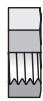
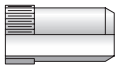
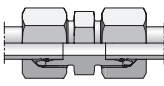
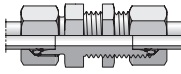
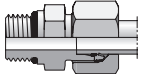
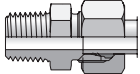
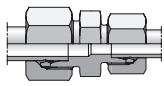
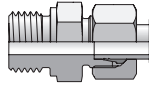
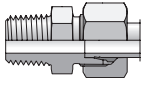
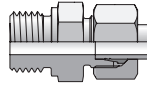
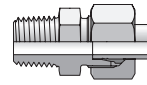
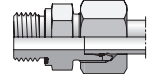
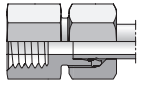
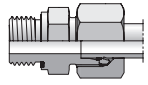
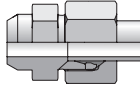
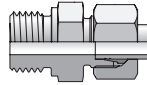
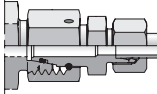
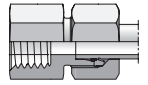
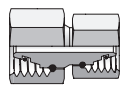
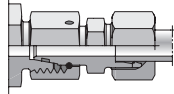
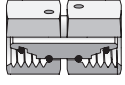
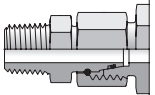
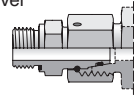
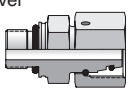
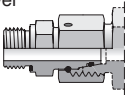
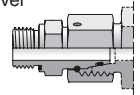
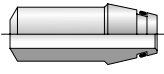
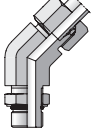
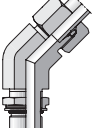
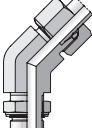
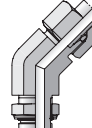
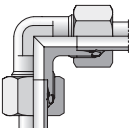
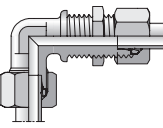
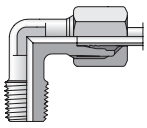
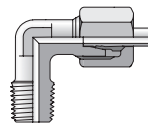
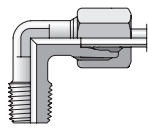


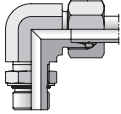
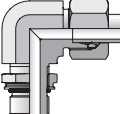
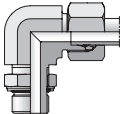
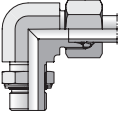
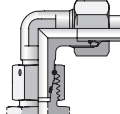
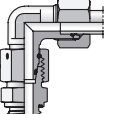
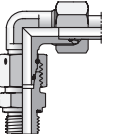
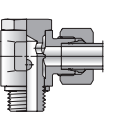
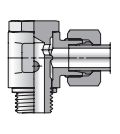
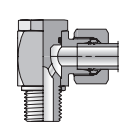
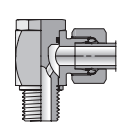
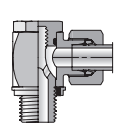
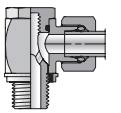
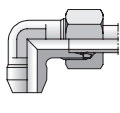
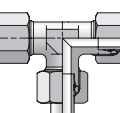
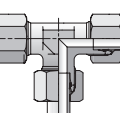
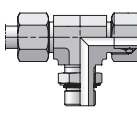
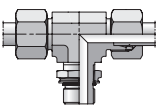
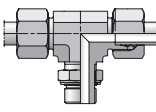
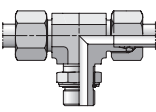
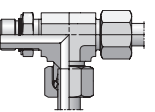
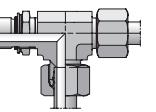
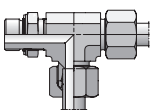
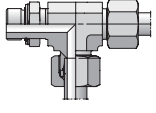
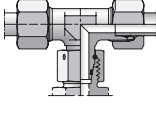
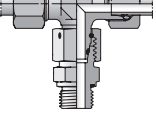
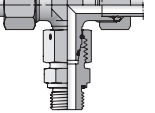
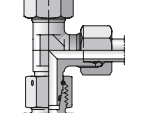
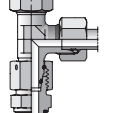
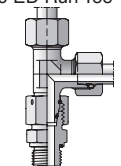
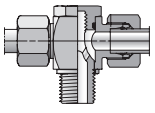
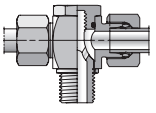
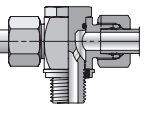
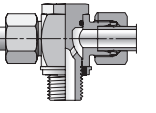
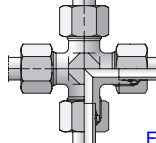
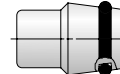
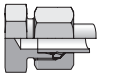
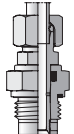
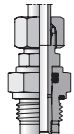
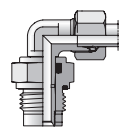
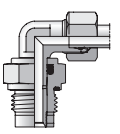


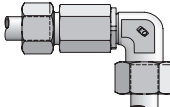
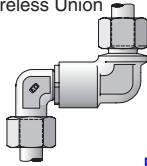
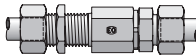
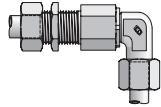
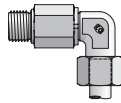
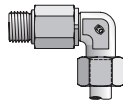
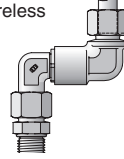
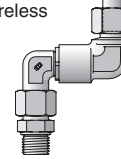
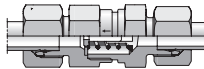
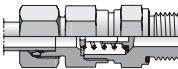
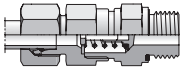
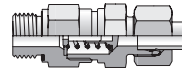
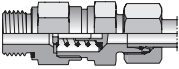
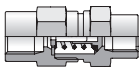
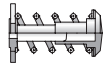
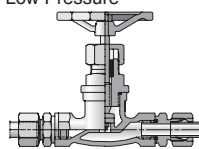
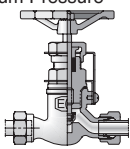
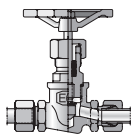
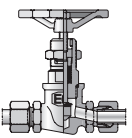
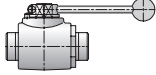
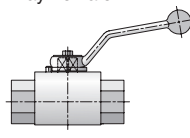
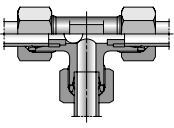
EO and EO-2 Metric Bite Type Fittings



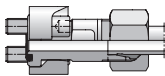
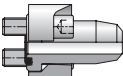
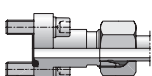
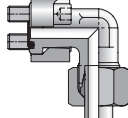
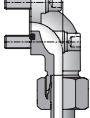
The Fitting Authority

Nuts, Sleeves, Locknut, Inserts	M Nut  F13	FM Functional Nut  F14	DPR Progressive Ring  F13	D Cutting Ring  F13	PSR Progressive Ring  F13
	GM Bulkhead Locknut  F15	E Insert for Plastic Tube  F15	VH Insert for Metal Tube  F15	Straights	G Union  F16
SV Bulkhead Union  F17	ESV Weld Bulkhead Union  F17	GE-UNF/UN SAE-ORB / Flareless  F18	GE-NPT NPT / Flareless  F18		GR Reducer Union  F16
GEO ISO 6149 / Flareless  F19	GE-R BSPP / Flareless  F20	GE-R keg BSPT / Flareless  F20	GE-M Metric / Flareless  F22	GE-M keg Metric Taper / Flareless  F22	GE-R-ED BSPP-ED / Flareless  F19
GAI-M Female Metric / Flareless  F23	GE-M-ED Metric-ED / Flareless  F21	AS Butt Weld / Flareless  F23	GE-M Metric / Flareless  F22	RED Tube End Reducer  F24	GAI-R Female BSPP / Flareless  F22
GZR Swivel Union Reducer  F25	Straight Swivels	DA Extender  F25	GZ Swivel Union  F25	EGE-NPT NPT / Flareless Swivel  F25	EGE-M Metric-ED / Flareless Swivel  F26
EGE-OR ISO 6149 / Flareless Swivel  F26		EGE-R-ED BSPP-ED / Flareless Swivel  F26	EGE-M-ED Metric-ED / Flareless Swivel  F26	SKA Butt Weld / Flareless Swivel  F26	VEE-UNF/UN SAE-ORB / Flareless  F27
VEE-OR ISO 6149 / Flareless  F27	VEE-R BSPP-ORR / Flareless  F28	VEE-M Metric-ORR / Flareless  F28	45° Elbows	W Union Elbow  F29	WSV Bulkhead Union Elbow  F30
WE-NPT NPT / Flareless  F30	WE-R keg BSPT / Flareless  F31	WE-M keg Metric Taper / Flareless  F31	90° Elbows		

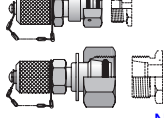
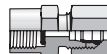
WEE-UNF/UN SAE-ORB / Flareless  F32	WEE-OR ISO 6149 / Flareless  F32	WEE-R BSPP-ORR / Flareless  F33	WEE-M Metric-ORR / Flareless  F33	EW Flareless Swivel / Flareless  F34	EW-R-ED BSPP-ED / Flareless  F35
EW-M-ED Metric-ED / Flareless  F35	SWVE-R Banjo BSPP / Flareless  F36	SWVE-M Banjo Metric / Flareless  F36	WH-R Banjo BSPP / Flareless  F37	WH-M Banjo Metric / Flareless  F37	WH-R-KDS Banjo BSPP / Flareless  F38
WH-M-KDS Banjo Metric / Flareless  F38	WAS Butt Weld / Flareless  F39			T Union Tee  F39	TR Reducer Tee  F40
TEE-UNF/UN SAE-ORB Branch Tee  F41	TEE-OR ISO 6149 Branch Tee  F42	TEE-R BSPP-ORR Branch Tee  F42	TEE-M Metric-ORR Branch Tee  F43	LEE-UNF/UN SAE-ORB Run Tee  F43	LEE-OR ISO 6164 Run Tee  F44
LEE-R BSPP-ORR Run Tee  F44	LEE-M Metric-ORR Run Tee  F44	ET Swivel Branch Tee  F45	ET-R-ED BSPP-ED Branch Tee  F45	ET-M-ED Metric-ED Branch Tee  F46	EL Swivel Run Tee  F46
EL-R-ED BSPP-ED Run Tee  F47	EL-M-ED Metric-ED Run Tee  F47	TH-R Banjo BSPP Branch Tee  F48	TH-M Banjo Metric Branch Tee  F48	TH-R-KDS Banjo BSPP Branch Tee  F49	TH-M-KDS Banjo Metric Branch Tee  F49
		K Union Cross  F50			VKA Flareless Cap  F50
		ROV Flareless Plug  F50			
		DVGE-R BSPP-ED / Flareless  F51	DVGE-M Metric-ED / Flareless  F52	DVWE-R BSPP-ED / Flareless  F51	DVWE-M Metric-ED / Flareless  F52

Ball Bearing Rotary Fittings	DG101 Flareless Union  F53	DG103 Flareless Union  F53	DG105 Flareless Union  F53	DG107 Union Bulkhead  F53	DG108 90° Union Bulkhead  F54		
	DG102-R BSPP-ED / Flareless  F54	DG102-M Metric-ED / Flareless  F54	DG104-R 90° BSPP-ED / Flareless  F54	DG104-M 90° Metric-ED / Flareless  F55	DG106-R Double Elbow BSPP / Flareless  F55	DG106-M Double Elbow Metric / Flareless  F55	
	Check Valves	RHD Union  F56	RHV-R-ED BSPP-ED / Flareless  F56	RHV-M-ED Metric-ED / Flareless  F57	RHZ-R-ED BSPP-ED / Flareless  F57	RHZ-M-ED Metric-ED / Flareless  F58	
		RHDI Female BSPP Union  F58	RVP Cartridge  F59	I-TL Internal Parts  F59	Shut-Off Valves	DV Low Pressure  F60	LD Medium Pressure  F60
		VDHA High Pressure  F61	VDHB High Pressure – Panel Mount  F61	Ball Valves		KH 2-Way Flareless Union  F62	KH-NPT 2-Way Female NPT  F63
		Alternating Valves	WV Union Tee  F63				

Flange Adapters (Shown in Section M)

Flange Adapters	GFS Code 61, 62 / Metric Flareless	AS Code 61, 62 / Weld Butt – Tube Metric	BFG DIN Flange / Metric Flareless	WFS Code 61, 62 / Metric Flareless	BFW DIN Flange / Metric Flareless
	 M12	 M24	 M13	 M31	 M32

Diagnostic and Specialty Adapters (Shown in Section N)

Test Point Connectors	GMA3 EO Tube / EO Tube / EMA-3 Diagnostic Tip	VKA3 EO Swivel / Diagnostic Tip	MAVE BSPP Gauge / EO Swivel	MAV BSPP Gauge / EO Tube
	 N5	 N8	 N6	 N6

O-Rings and Seals (Shown in Section O)

O-Rings and Seals	Bonded Seal for Banjo Fittings	Metal Seal for Banjo Fittings	Pressure Gauge Sealing Ring	EOlastic Seal Ring	EO O-Ring
	 O7	 O7	 O8	 O5	 O8
EO-2 Sealing Ring  O6	Metric Retaining Ring  O4				

EO Progressive Ring Fittings — Introduction

The flareless bite type fitting was pioneered by Ermeto in Germany in the early 1930's. When Parker Hannifin acquired Ermeto, it introduced the EO fittings to the US. Today, the EO fittings are the most widely used bite type fittings in the world.

The EO progressive ring fitting is a flareless metric fitting (for metric tube) that consists of a body, a progressive ring (ferrule) and a nut. On assembly, two cutting edges of the progressive ring "bite" into the outer surface of the tube ensuring the necessary holding power and seal for high operating pressures.



Fig. H1 — EO fitting components: Body, progressive ring and nut

The fittings and components listed in this catalog are intended solely for the assembly of connections for fluid applications.

Three series of EO tube fittings (LL, L and S) and accessories are manufactured in accordance with DIN 2353 (summary) which today is represented by international standard 8434-1 on the basis of decades of experience.*

To ensure functional safety of EO tube fittings, only EO parts should be used in their assembly. Routing of tubes should be carried out in accordance with Parker/EO recommended practices. Assembly instructions are available.

Design and Construction

The three components of EO fittings are designed and manufactured to produce a strong, reliable, leak-free joint upon proper assembly.

The EO Body. EO fitting bodies are available in over thirty configurations. The shaped products (i.e., elbows, tees, crosses) are hot forged, then machined to the stringent EO fitting specifications. The forging process used by Parker further improves the strength and metallurgical properties of the fitting material.

Straight products are made from cold drawn bar stock. The cold drawing operation ensures consistently tight dimensional tolerances, as well as significantly improved strength.

The EO Progressive Ring (Cutting Ring). EO progressive rings are precision machined with all dimensions and surfaces, particularly the critical bite edges, monitored on an ongoing basis. The rings are then heat treated in a manner that provides

the hardness, strength, and toughness necessary to satisfy the demanding service conditions that exist in industry today. The original progressive ring, known as DPR, is now being replaced with the new generation, called PSR. PSR is stronger and features a "positive stop" to eliminate over-tightening.

The EO Nut. EO fitting nuts are either cold formed, hot formed or machined from cold drawn material. The cold forming and cold drawing operations provide a more tightly packed grain structure, thus improving the material's strength. In addition, cold forming significantly improves the fatigue properties or endurance limits of the nuts.

Standard Material Specifications

Steel fittings:

EO tube fittings — Materials according to DIN 3859-1

Stainless steel fittings:

EO tube fittings — X6CrNiMoTi 17122 in accordance with DIN 17440 / EN 10088, material no. 1.4571.

Brass fittings:

EO tube fittings — CUZN35Ni2 in accordance with DIN 17660, material no. 2.0540.

Elastomer seals: NBR (BUNA-N), FKM (Fluorocarbon)

Surface Finish - Steel fittings:

Standard		
LL Series	Body, Nuts, and Rings	— Zinc clear chromate, Chromium 6 Free
L+S Series	Body and Nuts	— Zinc clear chromate, Chromium 6 Free
	Progressive Rings (PSR)	— Zinc clear chromate, Chromium 6 Free

Short codes for surface protection procedure in accordance with DIN 267 part 9 or DIN 50942.

How EO Fittings Work: Function of Progressive Ring Fittings

The EO progressive ring fitting produces a low to high pressure, leak free connection of tubes and components in fluid systems. The basic function of the EO progressive ring is the controlled progressive bite of the ring into the tube due to a unique internal geometry.

The front cutting edge has already started cutting into the tube before the second cutting edge starts. As soon as both cutting edges have cut the tube to the designed depth further advance is limited by the stop edge.

Owing to the design of both cutting edges and stop edge all forces arising are equally distributed. This distribution along with the specially designed interior collar of the ring guarantees increased safety, particularly with regard to vibration and flexure stresses. The design and function of the progressive cutting ring ensure that service vibration loading is not present in the areas of the tubing where the bite is made.

*The selection of LL, L or S design should be made by the user on the basis of intended system pressure. The pertinent maximum recommended working pressures are shown throughout this catalog in individual data charts of the various fitting configurations.

The stop edge causes a sharp increase in tightening forces which is clearly perceptible. After assembly, a visible collar of cut tube material must completely fill the space in front of the first cutting edge. With stainless steel tube and hose connections made from free cutting steel, the collar is less due to the harder material.

During assembly, it is absolutely essential that the tube is held firmly against the stop in the inner cone of the fitting; if not, the cutting process will not take place satisfactorily. Reassembly can be performed an unlimited number of times.

Assembly and Installation

Please refer to [Section T](#) for the assembly and installation instructions for EO and EO-2 Metric Bite type fittings.

Weld Nipples

EO weld nipple fittings with an O-ring seal between weld nipple and body give impressive pull out resistance and sealing integrity, and a sensible alternative to the progressive ring. Fittings bodies and nuts are fully interchangeable for weld nipple and progressive ring fittings of the same series and tube outside diameter. Weld nipples SKA conform to DIN 3865 form A, which today is represented by international standard ISO 8434-4.

Ball Bearing Rotary Fittings

DG Ball Bearing Rotary Fittings: These compact, maintenance-free construction, service proven fittings combine ball and plain bearings with constant lubrication and relatively wear resistant annular piston seals. They are rated for working pressures up to 250 bar, have a low starting torque and have a suitable pressure/RPM rate.

Ball bearing rotary fittings are designed for connecting a fixed point to a rotating, swiveling or moving machine part via tubing or hoses. Thus axial torsion of tubing or hoses can be prevented. They are suitable for hydraulic oils and lubricants of mineral oil base, not suitable for water or gases. Nominal temperature range is -35°C to +80°C.

Fitting Instructions:

The life of rotary fitting depends considerably in a stress-free line connection. Therefore, the direct connection with tube is to be avoided. For connection to hoses the use of swivel nut fittings is recommended with short, straight lines (approx. length 5x hose O.D.). Thus shocks and vibrations can be absorbed.

Assemble tube ends in accordance with the Tube End Assembly Information on [pages T12 through T13](#). Assemble BSPP and metric stud ends in accordance with torque values on [page T5](#).

Plain Bearing Rotary Fittings

Plain Bearing Rotary Fittings: These compact, maintenance-free construction, service proven fittings are rated for low pressure tube and hose with slow rotating, swiveling or moving machine parts up to 64 bar (L series) and 160 bar (S series).

Plain bearing rotary fittings are designed for connecting a fixed point to a rotating, swiveling or moving machine part via tubing or hoses. Thus axial torsion of tubing or hoses can be prevented. They are suitable for hydraulic oils and lubricants of mineral oil base, not suitable for water or gases. Nominal temperature range is -35°C to +100°C.

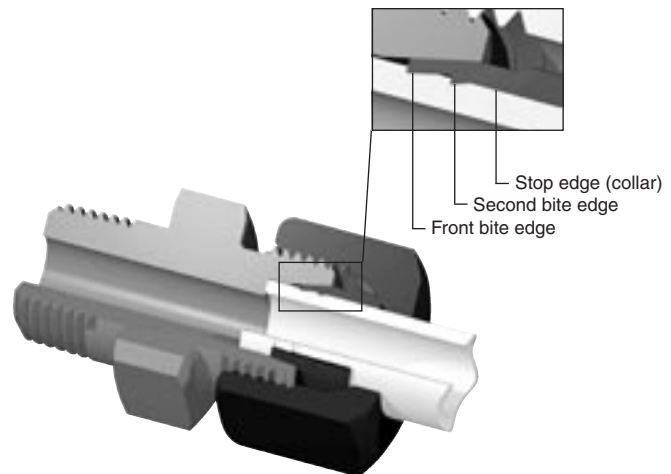


Fig. F2 — How EO fittings work

Tube O.D.	Nominal bore (mm)	Permissible number of revolutions (rpm) under a working pressure** of:					Torque at 250 bar/Nm
		25 bar	64 bar	100 bar	160 bar	250 bar	
6	4	1500	750	400	200	85	0.08
8	6						
12	10	800	400	200	100	45	0.24
16	13						
20	16	300	150	75	38	15	0.8
25	20						
30	25	200	100	50	25	10	2.0
38	30						

Table F1 — Ball Bearing Recommended RPM and Starting Torques

**A minimum working pressure of 10 bar is necessary.

Series L											
Tube O.D.		6	8	10	12	15	18	22	28	35	
Permissible RPM		28	28	21	17	13	10	10	7	7	
Series S											
Tube O.D.		6	8	10	12	14	16	20	25	30	38
Permissible RPM		11	11	9	7	5	5	4	4	3	3

Table F2 — Plain Bearing Recommended RPM

Fitting Instructions:

The life of a rotary fitting depends considerably in a stress-free line connection. Therefore, the direct connection with tube is to be avoided. For connection to hoses, the use of swivel nut fittings is recommended with short, straight lines (approx. length 5x hose O.D.). Thus, shocks and vibrations can be absorbed.

Non-Return Valves

Characteristics: Sealing is achieved by using a 90° cone with a packing washer of synthetic material. Valve has a lift stop which provides safe free outlet, shock-absorbing, muffled opening and no reduction of cross section. Maximum flow velocity not more than 8 m/sec (for higher flow velocities special tests are required).

Opening Pressure: Approximately 1 bar standard (on request also 0.2, 0.5, 2, 3, 4, 5 & 6 bar are available). Please specify nonstandard opening pressures on order as follows: Tube Fitting part number, opening pressure, material. Ex: RHD12L2BCF is a RHD12LCF with 2 bar opening pressure. Tolerance of (cracking) pressure is $\pm 20\%$.

Tube Recommendations**For steel fittings:**

Seamless cold drawn steel tubes made from material St. 35.4 or from conditioned base material St. 37.4 in accordance with DIN 1630, state of delivery NBK (normal annealed) with tube outer and inner diameter tolerances in accordance with DIN 2391/ISO 3304. Max. hardness: HRB 75.

**For stainless steel fittings:
Material no. 1.4571 and 1.4541**

Seamless drawn tubes made from austenitic, stainless steel materials no. 1.4571 and 1.4541, in accordance with DIN/EN/ISO 1127. Max. hardness: HRB 90.

These tubes are particularly recommended for tube fittings, since the tube outer diameter and wall thickness, tolerances correspond to those of steel tubes in accordance with DIN 2391/ISO 3304.

For brass fittings:

Seamless drawn copper tube made from material with short code SF-Cu F37 in accordance with DIN 1786.

Tube wall thicknesses:

In order to determine the necessary tube wall thicknesses for applications, refer to the calculated pressures provided in the tables for EO metric tubing. The calculated pressures DIN 2413-I are for static and DIN 2413-III for dynamic loads.

The maximum wall thickness is based on the pressure holding capacity of the fitting. In some cases, the wall thickness of the tube might be too thin for reliable service and an insert must be used to prevent excessive tube collapse. See assembly section for recommended tube wall thicknesses.

Plastic tube:

EO fittings are suitable for use with various types of plastic tubes such as nylon, polyethylene, etc. When used with plastic tube, an insert (see [page F15](#)) must be used to prevent tube pull out due to tensile loading.

Features, Advantages & Benefits

- **Visible Bite** — The critical front bite of the progressive ring is clearly visible to tube fitters & inspectors. The presence of the recommended bite virtually eliminates any risk of catastrophic blow-off. This is a very important safety feature.
- **Sealing Capability** — EO fittings have demonstrated a remarkable ability to remain leak free under various service conditions ranging from sealing high vacuum and small molecules gases to high pressure hydraulic fluids.
- **Distributed Stresses** — Stresses due to service flexural loading are distributed at several points in the joint, thus stress concentration in the bite is minimized.
- **Vibration Control** — The rear bevel of the ferrule firmly grips tubing, thus dampening the effects of system vibration in the joint.
- **Progressive Ring Design** — The progressive ring design provides a second bite for improved reliability and higher working pressure capability. This design also decreases the risk of improper assembly because of the sharp, high torque rise which occurs when the fitting is properly tightened.
- **Envelope Size** — EO fittings are relatively small and compact, making it a suitable selection for plumbing in limited or tight space.
- **Temperature Rating** — EO fittings are suitable for sub-zero through elevated temperature applications. Service temperature rating is limited by the material chosen.
- **Compatibility** — Since EO fittings can be manufactured from a wide range of metals, its compatibility factor with various fluids and atmospheric conditions is virtually limitless. One simply has to select and specify EO fittings from an acceptable material that best satisfies the service conditions.
- **Tube Wall** — EO fittings are suitable for use with light wall, medium wall, heavy wall, and extra heavy wall tubing. (Light wall tube may require support sleeve (VH), as shown in Assembly/Installation Section.)
- **Re-Usability / Remakeability** — Joints can be disassembled and reassembled many times to facilitate system maintenance. This reduces the labor and material costs that would otherwise result from tube and fittings replacement.
- **Assembly** — No expensive, complicated tooling is necessary to assemble EO fittings. Assembly is simple when the procedures described in the Assembly / Installation section are followed (see [pages T28 - T33](#)).
- **Materials** — EO fittings can be manufactured from almost any metallic material. The more popular materials currently used for EO fittings are: stainless steel, carbon steel, and brass. On request, the Tube Fitting Division will machine EO fittings from other appropriate material specified by users.
- **Manufacture** — EO fittings are manufactured under tight quality control which ensures that the product routinely satisfies or surpasses the requirements of the pertinent industrial standards.
- **World Wide Popularity** — The bite type fitting design has worldwide acceptance and is especially popular in Europe.

- **Finish** — Steel EO fittings have a zinc clear Chromium-6 Free finish. This finish provides good corrosion protection.
- **Silver Plated Nuts** — Stainless steel tube nuts are pre-lubricated with silver plated threads (size 15L-42L, 12S-38S). Thread galling is eliminated and assembly torque is reduced as much as 40 percent. This increases the speed and efficiency for stainless steel fitting assembly.
- **Availability** — EO fittings are available as standard in over thirty different configurations, and as many as twenty-seven different size combinations in some configurations.
- **Configurations** — Popular configurations for EO fittings are shown in the Visual Index. Other configurations can be manufactured on request.

EO-2 Fitting System — Introduction



Fig. F3 — EO-2: Fitting body and functional nut

The EO-2 high pressure tube fitting generation is the most recent development of the Tube Fitting Division Europe. It was introduced in an effort to eliminate leakage in all fluid systems.

The common feature of all EO-2 fittings is elastomeric seals on all joints. This assures leakfree operation without retightening — even under severe working conditions. Another breakthrough in bite-type technology is the simple assembly and cost-saving handling of the unique EO-2 Functional Nut.

EO-2 is a true metric design according to 24° bite-type standards such as: ISO 8434-1, DIN 2353 or DIN 3861. It covers all three series (LL, L and S) of the broad EO tube fitting program.

This resulted in a great acceptance with equipment manufactures that are targeting an absolute leakfree systems without sacrificing the convenience of using metric bite type fittings.

Design and Construction

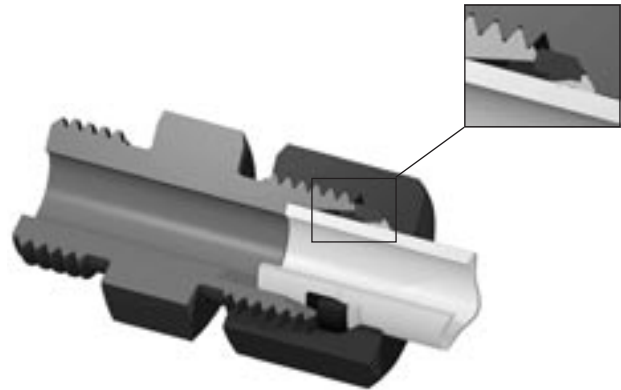


Fig. F4 — EO-2: The metallic support of the sealing ring acts just like an integrated preassembly tool.

Elastomeric Sealing

The elastomeric seal assures a hermetically sealed tube joint. It is located in between the inner cone of the fitting body and the tube surface, thus blocking the only possible leak path. Due to its large cross-section, the seal effectively compensates for all manufacturing tolerances on tube and fitting cone.

The sealing effect is pressure supported which makes the EO-2 fitting suitable for high pressure applications. The static compression also eliminates air-ingress into the fluid system at underpressure conditions.

Elastomerically sealed EO-2 fittings do not require any retightening even in heavy-duty applications. Seal extrusion is prevented by proper housing without gaps or dead volume. The sealing lip is bonded to a metallic support ring.

Standard Material Specifications

Steel fittings:

EO-2 tube fittings — Materials according to DIN 3859-1

Stainless steel fittings:

EO-2 tube fittings — X6CrNiMoTi 17122 in accordance with DIN 17440 / EN 10088, material no. 1.4571.

Brass fittings:

EO-2 tube fittings — CUZN35Ni2 in accordance with DIN 17660, material no. 2.0540.

Elastomer seals: NBR (BUNA-N), FPM (Fluorocarbon)

Surface Finish - Steel fittings:

Standard

LL Series	Body, Nuts, and Rings	- Zinc clear chromate, Chromium 6 Free
L+S Series	Body and Nuts	- Zinc clear chromate, Chromium 6 Free

Short codes for surface protection procedure in accordance with DIN 267 part 9 or DIN 50942.

How EO-2 Fittings Work

The retaining ring bites into the tube in accordance to the proven bite ring principle. The elastomeric seal reduces the danger of over- or underassembly by a special EO-2 design feature: Before assembly there is a gap in between the flat surfaces of the retaining ring and the metallic support ring of the seal. As soon as the retaining ring has reached the proper incision depth, the gap closes, resulting in a sharp increase of assembly torque. This results in uniform and reliable fitting assemblies. The assembly result can easily be inspected by just checking if the gap is closed.

The separation of sealing and holding functions to two separate elements finally allows a more effective solution of the over- and undertightening problems typically associated with bite type fittings.

Assembly and Installation

Please refer to [Section T](#) for the assembly and installation instructions for EO and EO-2 Metric Bite type fittings.

