1	C	Order code	Order code	Sleeve	kg/1 piece
1/2	16X2.0	**F37-308-16X2.0TTCF**	9.5	16	IN08-16X2.0TTCF	OR12X1.0X	SL08-25-16-CFX	0.28
1/2	18X2.0	**F37-308-18X2.0TTCF**	11.5	16	IN08-18X2.0TTCF	OR14X1.1X	SL08-25-18-CFX	0.29
1/2	20X2.0	**F37-308-20X2.0TTCF**	13.5	16	IN08-20X2.0TTCF	OR16X1.0X	SL08-25-20-CFX	0.29
1/2	20X2.5	**F37-308-20X2.5TTCF**	13.5	16	IN08-20X2.5TTCF	OR16X1.0X	SL08-25-20-CFX	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	SL12-30-20-CFX	0.38
3/4	20X2.5	**F37-312-20X2.5TTCF**	12.5	16	IN12-20X2.5TTCF	OR16X1.0X	SL12-30-20-CFX	0.38
3/4	25X2.5	**F37-312-25X2.5TTCF**	17.5	20	IN12-25X2.5TTCF	OR20X1.0X	SL12-30-25-CFX	0.39
3/4	25X3.0	**F37-312-25X3.0TTCF**	16.5	16	IN12-25X3.0TTCF	OR20X1.0X	SL12-30-25-CFX	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	OR24X1.0X		0.40
1	25X2.5	**F37-316-25X2.5TTCF**	17.5	20	IN16-25X2.5TTCF	OR20X1.0X	SL16-38-25-CFX	0.49
1	25X3.0	**F37-316-25X3.0TTCF**	16.5	16	IN16-25X3.0TTCF	OR20X1.0X	SL16-38-25-CFX	0.49
1	30X3.0	**F37-316-30X3.0TTCF**	21.5	17	IN16-30X3.0TTCF	OR25X1.0X	SL16-38-30-CFX	0.48
1	30X4.0	**F37-316-30X4.0TTCF**	19.5	17	IN16-30X4.0TTCF	OR22X1.0X	SL16-38-30-CFX	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	SL20-42-30-CFX	0.70
1 1/4	30X4.0	**F37-320-30X4.0TTCF**	19.5	17	IN20-30X4.0TTCF	OR22X1.0X	SL20-42-30-CFX	0.73
1 1/4	38X3.0	**F37-320-38X3.0TTCF**	29.0	18	IN20-38X3.0TTCF	OR34X1.0X	SL20-42-38-CFX	0.68
1 1/4	38X4.0	**F37-320-38X4.0TTCF**	27.0	20	IN20-38X4.0TTCF	OR30X1.0X	SL20-42-38-CFX	0.69
1 1/4	38X5.0	**F37-320-38X5.0TTCF**	25.5	16	IN20-38X5.0TTCF	OR28X1.0X	SL20-42-38-CFX	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	SL24-50-38-CFX	0.93
1 1/2	38X4.0	**F37-324-38X4.0TTCF**	27.5	20	IN24-38X4.0TTCF	OR44.17X1.78X	SL24-50-38-CFX	0.93
1 1/2	38X5.0	**F37-324-38X5.0TTCF**	25.0	16	IN24-38X5.0TTCF	OR41X1.78X	SL24-50-38-CFX	0.93
1 1/2	42X3.0	**F37-324-42X3.0TTCF**	33.5	20	IN24-42X3.0TTCF	OR37.82X1.78X	SL24-50-42-CFX	0.98
1 1/2	42X4.0	**F37-324-42X4.0TTCF**	31.5	20	IN24-42X4.0TTCF	OR34X1.0X	SL24-50-42-CFX	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	SL32-60-50-CFX	1.40
2	50X5.0	**F37-332-50X5.0TTCF**	37.5	20	IN32-50X5.0TTCF	OR41X1.78X	SL32-60-50-CFX	1.51
2	50X6.0	**F37-332-50X6.0TTCF**	35.0	20	IN32-50X6.0TTCF	OR41X1.78X	SL32-60-50-CFX	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	SL40-75-60-CFX	1.98
2 1/2	60X5.0	**F37-340-60X5.0TTCF**	46.0	22	IN40-60X5.0TTCF	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	**F37-340-60X6.0TTCF**	45.0	22	IN40-60X6.0TTCF	OR47.37X1.78X	SL40-75-60-CFX	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	SL48-90-75-CFX	3.22
3	75X5.0	**F37-348-75X5.0TTCF**	62.0	20	IN48-75X5.0TTCF	OR63.22X1.78X	SL48-90-75-CFX	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

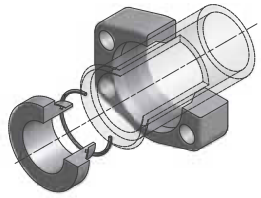
Other sizes on request

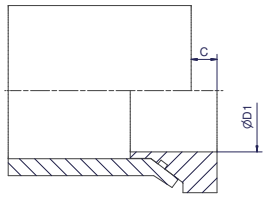
Please change suffixes according to material/surface required

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

TF – Flare flange connection

Tube to flange connection, flat face





Size		Flange incl. Insert + O-Ring (+ Sleeve)			Insert incl. O-Ring	O-Ring		Weight (Steel)
Inch	Tube	Order code	D1	C	Order code	Order code	Sleeve	kg/1 piece
1/2	16X2.0	**F37-308-16X2.0TFCF**	9.5	8.0	IN08-16X2.0TFCF	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	**F37-308-18X2.0TFCF**	11.5	8.0	IN08-18X2.0TFCF	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	**F37-308-20X2.0TFCF**	13.5	8.0	IN08-20X2.0TFCF	OR16X1.0X	SL08-25-20-CFX	0.25
1/2	20X2.5	**F37-308-20X2.5TFCF**	13.5	8.0	IN08-20X2.5TFCF	OR16X1.0X	SL08-25-20-CFX	0.25
1/2	25X2.5	**F37-308-25X2.5TFCF**	13.5	10.0	IN08-25X2.5TFCF	OR20X1.0X		0.25
1/2	25X3.0	**F37-308-25X3.0TFCF**	13.0	8.0	IN08-25X3.0TFCF	OR20X1.0X		0.24
3/4	20X2.0	**F37-312-20X2.0TFCF**	13.5	8.0	IN12-20X2.0TFCF	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	20X2.5	**F37-312-20X2.5TFCF**	12.5	8.0	IN12-20X2.5TFCF	OR16X1.0X	SL12-30-20-CFX	0.31
3/4	25X2.5	**F37-312-25X2.5TFCF**	17.5	10.0	IN12-25X2.5TFCF	OR20X1.0X	SL12-30-25-CFX	0.31
3/4	25X3.0	**F37-312-25X3.0TFCF**	16.5	8.0	IN12-25X3.0TFCF	OR20X1.0X	SL12-30-25-CFX	0.32
3/4	30X3.0	**F37-312-30X3.0TFCF**	19.0	8.5	IN12-30X3.0TFCF	OR25X1.0X		0.32
3/4	30X4.0	**F37-312-30x4.0TFCF**	19.0	8.5	IN12-30x4.0TFCF	OR24X1.0X		0.32
1	25X2.5	**F37-316-25X2.5TFCF**	17.5	10.0	IN16-25X2.5TFCF	OR20X1.0X	SL16-38-25-CFX	0.38
1	25X3.0	**F37-316-25X3.0TFCF**	16.5	8.0	IN16-25X3.0TFCF	OR20X1.0X	SL16-38-25-CFX	0.39
1	30X3.0	**F37-316-30X3.0TFCF**	21.5	8.5	IN16-30X3.0TFCF	OR25X1.0X	SL16-38-30-CFX	0.41
1	30X4.0	**F37-316-30X4.0TFCF**	19.5	8.5	IN16-30X4.0TFCF	OR22X1.0X	SL16-38-30-CFX	0.39
1	38X2.5	**F37-316-38X2.5TFCF**	25.0	9.5	IN16-38X2.5TFCF	OR34X1.0X		0.41
1	38X3.0	**F37-316-38X3.0TFCF**	25.0	9.0	IN16-38X3.0TFCF	OR34X1.0X		0.40
1	38X4.0	**F37-316-38X4.0TFCF**	25.0	10.0	IN16-38X4.0TFCF	OR30X1.0X		0.40
1	38X5.0	**F37-316-38X5.0TFCF**	25.0	8.0	IN16-38X5.0TFCF	OR28X1.0X		0.39
1 1/4	30X3.0	**F37-320-30X3.0TFCF**	21.5	8.5	IN20-30X3.0TFCF	OR25X1.0X	SL20-42-30-CFX	0.57
1 1/4	30X4.0	**F37-320-30X4.0TFCF**	19.5	8.5	IN20-30X4.0TFCF	OR22X1.0X	SL20-42-30-CFX	0.59
1 1/4	38X3.0	**F37-320-38X3.0TFCF**	29.0	9.0	IN20-38X3.0TFCF	OR34X1.0X	SL20-42-38-CFX	0.56
1 1/4	38X4.0	**F37-320-38X4.0TFCF**	27.0	10.0	IN20-38X4.0TFCF	OR30X1.0X	SL20-42-38-CFX	0.57
1 1/4	38X5.0	**F37-320-38X5.0TFCF**	25.5	8.0	IN20-38X5.0TFCF	OR28X1.0X	SL20-42-38-CFX	0.56
1 1/4	42X3.0	**F37-320-42X3.0TFCF**	31.5	10.0	IN20-42X3.0TFCF	OR37.82X1.78X		0.57
1 1/4	42X4.0	**F37-320-42X4.0TFCF**	31.5	10.0	IN20-42X4.0TFCF	OR34X1.0X		0.56
1 1/2	38X3.0	**F37-324-38X3.0TFCF**	27.5	9.0	IN24-38X3.0TFCF	OR34X1.0X	SL24-50-38-CFX	0.87
1 1/2	38X4.0	**F37-324-38X4.0TFCF**	27.5	10.0	IN24-38X4.0TFCF	OR44.17X1.78X	SL24-50-38-CFX	0.87
1 1/2	38X5.0	**F37-324-38X5.0TFCF**	25.0	8.0	IN24-38X5.0TFCF	OR41X1.78X	SL24-50-38-CFX	0.87
1 1/2	42X3.0	**F37-324-42X3.0TFCF**	33.5	10.0	IN24-42X3.0TFCF	OR37.82X1.78X	SL24-50-42-CFX	0.87
1 1/2	42X4.0	**F37-324-42X4.0TFCF**	31.5	10.0	IN24-42X4.0TFCF	OR34X1.0X	SL24-50-42-CFX	0.87
1 1/2	50X3.0	**F37-324-50X3.0TFCF**	36.0	11.0	IN24-50X3.0TFCF	OR44.17X1.78X		0.87
1 1/2	50X5.0	**F37-324-50X5.0TFCF**	36.0	10.0	IN24-50X5.0TFCF	OR41X1.78X		0.87
1 1/2	50X6.0	**F37-324-50X6.0TFCF**	35.0	10.0	IN24-50X6.0TFCF	OR41X1.78X		0.87
2	50X3.0	**F37-332-50X3.0TFCF**	41.5	11.0	IN32-50X3.0TFCF	OR44.17X1.78X	SL32-60-50-CFX	1.20
2	50X5.0	**F37-332-50X5.0TFCF**	37.5	10.0	IN32-50X5.0TFCF	OR41X1.78X	SL32-60-50-CFX	1.22
2	50X6.0	**F37-332-50X6.0TFCF**	35.0	10.0	IN32-50X6.0TFCF	OR41X1.78X	SL32-60-50-CFX	1.25
2	60X3.0	**F37-332-60X3.0TFCF**	46.0	12.0	IN32-60X3.0TFCF	OR53.7X1.78X		1.25
2	60X5.0	**F37-332-60X5.0TFCF**	46.0	11.0	IN32-60X5.0TFCF	OR50.52X1.78X		1.22
2	60X6.0	**F37-332-60X6.0TFCF**	45.5	11.0	IN32-60X6.0TFCF	OR47.37X1.78X		1.21
2 1/2	60X3.0	**F37-340-60X3.0TFCF**	50.0	12.0	IN40-60X3.0TFCF	OR53.7X1.78X	SL40-75-60-CFX	1.98
2 1/2	60X5.0	**F37-340-60X5.0TFCF**	46.0	11.0	IN40-60X5.0TFCF	OR50.52X1.78X	SL40-75-60-CFX	1.99
2 1/2	60X6.0	**F37-340-60X6.0TFCF**	45.5	11.0	IN40-60X6.0TFCF	OR47.37X1.78X	SL40-75-60-CFX	1.97
2 1/2	75X3.0	**F37-340-75X3.0TFCF**	60.0	10.0	IN40-75X3.0TFCF	OR69.57X1.78X		1.93
2 1/2	75X5.0	**F37-340-75X5.0TFCF**	60.0	10.0	IN40-75X5.0TFCF	OR63.22X1.78X		1.95
3	75X3.0	**F37-348-75X3.0TFCF**	66.0	10.0	IN48-75X3.0TFCF	OR69.57X1.78X	SL48-90-75-CFX	3.22
3	75X5.0	**F37-348-75X5.0TFCF**	62.0	10.0	IN48-75X5.0TFCF	OR63.22X1.78X	SL48-90-75-CFX	3.38
3	90X3.5	**F37-348-90X3.5TFCF**	72.0	15.0	IN48-90X3.5TFCF	OR82.27X1.78X		3.39
3	90X5.0	**F37-348-90X5.0TFCF**	72.0	14.0	IN48-90X5.0TFCF	OR79X1.78X		3.35

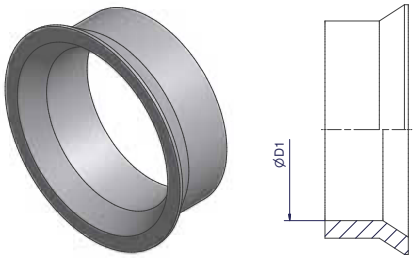
Other sizes on request

Please change suffixes according to material/surface required

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

SL – Sleeve

SAE 3000/ISO 6162-1



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

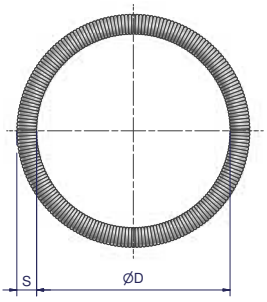
Please change suffixes according to material/surface required

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

R – Retaining ring

SAE 3000/ISO 6162-1

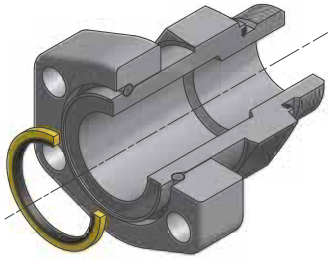
Size Inch	Tube	D	S	Order code
1/2	26X6.0	23.7	2.6	**R08X**
3/4	36X8.0	33.7	2.6	**R12X**
1	39X7.5	35.8	3.5	**R16X**
1 1/4	46X8.0	42.8	3.5	**R20X**
1 1/2	56X8.5	52.8	3.5	**R24X**
2	66X8.5	62.8	3.5	**R32X**
2 1/2	80X10.0	76.8	3.5	**R40X**
3	97X12.0	93.3	4.0	**R48X**

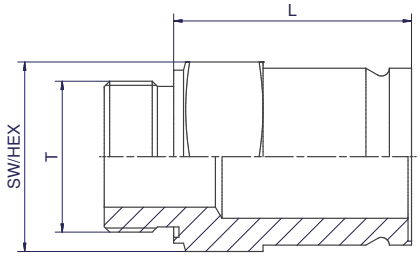


Material: Stainless steel

MTF-R – Male thread adapter, BSPP

SAE 3000/ISO 6162-1





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

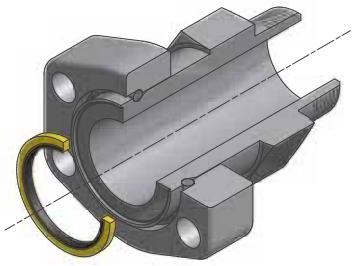
Other sizes on request

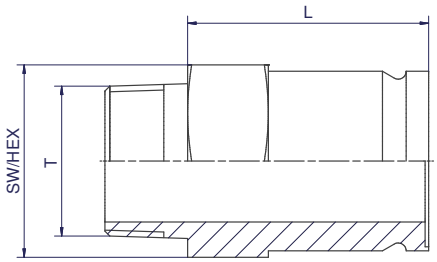
Please change suffixes according to material/surface required

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

MTF-N – Male thread adapter, NPT

SAE 3000/ISO 6162-1





Size Inch	Tube	Complete part Order code	Body Order code	Weight body (Steel) kg/1 piece	L	T (NPT)	SW/ HEX
1/2	26X6.0	**R-308MTFNCF**	MTF08NCFX	0.26	72.6	1/2-14	27
3/4	36X8.0	**R-312MTFNCF**	MTF12NCFX	0.48	72.6	3/4-14	36
1	39X7.5	**R-316MTFNCF**	MTF16NCFX	0.45	63.0	1-11.5	41
1 1/4	46X8.0	**R-320MTFNCF**	MTF20NCFX	0.70	67.0	1 1/4-11.5	50
1 1/2	56X8.5	**R-324MTFNCF**	MTF24NCFX	1.80	75.0	1 1/2-11.5	60
2	66X8.5	**R-332MTFNCF**	MTF32NCFX	2.40	80.0	2-11.5	75
2 1/2	80X10.0	**R-340MTFNCF**	MTF40NCFX	2.50	130.0	2 1/2-8	85
3	97x12.0	**R-348MTFNCF**	MTF48NCFX	2.50	141.0	3-8	95

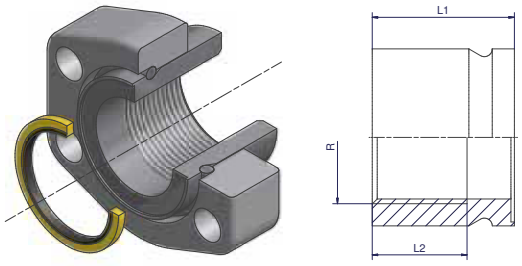
Other sizes on request

Please change suffixes according to material/surface required

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

FTF-R – Female thread adapter, BSPP

SAE 3000/ISO 6162-1



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

Other sizes on request

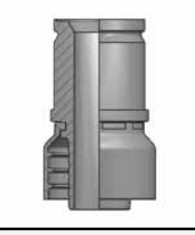
Please change suffixes according to material/surface required

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

Retaining ring hose couplings

SAE 3000/ISO 6162-1

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

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

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

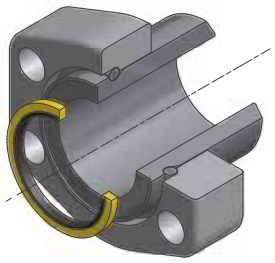
				
Connection				
Flange	Hose	Order code	Order code	Order code
1 1/4	1 1/4	**KX5V6-20-20**	**KX7V6-20-20**	**KX9V6-20-20**
1 1/2	1 1/2	**KX5V6-24-24**	**KX7V6-24-24**	**KX9V6-24-24**
2	2	**KX5V6-32-32**	**KX7V6-32-32**	**KX9V6-32-32**

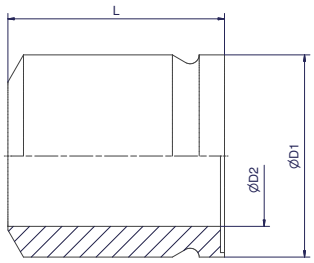
Interlock Shells V6 Series for Parker hose types H82 & R42

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

WA – Weld adapter connection

SAE 3000/ISO 6162-1



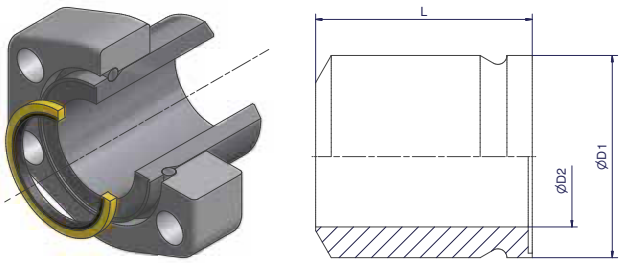


Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1/2	12X1.5	**R-308WA-12X1.5S**	R08X	BS08SNX	R-308-CFX	WA08-12X1.5SX	**0.29**	26	9	40
1/2	16X2.0	**R-308WA-16X2.0S**	R08X	BS08SNX	R-308-CFX	WA08-16X2.0SX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

see next page

WA – Weld adapter connection continued

SAE 3000/ISO 6162-1



Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1 1/2	48.3X7.1	**R-324WA-48.3X7.1S**	R24X	BS24SNX	R-324-CFX	WA24-48.3X7.1SX	1.33	56	34	70
1 1/2	48.3X10.2	**R-324WA-48.3X10.2S**	R24X	BS24SNX	R-324-CFX	WA24-48.3X10.2SX	1.29	56	28	70
1 1/2	50X3.0	**R-324WA-50X3.0S**	R24X	BS24SNX	R-324-CFX	WA24-50X3.0SX	1.10	56	39	70
1 1/2	50X5.0	**R-324WA-50X5.0S**	R24X	BS24SNX	R-324-CFX	WA24-50X5.0SX	1.17	56	40	70
1 1/2	50X6.0	**R-324WA-50X6.0S**	R24X	BS24SNX	R-324-CFX	WA24-50X6.0SX	1.23	56	38	70
1 1/2	50x9.0	**R-324WA-50X9.0S**	R24X	BS24SNX	R-324-CFX	WA24-50X9.0SX	1.39	56	32	70
1 1/2	56X8.5	**R-324WA-56X8.5S**	R24X	BS24SNX	R-324-CFX	WA24-56X8.5SX	1.15	56	39	60
2	48.3X5.6	**R-332WA-48.3X5.6S**	R32X	BS32SNX	R-332-CFX	WA32-48.3X5.6SX	2.30	66	37	90
2	50X9.0	**R-332WA-50X9.0S**	R32X	BS32SNX	R-332-CFX	WA32-50X9.0SX	2.51	66	32	90
2	60X3.0	**R-332WA-60X3.0S**	R32X	BS32SNX	R-332-CFX	WA32-60X3.0SX	1.79	66	49	90
2	60X5.0	**R-332WA-60X5.0S**	R32X	BS32SNX	R-332-CFX	WA32-60X5.0SX	1.89	66	50	90
2	60X6.0	**R-332WA-60X6.0S**	R32X	BS32SNX	R-332-CFX	WA32-60X6.0SX	2.00	66	48	90
2	60X8.0	**R-332WA-60X8.0S**	R32X	BS32SNX	R-332-CFX	WA32-60X8.0SX	2.18	66	44	90
2	60x10.0	**R-332WA-60X10.0S**	R32X	BS32SNX	R-332-CFX	WA32-60X10.0SX	2.36	66	40	90
2	60.3X2.8	**R-332WA-60.3X2.8S**	R32X	BS32SNX	R-332-CFX	WA32-60.3X2.8SX	1.77	66	49	90
2	60.3X3.9	**R-332WA-60.3X3.9S**	R32X	BS32SNX	R-332-CFX	WA32-60.3X3.9SX	1.85	66	49	90
2	60.3X5.5	**R-332WA-60.3X5.5S**	R32X	BS32SNX	R-332-CFX	WA32-60.3X5.5SX	1.94	66	49	90
2	60.3X8.7	**R-332WA-60.3X8.7S**	R32X	BS32SNX	R-332-CFX	WA32-60.3X8.7SX	2.24	66	43	90
2	60.3X11.1	**R-332WA-60.3X11.1S**	R32X	BS32SNX	R-332-CFX	WA32-60.3X11.1SX	2.44	66	38	90
2	66X8.5	**R-332WA-66X8.5S**	R32X	BS32SNX	R-332-CFX	WA32-66X8.5SX	1.85	66	49	75
2 1/2	65X8.5	**R-340WA-65X8.5S**	R40X	BS40SNX	R-340-CFX	WA40-65X8.5SX	3.80	80	49	105
2 1/2	73X7.0	**R-340WA-73X7.0S**	R40X	BS40SNX	R-340-CFX	WA40-73X7.0SX	3.29	80	59	105
2 1/2	75X3.0	**R-340WA-75X3.0S**	R40X	BS40SNX	R-340-CFX	WA40-75X3.0SX	2.90	80	60	105
2 1/2	75X5.0	**R-340WA-75X5.0S**	R40X	BS40SNX	R-340-CFX	WA40-75X5.0SX	3.07	80	60	105
2 1/2	76.1X6.3	**R-340WA-76.1X6.3S**	R40X	BS40SNX	R-340-CFX	WA40-76.1X6.3SX	3.15	80	60	105
2 1/2	76.1X12.5	**R-340WA-76.1X12.5S**	R40X	BS40SNX	R-340-CFX	WA40-76.1X12.5SX	3.87	80	51	105
2 1/2	80X10.0	**R-340WA-80X10.0S**	R40X	BS40SNX	R-340-CFX	WA40-80X10.0SX	3.10	80	60	90
3	76.1X12.5	**R-348WA-76.1X12.5S**	R48X	BS48SNX	R-348-CFX	WA48-76.1X12.5SX	5.68	97	51	120
3	80X10.0	**R-348WA-80X10.0S**	R48X	BS48SNX	R-348-CFX	WA48-80X10.0SX	5.57	97	60	120
3	88.9X3.1	**R-348WA-88.9X3.1S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X3.1SX	4.68	97	73	120
3	88.9X5.5	**R-348WA-88.9X5.5S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X5.5SX	4.97	97	73	120
3	88.9X7.7	**R-348WA-88.9X7.7S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X7.7SX	5.17	97	74	120
3	88.9X8.8	**R-348WA-88.9X8.8S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X8.8SX	5.40	97	71	120
3	88.9X11.1	**R-348WA-88.9X11.1S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X11.1SX	5.84	97	67	120
3	88.9X12.5	**R-348WA-88.9X12.5S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X12.5SX	6.10	97	64	120
3	88.9X15.2	**R-348WA-88.9X15.2S**	R48X	BS48SNX	R-348-CFX	WA48-88.9X15.2SX	6.50	97	59	120
3	90X3.5	**R-348WA-90X3.5S**	R48X	BS48SNX	R-348-CFX	WA48-90X3.5SX	4.69	97	73	120
3	90X5.0	**R-348WA-90X5.0S**	R48X	BS48SNX	R-348-CFX	WA48-90X5.0SX	5.00	97	80	120
3	90X9.0	**R-348WA-90X9.0S**	R48X	BS48SNX	R-348-CFX	WA48-90X9.0SX	5.35	97	72	120
3	97X12.0	**R-348WA-97X12.0S**	R48X	BS48SNX	R-348-CFX	WA48-97X12.0SX	5.15	97	73	110

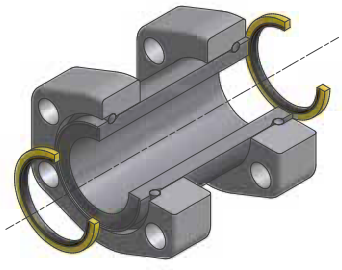
Other sizes on request

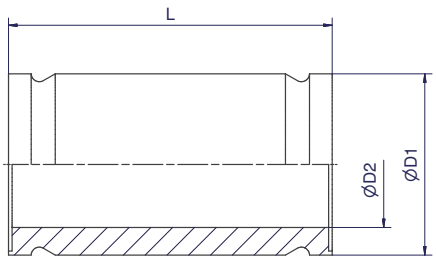
Please change suffixes according to material/surface required

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

BF – Bulkhead flange

SAE 3000/ISO 6162-1





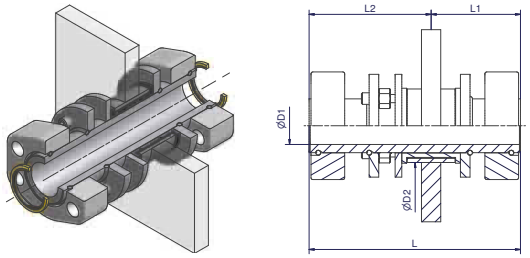
Size Inch	D1	D2	L	Complete Part Order code	Bulkhead Body Order code	Weight body (Steel) kg/1 piece
1	39	24	170	**R-316BFS**	BF16SX	0.96
1 1/4	46	30	180	**R-320BFS**	BF20SX	1.30
1 1/2	56	39	180	**R-324BFS**	BF24SX	1.75
2	66	49	210	**R-332BFS**	BF32SX	2.45
2 1/2	80	60	220	**R-340BFS**	BF40SX	3.70
3	97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

Please change suffixes according to material/surface required

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

VB – Vibra bulkhead

SAE 3000/ISO 6162-1



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

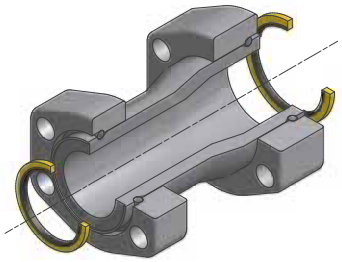
Other sizes on request

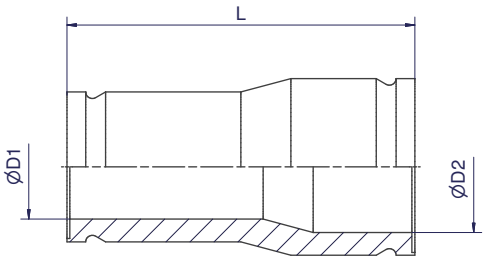
Please change suffixes according to material/surface required

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

RF – Reducer flange

SAE 3000/ISO 6162-1





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

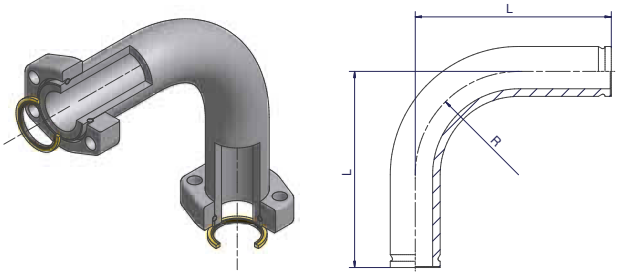
Other sizes on request

Please change suffixes according to material/surface required

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

FB90 – 90° Flange bend

SAE 3000/ISO 6162-1



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

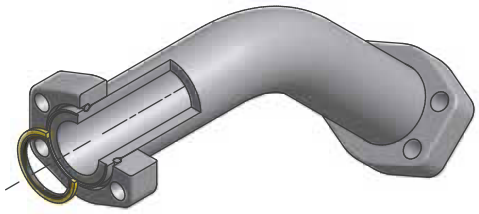
Other sizes on request

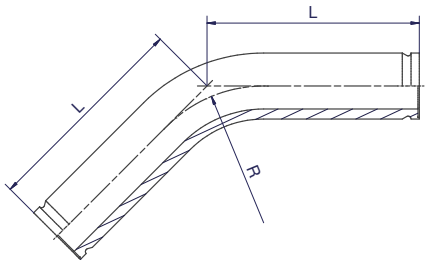
Please change suffixes according to material/surface required

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

FB45 – 45° Flange bend

SAE 3000/ISO 6162-1





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

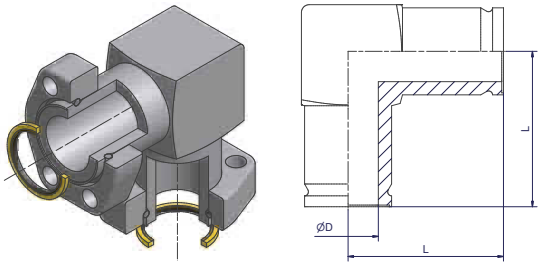
Available on request

Please change suffixes according to material/surface required

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

LF – Elbow flange

SAE 3000/ISO 6162-1



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

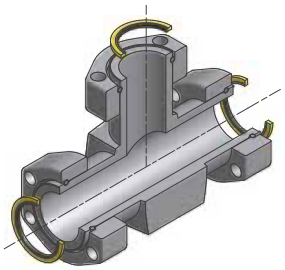
Other sizes on request

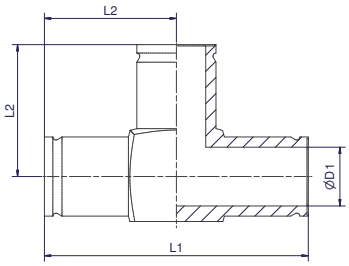
Please change suffixes according to material/surface required

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

TF – TEE flange

SAE 3000/ISO 6162-1





Size Inch	Complete Part Order code	Tee Flange body Order code	D1	L1	L2	Weight body (Steel) kg/1 piece
1/2	**R-308TFCF**	**TF08CFX**	14	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
3	**R-348TFCF**	**TF48CFX**	73	320	160	12.81

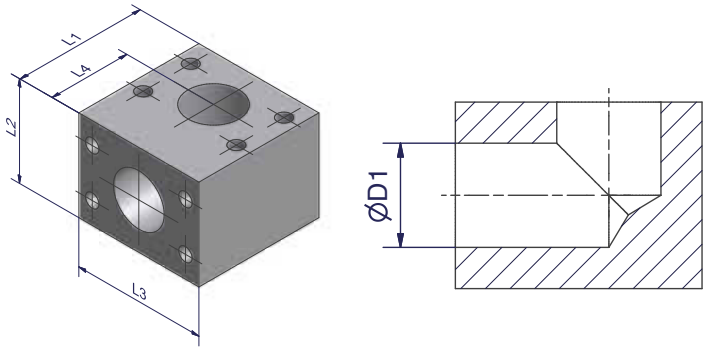
Other sizes on request

Please change suffixes according to material/surface required

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

LB – Flange L-block

SAE 3000/ISO 6162-1



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

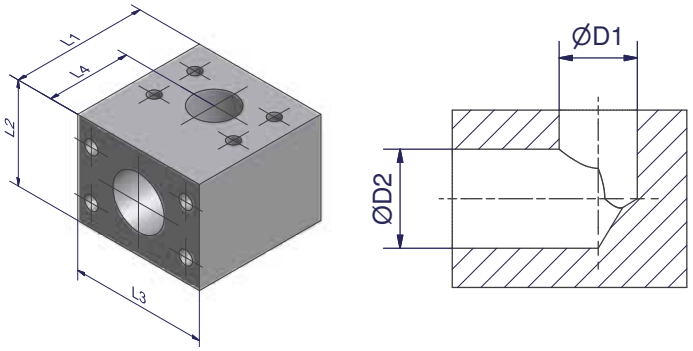
Other sizes on request

Please change suffixes according to material/surface required

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

LBR – Flange L-block reducer

SAE 3000/ISO 6162-1



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

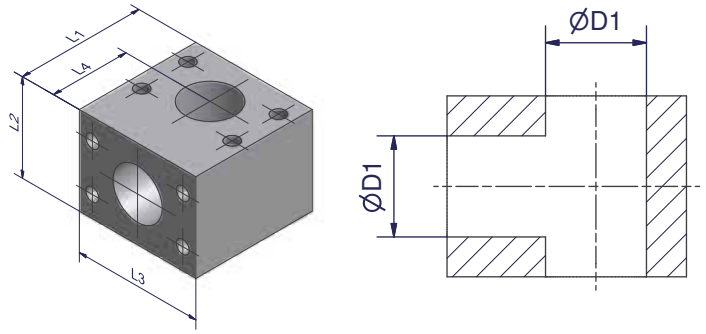
Other sizes on request

Please change suffixes according to material/surface required

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

TB – Flange T-block

SAE 3000/ISO 6162-1



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

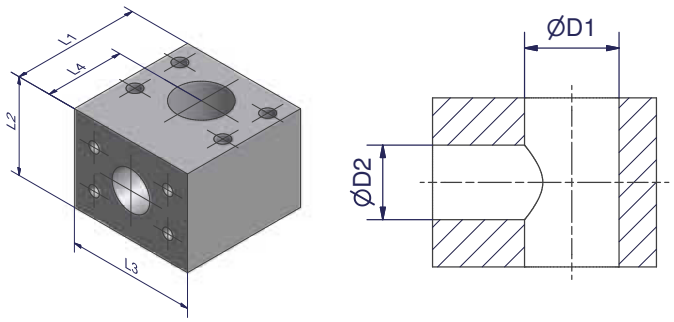
Other sizes on request

Please change suffixes according to material/surface required

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

TBR – Flange T-block reducer

SAE 3000/ISO 6162-1



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

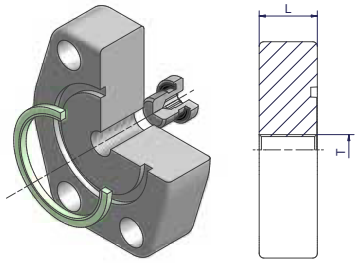
Other sizes on request

Please change suffixes according to material/surface required

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

BFV – Blind flange

SAE 3000/ISO 6162-1



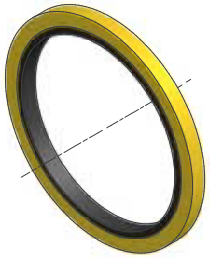
Size Inch	L	T	Weight (Steel) kg/1 piece	Flange incl. VSTI-ED and F37 Seal Order code
1	24	G 1/4	0.60	**F37-316BFVCF**
1 1/4	22	G 1/4	0.70	**F37-320BFVCF**
1 1/2	25	G 1/4	1.10	**F37-324BFVCF**
2	33	G 1/4	2.00	**F37-332BFVCF**
2 1/2	44	G 1/4	3.45	**F37-340BFVCF**
3	50	G 1/4	5.45	**F37-348BFVCF**

