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Industrial Tube Fittings, Adapters and Equipment

Catalog 4300 PDF Version

PDF Version 12— 11/2025



ENGINEERING YOUR SUCCESS.

 WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale."

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IN THIS WORLD,
THERE'S NO TIME
FOR DOWNTIME.



GETTING YOU RUNNING AND KEEPING YOU THERE: PRODUCTS, SERVICES, INNOVATION, AND LEAK-FREE PERFORMANCE DESIGNED WITH YOU IN MIND

Equipment makers and users both rely on Parker to keep downtime at bay. Because we understand that every lost minute impacts productivity, we continually add innovation to our products and services while helping our customers save money and time.

INDUSTRY STANDARDS



LESS DOWNTIME BEGINS WITH MORE ADVANCED TESTING

Water. Salt. Oxygen. Chemicals. Vibration. Fatigue. High internal and external pressure. Put them together and you have the makings for premature connector failure. Parker's metallurgical lab is the first line of defense against the ravages of your application environment.

Our lab features the most advanced testing equipment, enabling us to evaluate our products under the same—or tougher—conditions they will face in their service life. Testing capabilities include:

- **High pressure test stand**, with the ability to achieve up to 60,000 psi of pressure to ensure safety while meeting the ever-increasing market demand for higher pressure applications.
- **Ingression tester** that allows us to test for leaks by simulating conditions that exist more than four miles below the ocean's surface.
- **Corrosion resistance testing chambers** enable us to ensure the prevention of corrosion throughout a product's life.
- **Force measurement equipment**—unique to Parker—evaluates the force required to pull apart our fittings, which leads to more robust and rugged designs.
- **Fatigue assessment** provides the critical data needed to ensure longer fitting life.
- **Inspection equipment that examines materials and surfaces** at the microscopic level, enabling us to understand a material's properties and microstructure, resulting in products with greater corrosion resistance and longer life.

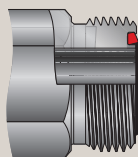


LISTENING TO CUSTOMERS TO DEVELOP IMPROVED SOLUTIONS

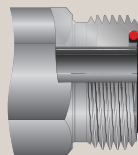
At Parker, we don't stand for standing still. By listening to and collaborating with customers, we gain an understanding of their daily challenges, and take action to improve their products and productivity.

TRAP-SEAL™: Solving O-ring fallout and pinch

Parker Trap-Seal™ technology proactively protects against issues that some people experience when using ORFS fittings: O-ring fallout and O-ring pinch, both of which can compromise connection integrity.



Trap-Seal in half-dovetail groove



Standard O-ring in half-dovetail groove

To eliminate these potential issues, Parker developed Trap-Seal™, a trapezoidal-shaped seal that sits snugly in the ORFS fitting's captive O-ring groove (CORG). It ensures improved retention and provides maximum assurance for leak-free connections.

► www.parker.com/seal-lok

ROBUST PORT STUD™: It's called "stud" for a reason

The O-ring pinch issue can happen on adjustable O-ring boss port ends due to thread exposure below the locknut that leads to a deformed backup washer, pinching the O-ring and creating an O-ring extrusion gap with the potential to leak. With a longer locknut, our Robust Port Stud eliminates exposed threads and the leak potential of adjustable O-ring boss port ends. This enhanced port end comes standard on all fittings with an adjustable O-ring boss port end.



Parker's SAE Robust Port Stud

Current SAE Adjustable Port Stud

TOUGHSHIELD™ PLUS: Rust protection that protects productivity

Anyone who has worked with industrial or heavy mobile equipment that spends much of its time outdoors has had to deal with the formation of rust. Dedicated to fundamentally understanding the cause of corrosion and how it progresses, Parker's metallurgy team has developed ToughShield Plus plating.

ToughShield Plus keeps steel fittings free of red rust for up to 3,000 hours according to ASTM B117 neutral salt spray testing – the first fluid power industry commercially available standard plating to provide this level of protection.

► [Learn More](#)



ToughShield Plus (left) and Zinc (right) crimped swivel adapters after 3,000 hours per ASTM B117 accelerated testing.

GOT A BIG IDEA? WE'LL MAKE WHAT YOU NEED, WHEN YOU NEED IT.

CUSTOM MANUFACTURING: You dream it, we machine it

Never again work your designs around parts somebody else designed, just because that's what's readily available. At our dedicated **Custom Manufacturing Operation**, Parker can transform your unique concept into a finished part, manufacturing custom products to your specifications, drawings or world standards. Whether you need thousands or just that one-of-a-kind.



► [Learn more](#)

TUBE FABRICATION RENTAL PROGRAM: To buy or not to buy?

When a short-term project requires fabricating tube assemblies, **Parker's Rental Program** can save you the costs of buying and owning equipment and tooling. Plus, you can rent and try equipment you are considering buying while enjoying the assurance of Parker quality, reliability and performance.

► [Learn more](#)



RAPID SERVICE UNIT: It's what's in the name

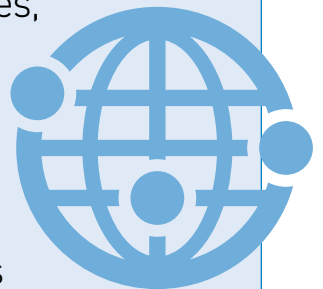
When you urgently need a part, whether a standard, an uncommon jump size or a one-of-a-kind, contact the Parker Rapid Service Unit (RSU). Created within our **Custom Manufacturing Operation**, RSU designs, produces and delivers high-quality hydraulic and pneumatic fittings and adapters on your schedule. Minimize costly downtime with our quick-response quotes, and get parts in hand in as little as 24, 48 or 72 hours.



► [Learn more](#)

EVERYWHERE YOU NEED US TO BE

13,000+ distributors, sales offices, and MRO outlets provide Parker customers with near-instant access to parts, products, maintenance, service and solutions of every kind. Globally, locally and ready to combat downtime.



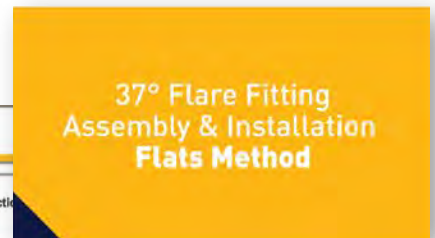
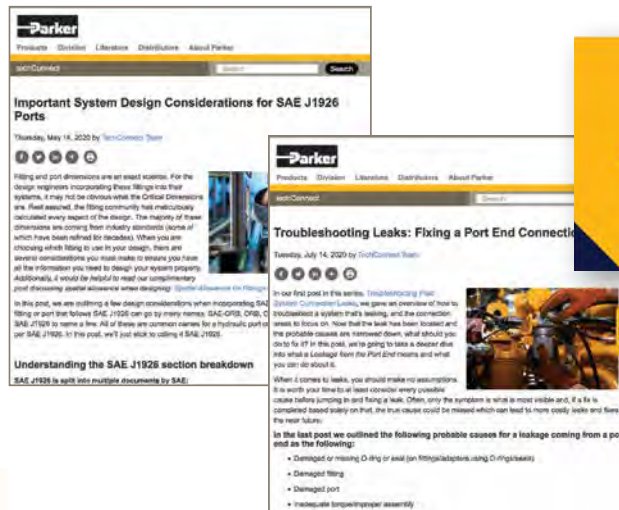
RESOURCES: KNOWLEDGE, POWERING YOU THROUGH CHALLENGES

By system design tips, training, leak and assembly troubleshooting, and countless other resources, Parker helps its customers do their jobs better and more efficiently while holding downtime in check.

techConnect

Every member an expert in fluid systems technology, Parker's **techConnect** team regularly publishes relevant articles that save customers time and make their jobs easier, from troubleshooting leaks to system design considerations. This rich online trove of information includes helpful videos and other reference materials.

► [Learn more](#)



Online tools: Design, specify, and train like the pro that you are

Not only is Parker's connection technology the most advanced, we have the tools you need to help best put that tech to work.

toolSpec:

Our **easy-to-use web app** helps you identify tube fabrication equipment and the required tooling for your application.

► [Learn more](#)

Online CAD models:

Parker makes it simple to download the **CAD models** you need to speed system design.

► [Learn more](#)



Online tools: Design, specify, and train like the pro that you are
continued from page 7

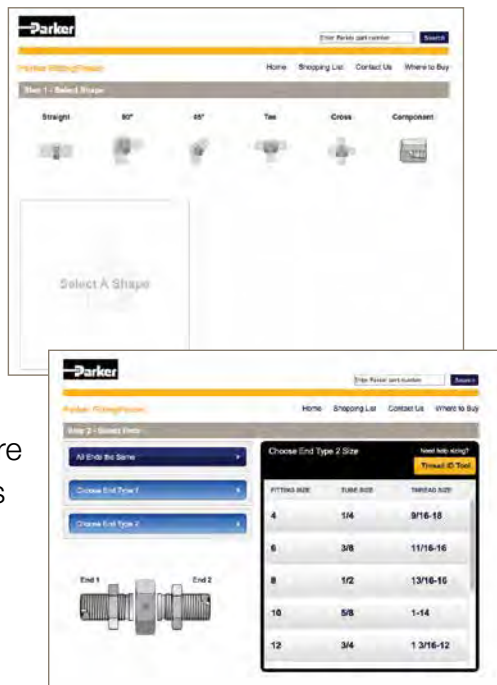
FittingFinder app with Competitive Interchange:



Available on the web or in your app store, Parker's FittingFinder

helps you easily locate the part number for the fitting you need. Plus, the new Competitive Interchange feature lets you convert a competitor's part number to a Parker one.

Parkerfittingfinder.com



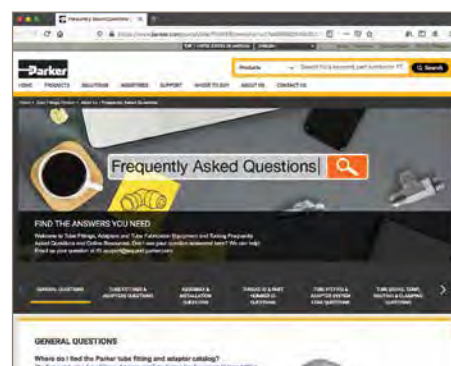
Tube fittings FAQs, FYI:

Our FAQ page makes answers to the most common questions just a few clicks—or swipes—away.

Topics included:

- General questions, including CAD model questions
- Tube fittings and adapters questions
- Assembly and installation questions
- Thread ID and part number ID questions
- Tube fittings and adapter system leak questions
- Tube sizing, temperature, routing and clamping questions
- Tube fabrication equipment and tooling questions
- Tube fitting and adapter O-ring and seal questions

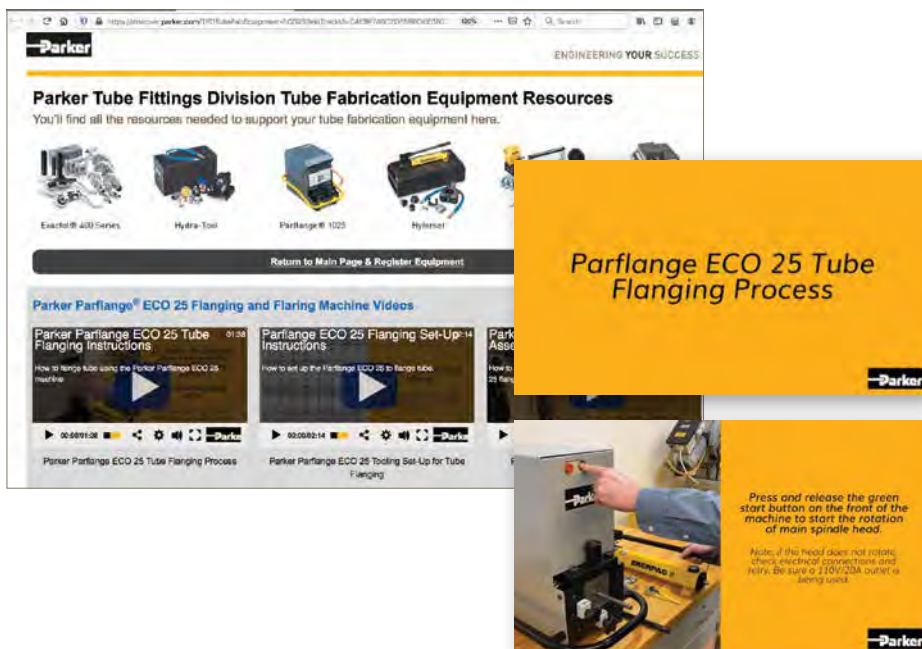
[▶ Learn more](#)



Tube fabrication resource page:

Where to go to view videos showing how to operate our tube fab equipment.

[▶ Learn more](#)



Make fast ORFS tube connections anywhere without brazing or flaring

PARKER FASTSEAL™

Faster connections for more uptime, speed, and cost savings

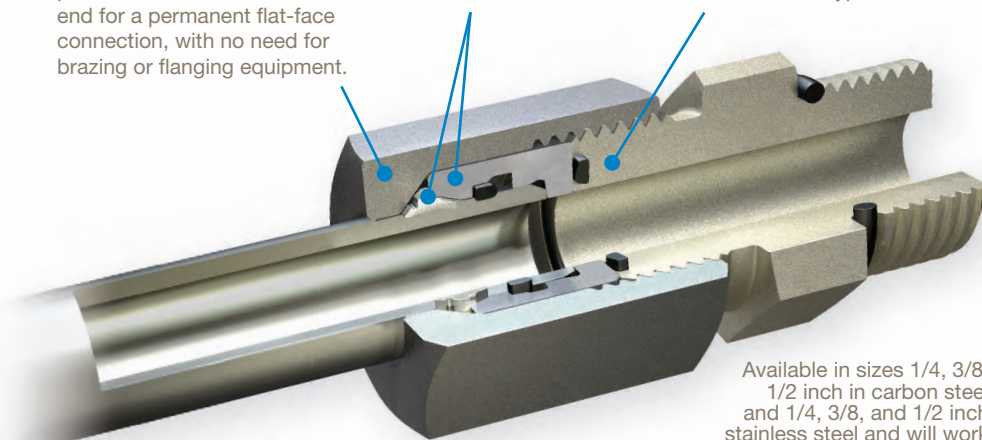
No one has time for downtime in the field. Every lost minute impacts productivity, and FastSeal is designed with uptime in mind. FastSeal eliminates the need for tube brazing and flanging equipment by utilizing Parker's proven flareless bite ring technology with an elastomeric seal to make strong, reliable tube connections that puts systems back on-line faster. There is no heavy equipment to buy, rent, or bring with you to the field; no extra storage space needed for equipment and tooling inventory; no messy or potentially unsafe brazing to perform; no leaving the work site for repairs; and no hassles.



Parker's patent-pending FastSeal ORFS connection allows assembly and maintenance teams to quickly preset the sleeve onto the tube end for a permanent flat-face connection, with no need for brazing or flanging equipment.

The FastSeal nut combines the bite-ring and sleeve with an integrated seal to make a simple, leak-free ORFS tube connection.

Works seamlessly with Parker Seal-Lok ORFS fittings, and can be used in the field regardless of connection type.



Available in sizes 1/4, 3/8, 1/2 inch in carbon steel and 1/4, 3/8, and 1/2 inch stainless steel and will work in a variety of tube wall thicknesses

Pairs with Seal-Lok ORFS fittings or easily converts existing connections to ORFS

Combining the leak-free reliability of a standard Seal-Lok™ ORFS connection and the simple assembly technology of a bite-type connection, FastSeal bridges the gap and provides the best of both worlds to assemblers and maintenance personnel. So, no matter what tube assembly technology was originally used—tube assemblies using Parker FastSeal connectors will mate seamlessly to your ORFS fittings. In fact, other fitting connection technologies can be easily converted to ORFS connections using our quick field attachable FastSeal tube assemblies.



**TESTED.
PROVEN.
TRUSTED.**



FastSeal™ has been tested in accordance with industry standards and meets/exceeds the same requirements as Parker's Seal-Lok™ ORFS product line.

Per SAE J1453 / ISO 19879

- Leak and burst
- Cyclic endurance (impulse)
- Vacuum
- Over torque
- Vibration (rotary flex)
- Remake

FastSeal connections are fast and easy anywhere

- 1** Select, cut, and deburr the tube. Use the FastSeal marking tool to check tube OD and ovality, ensure adequate deburr, and mark the tube insertion depth.
- 2** Thread the FastSeal nut onto the fitting body hand tight. Then, insert the tube into the nut, past the integrated seal, until it bottoms out and the tube insertion mark is reached.
- 3** With the tube fully inserted to the depth mark, preset the bite ring by tightening the nut to the specified turns. After inspection, tighten to the required Seal-Lok torque value.

**Mark.
Insert.
Tighten.**



Scan for FastSeal assembly instructions.

The unmatched alternative for alternative fuels

SEAL-LOK™ TECHNOLOGY

ROBUST.
RELIABLE.
REUSABLE.



As the push for cleaner fuel alternatives intensifies, Parker continues leading the way with products engineered to optimize fuel conveyance. Parker Seal-Lok™ technology introduces an O-ring face seal (ORFS) design that performs with a variety of fuels to achieve the most robust, leak-free connection in the industry – period. Seal-Lok fittings boost your bottom line with:



Unlimited Reusability – The ORFS design allows for in-field troubleshooting and maintenance by simply replacing the O-ring.

Parflange® Technology – Provides high-quality, consistent flanges fast with an exclusive orbital spindle motion. Parflange machines are available to purchase or rent to meet all production needs.

Robust Port Stud™ – Features a longer locknut to cover the uppermost threads on adjustable port end fittings, eliminating the potential for backup washer damage and leaks.

Corrosion-Resistant Materials – All Seal-Lok product lines for alternative fuels are available in corrosion-resistant SAE/AISI 316/316L stainless steel, as well as carbon steel with zinc nickel plating.

SEAL-LOK SOLUTIONS FOR ALTERNATIVE FUELS

Seal-Lok for CNG

- Meets all requirements of NGV 3.1, ECE R110, ISO 15500
- CNG compatible HNBR O-ring compound
- Sealing temperatures from -40°F to 300°F (-40°C to 149°C)
- Suitable for on-vehicle and infrastructure applications



Seal-Lok XTREME for LNG

- Meets all requirements of ECE R110
- Uses patented metal seal for increased pressure capability in ORFS-design and SAE ORB fittings
- Sealing temperatures from -328°F to 1,200°F (-200°C to 649°C)
- Suitable for on-vehicle and infrastructure applications



Seal-Lok for LPG

- Meets all requirements of ECE R110, ISO 15500
- LPG compatible HNBR O-ring compound
- Stainless steel and carbon steel with Zn-Ni plating
- Suitable for on-vehicle and infrastructure applications



Seal-Lok for Hydrogen

- Meets all performance requirements of EC 79
- ORFS manufactured specifically for critical H₂ applications
- Custom port options for 700 bar (10,000 psi)
- Suitable for on-vehicle and infrastructure applications



INNOVATION IN ACTION

Faster commissioning for oil & gas applications



PHASTITE® FOR PIPE

Permanent leak-free piping connections in minutes

Phastite is an innovative pipe connection technology that provides non-welded, stainless steel piping connections quickly and safely. The intuitive and fast fabrication process delivers permanent pipe connections in minutes, eliminating the time consuming steps required for welded piping connections.

A typical heavy-schedule pipe weld requires several hours to complete; and as pipe size and schedule increase, man-hours for welding dramatically grow.



Phastite fittings are available in common SAE 4-bolt hydraulic flanges (SAE J518/ISO 6162) and Dual Seal (seal-sub) subsea flanges.

SIGNIFICANT TIME SAVINGS

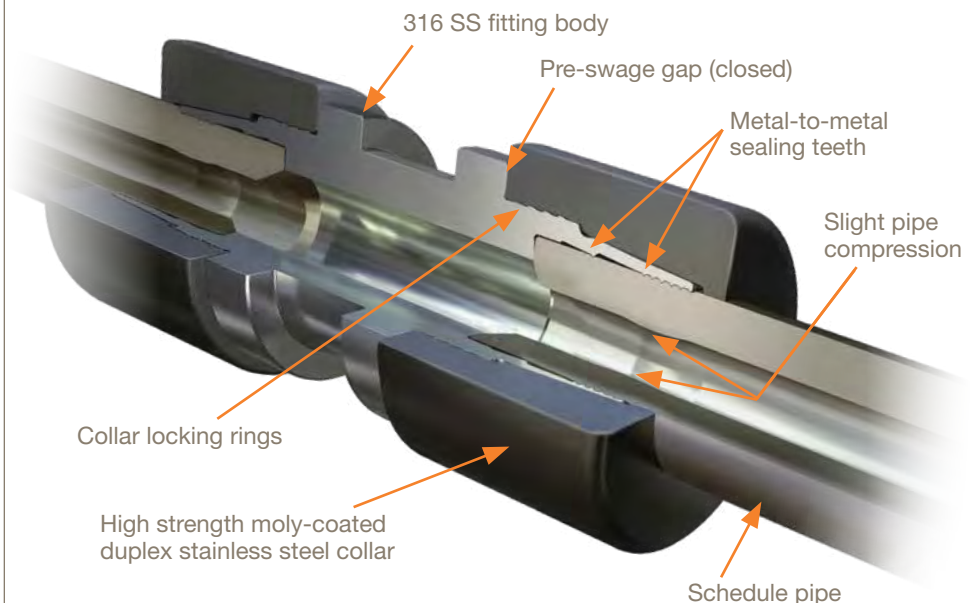
In contrast, Phastite connections provide real-world time savings, **enabling permanent, installation-ready connections to be fabricated in 15 minutes versus 180 minutes or longer for welded connections.**

In fact, a high-pressure welding project typically requiring several weeks to commission may be reduced to several days and require less manpower using Phastite.

Phastite fittings also deliver consistency to the scheduling and commissioning process as one machine and fitting series is used across all available sizes and schedules.



THE INSIDE STORY



A

SEAL-LOK™

O-Ring Face Seal Tube Fittings



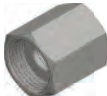
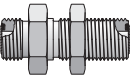
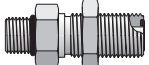
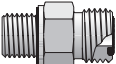
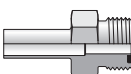
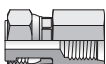
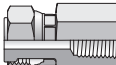
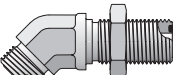
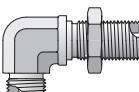
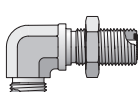
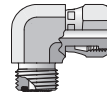
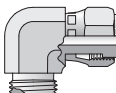
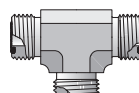
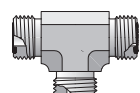
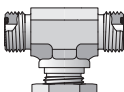
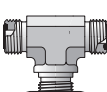
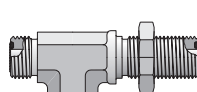
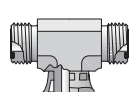
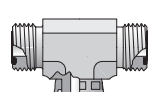
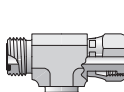
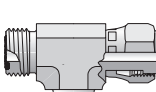
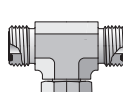
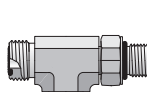
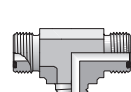
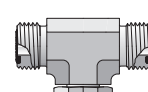
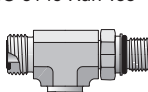
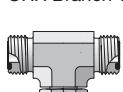
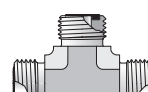
FastSeal	TLFA FastSeal  A8	Nuts, Sleeves, Locknuts	BL Tube Nut  A8	BML Tube Nut - mm Hex  A8	TPLS (Metric) Parflange Sleeve  A9
	TPL (Inch) Parflange Sleeve  A9		SBR (Inch and Metric) Braze Ring  A11	WLN Bulkhead Locknut  A11	WLNML Blkhd Locknut - mm Hex  A11
Straights	HLO Union  A12	HMLO Union - mm Hex  A12	WLO Bulkhead Union  A12	WMLO Bulkhead Union - mm Hex  A13	WF5OLO ORFS Blkhd / SAE-ORB  A13
	F5OLO ORFS / SAE-ORB  A14	FF5OLO ORFS - Long / SAE-ORB  A14	FLO ORFS / NPTF  A14	GLO ORFS / NPTF  A15	F87OMLO ORFS / ISO 6149  A15
F42EDMLO ORFS / BSPP-ED  A15	LOHB3 ORFS / Braze Socket  A16	MMLOHB3 ORFS / Braze - mm Hex  A16	LOHT3 ORFS / Tube Weld  A17	TLW1 Butt Weld / Sleeve  A17	Straight Swivels
TRLON Tube End Reducer  A17	LOHL6 Extender and Expander  A18	HL6 ORFS Swivel Union  A18	F65OL ORFS Swivel / SAE-ORB  A18	G65L ORFS Swivel / SAE-ORB  A18	
G6L ORFS Swivel / NPTF  A19	F687OML ORFS Swivel / ISO 6149  A19	F682EDML ORFS Swivel / Metric-ED  A19	F642EDML ORFS Swivel / BSPP-ED  A20	45° Elbows	WNLO Bulkhead Union  A20
WNMLO Bulkhead Union - mm Hex  A21	V6LO ORFS Swivel Elbow  A21	V5OLO ORFS / SAE-ORB  A21	V87OMLO ORFS / ISO 6149  A21		V40MLO ORFS / BSPP-ORR  A22

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90° Elbows	ELO Union Elbow  A22	EMLO Union Elbow - mm Hex  A22	WELO Bulkhead Union  A23	WEMLO Bulkhead Union - mm Hex  A23	C6LO ORFS Swivel Elbow  A24
	C6MLO Swivel Elbow - mm Hex  A24	AOEL6 ORFS Swivel / SAE-ORB  A24	C5OLO ORFS / SAE-ORB  A24	CC5OLO ORFS / SAE-ORB - Long  A25	CLO ORFS / NPTF  A25
C87OMLO ORFS / ISO 6149 - Long  A26	C8OMLO ORFS / Metric-ORR  A26	C4OMLO ORFS / BSPP-ORR  A27	Tees	JLO Union Tee  A27	JMLO Union Tee - mm Hex  A28
WJLO Bulkhead Branch  A28	WJMLO Blkhd Branch - mm Hex  A28	WJJLO Bulkhead Run  A29		S6LO ORFS Swivel Branch  A30	S6MLO Swivel Branch - mm Hex  A30
R6LO ORFS Swivel Run  A30	R6MLO Swivel Run - mm Hex  A30	S5OLO SAE-ORB Branch Tee  A31	R5OLO SAE-ORB Run Tee  A31	SLO NPTF Branch Tee  A32	S87OMLO ISO 6149 Branch Tee  A32
R87OMLO ISO 6149 Run Tee  A33	S4OMLO BSPP-ORR Branch Tee  A33	R4OMLO BSPP-ORR Run Tee  A34	Crosses	KLO Union Cross  A34	Plugs and Caps
PNLO ORFS Plug  A35	PNMLO ORFS Plug - mm Hex  A35	FNL ORFS Cap  A35		FNML ORFS Cap - mm Hex  A35	

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Conversion Adapters (Shown in Section J)

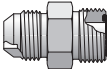
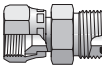
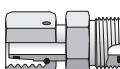
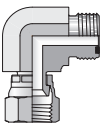
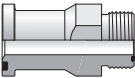
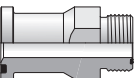
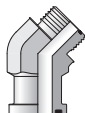
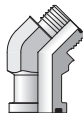
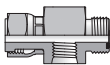
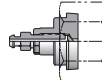
Conversion Adapters	XHLO 37° Flare / ORFS	XHL6 37° Flare / ORFS Swivel	LOHX6 ORFS / 37° Swivel	BUHLO ORFS / Flareless (inch)	LOHU86 Metric Swivel (EO)/ORFS
	 J3	 J3	 J3	 J4	 J4
LOEX6 ORFS / 37° Swivel	 J3				

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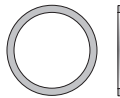
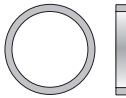
Flange Adapters (Shown in Section K)

SAE Flange Adapters	LOHQ1 Code 61 / ORFS	LOHQ2 Code 62 / ORFS	LOVQ1 Code 61 / ORFS	LOVQ2 Code 62 / ORFS	LOEQ1 Code 61 / ORFS
	 K12	 K12	 K32	 K32	 K33
LOEQ2 Code 62 / ORFS	 K33				

Diagnostic, Bleed Adapters & Screen Fittings (Shown in Section L)

Diagnostic, Bleed Adapters & Screen Fittings	LOHL6 Orifice Orifice Swivel with Orifice / ORFS	LOHL6G5TP Orifice Swivel / ORFS / SAE-ORB	PNLOBA Bleed Screw / ORFS	FNLBA Bleed Screw / SAE-ORB	Screen Fittings
	 L9	 L5	 L10	 L10	 L11

O-Rings and Seals (Shown in Section M)

O-Rings and Seals	ORFS O-Ring	SAE O-Ring	ISO 6149 O-Ring	Metric O-Ring	Metric Retaining Ring
	 M4	 M4	 M5	 M5	 M5
BSPP O-Ring	BSPP Retaining O-Ring	EOlastic Seal Ring			
 M6	 M6	 M6			

Seal-Lok Introduction

The Seal-Lok fitting meets or exceeds the strict requirements of SAE J1453 and ISO 8434-3. It is an O-ring face seal type fitting that consists of a nut, a body, an O-ring and a sleeve. As shown in Fig. A1, the tube is flanged to 90° (or the tube may be brazed instead to a braze-type sleeve). When the fitting is assembled, it compresses an O-ring in the precision machined groove of the fitting body to form a leak tight seal.

Seal-Lok fittings are suitable for a wide range of tube wall thicknesses and are readily adaptable to inch or metric tubing and hose. (Please refer to Table S14 located in the General Technical section for min./max. tube wall thickness). Seal-Lok's leak-free design and rugged construction make it suitable for a variety of applications where higher pressures, vibration and impulse are prevalent.

How Seal-Lok Fittings Work

The Seal-Lok fitting body face contains a high durometer Trap-Seal to maximize retention in a precision machined groove, known as a Captive O-ring Groove (CORG) referenced in Fig. A2. As the nut is tightened onto the fitting body, the Trap-Seal is compressed between the body and flat face of the tube flange or braze sleeve to form a tight, positive seal (see Fig. A1).

As the two faces come in contact, further tightening of the nut produces a sharp rise in assembly torque. A solid pull of the wrench at this point, to recommended assembly torque, completes the assembly. The sharp torque rise gives a "solid feel" at assembly, minimizing the possibility of over tightening.

Because the sealing surfaces are flat and perpendicular to the assembly pull, they remain virtually free of distortion during assembly, giving Seal-Lok fittings practically unlimited remakability. The seal should be inspected at each disassembly and replaced when necessary. **See the O-rings and Seals section for information on replacement ORFS O-rings.**

Because the tubing is a sealing surface, it must be smooth, free of any nicks, scratches, spiral tool marks, splits or weld beads. Seamless tube is recommended for Seal-Lok fittings for ease in flanging and bending. Certain types of harder tubes that are not fully annealed may not be suitable for flanging due to the potential for immediate or long-term cracking of the tube flange. For specific tube type and wall thickness recommendations, please see Table S14 and S15 in the General Technical Section.

Reference locations

Dynamic Pressure Ratings: Please refer to the last column of the part number tables located on the following pages of this section for the appropriate dynamic pressure ratings.

Recommended Tube Wall Thickness: Please refer to Table S14 located in the General Technical section.

Assembly and Installation: Please refer to Seal-Lok Assembly located within the Assembly/Installation section of this catalog.

Standard material specifications: Please refer to Table U1 located in the Appendix section.

Seal Material Selection: Please refer to Table S12 in the General Technical section of this catalog.

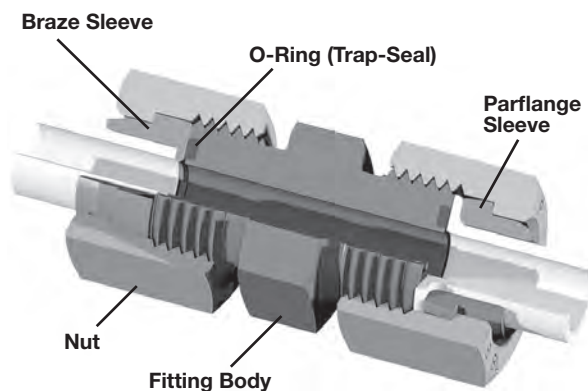


Fig. A1 — Seal-Lok Union cutaway with flanged and brazed assemblies

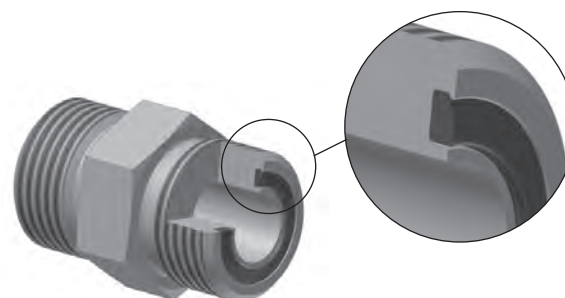


Fig. A2 — Captive O-ring Groove (CORG) Cutaway with Parker's Trap-Seal

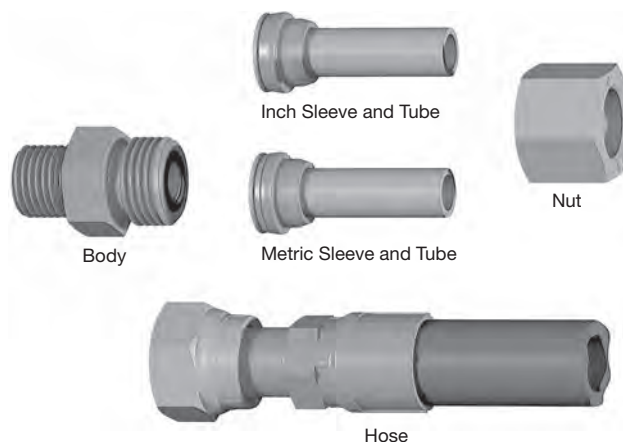


Fig. A3 — Seal-Lok Works with Inch or Metric Tube and Hose

Dimensions and pressures for reference only, subject to change.

International Acceptance

The tube/hose end connection for metric Seal-Lok is the same as standard (inch) Seal-Lok. It consists of a nut, a body, an O-ring, & a sleeve. The difference is at the port end of the fitting. Instead of the SAE straight thread connection for example, it

features a similar connection with metric threads per ISO 6149-2 or ISO 9974-1. Additionally, the fitting body, tube nut and locknut are manufactured with metric hexes or wrench flats for shaped fittings. The metric Seal-Lok fittings meet or exceed all requirements of ISO 8434-3.

To identify the metric sleeves used for metric tubing, there is a groove machined into the TPLS & TLS sleeves.

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The Parker Advantage

Trap Seal™: The patented trapezoidal seal of the Seal-Lok tube end allows for maximum O-ring retention in the CORG groove. This advantage over the competition increases the productivity of assembly as well as offers the maximum assurance for a leak free connection. Ultimately, operational and maintenance costs can be avoided.

Resistance to over-torque: The minimum requirement for a Seal-Lok connection is to withstand 200% torque above the rated value. This reduces the frequency of metal distortion and the potential of leaks. Seal-Lok reduces production assembly and maintenance costs by its resistance to over-torque.

Zero clearance: The flat face of Seal-Lok allow maintenance for easy and fast drop-in installation. This reduces rework costs from a design and assembly perspective.

High pressure rating: Seal-Lok offers a high pressure rating which can be used in a wide range of applications. This provides the opportunity to standardize across multiple product lines, saving procurement and inventory costs.

Superior Plating: Parker's Seal-Lok steel fittings come standard with ToughShield™ Plus zinc-nickel plating, giving them unmatched protection against red rust. In ASTM B117 / ISO 9227 neutral salt spray testing, fittings and adapters with ToughShield Plus plating remained rust free for up to 3,000 hours. This performance far exceeds the SAE industry requirement, even on post plating deformed parts like crimp nuts and back-up washers where SAE allows for large exceptions. Learn more and see the difference at toughshield.com.

Robust Port Stud: The adjustable port stud is manufactured with a longer locknut designed to cover the uppermost threads. Since the backup washer is never exposed to the upper threads, it cannot be damaged during assembly. During assembly, exposed upper threads, which are common with fittings from other fitting manufacturers, can lead to a deformed backup washer that can pinch the o-ring and create an o-ring extrusion gap that has the potential to leak. The longer locknut also provides a greater grip area for the wrench for easier assembly.

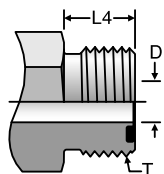
Unlimited reusability: When a Seal-Lok connection is completely assembled and disassembled, very little metal is distorting in the connection. Therefore, Seal-Lok allows for unlimited reusability in the field, reducing the component replacement and maintenance costs of the connection.

Dimensions and pressures for reference only, subject to change.

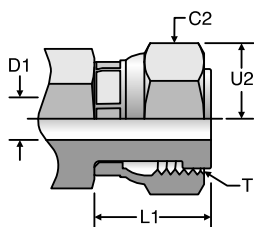


[Click here for CADs, Support Resources or to Configure Parts Online](#)

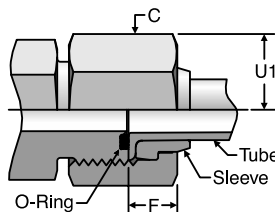
Seal-Lok O-Ring Face Seal Tube Ends



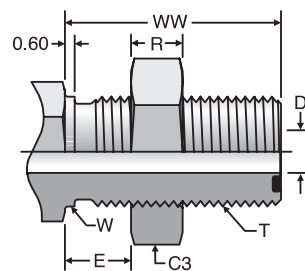
**Seal-Lok Male
Tube End**



**Seal-Lok Female
Swivel**



**Seal-Lok Tube End
Assembly**



Seal-Lok Bulkhead

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			Thread	Tube Nut Hex		Swivel Nut Hex		Bulkhead Locknut Hex		Nominal Drill Tube End	Nominal Drill Swivel End	Max Bulkhead Thickness	Tube Nut Assembled Allowance	Swivel Turn Back	Male Turn Back	Bulkhead			Across Corners	
																Locknut Thickness	Pilot Dia	Length	Tube Nut Hex	Swivel Nut Hex
SAE Dash Size	Tube O.D.		T UN/UNF	C		C2		C3		D ¹⁾	D1 ¹⁾	E	Ref. F	L1	L4	R	W ²⁾	WW	U1	U2
	(in.)	(mm)		(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)
4	1/4	6	9/16-18	11/16	17	11/16	17	13/16	22	0.177	0.157	0.55	0.270	0.650	0.394	0.27	0.563	1.24	0.80	0.80
6	3/8	8 10	11/16-16	13/16	22	13/16	22	1	27	0.256	0.256	0.55	0.340	0.715	0.443	0.32	0.688	1.34	0.94	0.94
8	1/2	12	13/16-16	15/16	24	15/16	24	1 1/8	30	0.374	0.354	0.55	0.400	0.865	0.512	0.35	0.813	1.44	1.08	1.08
10	5/8	14 15 16	1-14	1 1/8	30	1 1/8	30	1 5/16	36	0.492	0.453	0.55	0.455	0.980	0.610	0.41	1.000	1.60	1.30	1.30
12	3/4	18 20	1 3/16-12	1 3/8	36	1 3/8	36	1 1/2	41	0.610	0.551	0.55	0.510	1.110	0.677	0.41	1.188	1.64	1.58	1.58
14	7/8	—	1 5/16-12	1 1/2		1 1/2		1 5/8		0.709	0.709	0.55	0.512	1.145	0.697	0.41	1.313	1.66	1.74	1.74
16	1	22 25	1 7/16-12	1 5/8	41	1 5/8	41	1 3/4	46	0.807	0.787	0.55	0.596	1.190	0.697	0.41	1.438	1.66	1.88	1.88
20	1 1/4	28 30 32	1 11/16-12	1 7/8	50	1 7/8	50	2	50	1.024	1.024	0.55	0.566	1.251	0.697	0.41	1.688	1.66	2.16	2.12
24	1 1/2	35 38	2-12	2 1/4	60	2 1/4	60	2 3/8	60	1.260	1.260	0.55	0.545	1.330	0.697	0.41	2.000	1.66	2.60	2.60
32	2	42 50	2 1/2-12	2 7/8		2 7/8		2 3/4		1.772	1.732	0.50	0.606	1.690	0.874	0.55	2.500	1.83	3.32	3.32

1) D and D1 nominal may vary from the values shown in the chart by 0.004 to 0.008. Contact the Tube Fittings Division if there are any questions.

2) Recommended clearance hole = W + 0.015.

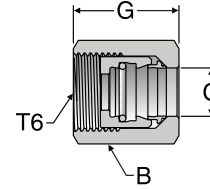
3) See page M4 for ORFS O-rings.

4) Note: For port and stud end dimensions reference section F: Pipe Fittings and Port Adapters.

Dimensions and pressures for reference only, subject to change.

TLFA

FastSeal



TUBE FITTING PART #	TUBE OD (in)	T6 UN/UNF - 2B	B Hex (in)	C (in)	G (in)	Dynamic Pressure (psi)*								
						Tube Wall OD (in)								
						0.028	0.035	0.049	0.058	0.065	0.083	0.095	0.109	0.120
Carbon steel fittings used with low-carbon steel tube walls (in)														
4 TLFA-S	1/4	9/16-18	11/16	0.25	0.95	2,750	3,350	5,150	6,200	7,000	-	-	-	-
6 TLFA-S	3/8	11/16-16	13/16	0.38	1.04	-	2,250	3,300	3,950	4,500	5,900	6,800	7,850	-
8 TLFA-S	1/2	13/16-16	15/16	0.50	1.10	-	-	2,400	2,900	3,250	4,300	4,950	7,750	-
12 TLFA-S	3/4	1 3/16-12	1 3/8	0.75	1.29	-	-	-	-	2,100	2,750	3,150	3,700	4,100
Stainless steel fittings used with 304/316 stainless steel tube walls (in)														
4 TLFA-SS	1/4	9/16-18	11/16	0.25	0.95	4,650	5,900	8,600	10,350	11,700	-	-	-	-
6 TLFA-SS	3/8	11/16-16	13/16	0.38	1.04	-	3,800	5,500	6,500	7,500	9,850	11,400	11,400	-
8 TLFA-SS	1/2	13/16-16	15/16	0.50	1.10	-	-	4,000	4,800	5,450	7,150	7,400	7,400	7,400

*NOTE: Tube walls shown are recommended for FastSeal. Some pressure ratings shown have been de-rated, verify application pressure requirement with listed tube wall pressure in the table.

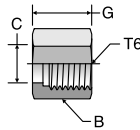
Please see the Assembly and Installation section for FastSeal Assembly instructions and refer to the equipment section for FastSeal assembly tools.

Parker's patent-pending FastSeal creates quick leak-free permanent ORFS tube end connections with just a wrench. Get more details on this new technology now.

BL

Tube Nut
ORFS

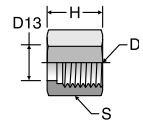
SAE 520110



BML

Tube Nut – mm Hex
ORFS

ISO 8434-3 NA
SAE 52M0110A



TUBE FITTING PART #	END SIZE (in.)	T6 UN/UNF-2B	B HEX (in.)	C (in.)	G (in.)	Material	
						-S	-SS
4 BL	1/4	9/16 - 18	11/16	0.410	0.59	•	•
5 BL	5/16	5/8 - 18	3/4	0.470	0.63	•	•
6 BL	3/8	11/16 - 16	13/16	0.530	0.67	•	•
8 BL	1/2	13/16 - 16	15/16	0.650	0.79	•	•
10 BL	5/8	1 - 14	1 1/8	0.830	0.94	•	•
12 BL	3/4	1 3/16 - 12	1 3/8	0.950	1.04	•	•
12-14 BL	7/8	1 3/16 - 12	1 3/8	0.990	1.20	•	•
14 BL	7/8	1 5/16 - 12	1 1/2	1.075	1.04	•	•
16 BL	1	1 7/16 - 12	1 5/8	1.150	1.08	•	•
20 BL	1 1/4	1 11/16 - 12	1 7/8	1.420	1.08	•	•
24 BL	1 1/2	2 - 12	2 1/4	1.730	1.08	•	•
32 BL	2	2 1/2 - 12	2 7/8	2.220	1.30	•	•

TUBE FITTING PART #	END SIZE		D THREAD UN/UNF-2B	D13 DRILL (mm)	H (mm)	S HEX (mm)	Material S
	(mm)	(in.)					
4BML	6	1/4	9/16 - 18	10.50	15.0	17	•
6BML	8,10	3/8	11/16 - 16	13.55	17.5	22	•
8BML	12	1/2	13/16 - 16	16.60	20.0	24	•
10BML	14,15,16	5/8	1 - 14	21.10	24.0	30	•
12BML	18,20	3/4	1 3/16 - 12	24.15	26.5	36	•
16BML	22,25	1	1 7/16 - 12	29.10	27.5	41	•
20BML	28,30,32	1 1/4	1 11/16 - 12	36.00	27.5	50	•
24BML	35,38	1 1/2	2 - 12	44.00	27.5	60	•

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

** These tube nuts should not be exposed to annealing temperatures, such as furnace brazing. Contact the Tube Fittings Division for information on special nuts.

- Stainless steel tube nuts are prelubricated for ease of assembly.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

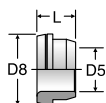
See Seal-Lok Xtreme for extreme temperature applications



[Click here for CADs, Support Resources or to Configure Parts Online](#)

TPL (Metric)

Parflange Sleeve for
Metric Tubing
ORFS Mechanically
Attachable Sleeve



TUBE FITTING PART #		USED WITH FITTING SIZE	D5 END SIZE (mm)	D8 DIA (mm)	L (mm)	Material	
STEEL	STAINLESS STEEL					S	SS
TPLS6	TPLSS6	-4	6	12.75	7.5	•	•
TPLS8	TPLSS8	-6	8	15.75	8.5	•	•
TPLS10	TPLSS10	-6	10	15.75	8.5	•	•
TPLS12	TPLSS12	-8	12	18.90	10.5	•	•
TPLS14	TPLSS14	-10	14	23.50	10.5	•	•
TPLS15	TPLSS15	-10	15	23.50	10.5	•	•
TPLS16	TPLSS16	-10	16	23.50	10.5	•	•
TPLS18	TPLSS18	-12	18	27.80	12.0	•	•
TPLS20	TPLSS20	-12	20	27.80	12.0	•	•
TPLS25	TPLSS25	-16	25	34.00	13.5	•	•
TPLS30	TPLSS30	-20	30	40.50	13.0	•	•
TPLS32	TPLSS32	-20	32	40.50	13.0	•	•
TPLS35	TPLSS35	-24	35	48.50	12.5	•	•
TPLS38	TPLSS38	-24	38	48.50	12.5	•	•

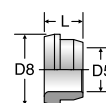
• Must be mechanically attached using Parflange system.

• Additional -S not required, TPLS6 is complete part number.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TPL (Inch)

Parflange Sleeve for
Inch Tubing
ORFS Mechanically
Attachable Sleeve



TUBE FITTING PART #	D5 END SIZE (in.)	D8 DIA (in.)	L (in.)	Material
4 TPL	1/4	0.50	0.30	•
6 TPL	3/8	0.62	0.34	•
8 TPL	1/2	0.74	0.42	•
10 TPL	5/8	0.92	0.42	•
12 TPL	3/4	1.09	0.47	•
16 TPL	1	1.34	0.53	•
20 TPL	1 1/4	1.59	0.51	•
24 TPL	1 1/2	1.91	0.49	•

• Must be mechanically attached using Parflange system.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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See Seal-Lok Xtreme for extreme temperature applications

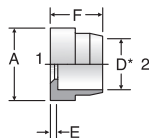


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TL (Inch)

Braze Sleeve for Inch Tubing
ORFS Silver Braze Sleeve Reducer

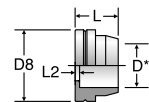
SAE 520115



TLS (Metric)

Braze Sleeve for Metric Tubing
ORFS Silver Braze Sleeve

ISO 8434-3 BRSL
SAE 5201M15



TUBE FITTING PART #	END SIZE		A (in.)	D* (in.)	E (in.)	F (in.)	Material	
	1 (in.)	2 (in.)					-S	-SS
4 TL	1/4		0.50	0.26	0.04	0.37	•	•
6 TL	3/8		0.62	0.38	0.04	0.37	•	•
6-4 TL	3/8	1/4	0.62	0.26	0.08	0.41	•	•
8 TL	1/2		0.75	0.51	0.04	0.37	•	•
8-4 TL	1/2	1/4	0.75	0.26	0.14	0.47	•	•
8-6 TL	1/2	3/8	0.75	0.38	0.14	0.47	•	•
10 TL	5/8		0.92	0.63	0.06	0.41	•	•
10-4 TL	5/8	1/4	0.92	0.26	0.20	0.53	•	•
10-6 TL	5/8	3/8	0.92	0.38	0.20	0.53	•	•
10-8 TL	5/8	1/2	0.92	0.51	0.20	0.53	•	•
12 TL	3/4		1.10	0.76	0.06	0.55	•	•
12-4 TL	3/4	1/4	1.10	0.26	0.24	0.57	•	•
12-6 TL	3/4	3/8	1.10	0.38	0.24	0.57	•	•
12-8 TL	3/4	1/2	1.10	0.51	0.24	0.57	•	•
12-10 TL	3/4	5/8	1.10	0.63	0.22	0.57	•	•
12-14 TL**	3/4	7/8	1.10	0.88	0.06	0.65	•	•
14 TL***	7/8		1.22	0.88	0.06	0.55	•	•
16 TL	1		1.35	1.01	0.06	0.61	•	•
16-8 TL	1	1/2	1.35	0.51	0.28	0.61	•	•
16-10 TL	1	5/8	1.35	0.63	0.26	0.61	•	•
16-12 TL	1	3/4	1.35	0.76	0.18	0.67	•	•
16-14 TL	1	7/8	1.35	0.88	0.18	0.67	•	•
20 TL	1 1/4		1.60	1.26	0.06	0.61	•	•
20-12 TL	1 1/4	3/4	1.60	0.76	0.28	0.77	•	•
20-16 TL	1 1/4	1	1.60	1.01	0.28	0.83	•	•
24 TL	1 1/2		1.91	1.51	0.06	0.61	•	•
24-16 TL	1 1/2	1	1.91	1.01	0.28	0.83	•	•
24-20 TL	1 1/2	1 1/4	1.91	1.26	0.28	0.83	•	•
32 TL	2		2.41	2.01	0.06	0.65	•	•

Unplated part, oil dipped for corrosion protection.