Integrated Assembly Tool

The metallic support ring of the seal is made of a specially designed material and heat-treatment to act as an assembly tool. This makes sure that the retaining ring securely cuts into the tube surface without damaging the sensitive inner cone of the fitting body.

This unique feature of EO-2 fittings even allows direct assembly of tube without any additional pre-assembly process. An EOMAT machine (or other hydraulic tool) is strongly recommended to allow easy assembly of large dimension tube and drastically save total assembly time, effort and costs. The integrated assembly tool of EO-2 fittings even helps to save further costs and trouble when using an EOMAT-type presetting machine: As the presetting cone is only in contact with the elastomeric sealing lip, it cannot be worn out or damaged even after thousands of assemblies. This not only saves replacement costs but also avoids leakage problems caused by worn presetting tools.

The Functional Nut



Fig. F5 — The unique Functional Nut allows easy handling and quick assembly.

The unique Functional Nut simplifies handling of fitting components and helps to minimize storage and procurement costs.

The sealing and retaining rings are combined as a pair and are inserted into the internal thread of the nut in such a manner that they cannot fall out, so that these three parts form one functional element.

Individual components such as seal or retaining ring cannot be forgotten, confused or assembled in the wrong orientation. Time and cost are saved by eliminating searching and arranging the components to make up individual joints.

Functional Nuts are completely interchangeable with the full range of EO tube fitting ends.

After assembly and disassembly, the sealing ring can be replaced individually without cutting off the tube end.

Tube Recommendations

For steel fittings:

Seamless cold drawn steel tubes made from material St. 35.4 or from conditioned base material St. 37.4 in accordance with DIN 1630, state of delivery NBK (normal annealed) with tube outer and inner diameter tolerances in accordance with DIN 2391/ISO 3304. Max. hardness: HRB 75.

For stainless steel fittings:

Material no. 1.4571 and 1.4541

Seamless drawn tubes made from austenitic, stainless steel materials no. 1.4571 and 1.4541, in accordance with DIN/EN/ISO 1127. Max. hardness: HRB 90.

These tubes are particularly recommended for tube fittings, since the tube outer diameter and wall thickness, tolerances correspond to those of steel tubes in accordance with DIN 2391/ISO 3304.

Tube wall thicknesses:

In order to determine the necessary tube wall thicknesses for applications, refer to the calculated pressures provided in the tables for EO metric tubing. The calculated pressures DIN 2413-I are for static and DIN 2413-III for dynamic loads.

The maximum wall thickness is based on the pressure holding capacity of the fitting. In some cases, the wall thickness of the tube might be too thin for reliable service and an insert must be used to prevent excessive tube collapse. See assembly section for recommended tube wall thicknesses.

Plastic tube:

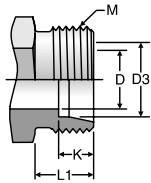
EO-2 fittings are suitable for use with various types of plastic tubes such as nylon, polyethylene, etc. When used with plastic tube, an insert (see [page F15](#)) must be used to prevent tube pull out due to tensile loading.

Features, Advantages and Benefits of the EO-2 Fitting System

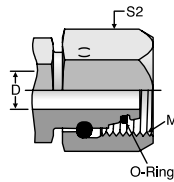
In addition to the general advantages of the EO tube fitting system, the unique EO-2 fitting features offer even more specific benefits:

- **Sealing Capability** — An elastomeric seal forms the primary sealing element, thus assuring leak-free sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems, therefore, do not “sweat” at fittings.
- **High Pressure Resistance** — EO-2 fittings are rated up to Pmax 900 bar. Sealing lip and seal arrangements have both been designed so that the sealing effect is supported by system pressure. The interaction of the retaining ring and the integrated preassembly tool results in uniform and reliable fitting assembly.
- **Durability** — The elastomeric seal does not require any retightening even after years of operation under severe working conditions.
- **Bite Control** — The ideal bite depth is controlled by the fitting design rather than by the fitters force. Closing the gap at the end of the manual assembly, the fitter gets clear signal that setting is completed and the joint is ready for inspection.
- **Functional Nut** — Individual components such as the retaining ring or seal cannot be lost, forgotten, confused or assembled in the wrong orientation. This dramatically saves assembly cost and helps to avoid dangerous assembly errors.
- **Assembly Cost** — With less than 10 seconds cycle time on the EOMAT III/A (actual presetting process: 1.4 seconds), the cost of presetting EO-2 is extremely low.
- **Integrated Preassembly Tool** — Each EO-2 Functional Nut comes assembled with an integrated assembly tool that makes sure that the retaining ring securely cuts into the tube surface without damaging the sensitive inner cone of the fitting body. This greatly reduces the danger of tube blow-off, even when using stainless steel tube.
- **Unlimited Presetting Tool Lifetime** — When EOMAT machines are used for cost-efficient presetting, the preassembly tools do not wear out as they are only in contact with the rubber seal. This avoids dangerous blow-off which can result when traditional bite-type fittings are assembled using worn presetting tools.
- **Make-up** — From the wrench-tight position of the preset EO-2 joint, one short pull on the wrench (approx. 1/6 to 1/4 turn) gives the assembly a quick high rise to required torque. EO-2 fittings have a solid “hit-home-feel” and excellent over-torque resistance.
- **Visible Inspection** — There is no doubt if an EO-2 Functional Nut has been preset correctly or not. Inspection is as simple as checking if the gap between retaining ring and sealing ring is completely closed. The tube end does not have to be disassembled out of the fitting for bite inspection.
- **No Phantom Leaks** — Lubrication is not mandatory for the assembly of steel EO-2 fittings. The machine operator will not be irritated about lubricant coming out of the fittings once the hydraulic system gets hot.
- **Re-Usability/Remakeability** — EO-2 fittings can be disassembled and reassembled many times. There is no wear or widening of the vulnerable inner cone. Damaged seals can easily be replaced. All spare DOZ-seals are marked by size-code (e.g.: 12-L).
- **On-Site Maintenance** — For the maintenance and replacement of EO-2 fittings a set of wrenches is sufficient. Additional in line components, such as test points (GMA), ball valves (KH) or T-fittings can be added to an existing assembly within minutes.
- **Interchangeability** — The EO-2 Functional Nut can be used for the whole variety of the broad range of more than 50 configurations in some 25 sizes of standard EO LL, L and S-series fittings. Changeover from Progressive ring or weld nipple is easy by the simple use of EO-2 Functional Nuts.
- **Reliability** — Millions of EO-2 fittings are working trouble-free in applications like: Mobile construction equipment, stationary machine tools, hydraulic presses, plastic injection molding machines, shipbuilding, offshore exploration, submarines, railway trains and military equipment. Leakage does not occur on EO-2 pipework.
- **Trouble-Free** — Regular bite type fittings allow typical assembly-errors such as: confusion of bite type ring material and size. Also, the use of worn-out preassembly tool may result in fitting failure. The clever EO-2 design eliminates most of these mistakes without making the assembly process more complicated.
- **Popularity** — EO-2 fittings are as easy to assemble as traditional bite type fittings, but they eliminate most of their typical assembly problems. EO-2 fittings are therefore appreciated by an increasing number of original equipment manufacturers. EO-2 also has become the fitting of choice of end-users that appreciate the leakfree performance, the easy maintenance and the global availability of the metric soft-seal bite type system.

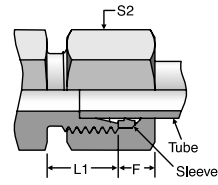
EO and EO-2 Metric Tube Ends



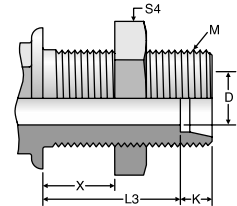
**EO/EO-2 Male
Tube End**



EO/EO-2 Swivel



EO/EO-2 Assembly



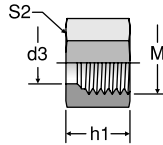
EO/EO-2 Bulkhead

	End Size	Thread	Drill	Tube Nut Assembled Allowance	Tube Depth	Male Turn Back	Bulkhead Length	Tube/Swivel Nut Hex	Bulkhead Nut Hex	Max Bulkhead Thickness
Size	D3 (mm)	M Metric	D (mm)	F (mm)	K (mm)	L1 (mm)	L3 (mm)	S2 (mm)	S4 (mm)	X (mm)
4LL	4	M8x1	3	5.5	4.0	8	—	10	—	—
6LL	6	M10x1	4.5	6	5.5	8	—	12	—	—
8LL	8	M12x1	6	6	5.5	9	—	14	—	—
10LL	10	M14x1	8	6	5.5	9	—	17	—	—
12LL	12	M16x1	10	6	6.0	9	—	19	—	—
6L	6	M12x1.5	4	8	7.0	10	34	14	17	16
8L	8	M14x1.5	6	8	7.0	10	34	17	19	16
10L	10	M16x1.5	8	8	7.0	11	35	19	22	16
12L	12	M18x1.5	10	8	7.0	11	36	22	24	16
15L	15	M22x1.5	12	8	7.0	12	38	27	30	16
18L	18	M26x1.5	15	9	7.5	12	40	32	36	16
22L	22	M30x2	19	9	7.5	14	42	36	41	16
28L	28	M36x2	24	9	7.5	14	43	41	46	16
35L	35	M45x2	30	11	10.5	16	47	50	55	16
42L	42	M52x2	36	12	11.0	16	47	60	65	16
6S	6	M14x1.5	4	8	7.0	12	36	17	19	16
8S	8	M16x1.5	5	8	7.0	12	36	19	22	16
10S	10	M18x1.5	7	9	7.5	12	37	22	24	16
12S	12	M20x1.5	8	9	7.5	12	38	24	27	16
14S	14	M22x1.5	10	10	8.0	14	40	27	30	16
16S	16	M24x1.5	12	10	8.5	14	41	30	32	16
20S	20	M30x2	16	11	10.5	16	44	36	41	16
25S	25	M36x2	20	12	12.0	18	47	46	46	16
30S	30	M42x2	25	13	13.5	20	51	50	50	16
38S	38	M52x2	32	15	16.0	22	53	60	65	16

Dimensions and pressures for reference only, subject to change.

M

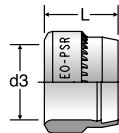
Nut



STANDARD FROM STOCK			d3	M	S2	h1
TUBE FITTING PART #			Tube O.D. (mm)	Metric Thread	(mm)	(mm)
STEEL	STAINLESS	BRASS				
M04LLCFX	M04LL71X	M04LLMSX	4	M8 x 1	10	11.0
M06LLCFX	M06LL71X	M06LLMSX	6	M10 x 1	12	11.5
M08LLCFX	M08LL71X	M08LLMSX	8	M12 x 1	14	13.0
M10LLCFX	—	M10LLMSX	10	M14 x 1	17	13.0
M12LLCFX	—	M12LLMSX	12	M16 x 1	19	13.0
M06LCFX	M06LEODURX	M06LMSX	6	M12 x 1.5	14	15.0
M08LCFX	M08LEODURX	M08LMSX	8	M14 x 1.5	17	15.0
M10LCFX	M10LEODURX	M10LMSX	10	M16 x 1.5	19	16.0
M12LCFX	M12LEODURX	M12LMSX	12	M18 x 1.5	22	16.0
M15LCFX	M15LEODURX	M15LMSX	15	M22 x 1.5	27	17.5
M18LCFX	M18LEODURX	M18LMSX	18	M26 x 1.5	32	18.5
M22LCFX	M22LEODURX	M22LMSX	22	M30 x 2	36	20.5
M28LCFX	M28LEODURX	M28LMSX	28	M36 x 2	41	21.0
M35LCFX	M35LEODURX	M35LMSX	35	M45 x 2	50	24.0
M42LCFX	M42LEODURX	M42LMSX	42	M52 x 2	60	24.0
M06SCFX	M06SEODURX	M06SMSX	6	M14 x 1.5	17	17.0
M08SCFX	M08SEODURX	M08SMSX	8	M16 x 1.5	19	17.0
M10SCFX	M10SEODURX	M10SMSX	10	M18 x 1.5	22	18.0
M12SCFX	M12SEODURX	M12SMSX	12	M20 x 1.5	24	18.0
M14SCFX	M14SEODURX	M14SMSX	14	M22 x 1.5	27	21.0
M16SCFX	M16SEODURX	M16SMSX	16	M24 x 1.5	30	21.0
M20SCFX	M20SEODURX	M20SMSX	20	M30 x 2	36	24.5
M25SCFX	M25SEODURX	M25SMSX	25	M36 x 2	46	27.0
M30SCFX	M30SEODURX	M30SMSX	30	M42 x 2	50	29.0
M38SCFX	M38SEODURX	M38SMSX	38	M52 x 2	60	32.5

PSR

Progressive Ring
For L and S series only



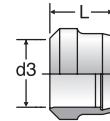
STANDARD FROM STOCK		d3	L
TUBE FITTING PART #		Tube O.D. (mm)	(mm)
STEEL			
PSR06LX*		6	9.5
PSR08LX*		8	9.5
PSR10LX*		10	10.0
PSR12LX*		12	10.0
PSR15LX		15	10.0
PSR18LX		18	10.0
PSR22LX		22	10.5
PSR28LX		28	10.5
PSR35LX		35	13.5
PSR42LX		42	13.5
PSR14SX		14	10.0
PSR16SX		16	10.5
PSR20SX		20	12.5
PSR25SX		25	12.5
PSR30SX		30	13.0
PSR38SX		38	13.5

* PSR Progressive Rings in sizes 6, 8, 10 and 12mm are the same for both Series L and S.

PSR Progressive Rings: Zinc plated and clear chromated

DPR

Progressive Ring
For L and S series only



DPR: Progressive Ring
D: Cutting Ring

D

Cutting (Locking) Ring
For LL series and all brass

STANDARD FROM STOCK			d3	L
TUBE FITTING PART #			Tube O.D. (mm)	(mm)
STEEL	STAINLESS	BRASS		
D04LLX	—	D04LLMSX	4	6.0
D06LLX	D06LL71X	D06LLMSX	6	7.0
D08LLX	D08LL71X	D08LLMSX	8	7.0
D10LLX	—	D10LLMSX	10	7.0
D12LLX	—	D12LLMSX	12	7.5
DPR06LX*	DPR06L71X*	D06LMSX*	6	9.5
DPR08LX*	DPR08L71X*	D08LMSX*	8	9.5
DPR10LX*	DPR10L71X*	D10LMSX*	10	10.0
DPR12LX*	DPR12L71X*	D12LMSX*	12	10.0
DPR15LX	DPR15L71X	D15LMSX	15	10.0
DPR18LX	DPR18L71X	D18LMSX	18	10.0
DPR22LX	DPR22L71X	D22LMSX	22	10.5
DPR28LX	DPR28L71X	D28LMSX	28	10.5
DPR35LX	DPR35L71X	D35LMSX	35	13.5
DPR42LX	DPR42L71X	D42LMSX	42	13.5
DPR14SX	DPR14S71X	D14SMSX	14	10.0
DPR16SX	DPR16S71X	D16SMSX	16	10.5
DPR20SX	DPR20S71X	D20SMSX	20	12.5
DPR25SX	DPR25S71X	D25SMSX	25	12.5
DPR30SX	DPR30S71X	D30SMSX	30	13.0
DPR38SX	DPR38S71X	D38SMSX	38	13.5

* DPR Progressive Rings in sizes 6, 8, 10 and 12mm are the same for both Series L and S.

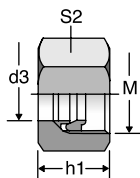
Cutting (locking) Rings, Series LL: Zinc plated and clear chromate (CF)

Progressive Rings, Series L and S: Zinc plated and olive chromated (A3D)

Dimensions and pressures for reference only, subject to change.

FM

EO-2 Dual Function Nut



TUBE FITTING PART #	SERIES	d3 END SIZE (mm)	M Metric Thread	h1 (mm)	S2 (mm)	STANDARD FROM STOCK				
						CF	SSA	VITCF	VITSSA	71
FM04LL	LL	4	M8 x 1	11	10	•	•			
FM06LL	very light	6	M10 x 1	11.5	12	•	•			
FM06L	L	6	M12 x 1.5	15	14	•				•
FM08L	light	8	M14 x 1.5	15	17	•	•	•		•
FM10L		10	M16 x 1.5	16	19	•	•	•	•	•
FM12L		12	M18 x 1.5	16	22	•	•			•
FM15L		15	M22 x 1.5	17.5	27	•	•			•
FM18L		18	M26 x 1.5	18.5	32	•	•		•	
FM22L		22	M30 x 2	20.5	36	•	•			•
FM28L		28	M36 x 2	21	41	•	•	•		•
FM35L		35	M45 x 2	24	50	•	•			
FM42L		42	M52 x 2	24	60	•	•	•		
FM06S	S	6	M14 x 1.5	17	17	•				
FM08S	heavy	8	M16 x 1.5	17	19	•		•		
FM10S		10	M18 x 1.5	18	22	•		•		•
FM12S		12	M20 x 1.5	18	24	•	•		•	•
FM14S		14	M22 x 1.5	21	27	•	•			
FM16S		16	M24 x 1.5	21	30	•	•		•	•
FM20S		20	M30 x 2	24.5	36	•	•			•
FM25S		25	M36 x 2	27	46	•	•		•	
FM30S		30	M42 x 2	29	50	•	•		•	
FM38S		38	M52 x 2	32.5	60	•			•	

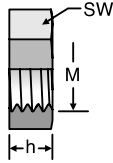
FM Component Breakdown by Material

	Nut	Bite Ring	Seal Ring	Elastomer	Nut Finish
CF	Steel	Steel	Steel	NBR	Zinc Clear
SSA	Steel	Stainless Steel	Steel	NBR	Zinc Clear
VITCF	Steel	Steel	Steel	FPM	Zinc Clear
VITSSA	Steel	Stainless Steel	Steel	FPM	Zinc Clear
71	Stainless Steel	Stainless Steel	Stainless Steel	FPM	Passivated

Dimensions and pressures for reference only, subject to change.

GM

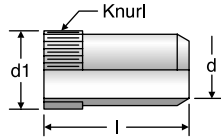
Bulkhead Locknut



TUBE FITTING PART #	FOR USE WITH	h (mm)	M Metric Thread	SW (mm)	STANDARD FROM STOCK		
					CFX	71X	MSX
GM06L	6L	6	M12 x 1.5	17	•		
GM08L	8L	6S	M14 x 1.5	19	•		
GM10L	10L	8S	M16 x 1.5	22	•		
GM12L	12L	10S	M18 x 1.5	24	•	•	
GM12S		12S	M20 x 1.5	27	•		
GM15L	15L	14S	M22 x 1.5	30	•	•	
GM16S		16S	M24 x 1.5	32	•		
GM18L	18L	8	M26 x 1.5	36	•		
GM22L	22L	20S	M30 x 2	41	•		
GM28L	28L	25S	M36 x 2	46	•		
GM30S		30S	M42 x 2	50	•		
GM35L	35L	9	M45 x 2	55	•		
GM42L	42L	38S	M52 x 2	65			

ETube Insert
For Plastic Tube

TUBE FITTING PART #	USE WITH TUBE		d (mm)	D (mm)	di (mm)	l (mm)
	O.D. ø	I.D. ø				
E04/02X	4	2.0	2.0	3.5	1.3	8
E04/2.5X	4	2.5	2.5	4.0	1.7	8
E0506/03X	5	3.0	3.0	5.0	2.2	14
E0506/03X	6	3.0	3.0	5.0	2.2	14
E0506/04X	5	4.0	4.0	5.0	3.2	14
E0506/04X	6	4.0	4.0	5.0	3.2	14
E08/04X	8	4.0	4.0	6.6	3.2	14
E06/05X	6	5.0	5.0	6.0	4.0	14
E08/05X	8	5.0	5.0	8.0	4.0	14
E10/05X	10	5.0	5.0	8.5	4.0	15
E0810/06X	8	6.0	6.0	8.0	5.0	15
E0810/06X	10	6.0	5.0	8.5	4.0	15
E10/08X	10	8.0	8.0	10.0	6.7	15
E12/08X	12	8.0	8.0	12.0	6.7	15
E12/09X	12	9.0	9.0	12.0	7.7	15
E1215/10X	12	10.0	10.0	12.0	8.7	15
E1215/10X	15	10.0	10.0	12.0	8.7	15
E1215/10X	16	10.0	10.0	12.0	8.7	15
E15/12X	15	12.0	12.0	14.0	10.7	15
E1516/12.5X	15	12.5	12.5	14.8	11.2	15
E1516/12.5X	16	12.5	12.5	14.8	11.2	15
E18/14X	18	14.0	14.0	17.8	12.7	15
E1820/16X	18	16.0	16.0	17.8	14.7	20
E1820/16X	20	16.0	16.0	17.8	14.7	20
E22/18X	22	18.0	18.0	21.8	16.7	16

VHTube Insert
For Thin Walled Metal Tube

TUBE FITTING PART #	FOR TUBE I.D. Ø (mm)	d (mm)	d1 (mm)	L (mm)	STANDARD FROM STOCK		
					CFX	71X	MSX
VH04	4	2.6	3.8	14	•		•
VH04.5	4.5	3.1	4.3	14			
VH05	5	3.6	4.8	14			
VH06	6	4.6	5.8	14	•		•
VH07	7	5.6	6.8	15.5	•		
VH08	8	6.6	7.8	15.5	•	•	•
VH09	9	7.6	8.8	15.5			•
VH10	10	8.6	9.8	15.5	•	•	•
VH12	12	10.2	11.8	17	•		
VH13	13	11.2	12.8	17		•	•
VH14	14	12.2	13.8	17	•		
VH15	15	13.2	14.8	20	•		
VH16	16	14.2	15.8	20			
VH17	17	15.2	16.8	20	•		
VH18	18	16.2	17.8	20	•		
VH19	19	17.2	18.8	16			•
VH20	20	18.2	19.8	21.5			•
VH21	21	19.2	20.8	21.5			
VH22	22	20.2	21.8	23.5			
VH24	24	22.2	23.8	23.5			
VH25	25	23.2	24.8	23.5			•
VH26	26	24.2	25.8	23.5			
VH27	27	25.2	26.8	23.5			
VH30	30	27.8	29.8	26.5			
VH31	31	28.8	30.8	26.5			•
VH32	32	29.8	31.8	26.5			
VH33	33	30.8	32.8	26.5			
VH38	38	35.8	37.8	21	•		

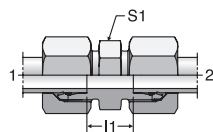
Note: E inserts are made of brass.

Dimensions and pressures for reference only, subject to change.

G

Union

24° Flareless / 24° Flareless



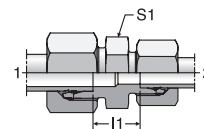
TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 (mm)			EO			EO-2	
					CF	71	MS	CF	71
G04LL	4	4	12	9	100	100	63	100	
G06LL	6	6	9	11	100	100	63	100	
G08LL	8	8	12	12	100	100	63		
G10LL	10	10	12	14	100		63		
G12LL	12	12	11	17	100				
G06L	6	6	10	12	315	315	200	315	315
G08L	8	8	11	14	315	315	200	315	315
G10L	10	10	13	17	315	315	200	315	315
G12L	12	12	14	19	315	315	200	315	315
G15L	15	15	16	24	315	315	200	315	315
G18L	18	18	16	27	315	315	200	315	315
G22L	22	22	20	32	160	160	100	160	160
G28L	28	28	21	41	160	160	100	160	160
G35L	35	35	20	46	160		100	160	160
G42L	42	42	21	55	160		100	160	160
G06S	6	6	16	14	630	630	400	630	630
G08S	8	8	18	17	630	630	400	630	630
G10S	10	10	17	19	630	630	400	630	
G12S	12	12	19	22	630	630	400	630	630
G14S	14	14	22	24	630		400	630	
G16S	16	16	21	27	400	400	250	400	400
G20S	20	20	23	32	400	400	250	400	400
G25S	25	25	26	41	400	400	250	400	
G30S	30	30	27	46	400	400	250	400	400
G38S	38	38	29	55	315		205	315	315

For EO-2 part number, insert "Z" between size and pressure series. Example: G06ZLCF

GR

Union Reducer

24° Flareless / 24° Flareless



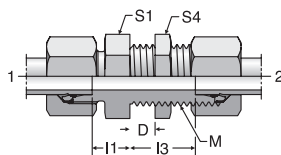
TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 (mm)			EO			EO-2	
					CF	71	MS	CF	71
GR06/04LL	6	4	10.5	11	100				
GR08/04LL	8	4	12.5	12	100				
GR08/06LL	8	6	11.0	12	100				
GR08/06L	8	6	11.0	14	315	315		315	315
GR10/06L	10	6	12.0	17	315	315		315	
GR10/08L	10	8	12.0	17	315	315		315	
GR12/06L	12	6	13.0	19	315			315	
GR12/08L	12	8	13.0	19	315			315	
GR12/10L	12	10	14.0	19	315	315		315	
GR15/10L	15	10	15.0	24	315	315			
GR15/12L	15	12	15.0	24	315	315		315	
GR18/10L	18	10	15.5	27	315	315		315	
GR18/12L	18	12	15.5	27	315	315		315	
GR18/15L	18	15	16.5	27	315			315	
GR22/12L	22	12	17.5	32	160			160	
GR22/15L	22	15	18.5	32	160				160
GR22/18L	22	18	18.0	32	160	160		160	
GR28/18L	28	18	19.0	41	160			160	
GR28/22L	28	22	21.0	41	160	160		160	
GR35/22L	35	22	21.0	46	160			160	
GR35/28L	35	28	21.0	46	160				
GR08/06S	8	6	18.0	17	630				
GR10/06S	10	6	17.5	19	630				
GR10/08S	10	8	17.5	19	630				
GR12/06S	12	6	19.5	22	630			630	
GR12/08S	12	8	19.5	22	630			630	
GR12/10S	12	10	19.0	22	630				
GR14/10S	14	10	20.5	24	630				
GR14/12S	14	12	20.5	24	630			630	
GR16/12S	16	12	20.0	27	400	400			
GR16/14S	16	14	21.5	27	400				
GR20/10S	20	10	22.0	32	400				
GR20/12S	20	12	22.0	32	400			400	
GR20/16S	20	16	23.0	32	400			400	
GR25/16S	25	16	25.5	41	400				
GR25/20S	25	20	25.5	41	400			400	
GR30/20S	30	20	26.0	46	400				
GR30/25S	30	25	26.5	46	400			400	
GR38/30S	38	30	29.5	55	315				

For EO-2 part number, insert "Z" between size and pressure series. Example: GR06/04ZLLCF

Dimensions and pressures for reference only, subject to change.

SV

Bulkhead Union
24° Flareless / 24° Flareless



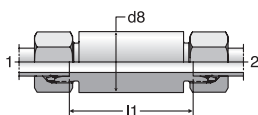
D = 16mm, max. bulkhead thickness

TUBE FITTING PART #	END SIZE		M Metric Thread	I 1 (mm)	I 3 (mm)	S1 (mm)	S4 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 (mm)						EO			EO-2	
								CF	71	MS	CF	71
SV06L	6	6	M12 x 1.5	7	27.0	17	17	315	315		315	315
SV08L	8	8	M14 x 1.5	8	27.0	19	19	315	315		315	315
SV10L	10	10	M16 x 1.5	10.0	28.0	22	22	315	315		315	
SV12L	12	12	M18 x 1.5	10.0	29.0	24	24	315	315		315	
SV15L	15	15	M22 x 1.5	12.0	31.0	27	30	315	315		315	
SV18L	18	18	M26 x 1.5	13.5	32.5	32	36	315	315	200	315	
SV22L	22	22	M30 x 2	16.5	34.5	36	41	160	160	100	160	160
SV28L	28	28	M36 x 2	18.5	35.5	41	46	160		100	160	
SV35L	35	35	M45 x 2	18.5	36.5	50	55	160			160	
SV42L	42	42	M52 x 2	19.0	36.0	60	65	160			160	
SV06S	6	6	M14 x 1.5	12.0	29.0	19	19	630		400	630	
SV08S	8	8	M16 x 1.5	13.0	29.0	22	22	630	630	400	630	
SV10S	10	10	M18 x 1.5	14.5	29.5	24	24	630	630	400	630	
SV12S	12	12	M20 x 1.5	14.5	30.5	27	27	630	630	400	630	
SV14S	14	14	M22 x 1.5	17.0	32.0	30	30	630				
SV16S	16	16	M24 x 1.5	16.5	31.5	32	32	400	400		400	
SV20S	20	20	M30 x 2	17.5	33.5	41	41	400			400	
SV25S	25	25	M36 x 2	20.0	35.0	46	46	400		250	400	
SV30S	30	30	M42 x 2	21.5	37.5	50	50	400			400	
SV38S	38	38	M52 x 2	22.0	37.0	65	65	315			315	

For EO-2 part number, insert "Z" between size and pressure series. Example: SV06ZLCF

ESV

Weld Bulkhead Fitting
24° Flareless / 24° Flareless



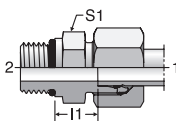
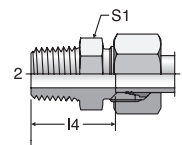
TUBE FITTING PART #	END SIZE		d8 (mm)	I 1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 (mm)			EO			EO-2	
					CF	71	MS	CF	71
ESV06L	6	6	18	56	500				
ESV08L	8	8	20	56	500				
ESV10L	10	10	22	58	500	315		315	
ESV12L	12	12	25	58	400				
ESV15L	15	15	28	70	400	315			
ESV18L	18	18	32	69	400			315	
ESV22L	22	22	36	73	250			160	
ESV28L	28	28	40	73	250				
ESV35L	35	35	50	71	250				
ESV42L	42	42	60	70	250				
ESV06S	6	6	20	60	800				
ESV08S	8	8	22	60	800	630			
ESV10S	10	10	25	59	800			630	
ESV12S	12	12	28	59	630	630			
ESV14S	14	14	30	72	630				
ESV16S	16	16	35	71	630				
ESV20S	20	20	38	71	420			400	
ESV25S	25	25	45	72	420				
ESV30S	30	30	50	73	420				
ESV38S	38	38	60	72	420				

For EO-2 part number, insert "Z" between size and pressure series.

Example: ESV06ZL71

Note: Weld fitting. Omit "CF" in the part number for steel material.

Dimensions and pressures for reference only, subject to change.