Please change suffixes according to material/surface required

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

BS – Bonded seal

SAE 3000/ISO 6162-1

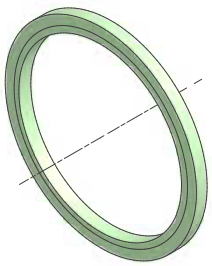


Size Inch	Steel	Stainless Steel
1/2	**BS08SNX**	**BS08SSNX**
3/4	**BS12SNX**	**BS12SSNX**
1	**BS16SNX**	**BS16SSNX**
1 1/4	**BS20SNX**	**BS20SSNX**
1 1/2	**BS24SNX**	**BS24SSNX**
2	**BS32SNX**	**BS32SSNX**
2 1/2	**BS40SNX**	**BS40SSNX**
3	**BS48SNX**	**BS48SSNX**

Sealing: NBR
Other sealing materials like FKM on request

F37S – F37 seal

SAE 3000/ISO 6162-1

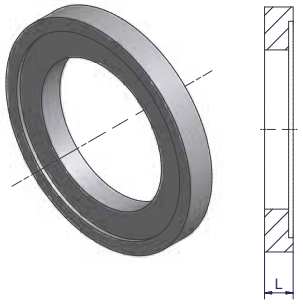


Size Inch	F37 Seal
1/2	**F37S08X**
3/4	**F37S12X**
1	**F37S16X**
1 1/4	**F37S20X**
1 1/2	**F37S24X**
2	**F37S32X**
2 1/2	**F37S40X**
3	**F37S48X**

Sealing: Polyurethane
Material properties and applications see page 18

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

SAE 3000/ISO 6162-1



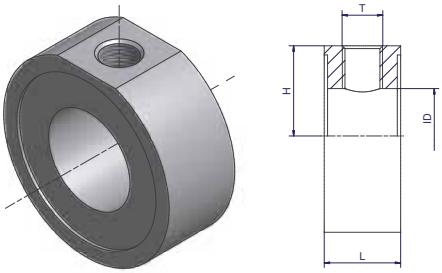
Size Inch	L	Weight (Steel) kg/1 piece	Adapter Order code
1/2	5	0.01	**AO08CFX**
3/4	5	0.02	**AO12CFX**
1	7	0.06	**AO16CFX**
1 1/4	7	0.06	**AO20CFX**
1 1/2	7	0.08	**AO24CFX**
2	7	0.10	**AO32CFX**
2 1/2	7	0.14	**AO40CFX**
3	7	0.20	**AO48CFX**

Please change suffixes according to material/surface required

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

TBT – TEE between bonded seal

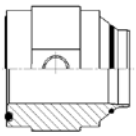
SAE 3000/ISO 6162-1



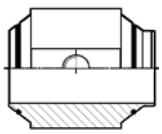
Size Inch	Order code*	L	H	T	ID	Bolt ISO 4762	Weight body (Steel) kg/1 piece
1	**TBT16-1/4CFX**	25	20.5	G 1/4 A	25	ZYLS10X90	0.21
1 1/4	**TBT20-1/4CFX**	25	24.5	G 1/4 A	27	ZYLS10X100	0.30
1 1/4	**TBT20-1/2CFX**	40	22.5	G 1/2 A	24	ZYLS10X120	0.49
1 1/2	**TBT24-1/4CFX**	25	29.5	G 1/4 A	31	ZYLS12X110	0.42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

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

Alternative versions on request



TFVB



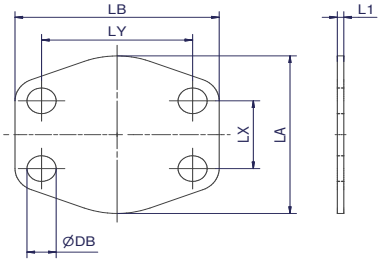
TTB

Please change suffixes according to material/surface required

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

AP – SAE flange locking plate

SAE 3000/ISO 6162-1



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

[1] Pressure shown = Item deliverable

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

This flange locking plate is not used under pressure

Please change suffixes according to material/surface required

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

Bolts and nuts for flange

SAE 3000/ISO 6162-1

F37 Flare Flange

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

Bolts and nuts must be ordered seperately

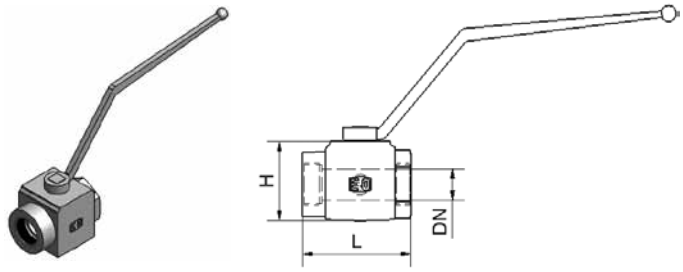
Latest information about nuts and bolts see www.parker.com/tfde/servicemanuals/userguides

Please add the suffixes according to the bolt quality

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

KH – Ball valve

Female BSPP thread (ISO 1179-1)



Material Steel

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

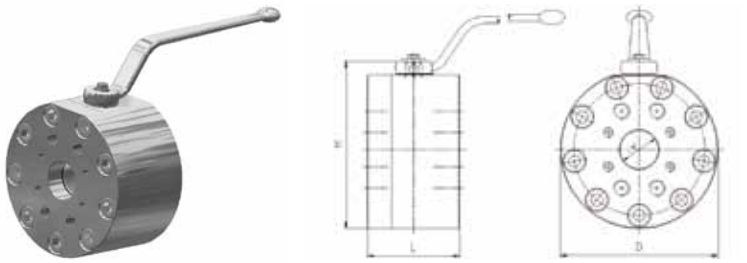
Please change suffixes according to material/surface required

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

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

KH – Ball valve drilled and tapped for SAE 3000 Flanges

SAE 3000/ISO 6162-1



Material Steel

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

Material Stainless Steel

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

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

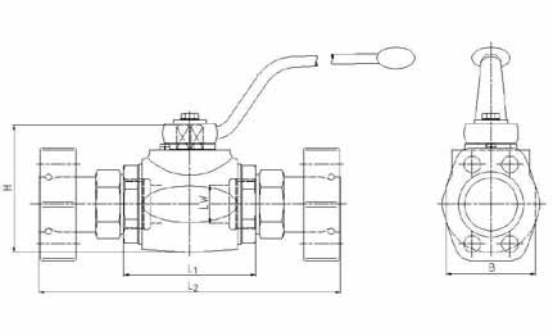
Please change suffixes according to material/surface required

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

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

KH-R – Ball valve with SAE 3000 Flanges

SAE 3000/ISO 6162-1



Material Steel

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

Other sizes on request

Material Stainless Steel

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

Other sizes on request

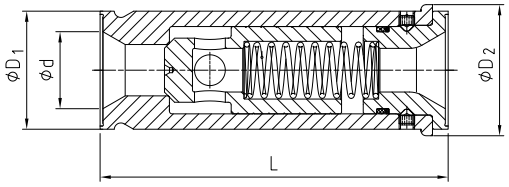
Please change suffixes according to material/surface required

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

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

RHD-R – Non return valves

SAE 3000/ISO 6162-1



Material Steel

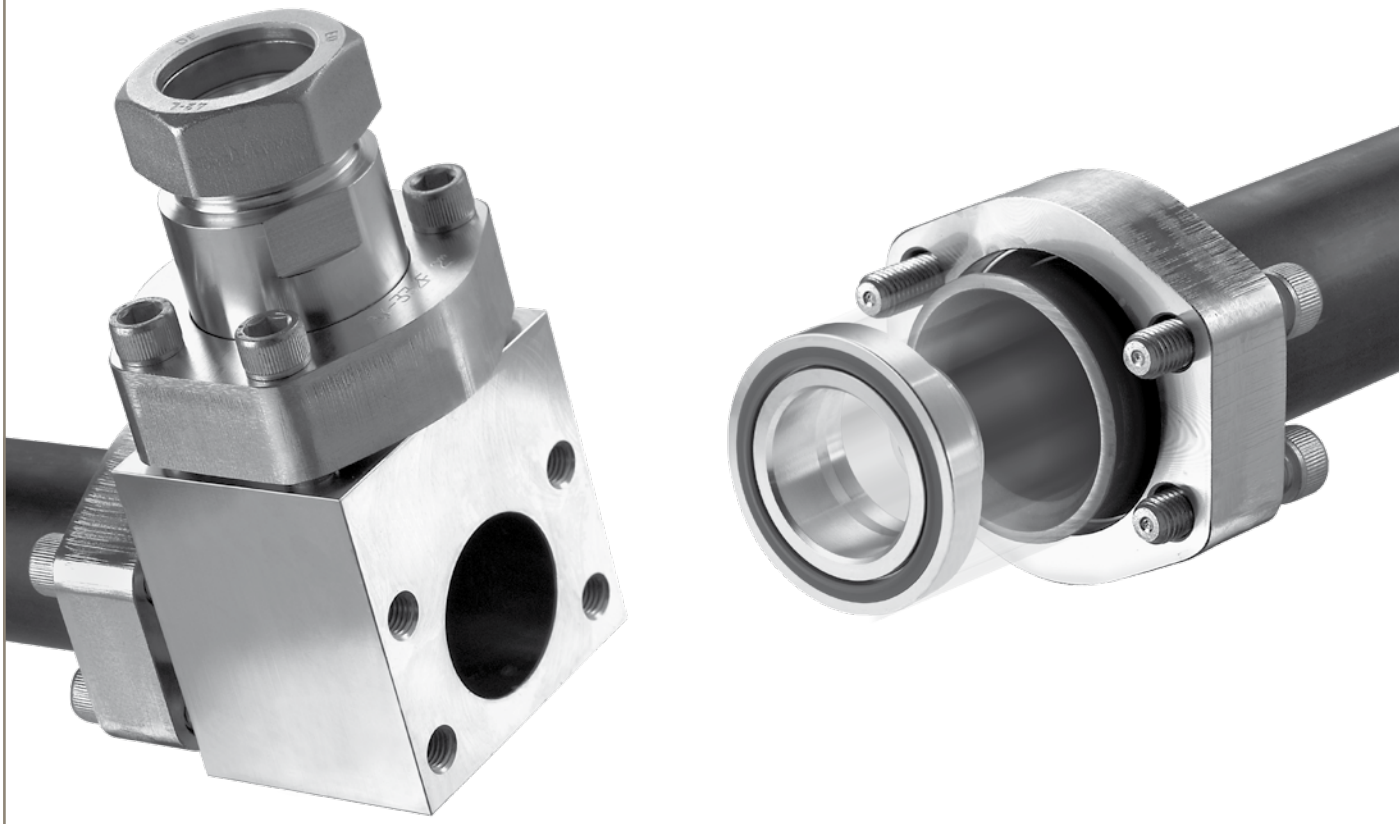
Size Inch	L	D1	D2	d	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
3/4	96.4	36	40.2	20.0	**RHD-R-312-0.5BCF**	RHD-R-12-0.5BCF	0.53	
1	116.6	39	44.2	23.0	**RHD-R-316-0.5BCF**	RHD-R-16-0.5BCF	0.78	
1 1/4	135.6	46	51.1	30.0	**RHD-R-320-0.5BCF**	RHD-R-20-0.5BCF	1.26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

Opening pressure 0.5 bar. Other pressure rates on request.

Please change suffixes according to material/surface required

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

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



SAE 6000 System

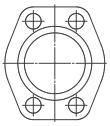
420 bar

Notes

Programme overview SAE 6000/ISO 6162-2 footprint

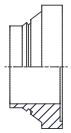
Parflange® F37 connection parts

Flanges

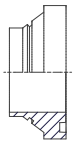


F37 – p.112/113

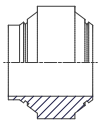
Inserts



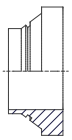
TFB – p.116



TFV – p.117



TT – p.118



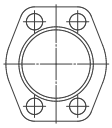
TF – p.119

Sleeve

SL – p.120

Retaining ring connection parts

Flanges

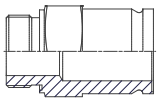


R – p.114

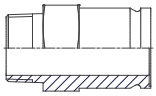
R-Ring – p.121

PSC – p.115

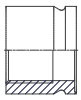
Male / Female



MTF-R – p.122

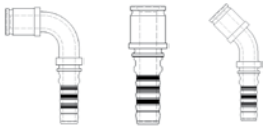


MTF-N – p.123



FTF-R – p.124

Hose



Hose – p.125

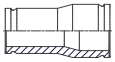
Weld

WA – p.126/127

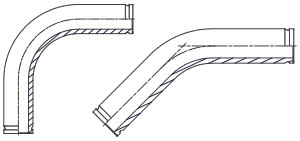
Tube to Tube

BF – p.128

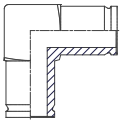
VB – p.129



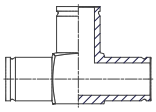
RF – p.130



FB90 – p.131 **FB45 –** p.132



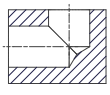
LF – p.133



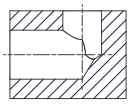
TF – p.134

SAE connection parts

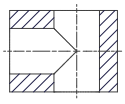
Blocks



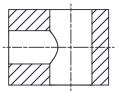
LB – p.135



LBR – p.136



TB – p.137

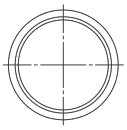


TBR – p.138

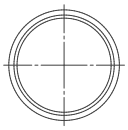
BFV – p.139

Seals Adapter Bolts

Components

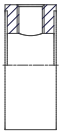


BS – p.140

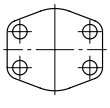


F37S – p.140

AO – p.141



TBT – p.142

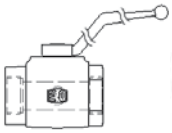


AP – p.143

Bolts and Nuts

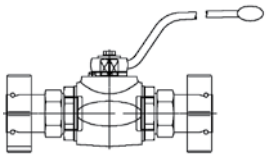
4 p.154

Ball valves

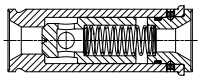


KH – p.145

KH – p.146



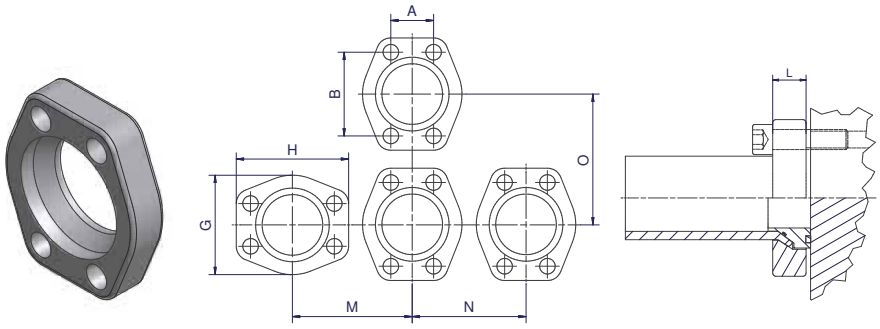
KH-R – p.147



RHD-R– p.148

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

SAE 6000/ISO 6162-2



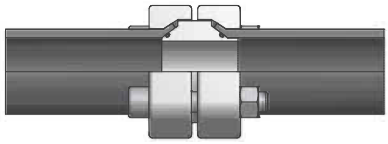
Parflange F37 flange dimensions

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

* Threaded flanges
** Jump size flanges (no adapter sleeves (SL...) necessary)
*** Threaded flanges for jump sizes (without sleeves)

Please change suffixes according to material/surface required

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



Part combination flaring SAE 6000

Flange Pressure (bar)	Size Inch	Pipe Size	Flange SAE 6000 ISO 6162-2	Insert*	F37 Seal	Sleeve	F37 Seal / Flat Face / Bonded Seal		Nuts
							Bolts Tube to Port	Bolts Tube to Tube	
	1/2	16X2.0	F37-608-CFX	IN08-16X2.0T...	F37S08X	SL08-25-16-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	18X2.0	F37-608-CFX	IN08-18X2.0T...	F37S08X	SL08-25-18-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	20X2.0	F37-608-CFX	IN08-20X2.0T...	F37S08X	SL08-25-20-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	20X2.5	F37-608-CFX	IN08-20X2.5T...	F37S08X	SL08-25-20-CFX	4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	25X2.5	F37-608-CFX	IN08-25X2.5T...	F37S08X		4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	1/2	25X3.0	F37-608-CFX	IN08-25X3.0T...	F37S08X		4 x ZYLS8X35	4 x ZYLS8X65	4 x ISO4032-M8
	3/4	20X2.0	F37-612-CFX	IN12-20X2.0T...	F37S12X	SL12-30-20-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	20X2.5	F37-612-CFX	IN12-20X2.5T...	F37S12X	SL12-30-20-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	25X2.5	F37-612-CFX	IN12-25X2.5T...	F37S12X	SL12-30-25-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	25X3.0	F37-612-CFX	IN12-25X3.0T...	F37S12X	SL12-30-25-CFX	4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	30X3.0	F37-612-CFX	IN12-30X3.0T...	F37S12X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	3/4	30X4.0	F37-612-CFX	IN12-30X4.0T...	F37S12X		4 x ZYLS10X45	4 x ZYLS10X75	4 x ISO4032-M10
	1	25X2.5	F37-616-CFX	IN16-25X2.5T...	F37S16X	SL16-38-25-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	25X3.0	F37-616-CFX	IN16-25X3.0T...	F37S16X	SL16-38-25-CFX	4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	30X3.0	F37-616-CFX	IN16-30X3.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	30X4.0	F37-616-CFX	IN16-30X4.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	38X2.5	F37-616-CFX	IN16-38X2.5T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	38X3.0	F37-616-CFX	IN16-38X3.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	38X4.0	F37-616-CFX	IN16-38X4.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
	1	38X5.0	F37-616-CFX	IN16-38X5.0T...	F37S16X		4 x ZYLS12X45	4 x ZYLS12X75	4 x ISO4032-M12
420	1 1/4	30X3.0	F37-620-CFX	IN20-30X3.0T...	F37S20X	SL20-42-30-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/4	30X4.0	F37-620-CFX	IN20-30X4.0T...	F37S20X	SL20-42-30-CFX	4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/4	38X3.0	F37-620-CFX	IN20-38X3.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/4	38X4.0	F37-620-CFX	IN20-38X4.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/4	38X5.0	F37-620-CFX	IN20-38X5.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/4	42X3.0	F37-620-CFX	IN20-42X3.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/4	42X4.0	F37-620-CFX	IN20-42X4.0T...	F37S20X		4 x ZYLS14X55	4 x ZYLS14 x90	4 x ISO4032-M14
	1 1/2	38X3.0	F37-624-CFX	IN24-38X3.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	38X4.0	F37-624-CFX	IN24-38X4.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	38X5.0	F37-624-CFX	IN24-38X5.0T...	F37S24X	SL24-50-38-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	42X3.0	F37-624-CFX	IN24-42X3.0T...	F37S24X	SL24-50-42-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	42X4.0	F37-624-CFX	IN24-42X4.0T...	F37S24X	SL24-50-42-CFX	4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	50X3.0	F37-624-CFX	IN24-50X3.0T...	F37S24X		4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	50X5.0	F37-624-CFX	IN24-50X5.0T...	F37S24X		4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	1 1/2	50X6.0	F37-624-CFX	IN24-50X6.0T...	F37S24X		4 x ZYLS16X60	4 x ZYLS16X100	4 x ISO4032-M16
	2	50X3.0	F37-632-CFX	IN32-50X3.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20
	2	50X5.0	F37-632-CFX	IN32-50X5.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20
	2	50X6.0	F37-632-CFX	IN32-50X6.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20
	2	60X3.0	F37-632-CFX	IN32-60X3.0T...	F37S32X		4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20
	2	60X5.0	F37-632-CFX	IN32-60X5.0T...	F37S32X		4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20
	2	60X6.0	F37-632-CFX	IN32-60X6.0T...	F37S32X		4 x ZYLS20X70	4 x ZYLS20X120	4 x ISO4032-M20

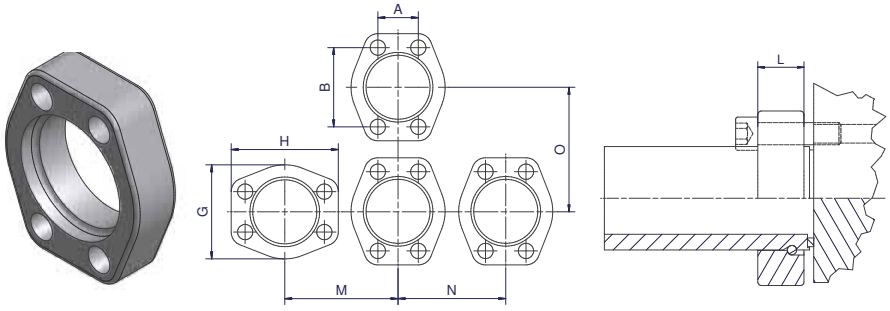
Select the complete version:

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

Pressure rates related to flanges.
Other sizes like schedule on request
Bolts and nuts are not included in a complete part.
Bolt and nuts for flanges see page 144

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

SAE 6000/ISO 6162-2

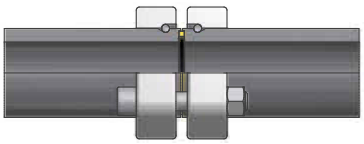


Retaining ring flange dimensions

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

Please change suffixes according to material/surface required

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

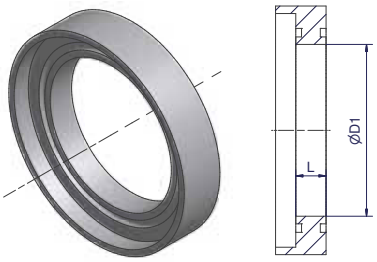


Part combination Bonded seal SAE 6000 connection

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

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

SAE 6000/ISO 6162-2

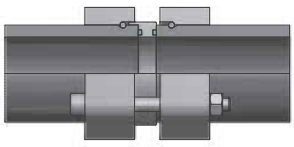


Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
2	66X8.5	6.5	49	PSC32-66X8.5VCF	
2 1/2	80X10	15.0	60	PSC40-80X10VCF	420
3	97X12	15.0	73	PSC48-97X12VCF	

Other sizes on request
Stainless steel on request
Included seals

Please change suffixes according to material/surface required

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



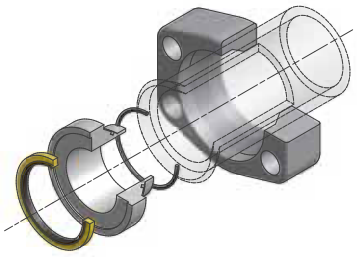
Part combination Pipe seal carrier SAE 6000 connection

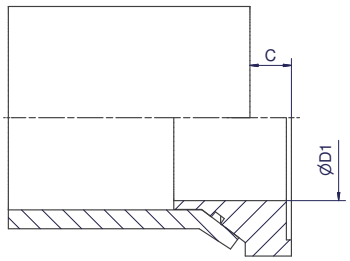
Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Seal Carrier	Bolts Tube to Port	Bolts Tube to Tube	Nut
	2	66X8.5	R-632-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS24X80	4 x ZYLS24X120	ISO4032-M24
420	2 1/2	80X10	R-640-CFX	R40X	PSC40-80X10VCF	4 x ZYLS24X100	4 x ZYLS24X150	ISO4032-M24
	3	97X12	R-648-CFX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

Stainless steel on request
Other sizes on request

TFB – Flare flange connection

Tube to port connection, bonded seal





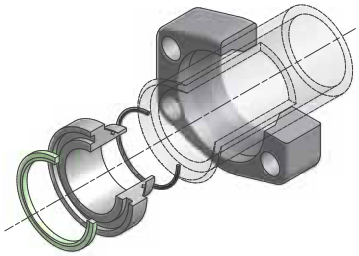
Size		Flange incl. Insert + Bonded Seal + O-Ring (+Sleeve) Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	**F37-608-16X2.0TFBCF**	9.5	8.0	IN08-16X2.0TFBCF	BS08SNX	OR12X1.0X	SL08-25-16-CFX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

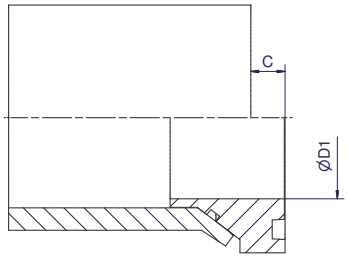
Please change suffixes according to material/surface required

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

TFV – Flare flange connection

Tube to port connection, F37 seal





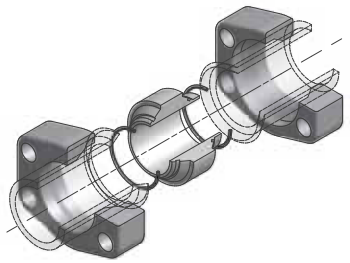
Size		Flange incl. Insert + F37 Seal + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
1/2	16X2.0	**F37-608-16X2.0TFVCF**	9.5	8.0	IN08-16X2.0TFVCF	F3708X	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	**F37-608-18X2.0TFVCF**	9.5	8.0	IN08-18X2.0TFVCF	F3708X	OR14X1.1X	SL08-25-18-CFX	0.24
1/2	20X2.0	**F37-608-20X2.0TFVCF**	11.5	8.0	IN08-20X2.0TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	20X2.5	**F37-608-20X2.5TFVCF**	13.5	8.0	IN08-20X2.5TFVCF	F3708X	OR16X1.0X	SL08-25-20-CFX	0.24
1/2	25X2.5	**F37-608-25X2.5TFVCF**	13.5	10.0	IN08-25X2.5TFVCF	F3708X	OR20X1.0X		0.25
1/2	25X3.0	**F37-608-25X3.0TFVCF**	13.5	8.0	IN08-25X3.0TFVCF	F3708X	OR20X1.0X		0.24
3/4	20X2.0	**F37-612-20X2.0TFVCF**	13.0	8.0	IN12-20X2.0TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	20X2.5	**F37-612-20X2.5TFVCF**	13.5	8.0	IN12-20X2.5TFVCF	F3712X	OR16X1.0X	SL12-30-20-CFX	0.41
3/4	25X2.5	**F37-612-25X2.5TFVCF**	12.5	10.0	IN12-25X2.5TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.41
3/4	25X3.0	**F37-612-25X3.0TFVCF**	17.5	8.0	IN12-25X3.0TFVCF	F3712X	OR20X1.0X	SL12-30-25-CFX	0.42
3/4	30X3.0	**F37-612-30X3.0TFVCF**	16.5	8.5	IN12-30X3.0TFVCF	F3712X	OR25X1.0X		0.42
3/4	30X4.0	**F37-612-30X4.0TFVCF**	19.0	8.5	IN12-30X4.0TFVCF	F3712X	OR22X1.0X		0.42
1	25X2.5	**F37-616-25X2.5TFVCF**	19.5	10.0	IN16-25X2.5TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.61
1	25X3.0	**F37-616-25X3.0TFVCF**	17.5	8.0	IN16-25X3.0TFVCF	F3716X	OR20X1.0X	SL16-38-25-CFX	0.62
1	30X3.0	**F37-616-30X3.0TFVCF**	16.5	8.5	IN16-30X3.0TFVCF	F3716X	OR25X1.0X		0.64
1	30X4.0	**F37-616-30X4.0TFVCF**	21.5	8.5	IN16-30X4.0TFVCF	F3716X	OR22X1.0X		0.62
1	38X2.5	**F37-616-38X2.5TFVCF**	19.5	9.5	IN16-38X2.5TFVCF	F3716X	OR34X1.0X		0.64
1	38X3.0	**F37-616-38X3.0TFVCF**	25.0	9.0	IN16-38X3.0TFVCF	F3716X	OR34X1.0X		0.63
1	38X4.0	**F37-616-38X4.0TFVCF**	25.0	10.0	IN16-38X4.0TFVCF	F3716X	OR30X1.0X		0.63
1	38X5.0	**F37-616-38X5.0TFVCF**	25.0	8.0	IN16-38X5.0TFVCF	F3716X	OR28X1.0X		0.62
1 1/4	30X3.0	**F37-620-30X3.0TFVCF**	25.0	8.5	IN20-30X3.0TFVCF	F3720X	OR25X1.0X	SL20-42-30-CFX	1.03
1 1/4	30X4.0	**F37-620-30X4.0TFVCF**	21.5	8.5	IN20-30X4.0TFVCF	F3720X	OR22X1.0X	SL20-42-30-CFX	1.04
1 1/4	38X3.0	**F37-620-38X3.0TFVCF**	19.5	9.0	IN20-38X3.0TFVCF	F3720X	OR34X1.0X		1.02
1 1/4	38X4.0	**F37-620-38X4.0TFVCF**	29.5	10.0	IN20-38X4.0TFVCF	F3720X	OR30X1.0X		1.03
1 1/4	38X5.0	**F37-620-38X5.0TFVCF**	27.0	8.0	IN20-38X5.0TFVCF	F3720X	OR28X1.0X		1.02
1 1/4	42X3.0	**F37-620-42X3.0TFVCF**	25.5	10.0	IN20-42X3.0TFVCF	F3720X	OR37.82X1.78X		1.03
1 1/4	42X4.0	**F37-620-42X4.0TFVCF**	31.5	10.0	IN20-42X4.0TFVCF	F3720X	OR34X1.0X		1.02
1 1/2	38X3.0	**F37-624-38X3.0TFVCF**	31.5	9.0	IN24-38X3.0TFVCF	F3724X	OR34X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X4.0	**F37-624-38X4.0TFVCF**	27.5	10.0	IN24-38X4.0TFVCF	F3724X	OR30X1.0X	SL24-50-38-CFX	1.73
1 1/2	38X5.0	**F37-624-38X5.0TFVCF**	27.5	8.0	IN24-38X5.0TFVCF	F3724X	OR28X1.0X	SL24-50-38-CFX	1.73
1 1/2	42X3.0	**F37-624-42X3.0TFVCF**	25.0	10.0	IN24-42X3.0TFVCF	F3724X	OR37.82X1.78X	SL24-50-42-CFX	1.73
1 1/2	42X4.0	**F37-624-42X4.0TFVCF**	33.5	10.0	IN24-42X4.0TFVCF	F3724X	OR34X1.0X	SL24-50-42-CFX	1.73
1 1/2	50X3.0	**F37-624-50X3.0TFVCF**	31.5	11.0	IN24-50X3.0TFVCF	F3724X	OR44.17X1.78X		1.73
1 1/2	50X5.0	**F37-624-50X5.0TFVCF**	36.0	10.0	IN24-50X5.0TFVCF	F3724X	OR41X1.78X		1.73
1 1/2	50X6.0	**F37-624-50X6.0TFVCF**	36.0	10.0	IN24-50X6.0TFVCF	F3724X	OR41X1.78X		1.73
2	50X3.0	**F37-632-50X3.0TFVCF**	35.0	11.0	IN32-50X3.0TFVCF	F3732X	OR44.17X1.78X	SL32-60-50-CFX	2.66
2	50X5.0	**F37-632-50X5.0TFVCF**	41.5	10.0	IN32-50X5.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	2.68
2	50X6.0	**F37-632-50X6.0TFVCF**	37.5	10.0	IN32-50X6.0TFVCF	F3732X	OR41X1.78X	SL32-60-50-CFX	2.71
2	60X3.0	**F37-632-60X3.0TFVCF**	35.0	12.0	IN32-60X3.0TFVCF	F3732X	OR53.7X1.78X		2.71
2	60X5.0	**F37-632-60X5.0TFVCF**	46.0	11.0	IN32-60X5.0TFVCF	F3732X	OR50.52X1.78X		2.68
2	60X6.0	**F37-632-60X6.0TFVCF**	46.0	11.0	IN32-60X6.0TFVCF	F3732X	OR47.37X1.78X		2.67

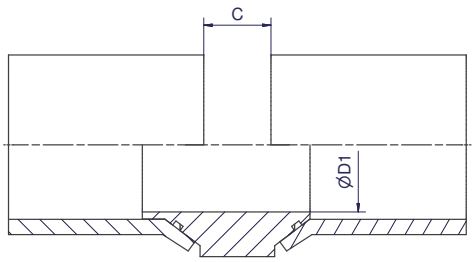
Please change suffixes according to material/surface required

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

TT – Flare flange connection

Tube to tube connection





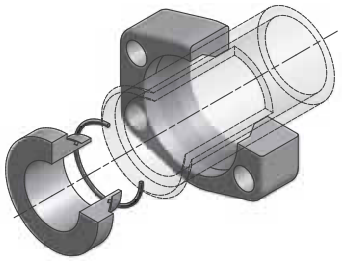
Size		2 x Flanges incl. Insert + 2 x O-Ring (+ 2 x Sleeve) Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
1/2	16X2.0	**F37-608-16X2.0TTCF**	9.5	16	IN08-16X2.0TTCF	OR12X1.0X	SL08-25-16-CFX	0.28
1/2	18X2.0	**F37-608-18X2.0TTCF**	11.5	16	IN08-18X2.0TTCF	OR14X1.1X	SL08-25-18-CFX	0.29
1/2	20X2.0	**F37-608-20X2.0TTCF**	13.5	16	IN08-20X2.0TTCF	OR16X1.0X	SL08-25-20-CFX	0.29
1/2	20X2.5	**F37-608-20X2.5TTCF**	13.5	16	IN08-20X2.5TTCF	OR16X1.0X	SL08-25-20-CFX	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	SL12-30-20-CFX	0.48
3/4	20X2.5	**F37-612-20X2.5TTCF**	12.5	16	IN12-20X2.5TTCF	OR16X1.0X	SL12-30-20-CFX	0.48
3/4	25X2.5	**F37-612-25X2.5TTCF**	17.5	20	IN12-25X2.5TTCF	OR20X1.0X	SL12-30-25-CFX	0.49
3/4	25X3.0	**F37-612-25X3.0TTCF**	16.5	16	IN12-25X3.0TTCF	OR20X1.0X	SL12-30-25-CFX	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	SL16-38-25-CFX	0.72
1	25X3.0	**F37-616-25X3.0TTCF**	16.5	16	IN16-25X3.0TTCF	OR20X1.0X	SL16-38-25-CFX	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	SL20-42-30-CFX	1.16
1 1/4	30X4.0	**F37-620-30X4.0TTCF**	19.5	17	IN20-30X4.0TTCF	OR22X1.0X	SL20-42-30-CFX	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	SL24-50-38-CFX	1.79
1 1/2	38X4.0	**F37-624-38X4.0TTCF**	27.5	20	IN24-38X4.0TTCF	OR30X1.0X	SL24-50-38-CFX	1.79
1 1/2	38X5.0	**F37-624-38X5.0TTCF**	25.0	16	IN24-38X5.0TTCF	OR28X1.0X	SL24-50-38-CFX	1.79
1 1/2	42X3.0	**F37-624-42X3.0TTCF**	33.5	20	IN24-42X3.0TTCF	OR37.82X1.78X	SL24-50-42-CFX	1.84
1 1/2	42X4.0	**F37-624-42X4.0TTCF**	31.5	20	IN24-42X4.0TTCF	OR34X1.0X	SL24-50-42-CFX	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	SL32-60-50-CFX	2.86
2	50X5.0	**F37-632-50X5.0TTCF**	37.5	20	IN32-50X5.0TTCF	OR41X1.78X	SL32-60-50-CFX	2.97
2	50X6.0	**F37-632-50X6.0TTCF**	35.0	20	IN32-50X6.0TTCF	OR41X1.78X	SL32-60-50-CFX	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