* D is for silver brazing.

** 12-14 TL must be assembled with 12-14 BL.

• Uses SBR silver braze rings

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TUBE FITTING PART #	USED WITH FITTING SIZE	D* END SIZE (mm)	D8 DIA (mm)	L (mm)	L2 (mm)	Material	
						S	SS
TLS6	-4	6	12.8	9.5	1.0	•	•
TLS8**	-6	8	15.8	9.5	1.0	•	•
TLS10	-6	10	15.8	9.5	1.0	•	•
TLS12	-8	12	18.9	9.5	1.0	•	•
TLS16	-10	16	23.5	10.5	1.5	•	•
TLS20	-12	20	27.9	14.0	1.5	•	•
TLS25	-16	25	34.2	15.5	1.5	•	•
TLS30	-20	30	40.6	15.5	1.5	•	•
TLS38	-24	38	48.5	15.5	1.5	•	•

Unplated part, oil dipped for corrosion protection.

* D is for silver brazing.

• Uses SBR (metric) silver braze rings

• Stainless steel part number example: TLSS10

**Different from SAE

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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SBR (Inch)

Silver Braze Ring for Inch Tubing

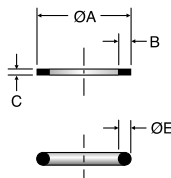
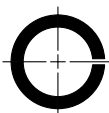
TUBE FITTING PART #	END SIZE (in.)	A DIA (in.)	B (in.)	C (in.)	E (in.)
4 SBR	1/4	0.260	—	—	0.05
6 SBR	3/8	0.390	0.07	0.03	—
8 SBR	1/2	0.515	0.07	0.03	—
10 SBR	5/8	0.640	0.07	0.03	—
12 SBR	3/4	0.765	0.08	0.04	—
14 SBR	7/8	0.890	—	—	0.06
16 SBR	1	1.015	0.08	0.04	—
20 SBR	1 1/4	1.265	0.08	0.04	—
24 SBR	1 1/2	1.515	0.08	0.04	—
32 SBR	2	2.015	—	—	0.09

SBR recommended for steel or copper tubing. -S not required.

SBR-SS recommended for stainless tubing, but can be used on steel tubing.

Contact the Tube Fittings Division for braze rings used in marine or special applications.

WARNING: This product can expose you to chemicals including Cadmium which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.



SBR (Metric)

Silver Braze Ring for Metric Tubing

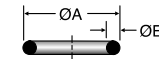
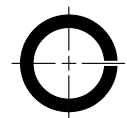
TUBE FITTING PART #	END SIZE (mm)	A DIA (mm)	E (mm)
SBR 6mm	6	6.4	1.2
SBR 8mm	8	8.4	1.2
SBR 10mm	10	10.4	1.2
SBR 12mm	12	12.4	1.2
SBR 16mm	16	16.4	1.2
SBR 20mm	20	20.4	1.6
SBR 25mm	25	25.4	1.6
SBR 30mm	30	30.4	1.6
SBR 38mm	38	38.4	1.6

SBR recommended for steel or copper tubing.

SBR-SS recommended for stainless tubing, but can be used on steel tubing.

Contact the Tube Fittings Division for braze rings used in marine or special applications.

WARNING: This product can expose you to chemicals including Cadmium which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.



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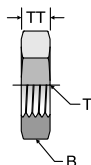
TUBE FAB EQUIP

GEN TECH

WLNL

Bulkhead Locknut

SAE 520118



TUBE FITTING PART #	END SIZE (in.)	T TUBE END UN/UNF-2A	B HEX (in.)	TT (in.)	Material -S
4 WLNL	1/4	9/16 - 18	13/16	0.27	•
6 WLNL	3/8	11/16 - 16	1	0.31	•
8 WLNL	1/2	13/16 - 16	1 1/8	0.35	•
10 WLNL	5/8	1 - 14	1 5/16	0.41	•
12 WLNL	3/4	1 3/16 - 12	1 1/2	0.41	•
14 WLNL*	7/8	1 5/16 - 12	1 5/8	0.41	•
16 WLNL	1	1 7/16 - 12	1 3/4	0.41	•
20 WLNL	1 1/4	1 11/16 - 12	2	0.41	•
24 WLNL	1 1/2	2 - 12	2 3/8	0.41	•

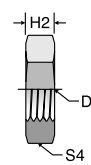
* Size 14 is not included in SAE J1453.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

WLNML

Bulkhead Locknut – mm Hex

ISO 8434-3 BHLN
SAE 52M0118



TUBE FITTING PART #	END SIZE		D TUBE END UN/UNF-2B	H2 (mm)	S4 HEX (mm)	Material S
	(mm)	(in.)				
4WLNML	6	1/4	9/16 - 18	7.0	22	•
6WLNML	8,10	3/8	11/16 - 16	8.0	27	•
8WLNML	12	1/2	13/16 - 16	9.0	30	•
10WLNML	14,15,16	5/8	1 - 14	10.5	36	•
12WLNML	18,20	3/4	1 3/16 - 12	10.5	41	•
16WLNML	22,25	1	1 7/16 - 12	10.5	46	•
20WLNML	28,30,32	1 1/4	1 11/16 - 12	10.5	50	•
24WLNML	35,38	1 1/2	2 - 12	10.5	60	•

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications

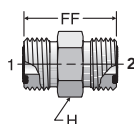


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HLO

Union
ORFS / ORFS

SAE 520101



TUBE FITTING PART #	END SIZE		FF (in.)	H HEX (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)			-S	-SS
4 HLO	1/4	1/4	1.08	5/8	9.2	9.2
6 HLO	3/8	3/8	1.22	3/4	9.2	9.2
6-4 HLO	3/8	1/4	1.18	3/4	9.2	9.2
8 HLO	1/2	1/2	1.40	7/8	9.2	9.2
8-6 HLO	1/2	3/8	1.32	7/8	9.2	9.2
10 HLO	5/8	5/8	1.67	1 1/16	6.0	6.0
10-8 HLO	5/8	1/2	1.57	1 1/16	6.0	6.0
12 HLO	3/4	3/4	1.85	1 1/4	6.0	6.0
12-8 HLO	3/4	1/2	1.69	1 1/4	6.0	6.0
12-10 HLO	3/4	5/8	1.79	1 1/4	6.0	6.0
16 HLO	1	1	1.95	1 1/2	6.0	6.0
16-12 HLO	1	3/4	1.93	1 1/2	6.0	6.0
20 HLO	1 1/4	1 1/4	2.03	1 3/4	6.0	6.0
20-16 HLO	1 1/4	1	2.03	1 3/4	6.0	6.0
24 HLO	1 1/2	1 1/2	2.09	2 1/8	5.0	5.0
32 HLO*	2	2	2.48	2 3/4	3.0	3.0

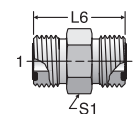
* Hex different from SAE

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

HMLO

Union – mm Hex
ORFS / ORFS

ISO 8434-3 S
SAE 52M0101



TUBE FITTING PART #	END SIZE 1 & 2		L6 (mm)	S1 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	(mm)	(in.)			S	SS
4HMLO	6	1/4	27.5	17	9.2	9.2
6HMLO	8,10	3/8	31.0	19	9.2	9.2
8HMLO	12	1/2	35.5	22	9.2	9.2
10HMLO	14,15,16	5/8	42.5	27	6.0	6.0
12HMLO	18,20	3/4	47.0	32	6.0	6.0
16HMLO	22,25	1	49.5	41	6.0	6.0
20HMLO	28,30,32	1 1/4	51.5	46	6.0	6.0
24HMLO	35,38	1 1/2	53.0	55	5.0	5.0

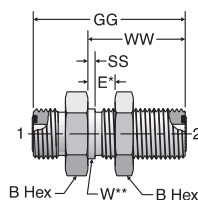
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

WLO

Bulkhead Union
ORFS / ORFS

SAE 520601

WLO-WLNL Body with Locknut
(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE (in.)	B HEX (in.)	E MAX (in.)	GG (in.)	SS	W DIA (in.)	WW (in.)	Dynamic Pressure (x 1,000 PSI)	
								-S	-SS
4 WLO	1/4	13/16	0.55	1.90	0.06	0.56	1.24	9.2	9.2
6 WLO	3/8	1	0.55	2.09	0.06	0.69	1.34	9.2	9.2
8 WLO	1/2	1 1/8	0.55	2.30	0.06	0.81	1.44	9.2	9.2
10 WLO	5/8	1 5/16	0.55	2.62	0.06	1.00	1.59	6.0	6.0
12 WLO	3/4	1 1/2	0.55	2.72	0.06	1.19	1.63	6.0	6.0
16 WLO	1	1 3/4	0.55	2.76	0.06	1.44	1.65	6.0	6.0
20 WLO	1 1/4	2	0.55	2.76	0.06	1.69	1.65	6.0	6.0
24 WLO	1 1/2	2 3/8	0.55	2.76	0.06	2.00	1.65	5.0	5.0

** W – Bulkhead pilot diameter. Recommended clearance hole is W + 0.015".

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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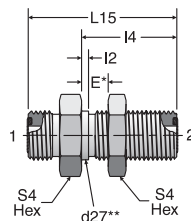
GEN TECH

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WMLO

Bulkhead Union – mm Hex
ORFS / ORFS

ISO 8434-3 BHS
SAE 52M0601
WMLO-WLNML - Body with Locknut
(See page A11 for WLNML)



TUBE FITTING PART #	END SIZE		d27** (mm)	E (mm)	I4 (mm)	I2 (mm)	L15 (mm)	S4 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2								S	SS
	(mm)	(in.)								
4WMLO	6	1/4	14.3	14	31.5	1.5	48.0	22	9.2	9.2
6WMLO	8,10	3/8	17.5	14	34.0	1.5	53.0	27	9.2	9.2
8WMLO	12	1/2	20.6	14	36.5	1.5	58.5	30	9.2	9.2
10WMLO	14,15,16	5/8	25.4	14	40.5	1.5	66.5	36	6.0	6.0
12WMLO	18,20	3/4	30.2	14	41.5	1.5	69.0	41	6.0	6.0
16WMLO	22,25	1	36.5	14	42.0	1.5	70.0	46	6.0	6.0
20WMLO	28,30,32	1 1/4	42.9	14	42.0	1.5	70.0	50	6.0	6.0
24WMLO	35,38	1 1/2	50.8	14	42.0	1.5	70.0	60	5.0	5.0

* E – Maximum bulkhead thickness.

**d27 – Bulkhead pilot diameter. Recommended clearance hole is d27 + 0.4 mm

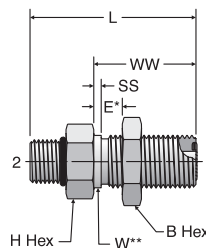
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

WF5OLO

Straight Thread Bulkhead
Connector

ORFS / SAE-ORB

WF5OLO-WLNL - Body with Locknut
(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE		B HEX (in.)	E MAX (in.)	H HEX (in.)	L (in.)	SS (in.)	W DIA (in.)	WW (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A								-S	-SS
4 WF5OLO	1/4	7/16 - 20	13/16	0.55	13/16	2.14	0.06	0.56	1.24	9.2	9.2
6 WF5OLO	3/8	9/16 - 18	1	0.55	1	2.31	0.06	0.69	1.34	9.2	9.2
8 WF5OLO	1/2	3/4 - 16	1 1/8	0.55	1 1/8	2.60	0.06	0.81	1.44	9.2	9.2
10 WF5OLO	5/8	7/8 - 14	1 5/16	0.55	1 5/16	2.69	0.06	1.00	1.59	6.0	6.0
12 WF5OLO	3/4	1 1/16 - 12	1 1/2	0.55	1 1/2	2.89	0.06	1.19	1.63	6.0	6.0
16 WF5OLO	1	1 5/16 - 12	1 3/4	0.55	1 3/4	2.95	0.06	1.44	1.65	6.0	6.0

* E – Maximum bulkhead thickness.

** W – Bulkhead pilot diameter. Recommended clearance hole is W + 0.015".

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications

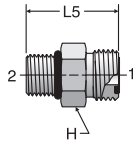


[Click here for CADs, Support Resources or to Configure Parts Online](#)

F5OLO

Straight Thread Connector
ORFS / SAE-ORB

SAE 520120



TUBE FITTING PART #	END SIZE		H HEX (in.)	L5 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A			-S	-SS
4 F5OLO	1/4	7/16 - 20	5/8	1.13	9.2	9.2
4-5 F5OLO*	1/4	1/2 - 20	5/8	1.16	9.2	9.2
4-6 F5OLO	1/4	9/16 - 18	3/4	1.20	9.2	9.2
4-8 F5OLO	1/4	3/4 - 16	7/8	1.32	9.2	9.2
6 F5OLO	3/8	9/16 - 18	3/4	1.26	9.2	9.2
6-4 F5OLO	3/8	7/16 - 20	3/4	1.34	9.2	9.2
6-5 F5OLO	3/8	1/2 - 20	3/4	1.22	9.2	9.2
6-8 F5OLO	3/8	3/4 - 16	7/8	1.38	9.2	9.2
6-10 F5OLO	3/8	7/8 - 14	1	1.52	6.0	6.0
6-12 F5OLO	3/8	1 1/16 - 12	1 1/4	1.67	6.0	6.0
8 F5OLO	1/2	3/4 - 16	7/8	1.44	9.2	9.2
8-4 F5OLO	1/2	7/16 - 20	7/8	1.44	9.2	9.2
8-6 F5OLO	1/2	9/16 - 18	7/8	1.48	9.2	9.2
8-10 F5OLO	1/2	7/8 - 14	1	1.59	6.0	6.0
8-12 F5OLO	1/2	1 1/16 - 12	1 1/4	1.75	6.0	6.0
8-16 F5OLO	1/2	1 5/16 - 12	1 1/2	1.79	6.0	6.0
10 F5OLO	5/8	7/8 - 14	1 1/16	1.69	6.0	6.0
10-6 F5OLO	5/8	9/16 - 18	1 1/16	1.63	6.0	6.0
10-8 F5OLO	5/8	3/4 - 16	1 1/16	1.77	6.0	6.0
10-12 F5OLO	5/8	1 1/16 - 12	1 1/4	1.85	6.0	6.0
10-16 F5OLO	5/8	1 5/16 - 12	1 1/2	1.89	6.0	6.0
12 F5OLO	3/4	1 1/16 - 12	1 1/4	1.91	6.0	6.0
12-6 F5OLO	3/4	9/16 - 18	1 1/4	1.77	6.0	6.0
12-8 F5OLO	3/4	3/4 - 16	1 1/4	1.91	6.0	6.0
12-10 F5OLO	3/4	7/8 - 14	1 1/4	1.99	6.0	6.0
12-16 F5OLO	3/4	1 5/16 - 12	1 1/2	1.95	6.0	6.0
14 F5OLO*	7/8	1 3/16 - 12	1 3/8	1.91	3.0	3.0
16 F5OLO	1	1 5/16 - 12	1 1/2	1.97	6.0	6.0
16-8 F5OLO	1	3/4 - 16	1 1/2	1.96	6.0	6.0
16-10 F5OLO	1	7/8 - 14	1 1/2	2.05	6.0	6.0
16-12 F5OLO	1	1 1/16 - 12	1 1/2	2.15	6.0	6.0
16-20 F5OLO	1	1 5/8 - 12	1 7/8	2.07	6.0	6.0
16-24 F5OLO	1	1 7/8 - 12	2 1/8	2.13	5.0	5.0
20 F5OLO	1 1/4	1 5/8 - 12	1 7/8	2.07	6.0	6.0
20-16 F5OLO	1 1/4	1 5/16 - 12	1 7/8	2.28	6.0	6.0
20-24 F5OLO	1 1/4	1 7/8 - 12	2 1/8	2.13	5.0	5.0
24 F5OLO	1 1/2	1 7/8 - 12	2 1/8	2.13	5.0	5.0
24-20 F5OLO	1 1/2	1 5/8 - 12	2 1/8	2.34	5.0	5.0
32 F5OLO*	2	2 1/2 - 12	2 3/4	2.32	3.0	3.0

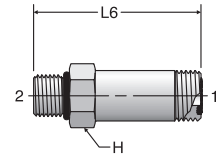
*Different from SAE

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

FF5OLO

Long Straight Thread Connector
ORFS-Long / SAE-ORB

SAE 521720 (previously 520122)

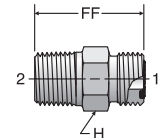


TUBE FITTING PART #	END SIZE		H HEX (in.)	L6 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A			-S	-SS
4 FF5OLO	1/4	7/16 - 20	5/8	2.07	9.2	9.2
6 FF5OLO	3/8	9/16 - 18	3/4	2.27	9.2	9.2
6-4 FF5OLO	3/8	7/16 - 20	3/4	2.39	9.2	9.2
8 FF5OLO	1/2	3/4 - 16	7/8	2.67	9.2	9.2
10 FF5OLO	5/8	7/8 - 14	1 1/16	3.14	6.0	6.0
12 FF5OLO	3/4	1 1/16 - 12	1 1/4	3.76	6.0	6.0
16 FF5OLO	1	1 5/16 - 12	1 1/2	4.14	6.0	6.0
20 FF5OLO	1 1/4	1 5/8 - 12	1 7/8	4.76	6.0	6.0
24 FF5OLO	1 1/2	1 7/8 - 12	2 1/8	5.26	5.0	5.0

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FLO

Male Pipe Connector
ORFS / NPTF



TUBE FITTING PART #	END SIZE		FF (in.)	H HEX (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF			-S	-SS
4 FLO	1/4	1/8 - 27	1.07	5/8	6.0	6.0
4-4 FLO	1/4	1/4 - 18	1.26	5/8	6.0	6.0
4-6 FLO	1/4	3/8 - 18	1.32	3/4	6.0	6.0
4-8 FLO	1/4	1/2 - 14	1.52	7/8	6.0	6.0
6 FLO	3/8	1/4 - 18	1.25	3/4	6.0	6.0
6-2 FLO	3/8	1/8 - 27	1.16	3/4	6.0	6.0
6-6 FLO	3/8	3/8 - 18	1.34	3/4	6.0	6.0
6-8 FLO	3/8	1/2 - 14	1.55	7/8	6.0	6.0
8 FLO	1/2	3/8 - 18	1.48	7/8	6.0	6.0
8-4 FLO	1/2	1/4 - 18	1.48	7/8	6.0	6.0
8-8 FLO	1/2	1/2 - 14	1.64	7/8	6.0	6.0
8-12 FLO	1/2	3/4 - 14	1.69	1 1/8	6.0	6.0
10 FLO	5/8	1/2 - 14	1.82	1 1/16	6.0	6.0
10-12 FLO	5/8	3/4 - 14	1.82	1 1/8	5.5	5.5
12 FLO	3/4	3/4 - 14	1.93	1 1/4	5.5	5.5
12-8 FLO	3/4	1/2 - 14	1.93	1 1/4	6.0	6.0
12-16 FLO	3/4	1 - 11 1/2	2.13	1 3/8	4.5	5.4
16 FLO	1	1 - 11 1/2	2.19	1 1/2	4.5	5.4
16-12 FLO	1	3/4 - 14	2.00	1 1/2	5.5	5.5
16-20 FLO	1	1 1/4 - 11 1/2	2.30	1 3/4	3.0	3.0
20 FLO	1 1/4	1 1/4 - 11 1/2	2.30	1 7/8	3.0	3.0
20-12 FLO	1 1/4	3/4 - 14	2.02	1 7/8	5.5	5.5
20-16 FLO	1 1/4	1 - 11 1/2	2.27	1 7/8	4.5	5.4
24 FLO	1 1/2	1 1/2 - 11 1/2	2.40	2 1/8	3.0	3.0

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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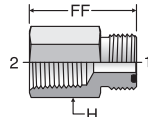
TUBE FAB
EQUIP

GEN TECH

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GLO

Female NPT
ORFS / Female Pipe

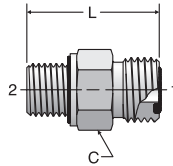


TUBE FITTING PART #	END SIZE		FF (in.)	H HEX (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2			-S	-SS
	(in.)	NPTF				
4 GLO	1/4	1/8 - 27	1.03	5/8	6.0	6.0
4-4 GLO	1/4	1/4 - 18	1.25	3/4	6.0	6.0
6 GLO	3/8	1/4 - 18	1.30	3/4	6.0	6.0
6-6 GLO	3/8	3/8 - 18	1.34	7/8	6.0	6.0
8 GLO	1/2	3/8 - 18	1.34	7/8	6.0	6.0

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F42EDMLO

Male Connector – BSPP
(for ISO 1179-1 Port)
ORFS / BSPP-ED

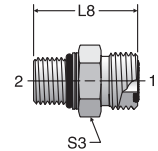


TUBE FITTING PART #	END SIZE			C HEX (mm)	L (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2			S	SS
	(mm)	(in.)	BSPP				
4F42EDMLO	6	1/4	1/8 - 28	17	25.7	9.2	9.2
4-4F42EDMLO	6	1/4	1/4 - 19	19	30.5	9.2	9.2
4-6F42EDMLO	6	1/4	3/8 - 19	22	31.6	9.2	9.2
4-8F42EDMLO	6	1/4	1/2 - 14	27	35.4	6.0	6.0
6F42EDMLO	8,10	3/8	1/4 - 19	19	31.9	9.2	9.2
6-2F42EDMLO	8,10	3/8	1/8 - 28	19	31.1	9.2	9.2
6-6F42EDMLO	8,10	3/8	3/8 - 19	22	33.0	9.2	9.2
6-8F42EDMLO	8,10	3/8	1/2 - 14	27	36.5	6.0	6.0
6-12F42EDMLO	8,10	3/8	3/4 - 14	32	40.3	6.0	6.0
8F42EDMLO	12	1/2	3/8 - 19	22	34.6	9.2	9.2
8-4F42EDMLO	12	1/2	1/4 - 19	22	37.5	9.2	9.2
8-8F42EDMLO	12	1/2	1/2 - 14	27	38.4	6.0	6.0
8-12F42EDMLO	12	1/2	3/4 - 14	32	41.9	6.0	6.0
10F42EDMLO	14,15,16	5/8	1/2 - 14	27	41.1	6.0	6.0
10-6F42EDMLO	14,15,16	5/8	3/8 - 19	27	42.4	6.0	6.0
10-12F42EDMLO	14,15,16	5/8	3/4 - 14	32	44.3	6.0	6.0
12F42EDMLO	18,20	3/4	3/4 - 14	32	46.1	6.0	6.0
12-8F42EDMLO	18,20	3/4	1/2 - 14	32	48.5	6.0	6.0
12-16F42EDMLO	18,20	3/4	1 - 11	41	47.5	6.0	6.0
12-20F42EDMLO	18,20	3/4	1 1/4 - 11	50	53.0	6.0	6.0
16F42EDMLO	22,25	1	1 - 11	41	49.8	6.0	6.0
16-12F42EDMLO	22,25	1	3/4 - 14	38	50.3	6.0	6.0
16-20F42EDMLO	22,25	1	1 1/4 - 11	50	53.8	6.0	6.0
16-24F42EDMLO	22,25	1	1 1/2 - 11	55	57.5	5.0	5.0
20F42EDMLO	28,30,32	1 1/4	1 1/4 - 11	50	53.8	6.0	6.0
20-16F42EDMLO	28,30,32	1 1/4	1 - 11	48	55.9	6.0	6.0
20-24F42EDMLO	28,30,32	1 1/4	1 1/2 - 11	55	57.6	5.0	5.0
24F42EDMLO	38	1 1/2	1 1/2 - 11	55	57.6	5.0	5.0

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F87OMLO

Metric Straight Thread Connector
ORFS / ISO 6149



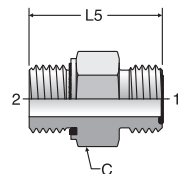
ISO 8434-3 SDS
SAE 52M0187

TUBE FITTING PART #	END SIZE			L8 (mm)	S3 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2			S	SS
	(mm)	(in.)	ISO 261				
4M12F87OMLO	6	1/4	M12X1.5	28.5	17	9.2	9.2
4M14F87OMLO	6	1/4	M14X1.5	29.5	19	9.2	9.2
6M12F87OMLO	8,10	3/8	M12X1.5	32.0	22	9.2	9.2
6M14F87OMLO	8,10	3/8	M14X1.5	32.0	22	9.2	9.2
6M16F87OMLO	8,10	3/8	M16X1.5	33.5	22	9.2	9.2
6M18F87OMLO	8,10	3/8	M18X1.5	36.1	24	9.2	9.2
8M14F87OMLO	12	1/2	M14X1.5	35.1	24	9.2	9.2
8M16F87OMLO	12	1/2	M16X1.5	36.6	24	9.2	9.2
8M18F87OMLO	12	1/2	M18X1.5	38.0	24	9.2	9.2
8M22F87OMLO	12	1/2	M22X1.5	39.6	27	6.0	6.0
8M27F87OMLO	12	1/2	M27X2.0	44.2	32	6.0	6.0
10M18F87OMLO	14,15,16	5/8	M18X1.5	41.0	27	6.0	6.0
10M22F87OMLO	14,15,16	5/8	M22X1.5	42.0	27	6.0	6.0
10M27F87OMLO	14,15,16	5/8	M27x2.0	47.0	32	6.0	6.0
12M22F87OMLO	18,20	3/4	M22X1.5	45.0	32	6.0	6.0
12M27F87OMLO	18,20	3/4	M27X2.0	48.5	32	6.0	6.0
12M33F87OMLO	18,20	3/4	M33X2.0	51.5	41	6.0	6.0
16M27F87OMLO	22,26	1	M27X2.0	52.1	41	6.0	6.0
16M33F87OMLO	22,25	1	M33X2.0	52.0	41	6.0	6.0
20M33F87OMLO	28,30,32	1 1/4	M33x2.0	54.1	46	6.0	6.0
20M42F87OMLO	28,30,32	1 1/4	M42X2.0	54.5	50	5.0	5.0
24M48F87OMLO	35,38	1 1/2	M48X2.0	57.0	55	5.0	5.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

F82EDMLO

Male Connector – Metric
(for ISO 9974-1 Port)
ORFS / Metric-ED



TUBE FITTING PART #	END SIZE			C HEX (mm)	L5 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2			S	SS
	(mm)	(in.)	Metric				
4M12F82EDMLO	6	1/4	M12X1.5	17	29.7	9.2	9.2
4M14F82EDMLO	6	1/4	M14X1.5	19	30.5	9.2	9.2
6M14F82EDMLO	8,10	3/8	M14X1.5	19	31.9	9.2	9.2
6M16F82EDMLO	8,10	3/8	M16X1.5	22	31.9	9.2	9.2
8M16F82EDMLO	12	1/2	M16X1.5	22	32.0	9.2	9.2
8M18F82EDMLO	12	1/2	M18X1.5	24	34.6	9.2	9.2
10M22F82EDMLO	14,15,16	5/8	M22X1.5	27	41.1	6.0	6.0
12M22F82EDMLO	18,20	3/4	M22X1.5	32	42.7	6.0	6.0
12M27F82EDMLO	18,20	3/4	M27X2	32	46.1	6.0	6.0
16M33F82EDMLO	22,25	1	M33X2	41	49.8	6.0	6.0
20M42F82EDMLO	28,30,32	1 1/4	M42X2	50	54.0	5.0	5.0

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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TUBE FAB
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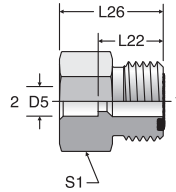
GEN TECH

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MMLOHB3

Braze Connector
ORFS / Braze Socket

ISO 8434-3 BRS
SAE 52M01M04



TUBE FITTING PART #	END SIZE			D5* DIA TUBE SOCKET	L22 (mm)	L26 (mm)	S1 HEX	Dynamic Pressure (x 1,000 PSI)	
	1		2					S	SS
	(mm)	(in.)	(mm)						
4-6MMLOHB3	6	1/4	6	6.15	13.5	22.0	17	9.2	9.2
4-8MMLOHB3	6	1/4	8	8.15	13.5	22.0	17	9.2	9.2
6-10MMLOHB3	8, 10	3/8	10	10.15	14.5	23.0	19	9.2	9.2
8-12MMLOHB3	12	1/2	12	12.15	16.0	24.5	22	9.2	9.2
10-16MMLOHB3	14, 15, 16	5/8	16	16.15	19.0	27.5	27	6.0	6.0
12-20MMLOHB3	18, 20	3/4	20	20.18	21.0	33.5	32	6.0	6.0
16-25MMLOHB3	22, 25	1	25	25.18	24.5	38.5	41	6.0	6.0
20-30MMLOHB3	28, 30, 32	1 1/4	30	30.20	24.5	38.5	46	6.0	6.0
24-38MMLOHB3	35, 38	1 1/2	38	38.20	24.5	38.5	55	5.0	5.0

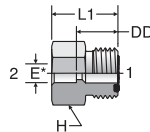
* D5 is for silver brazing. Standard steel parts are not recommended for welding.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

LOHB3

Braze Connector
ORFS / Braze Socket

SAE 520104



TUBE FITTING PART #	END SIZE		DD (in.)	E* DIA (in.)	H HEX (in.)	L1 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2					-S	-SS
	(in.)	(in.)						
4 LOHB3	1/4	1/4	0.53	0.26	5/8	0.86	9.2	9.2
4-6 LOHB3	1/4	3/8	0.53	0.38	5/8	0.86	9.2	9.2
6 LOHB3	3/8	3/8	0.57	0.38	3/4	0.90	9.2	9.2
6-4 LOHB3	3/8	1/4	0.57	0.26	3/4	0.90	9.2	9.2
6-8 LOHB3	3/8	1/2	0.57	0.51	3/4	0.90	9.2	9.2
8 LOHB3	1/2	1/2	0.63	0.51	7/8	0.97	9.2	9.2
8-4 LOHB3**	1/2	1/4	0.64	0.26	7/8	0.97	9.2	9.2
8-6 LOHB3	1/2	3/8	0.63	0.38	7/8	0.97	9.2	9.2
8-10 LOHB3	1/2	5/8	0.63	0.63	7/8	0.97	6.0	6.0
8-12 LOHB3**	1/2	3/4	0.67	0.76	1 1/16	1.16	6.0	6.0
10 LOHB3	5/8	5/8	0.74	0.63	1 1/16	1.07	6.0	6.0
10-6 LOHB3	5/8	3/8	0.74	0.38	1 1/16	1.07	6.0	6.0
10-8 LOHB3	5/8	1/2	0.74	0.51	1 1/16	1.07	6.0	6.0
10-12 LOHB3	5/8	3/4	0.74	0.76	1 1/16	1.23	6.0	6.0
12 LOHB3	3/4	3/4	0.83	0.76	1 1/4	1.32	6.0	6.0
12-8 LOHB3	3/4	1/2	0.83	0.51	1 1/4	1.16	6.0	6.0
12-10 LOHB3	3/4	5/8	0.83	0.63	1 1/4	1.16	6.0	6.0
12-16 LOHB3	3/4	1	0.83	1.01	1 1/4	1.38	6.0	6.0
16 LOHB3	1	1	0.97	1.01	1 1/2	1.52	6.0	6.0
16-8 LOHB3**	1	1/2	0.97	0.51	1 1/2	1.30	6.0	6.0
16-12 LOHB3	1	3/4	0.97	0.76	1 1/2	1.46	6.0	6.0
16-20 LOHB3	1	1 1/4	0.96	1.26	1 3/4	1.52	6.0	6.0
20 LOHB3	1 1/4	1 1/4	0.97	1.26	1 3/4	1.52	6.0	6.0
20-16 LOHB3	1 1/4	1	0.97	1.01	1 3/4	1.52	6.0	6.0
20-24 LOHB3	1 1/4	1 1/2	0.97	1.51	2 1/8	1.52	5.0	5.0
24 LOHB3	1 1/2	1 1/2	0.97	1.51	2 1/8	1.52	5.0	5.0
24-20 LOHB3	1 1/2	1 1/4	0.97	1.26	2 1/8	1.52	5.0	5.0

* E is for silver brazing. Standard steel parts are not recommended for welding.

** Size 14 is not included in SAE J1453.

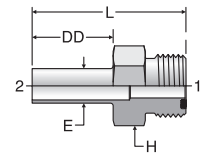
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications

LOHT3

Tube Stub Connector
ORFS / Tube Weld



TUBE FITTING PART #	END SIZE	DD (in.)	E DIA (in.)	H HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)
	1 & 2 (in.)					-SS
4-4X035 LOHT3	1/4	0.88	0.25	5/8	1.58	5.9
6-6X035 LOHT3	3/8	0.88	0.38	3/4	1.67	3.8
8-8X065 LOHT3	1/2	1.00	0.50	7/8	1.89	5.5
12-12X065 LOHT3	3/4	1.16	0.75	1 1/4	2.35	3.5
12-16X065 LOHT3	1	1.13	1.00	1 1/4	2.32	2.6
16-16X065 LOHT3	1	1.13	1.00	1 1/2	2.40	2.6

* Contact Tube Fittings Division for pressure ratings.

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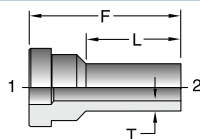
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TLW1

Butt Weld
Sleeve

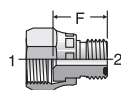


TUBE FITTING PART #	END SIZE		F (in.)	L (in.)	T (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)				-S	-SS
4-4X035 TLW1	1/4	1/4	1.20	0.75	0.035	5.9	
6-4X035 TLW1	3/8	1/4	1.26	0.75	0.035	5.9	
6-4X049 TLW1	3/8	1/4	1.26	0.75	0.049	8.6	
6-6X035 TLW1	3/8	3/8	1.20	0.75	0.035	3.8	
6-6X049 TLW1	3/8	3/8	1.20	0.75	0.049	5.5	
6-6X065 TLW1	3/8	3/8	1.20	0.75	0.065	7.5	
8-8X049 TLW1	1/2	1/2	1.20	0.75	0.049	4.0	
8-8X065 TLW1	1/2	1/2	1.20	0.75	0.065	5.5	
12-12X065 TLW1	3/4	3/4	1.39	0.75	0.065	3.5	
12-12X083 TLW1	3/4	3/4	1.39	0.75	0.083	4.6	
12-12X095 TLW1	3/4	3/4	1.39	0.75	0.095	5.3	
12-8X049 TLW1	3/4	1/2	1.52	0.75	0.049	4.0	
16-16X083 TLW1	1	1	1.43	0.75	0.083	3.4	
16-16X095 TLW1	1	1	1.43	0.75	0.095	3.9	

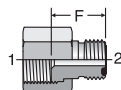
TRLON

Tube End Reducer
ORFS Swivel / ORFS Tube End

SAE 520123 (body only)
SAE 520123A (body with large nut)



* Assembled
with
Crimp Nut



** Assembled
with Large
BL Nut

TUBE FITTING PART #			END SIZE		F (in.)	Dynamic Pressure (x 1,000 PSI)	
TRLON	TRLON	TRLO					
*One Piece Design (With Crimp Nut)	**Two Piece Design (With Large Nut)	***Body Only (For Two-Piece Design Only)	1 (in.)	2 (in.)			
6-4 TRLON	—	—	3/8	1/4	0.77	9.2	9.2
—	8-4 TRLON	8-4 TRLO	1/2	1/4	0.87	9.2	9.2
8-6 TRLON	—	—	1/2	3/8	0.89	9.2	9.2
—	10-4 TRLON	10-4 TRLO	5/8	1/4	0.91	6.0	6.0
—	10-6 TRLON	10-6 TRLO	5/8	3/8	0.94	6.0	6.0
—	10-8 TRLON	10-8 TRLO	5/8	1/2	1.00	6.0	6.0
—	12-4 TRLON	12-4 TRLO	3/4	1/4	0.98	6.0	6.0
—	12-6 TRLON	12-6 TRLO	3/4	3/8	1.02	6.0	6.0
—	12-8 TRLON	12-8 TRLO	3/4	1/2	1.08	6.0	6.0
12-10 TRLON	—	—	3/4	5/8	1.16	6.0	6.0
—	16-8 TRLON	16-8 TRLO	1	1/2	1.14	6.0	6.0
—	16-10 TRLON	16-10 TRLO	1	5/8	1.26	6.0	6.0
16-12 TRLON	—	—	1	3/4	1.30	6.0	6.0
—	20-12 TRLON	20-12 TRLO	1 1/4	3/4	1.32	5.0	5.0
20-16 TRLON	—	—	1 1/4	1	1.34	5.0	5.0
—	24-12 TRLON-S	—	1 1/2	3/4	1.32	4.0	4.0
—	24-16 TRLON	24-16 TRLO	1 1/2	1	1.34	4.0	4.0
—	24-20 TRLON	24-20 TRLO	1 1/2	1 1/4	1.34	4.0	4.0
—	32-20 TRLON	32-20 TRLO	2	1 1/4	1.42	3.0	3.0
—	32-24 TRLON	32-24 TRLO	2	1 1/2	1.42	3.0	3.0

* Assembled with crimp nut.

** Assembled with large BL nut.

***To order reducer without large nut (body only) remove the "N" from the part number (i.e., TRLO).

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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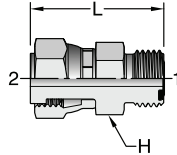
TUBE FAB
EQUIP

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LOHL6

Tube End Extender / Expander
ORFS / ORFS Swivel

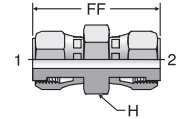


TUBE FITTING PART #	END SIZE		L (in.)	H HEX (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)			-S	-SS
4 LOHL6	1/4	1/4	1.33	5/8	9.2	9.2
6 LOHL6	3/8	3/8	1.44	3/4	9.2	9.2
6-4 LOHL6	3/8	1/4	1.37	3/4	9.2	9.2
8 LOHL6	1/2	1/2	1.67	7/8	9.2	9.2
8-6 LOHL6	1/2	3/8	1.62	7/8	9.2	9.2
10-8 LOHL6	5/8	1/2	1.81	1 1/16	6.0	6.0
12-10 LOHL6	3/4	5/8	1.99	1 1/4	6.0	6.0
16-12 LOHL6	1	3/4	2.16	1 1/2	6.0	6.0
20-16 LOHL6	1 1/4	1	2.28	1 3/4	6.0	6.0
24-20 LOHL6	1 1/2	1 1/4	2.35	2 1/8	5.0	5.0

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HL6

Swivel Nut Union
ORFS Swivel / ORFS Swivel



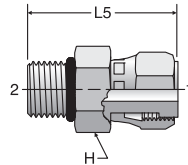
TUBE FITTING PART #	END SIZE		FF (in.)	H HEX (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)			-S	-SS
4 HL6	1/4	1/4	1.59	5/8	9.2	9.2
6 HL6	3/8	3/8	1.77	3/4	9.2	9.2
8 HL6	1/2	1/2	2.12	7/8	9.2	9.2
10 HL6	5/8	5/8	2.42	1 1/16	6.0	6.0
12 HL6	3/4	3/4	2.74	1 1/4	6.0	6.0
16 HL6	1	1	2.95	1 7/16	6.0	6.0

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F650L

Straight Thread Swivel Connector
ORFS Swivel / SAE-ORB

SAE 520181

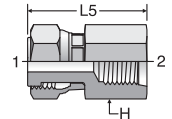


TUBE FITTING PART #	END SIZE		H HEX (in.)	L5 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A			-S	-SS
4 F650L	1/4	7/16 - 20	5/8	1.46	9.2	9.2
6 F650L	3/8	9/16 - 18	3/4	1.57	9.2	9.2
8 F650L	1/2	3/4 - 16	7/8	1.95	9.2	9.2
10 F650L	5/8	7/8 - 14	1 1/16	2.13	6.0	6.0
12 F650L	3/4	1 1/16 - 12	1 1/4	2.34	6.0	6.0
16 F650L	1	1 5/16 - 12	1 1/2	2.66	6.0	6.0
20 F650L	1 1/4	1 5/8 - 12	1 7/8	2.66	5.0	5.0

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G65L

Straight Thread Swivel
Female Connector
ORFS Swivel / SAE-ORB



TUBE FITTING PART #	END SIZE		H HEX (in.)	L5 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2B			-S	-SS
4 G65L	1/4	7/16 - 20	3/4	1.38	6.0	6.0
4-6 G65L	1/4	9/16 - 18	13/16	1.45	6.0	6.0
6-4 G65L	3/8	7/16 - 20	3/4	1.51	6.0	6.0
8-4 G65L	1/2	7/16 - 20	7/8	1.57	6.0	6.0

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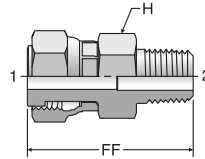
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F6L

Pipe Thread Swivel
Connector
ORFS Swivel / NPTF

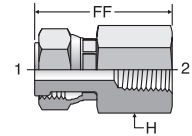


TUBE FITTING PART #	END SIZE		FF (in.)	H HEX (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2			-S	-SS
	(in.)	NPTF				
4 F6L	1/4	1/8 - 27	1.33	5/8	6.0	6.0
4-4 F6L	1/4	1/4 - 18	1.52	5/8	6.0	6.0
6 F6L	3/8	1/4 - 18	1.69	3/4	6.0	6.0
6-6 F6L	3/8	3/8 - 18	1.67	3/4	6.0	6.0
8 F6L	1/2	3/8 - 18	1.95	3/4	6.0	6.0
8-8 F6L	1/2	1/2 - 14	2.14	7/8	6.0	6.0
10 F6L	5/8	1/2 - 14	2.29	1 1/16	6.0	6.0
12 F6L	3/4	3/4 - 14	2.37	1 1/4	5.5	6.0
16 F6L	1	1 - 11 1/2	2.87	1 1/2	4.5	5.4

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

G6L

Female Pipe Thread Swivel
Connector
ORFS Swivel / NPTF

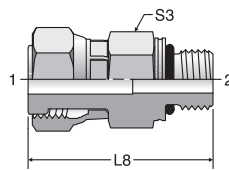


TUBE FITTING PART #	END SIZE		FF (in.)	H (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2			-S	-SS
	(in.)	NPTF				
4-4 G6L	1/4	1/4 - 18	1.48	3/4	6.0	6.0
6 G6L	3/8	1/4 - 18	1.60	7/8	6.0	6.0
8-4 G6L	1/2	1/4 - 18	1.75	7/8	6.0	6.0

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F687OML

Swivel ISO 6149 Connector
ORFS Swivel / ISO 6149

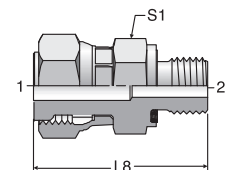


TUBE FITTING PART #	END SIZE			L8 (mm)	S3 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	1	2				S	SS
	(mm)	(in.)	ISO 261				
4M12F687OML	6	1/4	M12x1.5	37.0	17	9.2	9.2
6M12F687OML	8, 10	3/8	M12x1.5	39.0	17	9.2	9.2
6M14F687OML	8, 10	3/8	M14x1.5	38.0	19	9.2	9.2
6M16F687OML	8, 10	3/8	M16x1.5	43.5	22	9.2	9.2
8M16F687OML	12	1/2	M16x1.5	48.0	22	9.2	9.2
10M22F687OML	14, 15, 16	5/8	M22x1.5	53.0	27	6.0	6.0
10M27F687OML	14, 15, 16	5/8	M27x2	57.0	32	6.0	6.0
12M27F687OML	18, 20	3/4	M27x2	59.5	32	6.0	6.0
16M33F687OML	22, 25	1	M33x2	67.5	41	6.0	6.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

F682EDML

Swivel Metric Connector
ORFS Swivel / Metric-ED



TUBE FITTING PART #	END SIZE			L8 (mm)	S1 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	1	2				S	SS
	(mm)	(in.)	Metric				
4M12F682EDML	6	1/4	M12x1.5	38.2	17	9.2	9.2
6M14F682EDML	8, 10	3/8	M14x1.5	40.2	19	9.2	9.2
8M16F682EDML	12	1/2	M16x1.5	47.3	22	9.2	9.2
10M22F682EDML	14, 15, 16	5/8	M22x1.5	51.8	27	6.0	6.0
12M27F682EDML	18, 20	3/4	M27x2	57.2	32	6.0	6.0
16M33F682EDML	22, 25	1	M33x2	67.0	41	6.0	6.0

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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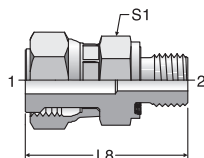
TUBE FAB
EQUIP

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F642EDML

Swivel BSPP Connector
ORFS Swivel / BSPP-ED



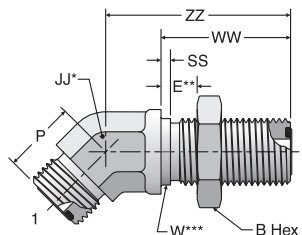
TUBE FITTING PART #	END SIZE		BSPP	L8 (mm)	S1 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	1	2				S	SS
	(mm)	(in.)					
4F642EDML	6	1/4	1/8	34.0	14	7.2	7.2
6F642EDML	8, 10	3/8	1/4	40.2	19	9.2	9.2
8F642EDML	12	1/2	3/8	47.3	22	9.2	9.2
10F642EDML	14, 15, 16	5/8	1/2	51.8	27	6.0	6.0
12F642EDML	18, 20	3/4	3/4	57.2	32	6.0	6.0
16F642EDML	22, 25	1	1	67.0	41	6.0	6.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

WNLO

45° Bulkhead Union Elbow
ORFS / ORFS

SAE 520801
WNLO-WLNL - Body with Locknut
(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE		B HEX (in.)	E MAX (in.)	JJ (in.)	P (in.)	SS (in.)	W DIA (in.)	WW (in.)	ZZ (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2									-S	-SS
	(in.)	(in.)										
4 WNLO	1/4	1/4	13/16	0.55	9/16	0.63	0.06	0.56	1.24	1.73	9.2	9.2
6 WNLO	3/8	3/8	1	0.55	3/4	0.75	0.06	0.69	1.34	1.91	9.2	9.2
8 WNLO	1/2	1/2	1 1/8	0.55	3/4	0.81	0.06	0.81	1.44	2.01	9.2	9.2
10 WNLO	5/8	5/8	1 5/16	0.55	1 1/16	0.93	0.06	1.00	1.59	2.22	6.0	6.0
12 WNLO	3/4	3/4	1 1/2	0.55	1 3/16	1.02	0.06	1.19	1.63	2.38	6.0	6.0
16 WNLO	1	1	1 3/4	0.55	1 7/16	1.18	0.06	1.44	1.65	2.56	6.0	6.0
20 WNLO	1 1/4	1 1/4	2	0.55	1 5/8	1.26	0.06	1.69	1.65	2.64	5.0	5.0
24 WNLO	1 1/2	1 1/2	2 3/8	0.55	1 7/8	1.46	0.06	2.00	1.65	2.64	4.0	4.0

* JJ – Across wrench flats.

** E – Maximum bulkhead thickness.

*** W – Bulkhead pilot diameter. Recommended clearance hole is W + 0.015".

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



A20

Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

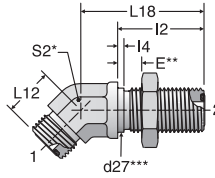
[Click here for CADs, Support Resources or to Configure Parts Online](#)

WNMLO

45° Bulkhead Union Elbow – mm Hex
ORFS / ORFS

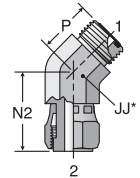
ISO 8434-3 BHE45
SAE 52M0801

WNMLO-WLNML - Body with Locknut
(See page A11 for WLNML)



V6LO

45° Swivel Nut Elbow
ORFS / ORFS Swivel



* JJ – Across Wrench Flats

TUBE FITTING PART #	END SIZE		d27*** (mm)	E (mm)	I2 (mm)	I4 (mm)	L12 (mm)	L18 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2									S	SS
	(mm)	(in.)									
4WNMLO	6	1/4	14.3	14	31.5	1.5	16.0	44.0	14	9.2	9.2
6WNMLO	8,10	3/8	17.5	14	34.0	1.5	19.0	48.5	19	9.2	9.2
8WNMLO	12	1/2	20.6	14	36.5	1.5	20.5	51.0	19	9.2	9.2
10WNMLO	14,15,16	5/8	25.4	14	40.5	1.5	23.5	56.5	27	6.0	6.0
12WNMLO	18,20	3/4	30.2	14	41.5	1.5	26.0	60.5	30	6.0	6.0
16WNMLO	22,25	1	36.5	14	42.0	1.5	30.0	65.0	36	6.0	6.0
20WNMLO	28,30,32	1 1/4	42.9	14	42.0	1.5	32.0	67.0	41	5.0	5.0
24WNMLO	35,38	1 1/2	50.8	14	42.0	1.5	37.0	67.0	50	4.0	4.0

* S2 – Across Wrench Flats.