GE-UNF/UNMale Connector
24° Flareless / SAE-ORB**GE-NPT**Male Connector
24° Flareless / NPTF

TUBE FITTING PART #	END SIZE		I1 (mm)	L1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)					
	1 (mm)	2 UN/UNF-2A				EO			EO-2		
						CF	71	MS	CF	71	
GE08L7/16UNF	8	7/16-20	10.0	25	17	315			315		
GE10L7/16UNF	10	7/16-20	11.0	26	17	315			315		
GE12L9/16UNF	12	9/16-18	11.0	26	19	315			315		
GE12L3/4UNF	12	3/4-16	13.0	28	24	315			315		
GE12L7/8UNF	12	7/8-14	14.3	29	27	315			315		
GE15L3/4UNF	15	3/4-16	14.0	29	24	315			315		
GE18L3/4UNF	18	3/4-16	14.5	31	27	315			315		
GE18L7/8UNF	18	7/8-14	14.8	31	27	315			315		
GE22L7/8UNF	22	7/8-14	16.8	33	32	160			160		
GE22L11/16UN	22	1 1/16-12	16.5	33	32	160			160		
GE22L15/16UN	22	1 5/16-12	17.5	34	41	160			160		
GE28L11/16UN	28	1 1/16-12	17.5	34	41	160			160		
GE28L15/16UN	28	1 5/16-12	17.5	34	41	160			160		
GE35L15/16UN	35	1 5/16-12	17.5	39	46	160			160		
GE35L15/8UN	35	1 5/8-12	17.5	39	50	160			160		
GE42L15/8UN	42	1 5/8-12	19.0	42	55	160			160		
GE08S7/16UNF	8	7/16-20	15.0	30	17	630			630		
GE10S9/16UNF	10	9/16-18	14.5	31	19	630			630		
GE12S9/16UNF	12	9/16-18	14.5	31	22	630			630		
GE12S3/4UNF	12	3/4-16	17.5	34	24	630			630		
GE16S3/4UNF	16	3/4-16	15.5	34	24	400			400		
GE16S7/8UNF	16	7/8-14	18.8	37	27	400			400		
GE20S3/4UNF	20	3/4-16	20.5	42	32	400			400		
GE20S7/8UNF	20	7/8-14	20.8	42	32	400			400		
GE20S11/16UN	20	1 1/16-12	20.5	42	32	400			400		
GE25S11/16UN	25	1 1/16-12	23.0	47	36	400			400		
GE25S15/16UN	25	1 5/16-12	23.0	47	41	400			400		
GE30S15/16UN	30	1 5/16-12	23.5	50	46	400			400		
GE30S15/8UN	30	1 5/8-12	23.5	50	50	400			400		
GE38S15/8UN	38	1 5/8-12	26.0	57	55	315			315		

For EO-2 part number, insert "Z" between size and pressure series.
Example: GE08ZL7/16UNFCF

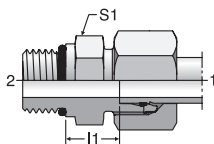
TUBE FITTING PART #	END SIZE		I 4 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 NPT			EO		
					CF	71	MS
GE04LL1/8NPT	4	1/8-27	18.0	11	100	100	
GE06LL1/8NPT	6	1/8-27	16.5	11	100	100	63
GE08LL1/8NPT	8	1/8-27	18.5	12	100	100	63
GE06L1/8NPT	6	1/8-27	17.0	12	315	315	200
GE06L1/4NPT	6	1/4-18	23.0	17	315	315	200
GE08L1/4NPT	8	1/4-18	23.0	17	315	315	200
GE10L1/4NPT	10	1/4-18	24.0	17	315	315	200
GE10L3/8NPT	10	3/8-18	25.0	19	315	315	
GE12L1/4NPT	12	1/4-18	25.0	19	315	315	200
GE12L3/8NPT	12	3/8-18	25.0	19	315	315	200
GE12L1/2NPT	12	1/2-14	30.0	22	315	315	200
GE15L1/2NPT	15	1/2-14	31.0	24	315	315	200
GE18L1/2NPT	18	1/2-14	31.5	27	315	315	200
GE22L3/4NPT	22	3/4-14	33.5	32	160	160	100
GE28L1NPT	28	1-11 1/2	39.5	41	160	160	100
GE35L11/4NPT	35	1 1/4-11 1/2	40.5	46	160	160	
GE42L11/2NPT	42	1 1/2-11 1/2	42.0	55	160	160	
GE06S1/4NPT	6	1/4-18	28.0	17	630		
GE08S1/4NPT	8	1/4-18	28.0	17	630	630	
GE10S1/4NPT	10	1/4-18	27.5	19	630		
GE10S3/8NPT	10	3/8-18	27.5	19	630	630	630
GE12S1/4NPT	12	1/4-18	29.5	22	630	630	
GE12S3/8NPT	12	3/8-18	29.5	22	630	630	
GE12S1/2NPT	12	1/2-14	34.5	22	630	630	
GE14S1/2NPT	14	1/2-14	36.0	24	630	630	
GE16S1/2NPT	16	1/2-14	39.5	32	400	400	260
GE20S3/4NPT	20	3/4-14	37.5	32	400	400	260
GE25S1NPT	25	1-11 1/2	45.0	41	400	400	
GE30S11/4NPT	30	1 1/4-11 1/2	46.5	46	400	400	
GE38S11/2NPT	38	1 1/2-11 1/2	49.0	55	315		

Note: Not sold with EO-2 Functional Nut.

Dimensions and pressures for reference only, subject to change.

GEO

Male Connector
24° Flareless / ISO 6149

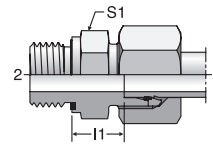


TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 Metric Thread			EO			EO-2	
					CF	71	MS	CF	71
GEO04LLM	4	M8 x 1	9.5	11	100			100	
GEO04LLM10x1	4	M10 x 1	9.5	13	100			100	
GEO06LLM	6	M10 x 1	8.0	13	100			100	
GEO06LM	6	M10 x 1	8.5	14	315			315	
GEO08LM	8	M12 x 1.5	10.0	17	315			315	
GEO10LM	10	M14 x 1.5	11.0	19	315			315	
GEO12LM	12	M16 x 1.5	12.5	22	315			315	
GEO15LM	15	M18 x 1.5	13.5	24	315			315	
GEO18LM	18	M22 x 1.5	14.5	27	315			315	
GEO22LM27x2	22	M27 x 2	16.5	32	160			160	
GEO28LM	28	M33 x 2	17.5	41	160			160	
GEO35LM	35	M42 x 2	17.5	50	160			160	
GEO42LM	42	M48 x 2	19.0	55	160			160	
GEO06SM	6	M12 x 1.5	13.0	17	630			630	
GEO08SM	8	M14 x 1.5	15.0	19	630			630	
GEO10SM	10	M16 x 1.5	15.0	22	630			630	
GEO12SM	12	M18 x 1.5	17.0	24	630			630	
GEO16SM	16	M22 x 1.5	18.5	27	400			400	
GEO20SM	20	M27 x 2	20.5	32	400			400	
GEO25SM	25	M33 x 2	23.0	41	400			400	
GEO30SM	30	M42 x 2	23.5	50	400			400	
GEO38SM	38	M48 x 2	26.0	55	315			315	

For EO-2 part number, insert "Z" between size and pressure series.
Example: GEO06ZLMCF

GE-R-ED

Male Connector
24° Flareless / BSPP



DIN 3852-2 Form E

TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 BSPP			EO				
					EO-1		EO-2		
					CF	71	MS	CF	71
GE04LLRED	4	G 1/8 A	9.5	14	100			100	
GE06LLRED	6	G 1/8 A	8.0	14	100			100	
GE06LRED	6	G 1/8 A	8.5	14	315	315		315	
GE06LR1/4ED	6	G 1/4A	10.0	19	315	315		315	
GE08LR1/8ED	8	G 1/8 A	9.5	14	315	315			
GE08LRED	8	G 1/4A	10.0	19	315	315		315	315
GE08LR3/8ED	8	G 3/8 A	11.5	22	315	315		315	
GE10LRED	10	G 1/4A	11.0	19	315	315		315	
GE10LR3/8ED	10	G 3/8 A	12.5	22	315	315		315	
GE10LR1/2ED	10	G 1/2 A	13.0	27	315	315			
GE12LR1/4ED	12	G 1/4A	12.0	19	315	315		315	
GE12LRED	12	G 3/8 A	12	22	315	315		315	
GE12LR1/2ED	12	G 1/2 A	14	27	315	315		315	315
GE15LR3/8ED	15	G 3/8 A	12	24	315	315		315	
GE15LRED	15	G 1/2 A	14	27	315	315		315	315
GE18LRED	18	G 1/2 A	14.0	27	315	315		315	
GE18LR3/4ED	18	G 3/4 A	16.0	32	160	160		315	
GE22LRED	22	G 3/4 A	16.0	32	160	160			160
GE28LRED	28	G 1 A	18.0	41	160	160		160	
GE35LRED	35	G1 1/4A	20.0	50	160	160			
GE42LRED	42	G1 1/2 A	22.0	55	160	160			
GE06SRED	6	G 1/4A	13.0	19	630	630		630	630
GE08SRED	8	G 1/4A	15.0	19	630	630		630	
GE08SR3/8ED	8	G 3/8 A	15.5	22	630	630		630	
GE10SR1/4ED	10	G 1/4 A	14.5	19	630			630	630
GE10SRED	10	G 3/8 A	15.0	22	630	630		630	
GE10SR1/2ED	10	G 1/2 A	17.5	27	630	630		630	
GE12SR1/4ED	12	G 1/4A	16.5	22	630			630	
GE12SRED	12	G 3/8 A	17.0	22	630	630		630	
GE12SR1/2ED	12	G 1/2 A	17.5	27	630			630	
GE14SRED	14	G 1/2 A	19.0	27	630			630	
GE16SR3/8ED	16	G 3/8 A	18.0	27	400	400		400	400
GE16SRED	16	G 1/2 A	18.5	27	400	400		400	400
GE16SR3/4ED	16	G 3/4 A	20.5	32	400	400		400	400
GE20SRED	20	G 3/4 A	20.5	32	400	400		400	400
GE25SR1/2ED	25	G 1/2 A	23.0	41	400			400	
GE25SRED	25	G 1 A	23.0	41	400	400		400	400
GE30SRED	30	G1 1/4A	23.5	50	400	400		400	
GE38SRED	38	G1 1/2 A	26.0	55	315	315		315	

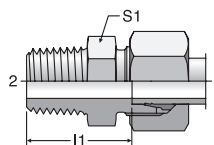
For EO-2 part number, insert "Z" between size and pressure series.
Example: GE06ZLRED CF

Dimensions and pressures for reference only, subject to change.

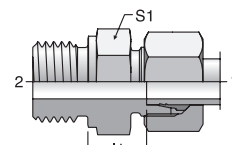
GE-R

Male Connector

24° Flareless / BSPT or BSPP



R (BSPT) thread

Cutting face DIN 3852, form B, G
(BSPP) thread

TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 BSPT / BSPP			EO		
					CF	71	MS
GE04LLR	4	R 1/8 keg.	16.0	11	100		63
GE06LLR	6	R 1/8 keg.	14.5	11	100	100	63
GE08LLR	8	R 1/8 keg.	16.5	12	100	100	63
GE08LLR1/4	8	R 1/4 keg.	20.5	14	100	100	63
GE10LLR	10	R 1/4 keg.	20.5	14	100		63
GE12LLR	12	R 1/4 keg.	20.0	17	100		63
GE12LLR3/8	12	R 3/8 keg.	20.0	17	100		
GE06LR	6	G 1/8 A	8.5	14	315	315	200
GE06LR1/8KEG	6	R 1/8 keg.	15.0	12	315		
GE06LR1/4	6	G 1/4 A	10.0	19	315	315	200
GE06LR3/8	6	G 3/8 A	11.5	22	315		200
GE06LR1/2	6	G 1/2 A	12.0	27	315	315	
GE08LR	8	G 1/4 A	10.0	19	315	315	200
GE08LR1/8	8	G 1/8 A	8.5	14	315	315	
GE08LR1/4KEG	8	R 1/4 keg.	20.0	17	315		
GE08LR3/8	8	G 3/8 A	11.5	22	315	315	200
GE08LR1/2	8	G 1/2 A	12.0	27	315	315	200
GE10LR	10	G 1/4 A	11.0	19	315	315	200
GE10LR1/4KEG	10	R 1/4 keg.	21.0	17	315		
GE10LR3/8	10	G 3/8 A	12.5	22	315	315	
GE10LR1/2	10	G 1/2 A	13.0	27	315	315	200
GE12LR	12	G 3/8 A	12.5	22	315	315	
GE12LR1/4	12	G 1/4 A	12.0	19	315	315	
GE12LR1/4KEG	12	R 1/4 keg.	22.0	19	315		
GE12LR3/8KEG	12	R 3/8 keg.	22.0	19	315		
GE12LR1/2	12	G 1/2 A	13.0	27	315	315	200
GE12LR1/2KEG	12	R 1/2 keg.	24.0	24	315		
GE12LR3/4	12	G 3/4 A	14.0	32	315		
GE15LR	15	G 1/2A	14.0	27	250	250	160
GE15LR3/8	15	G 3/8 A	13.5	24	250	250	160
GE15LR3/8KEG	15	R 3/8 keg.	23.0	24	315		
GE15LR1/2KEG	15	R 1/2 keg.	25.0	24	315		
GE15LR3/4	15	G 3/4 A	15.0	32	250		
GE18LR	18	G 1/2 A	14.5	27	250	250	160
GE18LR3/8	18	G 3/8 A	14.0	27	250		160
GE18LR1/2KEG	18	R 1/2 keg.	25.5	27	315		
GE18LR3/4	18	G 3/4 A	14.5	32	250	250	
GE22LR	22	G 3/4 A	16.5	32	160		100
GE22LR1/2	22	G 1/2 A	16.5	32	160	160	100
GE22LR3/4KEG	22	R 3/4 keg.	29.5	32	160		
GE28LR	28	G 1 A	17.5	41	160	160	100
GE28LR3/4	28	G 3/4 A	17.5	41	160		
GE35LR	35	G 1 1/4 A	17.5	50	160		100
GE35LR1	35	G 1 A	17.5	46	160		
GE42LR	42	G 1 1/2 A	19.0	55	160		100

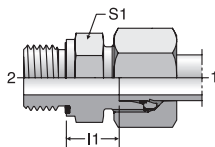
Note: "keg." refers to tapered threads.
Not sold with EO-2 Functional Nut.

TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 BSPP			EO		
					CF	71	MS
GE06SR	6	G 1/4 A	13.0	19	400		250
GE06SR1/2	6	G 1/2 A	18.0	27	400		
GE08SR	8	G 1/4 A	15.0	19	400	400	250
GE08SR3/8	8	G 3/8 A	15.5	22	400		
GE10SR	10	G 3/8 A	15.0	22	400	400	250
GE10SR1/4	10	G 1/4 A	14.5	19	400		
GE10SR1/2	10	G 1/2 A	17.5	27	400	400	
GE12SR	12	G 3/8 A	17.0	22	400	400	250
GE12SR1/4	12	G 1/4 A	16.5	22	400	400	
GE12SR1/2	12	G 1/2 A	17.5	27	400	400	
GE14SR	14	G 1/2 A	19.0	27	400		250
GE14SR3/8	14	G 3/8 A	18.5	24	400		
GE16SR	16	G 1/2 A	18.5	27	400	400	250
GE16SR3/8	16	G 3/8 A	18.0	27	400	400	
GE16SR3/4	16	G 3/4 A	20.5	32	400		
GE20SR	20	G 3/4 A	20.5	32	400	400	250
GE20SR1/2	20	G 1/2 A	20.5	32	400	400	
GE25SR	25	G 1 A	23.0	41	250		160
GE25SR3/4	25	G 3/4 A	23.0	41	250		
GE30SR	30	G 1 1/4 A	23.5	50	160		100
GE30SR1	30	G 1 A	23.5	46	160	160	
GE38SR	38	G 1 1/2 A	26.0	55	160		100
GE38SR11/4	38	G 1 1/4 A	26.0	55	160		

Dimensions and pressures for reference only, subject to change.

GE-M-ED

Male Connector
24° Flareless / Metric with
EOlastic Seal



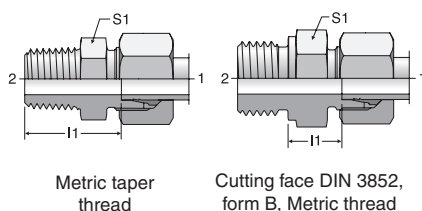
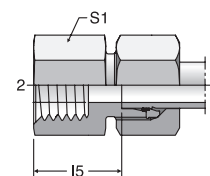
DIN 3852-1, form E

TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1	2			EO			EO-2	
	(mm)	Metric			CF	71	MS	CF	71
GE06LMED	6	M10 x 1	8.5	14	315	315		315	
GE08LMED	8	M12 x 1.5	10.0	17	315			315	
GE10LMED	10	M14 x 1.5	11.0	19	315			315	
GE12LMED	12	M16 x 1.5	12.5	22	315	315		315	
GE12LM18X1.5ED	12	M18 x 1.5	12.5	24	315			315	
GE12LM22X1.5ED	12	M22 x 1.5	14.0	27	315			315	
GE15LMED	15	M18 x 1.5	13.5	24	315			315	
GE15LM22X1.5ED	15	M22 x 1.5	15.0	27	315			315	
GE18LMED	18	M22 x 1.5	14.5	27	315			315	
GE22LMED	22	M26 x 1.5	16.5	32	160			160	
GE28LMED	28	M33 x 2	17.5	41	160			160	
GE35LMED	35	M42 x 2	17.5	50	160	160			
GE42LMED	42	M48 x 2	19.0	55	160			160	
GE06SMED	6	M12 x 1.5	13.0	17	630			630	
GE08SMED	8	M14 x 1.5	15.0	19	630	630		630	
GE10SMED	10	M16 x 1.5	15.0	22	630			630	
GE12SMED	12	M18 x 1.5	17.0	24	630			630	
GE14SMED	14	M20 x 1.5	19.0	27	630			630	
GE16SMED	16	M22 x 1.5	18.5	27	400			400	
GE20SMED	20	M27 x 2	20.5	32	400	400		400	
GE25SMED	25	M33 x 2	23.0	41	400			400	
GE30SMED	30	M42 x 2	23.5	50	400				
GE38SMED	38	M48 x 2	26.0	55	315			315	

For EO-2 part number, insert "Z" between size and pressure series.

Example: GE06ZLMEDCF

Dimensions and pressures for reference only, subject to change.

GE-MMale Connector
24° Flareless / Metric**GAI-R**Female Connector
24° Flareless / BSPP

TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 Metric			EO		
					CF	71	MS
GE04LLM6X1KEG	4	M6 x 1 keg.	16.0	9	100		
GE04LLM	4	M8 x 1 keg.	16.0	10	100	100	63
GE06LLM	6	M10 x 1 keg.	14.5	11	100		63
GE08LLM	8	M10 x 1 keg.	16.5	12	100		63
GE06LM	6	M10 x 1	8.5	14	315	315	200
GE08LM	8	M12 x 1.5	10.0	17	315	315	200
GE10LM	10	M14 x 1.5	11.0	19	315	315	200
GE10LM16X1.5	10	M16 x 1.5	12.0	22	315	315	
GE10LM18X1.5	10	M18 x 1.5	12.5	24	315		
GE10LM22X1.5	10	M22 x 1.5	14.0	27	315		
GE12LM14X1.5	12	M14 x 1.5	11.0	19	315		
GE12LM	12	M16 x 1.5	12.5	22	315	315	
GE12LM18X1.5	12	M18 x 1.5	12.5	24	315		
GE12LM22X1.5	12	M22 x 1.5	14.0	27	315		
GE15LM16X1.5	15	M16 x 1.5	13.0	24	250		
GE15LM	15	M18 x 1.5	13.5	24	250		
GE15LM22X1.5	15	M22 x 1.5	15.0	27	250		
GE18LM18X1.5	18	M18 x 1.5	14.0	27	250		
GE18LM	18	M22 x 1.5	14.5	27	250	250	160
GE22LM22X1.5	22	M22 x 1.5	16.5	32	160		
GE22LM	22	M26 x 1.5	16.5	32	160		100
GE28LM	28	M33 x 2	17.5	41	160	160	
GE35LM	35	M42 x 2	17.5	50	160		
GE42LM	42	M48 x 2	19.0	55	160		
GE06SM	6	M12 x 1.5	13.0	17	400		
GE08SM	8	M14 x 1.5	15.0	19	400		
GE10SM	10	M16 x 1.5	15.0	22	400		
GE12SM	12	M18 x 1.5	17.0	24	400		
GE12SM22X1.5	12	M22 x 1.5	17.5	27	400		
GE14SM	14	M20 x 1.5	19.0	27	400		
GE16SM18X1.5	16	M18 x 1.5	18.0	27	400		
GE16SM	16	M22 x 1.5	18.5	27	400		
GE20SM	20	M27 x 2	20.5	32	400		
GE25SM	25	M33 x 2	23.0	41	250		
GE30SM	30	M42 x 2	23.5	50	160		
GE38SM	38	M48 x 2	26.0	55	160		

Note: "keg." refers to taper threads.
Not sold with EO-2 Functional Nut.

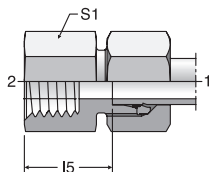
TUBE FITTING PART #	END SIZE		I 5 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 BSPP			EO				
					CF	71	MS	CF	71
GAI06LR	6	G 1/8	19.0	14	315			200	315
GAI08LR	8	G 1/4	24.0	19	315			200	315
GAI08LR3/8	8	G 3/8	25.0	24	315				315
GAI08LR1/2	8	G 1/2	29.0	27	315				315
GAI10LR	10	G 1/4	25.0	19	315	315	200	315	
GAI10LR3/8	10	G 3/8	26.0	24	315				315
GAI10LR1/2	10	G 1/2	30.0	27	315				315
GAI12LR	12	G 3/8	26.0	24	315			200	315
GAI12LR1/2	12	G 1/2	30.0	27	315	315			315
GAI15LR	15	G 1/2	31.0	27	315	315	200	315	315
GAI18LR	18	G 1/2	30.5	27	315	315	200	315	
GAI22LR	22	G 3/4	35.5	36	160	160	100	160	
GAI28LR	28	G 1	38.0	41	160				160
GAI35LR	35	G 1 1/4	41.0	55	160				160
GAI42LR	42	G 1 1/2	42.5	60	160				160
GAI06SR	6	G 1/4	26.0	19	400				400
GAI08SR	8	G 1/4	26.0	19	400				400
GAI10SR	10	G 3/8	26.5	24	400				400
GAI12SR	12	G 3/8	26.5	24	400				
GAI14SR	14	G 1/2	32.0	30	400				
GAI16SR	16	G 1/2	31.5	30	400			400	400
GAI20SR	20	G 3/4	34.5	36	315				315
GAI25SR	25	G 1	37.5	41	315				315
GAI30SR	30	G 1 1/4	42.0	55	315				
GAI38SR	38	G 1 1/2	43.5	60	250				

For EO-2 part number, insert "Z" between size and pressure series.
Example: GAI06ZLRFCF

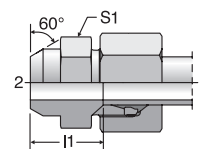
Dimensions and pressures for reference only, subject to change.

GAI-M

Female Connector
24° Flareless / Metric

**AS**

Weld Connector
24° Flareless / Butt Weld



TUBE FITTING PART #	END SIZE		I 5 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1	2			EO			EO-2	
	(mm)	Metric			CF	71	MS	CF	71
GAI06LM	6	M10 x 1	19.5	14	315			315	
GAI08LM	8	M12 x 1.5	24.0	17	315				
GAI10LM	10	M14 x 1.5	25.0	19	315			315	
GAI12LM	12	M16 x 1.5	26.0	22	315			315	
GAI15LM	15	M18 x 1.5	28.0	24	315			315	
GAI18LM	18	M22 x 1.5	29.5	30	315			315	
GAI22LM	22	M26 x 1.5	34.5	32	160			160	
GAI28LM	28	M33 x 2	37.5	41					
GAI35LM	35	M42 x 2	40.5	55					
GAI42LM	42	M48 x 2	42.0	60					
GAI06SM	6	M12 x 1.5	26.0	17					
GAI08SM	8	M14 x 1.5	26.0	17	400			400	
GAI10SM	10	M16 x 1.5	26.5	22	400				
GAI12SM	12	M18 x 1.5	27.5	24	400				
GAI14SM	14	M20 x 1.5	31.0	27					
GAI16SM	16	M22 x 1.5	30.5	30	400				
GAI20SM	20	M27 x 2	34.5	36	315				
GAI25SM	25	M33 x 2	37.0	41	315				
GAI30SM	30	M42 x 2	41.5	55	315				
GAI38SM	38	M48 x 2	43.0	60					

For EO-2 part number, insert "Z" between size and pressure series.
Example: GAI06ZLMCF

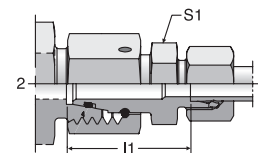
TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1	2			EO			EO-2	
	(mm)	(mm)			CF	71	MS	CF	71
AS06L	6	10	14.0	12		315			
AS08L	8	12	16.0	14	315				
AS10L	10	14	18.0	17	315	315		315	
AS12L	12	16	18.0	19	315	315		315	
AS15L	15	19	22.0	22		315		315	
AS18L	18	22	23.5	27	315			315	
AS22L	22	27	28.5	32	160			160	
AS28L	28	32	30.5	41	160			160	
AS35L	35	40	32.5	46	160			160	
AS42L	42	46	35.0	55	160			160	
AS06S	6	11	19.0	14	630				
AS08S	8	13	21.0	17	630				
AS10S	10	15	22.5	19	630				
AS12S	12	17	24.5	22	630				
AS14S	14	19	27.0	24	630				
AS16S	16	21	26.5	27	400				
AS20S	20	26	29.5	32	400	400			
AS25S	25	31	32.0	41	400				
AS30S	30	36	35.5	46	400	400			
AS38S	38	44	38.0	55	315				

Note: Weld fitting. Omit "CF" in the part number for steel material.
For EO-2 part number, insert "Z" between size and pressure series.
Example: AS06ZL

RED

Tube End Reducer

Flareless Swivel / 24° Flareless

**L-Series**

TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 Metric			EO			EO-2	
					CF	71	MS	CF	71
RED06L/04LL	4	M12 x 1.5	24.5	9	250			250	
RED08/06L	6	M14 x 1.5	23.5	12	250			315	
RED10/06L	6	M16 x 1.5	25	14	315			315	
RED10/08L	8		25	14	315			315	
RED12/06L	6	M18 x 1.5	25	17	315			315	
RED12/08L	8		25	17	315			315	
RED12/10L	10		26	17	315			315	
RED15/06L	6	M22 x 1.5	28.5	19	315			315	
RED15/08L	8		28.5	19	315			315	
RED15/10L	10		29.5	19	315	315		315	
RED15/12L	12		29.5	19	315			315	
RED18/06L	6	M26 x 1.5	28	24	315			315	
RED18/08L	8		28	24	315			315	
RED18/10L	10		29	24	315	315		315	
RED18/12L	12		29	24	315	315		315	
RED18/15L	15		30	24	315			315	
RED22/06L	6	M30 x 2	32	27	160			160	
RED22/08L	8		32	27	160			160	
RED22/10L	10		33	27	160			160	
RED22/12L	12		33	27	160			160	
RED22/15L	15		34	27	160			160	
RED22/18L	18		33.5	27	160	160		160	
RED28/06L	6	M36 x 2	34	32	160			160	
RED28/08L	8		34	32	160			160	
RED28/10L	10		35	32	160			160	
RED28/12L	12		35	32	160			160	
RED28/15L	15		36	32	160			160	
RED28/18L	18		35.5	32	160			160	
RED28/22L	22		37.5	32	160			160	
RED35/12L	12	M45 x 2	38	41				160	
RED35/15L	15		39	41	160			160	
RED35/18L	18		38.5	41	160			160	
RED35/22L	22		40.5	41	160			160	
RED35/28L	28		40.5	41	160			160	
RED42/18L	18	M52 x 2	42	50	160			160	
RED42/22L	22		44	50	160			160	
RED42/28L	28		44	50	160			160	
RED42/35L	35		43	50	160	160		160	

For EO-2 part number, insert "Z" between size and pressure series.
Example: RED08/06ZLCF

S-Series

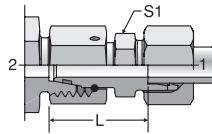
TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 Metric			EO			EO-2	
					CF	71	MS	CF	71
RED08/06S	6	M16 x 1.5	27.0	14	630			630	
RED10/06S	6	M18 x 1.5	27.5	17	630			630	
RED10/08S	8		27.5	17	630			630	
RED12/06S	6	M20 x 1.5	29.0	17	630			630	
RED12/08S	8		29.0	17	630			630	
RED12/10S	10		29.5	19	630			630	
RED14/06S	6	M22 x 1.5	31.5	19	630				
RED14/08S	8		31.5	19	630				
RED14/10S	10		31.0	19	630				
RED14/12S	12		31.0	22	630			630	
RED16/06S	6	M24 x 1.5	32.0	22	400			400	
RED16/08S	8		32.0	22	400			400	
RED16/10S	10		31.5	22	400			400	
RED16/12S	12		31.5	22	400			400	
RED16/14S	14		33.0	24	400				
RED20/06S	6	M30 x 2	36.0	27	400			400	
RED20/08S	8		36.0	27	400			400	
RED20/10S	10		35.5	27	400			400	
RED20/12S	12		35.5	27	400			400	
RED20/14S	14		37.0	27	400				
RED20/16S	16		36.5	27	400			400	
RED25/06S	6	M36 x 2	38.5	32				400	
RED25/08S	8		38.5	32	400			400	
RED25/10S	10		38.0	32	400			400	
RED25/12S	12		38.0	32	400			400	
RED25/14S	14		39.5	32	400				
RED25/16S	16		39.0	32	400	400		400	
RED25/20S	20		39.0	32	400			400	
RED30/08S	8	M42 x 2	44.0	41				400	
RED30/10S	10		43.5	41	400			400	
RED30/12S	12		43.5	41	400			400	
RED30/14S	14		45.0	41					
RED30/16S	16		44.5	41	400			400	
RED30/20S	20		44.5	41	400			400	
RED30/25S	25		45.0	41	400			400	
RED38/12S	12	M52 x 2	47.0	50	315			315	
RED38/16S	16		48.0	50	315			315	
RED38/20S	20		48.0	50	315			315	
RED38/25S	25		48.5	50	315			315	
RED38/30S	30		49.0	50	315			315	

For EO-2 part number, insert "Z" between size and pressure series.
Example: RED08/06ZSCF

Dimensions and pressures for reference only, subject to change.