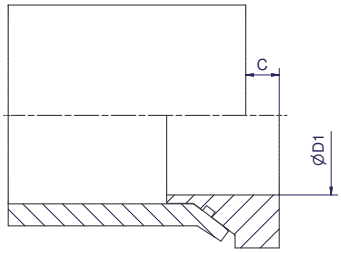
Please change suffixes according to material/surface required

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

TF – Flare flange connection

Tube to port connection, flat face





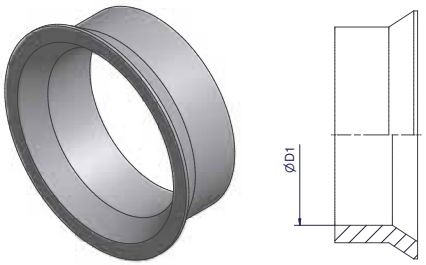
Size		Flange incl. Insert + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
1/2	16X2.0	**F37-608-16X2.0TFCF**	9.5	8.0	IN08-16X2.0TFCF	OR12X1.0X	SL08-25-16-CFX	0.24
1/2	18X2.0	**F37-608-18X2.0TFCF**	11.5	8.0	IN08-18X2.0TFCF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

Please change suffixes according to material/surface required

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

SL – Sleeve

SAE 6000/ISO 6162-2



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

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

Please change suffixes according to material/surface required

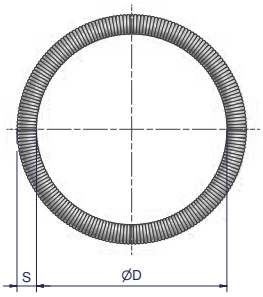
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SL24-50-42-CFX
Stainless steel	SS	SL24-50-42-SSX

R – Retaining ring

SAE 6000/ISO 6162-2

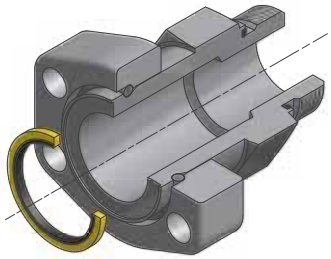
Size Inch	Tube	D	S	Order code
1/2	26X6.0	23.7	2.6	**R08X**
3/4	36X8.0	33.7	2.6	**R12X**
1	39X7.5	35.8	3.5	**R16X**
1 1/4	46X8.0	42.8	3.5	**R20X**
1 1/2	56X8.5	52.8	3.5	**R24X**
2	66X8.5	62.8	3.5	**R32X**

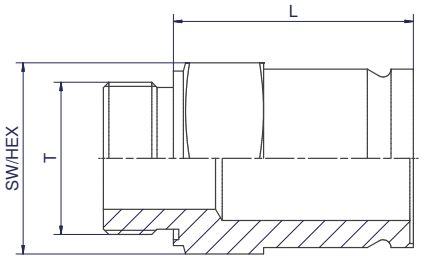
Material: Stainless steel



MTF-R – Male thread adapter, BSPP

SAE 6000/ISO 6162-2





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

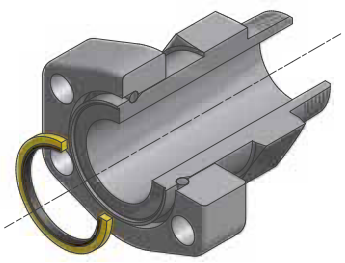
Other sizes on request

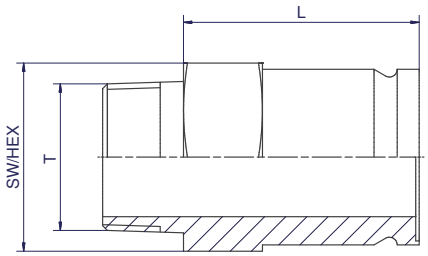
Please change suffixes according to material/surface required

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

MTF-N – Male thread adapter, NPT

SAE 6000/ISO 6162-2





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

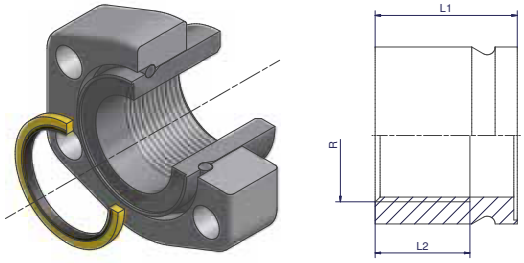
Other sizes on request

Please change suffixes according to material/surface required

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

FTF-R – Female thread adapter, BSPP

SAE 6000/ISO 6162-2



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

Other sizes on request

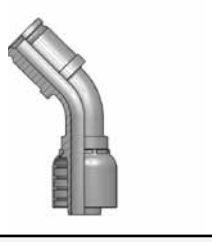
Please change suffixes according to material/surface required

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

Retaining ring hose couplings

SAE 6000/ISO 6162-2

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

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

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

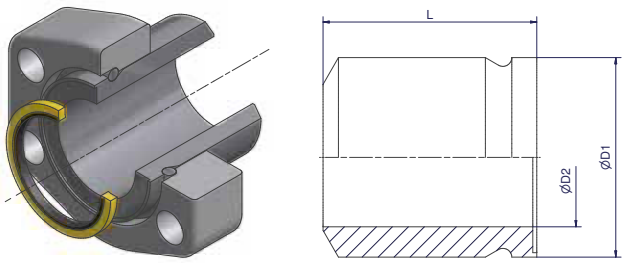
				
Connection				
Flange	Hose	Order code	Order code	Order code
1 1/4	1 1/4	**KX5V6-20-20**	**KX7V6-20-20**	**KX9V6-20-20**
1 1/2	1 1/2	**KX5V6-24-24**	**KX7V6-24-24**	**KX9V6-24-24**
2	2	**KX5V6-32-32**	**KX7V6-32-32**	**KX9V6-32-32**

Interlock Shells V6 Series for Parker hose types H82 & R42

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

WA – Weld adapter connection

SAE 6000/ISO 6162-2

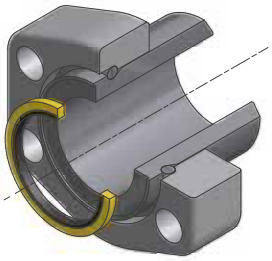


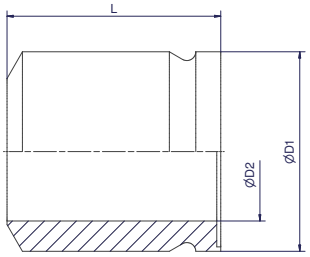
Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
1/2	12X1.5	**R-608WA-12X1.5S**	R08X	BS08SNX	R-608-CFX	WA08-12X1.5SX	0.29	26	14	40
1/2	16X2.0	**R-608WA-16X2.0S**	R08X	BS08SNX	R-608-CFX	WA08-16X2.0SX	0.30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

See next page

WA – Weld adapter connection continued

SAE 6000/ISO 6162-2





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

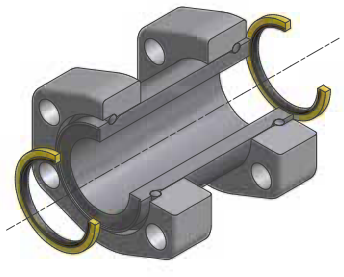
Other sizes on request

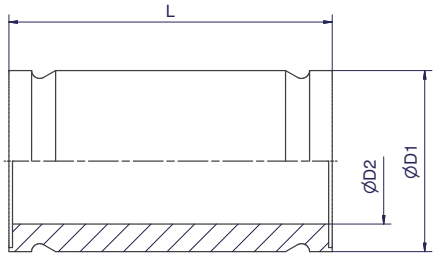
Please change suffixes according to material/surface required

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

BF – Bulkhead flange

SAE 6000/ISO 6162-2





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

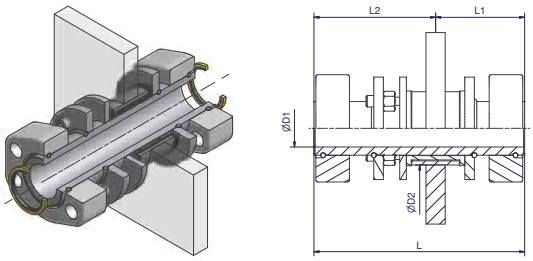
Other sizes on request

Please change suffixes according to material/surface required

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

VB – Vibra bulkhead

SAE 6000/ISO 6162-2



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

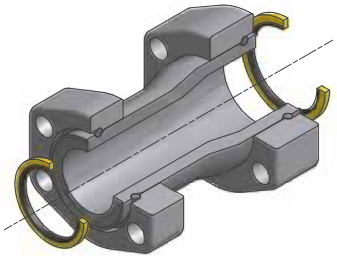
Other sizes on request

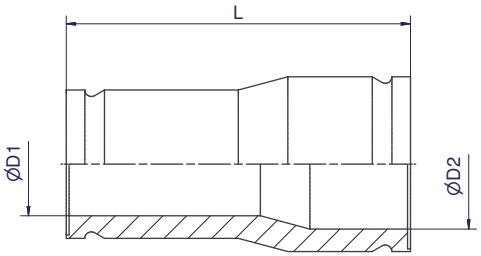
Please change suffixes according to material/surface required

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

RF – Reducer flange

SAE 6000/ISO 6162-2





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

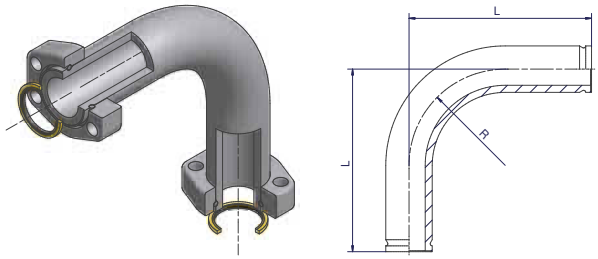
Other sizes on request

Please change suffixes according to material/surface required

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

FB90 – 90° Flange bend

SAE 6000/ISO 6162-2



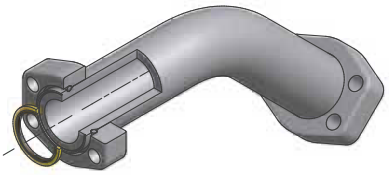
Size Inch	Tube	L	R	Complete Part Order code	90° Flange Bend Order code	Weight body (Steel) kg/1 piece
1	39X7.5	160	98	**R-616FB90S**	FB90-16SX	1.59
1 1/4	46X8.0	180	96	**R-620FB90S**	FB90-20SX	2.35
1 1/2	56X8.5	220	116	**R-624FB90S**	FB90-24SX	3.84
2	66X8.5	275	165	**R-632FB90S**	FB90-32SX	5.72

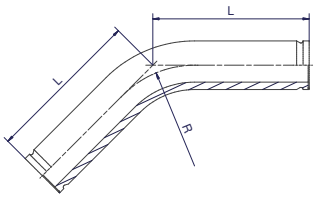
Please change suffixes according to material/surface required

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

FB45 – 45° Flange bend

SAE 6000/ISO 6162-2





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

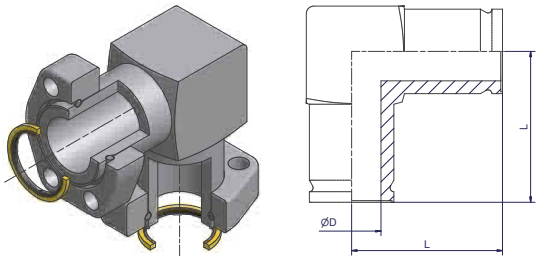
Available on request

Please change suffixes according to material/surface required

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

LF – Elbow flange

SAE 6000/ISO 6162-2



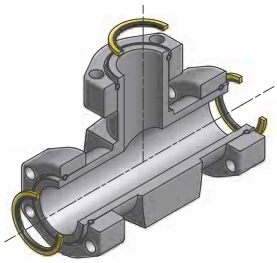
Size Inch	D	L	Complete Part Order code	Elbow Flange body Order code	Weight body (Steel) kg/1 piece
1/2	14	70	**R-608LFCF**	**LF08CFX**	0.50
3/4	20	80	**R-612LFCF**	**LF12CFX**	1.07
1	24	85	**R-616LFCF**	**LF16CFX**	1.32
1 1/4	30	90	**R-620LFCF**	**LF20CFX**	1.72
1 1/2	39	100	**R-624LFCF**	**LF24CFX**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

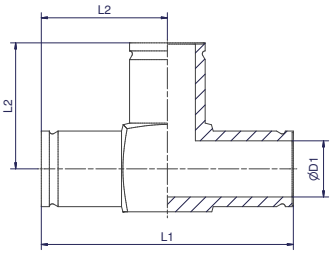
Please change suffixes according to material/surface required

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

TF – TEE flange

SAE 6000/ISO 6162-2





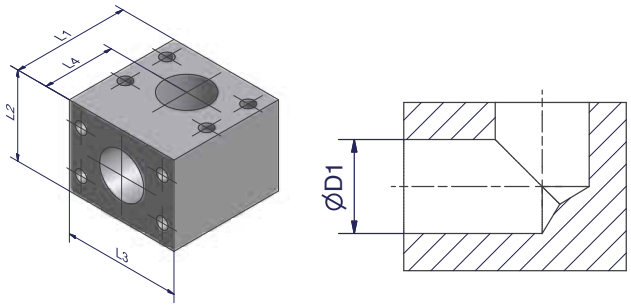
Size Inch	D1	L1	L2	Complete Part Order code	Tee Flange body Order code	Weight body (Steel) kg/1 piece
1/2	14	120	60	**R-608TFCF**	**TF08CFX**	0.75
3/4	20	130	65	**R-612TFCF**	**TF12CFX**	3.20
1	24	140	70	**R-616TFCF**	**TF16CFX**	2.00
1 1/4	30	180	90	**R-620TFCF**	**TF20CFX**	2.03
1 1/2	39	200	100	**R-624TFCF**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

Please change suffixes according to material/surface required

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

LB – Flange L-block

SAE 6000/ISO 6162-2



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

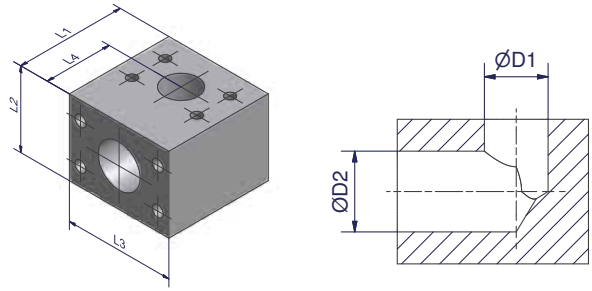
Other sizes on request

Please change suffixes according to material/surface required

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

LBR – Flange L-block reducer

SAE 6000/ISO 6162-2



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

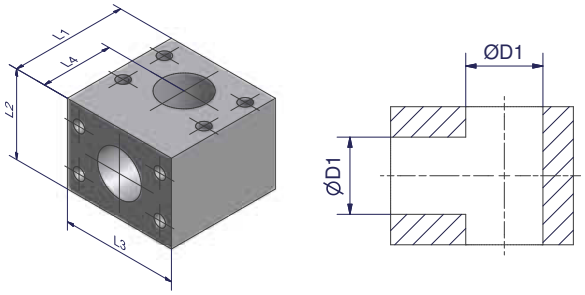
Other sizes on request

Please change suffixes according to material/surface required

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

TB – Flange T-block

SAE 6000/ISO 6162-2



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

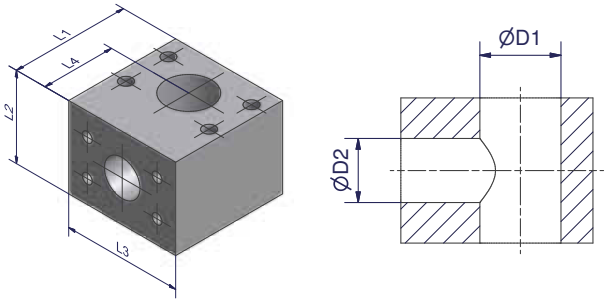
Other sizes an combinations on request

Please change suffixes according to material/surface required

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

TBR – Flange T-block reducer

SAE 6000/ISO 6162-2



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

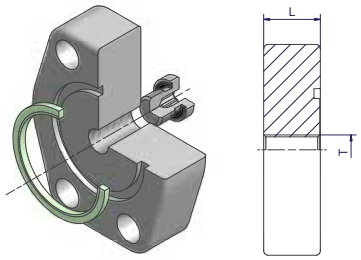
Other sizes on request

Please change suffixes according to material/surface required

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

BFV – Blind flange

SAE 6000/ISO 6162-2



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

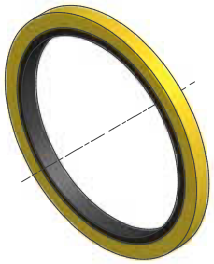
Other sizes on request

Please change suffixes according to material/surface required

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

BS – Bonded seal

SAE 6000/ISO 6162-2

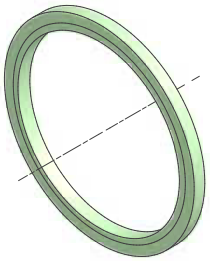


Size Inch	Steel	Stainless Steel
1/2	**BS08SNX**	**BS08SSNX**
3/4	**BS12SNX**	**BS12SSNX**
1	**BS16SNX**	**BS16SSNX**
1 1/4	**BS20SNX**	**BS20SSNX**
1 1/2	**BS24SNX**	**BS24SSNX**
2	**BS32SNX**	**BS32SSNX**

Sealing: NBR
Other sealing materials like FKM on request

F37S – F37 Seal

SAE 6000/ISO 6162-2

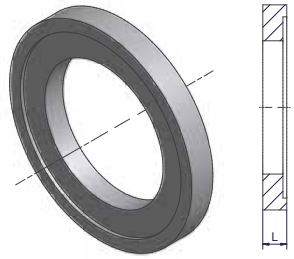


Size Inch	F37 Seal
1/2	**F37S08X**
3/4	**F37S12X**
1	**F37S16X**
1 1/4	**F37S20X**
1 1/2	**F37S24X**
2	**F37S32X**

Sealing: Polyurethane
Material properties and applications see page 18

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

SAE 6000/ISO 6162-2



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

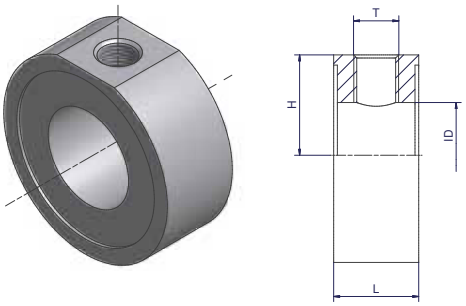
*Part excluding seals

Please change suffixes according to material/surface required

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

TBT – Tee between bonded seal

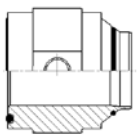
SAE 6000/ISO 6162-2



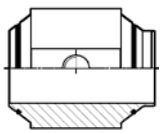
Size Inch	L	H	T	ID	Bolt ISO 4762	Weight (Steel) kg/1 piece	Order code*
1	25	20.5	G 1/4	25	ZYLS10X90	0.21	**TBT16-1/4CFX**
1 1/4	25	24.5	G 1/4	27	ZYLS10X100	0.30	**TBT20-1/4CFX**
1 1/4	40	22.5	G 1/2	24	ZYLS10X120	0.49	**TBT20-1/2CFX**
1 1/2	25	29.5	G 1/4	31	ZYLS12X110	0.42	**TBT24-1/4CFX**
1 1/2	40	28.0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

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

Alternative versions on request



TFVB



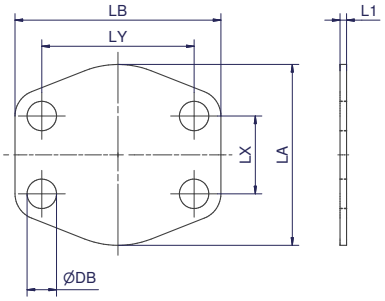
TTB

Please change suffixes according to material/surface required

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

AP – SAE flange locking plate

SAE 6000/ISO 6162-2



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

[1] Pressure shown = Item deliverable

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

This flange locking plate is not used under pressure

Please change suffixes according to material/surface required

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

Bolts and nuts for flange

SAE 6000/ISO 6162-2

F37 Flare Flange

Size Inch	Flange	F37 Seal / Flat Face / Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1/2	F37-608-CFX	4 x ZYLS8X35	4 x 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 1/2	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		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
1/2	R-608-CFX	4 x ZYLS8X35	4 x ZYLS8X60	4 x ISO4032-M8
3/4	R-612-CFX	4 x ZYLS10X45	4 x ZYLS10X80	4 x ISO4032-M10
1	R-616-CFX	4 x ZYLS12X45	4 x ZYLS12X80	4 x ISO4032-M12
1 1/4	R-620-CFX	4 x ZYLS14X50	4 x ZYLS14X90	4 x ISO4032-M14
1 1/2	R-624-CFX	4 x ZYLS16X60	4 x ZYLS16X110	4 x ISO4032-M16
2	R-632-CFX	4 x ZYLS20X70	4 x ZYLS20X110	4 x ISO4032-M20
2 1/2	R-640-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
3	R-648-CFX	4 x ZYLS30X100	4 x ZYLS30X160	4 x ISO4032-M30

Bolts and nuts must be ordered seperately

Latest information about nuts and bolts see www.parker.com/tfde/servicemanuals/userguides

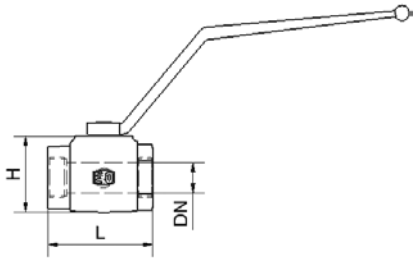
Please add the suffixes according to the bolt quality

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

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

KH – Ball valve

400 bar female BSPP thread (ISO 1179-1)



Material Steel

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

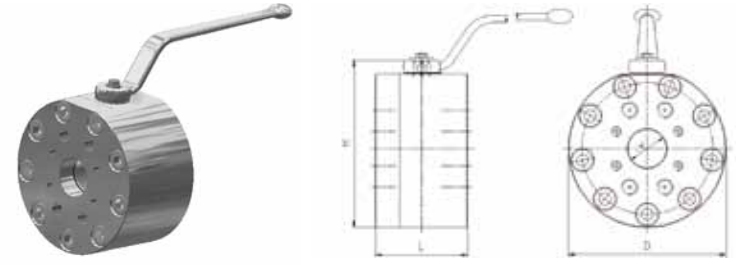
Please change suffixes according to material/surface required

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

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

KH – Ball valve drilled and tapped for SAE 6000 flanges

SAE 6000/ISO 6162-2



Material Steel

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

Material Stainless Steel

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

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

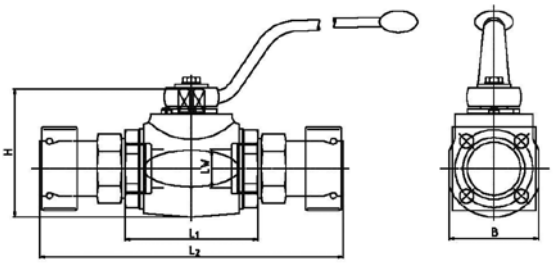
Please change suffixes according to material/surface required

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

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

KH-R – Ball valve with SAE 6000 Flanges

SAE 6000/ISO 6162-2



Material Steel

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

Material Stainless Steel

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

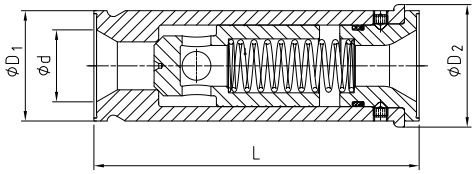
Please change suffixes according to material/surface required

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

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

RHD-R – Non return valves

SAE 6000/ISO 6162-2



Material Steel

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

Opening pressure 0.5 bar
Other pressure rates on request

Please change suffixes according to material/surface required

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

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

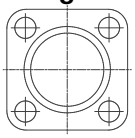
ISO 6164 System

350 – 400 bar

Programme overview ISO 6164 footprint

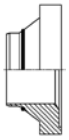
Parflange® F37 connection parts

Flanges

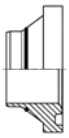


F37 – p.152/153

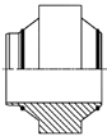
Inserts



TFB – p.156



TFV – p.157



TT – p.158

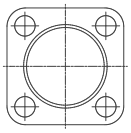
TF – p.159

Sleeve

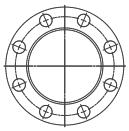
SL – p.160

Retaining ring connection parts

Flanges



R – p.154

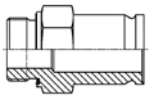


R – p.154

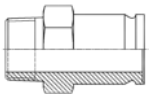
R-Ring – p.161

PSC – p.155

Male / Female



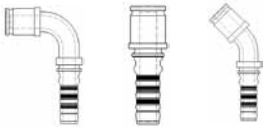
MTF-R – p.162



MTF-N – p.163

FTF-R – p.164

Hose



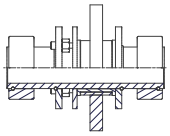
Hose – p.165

Weld

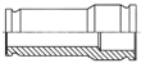
WA – p.166

Tube to Tube

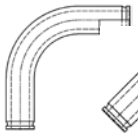
BF – p.167



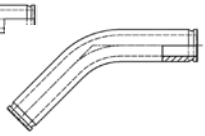
VB – p.168



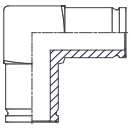
RF – p.169



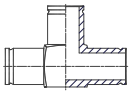
FB90 – p.170



FB45 – p.171



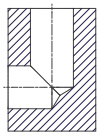
LF – p.172



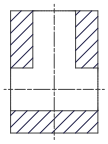
TF – p.173

SAE connection parts

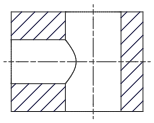
Blocks



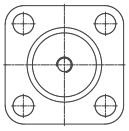
LB – p.174



TB – p.175



TBR – p.176

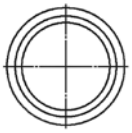


BFV – p.177

Seals Adapter Bolts

Components

BS – p.178



F37S – p.178

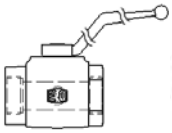
AO – p.179

TBT – p.180

Bolts and Nuts

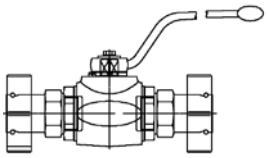
p.181

Ball valves

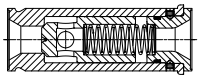


KH – p.182

KH – p.183



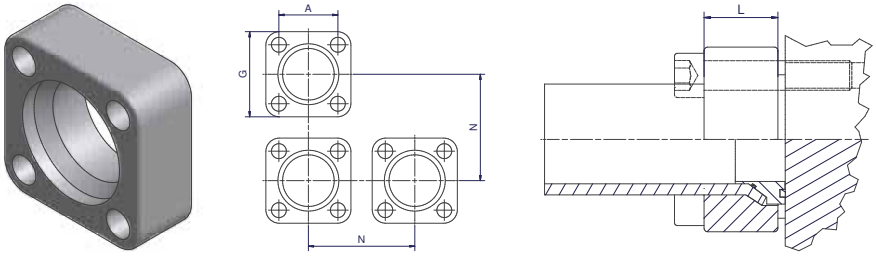
KH-R – p.184



RHD-R – p.185

F37 – Flare flange | ISO 6164 footprint

ISO 6164



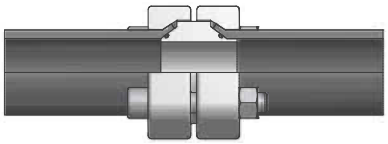
Parflange F37 flange dimensions

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	
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	400
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*	F37 Seal	Sleeve	F37 Seal / Flat Face / Bonded Seal		Nut
							Bolts Tube to Port	Bolts Tube to Tube	
420	2	50X3.0	F37-432-CFX	IN32-50X3.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2	50X5.0	F37-432-CFX	IN32-50X5.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2	50X6.0	F37-432-CFX	IN32-50X6.0T...	F37S32X	SL32-60-50-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2	60X3.0	F37-432-CFX	IN32-60X3.0T...	F37S32X		4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2	60X5.0	F37-432-CFX	IN32-60X5.0T...	F37S32X		4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2	60X6.0	F37-432-CFX	IN32-60X6.0T...	F37S32X		4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2 1/2	60X3.0	F37-440-CFX	IN40-60X3.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	2 1/2	60X5.0	F37-440-CFX	IN40-60X5.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	2 1/2	60X6.0	F37-440-CFX	IN40-60X6.0T...	F37S40X	SL40-75-60-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	2 1/2	73X7.0	F37-44073-CF	IN40-73X7.0T...	F37S40X		4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	2 1/2	75X3.0	F37-440-CFX	IN40-75X3.0T...	F37S40X		4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	2 1/2	75X5.0	F37-440-CFX	IN40-75X5.0T...	F37S40X		4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	3	75X3.0	F37-440-CFX	IN48-75X3.0T...	F37S48X	SL48-90-75-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
	3	75X5.0	F37-448-CFX	IN48-75X5.0T...	F37S48X	SL48-90-75-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
	3	90X3.5	F37-448-CFX	IN48-90X3.5T...	F37S48X		4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
	3	90X5.0	F37-448-CFX	IN48-90X5.0T...	F37S48X		4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
	3	90X9.0	F37-448909-CF	IN48-90X9.0T...	F37S48X		4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24

Select the complete version:

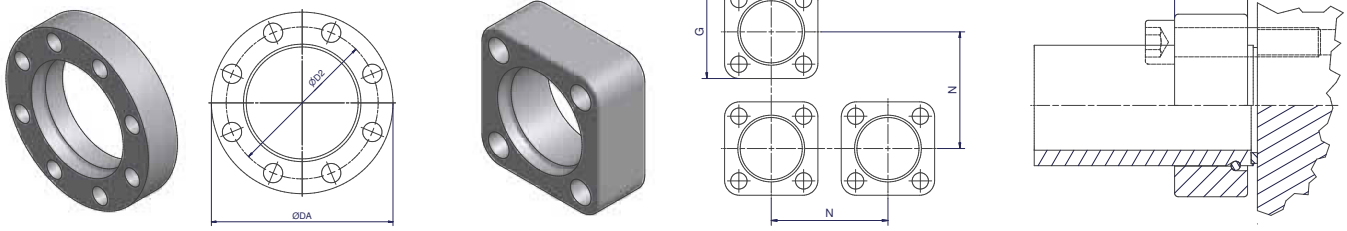
* …FBCF Bonded Seal version
…FVCF F37 Seal version
…TCF Tube to Tube version
…FCF Flat Face version

Pressure rates related to flanges
Other sizes like schedule on request
Bolts and nuts for flanges see page 181

Bolts and nuts are not included in a complete part.