** E – Maximum bulkhead thickness.

***d27 – Bulkhead pilot diameter. Recommended clearance hole is d27 + 0.4 mm.

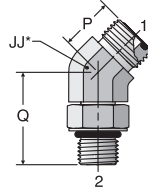
TUBE FITTING PART #	END SIZE	JJ (in.)	N2 (in.)	P (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2				-S	-SS
	(in.)					
4 V6LO	1/4	9/16	0.99	0.63	9.2	9.2
6 V6LO	3/8	3/4	1.12	0.74	9.2	9.2
8 V6LO	1/2	3/4	1.49	0.80	9.2	9.2
10 V6LO	5/8	1 1/16	1.53	0.92	6.0	6.0
12 V6LO	3/4	1 3/16	1.73	1.02	6.0	6.0
16 V6LO	1	1 7/16	1.87	1.18	6.0	6.0
20 V6LO	1 1/4	1 5/8	1.98	1.26	5.0	5.0
24 V6LO	1 1/2	1 7/8	2.06	1.45	4.0	4.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

V5OLO

45° Straight Thread Elbow
ORFS / SAE-ORB

SAE 520320

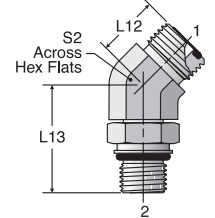


* JJ – Across Hex Flats

V87OMLO

45° Metric Straight Thread Elbow
ORFS / ISO 6149

ISO 8434-3 SDE45
SAE 52M0387



* S2 – Across Hex Flats

TUBE FITTING PART #	END SIZE		JJ	P	Q	Dynamic Pressure (x 1,000 PSI)	
	1	2				-S	-SS
	(in.)	UN/UNF-2A					
4 V5OLO	1/4	7/16 - 20	9/16	0.63	1.18	6.0	6.0
4-6 V5OLO	1/4	9/16 - 18	3/4	0.69	1.30	6.0	6.0
6 V5OLO	3/8	9/16 - 18	3/4	0.75	1.30	6.0	6.0
6-4 V5OLO	3/8	7/16 - 20	3/4	0.75	1.22	6.0	6.0
6-8 V5OLO	3/8	3/4 - 16	3/4	0.75	1.44	6.0	6.0
8 V5OLO	1/2	3/4 - 16	3/4	0.81	1.44	6.0	6.0
8-6 V5OLO	1/2	9/16 - 18	3/4	0.81	1.28	6.0	6.0
8-10 V5OLO	1/2	7/8 - 14	3/4	0.85	1.75	6.0	6.0
10 V5OLO	5/8	7/8 - 14	1 1/16	0.93	1.75	6.0	6.0
10-8 V5OLO	5/8	3/4 - 16	1 1/16	0.93	1.57	6.0	6.0
10-12 V5OLO	5/8	1 1/16 - 12	1 3/16	0.96	1.97	6.0	6.0
12 V5OLO	3/4	1 1/16 - 12	1 3/16	1.02	1.97	6.0	6.0
12-10 V5OLO	3/4	7/8 - 14	1 3/16	1.02	1.81	6.0	6.0
12-16 V5OLO	3/4	1 5/16 - 12	1 7/16	1.16	2.07	5.5	5.5
16 V5OLO	1	1 5/16 - 12	1 7/16	1.18	2.07	5.5	5.5
16-10 V5OLO	1	7/8 - 14	1 7/16	1.18	2.03	6.0	6.0
16-12 V5OLO	1	1 1/16 - 12	1 7/16	1.18	2.03	6.0	6.0
16-20 V5OLO	1	1 5/8 - 12	1 5/8	1.26	2.11	4.0	4.0
20 V5OLO	1 1/4	1 5/8 - 12	1 5/8	1.26	2.11	4.0	4.0
24 V5OLO	1 1/2	1 7/8 - 12	1 7/8	1.46	2.11	4.0	4.0

TUBE FITTING PART #	END SIZE		L12	L13	S2	Dynamic Pressure (x 1,000 PSI)	
	1	2				S	SS
	(mm)	(in.)					
4M12V87OMLO	6	1/4	M12X1.5	16.0	30.0	14	6.0
4M14V87OMLO	6	1/4	M14X1.5	17.5	31.5	17	6.0
6M16V87OMLO	8,10	3/8	M16X1.5	19.0	33.5	19	6.0
8M18V87OMLO	12	1/2	M18X1.5	20.5	37.0	19	6.0
10M22V87OMLO	14,15,16	5/8	M22X1.5	23.5	44.0	27	6.0
12M27V87OMLO	18,20	3/4	M27X2	26.0	50.5	27	6.0
16M33V87OMLO	22,25	1	M33X2	30.0	52.5	36	5.0
20M42V87OMLO	28,30,32	1 1/4	M42X2	32.0	54.0	41	4.0
24M48V87OMLO	35,38	1 1/2	M48X2	37.0	56.5	50	4.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

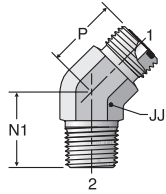
See Seal-Lok Xtreme for extreme temperature applications



[Click here for CADs, Support Resources or to Configure Parts Online](#)

VLO

45° Male Elbow
ORFS / NPTF

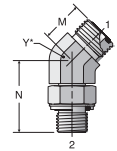


* JJ – Across Wrench Flats

TUBE FITTING PART #	END SIZE		JJ (in.)	N1 (in.)	P (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF				-S	-SS
4 VLO	1/4	1/8 - 27	9/16	0.64	0.63	6.0	6.0
4-4 VLO	1/4	1/4 - 18	9/16	0.86	0.68	6.0	6.0
6 VLO	3/8	1/4 - 18	3/4	0.87	0.74	6.0	6.0
6-6 VLO	3/8	3/8 - 18	3/4	0.87	0.74	6.0	6.0
8 VLO	1/2	3/8 - 18	3/4	0.95	0.80	6.0	6.0
8-8 VLO	1/2	1/2 - 14	7/8	1.17	0.86	6.0	6.0
10 VLO	5/8	1/2 - 14	1 1/16	1.17	0.92	6.0	6.0
12 VLO	3/4	3/4 - 14	1 5/16	1.30	1.02	4.0	4.0
16 VLO	1	1 - 11 1/2	1 7/16	1.48	1.18	3.0	3.0
20 VLO	1 1/4	1 1/4 - 11 1/2	1 5/8	1.67	1.26	2.5	2.5

V40MLO

Male 45° Elbow – BSPP
(for ISO 1179-1 Port)
ORFS / BSPP-ORR



* Y – Across Hex Flats

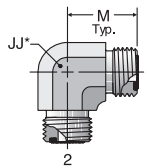
TUBE FITTING PART #	END SIZE			M (mm)	N (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2				S	SS
	(mm)	(in.)	BSP					
4V4OMLO	6	1/4	1/8 - 28	16.0	27.5	14	4.0	4.0
4-4V4OMLO	6	1/4	1/4 - 19	17.5	32.0	19	4.0	4.0
6V4OMLO	8,10	3/8	1/4 - 19	19.0	32.0	19	4.0	4.0
6-6V4OMLO	8,10	3/8	3/8 - 19	19.0	33.5	19	4.0	4.0
6-8V4OMLO	8,10	3/8	1/2 - 14	19.5	43.5	27	4.0	4.0
8V4OMLO	12	1/2	3/8 - 19	20.5	33.5	19	4.0	4.0
8-8V4OMLO	12	1/2	1/2 - 14	21.0	43.5	27	4.0	4.0
10V4OMLO	14,15,16	5/8	1/2 - 14	23.5	43.5	27	4.0	4.0
10-12V4OMLO	14,15,16	5/8	3/4 - 14	24.5	46.5	30	4.0	4.0
12V4OMLO	18,20	3/4	3/4 - 14	26.0	46.5	30	4.0	4.0
12-16V4OMLO	18,20	3/4	1 - 11	26.0	51.0	37	4.0	4.0
16V4OMLO	22,25	1	1 - 11	30.0	51.0	37	4.0	4.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

ELO

Union Elbow
ORFS / ORFS

SAE 520201



* JJ – Across Wrench Flats

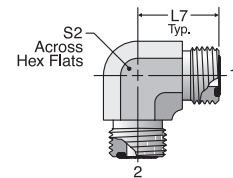
TUBE FITTING PART #	END SIZE		JJ (in.)	M (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)			-S	-SS
4 ELO	1/4	1/4	9/16	0.85	9.2	9.2
6 ELO	3/8	3/8	3/4	0.98	9.2	9.2
8 ELO	1/2	1/2	3/4	1.10	9.2	9.2
10 ELO	5/8	5/8	1 1/16	1.32	6.0	6.0
12 ELO	3/4	3/4	1 3/16	1.48	6.0	6.0
16 ELO	1	1	1 7/16	1.63	6.0	6.0
20 ELO	1 1/4	1 1/4	1 5/8	1.75	5.0	5.0
24 ELO	1 1/2	1 1/2	1 7/8	1.93	4.0	4.0
32 ELO*	2	2	2 1/2	2.76	3.0	3.0

** Size 32 is not included in SAE J1453.

EMLO

Union Elbow – mm Hex
ORFS / ORFS

ISO 8434-3 E
SAE 52M0201



TUBE FITTING PART #	END SIZE		L7 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2				S	SS
	(mm)	(in.)				
4EMLO	6	1/4	21.5	14	9.2	9.2
6EMLO	8,10	3/8	25.0	19	9.2	9.2
8EMLO	12	1/2	28.0	19	9.2	9.2
10EMLO	14,15,16	5/8	33.5	27	6.0	6.0
12EMLO	18,20	3/4	37.5	30	6.0	6.0
16EMLO	22,25	1	41.5	36	6.0	6.0
20EMLO	28,30,32	1 1/4	44.5	41	5.0	5.0
24EMLO	35,38	1 1/2	49.0	50	4.0	4.0

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



A22

Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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TUBE FAB
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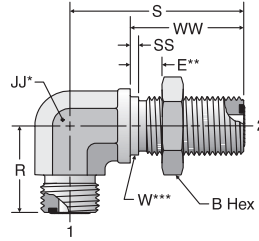
GEN TECH

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WELO

Bulkhead Union Elbow
ORFS / ORFS

SAE 520701
WELO-WLNL - Body with Locknut
(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE		B HEX (in.)	E MAX (in.)	JJ (in.)	R (in.)	S (in.)	SS (in.)	W (in.)	WW (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)									-S	-SS
4 WELO	1/4	1/4	13/16	0.55	9/16	0.89	1.85	0.06	0.56	1.24	9.2	9.2
6 WELO	3/8	3/8	1	0.55	3/4	1.02	2.05	0.06	0.69	1.34	9.2	9.2
8 WELO	1/2	1/2	1 1/8	0.55	3/4	1.14	2.19	0.06	0.81	1.44	9.2	9.2
10 WELO	5/8	5/8	1 5/16	0.55	1 1/16	1.36	2.48	0.06	1.00	1.59	6.0	6.0
12 WELO	3/4	3/4	1 1/2	0.55	1 3/16	1.52	2.64	0.06	1.19	1.63	6.0	6.0
16 WELO	1	1	1 3/4	0.55	1 7/16	1.67	2.80	0.06	1.44	1.65	6.0	6.0
20 WELO	1 1/4	1 1/4	2	0.55	1 5/8	1.79	2.97	0.06	1.69	1.65	5.0	5.0
24 WELO	1 1/2	1 1/2	2 3/8	0.55	1 7/8	1.95	3.13	0.06	2.00	1.65	4.0	4.0

* JJ – Across wrench flats.

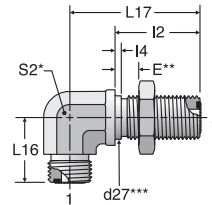
** E – Maximum bulkhead thickness.

*** W – Bulkhead pilot diameter. Recommended clearance hole is W + 0.015".

WEMLO

Bulkhead Union Elbow – mm Hex
ORFS / ORFS

ISO 8434-3 BHE
SAE 52M0701
WEMLOWLNL - Body with Locknut
(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE		d27*** (mm)	E (mm)	I2 (mm)	I4 (mm)	L16 (mm)	L17 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2									S	SS
	(mm)	(in.)									
4WEMLO	6	1/4	14.3	14	31.5	1.5	22.5	47.0	14	9.2	9.2
6WEMLO	8,10	3/8	17.5	14	34.0	1.5	26.0	52.0	19	9.2	9.2
8WEMLO	12	1/2	20.6	14	36.5	2.5	29.0	55.5	19	9.2	9.2
10WEMLO	14,15,16	5/8	25.4	14	40.5	2.5	34.5	63.0	27	6.0	6.0
12WEMLO	18,20	3/4	30.2	14	41.5	3.0	38.5	67.0	30	6.0	6.0
16WEMLO	22,25	1	36.5	14	42.0	3.0	42.5	71.0	36	6.0	6.0
20WEMLO	28,30,32	1 1/4	42.9	14	42.0	3.0	45.5	75.5	41	5.0	5.0
24WEMLO	35,38	1 1/2	50.8	14	42.0	3.0	49.5	79.5	50	4.0	4.0

* S2 – Across wrench flats.

** E – Maximum bulkhead thickness.

***d27 - Bulkhead pilot diameter. Recommended clearance is d27 + 0.4 mm.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications

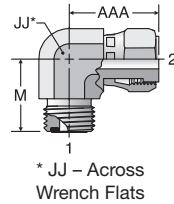


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C6LO

Swivel Nut Elbow
ORFS / ORFS Swivel

SAE 520221

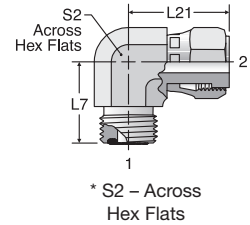


TUBE FITTING PART #	END SIZE		AAA (in.)	JJ (in.)	M (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)				-S	-SS
4 C6LO	1/4	1/4	1.07	9/16	0.85	9.2	9.2
6 C6LO	3/8	3/8	1.17	3/4	0.98	9.2	9.2
8 C6LO	1/2	1/2	1.50	3/4	1.10	9.2	9.2
10 C6LO	5/8	5/8	1.61	1 1/16	1.32	6.0	6.0
12 C6LO	3/4	3/4	1.83	1 3/16	1.48	6.0	6.0
16 C6LO	1	1	2.11	1 7/16	1.64	6.0	6.0
20 C6LO	1 1/4	1 1/4	2.28	1 5/8	1.75	5.0	5.0
24 C6LO	1 1/2	1 1/2	2.41	1 7/8	1.92	4.0	4.0

C6MLO

Swivel Nut Elbow – mm Hex
ORFS / ORFS Swivel

ISO 8434-3 SWE
SAE 52M0221

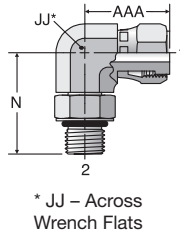


TUBE FITTING PART #	END SIZE		L7 (mm)	L21 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 (mm)	2 (in.)				S	SS
4C6MLO	6	1/4	21.5	27.2	14	9.2	9.2
6C6MLO	8,10	3/8	25.0	29.7	19	9.2	9.2
8C6MLO	12	1/2	28.0	38.0	19	9.2	9.2
10C6MLO	14,15,16	5/8	33.5	41.0	27	6.0	6.0
12C6MLO	18,20	3/4	37.5	46.5	30	6.0	6.0
16C6MLO	22,25	1	41.6	53.5	36	6.0	6.0
20C6MLO	28,30,32	1 1/4	44.5	58.0	41	5.0	5.0
24C6MLO	35,38	1 1/2	48.8	61.0	50	4.0	4.0

AOEL6

Straight Thread Swivel Elbow
ORFS Swivel / SAE-ORB

SAE 520281

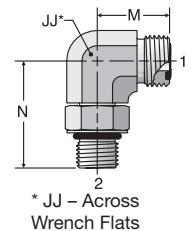


TUBE FITTING PART #	END SIZE		AAA (in.)	JJ (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A				-S	-SS
4 AOEL6	1/4	7/16 - 20	1.04	9/16	1.30	6.0	6.0
6 AOEL6	3/8	9/16 - 18	1.17	3/4	1.46	6.0	6.0
8 AOEL6	1/2	3/4 - 16	1.50	3/4	1.59	6.0	6.0
10 AOEL6	5/8	7/8 - 14	1.65	1 1/16	1.97	6.0	6.0
12 AOEL6	3/4	1 1/16 - 12	1.79	1 1/16	2.17	6.0	6.0
16 AOEL6	1	1 5/16 - 12	2.07	1 5/16	2.34	5.5	5.5
20 AOEL6	1 1/4	1 5/8 - 12	2.28	1 5/8	2.44	4.0	4.0
24 AOEL6	1 1/2	1 7/8 - 12	2.40	1 7/8	2.60	4.0	4.0

C5OLO

Straight Thread Elbow
ORFS / SAE-ORB

SAE 520220



TUBE FITTING PART #	END SIZE		JJ (in.)	M (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A				-S	-SS
4 C5OLO	1/4	7/16 - 20	9/16	0.85	1.30	6.0	6.0
4-6 C5OLO***	1/4	9/16 - 18	9/16	0.93	1.46	6.0	6.0
4-8 C5OLO	1/4	3/4 - 16	3/4	0.98	1.59	6.0	6.0
6 C5OLO	3/8	9/16 - 18	3/4	0.98	1.46	6.0	6.0
6-4 C5OLO	3/8	7/16 - 20	3/4	0.98	1.38	6.0	6.0
6-5 C5OLO	3/8	1/2 - 20	3/4	0.98	1.38	6.0	6.0
6-8 C5OLO	3/8	3/4 - 16	3/4	1.04	1.59	6.0	6.0
6-10 C5OLO***	3/8	7/8 - 14	7/8	1.15	1.97	6.0	6.0
6-12 C5OLO	3/8	1 1/16 - 12	1 1/16	1.28	2.17	6.0	6.0
8 C5OLO	1/2	3/4 - 16	3/4	1.10	1.59	6.0	6.0
8-6 C5OLO	1/2	9/16 - 18	3/4	1.10	1.44	6.0	6.0
8-10 C5OLO***	1/2	7/8 - 14	7/8	1.21	1.97	6.0	6.0
8-12 C5OLO	1/2	1 1/16 - 12	1 3/16	1.32	2.17	6.0	6.0
10 C5OLO	5/8	7/8 - 14	1 1/16	1.32	1.97	6.0	6.0
10-8 C5OLO	5/8	3/4 - 16	1 1/16	1.32	1.81	6.0	6.0
10-12 C5OLO	5/8	1 1/16 - 12	1 3/16	1.42	2.17	6.0	6.0
12 C5OLO	3/4	1 1/16 - 12	1 3/16	1.48	2.17	6.0	6.0
12-8 C5OLO	3/4	3/4 - 16	1 3/16	1.48	1.83	6.0	6.0
12-10 C5OLO	3/4	7/8 - 14	1 3/16	1.48	2.01	6.0	6.0
12-16 C5OLO	3/4	1 5/16 - 12	1 7/16	1.61	2.34	5.5	5.5
16 C5OLO	1	1 5/16 - 12	1 7/16	1.63	2.34	5.5	5.5
16-12 C5OLO	1	1 1/16 - 12	1 7/16	1.63	2.30	6.0	6.0
16-20 C5OLO	1	1 5/8 - 12	1 5/8	1.75	2.44	4.0	4.0
20 C5OLO	1 1/4	1 5/8 - 12	1 5/8	1.75	2.44	4.0	4.0
20-16 C5OLO	1 1/4	1 5/16 - 12	1 5/8	1.75	2.44	5.0	5.0
20-24 C5OLO	1 1/4	1 7/8 - 12	1 7/8	1.93	2.60	4.0	4.0
24 C5OLO	1 1/2	1 7/8 - 12	1 7/8	1.93	2.60	4.0	4.0
24-20 C5OLO	1 1/2	1 5/8 - 12	1 7/8	1.93	2.60	4.0	4.0
32 C5OLO	2	2 1/2 - 12	2 1/2	2.76	3.07	2.5	2.5

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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TUBE FAB
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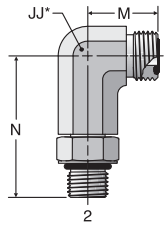
GEN TECH

[Click here for CADs, Support Resources or to Configure Parts Online](#)

CC5OLO

Long Straight Thread Elbow
ORFS-Long / SAE-ORB

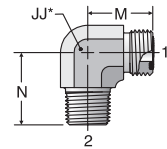
SAE 521520



* JJ – Across
Wrench Flats

CLO

Male Pipe Elbow
ORFS / NPTF



* JJ – Across
Wrench Flats

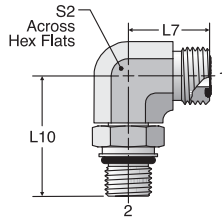
TUBE FITTING PART #	END SIZE		JJ (in.)	M (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2				-S	-SS
	(in.)	UN-UNF-2A					
4 CC5OLO	1/4	7/16 - 20	3/4	0.85	2.23	6.0	6.0
6 CC5OLO	3/8	9/16 - 18	7/8	0.98	2.62	6.0	6.0
8 CC5OLO	1/2	3/4 - 16	7/8	1.10	2.95	6.0	6.0
10 CC5OLO	5/8	7/8 - 14	1 1/16	1.32	3.50	6.0	6.0
12 CC5OLO	3/4	1 1/16 - 12	1 5/16	1.48	3.98	6.0	6.0
16 CC5OLO	1	1 5/16 - 12	1 5/8	1.63	4.51	5.5	5.5

TUBE FITTING PART #	END SIZE		JJ (in.)	M (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2				-S	-SS
	(in.)	NPTF					
4 CLO	1/4	1/8 - 27	9/16	0.85	0.80	6.0	6.0
4-4 CLO	1/4	1/4 - 18	9/16	0.85	1.12	6.0	6.0
4-6 CLO	1/4	3/8 - 18	3/4	0.97	1.22	6.0	6.0
4-8 CLO	1/4	1/2 - 14	7/8	1.07	1.47	6.0	6.0
6 CLO	3/8	1/4 - 18	3/4	0.98	1.09	6.0	6.0
6-6 CLO	3/8	3/8 - 18	3/4	0.98	1.22	6.0	6.0
6-8 CLO	3/8	1/2 - 14	7/8	1.15	1.47	6.0	6.0
8 CLO	1/2	3/8 - 18	3/4	1.10	1.22	6.0	6.0
8-4 CLO	1/2	1/4 - 18	3/4	1.10	1.22	6.0	6.0
8-8 CLO	1/2	1/2 - 14	7/8	1.10	1.47	6.0	6.0
8-12 CLO	1/2	3/4 - 14	1 1/16	1.32	1.59	4.0	4.0
10 CLO	5/8	1/2 - 14	1 1/16	1.31	1.47	6.0	6.0
10-6 CLO	5/8	3/8 - 18	1 1/16	1.31	1.28	6.0	6.0
10-12 CLO	5/8	3/4 - 14	1 3/16	1.41	1.59	4.0	4.0
12 CLO	3/4	3/4 - 14	1 3/16	1.47	1.59	4.0	4.0
12-8 CLO	3/4	1/2 - 14	1 3/16	1.47	1.59	6.0	6.0
12-16 CLO	3/4	1 - 11 1/2	1 5/16	1.62	1.97	3.0	3.0
16 CLO	1	1 - 11 1/2	1 7/16	1.64	1.97	3.0	3.0
16-12 CLO	1	3/4 - 14	1 7/16	1.64	1.78	4.0	4.0
20 CLO	1 1/4	1 1/4 - 11 1/2	1 5/8	1.76	2.38	2.5	2.5
24 CLO	1 1/2	1 1/2 - 11 1/2	1 7/8	1.92	2.64	2.5	2.5
24-20 CLO	1 1/2	1 1/4 - 11 1/2	1 7/8	1.92	2.61	2.5	2.5

C87OMLO

90° Metric Straight Thread Elbow
ORFS / ISO 6149

ISO 8434-3 SDE
SAE 52M0287



TUBE FITTING PART #	END SIZE		L7 (mm)	L10 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1	2				S	SS
	(mm)	(in.) ISO 261					
4M12C87OMLO	6	1/4 M12X1.5	21.5	33.0	14	6.0	6.0
4M14C87OMLO	6	1/4 M14X1.5	23.5	35.5	14	6.0	6.0
6M12C87OMLO	8,10	3/8 M12X1.5	25.0	35.5	19	6.0	6.0
6M14C87OMLO	8,10	3/8 M14X1.5	25.0	35.5	19	6.0	6.0
6M16C87OMLO	8,10	3/8 M16X1.5	25.0	37.5	19	6.0	6.0
8M14C87OMLO	12	1/2 M14X1.5	28.0	36.0	19	6.0	6.0
8M18C87OMLO	12	1/2 M18X1.5	28.0	41.0	19	6.0	6.0
8M22C87OMLO	12	1/2 M22X1.5	31.0	49.0	27	6.0	6.0
10M18C87OMLO	14,15,16	5/8 M18X1.5	33.5	47.5	27	6.0	6.0
10M22C87OMLO	14,15,16	5/8 M22X1.5	33.5	49.0	27	6.0	6.0
12M22C87OMLO	18,20	3/4 M22X1.5	37.5	49.0	27	6.0	6.0
12M27C87OMLO	18,20	3/4 M27X2	37.5	55.5	27	6.0	6.0
16M33C87OMLO	22,25	1 M33X2	41.5	59.5	36	5.0	5.0
20M38C87OMLO*	28,30,32	1 1/4 M38X2	44.5	62.0	41	4.0	4.0
20M42C87OMLO	28,30,32	1 1/4 M42X2	44.5	63.0	41	4.0	4.0
24M48C87OMLO	35,38	1 1/2 M48X2	49.0	71.5	50	4.0	4.0

* For special M38x2 (ISO 6149-1 style) port. The current ISO 6149 does not include the M38 size.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

*** JJ for these parts does not conform to SAE.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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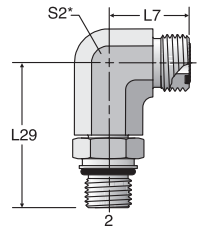
GEN TECH

[Click here for CADs, Support Resources or to Configure Parts Online](#)

CC870MLO

Long 90° Metric Straight Thread Elbow
ORFS-Long / ISO 6149

ISO 8434-3 SDEL
SAE 52M1587



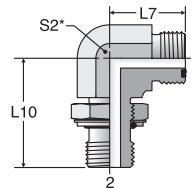
* S2 – Across
Hex Flats

TUBE FITTING PART #	END SIZE			L7 (mm)	L29 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2				S	SS
	(mm)	(in.)	ISO 261					
4M12CC87OMLO	6	1/4	M12X1.5	21.5	56.5	14	6.0	6.0
6M14CC87OMLO	8,10	3/8	M14X1.5	25.0	56.5	17	6.0	6.0
6M16CC87OMLO	8,10	3/8	M16X1.5	25.0	66.5	17	6.0	6.0
8M18CC87OMLO	12	1/2	M18X1.5	28.0	75.0	19	6.0	6.0
8M22CC87OMLO	12	1/2	M22X1.5	31.5	88.0	27	6.0	6.0
10M22CC87OMLO	14,15,16	5/8	M22X1.5	33.5	88.0	27	6.0	6.0
12M27CC87OMLO	18,20	3/4	M27X2	37.5	100.5	27	6.0	6.0
16M33CC87OMLO	22,25	1	M33X2	41.5	114.5	36	5.0	5.0
20M42CC87OMLO	28,30,32	1 1/4	M42X2	44.5	126.5	41	4.0	4.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

C80MLO

Metric Straight Thread Elbow
ORFS / Metric-ORR



* S2 – Across
Hex Flats

TUBE FITTING PART #	END SIZE			L7 (mm)	L10 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2				S	SS
	(mm)	(in.)	ISO 261					
4M12C8OMLO	6	1/4	M12X1.5	21.5	33.0	14	3.6	3.6
6M12C8OMLO	8, 10	3/8	M12X1.5	25.0	35.5	19	3.6	3.6
6M14C8OMLO	8, 10	3/8	M14X1.5	25.0	35.5	19	3.6	3.6
6M16C8OMLO	8, 10	3/8	M16X1.5	25.0	37.5	19	3.6	3.6
8M14C8OMLO	12	1/2	M14X1.5	28.0	36.0	19	3.6	3.6
8M18C8OMLO	12	1/2	M18X1.5	28.0	41.0	19	3.6	3.6
8M22C8OMLO	12	1/2	M22X1.5	31.5	49.0	27	3.6	3.6
10M22C8OMLO	14, 15, 16	5/8	M22X1.5	33.5	49.0	27	3.6	3.6
12M27C8OMLO	18, 20	3/4	M27X2	37.5	55.5	30	3.6	3.6
16M33C8OMLO	22, 25	1	M33X2	41.5	59.5	36	2.5	2.5
20M38C8OMLO	28, 30, 32	1 1/4	M38X2	44.5	62.0	41	2.5	2.5
20M42C8OMLO	28, 30, 32	1 1/4	M42X2	44.5	63.0	41	2.5	2.5

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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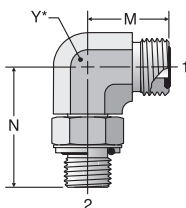
TUBE FAB
EQUIP

GEN TECH

[Click here for CADs, Support Resources or to Configure Parts Online](#)

C40MLO

Male Elbow – BSPP
(for ISO 1179-1 Port)
ORFS / BSPP-ORR

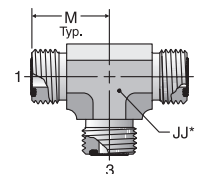


* Y – Across
Wrench Flats

JLO

Union Tee
ORFS (all three ends)

SAE 520401



* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE			M (mm)	N (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)	
	1		2				S	SS
	(mm)	(in.)	BSPP					
4C4OMLO	6	1/4	1/8 - 28	21.5	30.0	14	4.0	4.0
4-4C4OMLO	6	1/4	1/4 - 19	23.5	36.0	19	4.0	4.0
4-6C4OMLO	6	1/4	3/8 - 19	24.5	38.0	19	4.0	4.0
6C4OMLO	8,10	3/8	1/4 - 19	25.0	36.0	19	4.0	4.0
6-6C4OMLO	8,10	3/8	3/8 - 19	26.5	38.0	19	4.0	4.0
8-4C4OMLO	12	1/2	1/4 - 19	28.0	35.5	19	4.0	4.0
8C4OMLO	12	1/2	3/8 - 19	28.0	38.0	19	4.0	4.0
8-8C4OMLO	12	1/2	1/2 - 14	31.0	48.5	27	4.0	4.0
8-12C4OMLO	12	1/2	3/4 - 14	33.5	51.5	30	4.0	4.0
10-6C4OMLO	14,15,16	5/8	3/8 - 19	33.5	40.5	27	4.0	4.0
10C4OMLO	14,15,16	5/8	1/2 - 14	33.5	48.5	27	4.0	4.0
10-12C4OMLO	14,15,16	5/8	3/4 - 14	36.0	51.5	30	4.0	4.0
10-16C4OMLO	14,15,16	5/8	1 - 11	39.5	58.5	36	4.0	4.0
12-8C4OMLO	18,20	3/4	1/2 - 14	37.5	49.5	30	4.0	4.0
12C4OMLO	18,20	3/4	3/4 - 14	37.5	51.5	30	4.0	4.0
12-16C4OMLO	18,20	3/4	1 - 11	41.0	58.5	36	4.0	4.0
16-12C4OMLO	22,25	1	3/4 - 14	41.5	56.0	36	4.0	4.0
16C4OMLO	22,25	1	1 - 11	41.5	58.5	36	4.0	4.0
16-20C4OMLO	22,25	1	1 1/4 - 11	44.5	61.0	41	3.0	3.0
20-16C4OMLO	28,30,32	1 1/4	1 - 11	44.5	61.0	41	4.0	4.0
20C4OMLO	28,30,32	1 1/4	1 1/4 - 11	44.5	61.0	41	2.0	2.0
20-24C4OMLO	28,30,32	1 1/4	1 1/2 - 11	49.0	64.5	50	2.0	2.0
24C4OMLO	35,38	1 1/2	1 1/2 - 11	49.0	64.5	50	2.0	2.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TUBE FITTING PART #	END SIZE	JJ (in.)	M (in.)	Dynamic Pressure (x 1,000 PSI)	
	1-3 (in.)			-S	-SS
4 JLO	1/4	9/16	0.85	9.2	9.2
6 JLO	3/8	3/4	0.98	9.2	9.2
8 JLO	1/2	3/4	1.10	9.2	9.2
10 JLO	5/8	1 1/16	1.32	6.0	6.0
12 JLO	3/4	1 3/16	1.48	6.0	6.0
16 JLO	1	1 7/16	1.63	6.0	6.0
20 JLO	1 1/4	1 5/8	1.75	5.0	5.0
24 JLO	1 1/2	1 7/8	1.93	4.0	4.0
32 JLO	2	2 1/2	2.76	3.0	3.0

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GEN TECH

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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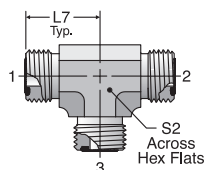
Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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JMLO

Union Tee – mm Hex
ORFS (all three ends)

ISO 8434-3 T
SAE 52M0401

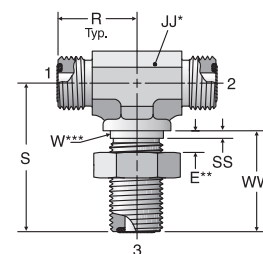


* S2 – Across Hex Flats

WJLO

Bulkhead Branch Tee
ORFS (all three ends)

SAE 520959
WJLO-WLNL - Body with Locknut
(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE		L7 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1-3				S	SS
	(mm)	(in.)				
4JMLO	6	1/4	21.5	14	9.2	9.2
6JMLO	8,10	3/8	25.0	19	9.2	9.2
8JMLO	12	1/2	28.0	19	9.2	9.2
10JMLO	14,15,16	5/8	33.5	27	6.0	6.0
12JMLO	18,20	3/4	37.5	30	6.0	6.0
16JMLO	22,25	1	41.5	36	6.0	6.0
20JMLO	28,30,32	1 1/4	44.5	41	5.0	5.0
24JMLO	35,38	1 1/2	49.0	50	4.0	4.0

TUBE FITTING PART #	END SIZE	E MAX (in.)	JJ (in.)	R (in.)	S (in.)	SS (in.)	W DIA (in.)	WW (in.)	Dynamic Pressure (x 1,000 PS	
	1-3 (in.)								-S	-SS
4 WJLO	1/4	0.55	9/16	0.89	1.85	0.06	0.56	1.24	9.2	9.2
6 WJLO	3/8	0.55	3/4	1.02	2.05	0.06	0.69	1.34	9.2	9.2
8 WJLO	1/2	0.55	3/4	1.14	2.19	0.06	0.81	1.44	9.2	9.2
10 WJLO	5/8	0.55	1 1/16	1.36	2.48	0.06	1.00	1.59	6.0	6.0
12 WJLO	3/4	0.55	1 3/16	1.52	2.64	0.06	1.19	1.63	6.0	6.0
16 WJLO	1	0.55	1 7/16	1.67	2.80	0.06	1.44	1.65	6.0	6.0

* JJ – Across wrench flats.

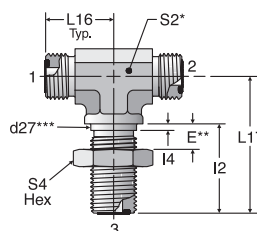
** E – Maximum bulkhead thickness.

*** W – Bulkhead pilot diameter. Recommended clearance hole is W + 0.015".

WJMLO

Bulkhead Union Tee – mm Hex
ORFS (all three ends)

ISO 8434-3 BHBT
SAE 52M0959
WJMLOWLNML - Body with Locknut
(See page A11 for WLNML)



TUBE FITTING PART #	END SIZE		d27*** (mm)	E (mm)	I2 (mm)	I4 (mm)	L16 (mm)	L17 (mm)	S2 (mm)	S4 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	1-3										S	SS
	(mm)	(in.)										
4WJMLO	6	1/4	14.3	14	31.5	1.5	22.5	47.0	14	22	9.2	9.2
6WJMLO	8,10	3/8	17.5	14	34.0	1.5	26.0	52.0	19	27	9.2	9.2
8WJMLO	12	1/2	20.6	14	36.5	2.5	29.0	55.5	19	30	9.2	9.2
10WJMLO	14,15,16	5/8	25.4	14	40.5	2.5	34.5	63.0	27	36	6.0	6.0
12WJMLO	18,20	3/4	30.2	14	41.5	3.0	38.5	67.0	30	41	6.0	6.0
16WJMLO	22,25	1	36.5	14	42.0	3.0	42.5	71.0	36	46	6.0	6.0
20WJMLO	28,30,32	1 1/4	42.9	14	42.0	3.0	45.5	75.5	41	50	5.0	5.0
24WJMLO	35,38	1 1/2	50.8	14	42.0	3.0	49.5	79.5	48	60	4.0	4.0

* S2 – Across wrench flats.

** E – Maximum bulkhead thickness.

***d27 – Bulkhead pilot diameter. Recommended clearance hole is d27 + 0.4 mm.

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Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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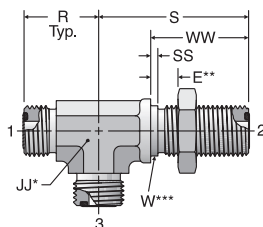
WJJLO

Bulkhead Run Tee
ORFS (all three ends)

SAE 520958

WJJLO-WLNL - Body with Locknut

(See page A11 for WLNL)



TUBE FITTING PART #	END SIZE	E MAX (in.)	JJ (in.)	R (in.)	S (in.)	SS (in.)	W DIA (in.)	WW (in.)	Dynamic Pressure (x 1,000 PSI)	
									-S	-SS
4 WJJLO	1/4	0.55	9/16	0.89	1.85	0.06	0.56	1.24	9.2	9.2
6 WJJLO	3/8	0.55	3/4	1.02	2.05	0.06	0.69	1.34	9.2	9.2
8 WJJLO	1/2	0.55	3/4	1.14	2.19	0.06	0.81	1.44	9.2	9.2
10 WJJLO	5/8	0.55	1 1/16	1.36	2.48	0.06	1.00	1.59	6.0	6.0
12 WJJLO	3/4	0.55	1 3/16	1.52	2.64	0.06	1.19	1.63	6.0	6.0
16 WJJLO	1	0.55	1 7/16	1.67	2.80	0.06	1.44	1.65	6.0	6.0
20 WJJLO	1 1/4	0.55	1 5/8	1.79	2.97	0.06	1.69	1.65	5.0	5.0
24 WJJLO	1 1/2	0.55	1 7/8	1.95	3.13	0.06	2.00	1.65	4.0	4.0

* JJ – Across wrench flats.

** E – Maximum bulkhead thickness.

*** W – Bulkhead pilot diameter. Recommended clearance hole is W + 0.015".

WJJMLO

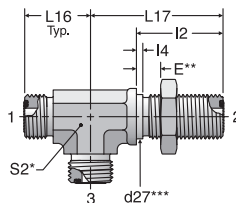
Bulkhead Run Tee – mm Hex
ORFS (all three ends)

ISO 8434-3 BHRT

SAE 52M0958

WJJMLOWLNML - Body with Locknut

(See page A11 for WLNML)



TUBE FITTING PART #	END SIZE		d27*** (mm)	E (mm)	I2 (mm)	I4 (mm)	L16 (mm)	L17 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1-3 (mm)	(in.)								S	SS
4WJJMLO	6	1/4	14.3	14	31.5	1.5	22.5	47.0	14	9.2	9.2
6WJJMLO	8,10	3/8	17.5	14	34.0	1.5	26.0	52.0	19	9.2	9.2
8WJJMLO	12	1/2	20.6	14	36.5	2.5	29.0	55.5	19	9.2	9.2
10WJJMLO	14,15,16	5/8	25.4	14	40.5	2.5	34.5	63.0	27	6.0	6.0
12WJJMLO	18,20	3/4	30.2	14	41.5	3.0	38.5	67.0	30	6.0	6.0
16WJJMLO	22,25	1	36.5	14	42.0	3.0	42.5	71.0	36	6.0	6.0
20WJJMLO	28,30,32	1 1/4	42.9	14	42.0	3.0	45.5	75.5	41	5.0	5.0
24WJJMLO	35,38	1 1/2	50.8	14	42.0	3.0	49.5	79.5	50	4.0	4.0

* S2 – Across wrench flats.

** E – Maximum bulkhead thickness.

***d27 - Bulkhead pilot diameter. Recommended clearance hole is d27 + 0.4 mm.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications

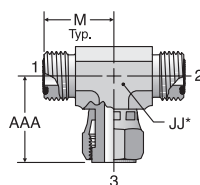


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S6LO

Swivel Nut Branch Tee
ORFS / ORFS / ORFS Swivel

SAE 520433



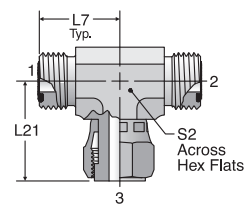
* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE	AAA (in.)	JJ (in.)	M (in.)	Dynamic Pressure (x 1,000 PSI)	
	1-3 (in.)				-S	-SS
4 S6LO	1/4	1.07	9/16	0.85	9.2	9.2
6 S6LO	3/8	1.17	3/4	0.98	9.2	9.2
8 S6LO	1/2	1.50	3/4	1.10	9.2	9.2
10 S6LO	5/8	1.61	1 1/16	1.32	6.0	6.0
12 S6LO	3/4	1.83	1 3/16	1.48	6.0	6.0
16 S6LO	1	2.11	1 7/16	1.63	6.0	6.0
20 S6LO	1 1/4	2.28	1 5/8	1.75	5.0	5.0
24 S6LO	1 1/2	2.40	1 7/8	1.93	4.0	4.0

S6MLO

Swivel Nut Branch Tee – mm Hex
ORFS / ORFS / ORFS Swivel

ISO 8434-3 SWBT
SAE 52M0433



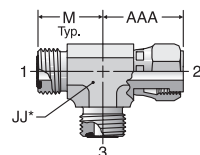
* S2 – Across
Wrench Flats

TUBE FITTING PART #	END SIZE		L7 (mm)	L21 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1-3					S	SS
	(mm)	(in.)					
4S6MLO	6	1/4	21.5	27.2	14		
6S6MLO	8,10	3/8	25.0	29.7	19	9.2	9.2
8S6MLO	12	1/2	28.0	38.0	19	9.2	9.2
10S6MLO	14,15,16	5/8	33.5	41.0	27	6.0	6.0
12S6MLO	18,20	3/4	37.5	46.5	30	6.0	6.0
16S6MLO	22,25	1	41.5	53.5	36	6.0	6.0
20S6MLO	28,30,32	1 1/4	44.5	58.0	41	5.0	5.0
24S6MLO	35,38	1 1/2	49.0	61.0	50	4.0	4.0

R6LO

Swivel Nut Run Tee
ORFS / ORFS Swivel / ORFS

SAE 520432



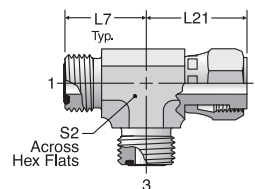
* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE	AAA (in.)	JJ (in.)	M (in.)	Dynamic Pressure (x 1,000 PSI)	
	1-3 (in.)				-S	-SS
4 R6LO	1/4	1.07	9/16	0.85	9.2	9.2
6 R6LO	3/8	1.17	3/4	0.98	9.2	9.2
8 R6LO	1/2	1.50	3/4	1.10	9.2	9.2
10 R6LO	5/8	1.61	1 1/16	1.32	6.0	6.0
12 R6LO	3/4	1.83	1 3/16	1.48	6.0	6.0
16 R6LO	1	2.11	1 7/16	1.63	6.0	6.0
20 R6LO	1 1/4	2.28	1 5/8	1.75	5.0	5.0
24 R6LO	1 1/2	2.40	1 7/8	1.93	4.0	4.0

R6MLO

Swivel Nut Run Tee – mm Hex
ORFS / ORFS Swivel / ORFS

ISO 8434-3 SWRT
SAE 52M0432



TUBE FITTING PART #	END SIZE		L7 (mm)	L21 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1-3					S	SS
	(mm)	(in.)					
4R6MLO	6	1/4	21.5	27.2	14	9.2	9.2
6R6MLO	8,10	3/8	25.0	29.7	19	9.2	9.2
8R6MLO	12	1/2	28.0	38.0	19	9.2	9.2
10R6MLO	14,15,16	5/8	33.5	41.0	27	6.0	6.0
12R6MLO	18,20	3/4	37.5	46.5	30	6.0	6.0
16R6MLO	22,25	1	41.5	53.5	36	6.0	6.0
20R6MLO	28,30,32	1 1/4	44.5	58.0	41	5.0	5.0
24R6MLO	35,38	1 1/2	49.0	61.0	50	4.0	4.0

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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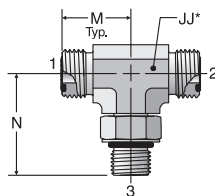
GEN TECH

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S5OLO

Straight Thread Branch Tee
ORFS / ORFS / SAE-ORB

SAE 520429



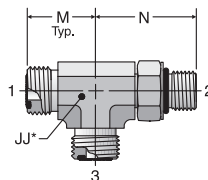
* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE			JJ (in.)	M (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2	3				-S	-SS
	(in.)	(in.)	UN/UNF-2A					
4 S5OLO	1/4	1/4	7/16 - 20	9/16	0.85	1.30	6.0	6.0
4-4-6 S5OLO	1/4	1/4	9/16 - 18	9/16	0.93	1.46	6.0	6.0
6 S5OLO	3/8	3/8	9/16 - 18	3/4	0.98	1.46	6.0	6.0
6-6-4 S5OLO	3/8	3/8	7/16 - 20	3/4	0.98	1.38	6.0	6.0
6-6-8 S5OLO	3/8	3/8	3/4 - 16	3/4	1.04	1.59	6.0	6.0
8 S5OLO	1/2	1/2	3/4 - 16	3/4	1.10	1.59	6.0	6.0
8-8-10 S5OLO	1/2	1/2	7/8 - 14	1 1/16	1.24	1.97	6.0	6.0
8-8-12 S5OLO	1/2	1/2	1 1/16 - 12	1 3/16	1.34	2.17	6.0	6.0
10 S5OLO	5/8	5/8	7/8 - 14	1 1/16	1.32	1.97	6.0	6.0
10-10-12 S5OLO	5/8	5/8	1 1/16 - 12	1 3/16	1.42	2.17	6.0	6.0
12 S5OLO	3/4	3/4	1 1/16 - 12	1 3/16	1.48	2.17	6.0	6.0
12-12-16 S5OLO	3/4	3/4	1 5/16 - 12	1 7/16	1.61	2.34	5.5	5.5
16 S5OLO	1	1	1 5/16 - 12	1 7/16	1.63	2.34	5.5	5.5
16-16-20 S5OLO	1	1	1 5/8 - 12	1 5/8	1.75	2.44	4.0	4.0
20 S5OLO	1 1/4	1 1/4	1 5/8 - 12	1 5/8	1.75	2.44	4.0	4.0
24 S5OLO	1 1/2	1 1/2	1 7/8 - 12	1 7/8	1.93	2.60	4.0	4.0

R5OLO

Straight Thread Run Tee
ORFS / SAE-ORB / ORFS

SAE 520428



* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE			JJ (in.)	M (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2	3				-S	-SS
	(in.)	UN/UNF-2A	(in.)					
4 R5OLO	1/4	7/16 - 20	1/4	9/16	0.85	1.30	6.0	6.0
4-6-4 R5OLO	1/4	9/16 - 18	1/4	3/4	0.92	1.46	6.0	6.0
6 R5OLO	3/8	9/16 - 18	3/8	3/4	0.98	1.46	6.0	6.0
6-8-6 R5OLO	3/8	3/4 - 16	3/8	3/4	1.04	1.59	6.0	6.0
8 R5OLO	1/2	3/4 - 16	1/2	3/4	1.10	1.59	6.0	6.0
8-10-8 R5OLO	1/2	7/8 - 14	1/2	1 1/16	1.24	1.97	6.0	6.0
10 R5OLO	5/8	7/8 - 14	5/8	1 1/16	1.32	1.97	6.0	6.0
10-12-10 R5OLO	5/8	1 1/16 - 12	5/8	1 3/16	1.42	2.17	6.0	6.0
12 R5OLO	3/4	1 1/16 - 12	3/4	1 3/16	1.48	2.17	6.0	6.0
12-16-12 R5OLO	3/4	1 5/16 - 12	3/4	1 7/16	1.61	2.34	5.5	5.5
16 R5OLO	1	1 5/16 - 12	1	1 7/16	1.63	2.34	5.5	5.5
16-20-16 R5OLO	1	1 5/8 - 12	1	1 5/8	1.75	2.44	4.0	4.0
20 R5OLO	1 1/4	1 5/8 - 12	1 1/4	1 5/8	1.75	2.44	4.0	4.0
24 R5OLO	1 1/2	1 7/8 - 12	1 1/2	1 7/8	1.93	2.60	4.0	4.0

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
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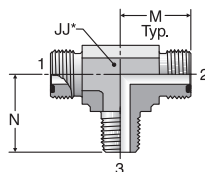
GEN TECH

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SLO

Male Pipe Tee
ORFS / ORFS / NPTF

SAE 520425



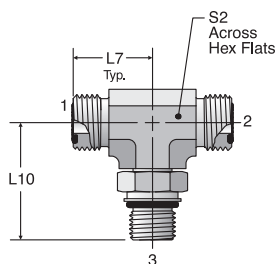
* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE		JJ (in.)	M (in.)	N (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2	3				-S	-SS
	(in.)	NPTF					
4-4-4 SLO	1/4	1/4 - 18	9/16	0.85	1.12	6.0	6.0
6 SLO	3/8	1/4 - 18	3/4	0.98	1.09	6.0	6.0
6-6-6 SLO	3/8	3/8 - 18	3/4	0.98	1.22	6.0	6.0
8 SLO	1/2	3/8 - 18	3/4	1.10	1.22	6.0	6.0
8-8-8 SLO	1/2	1/2 - 14	7/8	1.10	1.47	6.0	6.0
10 SLO	5/8	1/2 - 14	1 1/16	1.31	1.47	6.0	6.0
12 SLO	3/4	3/4 - 14	1 3/16	1.47	1.59	4.0	4.0
16 SLO	1	1 - 11 1/2	1 7/16	1.64	1.97	3.0	3.0
20 SLO	1 1/4	1 1/4 - 11 1/2	1 5/8	1.76	2.38	2.5	2.5

S87OMLO

Metric Straight Thread Branch Tee
ORFS / ORFS / ISO 6149

ISO 8434-3 SDBT
SAE 52M0489



* S2 – Across
Hex Flats

TUBE FITTING PART #	END SIZE			L7 (mm)	L10 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2		3				S	SS
	(mm)	(in.)	ISO 261					
4M12S87OMLO	6	1/4	M12X1.5	21.5	33.0	14	6.0	6.0
4M14S87OMLO	6	1/4	M14X1.5	23.5	35.5	19	6.0	6.0
6M14S87OMLO	8,10	3/8	M14X1.5	25.0	35.5	19	6.0	6.0
6M16S87OMLO	8,10	3/8	M16X1.5	25.0	37.5	19	6.0	6.0
8M14S87OMLO	12	1/2	M14X1.5	28.0	36.0	19	6.0	6.0
8M18S87OMLO	12	1/2	M18X1.5	28.0	41.0	19	6.0	6.0
8M22S87OMLO	12	1/2	M22X1.5	31.0	49.0	27	6.0	6.0
10M22S87OMLO	14,15,16	5/8	M22X1.5	33.5	49.0	27	6.0	6.0
12M27S87OMLO	18,20	3/4	M27X2	37.5	55.5	30	6.0	6.0
16M33S87OMLO	22,25	1	M33X2	41.5	59.5	36	5.1	5.1
20M42S87OMLO	28,30,32	1 1/4	M42X2	44.5	63.0	41	4.0	4.0
24M48S87OMLO	35,38	1 1/2	M48X2	49.0	71.5	50	4.0	4.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

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Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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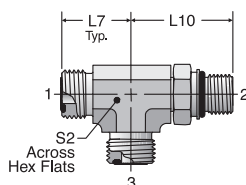
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R87OMLO

Metric Straight Thread Run Tee

ORFS / ISO 6149 / ORFS

ISO 8434-3 SDRT
SAE 52M0488



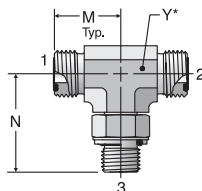
TUBE FITTING PART #	END SIZE			L7 (mm)	L10 (mm)	S2 (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 3		2				S	SS
	(mm)	(in.)	ISO 261					
4M12R87OMLO	6	1/4	M12X1.5	21.5	33.0	14	6.0	6.0
4M14R87OMLO	6	1/4	M14X1.5	23.5	35.5	19	6.0	6.0
6M14R87OMLO	8,10	3/8	M14X1.5	25.0	35.5	19	6.0	6.0
6M16R87OMLO	8,10	3/8	M16X1.5	25.0	37.5	19	6.0	6.0
8M14R87OMLO	12	1/2	M14X1.5	28.0	36.0	19	6.0	6.0
8M18R87OMLO	12	1/2	M18X1.5	28.0	41.0	19	6.0	6.0
8M22R87OMLO	12	1/2	M22X1.5	31.0	49.0	27	6.0	6.0
10M22R87OMLO	14,15,16	5/8	M22X1.5	33.5	49.0	27	6.0	6.0
12M27R87OMLO	18,20	3/4	M27X2	37.5	55.5	30	6.0	6.0
16M33R87OMLO	22,25	1	M33X2	41.5	59.5	36	5.0	5.0
20M42R87OMLO	28,30,32	1 1/4	M42X2	44.5	63.0	41	4.0	4.0
24M48R87OMLO	35,38	1 1/2	M48X2	49.0	71.5	50	4.0	4.0

S4OMLO

Branch Tee – BSPP

(for ISO 1179-1 Port)

ORFS / ORFS / BSPP-ORR



* Y – Across
Wrench Flats

TUBE FITTING PART #	END SIZE			M (mm)	N (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 2		3				S	SS
	(mm)	(in.)	BSP					
4S4OMLO	6	1/4	1/8 - 28	21.5	30.0	14	4.0	4.0
4-4-4S4OMLO	6	1/4	1/4 - 19	23.5	36.0	19	4.0	4.0
6S4OMLO	8,10	3/8	1/4 - 19	25.0	36.0	19	4.0	4.0
6-6-6S4OMLO	8,10	3/8	3/8 - 19	26.5	38.0	19	4.0	4.0
8S4OMLO	12	1/2	3/8 - 19	28.0	38.0	19	4.0	4.0
8-8-8S4OMLO	12	1/2	1/2 - 14	31.0	48.5	27	4.0	4.0
10S4OMLO	14,15,16	5/8	1/2 - 14	33.5	48.5	27	4.0	4.0
12S4OMLO	18,20	3/4	3/4 - 14	37.5	51.5	30	4.0	4.0
16S4OMLO	22,25	1	1 - 11	41.5	58.5	36	4.0	4.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications



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Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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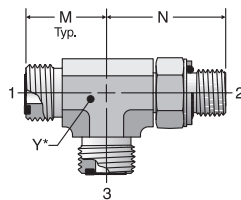
TUBE FAB
EQUIP

GEN TECH

[Click here for CADs, Support Resources or to Configure Parts Online](#)

R4OMLO

Run Tee – BSPP
(for ISO 1179-1 Port)
ORFS / BSPP-ORR / ORFS



* Y – Across
Wrench Flats

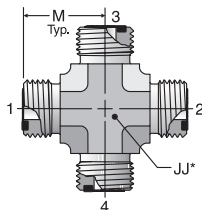
TUBE FITTING PART #	END SIZE			M (mm)	N (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)	
	1 & 3		2 BSPP				S	SS
	(mm)	(in.)						
4R4OMLO	6	1/4	1/8 - 28	21.5	30.0	14	4.0	4.0
4-4-4R4OMLO	6	1/4	1/4 - 19	23.5	36.0	19	4.0	4.0
6R4OMLO	8,10	3/8	1/4 - 19	25.0	36.0	19	4.0	4.0
6-6-6R4OMLO	8,10	3/8	3/8 - 19	26.5	38.0	19	4.0	4.0
8R4OMLO	12	1/2	3/8 - 19	28.0	38.0	19	4.0	4.0
8-8-8R4OMLO	12	1/2	1/2 - 14	31.0	48.5	27	4.0	4.0
10R4OMLO	14,15,16	5/8	1/2 - 14	33.5	45.2	27	4.0	4.0
12R4OMLO	18,20	3/4	3/4 - 14	37.5	51.5	30	4.0	4.0
16R4OMLO	22,25	1	1 - 11	41.5	58.5	37	4.0	4.0

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KLO

Union Cross
ORFS (all four ends)

SAE 520501



* JJ – Across
Wrench Flats

TUBE FITTING PART #	END SIZE	JJ (in.)	M (in.)	Dynamic Pressure (x 1,000 PSI)	
	1-4 (in.)			-S	-SS
4 KLO	1/4	9/16	0.85	9.2	9.2
6 KLO	3/8	3/4	0.98	9.2	9.2
8 KLO	1/2	3/4	1.10	9.2	9.2
10 KLO	5/8	1 1/16	1.32	6.0	6.0
12 KLO	3/4	1 3/16	1.48	6.0	6.0
16 KLO	1	1 5/8	1.63	6.0	6.0
20 KLO	1 1/4	1 5/8	1.75	5.0	5.0
24 KLO	1 1/2	2 1/8	1.92	4.0	4.0

Dimensions and pressures for reference only, subject to change.