DA

Distance Piece Adapter
Flareless Swivel / 24° Flareless

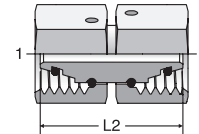


TUBE FITTING PART #	END SIZE		L (mm)	S1 (mm)	STANDARD Pressure Rating (bar)			
	1	2			EO			
	(mm)	Metric			CF	71	MS	EO-2
DA06L	6	M12 x 1.5	36	12				315
DA08L	8	M14 x 1.5	36	14	315			
DA10L	10	M16 x 1.5	36	17	315			
DA12L	12	M18 x 1.5	36	19	315			315
DA15L	15	M22 x 1.5	36	24	315			
DA18L	18	M26 x 1.5	36	27	315			
DA22L	22	M30 x 2	40	32	160			
DA28L	28	M36 x 2	40	41	160			
DA35L	35	M45 x 2	50	46				
DA42L	42	M52 x 2	60	55				
DA06S	6	M14 x 1.5	36	12				
DA08S	8	M16 x 1.5	36	14	630			
DA10S	10	M18 x 1.5	36	17				
DA12S	12	M22 x 1.5	36	19	630			630
DA14S	14	M24 x 1.5	40	24				
DA16S	16	M26 x 1.5	40	27	400			
DA20S	20	M30 x 2	46	32	400			
DA25S	25	M36 x 2	50	41	400			
DA30S	30	M45 x 2	56	46	400			
DA38S	38	M52 x 2	60	55	315			

For EO-2 part number, insert "Z" between size and pressure series.
Example: DA06ZLCF

GZ

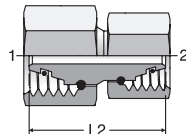
Swivel Union
Flareless Swivel /
Flareless Swivel



TUBE FITTING PART #	END SIZE		L2 (mm)	STANDARD Pressure Rating (bar)		
	1 & 2	Metric		EO		
				CF	71	MS
GZ06L	M12 x 1.5		32	315		
GZ08L	M14 x 1.5		32	315	315	
GZ10L	M16 x 1.5		33	315		
GZ12L	M18 x 1.5		33	315		
GZ15L	M22 x 1.5		38	315		
GZ18L	M26 x 1.5		36	315		
GZ22L	M30 x 2		42	160		
GZ28L	M36 x 2		46	160		
GZ35L	M45 x 2		48	160		
GZ42L	M52 x 2		52	160		
GZ06S	M14 x 1.5		32	630		
GZ08S	M16 x 1.5		33	630		
GZ10S	M18 x 1.5		33	630		
GZ12S	M20 x 1.5		36	630		
GZ14S	M22 x 1.5		39	630		
GZ16S	M24 x 1.5		39	400		
GZ20S	M30 x 2		44	400		
GZ25S	M36 x 2		46	400		
GZ30S	M42 x 2		52	400		
GZ38S	M52 x 2		52	315		

GZR

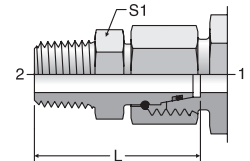
Swivel Union Reducer
Flareless Swivel / Flareless Swivel



TUBE FITTING PART #	END SIZE		L2 (mm)	STANDARD Pressure Rating (bar)		
	1	2		EO		
	Metric	Metric		CF	71	MS
GZR06L/06S	M14 x 1.5	M12 x 1.5	32	315		
GZR08L/08S	M16 x 1.5	M14 x 1.5	33	315		
GZR10L/10S	M18 x 1.5	M16 x 1.5	33	315		
GZR12L/12S	M20 x 1.5	M18 x 1.5	36	315		
GZR12L/08L	M18 x 1.5	M14 x 1.5	34	315		
GZR15L/08L	M22 x 1.5	M14 x 1.5	39	315		
GZR15L/12L	M22 x 1.5	M18 x 1.5	39	315		
GZR18L/16S	M26 x 1.5	M24 x 1.5	39	315		
GZR22L/20S	M30 x 2	M30 x 2	44	160		
GZR28L/25S	M36 x 2	M36 x 2	46	160		
GZR28L/22L	M36 x 2	M30 x 2	46	160		
GZR35L/30S	M45 x 2	M42 x 2	52	160		
GZR42L/38S	M52 x 2	M52 x 2	52	160		
GZR16S/15L	M24 x 1.5	M22 x 1.5	39	315		
GZR20S/18L	M30 x 2	M26 x 1.5	44	315		
GZR25S/22L	M36 x 2	M30 x 2	46	160		
GZR30S/28L	M42 x 2	M36 x 2	52	160		
GZR38S/35L	M52 x 2	M45 x 2	52	160		

EGE-NPT

Swivel Connector
Flareless Swivel / NPT

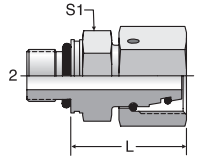


TUBE FITTING PART #	END SIZE		L (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1	2			EO		
	Metric	NPT			CF	71	MS
EGE06L1/8NPT	M12 x 1.5	1/8-27	31.5	11	315		
EGE08L1/4NPT	M14 x 1.5	1/4-18	37.5	14	315		
EGE10L1/4NPT	M16 x 1.5	1/4-18	38.0	14	315		
EGE12L3/8NPT	M18 x 1.5	3/8-18	40.0	19	315		
EGE15L1/2NPT	M22 x 1.5	1/2-14	49.5	22	315		
EGE18L1/2NPT	M26 x 1.5	1/2-14	49.0	24	315		
EGE22L3/4NPT	M30 x 2	3/4-14	52.0	27	160		
EGE28L1NPT	M36 x 2	1-11 1/2	61.0	36	160		
EGE35L11/4NPT	M45 x 2	1 1/4-11 1/2	65.5	46	160		
EGE42L11/2NPT	M52 x 2	1 1/2-11 1/2	68.5	50	160		
EGE06S1/4NPT	M14 x 1.5	1/4-18	37.5	14	630		
EGE08S1/4NPT	M16 x 1.5	1/4-18	38.0	14	630		
EGE10S3/8NPT	M18 x 1.5	3/8-18	40.5	19	630		
EGE12S3/8NPT	M20 x 1.5	3/8-18	42.0	19	630		
EGE14S1/2NPT	M22 x 1.5	1/2-14	50.5	22	630		
EGE16S1/2NPT	M24 x 1.5	1/2-14	51.0	22	400		
EGE20S3/4NPT	M30 x 2	3/4-14	54.0	27	400		
EGE25S1NPT	M36 x 2	1-11 1/2	63.5	36	400		
EGE30S11/4NPT	M42 x 2	1 1/4-11 1/2	70.5	46	400		
EGE38S11/2NPT	M52 x 2	1 1/2-11 1/2	73.5	50	315		

Dimensions and pressures for reference only, subject to change.

EGEO

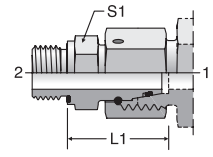
Swivel Connector
Metric ISO 6149 / Flareless Swivel



TUBE FITTING PART #	END SIZE		L (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1	2			EO		
	Metric	Metric			CF	71	MS
EGEO06LM	M12 x 1.5	M10 x 1	24.5	14	315		
EGEO08LM	M14 x 1.5	M12 x 1.5	26.5	17	315		
EGEO10LM	M16 x 1.5	M14 x 1.5	27.5	19	315		
EGEO12LM	M18 x 1.5	M16 x 1.5	30.5	22	315		
EGEO15LM	M22 x 1.5	M18 x 1.5	31.5	24	315		
EGEO18LM	M26 x 1.5	M22 x 1.5	31.5	27	315		
EGEO22LM27X2	M30 x 2	M27 x 2	32.5	32			
EGEO28LM	M36 x 2	M33 x 2	35.0	41			
EGEO35LM	M45 x 2	M42 x 2	42.5	50			
EGEO08SM	M16 x 1.5	M14 x 1.5	29.5	19			
EGEO10SM	M18 x 1.5	M16 x 1.5	32.0	22			
EGEO12SM	M20 x 1.5	M18 x 1.5	34.0	24	630		
EGEO16SM	M24 x 1.5	M22 x 1.5	37.0	27			
EGEO20SM	M30 x 2	M27 x 2	43.0	32			
EGEO25SM	M36 x 2	M33 x 2	48.0	41			
EGEO30SM	M42 x 2	M42 x 2	51.0	50			

EGE-R-ED

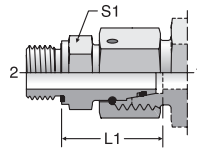
Swivel Connector
Flareless Swivel / BSPP with
EOlastic Seal



TUBE FITTING PART #	END SIZE		L1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1	2			EO		
	Metric	BSPP			CF	71	MS
EGEO6LR	M12 x 1.5	G 1/8A	24.5	14	315	315	
EGEO8LR	M14 x 1.5	G 1/4A	29.5	19	315	315	
EGEO10LR	M16 x 1.5	G 1/4A	27.5	19	315		
EGEO12LR	M18 x 1.5	G 3/8A	34.0	22	315		
EGEO15LR	M22 x 1.5	G 1/2A	32.0	27	315	315	
EGEO18LR	M26 x 1.5	G 1/2A	31.5	27	315	315	
EGEO22LR	M30 x 2	G 3/4A	32.5	32	160	160	
EGEO28LR	M36 x 2	G 1A	35.0	41	160		
EGEO35LR	M45 x 2	G 1 1/4A	42.5	50	160		
EGEO42LR	M52 x 2	G 1 1/2A	46.5	55	160		
EGEO6SR	M14 x 1.5	G 1/4A	27.0	19	630	630	
EGEO8SR	M16 x 1.5	G 1/4A	29.5	19	630		
EGEO10SR	M18 x 1.5	G 3/8A	32.0	22	630		
EGEO12SR	M20 x 1.5	G 3/8A	34.0	22	630		
EGEO14SR	M22 x 1.5	G 1/2A	36.5	27	630		
EGEO16SR	M24 x 1.5	G 1/2A	37.0	27	400	400	
EGEO20SR	M30 x 2	G 3/4A	43.0	32	400	400	
EGEO25SR	M36 x 2	G 1A	48.0	41	400		
EGEO30SR	M42 x 2	G 1 1/4A	51.0	50	400	400	
EGEO38SR	M52 x 2	G 1 1/2A	60.0	55	315	315	

EGE-M-ED

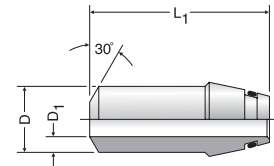
Swivel Connector
Flareless Swivel / Metric with
EOlastic Seal



TUBE FITTING PART #	END SIZE		L1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
	1	2			EO		
	Metric	Metric			CF	71	MS
EGEO6LMED	M12 x 1.5	M10 x 1	24.5	14	315		
EGEO8LMED	M14 x 1.5	M12 x 1.5	26.5	17	315		
EGEO10LMED	M16 x 1.5	M14 x 1.5	27.5	19	315		
EGEO12LMED	M18 x 1.5	M16 x 1.5	30.5	22	315		
EGEO15LMED	M22 x 1.5	M18 x 1.5	31.5	24	315		
EGEO18LMED	M26 x 1.5	M22 x 1.5	31.5	27	315		
EGEO22LMED	M30 x 2	M26 x 1.5	32.5	32	160		
EGEO28LMED	M36 x 2	M33 x 2	35.0	41	160		
EGEO35LMED	M45 x 2	M42 x 2	42.5	50	160		
EGEO42LMED	M52 x 2	M48 x 2	46.5	55	160		
EGEO6SMED	M14 x 1.5	M12 x 1.5	27.0	17	630	630	
EGEO8SMED	M16 x 1.5	M14 x 1.5	29.5	19	630		
EGEO10SMED	M18 x 1.5	M16 x 1.5	32.0	22	630		
EGEO12SMED	M20 x 1.5	M18 x 1.5	34.0	24	630		
EGEO14SMED	M22 x 1.5	M20 x 1.5	36.5	27	630		
EGEO16SMED	M24 x 1.5	M22 x 1.5	37.0	27	400		
EGEO20SMED	M30 x 2	M27 x 2	43.0	32	400		
EGEO25SMED	M36 x 2	M33 x 2	48.0	41	400		
EGEO30SMED	M42 x 2	M42 x 2	51.0	50	400		
EGEO38SMED	M52 x 2	M48 x 2	60.0	55	315		

SKA

Weld Nipple
24° Flareless /
ISO 8434-4 Butt Weld



TUBE FITTING PART #	D (mm)	D1 (mm)	L1 (mm)	STANDARD Pressure Rating (bar)		
				EO		
				CF	71	MS
SKA10X1	10	8	32.5	249		
SKA10X1.5	10	7	32.5	358		
SKA10X2	10	6	32.5	460		
SKA12X1.5	12	9	32.5	305	297	
SKA12X2	12	8	32.5	393	383	
SKA12X2.5	12	7	32.5	476		
SKA16X1.5	16	13	39.0	234		
SKA16X2	16	12	39.0	305		
SKA16X2.5	16	11	39.0	372		
SKA16X3	16	10	39.0	400	400	
SKA20X2	20	16	45.0	249		
SKA20X2.5	20	15	45.0	305		
SKA20X3	20	14	45.0	358	349	
SKA20X4	20	12	45.0	400		
SKA25X3	25	19	49.5	294		
SKA25X4	25	17	49.5	379		
SKA25X5	25	15	49.5	400		
SKA30X3	30	24	52.0	249		
SKA30X4	30	22	52.0	323	314	
SKA30X5	30	20	52.0	393		
SKA30X6	30	18	52.0	400		
SKA38X4	38	30	56.5	261	254	
SKA38X5	38	28	56.5	315		
SKA38X6	38	26	56.5	315		
SKA38X7	38	24	56.5			

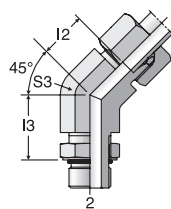
Note: Weld fitting. Omit "CF" in the part number for steel material. Part does not include the tube nut. Size 10 and 12 SKA will work for Series L & S

Dimensions and pressures for reference only, subject to change.

VEE-UNF

Adjustable Locknut 45° Elbow

24° Flareless / SAE-ORB



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	UN/UNF-2A				CF	71	MS	CF	71
VEE06L7/16UNF	6	7/16-20	9	19	14				315	
VEE08L7/16UNF	8	7/16-20	12	19	14					
VEE10L7/16UNF	10	9/16-18	12	24	19				315	
VEE12L9/16UNF	12	9/16-18	14	24	19					
VEE12L3/4UNF	12	3/4-16	14	24	19					
VEE15L3/4UNF	15	3/4-16	17	24	22	315			315	
VEE15L7/8UNF	15	7/8-14	17	24	22					
VEE18L7/8UNF	18	7/8-14	17	30	27				315	
VEE18L11/16UN	18	1 1/16-12	17	30	30					
VEE22L11/16UN	22	1 1/16-12	19	33	30					
VEE28L15/16UN	28	1 5/16-12	23	35	36					
VEE35L15/8UN	35	1 5/8-12	27	37	50					
VEE42L17/8UN	42	1 7/8-12	26	37	50					
VEE06S7/16UNF	6	7/16-20	9	18	14					
VEE08S9/16UNF	8	9/16-18	12	21	19					
VEE10S9/16UNF	10	9/16-18	13	21	19				400	
VEE12S3/4UNF	12	3/4-16	17	22	22	400				
VEE16S7/8UNF	16	7/8-14	16	29	27					
VEE20S11/16UN	20	1 1/16-12	16	31	30					
VEE25S11/16UN	25	1 1/16-12	30	33	36					
VEE30S15/8UN	30	1 5/8-12	24	35	50					
VEE38S17/8UN	38	1 7/8-12	21	35	50					

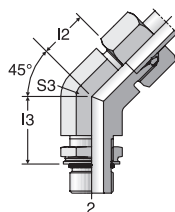
For EO-2 part number, insert "Z" between size and pressure series.

Example: VEE06ZL7/16UNFCF

VEE-OR

Adjustable Locknut 45° Elbow

24° Flareless / Metric ISO 6149



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	Metric				CF	71	MS	CF	71
VEE06LMOR	6	M10 x 1	9	20	14				315	
VEE08LMOR	8	M12 x 1.5	12	18	14					
VEE10LMOR	10	M14 x 1.5	12	22	19					
VEE12LMOR	12	M16 x 1.5	14	23	19	315				
VEE15LMOR	15	M18 x 1.5	17	23	22					
VEE18LMOR	18	M22 x 1.5	17	30	27					
VEE22LM27X2OR	22	M27 x 2	19	30	30					
VEE28LMOR	28	M33 x 2	23	34	36					
VEE35LMOR	35	M42 x 2	27	36	50					
VEE42LMOR	42	M48 x 2	26	36	50	160				
VEE06SMOR	6	M12 x 1.5	9	18	14	400			400	
VEE08SMOR	8	M14 x 1.5	12	18	19					
VEE10SMOR	10	M16 x 1.5	13	22	19	400			400	
VEE12SMOR	12	M18 x 1.5	17	23	22					
VEE16SMOR	16	M22 x 1.5	16	20	27					
VEE20SMOR	20	M27 x 2	16	33	30					
VEE25SMOR	25	M33 x 2	19	35	36					
VEE30SMOR	30	M42 x 2	24	36	50					
VEE38SMOR	38	M48 x 2	21	36	50					

For EO-2 part number, insert "Z" between size and pressure series.

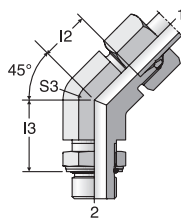
Example: VEE06ZLMORCF

Dimensions and pressures for reference only, subject to change.

VEE-R

Adjustable Locknut 45° Elbow

24° Flareless / BSPP ORR



TUBE FITTING PART #	END SIZE		I1 (mm)	I2 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	BSPP				CF	71	MS	CF	71
VEE06LR	6	G 1/8A	7	9	14	315			315	
VEE08LR	8	G 1/4A	9	12	14	315			315	
VEE10LR	10	G 1/4A	9	12	19	315			315	
VEE12LR	12	G 3/8A	9	14	19	250			250	
VEE15LR	15	G 1/2A	13	17	22				250	
VEE18LR	18	G 1/2A	13	17	27	250			250	
VEE22LR	22	G 3/4A	13	19	30	160			160	
VEE28LR	28	G 1A	15	23	36	160			160	
VEE35LR	35	G 1 1/4A	15	27	50				160	
VEE42LR	42	G 1 1/2A	15	26	50	160			160	
VEE06SR	6	G 1/4A	9	9	14	315			315	
VEE08SR	8	G 1/4A	9	12	19					
VEE10SR	10	G 3/8A	9	13	19	250				
VEE12SR	12	G 3/8A	9	17	22					
VEE16SR	16	G 1/2A	13	16	27					
VEE20SR	20	G 3/4A	12	16	27					
VEE25SR	25	G 1A	14	19	36				250	
VEE30SR	30	G 1 1/4A	15	24	50				160	
VEE38SR	38	G 1 1/2A	15	21	50	160			160	

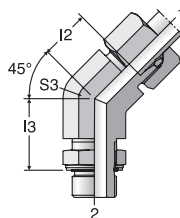
For EO-2 part number, insert "Z" between size and pressure series.

Example: VEE06ZLRCF

VEE-M

Adjustable Locknut 45° Elbow

24° Flareless / Metric ORR



TUBE FITTING PART #	END SIZE		I2 (mm)	I3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	Metric				CF	71	MS	CF	71
VEE06LM	6	M10 x 1	9	20	14				315	
VEE08LM	8	M12 x 1.5	12	18	14	315				
VEE10LM	10	M14 x 1.5	12	22	19					
VEE12LM	12	M16 x 1.5	14	23	19					
VEE15LM	15	M18 x 1.5	17	23	22				315	
VEE18LM	18	M22 x 1.5	17	30	27				250	
VEE22LM27X2	22	M27 x 2	19	30	30					
VEE28LM	28	M33 x 2	23	34	36					
VEE35LM	35	M42 x 2	27	36	50					
VEE42LM	42	M48 x 2	26	36	50					
VEE06SM	6	M12 x 1.5	9	18	14					
VEE08SM	8	M14 x 1.5	12	18	19	315				
VEE10SM	10	M16 x 1.5	13	22	19					
VEE12SM	12	M18 x 1.5	17	23	22					
VEE16SM	16	M22 x 1.5	16	30	27					
VEE20SM	20	M27 x 2	16	33	30					
VEE25SM	25	M33 x 2	19	35	36					
VEE30SM	30	M42 x 2	24	36	50					
VEE38SM	38	M48 x 2	21	36	50					

For EO-2 part number, insert "Z" between size and pressure series.

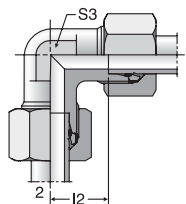
Example: VEE06ZLMCF

Dimensions and pressures for reference only, subject to change.

W

Elbow Union

24° Flareless / 24° Flareless



TUBE FITTING PART #	END SIZE 1 & 2 (mm)	I 2 (mm)	S3 (mm)	S3 (Stainless Steel) (mm)	STANDARD Pressure Rating (bar)				
					EO			EO-2	
					CF	71	MS	CF	71
* W04LL	4	11	9	9	100	100		100	
* W06LL	6	9.5	11	9	100	100		100	
* W08LL	8	11.5	12	12	100	100			
* W10LL	10	12.5	14	12	100				
* W12LL	12	13	17	14	100				
* W06L	6	12	12	12	315	315		315	
* W08L	8	14	14	12	315	315	200	315	
* W10L	10	15	17	14	315	315	200	315	
* W12L	12	17	19	17	315	315	200	315	315
W15L	15	21	19	19	315	315	200	315	315
W18L	18	23.5	24	24	315	315	200	315	315
W22L	22	27.5	27	27	160	160	100	160	
W28L	28	30.5	36	36	160		100	160	
W35L	35	34.5	41	41	160		100	160	
W42L	42	40	50	50	160		100	160	
* W06S	6	16	14	12	630			630	
* W08S	8	17	17	14	630	630		630	
* W10S	10	17.5	19	17	630			630	
* W12S	12	21.5	22	17	630	630		630	630
W14S	14	22	19	19	630			630	630
W16S	16	24.5	24	24	400	400	250	400	400
W20S	20	26.5	27	27	400	400	250	400	
W25S	25	30	36	36	400		250	400	
W30S	30	35.5	41	41	400	400	250	400	
W38S	38	41	50	50	315		200	315	315

* Extruded body.

For EO-2 part number, insert "Z" between size and pressure series.

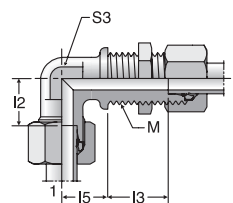
Example: W04ZLLCF

Dimensions and pressures for reference only, subject to change.

WSV

Bulkhead Union Elbow

24° Flareless / 24° Flareless



TUBE FITTING PART #	END SIZE 1 & 2 (mm)	M Metric	I 2 (mm)	I 3 (mm)	I 5 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
							EO				
							CF	71	MS	CF	71
WSV06L	6	M12 x 1.5	12.0	27.0	14	12	315	315	200	315	
WSV08L	8	M14 x 1.5	14.0	27.0	17	12	315	315	200	315	
WSV10L	10	M16 x 1.5	15.0	28.0	18	14	315	315	200	315	
WSV12L	12	M18 x 1.5	17.0	29.0	20	17	315	315	200	315	
WSV15L	15	M22 x 1.5	21.0	31.0	23	19	315	315	200	315	
WSV18L	18	M26 x 1.5	23.5	32.5	24	24	315	315	200	315	
WSV22L	22	M30 x 2	27.5	34.5	30	27	160			160	
WSV28L	28	M36 x 2	30.5	35.5	34	36	160			160	
WSV35L	35	M45 x 2	34.5	36.5	39	41	160			160	
WSV42L	42	M52 x 2	40.0	36.0	43	50	160			160	
WSV06S	6	M14 x 1.5	16.0	29.0	17	12	630			630	
WSV08S	8	M16 x 1.5	17.0	29.0	18	14	630			630	
WSV10S	10	M18 x 1.5	17.5	29.5	20	17	630			630	
WSV12S	12	M20 x 1.5	21.5	30.5	21	17	630			630	
WSV14S	14	M22 x 1.5	22.0	32.0	23	19	630			630	
WSV16S	16	M24 x 1.5	24.5	31.5	24	24	400			400	
WSV20S	20	M30 x 2	26.5	33.5	30	27	400			400	
WSV25S	25	M36 x 2	30.0	35.0	34	36	400			400	
WSV30S	30	M42 x 2	35.5	37.5	39	41	400			400	
WSV38S	38	M52 x 2	41.0	37.0	43	50	315			315	

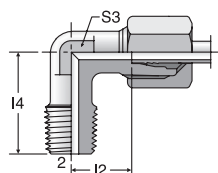
For EO-2 part number, insert "Z" between size and pressure series.

Example: WSV06ZLCF

WE-NPT

Male Elbow

24° Flareless / NPT



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 4 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 NPT				EO		
						CF	71	MS
* WE04LL1/8NPT	4	1/8-27	11.0	17	9	100		65
* WE06LL1/8NPT	6	1/8-27	9.5	17	9	100		
* WE08LL1/8NPT	8	1/8-27	11.5	20	12	100		
* WE06L1/8NPT	6	1/8-27	12.0	20	12	315	315	
WE06L1/4NPT	6	1/4-18	14.0	26	14	315		
* WE08L1/4NPT	8	1/4-18	14.0	26	12	315	315	
* WE10L1/4NPT	10	1/4-18	15.0	27	12	315	315	200
* WE12L3/8NPT	12	3/8-18	17.0	28	17	315	315	
WE12L1/4NPT	12	1/4-18	17.0	28	19	315	315	
WE12L1/2NPT	12	1/2-14	21.0	34	19	315		
WE15L1/2NPT	15	1/2-14	21.0	34	19	315	315	
WE18L1/2NPT	18	1/2-14	23.5	36	24	315	315	
WE22L3/4NPT	22	3/4-14	27.5	42	27	160	160	
WE28L1NPT	28	1-11 1/2	30.5	48	36	160		
WE35L11/4NPT	35	1 1/4-11 1/2	34.5	54	41	160		
WE42L11/2NPT	42	1 1/2-11 1/2	40.0	61	50	160		
* WE06S1/4NPT	6	1/4-18	16.0	26	12	630	630	
* WE08S1/4NPT	8	1/4-18	17.0	27	14	630		
* WE10S3/8NPT	10	3/8-18	17.5	28	17	630	630	
* WE12S3/8NPT	12	3/8-18	22.5	28	17	630		
WE14S1/2NPT	14	1/2-14	22.0	34	19	630		
WE16S1/2NPT	16	1/2-14	24.5	36	24	400	400	
WE20S3/4NPT	20	3/4-14	26.5	42	27	400		
WE25S1NPT	25	1-11 1/2	30.0	48	36	400		
WE30S11/4NPT	30	1 1/4-11 1/2	35.5	54	41	400		
WE38S11/2NPT	38	1 1/2-11 1/2	41.0	61	50	315		

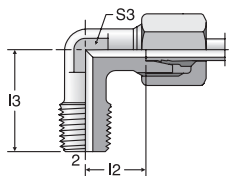
* Extruded body.

Dimensions and pressures for reference only, subject to change.

WE-R keg

Male Elbow

24° Flareless / BSPT



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
	1	2				EO		
	(mm)	BSPT				CF	71	MS
* WE04LLR	4	R1/8 keg.	11	17	11	100		
* WE06LLR	6	R1/8 keg.	9.5	17	11	100	100	
* WE08LLR	8	R1/8 keg.	11.5	20	12	100	100	63
* WE10LLR	10	R1/4 keg.	12.5	23	14	100		
* WE12LLR	12	R1/4 keg.	13	23	17	100		
* WE06LR	6	R1/8 keg.	12	20	12	315	315	200
* WE08LR	8	R1/4 keg.	14	26	14	315	315	200
* WE10LR	10	R1/4 keg.	15	27	17	315	315	200
* WE12LR	12	R3/8 keg.	17	28	19	315		200
WE12LR	12	R1/4 keg.	17	27	19	315		
WE15LR	15	R1/2 keg.	21	34	19	315	315	
WE18LR	18	R1/2 keg.	23.5	36	24	315	315	200
WE22LR	22	R3/4 keg.	27.5	42	27	160		
* WE06SR	6	R1/4 keg.	16	26	14	400	400	
* WE08SR	8	R1/4 keg.	17	27	17	400		
* WE10SR	10	R3/8 keg.	18	28	19	400	400	
* WE12SR	12	R3/8 keg.	21.5	28	22	400		
WE14SR	14	R1/2 keg.	22	32	19	400		
WE16SR	16	R1/2 keg.	24.5	32	24	400	400	

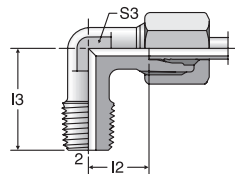
* Extruded body.

Note: keg. refers to taper threads.

WE-M keg

Male Elbow

24° Flareless / Metric Taper Thread



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
	1	2				EO		
	(mm)	Metric				CF	71	MS
* WE06LLM	6	M10 x 1 keg.	9.5	17	11	100		
* WE08LLM	8	M10 x 1 keg.	11.5	20	12	100		
* WE06LM	6	M10 x 1 keg.	12	20	12	315		
* WE08LM	8	M12 x 1.5 keg.	14	26	14	315	315	
* WE10LM	10	M14 x 1.5 keg.	15	27	17	315		
WE12LM	12	M16 x 1.5 keg.	17	28	19	315		
WE15LM	15	M18 x 1.5 keg.	21	32	19	315		
WE18LM	18	M22 x 1.5 keg.	23.0	36	24	315		
* WE06SM	6	M12 x 1.5 keg.	16	26	14	400		
* WE08SM	8	M14 x 1.5 keg.	17	27	17	400	400	
* WE10SM	10	M16 x 1.5 keg.	17.5	28	19	400		
* WE12SM	12	M18 x 1.5 keg.	21.5	28	22	400		
WE14SM	14	M20 x 1.5 keg.	22	32	19	400		
WE16SM	16	M22 x 1.5 keg.	24.5	32	24	400		

* Extruded body.

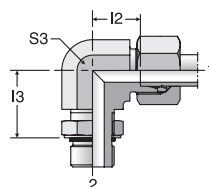
Note: keg. refers to taper threads.

Dimensions and pressures for reference only, subject to change.

WEE-UNF

Adjustable Locknut Elbow

24° Flareless / SAE-ORB



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 UN / UNF				EO			EO-2	
						CF	71	MS	CF	71
WEE06L7/16UNF	6	7/16-20	14	19	14	315			315	
WEE08L7/16UNF	8	7/16-20	16	19	14	315			315	
WEE10L9/16UNF	10	9/16-18	17	24	19	315			315	
WEE12L9/16UNF	12	9/16-18	19	25	19	315			315	
WEE12L3/4UNF	12	3/4-16	19	25	19	315			315	
WEE15L3/4UNF	15	3/4-16	21	28	22	315			315	
WEE15L7/8UNF	15	7/8-14	21	28	22	315			315	
WEE18L7/8UNF	18	7/8-14	24	32	27	315			315	
WEE18L11/16UN	18	1 1/16-12	24	32	30	315			315	
WEE22L11/16UN	22	1 1/16-12	28	35	30	160			160	
WEE28L15/16UN	28	1 5/16-12	31	42	36	160			160	
WEE35L15/8UN	35	1 5/8-12	38	46	50	160			160	
WEE42L17/8UN	42	1 7/8-12	38	47	50	160			160	
WEE06S7/16UNF	6	7/16-20	15	20	14	400				
WEE08S9/16UNF	8	9/16-18	17	25	19	400			400	
WEE10S9/16UNF	10	9/16-18	18	26	19	400			400	
WEE12S3/4UNF	12	3/4-16	22	30	22	400				
WEE16S7/8UNF	16	7/8-14	25	34	27	400			400	
WEE20S11/16UN	20	1 1/16-12	28	37	30	400				
WEE25S11/16UN	25	1 1/16-12	30	50	36	400			400	
WEE30S15/8UN	30	1 5/8-12	36	50	50	250			250	
WEE38S17/8UN	38	1 7/8-12	34	51	50				250	

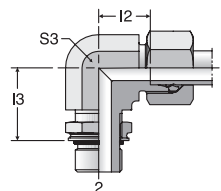
For EO-2 part number, insert "Z" between size and pressure series.