R – Retaining ring flange | ISO 6164 footprint

ISO 6164

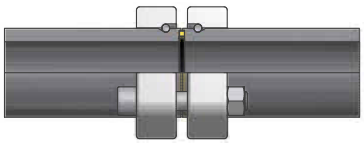


Retaining ring flange dimensions

Size Inch	Flange Order Code	A	G	N	L	Weight (Steel) kg/1 piece	W.P. bar
2	**R-432-CFX**	69.3	100	105	40	1.60	400
2 1/2	**R-440-CFX**	83.4	120	125	50	2.90	
3	**R-448-CFX**	102.5	150	155	52	5.00	
4	**R-464-CFX**	123.7	180	185	70	9.70	
		D2	DA				
4 1/2	**R-872-CFX**	175	214		60	8.97	400
5	**R-880-CFX**	205	245		70	13.44	400
6	**R-896-CFX**	245	300		80	21.22	350
8	**R-8128-CFX**	315	385		92	39.27	250
10	**R-8160273-CFX**	375	450		90	59.31	250

Please change suffixes according to material/surface required

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

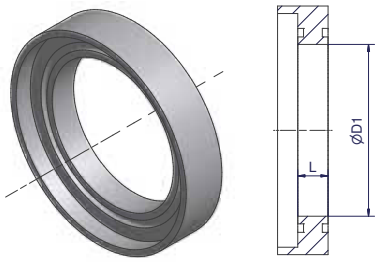


Part combination Bonded seal ISO 6164 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal	Bolts Tube to Port	Bolts Tube to Tube	Nut
400	2	66X8.5	R-432-CFX	R32X	BS32SNX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
	2 1/2	80X10	R-440-CFX	R40X	BS40SNX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
	3	97X12	R-448-CFX	R48X	BS48SNX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
	4	115X15	R-464-CFX	R64X	BS64SNX	4 x ZYLS30X120	4 x ZYLS30X190	4 x ISO4032-M30
	4 1/2	130X15	R-872-CFX	R72X	BS72SNX	8 x ZYLS20X90	8 x ZYLS20X160	8 x ISO4032-M20
	5	150X15	R-880-CFX	R80X	BS80SNX	8 x ZYLS24X110	8 x ZYLS24X190	8 x ISO4032-M24

PSC – Pipe seal carrier | ISO 6164 footprint

ISO 6164

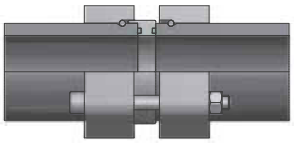


Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
2	66X8.5	6.5	49	PSC32-66X8.5VCF	400
2 1/2	80X10	15.0	60	PSC40-80X10VCF	400
3	97X12	15.0	73	PSC48-97X12VCF	400
4	115X15	15.0	85	PSC64-115X15VCF	400
4 1/2	130X15	25.5	100	PSC72-130X15VCF	400
5	150X15	22.0	120	PSC80-150X15VCF	400
6	190X20	40.0	150	PSC96-190X20VCF	350
8	250X25	40.0	200	PSC128-250X25VCF	250
10	273X25.4	40.0	222	PSC160-273X25.4VCF	250

Other sizes on request
Stainless steel on request
Included seals

Please change suffixes according to material/surface required

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



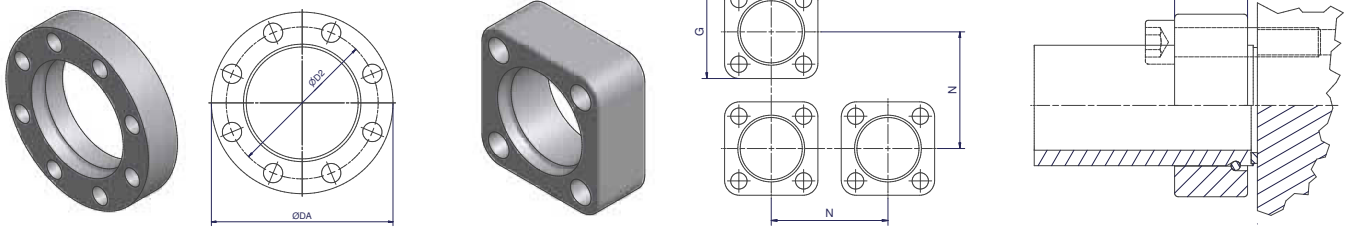
Part combination Pipe seal carrier ISO 6164 connection

Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Pipe seal carrier	Bolts Tube to Port	Bolts Tube to Tube	Nut
400	2	66X8.5	R-432-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS16X75	4 x ZYLS16X110	ISO4032-M16
	2 1/2	80X10	R-440-CFX	R40X	PSC40-80X10VCF	4 x ZYLS20X100	4 x ZYLS20X140	ISO4032-M20
	3	97X12	R-448-CFX	R48X	PSC48-97X12VCF	4 x ZYLS24X120	4 x ZYLS24X150	ISO4032-M24
	4	115X15	R-464-CFX	R64X	PSC64-115X15VCF	4 x ZYLS30X140	4 x ZYLS30X190	ISO4032-M30
	4 1/2	130X15	R-872-CFX	R72X	PSC72-130X15VCF	8 x ZYLS20X120	8 x ZYLS20X190	ISO4032-M20
	5	150X15	R-880-CFX	R80X	PSC80-150X15VCF	8 x ZYLS24X130	8 x ZYLS24X210	ISO4032-M24
350	6	190X20	R-896-CFX	R96X	PSC96-190X20VCF	8 x ZYLS30X160	8 x ZYLS30X220	ISO4032-M30
250	8	250X25	R-8128-CFX	R128X	PSC128-250X25VCF	8 x ZYLS36X180	8 x ZYLS36X250	ISO4032-M36
	10	273x25.4	R-8160273-CFX	R160X	PSC160-273X25.4VCF	12 x ZYLS36X180	12 x ZYLS36X250	ISO4032-M36

Stainless steel on request
Other sizes on request

R – Retaining ring flange | ISO 6164 footprint

ISO 6164

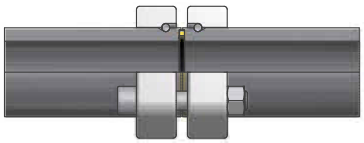


Retaining ring flange dimensions

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

Please change suffixes according to material/surface required

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

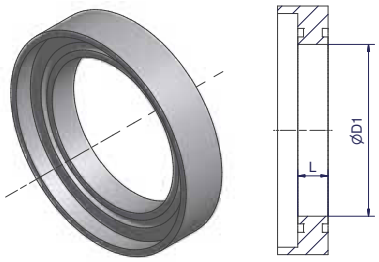


Part combination Bonded seal ISO 6164 connection

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

PSC – Pipe seal carrier | ISO 6164 footprint

ISO 6164

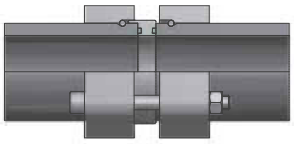


Size Inch	Pipe size	L	D1	Seal carrier	Flange pressure (bar)
2	66X8.5	6.5	49	PSC32-66X8.5VCF	400
2 1/2	80X10	15.0	60	PSC40-80X10VCF	400
3	97X12	15.0	73	PSC48-97X12VCF	400
4	115X15	15.0	85	PSC64-115X15VCF	400
4 1/2	130X15	25.5	100	PSC72-130X15VCF	400
6	190X20	40.0	150	PSC96-190X20VCF	350

Other sizes on request
Stainless steel on request
Included seals

Please change suffixes according to material/surface required

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



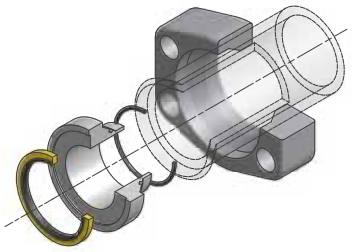
Part combination Pipe seal carrier ISO 6164 connection

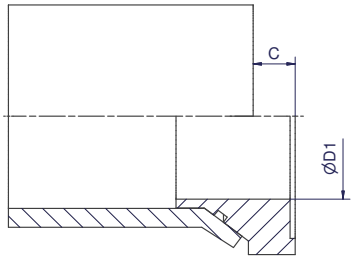
Flange pressure (bar)	Size Inch	Pipe Size	Flange	Retaining Ring	Bonded Seal	Bolts Tube to Port	Bolts Tube to Tube	Nut
400	2	66X8.5	R-432-CFX	R32X	PSC32-66X8.5VCF	4 x ZYLS16X75	4 x ZYLS16X110	ISO4032-M16
	2 1/2	80X10	R-440-CFX	R40X	PSC40-80X10VCF	4 x ZYLS20X100	4 x ZYLS20X140	ISO4032-M20
	3	97X12	R-448-CFX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

Stainless steel on request
Other sizes on request

TFB – Flare flange connection

Tube to port connection, bonded seal





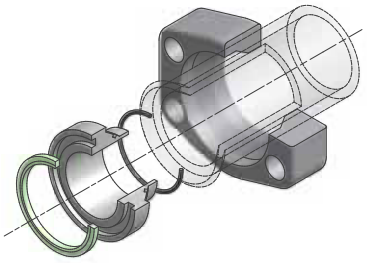
Size		Flange incl. Insert + Bonded Seal + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. Bonded Seal + O-Ring Order code	Bonded Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
2	50X3.0	**F37-432-50X3.0TFBCF**	42	11	IN32-50X3.0TFBCF	BS32SNX	OR44.17X1.78X	SL32-60-50-CFX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

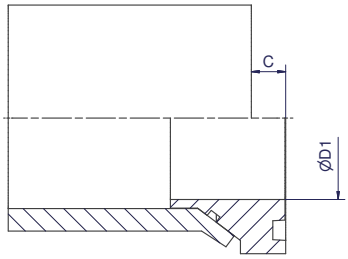
Please change suffixes according to material/surface required

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

TFV – Flare flange connection

Tube to port connection, F37 seal





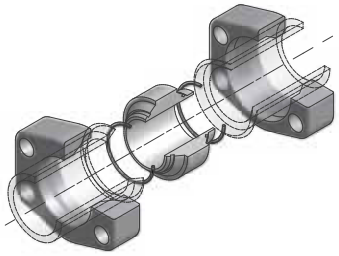
Size		Flange incl. Insert + F37 Seal + O-Ring (+ Sleeve) Order code	D1	C	Insert incl. F37 Seal + O-Ring Order code	F37 Seal Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube								
2	50X3.0	**F37-432-50X3.0TFVCF**	42	11	IN32-50X3.0TFVCF	F3732X	OR44.17X1.78X	SL32-60-50-CFX	2.02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

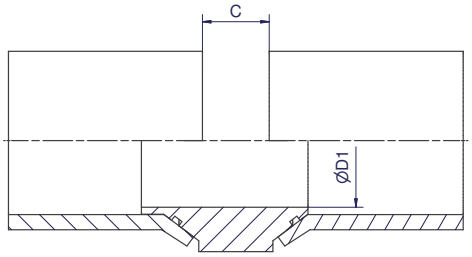
Please change suffixes according to material/surface required

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

TT – Flare Flange Connection

Tube to tube connection





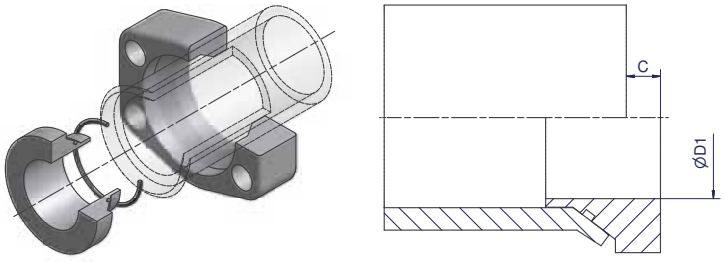
Size		2 Flange incl. Insert + 2 x O-Ring (2 x Sleeve) Order code	D1	C	Insert incl. 2 x O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
2	50X3.0	**F37-432-50X3.0TTCF**	42	22	IN32-50X3.0TTCF	OR44.17X1.78X	SL32-60-50-CFX	2.22
2	50X5.0	**F37-432-50X5.0TTCF**	38	20	IN32-50X5.0TTCF	OR41X1.78X	SL32-60-50-CFX	2.33
2	50X6.0	**F37-432-50X6.0TTCF**	35	20	IN32-50X6.0TTCF	OR41X1.78X	SL32-60-50-CFX	2.38
2	60X3.0	**F37-432-60X3.0TTCF**	46	24	IN32-60X3.0TTCF	OR53.7X1.78X		2.35
2	60X5.0	**F37-432-60X5.0TTCF**	46	22	IN32-60X5.0TTCF	OR50.52X1.78X		2.28
2	60X6.0	**F37-432-60X6.0TTCF**	46	22	IN32-60X6.0TTCF	OR47.37X1.78X		2.27
2 1/2	60X3.0	**F37-440-60X3.0TTCF**	50	24	IN40-60X3.0TTCF	OR53.7X1.78X	SL40-75-60-CFX	3.35
2 1/2	60X5.0	**F37-440-60X5.0TTCF**	46	22	IN40-60X5.0TTCF	OR50.52X1.78X	SL40-75-60-CFX	3.36
2 1/2	60X6.0	**F37-440-60X6.0TTCF**	45	22	IN40-60X6.0TTCF	OR47.37X1.78X	SL40-75-60-CFX	3.34
2 1/2	73X7.0	**F37-440-73X7.0TTCF**	56	26	IN40-73X7.0TTCF	OR63.22X1.78X		3.33
2 1/2	75X3.0	**F37-440-75X3.0TTCF**	60	20	IN40-75X3.0TTCF	OR69.57X1.78X		3.30
2 1/2	75X5.0	**F37-440-75X5.0TTCF**	60	20	IN40-75X5.0TTCF	OR63.22X1.78X		3.32
3	75X3.0	**F37-448-75X3.0TTCF**	66	20	IN48-75X3.0TTCF	OR69.57X1.78X	SL48-90-75-CFX	5.83
3	75X5.0	**F37-448-75X5.0TTCF**	62	20	IN48-75X5.0TTCF	OR63.22X1.78X	SL48-90-75-CFX	5.99
3	90X3.5	**F37-448-90X3.5TTCF**	72	30	IN48-90X3.5TTCF	OR82.27X1.78X		6.00
3	90X5.0	**F37-448-90X5.0TTCF**	72	28	IN48-90X5.0TTCF	OR79X1.78X		5.96
3	90X9.0	**F37-448-90X9.0TTCF**	69	34	IN48-90X9.0TTCF	OR72.75X1.78X		5.85

Please change suffixes according to material/surface required

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

TF – Flare Flange Connection

Tube to port connection, flat face



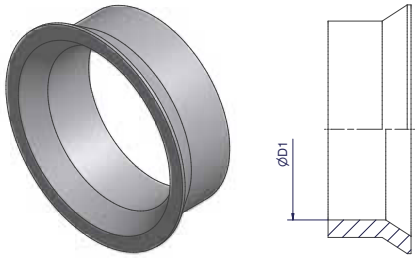
Size		Flange incl. Insert + O-Ring Order code	D1	C	Insert incl. O-Ring Order code	O-Ring Order code	Sleeve	Weight (Steel) kg/1 piece
Inch	Tube							
2	50X3.0	**F37-432-50X3.0TFCF**	42	11	IN32-50X3.0TFCF	OR44.17X1.78X	SL32-60-50-CFX	2.02
2	50X5.0	**F37-432-50X5.0TFCF**	38	10	IN32-50X5.0TFCF	OR41X1.78X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

Please change suffixes according to material/surface required

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

SL – Sleeve

ISO 6164



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

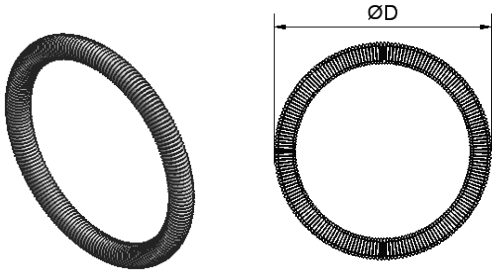
Please change suffixes according to material/surface required

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

R – Retaining ring

ISO 6164

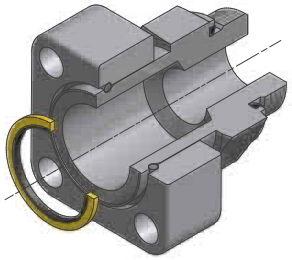
Size Inch	Tube	D	S	Order code
2	66X8.5	62.8	3.5	**R32X**
2 1/2	80X10	76.8	3.5	**R40X**
3	97X12	93.3	4.0	**R48X**
4	115X15	109.3	6.0	**R64X**
4 1/2	130x15	136.3	6.0	**R72X**
5	150X15	156.3	6.0	**R80X**
6	190x20	197.3	7.0	**R96X**
8	250X25	238.3	12.0	**R128X**
10	273X25	261.4	12.0	**R160X**

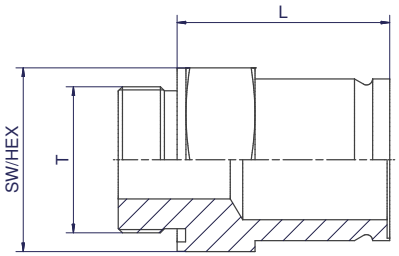


Material: Stainless steel

MTF-R – Male thread adapter, BSPP

ISO 6164





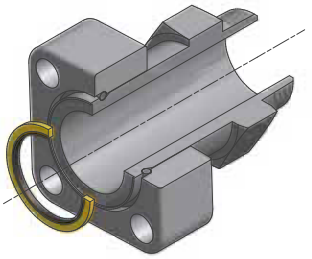
Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	Weight body (Steel) kg/1 piece	L	T (BSPP)	SW/ HEX
2	66X8.5	**R-432MTFRCF**	MTF32ROMDCF	1.90	86.8	G 2 A	75

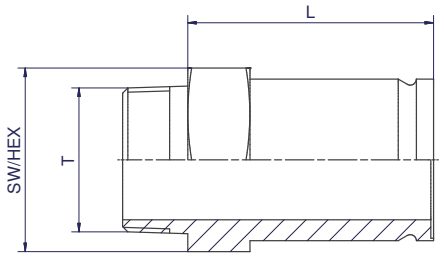
Please change suffixes according to material/surface required

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

MTF-N – Male thread adapter, NPT

ISO 6164





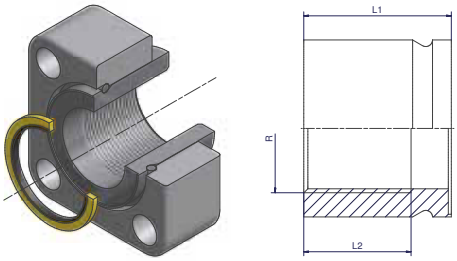
Size Inch	Tube	Complete part Order code	Body incl. ED Seal Order code	Weight body (Steel) kg/1 piece	L	T (NPT)	SW/ HEX
2	66X8.5	**R-432MTFNCF**	MTF32NCFX	1.40	80	2-11.5	75

Please change suffixes according to material/surface required

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

FTF-R – Female thread adapter, BSPP

ISO 6164



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

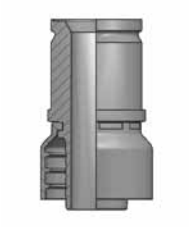
Please change suffixes according to material/surface required

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

Retaining ring hose couplings

ISO 6164

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

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

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

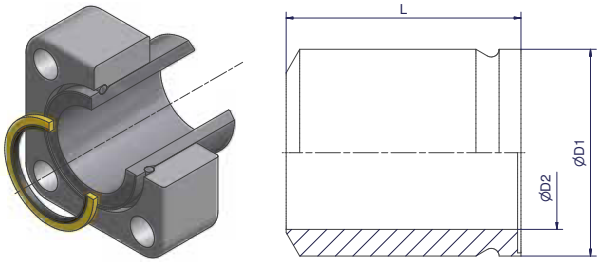
				
Connection				
Flange	Hose	Order code	Order code	Order code
1 1/4	1 1/4	**KX5V6-20-20**	**KX7V6-20-20**	**KX9V6-20-20**
1 1/2	1 1/2	**KX5V6-24-24**	**KX7V6-24-24**	**KX9V6-24-24**
2	2	**KX5V6-32-32**	**KX7V6-32-32**	**KX9V6-32-32**

Interlock Shells V6 Series for Parker hose types H82 & R42

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

WA – Weld adapter connection

ISO 6164



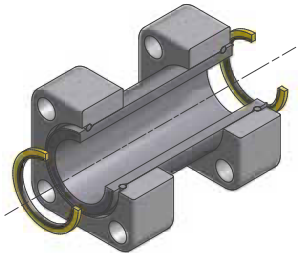
Size Inch	Tube	Complete Part Order code	Retaining Ring	Bonded Seal	Flange Order code	Weld Adapter Body Order code	Weight (Steel) kg/1 piece	D1	D2	L
2	48.3X5.6	**R-432WA-48.3X5.6S**	R32X	BS32SNX	R-432-CFX	WA32-48.3X5.6SX	2.90	66	37	90
2	50X9.0	**R-432WA-50X9.0S**	R32X	BS32SNX	R-432-CFX	WA32-50X9.0SX	3.11	66	32	90
2	60X3.0	**R-432WA-60X3.0S**	R32X	BS32SNX	R-432-CFX	WA32-60X3.0SX	2.39	66	49	90
2	60X5.0	**R-432WA-60X5.0S**	R32X	BS32SNX	R-432-CFX	WA32-60X5.0SX	2.49	66	50	90
2	60X6.0	**R-432WA-60X6.0S**	R32X	BS32SNX	R-432-CFX	WA32-60X6.0SX	2.60	66	48	90
2	60X8.0	**R-432WA-60X8.0S**	R32X	BS32SNX	R-432-CFX	WA32-60X8.0SX	2.78	66	44	90
2	60X10.0	**R-432WA-60X10.0S**	R32X	BS32SNX	R-432-CFX	WA32-60X10.0SX	2.96	66	40	90
2	60.3X2.8	**R-432WA-60.3X2.8S**	R32X	BS32SNX	R-432-CFX	WA32-60.3X2.8SX	2.37	66	49	90
2	60.3X3.9	**R-432WA-60.3X3.9S**	R32X	BS32SNX	R-432-CFX	WA32-60.3X3.9SX	2.45	66	49	90
2	60.3X5.5	**R-432WA-60.3X5.5S**	R32X	BS32SNX	R-432-CFX	WA32-60.3X5.5SX	2.54	66	49	90
2	60.3X8.7	**R-432WA-60.3X8.7S**	R32X	BS32SNX	R-432-CFX	WA32-60.3X8.7SX	2.84	66	43	90
2	60.3X11.1	**R-432WA-60.3X11.1S**	R32X	BS32SNX	R-432-CFX	WA32-60.3X11.1SX	3.04	66	38	90
2	66X8.5	**R-432WA-66X8.5S**	R32X	BS32SNX	R-432-CFX	WA32-66X8.5SX	2.45	66	49	75
2 1/2	65X8.0	**R-440WA-65X8.0S**	R40X	BS40SNX	R-440-CFX	WA40-65X8.0SX	5.10	80	49	105
2 1/2	65X8.5	**R-440WA-65X8.5S**	R40X	BS40SNX	R-440-CFX	WA40-65X8.5SX	4.59	80	59	105
2 1/2	73X7.0	**R-440WA-73X7.0S**	R40X	BS40SNX	R-440-CFX	WA40-73X7.0SX	4.20	80	59	105
2 1/2	75X5.0	**R-440WA-75X5.0S**	R40X	BS40SNX	R-440-CFX	WA40-75X5.0SX	4.37	80	60	105
2 1/2	76.1X6.3	**R-440WA-76.1X6.3S**	R40X	BS40SNX	R-440-CFX	WA40-76.1X6.3SX	4.45	80	60	105
2 1/2	76.1X12.5	**R-440WA-76.1X12.5S**	R40X	BS40SNX	R-440-CFX	WA40-76.1X12.5SX	5.17	80	51	105
2 1/2	80X10.0	**R-440WA-80X10.0S**	R40X	BS40SNX	R-440-CFX	WA40-80X10.0SX	4.40	80	60	90
3	76.1X12.5	**R-448WA-76.1X12.5S**	R48X	BS48SNX	R-448-CFX	WA48-76.1X12.5SX	8.18	97	51	120
3	80X10.0	**R-448WA-80X10.0S**	R48X	BS48SNX	R-448-CFX	WA48-80X10.0SX	8.07	97	60	120
3	88.9X3.1	**R-448WA-88.9X3.1S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X3.1SX	7.18	97	73	120
3	88.9X5.5	**R-448WA-88.9X5.5S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X5.5SX	7.47	97	73	120
3	88.9X7.7	**R-448WA-88.9X7.7S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X7.7SX	7.67	97	74	120
3	88.9X8.8	**R-448WA-88.9X8.8S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X8.8SX	7.90	97	71	120
3	88.9X11.1	**R-448WA-88.9X11.1S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X11.1SX	8.34	97	67	120
3	88.9X12.5	**R-448WA-88.9X12.5S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X12.5SX	8.60	97	64	120
3	88.9X15.2	**R-448WA-88.9X15.2S**	R48X	BS48SNX	R-448-CFX	WA48-88.9X15.2SX	9.00	97	59	120
3	90X3.5	**R-448WA-90X3.5S**	R48X	BS48SNX	R-448-CFX	WA48-90X3.5SX	7.19	97	73	120
3	90X5.0	**R-448WA-90X5.0S**	R48X	BS48SNX	R-448-CFX	WA48-90X5.0SX	7.50	97	73	120
3	90X9.0	**R-448WA-90X9.0S**	R48X	BS48SNX	R-448-CFX	WA48-90X9.0SX	7.85	97	72	120
3	97X12.0	**R-448WA-97X12.0S**	R48X	BS48SNX	R-448-CFX	WA48-97X12.0SX	7.65	97	73	110
4	100X4.0	**R-464WA-100X4.0S**	R64X	BS64SNX	R-464-CFX	WA64-100X4.0SX	13.44	115	85	130
4	101.6X8.1	**R-464WA-101.6X8.1S**	R64X	BS64SNX	R-464-CFX	WA64-101.6X8.1SX	12.49	115	85	130
4	101.6X16.0	**R-464WA-101.6X16.0S**	R64X	BS64SNX	R-464-CFX	WA64-101.6X16.0SX	13.73	115	85	120
4	114.3X4.5	**R-464WA-114.3X4.5S**	R64X	BS64SNX	R-464-CFX	WA64-114.3X4.5SX	14.40	115	80	120
4	114.3X12.5	**R-464WA-114.3X12.5S**	R64X	BS64SNX	R-464-CFX	WA64-114.3X12.5SX	12.37	115	85	120
4	114.3X17.1	**R-464WA-114.3X17.1S**	R64X	BS64SNX	R-464-CFX	WA64-114.3X17.1SX	13.90	115	85	120
4	115X4.0	**R-464WA-115X4.0S**	R64X	BS64SNX	R-464-CFX	WA64-115X4.0SX	12.36	115	85	120
4	115X15.0	**R-464WA-115X15.0S**	R64X	BS64SNX	R-464-CFX	WA64-115X15.0SX	13.87	115	85	120
4 1/2	130X15	**R-872WA-130X15.0S**	R72X	BS72SNX	R-872-CFX	WA72-130X15SX	12.50	130	100	125
5	150X15	**R-880WA-150X15.0S**	R80X	BS80SNX	R-880-CFX	WA80-150X15SX	14.60	150	120	110
6	190x20	**R-896WA-190X20.0FS**	R96X	PSC96-190x20CFX	R-896-CFX	WA96-190x20.0SX	?????	190	150	175

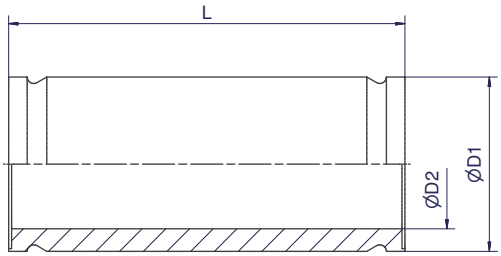
Please change suffixes according to material/surface required

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

BF – Bulkhead flange

ISO 6164





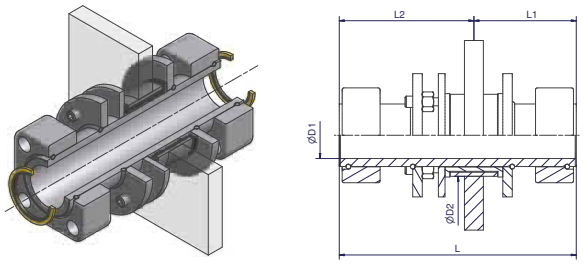
Size Inch	D1	D2	L	Complete Part Order code	Bulkhead Body Order code	Weight body (Steel) kg/1 piece
1 1/2	56	39	180	**R-424BFS**	BF24SX	1.75
2	66	49	210	**R-432BFS**	BF32SX	2.45
2 1/2	80	60	220	**R-440BFS**	BF40SX	3.70
3	97	73	240	**R-448BFS**	BF48SX	7.85
4	115	85	260	**R-464BFS**	BF64SX	9.35
5	150	120	260	**R-880BFS**	BF80SX	10.53

Please change suffixes according to material/surface required

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

VB – Vibra bulkhead

ISO 6164



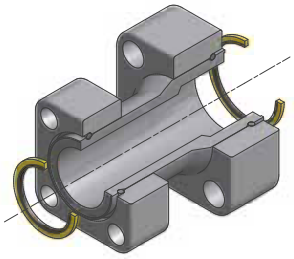
Size Inch	Tube	D1	D2	L	L1	L2	Complete Part Order code	Weight (Steel) kg/1 piece
2	66X8.5	66	86.5	250	110	140	**R-432VBCF**	6.52
2 1/2	80X10	80	100.5	260	115	145	**R-440VBCF**	9.32
3	97X12	97	117.5	280	125	155	**R-448VBCF**	16.12
4	115X15	115	135.5	300	135	165	**R-464VBCF**	27.62

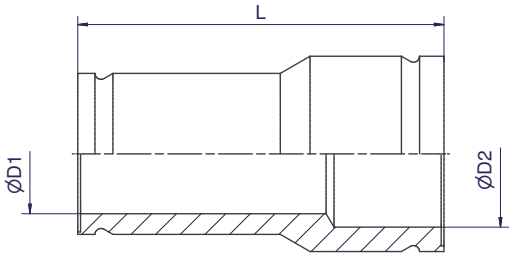
Please change suffixes according to material/surface required

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

RF – Reducer flange

ISO 6164





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

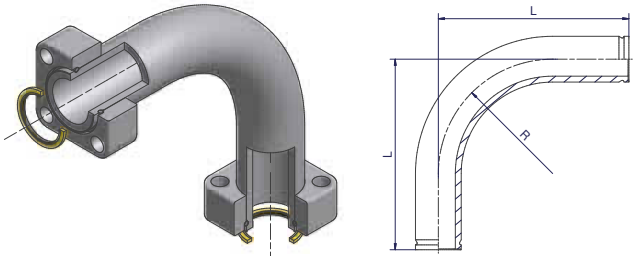
Other sizes on request

Please change suffixes according to material/surface required

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

FB90 – 90° Flange bend

ISO 6164



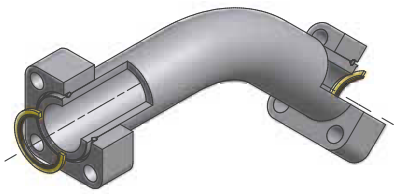
Size Inch	Tube	L	R	Complete Part Order code	90° Flange Bend Order code	Weight body (Steel) kg/1 piece
2	66X8.5	275	165	**R-432FB90S**	**FB90-32SX**	5.72
2 1/2	80X10.0	370	200	**R-440FB90S**	**FB90-40SX**	11.20
3	97X12	450	243	**R-448FB90S**	**FB90-48SX**	19.90

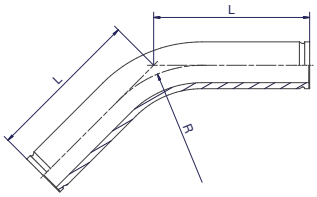
Please change suffixes according to material/surface required

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

FB45 – 45° Flange bend

ISO 6164





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

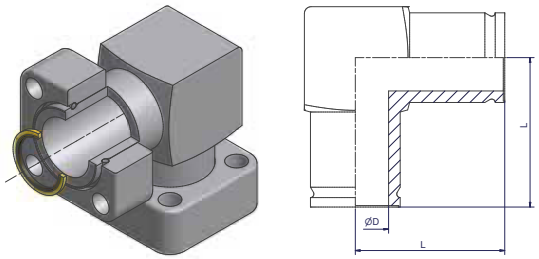
Available on request

Please change suffixes according to material/surface required

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

LF – Elbow flange

ISO 6164



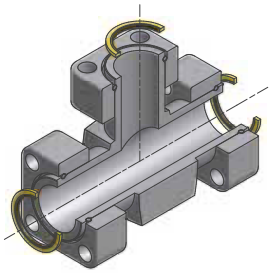
Size Inch	D	L	Complete Part Order code	Elbow Flange body Order code	Weight body (Steel) kg/1 piece
2	49	110	**R-432LFCF**	**LF32CFX**	4.02
2 1/2	60	130	**R-440LFCF**	**LF40CFX**	5.79
3	73	160	**R-448LFCF**	**LF48CFX**	10.76

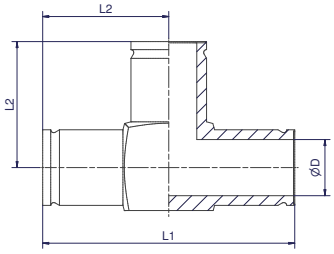
Please change suffixes according to material/surface required

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

TF – TEE flange

ISO 6164





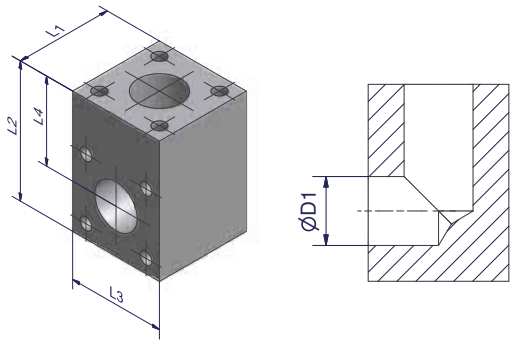
Size Inch	D	L1	L2	Complete Part Order code	Tee Flange body Order code	Weight body (Steel) kg/1 piece
2	49	220	110	**R-432TFCF**	**TF32CFX**	4.53
2 1/2	60	260	130	**R-440TFCF**	**TF40CFX**	8.70
3	73	320	160	**R-448TFCF**	**TF48CFX**	12.81

Please change suffixes according to material/surface required

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

LB – Flange L-block

ISO 6164



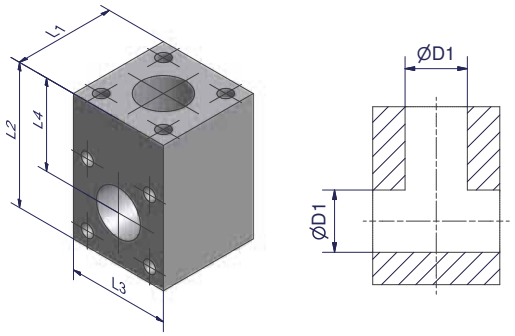
Size Inch	D1	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
2	50	100	140	100	90	8.72	**LB432CFX**
2 1/2	60	120	160	120	100	14.10	**LB440CFX**
3	73	150	200	150	125	28.10	**LB448SX**
4	99	180	240	180	150	48.80	**LB464SX**

Please change suffixes according to material/surface required

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

TB – Flange T-block

ISO 6164



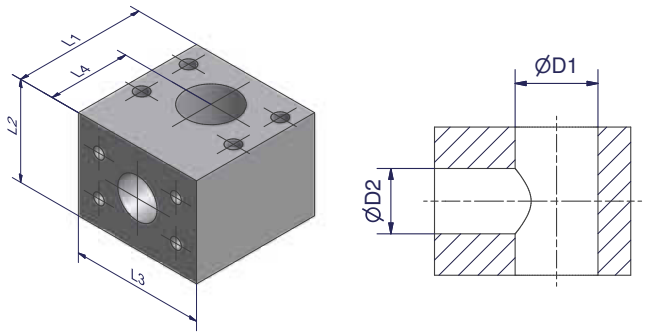
Size Inch	D1	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
2	49	100	140	100	90	8.03	**TB432CFX**
2 1/2	60	120	160	120	100	12.90	**TB440CFX**
3	73	150	200	150	125	25.80	**TB448SX**
4	85	180	240	180	150	40.70	**TB464SX**
5	120	260	300	260	170	122.0	**TB880SX**

Please change suffixes according to material/surface required

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

TBR – Flange T-block reducer

ISO 6164



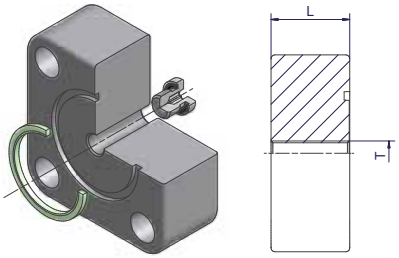
Size Inch	D1	D2	L1	L2	L3	L4	Weight body (Steel) kg/1 piece	Order code
2 1/2 - 2	60	49	150	100	120	90	10.2	**TBR440-432-440CFX**
3 - 2 1/2	73	60	185	120	150	110	19.2	**TBR448-440-448CFX**
3 - 2	73	49	175	100	150	100	15.2	**TBR448-432-448CFX**
4 - 3	85	73	225	150	150	135	35.2	**TBR464-448-464SX**
4 - 2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

Please change suffixes according to material/surface required

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

BFV – Blind flange

ISO 6164



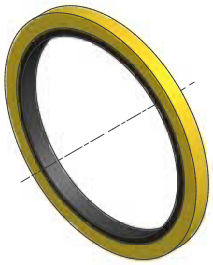
Size Inch	L	T	Weight (Steel) kg/1 piece	Flange incl. VSTI-ED and F37 Seal Order code
2	40.0	G 1/4	2.75	**F37-432BFVCF**
2 1/2	50.0	G 1/4	4.90	**F37-440BFVCF**
3	52.0	G 1/4	8.15	**F37-448BFVCF**
4	70.0	G 1/4	11.55	**F37-464BFVCF**
5	50.0	G 1/4	16.74	**F37-880BFVCF**

Please change suffixes according to material/surface required

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

BS – Bonded seal

ISO 6164

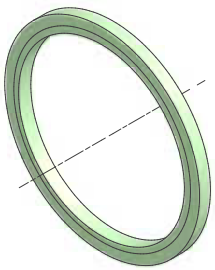


Size Inch	Steel	Stainless Steel
2	**BS32SNX**	**BS32SSNX**
2 1/2	**BS40SNX**	**BS40SSNX**
3	**BS48SNX**	**BS48SSNX**
4	**BS64SNX**	**BS64SSNX**
5	**BS80SNX**	**BS80SSNX**

Sealing: NBR
Other sealing materials like FKM on request

F37S – F37 Seal

ISO 6164

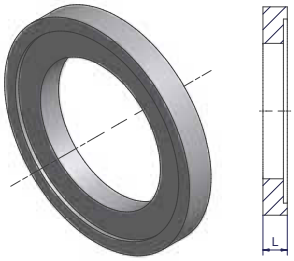


Size Inch	F37 Seal
2	**F37S32X**
2 1/2	**F37S40X**
3	**F37S48X**
4	**F37S64X**
5	**F37S80X**

Sealing: Polyurethane
Material properties and applications see page 18

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

ISO 6164



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

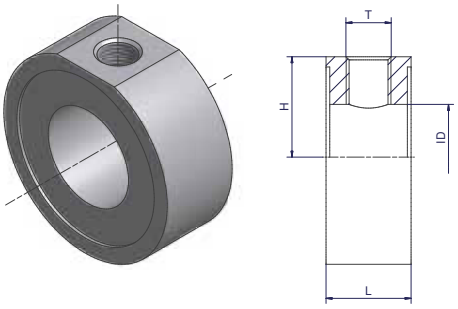
*Part excluding seals

Please change suffixes according to material/surface required

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

TBT – Tee between bonded seal

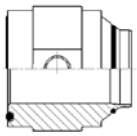
ISO 6164



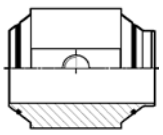
Size Inch	L	H	T	ID	Bolt ISO 4762	Weight (Steel) kg/1 piece	Order code
2	25	35	G 1/4	41	ZYLS12X110	0.51	**TBT32-1/4CFX**
2	40	34	G 1/2	38	ZYLS12X130	0.87	**TBT32-1/2CFX**
2 1/2	30	42	G 1/4	60	ZYLS12X150	0.63	**TBT40-1/4CFX**
3	30	50	G 1/4	72	ZYLS12x150	0.90	**TBT48-1/4CFX**