See Seal-Lok Xtreme for extreme temperature applications

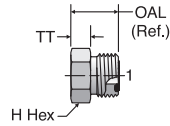


[Click here for CADs, Support Resources or to Configure Parts Online](#)

PNLO

Plug
ORFS

SAE 520109



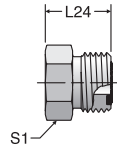
TUBE FITTING PART #	END SIZE 1 (in.)	H HEX (in.)	OAL (REF) (in.)	TT (in.)	Dynamic Pressure (x 1,000 PSI)	
					-S	-SS
4 PNLO	1/4	5/8	0.65	0.20	9.2	9.2
6 PNLO	3/8	3/4	0.75	0.32	9.2	9.2
8 PNLO	1/2	7/8	0.87	0.35	9.2	9.2
10 PNLO	5/8	1 1/16	1.02	0.41	6.0	6.0
12 PNLO	3/4	1 1/4	1.08	0.41	6.0	6.0
14 PNLO	7/8	1 3/8	1.10	0.49	6.0	6.0
16 PNLO	1	1 1/2	1.10	0.41	6.0	6.0
20 PNLO	1 1/4	1 3/4	1.10	0.41	6.0	6.0
24 PNLO	1 1/2	2 1/8	1.10	0.41	5.0	5.0
32 PNLO	2	2 3/4	1.40	0.50	3.0	3.0

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PNMLO

Plug – mm Hex
ORFS

ISO 8434-3 PL
SAE 52M0109



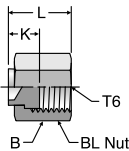
TUBE FITTING PART #	ORFS TUBE O.D.		L24 (mm)	S1 HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	(mm)	(in.)			S	SS
4PNMLO	6	1/4	16.5	17	9.2	9.2
6PNMLO	8,10	3/8	19.0	19	9.2	9.2
8PNMLO	12	1/2	22.0	22	9.2	9.2
10PNMLO	14,15,16	5/8	26.0	27	6.0	6.0
12PNMLO	18,20	3/4	27.5	32	6.0	6.0
16PNMLO	22,25	1	28.0	41	6.0	6.0
20PNMLO	28,30,32	1 1/4	28.0	46	6.0	6.0
24PNMLO	38	1 1/2	28.0	55	5.0	5.0

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FNL

Cap
ORFS

SAE 520112

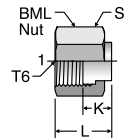


TUBE FITTING PART #	TUBE O.D. (in.)	T6 SWIVEL UN/UNF-2B	B HEX (in.)	K (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)	
						-S	-SS
4 FNL	1/4	9/16 - 18	11/16	0.35	0.66	9.2	9.2
6 FNL	3/8	11/16 - 16	13/16	0.41	0.74	9.2	9.2
8 FNL	1/2	13/16 - 16	15/16	0.47	0.87	9.2	9.2
10 FNL	5/8	1 - 14	1 1/8	0.53	1.02	6.0	6.0
12 FNL	3/4	1 3/16 - 12	1 3/8	0.59	1.12	6.0	6.0
14 FNL	7/8	1 5/16 - 12	1 1/2	0.59	1.12	6.0	6.0
16 FNL	1	1 7/16 - 12	1 5/8	0.63	1.16	6.0	6.0
20 FNL	1 1/4	1 11/16 - 12	1 7/8	0.63	1.16	6.0	6.0
24 FNL	1 1/2	2 - 12	2 1/4	0.63	1.16	5.0	5.0
32 FNL	2	2 1/2 - 12	2 7/8	0.79	1.46	3.0	3.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

FNML

Cap
ORFS



TUBE FITTING PART #	TUBE O.D.		T6 SWIVEL UN/UNF-2B	K (mm)	L (mm)	S HEX (mm)	Dynamic Pressure (x 1,000 PSI)	
	(mm)	(in.)					S	SS
4FNML	6	1/4	9/16 - 18	9.0	16.8	17	9.2	9.2
6FNML	8, 10	3/8	11/16 - 16	10.5	18.8	22	9.2	9.2
8FNML	12	1/2	13/16 - 16	12.0	22.0	24	9.2	9.2
10FNML	14, 15, 16	5/8	1 - 14	13.5	26.0	30	6.0	6.0
12FNML	18, 20	3/4	1 3/16 - 12	15.0	28.6	36	6.0	6.0
16FNML	22, 25	1	1 7/16 - 12	16.0	29.5	41	6.0	6.0
20FNML	28, 30, 32	1 1/4	1 11/16 - 12	16.0	29.5	50	6.0	6.0
24FNML	35, 38	1 1/2	2 - 12	16.0	29.5	60	5.0	5.0

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Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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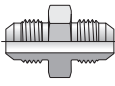
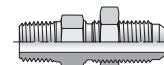
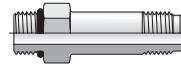
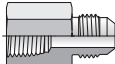
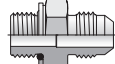
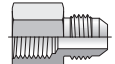
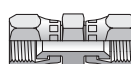
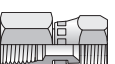
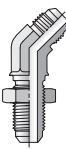
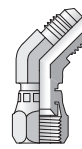
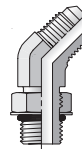
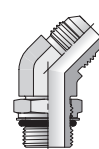
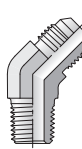
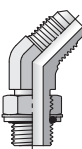
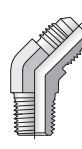
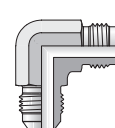
GEN TECH

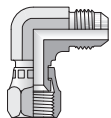
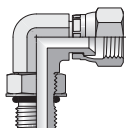
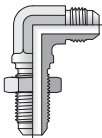
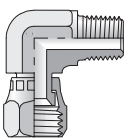
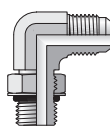
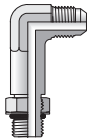
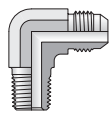
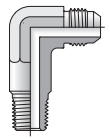
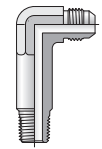
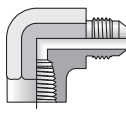
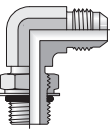
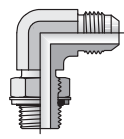
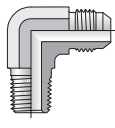
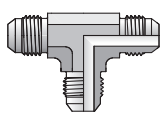
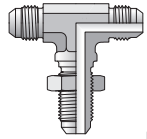
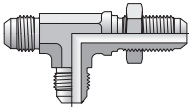
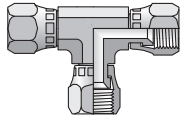
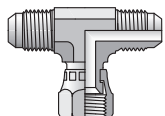
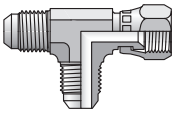
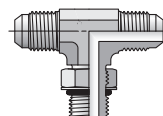
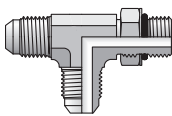
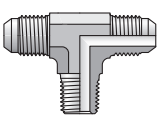
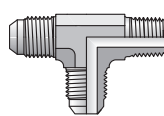
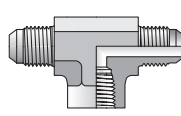
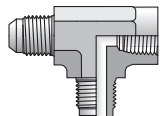
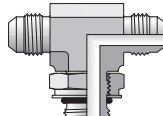
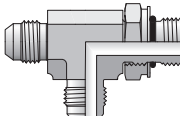
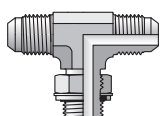
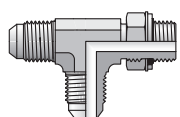
B

TRIPLE-LOK™ & TRIPLE-LOK™ 2

37° Flare Tube Fittings

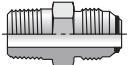
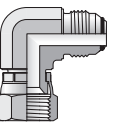
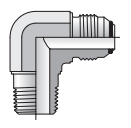
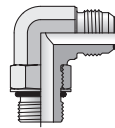
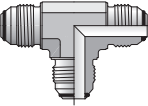
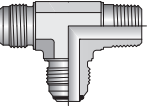
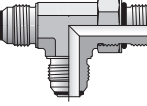


Nuts, Sleeves, Locknuts	BTX Nut  B9	TX and TX Metric Sleeve  B9	WLN Bulkhead Locknut  B10	SBR Braze Ring  B10	
	HTX Union  B11	LHTX Large Hex Union  B11	WTX Bulkhead Union  B12	WF50X SAE-ORB / 37° Bulkhead  B12	WFTX NPTF / 37° Bulkhead  B12
WGTX NPTF / 37° Bulkhead  B13	HHX6 Extender and Expander  B13	TRTX / TRTXN Reducer  B14	F50X SAE-ORB / 37° Flare  B15	FF50X SAE-ORB / 37° – Long  B15	XHB3 Braze Socket / 37° Flare  B15
FTX NPTF / 37° Flare  B16	FFTX NPTF / 37° Flare – Long  B16	GTX NPTF / 37° Flare  B17	F87OMX ISO 6149 / 37° Flare  B17	F82EDMX Metric-ED / 37° Flare  B17	F8OMX Metric-ORR / 37° Flare  B18
F42EDMX BSPP-ED / 37° Flare  B18	F4OMX BSPP-ORR / 37° Flare  B19	G4MX BSPP / 37° Flare  B19	F3MX BSPT / 37° Flare  B19	Straight Swivels	HX6 37° Swivel Union  B19
F65OX SAE-ORB / 37° Swivel  B20	F6X NPTF / 37° Swivel  B20	G6X NPTF / 37° Swivel  B20	F687OMX ISO-6149 / 37° Swivel  B20		F68OMX Metric-ORR / 37° Swivel  B21
F642EDMX BSPP-ED / 37° Swivel  B21	F63MX BSPT / 37° Swivel  B21	45° Elbows	WNTX Bulkhead Union  B22	V6X 37° Swivel Elbow  B22	V5OX SAE-ORB / 37° Flare  B23
V87OMX ISO-6149 / 37° Flare  B23	VTX NPTF / 37° Flare  B24		V4OMX BSPP-ORR / 37° Flare  B24	V3MX BSPT / 37° Flare  B24	ETX Union Elbow  B25
				90° Elbows	

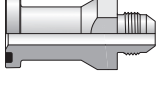
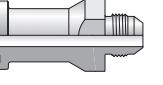
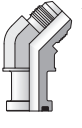
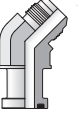
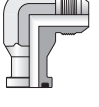
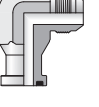
C6X 37° Swivel Elbow  B25	AOEX6 SAE-ORB / 37° Swivel  B25	WETX Bulkhead Union  B26	X6EF NPTF / 37° Swivel  B27	C50X SAE-ORB / 37° Flare  B27	CC50X SAE-ORB / 37° – Long  B27
CTX NPTF / 37° Flare  B28	CCTX NPTF / 37° Flare – Long  B28	CCCTX NPTF / 37° – Extra Long  B28	DTX NPTF / 37° Flare  B29	C87OMX ISO-6149 / 37° Flare  B29	C80MX Metric-ORR / 37° Flare  B29
C40MX BSPP-ORR / 37° Flare  B30	C3MX BSPT / 37° Flare  B30	Tees 	JTX Union Tee  B31	WJTX Bulkhead Branch Tee  B31	WJJTX Bulkhead Run Tee  B32
JX6 37° Swivel Union Tee  B32	S6X 37° Swivel Branch Tee  B32	R6X 37° Swivel Run Tee  B33	S50X SAE-ORB Branch Tee  B33	R50X SAE-ORB Run Tee  B33	STX NPTF Branch Tee  B34
RTX NPTF Run Tee  B34	OTX NPTF Branch Tee  B34	MTX NPTF Run Tee  B34	S87OMX ISO 6149 Branch Tee  B35	R87OMX ISO 6149 Run Tee  B35	S40MX BSPP-ORR Branch Tee  B35
R40MX BSPP-ORR Run Tee  B35	Cross 	KTX Union Cross  B36	Plug and Cap 	PNTX 37° Plug  B36	FNTX 37° Cap  B36
T22X Mountie Cap  B36					

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Straights	HTXO Union  B37	F5OXO SAE-ORB / 37° Flare  B37	FTXO NPTF / 37° Flare  B37	GTXO NPTF / 37° Flare  B37
	ETXO Union Elbow  B38	C6XO 37° Swivel Elbow  B38	CTXO NPTF / 37° Flare  B38	C5OXO SAE-ORB / 37° Flare  B38
	JTXO Union Tee  B39	RTXO 37° Swivel Run Tee  B39	R5OXO SAE-ORB Run Tee  B39	

Flange Adapters (Shown in Section K)

SAE Flange Adapters	XHQ1 Code 61 / 37° Flare  K12	XHQ2 Code 62 / 37° Flare  K12	XVQ1 Code 61 / 37° Flare  K32	XVQ2 Code 62 / 37° Flare  K32	XEQ1 Code 61 / 37° Flare  K33
XEQ2 Code 62 / 37° Flare  K33					

Conversion Adapters (Shown in Sections I and J)

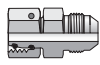
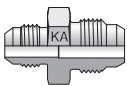
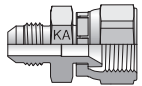
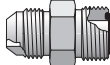
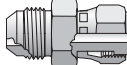
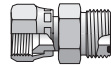
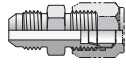
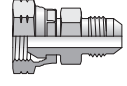
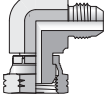
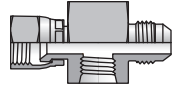
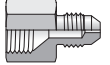
Conversion Adapters	XHU86 Metric Swivel (EO) / 37°  J6	XHMKA Komatsu 30° / 37° Flare  I5	XHMKA6 Komatsu 30° Swivel / 37°  I6	XHLO 37° Flare / ORFS  J3	XHL6 37° Flare / ORFS Swivel  J3
	LOHX6 ORFS / 37° Swivel  J3	XHBU 37° Flare / Flareless  J4	XHMK46 37° Flare / BSPP Swivel  J5	XEMK46 37° Flare / BSPP Swivel  J6	

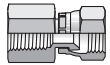
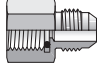
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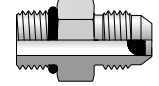
Diagnostic and Orifice Fittings (Shown in Section L)

Diagnostic Tee	XHX6G5TP 37° Flare / 37° Swivel / SAE-ORB  L5	Orifice Fitting	XHX7 37° Flare / 37° Female with Orifice  L9
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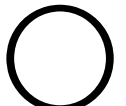
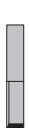
Gauge Fittings (Shown in Section L)

Gauge Fittings	G6X NPT Gauge / 37° Swivel  L7	G4MXSMO BSPP Gauge / 37° Flare  L6
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Screen Fittings (Shown in Section L)

Screen Fittings	Screen Fittings  L11
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O-Rings and Seals (Shown in Section M)

O-Rings and Seals	XO O-Ring  M4	SAE O-Ring  M4	ISO 6149 O-Ring  M5	Metric O-Ring  M5	Metric Retaining Ring  M5
	BSPP O-Ring  M6	BSPP Retaining Ring  M6	EOLastic Seal Ring  M6		

Triple-Lok

Parker Triple-Lok fittings meet the strict requirements of SAE J514 and ISO 8434-2 industry standards for 37° flare fittings. Its design is simple. It uses an easily produced flare at the tube end to seal and hold fluid under high pressure. The fitting consists of three pieces: the body, sleeve and nut. The tube is flared at a 37° angle (74° included angle) and held between the fitting nose (seat) and the sleeve (support) with the nut as shown in Fig. B1, providing a very effective seal between the fitting nose and the tube flare.

The design of Triple-Lok fittings is very efficient. The fitting incorporates the smallest seal area of all fitting types. This seal area, as seen in Fig. B1, is only slightly larger than the fluid flow area. The small seal area results in a compact design, low assembly torque, and a relatively high-pressure capability.

How Triple-Lok Fittings Work

Tightening of the nut clamps the tube flare between the body nose (seat) producing a leak tight connection. This clamping on the 37° taper provides a measure of elasticity to the joint helping it to resist loosening under vibration. The clamping force results in a small radial load that tends to deform the fitting nose radially. The resistance of the nose to elastic deformation provides a constant preload (similar to a lock-washer) keeping it tight.

The clamping force provided by the nut resists the opposing force of the fluid under pressure. The joint remains leak tight as long as the clamping force is higher than the opposing pressure load. Properly assembled Triple-Lok fittings with appropriate tube will seal consistently under pressure until tube bursts.

Sealing in Triple-Lok fittings takes place between two smooth metal surfaces, the fitting nose and inside of the tube flare. Therefore, the sealing surfaces have to be smooth, free of any nicks, scratches, spiral tool marks, splits or weld beads. Seamless or welded and drawn fully annealed tube is recommended for Triple-Lok fittings for ease in flaring and bending. Certain types of harder tubes that are not fully annealed may not be suitable for flaring due to the potential for immediate or long-term cracking of the tube flare. For specific tube type and wall thickness recommendations, please see Table S11 and S14 in the General Technical Section.

International Acceptance

The versatility of 37° flare fittings is a primary reason for its worldwide acceptance. To illustrate the versatility of Triple-Lok, refer to Fig. B2. The Triple-Lok adapter is attachable to either inch tube, metric tube, or a hose assembly. To adapt to metric tube, simply change the sleeve (using the standard inch adapter and nut). Please see Table S29 in the General Technical Section for a clear illustration of every “convertible sleeve” connection for the 37° design. For example, a 25 mm tube would use a standard SAE -16 (1”) flare fitting and nut, however, a 25 mm metric sleeve (TXS25) would replace the inch size sleeve.

Triple-Lok fittings are available with many different port options for the various international hydraulic ports available, such as SAE straight thread, NPT/NPTF, BSPP, BSPT and Metric (including ISO 6149).

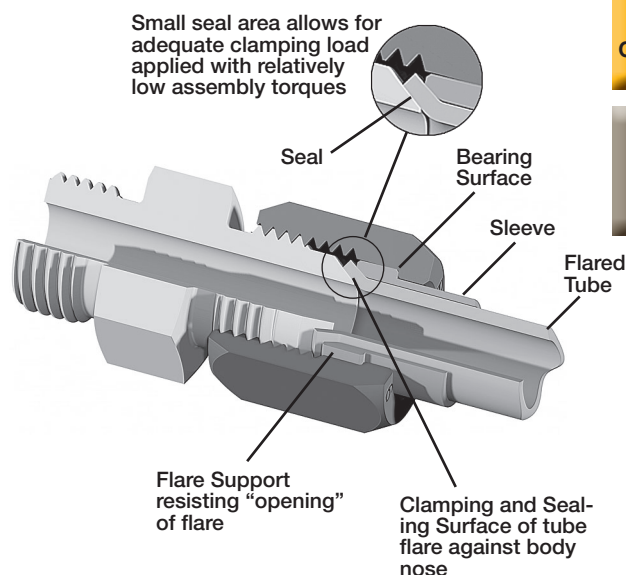


Fig. B1 – Triple-Lok Design and Features

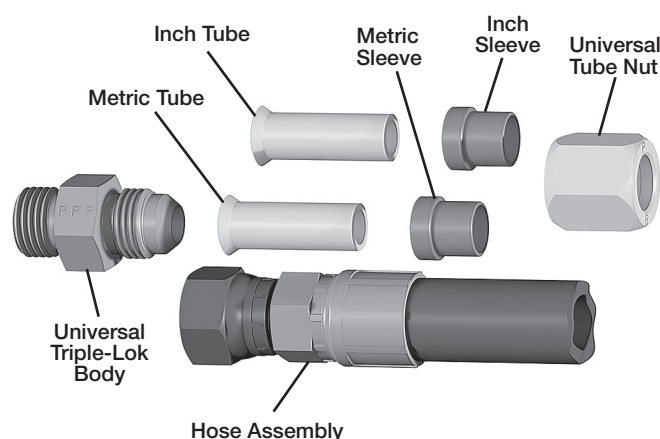


Fig. B2 – Triple-Lok’s Adaptability to Inch Tube, Metric Tube, or Hose Assemblies

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Triple-Lok 2

Triple-Lok 2 combines the versatility of stainless steel Triple-Lok with the added advantage of an elastomeric seal. It incorporates an O-ring that is positioned in the nose of the 37° flare so that elastomeric sealing occurs with the mating flared tube. Similar to the standard stainless steel Triple-Lok, Triple-Lok 2 consists of three pieces: the body (with O-ring), the standard Triple-Lok sleeve and standard Triple-Lok nut. The tube end is flared at a 37° angle (74° included angle) and held between the fitting nose and sleeve with the nut as shown in Fig. B3, providing a very effective elastomeric seal between the fitting nose and the tube flare.

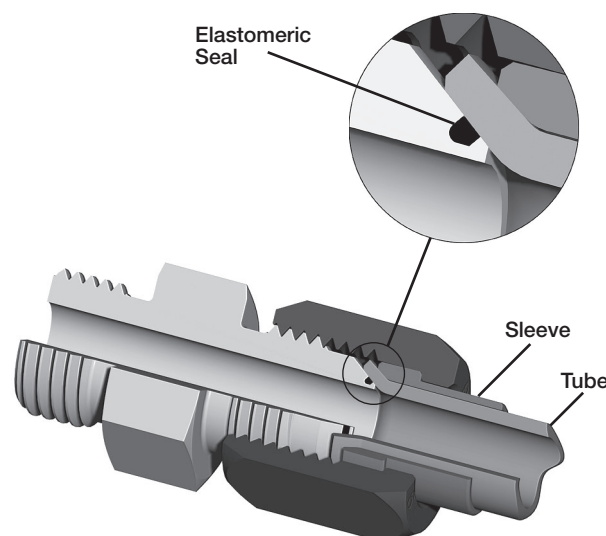


Fig. B3 – Triple-Lok 2 Design and Features

The Parker Advantage

Robust Port Stud: The adjustable port stud is manufactured with a longer locknut designed to cover the uppermost threads completely. Since the backup washer is never exposed to the upper threads, it cannot be damaged during assembly. During assembly, exposed upper threads, as common with fittings from other fitting manufacturers, can lead to a deformed backup washer that can pinch the o-ring and create an o-ring extrusion gap that has the potential to leak. The longer locknut also provides a greater grip area for the wrench.

Superior Plating: Parker's Triple-Lok steel fittings come standard with ToughShield™ Plus zinc-nickel plating, giving them unmatched protection against red rust. In ASTM B117 / ISO 9227 neutral salt spray testing, fittings and adapters with ToughShield Plus plating remained rust free for up to 3,000 hours. This performance far exceeds the SAE industry requirement, even on post plating deformed parts like crimp nuts and back-up washers where SAE allows for large exceptions. Learn more and see the difference at toughshield.com.

Pre-Lubricated Stainless Steel Tube Nut: All stainless steel Triple-Lok tube nuts have a pre-applied anti-seize lubricant to prevent galling during assembly.

Wide Selection: Triple-Lok fittings are available as standard in steel, stainless steel, brass and aluminum materials. Coupled with its broad line of configurations and port end options, Parker is well positioned to better service the hydraulic requirements of the international markets.

Triple-Lok 2: Triple-Lok 2 utilizes an elastomeric seal in the flare nose for improved seal reliability in applications where stainless steel fittings are required.

Reference locations

Dynamic Pressure Ratings: Please refer to the last column of the part number tables located on the following pages of this section for the appropriate dynamic pressure ratings.

Recommended Tube Wall Thickness: Please refer to Table S14 located in the General Technical section.

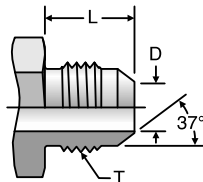
Assembly and Installation: Please refer to Triple-Lok Assembly located within the Assembly/Installation section of this catalog.

Standard material specifications: Please refer to Table U1 located in the Appendix section.

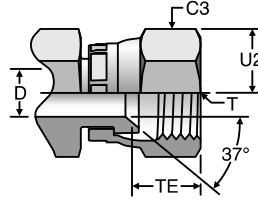
Seal Material Selection: Please refer to Table S10 in the General Technical section of this catalog.

Dimensions and pressures for reference only, subject to change.

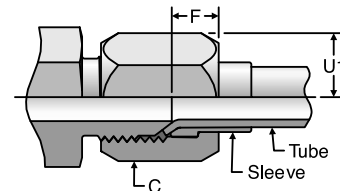
Triple-Lok 37° Flared Tube Ends



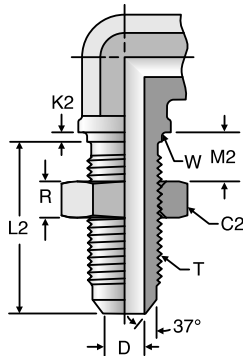
Triple-Lok Male Flare
Tube End



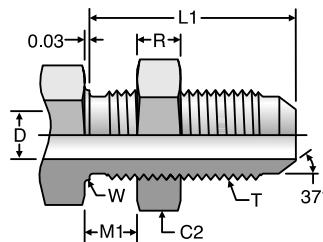
Triple-Lok Swivel



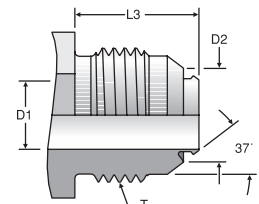
Triple-Lok Tube End
Assembly



Triple-Lok Shape
Bulkhead



Triple-Lok Straight
Bulkhead



Triple-Lok 2 Male Flare
Tube End

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			Thread	Tube Nut Hex	Bulkhead Locknut Hex	Swivel Nut Hex		Max Drill		Male Turn Back		Assembly Allowance		Bulkhead					Max Bulkhead Thickness		Min. Flare Dia.
												Tube Nut	Swivel Nut	Pilot Length - Shapes	Length - Straights	Length - Shapes	Locknut Thickness	Pilot Dia (Max)	Straights	Shapes	
SAE Dash Size	Tube O.D.		T UN/UNF	C (in.)	C2 (in.)	C3 (in.) (mm)		D (in)	D1 (in)	L (in)	L3 (in)	F (in)	TE (in)	K2 (in)	L1 (in)	L2 (in)	R (in)	W ¹⁾ (in)	M1 (in)	M2 (in)	D2 (in)
	(in.)	(mm)																			
2	1/8	—	5/16-24	3/8	9/16	7/16	—	0.062	—	0.45	—	0.19	0.31	0.094	1.11	0.92	0.22	0.313	0.38	0.25	—
3	3/16	—	3/8-24	7/16	5/8	1/2	—	0.125	—	0.48	—	0.25	0.33	0.094	1.11	0.92	0.22	0.375	0.38	0.25	—
4	1/4	6	7/16-20	9/16	11/16	9/16	14	0.172	0.156	0.55	0.56	0.19	0.34	0.094	1.20	1.02	0.28	0.438	0.38	0.25	0.254
5	5/16	8	1/2-20	5/8	3/4	5/8	16	0.234	0.217	0.55	0.56	0.30	0.38	0.094	1.20	1.02	0.28	0.500	0.38	0.25	0.314
6	3/8	10	9/16-18	11/16	13/16	11/16	17	0.297	0.263	0.56	0.57	0.28	0.38	0.094	1.28	1.09	0.27	0.563	0.44	0.35	0.359
8	1/2	12	3/4-16	7/8	1	7/8	22	0.391	0.391	0.66	0.66	0.31	0.42	0.125	1.44	1.25	0.31	0.750	0.44	0.35	0.510
10	5/8	14 15 16	7/8-14	1	1 1/8	1	27	0.484	0.446	0.76	0.81	0.38	0.50	0.125	1.58	1.39	0.36	0.875	0.44	0.35	0.610
12	3/4	18 20	1 1/16-12	1 1/4	1 3/8	1 1/4	32	0.610	0.578	0.86	0.91	0.36	0.56	0.125	1.75	1.56	0.41	1.063	0.44	0.35	0.753
14	7/8	22	1 3/16-12	1 3/8	1 1/2	1 3/8	36	0.718	0.680	0.89	0.95	0.38	0.58	0.125	1.75	1.56	0.41	1.188	0.44	0.35	0.849
16	1	25	1 5/16-12	1 1/2	1 5/8	1 1/2	38	0.844	0.769	0.91	0.99	0.34	0.59	0.125	1.75	1.56	0.41	1.313	0.44	0.35	0.940
20	1 1/4	28 30 32	1 5/8-12	2	1 7/8	2	50	1.078	1.020	0.96	1.03	0.34	0.63	0.125	1.80	1.61	0.41	1.625	0.44	0.35	1.198
24	1 1/2	35 38	1 7/8-12	2 1/4	2 1/8	2 1/4	60	1.312	1.230	1.08	1.16	0.50	0.73	0.125	1.81	1.62	0.41	1.875	0.31	0.22	1.416
32	2	—	2 1/2-12	2 7/8	2 3/4	2 7/8	—	1.781	1.736	1.33	1.40	0.55	0.94	0.125	2.09	1.91	0.41	2.500	0.35	0.25	1.994
40 ²⁾	2 1/2	—	3-12	3 3/8	—	—	—	2.281	—	—	—	0.55	—	0.125	1.72	1.72	0.41	2.998	0.45	0.45	—

1) Recommended clearance hole = W + 0.015.

2) Not a standard SAE J514 size.

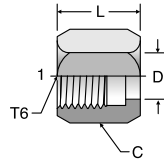
Dimensions and pressures for reference only, subject to change.

[Click here for CADs, Support Resources or to Configure Parts Online](#)

BTX

Nut
37° Flare

SAE 070110
HPD Base # 06B



TUBE FITTING PART #	END SIZE		T6 UN/UNF- 2B	C HEX (in.)	D (in.)	L (in.)	Material		
	(in.)	(mm)					-S	-SS	-B
2 BTX	1/8	—	5/16 - 24	3/8	0.180	0.55	•	•	•
3 BTX	3/16	—	3/8 - 24	7/16	0.240	0.61	•	•	•
4 BTX	1/4	6	7/16 - 20	9/16	0.310	0.62	•	•	•
5 BTX	5/16	8	1/2 - 20	5/8	0.380	0.68	•	•	•
6 BTX	3/8	10	9/16 - 18	11/16	0.440	0.73	•	•	•
8 BTX	1/2	12	3/4 - 16	7/8	0.570	0.85	•	•	•
10 BTX	5/8	14, 15, 16	7/8 - 14	1	0.700	0.98	•	•	•
12 BTX	3/4	18	1 1/16 - 12	1 1/4	0.840	1.03	•	•	•
20-12 BTX	—	20	1 1/16 - 12	1 1/4	0.862	0.87	•	•	•
14 BTX	7/8	22	1 3/16 - 12	1 3/8	0.960	1.09	•	•	•
16 BTX	1	25	1 5/16 - 12	1 1/2	1.090	1.13	•	•	•
20 BTX	1 1/4	28, 30, 32	1 5/8 - 12	2	1.350	1.23	•	•	•
24 BTX	1 1/2	35, 38	1 7/8 - 12	2 1/4	1.620	1.42	•	•	•
32 BTX	2	42, 50	2 1/2 - 12	2 7/8	2.170	1.75	•	•	•

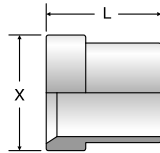
Note: All stainless steel nuts are coated to prevent galling at assembly.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TX (inch)

Sleeve
37° Flare

SAE 070115
HPD Base # 06S



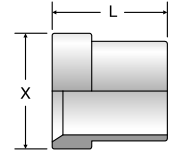
TUBE FITTING PART #	END SIZE (in.)	L (in.)	X (in.)	Material		
				-S	-SS	-B
2 TX	1/8	0.34	0.27	•	•	•
3 TX	3/16	0.34	0.33	•	•	•
4 TX	1/4	0.41	0.38	•	•	•
5 TX	5/16	0.44	0.45	•	•	•
6 TX	3/8	0.50	0.50	•	•	•
8 TX	1/2	0.56	0.68	•	•	•
10 TX	5/8	0.66	0.80	•	•	•
12 TX	3/4	0.69	0.97	•	•	•
14 TX	7/8	0.75	1.10	•	•	•
16 TX	1	0.78	1.22	•	•	•
20 TX	1 1/4	0.91	1.53	•	•	•
24 TX	1 1/2	1.13	1.78	•	•	•
32 TX	2	1.19	2.41	•	•	•

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TX (metric)

Sleeve
37° Flare

SAE 0701M15



TUBE FITTING PART #	See Note	END SIZE (mm)	FITTING DASH SIZE	L (mm)	X (mm)	Material		
						S	SS	B
TXS6	3	6	-4	10.4	9.6	•	•	•
TXS8	3	8	-5	11.2	11.4	•	•	•
TXS10	3	10	-6	12.7	12.7	•	•	•
TXS12	3	12	-8	14.2	17.3	•	•	•
TXS14	3	14	-10	16.8	20.3	•	•	•
TXS15	3	15	-10	16.8	20.3	•	•	•
TXS16	3	16	-10	16.8	20.3	•	•	•
TXS18	3	18	-12	17.3	24.6	•	•	•
20-12 TX	2	20	-12	17.3	24.6	•	•	•
TXS22	3	22	-14	19.0	27.8	•	•	•
TXS25	3	25	-16	19.8	31.0	•	•	•
TXS28	3	28	-20	23.1	38.9	•	•	•
TXS30	3	30	-20	23.1	38.9	•	•	•
TXS32	3	32	-20	23.1	38.9	•	•	•
TXS35	3	35	-24	28.4	45.2	•	•	•
24 TX	1	38	-24	28.4	45.2	•	•	•

1. Inch sleeve for use with metric tubing.
2. Use with 20-12 BTX.
3. The part numbers above are for steel. Use "SS" in place of "S" for ordering stainless steel. Example: TXSS12

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

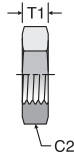
Dimensions and pressures for reference only, subject to change.

[Click here for CADs, Support Resources or to Configure Parts Online](#)

WLN

Bulkhead Locknut

SAE 080118 and 070118
HPD Base # 53-XN



TUBE FITTING PART #	TUBE O.D. (in.)	C2 HEX (in.)	T1 (in.)	Material		
				-S	-SS	-B
3 WLN	3/16	5/8	0.22	•	•	•
4 WLN	1/4	11/16	0.28	•	•	•
5 WLN	5/16	3/4	0.28	•	•	•
6 WLN	3/8	13/16	0.27	•	•	•
8 WLN	1/2	1	0.31	•	•	•
10 WLN	5/8	1 1/8	0.36	•	•	•
12 WLN	3/4	1 3/8	0.41	•	•	•
14 WLN	7/8	1 1/2	0.41	•	•	•
16 WLN	1	1 5/8	0.41	•	•	•
20 WLN	1 1/4	1 7/8	0.41	•	•	•
24 WLN	1 1/2	2 1/8	0.41	•	•	•
32 WLN	2	2 3/4	0.41	•	•	•

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

SBR

Braze Ring

TUBE FITTING PART #	TUBE O.D. (in.)	A DIA. (in.)	B (in.)	C (in.)	E (in.)	Material		
						-S	-SS	-B
4 SBR	1/4	0.260	—	—	0.05	•	•	•
6 SBR	3/8	0.390	0.07	0.03	—	•	•	•
8 SBR	1/2	0.515	0.07	0.03	—	•	•	•
10 SBR	5/8	0.640	0.07	0.03	—	•	•	•
12 SBR	3/4	0.765	0.08	0.04	—	•	•	•
14 SBR	7/8	0.890	—	—	0.06	•	•	•
16 SBR	1	1.015	0.08	0.04	—	•	•	•
20 SBR	1 1/4	1.265	0.08	0.04	—	•	•	•
24 SBR	1 1/2	1.515	0.08	0.04	—	•	•	•
32 SBR	2	2.015	—	—	0.09	•	•	•

WARNING: This product can expose you to chemicals including Cadmium which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

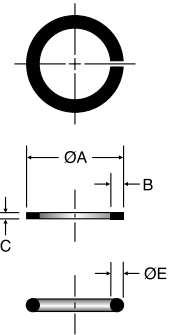


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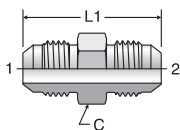
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

HTX

Union
37° Flare / 37° Flare

SAE 070101
HPD Base # 0303



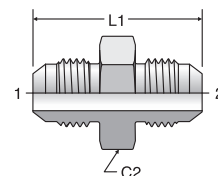
TUBE FITTING PART #	END SIZE		C HEX (in.)	L1 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 (in.)			-S	-SS	-B
2 HTX	1/8	1/8	7/16	1.17	7.5	9.0	3.3
3 HTX	3/16	3/16	7/16	1.23	7.5	9.0	3.3
4 HTX	1/4	1/4	1/2	1.37	7.5	9.0	3.3
4-2 HTX	1/4	1/8	1/2	1.27	7.5	9.0	3.3
4-3 HTX	1/4	3/16	1/2	1.30	7.5	9.0	3.3
5 HTX	5/16	5/16	9/16	1.37	6.0	7.2	3.3
5-4 HTX	5/16	1/4	9/16	1.38	6.0	7.2	3.3
6 HTX	3/8	3/8	5/8	1.41	6.0	7.2	3.3
6-4 HTX	3/8	1/4	5/8	1.41	6.0	7.2	3.3
6-5 HTX	3/8	5/16	5/8	1.41	6.0	7.2	3.3
8 HTX	1/2	1/2	13/16	1.62	6.0	7.2	3.3
8-4 HTX	1/2	1/4	13/16	1.52	6.0	7.2	3.3
8-6 HTX	1/2	3/8	13/16	1.52	6.0	7.2	3.3
10 HTX	5/8	5/8	15/16	1.88	5.0	6.0	3.3
10-8 HTX	5/8	1/2	15/16	1.78	5.0	6.0	3.3
12 HTX	3/4	3/4	1 1/8	2.16	5.0	6.0	3.3
12-8 HTX	3/4	1/2	1 1/8	1.95	5.0	6.0	3.3
12-10 HTX	3/4	5/8	1 1/8	2.05	5.0	6.0	3.3
14 HTX	7/8	7/8	1 1/4	2.22	5.0	6.0	2.6
16 HTX	1	1	1 3/8	2.25	4.5	5.4	2.9
16-12 HTX	1	3/4	1 3/8	2.20	4.5	5.4	2.9
20 HTX	1 1/4	1 1/4	1 11/16	2.43	4.0	4.8	2.6
24 HTX	1 1/2	1 1/2	2	2.75	3.0	3.6	2.0
24-10 HTX	1 1/2	5/8	2	2.42	3.0	3.6	2.0
24-12 HTX	1 1/2	3/4	2	2.53	3.0	3.6	2.0
24-16 HTX	1 1/2	1	2	2.58	3.0	3.6	2.0
32 HTX	2	2	2 5/8	3.40	2.0	2.4	1.3
32-24 HTX	2	1 1/2	2 5/8	2.81	2.0	2.4	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

LHTX

Large Hex Union
37° Flare / 37° Flare

SAE 070119
HPD Base # 03L3



TUBE FITTING PART #	END SIZE		C2 HEX (in.)	L1 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 (in.)			-S	-SS	-B
4 LHTX	1/4	1/4	11/16	1.38	7.5	9.0	3.3
4-3 LHTX	1/4	3/16	11/16	1.30	7.5	9.0	3.3
5 LHTX	5/16	5/16	3/4	1.37	6.0	7.2	3.3
6 LHTX	3/8	3/8	13/16	1.41	6.0	7.2	3.3
6-4 LHTX	3/8	1/4	13/16	1.41	6.0	7.2	3.3
8 LHTX	1/2	1/2	1	1.62	6.0	7.2	3.3
8-4 LHTX	1/2	1/4	1	1.52	6.0	7.2	3.3
8-6 LHTX	1/2	3/8	1	1.52	6.0	7.2	3.3
10 LHTX	5/8	5/8	1 1/8	1.88	5.0	6.0	3.3
12 LHTX	3/4	3/4	1 3/8	2.16	5.0	6.0	3.3
12-8 LHTX	3/4	1/2	1 3/8	1.95	5.0	6.0	3.3
16 LHTX	1	1	1 5/8	2.25	4.5	5.4	2.9
32 LHTX	2	2	2 3/4	3.40	2.0	2.4	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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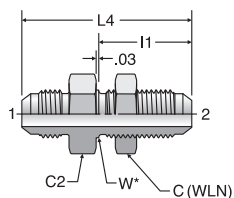
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

WTX

Bulkhead Union
37° Flare / 37° Flare

SAE 070601
HPD Base # 0355
WTX-WLN – Body with locknut
(See page B10 for WLN)

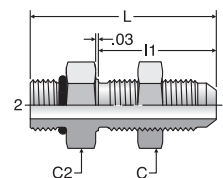


W* – Bulkhead pilot dia.
recommended clearance
hole +.015 over W dia.

WF5OX

SAE-ORB Bulkhead Connector
37° Flare / SAE-ORB

HPD Base # 0355
WF5OX-WLN – Body with locknut
(See page B10 for WLN)



TUBE FITTING PART #	END SIZE		C HEX (in.)	C2 HEX (in.)	I1 (in.)	L4 (in.)	W DIA (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2 (in.)	HEX (in.)							-S	-SS	-B
3 WTX	3/16	5/8	5/8	5/8	1.11	1.90	0.38	0.38	7.5	9.0	3.3
4 WTX	1/4	11/16	11/16	11/16	1.20	2.07	0.44	0.38	7.5	9.0	3.3
5 WTX	5/16	3/4	3/4	3/4	1.20	2.07	0.50	0.38	6.0	7.2	3.3
6 WTX	3/8	13/16	13/16	13/16	1.28	2.18	0.56	0.44	6.0	7.2	3.3
8 WTX	1/2	1	1	1	1.44	2.44	0.75	0.44	6.0	7.2	3.3
10 WTX	5/8	1 1/8	1 1/8	1 1/8	1.58	2.74	0.88	0.44	5.0	6.0	3.3
12 WTX	3/4	1 3/8	1 3/8	1 3/8	1.75	3.09	1.06	0.44	5.0	6.0	3.3
14 WTX	7/8	1 1/2	1 1/2	1 1/2	1.75	3.12	1.19	0.44	5.0	6.0	3.3
16 WTX	1	1 5/8	1 5/8	1 5/8	1.75	3.14	1.31	0.44	4.5	5.4	2.9
20 WTX	1 1/4	1 7/8	1 7/8	1 7/8	1.80	3.31	1.63	0.44	4.0	4.8	2.6
24 WTX	1 1/2	2 1/8	2 1/8	2 1/8	1.81	3.52	1.88	0.31	3.0	3.6	2.0
32 WTX	2	2 3/4	2 3/4	2 3/4	2.09	4.20	2.50	0.35	2.0	2.4	1.3

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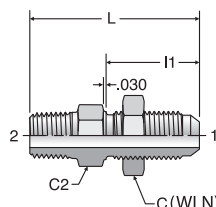
TUBE FITTING PART #	END SIZE		C HEX (in.)	C2 HEX (in.)	I1 (in.)	L (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 UN/UNF-2A						-S	-SS	-B
4 WF5OX	1/4	7/16 - 20	11/16	11/16	1.20	1.84	0.38	7.5	9.0	3.3
6 WF5OX	3/8	9/16 - 18	13/16	13/16	1.28	2.02	0.44	6.0	7.2	3.3
8 WF5OX	1/2	3/4 - 16	1	1	1.44	2.19	0.44	6.0	7.2	3.3
10 WF5OX	5/8	7/8 - 14	1 1/8	1 1/8	1.58	2.47	0.44	5.0	6.0	3.3
12 WF5OX	3/4	1 1/16 - 12	1 3/8	1 3/8	1.75	2.79	0.44	5.0	6.0	3.3
16 WF5OX	1	1 5/16 - 12	1 5/8	1 5/8	1.75	2.90	0.44	4.5	5.4	2.9

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WFTX

Male Bulkhead Connector
37° Flare / NPTF

HPD Base # 0153
WFTX-WLN – Body with locknut
(See page B10 for WLN)



TUBE FITTING PART #	END SIZE		C HEX (in.)	C2 HEX (in.)	I1 (in.)	L (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF						-S	-SS	-B
4 WFTX	1/4	1/8 - 27	11/16	11/16	1.20	1.88	0.38	6.0	6.0	3.3
4-4 WFTX	1/4	1/4 - 18	11/16	11/16	1.20	2.10	0.38	6.0	6.0	3.3
6 WFTX	3/8	1/4 - 18	13/16	13/16	1.28	2.18	0.44	6.0	6.0	3.3
6-6 WFTX	3/8	3/8 - 18	13/16	13/16	1.28	2.16	0.44	6.0	6.0	3.3
6-8 WFTX	3/8	1/2 - 14	7/8	13/16	1.28	2.41	0.44	6.0	6.0	3.3
8 WFTX	1/2	3/8 - 18	1	1	1.44	2.34	0.44	6.0	6.0	3.3
8-8 WFTX	1/2	1/2 - 14	1	1	1.44	2.60	0.44	6.0	6.0	3.3
10 WFTX	5/8	1/2 - 14	1 1/8	1 1/8	1.58	2.74	0.44	5.0	5.0	3.3
12 WFTX	3/4	3/4 - 14	1 3/8	1 3/8	1.75	2.95	0.44	5.0	5.0	2.6
16 WFTX	1	1 - 11 1/2	1 5/8	1 5/8	1.75	3.14	0.44	4.5	4.5	2.0

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Dimensions and pressures for reference only, subject to change.