Example: WEE06ZL7/16UNFCF

WEE-OR

Adjustable Locknut Elbow

24° Flareless / Metric ISO 6149



TUBE FITTING PART #	END SIZE		I 3 (mm)	I 2 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 Metric				EO			EO-2	
						CF	71	MS	CF	71
WEE04LLMOR	4	M8 x 1	7.1	19.8	12	250				
WEE04LLM10X1MOR	4	M10 x 1	7.1	19.8	11					
WEE06LLMOR	6	M10 x 1	7.1	19.8	14				250	
WEE06LLM12X1.5MOR	6	M12 x 1.5	9.6	23.2	14				250	
WEE06LMOR	6	M10 x 1	7	20	14	315			315	
WEE08LMOR	8	M12 x 1.5	10	22	14	315			315	
WEE10LMOR	10	M14 x 1.5	10	25	19	315			315	
WEE12LMOR	12	M16 x 1.5	10	26	19	315				
WEE15LMOR	15	M18 x 1.5	11	30	22	315			315	
WEE18LMOR	18	M22 x 1.5	12	33	27	315				
WEE22LM27X2OR	22	M27 x 2	14	35	30	160			160	
WEE28LMOR	28	M33 x 2	14	38	36	160			160	
WEE35LMOR	35	M42 x 2	14	48	50					
WEE42LMOR	42	M48 x 2	16	49	50					
WEE06SMOR	6	M12 x 1.5	10	22	14	400			400	
WEE08SMOR	8	M14 x 1.5	10	26	19				400	
WEE10SMOR	10	M16 x 1.5	11	27	19	400				
WEE12SMOR	12	M18 x 1.5	12	31	22				400	
WEE16SMOR	16	M22 x 1.5	14	35	27	400				
WEE20SMOR	20	M27 x 2	16	39	30	400			400	
WEE25SMOR	25	M33 x 2	16	44	36	315				
WEE30SMOR	30	M42 x 2	17	51	50	250				
WEE38SMOR	38	M48 x 2	19	54	50					

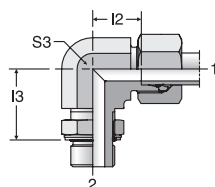
For EO-2 part number, insert "Z" between size and pressure series.

Example: WEE04ZLLMORCF

Dimensions and pressures for reference only, subject to change.

WEE-R

Adjustable Locknut Elbow
24° Flareless / BSPP ORR



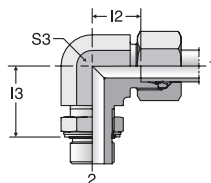
TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	BSPP				CF	71	MS	CF	71
WEE04LLR	4	G 1/8A	11	20	11				250	
WEE06LLR	6	G 1/8A	11	20	11	250				
WEE06LR	6	G 1/8A	14	19	14	315			315	
WEE08LR	8	G 1/4A	16	23	14	315			315	
WEE10LR	10	G 1/4A	17	25	19	315			315	
WEE12LR	12	G 3/8A	19	28	19	250			250	
WEE15LR	15	G 1/2A	21	30	22	250			250	
WEE18LR	18	G 1/2A	24	36	27	250			250	
WEE22LR	22	G 3/4A	28	36	30	160			160	
WEE28LR	28	G 1A	31	44	36	160			160	
WEE35LR	35	G 1 1/4A	38	50	50	160			160	
WEE42LR	42	G 1 1/2A	38	52	50	160			160	
WEE06SR	6	G 1/4A	15	23	14	315			315	
WEE08SR	8	G 1/4A	17	27	19	315			315	
WEE10SR	10	G 3/8A	18	29	19	250			250	
WEE12SR	12	G 3/8A	22	29	22	250			250	
WEE16SR	16	G 1/2A	25	36	27	250			250	
WEE20SR	20	G 3/4A	28	39	30	250			250	
WEE25SR	25	G 1A	30	44	36	250			250	
WEE30SR	30	G 1 1/4A	36	49	50	160			160	
WEE38SR	38	G 1 1/2A	34	55	50	160			160	

For EO-2 part number, insert "Z" between size and pressure series.

Example: WEE04ZLLRCF

WEE-M

Adjustable Locknut Elbow
24° Flareless / Metric ORR



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	Metric				CF	71	MS	CF	71
WEE06LM	6	M10 x 1	14	20	14	315			315	
WEE08LM	8	M12 x 1.5	16	22	14	315				
WEE10LM	10	M14 x 1.5	17	24	19	315			315	
WEE12LM	12	M16 x 1.5	19	25	19	315			315	
WEE15LM	15	M18 x 1.5	21	31	22					
WEE18LM	18	M22 x 1.5	24	33	27	250			250	
WEE22LM27X2	22	M27 x 2	28	36	30					
WEE28LM	28	M33 x 2	31	39	36					
WEE35LM	35	M42 x 2	38	49	50					
WEE42LM	42	M48 x 2	38	50	50					
WEE06SM	6	M12 x 1.5	15	22	14	315			315	
WEE08SM	8	M14 x 1.5	17	26	19	315			315	
WEE10SM	10	M16 x 1.5	18	27	19	315			315	
WEE12SM	12	M18 x 1.5	22	31	22					
WEE16SM	16	M22 x 1.5	25	36	27	250			250	
WEE20SM	20	M27 x 2	28	39	30					
WEE25SM	25	M33 x 2	30	44	36				160	
WEE30SM	30	M42 x 2	36	51	50	160				
WEE38SM	38	M48 x 2	34	54	50				160	

For EO-2 part number, insert "Z" between size and pressure series.

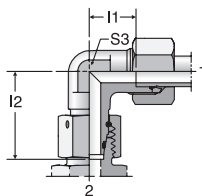
Example: WEE06ZLMCF

Dimensions and pressures for reference only, subject to change.

EW

Swivel Nut Elbow

24° Flareless / Flareless Swivel



TUBE FITTING PART #	END SIZE		I 1 (mm)	I 2 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1	2				EO			EO-2	
	(mm)	Metric				CF	71	MS	CF	71
EW06L	6	M12 x 1.5	12.0	26.0	12	315	315		315	
EW08L	8	M14 x 1.5	14.0	27.5	12	315	315		315	
EW10L	10	M16 x 1.5	15.0	29.0	14	315	315		315	
EW12L	12	M18 x 1.5	17.0	29.5	17	315	315		315	
EW15L	15	M22 x 1.5	21.0	32.5	19	315	315		315	
EW18L	18	M26 x 1.5	23.5	35.5	24	315	315		315	
EW22L	22	M30 x 2	27.5	38.5	27	160	160		160	
EW28L	28	M36 x 2	30.5	41.5	36	160			160	
EW35L	35	M45 x 2	34.5	51.0	41	160			160	
EW42L	42	M52 x 2	40.0	56.0	50	160			160	
EW06S	6	M14 x 1.5	16.0	27.0	12	630	630		630	
EW08S	8	M16 x 1.5	17.0	27.5	14	630	630		630	
EW10S	10	M18 x 1.5	17.5	30.0	17	630			630	
EW12S	12	M20 x 1.5	21.5	31.0	17	630			630	
EW14S	14	M22 x 1.5	22.0	35.0	19	630			630	
EW16S	16	M24 x 1.5	24.5	36.5	24	400	400		400	
EW20S	20	M30 x 2	26.5	44.5	27	400	400		400	
EW25S	25	M36 x 2	30.0	50.0	36	400			400	
EW30S	30	M42 x 2	35.5	55.0	41	400	400		400	
EW38S	38	M52 x 2	41.0	63.0	50	315			315	

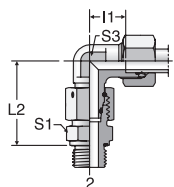
For EO-2 part number, insert "Z" between size and pressure series.

Example: EW06ZLCF

Dimensions and pressures for reference only, subject to change.

EW-R-ED

Assembled Adjustable Swivel Elbow
24° Flareless / BSPP with EOlastic Seal

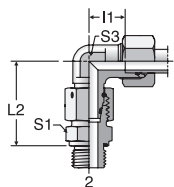


TUBE FITTING PART #	END SIZE		I 1 (mm)	L 2 (mm)	S 1 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 BSPP					EO			EO-2	
							CF	71	MS	CF	71
EW06LRED	6	G 1/8 A	12.0	34.5	14	12	315			315	
EW08LRED	8	G 1/4 A	14.0	37.5	19	12	315			315	
EW10LRED	10	G 1/4 A	15.0	40.0	19	14	315			315	
EW12LRED	12	G 3/8 A	17.0	42.0	22	17	315			315	
EW15LRED	15	G 1/2 A	21.0	46.5	27	19	315			315	
EW18LRED	18	G 1/2 A	23.5	50.0	27	24	315			315	
EW22LRED	22	G 3/4 A	27.5	55.0	32	27	160			160	
EW28LRED	28	G 1 A	30.5	59.0	41	36	160			160	
EW35LRED	35	G 1 1/4 A	34.5	68.5	50	41	160				
EW42LRED	42	G 1 1/2 A	40.0	75.0	55	50	160				
EW06SRED	6	G 1/4 A	16.0	40.0	19	12	630			630	
EW08SRED	8	G 1/4 A	17.0	42.5	19	14	630			630	
EW10SRED	10	G 3/8 A	17.5	45.0	22	17	630			630	
EW12SRED	12	G 3/8 A	21.5	48.0	22	17	630				
EW14SRED	14	G 1/2 A	22.0	54.0	27	19	630				
EW16SRED	16	G 1/2 A	24.5	55.0	27	24	400			400	
EW20SRED	20	G 3/4 A	26.5	65.0	32	27	400			400	
EW25SRED	25	G 1 A	30.0	73.0	41	36	400			400	
EW30SRED	30	G 1 1/4 A	35.5	78.5	50	41	400			400	
EW38SRED	38	G 1 1/2 A	41.0	89.0	55	50	315			315	

For EO-2 part number, insert "Z" between size and pressure series.
Example: EW06ZLREDCF

EW-M-ED

Assembled Adjustable Swivel Elbow
24° Flareless / Metric Parallel with EOlastic Seal



TUBE FITTING PART #	END SIZE		I 1 (mm)	L 2 (mm)	S 1 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 Metric					EO			EO-2	
							CF	71	MS	CF	71
EW06LMED	6	M10 x 1	12	34.5	14	12	315			315	
EW08LMED	8	M12 x 1.5	14	37.5	17	12	315			315	
EW10LMED	10	M14 x 1.5	15	40.0	19	14	315			315	
EW12LMED	12	M16 x 1.5	17	42.0	22	17	315			315	
EW15LMED	15	M18 x 1.5	21	46.0	24	19	315			315	
EW18LMED	18	M22 x 1.5	23.5	50.0	27	24	315			315	
EW22LMED	22	M26 x 1.5	27.5	55.0	32	27	160			160	
EW28LMED	28	M33 x 2	30.5	59.0	41	36	160			160	
EW35LMED	35	M42 x 2	34.5	68.5	50	41	160			160	
EW42LMED	42	M48 x 2	40	75.0	55	50	160			160	
EW06SMED	6	M12 x 1.5	16	40.0	17	12	630			630	
EW08SMED	8	M14 x 1.5	17	42.5	19	14	630			630	
EW10SMED	10	M16 x 1.5	17.5	45.0	22	17	630			630	
EW12SMED	12	M18 x 1.5	21.5	48.0	24	17	630			630	
EW14SMED	14	M20 x 1.5	22	54.0	27	19	630			630	
EW16SMED	16	M22 x 1.5	24.5	55.0	27	24	400			400	
EW20SMED	20	M27 x 2	26.5	65.0	32	27	400			400	
EW25SMED	25	M33 x 2	30	73.0	41	36	400			400	
EW30SMED	30	M42 x 2	35.5	78.5	50	41	400			400	
EW38SMED	38	M48 x 2	41	89.0	55	50	315			315	

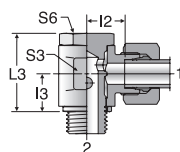
For EO-2 part number, insert "Z" between size and pressure series.
Example: EW06ZLMEDCF

Dimensions and pressures for reference only, subject to change.

SWVE-R

Banjo Elbow

24° Flareless / BSPP

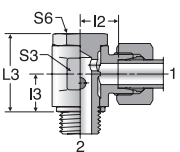


TUBE FITTING PART #	END SIZE		I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)		
	1	2						EO		
	(mm)	BSPP						CF	71	MS
SWVE04LLR	4	G 1/8 A	11.5	10	21.0	14	14	63		
SWVE06LLR	6	G 1/8 A	10.0	10	21.5	14	14	63		
SWVE08LLR	8	G 1/8 A	11.0	10	21.0	14	14	63		
SWVE06LR	6	G 1/8 A	10.5	10	21.0	14	14	160		
SWVE08LR	8	G 1/4 A	13.0	13	27.0	19	19	160		
SWVE10LR	10	G 1/4 A	14.0	13	27.0	19	19	160		
SWVE12LR	12	G 3/8 A	15.5	15	32.0	22	21	100		
SWVE15LR	15	G 1/2 A	19.0	18	37.5	27	27	100		
SWVE18LR	18	G 1/2 A	20.5	21.5	44.0	30	27	100		
SWVE22LR	22	G 3/4 A	25.5	24	49.0	36	32	100		
SWVE06SR	6	G 1/4 A	15.0	13	27.0	19	19	160		
SWVE08SR	8	G 1/4 A	15.0	13	27.0	19	19	160		
SWVE10SR	10	G 3/8 A	16.0	15	32.0	22	22	100		
SWVE12SR	12	G 3/8 A	17.0	18	37.0	24	24	100		
SWVE14SR	14	G 1/2 A	20.0	18	37.0	27	27	100		
SWVE16SR	16	G 1/2 A	21.5	21.5	44.0	30	27	100		
SWVE20SR	20	G 3/4 A	24.5	24	49.0	36	32	100		

SWVE-M

Banjo Elbow

24° Flareless / Metric Parallel



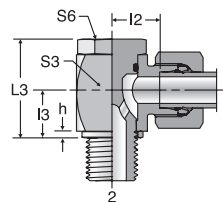
TUBE FITTING PART #	END SIZE		I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)		
	1	2						EO		
	(mm)	Metric						CF	71	MS
SWVE04LLM	4	M8 x 1	10.5	8	17	12	12	63		
SWVE06LLM	6	M10 x 1	10.0	10	21	14	14	63		
SWVE08LLM	8	M10 x 1	11.0	10	21	14	14	63		
SWVE06LM	6	M10 x 1	10.5	10	21.5	14	14	160		
SWVE08LM	8	M12 x 1.5	12.0	12	25	17	17	160		
SWVE10LM	10	M14 x 1.5	14.0	13	27	19	19	160		
SWVE12LM	12	M16 x 1.5	15.5	15	32	22	21	100		
SWVE15LM	15	M18 x 1.5	17.5	18	37.5	24	24	100		
SWVE18LM	18	M22 x 1.5	20.5	21.5	44	30	27	100		
SWVE22LM	22	M26 x 1.5	25.5	24	49	36	32	100		
SWVE06SM	6	M12 x 1.5	14.0	12	25	17	17	160		
SWVE08SM	8	M14 x 1.5	15.0	13	27	19	19	160		
SWVE10SM	10	M16 x 1.5	16.0	15	32	22	22	100		
SWVE12SM	12	M18 x 1.5	17.0	18	37	24	24	100		
SWVE14SM	14	M20 x 1.5	20.0	18	37	27	27	100		
SWVE16SM	16	M22 x 1.5	21.5	21.5	44	30	27	100		
SWVE20SM	20	M27 x 2	24.5	24	49	36	32	100		

Dimensions and pressures for reference only, subject to change.

WH-R

High Pressure Banjo Elbow

24° Flareless / BSPP



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1	2							EO		EO-2		
	(mm)	BSPP							CF	71	MS	CF	71
WH06LR	6	G 1/8 A	2.5	12.0	10.5	24	17	17	250	250	160		
WH08LR	8	G 1/4 A	3.0	14.5	14.0	30	22	19	250		160		
WH10LR	10	G 1/4 A	3.0	15.5	14.0	30	22	19	250		160		
WH12LR	12	G 3/8 A	3.0	18.0	16.5	36	27	24	250	250	160		
WH15LR	15	G 1/2 A	4.5	21.5	21.5	45	32	30	250	250	160		
WH18LR	18	G 1/2 A	4.5	21.0	21.5	45	32	30	250	250	160		
WH22LR	22	G 3/4 A	3.5	27.5	24.0	53	41	36	160				
WH28LR	28	G 1 A	3.5	32.0	30.5	66	50	46	160				
WH35LR	35	G 1 1/4 A	3.5	36.0	35.5	76	60	55	160				
WH42LR	42	G 1 1/2 A	3.5	40.5	40.5	87	70	60	160				
WH06SR	6	G 1/4 A	3.0	16.5	14.0	30	22	19	315		200		
WH08SR	8	G 1/4 A	3.0	16.5	14.0	30	22	19	315		200		
WH10SR	10	G 3/8 A	3.0	18.5	16.5	36	27	24	315		200		
WH12SR	12	G 3/8 A	3.0	18.5	16.5	36	27	24	315		200		
WH14SR	14	G 1/2 A	4.5	22.5	21.5	45	32	30	315				
WH16SR	16	G 1/2 A	4.5	22.0	21.5	45	32	30	315				315
WH20SR	20	G 3/4 A	3.5	26.5	24.0	53	41	36	160				
WH25SR	25	G 1 A	3.5	31.5	30.5	66	50	46	160				
WH30SR	30	G 1 1/4 A	3.5	37.0	34.5	76	60	55	160				
WH38SR	38	G 1 1/2 A	3.5	41.5	40.5	87	70	60	160				

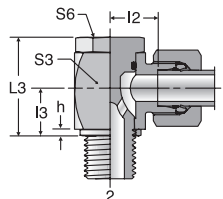
For EO-2 part number, insert "Z" between size and pressure series.

Example: WH06ZLRFCF

WH-M

High Pressure Banjo Elbow

24° Flareless / Metric Parallel



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1	2							EO		EO-2		
	(mm)	Metric							CF	71	MS	CF	71
WH06LM	6	M10 x 1	2.5	12.0	10.5	24	17	17	250				
WH08LM	8	M12 x 1.5	3.0	14.5	14.0	30	22	19	250				
WH10LM	10	M14 x 1.5	3.0	15.5	14.0	30	22	19	250				
WH12LM	12	M16 x 1.5	3.0	18.0	16.5	36	27	24	250				
WH15LM	15	M18 x 1.5	3.0	21.5	18.5	39.5	30	30	250				
WH18LM	18	M22 x 1.5	4.5	21.0	21.5	45	32	30	250	250			
WH22LM	22	M26 x 1.5	3.5	27.5	24.0	53	41	36	160				
WH28LM	28	M33 x 2	3.5	32.0	30.5	66	50	46	160				
WH35LM	35	M42 x 2	3.5	36.0	35.5	76	60	55					
WH42LM	42	M48 x 2	3.5	40.5	40.5	87	70	60					
WH06SM	6	M12 x 1.5	3.0	16.5	14.0	30	22	19	315				
WH08SM	8	M14 x 1.5	3.0	16.5	14.0	30	22	19	315				
WH10SM	10	M16 x 1.5	3.0	18.5	16.5	36	27	24	315				
WH12SM	12	M18 x 1.5	3.0	20.0	18.5	39.5	27	27	315				
WH14SM	14	M20 x 1.5	3.0	22.5	20.0	43.5	32	30					
WH16SM	16	M22 x 1.5	4.5	22.0	21.5	45	32	30	315				
WH20SM	20	M27 x 2	3.5	26.5	24.0	53	41	36	160				
WH25SM	25	M33 x 2	3.5	31.5	30.5	66	50	46	160				
WH30SM	30	M42 x 2	3.5	37.0	35.5	76	60	55					
WH38SM	38	M48 x 2	3.5	41.5	40.5	87	70	60	160				

For EO-2 part number, insert "Z" between size and pressure series.

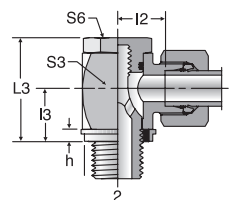
Example: WH06ZLMCF

Dimensions and pressures for reference only, subject to change.

WH-R-KDS

High Pressure Banjo Elbow

24° Flareless / BSPP



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 BSPP							EO		EO-2		
									CF	71	MS	CF	71
WH06LRKDS	6	G 1/8 A	2.5	12.0	10.5	24	17	17	315			315	
WH08LRKDS	8	G 1/4 A	3.0	14.5	14.0	30	22	19	315			315	
WH10LRKDS	10	G 1/4 A	3.0	15.5	14.0	30	22	19	315			315	
WH12LRKDS	12	G 3/8 A	3.0	18.0	16.5	36	27	24	315			315	
WH15LRKDS	15	G 1/2 A	4.5	21.5	21.5	45	32	30	315			315	
WH18LRKDS	18	G 1/2 A	4.5	21.0	21.5	45	32	30	315			315	
WH22LRKDS	22	G 3/4 A	3.5	27.5	24.0	53	41	36	160			160	
WH28LRKDS	28	G 1 A	3.5	32.0	30.5	66	50	46	160			160	
WH35LRKDS	35	G 1 1/4 A	3.5	36.0	35.5	76	60	55	160			160	
WH42LRKDS	42	G 1 1/2 A	3.5	40.5	40.5	87	70	60	160			160	
WH06SRKDS	6	G 1/4 A	3.0	16.5	14.0	30	22	19	400	400		400	
WH08SRKDS	8	G 1/4 A	3.0	16.5	14.0	30	22	19	400			400	
WH10SRKDS	10	G 3/8 A	3.0	18.5	16.5	36	27	24	400			400	
WH12SRKDS	12	G 3/8 A	3.0	18.5	16.5	36	27	24	400			400	
WH14SRKDS	14	G 1/2 A	4.5	22.5	21.5	45	32	30	400				
WH16SRKDS	16	G 1/2 A	4.5	22.0	21.5	45	32	30	315			315	
WH20SRKDS	20	G 3/4 A	3.5	26.5	24.0	53	41	36	315			315	
WH25SRKDS	25	G 1 A	3.5	31.5	30.5	66	50	46	250			250	
WH30SRKDS	30	G 1 1/4 A	3.5	37.0	34.5	76	60	55	160			160	
WH38SRKDS	38	G 1 1/2 A	3.5	41.5	40.5	87	70	60	160			160	

For EO-2 part number, insert "Z" between size and pressure series.

Example WH06ZLRKDS

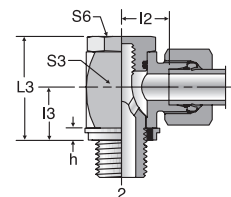
*Stainless Steel (71) part numbers have KD instead of KDS.

Example: WH06SRKD71

WH-M-KDS

High Pressure Banjo Elbow

Banjo Metric / Flareless



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 BSPP							EO		EO-2		
									CF	71	MS	CF	71
WH06LMKDS	6	M10 x 1	2.5	12.0	10.5	24.0	17	17	315			315	
WH08LMKDS	8	M12 x 1.5	3.0	14.5	14.0	30.0	22	19	315				
WH10LMKDS	10	M14 x 1.5	3.0	15.5	14.0	30.0	22	19	315			315	
WH12LMKDS	12	M16 x 1.5	3.0	18.0	16.5	36.0	27	24				315	
WH15LMKDS	15	M18 x 1.5	3.0	21.5	18.5	39.5	30	30	315			315	
WH18LMKDS	18	M22 x 1.5	4.5	21.0	21.5	45.0	32	30					
WH22LMKDS	22	M26 x 1.5	3.5	27.5	24.0	53.0	41	36					
WH28LMKDS	28	M33 x 2	3.5	32.0	30.5	66.0	50	46					
WH35LMKDS	35	M42 x 2	3.5	36.0	35.5	76.0	60	55				160	
WH42LMKDS	42	M48 x 2	3.5	40.5	40.5	87.0	70	60					
WH06SMKDS	6	M12 x 1.5	3.0	16.5	14.0	30.0	22	19	400				
WH08SMKDS	8	M14 x 1.5	3.0	16.5	14.0	30.0	22	19	400				
WH10SMKDS	10	M16 x 1.5	3.0	18.5	16.5	36.0	27	24	400			400	
WH12SMKDS	12	M18 x 1.5	3.0	20.0	18.5	39.5	27	27	400			400	
WH14SMKDS	14	M20 x 1.5	3.0	22.5	20.0	43.5	32	30					
WH16SMKDS	16	M22 x 1.5	4.5	22.0	21.5	45.0	32	30	315			315	
WH20SMKDS	20	M27 x 2	3.5	26.5	24.0	53.0	41	36	315				
WH25SMKDS	25	M33 x 2	3.5	31.5	30.5	66.0	50	46	250				
WH30SMKDS	30	M42 x 2	3.5	37.0	35.5	76.0	60	55					
WH38SMKDS	38	M48 x 2	3.5	41.5	40.5	87.0	70	60					

For EO-2 part number, insert "Z" between size and pressure series.

Example: WH06ZLMKDS

*Stainless Steel (71) part numbers have KD instead of KDS.

Example: WH06SMKD71

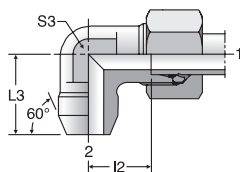
Dimensions and pressures for reference only, subject to change.



WAS

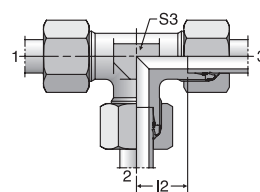
Weld Elbow

24° Flareless / Butt Weld

**T**

Union Tee

24° Flareless



TUBE FITTING PART #	END SIZE		I 2 (mm)	L3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 (mm)				EO			EO-2	
						CF	71	MS	CF	71
WAS06L	6	10	12.0	19	12					
WAS08L	8	12	14.0	23	12					
WAS10L	10	14	15.0	24	14	315				
WAS12L	12	16	17.0	25	17					
WAS15L	15	19	21.0	30	19					
WAS18L	18	22	23.5	33	24					
WAS22L	22	27	27.5	37	27					
WAS28L	28	32	30.5	42	36					
WAS35L	35	40	34.5	49	41					
WAS42L	42	46	40.0	57	50					
WAS06S	6	11	16.0	23	12					
WAS08S	8	13	17.0	24	14					
WAS10S	10	15	17.5	25	17					
WAS12S	12	17	21.5	29	17					
WAS14S	14	19	22.0	30	19					
WAS16S	16	21	24.5	33	24					
WAS20S	20	26	26.5	37	27					
WAS25S	25	31	30.0	42	36					
WAS30S	30	36	35.5	49	41					
WAS38S	38	44	41.0	57	50					

Note: Weld fitting. Omit "CF" in the part number for steel material.
For EO-2 part number, insert "Z" between size and pressure series.
Example: WAS06ZL

TUBE FITTING PART #	END SIZE		I 2 (mm)	S3 (mm)	S3 (Only Stainless Steel) (mm)	STANDARD Pressure Rating (bar)				
	1 - 3 (mm)					EO			EO-2	
						CF	71	MS	CF	71
*T04LL	4	11.0	9	9	100	100	63	100		
*T06LL	6	9.5	11	9	100	100	63	100		
*T08LL	8	11.5	12	12	100	100	63			
*T10LL	10	12.5	14	12	100		63			
T12LL	12	15.0	14	14	100					
*T06L	6	12.0	12	12	315	315	200	315	315	
*T08L	8	14.0	14	12	315	315	200	315		
T10L	10	15.0	14	14	315	315	200	315		
T12L	12	17.0	17	17	315	315	200	315		
T15L	15	21.0	19	19	315	315	200	315	315	
T18L	18	23.5	24	24	315	315	200	315	315	
T22L	22	27.5	27	27	160	160	100	160	160	
T28L	28	30.5	36	36	160	160	100	160		
T35L	35	34.5	41	41	160	160	100	160		
T42L	42	40.0	50	50	160	160	100	160		
*T06S	6	16.0	14	12	630	630	400	630		
T08S	8	17.0	14	14	630	630	400	630		
T10S	10	17.5	17	17	630	630	400	630		
T12S	12	21.5	17	17	630	630	400	630		
T14S	14	22.0	19	19	630	630	400	630		
T16S	16	24.5	24	24	400	400	250	400	400	
T20S	20	26.5	27	27	400	400	250	400		
T25S	25	30.0	36	36	400	400	250	400		
T30S	30	35.5	41	41	400	400	250	400		
T38S	38	41.0	50	50	315	315	200	315		

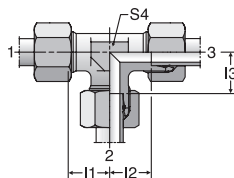
* Extruded body.

For EO-2 part number, insert "Z" between size and pressure series.
Example: T04ZLLCF

Dimensions and pressures for reference only, subject to change.