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

Alternative versions on request



TFVB



TTB

Please change suffixes according to material/surface required

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

Bolts and nuts for flange

ISO 6164

F37 Flare Flange

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

Retaining Ring Flange

Size Inch	Flange	Flat Face / Bonded Seal		Nut
		Bolts Tube to Port	Bolts Tube to Tube	
2	R-432-CFX	4 x ZYLS16X65	4 x ZYLS16X110	4 x ISO4032-M16
2 1/2	R-440-CFX	4 x ZYLS20X80	4 x ZYLS20X140	4 x ISO4032-M20
3	R-448-CFX	4 x ZYLS24X90	4 x ZYLS24X150	4 x ISO4032-M24
4	R-464-CFX	4 x ZYLS30X120	4 x ZYLS30X190	4 x ISO4032-M30
4 1/2	R-872-CFX	8 x ZYLS30X120	8 x ZYLS30X190	8 x ISO4032-M30
5	R-880-CFX	8 x ZYLS24X90	8 x ZYLS24X150	8 x ISO4032-M24
6	R-896-CFX	8 x ZYLS30X160	8 x ZYLS30X230	8 x ISO4032-M30
8	R-8128-CFX	8 x ZYLS30X170	8 x ZYLS30X250	8 x ISO4032-M30
10	R-8160273-CFX	12 x ZYLS36X170	12 x ZYLS36X250	12 x ISO4032-M36

Bolts and nuts must be ordered seperately

Latest information about nuts and bolts see www.parker.com/tfde/servicemanuals/userguides

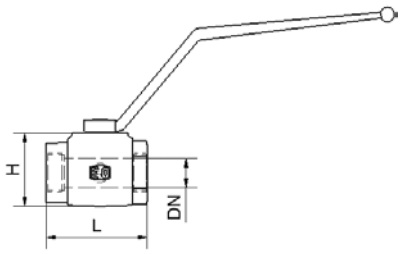
Please add the suffixes according to the bolt quality

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

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

KH – Ball valve

400 bar Female BSPP Thread (ISO 1179-1)



Material Steel

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

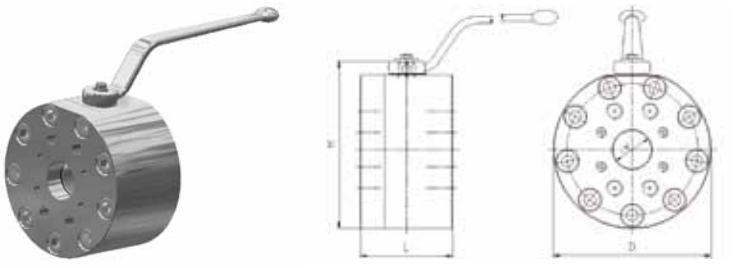
Please change suffixes according to material/surface required

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

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

KH – Ball valve drilled and tapped for ISO 6164 flanges

ISO 6164



Material Steel

Size Inch	LW	L	Flange Part	D	H	Order code	Weight (Steel) kg/1 piece	W.P. bar
2	38	110	432	165	178	**KH432-38CF**	25.8	400
2	48	116	432	198	210	**KH432-48CF**	25.5	400
2 1/2	48	116	440	198	210	**KH440-48CF**	24.9	400
3	63	150	448	198	259	**KH448-63CF**	36.0	350
4	76	140	464	210	277	**KH464-76CF**	34.3	350
4	88	170	464	260	327	**KH464-88CF**	60.4	350
4 1/2	100	170	472	260	327	**KH472-100CF**	60.4	350
5	118	210	880	300	379	**KH880-118CF**	96.8	350
6	132	285	896	390	475	**KH896-132CF**	227.0	350
6	150	285	896	390	475	**KH896-150CF**	225.0	350
8	192	378	8128	456	598	**KH8128-200CF**	395.0	350

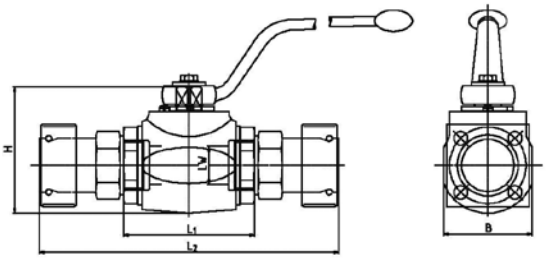
Please change suffixes according to material/surface required

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

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

KH-R – Ball valve with ISO 6164 flanges

ISO 6164



Material Steel

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

Material Stainless Steel

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

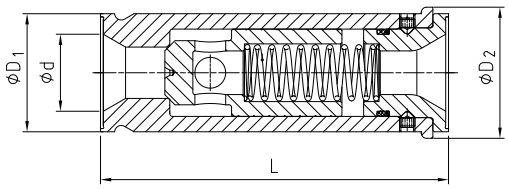
Please change suffixes according to material/surface required

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

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

RHD-R – Non return valves

ISO 6164



Material Steel

Size Inch	L	D1	D2	d	Complete part Order code	Valve body Order code	Weight body (Steel) kg/1 piece	W.P. bar
2	180.1	66	70.5	49	**RHD-R-432-0.5BCF**	RHD-R-32-0.5BCF	2.54	420
2 1/2	190.0	80	84.5	60	**RHD-R-440-0.5BCF**	RHD-R-40-0.5BCF	3.89	

Opening pressure 0.5 bar
Other pressure rates on request

Please change suffixes according to material/surface required

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

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

Notes

Flange mounted valves

Characteristics

Flange Mounted Valves

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

Pressure relief valves

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

Functions:

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

Check valves

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

Functions:

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

Flow valves

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

Functions:

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

Logic valves

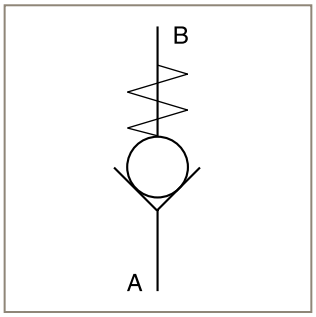
2- and 3-port configurations
SAE 3000 (SAE 61)

Function:

● 2/2-way seat valve	D5S

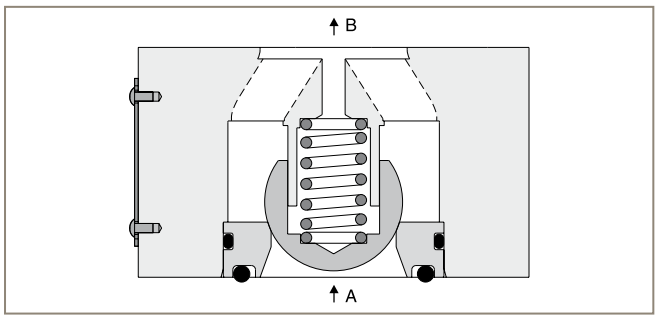
Characteristics C5V

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



Features

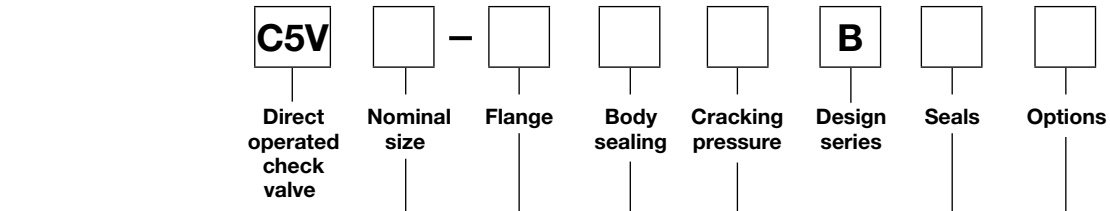
- Direct operated check valve
- SAE61 and SAE62 flange
- 4 sizes (SAE ¾", 1", 1¼", 1½")
- 3 springs
- 5 options for body sealing



Technical data

General					
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**	**12 (1½")**
Mounting		2-port inline flange (SAE61 and 62)			
Mounting position		unrestricted			
Ambient temperature	[°C]	-20...+50			
MTTFD value	[years]	150			
Weight	[kg]	0.6	0.9	1.3	1.8
Hydraulic					
Max. operating pressure	[bar]				
	SAE61	350	350	280	210
	SAE62	420	420	420	420
Pressure stages	[bar]				
Nominal flow	[l/min]	100	200	400	750
Fluid		Hydraulic oil as per DIN 51524...525			
Fluid temperature	[°C]	-20...+80			
Viscosity permitted	[cSt]/[mm²/s]	10...650			
Viscosity recommended	[cSt]/[mm²/s]	30			
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			

Characteristics C5V



Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"
12[1)]	SAE 1½"

Code	Flange
3	SAE 61
6	SAE 62

Code	Body sealing
1	sealing for port A
2 [1)]	sealing for port A and X
3	without sealing
4	sealing for port B
5	sealing for port A and B

[1)] For combination with R5U unloading valve (SAE61 only)

Code	Option
omit	Standard
019[2)]	C5V10 for M14 mounting screws

[2)] For SAE62 only

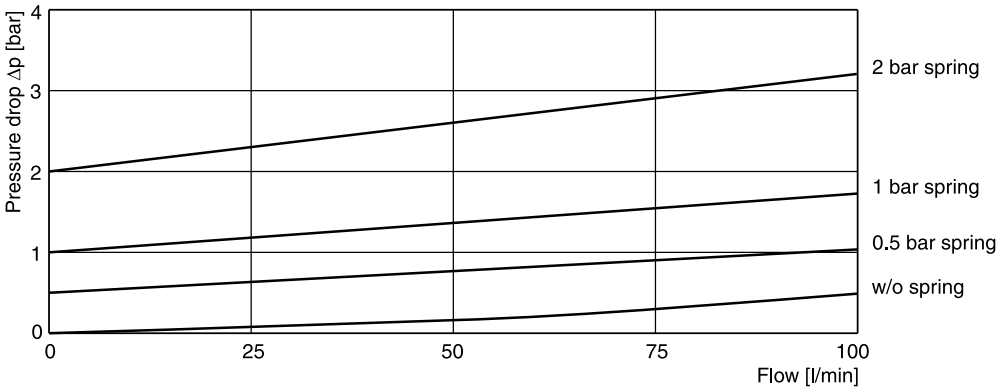
Code	Seals
1	NBR
5	FKM

Code	Cracking press.
0	0.5 bar
1	1.0 bar
2	2.0 bar

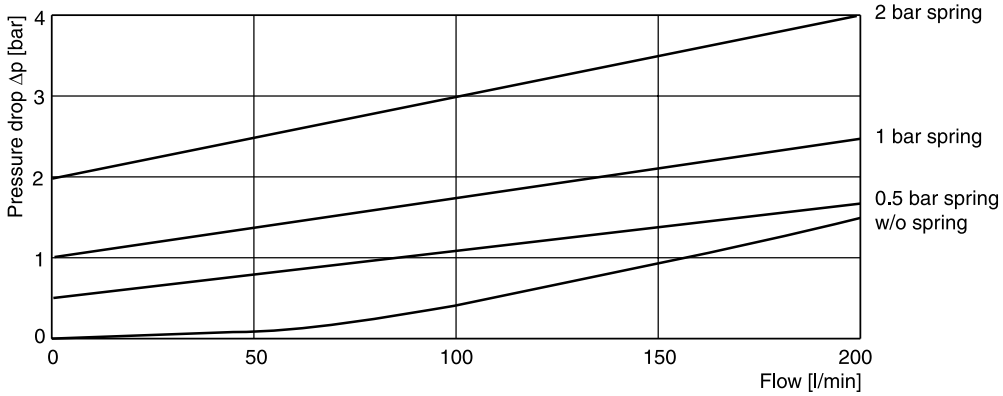
NEW Master Code
- supplied under
Parker brand name

Characteristics C5V

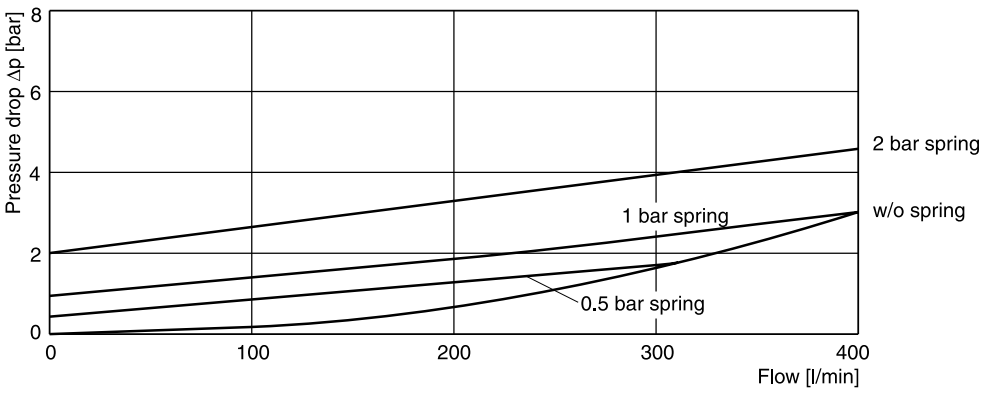
C5V06



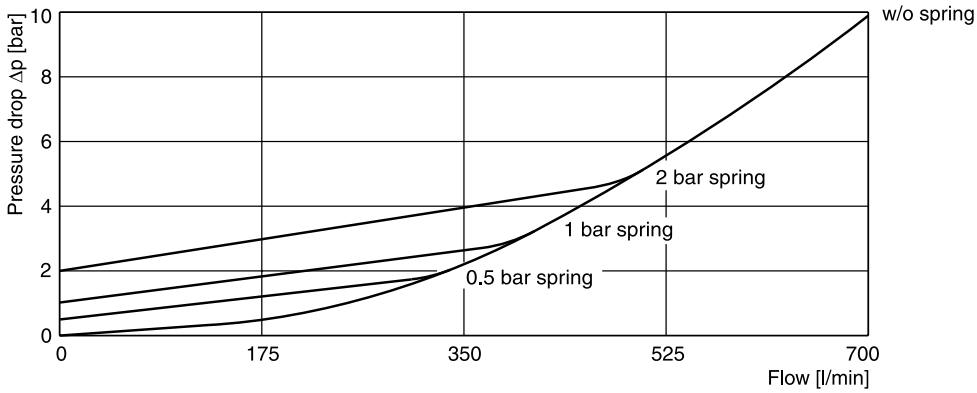
C5V08



C5V10

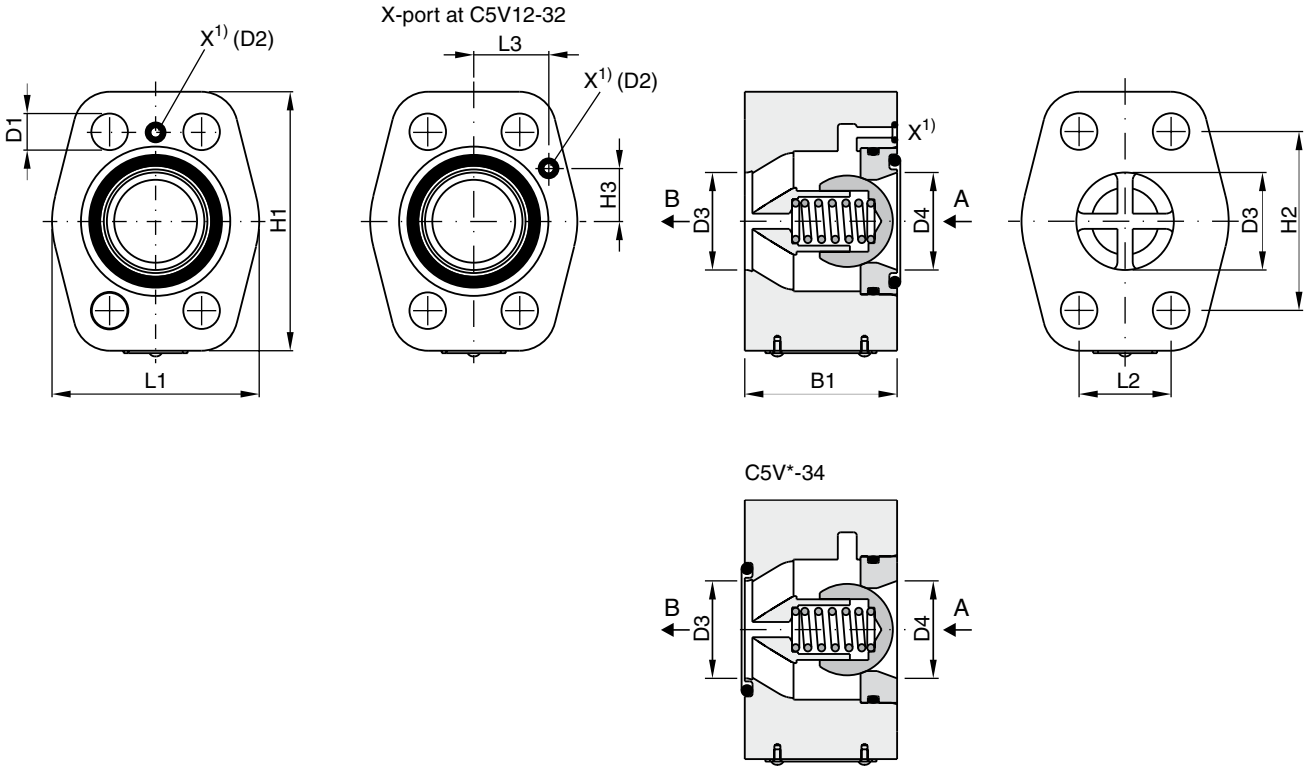


C5V12



All characteristic curves measured with HLP46 at 50°C.

Characteristics C5V



Position of O-ring seal according to ordering code.

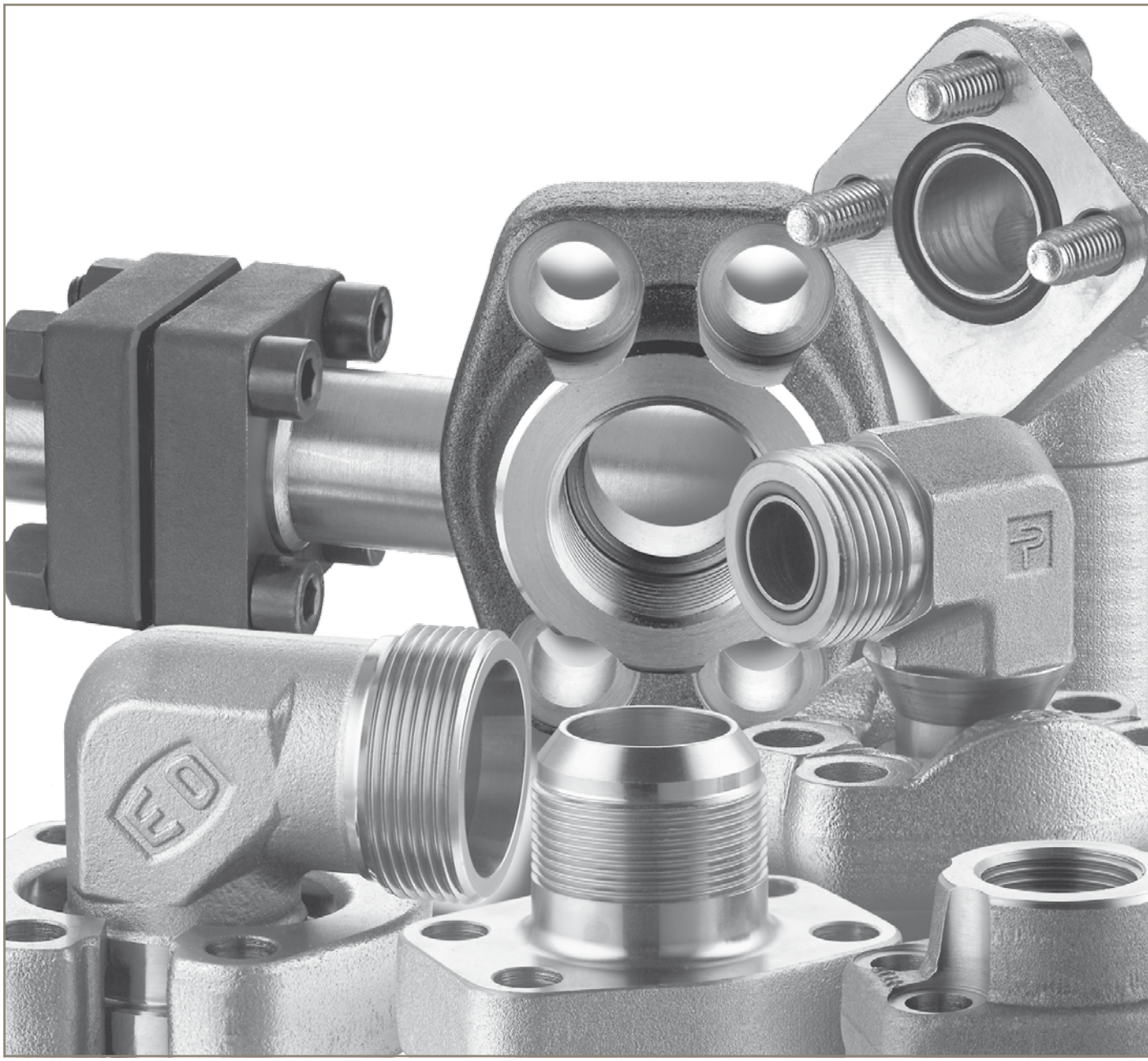
1) X1 port for C5V*32* (for use with unloading valve R5U)

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

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

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

Notes



SAE Flange adapters

Technical data

Flange bolts

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

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

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

Used Sealing

Materials

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

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

Dimensions

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

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

Pressure ratings

The maximum recommended working pressure is indicated for each article.
Before using a part, please take notice of the pressure ratings. All pressure indications are based on a working temperature from –20° celsius up to +100° celsius (resp. ambient temperature from –40° celsius up to +120° celsius). Outside of this temperature range the physical properties of the material is affected and the maximum recommended working pressure is reduced.
The indicated working pressures refer only to the flange itself. For the tubes, fittings and connections the pressure ratings of the specific manufacturer must also be taken into account.

Materials

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

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

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

Surface protection

All surface order possibilities are described on each catalogue page!

Surface possibilities are:

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

Order codes bolts and O-Rings

Bolts for flanges

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

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

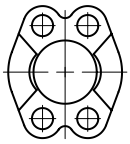
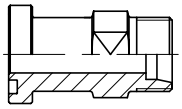
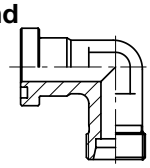
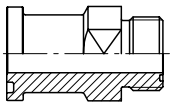
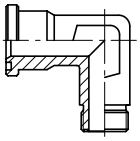
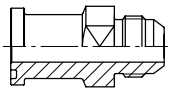
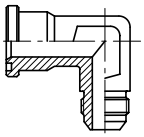
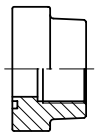
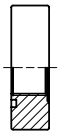
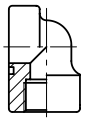
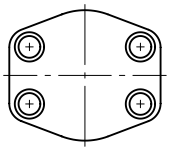
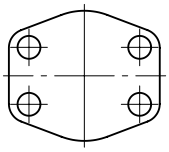
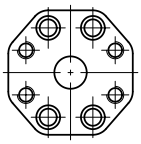
* = are not implemented in the ISO 6162 -1 and ISO 6162-2.

O-Rings for flanges

SAE J518

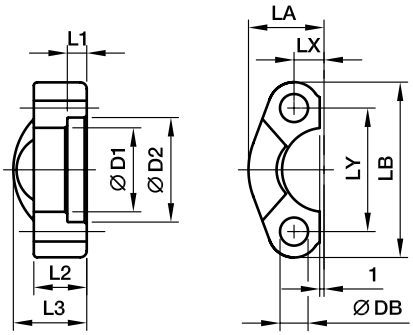
ISO (DN)	SAE (Inch)	O-Ring	
		NBR Order code	FKM Order code
13	1/2	**OR18.64X3.53X**	**OR18.64X3.53VITX**
19	3/4	**OR25X3.53X**	**OR25X3.53VITX**
25	1	**OR32.92X3.53X**	**OR32.92X3.53VITX**
32	1 1/4	**OR37.69X3.53X**	**OR37.69X3.53VITX**
38	1 1/2	**OR47.22X3.53X**	**OR47.22X3.53VITX**
51	2	**OR56.75X3.53X**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

Programme overview

SAE Flange clamps	  **FHS –** p.199 **FUS –** p.200
SAE Flange adapters	**EO 24° cone end**   **GFS –** p.201/202 **WFS –** p.203/204
	O-Lok® ORFS end **Triple-Lok® 37° flare end**     **L(O)HQ –** p.205 **L(O)EMQ –** p.206 **XHQ –** p.207 **XEMQ –** p.208
SAE 4 Bolt flanges	**BSPP Female thread**    **PFF-G –** p.209 **PAFSF-G –** p.210 **PEFF-G –** p.211
SAE Flange accessories	   **PCFF –** p.212 **AP –** p.213 **PRF –** p.214

FHS – SAE Split flange halves

SAE 3000/6000
ISO 6162-1/-2



SAE 3000

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

SAE 6000

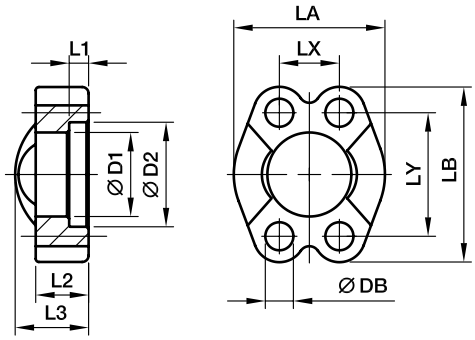
1/2	13	24.6	32.5	7.2	16	22	24.0	56.4	9.1	40.5	9.0	M 8×30	5/16×1 1/4	0.08	**FHS62**	420
3/4	19	32.5	42.0	8.2	19	28	30.0	71.4	11.9	50.8	11.0	M10×35	3/8×1 1/2	0.18	**FHS63**	420
1	25	38.8	48.4	9.0	24	33	34.8	81.0	13.9	57.2	13.0	M12×45		0.27	**FHS64**	420
1	25	38.9	48.4	9.0	24	33	34.8	81.0	13.9	57.2	12.0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

Please change suffixes according to material/surface required

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

FUS – SAE Flange clamps

SAE 3000/6000
ISO 6162-1/-2



SAE 3000

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

SAE 6000

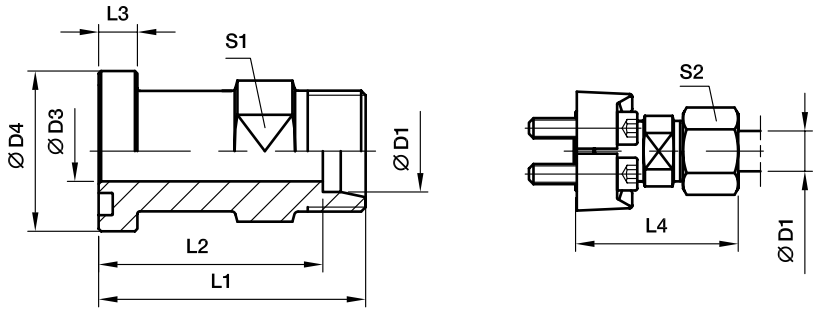
1/2	13	24.6	32.5	7.2	16	22	48	56.4	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.16	**FUS62**	420
3/4	19	32.5	42.0	8.2	19	28	60	71.4	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.35	**FUS63**	420
1	25	38.8	48.4	9.0	24	33	70	81.0	27.8	57.2	13.0	M12×45		0.53	**FUS64**	420
1	25	38.9	48.4	9.0	24	33	70	81.0	27.8	57.2	12.0		7/16×1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

Please change suffixes according to material/surface required

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

GFS – SAE Straight flange adapter

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



SAE 3000

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

[1])L = light series; S = heavy series

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

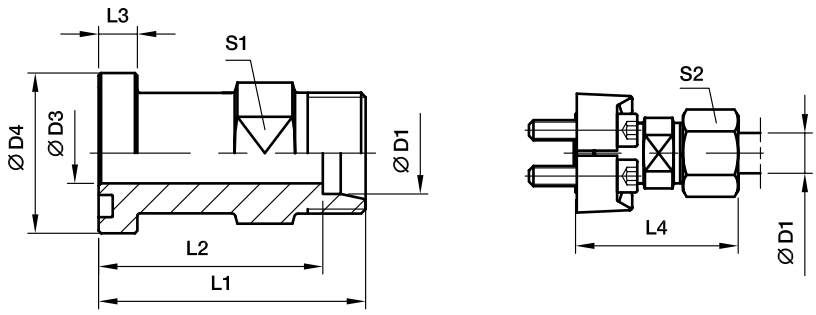
[2])Order code for the flange adapter assembled with FHS35/10CFX and M10X35 bolts.

Please change suffixes according to material/surface required

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

GFS – SAE Straight flange adapter

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



SAE 6000

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

[1])S = heavy series

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

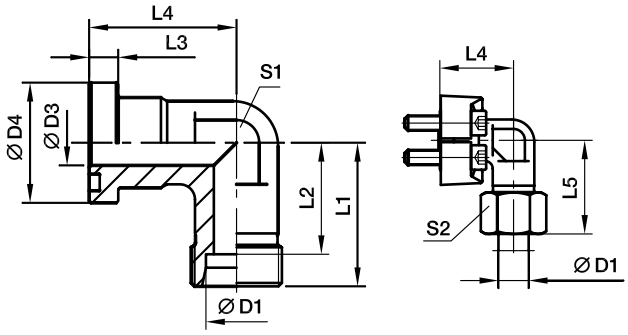
[2])Order code for the flange adapter assembled with FHS35/12CFX and M12X45 bolts.

Please change suffixes according to material/surface required

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

WFS – SAE 90° Elbow flange adapter

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



SAE 3000

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

[1] L = light series; S = heavy series

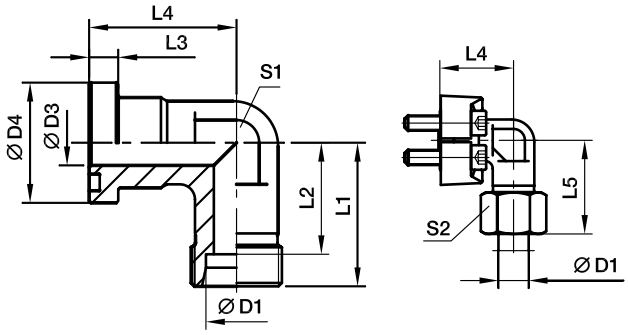
Delivery without nut and ring.
For nuts and cutting rings see also
Industrial Tube Fittings Europe Catalogue 4100.
[2] Order code for the elbow flange adapter assembled with FHS35/10CFX and M10X35 bolts.

Please change suffixes according to material/surface required

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

WFS – SAE 90° Elbow flange adapter

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



SAE 6000

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

[1]) S = heavy series

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

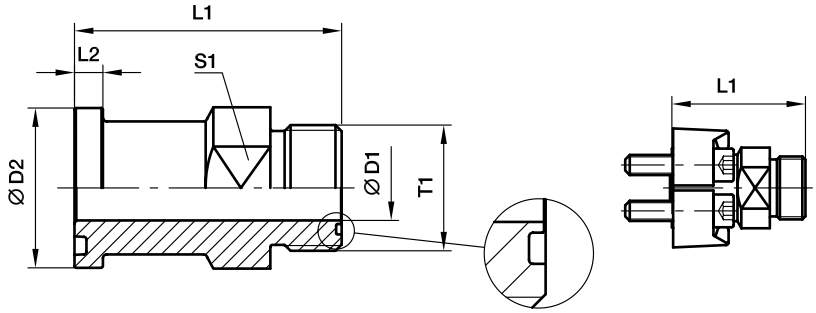
[2]) Order code for the elbow flange adapter assembled with FHS65/12CFX and M12X45 bolts.