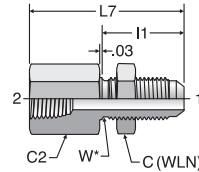
WGTX

Female Bulkhead Connector 37° Flare / NPTF

HPD Base # 0253

WGTX-WLN – Body with locknut

(See page B10 for WLN)



W* – Bulkhead pilot dia.
recommended clearance
hole +.015 over W dia.

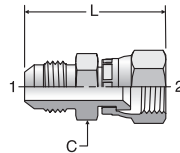
TUBE FITTING PART #	END SIZE		C HEX (in.)	C2 HEX (in.)	I1 (in.)	L7 (in.)	W DIA (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF							-S	-SS	-B
4 WGTX	1/4	1/8 - 27	11/16	11/16	1.20	1.84	0.44	0.38	6.0	6.0	3.3
4-4 WGTX	1/4	1/4 - 18	11/16	3/4	1.20	2.11	0.44	0.38	6.0	6.0	3.3
6 WGTX	3/8	1/4 - 18	13/16	13/16	1.28	2.12	0.56	0.44	6.0	6.0	3.3
6-6 WGTX	3/8	3/8 - 18	13/16	7/8	1.28	2.24	0.56	0.44	6.0	6.0	3.3
8 WGTX	1/2	3/8 - 18	1	1	1.44	2.34	0.75	0.44	6.0	6.0	3.3
8-8 WGTX	1/2	1/2 - 14	1	1 1/8	1.44	2.61	0.75	0.44	5.0	5.0	3.3
10 WGTX	5/8	1/2 - 14	1 1/8	1 1/8	1.58	2.71	0.88	0.44	5.0	5.0	3.3
12 WGTX	3/4	3/4 - 14	1 3/8	1 3/8	1.75	2.95	1.06	0.44	4.0	4.0	2.6
14 WGTX	7/8	3/4 - 14	1 3/8	1 1/2	1.75	2.92	1.19	0.41	4.0	4.0	2.6
16 WGTX	1	1 - 11 1/2	1 5/8	1 5/8	1.75	3.19	1.31	0.44	3.0	3.0	2.0
24 WGTX	1 1/2	1 1/2-11 1/2	2 1/8	2 1/4	1.81	3.35	1.88	0.31	2.0	2.0	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

XHX6

Extender and Expander 37° Flare / 37° Flare Swivel

SAE 070121



TUBE FITTING PART #	END SIZE		C HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 (in.)			-S	-SS	-B
4 XHX6	1/4	1/4	9/16	1.39	7.5	7.7	3.3
6 XHX6	3/8	3/8	5/8	1.50	6.0	6.0	3.3
6-4 XHX6	3/8	1/4	5/8	1.50	6.0	6.0	3.3
8 XHX6	1/2	1/2	13/16	1.71	6.0	6.0	3.3
8-6 XHX6	1/2	3/8	13/16	1.72	6.0	6.0	3.3
10 XHX6	5/8	5/8	1	2.01	5.0	5.0	3.3
10-8 XHX6	5/8	1/2	15/16	1.93	5.0	5.0	3.3
12 XHX6	3/4	3/4	1 1/4	2.20	5.0	5.0	3.3
12-10 XHX6	3/4	5/8	1 1/8	2.19	5.0	5.0	3.3
16 XHX6	1	1	1 1/2	2.47	4.0	3.0	2.6
16-12 XHX6	1	3/4	1 1/2	2.24	4.0	3.0	2.6
20-16 XHX6	1 1/4	1	1 11/16	2.50	4.0	3.0	2.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

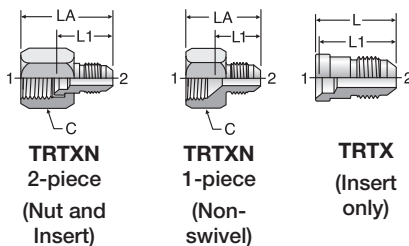
Dimensions and pressures for reference only, subject to change.

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TRTX / TRTXN

Reducer
37° Flare

SAE 070123 / SAE 070123A / SAE 070105
HPD Base # 0603 (TRTXN only)



TUBE FITTING PART #			END SIZE		C HEX (in.)	L (TRTX) (in.)	LA (TRTXN) (in.)	L1 (TRTX & TRTXN) (in.)	Dynamic Pressure (x 1,000 PSI)		
TRTXN 2-pc. Design (with Large Nut)	TRTXN 1-pc. Design (Machined Female)	TRTX Reducer Insert (For 2-pc. Design Only)	1 (in.)	2 (in.)					-S	-SS	-B
4-2 TRTXN	—	4-2 TRTX	1/4	1/8	9/16	0.75	1.14	0.68	7.5	9.0	3.3
—	4-3 TRTXN	—	1/4	3/16	9/16	—	1.09	0.64	7.5	9.0	3.3
—	5-4 TRTXN	—	5/16	1/4	5/8	—	1.16	0.69	6.0	7.2	3.3
6-4 TRTXN	—	6-4 TRTX	3/8	1/4	11/16	0.97	1.40	0.90	6.0	7.2	3.3
—	6-5 TRTXN	—	3/8	5/16	11/16	—	1.19	0.73	6.0	7.2	3.3
8-4 TRTXN	—	8-4 TRTX	1/2	1/4	7/8	1.00	1.50	0.90	6.0	7.2	3.3
8-6 TRTXN	—	8-6 TRTX	1/2	3/8	7/8	1.00	1.50	0.90	6.0	7.2	3.3
10-4 TRTXN	—	10-4 TRTX	5/8	1/4	1	1.03	1.61	0.93	5.0	6.0	3.3
10-6 TRTXN	—	10-6 TRTX	5/8	3/8	1	1.03	1.61	0.93	5.0	6.0	3.3
—	10-8 TRTXN	—	5/8	1/2	1	—	1.48	0.85	5.0	6.0	3.3
12-4 TRTXN	—	12-4 TRTX	3/4	1/4	1 1/4	1.09	1.69	0.95	5.0	6.0	3.3
12-6 TRTXN	—	12-6 TRTX	3/4	3/8	1 1/4	1.09	1.69	0.95	5.0	6.0	3.3
12-8 TRTXN	—	12-8 TRTX	3/4	1/2	1 1/4	1.19	1.79	1.05	5.0	6.0	3.3
—	12-10 TRTXN	—	3/4	5/8	1 1/4	—	1.66	0.96	5.0	6.0	3.3
14-6 TRTXN	—	14-6 TRTX	7/8	3/8	1 3/8	1.13	1.78	1.00	5.0	6.0	3.3
14-10 TRTXN	—	14-10 TRTX	7/8	5/8	1 3/8	1.33	1.98	1.20	5.0	6.0	3.3
—	14-12 TRTXN	—	7/8	3/4	1 3/8	—	1.84	1.11	5.0	6.0	3.3
16-4 TRTXN	—	16-4 TRTX	1	1/4	1 1/2	1.22	1.90	1.09	4.5	5.4	2.9
16-6 TRTXN	—	16-6 TRTX	1	3/8	1 1/2	1.22	1.90	1.09	4.5	5.4	2.9
16-8 TRTXN	—	16-8 TRTX	1	1/2	1 1/2	1.27	1.95	1.14	4.5	5.4	2.9
16-10 TRTXN	—	16-10 TRTX	1	5/8	1 1/2	1.38	2.06	1.25	4.5	5.4	2.9
16-12 TRTXN	—	16-12 TRTX	1	3/4	1 1/2	1.47	2.15	1.34	4.5	5.4	2.9
—	16-14 TRTXN	—	1	7/8	1 1/2	—	1.91	1.15	4.5	5.4	2.9
—	—	20-8 TRTX	1 1/4	1/2	—	1.41	—	1.25	4.0	4.8	2.6
20-12 TRTXN	—	20-12 TRTX	1 1/4	3/4	2	1.53	2.17	1.37	4.0	4.8	2.6
20-16 TRTXN	—	20-16 TRTX	1 1/4	1	2	1.59	2.23	1.43	4.0	4.8	2.6
—	—	24-4 TRTX	1 1/2	1/4	—	1.47	—	1.32	3.0	3.6	2.0
24-8 TRTXN	—	24-8 TRTX	1 1/2	1/2	2 1/4	1.56	2.33	1.41	3.0	3.6	2.0
24-12 TRTXN	—	24-12 TRTX	1 1/2	3/4	2 1/4	1.63	2.40	1.48	3.0	3.6	2.0
24-16 TRTXN	—	24-16 TRTX	1 1/2	1	2 1/4	1.59	2.40	1.48	3.0	3.6	2.0
24-20 TRTXN	—	24-20 TRTX	1 1/2	1 1/4	2 1/4	1.69	2.46	1.54	3.0	3.6	2.0
—	—	32-12 TRTX	2	3/4	—	2.00	—	1.81	2.0	2.4	1.3
—	—	32-20 TRTX	2	1 1/4	—	1.78	—	1.59	2.0	2.4	1.3
32-24 TRTXN	—	32-24 TRTX	2	1 1/2	2 7/8	1.91	2.97	1.71	2.0	2.4	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.



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TUBE FAB
EQUIP

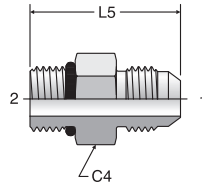
GEN TECH

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F50X

Straight Thread Connector
37° Flare / SAE-ORB

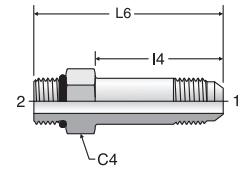
SAE 070120
HPD Base # 0503



FF50X

Long Straight Thread Connector
37° Flare / SAE-ORB

SAE 071720
HPD Base # 053E



TUBE FITTING PART #	END SIZE		C4 HEX (in.)	L5 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2			-S	-SS	-B
	(in.)	UN/UNF-2A					
2 F50X	1/8	5/16 - 24	7/16	1.06	7.5	9.0	3.3
3 F50X	3/16	3/8 - 24	1/2	1.10	7.5	9.0	3.3
3-2 F50X	3/16	5/16 - 24	1/2	1.10	7.5	9.0	3.3
4 F50X	1/4	7/16 - 20	9/16	1.23	7.5	9.0	3.3
4-2 F50X	1/4	5/16 - 24	9/16	1.17	7.5	9.0	3.3
4-3 F50X	1/4	3/8 - 24	9/16	1.19	7.5	9.0	3.3
4-5 F50X	1/4	1/2 - 20	5/8	1.23	6.0	7.2	3.3
4-6 F50X	1/4	9/16 - 18	11/16	1.29	6.0	7.2	3.3
4-8 F50X	1/4	3/4 - 16	7/8	1.38	6.0	7.2	3.3
4-10 F50X	1/4	7/8 - 14	1	1.49	5.0	6.0	3.3
5 F50X	5/16	1/2 - 20	5/8	1.23	6.0	7.2	3.3
5-4 F50X	5/16	7/16 - 20	9/16	1.23	6.0	7.2	3.3
5-6 F50X	5/16	9/16 - 18	11/16	1.30	6.0	7.2	3.3
5-8 F50X	5/16	3/4 - 16	7/8	1.37	6.0	7.2	3.3
6 F50X	3/8	9/16 - 18	11/16	1.30	6.0	7.2	3.3
6-4 F50X	3/8	7/16 - 20	5/8	1.27	6.0	7.2	3.3
6-5 F50X	3/8	1/2 - 20	5/8	1.27	6.0	7.2	3.3
6-8 F50X	3/8	3/4 - 16	7/8	1.38	6.0	7.2	3.3
6-10 F50X	3/8	7/8 - 14	1	1.50	5.0	6.0	3.3
6-12 F50X	3/8	1 1/16 - 12	1 1/4	1.66	5.0	6.0	3.3
8 F50X	1/2	3/4 - 16	7/8	1.48	6.0	7.2	3.3
8-4 F50X	1/2	7/16 - 20	13/16	1.50	6.0	7.2	3.3
8-6 F50X	1/2	9/16 - 18	13/16	1.44	6.0	7.2	3.3
8-10 F50X	1/2	7/8 - 14	1.00	1.60	5.0	6.0	3.3
8-12 F50X	1/2	1 1/16 - 12	1 1/4	1.76	5.0	6.0	3.3
8-16 F50X	1/2	1 5/16 - 12	1 1/2	1.78	4.5	5.4	2.9
10 F50X	5/8	7/8 - 14	1	1.70	5.0	6.0	3.3
10-6 F50X	5/8	9/16 - 18	15/16	1.71	5.0	6.0	3.3
10-8 F50X	5/8	3/4 - 16	15/16	1.64	5.0	6.0	3.3
10-12 F50X	5/8	1 1/16 - 12	1 1/4	1.86	5.0	6.0	3.3
10-16 F50X	5/8	1 5/16 - 12	1 1/2	1.89	4.5	5.4	2.9
12 F50X	3/4	1 1/16 - 12	1 1/4	1.97	5.0	6.0	3.3
12-8 F50X	3/4	3/4 - 16	1 1/8	1.94	5.0	6.0	3.3
12-10 F50X	3/4	7/8 - 14	1 1/8	1.88	5.0	6.0	3.3
12-14 F50X	3/4	1 3/16 - 12	1 3/8	1.96	5.0	6.0	3.3
12-16 F50X	3/4	1 5/16 - 12	1 1/2	1.99	4.5	5.4	2.9
12-20 F50X	3/4	1 5/8 - 12	1 7/8	2.08	4.0	4.8	2.6
14 F50X	7/8	1 3/16 - 12	1 3/8	1.99	5.0	6.0	3.3
14-16 F50X	7/8	1 5/16 - 12	1 1/2	2.02	4.5	5.4	2.9
16 F50X	1	1 5/16 - 12	1 1/2	2.04	4.5	5.4	2.9
16-8 F50X	1	3/4 - 16	1 3/8	1.78	4.5	5.4	2.9
16-10 F50X	1	7/8 - 14	1 3/8	2.08	4.5	5.4	2.9
16-12 F50X	1	1 1/16 - 12	1 3/8	1.99	4.5	5.4	2.9
16-14 F50X	1	1 3/16 - 12	1 3/8	2.05	4.5	5.4	2.9
16-20 F50X	1	1 5/8 - 12	1 7/8	2.12	4.0	4.8	2.6
16-24 F50X	1	1 7/8 - 12	2 1/8	2.20	3.0	3.6	2.0
20 F50X	1 1/4	1 5/8 - 12	1 7/8	2.17	4.0	4.8	2.6
20-12 F50X	1 1/4	1 1/16 - 12	1 11/16	2.30	4.0	4.8	2.6
20-16 F50X	1 1/4	1 5/16 - 12	1 11/16	2.33	4.0	4.8	2.6
20-24 F50X	1 1/4	1 7/8 - 12	2 1/8	2.24	3.0	3.6	2.0
24 F50X	1 1/2	1 7/8 - 12	2 1/8	2.38	3.0	3.6	2.0
24-20 F50X	1 1/2	1 5/8 - 12	2	2.53	3.0	3.6	2.0
24-32 F50X	1 1/2	2 1/2 - 12	2 3/4	2.53	2.0	2.4	1.3
32 F50X	2	2 1/2 - 12	2 3/4	2.78	2.0	2.4	1.3
32-24 F50X	2	1 7/8 - 12	2 5/8	2.94	2.0	2.4	1.3

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Dimensions and pressures for reference only, subject to change.

TUBE FITTING PART #	END SIZE		C4 HEX (in.)	I4 (in.)	L6 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2				-S	-SS	-B
	(in.)	UN/UNF-2A						
4 FF50X	1/4	7/16 - 20	9/16	1.39	2.08	7.5	9.0	3.3
4-6 FF50X	1/4	9/16 - 18	11/16	1.38	2.13	6.0	7.2	3.3
6 FF50X	3/8	9/16 - 18	11/16	1.56	2.31	6.0	7.2	3.3
8 FF50X	1/2	3/4 - 16	7/8	1.88	2.70	6.0	7.2	3.3
10 FF50X	5/8	7/8 - 14	1	2.09	3.04	5.0	6.0	3.3
12 FF50X	3/4	1 1/16 - 12	1 1/4	2.50	3.61	5.0	6.0	3.3
16 FF50X	1	1 5/16 - 12	1 1/2	2.84	3.98	4.5	5.4	2.9
20 FF50X	1 1/4	1 5/8 - 12	1 7/8	3.47	4.69	4.0	4.8	2.6

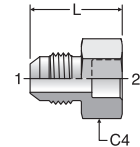
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XHB3

Braze Socket

37° Flare / Inch Tube Braze

SAE 070172



TUBE FITTING PART #	END SIZE		C4 HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2			-S	-SS	-B
	(in.)	(in.)					
4 XHB3	1/4	1/4	9/16	0.97	7.5	7.5	3.3
6 XHB3	3/8	3/8	5/8	1.00	6.0	6.0	3.3
6-4 XHB3	3/8	1/4	5/8	1.00	6.0	6.0	3.3
6-8 XHB3	3/8	1/2	5/8	1.00	6.0	6.0	3.3
8 XHB3	1/2	1/2	13/16	1.12	6.0	6.0	3.3
8-10 XHB3	1/2	5/8	13/16	1.12	5.0	5.0	3.3
10 XHB3	5/8	5/8	15/16	1.21	5.0	5.0	3.3
10-8 XHB3	5/8	1/2	15/16	1.21	5.0	5.0	3.3
10-12 XHB3	5/8	3/4	1 1/8	1.37	5.0	5.0	3.3
12 XHB3	3/4	3/4	1 1/4	1.51	5.0	5.0	3.3
12-10 XHB3	3/4	5/8	1 1/8	1.51	5.0	5.0	3.3
12-16 XHB3	3/4	1	1 1/4	1.57	4.0	4.0	2.6
16 XHB3	1	1	1 3/8	1.63	4.0	4.0	2.6
16-20 XHB3	1	1 1/4	1 11/16	1.73	4.0	4.0	2.6
20 XHB3	1 1/4	1 1/4	1 11/16	1.71	4.0	4.0	2.6
20-24 XHB3	1 1/4	1 1/2	2	1.71	3.0	3.0	2.0
24 XHB3	1 1/2	1 1/2	2	1.84	3.0	3.0	2.0
32 XHB3	2	2	2 5/8	2.16	2.0	2.0	1.3

Note: Braze rings are on page B10.

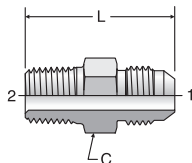
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FTX

Male Connector
37° Flare / NPTF

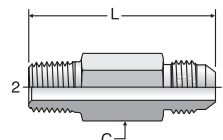
SAE 070102
HPD Base # 0103



FFTX

Long Male Connector
37° Flare / NPTF

SAE 071802
HPD Base # 013E



TUBE FITTING PART #	END SIZE		C HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF			-S	-SS	-B
2 FTX	1/8	1/8 - 27	7/16	1.11	6.0	6.0	3.3
3 FTX	3/16	1/8 - 27	7/16	1.14	6.0	6.0	3.3
4 FTX	1/4	1/8 - 27	1/2	1.22	6.0	6.0	3.3
4-4 FTX	1/4	1/4 - 18	9/16	1.42	6.0	6.0	3.3
4-6 FTX	1/4	3/8 - 18	3/4	1.44	6.0	6.0	3.3
4-8 FTX	1/4	1/2 - 14	7/8	1.69	6.0	6.0	3.3
5 FTX	5/16	1/8 - 27	9/16	1.22	6.0	6.0	3.3
5-4 FTX	5/16	1/4 - 18	9/16	1.42	6.0	6.0	3.3
5-6 FTX	5/16	3/8 - 18	3/4	1.44	6.0	6.0	3.3
6 FTX	3/8	1/4 - 18	5/8	1.43	6.0	6.0	3.3
6-2 FTX	3/8	1/8 - 27	5/8	1.24	6.0	6.0	3.3
6-6 FTX	3/8	3/8 - 18	3/4	1.43	6.0	6.0	3.3
6-8 FTX	3/8	1/2 - 14	7/8	1.69	6.0	6.0	3.3
6-12 FTX	3/8	3/4 - 14	1 1/8	1.75	5.5	5.5	3.3
8 FTX	1/2	3/8 - 18	13/16	1.53	6.0	6.0	3.3
8-2 FTX	1/2	1/8 - 27	13/16	1.34	6.0	6.0	3.3
8-4 FTX	1/2	1/4 - 18	13/16	1.53	6.0	6.0	3.3
8-8 FTX	1/2	1/2 - 14	7/8	1.79	6.0	6.0	3.3
8-12 FTX	1/2	3/4 - 14	1 1/8	1.85	5.5	5.5	2.6
8-16 FTX	1/2	1 - 11 1/2	1 3/8	2.05	4.5	4.5	2.0
10 FTX	5/8	1/2 - 14	15/16	1.89	5.0	5.0	3.3
10-6 FTX	5/8	3/8 - 18	15/16	1.70	5.0	5.0	3.3
10-12 FTX	5/8	3/4 - 14	1 1/8	1.95	5.0	5.0	2.6
12 FTX	3/4	3/4 - 14	1 1/8	2.06	5.0	5.0	2.6
12-6 FTX	3/4	3/8 - 18	1 1/8	1.87	5.0	5.0	3.3
12-8 FTX	3/4	1/2 - 14	1 1/8	2.06	5.0	5.0	3.3
12-16 FTX	3/4	1 - 11 1/2	1 3/8	2.25	5.0	5.0	2.0
12-20 FTX	3/4	1 1/4 - 11 1/2	1 11/16	2.36	3.0	3.0	1.6
14 FTX	7/8	3/4 - 14	1 1/4	2.09	5.0	5.0	2.9
16 FTX	1	1 - 11 1/2	1 3/8	2.30	4.5	4.5	2.0
16-8 FTX	1	1/2 - 14	1 3/8	2.11	4.5	4.5	2.9
16-12 FTX	1	3/4 - 14	1 3/8	2.11	4.5	4.5	2.6
16-20 FTX	1	1 1/4 - 11 1/2	1 11/16	2.40	3.0	3.0	1.6
16-24 FTX	1	1 1/2 - 11 1/2	2	2.50	3.0	3.0	1.3
20 FTX	1 1/4	1 1/4 - 11 1/2	1 11/16	2.45	3.0	3.0	1.6
20-16 FTX	1 1/4	1 - 11 1/2	1 11/16	2.42	3.0	3.0	2.0
20-24 FTX	1 1/4	1 1/2 - 11 1/2	2	2.55	3.0	3.0	1.3
24 FTX	1 1/2	1 1/2 - 11 1/2	2	2.68	3.0	3.0	1.3
24-16 FTX	1 1/2	1 - 11 1/2	2	2.62	3.0	3.0	2.0
24-20 FTX	1 1/2	1 1/4 - 11 1/2	2	2.66	3.0	3.0	1.6
24-32 FTX	1 1/2	2 - 11 1/2	2 5/8	2.86	2.0	2.0	1.0
32 FTX	2	2 - 11 1/2	2 5/8	3.11	2.0	2.0	1.0
32-24 FTX	2	1 1/2 - 11 1/2	2 5/8	3.08	2.0	2.0	1.3
40 FTX	2 1/2	2 1/2 - 8	3 1/4	3.38	1.0	1.0	0.5

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TUBE FITTING PART #	END SIZE		C (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF			-S	-SS	-B
4 FFTX	1/4	1/8 - 27	1/2	1.81	6.0	6.0	3.3
4-4 FFTX	1/4	1/4 - 18	9/16	2.25	6.0	6.0	3.3
6 FFTX	3/8	1/4 - 18	5/8	2.25	6.0	6.0	3.3
6-6 FFTX	3/8	3/8 - 18	3/4	2.50	6.0	6.0	3.3
8 FFTX	1/2	3/8 - 18	13/16	2.75	6.0	6.0	3.3
8-8 FFTX	1/2	1/2 - 14	15/16	2.80	6.0	6.0	3.3
10 FFTX	5/8	1/2 - 14	15/16	3.12	5.0	5.0	3.3
12 FFTX	3/4	3/4 - 14	1 1/8	3.50	5.0	5.0	2.6

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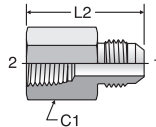


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GTX

Female Connector
37° Flare / NPTF

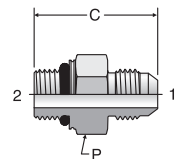
SAE 070103
HPD Base # 0203



F87OMX

Male Connector – ISO 6149
37° Flare / ISO 6149

SAE 070187



TUBE FITTING PART #	END SIZE		C1 HEX (in.)	L2 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2			-S	-SS	-B
	(in.)	NPTF					
2 GTX	1/8	1/8 - 27	9/16	1.12	6.0	6.0	3.3
3 GTX	3/16	1/8 - 27	9/16	1.13	6.0	6.0	3.3
4 GTX	1/4	1/8 - 27	9/16	1.19	6.0	6.0	3.3
4-4 GTX	1/4	1/4 - 18	3/4	1.39	6.0	6.0	3.3
4-6 GTX	1/4	3/8 - 18	7/8	1.45	6.0	6.0	3.3
4-8 GTX	1/4	1/2 - 14	1 1/8	1.68	6.0	6.0	3.3
5 GTX	5/16	1/8 - 27	9/16	1.17	6.0	6.0	3.3
5-4 GTX	5/16	1/4 - 18	3/4	1.39	6.0	6.0	3.3
6 GTX	3/8	1/4 - 18	3/4	1.40	6.0	6.0	3.3
6-2 GTX	3/8	1/8 - 27	5/8	1.19	6.0	6.0	3.3
6-6 GTX	3/8	3/8 - 18	7/8	1.46	6.0	6.0	3.3
6-8 GTX	3/8	1/2 - 14	1 1/8	1.69	5.0	5.0	3.3
8 GTX	1/2	3/8 - 18	7/8	1.56	6.0	6.0	3.3
8-4 GTX	1/2	1/4 - 18	13/16	1.55	6.0	6.0	3.3
8-8 GTX	1/2	1/2 - 14	1 1/8	1.79	5.0	5.0	3.3
8-12 GTX	1/2	3/4 - 14	1 3/8	1.85	4.0	4.0	2.6
10 GTX	5/8	1/2 - 14	1 1/8	1.89	5.0	5.0	3.3
10-12 GTX	5/8	3/4 - 14	1 3/8	1.95	4.0	4.0	2.6
12 GTX	3/4	3/4 - 14	1 3/8	2.06	4.0	4.0	2.6
12-8 GTX	3/4	1/2 - 14	1 1/8	2.05	5.0	5.0	2.6
12-16 GTX	3/4	1 - 11 1/2	1 5/8	2.30	3.0	3.0	2.0
14 GTX	7/8	3/4 - 14	1 3/8	2.06	4.0	4.0	2.6
16 GTX	1	1 - 11 1/2	1 5/8	2.35	3.0	3.0	2.0
16-12 GTX	1	3/4 - 14	1 3/8	2.13	4.0	4.0	2.6
16-20 GTX	1	1 1/4 - 11 1/2	2	2.44	2.5	2.5	1.6
20 GTX	1 1/4	1 1/4 - 11 1/2	2	2.49	2.5	2.5	1.6
20-16 GTX	1 1/4	1 - 11 1/2	1 3/4	2.47	3.0	3.0	2.0
24 GTX	1 1/2	1 1/2 - 11 1/2	2 3/8	2.62	2.0	2.0	1.3
32 GTX	2	2 - 11 1/2	2 7/8	2.97	1.5	1.5	1.0

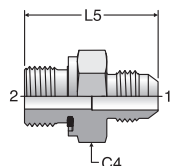
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TUBE FITTING PART #	END SIZE		Male Metric Parallel Thread	C (mm)	P (mm)	Dynamic Pressure (x 1,000 PSI)		
	1	2				S	SS	B
	(mm)	(in.)						
4M10F87OMX	6	1/4	M10x1	30.0	14	7.2	5.0	3.3
5M12F87OMX	8	5/16	M12x1.5	33.1	19	6.0	5.0	3.3
6M14F87OMX	10	3/8	M14x1.5	34.1	19	6.0	5.0	3.3
6M16F87OMX	10	3/8	M16x1.5	35.5	22	6.0	5.0	3.3
8M16F87OMX	12	1/2	M16x1.5	38.0	22	6.0	5.0	3.3
8M18F87OMX	12	1/2	M18x1.5	39.1	24	5.0	5.0	3.3
10M18F87OMX	14, 15, 16	5/8	M18x1.5	43.1	24	5.0	5.0	3.3
10M22F87OMX	14, 15, 16	5/8	M22x1.5	43.5	27	5.0	5.0	3.3
12M22F87OMX	18, 20	3/4	M22x1.5	48.0	27	5.0	5.0	3.3
12M27F87OMX	18, 20	3/4	M27x2	50.9	32	5.0	5.0	3.3
16M27F87OMX	25	1	M27x2	50.5	36	5.0	5.0	3.3
16M33F87OMX	25	1	M33x2	52.7	41	4.0	4.0	2.6
20M42F87OMX	30, 32	1 1/4	M42x2	55.0	50	4.0	3.0	2.0
24M48F87OMX	38	1 1/2	M48x2	59.4	55	3.0	2.0	1.3

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F82EDMX

Male Connector – Metric
37° Flare / Metric-ED



TUBE FITTING PART #	END SIZE		Male Metric Parallel Thread	C4 (mm)	L5 (mm)	Dynamic Pressure (x 1,000 PSI)		
	1	2				S	SS	B
	(mm)	(in.)						
4M10F82EDMX	6	1/4	M10x1	14	30.0	7.2	5.0	3.3
5M12F82EDMX	8	5/16	M12x1.5	17	34.0	6.0	5.0	3.3
6M14F82EDMX	10	3/8	M14x1.5	19	35.0	6.0	5.0	3.3
6M16F82EDMX	10	3/8	M16x1.5	22	36.0	6.0	5.0	3.3
8M16F82EDMX	12	1/2	M16x1.5	22	38.5	6.0	5.0	3.3
8M18F82EDMX	12	1/2	M18x1.5	24	38.5	5.0	5.0	3.3
10M18F82EDMX	14,15,16	5/8	M18x1.5	24	42.5	5.0	5.0	3.3
10M22F82EDMX	14,15,16	5/8	M22x1.5	27	44.5	5.0	5.0	3.3
12M22F82EDMX	18,20	3/4	M22x1.5	27	49.0	5.0	5.0	3.3
12M27F82EDMX	18,20	3/4	M27x2	32	51.0	5.0	5.0	3.3
16M33F82EDMX	25	1	M33x2	41	54.5	4.0	4.0	2.6
20M42F82EDMX	30,32	1 1/4	M42x2	50	60.0	4.0	3.0	2.0

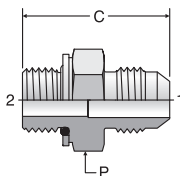
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Dimensions and pressures for reference only, subject to change.

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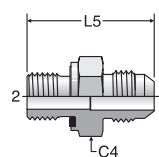
F80MX

Male Connector – Metric
37° Flare / Metric-ORR



F42EDMX

Male Connector – BSPP
37° Flare / BSPP-ED



TUBE FITTING PART #	END SIZE			C (mm)	P (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2			S	SS	B
	(mm)	(in.)	Male Metric Parallel Thread					
4M10F8OMX	6	1/4	M10x1	30.0	14	5.0	5.0	3.3
5M12F8OMX	8	5/16	M12x1.5	33.1	19	6.0	6.0	3.3
6M14F8OMX	10	3/8	M14x1.5	34.1	19	5.0	5.0	3.3
8M16F8OMX	12	1/2	M16x1.5	38.0	22	5.0	5.0	3.3
8M18F8OMX	12	1/2	M18x1.5	39.1	24	3.6	3.6	2.3
10M18F8OMX	14, 15, 16	5/8	M18x1.5	43.1	24	3.6	3.6	2.3
10M22F8OMX	14, 15, 16	5/8	M22x1.5	43.5	27	3.6	3.6	2.3
12M22F8OMX	18, 20	3/4	M22x1.5	48.0	27	3.6	3.6	2.3
12M24F8OMX	18, 20	3/4	M24x1.5	44.5	30	3.0	3.0	2.0
12M27F8OMX	18, 20	3/4	M27x2	50.9	32	3.0	3.0	2.0
16M27F8OMX	25	1	M27x2	50.5	36	3.0	3.0	2.0
16M33F8OMX	25	1	M33x2	52.7	41	3.0	3.0	2.0
20M42F8OMX	30, 32	1 1/4	M42x2	54.9	50	3.0	3.0	2.0
24M48F8OMX	38	1 1/2	M48x2	59.4	55	2.0	2.0	1.3

Note: If F80MX is not available, use F82EDMX.

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TUBE FITTING PART #	END SIZE		C4 (mm)	L5 (mm)	Dynamic Pressure (x 1,000 PSI)			
	1	2			S	SS	B	
	(mm)	(in.)						BSPP
4F42EDMX	6	1/4	1/8 - 28	14	30.2	7.2	5.0	3.3
4-4F42EDMX	6	1/4	1/4 - 19	19	35.0	6.0	5.0	3.3
4-6F42EDMX	6	1/4	3/8 - 19	22	36.0	6.0	5.0	3.3
4-8F42EDMX	6	1/4	1/2 - 14	27	39.5	5.0	5.0	3.3
5F42EDMX	8	5/16	1/8 - 28	14	30.0	6.0	5.0	3.3
5-4F42EDMX	8	5/16	1/4 - 19	19	35.0	6.0	5.0	3.3
5-6F42EDMX	8	5/16	3/8 - 19	22	36.0	6.0	5.0	3.3
6-2F42EDMX	10	3/8	1/8 - 28	17	31.2	6.0	5.0	3.3
6F42EDMX	10	3/8	1/4 - 19	19	35.0	6.0	5.0	3.3
6-6F42EDMX	10	3/8	3/8 - 19	22	36.0	6.0	5.0	3.3
6-8F42EDMX	10	3/8	1/2 - 14	27	39.5	5.0	5.0	3.3
8F42EDMX	12	1/2	3/8 - 19	22	38.6	6.0	5.0	3.3
8-4F42EDMX	12	1/2	1/4 - 19	19	39.0	6.0	5.0	3.3
8-8F42EDMX	12	1/2	1/2 - 14	27	42.0	5.0	5.0	3.3
8-12F42EDMX	12	1/2	3/4 - 14	32	45.7	5.0	5.0	3.3
10F42EDMX	14, 15, 16	5/8	1/2 - 14	27	45.0	5.0	5.0	3.3
10-6F42EDMX	14, 15, 16	5/8	3/8 - 19	24	43.0	5.0	5.0	3.3
10-12F42EDMX	14, 15, 16	5/8	3/4 - 14	32	48.2	5.0	5.0	3.3
12F42EDMX	18, 20	3/4	3/4 - 14	32	51.0	5.0	5.0	3.3
12-6F42EDMX	18, 20	3/4	3/8 - 19	27	50.0	5.0	5.0	3.3
12-8F42EDMX	18, 20	3/4	1/2 - 14	27	49.0	5.0	5.0	3.3
12-16F42EDMX	18, 20	3/4	1 - 11	41	53.5	4.0	4.0	2.6
16F42EDMX	25	1	1 - 11	41	55.0	4.0	4.0	2.6
16-12F42EDMX	25	1	3/4 - 14	36	53.0	4.0	4.0	2.6
16-20F42EDMX	25	1	1 1/4 - 11	50	59.0	4.0	4.0	2.6
20-16F42EDMX	30, 32	1 1/4	1 - 11	46	62.0	4.0	3.0	2.0
20F42EDMX	30, 32	1 1/4	1 1/4 - 11	50	60.0	4.0	3.0	2.0
20-24F42EDMX	30, 32	1 1/4	1 1/2 - 11	55	64.0	3.0	2.0	1.3
24F42EDMX	38	1 1/2	1 1/2 - 11	55	67.0	3.0	2.0	1.3
24-20F42EDMX	38	1 1/2	1 1/4 - 11	50	62.0	3.0	3.0	2.0

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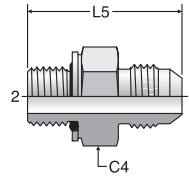
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F4OMX

Male Connector – BSPP
37° Flare / BSPP-ORR



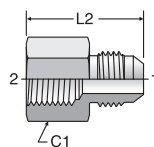
TUBE FITTING PART #	END SIZE			C4 (mm)	L5 (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2			S	SS	B
	(mm)	(in.)	BSPP					
4F4OMX	6	1/4	1/8 - 28	17	28.3	5.0	5.0	3.3
4-4F4OMX	6	1/4	1/4 - 19	19	32.2	5.0	5.0	3.3
4-6F4OMX	6	1/4	3/8 - 19	22	33.1	5.0	5.0	3.3
4-8F4OMX	6	1/4	1/2 - 14	30	38.6	5.0	5.0	3.3
5-4F4OMX	8	5/16	1/4 - 19	19	32.2	5.0	5.0	3.3
5-6F4OMX	8	5/16	3/8 - 19	22	33.1	5.0	5.0	3.3
6F4OMX	10	3/8	1/4 - 19	19	32.5	5.0	5.0	3.3
6-6F4OMX	10	3/8	3/8 - 19	22	33.4	5.0	5.0	3.3
6-8F4OMX	10	3/8	1/2 - 14	30	38.0	5.0	5.0	3.3
8-4F4OMX	12	1/2	1/4 - 19	19	35.0	5.0	5.0	3.3
8F4OMX	12	1/2	3/8 - 19	22	35.9	5.0	5.0	3.3
8-8F4OMX	12	1/2	1/2 - 14	30	41.4	5.0	5.0	3.3
8-12F4OMX	12	1/2	3/4 - 14	36	42.2	4.0	4.0	2.6
10-6F4OMX	14, 15, 16	5/8	3/8 - 19	24	39.1	5.0	5.0	3.3
10F4OMX	14, 15, 16	5/8	1/2 - 14	30	43.1	5.0	5.0	3.3
12-8F4OMX	18, 20	3/4	1/2 - 14	30	46.7	5.0	5.0	3.3
12F4OMX	18, 20	3/4	3/4 - 14	36	47.5	4.0	3.6	2.3
12-16F4OMX	18, 20	3/4	1 - 11	46	52.6	4.0	3.6	2.3
16-12F4OMX	25	1	3/4 - 14	36	48.5	4.0	3.6	2.3
16F4OMX	25	1	1 - 11	46	53.6	4.0	3.6	2.3
16-20F4OMX	25	1	1 1/4 - 11	50	54.7	3.6	2.5	1.6
20F4OMX	30, 32	1 1/4	1 1/4 - 11	50	56.0	3.6	2.5	1.6
24-20F4OMX	38	1 1/2	1 1/4 - 11	50	60.4	3.0	2.0	1.3
24F4OMX	38	1 1/2	1 1/2 - 11	55	61.1	3.0	2.0	1.3

Note: If F4OMX is not available, use F42EDMX.

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G4MX

Female Connector – BSPP
37° Flare / BSPP

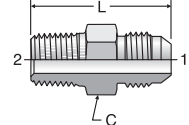


TUBE FITTING PART #	END SIZE			C1 (mm)	L2 (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2 BSPP			S	SS	B
	(mm)	(in.)						
4G4MX	6	1/4	1/8 - 28	17	30.2	4.5	4.5	2.9
4-4G4MX	6	1/4	1/4 - 19	19	35.3	5.8	5.8	3.3
5G4MX	8	5/16	1/8 - 28	17	29.7	4.5	4.5	2.9
6G4MX	10	3/8	1/4 - 19	19	35.6	5.8	5.8	3.3
6-6G4MX	10	3/8	3/8 - 19	22	37.1	5.0	5.0	3.3
8G4MX	12	1/2	3/8 - 19	22	39.6	5.0	5.0	3.3
8-8G4MX	12	1/2	1/2 - 14	30	45.5	5.0	5.0	3.3
10G4MX	14,15,16	5/8	1/2 - 14	30	48.0	5.0	5.0	3.3
12G4MX	18, 20	3/4	3/4 - 14	36	52.3	4.5	4.5	2.9
16G4MX	25	1	1 - 11	46	59.7	4.0	4.0	2.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

F3MX

Male Connector – BSPT
37° Flare / BSPT

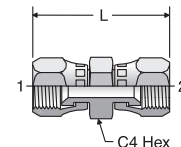


TUBE FITTING PART #	END SIZE			C HEX (mm)	L (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2			S	SS	B
	(mm)	(in.)	BSPT					
4F3MX	6	1/4	1/8 - 28	13	30.7	4.5	4.5	2.9
4-4F3MX	6	1/4	1/4 - 19	14	35.3	4.5	4.5	2.9
5F3MX	8	5/16	1/8 - 28	14	30.7	4.5	4.5	2.9
5-4F3MX	8	5/16	1/4 - 19	14	35.3	4.5	4.5	2.9
6F3MX	10	3/8	1/4 - 19	17	35.6	4.5	4.5	2.9
6-6F3MX	10	3/8	3/8 - 19	19	36.4	4.5	4.5	2.9
6-8F3MX	10	3/8	1/2 - 14	22	42.9	4.5	4.5	2.9
8-4F3MX	12	1/2	1/4 - 19	19	38.1	4.5	4.5	2.9
8F3MX	12	1/2	3/8 - 19	19	38.9	4.5	4.5	2.9
8-8F3MX	12	1/2	1/2 - 14	22	45.5	4.5	4.5	2.9
10-6F3MX	14, 15, 16	5/8	3/8 - 19	24	43.2	4.5	4.5	2.9
10F3MX	14, 15, 16	5/8	1/2 - 14	24	48.0	4.5	4.5	2.9
10-12F3MX	14, 15, 16	5/8	3/4 - 14	27	48.3	2.3	2.3	1.5
12-8F3MX	18, 20	3/4	1/2 - 14	27	50.8	4.5	4.5	2.9
12F3MX	18, 20	3/4	3/4 - 14	27	50.8	2.3	2.3	1.5
12-16F3MX	18, 20	3/4	1 - 11	36	57.1	2.3	2.3	1.5
16-12F3MX	25	1	3/4 - 14	36	53.6	2.3	2.3	1.5
16F3MX	25	1	1 - 11	36	58.5	2.3	2.3	1.5
20-16F3MX	30, 32	1 1/4	1 - 11	46	61.4	2.3	2.3	1.5
20F3MX	30, 32	1 1/4	1 1/4 - 11	46	62.2	2.3	2.3	1.5
24F3MX	38	1 1/2	1 1/2 - 11	50	68.1	2.3	2.0	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

HX6

Swivel Nut Union
37° Swivel / 37° Swivel



SAE 070108
HPD Base # 0606

TUBE FITTING PART #	END SIZE	C4 HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2 (in.)			-S	-SS	-B
4 HX6	1/4	9/16	1.48	7.5	7.7	3.3
6 HX6	3/8	11/16	1.75	6.0	6.0	3.3
8 HX6	1/2	7/8	2.02	6.0	6.0	3.3
10 HX6	5/8	1	2.24	5.0	5.0	3.3
12 HX6	3/4	1 1/4	2.31	5.0	5.0	3.3
16 HX6	1	1 1/2	2.75	4.0	3.0	2.6

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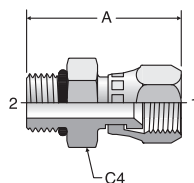
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

F650X

Swivel Straight Thread Connector
37° Swivel / SAE-ORB

HPD Base # 0506

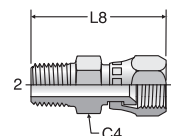


F6X

Swivel Connector
37° Swivel / NPTF

SAE 070106

HPD Base # 0106



TUBE FITTING PART #	END SIZE		A (in.)	C4 HEX (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 UN/UNF-2A			-S	-SS	-B
4 F650X	1/4	7/16 - 20	1.31	9/16	7.5	7.5	3.3
4-6 F650X	1/4	9/16 - 18	1.33	11/16	6.0	7.2	3.3
5 F650X	5/16	1/2 - 20	1.39	5/8	6.0	7.2	3.3
6 F650X	3/8	9/16 - 18	1.43	11/16	6.0	7.2	3.3
6-4 F650X	3/8	7/16 - 20	1.37	9/16	6.0	7.2	3.3
6-8 F650X	3/8	3/4 - 16	1.50	7/8	6.0	7.2	3.3
8 F650X	1/2	3/4 - 16	1.61	7/8	6.0	7.2	3.3
8-6 F650X	1/2	9/16 - 18	1.54	13/16	6.0	7.2	3.3
8-10 F650X	1/2	7/8 - 14	1.78	1	5.0	6.0	3.3
10 F650X	5/8	7/8 - 14	1.81	1	5.0	6.0	3.3
10-8 F650X	5/8	3/4 - 16	1.75	1	5.0	6.0	3.3
10-12 F650X	5/8	1 1/16 - 12	1.85	1 1/4	5.0	6.0	3.3
12 F650X	3/4	1 1/16 - 12	2.07	1 1/4	5.0	6.0	3.3
12-10 F650X	3/4	7/8 - 14	2.10	1 1/4	5.0	6.0	3.3
12-16 F650X	3/4	1 5/16 - 12	2.04	1 1/2	4.5	4.5	2.9
16 F650X	1	1 5/16 - 12	2.14	1 1/2	4.0	4.0	2.6
16-12 F650X	1	1 1/16 - 12	2.14	1 1/2	4.0	4.0	2.6
20 F650X	1 1/4	1 5/8 - 12	2.55	2	4.0	4.0	2.6

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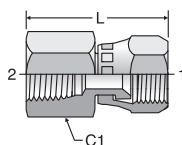
TUBE FITTING PART #	END SIZE		C4 (in.)	L8 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF			-S	-SS	-B
4 F6X	1/4	1/8 - 27	9/16	1.21	6.0	6.0	3.3
4-4 F6X	1/4	1/4 - 18	9/16	1.54	6.0	6.0	3.3
5-4 F6X	5/16	1/4 - 18	5/8	1.60	6.0	6.0	3.3
6 F6X	3/8	1/4 - 18	11/16	1.66	5.0	5.0	3.3
6-6 F6X	3/8	3/8 - 18	3/4	1.69	5.0	5.0	3.3
8 F6X	1/2	3/8 - 18	7/8	1.74	5.0	5.0	3.3
8-8 F6X	1/2	1/2 - 14	7/8	1.97	5.0	5.0	3.3
10 F6X	5/8	1/2 - 14	1	2.05	5.0	5.0	3.3
10-6 F6X	5/8	3/8 - 18	1	1.84	5.0	5.0	3.3
12 F6X	3/4	3/4 - 14	1 1/4	2.15	5.0	5.0	3.3
12-8 F6X	3/4	1/2 - 14	1 1/4	2.15	5.0	5.0	3.3
16 F6X	1	1 - 11 1/2	1 1/2	2.50	3.6	3.6	2.3
16-12 F6X	1	3/4 - 14	1 1/2	2.33	3.6	3.6	2.3
20 F6X	1 1/4	1 1/4 - 11 1/2	2	2.76	3.0	3.0	2.0
24 F6X	1 1/2	1 1/2 - 11 1/2	2 1/4	3.05	2.5	2.5	1.6
32 F6X	2	2 - 11 1/2	2 5/8	3.53	2.0	2.0	1.3

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G6X

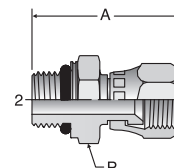
Swivel Nut Female Connector
37° Swivel / NPTF

HPD Base # 0206



F6870MX

Swivel - ISO 6149 Connector
37° Swivel / ISO 6149



TUBE FITTING PART #	END SIZE		C1 (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF			-S	-SS	-B
4 G6X	1/4	1/8 - 27	9/16	1.27	6.0	6.0	3.3
4-4 G6X	1/4	1/4 - 18	3/4	1.43	6.0	6.0	3.3
6 G6X	3/8	1/4 - 18	3/4	1.44	5.0	5.0	3.3
6-6 G6X	3/8	3/8 - 18	7/8	1.54	5.0	5.0	3.3
6-8 G6X	3/8	1/2 - 14	1 1/8	1.80	5.0	5.0	3.3
8 G6X	1/2	3/8 - 18	7/8	1.69	5.0	5.0	3.3
8-8 G6X	1/2	1/2 - 14	1 1/8	1.94	5.0	5.0	3.3
10 G6X	5/8	1/2 - 14	1 1/8	1.98	5.0	5.0	3.3
12 G6X	3/4	3/4 - 14	1 3/8	2.01	4.0	4.0	2.6
12-8 G6X	3/4	1/2 - 14	1 1/4	2.00	5.0	5.0	3.3
16 G6X	1	1 - 11 1/2	1 5/8	2.48	3.0	3.0	2.0
20 G6X	1 1/4	1 1/4 - 11 1/2	2	2.86	2.5	2.5	1.6
24 G6X	1 1/2	1 1/2 - 11 1/2	2 3/8	3.01	2.0	2.0	1.3
32 G6X	2	2 - 11 1/2	2 7/8	3.40	1.5	1.5	1.0

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TUBE FITTING PART #	END SIZE		A (mm)	P (mm)	Dynamic Pressure (x 1,000 PSI)		
	1 (mm)	2 Male Metric Parallel Thread			S	SS	B
4M10F6870MX	6	1/4 M10x1	31.9	14	7.2	5.0	3.3
5M12F6870MX	8	5/16 M12x1.5	35.6	17	6.0	5.0	3.3
6M14F6870MX	10	3/8 M14x1.5	37.2	19	5.0	5.0	3.3
8M16F6870MX	12	1/2 M16x1.5	41.8	22	5.0	5.0	3.3
10M22F6870MX	14, 15, 16	5/8 M22x1.5	47.6	27	5.0	5.0	3.3
12M27F6870MX	18, 20	3/4 M27x2	51.7	32	5.0	5.0	3.3
16M33F6870MX	25	1 M33x2	56.9	41	3.6	3.6	2.3

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Dimensions and pressures for reference only, subject to change.