TR

Tee-Reducer
24° Flareless



TUBE FITTING PART #	END SIZE			I1 (mm)	I2 (mm)	I3 (mm)	S4 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 (mm)	3 (mm)					EO		EO-2		
								CF	71	MS	CF	71
TR04/08/04LL	4	8	4	13.0	13.0	11.5	12	100				
TR06/04/06LL	6	4	6	9.5	9.5	11.0	11	100				
TR06/08/06L	6	8	6	14.0	14.0	14.0	14	315				
TR08/06/08L	8	6	8	14.0	14.0	14.0	14	315				
TR06/10/06L	6	10	6	15.0	15.0	15.0	14	315				
TR08/10/08L	8	10	8	15.0	15.0	15.0	14	315				
TR10/06/10L	10	6	10	15.0	15.0	15.0	14	315				
TR10/08/10L	10	8	10	15.0	15.0	15.0	14	315				
TR10/10/06L	10	10	6	15.0	15.0	15.0	14	315				
TR08/12/08L	8	12	8	17.0	17.0	17.0	17	315				
TR12/06/12L	12	6	12	17.0	17.0	17.0	17	315				
TR12/08/08L	12	8	8	17.0	17.0	17.0	17	315				
TR12/08/12L	12	8	12	17.0	17.0	17.0	17	315				
TR12/10/10L	12	10	10	17.0	17.0	17.0	17	315				
TR12/10/12L	12	10	12	17.0	17.0	17.0	17	315				
TR12/12/10L	12	12	10	17.0	17.0	17.0	17	315				
TR10/15/10L	10	15	10	21.0	21.0	21.0	19	315				
TR12/15/12L	12	15	12	21.0	21.0	21.0	19	315				
TR15/06/15L	15	6	15	21.0	21.0	21.0	19	315				
TR15/10/15L	15	10	15	21.0	21.0	21.0	19	315				
TR15/12/12L	15	12	12	21.0	21.0	21.0	19	315				
TR15/12/15L	15	12	15	21.0	21.0	21.0	19	315				
TR15/15/12L	15	15	12	21.0	21.0	21.0	19	315				
TR12/18/12L	12	18	12	24.0	24.0	23.5	24	315				
TR18/10/10L	18	10	10	23.5	24.0	24.0	24	315				
TR18/10/18L	18	10	18	23.5	23.5	24.0	24	315				
TR18/12/18L	18	12	18	23.5	23.5	24.0	24	315				
TR18/15/18L	18	15	18	23.5	23.5	24.0	24	315				
TR18/18/10L	18	18	10	23.5	24.0	23.5	24	315				
TR22/10/22L	22	10	22	27.5	27.5	28.0	27	160				
TR22/12/22L	22	12	22	27.5	27.5	28.0	27	160				
TR22/15/15L	22	15	15	27.5	28.0	28.0	27	160				
TR22/15/22L	22	15	22	27.5	27.5	28.0	27	160				
TR22/18/18L	22	18	18	27.5	27.5	27.5	27	160				
TR22/18/22L	22	18	22	27.5	27.5	27.5	27	160				
TR22/22/18L	22	22	18	27.5	27.5	27.5	27	160				
TR28/10/28L	28	10	28	30.5	30.5	31.0	36	160				
TR28/12/28L	28	12	28	30.5	30.5	31.0	36	160				
TR28/15/28L	28	15	28	30.5	30.5	31.0	36	160				
TR28/18/28L	28	18	28	30.5	30.5	30.5	36	160				
TR28/22/22L	28	22	22	30.5	30.5	30.5	36	160				
TR28/22/28L	28	22	28	30.5	30.5	30.5	36	160				

Series S is continued on the next page.

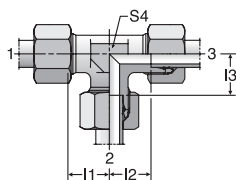
For EO-2 part number, insert "Z" between size and pressure series.

Example: TR06/08/06ZLLCF

Dimensions and pressures for reference only, subject to change.

TR

Tee-Reducer
24° Flareless



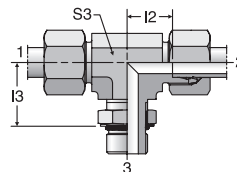
TUBE FITTING PART #	END SIZE			I 1	I 2	I 3	S 4	STANDARD Pressure Rating (bar)				
	1	2	3					EO			EO-2	
	(mm)	(mm)	(mm)					CF	71	MS	CF	71
TR10/06/10S	10	6	10	17.5	17.5	18.0	17					
TR12/08/08S	12	8	8	21.5	22.0	22.0	17					
TR12/08/12S	12	8	12	21.5	21.5	22.0	17					
TR12/10/12S	12	10	12	21.5	21.5	21.5	17					
TR12/16/12S	12	16	12	25.5	25.5	24.5	24	400				
TR16/06/16S	16	6	16	24.5	24.5	26.0	24					
TR16/08/16S	16	8	16	24.5	24.5	26.0	24	400				
TR16/10/16S	16	10	16	24.5	24.5	25.5	24					
TR16/12/16S	16	12	16	24.5	24.5	25.5	24	400				
TR16/20/16S	16	20	16	28.5	28.5	26.5	27	400				
TR20/10/20S	20	10	20	26.5	26.5	29.5	27	400				
TR20/12/20S	20	12	20	26.5	26.5	29.5	27	400				
TR20/16/20S	20	16	20	26.5	26.5	28.5	27	400				
TR20/25/20S	20	25	20	31.5	31.5	30.0	36	400				
TR25/16/25S	25	16	25	30.0	30.0	33.5	36	400				
TR25/20/25S	25	20	25	30.0	30.0	31.5	36	400				
TR25/30/25S	25	30	25	37.0	37.0	35.5	41					

Series L is on the previous page.

For EO-2 part number, insert "Z" between size and pressure series.
Example: TR10/06/10ZSCF

TEE-UNF

Adjustable Locknut Branch Tee
24° Flareless / SAE-ORB



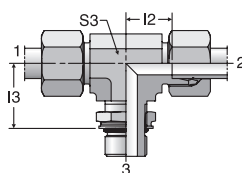
TUBE FITTING PART #	END SIZE		I 2	I 3	S 3	STANDARD Pressure Rating (bar)				
	1 & 2	3				EO			EO-2	
	(mm)	UN/UNF-2A	(mm)	(mm)	(mm)	CF	71	MS	CF	71
TEE06L7/16UNF	6	7/16-20	14	19	14	315			315	
TEE08L7/16UNF	8	7/16-20	16	19	14	315				
TEE10L9/16UNF	10	9/16-18	17	24	19					
TEE12L9/16UNF	12	9/16-18	19	25	19				315	
TEE12L3/4UNF	12	3/4-16	19	25	19				315	
TEE15L3/4UNF	15	3/4-16	21	28	22	315			315	
TEE15L7/8UNF	15	7/8-14	21	28	22	315			315	
TEE18L7/8UNF	18	7/8-14	24	32	27				315	
TEE18L11/16UN	18	1 1/16-12	24	32	30				315	
TEE22L11/16UN	22	1 1/16-12	28	35	30				160	
TEE28L15/16UN	28	1 5/16-12	31	42	36				160	
TEE35L15/8UN	35	1 5/8-12	38	46	50					
TEE42L17/8UN	42	1 7/8-12	38	47	50					
TEE06S7/16UNF	6	7/16-20	15	20	14					
TEE08S9/16UNF	8	9/16-18	17	25	19					
TEE10S9/16UNF	10	9/16-18	18	26	19	400			400	
TEE12S3/4UNF	12	3/4-16	22	30	22					
TEE16S7/8UNF	16	7/8-14	25	34	27					
TEE20S11/16UN	20	1 1/16-12	28	37	30	400				
TEE25S11/16UN	25	1 1/16-12	30	50	36					
TEE30S15/8UN	30	1 5/8-12	36	50	50					
TEE38S17/8UN	38	1 7/8-12	34	51	50					

For EO-2 part number, insert "Z" between size and pressure series.
Example: TEE06ZL7/16UNFCF

Dimensions and pressures for reference only, subject to change.

TEE-OR

Adjustable Locknut Branch Tee
24° Flareless / Metric ISO 6149



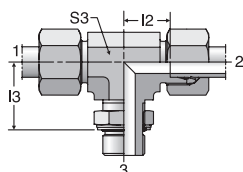
TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric				EO			EO-2	
						CF	71	MS	CF	71
TEE06LMOR	6	M10x1	14	20	14					
TEE08LMOR	8	M12x1.5	16	22	14	315				
TEE10LMOR	10	M14x1.5	17	25	19	315				
TEE12LMOR	12	M16x1.5	19	26	19	315				
TEE15LMOR	15	M18x1.5	21	30	22					
TEE18LMOR	18	M22x1.5	24	33	27	315				
TEE22LM27X2OR	22	M27x2	28	35	30	160				
TEE28LMOR	28	M33x2	31	38	36	160				
TEE35LMOR	35	M42x2	38	48	50					
TEE42LMOR	42	M48x2	38	49	50	160				
TEE06SMOR	6	M12x1.5	15	22	14					
TEE08SMOR	8	M14x1.5	17	26	19				400	
TEE10SMOR	10	M16x1.5	18	27	19					
TEE12SMOR	12	M18x1.5	22	31	22					
TEE16SMOR	16	M22x1.5	25	35	27					
TEE20SMOR	20	M27x2	28	39	30					
TEE25SMOR	25	M33x2	30	44	36					
TEE30SMOR	30	M42x2	36	51	50					
TEE38SMOR	38	M48x2	34	54	50					

For EO-2 part number, insert "Z" between size and pressure series.

Example: TR06ZLMORCF

TEE-R

Adjustable Locknut Branch Tee
24° Flareless / BSPP ORR



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 BSPP				EO			EO-2	
						CF	71	MS	CF	71
TEE06LR	6	G 1/8A	14	19	14	315			315	
TEE08LR	8	G 1/4A	16	23	14	315			315	
TEE10LR	10	G 1/4A	17	25	19	315			315	
TEE12LR	12	G 3/8A	19	28	19	250			250	
TEE15LR	15	G 1/2A	21	30	22	250			250	
TEE18LR	18	G 1/2A	24	36	27	250			250	
TEE22LR	22	G 3/4A	28	36	30	160				
TEE28LR	28	G 1A	31	44	36	160			160	
TEE35LR	35	G 1 1/4A	38	50	50				160	
TEE42LR	42	G 1 1/2A	38	52	50				160	
TEE06SR	6	G 1/4A	15	23	14				315	
TEE08SR	8	G 1/4A	17	27	19				315	
TEE10SR	10	G 3/8A	18	29	19	250			250	
TEE12SR	12	G 3/8A	22	29	22	250				
TEE16SR	16	G 1/2A	25	36	27	250				
TEE20SR	20	G 3/4A	28	39	30	250			250	
TEE25SR	25	G 1A	30	44	36	250			250	
TEE30SR	30	G 1 1/4A	36	49	50	160			160	
TEE38SR	38	G 1 1/2A	34	55	50	160				

For EO-2 part number, insert "Z" between size and pressure series.

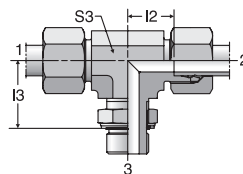
Example: TEE06ZLRFCF

Dimensions and pressures for reference only, subject to change.

TEE-M

Adjustable Locknut Branch Tee

24° Flareless / Metric ORR



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric				EO			EO-2	
						CF	71	MS	CF	71
TEE06LM	6	M10x1	14	20	14	315				
TEE08LM	8	M12x1.5	16	22	14	315			315	
TEE10LM	10	M14x1.5	17	25	19	315			315	
TEE12LM	12	M16x1.5	19	26	19	315				
TEE15LM	15	M18x1.5	21	30	22				315	
TEE18LM	18	M22x1.5	24	33	27	315			315	
TEE22LM27X2	22	M27x2	28	35	30					
TEE28LM	28	M33x2	31	38	36	160			160	
TEE35LM	35	M42x2	38	48	50					
TEE42LM	42	M48x2	38	49	50					
TEE06SM	6	M12x1.5	15	22	14	400			400	
TEE08SM	8	M14x1.5	17	26	19	400			400	
TEE10SM	10	M16x1.5	18	27	19	400			400	
TEE12SM	12	M18x1.5	22	31	22	400			400	
TEE16SM	16	M22x1.5	25	35	27	400			400	
TEE20SM	20	M27x2	28	39	30	400			400	
TEE25SM	25	M33x2	30	44	36	315			315	
TEE30SM	30	M42x2	36	51	50	250			250	
TEE38SM	38	M48x2	34	54	50	200			200	

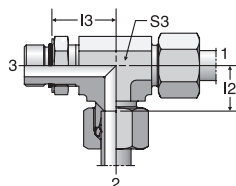
For EO-2 part number, insert "Z" between size and pressure series.

Example: TEE06ZLMCF

LEE-UNF

Adjustable Locknut Run Tee

24° Flareless / SAE-ORB



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 UN/UNF-2A				EO			EO-2	
						CF	71	MS	CF	71
LEE06L7/16UNF	6	7/16-20	14	19	14				315	
LEE08L7/16UNF	8	7/16-20	16	19	14	315			315	
LEE10L9/16UNF	10	9/16-18	17	24	19	315				
LEE12L9/16UNF	12	9/16-18	19	25	19				315	
LEE12L3/4UNF	12	3/4-16	19	25	19	315			315	
LEE15L3/4UNF	15	3/4-16	21	28	22				315	
LEE15L7/8UNF	15	7/8-14	21	28	22				315	
LEE18L7/8UNF	18	7/8-14	24	32	27				315	
LEE18L11/16UN	18	1 1/16-12	24	32	30	315			315	
LEE22L11/16UN	22	1 1/16-12	28	35	30				160	
LEE28L15/16UN	28	1 5/16-12	31	42	36				160	
LEE35L15/8UN	35	1 5/8-12	38	46	50				160	
LEE42L17/8UN	42	1 7/8-12	38	47	50				160	
LEE06S7/16UNF	6	7/16-20	15	20	14					
LEE08S9/16UNF	8	9/16-18	17	25	19					
LEE10S9/16UNF	10	9/16-18	18	26	19	400				
LEE12S3/4UNF	12	3/4-16	22	30	22	400				
LEE16S7/8UNF	16	7/8-14	25	34	27	400				
LEE20S11/16UN	20	1 1/16-12	28	37	30	400				
LEE25S11/16UN	25	1 1/16-12	30	50	36					
LEE30S15/8UN	30	1 5/8-12	36	50	50	250				
LEE38S17/8UN	38	1 7/8-12	34	51	50					

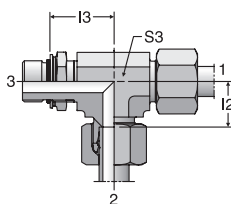
For EO-2 part number, insert "Z" between size and pressure series.

Example: LEE06ZL7/16UNFCF

Dimensions and pressures for reference only, subject to change.

LEE-OR

Adjustable Locknut Run Tee
24° Flareless / Metric ISO 6149



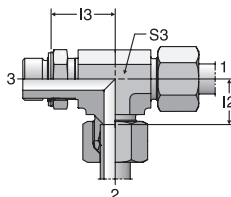
TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric				EO			EO-2	
						CF	71	MS	CF	71
LEE06LMOR	6	M10 x 1	14	20	14					
LEE08LMOR	8	M12 x 1.5	16	22	14	315				
LEE10LMOR	10	M14 x 1.5	17	25	19	315				
LEE12LMOR	12	M16 x 1.5	19	26	19	315				
LEE15LMOR	15	M18 x 1.5	21	30	22	315				
LEE18LMOR	18	M22 x 1.5	24	33	27	315				
LEE22LM27x2OR	22	M27 x 2	28	35	30	160				
LEE28LMOR	28	M33 x 2	31	38	36	160				
LEE35LMOR	35	M42 x 2	38	48	50					
LEE42LMOR	42	M48 x 2	38	49	50					
LEE06SMOR	6	M12 x 1.5	15	22	14	400				
LEE08SMOR	8	M14 x 1.5	17	26	19					
LEE10SMOR	10	M16 x 1.5	18	27	19					
LEE12SMOR	12	M18 x 1.5	22	31	22					
LEE16SMOR	16	M22 x 1.5	25	35	27					
LEE20SMOR	20	M27 x 2	28	35	30					
LEE25SMOR	25	M33 x 2	30	44	36	315				
LEE30SMOR	30	M42 x 2	36	51	50					
LEE38SMOR	38	M48 x 2	34	54	50					

For EO-2 part number, insert "Z" between size and pressure series.

Example: LEE06ZLMORCF

LEE-R

Adjustable Locknut Run Tee
24° Flareless / BSPP ORR



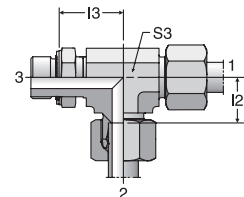
TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 BSPP				EO			EO-2	
						CF	71	MS	CF	71
LEE06LR	6	G 1/8A	14	19	14	315			315	
LEE08LR	8	G 1/4A	16	23	14	315			315	
LEE10LR	10	G 1/4A	17	25	19	315			315	
LEE12LR	12	G 3/8A	19	28	19	250			250	
LEE15LR	15	G 1/2A	21	30	22	250			250	
LEE18LR	18	G 1/2A	24	36	27	250			250	
LEE22LR	22	G 3/4A	28	36	30	160			160	
LEE28LR	28	G 1A	31	44	36	160			160	
LEE35LR	35	G 1 1/4A	38	50	50				160	
LEE42LR	42	G 1 1/2A	38	52	50	160			160	
LEE06SR	6	G 1/4A	15	23	14	315				
LEE08SR	8	G 1/4A	17	27	19					
LEE10SR	10	G 3/8A	18	29	19				250	
LEE12SR	12	G 3/8A	22	29	22	250				
LEE16SR	16	G 1/2A	25	36	27				250	
LEE20SR	20	G 3/4A	28	39	30	250			250	
LEE25SR	25	G 1A	30	44	36				250	
LEE30SR	30	G 1 1/4A	36	49	50				160	
LEE38SR	38	G 1 1/2A	34	55	50				160	

For EO-2 part number, insert "Z" between size and pressure series.

Example: LEE06ZLRFCF

LEE-M

Adjustable Locknut Run Tee
24° Flareless / Metric ORR



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric				EO			EO-2	
						CF	71	MS	CF	71
LEE06LM	6	M10 x 1	14	20	14					
LEE08LM	8	M12 x 1.5	16	22	14				315	
LEE10LM	10	M14 x 1.5	17	25	19					
LEE12LM	12	M16 x 1.5	19	26	19	315			315	
LEE15LM	15	M18 x 1.5	21	30	22				315	
LEE18LM	18	M22 x 1.5	24	33	27				250	
LEE22LM27X2	22	M27 x 2	28	35	30					
LEE28LM	28	M33 x 2	31	38	36				160	
LEE35LM	35	M42 x 2	38	48	50					
LEE42LM	42	M48 x 2	38	49	50					
LEE06SM	6	M12 x 1.5	15	22	14					
LEE08SM	8	M14 x 1.5	17	26	19	315				
LEE10SM	10	M16 x 1.5	18	27	19					
LEE12SM	12	M18 x 1.5	22	31	22					
LEE16SM	16	M22 x 1.5	25	35	27					
LEE20SM	20	M27 x 2	28	39	30					
LEE25SM	25	M33 x 2	30	44	36					
LEE30SM	30	M42 x 2	36	51	50					
LEE38SM	38	M48 x 2	34	54	50				160	

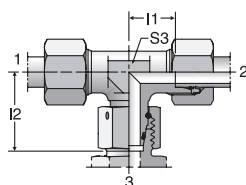
For EO-2 part number, insert "Z" between size and pressure series.

Example: LEE06ZLMCF

Dimensions and pressures for reference only, subject to change.

ET

Swivel Nut Branch Tee

24° Flareless / 24° Flareless /
Flareless Swivel

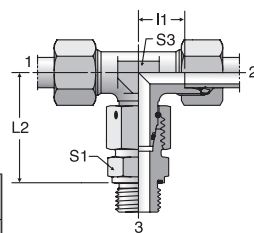
TUBE FITTING PART #	END SIZE		I 1 (mm)	I 2 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric				EO			EO-2	
						CF	71	MS	CF	71
ET06L	6	M12 x 1.5	12.0	26.0	12	315			315	
ET08L	8	M14 x 1.5	14.0	27.5	12	315			315	
ET10L	10	M16 x 1.5	15.0	29.0	14	315	315		315	
ET12L	12	M18 x 1.5	17.0	29.5	17	315	315			315
ET15L	15	M22 x 1.5	21.0	32.5	19	315			315	
ET18L	18	M26 x 1.5	23.5	35.5	24	315			315	
ET22L	22	M30 x 2	27.5	38.5	27	160			160	
ET28L	28	M36 x 2	30.5	41.5	36	160			160	
ET35L	35	M45 x 2	34.5	51.0	41	160			160	
ET42L	42	M52 x 2	40.0	56.0	50	160			160	
ET06S	6	M14 x 1.5	16.0	27.0	12	630			630	
ET08S	8	M16 x 1.5	17.0	27.5	14	630			630	
ET10S	10	M18 x 1.5	17.5	30.0	17	630			630	
ET12S	12	M20 x 1.5	21.5	31.0	17	630			630	
ET14S	14	M22 x 1.5	22.0	35.0	19	630				
ET16S	16	M24 x 1.5	24.5	36.5	24	400	400		400	
ET20S	20	M30 x 2	26.5	44.5	27	400			400	
ET25S	25	M36 x 2	30.0	50.0	36	400			400	
ET30S	30	M42 x 2	35.5	55.0	41	400			400	
ET38S	38	M52 x 2	41.0	63.0	50	315			315	

For EO-2 part number, insert "Z" between size and pressure series.

Example: ET06ZLCF

ET-R-ED

Assembled Adjustable Swivel Branch Tee

24° Flareless / 24° Flareless /
BSPP with EOlastic Seal

TUBE FITTING PART #	END SIZE		I 1 (mm)	I 2 (mm)	S 1 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 BSPP					EO			EO-2	
							CF	71	MS	CF	71
ET06LRED	6	G 1/8 A	12.0	34.5	14	12	315				
ET08LRED	8	G 1/4 A	14.0	37.5	19	12	315			315	
ET10LRED	10	G 1/4 A	15.0	40.0	19	14	315				
ET12LRED	12	G 3/8 A	17.0	42.0	22	17	315			315	
ET15LRED	15	G 1/2 A	21.0	46.5	27	19	315			315	
ET18LRED	18	G 1/2 A	23.5	50.0	27	24	315			315	
ET22LRED	22	G 3/4 A	27.5	55.0	32	27	160			160	
ET28LRED	28	G 1 A	30.5	59.0	41	36	160				
ET35LRED	35	G 1 1/4 A	34.5	68.5	50	41					
ET42LRED	42	G 1 1/2 A	40.0	75.0	55	50					
ET06SRED	6	G 1/4 A	16.0	40.0	19	12	630				
ET08SRED	8	G 1/4 A	17.0	42.5	19	14	630			630	
ET10SRED	10	G 3/8 A	17.5	45.0	22	17	630			630	
ET12SRED	12	G 3/8 A	21.5	48.0	22	17	630			630	
ET14SRED	14	G 1/2 A	22.0	54.0	27	19					
ET16SRED	16	G 1/2 A	24.5	55.0	27	24	400				
ET20SRED	20	G 3/4 A	26.5	65.0	32	27	400			400	
ET25SRED	25	G 1 A	30.0	73.0	41	36	400				
ET30SRED	30	G 1 1/4 A	35.5	78.5	50	41					
ET38SRED	38	G 1 1/2 A	41.0	89.0	55	50					

For EO-2 part number, insert "Z" between size and pressure series.

Example: ET06ZLREDCF

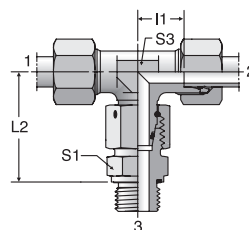
Dimensions and pressures for reference only, subject to change.

ET-M-ED

Assembled Adjustable Swivel Branch Tee

24° Flareless / 24° Flareless /

Metric Parallel with EOlastic Seal



TUBE FITTING PART #	END SIZE		I 1 (mm)	L2 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric					EO				
							EO-2		EO-2		
							CF	71	MS	CF	71
ET06LMED	6	M10 x 1	12.0	34.5	14	12					
ET08LMED	8	M12 x 1.5	14.0	37.5	17	12	315				
ET10LMED	10	M14 x 1.5	15.0	40.0	19	14	315			315	
ET12LMED	12	M16 x 1.5	17.0	42.0	22	17	315				
ET15LMED	15	M18 x 1.5	21.0	46.0	24	19	315				
ET18LMED	18	M22 x 1.5	23.5	50.0	27	24	315				
ET22LMED	22	M26 x 1.5	27.5	55.0	32	27	160				
ET28LMED	28	M33 x 2	30.5	59.0	41	36	160				
ET35LMED	35	M42 x 2	34.5	68.5	50	41					
ET42LMED	42	M48 x 2	40.0	75.0	55	50	160				
ET06SMED	6	M12 x 1.5	16.0	40.0	17	12					
ET08SMED	8	M14 x 1.5	17.0	42.5	19	14					
ET10SMED	10	M16 x 1.5	17.5	45.0	22	17	630				
ET12SMED	12	M18 x 1.5	21.5	48.0	24	17	630				
ET14SMED	14	M20 x 1.5	22.0	54.0	27	19					
ET16SMED	16	M22 x 1.5	24.5	55.0	27	24	400				
ET20SMED	20	M27 x 2	26.5	65.0	32	27					
ET25SMED	25	M33 x 2	30.0	73.0	41	36	400				
ET30SMED	30	M42 x 2	35.5	78.5	50	41					
ET38SMED	38	M48 x 2	41.0	89.0	55	50					

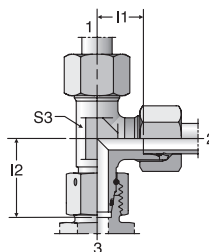
For EO-2 part number, insert "Z" between size and pressure series.

Example: ET06ZLMEDCF

EL

Swivel Nut Run Tee

24° Flareless / Flareless Swivel



TUBE FITTING PART #	END SIZE		I 1 (mm)	I 2 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric				EO				
						EO-2		EO-2		
						CF	71	MS	CF	71
EL06L	6	M12 x 1.5	12.0	26.0	12	315			315	
EL08L	8	M14 x 1.5	14.0	27.5	12	315			315	
EL10L	10	M16 x 1.5	15.0	29.0	14	315			315	
EL12L	12	M18 x 1.5	17.0	29.5	17	315	315		315	
EL15L	15	M22 x 1.5	21.0	32.5	19	315			315	
EL18L	18	M26 x 1.5	23.5	35.5	24	315			315	
EL22L	22	M30 x 2	27.5	38.5	27	160			160	
EL28L	28	M36 x 2	30.5	41.5	36	160			160	
EL35L	35	M45 x 2	34.5	51.0	41	160			160	
EL42L	42	M52 x 2	40.0	56.0	50	160			160	
EL06S	6	M14 x 1.5	16.0	27.0	12	630			630	
EL08S	8	M16 x 1.5	17.0	27.5	14	630			630	
EL10S	10	M18 x 1.5	17.5	30.0	17	630			630	
EL12S	12	M20 x 1.5	21.5	31.0	17	630	630		630	
EL14S	14	M22 x 1.5	22.0	35.0	19	630			630	
EL16S	16	M24 x 1.5	24.5	36.5	24	400			400	
EL20S	20	M30 x 2	26.5	44.5	27	400			400	
EL25S	25	M36 x 2	30.0	50.0	36	400			400	
EL30S	30	M42 x 2	35.5	55.0	41	400			400	
EL38S	38	M52 x 2	41.0	63.0	50	315			315	

For EO-2 part number, insert "Z" between size and pressure series.

Example: EL06ZLCF

Dimensions and pressures for reference only, subject to change.

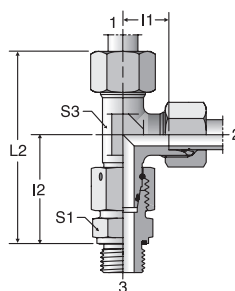
EL-R-ED

Adjustable Assembled Swivel Run Tee
24° Flareless / BSPP with EOlastic Seal

TUBE FITTING PART #	END SIZE		I 1 (mm)	I 2 (mm)	L2 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 BSPP						EO			EO-2	
								CF	71	MS	CF	71
EL06LRED	6	G 1/8 A	12.0	34.5	61	14	12	315			315	
EL08LRED	8	G 1/4 A	14.0	37.5	66	19	12	315				
EL10LRED	10	G 1/4 A	15.0	40.0	70	19	14	315			315	
EL12LRED	12	G 3/8 A	17.0	42.0	74	22	17	315			315	
EL15LRED	15	G 1/2 A	21.0	46.5	83	27	19	315			315	
EL18LRED	18	G 1/2 A	23.5	50.0	90	27	24	315			315	
EL22LRED	22	G 3/4 A	27.5	55.0	99	32	27	160			160	
EL28LRED	28	G 1 A	30.5	59.0	106	41	36	160				
EL35LRED	35	G 1 1/4 A	34.5	68.5	125	50	41				160	
EL42LRED	42	G 1 1/2 A	40.0	75.0	138	55	50				160	
EL06SRED	6	G 1/4 A	16.0	40.0	71	19	12	630			630	
EL08SRED	8	G 1/4 A	17.0	42.5	74	19	14	630			630	
EL10SRED	10	G 3/8 A	17.5	45.0	79	22	17	630			630	
EL12SRED	12	G 3/8 A	21.5	48.0	86	22	17	630			630	
EL14SRED	14	G 1/2 A	22.0	54.0	94	27	19	630				
EL16SRED	16	G 1/2 A	24.5	55.0	98	27	24	400			400	
EL20SRED	20	G 3/4 A	26.5	65.0	113	32	27	400			400	
EL25SRED	25	G 1 A	30.0	73.0	127	41	36	400			400	
EL30SRED	30	G 1 1/4 A	35.5	78.5	141	50	41				400	
EL38SRED	38	G 1 1/2 A	41.0	89.0	161	55	50				315	

For EO-2 part number, insert "Z" between size and pressure series.

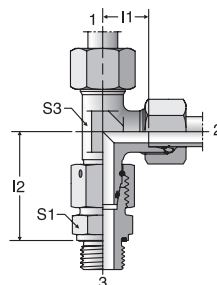
Example: EL06ZLREDCF



EL-M-ED

Adjustable Assembled Swivel Run Tee
24° Flareless / Metric Parallel with EOlastic Seal

TUBE FITTING PART #	END SIZE		I 1 (mm)	I 2 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric					EO			EO-2	
							CF	71	MS	CF	71
EL06LMED	6	M10 x 1	12.0	34.5	14	12	315				
EL08LMED	8	M12 x 1.5	14.0	37.5	17	12	315				
EL10LMED	10	M14 x 1.5	15.0	40.0	19	14	315				
EL12LMED	12	M16 x 1.5	17.0	42.0	22	17	315				
EL15LMED	15	M18 x 1.5	21.0	46.5	24	19					
EL18LMED	18	M22 x 1.5	23.5	50.0	27	24	315				
EL22LMED	22	M26 x 1.5	27.5	55.0	32	27	160				
EL28LMED	28	M33 x 2	30.5	59.0	41	36	160				
EL35LMED	35	M42 x 2	34.5	68.5	50	41					
EL42LMED	42	M48 x 2	40.0	75.0	55	50					
EL06SMED	6	M12 x 1.5	16.0	40.0	17	12	630				
EL08SMED	8	M14 x 1.5	17.0	42.5	19	14					
EL10SMED	10	M16 x 1.5	17.5	45.0	22	17					
EL12SMED	12	M18 x 1.5	21.5	48.0	24	17	630				
EL14SMED	14	M20 x 1.5	22.0	54.0	27	19					
EL16SMED	16	M22 x 1.5	24.5	55.0	27	24	400				
EL20SMED	20	M27 x 2	26.5	65.0	32	27	400				
EL25SMED	25	M33 x 2	30.0	73.0	41	36	400				
EL30SMED	30	M42 x 2	35.5	78.5	50	41					
EL38SMED	38	M48 x 2	41.0	89.0	55	50	315				



For EO-2 part number, insert "Z" between size and pressure series.