Please change suffixes according to material/surface required

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

L(O)HQ – SAE Straight flange adapter

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



SAE 3000

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

SAE 6000

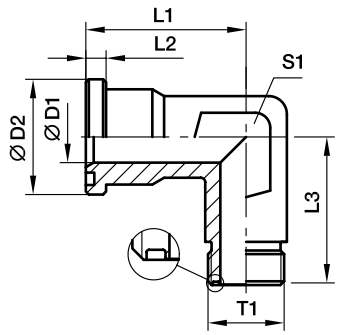
3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15.5	41.3	76.7	8.8	0.21	**12LHQ2**	**12LOHQ2**	420
1	25	18, 20	3/4	**1 3/16-12UN-2A**	15.5	47.6	84.8	9.5	0.26	**12-16LHQ2**	**12-16LOHQ2**	420
1	25	22, 27	3/4, 7/8	**1 7/16-12UN-2A**	20.6	47.6	85.3	9.5	0.30	**16LHQ2**	**16LOHQ2**	420
1 1/4	32	28, 30, 32	1 1/4	**1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

Please change suffixes according to material/surface required

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

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

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



SAE 3000

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

SAE 6000

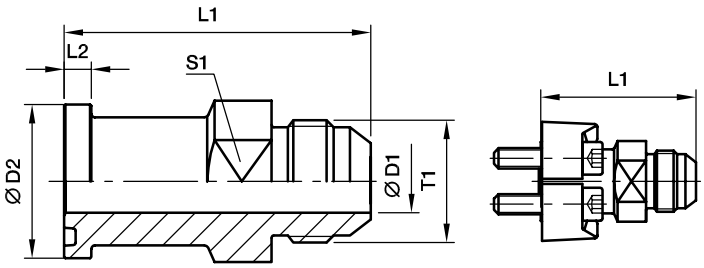
1/2	13	8, 10	3/8	**11/16-16UN-2A**	6	31.8	44	7.7	50	22	0.40	**6-8LEMQ2**	**6-8LOEMQ2**	420
1/2	13	12	1/2	**13/16-16UN-2A**	9	31.8	44	7.7	50	22	0.36	**8LEMQ2**	**8LOEMQ2**	420
1/2	13	14, 15, 16	5/8	**1-14UN-2A**	12	31.8	44	7.7	50	22	0.32	**10-8LEMQ2**	**10-8LOEMQ2**	420
3/4	19	14, 15, 16	5/8	**1-14UN-2A**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

Please change suffixes according to material/surface required

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

XHQ – SAE Straight flange adapter

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



SAE 3000

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

SAE 6000

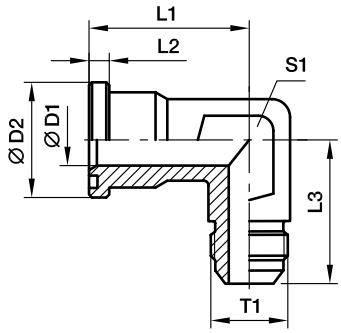
3/4	19	18. 20	3/4	**1 1/16-12UN-2A**	15.5	41.3	78.2	8.8	0.21	**12XHQ2**	350
1	25	22. 25	7/8, 1	**1 5/16-12UN-2A**	21.5	47.6	87.1	9.5	0.30	**16XHQ2**	350
1 1/4	32	28, 30, 32	1 1/4	**1 5/8-12UN-2A**	27.5	54.0	91.4	10.3	0.31	**20XHQ2**	275
1 1/2	38	35. 38	1 1/2	**1 7/8-12UN-2A**	33.5	63.5	110.2	12.6	0.56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

Please change suffixes according to material/surface required

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

XEMQ – SAE 90° Elbow flange adapter

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



SAE 3000

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

SAE 6000

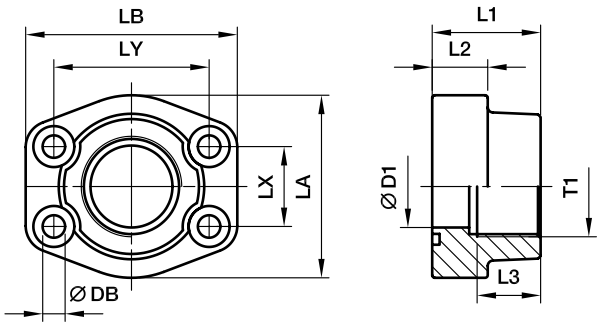
1/2	13	12	1/2	**3/4-16UNF-2A**	12	31.8	44	7.7	50	22	0.20	**8XEMQ2**	350
1/2	13	14, 15, 16	5/8	**7/8-14UNF-2A**	12	31.8	44	7.7	50	22	0.20	**10-8XEMQ2**	350
3/4	19	14, 15, 16	5/8	**7/8-14UNF-2A**	18	41.3	53	8.7	64	27	0.29	**10-12XEMQ2**	350
3/4	19	18, 20	3/4	**1 1/16-12UN-2A**	18	41.3	53	8.7	64	27	0.29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

Please change suffixes according to material/surface required

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

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

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



SAE 3000

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

SAE 6000

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

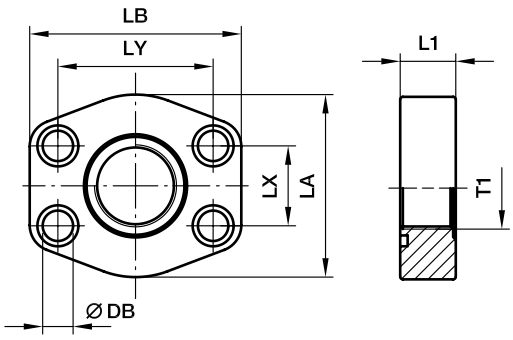
Please change suffixes according to material/surface required

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

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

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

only for low pressure applications



SAE 3000

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

SAE 6000

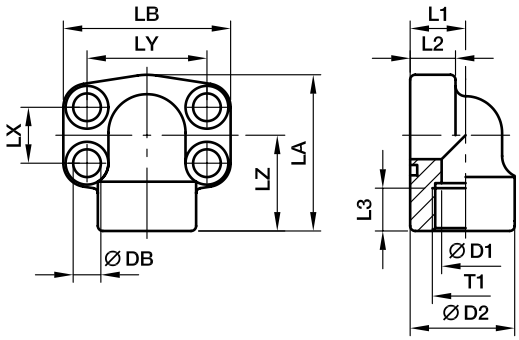
1/2	13	G 3/8	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	Standard	0.25	**PAFSF401G38**	40
1/2	13	G 1/2	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	OR25.07X2.62X	0.20	**PAFSF401G**	40
3/4	19	G 1/2	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	Standard	0.37	**PAFSF402G12**	40
3/4	19	G 3/4	19	53	71	23.8	50.8	10.5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

Please change suffixes according to material/surface required

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

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

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



SAE 3000

Nom. flange size														Bolts		Weight (steel)		
SAE (in)	ISO (DN)	T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	kg/1 piece	Order code	W.P.
1/2	13	G 1/2	13	34.0	18	16	16	59	57	17.5	38.1	36	9.0	M 8×30	5/16×1 1/4	0.35	**PEFF32G**	348
3/4	19	G 3/4	19	38.5	22	18	19	63	68	22.3	47.6	38	10.5	M10×35	3/8×1 1/2	0.55	**PEFF33G**	348
1	25	G 1	25	44.5	28	19	19	68	74	26.2	52.4	41	10.5	M10×35	3/8×1 1/2	0.80	**PEFF34G**	348
1 1/4	32	G 1 1/4	31	53.5	30	22	22	84	81	30.2	58.7	50	10.5	M10×35	7/16×1 1/2	1.30	**PEFF35G**	278
1 1/2	38	G 1 1/2	38	62.5	36	25	24	97	95	35.7	69.9	58	13.5	M12×45	1/2×1 3/4	1.60	**PEFF36G**	210
2	51	G 2	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M12×45	1/2×1 3/4	2.00	**PEFF38G**	210
2 1/2	64	G 2 1/2	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M12×45	1/2×1 3/4	2.40	**PEFF310G**	175

SAE 6000

1/2	13	G 1/2	13	34.0	18	16	16	59	57	18.2	40.5	36	8.8	M 8×30	5/16×1 1/4	0.35	**PEFF62G**	420
3/4	19	G 3/4	19	44.5	28	20	22	68	72	23.8	50.8	41	10.5	M10×35	3/8×1 1/2	0.80	**PEFF63G**	420
1	25	G 1	25	53.5	30	24	24	84	82	27.8	57.2	50	13.5	M12×45	7/16×1 1/2	1.30	**PEFF64G**	420
1 1/4	32	G 1 1/4	31	62.5	36	25	25	97	95	31.8	66.6	58	15.0**	M14×50	1/2×1 3/4	1.60	**PEFF65G**	420
1 1/2	38	G 1 1/2	38	77.0	51	26	28	109	110	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	2.00	**PEFF66G**	420
2	51	G 2	50	87.0	45	35	34	133	134	44.5	96.8	75	21.0	M20×70	3/4×2 3/4	2.50	**PEFF68G**	420

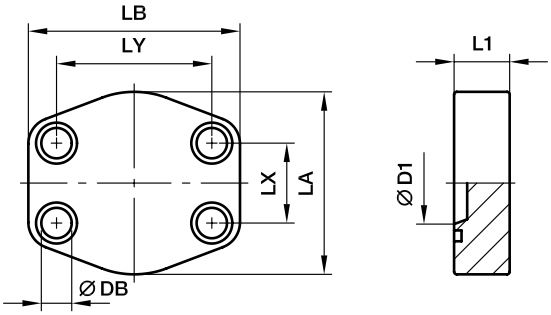
**DB = 13.5 for UNC Bolts

Please change suffixes according to material/surface required

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

PCFF – SAE Closed flange

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



SAE 3000

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

SAE 6000

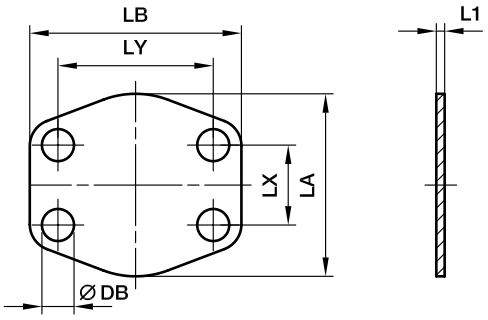
1/2	13	13	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PCFF62**	420
3/4	19	15	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.44	**PCFF63**	420
1	25	22	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.73	**PCFF64**	420
1 1/4	32	30	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.85	**PCFF65**	420
1 1/2	38	35	30	89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

Please change suffixes according to material/surface required

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

AP – SAE Flange locking plate

ISO 6162-1/-2



SAE 3000

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

SAE 6000

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

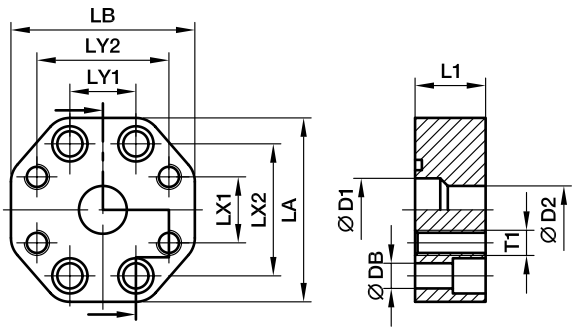
This flange locking plate is not used under pressure.

Please change suffixes according to material/surface required

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

PRF – SAE Straight reducing flange adapter

SAE 3000
ISO 6162-1



SAE 3000

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	D1	D2	L1	LA	LB	LX1	LX2	LY1	LY2	DB	Bolts (metr.)	T1	Weight (steel) kg/1 piece	Order code	W.P.
1×1	25/25	25	25	28	73	73	26.2	52.4	26.2	52.4	11	M10×35	M10	1.10	**PRF102/102**	210
1×3/4	25/19	25	19	28	73	73	22.3	52.4	26.2	47.6	11	M10×35	M10	1.15	**PRF102/100**	210
1 1/4×1 1/4	32/32	30	30	28	80	80	30.2	58.7	30.2	58.7	11	M10×35	M10	1.55	**PRF104/104**	210
1 1/4×1	32/25	30	25	28	80	71	26.2	58.7	30.2	52.4	11	M10×35	M10	1.55	**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	M12×45	M12	2.25	**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	M10×35	M10	2.40	**PRF106/104**	210
2×2	51/51	50	50	33	103	103	42.9	77.8	42.9	77.8	13	M12×45	M12	3.00	**PRF108/108**	210
2×1 1/2	51/38	50	38	33	103	94	35.7	77.8	42.9	70.0	13	M12×45	M12	3.15	**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	M12×45	M12	3.85	**PRF110/110**	175
2 1/2×2	64/51	63	50	33	115	103	42.9	88.9	50.8	77.8	13	M12×45	M12	3.95	**PRF110/108**	175
3×3	76/76	73	73	36	135	135	61.9	106.4	61.9	106.4	17	M16×50	M16	4.25	**PRF112/112**	138
3×2 1/2	76/64	73	63	36	135	115	50.8	106.4	61.9	89.0	17	M12×45	M12	4.45	**PRF112/110**	138

6000 PSI Series

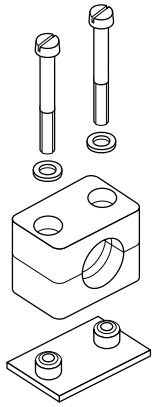
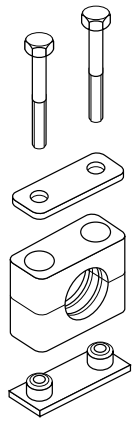
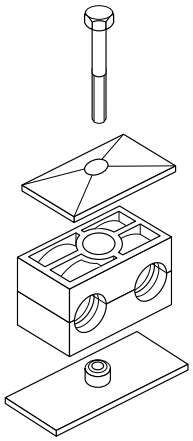
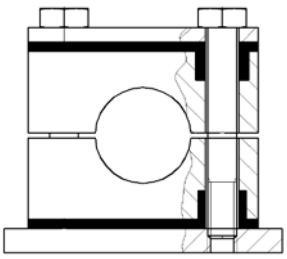
3/4×3/4	19/19	19	19	28	71	71	23.8	50.8	23.8	50.8	11	M10×35	M10	0.80	**PRF402/402**	420
1×1	25/25	25	25	33	80	80	27.8	57.2	27.8	57.2	13	M12×45	M12	1.10	**PRF403/403**	420
1×3/4	25/19	25	19	33	80	71	23.8	57.2	27.8	50.8	13	M10×35	M10	1.10	**PRF403/402**	420
1 1/4×1 1/4	32/32	30	30	33	94	94	31.8	66.6	31.8	66.6	15	M14×45	M14	1.40	**PRF404/404**	420
1 1/4×1	32/25	30	25	33	94	80	27.8	66.6	31.8	57.2	15	M12×45	M12	1.60	**PRF404/403**	420
1 1/2×1 1/2	38/38	38	38	48	106	106	36.5	79.3	36.5	79.3	17	M16×50	M16	3.30	**PRF405/405**	420
1 1/2×1 1/4	38/32	38	30	48	106	94	31.8	79.3	36.5	66.6	17	M14×45	M14	3.60	**PRF405/404**	420
2×2	51/51	50	50	48	135	135	44.5	96.8	44.5	96.8	21	M20×65	M20	5.00	**PRF406/406**	420
2×1 1/2	51/38	50	38	48	135	106	36.5	96.8	44.5	79.3	21	M16×50	M16	5.25	**PRF406/405**	420
2 1/2×2	64/51	63	50	53	166	150	44.5	123.8	58.7	96.8	25	M20×65	M20	6.50	**PRF408/406**	420
3×2	76/51	73	50	58	208	178	44.5	152.4	71.4	96.8	31	M20×65	M20	7.50	**PRF410/406**	420

Please change suffixes according to material/surface required

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

Tube clamps

Programme overview

Tube clamps series A	 Page 220-229	**Tube clamps series C**	 Page 235-245
Tube clamps series B	 Page 230-234	**Tube clamps series C with absorbing noise insert**	 Page 246-247

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 R1 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 recommand 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), resistent 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.

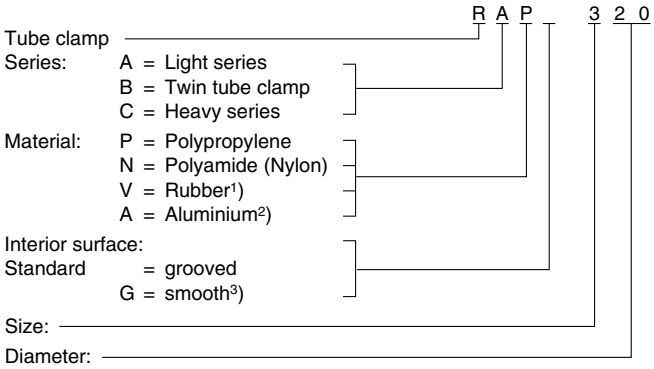
Resistance to stress:

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 material properties

DIN 3015

Mechanical properties		Polypropylene (PP)	Polyamide 6 (PA 6)	Aluminium	Rubber
Density		0.906 g/cm³	1.12–1.15g/cm³	2.65 g/cm³	0.98 g/cm³
Flexural deflection	DIN 53452	36 N/mm²	130...200 N/mm²	70 N/mm²	–
Impact resistance	DIN 53453	no break	no break	–	
Compressive strength	DIN 53454	90 N/mm²	120 N/mm²	HB 500...600 N/mm²	A and B: 64° shore C: 73° shore
Modulus of elasticity	DIN 53452	1500 N/mm²	3000 N/mm²	70.000 N/mm²	
Tensile strength without breakage	DIN 53454	25–35 N/mm²	80–90 N/mm²	180 N/mm²	A and B: 6.1 N/mm² C: 8.5 N/mm²

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

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

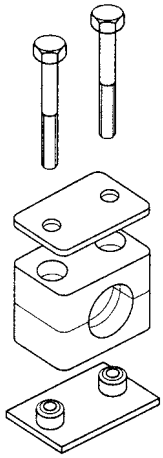
The outlined particulars are approximate values and are only shown for reference, which are not binding, and with regard to possible protection of third parties. They do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in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

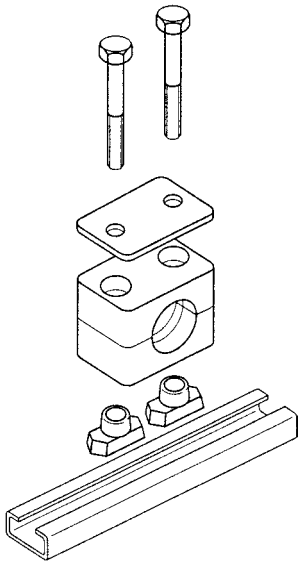
The application of the products is carried out outside of our control and, therefore, is exclusively subject to your own area of responsibility. Any claim however would be limited for all damages to the value of the goods supplied by us and in use by you.

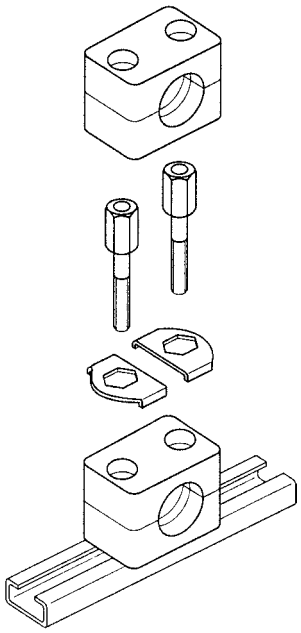
It goes without saying, that we guarantee the perfect quality of our products according to our general sales and delivery conditions.

Tube clamps assembly instruction

DIN 3015







Assembly:

Assembly on to metal welding plates

Place welding plates on a base appropriate for the load. Make sure that the clamps are properly aligned. Clamp lower clamp halve onto welding plate, insert tube, place upper clamp halve onto lower halve 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 halve onto lower halve 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)!

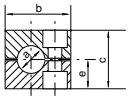
Construction assembly

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 halve on welding plate or support rail respectively, insert tube, place upper clamp halve on lower halve and fasten with fixing screws. The fixing screw juts out from the upper clamp halve. The application of a locking plate securely fastens the fixing screw and prevents twisting. Clamp on second clamp halve on to the fixing screws etc.

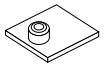
Tube clamps series A (Light construction series) – Components

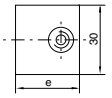
DIN 3015, part 1


size 0

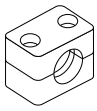


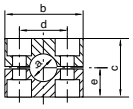
size 0


size 0

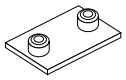


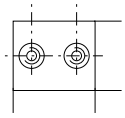
size 0


size 1–6



size 1–6
Width: 30 mm


size 1–6


size 1–6
Thickness: 3 mm

Order code for clamp halves:

Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG**
Aluminium – **RAA[1])**

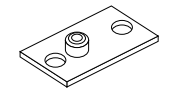
(Please exchange as required standard abbreviation RAP in column for "clamp halves")

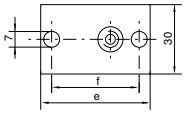
clamp size	Tube O.D. mm a	Tube NB	Tube O.D.	1 part 2 clamp halves **RAP…** Order code	dimensions: b	c	d	e	welding plate, short **APK A…** Order code	dimensions: d	e
0	6.0 6.4 8.0 9.5 10.0 12.0	G 1/8	1/4 5/16 3/8	**RAP006X** **RAP006.4X** **RAP008X** **RAP009.5X** **RAP010X** **RAP012X**	28	27	–	13.5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

When assemblying 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.

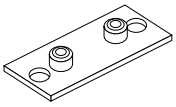
Tube clamps series A (Light construction series) – Components

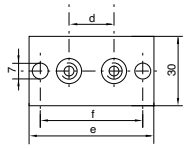
DIN 3015, part 1


size 0

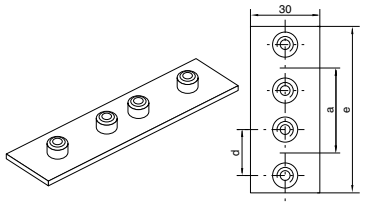


size 0

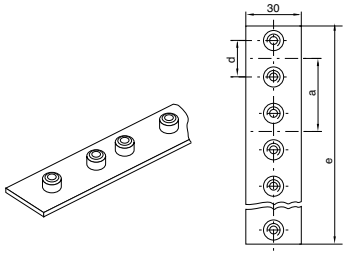

size 1–6



size 1–6
Thickness: 3 mm



Thickness: 3 mm



Thickness: 3 mm

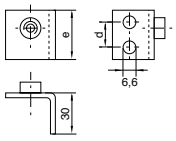
clamp size	weld/screw plate, long				twin welding plate				multiple weld plate			
	APL A… Order code	dimensions: d	e	f	**APD A…** Order code	dimensions: d	a	e	**APR A…** Order code	dimensions: d	a	e
0	**APLA0X**		58	44	**APDA0X**		30	61	**APRA0X (10 clamps)**		30	298
1	**APLA1X**	20	64	50	**APDA1X**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

Metal parts also available in stainless steel.

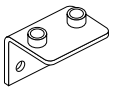
Tube clamps series A (Light construction series) – Components

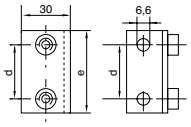
DIN 3015, part 1


size 0

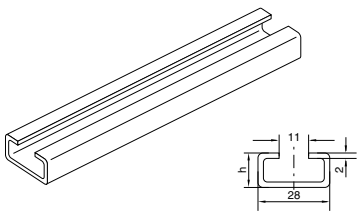


size 0

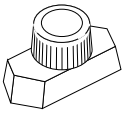

size 1–6

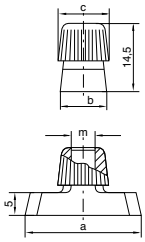


size 1–6
Thickness: 3 mm



1 or 2 mtr



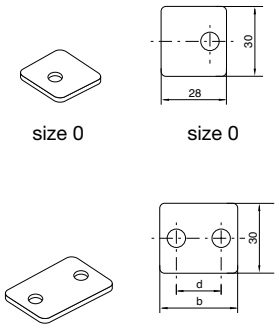


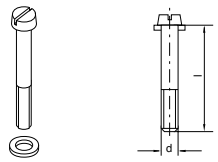
clamp size	weld plate, angled			mounting rail		rail nut				
	APW A… Order code	dimensions: d	e	**TS…A/B** Order code	dimensions: h	**TM…A/B1** Order code	dimensions: a	b	c	m
0	**APWA0X**	14	30	**TS11A/B1X** **TS11A/B2X** **TS14A/B1X** **TS14A/B2X** **TS30A/B1X** **TS30A/B2X**	TS11: 11 TS14: 14 TS30: 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							

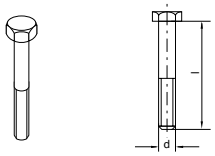
Metal parts also available in stainless steel.

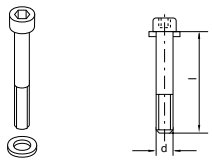
Tube clamps series A (Light construction series) – Components

DIN 3015, part 1







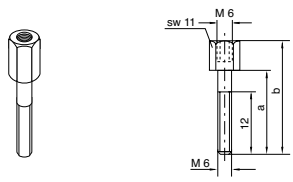


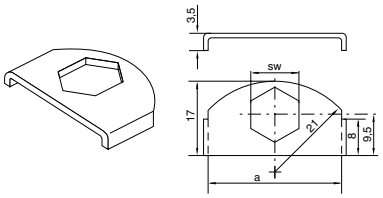
clamp size	cover plate			slot head		hexagon head		socket head	
	DP A… Order code	dimensions: b	d	**SL A…** Order code	dimensions: d × L	**SSL A…** Order code	dimensions: d × L	**IS A…** Order code	dimensions: d × L
0	**DPA0X**	–	–	**SLA0X**	M 6 × 20	**SSL10X**	M 6 × 30	**ISA0X**	M 6 × 20
1	**DPA1X**	34	20	**SLA1X**	M 6 × 20	**SSLAOX**	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

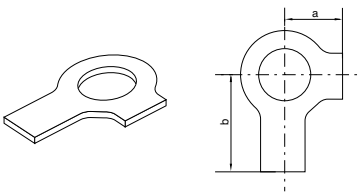
All metal parts available in stainless steel.

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						

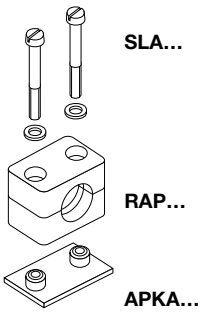
[1]) The use of stacking bolts necessitates the use of locking plates in the construction assembly.
[2]) When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

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

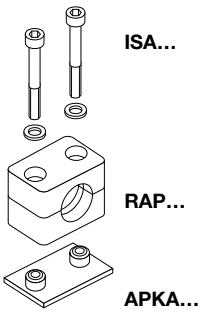
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

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

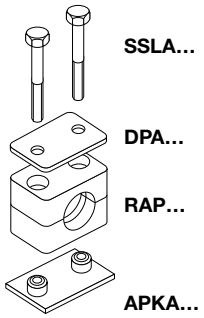
2 clamp halves, weld plate **short,** slot head bolts and bushes



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			**RAP1–006**	**RAP2–006**	**RAP3–006**
	6.4		1/4	**RAP1–006.4**	**RAP2–006.4**	**RAP3–006.4**
	8.0		5/16	**RAP1–008**	**RAP2–008**	**RAP3–008**
	9.5		3/8	**RAP1–009.5**	**RAP2–009.5**	**RAP3–009.5**
	10.0	G 1/8		**RAP1–010**	**RAP2–010**	**RAP3–010**
	12.0			**RAP1–012**	**RAP2–012**	**RAP3–012**
1	6.0			**RAP1–106**	**RAP2–106**	**RAP3–106**
	6.4		1/4	**RAP1–106.4**	**RAP2–106.4**	**RAP3–106.4**
	8.0		5/16	**RAP1–108**	**RAP2–108**	**RAP3–108**
	9.5		3/8	**RAP1–109.5**	**RAP2–109.5**	**RAP3–109.5**
	10.0	G 1/8		**RAP1–110**	**RAP2–110**	**RAP3–110**
	12.0			**RAP1–112**	**RAP2–112**	**RAP3–112**
2	12.7		1/2	**RAP1–212.7**	**RAP2–212.7**	**RAP3–212.7**
	13.5	G 1/4		**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		5/8	**RAP1–216**	**RAP2–216**	**RAP3–216**
	17.2	G 3/8		**RAP1–217.2**	**RAP2–217.2**	**RAP3–217.2**
	18.0			**RAP1–218**	**RAP2–218**	**RAP3–218**
3	19.0		3/4	**RAP1–319**	**RAP2–319**	**RAP3–319**
	20.0			**RAP1–320**	**RAP2–320**	**RAP3–320**
	21.3	G1/2		**RAP1–321.3**	**RAP2–321.3**	**RAP3–321.3**
	22.0			**RAP1–322**	**RAP2–322**	**RAP3–322**
	23.0			**RAP1–323**	**RAP2–323**	**RAP3–323**
	25.0		1	**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		1 1/4	**RAP1–532**	**RAP2–532**	**RAP3–532**
	33.7	G 1		**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			**RAP1–540**	**RAP2–540**	**RAP3–540**
	42.0	G 1 1/4		**RAP1–542**	**RAP2–542**	**RAP3–542**
6	44.5		1 3/4	**RAP1–644.5**	**RAP2–644.5**	**RAP3–644.5**
	45.0			**RAP1–645**	**RAP2–645**	**RAP3–645**
	48.0	G 1 1/2		**RAP1–648**	**RAP2–648**	**RAP3–648**
	50.0			**RAP1–650**	**RAP2–650**	**RAP3–650**
	50.8		2	**RAP1–650.8**	**RAP2–650.8**	**RAP3–650.8**
	52.0			**RAP1–652**	**RAP2–652**	**RAP3–652**
	55.0			**RAP1–655**	**RAP2–655**	**RAP3–655**
	57.0		2 1/4	**RAP1–657**	**RAP2–657**	**RAP3–657**

Delivery in unassembled individual components.

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

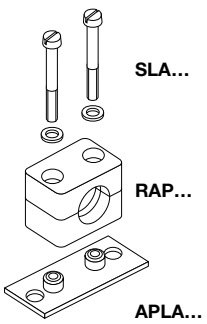
* Only with cover plate, hexagon screws and locking washers.

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

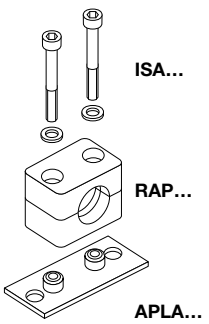
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

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

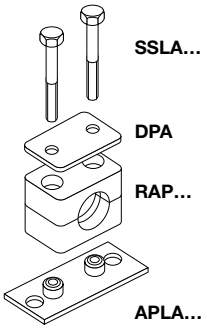
2 clamp halves, weld/ screw plate, slot head bolts and bushes



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



2 clamp halves, weld/ screw plate, cover plate 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			**RAP4–006**	**RAP5–006**	**RAP6–006**
	6.4		1/4	**RAP4–006.4**	**RAP5–006.4**	**RAP6–006.4**
	8.0		5/16	**RAP4–008**	**RAP5–008**	**RAP6–008**
	9.5		3/8	**RAP4–009.5**	**RAP5–009.5**	**RAP6–009.5**
	10.0	G 1/8		**RAP4–010**	**RAP5–010**	**RAP6–010**
	12.0			**RAP4–012**	**RAP5–012**	**RAP6–012**
1	6.0			**RAP4–106**	**RAP5–106**	**RAP6–106**
	6.4		1/4	**RAP4–106.4**	**RAP5–106.4**	**RAP6–106.4**
	8.0		5/16	**RAP4–108**	**RAP5–108**	**RAP6–108**
	9.5		3/8	**RAP4–109.5**	**RAP5–109.5**	**RAP6–109.5**
	10.0	G 1/8		**RAP4–110**	**RAP5–110**	**RAP6–110**
	12.0			**RAP4–112**	**RAP5–112**	**RAP6–112**
2	12.7		1/2	**RAP4–212.7**	**RAP5–212.7**	**RAP6–212.7**
	13.5	G 1/4		**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		5/8	**RAP4–216**	**RAP5–216**	**RAP6–216**
	17.2	G 3/8		**RAP4–217.2**	**RAP5–217.2**	**RAP6–217.2**
	18.0			**RAP4–218**	**RAP5–218**	**RAP6–218**
3	19.0		3/4	**RAP4–319**	**RAP5–319**	**RAP6–319**
	20.0			**RAP4–320**	**RAP5–320**	**RAP6–320**
	21.3	G 1/2		**RAP4–321.3**	**RAP5–321.3**	**RAP6–321.3**
	22.0			**RAP4–322**	**RAP5–322**	**RAP6–322**
	23.0			**RAP4–323**	**RAP5–323**	**RAP6–323**
	25.0		1	**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		1 1/4	**RAP4–532**	**RAP5–532**	**RAP6–532**
	33.7	G 1		**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			**RAP4–540**	**RAP5–540**	**RAP6–540**
	42.0	G 1 1/4		**RAP4–542**	**RAP5–542**	**RAP6–542**
6	44.5		1 3/4	**RAP4–644.5**	**RAP5–644.5**	**RAP6–644.5**
	45.0			**RAP4–645**	**RAP5–645**	**RAP6–645**
	48.0	G 1 1/2		**RAP4–648**	**RAP5–648**	**RAP6–648**
	50.0			**RAP4–650**	**RAP5–650**	**RAP6–650**
	50.8		2	**RAP4–650.8**	**RAP5–650.8**	**RAP6–650.8**
	52.0			**RAP4–652**	**RAP5–652**	**RAP6–652**
	55.0			**RAP4–655**	**RAP5–655**	**RAP6–655**
	57.0		2 1/4	**RAP4–657**	**RAP5–657**	**RAP6–657**

Delivery in unassembled individual components.

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

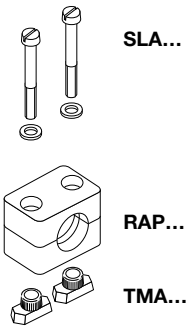
* Only with cover plate, hexagon screws and locking washers.

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

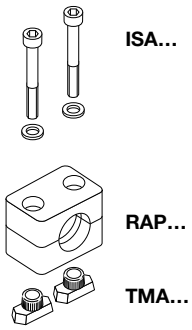
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

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

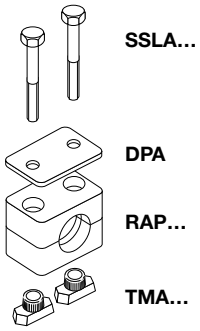
2 clamp halves, rail nuts, slot head bolts and bushes



2 clamp halves, rail nuts, socket head bolts and bushes



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



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0[1]	6.0			**RAP9–006**	**RAP10–006**	**RAP12–006**
	6.4		1/4	**RAP9–006.4**	**RAP10–006.4**	**RAP12–006.4**
	8.0		5/16	**RAP9–008**	**RAP10–008**	**RAP12–008**
	9.5		3/8	**RAP9–009.5**	**RAP10–009.5**	**RAP12–009.5**
	10.0	G 1/8		**RAP9–010**	**RAP10–010**	**RAP12–010**
	12.0			**RAP9–012**	**RAP10–012**	**RAP12–012**
1	6.0			**RAP9–106**	**RAP10–106**	**RAP12–106**
	6.4		1/4	**RAP9–106.4**	**RAP10–106.4**	**RAP12–106.4**
	8.0		5/16	**RAP9–108**	**RAP10–108**	**RAP12–108**
	9.5		3/8	**RAP9–109.5**	**RAP10–109.5**	**RAP12–109.5**
	10.0	G 1/8		**RAP9–110**	**RAP10–110**	**RAP12–110**
	12.0			**RAP9–112**	**RAP10–112**	**RAP12–112**
2	12.7		1/2	**RAP9–212.7**	**RAP10–212.7**	**RAP12–212.7**
	13.5	G 1/4		**RAP9–213.5**	**RAP10–213.5**	**RAP12–213.5**
	14.0			**RAP9–214**	**RAP10–214**	**RAP12–214**
	15.0			**RAP9–215**	**RAP10–215**	**RAP12–215**
	16.0		5/8	**RAP9–216**	**RAP10–216**	**RAP12–216**
	17.2	G 3/8		**RAP9–217.2**	**RAP10–217.2**	**RAP12–217.2**
	18.0			**RAP9–218**	**RAP10–218**	**RAP12–218**
3	19.0		3/4	**RAP9–319**	**RAP10–319**	**RAP12–319**
	20.0			**RAP9–320**	**RAP10–320**	**RAP12–320**
	21.3	G 1/2		**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**
	25.0		1	**RAP9–325**	**RAP10–325**	**RAP12–325**
4	26.9	G 3/4		**RAP9–426.9**	**RAP10–426.9**	**RAP12–426.9**
	28.0			**RAP9–428**	**RAP10–428**	**RAP12–428**
	30.0			**RAP9–430**	**RAP10–430**	**RAP12–430**
5	32.0		1 1/4	**RAP9–532**	**RAP10–532**	**RAP12–532**
	33.7	G 1		**RAP9–533.7**	**RAP10–533.7**	**RAP12–533.7**
	35.0			**RAP9–535**	**RAP10–535**	**RAP12–535**
	38.0		1 1/2	**RAP9–538**	**RAP10–538**	**RAP12–538**
	40.0			**RAP9–540**	**RAP10–540**	**RAP12–540**
	42.0	G 1 1/4		**RAP9–542**	**RAP10–542**	**RAP12–542**
6	44.5		1 3/4	**RAP9–644.5**	**RAP10–644.5**	**RAP12–644.5**
	45.0			**RAP9–645**	**RAP10–645**	**RAP12–645**
	48.0	G 1 1/2		**RAP9–648**	**RAP10–648**	**RAP12–648**
	50.0			**RAP9–650**	**RAP10–650**	**RAP12–650**
	50.8		2	**RAP9–650.8**	**RAP10–650.8**	**RAP12–650.8**
	52.0			**RAP9–652**	**RAP10–652**	**RAP12–652**
	55.0			**RAP9–655**	**RAP10–655**	**RAP12–655**
	57.0		2 1/4	**RAP9–657**	**RAP10–657**	**RAP12–657**

Delivery in unassembled individual components.

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

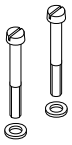
* Only with cover plate, hexagon screws and locking washers.

Tube clamps series A – Complete range

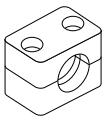
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

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

2 clamp halves, slot heads and bushes

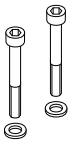


SLA...

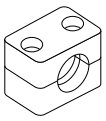


RAP...

2 clamp halves, socket head bolts and bushes



ISA...



RAP...

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

Delivery in unassembled individual components.

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

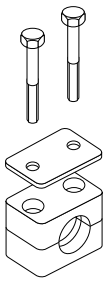
* Only with cover plate, hexagon screws and locking washers.