B20

Parker Hannifin Corporation
Tube Fittings Division
Columbus, Ohio
<http://www.parker.com/tfd>

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FAQs

ASSEMBLY

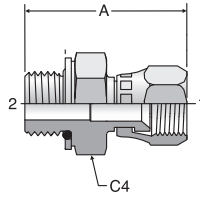
TUBE FAB
EQUIP

GEN TECH

[Click here for CADs, Support Resources or to Configure Parts Online](#)

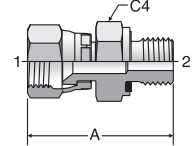
F68OMX

Swivel Metric ORR Connector
Metric-ORR / 37° Swivel



F682EDMX

Metric-ED / 37° Swivel



TUBE FITTING PART #	END SIZE			A (mm)	C4 (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2			S	SS	B
	(mm)	(in.)	Male Metric					
			Parallel Thread					
4M10F68OMX	6	1/4	M10x1	30.2	14	5.0	5.0	3.3
5M12F68OMX	8	5/16	M12x1.5	35.6	17	6.0	6.0	3.3
6M14F68OMX	10	3/8	M14x1.5	37.2	19	5.0	5.0	3.3
8M16F68OMX	12	1/2	M16x1.5	42.4	22	3.6	3.6	2.3
10M22F68OMX	14, 15, 16	5/8	M22x1.5	47.9	27	3.6	3.6	2.3
12M27F68OMX	18, 20	3/4	M27x2	52.3	32	3.0	3.0	2.0
16M33F68OMX	25	1	M33x2	57.4	41	3.0	3.0	2.0

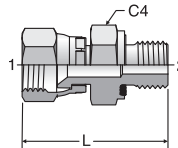
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TUBE FITTING PART #	END SIZE			A (mm)	C4 (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2			S	SS	B
	(mm)	(in.)	Male Metric Parallel Thread					
4M10F682EDMX	6	1/4	M10x1	29.7	14	7.2	5.0	3.3
5M12F682EDMX	8	5/16	M12x1.5	36.6	17	6.0	5.0	3.3
6M14F682EDMX	10	3/8	M14x1.5	38.2	19	5.0	5.0	3.3
8M16F682EDMX	12	1/2	M16x1.5	42.3	22	5.0	5.0	3.3
10M22F682EDMX	14, 15, 16	5/8	M22x1.5	48.6	27	5.0	5.0	3.3
12M27F682EDMX	18, 20	3/4	M27x2	51.7	32	5.0	5.0	3.3
16M33F682EDMX	25	1	M33x2	59.0	41	3.6	3.6	2.3

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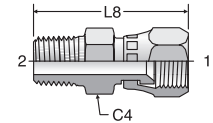
F642EDMX

Swivel – BSPP Connector
37° Swivel / BSPP-ED



F63MX

Swivel – BSPT Connector
37° Swivel / BSPT



TUBE FITTING PART #	END SIZE		C4 (mm)	L (mm)	Dynamic Pressure (x 1,000 PSI)			
	1				2 BSPP	S	SS	B
	(mm)	(in.)						
4F642EDMX	6	1/4	1/8 - 28	14	29.7	7.2	5.0	3.3
4-4F642EDMX	6	1/4	1/4 - 19	19	35.2	6.0	5.0	3.3
5F642EDMX	8	5/16	1/8 - 28	14	32.8	6.0	5.0	3.3
5-4F642EDMX	8	5/16	1/4 - 19	19	37.2	6.0	6.0	3.3
6F642EDMX	10	3/8	1/4 - 19	19	38.7	5.0	5.0	3.3
6-6F642EDMX	10	3/8	3/8 - 19	22	39.2	5.0	5.0	3.3
8F642EDMX	12	1/2	3/8 - 19	22	42.3	5.0	5.0	3.3
8-4F642EDMX	12	1/2	1/4 - 19	19	42.3	5.0	5.0	3.3
10F642EDMX	14, 15, 16	5/8	1/2 - 14	27	48.6	5.0	5.0	3.3
10-6F642EDMX	14, 15, 16	5/8	3/8 - 19	22	46.6	5.0	5.0	3.3
12F642EDMX	18, 20	3/4	3/4 - 14	32	51.7	5.0	5.0	3.3
12-8F642EDMX	18, 20	3/4	1/2 - 14	27	49.7	5.0	5.0	3.3
16F642EDMX	25	1	1 - 11	41	59.0	3.6	3.6	2.3
16-12F642EDMX	25	1	3/4 - 14	32	57.0	3.6	3.6	2.3
20F642EDMX	28, 30, 32	1 1/4	1 1/4 - 11	50	63.4	3.6	3.0	2.0
20-16F642EDMX	28, 30, 32	1 1/4	1 - 11	41	65.9	3.6	3.0	2.0
24F642EDMX	35, 38	1 1/2	1 1/2 - 11	55	74.1	2.5	2.0	1.3
24-20F642EDMX	35, 38	1 1/2	1 1/4 - 11	50	69.1	2.5	2.0	1.3

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TUBE FITTING PART #	END SIZE			C4 (mm)	L8 (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2			S	SS	B
	(mm)	(in.)	BSPT					
4F63MX	6	1/4	1/8 - 20	13	31.0	4.5	4.5	2.9
4-4F63MX	6	1/4	1/4 - 19	14	35.7	4.5	4.5	2.9
5-4F63MX	8	5/16	1/4 - 19	14	38.4	4.5	4.5	2.9
6F63MX	10	3/8	1/4 - 19	14	39.7	4.5	4.5	2.9
6-6F63MX	10	3/8	3/8 - 19	19	39.7	4.5	4.5	2.9
8-4F63MX	12	1/2	1/4 - 19	19	42.8	4.5	4.5	2.9
8F63MX	12	1/2	3/8 - 19	19	42.8	4.5	4.5	2.9
10F63MX	14, 15, 16	5/8	1/2 - 14	22	51.2	4.5	4.5	2.9
12-8F63MX	20	3/4	1/2 - 14	27	53.2	4.5	4.5	2.9
12F63MX	18, 20	3/4	3/4 - 14	27	53.2	2.3	2.3	1.5
16-12F63MX	25	1	3/4 - 14	32	55.7	2.3	2.3	1.5
16F63MX	25	1	1 - 11	36	62.5	2.3	2.3	1.5
20F63MX	30, 32	1 1/4	1 1/4 - 11	46	70.6	2.3	2.3	1.5

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Dimensions and pressures for reference only, subject to change.



WNTX

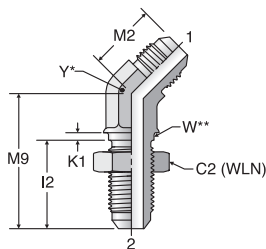
45° Bulkhead Union Elbow 37° Flare / 37° Flare

SAE 070801

HPD Base # 3353

WNTX-WLN – Body with locknut

(See page B10 for WLN)



Y* – Across wrench flats.

W** – Bulkhead pilot dia.
recommended clearance hole
+.015 over W dia.

TUBE FITTING PART #	END SIZE	C2 HEX (in.)	I2 (in.)	K1 (in.)	M2 (in.)	M9 (in.)	W DIA (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2 (in.)									-S	-SS	-B
4 WNTX	1/4	11/16	1.02	0.09	0.72	1.53	0.44	0.25	7/16	7.5	7.7	3.3
5 WNTX	5/16	3/4	1.02	0.09	0.77	1.66	0.56	0.25	9/16	6.0	6.0	3.3
6 WNTX	3/8	13/16	1.09	0.09	0.83	1.67	0.56	0.35	9/16	6.0	6.0	3.3
8 WNTX	1/2	1	1.25	0.13	0.98	1.94	0.75	0.35	3/4	6.0	6.0	3.3
10 WNTX	5/8	1 1/8	1.39	0.13	1.11	2.17	0.82	0.35	7/8	5.0	5.0	3.3
12 WNTX	3/4	1 3/8	1.56	0.13	1.28	2.44	1.06	0.35	1 1/16	5.0	5.0	2.9
16 WNTX	1	1 5/8	1.56	0.13	1.47	2.56	1.31	0.35	1 5/16	4.0	3.5	2.3
20 WNTX	1 1/4	1 7/8	1.61	0.13	1.59	2.66	1.63	0.35	1 5/8	4.0	3.0	2.0

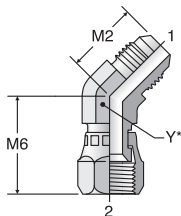
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

V6X

45° Swivel Nut Elbow 37° Flare / 37° Swivel

SAE 070321

HPD Base # 3703



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE	M2 (in.)	M6 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2 (in.)				-S	-SS	-B
4 V6X	1/4	0.72	0.94	7/16	7.5	7.7	3.3
5 V6X	5/16	0.77	1.00	9/16	6.0	6.0	3.3
6 V6X	3/8	0.83	1.12	9/16	6.0	6.0	3.3
8 V6X	1/2	0.98	1.28	3/4	6.0	6.0	3.3
10 V6X	5/8	1.11	1.44	7/8	5.0	5.0	3.3
12 V6X	3/4	1.28	1.50	1 1/16	5.0	5.0	3.3
14 V6X	7/8	1.45	1.62	1 3/16	5.0	5.0	3.3
16 V6X	1	1.47	1.75	1 5/16	4.0	3.0	2.6
20 V6X	1 1/4	1.59	2.03	1 5/8	4.0	3.0	2.6
24 V6X	1 1/2	1.78	2.18	1 7/8	3.0	2.5	2.0
32 V6X	2	2.22	2.76	2 1/2	2.0	1.5	1.3

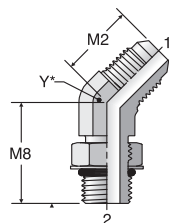
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Dimensions and pressures for reference only, subject to change.

V50X

45° Straight Thread Elbow
37° Flare / SAE-ORB

SAE 070320
HPD Base # 3503



Y* – Across wrench flats

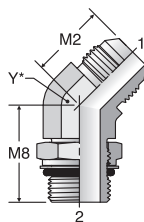
TUBE FITTING PART #	END SIZE		M2 (in.)	M8 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2				-S	-SS	-B
	(in.)	UN/UNF-2A						
4 V50X	1/4	7/16 - 20	0.72	1.05	7/16	6.0	6.0	3.3
4-6 V50X	1/4	9/16 - 18	0.82	1.14	9/16	6.0	5.4	3.3
5 V50X	5/16	1/2 - 20	0.77	1.05	9/16	6.0	5.4	3.3
6 V50X	3/8	9/16 - 18	0.83	1.14	9/16	6.0	5.4	3.3
6-4 V50X	3/8	7/16 - 20	0.83	1.08	9/16	6.0	5.4	3.3
6-8 V50X	3/8	3/4 - 16	0.86	1.30	3/4	6.0	5.4	3.3
8 V50X	1/2	3/4 - 16	0.98	1.30	3/4	6.0	5.4	3.3
8-6 V50X	1/2	9/16 - 18	0.98	1.09	3/4	6.0	5.4	3.3
8-10 V50X	1/2	7/8 - 14	1.00	1.52	7/8	5.0	5.4	3.3
8-12 V50X	1/2	1 1/16 - 12	1.04	1.73	1 1/16	5.0	5.4	3.3
10 V50X	5/8	7/8 - 14	1.11	1.52	7/8	5.0	5.4	3.3
10-8 V50X	5/8	3/4 - 16	1.11	1.38	7/8	5.0	5.4	3.3
10-12 V50X	5/8	1 1/16 - 12	1.16	1.73	1 1/16	5.0	5.4	3.3
12 V50X	3/4	1 1/16 - 12	1.28	1.73	1 1/16	5.0	5.4	3.3
12-10 V50X	3/4	7/8 - 14	1.28	1.58	1 1/16	5.0	5.4	3.3
12-16 V50X	3/4	1 5/16 - 12	1.42	1.86	1 5/16	4.0	3.0	2.6
14 V50X	7/8	1 3/16 - 12	1.45	1.86	1 5/16	5.0	5.4	3.3
16 V50X	1	1 5/16 - 12	1.47	1.86	1 5/16	4.0	3.0	2.6
16-12 V50X	1	1 1/16 - 12	1.47	1.86	1 5/16	4.0	3.0	2.6
16-20 V50X	1	1 5/8 - 12	1.55	1.91	1 5/8	3.0	2.5	2.0
20 V50X	1 1/4	1 5/8 - 12	1.59	1.91	1 5/8	3.0	2.5	2.0
20-16 V50X	1 1/4	1 5/16 - 12	1.59	1.91	1 5/8	4.0	2.5	2.0
24 V50X	1 1/2	1 7/8 - 12	1.78	1.91	1 7/8	3.0	2.0	1.5
32 V50X	2	2 1/2 - 12	2.22	1.86	2 1/2	2.0	1.5	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

V87OMX

Male 45° Elbow – ISO 6149
37° Flare / ISO 6149

SAE 070387



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		Male Metric Parallel Thread	M2 (mm)	M8 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1	2					S	SS	B
	(mm)	(in.)							
4M12V87OMX	6	1/4	M12X1.5	19.6	27.0	13	6.0	6.0	3.3
6M14V87OMX	10	3/8	M14X1.5	21.1	28.0	14	6.0	6.0	3.3
8M16V87OMX	12	1/2	M16 X 1.5	24.9	33.0	19	5.0	5.0	3.3
10M22V87OMX	14, 15, 16	5/8	M22 X 1.5	28.2	37.5	22	5.0	5.0	3.3
12M27V87OMX	18, 20	3/4	M27 X 2.0	32.5	46.0	27	5.0	5.0	3.3
16M33V87OMX	25	1	M33 X 2.0	37.3	45.5	33	4.0	4.0	2.6

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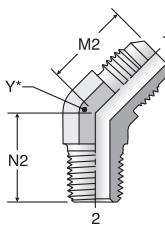
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

VTX

45° Male Elbow
37° Flare / NPTF

SAE 070302
HPD Base # 3103



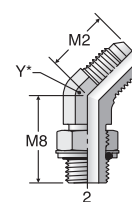
Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M2 (in.)	N2 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2				-S	-SS	-B
	(in.)	NPTF						
2 VTX	1/8	1/8 - 27	0.69	0.53	7/16	6.0	6.0	3.3
3 VTX	3/16	1/8 - 27	0.69	0.52	7/16	6.0	6.0	3.3
4 VTX	1/4	1/8 - 27	0.72	0.64	7/16	6.0	6.0	3.3
4-4 VTX	1/4	1/4 - 18	0.82	0.86	9/16	6.0	6.0	3.3
4-6 VTX	1/4	3/8 - 18	0.85	0.95	3/4	6.0	6.0	3.3
5 VTX	5/16	1/8 - 27	0.77	0.64	9/16	6.0	6.0	3.3
5-4 VTX	5/16	1/4 - 18	0.82	0.86	9/16	6.0	6.0	3.3
6 VTX	3/8	1/4 - 18	0.83	0.86	9/16	6.0	6.0	3.3
6-2 VTX	3/8	1/8 - 27	0.83	0.67	9/16	6.0	6.0	3.3
6-6 VTX	3/8	3/8 - 18	0.87	0.95	3/4	6.0	6.0	3.3
6-8 VTX	3/8	1/2 - 14	0.88	1.17	7/8	6.0	6.0	3.3
8 VTX	1/2	3/8 - 18	0.98	0.95	3/4	6.0	6.0	3.3
8-4 VTX	1/2	1/4 - 18	0.98	0.95	3/4	6.0	6.0	3.3
8-8 VTX	1/2	1/2 - 14	0.99	1.17	7/8	6.0	6.0	3.3
8-12 VTX	1/2	3/4 - 14	1.04	1.20	1 1/16	4.0	4.0	2.6
10 VTX	5/8	1/2 - 14	1.11	1.17	7/8	5.0	5.0	3.3
10-6 VTX	5/8	3/8 - 18	1.11	0.98	7/8	5.0	5.0	3.3
10-12 VTX	5/8	3/4 - 14	1.28	1.20	1 1/16	4.0	4.0	2.6
12 VTX	3/4	3/4 - 14	1.28	1.20	1 1/16	4.0	4.0	2.6
12-8 VTX	3/4	1/2 - 14	1.28	1.20	1 1/16	5.0	5.0	2.9
12-16 VTX	3/4	1 - 11 1/2	1.42	1.49	1 5/16	3.0	3.0	2.0
14 VTX	7/8	3/4 - 14	1.45	1.30	1 5/16	4.0	4.0	2.3
16 VTX	1	1 - 11 1/2	1.47	1.48	1 5/16	3.0	3.0	2.0
16-12 VTX	1	3/4 - 14	1.47	1.29	1 5/16	4.0	4.0	2.3
16-20 VTX	1	1 1/4 - 11 1/2	1.59	1.67	1 5/8	2.5	2.5	1.6
20 VTX	1 1/4	1 1/4 - 11 1/2	1.59	1.67	1 5/8	2.5	2.5	1.6
20-16 VTX	1 1/4	1 - 11 1/2	1.59	1.63	1 5/8	3.0	3.0	2.0
24 VTX	1 1/2	1 1/2 - 11 1/2	1.78	1.77	1 7/8	2.5	2.5	1.6
32 VTX	2	2 - 11 1/2	2.22	2.11	2 1/2	2.0	2.0	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

V40MX

Male 45° Elbow – BSPP
37° Flare / BSPP-ORR



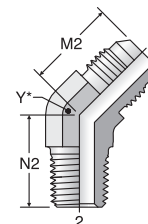
Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M2 (mm)	M8 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1	2				S	SS	B
	(mm)	(in.) BSPP						
4V40MX	6	1/4	1/8 - 28	18.3	26.5	11	3.6	2.3
6V40MX	10	3/8	1/4 - 19	21.1	29.0	14	3.6	2.3
8V40MX	12	1/2	3/8 - 19	24.9	33.0	19	3.6	2.3
10V40MX	14,15,16	5/8	1/2 - 14	28.2	38.5	22	3.6	2.3
12V40MX	18,20	3/4	3/4 - 14	32.5	44.0	27	3.6	2.3
16V40MX	25	1	1 - 11	37.3	47.0	33	3.6	2.3

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V3MX

Male 45° Elbow – BSPT
37° Flare / BSPT



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M2 (mm)	N2 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1	2				S	SS	B
	(mm)	(in.) BSPT						
4V3MX	6	1/4	1/8 - 28	18.3	16.3	11	4.5	2.9
4-4V3MX	6	1/4	1/4 - 19	20.8	21.8	14	4.5	2.9
6V3MX	10	3/8	1/4 - 19	21.1	21.8	14	4.5	2.9
6-6V3MX	10	3/8	3/8 - 19	22.1	24.1	19	4.5	2.9
8V3MX	12	1/2	3/8 - 19	24.9	24.1	19	4.5	2.9
8-8V3MX	12	1/2	1/2 - 14	25.2	29.7	22	4.5	2.9
12V3MX	18, 20	3/4	3/4 - 14	32.5	30.5	27	2.3	1.5

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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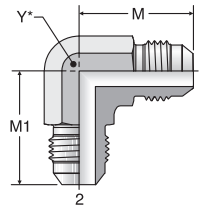
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ETX

Union Elbow
37° Flare / 37° Flare

SAE 070201
HPD Base # 2303



Y* – Across wrench flats

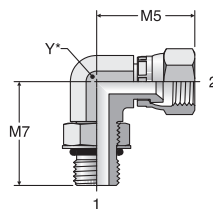
TUBE FITTING PART #	END SIZE		M (in.)	M1 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 (in.)				-S	-SS	-B
2 ETX	1/8	1/8	0.77	0.77	7/16	7.5	7.7	3.3
3 ETX	3/16	3/16	0.83	0.83	7/16	7.5	7.7	3.3
4 ETX	1/4	1/4	0.89	0.89	7/16	7.5	7.7	3.3
5 ETX	5/16	5/16	0.97	0.97	9/16	6.0	6.0	3.3
6 ETX	3/8	3/8	1.06	1.06	9/16	6.0	6.0	3.3
6-4 ETX	3/8	1/4	1.06	1.05	9/16	6.0	6.0	3.3
8 ETX	1/2	1/2	1.25	1.25	3/4	6.0	6.0	3.3
8-6 ETX	1/2	3/8	1.25	1.14	3/4	6.0	6.0	3.3
10 ETX	5/8	5/8	1.45	1.45	7/8	5.0	5.0	3.3
10-8 ETX	5/8	1/2	1.45	1.33	7/8	5.0	5.0	3.3
12 ETX	3/4	3/4	1.66	1.66	1 1/16	5.0	5.0	3.3
12-8 ETX	3/4	1/2	1.66	1.42	1 1/16	5.0	5.0	3.3
12-10 ETX	3/4	5/8	1.66	1.54	1 1/16	5.0	5.0	3.3
14 ETX	7/8	7/8	1.80	1.80	1 3/16	5.0	5.0	3.3
16 ETX	1	1	1.81	1.81	1 5/16	4.0	3.5	2.3
16-12 ETX	1	3/4	1.81	1.77	1 5/16	4.0	3.5	2.3
20 ETX	1 1/4	1 1/4	2.06	2.06	1 5/8	4.0	3.0	2.0
24 ETX	1 1/2	1 1/2	2.33	2.33	1 7/8	3.0	2.0	1.3
32 ETX	2	2	3.06	3.06	2 1/2	2.0	1.5	1.0

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AOEX6

Swivel Elbow
Thread Connector
SAE-ORB / 37° Swivel

HPD Base # 2506



Y* – Across wrench flats

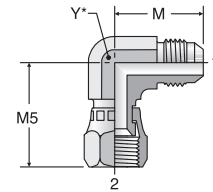
TUBE FITTING PART #	END SIZE		M5 (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 UN/UNF-2A	2 (in.)				-S	-SS	-B
4 AOEX6	7/16 - 20	1/4	1.00	1.03	7/16	6.0	6.0	3.3
6 AOEX6	9/16 - 18	3/8	1.25	1.25	9/16	6.0	6.0	3.3
8 AOEX6	3/4 - 16	1/2	1.38	1.45	3/4	6.0	6.0	3.3
10 AOEX6	7/8 - 14	5/8	1.62	1.70	7/8	5.0	5.0	3.3
12 AOEX6	1 1/16 - 12	3/4	1.75	1.94	1 1/16	5.0	5.0	3.3
16 AOEX6	1 5/16 - 12	1	2.00	2.05	1 5/16	4.0	3.0	2.6

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C6X

Swivel Nut Elbow
37° Flare / 37° Swivel

SAE 070221
HPD Base # 3903



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 (in.)				-S	-SS	-B
3 C6X	3/16	3/16	0.83	1.00	7/16	7.5	7.7	3.3
4 C6X	1/4	1/4	0.89	1.00	7/16	7.5	7.7	3.3
5 C6X	5/16	5/16	0.95	1.06	9/16	6.0	6.0	3.3
6 C6X	3/8	3/8	1.06	1.25	9/16	6.0	6.0	3.3
8 C6X	1/2	1/2	1.25	1.38	3/4	6.0	6.0	3.3
10 C6X	5/8	5/8	1.45	1.62	7/8	5.0	5.0	3.3
12 C6X	3/4	3/4	1.66	1.75	1 1/16	5.0	5.0	3.3
12-24 C6X	3/4	1 1/2	2.11	2.59	1 7/8	3.0	2.5	2.0
14 C6X	7/8	7/8	1.81	1.78	1 5/16	5.0	5.0	3.3
16 C6X	1	1	1.81	2.00	1 5/16	4.0	3.0	2.6
16-12 C6X	1	3/4	1.81	1.87	1 5/16	4.0	3.0	2.6
20 C6X	1 1/4	1 1/4	2.06	2.31	1 5/8	4.0	3.0	2.6
24 C6X	1 1/2	1 1/2	2.33	2.59	1 7/8	3.0	2.5	2.0
32 C6X	2	2	3.06	3.51	2 1/2	2.0	1.5	1.3

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WETX

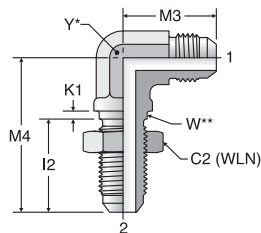
Bulkhead Union Elbow 37° Flare / 37° Flare

SAE 070701

HPD Base # 2353

WETX-WLN – Body with locknut

(See page B10 for WLN)



Y* – Across wrench flats.

W** – Bulkhead pilot dia.
recommended clearance hole
+.015 over W dia.

TUBE FITTING PART #	END SIZE 1 & 2 (in.)	C2 HEX (in.)	I2 (in.)	K1 (in.)	M3 (in.)	M4 (in.)	W DIA (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
										-S	-SS	-B
3 WETX	3/16	5/8	0.92	0.09	0.94	1.50	0.38	0.25	7/16	7.5	7.7	3.3
4 WETX	1/4	11/16	1.02	0.09	0.97	1.59	0.44	0.25	7/16	7.5	7.7	3.3
5 WETX	5/16	3/4	1.02	0.09	1.06	1.72	0.50	0.25	9/16	6.0	6.0	3.3
6 WETX	3/8	13/16	1.09	0.09	1.09	1.81	0.56	0.35	9/16	6.0	6.0	3.3
8 WETX	1/2	1	1.25	0.13	1.36	2.11	0.75	0.35	3/4	6.0	6.0	3.3
10 WETX	5/8	1 1/8	1.39	0.13	1.56	2.39	0.88	0.35	7/8	5.0	5.0	3.3
12 WETX	3/4	1 3/8	1.56	0.13	1.78	2.67	1.06	0.35	1 1/16	5.0	5.0	3.3
14 WETX	7/8	1 1/2	1.56	0.13	1.92	2.80	1.19	0.35	1 5/8	5.0	5.0	3.3
16 WETX	1	1 5/8	1.56	0.13	1.94	2.80	1.31	0.35	1 5/8	4.0	3.5	2.3
20 WETX	1 1/4	1 7/8	1.61	0.13	2.17	3.13	1.63	0.35	1 5/8	4.0	3.0	2.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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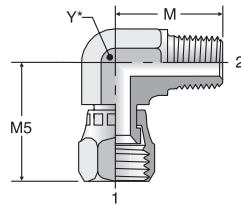


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X6EF

Swivel Elbow Connector
37° Swivel / NPTF

HPD Base # 2106



Y* – Across wrench flats

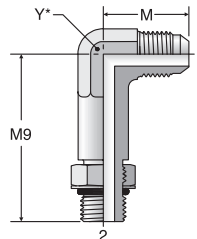
TUBE FITTING PART #	END SIZE		M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF				-S	-SS	-B
4 X6EF	1/4	1/8 - 27	0.78	1.01	7/16	6.0	6.0	3.3
4-4 X6EF	1/4	1/4 - 18	1.09	1.13	9/16	6.0	6.0	3.3
6 X6EF	3/8	1/4 - 18	1.09	1.25	9/16	6.0	6.0	3.3
6-6 X6EF	3/8	3/8 - 18	1.22	1.27	3/4	6.0	6.0	3.3
8 X6EF	1/2	3/8 - 18	1.22	1.38	3/4	6.0	6.0	3.3
8-8 X6EF	1/2	1/2 - 14	1.47	1.48	7/8	6.0	6.0	3.3
10 X6EF	5/8	1/2 - 14	1.47	1.62	7/8	5.0	5.0	3.3
12 X6EF	3/4	3/4 - 14	1.59	1.75	1 1/16	4.0	4.0	2.6
16 X6EF	1	1 - 11 1/2	1.97	2.01	1 5/16	3.0	3.0	2.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

CC50X

Long Straight Thread Elbow
37° Flare / SAE-ORB

SAE 071620
HPD Base # 5503



Y* – Across wrench flats

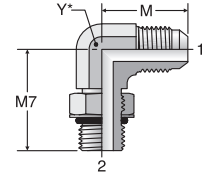
TUBE FITTING PART #	END SIZE		M (in.)	M9 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 UN/UNF-2A				-S	-SS	-B
4 CC50X	1/4	7/16 - 20	0.89	1.73	9/16	6.0	6.0	3.3
6 CC50X	3/8	9/16 - 18	1.06	2.08	9/16	6.0	5.4	3.3
8 CC50X	1/2	3/4 - 16	1.25	2.50	7/8	6.0	5.4	3.3
10 CC50X	5/8	7/8 - 14	1.45	2.89	7/8	5.0	5.4	3.3
12 CC50X	3/4	1 1/16 - 12	1.66	3.34	1 1/16	5.0	5.4	3.3
16 CC50X	1	1 5/16 - 12	1.81	3.72	1 5/16	4.0	3.0	2.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

C50X

Straight Thread Elbow
37° Flare / SAE-ORB

SAE 070220
HPD Base # 2503



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 UN/UNF-2A				-S	-SS	-B
2 C50X	1/8	5/16 - 24	0.77	0.94	7/16	5.0	6.0	3.3
3 C50X	3/16	3/8 - 24	0.83	0.94	7/16	5.0	6.0	3.3
4 C50X	1/4	7/16 - 20	0.89	1.03	7/16	6.0	6.0	3.3
4-2 C50X	1/4	5/16 - 24	0.89	0.92	7/16	5.0	6.0	3.3
4-6 C50X	1/4	9/16 - 18	1.05	1.25	9/16	6.0	5.4	3.3
4-8 C50X	1/4	3/4 - 16	1.13	1.45	3/4	6.0	5.4	3.3
5 C50X	5/16	1/2 - 20	0.95	1.13	9/16	6.0	5.4	3.3
5-4 C50X	5/16	7/16 - 20	0.95	1.13	9/16	6.0	5.4	3.3
5-6 C50X	5/16	9/16 - 18	1.06	1.25	9/16	6.0	5.4	3.3
6 C50X	3/8	9/16 - 18	1.06	1.25	9/16	6.0	5.4	3.3
6-4 C50X	3/8	7/16 - 20	1.06	1.19	9/16	6.0	5.4	3.3
6-5 C50X	3/8	1/2 - 20	1.06	1.19	9/16	6.0	5.4	3.3
6-8 C50X	3/8	3/4 - 16	1.14	1.45	3/4	6.0	5.4	3.3
6-10 C50X	3/8	7/8 - 14	1.23	1.70	7/8	6.0	5.4	3.3
8 C50X	1/2	3/4 - 16	1.25	1.45	3/4	6.0	5.4	3.3
8-4 C50X	1/2	7/16 - 20	1.25	1.26	3/4	6.0	5.4	3.3
8-6 C50X	1/2	9/16 - 18	1.25	1.34	3/4	6.0	5.4	3.3
8-10 C50X	1/2	7/8 - 14	1.33	1.70	7/8	5.0	5.4	3.3
8-12 C50X	1/2	1 1/16 - 12	1.42	1.94	1 1/16	5.0	5.4	3.3
8-16 C50X	1/2	1 5/16 - 12	1.52	2.05	1 5/16	4.0	3.0	2.6
10 C50X	5/8	7/8 - 14	1.45	1.70	7/8	5.0	5.4	3.3
10-6 C50X	5/8	9/16 - 18	1.45	1.41	7/8	5.0	5.4	3.3
10-8 C50X	5/8	3/4 - 16	1.45	1.55	7/8	5.0	5.4	3.3
10-12 C50X	5/8	1 1/16 - 12	1.53	1.94	1 1/16	5.0	5.4	3.3
10-16 C50X	5/8	1 5/16 - 12	1.64	2.05	1 5/16	4.0	3.0	2.6
12 C50X	3/4	1 1/16 - 12	1.66	1.94	1 1/16	5.0	5.4	3.3
12-8 C50X	3/4	3/4 - 16	1.66	1.63	1 1/16	5.0	5.4	3.3
12-10 C50X	3/4	7/8 - 14	1.66	1.78	1 1/16	5.0	5.4	3.3
12-14 C50X	3/4	1 3/16 - 12	1.77	2.00	1 5/16	5.0	5.4	3.3
12-16 C50X	3/4	1 5/16 - 12	1.76	2.05	1 5/16	4.0	3.0	2.6
12-20 C50X	3/4	1 5/8 - 12	1.97	2.25	1 5/8	3.0	3.0	2.6
14 C50X	7/8	1 3/16 - 12	1.80	2.05	1 5/16	5.0	5.4	3.3
16 C50X	1	1 5/16 - 12	1.81	2.05	1 5/16	4.0	3.0	2.6
16-12 C50X	1	1 1/16 - 12	1.81	2.05	1 5/16	4.0	3.0	2.6
16-14 C50X	1	1 3/16 - 12	1.81	2.05	1 5/16	4.0	3.0	2.6
16-20 C50X	1	1 5/8 - 12	2.01	2.25	1 5/8	3.0	2.5	2.0
16-24 C50X	1	1 7/8 - 12	2.16	2.39	1 7/8	3.0	2.5	2.0
20 C50X	1 1/4	1 5/8 - 12	2.06	2.25	1 5/8	3.0	2.5	2.0
20-16 C50X	1 1/4	1 5/16 - 12	2.06	2.25	1 5/8	4.0	2.5	2.0
20-24 C50X	1 1/4	1 7/8 - 12	2.20	2.39	1 7/8	3.0	2.5	2.0
24 C50X	1 1/2	1 7/8 - 12	2.33	2.39	1 7/8	3.0	2.0	1.5
24-20 C50X	1 1/2	1 5/8 - 12	2.33	2.39	1 7/8	3.0	2.0	1.5
32 C50X	2	2 1/2 - 12	3.06	2.89	2 1/2	2.0	1.5	1.3
32-24 C50X	2	1 7/8 - 12	3.06	2.89	2 1/2	2.0	1.5	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

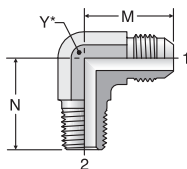
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

CTX

Male Elbow
37° Flare / NPTF

SAE 070202
HPD Base # 2103



Y* – Across wrench flats

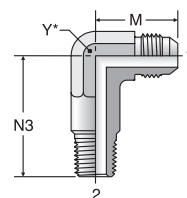
TUBE FITTING PART #	END SIZE		M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF				-S	-SS	-B
2 CTX	1/8	1/8 - 27	0.77	0.72	5/16	6.0	6.0	3.3
3 CTX	3/16	1/8 - 27	0.83	0.72	3/8	6.0	6.0	3.3
4 CTX	1/4	1/8 - 27	0.89	0.78	7/16	6.0	6.0	3.3
4-4 CTX	1/4	1/4 - 18	1.05	1.09	9/16	6.0	6.0	3.3
4-6 CTX	1/4	3/8 - 18	1.12	1.22	3/4	6.0	6.0	3.3
4-8 CTX	1/4	1/2 - 14	1.21	1.47	7/8	6.0	6.0	3.3
5 CTX	5/16	1/8 - 27	0.95	0.78	9/16	6.0	6.0	3.3
5-4 CTX	5/16	1/4 - 18	1.05	1.09	9/16	6.0	6.0	3.3
5-6 CTX	5/16	3/8 - 18	1.12	1.22	3/4	6.0	6.0	3.3
6 CTX	3/8	1/4 - 18	1.06	1.09	9/16	6.0	6.0	3.3
6-2 CTX	3/8	1/8 - 27	1.06	0.90	9/16	6.0	6.0	3.3
6-6 CTX	3/8	3/8 - 18	1.14	1.22	3/4	6.0	6.0	3.3
6-8 CTX	3/8	1/2 - 14	1.22	1.47	7/8	6.0	6.0	3.3
6-12 CTX	3/8	3/4 - 14	1.31	1.59	1 1/16	4.0	4.0	2.6
8 CTX	1/2	3/8 - 18	1.25	1.22	3/4	6.0	6.0	3.3
8-4 CTX	1/2	1/4 - 18	1.25	1.22	3/4	6.0	6.0	3.3
8-8 CTX	1/2	1/2 - 14	1.33	1.47	7/8	6.0	6.0	3.3
8-12 CTX	1/2	3/4 - 14	1.42	1.59	1 1/16	4.0	4.0	2.6
8-16 CTX	1/2	1 - 11 1/2	1.52	1.97	1 5/16	3.0	3.0	2.0
10 CTX	5/8	1/2 - 14	1.45	1.47	7/8	5.0	5.0	3.3
10-6 CTX	5/8	3/8 - 18	1.45	1.28	7/8	5.0	5.0	3.3
10-12 CTX	5/8	3/4 - 14	1.53	1.59	1 1/16	4.0	4.0	2.6
10-16 CTX	5/8	1 - 11 1/2	1.64	1.97	1 5/16	3.0	3.0	2.0
12 CTX	3/4	3/4 - 14	1.66	1.59	1 1/16	4.0	4.0	2.6
12-6 CTX	3/4	3/8 - 18	1.66	1.40	1 1/16	5.0	5.0	3.3
12-8 CTX	3/4	1/2 - 14	1.66	1.59	1 1/16	5.0	5.0	2.9
12-16 CTX	3/4	1 - 11 1/2	1.76	1.97	1 5/16	3.0	3.0	2.0
14 CTX	7/8	3/4 - 14	1.80	1.69	1 5/16	4.0	4.0	2.3
16 CTX	1	1 - 11 1/2	1.81	1.97	1 5/16	3.0	3.0	2.0
16-8 CTX	1	1/2 - 14	1.81	1.66	1 5/16	4.0	4.0	2.3
16-12 CTX	1	3/4 - 14	1.81	1.78	1 5/16	4.0	4.0	2.3
16-20 CTX	1	1 1/4 - 11 1/2	2.01	2.38	1 5/8	2.5	2.5	1.6
20 CTX	1 1/4	1 1/4 - 11 1/2	2.06	2.38	1 5/8	2.5	2.5	1.6
20-16 CTX	1 1/4	1 - 11 1/2	2.06	2.06	1 5/8	3.0	3.0	2.0
20-24 CTX	1 1/4	1 1/2 - 11 1/2	2.21	2.64	1 7/8	2.5	2.5	1.6
24 CTX	1 1/2	1 1/2 - 11 1/2	2.33	2.64	1 7/8	2.5	2.5	1.6
24-20 CTX	1 1/2	1 1/4 - 11 1/2	2.33	2.25	1 7/8	2.5	2.5	1.6
24-32 CTX	1 1/2	2 - 11 1/2	2.81	3.00	2 1/2	2.0	2.0	1.3
32 CTX	2	2 - 11 1/2	3.06	3.00	2 1/2	2.0	2.0	1.3
32-24 CTX	2	1 1/2 - 11 1/2	3.06	2.97	2 1/2	2.0	2.0	1.3
40 CTX	2 1/2	2 1/2 - 8	2.86	3.57	3 1/4	1.0	1.0	0.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

CCTX

Long Male Elbow
37° Flare / NPTF

SAE 071502
HPD Base # 5603



Y* – Across wrench flats

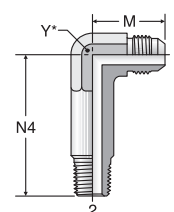
TUBE FITTING PART #	END SIZE		M (in.)	N3 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF				-S	-SS	-B
4 CCTX	1/4	1/8 - 27	0.89	1.17	7/16	6.0	6.0	3.3
4-4 CCTX	1/4	1/4 - 18	1.05	1.58	9/16	6.0	6.0	3.3
5 CCTX	5/16	1/8 - 27	0.95	1.17	9/16	6.0	6.0	3.3
6 CCTX	3/8	1/4 - 18	1.06	1.58	9/16	6.0	6.0	3.3
6-6 CCTX	3/8	3/8 - 18	1.14	1.82	3/4	6.0	6.0	3.3
8 CCTX	1/2	3/8 - 18	1.25	1.82	3/4	6.0	6.0	3.3
8-8 CCTX	1/2	1/2 - 14	1.33	2.17	7/8	6.0	6.0	3.3
8-12 CCTX	1/2	3/4 - 14	1.42	2.44	1 1/16	4.0	4.0	2.6
10 CCTX	5/8	1/2 - 14	1.45	2.17	7/8	5.0	5.0	3.3
12 CCTX	3/4	3/4 - 14	1.66	2.44	1 1/16	4.0	4.0	2.6
14 CCTX	7/8	3/4 - 14	1.80	2.59	1 5/16	4.0	4.0	2.3
16 CCTX	1	1 - 11 1/2	1.81	3.01	1 5/16	3.0	3.0	2.0
20 CCTX	1 1/4	1 1/4 - 11 1/2	2.06	3.69	1 5/8	2.5	2.5	1.6

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CCCTX

Extra Long Male Elbow
37° Flare / NPTF

SAE 071602
HPD Base # 5703



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M (in.)	N4 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 NPTF				-S	-SS	-B
4 CCCTX	1/4	1/8 - 27	0.89	1.56	7/16	6.0	6.0	3.3
4-4 CCCTX	1/4	1/4 - 18	1.05	2.07	9/16	6.0	6.0	3.3
5 CCCTX	5/16	1/8 - 27	0.97	1.63	9/16	6.0	6.0	3.3
6 CCCTX	3/8	1/4 - 18	1.06	2.07	9/16	6.0	6.0	3.3
6-6 CCCTX	3/8	3/8 - 18	1.14	2.34	3/4	6.0	6.0	3.3
8 CCCTX	1/2	3/8 - 18	1.25	2.34	3/4	6.0	6.0	3.3
8-8 CCCTX	1/2	1/2 - 14	1.33	2.87	7/8	6.0	6.0	3.3
10 CCCTX	5/8	1/2 - 14	1.45	2.87	7/8	5.0	5.0	3.3
12 CCCTX	3/4	3/4 - 14	1.66	3.28	1 1/16	4.0	4.0	2.3
16 CCCTX	1	1 - 11 1/2	1.81	4.05	1 5/16	3.0	3.0	2.0
20 CCCTX	1 1/4	1 1/4 - 11 1/2	2.06	5.00	1 5/8	2.5	2.5	1.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

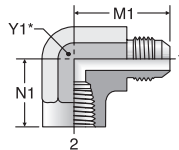
Dimensions and pressures for reference only, subject to change.

[Click here for CADs, Support Resources or to Configure Parts Online](#)

DTX

Femle Elbow
37° Flare / NPTF

SAE 070203
HPD Base # 2203

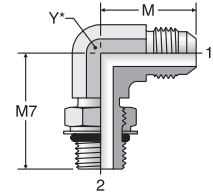


Y* – Across wrench flats

C87OMX

Male Elbow – ISO 6149
37° Flare / ISO 6149

SAE 070287



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE		M1 (in.)	N1 (in.)	Y1 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2				-S	-SS	-B
	(in.)	NPTF						
4 DTX	1/4	1/8 - 27	1.08	0.66	9/16	5.0	5.0	3.3
4-4 DTX	1/4	1/4 - 18	1.22	0.88	3/4	5.0	5.0	3.3
5 DTX	5/16	1/8 - 27	1.08	0.66	9/16	5.0	5.0	3.3
5-4 DTX	5/16	1/4 - 18	1.22	0.88	3/4	5.0	5.0	3.3
6 DTX	3/8	1/4 - 18	1.23	0.88	3/4	5.0	5.0	3.3
6-2 DTX	3/8	1/8 - 27	1.23	0.67	9/16	5.0	5.0	3.3
6-6 DTX	3/8	3/8 - 18	1.31	1.02	7/8	4.5	4.5	2.9
8 DTX	1/2	3/8 - 18	1.42	1.02	7/8	4.5	4.5	2.9
8-4 DTX	1/2	1/4 - 18	1.42	1.01	3/4	4.5	4.5	2.9
8-8 DTX	1/2	1/2 - 14	1.52	1.23	1 1/16	3.0	3.0	2.0
10 DTX	5/8	1/2 - 14	1.64	1.23	1 1/16	3.0	3.0	2.0
12 DTX	3/4	3/4 - 14	1.89	1.36	1 5/16	3.0	3.0	2.0
12-8 DTX	3/4	1/2 - 14	1.89	1.35	1 1/16	3.0	3.0	2.0
14 DTX	7/8	3/4 - 14	1.86	1.42	1 5/16	3.0	3.0	2.0
16 DTX	1	1 - 11 1/2	2.17	1.62	1 5/8	1.8	1.8	1.2
20 DTX	1 1/4	1 1/4 - 11 1/2	2.33	1.70	1 7/8	1.5	1.5	1.0
24 DTX	1 1/2	1 1/2 - 11 1/2	2.89	2.08	2 1/2	1.5	1.5	1.0

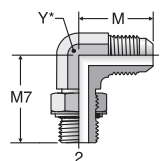
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2				S	SS	B
	(mm)	(in.)	Male Metric Parallel Thread						
4M10C87OMX	6	1/4	M10x1	22.6	27.1	11	6.0	5.0	3.3
5M12C87OMX	8	5/16	M12x1.5	24.1	30.5	13	6.0	5.0	3.3
6M14C87OMX	10	3/8	M14x1.5	26.9	33.5	14	6.0	5.0	3.3
8M16C87OMX	12	1/2	M16x1.5	31.8	38.0	19	5.0	5.0	3.3
8M18C87OMX	12	1/2	M18x1.5	31.8	38.0	19	5.0	5.0	3.3
10M18C87OMX	14, 15, 16	5/8	M18x1.5	36.8	41.5	22	5.0	5.0	3.3
10M22C87OMX	14, 15, 16	5/8	M22x1.5	36.8	42.5	22	5.0	5.0	3.3
12M22C87OMX	18, 20	3/4	M22x1.5	42.2	45.0	27	5.0	5.0	3.3
12M27C87OMX	18, 20	3/4	M27x2	42.2	51.0	27	5.0	5.0	3.3
16M33C87OMX	25	1	M33x2	46.0	53.0	33	4.0	4.0	2.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

C8OMX

Male Elbow – Metric-ORR
37° Flare / Metric-ORR



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2						
	(mm)	(in.)	Male Metric Parallel Thread						
4M10C8OMX	6	1/4	M10x1	22.6	26.9	11	3.6	3.6	2.3
5M12C8OMX	8	5/16	M12x1.5	24.1	30.5	13	3.6	3.6	2.3
6M14C8OMX	10	3/8	M14x1.5	26.9	33.5	14	3.6	3.6	2.3
8M16C8OMX	12	1/2	M16x1.5	31.8	38.0	19	3.6	3.6	2.3
8M18C8OMX	12	1/2	M18x1.5	31.8	38.0	19	3.6	3.6	2.3
10M18C8OMX	14, 15, 16	5/8	M18x1.5	36.8	41.5	22	3.6	3.6	2.3
10M22C8OMX	14, 15, 16	5/8	M22x1.5	36.8	42.5	22	3.6	3.6	2.3
12M22C8OMX	18, 20	3/4	M22x1.5	42.2	45.0	27	3.6	3.6	2.3
12M27C8OMX	18, 20	3/4	M27x2.0	42.2	51.0	27	2.5	2.5	1.6
16M33C8OMX	25	1	M33x2.0	46.0	53.0	33	2.0	2.0	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

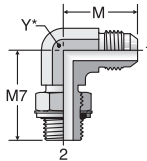
Dimensions and pressures for reference only, subject to change.