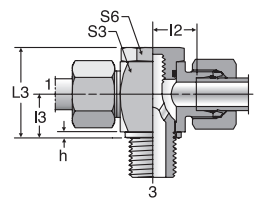
Example: EL06ZLMEDCF

Dimensions and pressures for reference only, subject to change.

TH-R

High Pressure Banjo Tee

24° Flareless / 24° Flareless / BSPP



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 BSPP							EO			EO-2	
									CF	71	MS	CF	71
TH06LR	6	G 1/8 A	2.5	12.0	10.5	24	17	17	250			250	
TH08LR	8	G 1/4 A	3.0	14.5	14.0	30	22	19	250			250	
TH10LR	10	G 1/4 A	3.0	15.5	14.0	30	22	19	250			250	
TH12LR	12	G 3/8 A	3.0	18.0	16.5	36	27	24	250	250		250	
TH15LR	15	G 1/2 A	4.5	21.5	21.5	45	32	30	250			250	
TH18LR	18	G 1/2 A	4.5	21.0	21.5	45	32	30	250			250	
TH22LR	22	G 3/4 A	3.5	27.5	24.0	53	41	36	160			160	
TH28LR	28	G 1 A	3.5	32.0	30.5	66	50	46	160			160	
TH35LR	35	G 1 1/4 A	3.5	36.0	35.5	76	60	55	160			160	
TH42LR	42	G 1 1/2 A	3.5	40.5	40.5	87	70	60	160			160	
TH06SR	6	G 1/4 A	3.0	16.5	14.0	30	22	19	315			315	315
TH08SR	8	G 1/4 A	3.0	16.5	14.0	30	22	19	315			315	315
TH10SR	10	G 3/8 A	3.0	18.5	16.5	36	27	24	315			315	315
TH12SR	12	G 3/8 A	3.0	18.5	16.5	36	27	24	315			315	315
TH14SR	14	G 1/2 A	4.5	22.5	21.5	45	32	30	315			315	
TH16SR	16	G 1/2 A	4.5	22.0	21.5	45	32	30	315			315	315
TH20SR	20	G 3/4 A	3.5	26.5	24.0	53	41	36	160			160	
TH25SR	25	G 1 A	3.5	31.5	30.5	66	50	46				160	
TH30SR	30	G 1 1/4 A	3.5	37.0	35.5	76	60	55	160			160	160
TH38SR	38	G 1 1/2 A	3.5	41.5	40.5	87	70	60				160	160

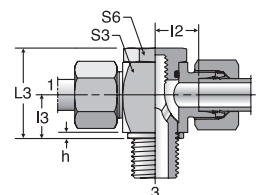
For EO-2 part number, insert "Z" between size and pressure series.

Example: TH06ZLRFCF

TH-M

High Pressure Banjo Tee

24° Flareless / 24° Flareless / Metric Parallel



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric							EO			EO-2	
									CF	71	MS	CF	71
TH06LM	6	M10 x 1	2.5	12.0	10.5	24.0	17	17	250			250	
TH08LM	8	M12 x 1.5	3.0	14.5	14.0	30.0	22	19	250			250	
TH10LM	10	M14 x 1.5	3.0	15.5	14.0	30.0	22	19	250			250	
TH12LM	12	M16 x 1.5	3.0	18.0	16.5	36.0	27	24	250			250	
TH15LM	15	M18 x 1.5	3.0	21.5	18.5	39.5	30	30	250			250	
TH18LM	18	M22 x 1.5	4.5	21.0	21.5	45.0	32	30	250			250	
TH22LM	22	M26 x 1.5	3.5	27.5	24.0	53.0	41	36	160			160	
TH28LM	28	M33 x 2	3.5	32.0	30.5	66.0	50	46	160			160	
TH35LM	35	M42 x 2	3.5	36.0	35.5	76.0	60	55		160		160	160
TH42LM	42	M48 x 2	3.5	40.5	40.5	87.0	70	60		160		160	160
TH06SM	6	M12 x 1.5	3.0	16.5	14.0	30.0	22	19	315	315		315	315
TH08SM	8	M14 x 1.5	3.0	16.5	14.0	30.0	22	19	315	315		315	315
TH10SM	10	M16 x 1.5	3.0	18.5	16.5	36.0	27	24	315	315		315	315
TH12SM	12	M18 x 1.5	3.0	20.0	18.5	39.5	27	27	315	315		315	315
TH14SM	14	M20 x 1.5	3.0	22.5	20.0	43.5	32	30	315	315		315	315
TH16SM	16	M22 x 1.5	4.5	22.0	21.5	45.0	32	30	315	315		315	315
TH20SM	20	M27 x 2	3.5	26.5	24.0	53.0	41	36	160	160		160	160
TH25SM	25	M33 x 2	3.5	31.5	30.5	66.0	50	46	160			160	
TH30SM	30	M42 x 2	3.5	37.0	35.5	76.0	60	55		160		160	160
TH38SM	38	M48 x 2	3.5	41.5	40.5	87.0	70	60		160		160	160

For EO-2 part number, insert "Z" between size and pressure series.

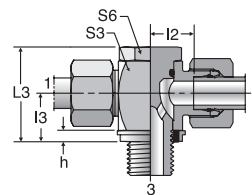
Example: TH06ZLMCF

Dimensions and pressures for reference only, subject to change.

TH-R-KDS

High Pressure Banjo Tee

24° Flareless / 24° Flareless / BSPP



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 BSPP							EO			EO-2	
									CF	71	MS	CF	71
TH06LRKDS	6	G 1/8 A	2.5	12.0	10.5	24	17	17	315				
TH08LRKDS	8	G 1/4 A	3.0	14.5	14.0	30	22	19	315			315	
TH10LRKDS	10	G 1/4 A	3.0	15.5	14.0	30	22	19				315	
TH12LRKDS	12	G 3/8 A	3.0	18.0	16.5	36	27	24	315				
TH15LRKDS	15	G 1/2 A	4.5	21.5	21.5	45	32	30					
TH18LRKDS	18	G 1/2 A	4.5	21.0	21.5	45	32	30				315	
TH22LRKDS	22	G 3/4 A	3.5	27.5	24.0	53	41	36					
TH28LRKDS	28	G 1 A	3.5	32.0	30.5	66	50	46					
TH35LRKDS	35	G 1 1/4 A	3.5	36.0	35.5	76	60	55					
TH42LRKDS	42	G 1 1/2 A	3.5	40.5	40.5	87	70	60					
TH06SRKDS	6	G 1/4 A	3.0	16.5	14.0	30	22	19					
TH08SRKDS	8	G 1/4 A	3.0	16.5	14.0	30	22	19	400				
TH10SRKDS	10	G 3/8 A	3.0	18.5	16.5	36	27	24				400	
TH12SRKDS	12	G 3/8 A	3.0	18.5	16.5	36	27	24	400				
TH14SRKDS	14	G 1/2 A	4.5	22.5	21.5	45	32	30					
TH16SRKDS	16	G 1/2 A	4.5	22.0	21.5	45	32	30					
TH20SRKDS	20	G 3/4 A	3.5	26.5	24.0	53	41	36	315				
TH25SRKDS	25	G 1 A	3.5	31.5	30.5	66	50	46					
TH30SRKDS	30	G 1 1/4 A	3.5	37.0	35.5	76	60	55	160				
TH38SRKDS	38	G 1 1/2 A	3.5	41.5	40.5	87	70	60	160				

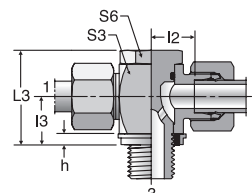
For EO-2 part number, insert "Z" between size and pressure series.

Example: TH06ZLRKDSCF

TH-M-KDS

High Pressure Banjo Tee

24° Flareless / 24° Flareless / Metric Parallel



TUBE FITTING PART #	END SIZE		h (mm)	I2 (mm)	I3 (mm)	L3 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)				
	1 & 2 (mm)	3 Metric							EO			EO-2	
									CF	71	MS	CF	71
TH06LMKDS	6	M10 x 1	2.5	12.0	10.5	24	17	17	315				
TH08LMKDS	8	M12 x 1.5	3.0	14.5	14.0	30	22	19					
TH10LMKDS	10	M14 x 1.5	3.0	15.5	14.0	30	22	19					
TH12LMKDS	12	M16 x 1.5	3.0	18.0	16.5	36	27	24	315				
TH15LMKDS	15	M18 x 1.5	3.0	21.5	18.5	39.5	30	30					
TH18LMKDS	18	M22 x 1.5	4.5	21.0	21.5	45	32	30					
TH22LMKDS	22	M26 x 1.5	3.5	27.5	24.0	53	41	36					
TH28LMKDS	28	M33 x 2	3.5	32.0	30.5	66	50	46					
TH35LMKDS	35	M42 x 2	3.5	36.0	35.5	76	60	55					
TH42LMKDS	42	M48 x 2	3.5	40.5	40.5	87	70	60					
TH06SMKDS	6	M12 x 1.5	3.0	16.5	14.0	30	22	19	315				
TH08SMKDS	8	M14 x 1.5	3.0	16.5	14.0	30	22	19					
TH10SMKDS	10	M16 x 1.5	3.0	18.5	16.5	36	27	24					
TH12SMKDS	12	M18 x 1.5	3.0	20.0	18.5	39.5	27	27					
TH14SMKDS	14	M20 x 1.5	3.0	22.5	20.0	43.5	32	30					
TH16SMKDS	16	M22 x 1.5	4.5	22.0	21.5	45	32	30					
TH20SMKDS	20	M27 x 2	3.5	26.5	24.0	53	41	36					
TH25SMKDS	25	M33 x 2	3.5	31.5	30.5	66	50	46					
TH30SMKDS	30	M42 x 2	3.5	37.0	35.5	76	60	55					
TH38SMKDS	38	M48 x 2	3.5	41.5	40.5	87	70	60					

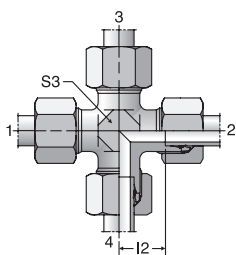
For EO-2 part number, insert "Z" between size and pressure series.

Example: TH06ZLMKDSCF

Dimensions and pressures for reference only, subject to change.

K

Union Cross
24° Flareless

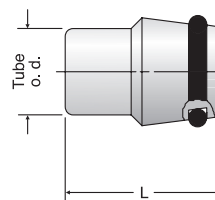


TUBE FITTING PART #	END SIZE 1 - 4 (mm)	I 2 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)					
				EO			EO-2		
				CF	71	MS	CF	71	
K04LL	4	11.0	9	100					
K06LL	6	9.5	9	100					
K08LL	8	11.5	12	100					
K06L	6	12.0	12	315			315		
K08L	8	14.0	12	315			315		
K10L	10	15.0	14	315			315		
K12L	12	17.0	17	315			315		
K15L	15	21.0	19	315			315		
K18L	18	23.5	24	315			315		
K22L	22	27.5	27	160			160		
K28L	28	30.5	36	160			160		
K35L	35	34.5	41	160					
K42L	42	40.0	50				160		
K06S	6	16.0	12	630	630				
K08S	8	17.0	14	630			630		
K10S	10	17.5	17	630					
K12S	12	21.5	17	630					
K14S	14	22.0	19	400			400		
K16S	16	24.5	24	400					
K20S	20	26.5	27	315			315		
K25S	25	30.0	36	315			315		
K30S	30	35.5	41	315			315		
K38S	38	41.0	50	315					

For EO-2 part number, insert "Z" between size and pressure series.
Example: K06ZLCF

VKA

Cap

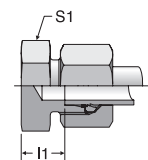


TUBE FITTING PART #	END SIZE 1 (mm)	L (mm)	STANDARD Pressure Rating (bar)		
			EO		
			CF	71	MS
VKA06	6	18.5	315		200
VKA08	8	18.5	315	315	200
VKA10	10	20.0	315	315	200
VKA12	12	20.5	315	315	200
VKA15	15	20.5	315	315	200
VKA18	18	22.5	315		200
VKA22	22	25.0	160	160	100
VKA28	28	25.5	160		100
VKA35	35	30.0	160	160	
VKA42	42	30.0	160		
VKA06	6	18.5	630		400
VKA08	8	18.5	630	630	400
VKA10	10	20.0	630	630	400
VKA12	12	20.5	630	630	400
VKA14	14	22.5	630	630	400
VKA16	16	23.5	400		250
VKA20	20	28.5	400	400	250
VKA25	25	29.0	400	400	250
VKA30	30	30.5	400	400	
VKA38	38	33.0	315	315	

Note: Part does not include tube nut.
Sizes 6,8,10 & 12 work with L and S Series.

ROV

Plug
24° Flareless



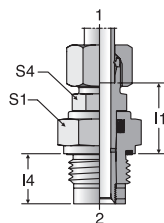
TUBE FITTING PART #	END SIZE 1 (mm)	I 1 (mm)	S1 (mm)	STANDARD Pressure Rating (bar)				
				EO			EO-2	
				CF	71	MS	CF	71
ROV06L	6	7	12	315			315	
ROV08L	8	8	14	315			315	
ROV10L	10	9	17	315			315	
ROV12L	12	10.0	19	315	315		315	
ROV15L	15	11.0	24	315			315	
ROV18L	18	11.5	27	315			315	
ROV22L	22	13.5	32	160	160		160	160
ROV28L	28	14.5	41	160			160	
ROV35L	35	14.5	46	160			160	
ROV42L	42	16.0	55	160			160	
ROV06S	6	11.0	14	630	630		630	
ROV08S	8	13.0	17	630			630	
ROV10S	10	12.5	19	630			630	
ROV12S	12	14.5	22	630	630		630	
ROV14S	14	16.0	24	630				
ROV16S	16	15.5	27	400			400	
ROV20S	20	17.5	32	400			400	
ROV25S	25	20.0	41	400			400	
ROV30S	30	20.5	46	400			400	
ROV38S	38	23.0	55	315			315	

For EO-2 part number, insert "Z" between size and pressure series.
Example: ROV06ZLCF

Dimensions and pressures for reference only, subject to change.

DVGE-R

Plain Bearing Rotary Straight
24° Flareless / BSPP with EOlastic Seal*

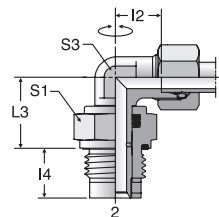


TUBE FITTING PART #	END SIZE		I 1 (mm)	I 4 (mm)	S 1 (mm)	S 4 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 BSPP					EO		
							CF	71	MS
DVGE06LR	6	G 1/4 A	21.0	18.0	19	12	40		
DVGE08LR	8	G 1/4 A	21.0	18.0	19	14	40		
DVGE10LR	10	G 3/8 A	25.0	18.0	24	17	40		
DVGE12LR	12	G 1/2 A	27.0	21.0	27	19	40		
DVGE15LR	15	G 3/4 A	32.0	24.0	32	24	40		
DVGE18LR	18	G 1 A	35.0	27.5	41	27	40		
DVGE22LR	22	G 1 A	39.0	27.5	41	32	40		
DVGE28LR	28	G 1 1/4 A	40.5	31.0	50	41	40		
DVGE35LR	35	G 1 1/2 A	44.5	35.0	55	46			
DVGE06SR	6	G 1/4 A	23.0	18.0	19	14			
DVGE08SR	8	G 1/4 A	24.0	18.0	19	17	100		
DVGE10SR	10	G 3/8 A	26.5	18.0	24	19	100		
DVGE12SR	12	G 1/2 A	28.5	21.0	27	22			
DVGE16SR	16	G 3/4 A	33.5	24.0	32	27			
DVGE20SR	20	G 1 A	38.0	27.5	41	32	100		
DVGE25SR	25	G 1 A	40.5	27.5	41	41	100		
DVGE30SR	30	G 1 1/4 A	41.5	31.0	50	46	100		
DVGE38SR	38	G 1 1/2 A	47.0	35.0	55	55			

*Note: Port depth must be deeper than standard DIN 3852-2.

DVWE-R

Plain Bearing Rotary Elbow
24° Flareless / BSPP with EOlastic Seal*



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 4 (mm)	L 3 (mm)	S 1 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 BSPP						EO		
								CF	71	MS
DVWE06LR	6	G 1/4 A	12.0	18.0	20.0	19	12	40		
DVWE08LR	8	G 1/4 A	14.0	18.0	21.0	19	12	40		
DVWE10LR	10	G 3/8 A	15.0	18.0	26.0	24	14	40		
DVWE12LR	12	G 1/2 A	17.0	21.0	27.0	27	17	40		
DVWE15LR	15	G 3/4 A	21.0	24.0	33.0	32	19	40		
DVWE18LR	18	G 1 A	23.5	27.5	37.5	41	27	40		
DVWE22LR	22	G 1 A	27.5	27.5	39.5	41	27	40		
DVWE28LR	28	G 1 1/4 A	30.5	31.0	44.0	50	36			
DVWE35LR	35	G 1 1/2 A	34.5	35.0	54.0	55	41			
DVWE06SR	6	G 1/4 A	16.0	18.0	21.0	19	12			
DVWE08SR	8	G 1/4 A	17.0	18.0	22.0	19	14	100		
DVWE10SR	10	G 3/8 A	17.5	18.0	27.0	24	17	100		
DVWE12SR	12	G 1/2 A	21.5	21.0	28.0	27	17	100		
DVWE16SR	16	G 3/4 A	24.5	24.0	34.0	32	24			
DVWE20SR	20	G 1 A	26.5	27.5	39.5	41	27			
DVWE25SR	25	G 1 A	30.0	27.5	42.5	41	36	100		
DVWE30SR	30	G 1 1/4 A	35.5	31.0	48.0	50	41	100		
DVWE38SR	38	G 1 1/2 A	41.0	35.0	55.0	55	50			

*Note: Port depth must be deeper than standard DIN 3852-2.

Dimensions and pressures for reference only, subject to change.

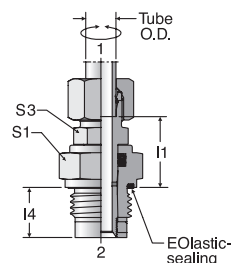
DVGE-M

Plain Bearing Rotary Straight

24° Flareless / Metric Parallel with EOlastic Seal*

TUBE FITTING PART #	END SIZE		I 1 (mm)	I 4 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 Metric					EO		
							CF	71	MS
DVGE06LM	6	M 14 x 1.5	20.0	18.0	19	12	40		
DVGE08LM	8	M 14 x 1.5	21.0	18.0	19	12			
DVGE10LM	10	M 18 x 1.5	26.0	18.0	24	14			
DVGE12LM	12	M 22 x 1.5	27.0	21.0	27	17			
DVGE15LM	15	M 27 x 2	33.0	24.0	32	19	40		
DVGE18LM	18	M 33 x 2	37.5	27.5	41	27			
DVGE22LM	22	M 33 x 2	39.5	27.5	41	27			
DVGE28LM	28	M 42 x 2	44.0	31.0	50	36			
DVGE35LM	35	M 48 x 2	54.0	35.0	55	41	100		
DVGE06SM	6	M 14 x 1.5	21.0	18.0	19	12			
DVGE08SM	8	M 14 x 1.5	22.0	18.0	19	14			
DVGE10SM	10	M 18 x 1.5	27.0	18.0	24	17			
DVGE12SM	12	M 22 x 1.5	28.0	21.0	27	17	100		
DVGE16SM	16	M 27 x 2	34.0	24.0	32	24			
DVGE20SM	20	M 33 x 2	39.5	27.5	41	27			
DVGE25SM	25	M 33 x 2	42.5	27.5	41	36			
DVGE30SM	30	M 42 x 2	48.0	31.0	50	41	100		
DVGE38SM	38	M 48 x 2	55.0	35.0	55	50			

*Note: Port depth must be deeper than standard DIN 3852-1.



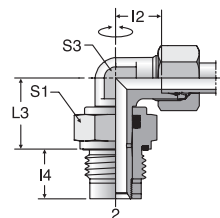
DVWE-M

Plain Bearing Rotary Elbow

24° Flareless / Metric Parallel with EOlastic Seal*

TUBE FITTING PART #	END SIZE		I 2 (mm)	I 4 (mm)	L3 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 Metric						EO		
								CF	71	MS
DVWE06LM	6	M 14 x 1.5	12.0	18.0	20.0	19	12	40		
DVWE08LM	8	M 14 x 1.5	14.0	18.0	21.0	19	12	40		
DVWE10LM	10	M 18 x 1.5	15.0	18.0	26.0	24	14			
DVWE12LM	12	M 22 x 1.5	17.0	21.0	27.0	27	17			
DVWE15LM	15	M 27 x 2	21.0	24.0	33.0	32	19			
DVWE18LM	18	M 33 x 2	23.5	27.5	37.5	41	27			
DVWE22LM	22	M 33 x 2	27.5	27.5	39.5	41	27			
DVWE28LM	28	M 42 x 2	30.5	31.0	44.0	50	36			
DVWE35LM	35	M 48 x 2	34.5	35.0	54.0	55	41			
DVWE06SM	6	M 14 x 1.5	16.0	18.0	21.0	19	12	100		
DVWE08SM	8	M 14 x 1.5	17.0	18.0	22.0	19	14	100		
DVWE10SM	10	M 18 x 1.5	17.5	18.0	27.0	24	17			
DVWE12SM	12	M 22 x 1.5	21.5	21.0	28.0	27	17			
DVWE16SM	16	M 27 x 2	24.5	24.0	34.0	32	24			
DVWE20SM	20	M 33 x 2	26.5	27.5	39.5	41	27			
DVWE25SM	25	M 33 x 2	30.0	27.5	42.5	41	36			
DVWE30SM	30	M 42 x 2	35.5	31.0	48.0	50	41			
DVWE38SM	38	M 48 x 2	41.0	35.0	55.0	55	50			

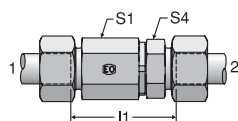
*Note: Port depth must be deeper than standard DIN 3852-1.



Dimensions and pressures for reference only, subject to change.

DG101

Ball Bearing Rotary Union
24° Flareless / 24° Flareless

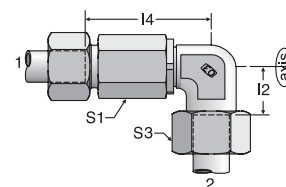


TUBE FITTING PART #	END SIZE 1 & 2 (mm)	I 1 (mm)	S1 (mm)	S4 (mm)	STANDARD Pressure Rating (bar)		
					EO		
					CF	71	MS
DG101/06S	6	47	22	17	•		
DG101/08S	8	47	22	17	•		
DG101/12S	12	57	30	24	•		
DG101/16S	16	57	30	27	•		
DG101/20S	20	71	41	36	•		
DG101/25S	25	72	41	41	•		
DG101/30S	30	82	60	46			
DG101/38S	38	82	60	55			

Note: See Table F1 on page F7 for RPM/working pressure data.

DG103

Ball Bearing Rotary Elbow
24° Flareless / 24° Flareless

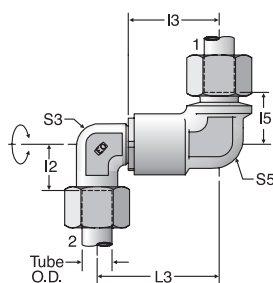


TUBE FITTING PART #	END SIZE 1 & 2 (mm)	I 2 (mm)	I 4 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
						EO		
						CF	71	MS
DG103/06S	6	16.0	44.5	22	17	•		
DG103/08S	8	17.0	44.5	22	19	•		
DG103/12S	12	21.5	55.5	30	24	•		
DG103/16S	16	24.5	54.5	30	30	•		
DG103/20S	20	26.5	72.5	41	36	•		
DG103/25S	25	30.0	71.0	41	46	•		
DG103/30S	30	35.5	89.0	60	50	•		
DG103/38S	38	41.0	86.5	60	60			

Note: See Table F1 on page F7 for RPM/working pressure data.

DG105

Ball Bearing Rotary Union
24° Flareless / 24° Flareless

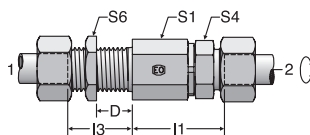


TUBE FITTING PART #	END SIZE 1 & 2 (mm)	I 2 (mm)	I 3 (mm)	I 5 (mm)	L3 (mm)	S3 (mm)	S5 (mm)	STANDARD Pressure Rating (bar)		
								EO		
								CF	71	MS
DG105/12S	12	21.5	39.5	26.5	81	22	24	•		
DG105/16S	16	24.5	39.5	25.5	87	22	24	•		
DG105/20S	20	26.5	56.5	39.5	109	36	32	•		
DG105/25S	25	30.0	56.5	38.0	116	36	32	•		
DG105/30S	30	35.5	65.0	44.5	133	50	50	•		
DG105/38S	38	41.0	65.0	42.0	145	50	50	•		

Note: See Table F1 on page F7 for RPM/working pressure data.

DG107

Ball Bearing Rotary Bulkhead Union
24° Flareless / 24° Flareless



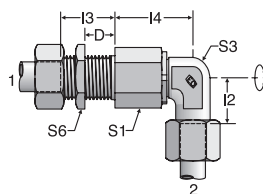
TUBE FITTING PART #	END SIZE 1 & 2 (mm)	D (mm)	I 1 (mm)	I 3 (mm)	S1 (mm)	S4 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)		
								EO		
								CF	71	MS
DG107/06S	6	5	42.0	16.0	22	17	19	•		
DG107/08S	8	5	42.0	16.0	22	17	22	•		
DG107/12S	12	5	52.5	15.5	30	24	27	•		
DG107/16S	16	5	51.5	17.5	30	27	32	•		
DG107/20S	20	15	65.5	28.5	41	36	41	•		
DG107/25S	25	15	66.0	30.0	41	41	46	•		
DG107/30S	30	15	75.5	30.5	60	46	50	•		
DG107/38S	38	15	76.0	31.0	60	55	65	•		

Note: See Table F1 on page F7 for RPM/working pressure data.

Dimensions and pressures for reference only, subject to change.

DG108

Ball Bearing Rotary Bulkhead Elbow
24° Flareless / 24° Flareless

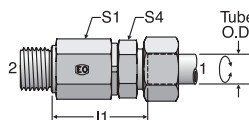


TUBE FITTING PART #	END SIZE 1 & 2 (mm)	D (mm)	I 2 (mm)	I 3 (mm)	I 4 (mm)	S1 (mm)	S3 (mm)	S6 (mm)	STANDARD Pressure Rating (bar)		
									EO		
									CF	71	MS
DG108/06S	6	5	16.0	16.0	39.5	22	17	19			
DG108/08S	8	5	17.0	16.0	39.5	22	17	22	•		
DG108/12S	12	5	21.5	15.5	51.0	30	22	27	•		
DG108/16S	16	5	24.5	17.5	49.0	30	22	32	•		
DG108/20S	20	15	26.5	28.5	67.0	41	36	41			
DG108/25S	25	15	30.0	30.0	65.0	41	36	46			
DG108/30S	30	15	35.5	30.5	82.5	60	50	50			
DG108/38S	38	15	41.0	31.0	80.5	60	50	65			

Note: See Table F1 on page F7 for RPM/working pressure data.

DG102-R

Ball Bearing Rotary Straight
24° Flareless / BSPP

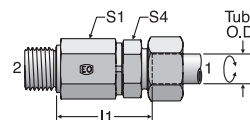


TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	S4 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 BSPP				EO		
						CF	71	MS
DG102/06SR	6	G 1/4 A	42.0	22	17	•		
DG102/08SR	8	G 1/4 A	42.0	22	17	•		
DG102/12SR	12	G 3/8 A	52.5	30	24	•		
DG102/16SR	16	G 1/2 A	51.5	30	27	•		
DG102/20SR	20	G 3/4 A	65.5	41	36			
DG102/25SR	25	G 1 A	66.0	41	41			
DG102/30SR	30	G 1 1/4 A	75.5	60	46	•		
DG102/38SR	38	G 1 1/2 A	76.0	60	55	•		

Note: See Table F1 on page F7 for RPM/working pressure data.

DG102-M

Ball Bearing Rotary Straight
24° Flareless / Metric Parallel

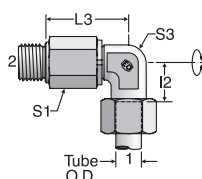


TUBE FITTING PART #	END SIZE		I 1 (mm)	S1 (mm)	S4 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 Metric				EO		
						CF	71	MS
DG102/06SM	6	M14 x 1.5	42.0	22	17	•		
DG102/08SM	8	M14 x 1.5	42.0	22	17			
DG102/12SM	12	M18 x 1.5	52.5	30	24	•		
DG102/16SM	16	M22 x 1.5	51.5	30	27	•		
DG102/20SM	20	M27 x 2	65.5	41	36			
DG102/25SM	25	M33 x 2	66.0	41	41			
DG102/30SM	30	M42 x 2	75.5	60	46			
DG102/38SM	38	M48 x 2	76.0	60	55			

Note: See Table F1 on page F7 for RPM/working pressure data.

DG104-R

Ball Bearing Rotary Elbow
24° Flareless / BSPP with
EOlastic Seal



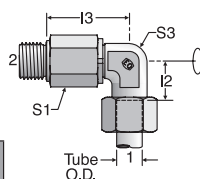
TUBE FITTING PART #	END SIZE		I2 (mm)	L3 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
	1 (mm)	2 BSPP					EO		
							CF	71	MS
DG104/06SR	6	G 1/4 A	16.0	39.5	22	17	•		
DG104/08SR	8	G 1/4 A	17.0	39.5	22	17	•		
DG104/12SR	12	G 3/8 A	21.5	51.0	30	22	•		
DG104/16SR	16	G 1/2 A	24.5	49.0	30	22	•		
DG104/20SR	20	G 3/4 A	26.5	67.0	41	36	•		
DG104/25SR	25	G 1 A	30.0	65.0	41	36	•		
DG104/30SR	30	G 1 1/4 A	35.5	82.5	60	50	•		
DG104/38SR	38	G 1 1/2 A	41.0	80.5	60	50			

Note: See Table F1 on page F7 for RPM/working pressure data.

Dimensions and pressures for reference only, subject to change.