Tube clamps series A – Complete range

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

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

2 clamp halves, cover plate and hex. head bolts

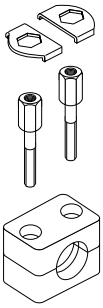


SSLA…

DPA…

RAP…

2 clamp halves, stacking bolts and locking plate



SBA…

ASA…

RAP…

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0[1])	6.0			**RAP16–006**	**RAP18–006**
	6.4		1/4	**RAP16–006.4**	**RAP18–006.4**
	8.0		5/16	**RAP16–008**	**RAP18–008**
	9.5		3/8	**RAP16–009.5**	**RAP18–009.5**
	10.0	G1/8		**RAP16–010**	**RAP18–010**
	12.0			**RAP16–012**	**RAP18–012**
1	6.0			**RAP16–106**	**RAP18–106**
	6.4		1/4	**RAP16–106.4**	**RAP18–106.4**
	8.0		5/16	**RAP16–108**	**RAP18–108**
	9.5		3/8	**RAP16–109.5**	**RAP18–109.5**
	10.0	G 1/8		**RAP16–110**	**RAP18–110**
	12.0			**RAP16–112**	**RAP18–112**
2	12.7		1/2	**RAP16–212.7**	**RAP18–212.7**
	13.5	G 1/4		**RAP16–213.5**	**RAP18–213.5**
	14.0			**RAP16–214**	**RAP18–214**
	15.0			**RAP16–215**	**RAP18–215**
	16.0		5/8	**RAP16–216**	**RAP18–216**
	17.2	G 3/8		**RAP16–217.2**	**RAP18–217.2**
	18.0			**RAP16–218**	**RAP18–218**
3	19.0		3/4	**RAP16–319**	**RAP18–319**
	20.0			**RAP16–320**	**RAP18–320**
	21.3	G 1/2		**RAP16–321.3**	**RAP18–321.3**
	22.0			**RAP16–322**	**RAP18–322**
	23.0			**RAP16–323**	**RAP18–323**
	25.0		1	**RAP16–325**	**RAP18–325**
4	26.9	G 3/4		**RAP16–426.9**	**RAP18–426.9**
	28.0			**RAP16–428**	**RAP18–428**
	30.0			**RAP16–430**	**RAP18–430**
5	32.0		1 1/4	**RAP16–532**	**RAP18–532**
	33.7	G 1		**RAP16–533.7**	**RAP18–533.7**
	35.0			**RAP16–535**	**RAP18–535**
	38.0		1 1/2	**RAP16–538**	**RAP18–538**
	40.0			**RAP16–540**	**RAP18–540**
	42.0	G 1 1/4		**RAP16–542**	**RAP18–542**
6	44.5		1 3/4	**RAP16–644.5**	**RAP18–644.5**
	45.0			**RAP16–645**	**RAP18–645**
	48.0	G 1 1/2		**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		2 1/4	**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.

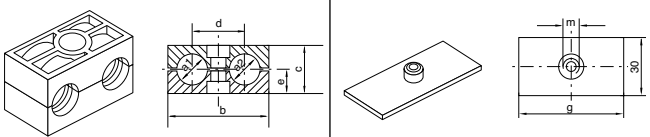
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3

Order code for clamp halves:

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

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



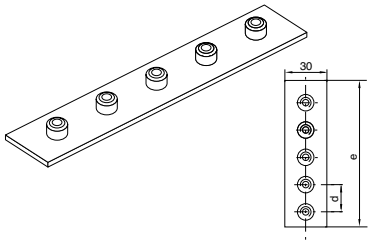
Width: 30 mm

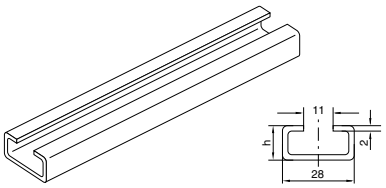
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves[1]) RBP… Order code	dimensions: b	c	d	e	weld plate APB… Order code	dimensions: g	m
1	6.0 6.4 8.0 9.5 10.0 12.0	G 1/8	1/4 5/16 3/8	**RBP106X** **RBP106.4X** **RBP108X** **RBP109.5X** **RBP110X** **RBP112X**	36	27	20	13.5	**APB1X**	37 Thickness: 3 mm	M 6
2	12.7 13.5 14.0 15.0 16.0 17.2 18.0	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 Thickness: 5 mm	M 8
3	19.0 20.0 21.3 22.0 25.0	G 1/2	3/4 1	**RBP319X** **RBP320X** **RBP321.3X** **RBP322X** **RBP325X**	67	37	36	18.5	**APB3X**	70 Thickness: 5 mm	M 8
4	26.9 28.0 30.0	G 3/4		**RBP426.9X** **RBP428X** **RBP430X**	82	42	45	21	**APB4X**	85 Thickness: 5 mm	M 8
5	32.0 33.7 35.0 38.0 42.0	G 1 G 1 1/4	1 1/4 1 1/2	**RBP532X** **RBP533.7X** **RBP535X** **RBP538X** **RBP542X**	106	54	56	27	**APB5X**	110 Thickness: 5 mm	M 8

Metal parts also available in stainless steel.
[1]) Twin-tube clamps with different outer tube diameters upon request.

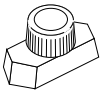
Tube clamps series B (Twin-tube clamps) – Components

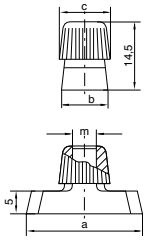
DIN 3015, part 3





1 or 2 mtr

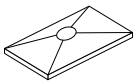


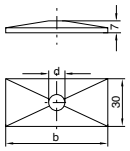


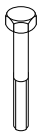
clamp size	multiple weld plate			mounting rail		rail nut				
	APRB… Order code	dimensions: d	e	**TS…A/B** Order code	dimensions: h	**TM…** Order code	dimensions: a	b	c	m
1	**APRB1X (5 clamps)**	40 Thickness: 3 mm	196	**TS11A/B1X** **TS11A/B2X** **TS14A/B1X** **TS14A/B2X** **TS30A/B1X** **TS30A/B2X**	TS11: 11 TS14: 14 TS30: 30	**TMA/TMB1VERZX**	25.4	10.4	12	M 6
2	**APRB2X (5 clamps)**	58 Thickness: 5 mm	288			**TMB2X**	25.4	10.4	12	M8
3	**APRB3X (5 clamps)**	72 Thickness: 5 mm	358							
4	**APRB4X (5 clamps)**	90 Thickness: 5 mm	446							
5	**APRB5X (5 clamps)**	112 Thickness: 5 mm	558							

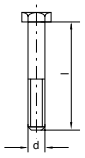
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3









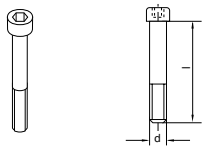
DIN 931/933

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

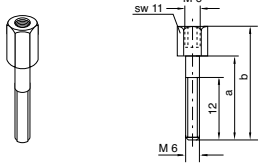
Metal parts also available in stainless steel.

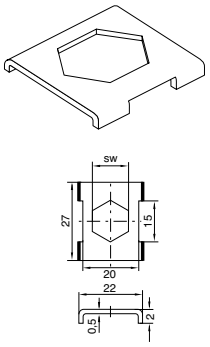
Tube clamps series B (Twin-tube clamps) – Components

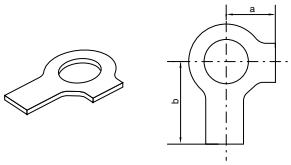
DIN 3015, part 3



DIN 912







clamp size	socket head		stacking					locking plate[1])		locking washer[2])		
	IS B… Order code	dimensions: d × L	**AS B…** Order code	dimensions: a	b	m	SW	**SB B…** Order code	dimensions: SW	**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					

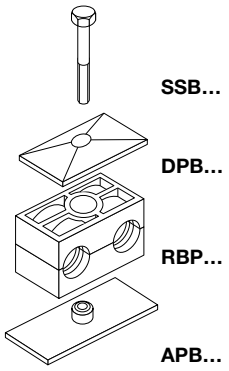
[1]) The use of stacking screws necessitates the use of locking plates in the construction assembly!
[2]) When assemblying solid rubber clamps, covering plates, he×agon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series B – Complete range

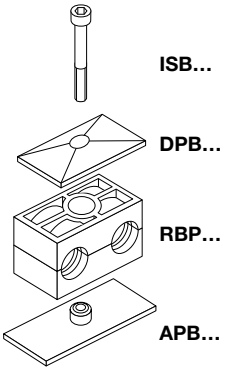
Polypropylene – **RBP**
Inside smooth – **RBPG**
Polyamide 6 – **RBN**
Rubber – **RBVG***

(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
	6.0			**RBP1–106**	**RBP3–106**
	6.4		1/4	**RBP1–106.4**	**RBP3–106.4**
1	8.0		5/16	**RBP1–108**	**RBP3–108**
	9.5		3/8	**RBP1–109.5**	**RBP3–109.5**
	10.0	G1/8		**RBP1–110**	**RBP3–110**
	12.0			**RBP1–112**	**RBP3–112**
	12.7		1/2	**RBP1–212.7**	**RBP3–212.7**
	13.5	G1/4		**RBP1–213.5**	**RBP3–213.5**
	14.0			**RBP1–214**	**RBP3–214**
2	15.0			**RBP1–215**	**RBP3–215**
	16.0		5/8	**RBP1–216**	**RBP3–216**
	17.2	G3/8		**RBP1–217.2**	**RBP3–217.2**
	18.0			**RBP1–218**	**RBP3–218**
	19.0		3/4	**RBP1–319**	**RBP3–319**
	20.0			**RBP1–320**	**RBP3–320**
3	21.3	G1/2		**RBP1–321.3**	**RBP3–321.3**
	22.0			**RBP1–322**	**RBP3–322**
	25.0		1	**RBP1–325**	**RBP3–325**
	26.9	G3/4		**RBP1–426.9**	**RBP3–426.9**
4	28.0			**RBP1–428**	**RBP3–428**
	30.0			**RBP1–430**	**RBP3–430**
	32.0		1 1/4	**RBP1–532**	**RBP3–532**
	33.7	G1		**RBP1–533.7**	**RBP3–533.7**
5	35.0			**RBP1–535**	**RBP3–535**
	38.0		1 1/2	**RBP1–538**	**RBP3–538**
	42.0	G1 1/4		**RBP1–542**	**RBP3–542**

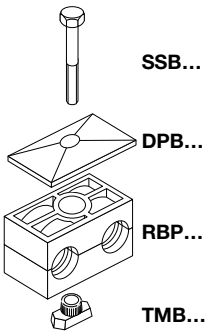
Delivery in unassembled individual components.
*Only with cover plate, hexagon screws and locking washers.

Tube clamps series B – Complete range

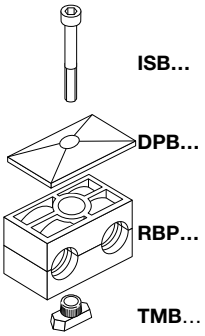
Polypropylene – **RBP**
Inside smooth – **RBPG**
Polyamide 6 – **RBN**
Rubber – **RBVG***

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

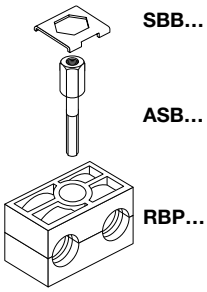
2 clamp halves, rail nut, cover plate, hex. head bolt



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



2 clamp halves, locking plate, stacking bolt



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

Delivery in unassembled individual components.
*Only with cover plate, hexagon screws and locking washers.

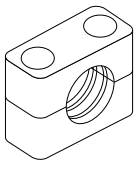
Tube clamps series C (Heavy series) – Components

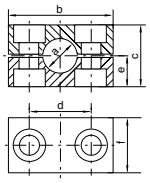
DIN 3015, part 2

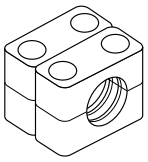
Order code for clamp halves:

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

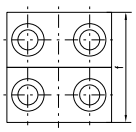
(Please exchange as required standard abbreviation RCP in column for "clamp halves")







RCPD
(= 2XRCP...)



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves RCP... Order code	b	c	d	e	f	1 part 4 clamp halves RCPD... Order code	b	c	d	e	f
	6.0			**RCP106X**						**RCPD106**					
	8.0		5/16	**RCP108X**						**RCPD108**					
	10.0	G 1/8		**RCP110X**						**RCPD110**					
	12.0			**RCP112X**						**RCPD112**					
	12.7		1/2	**RCP112.7X**						**RCPD112.7**					
1	13.5	G 1/4		**RCP113.5X**	55	32	33	16	30	**RCPD113.5**	55	32	33	16	60
	14.0			**RCP114X**						**RCPD114**					
	15.0			**RCP115X**						**RCPD115**					
	16.0		5/8	**RCP116X**						**RCPD116**					
	17.2	G 3/8		**RCP117.2X**						**RCPD117.2**					
	18.0			**RCP118X**						**RCPD118**					
	19.0		3/4	**RCP219X**						**RCPD219**					
	20.0			**RCP220X**						**RCPD220**					
	21.3	G 1/2		**RCP221.3X**						**RCPD221.3**					
	22.0			**RCP222X**						**RCPD222**					
2	23.0			**RCP223X**	70	48	45	24	30	**RCPD223**	70	48	45	24	60
	25.0		1	**RCP225X**						**RCPD225**					
	26.9	G 3/4		**RCP226.9X**						**RCPD226.9**					
	28.0			**RCP228X**						**RCPD228**					
	30.0			**RCP230X**						**RCPD230**					
	30.0			**RCP330X**						**RCPD330**					
	32.0		1 1/4	**RCP332X**						**RCPD332**					
	33.7	G 1		**RCP333.7X**						**RCPD333.7**					
3	35.0			**RCP335X**	85	60	60	30	30	**RCPD335**	85	60	60	30	60
	38.0		1 1/2	**RCP338X**						**RCPD338**					
	39.0			**RCP339X**						**RCPD339**					
	40.0			**RCP340X**						**RCPD340**					
	42.0	G 1 1/4		**RCP342X**						**RCPD342**					
	38.0		1 1/2	**RCP438X**						**RCPD428**					
	40.0			**RCP440X**						**RCPD440**					
	42.0	G 1 1/4		**RCP442X**						**RCPD442**					
	45.0			**RCP445X**						**RCPD445**					
	46.0			**RCP446X**						**RCPD446**					
	48.3	G 1 1/2		**RCP448.3X**						**RCPD448.3**					
	50.0			**RCP450X**						**RCPD450**					
4	51.0		2	**RCP451X**	115	90	90	45	45	**RCPD451**	115	90	90	45	90
	52.0			**RCP452X**						**RCPD452**					
	55.0			**RCP455X**						**RCPD455**					
	56.0			**RCP456X**						**RCPD456**					
	57.0		2 1/4	**RCP457X**						**RCPD457**					
	60.3	G 2		**RCP460.3X**						**RCPD460.3**					
	63.0		2 1/2	**RCP463X**						**RCPD463**					
	65.0			**RCP465X**						**RCPD465**					
	66.0			**RCP466X**						**RCPD466**					
	70.0			**RCP470X**						**RCPD470**					

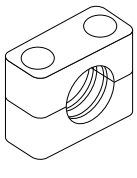
Continuation see next page ...

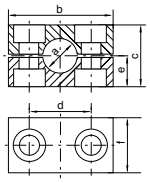
Tube clamps series C (Heavy series) – Components (Continued)

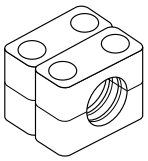
Order code for clamp halves:

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

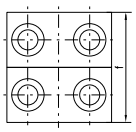
(Please exchange as required standard abbreviation RCP in column for "clamp halves")







RCPD
(= 2XRCP...)

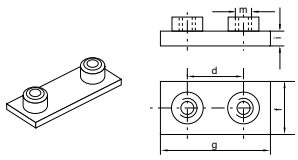
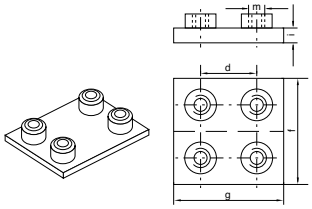
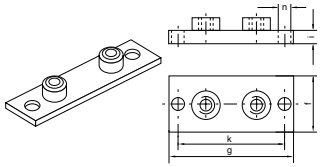
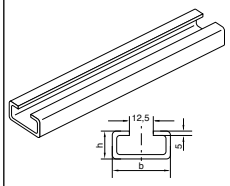


clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves RCP... Order code	b	c	d	e	f	1 part 4 clamp halves RCPD... Order code	b	c	d	e	f
	70.0			**RCP570X**						**RCPD570**					
	73.0			**RCP573X**						**RCPD573**					
	75.0			**RCP575X**						**RCPD575**					
5	76.1	G 2½	3	**RCP576.1X**	152	120	122	60	60	**RCPD576.1**	152	120	122	60	120
	80.0			**RCP580X**						**RCPD580**					
	82.5		3¼	**RCP582.5X**						**RCPD582.5**					
	88.9	G 3	3½	**RCP588.9X**						**RCPD588.9**					
	90.0			**RCP590X**						**RCPD590**					
	90.0			**RCP690X**						**RCPD690**					
	97.0			**RCP697X**						**RCPD697**					
	100.0			**RCP6100X**						**RCPD6100**					
6	101.6	G 3½	4	**RCP6101.6X**	205	170	168	85	80	**RCPD6101.6**	205	170	168	85	160
	108.0		4¼	**RCP6108X**						**RCPD6108**					
	114.3	G 4	4½	**RCP6114.3X**						**RCPD6114.3**					
	127.0		5	**RCP6127X**						**RCPD6127**					
	127.0		5	**RCP7127X**						**RCPD7127**					
	133.0		5¼	**RCP7133X**						**RCPD7133**					
	140.0	G 5	5½	**RCP7140X**						**RCPD7140**					
7	150.0			**RCP7150X**	250	200	205	100	90	**RCPD7150**	250	200	205	100	180
	152.4	G 5½	6	**RCP7152.4X**						**RCPD7152.4**					
	159.0		6¼	**RCP7159X**						**RCPD7159**					
	165.1	G 6	6½	**RCP7165.1X**						**RCPD7165.1**					
	168.3		6⅝	**RCP7168.3X**						**RCPD7168.3**					
	168.3		6⅝	**RCP8168.3X**						**RCPD8168.3**					
	177.8		7	**RCP8177.8X**						**RCPD8177.8**					
8	193.7		7⅝	**RCP8193.7X**	320	270	265	135	120	**RCPD8193.7**	320	270	265	135	240
	203.0			**RCP8203X**						**RCPD8203**					
	219.1	G 8	8⅝	**RCP8219.1X**						**RCPD8219.1**					
	220.0			**RCP8220X**						**RCPD8220**					
	219.1	8		**RCP9219.1X**											
	244.5			**RCP244.5X**											
9	250.0			**RCP250X**	466	410	395	20	160						
	273.0	10		**RCP273X**											
	323.9	12		**RCP323.9X**											
10	355.6	14		**RCP355.6X**	630	530	530	20	180						
	406.4	16		**RCP406.4X**											

Metal parts also available in stainless steel.
[1]) Only sizes 1–4

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

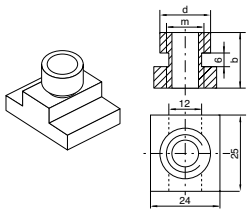





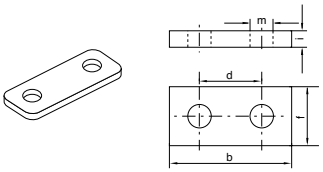
clamp size	weld plate					double weld plate						weld/screw plate					mounting rail		
	AP C… Order code	dimensions:					**APD C…** Order code	dimensions:					**APL C…** Order code	dimensions:					**TS C…** Order code	dim.:	
		d	f	g	i	m		d	f	g	i	m		g	f	i	k	n		b	h
1	**APC1X**	33	30	73	8	M10	**APDC1X**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

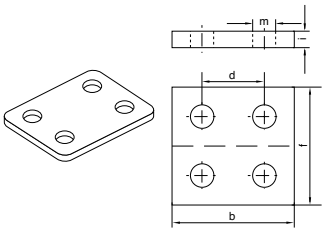
Metal parts also available in stainless steel.
Complete programme range please refer to page 248.

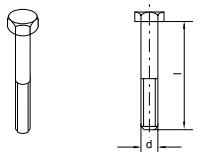
Tube clamps series C (Heavy series) – Components

DIN 3015, part 2









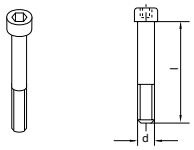
DIN 931/933

clamp size	rail nut				cover plate						double cover plate						hexagon head	
	TM C… Order code	dimensions: b	d	m	**DP C…** Order code	dimensions: b	d	f	i	m	**DPD C…** Order code	dimensions: b	d	f	i	m	**SS C…** Order code	dimensions: d × L
1					**DPC1X**	55	33	30	8	11	**DPDC1X**	55	33	60	8	11	**SSC1X**	M 10 × 45
2	**TMC1X**	20	17.8	M 10	**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

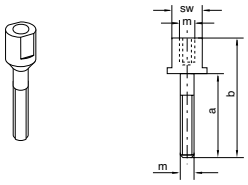
Metal parts also available in stainless steel.

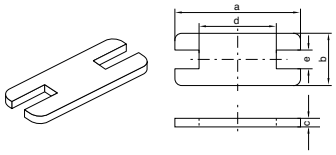
Tube clamps series C (Heavy series) – Components

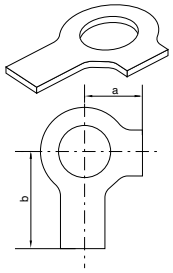
DIN 3015, part 2



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			
2	**ISC2X**	M 10 × 60	**ASC2X**	40	66	M 10	15	**SPC2X**	70	30	8	26	15.5	**USC1X**	13	22
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

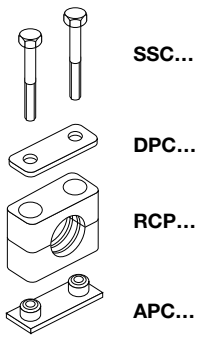
[1]) The use of stacking screws necessitates the use of locking plates in the construction assembly!
[2]) When assemblying solid rubber clamps, covering plates, he×agon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series C – Complete range

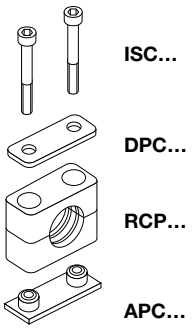
Polypropylene – **RCP**
Inside smooth – **RCPG[1])**
Polyamide 6 – **RCN**
Rubber – **RCVR***
Aluminium – **RCA**

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

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

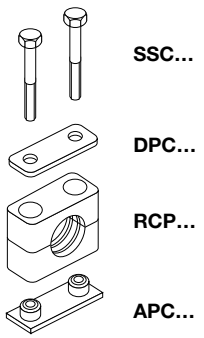
Continuation see next page ...

Tube clamps series C – Complete range (Continued)

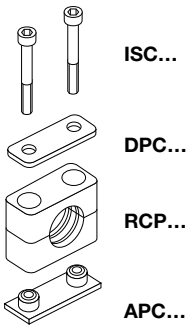
Polypropylene – **RCP**
Inside smooth – **RCPG[1)]**
Polyamide 6 – **RCN**
Rubber – **RCVR***
Aluminium – **RCA**

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

Delivery in unassembled individual components.

[1)] Only sizes 1–4

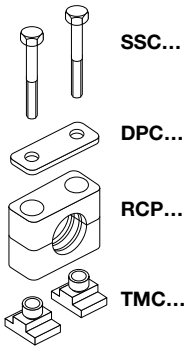
* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

Tube clamps series C – Complete range

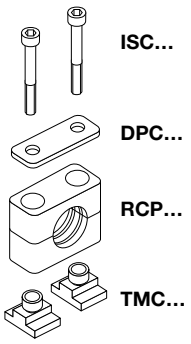
Polypropylene – **RCP**
Inside smooth – **RCPG**[1]**)**
Polyamide 6 – **RCN**
Rubber – **RCVR***
Aluminium – **RCA**

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

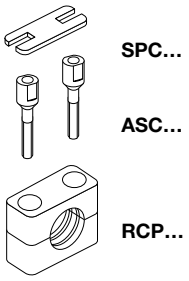
2 clamp halves, rail nuts, cover plate, hex. head bolts



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
	6.0			**RCP3–106**	**RCP4–106**	**RCP5–106**
	8.0		5/16	**RCP3–108**	**RCP4–108**	**RCP5–108**
	10.0	G 1/8		**RCP3–110**	**RCP4–110**	**RCP5–110**
	12.0			**RCP3–112**	**RCP4–112**	**RCP5–112**
	12.7		1/2	**RCP3–112.7**	**RCP4–112.7**	**RCP5–112.7**
1	13.5	G 1/4		**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		5/8	**RCP3–116**	**RCP4–116**	**RCP5–116**
	17.2	G 3/8		**RCP3–117.2**	**RCP4–117.2**	**RCP5–117.2**
	18.0			**RCP3–118**	**RCP4–118**	**RCP5–118**
	19.0		3/4	**RCP3–219**	**RCP4–219**	**RCP5–219**
	20.0			**RCP3–220**	**RCP4–220**	**RCP5–220**
	21.3	G 1/2		**RCP3–221.3**	**RCP4–221.3**	**RCP5–221.3**
	22.0			**RCP3–222**	**RCP4–222**	**RCP5–222**
2	23.0			**RCP3–223**	**RCP4–223**	**RCP5–223**
	25.0		1	**RCP3–225**	**RCP4–225**	**RCP5–225**
	26.9	G 3/4		**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**
	32.0		1 1/4	**RCP3–332**	**RCP4–332**	**RCP5–332**
	33.7	G 1		**RCP3–333.7**	**RCP4–333.7**	**RCP5–333.7**
3	35.0			**RCP3–335**	**RCP4–335**	**RCP5–335**
	38.0		1 1/2	**RCP3–338**	**RCP4–338**	**RCP5–338**
	40.0			**RCP3–340**	**RCP4–340**	**RCP5–340**
	42.0	G 1 1/4		**RCP3–342**	**RCP4–342**	**RCP5–342**
	38.0		1 1/2	**RCP3–438**	**RCP4–438**	**RCP5–438**
	40.0			**RCP3–440**	**RCP4–440**	**RCP5–440**
	42.0	G 1 1/4		**RCP3–442**	**RCP4–442**	**RCP5–442**
	45.0			**RCP3–445**	**RCP4–445**	**RCP5–445**
	48.3	G 1 1/2		**RCP3–448.3**	**RCP4–448.3**	**RCP5–448.3**
	50.0			**RCP3–450**	**RCP4–450**	**RCP5–450**
4	51.0		2	**RCP3–451**	**RCP4–451**	**RCP5–451**
	52.0			**RCP3–452**	**RCP4–452**	**RCP5–452**
	55.0			**RCP3–455**	**RCP4–455**	**RCP5–455**
	57.0		2 1/4	**RCP3–457**	**RCP4–457**	**RCP5–457**
	60.3	G 2		**RCP3–460.3**	**RCP4–460.3**	**RCP5–460.3**
	63.0		2 1/2	**RCP3–463**	**RCP4–463**	**RCP5–463**
	65.0			**RCP3–465**	**RCP4–465**	**RCP5–465**
	70.0			**RCP3–470**	**RCP4–470**	**RCP5–470**

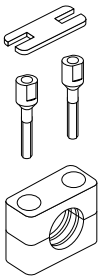
Continuation see next page …

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



SPC…

ASC…

RCP…

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code
	70.0			**RCP5–570**
	73.0			**RCP5–573**
	75.0			**RCP5–575**
5	76.1	G 2½	3	**RCP5–576.1**
	80.0			**RCP5–580**
	82.5		3¼	**RCP5–582.5**
	88.9	G 3	3½	**RCP5–588.9**
	90.0			**RCP5–590**
	90.0			**RCP5–690**
	97.0			**RCP5–697**
	100.0			**RCP5–6100**
6	101.6	G 3½	4	**RCP5–6101.6**
	108.0		4¼	**RCP5–6108**
	114.3	G 4	4½	**RCP5–6114.3**
	127.0		5	**RCP5–6127**
	127.0		5	**RCP5–7127**
	133.0		5¼	**RCP5–7133**
	140.0	G 5	5½	**RCP5–7140**
7	150.0			**RCP5–7150**
	152.4	G 5½	6	**RCP5–7152.4**
	159.0		6¼	**RCP5–7159**
	165.1	G 6	6½	**RCP5–7165.1**
	168.3		6⅝	**RCP5–7168.3**
	168.3		6⅝	**RCP5–8168.3**
	177.8		7	**RCP5–8177.8**
8	193.7		7⅝	**RCP5–8193.7**
	203.0			**RCP5–8203**
	219.1	G 8	8⅝	**RCP5–8219.1**
	220.0			**RCP5–8220**

Delivery in unassembled individual components.

[1]) Only sizes 1–4

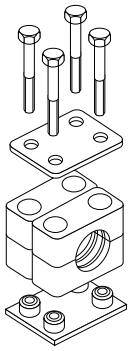
* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

Tube clamps series C – Complete range

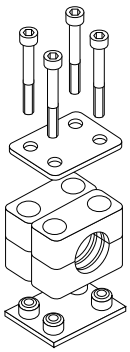
Polypropylene – **RCPD**
Inside smooth – **RCPDG[1])**
Polyamide 6 – **RCND**
Rubber – **RCVDR***
Aluminium – **RCAD**

(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



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

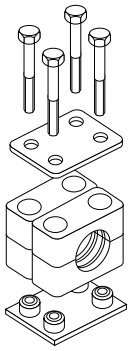
Continuation see next page ...

Tube clamps series C – Complete range (Continued)

Polypropylene – **RCPD**
Inside smooth – **RCPDG**[1])
Polyamide 6 – **RCND**
Rubber – **RCVDR***
Aluminium – **RCAD**

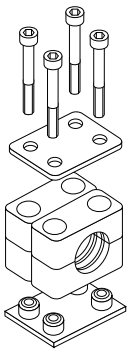
(As required please exchange standard abbreviation RCP in column for "Order code")

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…

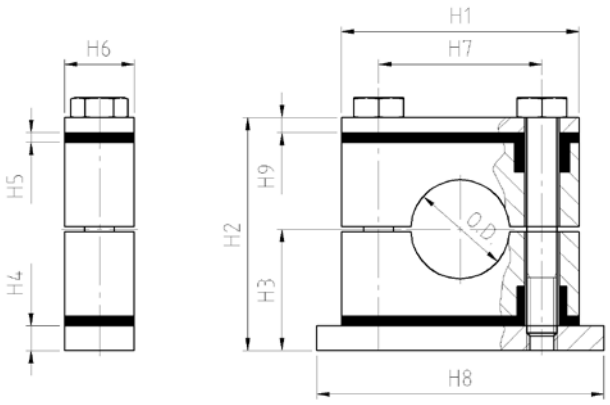
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
	70.0			**RCPD1–570**	**RCPD2–570**
	73.0			**RCPD1–573**	**RCPD2–573**
	75.0			**RCPD1–575**	**RCPD2–575**
5	76.1	G 2½	3	**RCPD1–576.1**	**RCPD2–576.1**
	80.0			**RCPD1–580**	**RCPD2–580**
	82.5		3¼	**RCPD1–582.5**	**RCPD2–582.5**
	88.9	G 3	3½	**RCPD1–588.9**	**RCPD2–588.9**
	90.0			**RCPD1–590**	**RCPD2–590**
	90.0			**RCPD1–690**	**RCPD2–690**
	97.0			**RCPD1–697**	**RCPD2–697**
	100.0			**RCPD1–6100**	**RCPD2–6100**
6	101.6	G 3½	4	**RCPD1–6101.6**	**RCPD2–6101.6**
	108.0		4¼	**RCPD1–6108**	**RCPD2–6108**
	114.3	G 4	4½	**RCPD1–6114.3**	**RCPD2–6114.3**
	127.0		5	**RCPD1–6127**	**RCPD2–6127**
	127.0		5	**RCPD1–7127**	**RCPD2–7127**
	133.0		5¼	**RCPD1–7133**	**RCPD2–7133**
	140.0	G 5	5½	**RCPD1–7140**	**RCPD2–7140**
7	150.0			**RCPD1–7150**	**RCPD2–7150**
	152.4	G 5½	6	**RCPD1–7152.4**	**RCPD2–7152.4**
	159.0		6¼	**RCPD1–7159**	**RCPD2–7159**
	165.1	G 6	6½	**RCPD1–7165.1**	**RCPD2–7165.1**
	168.3		6⅝	**RCPD1–7168.3**	**RCPD2–7168.3**
	168.3		6⅝	**RCPD1–8168.3**	**RCPD2–8168.3**
	177.8		7	**RCPD1–8177.8**	**RCPD2–8177.8**
8	193.7		7⅝	**RCPD1–8193.7**	**RCPD2–8193.7**
	203.0			**RCPD1–8203**	**RCPD2–8203**
	219.1	G 8	8⅝	**RCPD1–8219.1**	**RCPD2–8219.1**
	220.0			**RCPD1–8220**	**RCPD2–8220**

Delivery in unassembled individual components.

[1]) Only sizes 1–4

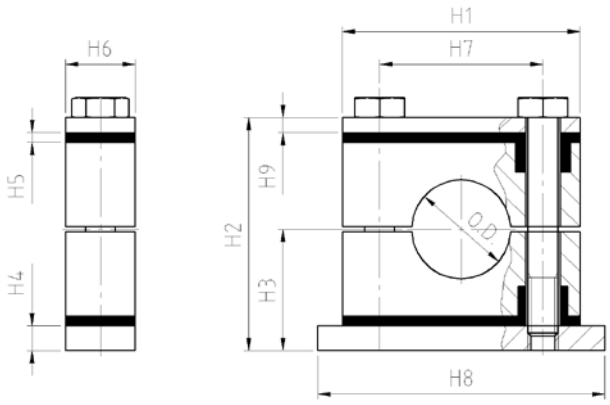
* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

Tube clamp series C with absorbing noise insert



Clamp size	Tube O.D.mm	Absorbing plate	Weld plate	Bolt ISO 4014	H1	H2	H3	H4	H5	H6	H7	H8	H9
1	6.0 8.0 9.5 10.0 12.0 12.7 13.5 14.0 15.0 16.0 17.2 18.0	DPEC1X	APCD1X	M10X65	55	69	38	15	7	30	33	70	8
2	19.0 20.0 21.3 22.0 23.0 25.0 26.9 28.0 30.0	DPEC2X	APCD2X	M10X80	70	85	46	15	7	30	45	85	8
3	30.0 32.0 33.7 35.0 38.0 40.0 42.0	DPEC3X	APCD3X	M10X90	85	97	52	15	7	30	60	100	8
4	38.0 40.0 42.0 45.0 48.3 50.0 51.0 52.0 54.0 55.0 57.0 60.3 63.5 65.0 70.0	DPEC4X	APCD4X	M12X130	115	134	72	20	7	45	90	140	10

Tube clamp series C with absorbing noise insert



Clamp size	Tube O.D.mm	Absorbing plate	Weld plate	Bolt ISO 4014	H1	H2	H3	H4	H5	H6	H7	H8	H9
5	70.0 73.0 75.0 76.1 80.0 82.5 88.9 90.0	DPEC5X	APCD5X	M16X160	152	165	90	25	7	60	122	180	10
6	90.0 97.0 100.0 101.6 108.0 114.3 127.0	DPEC6X	APCD6X	M20X230	205	237	126	30	11	80	168	228	15
7	127.0 130.0 133.0 140.0 141.3 150.0 152.4 159.0 165.1 168,3	DPEC7X	APCD7X	M24X260	250	287	161	50	11	90	205	270	15
8	168.3 177.8 193.7 203.0 219.1 220.0	DPEC8X	APCD8X	M30X360	322	407	231	80	16	120	265	340	25

Notes

Pipes and tubes

Table of contents

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 $\left[\frac{m}{s}\right]$

Return lines – 2 →4.5 $\left[\frac{m}{s}\right]$

Suction lines – 1 →1.8 $\left[\frac{m}{s}\right]$

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.

$$\text{Tube – I.D. [mm]} = 4{,}61 \times \sqrt{\frac{\text{Flow}\ \left[\frac{\text{ltr.}}{\text{min}}\right]}{\text{Velocity}\ \left[\frac{m}{s}\right]}}$$

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 porportionally 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 $\left[\frac{m}{s}\right]$

d = Pipe inside diameter [m]

L = Pipe length [m]

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

$\dot{V}$ = Flow rate $\left[\frac{m^3}{s}\right]$, $1\ \frac{m^3}{s} = 6000\ \frac{l}{min}$

λ = Pipe friction factor

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

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

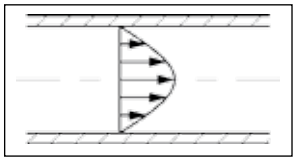
ζ = Individual pressure loss coefficient

Flow characteristics

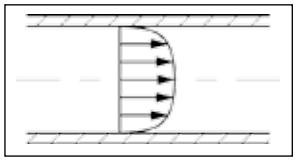
Only base units have been used. This has the advantage that the formula do not contain correction factors and there is no danger of confusion, e.g. that values are used with the wrong unit. In case values are given in other units – the flow rate is e.g. often given in l/min – it is advisable to convert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

Pressure losses in pipe lines

To calculate pressure losses in pipe lines, it must first be determined whether there is a laminar or a turbulent flow. Laminar flow is homogenous and without turbulence. In case of turbulent flow, the losses increase much more quickly.