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C4OMX

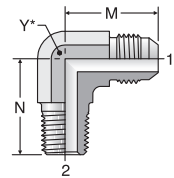
Male Elbow – BSPP
37° Flare / BSPP-ORR



Y* – Across wrench flats

C3MX

Male Elbow – BSPT
37° Flare / BSPT



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2				S	SS	L
	(mm)	(in.)	BSPP						
4C4OMX	6	1/4	1/8-28	22.6	26.5	11	3.6	3.6	2.3
4-4C4OMX	6	1/4	1/4-19	26.9	32.0	14	3.6	2.9	1.9
5C4OMX	8	5/16	1/8-28	24.1	27.0	13	3.6	3.6	2.3
5-4C4OMX	8	5/16	1/4-19	26.6	32.0	14	3.6	2.9	1.9
5-6C4OMX	8	5/16	3/8-19	28.5	37.0	19	3.6	2.9	1.9
6C4OMX	10	3/8	1/4-19	26.9	32.0	14	3.6	2.9	1.9
6-6C4OMX	10	3/8	3/8-19	29.0	37.0	19	3.6	2.9	1.9
8-4C4OMX	12	1/2	1/4-19	31.8	37.0	19	3.6	2.9	1.9
8C4OMX	12	1/2	3/8-19	31.8	37.0	19	3.6	2.9	1.9
8-8C4OMX	12	1/2	1/2-14	33.8	43.0	22	3.6	2.9	1.9
10-6C4OMX	16	5/8	3/8-19	36.8	36.0	22	3.6	2.9	1.9
10C4OMX	14,15,16	5/8	1/2-14	36.8	43.0	22	3.6	2.9	1.9
10-12C4OMX	15	5/8	3/4-14	39.2	49.5	27	3.6	2.9	1.9
12-8C4OMX	18,20	3/4	1/2-14	42.2	49.5	27	3.6	2.9	1.9
12C4OMX	18,20	3/4	3/4-14	42.2	49.5	27	3.6	2.9	1.9
12-16C4OMX	18	3/4	1-11	44.7	52.0	33	3.6	2.9	1.9
16-12C4OMX	25	1	3/4-14	46.0	47.0	33	3.6	2.9	1.9
16C4OMX	25	1	1-11	46.0	52.0	33	3.6	2.9	1.9
20-16C4OMX	30,32	1 1/4	1-11	52.3	57.0	41	3.6	2.3	1.5
20C4OMX	30,32	1 1/4	1 1/4-11	52.3	57.0	41	3.0	2.3	1.5
24-20C4OMX	38	1 1/2	1 1/4-11	59.2	60.5	48	3.0	2.0	1.3
24C4OMX	38	1 1/2	1 1/2-11	59.2	60.5	48	2.0	2.0	1.3

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TUBE FITTING PART #	END SIZE			M (mm)	N (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1		2				S	SS	B
	(mm)	(in.)	BSPT						
4C3MX	6	1/4	1/8 - 28	22.6	19.8	11	4.5	4.5	2.9
4-4C3MX	6	1/4	1/4 - 19	26.6	27.7	14	4.5	4.5	2.9
5C3MX	8	5/16	1/8 - 28	24.1	19.8	13	4.5	4.5	2.9
5-4C3MX	8	5/16	1/4 - 19	26.6	27.7	14	4.5	4.5	2.9
6C3MX	10	3/8	1/4 - 19	26.9	27.7	14	4.5	4.5	2.9
6-6C3MX	10	3/8	3/8 - 19	29.0	31.0	19	4.5	4.5	2.9
6-8C3MX	10	3/8	1/2 - 14	31.0	37.3	22	4.5	4.5	2.9
8-4C3MX	12	1/2	1/4 - 19	31.8	31.0	19	4.5	4.5	2.9
8C3MX	12	1/2	3/8 - 19	31.8	31.0	19	4.5	4.5	2.9
8-8C3MX	12	1/2	1/2 - 14	33.8	37.3	22	4.5	4.5	2.9
10-6C3MX	14,15,16	5/8	3/8 - 19	36.8	32.5	22	4.5	4.5	2.9
10C3MX	14,15,16	5/8	1/2 - 14	36.8	37.3	22	4.5	4.5	2.9
10-12C3MX	14,15,16	5/8	3/4 - 14	39.2	40.4	27	2.3	2.3	1.5
12-8C3MX	18,20	3/4	1/2 - 14	42.2	40.4	27	4.5	4.5	2.9
12C3MX	18,20	3/4	3/4 - 14	42.2	40.4	27	2.3	2.3	1.5
16-12C3MX	25	1	3/4 - 14	46.0	45.2	33	2.3	2.3	1.5
16C3MX	25	1	1 - 11	46.0	50.0	33	2.3	2.3	1.5
20-16C3MX	30,32	1 1/4	1 - 11	52.3	59.7	41	2.3	2.3	1.5
20C3MX	30,32	1 1/4	1 1/4 - 11	52.3	60.5	41	2.3	2.3	1.5
24C3MX	38	1 1/2	1 1/2 - 11	59.2	67.1	48	2.3	2.0	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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TUBE FAB
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GEN TECH

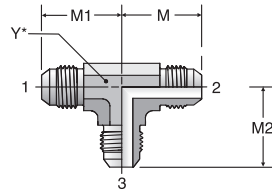
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JTX

Union Tee
37° Flare (all three ends)

SAE 070401
HPD Base # 033T



Y* – Across wrench flats

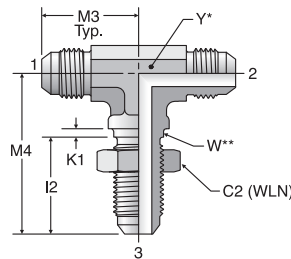
TUBE FITTING PART #	END SIZE			M (in.)	M1 (in.)	M2 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2	3					-S	-SS	-B
	(in.)	(in.)	(in.)							
2 JTX	1/8	1/8	1/8	0.77	0.77	0.77	5/16	7.5	7.7	3.3
3 JTX	3/16	3/16	3/16	0.83	0.83	0.83	7/16	7.5	7.7	3.3
4 JTX	1/4	1/4	1/4	0.89	0.89	0.89	7/16	7.5	7.7	3.3
4-4-3 JTX	1/4	1/4	3/16	0.89	0.89	0.81	7/16	7.5	7.7	3.3
5 JTX	5/16	5/16	5/16	0.95	0.95	0.95	9/16	6.0	6.0	3.3
6 JTX	3/8	3/8	3/8	1.06	1.06	1.06	9/16	6.0	6.0	3.3
8 JTX	1/2	1/2	1/2	1.25	1.25	1.25	3/4	6.0	6.0	3.3
10 JTX	5/8	5/8	5/8	1.45	1.45	1.45	7/8	5.0	5.0	3.3
12 JTX	3/4	3/4	3/4	1.66	1.66	1.66	1 1/16	5.0	5.0	2.9
12-12-8 JTX	3/4	3/4	1/2	1.66	1.66	1.42	1 1/16	5.0	5.0	2.9
12-16-12 JTX	3/4	1	3/4	1.77	1.81	1.77	1 5/16	4.0	3.5	2.3
14 JTX	7/8	7/8	7/8	1.80	1.80	1.80	1 5/16	5.0	5.0	2.9
16 JTX	1	1	1	1.81	1.81	1.81	1 5/16	4.0	3.5	2.3
20 JTX	1 1/4	1 1/4	1 1/4	2.06	2.06	2.06	1 5/8	4.0	3.0	2.0
24 JTX	1 1/2	1 1/2	1 1/2	2.33	2.33	2.33	1 7/8	3.0	2.0	1.5
24-16-16 JTX	1 1/2	1	1	2.33	2.16	2.16	1 7/8	3.0	2.0	1.5
32 JTX	2	2	2	3.06	3.06	3.06	2 1/2	2.0	1.5	1.0

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WJTX

Bulkhead Branch Tee
37° Flare (all three ends)

SAE 070959
HPD Base # 543T
WJTX-WLN – Body with locknut
(See page B10 for WLN)



Y* – Across wrench flats.
W** – Bulkhead pilot dia.
recommended clearance hole
+.015 over W dia.

TUBE FITTING PART #	END SIZE		C2 HEX (in.)	I2 (in.)	K1 (in.)	M3 (in.)	M4 (in.)	W DIA (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 - 3										-S	-SS	-B
	(in.)												
4 WJTX	1/4	11/16	1.02	0.09	0.97	1.59	0.44	0.25	0.25	7/16	7.5	7.7	3.3
6 WJTX	3/8	13/16	1.09	0.09	1.09	1.81	0.56	0.35	0.35	9/16	6.0	6.0	3.3
8 WJTX	1/2	1	1.25	0.13	1.36	2.11	0.75	0.35	0.35	3/4	6.0	6.0	3.3
10 WJTX	5/8	1 1/8	1.39	0.13	1.56	2.39	0.88	0.35	0.35	1 1/16	5.0	5.0	3.3
12 WJTX	3/4	1 3/8	1.56	0.13	1.78	2.67	1.06	0.35	0.35	1 1/16	5.0	5.0	2.9
16 WJTX	1	1 5/8	1.56	0.13	1.94	2.80	1.31	0.35	0.35	1 5/16	4.0	3.5	2.3
20 WJTX***	1 1/4	1 7/8	1.61	0.13	2.17	3.12	1.63	0.35	0.35	1 5/8	4.0	3.0	2.0

***Machined from one-piece milled bar stock.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

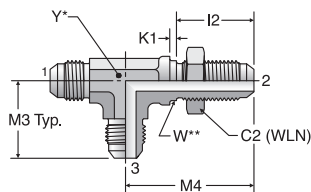


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WJJTX

Bulkhead Run Tee
37° Flare (all three ends)

SAE 070958
HPD Base # 533T
WJJTX-WLN – Body with locknut
(See page B10 for WLN)



Y* – Across wrench flats.

W** – Bulkhead pilot dia.
recommended clearance hole
+.015 over W dia.

TUBE FITTING PART #	END SIZE	C2 HEX (in.)	I2 (in.)	K1 (in.)	M3 (in.)	M4 (in.)	W DIA (in.)	MAX BULKHEAD WALL THICKNESS (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
										-S	-SS	-B
4 WJJTX	1/4	11/16	1.02	0.09	0.97	1.59	0.44	0.25	7/16	7.5	7.7	3.3
6 WJJTX	3/8	13/16	1.09	0.09	1.09	1.81	0.56	0.35	9/16	6.0	6.0	3.3
8 WJJTX	1/2	1	1.25	0.13	1.36	2.11	0.75	0.35	3/4	6.0	6.0	3.3
10 WJJTX	5/8	1 1/8	1.39	0.13	1.56	2.39	0.88	0.35	7/8	5.0	5.0	3.3
12 WJJTX	3/4	1 3/8	1.56	0.13	1.78	2.67	1.06	0.35	1 1/16	5.0	5.0	2.9
16 WJJTX***	1	1 5/8	1.56	0.13	1.94	2.80	1.31	0.35	1 7/16	4.0	3.5	2.3
20 WJJTX***	1 1/4	1 7/8	1.61	0.13	2.17	3.12	1.63	0.35	1 5/8	4.0	3.0	2.0

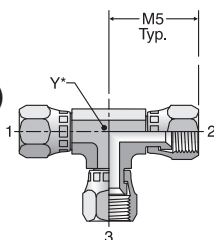
***Machined from one-piece milled bar stock.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

JX6

Swivel Nut Union Tee
37° Swivel (all three ends)

HPD Base # 069T



Y* – Across wrench flats

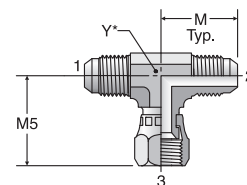
TUBE FITTING PART #	END SIZE	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
				-S	-SS	-B
4 JX6	1/4	1.00	7/16	7.5	7.7	3.3
6 JX6	3/8	1.25	9/16	6.0	6.0	3.3
8 JX6	1/2	1.38	3/4	6.0	6.0	3.3
10 JX6	5/8	1.62	3/4	5.0	5.0	3.3
12 JX6	3/4	1.75	1 1/16	5.0	5.0	3.3
16 JX6	1	2.00	1 3/16	4.0	3.0	2.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

S6X

Swivel Nut Branch Tee
37° Flare / 37° Flare /
37° Swivel

SAE 070433
HPD Base # 393T



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE	M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
					-S	-SS	-B
4 S6X	1/4	0.89	1.00	7/16	7.5	7.7	3.3
5 S6X	5/16	0.95	1.06	9/16	6.0	6.0	3.3
6 S6X	3/8	1.06	1.25	9/16	6.0	6.0	3.3
8 S6X	1/2	1.25	1.38	3/4	6.0	6.0	3.3
10 S6X	5/8	1.45	1.62	7/8	5.0	5.0	3.3
12 S6X	3/4	1.66	1.75	1 1/16	5.0	5.0	3.3
14 S6X	7/8	1.80	1.78	1 5/16	5.0	5.0	3.3
16 S6X	1	1.81	2.00	1 5/16	4.0	3.0	2.6
20 S6X	1 1/4	2.06	2.31	1 5/8	4.0	3.0	2.6
24 S6X	1 1/2	2.33	2.59	1 7/8	3.0	2.5	2.0

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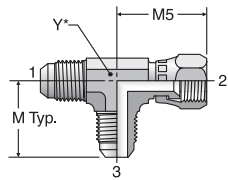
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

R6X

Swivel Nut Run Tee
37° Flare / 37° Swivel /
37° Flare

SAE 070432
HPD Base # 063T



Y* – Across wrench flats

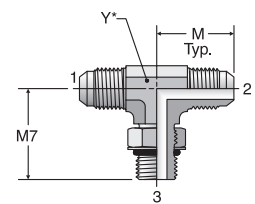
TUBE FITTING PART #	END SIZE	M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1-3 (in.)				-S	-SS	-B
4 R6X	1/4	0.89	1.00	7/16	7.5	7.7	3.3
5 R6X	5/16	0.95	1.06	9/16	6.0	6.0	3.3
6 R6X	3/8	1.06	1.25	9/16	6.0	6.0	3.3
8 R6X	1/2	1.25	1.38	3/4	6.0	6.0	3.3
10 R6X	5/8	1.45	1.62	7/8	5.0	5.0	3.3
12 R6X	3/4	1.66	1.75	1 1/16	5.0	5.0	3.3
14 R6X	7/8	1.80	1.78	1 5/16	5.0	5.0	3.3
16 R6X	1	1.81	2.00	1 5/16	4.0	3.0	2.6
20 R6X	1 1/4	2.06	2.31	1 5/8	4.0	3.0	2.6
24 R6X	1 1/2	2.33	2.59	1 7/8	3.0	2.5	2.0

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S5OX

Straight Thread Branch Tee
37° Flare / 37° Flare /
SAE-ORB

SAE 070429
HPD Base # 253T



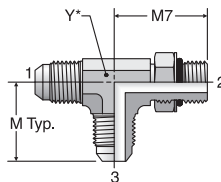
Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1	2	3				-S	-SS	-B
	(in.)	(in.)	UN/UNF-2A						
4 S5OX	1/4	1/4	7/16 - 20	0.89	1.03	7/16	6.0	6.0	3.3
4-4-6 S5OX	1/4	1/4	9/16 - 18	1.05	1.25	9/16	6.0	5.4	3.3
5 S5OX	5/16	5/16	1/2 - 20	0.97	1.13	9/16	6.0	5.4	3.3
6 S5OX	3/8	3/8	9/16 - 18	1.06	1.25	9/16	6.0	5.4	3.3
6-6-8 S5OX	3/8	3/8	3/4 - 16	1.14	1.45	3/4	6.0	5.4	3.3
8 S5OX	1/2	1/2	3/4 - 16	1.25	1.45	3/4	6.0	5.4	3.3
8-8-10 S5OX	1/2	1/2	7/8 - 14	1.33	1.70	7/8	5.0	5.4	3.3
10 S5OX	5/8	5/8	7/8 - 14	1.45	1.70	7/8	5.0	5.4	3.3
10-10-12 S5OX	5/8	5/8	1 1/16 - 12	1.53	1.94	1 1/16	5.0	5.4	3.3
12 S5OX	3/4	3/4	1 1/16 - 12	1.66	1.94	1 1/16	5.0	5.4	3.3
12-12-16 S5OX	3/4	3/4	1 5/16 - 12	1.76	2.05	1 5/16	4.0	3.0	2.6
16 S5OX	1	1	1 5/16 - 12	1.81	2.05	1 5/16	4.0	3.0	2.6
20 S5OX	1 1/4	1 1/4	1 5/8 - 12	2.06	2.25	1 5/8	3.0	2.5	2.0
24 S5OX	1 1/2	1 1/2	1 7/8 - 12	2.33	2.39	1 7/8	3.0	2.0	1.5
32 S5OX	2	2	2 1/2 - 12	3.06	2.89	2 1/2	2.0	1.5	1.3

R5OX

Straight Thread Run Tee
37° Flare / SAE-ORB /
37° Flare

SAE 070428
HPD Base # 053T



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 UN/UNF-2A	3 (in.)				-S	-SS	-B
4 R5OX	1/4	7/16 - 20	1/4	0.89	1.03	7/16	6.0	6.0	3.3
4-6-4 R5OX	1/4	9/16 - 18	1/4	1.05	1.25	9/16	6.0	5.4	3.3
5 R5OX	5/16	1/2 - 20	5/16	0.97	1.13	9/16	6.0	5.4	3.3
6 R5OX	3/8	9/16 - 18	3/8	1.06	1.25	9/16	6.0	5.4	3.3
6-8-6 R5OX	3/8	3/4 - 16	3/8	1.14	1.45	3/4	6.0	5.4	3.3
8 R5OX	1/2	3/4 - 16	1/2	1.25	1.45	3/4	6.0	5.4	3.3
8-6-8 R5OX	1/2	9/16 - 18	1/2	1.25	1.33	3/4	6.0	5.4	3.3
8-10-8 R5OX	1/2	7/8 - 14	1/2	1.33	1.70	7/8	5.0	5.4	3.3
8-12-8 R5OX	1/2	1 1/16 - 12	1/2	1.42	1.94	1 1/16	5.0	5.4	3.3
10 R5OX	5/8	7/8 - 14	5/8	1.45	1.70	7/8	5.0	5.4	3.3
10-12-10 R5OX	5/8	1 1/16 - 12	5/8	1.53	1.94	1 1/16	5.0	5.4	3.3
12 R5OX	3/4	1 1/16 - 12	3/4	1.66	1.94	1 1/16	5.0	5.4	3.3
12-16-12 R5OX	3/4	1 5/16 - 12	3/4	1.76	2.05	1 5/16	4.0	3.0	2.6
16 R5OX	1	1 5/16 - 12	1	1.81	2.05	1 5/16	4.0	3.0	2.6
20 R5OX	1 1/4	1 5/8 - 12	1 1/4	2.06	2.25	1 5/8	3.0	2.5	2.0
24 R5OX	1 1/2	1 7/8 - 12	1 1/2	2.33	2.39	1 7/8	3.0	2.0	1.5
32 R5OX	2	2 1/2 - 12	2	3.06	2.89	2 1/2	2.0	1.5	1.3

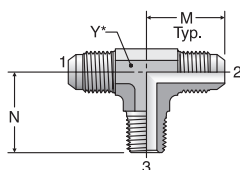
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

STX

Male Branch Tee
37° Flare / 37° Flare / NPTF

SAE 070425
HPD Base # 213T



Y* – Across wrench flats

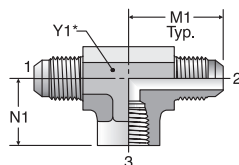
TUBE FITTING PART #	END SIZE		M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2 (in.)	3 NPTF				-S	-SS	-B
3 STX	3/16	1/8 - 27	0.83	0.72	7/16	6.0	6.0	3.3
4 STX	1/4	1/8 - 27	0.89	0.78	7/16	6.0	6.0	3.3
4-4-4 STX	1/4	1/4 - 18	1.05	1.09	9/16	6.0	6.0	3.3
4-4-6 STX	1/4	3/8 - 18	1.12	1.22	3/4	6.0	6.0	3.3
5 STX	5/16	1/8 - 27	0.95	0.78	9/16	6.0	6.0	3.3
5-5-4 STX	5/16	1/4 - 18	1.05	1.09	9/16	6.0	6.0	3.3
6 STX	3/8	1/4 - 18	1.06	1.09	9/16	6.0	6.0	3.3
6-6-6 STX	3/8	3/8 - 18	1.14	1.22	3/4	6.0	6.0	3.3
8 STX	1/2	3/8 - 18	1.25	1.22	3/4	6.0	6.0	3.3
8-8-8 STX	1/2	1/2 - 14	1.33	1.47	7/8	6.0	6.0	3.3
10 STX	5/8	1/2 - 14	1.45	1.47	7/8	5.0	5.0	3.3
12 STX	3/4	3/4 - 14	1.66	1.59	1 1/16	4.0	4.0	2.6
14 STX	7/8	3/4 - 14	1.80	1.69	1 5/16	4.0	4.0	2.3
16 STX	1	1 - 11 1/2	1.81	1.97	1 5/16	3.0	3.0	2.0
20 STX	1 1/4	1 1/4 - 11 1/2	2.06	2.38	1 5/8	2.5	2.5	1.6
24 STX	1 1/2	1 1/2 - 11 1/2	2.33	2.64	1 7/8	2.5	2.5	1.6

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

OTX

Female Branch Tee
37° Flare / 37° Flare / NPTF

SAE 070427
HPD Base # 223T



Y1* – Across wrench flats

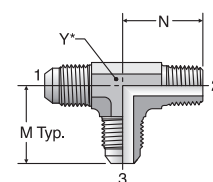
TUBE FITTING PART #	END SIZE		M1 (in.)	N1 (in.)	Y1 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2 (in.)	3 NPTF				-S	-SS	-B
4 OTX	1/4	1/8 - 27	1.08	0.66	9/16	5.0	5.0	3.3
4-4-4 OTX	1/4	1/4 - 18	1.13	0.88	3/4	5.0	5.0	3.3
5 OTX	5/16	1/8 - 27	1.08	0.66	9/16	5.0	5.0	3.3
6 OTX	3/8	1/4 - 18	1.23	0.88	3/4	5.0	5.0	3.3
6-6-6 OTX	3/8	3/8 - 18	1.23	1.02	7/8	4.5	4.5	2.9
8 OTX	1/2	3/8 - 18	1.42	1.02	7/8	4.5	4.5	2.9
8-8-8 OTX	1/2	1/2 - 14	1.42	1.23	1 1/16	3.0	3.0	2.0
10 OTX	5/8	1/2 - 14	1.64	1.23	1 1/16	3.0	3.0	2.0
12 OTX	3/4	3/4 - 14	1.89	1.36	1 5/16	3.0	3.0	2.0
14 OTX	7/8	3/4 - 14	1.86	1.42	1 5/16	3.0	3.0	2.0
16 OTX	1	1 - 11 1/2	2.17	1.62	1 5/8	1.8	1.8	1.2
20 OTX	1 1/4	1 1/4 - 11 1/2	2.33	1.70	1 7/8	1.5	1.5	1.0
24 OTX	1 1/2	1 1/2 - 11 1/2	2.89	2.08	2 1/2	1.5	1.5	1.0

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RTX

Male Run Tee
37° Flare / NPTF / 37° Flare

SAE 070424
HPD Base # 013T



Y* – Across wrench flats

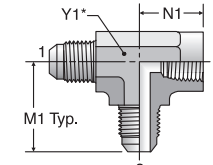
TUBE FITTING PART #	END SIZE		M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 3 (in.)	2 NPTF				-S	-SS	-B
3 RTX	3/16	1/8 - 27	0.83	0.72	7/16	6.0	6.0	3.3
4 RTX	1/4	1/8 - 27	0.89	0.78	7/16	6.0	6.0	3.3
4-4-4 RTX	1/4	1/4 - 18	1.05	1.09	9/16	6.0	6.0	3.3
5 RTX	5/16	1/8 - 27	0.95	0.78	9/16	6.0	6.0	3.3
5-4-5 RTX	5/16	1/4 - 18	1.05	1.09	9/16	6.0	6.0	3.3
6 RTX	3/8	1/4 - 18	1.06	1.09	9/16	6.0	6.0	3.3
6-6-6 RTX	3/8	3/8 - 18	1.14	1.22	3/4	6.0	6.0	3.3
8 RTX	1/2	3/8 - 18	1.25	1.22	3/4	6.0	6.0	3.3
8-8-8 RTX	1/2	1/2 - 14	1.33	1.47	7/8	6.0	6.0	3.3
10 RTX	5/8	1/2 - 14	1.45	1.47	7/8	5.0	5.0	3.3
12 RTX	3/4	3/4 - 14	1.66	1.59	1 1/16	4.0	4.0	2.6
12-8-12 RTX	3/4	1/2 - 14	1.66	1.59	1 1/16	5.0	5.0	2.9
14 RTX	7/8	3/4 - 14	1.80	1.69	1 5/16	4.0	4.0	2.3
16 RTX	1	1 - 11 1/2	1.81	1.97	1 5/16	3.0	3.0	2.0
20 RTX	1 1/4	1 1/4 - 11 1/2	2.06	2.38	1 5/8	2.5	2.5	1.6
24 RTX	1 1/2	1 1/2 - 11 1/2	2.33	2.64	1 7/8	2.5	2.5	1.6

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MTX

Female Run Tee
37° Flare / NPTF / 37° Flare

SAE 070426
HPD Base # 023T



Y1* – Across wrench flats

TUBE FITTING PART #	END SIZE		M1 (in.)	N1 (in.)	Y1 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 & 3 (in.)	2 NPTF				-S	-SS	-B
4 MTX	1/4	1/8 - 27	1.08	0.66	9/16	5.0	5.0	3.3
4-4-4 MTX	1/4	1/4 - 18	1.13	0.88	3/4	5.0	5.0	3.3
6 MTX	3/8	1/4 - 18	1.23	0.88	3/4	5.0	5.0	3.3
8 MTX	1/2	3/8 - 18	1.42	1.02	7/8	4.5	4.5	2.9
8-8-8 MTX	1/2	1/2 - 14	1.42	1.23	1 1/16	3.0	3.0	2.0
10 MTX	5/8	1/2 - 14	1.64	1.23	1 1/16	3.0	3.0	2.0
12 MTX	3/4	3/4 - 14	1.89	1.36	1 5/16	3.0	3.0	2.0
14 MTX	7/8	3/4 - 14	1.86	1.42	1 5/16	3.0	3.0	2.0
16 MTX	1	1 - 11 1/2	2.17	1.62	1 5/8	1.8	1.8	1.2
20 MTX	1 1/4	1 1/4 - 11 1/2	2.33	1.70	1 7/8	1.5	1.5	1.0
24 MTX	1 1/2	1 1/2 - 11 1/2	2.89	2.08	2 1/2	1.5	1.5	1.0

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Dimensions and pressures for reference only, subject to change.

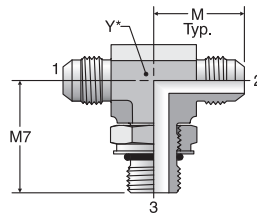
[Click here for CADs, Support Resources or to Configure Parts Online](#)

S870MX

ISO 6149 Branch Tee

37° Flare / 37° Flare / ISO 6149

SAE 070489



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2		3						
			Male Metric Parallel Thread						
	(mm)	(in.)							
6M14S87OMX	10	3/8	M14 x 1.5	26.9	33.5	14	6.0	6.0	3.3
8M16S87OMX	12	1/2	M16 x 1.5	31.8	38.0	19	5.0	5.0	3.3
10M22S87OMX	14,15,16	5/8	M22 x 1.5	36.8	42.5	22	5.0	5.0	3.3
12M27S87OMX	18,20	3/4	M27 x 2	42.2	51.0	27	5.0	5.0	3.3

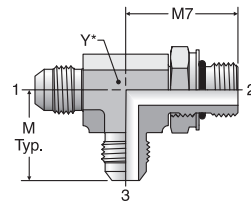
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

R870MX

ISO 6149 Run Tee

37° Flare / ISO 6149 / 37° Flare

SAE 070488



Y* – Across wrench flats

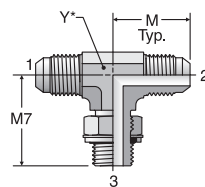
TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1 & 3		2						
	(mm)	(in.)	Male Metric Parallel Thread						
							S	SS	B
6M14R870MX	10	3/8	M14 x 1.5	26.9	33.5	14	6.0	6.0	3.3
8M16R870MX	12	1/2	M16 x 1.5	31.8	38.0	19	5.0	5.0	3.3
10M22R870MX	14,15,16	5/8	M22 x 1.5	36.8	42.5	22	5.0	5.0	3.3
12M27R870MX	18, 20	3/4	M27 x 1.5	42.2	51.0	27	5.0	5.0	3.3

S40MX

Male Branch Tee – BSPP

37° Flare / 37° Flare /

BSPP-ORR



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1 & 2		3				S	SS	B
	(mm)	(in.)	BSPP						
4S40MX	6	1/4	1/8 - 28	22.6	26.5	11	3.6	3.6	2.3
6S40MX	10	3/8	1/4 - 19	26.9	32.0	14	3.6	2.9	1.9
8S40MX	12	1/2	3/8 - 19	31.8	37.0	19	3.6	2.9	1.9
10S40MX	14,15,16	5/8	1/2 - 14	36.8	43.0	22	3.6	2.9	1.9
12S40MX	18,20	3/4	3/4 - 14	42.2	49.5	27	3.6	2.9	1.9
16S40MX	25	1	1 - 11	46.0	52.0	33	3.6	2.9	1.9

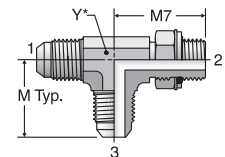
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

R40MX

Male Run Tee – BSPP

37° Flare / BSPP-ORR /

37° Flare



Y* – Across wrench flats

TUBE FITTING PART #	END SIZE			M (mm)	M7 (mm)	Y (mm)	Dynamic Pressure (x 1,000 PSI)		
	1 & 3		2				S	SS	B
	(mm)	(in.)	BSP						
4R40MX	6	1/4	1/8 - 28	22.6	26.5	11	3.6	3.6	2.3
6R40MX	10	3/8	1/4 - 19	26.6	32.0	14	3.6	2.9	1.9
8R40MX	12	1/2	3/8 - 19	31.8	36.8	19	3.6	2.9	1.9
10R40MX	14,15,16	5/8	1/2 - 14	36.8	43.0	22	3.6	2.9	1.9
12R40MX	18,20	3/4	3/4 - 14	42.2	49.5	27	3.6	2.9	1.9
16R40MX	25	1	1 - 11	46.0	52.0	33	3.6	2.9	1.9
20R40MX	28, 30, 32	1 1/4	1 1/4 - 11	52.3	57.0	41	3.0	2.3	1.5

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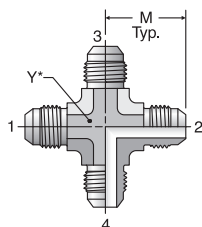
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

KTX

Union Cross
37° Flare (all four ends)

SAE 070501
HPD Base # 033X



Y* – Across wrench flats

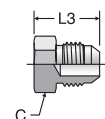
TUBE FITTING PART #	END SIZE	M (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)		
	1-4 (in.)			-S	-SS	-B
4 KTX	1/4	0.89	7/16	7.5	7.7	3.3
5 KTX	5/16	0.95	9/16	6.0	6.0	3.3
6 KTX	3/8	1.06	9/16	6.0	6.0	3.3
8 KTX	1/2	1.25	3/4	6.0	6.0	3.3
10 KTX	5/8	1.45	7/8	5.0	5.0	3.3
12 KTX	3/4	1.66	1 1/16	5.0	5.0	2.9
16 KTX	1	1.81	1 5/16	4.0	3.5	2.3

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PNTX

Plug
37° Flare

SAE 070109
HPD Base # 03CP



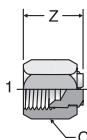
TUBE FITTING PART #	END SIZE	C HEX (in.)	L3 (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)			-S	-SS	-B
2 PNTX	1/8	7/16	0.70	7.5	9	3.3
3 PNTX	3/16	7/16	0.73	7.5	9	3.3
4 PNTX	1/4	1/2	0.80	7.5	9	3.3
5 PNTX	5/16	9/16	0.80	6.0	7.2	3.3
6 PNTX	3/8	5/8	0.84	6.0	7.2	3.3
8 PNTX	1/2	13/16	0.94	6.0	7.2	3.3
10 PNTX	5/8	15/16	1.10	5.0	6.0	3.3
12 PNTX	3/4	1 1/8	1.28	5.0	6.0	3.3
14 PNTX	7/8	1 1/4	1.31	5.0	5.0	3.3
16 PNTX	1	1 3/8	1.33	4.5	5.4	2.9
20 PNTX	1 1/4	1 11/16	1.45	4.0	4.8	2.6
24 PNTX	1 1/2	2	1.65	4.0	4.8	2.6
32 PNTX	2	2 5/8	2.05	2.0	2.4	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

FNTX

Cap
37° Flare

SAE 070112A
HPD Base # 06CP

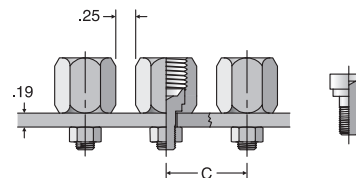


TUBE FITTING PART #	END SIZE	C HEX (in.)	Z (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)			-S	-SS	-B
2 FNTX	1/8	3/8	0.60	7.5	9.0	3.3
3 FNTX	3/16	7/16	0.66	7.5	9.0	3.3
4 FNTX	1/4	9/16	0.67	7.5	9.0	3.3
5 FNTX	5/16	5/8	0.77	6.0	7.2	3.3
6 FNTX	3/8	11/16	0.81	6.0	7.2	3.3
8 FNTX	1/2	7/8	0.94	6.0	7.2	3.3
10 FNTX	5/8	1	1.07	5.0	6.0	3.3
12 FNTX	3/4	1 1/4	1.24	5.0	6.0	3.3
14 FNTX	7/8	1 3/8	1.26	5.0	6.0	3.3
16 FNTX	1	1 1/2	1.29	4.5	5.4	2.9
20 FNTX	1 1/4	2	1.39	4.0	4.8	2.6
24 FNTX	1 1/2	2 1/4	1.70	3.0	3.6	2.0
32 FNTX	2	2 7/8	2.01	2.0	2.4	1.3

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

T22X

Mountie Cap



TUBE FITTING PART #	END SIZE		C (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)		
	1 (in.)	2 UNC/UNF-2A			-S	-SS	-B
4 T22X	1/4	1/4 - 20	0.91	0.72	7.5	9.0	3.3
6 T22X	3/8	1/4 - 20	1.08	0.81	6.0	7.2	3.3
8 T22X	1/2	5/16 - 18	1.25	0.97	6.0	7.2	3.3

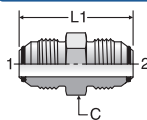
WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

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HTXO

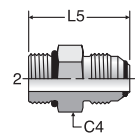
Union
37° Flare



TUBE FITTING PART #	END SIZE 1 & 2 (in.)	C HEX (in.)	L1 (in.)	Dynamic Pressure (x 1,000 PSI)
				-SS
4 HTXO	1/4	1/2	1.39	9.0
6 HTXO	3/8	5/8	1.42	7.7
8 HTXO	1/2	13/16	1.66	7.7
10 HTXO	5/8	15/16	1.98	6.0
12 HTXO	3/4	1 1/8	2.24	6.0
16 HTXO	1	1 3/8	2.41	5.4
20 HTXO	1 1/4	1 11/16	2.58	5.0
24 HTXO	1 1/2	2	2.90	5.0

F5OXO

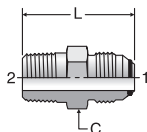
Straight Thread Connector
37° Flare / SAE-ORB



TUBE FITTING PART #	END SIZE		C4 HEX (in.)	L5 (in.)	Dynamic Pressure (x 1,000 PSI)
	1 (in.)	2 UN/UNF-2A			-SS
4 F5OXO	1/4	7/16 - 20	9/16	1.23	9.0
4-6 F5OXO	1/4	9/16 - 18	11/16	1.28	7.7
6 F5OXO	3/8	9/16 - 18	11/16	1.30	7.7
6-4 F5OXO	3/8	7/16 - 20	5/8	1.27	7.7
6-8 F5OXO	3/8	3/4 - 16	7/8	1.38	7.7
8 F5OXO	1/2	3/4 - 16	7/8	1.48	7.7
8-6 F5OXO	1/2	9/16 - 18	13/16	1.44	7.7
10 F5OXO	5/8	7/8 - 14	1	1.75	6.0
12 F5OXO	3/4	1 1/16 - 12	1 1/4	1.97	6.0
16 F5OXO	1	1 5/16 - 12	1 1/2	2.05	5.4
20 F5OXO	1 1/4	1 5/8 - 12	1 7/8	2.17	5.0
24 F5OXO	1 1/2	1 7/8 - 12	2 1/8	2.37	4.0
32 F5OXO	2	2 1/2 - 12	2 3/4	2.78	2.4

FTXO

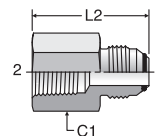
Male Connector
37° Flare / NPTF



TUBE FITTING PART #	END SIZE		C HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)
	1 (in.)	2 NPTF			-SS
4 FTXO	1/4	1/8 - 27	1/2	1.23	6.0
4-4 FTXO	1/4	1/4 - 18	9/16	1.43	6.0
6 FTXO	3/8	1/4 - 18	5/8	1.45	6.0
6-6 FTXO	3/8	3/8 - 18	3/4	1.46	6.0
8 FTXO	1/2	3/8 - 18	13/16	1.53	6.0
8-8 FTXO	1/2	1/2 - 14	7/8	1.78	6.0
10 FTXO	5/8	1/2 - 14	15/16	1.94	5.0
12 FTXO	3/4	3/4 - 14	1 1/8	2.10	5.0
16 FTXO	1	1 - 11 1/2	1 3/8	2.38	4.5
20 FTXO	1 1/4	1 1/4 - 11 1/2	1 11/16	2.52	3.0
24 FTXO	1 1/2	1 1/2 - 11 1/2	2	2.76	3.0
32 FTXO	2	2 - 11 1/2	2 5/8	3.18	2.0

GTXO

Female Connector
37° Flare / NPTF



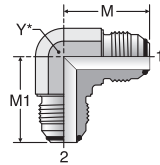
TUBE FITTING PART #	END SIZE		C1 HEX (in.)	L2 (in.)	Dynamic Pressure (x 1,000 PSI)
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4 GTXO	1/4	1/8 - 27	9/16	1.20	6.0
6 GTXO	3/8	1/4 - 18	3/4	1.41	6.0
8 GTXO	1/2	3/8 - 18	7/8	1.58	6.0
10 GTXO	5/8	1/2 - 14	1 1/8	1.94	5.0
12 GTXO	3/4	3/4 - 14	1 3/8	2.10	4.8
16 GTXO	1	1 - 11 1/2	1 5/8	2.43	3.6
20 GTXO	1 1/4	1 1/4 - 11 1/2	2	2.56	3.0
24 GTXO	1 1/2	1 1/2 - 11 1/2	2 3/8	2.70	2.4

Dimensions and pressures for reference only, subject to change.

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ETXO

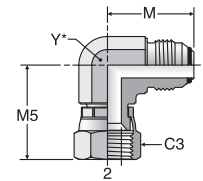
Union Elbow
37° Flare / 37° Flare



TUBE FITTING PART #	END SIZE	M (in.)	M1 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)
	1 & 2 (in.)				-SS
4 ETXO	1/4	0.90	0.90	7/16	7.7
6 ETXO	3/8	1.08	1.08	9/16	6.0
8 ETXO	1/2	1.25	1.25	3/4	6.0
10 ETXO	5/8	1.50	1.50	7/8	5.0
12 ETXO	3/4	1.70	1.70	1 1/16	5.0
16 ETXO	1	1.89	1.89	1 5/16	5.0
20 ETXO	1 1/4	2.13	2.13	1 5/8	5.0
24 ETXO	1 1/2	2.33	2.33	1 7/8	5.0

C6XO

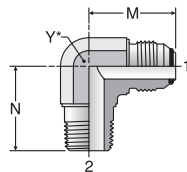
Swivel Nut Elbow
37° Flare / 37° Swivel



TUBE FITTING PART #	END SIZE	C3 HEX (in.)	M (in.)	M5 (in.)	M10 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)
	1 & 2 (in.)						-SS
4 C6XO	1/4	9/16	0.90	1.00	0.66	7/16	7.7
6 C6XO	3/8	11/16	1.08	1.25	0.88	9/16	6.0
8 C6XO	1/2	7/8	1.25	1.38	0.95	3/4	6.0
10 C6XO	5/8	1	1.50	1.62	1.13	7/8	5.0
12 C6XO	3/4	1 1/4	1.70	1.75	1.19	1 1/16	5.0
16 C6XO	1	1 1/2	1.89	2.00	1.41	1 5/16	2.5
20 C6XO	1 1/4	2	2.13	2.31	1.69	1 5/8	2.5

CTXO

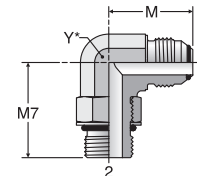
Male Elbow
37° Flare / NPTF



TUBE FITTING PART #	END SIZE		M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)
	1 (in.)	2 NPTF				-SS
4 CTXO	1/4	1/8 - 27	0.90	0.78	7/16	6.0
4-4 CTXO	1/4	1/4 - 18	1.06	1.09	9/16	6.0
6 CTXO	3/8	1/4 - 18	1.08	1.09	9/16	6.0
6-6 CTXO	3/8	3/8 - 18	1.16	1.22	3/4	6.0
8 CTXO	1/2	3/8 - 18	1.25	1.22	3/4	6.0
8-8 CTXO	1/2	1/2 - 14	1.33	1.47	7/8	6.0
10 CTXO	5/8	1/2 - 14	1.51	1.47	7/8	5.0
12 CTXO	3/4	3/4 - 14	1.70	1.59	1 1/16	4.0
16 CTXO	1	1 - 11 1/2	1.89	1.97	1 5/16	3.0
20 CTXO	1 1/4	1 1/4 - 11 1/2	2.13	2.38	1 5/8	2.5
24 CTXO	1 1/2	1 1/2 - 11 1/2	2.41	2.64	1 7/8	2.5
32 CTXO	2	2 - 11 1/2	3.13	3.00	2 1/2	2.0

C5OXO

Straight Thread Elbow
37° Flare / SAE-ORB



TUBE FITTING PART #	END SIZE		M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)
	1 (in.)	2 UN/UNF-2A				-SS
4 C5OXO	1/4	7/16 - 20	0.90	1.03	7/16	6.0
6 C5OXO	3/8	9/16 - 18	1.08	1.25	9/16	5.4
8 C5OXO	1/2	3/4 - 16	1.25	1.45	3/4	5.4
10 C5OXO	5/8	7/8 - 14	1.50	1.70	7/8	5.4
12 C5OXO	3/4	1 1/16 - 12	1.70	1.94	1 1/16	5.4
16 C5OXO	1	1 5/16 - 12	1.89	2.05	1 5/16	3.7
20 C5OXO	1 1/4	1 5/8 - 12	2.13	2.25	1 5/8	2.8
24 C5OXO	1 1/2	1 7/8 - 12	2.41	2.39	1 7/8	2.5
32 C5OXO	2	2 1/2 - 12	3.13	2.89	2 1/2	1.5

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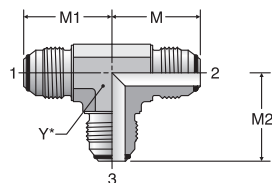
GEN TECH

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JTXO

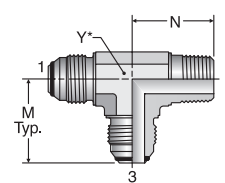
Union Tee
37° Flare (all three ends)



TUBE FITTING PART #	END SIZE	M (in.)	M1 (in.)	M2 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI) -SS
	1 - 3 (in.)					
4 JTXO	1/4	0.90	0.90	0.90	7/16	7.7
6 JTXO	3/8	1.08	1.08	1.08	9/16	6.0
8 JTXO	1/2	1.25	1.25	1.25	3/4	6.0
10 JTXO	5/8	1.50	1.50	1.50	7/8	5.0
12 JTXO	3/4	1.70	1.70	1.70	1 1/16	5.0
16 JTXO	1	1.89	1.89	1.89	1 5/16	5.0
20 JTXO	1 1/4	2.13	2.13	2.13	1 5/8	5.0
24 JTXO	1 1/2	2.41	2.41	2.41	1 7/8	5.0

RTXO

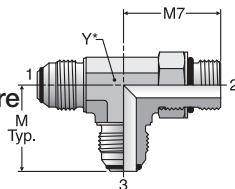
Male Run Tee
37° Flare / NPTF / 37° Flare



TUBE FITTING PART #	END SIZE		M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI) -SS
	1 & 3 (in.)	2 NPTF				
4 RTXO	1/4	1/8 - 27	0.90	0.78	7/16	6.0
6 RTXO	3/8	1/4 - 18	1.08	1.09	9/16	6.0
8 RTXO	1/2	3/8 - 18	1.25	1.22	3/4	6.0
10 RTXO	5/8	1/2 - 14	1.51	1.47	7/8	5.0
12 RTXO	3/4	3/4 - 14	1.70	1.59	1 1/16	4.0
16 RTXO	1	1 - 11 1/2	1.89	1.97	1 5/16	3.0
20 RTXO	1 1/4	1 1/4 - 11 1/2	2.13	2.38	1 5/8	2.5
24 RTXO	1 1/2	1 1/2 - 11 1/2	2.41	2.64	1 7/8	2.5

R5OXO

Straight Thread Run Tee
37° Flare / SAE-ORB / 37° Flare



TUBE FITTING PART #	END SIZE		M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI) -SS
	1 (in.)	2 UN/UNF-2A				
4 R5OXO	1/4	7/16 - 20	0.90	1.03	7/16	6.0
6 R5OXO	3/8	9/16 - 18	1.08	1.25	9/16	5.4
8 R5OXO	1/2	3/4 - 16	1.25	1.45	3/4	5.4
10 R5OXO	5/8	7/8 - 14	1.51	1.70	7/8	5.4
12 R5OXO	3/4	1 1/16 - 12	1.70	1.94	1 1/16	5.4
16 R5OXO	1	1 5/16 - 12	1.89	2.05	1 5/16	3.7
20 R5OXO	1 1/4	1 5/8 - 12	2.13	2.25	1 5/8	2.8

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C

FERULOK®

Flareless Bite Type Fittings



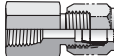
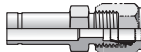
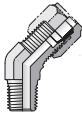
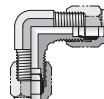
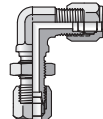
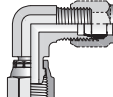
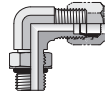
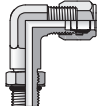
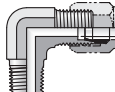
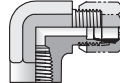
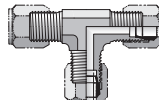
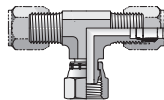
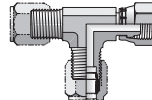
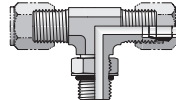
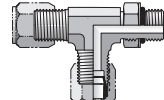
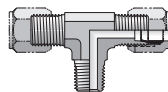
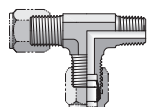
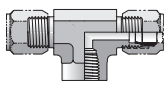
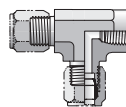
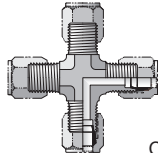
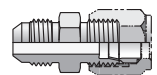
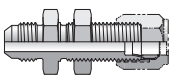
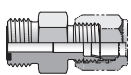
Nuts, Ferrules, Locknuts	BU Nut	TU Ferrules	WLN Bulkhead Locknut	Straights	HBU Union
	 C7	 C7	 C7		 C7
WBU Bulkhead Union	F5BU SAE-ORB / Flareless	FBU NPTF / Flareless	GBU NPTF / Flareless	TRBU Tube End Reducer	
 C8	 C8	 C8	 C9	 C9	
45° Elbows	V5BU SAE-ORB / Flareless	VBU NPTF / Flareless	90° Elbows	EBU Union Elbow	WEBU Bulkhead Union Elbow
	 C9	 C9		 C10	 C10
C6BU Flareless Swivel/Flareless	C5BU SAE-ORB / Flareless	CC5BU SAE-ORB / Flareless	CBU NPTF / Flareless	DBU NPTF / Flareless	
 C10	 C10	 C11	 C11	 C11	
Tees	JBW Union Tee	S6BU Swivel Branch Tee	R6BU Swivel Run Tee	S5BU SAE-ORB Branch Tee	R5BU SAE-ORB Run Tee
	 C12	 C12	 C12	 C12	 C13
SBU NPTF Branch Tee	RBU NPTF Run Tee	OBW NPTF Branch Tee	MBU NPTF Run Tee	Cross	KBU Union Cross
 C13	 C13	 C13	 C14		 C14
Plugs and Caps	PNU Plug	FNU Cap			
	 C14	 C14			

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Dimensions and pressures for reference only, subject to change.

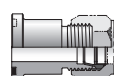
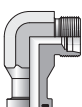
Conversion Adapters (Shown in Section J)

	XHBU 37° Flare / Flareless	XHBU2 37° / Flareless Bulkhead	BUHLO ORFS / 24° Flareless
			
	J4	J4	J4

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Flange Adapters (Shown in Section K)

	BUHQ1 Code 61 / Flareless	BUVQ1 Code 61 / Flareless	BUEQ1 Code 61 / Flareless
			
	K12	K32	K33

O-Rings and Seals (Shown in Section M)

	SAE O-Ring
	
	M4

Dimensions and pressures for reference only, subject to change.

Introduction

The Ferulok fitting design and performance capabilities far exceed the strict requirements of SAE J514. The Ferulok fitting is a flareless fitting that consists of a body, a one-piece ferrule, and a nut. On assembly, the ferrule “bites” into the outer surface of the tube with sufficient strength to hold the tube against pressure and seal the fluid, without considerable distortion of the inside tube diameter. Ferulok fittings have a visible bite, allowing the fitting assembler to visually inspect the bite quality, thus significantly minimizing the risk of improper assembly and related service problems. Ferulok fittings are especially suitable for use with tube wall thickness ranging from medium to extra heavy.

How Ferulok Fittings Work

The ferrule in the Ferulok fitting forms pressure tight seals with the tube and the fitting body. These seals are the result of several key characteristics graphically shown in Fig. C1. Below are detailed explanations of each of these key features.

- A. When properly assembled, the wedging action of the Ferulok design will cause the end of the tube to press firmly against the seat in the body. This action will cause the tube to develop a small indentation circumferentially on the bottom of the tube. This indentation serves as a good post assembly inspection criterion.
- B. As the ferrule moves forward, it contacts the tapered seat of the body, which causes the ferrule to move inward into the tube. The leading edge of the hardened ferrule makes a clean 360° cut into the outside diameter of the tube. This cut is often termed a “bite” and thus “bite type fitting”. As the ferrule makes its bite, a small ridge of material is plowed up in front of the ferrule. This intimate contact of the tube ridge with the ferrule’s front face and bite edge gives the fitting its ability to retain high pressure without leaking or blowing off. A second seal point is also created between the now bowed ferrule and the fitting body seat.
- C. As the ferrule bites into the tube, the mid section will bow and the inside diameter of the back area firmly grips the tube. This action keeps the stresses, caused by flexural and vibration loading, from being concentrated in the bite area. The “compression grip” at the back end is a key factor for long life in rigorous applications.

All Ferulok parts come with the ferrule, and nut. However, Ferulok fittings can be purchased without nuts and sleeves for use with hose crimp fittings (Fig. C2). This can be done by dropping the ‘B’ from the part number. For example, (4 CBU-S, 4 CU-S). When used with a hose crimp fitting, sealing occurs between the 24° cone of the fitting body and the hose swivel as shown.