DG104-M

Ball Bearing Rotary Elbow
24° Flareless / Metric Parallel



TUBE FITTING PART #	END SIZE		I 2 (mm)	I 3 (mm)	S 1 (mm)	S 3 (mm)	STANDARD Pressure Rating (bar)		
	1	2					EO		
	(mm)	Metric					CF	71	MS
DG104/06SM	6	M14 x 1.5	16.0	39.5	22	17			
DG104/08SM	8	M14 x 1.5	17.0	39.5	22	17	•		
DG104/12SM	12	M18 x 1.5	21.5	51.0	30	22	•		
DG104/16SM	16	M22 x 1.5	24.5	49.0	30	22	•		
DG104/20SM	20	M27 x 2	26.5	67.0	41	36	•		
DG104/25SM	25	M33 x 2	30.0	65.0	41	36	•		
DG104/30SM	30	M42 x 2	35.5	82.5	60	50			
DG104/38SM	38	M48 x 2	41.0	80.5	60	50			

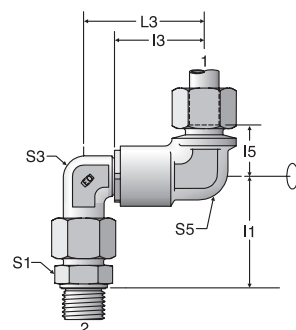
Note: See Table F1 on page F7 for RPM/working pressure data.

DG106-R

Ball Bearing Rotary Double Elbow
24° Flareless / BSPP with EOlastic Seal

TUBE FITTING PART #	END SIZE		I 1 (mm)	I 3 (mm)	I 5 (mm)	L 3 (mm)	S 1 (mm)	S 3 (mm)	S 5 (mm)	STANDARD Pressure Rating (bar)		
	1	2								EO		
	(mm)	BSPP								CF	71	MS
DG106/12SR	12	G 3/8 A	55.5	39.5	26.5	53.0	22	24	22	•		
DG106/16SR	16	G 1/2 A	61.5	39.5	25.5	53.0	27	24	24			
DG106/20SR	20	G 3/4 A	69.5	56.5	39.5	76.0	32	36	32			
DG106/25SR	25	G 1 A	78	56.5	38.0	76.0	41	36	32			
DG106/30SR	30	G 1 1/4 A	86.5	65.0	44.5	92.5	50	50	50			
DG106/38SR	38	G 1 1/2 A	101.0	65.0	42.0	92.5	55	50	50			

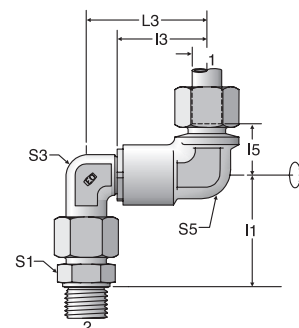
Note: See Table F1 on page F7 for RPM/working pressure data.

**DG106-M**

Ball Bearing Rotary Double Elbow
24° Flareless / Metric Parallel

TUBE FITTING PART #	END SIZE		I 1 (mm)	I 3 (mm)	I 5 (mm)	L 3 (mm)	S 1 (mm)	S 3 (mm)	S 5 (mm)	STANDARD Pressure Rating (bar)		
	1	2								EO		
	(mm)	Metric								CF	71	MS
DG106/12SM	12	M18 x 1.5	55.5	39.5	26.5	53	24	24	22			
DG106/16SM	16	M22 x 1.5	61.5	39.5	25.5	53	27	24	24			
DG106/20SM	20	M27 x 2	69.5	56.5	39.5	76	32	36	32	•		
DG106/25SM	25	M33 x 2	78.0	56.5	38.0	76	41	36	32			
DG106/30SM	30	M42 x 2	86.5	65.0	44.5	92.5	50	50	50			
DG106/38SM	38	M48 x 2	101.0	65.0	42.0	92.5	55	50	50			

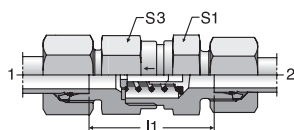
Note: See Table F1 on page F7 for RPM/working pressure data.



Dimensions and pressures for reference only, subject to change.

RHD

Non-Return Valve
24° Flareless / 24° Flareless



TUBE FITTING PART #	END SIZE 1 & 2 (mm)	DN SIZE (mm)	I 1 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
						EO		EO-2		
						CF	71	MS	CF	71
RHD06L	6	4	29.0	17	17	250			250	
RHD08L	8	6	30.0	19	19	250			250	
RHD10L	10	8	40.5	22	24	250	250		250	
RHD12L	12	10	43.5	27	30	250	250		250	
RHD15L	15	12	47.5	27	32	250			250	
RHD18L	18	16	51.5	36	36	160			160	
RHD22L	22	20	61.5	41	46	160			160	
RHD28L	28	25	69.5	50	55	100			100	
RHD35L	35	32	74.5	60	60	100			100	
RHD42L	42	32	74.0	65	70	100			100	
RHD06S	6	3	34.5	19	19	400				
RHD08S	8	4	34.5	19	19	400				
RHD10S	10	6	40.5	22	24	400			400	
RHD12S	12	8	42.5	24	27	400				
RHD14S	14	10	47.5	27	32					
RHD16S	16	12	50.5	32	36	315	315		250	
RHD20S	20	16	54.5	41	46	250	250			
RHD25S	25	20	58.5	46	50	250	250			
RHD30S	30	25	69.5	60	60	250				
RHD38S	38	32	75.5	65	70	250			250	

Note: These valves are not compatible with steam, oxygen and explosive gases.

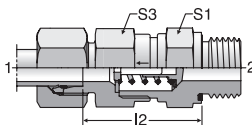
For EO-2 part number, insert "Z" between size and pressure series.

Example: RHD06ZLCF

For Optional Opening Pressures see [page F8](#).

RHV-R-ED

Non-Return Valve
24° Flareless / BSPP
with EOlastic Seal



TUBE FITTING PART #	END SIZE		DN SIZE (mm)	I 2 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 BSPP					EO		EO-2		
							CF	71	MS	CF	71
RHV06LRED	6	G 1/8 A	4	28.0	17	17	250				
RHV08LRED	8	G 1/4 A	6	30.0	19	19	250			250	
RHV10LRED	10	G 1/4 A	8	38.5	22	24	250				
RHV12LRED	12	G 3/8 A	10	42.5	27	30	250			250	
RHV15LRED	15	G 1/2 A	12	45.5	27	32	250				
RHV18LRED	18	G 1/2 A	16	50.0	36	36	160			160	160
RHV22LRED	22	G 3/4 A	20	55.0	41	46	160			160	160
RHV28LRED	28	G 1 A	25	63.0	50	55	100			100	
RHV35LRED	35	G 1 1/4 A	32	69.0	60	60	100			100	
RHV42LRED	42	G 1 1/2 A	32	68.5	65	70	100			100	
RHV06SRED	6	G 1/4 A	3	31.5	19	19	400	400			
RHV08SRED	8	G 1/4 A	4	31.5	19	19	400				
RHV10SRED	10	G 3/8 A	6	38.0	22	24	400				
RHV12SRED	12	G 3/8 A	8	41.0	24	27	400				
RHV14SRED	14	G 1/2 A	10	44.5	27	32					
RHV16SRED	16	G 1/2 A	12	48.0	32	36	315			315	
RHV20SRED	20	G 3/4 A	16	52.0	41	46	250				
RHV25SRED	25	G 1 A	20	54.5	46	50	250				
RHV30SRED	30	G 1 1/4 A	25	64.0	60	60	250				
RHV38SRED	38	G 1 1/2 A	32	69.5	65	70	250				

Note: These valves are not compatible with steam, oxygen and explosive gases.

For EO-2 part number, insert "Z" between size and pressure series.

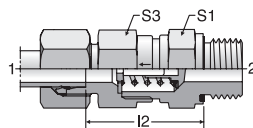
Example: RHV06ZLREDCF

For Optional Opening Pressures see [page F8](#).

Dimensions and pressures for reference only, subject to change.

RHV-M-ED

Non-Return Valve

24° Flareless / Metric Parallel
with EOlastic Seal

TUBE FITTING PART #	END SIZE		DN SIZE (mm)	I 2 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1 (mm)	2 Metric					EO		EO-2		
							CF	71	MS	CF	71
RHV06LMED	6	M10 x 1	4	28.0	17	17	250				
RHV08LMED	8	M12 x 1.5	6	29.0	19	19	250				
RHV10LMED	10	M14 x 1.5	8	38.5	22	24					
RHV12LMED	12	M16 x 1.5	10	42.5	27	30	250				
RHV15LMED	15	M18 x 1.5	12	45.5	27	32					
RHV18LMED	18	M22 x 1.5	16	50.0	36	36					
RHV22LMED	22	M26 x 1.5	20	55.0	41	46					
RHV28LMED	28	M33 x 2	25	63.0	50	55					
RHV35LMED	35	M42 x 2	32	69.0	60	60					
RHV42LMED	42	M48 x 2	32	68.5	65	70					
RHV06SMED	6	M12 x 1.5	3	31.5	19	19					
RHV08SMED	8	M14 x 1.5	4	31.5	19	19					
RHV10SMED	10	M16 x 1.5	6	38.0	22	24					
RHV12SMED	12	M18 x 1.5	8	41.0	24	27					
RHV14SMED	14	M20 x 1.5	10	44.5	27	32					
RHV16SMED	16	M22 x 1.5	12	48.0	32	36					
RHV20SMED	20	M27 x 2	16	52.0	41	46					
RHV25SMED	25	M33 x 2	20	54.5	46	50					
RHV30SMED	30	M42 x 2	25	64.0	60	60					
RHV38SMED	38	M48 x 2	32	69.5	65	70					

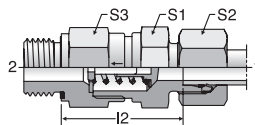
For EO-2 part number, insert "Z" between size and pressure series.

Example: RHV06ZLMEDCF

For Optional Opening Pressures see [page F8](#).**Note:** These valves are not compatible with steam, oxygen and explosive gases.**RHZ-R-ED**

Non-Return Valve

24° Flareless / BSPP



TUBE FITTING PART #	END SIZE		DN SIZE (mm)	I 2 (mm)	S1 (mm)	S2 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)					
	1 (mm)	2 BSPP						EO				EO-2	
								CF	71	MS	CF	71	
RHZ06LRED	6	G 1/8 A	4	26.5	17	14	17	250					
RHZ08LRED	8	G 1/4 A	6	28.5	19	17	19	250					
RHZ10LRED	10	G 1/4 A	8	38.5	22	19	24	250					
RHZ12LRED	12	G 3/8 A	10	40.5	27	22	30	250			250		
RHZ15LRED	15	G 1/2 A	12	42.5	27	27	32	250			250		
RHZ18LRED	18	G 1/2 A	16	48.0	36	32	36	160			160		
RHZ22LRED	22	G 3/4 A	20	56.0	41	36	46	160			160		
RHZ28LRED	28	G 1 A	25	64.0	50	41	55	100			100		
RHZ35LRED	35	G 1 1/4 A	32	70.0	60	50	60	100					
RHZ42LRED	42	G 1 1/2 A	32	70.5	65	60	70						
RHZ06SRED	6	G 1/4 A	3	31.5	19	17	19	400	400				
RHZ08SRED	8	G 1/4 A	4	31.5	19	19	19	400					
RHZ10SRED	10	G 3/8 A	6	38.0	22	22	24						
RHZ12SRED	12	G 3/8 A	8	41.0	24	24	27	400					
RHZ14SRED	14	G 1/2 A	10	43.5	27	27	32						
RHZ16SRED	16	G 1/2 A	12	46.0	32	30	36	315					
RHZ20SRED	20	G 3/4 A	16	50.0	41	36	46	250					
RHZ25SRED	25	G 1 A	20	54.5	46	46	50	250					
RHZ30SRED	30	G 1 1/4 A	25	64.0	60	50	60						
RHZ38SRED	38	G1 1/2 A	32	71.5	65	60	70						

For EO-2 part number, insert "Z" between size and pressure series.

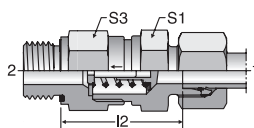
Example: RHZ06ZLREDCF

For Optional Opening Pressures see [page F8](#).**Note:** These valves are not compatible with steam, oxygen and explosive gases.

Dimensions and pressures for reference only, subject to change.

RHZ-M-ED

Non-Return Valve

24° Flareless / Metric Parallel with
EOlastic Seal

TUBE FITTING PART #	END SIZE		DN SIZE (mm)	I 2 (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)				
	1	2					EO			EO-2	
	(mm)	Metric					CF	71	MS	CF	71
RHZ06LMED	6	M10 x 1	4	26.5	17	17	250				
RHZ08LMED	8	M12 x 1.5	6	28.5	19	19					
RHZ10LMED	10	M14 x 1.5	8	38.5	22	24	250				
RHZ12LMED	12	M16 x 1.5	10	40.5	27	30	250				
RHZ15LMED	15	M18 x 1.5	12	42.5	27	32				250	
RHZ18LMED	18	M22 x 1.5	16	48.0	36	36					
RHZ22LMED	22	M26 x 1.5	20	56.0	41	46					
RHZ28LMED	28	M33 x 2	25	64.0	50	55					
RHZ35LMED	35	M42 x 2	32	70.0	60	60					
RHZ42LMED	42	M48 x 2	32	70.5	65	70					
RHZ06SMED	6	M12 x 1.5	3	31.5	19	19	400				
RHZ08SMED	8	M14 x 1.5	4	31.5	19	19					
RHZ10SMED	10	M16 x 1.5	6	38.0	22	24					
RHZ12SMED	12	M18 x 1.5	8	41.0	24	27					
RHZ14SMED	14	M20 x 1.5	10	43.5	27	32					
RHZ16SMED	16	M22 x 1.5	12	46.0	32	36					
RHZ20SMED	20	M27 x 2	16	50.0	41	46					
RHZ25SMED	25	M33 x 2	20	54.5	46	50					
RHZ30SMED	30	M42 x 2	25	64.0	60	60					
RHZ38SMED	38	M48 x 2	32	71.5	65	70					

Note: These valves are not compatible with steam, oxygen and explosive gases.

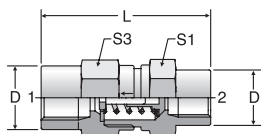
For EO-2 part number, insert "Z" between size and pressure series.
Example: RHZ06ZLMEDCF

For Optional Opening Pressures see [page F8](#).

RHDI

Non-Return Valve

BSPP Female / BSPP Female



TUBE FITTING PART #	END SIZE	DN SIZE	D	L	S1	S3	STANDARD Pressure Rating (bar)		
							EO		
							CF	71	MS
RHDI1/8	G 1/8	3	19	42.5	19	19		400	
RHDI1/4	G 1/4	4	19	51	19	19	400		
RHDI3/8	G 3/8	8	24	60	24	27	400		
RHDI1/2	G 1/2	12	32	72	32	36	315	315	
RHDI3/4	G 3/4	16	41	84	41	46	250		
RHDI1	G 1	20	46	95	46	50	250		
RHDI1 1/4	G 1 1/4	25	60	110	60	60	250	250	
RHDI1 1/2	G 1 1/2	32	65	114	65	70	250	250	

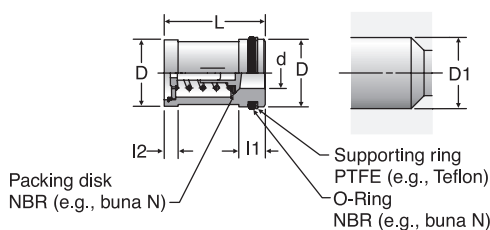
Note: These valves are not compatible with steam, oxygen and explosive gases.

For Optional Opening Pressures see [page F8](#).

Dimensions and pressures for reference only, subject to change.

RVP

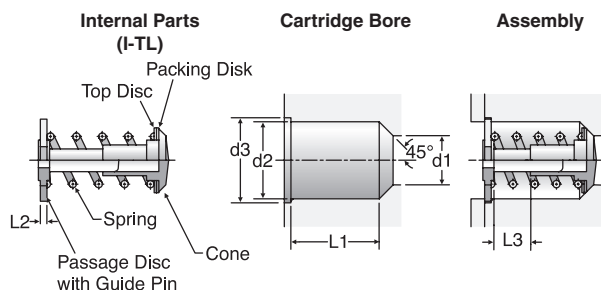
Non-Return Valve
Cartridge



TUBE FITTING PART #	d (mm)	D (mm)	D1 (mm)	I 1 (mm)	I 2 (mm)	L (mm)	STANDARD Pressure Rating (bar)		
							EO	CF	71
RVP13	3.5	13	13	9.5	6.0	23.0		400	400
RVP16	5.5	16	16	9.5	6.5	26.5		400	400
RVP20	7.5	20	20	9.5	6.5	30.0		400	400
RVP24	9.5	24	24	12.0	7.5	35.0		315	315
RVP27	11.5	27	27	12.0	7.5	38.0			315
RVP35	15.0	35	35	12.0	9.5	44.5		250	250
RVP40	19.0	40	40	12.0	11.0	50.5			250
RVP47	24.0	47	47	13.0	13.0	60.0			250
RVP55	29.0	55	55	16.0	13.0	70.0			250

I-TL

Non-Return Valve
Internal Parts



TUBE FITTING PART #	For Use With	d1 (mm)	d2 (mm)	d3 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	STANDARD FROM STOCK		
								CF	71	MS
ITL06L	6L, 8S	3.5	7.5	8.55	8.2	2.0	1.0	•		
ITL08L	8L, 10S	5.5	10.2	11.55	11.0	2.0	1.7	•		
ITL10L	10L, 12S	7.5	13.0	14.05	14.0	2.0	2.3	•		
ITL12L	12L, 14S	9.5	16.7	18.05	16.5	2.5	2.9	•		
ITL15L	15L, 16S	11.5	19.5	20.55	19.0	2.5	3.5	•		
ITL18L	18L, 20S	15	25.2	27.10	22.5	3.0	4.4			
ITL22L	22L, 25S	19	30.8	32.60	27.0	3.0	5.5	•		
ITL28L	28L, 30S	24	38.6	40.60	32.5	3.5	7.3			
ITL35L	35L, 42L, 38S	29	45.7	48.10	37.5	3.5	8.9			

Note: Omit "CF" in the part number for steel material.

Standard: Material steel zinc plated (A3K), springs phosphated and oiled. Packing disc of NBR (e.g., buna N), opening pressure 1 bar.

On request:

- Packing disc of FKM (e.g., fluorocarbon)
- Stainless steel 1.4571, packing disc of NBR (e.g., buna N) or FKM (e.g., fluorocarbon) (on request).

Temperature rating, without pressure reductions of steel non-return valves with NBR seals (e.g., buna N-standard) is -35°C to +100°C and with FKM seals (e.g., fluorocarbon) (on request) is -25°C to +120°C.

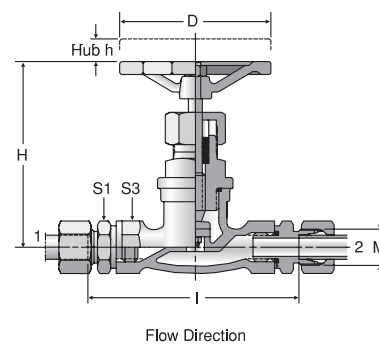
Dimensions and pressures for reference only, subject to change.

DV

Shut-Off Valve, PN 10

24° Flareless / 24° Flareless

TUBE FITTING PART #	END SIZE 1 & 2 (mm)	M Metric (mm)	DN SIZE (mm)	D (mm)	h (mm)	H (mm)	I (mm)	S1 (mm)	S3 (mm)	STANDARD Pressure Rating (bar)		
										EO		
										CF	71	MS
DV06L	6	12 x 1.5	5	50	7	63	88	22	21			10
DV08L	8	14 x 1.5	6	50	7	63	88	22	21			
DV10L	10	16 x 1.5	8	50	7	63	90	22	21			10
DV12L	12	18 x 1.5	10	50	7	63	90	22	21			10
DV15L	15	22 x 1.5	12	50	8	65	93	27	25			10
DV18L	18	26 x 1.5	16	50	8	67	94	27	25			10
DV22L	22	30 x 2	20	60	8	67	108	32	32			10
DV28L	28	36 x 2	25	60	10	95	125	41	38			10
DV35L	35	45 x 2	32	70	10	102	145	50	47			10



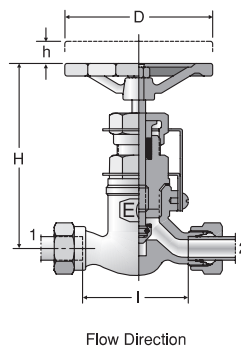
Note: The pressure specification PN for hand operated shut-off valves applies to the design factor 1.5 (according to DIN 3230 T5 and ISO 5208). Omit "MS" in the part number for brass material.

LD

Shut-Off Valve, PN 40

24° Flareless / 24° Flareless

TUBE FITTING PART #	END SIZE 1 & 2 (mm)	DN SIZE (mm)	D (mm)	h LIFT (mm)	H (mm)	I (mm)	STANDARD Pressure Rating (bar)		
							EO		
							CF	71	MS
LD10S	10	6	63	7	98	45			40
LD12S	12	8	63	7	98	49			40
LD14S	14	10	63	7	98	54			40
LD16S	16	12	80	9	110	67			40
LD20S	20	16	80	9	110	69			40
LD25S	25	20	100	12	129	86			40
LD30S	30	25	100	12	129	93			40
LD38S	38	32	100	12	158	108			40



Note: The pressure specification PN for hand operated shut-off valves applies to the design factor 1.5 (according to DIN 3230 T5 and ISO 5208). Omit "MS" in the part number for brass material.

Dimensions and pressures for reference only, subject to change.

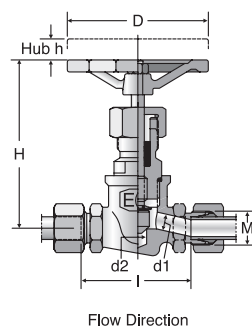
VDHA

High Pressure Valve
24° Flareless / 24° Flareless

TUBE FITTING PART #	END SIZE (mm)	DN SIZE (mm)	d1 (mm)	d2 (mm)	D (mm)	h (mm)	H (mm)	I (mm)	STANDARD Pressure Rating (bar)				
									EO			EO-2	
									CF	71	MS	CF	71
VDHA06S	6	3	4	9.5	100	6	120	66					
VDHA08S	8	4	5	9.5	100	6	120	66					
VDHA10S	10	6	7	9.5	100	6	120	65					
VDHA12S	12	8	8	9.5	100	6	120	65	250				
VDHA14S	14	10	10	9.5	100	6	120	84					
VDHA16S	16	12	11	9.5	100	6	120	83	160				
VDHA20S	20	16	13	11.0	100	6	120	79					
VDHA25S	25	20	17	12.0	125	9	143	106	160				
VDHA30S	30	25	19	22.5	125	12	164	103	100				
VDHA38S	38	32	25	26.5	180	12	198	118	100				

For EO-2 part number, insert "Z" between size and pressure series.

Example: VDHA06ZS



Internal threaded spindle
and body of low grade
forged stainless steel

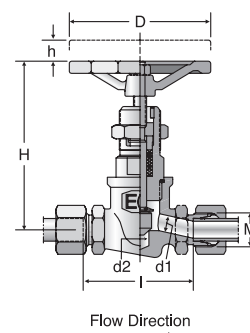
VDHB

High Pressure Valve – Panel Mount
24° Flareless / 24° Flareless

TUBE FITTING PART #	END SIZE (mm)	DN SIZE (mm)	M Metric	d1 (mm)	d2 (mm)	D (mm)	h (mm)	H (mm)	I (mm)	STANDARD Pressure Rating (bar)				
										EO			EO-2	
										CF	71	MS	CF	71
VDHB06S	6	4	14 x 1.5	4	9.5	100	6	124	66	160			160	
VDHB08S	8	4	16 x 1.5	5	9.5	100	6	124	66	160			160	
VDHB10S	10	6	18 x 1.5	7	9.5	100	6	124	65	160	160		160	
VDHB12S	12	8	20 x 1.5	8	9.5	100	6	124	65	160	160		160	
VDHB14S	14	10	22 x 1.5	10	9.5	100	6	124	84	160			160	
VDHB16S	16	12	24 x 1.5	11	9.5	100	6	124	83	160			160	160
VDHB20S	20	16	30 x 2	13	11.0	100	6	124	79	160			160	
VDHB25S	25	20	36 x 2	17	12.0	125	9	153	106	160			160	

For EO-2 part number, insert "Z" between size and pressure series.

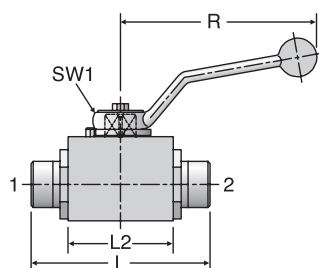
Example: VDHB06ZS



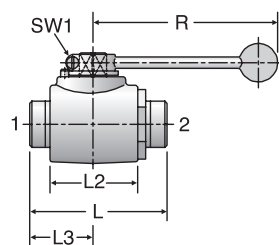
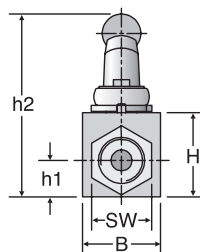
External threaded spindle
and body of low grade
forged stainless steel

KH

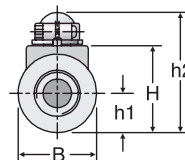
Two-Way Ball Valve
24° Flareless / 24° Flareless



DN4 - DN25



DN32 - DN40



TUBE FITTING PART #	END SIZE (mm)	DN SIZE (mm)	B (mm)	h1 (mm)	h2 (mm)	H (mm)	L (mm)	L2 (mm)	L3 (mm)	R (mm)	SW1 (mm)	EO			EO-2	
												CF	71	MS	CF	71
KH06L	6	4	20	10.0	55.0	25	67	36	—	76	7	125				
KH08L	8	6	20	10.0	55.0	25	67	36	—	76	7	125				
KH10L	10	8	30	14.5	68.0	35	75	45	—	100	8	125			125	
KH12L	12	10	30	14.5	68.0	35	75	45	—	100	8	125	125		125	
KH15L	15	12	35	17.0	92.0	40	83	51	—	112	10	125	125		125	
KH18L	18	16	45	20.0	105.0	45	82	50	—	166	11	125			125	
KH22L	22	20	45	24.0	113.0	55	99	60	—	187	14				63	
KH28L	28	25	55	26.0	118.0	60	108	70	—	187	14	63			63	
KH35L	35	32	73	36.5	180.5	80	121	79	58.5	240	17					
KH42L	42	40	85	42.5	190.5	90	118	76	52.5	250	17	63				
KH08S	8	4	20	10.0	55.0	25	73	36	—	76	7	200				
KH10S	10	6	20	10.0	55.0	25	73	36	—	76	7	200				
KH12S	12	8	30	14.5	68.0	35	77	45	—	100	8	200				
KH14S	14	10	30	14.5	68.0	35	81	45	—	100	8	200				
KH16S	16	12	35	17.0	92.0	40	87	51	—	112	10	160				
KH20S	20	16	40	20.0	105.0	45	90	50	—	166	11	160	160		160	
KH25S	25	20	45	24.0	113.0	55	107	60	—	187	14	125				
KH30S	30	25	55	36.0	118.0	60	120	70	—	187	14	125				
KH38S	38	32	73	36.5	180.5	80	127	73	58.5	320	17	63				

For EO-2 part number, insert "Z" between size and pressure series.
Example: KH08ZSCF. Omit "CF" in the part number for steel material.

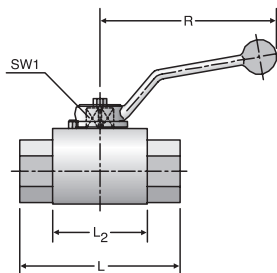
Dimensions and pressures for reference only, subject to change.

KH-R/NPT

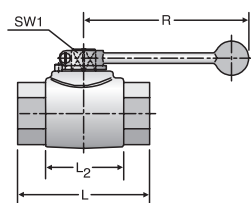
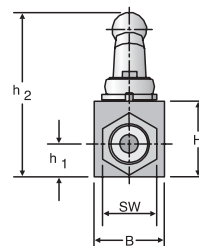
Two-Way Ball Valve

Female BSPP / Female BSPP

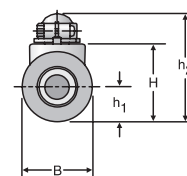
Female NPT / Female NPT



DN4-DN25



DN32-DN40

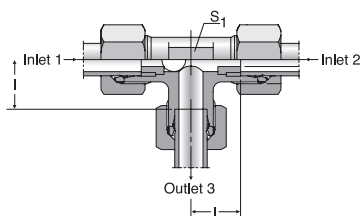


TUBE FITTING PART #	END SIZE 1 & 2 NPT / BSPT	DN SIZE (mm)	B (mm)	h1 (mm)	h2 (mm)	H (mm)	L (mm)	L2 (mm)	R (mm)	SW1 (mm)	STANDARD Pressure Rating (bar)		
											EO		
											CF	71	MS
KH1/8X	1/8-28	4	20	10.0	55.0	25	69	36	76	7	200		
KH1/4X	1/4-19	6	20	10.0	55.0	25	69	36	76	7	200		
KH3/8X	3/8-19	10	30	14.5	68.0	35	73	45	100	8	200		
KH1/2X	1/2-14	12	35	17.0	92.0	40	82	51	112	10	200		
KH5/8X	5/8-14	16	40	20.0	105.0	45	88	50	166	11			
KH3/4X	3/4-14	20	45	24.0	113.0	55	93	60	187	14	125		
KH1X	1-11	25	55	26.0	118.0	60	113	70	187	14	125		
KH11/4X	1 1/4-11	32	73	36.5	104.5	80	110	70	240	17	195		
KH11/2X	1 1/2-11	40	85	42.5	114.5	90	114	75	240	17	195		
KH1/8NPTX	1/8-27	4	20	10.0	55.0	25	69	36	76	7	200		
KH1/4NPTX	1/4-18	6	20	10.0	55.0	25	69	36	76	7	200		
KH3/8NPTX	3/8-18	10	30	14.5	68.0	35	73	45	100	8	200		
KH1/2NPTX	1/2-14	12	35	17.0	92.0	40	82	51	112	10	200		
KH3/4NPTX	3/4-14	20	45	24.0	113.0	55	93	60	187	14	125		
KH1NPTX	1-11 1/2	25	55	26.0	118.0	60	113	70	187	14	125		
KH11/4NPTX	1 1/4-11 1/2	32	73	36.5	104.5	80	110	70	240	17	125		
KH11/2NPTX	1 1/2-11 1/2	40	85	42.5	114.5	90	114	75	240	17			

Note: Omit "CF" in the part number for steel material.**WV**

Alternating Valve

24° Flareless



TUBE FITTING PART #	END SIZE 1 - 3 (mm)	I (mm)	S1 (mm)	STANDARD Pressure Rating (bar)		
				EO		
				CF	71	MS
WV08L	8	14	14	160		
WV10L	10	15	17	160		
WV12L	12	17	19	160		
WV15L	15	21	19			

Dimensions and pressures for reference only, subject to change.

[illegible]

Dimensions and pressures for reference only, subject to change.