Flow profile
with laminar flow



Flow profile
with turbulent flow

The kind of flow is defined by the Reynolds' number. With a Reynolds' number of more than 2320, the flow changes to turbulent. The Reynolds' number is calculated according to the formula:

$$Re = \frac{c \cdot d}{\upsilon(T)}$$

The Reynolds' number is a non-dimensional number. The critical fluid velocity at which the flow regime can change, is thus calculated from:

$$c_{cr} = 2320 \cdot \frac{\upsilon(T)}{d} \left[\frac{m}{s}\right]$$

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:

$$\text{laminar flow, } (Re < 2320): \lambda = \frac{64}{Re}$$

$$\textit{turbulent flow, } (Re > 2320): \lambda = \frac{0.3164}{\sqrt[4]{Re}}$$

Finally, if all factors are known, the pressure loss in a certain pipe line can be calculated according to the formula:

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

Calculation of individual losses

A hydraulic system does not only incorporate pipes, but also valves, fittings, pipe bends etc. that cause flow losses. These individual losses are often much higher than the pipe losses and are calculated according to the following formula:

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

Tube and pipe specification

Recommended carbon steel tubes and pipes

Parker recommends the use of cold drawn seamless hydraulic tubes and pipes acc. to DIN EN 10305-4.

E 355N (St. 52.4 NBK) or E 235N (St. 37.4 NBK).

+ precision dimension/shape
+ high pressure capability
+ clean inside (no scale)
+ excellent scaling surface after roll flaring

Recommended stainless steel tubes and pipes

Parker recommends the use of seamless cold drawn stainless steel tubes and pipes acc. to

ASTM A269/A213
Grade TP316L (1.4404)

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

Welded tubes and pipes

Tubes and pipes acc. to above specification but welded and cold redrawn instead of seamless drawn are suitable. Pressure capability might be reduced due to the welding seam zone.

Welding seam quality might effect roll flaring surface results.

Hot rolled pipes

Hot rolled pipes are not recommended for the following reasons:

Hot rolled pipes do not have precision dimensions and may slip in machine dies.
They have scales inside and outside. The inside scales effect the cleanliness level of the fluid.
Used in roll flaring process the scales will contaminate the flaring tools (high cleaning effort) and cause poor flare surface quality.

The required maximum working pressure is calculated either acc. to DNV, DIN or ANSI.

Oil flow and pressure loss

All calculations based on Tube acc. to EN 10305-4, viscosity 37sct. specific gravity 0.860.
Following formula used and to determine other required tube or pipe sizes:

$$\text{Tube/Pipe I.D.: } = 4.61 \times \sqrt{\frac{\text{flow/min}}{\text{velocity m/s}}}$$

	Oil flow capacity l/min			Pressure loss in tube bar/m		
Tube	1.8 m/s	4.5 m/s	7.2 m/s	1.8 m/s	4.5 m/s	7.2 m/s
6x1.0		3.4	5.4		1.90	4.10
6x1.5		1.9	3.1		2.80	5.90
8x1.0		7.6	12.2		1.10	2.30
8x1.5		5.3	8.5		1.40	3.00
8x2.0		3.4	5.4		1.90	4.10
8x2.5		1.9	3.1		2.80	5.90
10x1.0		13.6	21.7		0.70	1.60
10x1.5		10.4	16.6		0.90	1.90
10x2.0		7.6	12.2		1.10	2.30
10x2.5		5.3	8.5		1.40	3.00
12x1.0		21.2	33.9		0.50	1.20
12x1.5		17.2	27.4		0.60	1.30
12x2.0		13.6	21.7		0.70	1.60
12x2.5		10.4	16.6		0.90	1.90
14x1.5		25.6	41.0		0.50	1.00
14x2.0		21.2	33.9		0.50	1.20
15x1.5		30.5	48.8		0.40	0.90
15x2.0		25.6	41.0		0.50	1.00
16x1.5		35.8	57.3		0.40	0.80
16x2.0		30.5	48.8		0.40	0.09
16x2.5		25.6	41.0		0.50	1.00
16x3.0		21.2	33.9		0.50	1.20
18x1.5		47.6	76.2		0.30	0.70
18x2.0		41.5	66.4		0.30	0.70
20x2.0		54.2	86.7		0.30	0.70
20x2.5		47.6	76.2		0.30	0.70
20x3.0		41.5	66.4		0.30	0.70
20x4.0		30.5	48.8		0.40	0.90
22x1.5		76.4	122.3		0.20	0.50
22x2.0		68.6	109.8		0.20	0.05
22x2.5		61.2	97.9		0.30	0.60
25x2.0		93.4	149.4		0.20	0.40
25x2.5		84.7	135.5		0.20	0.50
25x3.0		76.4	122.3		0.20	0.50
25x4.0		61.2	97.9		3.00	0.06
28x2.0		122.0	195.1		0.20	0.40
28x2.5		112.0	179.2		0.20	0.40
28x3.0		102.5	164.0		0.20	0.40

	Oil flow capacity l/min			Pressure loss in tube bar/m		
Tube	1.8 m/s	4.5 m/s	7.2 m/s	1.8 m/s	4.5 m/s	7.2 m/s
30x2.0		143.1	229.0		0.10	0.30
30x3.0		122.0	195.1		0.10	0.40
30x4.0		102.5	164.0		0.10	0.40
35x2.0	81.4	203.5	325.6	0.024	0.10	0.30
35x3.0		178.1	284.9		0.10	0.30
38x2.5		230.6	368.9		0.10	0.20
38x3.0		216.8	346.9		0.10	0.30
38x4.0		190.6	304.9		0.10	0.30
38x5.0		166.0	265.6		0.10	0.30
42x2.0	122.3	305.8	489.2	0.018	0.09	0.20
42x3.0		274.4	439.1		0.10	0.20
42x4.0		244.8	391.6		0.10	0.20
46x8.5		178.1	284.9		0.06	0.14
50x3.0	164.0	410.0	656.0	0.012	0.07	0.17
50x5.0		338.8	542.1		0.08	0.19
50x6.0		305.8	489.2		0.09	0.19
56x8.5		322.1	515.3		0.09	0.19
60x3.0		617.4	987.9	0.012	0.06	0.13
60x5.0		529.4	847.0		0.06	0.14
65x8.0		508.4	813.4		0.06	0.14
66x8.5		508.4	813.4		0.06	0.14
73x7.0		737.1	1179.3		0.05	0.11
75x3.0		1008.1	1613.0	0.008	0.04	0.09
75x5.0		894.6	1431.4		0.03	0.10
80x10.0		762.3	1219.6		0.05	0.11
90x3.5		1458.7	2333.9	0.006	0.03	0.07
90x5.0		1355.2	2168.3		0.03	0.08
90x9.0		1097.7	1756.3		0.04	0.09
97x12.0		1128.4	1805.4		0.04	0.09
115x4.0		2424.3	3878.8	0.004	0.03	0.05
115x15.0		1529.8	2447.8		0.03	0.07
125x4.0		2898.6	4637.7		0.03	0.05
130x15.0		2117.4	3387.9		0.03	0.06
140x4.5	1453.5	3633.7	5814.0	0.004	0.02	0.04

Tube calculation for marine and offshore acc. to DNV rules

Calculation of working pressure of steel and stainless steel tubes for ship building acc. to DNV Part 4, Chapter 6, Section 6.

$$P = \frac{20 \cdot \sigma_t \cdot e \cdot t_0}{D - t_0}$$

P = permissible working pressure [bar]
σ_t = permissible stress [N/mm²]
calculated from the lower value off:

stainless steel:

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

carbon steel:

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

t_0 = tube wall thickness without allowences [mm]

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

t_n = tube wall thickness nominal [mm]
a = factor for wall thickness allowence [mm]
= 0.8 for Tube-OD 4-5, 0.85 for Tube-OD 6-8, 0.9 for Tube OD >=10
= 0.9 for all stainless steel tubes
b = bending allowence

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

c = corrosion tolerance, c = 0.3 mm for hydraulic steel tube, c = 0 mm for SS tubes
e = strength ratio: for seamless tubes e = 1
D = tube outside diameter [mm]
R_m = min. tensile strength [N/mm²]
K = min. yield strength or min 0.2% proof stress [N/mm²]

Material specifications

Material	Data Source	Yield/Tensile	Permissible stress
E235N (St37.4)	DIN EN 10305-4	min. 235/340 N/mm²	126 N/mm² (tensile strength / 2.7)
	Tube certification	min. 235/390 N/mm²	130.5 N/mm² (yield strength / 1.8) [5]
E355N (St52.4)	DIN EN 10305-4	min. 355/490 N/mm²	181.5 N/mm² (tensile strength / 2.7)
	Tube certification	min. 355/533 N/mm²	197 N/mm² (yield strength / 1.8) [5]
1.4404 (316L)	DIN EN 10216-5	min. 210/500 N/mm²	131 N/mm² (0.2%proof stress / 1.6)
	ASTM 269 / A213 – TP 316 L and tube certification	min. 276/530 N/mm²	172.5 N/mm² (0.2%proof stress / 1.6) [5]
1.4404 (316L)	Schedule Pipe ASTM A312 / A530 – TP 316 L and tube certification	min. 234/515 N/mm²	146 N/mm² (0.2%proof stress / 1.6) [5]

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

Tube calculation for landbased and industrial applications

DIN 2413 I, only for static load

Calculation of working pressure of steel tubes for static stress up to 120°C. Corrosion – additional allowences 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 allowences are not considered for the calculation of pressures.

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot (D + s \cdot c)}$$

P = permissible working pressure [bar]
K = fatigue strength [N/mm²]
s = tube wall thickness [mm]
c = factor for wall thickness allowance
= 0.8 for Tube-OD 4-5, 0.85 for Tube-OD 6-8, 0.9 for Tube-OD 10-80
= 0.9 for all stainless steel tubes
S = Safety factor = 1.5
D = tube outside diameter [mm]

Burst Pressure calculation

Calculation acc. to Formula of DIN 24131 but without safety

BP = Burst Pressure
Rm = min tensile strength
s = tube wall thickness
c = factor for wall thickness allowance
= 0.8 for Tube-OD 4-5,
0.85 for Tube-OD 6-8,
0.9 for Tube-OD 10
0.9 for all stainless steel tubes
D = tube outside diameter [mm]

$$BP = \frac{20 \cdot Rm \cdot s \cdot c}{D}$$

Material specifications

E235N (St37.4) acc. to DIN EN 10305-4

Tensile strength	min. 340 N/mm²
Yield strength	min. 235 N/mm²
Fatigue strength	225 N/mm²
Elongation at break	min. 25%

E355N (St52.4) acc. to DIN EN 10305-4

Tensile strength	min. 490 N/mm²
Yield strength	min. 355 N/mm²
Fatigue strength	265 N/mm²
Elongation at break	min. 22%

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

Tensile strength	min. 500 N/mm²
0.2% proof stress	min. 210 N/mm²
1% proof stress	min. 245 N/mm²
Fatigue strength	220 N/mm²
Elongation at break	min. 35%

Tubes – Marine and offshore applications

1 DNV Bended pipe including manufacturing and corosion tolerances
2 DNV Corrosion and production tolerances included
3 Burst pressure (B.P.) calculation including manufacturing tolerance

Tube E 235N /St. 37.4 NBK) - Cr(VI)-free plated or phosphated and oiled

Tube O.D. x W.T.	1 DNV W.P. bar	2 DNV W.P. bar	3 B.P. bar	Weight kg/mtr.	Phosphated and oiled Order code	Cr(VI)-free Order code
06x1.0	230	373	1105	0.07	**R06x1.0**	**R06x1.0CF**
06X1.5	437	506	1658	0.17	**R06X1.5**	**R06X1.5CF**
08X1.0	169	193	829	0.17	**R08X1.0**	**R08X1.0CF**
08X1.5	315	362	1243	0.24	**R08X1.5**	**R08X1.5CF**
10X1.0	146	167	702	0.22	**R10X1.0**	**R10X1.0CF**
10X1.5	267	306	1053	0.31	**R10X1.5**	**R10X1.5CF**
12X1.5	218	250	878	0.39	**R12X1.5**	**R12X1.5CF**
12X2.0	324	373	1170	0.49	**R12X2.0**	**R12X2.0CF**
14X2.0	273	313	1003	0.59	**R14X2.0**	**R14X2.0CF**
15X1.5	172	196	702	0.50	**R15X1.5**	**R15X1.5CF**
15X2.0	253	290	936	0.64	**R15X2.0**	**R15X2.0CF**
16X1.5	160	183	658	0.54	**R16X1.5**	**R16X1.5CF**
16X2.0	235	270	878	0.69	**R16X2.0**	**R16X2.0CF**
16X2.5	315	362	1097	0.83	**R16X2.5**	**R16X2.5CF**
18X1.5	142	162	585	0.61	**R18X1.5**	**R18X1.5CF**
18X2.0	207	237	780	0.79	**R18X2.0**	**R18X2.0CF**
20X2.0	185	212	702	0.89	**R20X2.0**	**R20X2.0CF**
20X2.5	246	282	878	1.08	**R20X2.5**	**R20X2.5CF**
20X3.0	309	356	1053	1.26	**R20X3.0**	**R20X3.0CF**
20X4.0	445	516	1404	1.58		**R20X4.0CF**
22X1.5	115	131	479	0.76	**R22X1.5**	**R22X1.5CF**
22X2.0	167	191	638	0.99	**R22X2.0**	**R22X2.0CF**
22X2.5	221	254	798	1.20	**R22x2.5**	**R22X2.5CF**
25X2.0	146	167	562	1.13	**R25X2.0**	**R25X2.0CF**
25X2.5	193	221	702	1.39	**R25X2.5**	**R25X2.5CF**
25X3.0	242	277	842	1.63	**R25X3.0**	**R25X3.0CF**
25X4.0	344	397	1123	2.07	**R25X4.0**	**R25X4.0CF**
28X2.0	129	148	501	1.28	**R28X2.0**	**R28X2.0CF**
28X3.0	214	245	752	1.85	**R28X3.0**	**R28X3.0CF**
30X2.0	120	137	468	1.38		**R30X2.0CF**
30X3.0	198	227	702	2.00	**R30X3.0**	**R30X3.0CF**
30X4.0	281	323	936	2.56	**R30X4.0**	**R30X4.0CF**
30X5.0	368	425	1170	3.08	**R30X5.0**	**R30X5.0CF**
35X2.0	103	117	401	1.63	**R35X2.0**	**R35X2.0CF**
35X3.0	168	192	602	2.37	**R35X3.0**	**R35X3.0CF**
38X2.5	124	141	462	2.19		**R38X2.5CF**
38X3.0	154	176	554	2.59	**R38X3.0**	**R38X3.0CF**
38X4.0	217	248	739	3.35	**R38X4.0**	**R38X4.0CF**
38X5.0	282	324	924	4.07	**R38X5.0**	**R38X5.0CF**
42X2.0	85	97	334	1.97	**R42X2.0**	**R42X2.0CF**
42X3.0	139	158	501	2.89	**R42X3.0**	**R42X3.0CF**
42X4.0	194	223	669	3.75	**R42X4.0**	**R42X4.0CF**
50X3.0	115	132	421	3.48		**R50X3.0CF**
60X3.0	95	109	351	4.22		**R60X3.0CF**
75X3.0	76	86	281	5.32		**R75X3.0CF**
90X3.5	75	85	273	7.47	**R90X3.5**	
100X4.0	78	89	281	9.47	**R100X4.0**	
115X4.0	68	77	244	10.98	**R115X4.0**	
140X4.5	63	72	226	15.04	**R140X4.5**	
165X5.0	60	68	213	19.73	**R165X5.0**	
220X6.0	55	62	191	31.66	**R220X6.0**	
273X6.0	44	50	154	39.51	**R273X6.0**	

Other sizes on request

Tubes – Landbased and industrial applications

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 including manufacturing tolerance

Tube E 235N /St. 37.4 NBK) - Cr(VI)-free plated or phosphated and oiled

Tube O.D. x W.T.	1 DIN 2413 I W.P. bar	2 DIN 2413 III W.P. bar	3 B.P. bar	Weight kg/mtr.	Phosphated and oiled Order code	Cr(VI)-free Order code
06x1.0	444	372	1105	0.07	**R06x1.0**	**R06x1.0CF**
06X1.5	666	526	1658	0.17	**R06X1.5**	**R06X1.5CF**
08X1.0	333	288	829	0.17	**R08X1.0**	**R08X1.0CF**
08X1.5	499	412	1243	0.24	**R08X1.5**	**R08X1.5CF**
10X1.0	282	248	702	0.22	**R10X1.0**	**R10X1.0CF**
10X1.5	423	357	1053	0.31	**R10X1.5**	**R10X1.5CF**
12X1.5	353	303	878	0.39	**R12X1.5**	**R12X1.5CF**
12X2.0	470	391	1170	0.49	**R12X2.0**	**R12X2.0CF**
14X2.0	403	342	1003	0.59	**R14X2.0**	**R14X2.0CF**
15X1.5	282	248	702	0.50	**R15X1.5**	**R15X1.5CF**
15X2.0	376	321	936	0.64	**R15X2.0**	**R15X2.0CF**
16X1.5	264	233	658	0.54	**R16X1.5**	**R16X1.5CF**
16X2.0	353	303	878	0.69	**R16X2.0**	**R16X2.0CF**
16X2.5	441	370	1097	0.83	**R16X2.5**	**R16X2.5CF**
18X1.5	235	209	585	0.61	**R18X1.5**	**R18X1.5CF**
18X2.0	313	273	780	0.79	**R18X2.0**	**R18X2.0CF**
20X2.0	282	248	702	0.89	**R20X2.0**	**R20X2.0CF**
20X2.5	353	303	878	1.08	**R20X2.5**	**R20X2.5CF**
20X3.0	423	357	1053	1.26	**R20X3.0**	**R20X3.0CF**
20X4.0	564	458	1404	1.58		**R20X4.0CF**
22X1.5	192	173	479	0.76	**R22X1.5**	**R22X1.5CF**
22X2.0	256	227	638	0.99	**R22X2.0**	**R22X2.0CF**
22X2.5	320	278	798	1.20	**R22x2.5**	**R22X2.5CF**
25X2.0	226	201	562	1.13	**R25X2.0**	**R25X2.0CF**
25X2.5	282	248	702	1.39	**R25X2.5**	**R25X2.5CF**
25X3.0	338	292	842	1.63	**R25X3.0**	**R25X3.0CF**
25X4.0	451	378	1123	2.07	**R25X4.0**	**R25X4.0CF**
28X2.0	201	181	501	1.28	**R28X2.0**	**R28X2.0CF**
28X3.0	302	264	752	1.85	**R28X3.0**	**R28X3.0CF**
30X2.0	188	170	468	1.38		**R30X2.0CF**
30X3.0	282	248	702	2.00	**R30X3.0**	**R30X3.0CF**
30X4.0	376	321	936	2.56	**R30X4.0**	**R30X4.0CF**
30X5.0	470	391	1170	3.08	**R30X5.0**	**R30X5.0CF**
35X2.0	161	147	401	1.63	**R35X2.0**	**R35X2.0CF**
35X3.0	242	215	602	2.37	**R35X3.0**	**R35X3.0CF**
38X2.5	186	168	462	2.19		**R38X2.5CF**
38X3.0	223	199	554	2.59	**R38X3.0**	**R38X3.0CF**
38X4.0	297	260	739	3.35	**R38X4.0**	**R38X4.0CF**
38X5.0	371	318	924	4.07	**R38X5.0**	**R38X5.0CF**
42X2.0	134	123	334	1.97	**R42X2.0**	**R42X2.0CF**
42X3.0	201	181	501	2.89	**R42X3.0**	**R42X3.0CF**
42X4.0	269	237	669	3.75	**R42X4.0**	**R42X4.0CF**
50X3.0	169	154	421	3.48	**R50X3.0**	**R50X3.0CF**
60X3.0	141	129	351	4.22	**R60X3.0**	**R60X3.0CF**
75X3.0	113	104	281	5.32	**R75X3.0**	**R75X3.0CF**
90X3.5	110	101	273	7.47	**R90X3.5**	
100X4.0	113	104	281	9.47	**R100X4.0**	
115X4.0	98	91	244	10.98	**R115X4.0**	
140X4.5	91	84	226	15.04	**R140X4.5**	
165X5.0	85	80	213	19.73	**R165X5.0**	
220X6.0	77	72	191	31.66	**R220X6.0**	
273X6.0	62	58	154	39.51	**R273X6.0**	

Other sizes on request

Tubes – Marine and Offshore applications

1 DNV Bended pipe including manufacturing and corosion tolerances
2 DNV Corrosion and production tolerances included
3 Burst pressure (B.P.) calculation including manufacturing tolerance

Tube E 355N /St.52.4 NBK) - Cr(VI)-free plated or phosphated and oiled

Tube O.D. x W.T.	1 DNV W.P. bar	2 DNV W.P. bar	3 B.P. bar	Weight kg/mtr.	Phosphated and oiled Order code	Cr(VI)-free Order code
15X1.5	259	297	959	0.50		**R15X1.5ST52CF**
15X2.0	381	438	1279	0.61		**R15X2.0ST52CF**
16X2.0	355	408	1199	0.69		**R16X2.0ST52CF**
16X2.5	475	547	1499	0.83		**R16X2.5ST52CF**
18X1.5	214	244	800	0.61		**R18X1.5ST52CF**
18X2.0	313	358	1066	0.79		**R18X2.0ST52CF**
20X2.0	279	319	959	0.89		**R20X2.0ST52CF**
20X2.5	371	426	1199	1.08		**R20X2.5ST52CF**
20X3.0	467	537	1439	1.25		**R20X3.0ST52CF**
22X1.5	173	197	654	0.76		**R22X1.5ST52CF**
22X2.0	252	288	872	0.99		**R22X2.0ST52CF**
25X2.5	291	333	959	1.39		**R25X2.5ST52CF**
25X3.0	365	418	1151	1.63		**R25X3.0ST52CF**
25X4.0	519	599	1535	2.07		**R25X4.0ST52CF**
28X2.0	195	223	685	1.28		**R28X2.0ST52CF**
30X3.0	299	343	959	2.00		**R30X3.0ST52CF**
30X4.0	424	487	1279	2.56		**R30X4.0ST52CF**
30X5.0	555	641	1599	3.08		**R30X5.0ST52CF**
35X3.0	254	290	822	2.37		**R35X3.0ST52CF**
38X3.0	233	266	757	2.37		**R38X3.0ST52CF**
38X4.0	327	375	1010	3.35		**R38X4.0ST52CF**
38X5.0	426	490	1262	4.07		**R38X5.0ST52CF**
39X7.5	673	781	1845	8.53		**R39X7.5ST52CF**
42X3.0	209	239	685	2.89		**R42X3.0ST52CF**
42X4.0	294	336	914	3.75		**R42X4.0ST52CF**
46X8.0	601	695	1669	7.50		**R46X8.0ST52CF**
50X5.0	315	361	959	5.55	**R50X5.0ST52**	**R50X5.0ST52CF**
50X6.0	390	448	1151	6.50	**R50X6.0ST52**	**R50X6.0ST52CF**
56X8.5	516	595	1456	9.96	**R56X8.5ST52**	
60X5.0	259	297	800	6.78		**R60X5.0ST52CF**
60X6.0	319	366	959	7.97	**R60X6.0ST52**	**R60X6.0ST52CF**
65X8.0	407	468	1121	11.25		**R65X8.0ST52CF**
66X8.5	429	494	1236	12.05	**R66X8.5ST52**	
73X7.0	309	353	920	11.22	**R73X7.0ST52**	
75X5.0	205	234	640	8.63	**R75X5.0ST52**	
80X10	418	481	1199	17.21	**R80X10ST52**	
90X5.0	169	193	533	10.48	**R90X5.0ST52**	
90x9.0	326	374	959	17.98	**R90X9.0ST52**	
97X12	416	478	1187	25.15	**R97X12ST52**	
115X15	444	511	1251	36.95	**R115X15ST52**	
130X15	388	445	1107	42.54	**R130X15ST52**	
150X15	332	380	959	49.94	**R150X15ST52**	
190X20	353	405	1010	83.84	**R190X20ST52**	
250X25	335	384	959	138.72	**R250X25ST52**	

Other sizes on request

Tubes – Landbased and industrial applications

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 (BP) calculation including manufacturing tolerance

Tube E 355N /St.52.4 NBK) - Cr(VI)-free plated or phosphated and oiled

Tube O.D. x W.T.	1 DIN 2413 I W.P. bar	2 DIN 2413 III W.P. bar	3 B.P. bar	Weight kg/mtr.	Phosphated and oiled Order code	Cr(VI)-free Order code
15X1.5	426	292	959	0.50		**R15X1.5ST52CF**
15X2.0	568	379	1279	0.61		**R15X2.0ST52CF**
16X2.0	533	357	1199	0.69		**R16X2.0ST52CF**
16X2.5	666	436	1499	0.83		**R16X2.5ST52CF**
18X1.5	355	247	800	0.61		**R18X1.5ST52CF**
18X2.0	473	321	1066	0.79		**R18X2.0ST52CF**
20X2.0	426	292	959	0.89		**R20X2.0ST52CF**
20X2.5	533	357	1199	1.08		**R20X2.5ST52CF**
20X3.0	639	420	1439	1.25		**R20X3.0ST52CF**
22X1.5	290	204	654	0.76		**R22X1.5ST52CF**
22X2.0	387	267	872	0.99		**R22X2.0ST52CF**
25X2.5	426	292	959	1.39		**R25X2.5ST52CF**
25X3.0	511	344	1151	1.63		**R25X3.0ST52CF**
25X4.0	682	445	1535	2.07		**R25X4.0ST52CF**
28X2.0	304	213	685	1.28		**R28X2.0ST52CF**
30X3.0	426	292	959	2.00		**R30X3.0ST52CF**
30X4.0	568	379	1279	2.56		**R30X4.0ST52CF**
30X5.0	710	461	1599	3.08		**R30X5.0ST52CF**
35X3.0	365	253	822	2.37		**R35X3.0ST52CF**
38X3.0	336	234	757	2.37		**R38X3.0ST52CF**
38X4.0	448	306	1010	3.35		**R38X4.0ST52CF**
38X5.0	561	374	1262	4.07		**R38X5.0ST52CF**
39X7.5	819	521	1845	8.53		**R39X7.5ST52CF**
42X3.0	304	213	685	2.89		**R42X3.0ST52CF**
42X4.0	406	279	914	3.75		**R42X4.0ST52CF**
46X8.0	741	478	1669	7.50		**R46X8.0ST52CF**
50X5.0	426	292	959	5.55	**R50X5.0ST52**	**R50X5.0ST52CF**
50X6.0	511	344	1151	6.50	**R50X6.0ST52**	**R50X6.0ST52CF**
56X8.5	647	425	1456	9.96	**R56X8.5ST52**	
60X5.0	355	247	800	6.78		**R60X5.0ST52CF**
60X6.0	426	292	959	7.97	**R60X6.0ST52**	**R60X6.0ST52CF**
65X8.0	524	352	1121	11.25		**R65X8.0ST52CF**
66X8.5	549	367	1236	12.05	**R66X8.5ST52**	
73X7.0	408	281	920	11.22	**R73X7.0ST52**	
75X5.0	284	200	640	8.63	**R75X5.0ST52**	
80X10	533	357	1199	17.21	**R80X10ST52**	
90X5.0	237	168	533	10.48	**R90X5.0ST52**	
90x9.0	426	292	959	17.98	**R90X9.0ST52**	
97X12	527	354	1187	25.15	**R97X12ST52**	
115X15	556	371	1251	36.95	**R115X15ST52**	
130X15	492	332	1107	42.54	**R130X15ST52**	
150X15	426	292	959	49.94	**R150X15ST52**	
190X20	448	306	1010	83.84	**R190X20ST52**	
250X25	426	292	959	138.72	**R250X25ST52**	

Other sizes on request

Tubes – Marine and Offshore applications

1 DNV: Bended pipe including manufacturing and corosion tolerances
2 Burst pressure (BP) calculation including manufacturing tolerance

Seamless Colddrown Stainless Steel Tube ASTM A269/A213 - AISI 316L

Tube O.D. x W.T.	1 DNV W.P. bar	2 B.P. bar	Weight kg/mtr.	AISI 316L Order code
06X1	493	1590	0.13	**R06X1-316**
08X1	357	1193	0.18	**R08X1-316**
10X1	298	954	0.23	**R10X1-316**
10X1.5	467	1431	0.32	**R10X1.5-316**
12X1	244	795	0.28	**R12X1-316**
12X1.5	380	1193	0.39	**R12X1.5-316**
12X2	526	1590	0.50	**R12X2-316**
15X1.5	298	954	0.51	**R15X1.5-316**
16X2	380	1193	0.70	**R16X2-316**
16X2.5	489	1491	0.85	**R16X2.5-316**
18X1.5	244	795	0.62	**R18X1.5-316**
18X2	334	1060	0.80	**R18X2-316**
20X2	298	954	0.90	**R20X2-316**
20X2.5	380	1193	1.10	**R20X2.5-316**
20X3	467	1431	1.28	**R20X3-316**
22X2	268	867	1.00	**R22X2-316**
25X2	234	763	1.13	**R25X2-316**
25X2.5	298	954	1.41	**R25X2.5-316**
25X3	363	1145	1.65	**R25X3-316**
28X2	207	681	1.30	**R28X2-316**
30X2.5	244	795	1.70	**R30X2.5-316**
30X3	298	954	2.03	**R30X3-316**
30X4	409	1272	2.60	**R30X4-316**
35X2	164	545	1.65	**R35X2-316**
35X3	252	818	2.40	**R35X3-316**
38X3	231	753	2.63	**R38X3-316**
38X4	315	1004	3.41	**R38X4-316**
38X5	403	1255	4.12	**R38X5-316**
38X6	495	1506	4.81	**R38X6-316**
42X2	136	454	1.97	**R42X2-316**
42X3	207	681	2.93	**R42X3-316**
50X3	173	572	3.53	**R50X3-316**
50X5	298	954	5.63	**R50X5-316**
50X6	363	1145	6.61	**R50X6-316**
60X3	143	477	4.28	**R60X3-316**
60X5	244	795	6.89	**R60X5-316**
66X8.5	393	1229	12.24	**R66X8.5-316**
73X7	284	915	11.57	**R73X7-316**
75X3	113	382	5.41	**R75X3-316**
75X5	193	636	8.76	**R75X5-316**
80X10	380	1193	17.53	**R80X10-316**
97X12	376	1180	25.54	**R97X12-316**

Other sizes on request

Tubes - Landbased and industrial applications

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

Seamless Colddrown Stainless Steel Tube ASTM A269/A213 - AISI 316L

Tube O.D. x W.T.	1 DIN 2413 I W.P. bar	2 B.P. bar	Weight kg/mtr.	AISI 316L Order code
06X1	490	1590	0.13	**R06X1-316**
08X1	368	1193	0.18	**R08X1-316**
10X1	294	954	0.23	**R10X1-316**
10X1.5	441	1431	0.32	**R10X1.5-316**
12X1	245	795	0.28	**R12X1-316**
12X1.5	368	1193	0.39	**R12X1.5-316**
12X2	490	1590	0.50	**R12X2-316**
15X1.5	294	954	0.51	**R15X1.5-316**
16X2	368	1193	0.70	**R16X2-316**
16X2.5	459	1491	0.85	**R16X2.5-316**
18X1.5	245	795	0.62	**R18X1.5-316**
18X2	327	1060	0.80	**R18X2-316**
20X2	294	954	0.90	**R20X2-316**
20X2.5	368	1193	1.10	**R20X2.5-316**
20X3	441	1431	1.28	**R20X3-316**
22X2	267	867	1.00	**R22X2-316**
25X2	235	763	1.13	**R25X2-316**
25X2.5	294	954	1.41	**R25X2.5-316**
25X3	353	1145	1.65	**R25X3-316**
28X2	210	681	1.30	**R28X2-316**
30X2.5	245	795	1.70	**R30X2.5-316**
30X3	294	954	2.03	**R30X3-316**
30X4	392	1272	2.60	**R30X4-316**
35X2	168	545	1.65	**R35X2-316**
35X3	252	818	2.40	**R35X3-316**
38X3	232	753	2.63	**R38X3-316**
38X4	309	1004	3.41	**R38X4-316**
38X5	387	1255	4.12	**R38X5-316**
38X6	464	1506	4.81	**R38X6-316**
42X2	140	454	1.97	**R42X2-316**
42X3	210	681	2.93	**R42X3-316**
50X3	176	572	3.53	**R50X3-316**
50X5	294	954	5.63	**R50X5-316**
50X6	353	1145	6.61	**R50X6-316**
60X3	147	477	4.28	**R60X3-316**
60X5	245	795	6.89	**R60X5-316**
66X8.5	379	1229	12.24	**R66X8.5-316**
73X7	282	915	11.57	**R73X7-316**
75X3	118	382	5.41	**R75X3-316**
75X5	196	636	8.76	**R75X5-316**
80X10	368	1193	17.53	**R80X10-316**
97X12	364	1180	25.54	**R97X12-316**

Other sizes on request

Pipe according to ANSI B36.19 ASTM - A - 312 - TP - 316L

Working pressure tabel acc. to DNV Rules for Classification of Ships Newbuilding and Mobile Offshore Units Drilling Plants: See page 262 Technical section for calculations.

1 ANSI B313 straight pipe including manufacturing tolerance
2 Burst pressure including manufacturing tolerance

Nom. Pipe Size SCH size	Tube/Pipe O.D-x W.T.	1 W.P. bar	2 B.P. bar	Weight kg/mtr.	Order code
2" SCH 10	60.30X2.77	111	426	3.99	**on request**
2" SCH 40	60.30X3.91	159	601	5.52	**on request**
2" SCH 80	60.30X5.54	230	852	7.60	**on request**
2" SCH 160	60.30X8.74	380	1344	11.28	**on request**
2" SCH xxs	60.30X11.07	498	1702	13.44	**on request**
2 1/2" SCH 10	73.00X3.05	100	387	5.37	**on request**
2 1/2" SCH 80	73.00X7.01	241	890	11.64	**on request**
2 1/2" SCH xxs	73.00X14.02	526	1780	20.50	**on request**
3" SCH 10	88.90X3.05	81	318	6.45	**on request**
3" SCH 160	88.90X11.13	322	1161	21.67	**on request**
3" SCH xxs	88.90X15.24	460	1589	27.68	**on request**
4" SCH 10	114.30X3.05	63	247	8.50	**on request**
4" SCH 160	114.30X13.49	302	1094	34.05	**on request**
4" SCH xxs	114.30X17.12	394	1388	41.03	**on request**
5" SCH 10	141.30X3.40	57	223	41.03	**on request**
5" SCH 160	141.30X15.88	286	1042	41.03	**on request**
5" SCH xxs	141.30X19.05	350	1250	41.03	**on request**
6" SCH 40	168.3x7.11	101	392	28.69	**on request**
6" SCH 160	168.3x18.26	275	1006	67.56	**on request**
6" SCH xxs	168.3X21.95	337	1209	79.21	**on request**
8" SCH 40	219.1X8,18	89	346	43.20	**on request**
8" SCH 160	219.1X23.01	266	974	111.30	**on request**
8" SCH xxs	219.10X22.00	253	931	106.88	**on request**
10" SCH xxs	273X25.04	233	862	101.90	**on request**

Other sizes on request