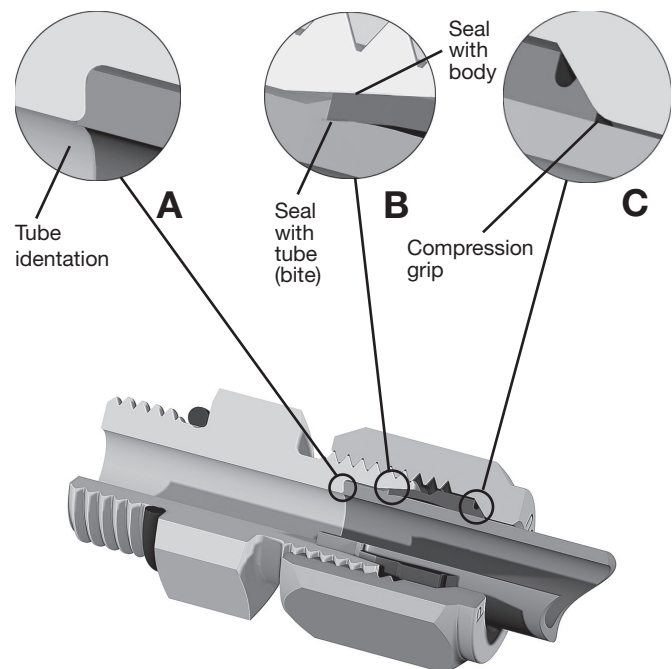


Fig. C1 – Assembled Ferulok Fitting with Tube

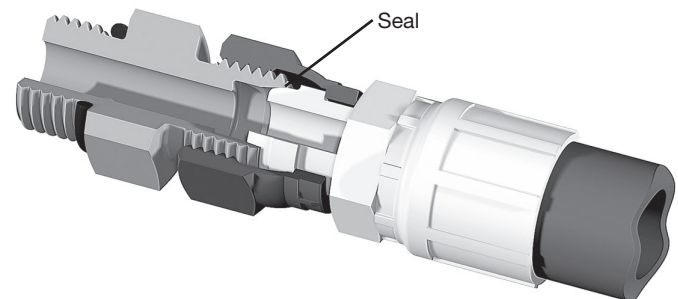


Fig. C2 – Ferulok Fitting with Hose Assembly

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The Parker Advantage

Robust Port Stud: The adjustable port stud is manufactured with a longer locknut designed to cover the uppermost threads completely. Since the backup washer is never exposed to the upper threads, it cannot be damaged during assembly. During assembly, exposed upper threads, as common with fittings from other fitting manufacturers, can lead to a deformed backup washer that can pinch the o-ring and create an o-ring extrusion gap that has the potential to leak. The longer locknut also provides a greater grip area for the wrench.

Visible bite: The style A (SAE 080115A) ferrule design allows for an easy inspection of the bite in the tubing. A verification can quickly be achieved which reduces time and assures proper assembly. This assurance also eliminates the risk of leaks and catastrophic failures.

Rear compression grip: The ferrule is also designed with a rear bevel to firmly hold the nut and tubing. This enhancement dampens the effects of vibration in the connection; thus extending the life of the joint.

Metal-to-metal sealing: The metal to metal sealing function broadens the range of both temperatures and media types. The temperature and media range of Ferulok is not limited by an elastomeric seal, but by the range of steel and stainless steel (see page S17 of the General Technical section for material temperature and media compatibility).

Superior Plating: Parker's Ferulok steel fittings come standard with ToughShield™ Plus zinc-nickel plating, giving them unmatched protection against red rust. In ASTM B117 / ISO 9227 neutral salt spray testing, fittings and adapters with ToughShield Plus plating remained rust free for up to 3,000 hours. This performance far exceeds the SAE industry requirement, even on post plating deformed parts like crimp nuts and back-up washers where SAE allows for large exceptions. Learn more and see the difference at toughshield.com.

No special tooling required: Neither flaring nor flanging tools are required to make a Ferulok connection. Smaller sizes of Ferulok can be assembled by a wrench thus reducing tooling costs and assembly time. However, portable presetting equipment is available for larger sizes and/or high production (see Section Q of the catalog for equipment available).

Reference locations

Standard Material Specifications: Refer to Table S34 in General Technical Section page S46.

Assembly and Installation: Please refer to Ferulok Assembly located within the Assembly/Installation section of this catalog.

Recommended Tube Wall Thickness: Please refer to Table S14 located in the General Technical section.

Dynamic Pressure Ratings: Please refer to the last column of the part number tables located on the following pages of this section for the appropriate dynamic pressure ratings.

Seal Material Selection: Please refer to Table S10 in the General Technical section of this catalog for elastomeric seal information.

Tube Recommendation

Maximum tube wall thickness is based on the pressure holding capability of Ferulok fittings. Tubes above the recommended range can be used. However, the pressure holding capability of the assembly will be limited to the fitting capacity. The proper Ferulok assembly procedures as outlined on pages R30 - R33 of this catalog are critical to the performance of the fitting. Steel Ferulok works best with seamless or welded and drawn fully annealed tube, SAE J356, SAE J524, SAE J525 (max. hardness, RB72) or equivalent specification steel tube. For stainless steel Ferulok fittings, types 304 and 316 of ASTM A269, ASTM A213 (max. hardness, RB90) or equivalent stainless steel tube is recommended.

Ferulok fittings are also suitable for use with soft metal tube and various types of plastic tubes such as nylon, polyethylene, etc. When used with plastic tube, it is strongly recommended that a tube insert, such as T23UI, be used to reduce tube collapse and prevent tube pull out due to tensile loading.

See Table U3 in Appendix on Page U6. Consult the Parker Hannifin Tube Fittings Division for other combinations of tube and tube fitting materials not shown.

C

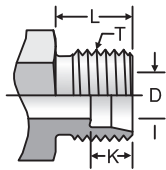
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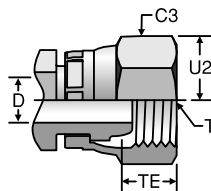
Dimensions and pressures for reference only, subject to change.



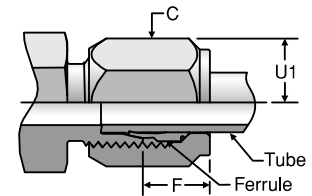
Ferulok Flareless Tube Ends



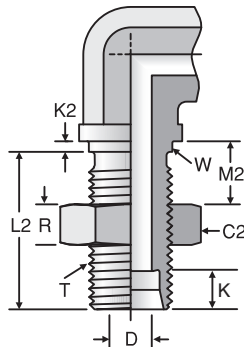
**Ferulok Male
Stud Tube End**



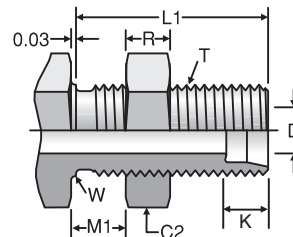
Ferulok Female Swivel End



**Ferulok Tube End
Assembly**



**Ferulok Shape
Bulkhead**



**Ferulok Straight
Bulkhead**

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SAE Dash Size	Tube O.D. (in.)	T UN/UNF	C (in.)	C2 (in.)	C3 (in.)	D (in.)	Allowance		Male Turn Back	Bulkhead					Max Bulkhead Thickness		Thread Engage- ment	Across Corners	
							Tube Nut Assembled	Tube		Pilot Length Shapes	Length - Straights	Length - Shapes	Locknut Thickness	Pilot Dia	Straights	Shapes		Tube Nut Hex	Swivel Nut Hex
							F (in)	K (in)	L (in)	K2 (in)	L1 (in)	L2 (in)	R (in)	W ¹⁾ (in)	M1 (in)	M2 (in)	TE (in)	U1 (in)	U2 (in)
2	1/8	5/16-24	3/8	9/16	7/16	0.093	0.31	0.19	0.375	0.09	1.02	0.83	0.22	0.31	0.28	0.38	0.22	0.22	0.25
3	3/16	3/8-24	7/16	5/8	1/2	0.125	0.34	0.24	0.422	0.09	1.06	0.88	0.22	0.37	0.28	0.38	0.25	0.25	0.29
4	1/4	7/16-20	9/16	11/16	9/16	0.203	0.42	0.24	0.453	0.09	1.12	0.94	0.28	0.44	0.38	0.28	0.29	0.33	0.33
5	5/16	1/2-20	5/8	3/4	5/8	0.234	0.42	0.26	0.453	0.09	1.12	0.94	0.28	0.50	0.28	0.38	0.31	0.36	0.36
6	3/8	9/16-18	11/16	13/16	11/16	0.281	0.47	0.26	0.469	0.09	1.17	0.98	0.27	0.56	0.40	0.31	0.34	0.40	0.40
8	1/2	3/4-16	7/8	1	7/8	0.422	0.50	0.31	0.562	0.13	1.31	1.12	0.31	0.75	0.40	0.31	0.32	0.51	0.51
10	5/8	7/8-14	1	1 1/8	1	0.500	0.53	0.36	0.625	0.13	1.45	1.27	0.36	0.88	0.44	0.38	0.37	0.58	0.59
12	3/4	1 1/16-12	1 1/4	1 3/8	1 1/4	0.656	0.56	0.36	0.688	0.13	1.56	1.38	0.41	1.06	0.44	0.38	0.42	0.72	0.73
14	7/8	1 3/16-12	1 3/8	1 1/2	1 3/8	0.719	0.53	0.36	0.688	0.13	1.56	1.38	0.41	1.19	0.44	0.38	0.34	0.79	0.79
16	1	1 5/16-12	1 1/2	1 5/8	1 1/2	0.875	0.66	0.42	0.688	0.13	1.56	1.38	0.41	1.31	0.44	0.38	0.32	0.87	0.88
20	1 1/4	1 5/8-12	2	1 7/8	2	1.094	0.72	0.42	0.688	0.13	1.56	1.38	0.41	1.62	0.44	0.38	0.33	1.15	1.17
24	1 1/2	1 7/8-12	2 1/4	2 1/8	2 1/4	1.344	0.72	0.49	0.688	0.13	1.56	1.38	0.41	1.87	0.44	0.38	0.34	1.30	1.29
32	2	2 1/2-12	2 7/8	2 3/4	2 7/8	1.813	0.84	0.49	0.688	0.13	1.77	1.58	0.41	2.50	0.63	0.56	0.34	1.66	1.64

1) Recommended clearance hole +0.015 over W dia.

Note: For port and stud end dimensions reference Section E: Pipe Fittings and Port Adapters.

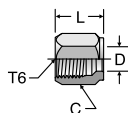
Dimensions and pressures for reference only, subject to change.

Click here for CADs, Support Resources or to Configure Parts Online

BU

Nut
Flareless

SAE 080110



TUBE FITTING PART #	TUBE O.D. (in.)	T6 UN/UNF-2B	C HEX (in.)	D DRILL (in.)	L (in.)	Material	
						-S	-SS
2 BU	1/8	5/16 - 24	3/8	0.130	0.53	•	•
3 BU	3/16	3/8 - 24	7/16	0.193	0.61	•	•
4 BU	1/4	7/16 - 20	9/16	0.255	0.70	•	•
5 BU	5/16	1/2 - 20	5/8	0.318	0.72	•	•
6 BU	3/8	9/16 - 18	11/16	0.380	0.75	•	•
8 BU	1/2	3/4 - 16	7/8	0.505	0.84	•	•
10 BU	5/8	7/8 - 14	1	0.631	0.92	•	•
12 BU	3/4	1 1/16 - 12	1 1/4	0.756	0.97	•	•
14 BU	7/8	1 3/16 - 12	1 3/8	0.881	1.00	•	•
16 BU	1	1 5/16 - 12	1 1/2	1.006	1.05	•	•
20 BU	1 1/4	1 5/8 - 12	2	1.260	1.05	•	•
24 BU	1 1/2	1 7/8 - 12	2 1/4	1.510	1.03	•	•
32 BU	2	2 1/2 - 12	2 7/8	2.014	1.12	•	•

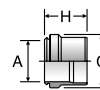
Note: All stainless steel nuts are coated to prevent galling at assembly.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TU

Ferrule
Flareless

SAE 080115A



TUBE FITTING PART #	TUBE O.D. (in.)	A (in.)	C (in.)	H (in.)	Material	
					-S	-SS
2 TU	1/8	0.13	0.24	0.29	•	•
3 TU	3/16	0.19	0.31	0.33	•	•
4 TU	1/4	0.26	0.37	0.36	•	•
5 TU	5/16	0.32	0.43	0.37	•	•
6 TU	3/8	0.38	0.50	0.39	•	•
8 TU	1/2	0.51	0.66	0.43	•	•
10 TU	5/8	0.63	0.78	0.44	•	•
12 TU	3/4	0.76	0.93	0.48	•	•
14 TU	7/8	0.88	1.06	0.48	•	•
16 TU	1	1.01	1.19	0.48	•	•
20 TU	1 1/4	1.26	1.45	0.48	•	•
24 TU	1 1/2	1.51	1.69	0.48	•	•
32 TU	2	2.01	2.21	0.51	•	•

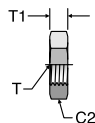
Steel TU sleeves are plated with a zinc phos.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

WLN

Bulkhead Locknut
Flareless

SAE 080118 and 070118



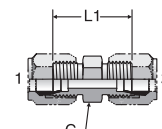
TUBE FITTING PART #	TUBE O.D. (in.)	T UN/UNF-2B	C2 HEX (in.)	T1 (in.)	Material	
					-S	-SS
3 WLN	3/16	3/8 - 24	5/8	0.22	•	•
4 WLN	1/4	7/16 - 20	11/16	0.28	•	•
5 WLN	5/16	1/2 - 20	3/4	0.28	•	•
6 WLN	3/8	9/16 - 18	13/16	0.27	•	•
8 WLN	1/2	3/4 - 16	1	0.31	•	•
10 WLN	5/8	7/8 - 14	1 1/8	0.36	•	•
12 WLN	3/4	1 1/16 - 12	1 3/8	0.41	•	•
14 WLN	7/8	1 3/16 - 12	1 1/2	0.41	•	•
16 WLN	1	1 5/16 - 12	1 5/8	0.41	•	•
20 WLN	1 1/4	1 5/8 - 12	1 7/8	0.41	•	•
24 WLN	1 1/2	1 7/8 - 12	2 1/8	0.41	•	•
32 WLN	2	2 1/2 - 12	2 3/4	0.41	•	•

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

HBU

Union
Flareless / Flareless

SAE 080101



TUBE FITTING PART #	END SIZE		C HEX (in.)	L1 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)			-S	-SS
2 HBU	1/8	1/8	7/16	1.02	6.0	6.0
3 HBU	3/16	3/16	7/16	1.11	6.0	6.0
4 HBU	1/4	1/4	1/2	1.19	6.0	6.0
5 HBU	5/16	5/16	9/16	1.19	6.0	6.0
6 HBU	3/8	3/8	5/8	1.24	6.0	6.0
6-4 HBU	3/8	1/4	5/8	1.22	6.0	6.0
8 HBU	1/2	1/2	13/16	1.42	5.0	5.0
8-6 HBU	1/2	3/8	13/16	1.33	5.0	5.0
10 HBU	5/8	5/8	15/16	1.61	5.0	5.0
10-8 HBU	5/8	1/2	15/16	1.55	5.0	5.0
12 HBU	3/4	3/4	1 1/8	1.81	4.5	4.5
14 HBU	7/8	7/8	1 1/4	1.81	4.0	4.0
16 HBU	1	1	1 3/8	1.81	4.0	4.0
20 HBU	1 1/4	1 1/4	1 11/16	1.89	3.0	3.0
24 HBU	1 1/2	1 1/2	2	1.96	2.0	2.0
32 HBU	2	2	2 5/8	2.11	1.5	1.5

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Dimensions and pressures for reference only, subject to change.

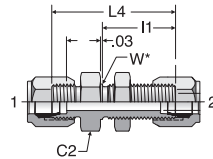


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WBU

Bulkhead Union
Flareless / Flareless Bulkhead

SAE 080601



* W – Bulkhead pilot dia.
recommended clearance
hole is +.015 over W dia.

TUBE FITTING PART #	END SIZE		C2 HEX (in.)	I1 (in.)	L4 (in.)	W (in.)	Max. Bulkhead Thickness	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)						-S	-SS
4 WBU	1/4	1/4	11/16	1.12	1.89	0.44	0.38	6.0	6.0
6 WBU	3/8	3/8	13/16	1.17	1.98	0.56	0.40	6.0	6.0
8 WBU	1/2	1/2	1	1.31	2.22	0.75	0.40	5.0	5.0
10 WBU	5/8	5/8	1 1/8	1.45	2.48	0.88	0.44	5.0	5.0
12 WBU	3/4	3/4	1 3/8	1.56	2.72	1.06	0.44	4.5	4.5
16 WBU	1	1	1 5/8	1.56	2.72	1.31	0.44	4.0	4.0

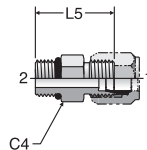
Part comes with the WLN locknut.

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

F5BU

Straight Thread Connector
Flareless / SAE-ORB

SAE 080120



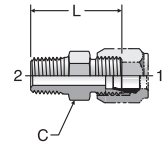
TUBE FITTING PART #	END SIZE		C4 HEX (in.)	L5 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A			-S	-SS
2 F5BU	1/8	5/16 - 24	7/16	0.99	6.0	6.0
3 F5BU	3/16	3/8 - 24	1/2	1.05	6.0	6.0
4 F5BU	1/4	7/16 - 20	9/16	1.13	6.0	6.0
4-5 F5BU	1/4	1/2 - 20	5/8	1.13	6.0	6.0
4-6 F5BU	1/4	9/16 - 18	11/16	1.20	6.0	6.0
5 F5BU	5/16	1/2 - 20	5/8	1.13	6.0	6.0
6 F5BU	3/8	9/16 - 18	11/16	1.22	6.0	6.0
6-4 F5BU	3/8	7/16 - 20	5/8	1.19	6.0	6.0
6-8 F5BU	3/8	3/4 - 16	7/8	1.28	6.0	6.0
8 F5BU	1/2	3/4 - 16	7/8	1.38	5.0	5.0
8-6 F5BU	1/2	9/16 - 18	13/16	1.28	5.0	5.0
8-10 F5BU	1/2	7/8 - 14	1	1.50	5.0	5.0
8-12 F5BU	1/2	1 1/16 - 12	1 1/4	1.67	4.5	4.5
10 F5BU	5/8	7/8 - 14	1	1.56	5.0	5.0
10-12 F5BU	5/8	1 1/16 - 12	1 1/4	1.73	4.5	4.5
12 F5BU	3/4	1 1/16 - 12	1 1/4	1.78	4.5	4.5
12-8 F5BU	3/4	3/4 - 16	1 1/8	1.75	4.5	4.5
12-16 F5BU	3/4	1 5/16 - 12	1 1/2	1.81	4.0	4.0
16 F5BU	1	1 5/16 - 12	1 1/2	1.81	4.0	4.0
16-12 F5BU	1	1 1/16 - 12	1 3/8	1.81	4.0	4.0
16-20 F5BU	1	1 5/8 - 12	1 7/8	1.91	3.0	3.0
20 F5BU	1 1/4	1 5/8 - 12	1 7/8	1.91	3.0	3.0
24 F5BU	1 1/2	1 7/8 - 12	2 1/8	1.97	3.0	3.0
32 F5BU	2	2 1/2 - 12	2 3/4	2.13	2.0	2.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

FBU

Male Connector
Flareless / NPTF

SAE 080102



TUBE FITTING PART #	END SIZE		C HEX (in.)	L (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF			-S	-SS
2 FBU	1/8	1/8 - 27	7/16	1.04	6.0	6.0
2-4 FBU	1/8	1/4 - 18	9/16	1.24	6.0	6.0
3 FBU	3/16	1/8 - 27	7/16	1.09	6.0	6.0
4 FBU	1/4	1/8 - 27	1/2	1.12	6.0	6.0
4-4 FBU	1/4	1/4 - 18	9/16	1.32	6.0	6.0
4-6 FBU	1/4	3/8 - 18	3/4	1.33	6.0	6.0
4-8 FBU	1/4	1/2 - 14	7/8	1.58	6.0	6.0
5 FBU	5/16	1/8 - 27	9/16	1.12	6.0	6.0
5-4 FBU	5/16	1/4 - 18	9/16	1.32	6.0	6.0
6 FBU	3/8	1/4 - 18	5/8	1.34	6.0	6.0
6-2 FBU	3/8	1/8 - 27	5/8	1.15	6.0	6.0
6-6 FBU	3/8	3/8 - 18	3/4	1.35	6.0	6.0
6-8 FBU	3/8	1/2 - 14	15/16	1.60	6.0	6.0
8 FBU	1/2	3/8 - 18	13/16	1.44	5.0	5.0
8-4 FBU	1/2	1/4 - 18	13/16	1.44	5.0	5.0
8-8 FBU	1/2	1/2 - 14	7/8	1.69	5.0	5.0
8-12 FBU	1/2	3/4 - 14	1 1/8	1.76	4.0	4.0
10 FBU	5/8	1/2 - 14	15/16	1.75	4.5	4.5
10-6 FBU	5/8	3/8 - 18	15/16	1.56	4.5	4.5
10-12 FBU	5/8	3/4 - 14	1 1/8	1.82	4.0	4.0
12 FBU	3/4	3/4 - 14	1 1/8	1.88	4.0	4.0
12-8 FBU	3/4	1/2 - 14	1 1/8	1.88	4.0	4.0
14 FBU	7/8	3/4 - 14	1 1/4	1.88	3.0	3.0
16 FBU	1	1 - 11 1/2	1 3/8	2.07	3.0	3.0
16-12 FBU	1	3/4 - 14	1 3/8	1.88	3.0	3.0
20 FBU	1 1/4	1 1/4 - 11 1/2	1 11/16	2.18	2.5	2.5
24 FBU	1 1/2	1 1/2 - 11 1/2	2	2.28	2.5	2.5
32 FBU	2	2 - 11 1/2	2 3/4	2.46	2.0	2.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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EQUIP

GEN TECH

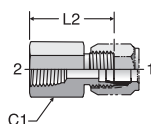
Dimensions and pressures for reference only, subject to change.

[Click here for CADs, Support Resources or to Configure Parts Online](#)

GBU

Female Connector
Flareless / NPTF

SAE 080103



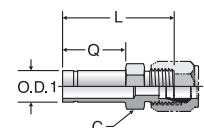
TUBE FITTING PART #	END SIZE		C1 HEX (in.)	L2 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2			-S	-SS
	(in.)	NPTF				
2 GBU	1/8	1/8 - 27	9/16	1.05	5.0	5.0
4 GBU	1/4	1/8 - 27	9/16	1.09	5.0	5.0
4-4 GBU	1/4	1/4 - 18	3/4	1.29	5.0	5.0
5 GBU	5/16	1/8 - 27	9/16	1.08	5.0	5.0
6 GBU	3/8	1/4 - 18	3/4	1.31	5.0	5.0
6-6 GBU	3/8	3/8 - 18	7/8	1.34	5.0	5.0
6-8 GBU	3/8	1/2 - 14	1 1/8	1.59	5.0	5.0
8 GBU	1/2	3/8 - 18	7/8	1.47	5.0	5.0
8-4 GBU	1/2	1/4 - 18	7/8	1.46	5.0	5.0
8-8 GBU	1/2	1/2 - 14	1 1/8	1.69	5.0	5.0
10 GBU	5/8	1/2 - 14	1 1/8	1.77	4.5	4.5
12 GBU	3/4	3/4 - 14	1 3/8	1.89	4.0	4.0
14 GBU	7/8	3/4 - 14	1 3/8	1.86	3.0	3.0
16 GBU	1	1 - 11 1/2	1 5/8	2.13	3.0	3.0
20 GBU	1 1/4	1 1/4 - 11 1/2	2	2.22	2.5	2.5
24 GBU	1 1/2	1 1/2 - 11 1/2	2 3/8	2.23	2.5	2.5

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

TRBU

Tube End Reducer
Tube / Flareless

SAE 080123



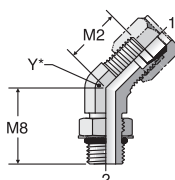
TUBE FITTING PART #	END SIZE		C HEX (in.)	L (in.)	Q (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2				-S	-SS
	(in.)	(in.)					
6-4 TRBU	3/8	1/4	1/2	1.61	0.88	6.0	6.0
8-4 TRBU	1/2	1/4	9/16	1.73	1.00	5.0	5.0
8-6 TRBU	1/2	3/8	5/8	1.77	1.00	5.0	5.0
10-6 TRBU	5/8	3/8	11/16	1.86	1.09	5.0	5.0
10-8 TRBU	5/8	1/2	13/16	1.95	1.09	4.5	4.5
12-6 TRBU	3/4	3/8	13/16	1.94	1.16	4.5	4.5
12-8 TRBU	3/4	1/2	13/16	2.03	1.16	4.5	4.5
12-10 TRBU	3/4	5/8	15/16	2.16	1.16	4.5	4.5
14-10 TRBU	7/8	5/8	15/16	2.14	1.16	4.0	4.0
16-8 TRBU	1	1/2	1 1/16	2.05	1.13	4.0	4.0
16-10 TRBU	1	5/8	1 1/16	2.11	1.13	4.0	4.0
16-12 TRBU	1	3/4	1 1/8	2.25	1.13	4.0	4.0
20-16 TRBU	1 1/4	1	1 3/8	2.28	1.16	3.0	3.0
24-12 TRBU	1 1/2	3/4	1 5/8	2.45	1.25	2.0	2.0
24-16 TRBU	1 1/2	1	1 5/8	2.45	1.25	2.0	2.0
24-20 TRBU	1 1/2	1 1/4	1 7/8	2.45	1.25	2.0	2.0

WARNING: This product can expose you to chemicals including Lead and Lead Compounds which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

V5BU

45° Straight Thread Elbow
Flareless / SAE-ORB

SAE 080320



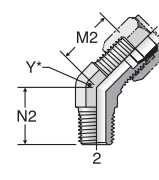
* Y – Across wrench flats

TUBE FITTING PART #	END SIZE		M2 (in.)	M8 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2				-S	-SS
	(in.)	UN/UNF-2A					
4 V5BU	1/4	7/16 - 20	0.70	1.05	7/16	5.0	5.0
6 V5BU	3/8	9/16 - 18	0.83	1.14	9/16	5.0	5.0
8 V5BU	1/2	3/4 - 16	0.98	1.30	3/4	5.0	5.0
12 V5BU	3/4	1 1/16 - 12	1.27	1.73	1 1/16	4.0	4.0
16 V5BU	1	1 5/16 - 12	1.36	1.86	1 5/16	3.0	3.0

VBU

45° Male Elbow
Flareless / NPTF

SAE 080302



* Y – Across wrench flats

TUBE FITTING PART #	END SIZE		M2 (in.)	N2 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2				-S	-SS
	(in.)	NPTF					
3 VBU	3/16	1/8 - 27	0.64	0.52	7/16	5.0	5.0
4 VBU	1/4	1/8 - 27	0.70	0.64	7/16	5.0	5.0
4-4 VBU	1/4	1/4 - 18	0.81	0.86	9/16	5.0	5.0
5 VBU	5/16	1/8 - 27	0.75	0.66	9/16	5.0	5.0
6 VBU	3/8	1/4 - 18	0.83	0.86	9/16	5.0	5.0
8 VBU	1/2	3/8 - 18	0.98	0.95	3/4	5.0	5.0
10 VBU	5/8	1/2 - 14	1.08	1.17	7/8	4.5	4.5
12 VBU	3/4	3/4 - 14	1.27	1.20	1 1/16	4.0	4.0
14 VBU	7/8	3/4 - 14	1.34	1.30	1 5/16	3.0	3.0
16 VBU	1	1 - 11 1/2	1.36	1.48	1 5/16	3.0	3.0
20 VBU	1 1/4	1 1/4 - 11 1/2	1.45	1.67	1 5/8	2.5	2.5

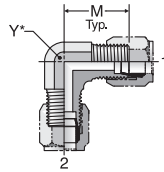
Dimensions and pressures for reference only, subject to change.

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EBU

Union Elbow
Flareless / Flareless

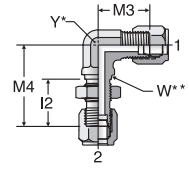
SAE 080201



* Y – Across wrench flats

WEBU

Bulkhead Union Elbow
Flareless / Flareless Bulkhead



* Y – Across wrench flats.
W** – Bulkhead pilot dia. recommended clearance hole is +.015 over W dia.

TUBE FITTING PART #	END SIZE		M (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)			-S	-SS
2 EBU	1/8	1/8	0.78	7/16	5.0	5.0
4 EBU	1/4	1/4	0.89	7/16	5.0	5.0
5 EBU	5/16	5/16	0.95	9/16	5.0	5.0
6 EBU	3/8	3/8	1.05	9/16	5.0	5.0
8 EBU	1/2	1/2	1.25	3/4	5.0	5.0
10 EBU	5/8	5/8	1.42	7/8	4.5	4.5
12 EBU	3/4	3/4	1.58	1 1/16	4.0	4.0
14 EBU	7/8	7/8	1.66	1 5/16	3.0	3.0
16 EBU	1	1	1.73	1 5/16	3.0	3.0
20 EBU	1 1/4	1 1/4	1.89	1 5/8	2.5	2.5
24 EBU	1 1/2	1 1/2	2.02	1 7/8	2.0	2.0
32 EBU	2	2	2.45	2 1/2	1.5	1.5

TUBE FITTING PART #	END SIZE		I2 (in.)	M3 (in.)	M4 (in.)	W DIA (in.)	Y (in.)	Max. Bulkhead Thickness	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)							-S	-SS
4 WEBU	1/4	1/4	0.94	0.95	1.52	0.44	7/16	0.28	5.0	5.0
6 WEBU	3/8	3/8	0.98	1.08	1.70	0.56	9/16	0.26	5.0	5.0
8 WEBU	1/2	1/2	1.12	1.33	1.97	0.75	3/4	0.30	5.0	5.0
10 WEBU	5/8	5/8	1.27	1.52	2.27	0.88	7/8	0.38	4.5	4.5
12 WEBU	3/4	3/4	1.38	1.64	2.48	1.06	1 1/16	0.38	4.0	4.0
16 WEBU	1	1	1.38	1.73	2.61	1.31	1 5/16	0.38	3.0	3.0

Includes WLN locknut.

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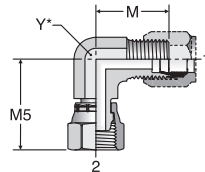
TUBE FAB
EQUIP

GEN TECH

C6BU

Swivel Nut Elbow
Flareless / Flareless Swivel

SAE 080221



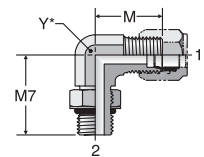
* Y – Across wrench flats

TUBE FITTING PART #	END SIZE		M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)				-S	-SS
4 C6BU	1/4	1/4	0.89	1.00	7/16	5.0	5.0
6 C6BU	3/8	3/8	1.05	1.25	9/16	5.0	5.0
8 C6BU	1/2	1/2	1.25	1.38	3/4	5.0	5.0
10 C6BU	5/8	5/8	1.42	1.62	7/8	4.5	4.5
12 C6BU	3/4	3/4	1.58	1.75	1 1/16	4.0	4.0
16 C6BU	1	1	1.73	2.00	1 5/16	3.0	3.0
20 C6BU	1 1/4	1 1/4	1.89	2.31	1 5/8	2.5	2.5

C5BU

Straight Thread Elbow
Flareless / SAE-ORB

SAE 080220



* Y – Across wrench flats

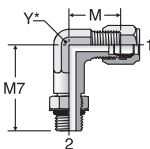
TUBE FITTING PART #	END SIZE		M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A				-S	-SS
3 C5BU	3/16	3/8 - 24	0.84	0.94	7/16	5.0	5.0
4 C5BU	1/4	7/16 - 20	0.89	1.03	7/16	5.0	5.0
5 C5BU	5/16	1/2 - 20	0.95	1.13	9/16	5.0	5.0
6 C5BU	3/8	9/16 - 18	1.05	1.25	9/16	5.0	5.0
6-8 C5BU	3/8	3/4 - 16	1.14	1.45	3/4	5.0	5.0
8 C5BU	1/2	3/4 - 16	1.25	1.45	3/4	5.0	5.0
8-6 C5BU	1/2	9/16 - 18	1.27	1.33	3/4	5.0	5.0
8-10 C5BU	1/2	7/8 - 14	1.34	1.70	7/8	4.5	4.5
8-12 C5BU	1/2	1 1/16 - 12	1.43	1.94	1 1/16	4.0	4.0
10 C5BU	5/8	7/8 - 14	1.42	1.70	7/8	4.5	4.5
12 C5BU	3/4	1 1/16 - 12	1.58	1.94	1 1/16	4.0	4.0
12-8 C5BU	3/4	3/4 - 16	1.58	1.63	1 1/16	4.0	4.0
12-10 C5BU	3/4	7/8 - 14	1.58	1.78	1 1/16	4.0	4.0
12-16 C5BU	3/4	1 5/16 - 12	1.73	2.05	1 5/16	3.0	3.0
16 C5BU	1	1 5/16 - 12	1.73	2.05	1 5/16	3.0	3.0
16-12 C5BU	1	1 1/16 - 12	1.73	2.05	1 5/16	3.0	3.0
20 C5BU	1 1/4	1 5/8 - 12	1.89	2.25	1 5/8	2.5	2.5
24 C5BU	1 1/2	1 7/8 - 12	2.02	2.39	1 7/8	2.0	2.0
32 C5BU	2	2 1/2 - 12	2.45	2.89	2 1/2	1.5	1.5

Dimensions and pressures for reference only, subject to change.

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CC5BU

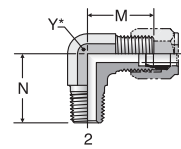
Straight Thread Elbow
Flareless / SAE-ORB Long



* Y – Across wrench flats

CBU

Male Elbow
Flareless / NPTF



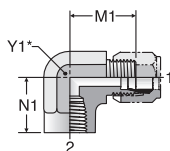
* Y – Across wrench flats

TUBE FITTING PART #	END SIZE		M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A				-S	-SS
4 CC5BU	1/4	7/16 - 20	0.89	1.43	7/16	5.0	5.0
6 CC5BU	3/8	9/16 - 18	1.05	1.72	9/16	5.0	5.0
8 CC5BU	1/2	3/4 - 16	1.25	2.02	3/4	5.0	5.0
10 CC5BU	5/8	7/8 - 14	1.42	2.39	7/8	4.5	4.5
12 CC5BU	3/4	1 1/16 - 12	1.58	2.69	1 1/16	4.0	4.0
16 CC5BU	1	1 5/16 - 12	1.73	3.13	1 5/16	3.0	3.0

TUBE FITTING PART #	END SIZE		M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF				-S	-SS
2 CBU	1/8	1/8 - 27	0.77	0.72	7/16	5.0	5.0
3 CBU	3/16	1/8 - 27	0.83	0.72	7/16	5.0	5.0
4 CBU	1/4	1/8 - 27	0.89	0.78	7/16	5.0	5.0
4-4 CBU	1/4	1/4 - 18	1.03	1.09	9/16	5.0	5.0
4-6 CBU	1/4	3/8 - 18	1.12	1.22	3/4	5.0	5.0
5 CBU	5/16	1/8 - 27	0.95	0.81	9/16	5.0	5.0
5-4 CBU	5/16	1/4 - 18	1.03	1.09	9/16	5.0	5.0
6 CBU	3/8	1/4 - 18	1.05	1.09	9/16	5.0	5.0
6-2 CBU	3/8	1/8 - 27	1.05	0.90	9/16	5.0	5.0
6-6 CBU	3/8	3/8 - 18	1.14	1.22	3/4	5.0	5.0
6-8 CBU	3/8	1/2 - 14	1.24	1.47	7/8	5.0	5.0
8 CBU	1/2	3/8 - 18	1.25	1.22	3/4	5.0	5.0
8-4 CBU	1/2	1/4 - 18	1.25	1.16	3/4	5.0	5.0
8-8 CBU	1/2	1/2 - 14	1.35	1.47	7/8	5.0	5.0
8-12 CBU	1/2	3/4 - 14	1.43	1.59	1 1/16	4.0	4.0
10 CBU	5/8	1/2 - 14	1.42	1.47	7/8	4.5	4.5
10-6 CBU	5/8	3/8 - 18	1.42	1.28	7/8	4.5	4.5
12 CBU	3/4	3/4 - 14	1.58	1.59	1 1/16	4.0	4.0
12-8 CBU	3/4	1/2 - 14	1.58	1.59	1 1/16	4.0	4.0
14 CBU	7/8	3/4 - 14	1.66	1.69	1 5/16	3.0	3.0
16 CBU	1	1 - 11 1/2	1.73	1.97	1 5/16	3.0	3.0
16-12 CBU	1	3/4 - 14	1.73	1.78	1 5/16	3.0	3.0
20 CBU	1 1/4	1 1/4 - 11 1/2	1.89	2.38	1 5/8	2.5	2.5
24 CBU	1 1/2	1 1/2 - 11 1/2	2.02	2.64	1 7/8	2.5	2.5
32 CBU	2	2 - 11 1/2	2.45	3.00	2 1/2	2.0	2.0

DBU

Female Elbow
Flareless / NPTF



* Y1 – Across wrench flats

TUBE FITTING PART #	END SIZE		M1 (in.)	N1 (in.)	Y1 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF				-S	-SS
4 DBU	1/4	1/8 - 27	0.89	0.66	9/16	5.0	5.0
4-4 DBU	1/4	1/4 - 18	1.03	0.88	3/4	5.0	5.0
5 DBU	5/16	1/8 - 27	0.95	0.66	9/16	5.0	5.0
6 DBU	3/8	1/4 - 18	1.05	0.88	3/4	5.0	5.0
6-6 DBU	3/8	3/8 - 18	1.13	1.02	7/8	4.5	4.5
8 DBU	1/2	3/8 - 18	1.23	1.02	7/8	3.0	3.0
8-4 DBU	1/2	1/4 - 18	1.23	0.88	3/4	5.0	5.0
8-8 DBU	1/2	1/2 - 14	1.34	1.23	1 1/16	3.0	3.0
10 DBU	5/8	1/2 - 14	1.42	1.23	1 1/16	3.0	3.0
12 DBU	3/4	3/4 - 14	1.58	1.36	1 5/16	3.0	3.0
14 DBU	7/8	3/4 - 14	1.62	1.42	1 5/16	3.0	3.0
16 DBU	1	1 - 11 1/2	1.73	1.63	1 5/8	1.7	1.7
20 DBU	1 1/4	1 1/4 - 11 1/2	2.08	1.70	1 7/8	1.5	1.5
24 DBU	1 1/2	1 1/2 - 11 1/2	2.58	2.08	2 1/2	1.0	1.0

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TUBE FAB
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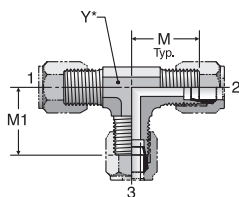
Dimensions and pressures for reference only, subject to change.

[Click here for CADs, Support Resources or to Configure Parts Online](#)

JBU

Union Tee
Flareless (all three ends)

SAE 080401



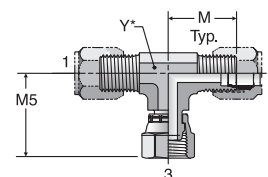
* Y – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M1 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2	3				-S	-SS
	(in.)	(in.)	(in.)					
2 JBU	1/8	1/8	1/8	0.77	0.77	7/16	5.0	5.0
3 JBU	3/16	3/16	3/16	0.84	0.84	7/16	5.0	5.0
4 JBU	1/4	1/4	1/4	0.89	0.89	7/16	5.0	5.0
5 JBU	5/16	5/16	5/16	0.95	0.95	9/16	5.0	5.0
6 JBU	3/8	3/8	3/8	1.05	1.05	9/16	5.0	5.0
8 JBU	1/2	1/2	1/2	1.25	1.25	3/4	5.0	5.0
8-8-6 JBU	1/2	1/2	3/8	1.25	1.14	3/4	5.0	5.0
10 JBU	5/8	5/8	5/8	1.42	1.42	7/8	4.5	4.5
12 JBU	3/4	3/4	3/4	1.58	1.58	1 1/16	4.0	4.0
14 JBU	7/8	7/8	7/8	1.66	1.66	1 5/16	3.0	3.0
16 JBU	1	1	1	1.73	1.73	1 5/16	3.0	3.0
20 JBU	1 1/4	1 1/4	1 1/4	1.89	1.89	1 5/8	2.5	2.5
24 JBU	1 1/2	1 1/2	1 1/2	2.02	2.02	1 7/8	2.0	2.0

S6BU

Swivel Nut Branch Tee
Flareless / Flareless
Swivel

SAE 080433



* Y – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2	3				-S	-SS
	(in.)	(in.)	(in.)					
4 S6BU	1/4	1/4	1/4	0.89	1.00	7/16	5.0	5.0
6 S6BU	3/8	3/8	3/8	1.05	1.25	9/16	5.0	5.0
8 S6BU	1/2	1/2	1/2	1.25	1.38	3/4	5.0	5.0
12 S6BU	3/4	3/4	3/4	1.58	1.75	1 1/16	4.0	4.0
16 S6BU	1	1	1	1.73	2.00	15/16	3.0	3.0

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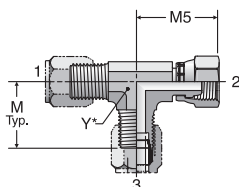
TUBE FAB
EQUIP

GEN TECH

R6BU

Swivel Nut Run Tee
Flareless / Flareless
Swivel

SAE 080432



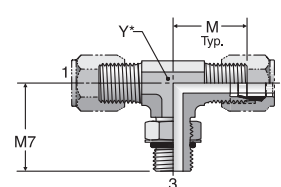
* Y – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M5 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2	3				-S	-SS
	(in.)	(in.)	(in.)					
4 R6BU	1/4	1/4	1/4	0.89	1.00	7/16	5.0	5.0
6 R6BU	3/8	3/8	3/8	1.05	1.25	9/16	5.0	5.0
8 R6BU	1/2	1/2	1/2	1.25	1.38	3/4	5.0	5.0
12 R6BU	3/4	3/4	3/4	1.58	1.75	1 1/16	4.0	4.0
16 R6BU	1	1	1	1.73	2.00	1 5/16	3.0	3.0

S5BU

Straight Thread
Branch Tee
Flareless / SAE-ORB

SAE 080429



* Y – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1	2	3				-S	-SS
	(in.)	(in.)	UN/UNF-2A					
4 S5BU	1/4	1/4	7/16 - 20	0.89	1.03	7/16	5.0	5.0
6 S5BU	3/8	3/8	9/16 - 18	1.05	1.25	9/16	5.0	5.0
8 S5BU	1/2	1/2	3/4 - 16	1.25	1.45	3/4	5.0	5.0
12 S5BU	3/4	3/4	1 1/16 - 12	1.58	1.94	1 1/16	4.0	4.0
16 S5BU	1	1	1 5/16 - 12	1.73	2.05	1 5/16	3.0	3.0

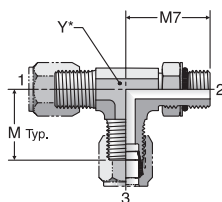
Dimensions and pressures for reference only, subject to change.

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R5BU

Straight Thread Run Tee
Flareless / SAE-ORB

SAE 080428

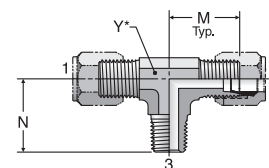


* Y – Across wrench flats

SBU

Male Branch Tee
Flareless / NPTF

SAE 080425



* Y – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	M7 (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 UN/UNF-2A (in.)	3 (in.)				-S	-SS
4 R5BU	1/4	7/16 - 20	1/4	0.89	1.03	7/16	5.0	5.0
6 R5BU	3/8	9/16 - 18	3/8	1.05	1.25	9/16	5.0	5.0
8 R5BU	1/2	3/4 - 16	1/2	1.25	1.45	3/4	5.0	5.0
10 R5BU	5/8	7/8 - 14	5/8	1.42	1.70	7/8	4.5	4.5
12 R5BU	3/4	1 1/16 - 12	3/4	1.58	1.94	1 1/16	4.0	4.0
16 R5BU	1	1 5/16 - 12	1	1.73	2.05	1 5/16	3.0	3.0

TUBE FITTING PART #	END SIZE			M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)	3 NPTF				-S	-SS
2 SBU	1/8	1/8	1/8 - 27	0.77	0.72	7/16	5.0	5.0
4 SBU	1/4	1/4	1/8 - 27	0.89	0.78	7/16	5.0	5.0
4-4-4 SBU	1/4	1/4	1/4 - 18	1.03	1.09	9/16	5.0	5.0
5 SBU	5/16	5/16	1/8 - 27	0.95	0.81	9/16	5.0	5.0
6 SBU	3/8	3/8	1/4 - 18	1.05	1.09	9/16	5.0	5.0
8 SBU	1/2	1/2	3/8 - 18	1.25	1.22	3/4	5.0	5.0
8-8-8 SBU	1/2	1/2	1/2 - 14	1.35	1.47	7/8	5.0	5.0
10 SBU	5/8	5/8	1/2 - 14	1.42	1.47	7/8	4.5	4.5
12 SBU	3/4	3/4	3/4 - 14	1.58	1.59	1 1/16	4.0	4.0
14 SBU	7/8	7/8	3/4 - 14	1.66	1.69	1 5/16	3.0	3.0
16 SBU	1	1	1 - 11 1/2	1.73	1.97	1 5/16	3.0	3.0

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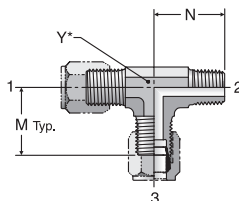
TUBE FAB
EQUIP

GEN TECH

RBU

Male Run Tee
Flareless / NPTF

SAE 080424

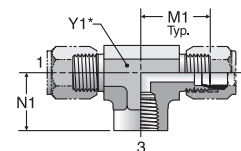


* Y – Across wrench flats

OBU

Female Branch Tee
Flareless / NPTF

SAE 080427



* Y1 – Across wrench flats

TUBE FITTING PART #	END SIZE			M (in.)	N (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF	3 (in.)				-S	-SS
4 RBU	1/4	1/8 - 27	1/4	0.89	0.78	7/16	5.0	5.0
4-4-4 RBU	1/4	1/4 - 18	1/4	1.03	1.09	9/16	5.0	5.0
5 RBU	5/16	1/8 - 27	5/16	0.95	0.81	9/16	5.0	5.0
6 RBU	3/8	1/4 - 18	3/8	1.05	1.09	9/16	5.0	5.0
8 RBU	1/2	3/8 - 18	1/2	1.25	1.22	3/4	5.0	5.0
8-8-8 RBU	1/2	1/2 - 14	1/2	1.35	1.47	7/8	5.0	5.0
10 RBU	5/8	1/2 - 14	5/8	1.42	1.47	7/8	4.5	4.5
12 RBU	3/4	3/4 - 14	3/4	1.58	1.59	1 1/16	4.0	4.0
14 RBU	7/8	3/4 - 14	7/8	1.66	1.69	1 5/16	3.0	3.0
16 RBU	1	1 - 11 1/2	1	1.73	1.97	1 5/16	3.0	3.0

TUBE FITTING PART #	END SIZE			M1 (in.)	N1 (in.)	Y1 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 (in.)	3 NPTF				-S	-SS
4 OBU	1/4	1/4	1/8 - 27	0.89	0.66	9/16	5.0	5.0
4-4-4 OBU	1/4	1/4	1/4 - 18	1.03	0.88	3/4	5.0	5.0
6 OBU	3/8	3/8	1/4 - 18	1.05	0.88	3/4	5.0	5.0
8 OBU	1/2	1/2	3/8 - 18	1.23	1.02	7/8	3.0	3.0
10 OBU	5/8	5/8	1/2 - 14	1.42	1.23	1 1/16	3.0	3.0
12 OBU	3/4	3/4	3/4 - 14	1.58	1.36	1 5/16	3.0	3.0
14 OBU	7/8	7/8	3/4 - 14	1.62	1.42	1 5/16	3.0	3.0
16 OBU	1	1	1 - 11 1/2	1.73	1.63	1 5/8	1.7	1.7
20 OBU	1 1/4	1 1/4	1 1/4 - 11 1/2	2.08	1.70	1 7/8	1.5	1.5

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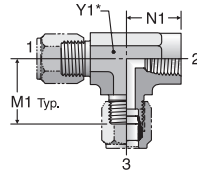


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MBU

Female Run Tee
Flareless / NPTF

SAE 080426

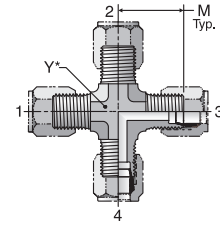


* Y1 – Across wrench flats

KBU

Union Cross
Flareless (all four ends)

SAE 080501



* Y – Across wrench flats

TUBE FITTING PART #	END SIZE			M1 (in.)	N1 (in.)	Y1 (in.)	Dynamic Pressure (x 1,000 PSI)	
	1 (in.)	2 NPTF	3 (in.)				-S	-SS
4 MBU	1/4	1/8 - 27	1/4	0.89	0.66	9/16	5.0	5.0
6 MBU	3/8	1/4 - 18	3/8	1.05	0.88	3/4	5.0	5.0
8 MBU	1/2	3/8 - 18	1/2	1.23	1.02	7/8	3.0	3.0
10 MBU	5/8	1/2 - 14	5/8	1.42	1.23	1 1/16	3.0	3.0
12 MBU	3/4	3/4 - 14	3/4	1.58	1.36	1 5/16	3.0	3.0
16 MBU	1	1 - 11 1/2	1	1.73	1.62	1 5/8	1.7	1.7

TUBE FITTING PART #	END SIZE		M (in.)	Y (in.)	Dynamic Pressure (x 1,000 PSI)	
	1-4 (in.)				-S	-SS
4 KBU	1/4		0.89	7/16	5.0	5.0
6 KBU	3/8		1.05	9/16	5.0	5.0
8 KBU	1/2		1.25	3/4	5.0	5.0
12 KBU	3/4		1.58	1 1/16	4.0	4.0

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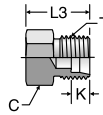
TUBE FAB
EQUIP

GEN TECH

PNU

Plug
Flareless

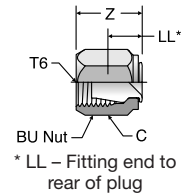
SAE 080109



FNU

Cap
Flareless Swivel

SAE 080112



* LL – Fitting end to rear of plug

TUBE FITTING PART #	TUBE O.D. (in.)	T TUBE END UN/UNF-2A	C HEX (in.)	K (in.)	L3 (in.)	Dynamic Pressure (x 1,000 PSI)	
						-S	-SS
2 PNU	1/8	5/16 - 24	7/16	0.19	0.63	6.0	6.0
4 PNU	1/4	7/16 - 20	1/2	0.24	0.72	6.0	6.0
5 PNU	5/16	1/2 - 20	9/16	0.26	0.72	6.0	6.0
6 PNU	3/8	9/16 - 18	5/8	0.26	0.75	6.0	6.0
8 PNU	1/2	3/4 - 16	13/16	0.31	0.84	5.0	5.0
10 PNU	5/8	7/8 - 14	15/16	0.36	0.97	5.0	5.0
12 PNU	3/4	1 1/16 - 12	1 1/8	0.36	1.09	4.5	4.5
16 PNU	1	1 5/16 - 12	1 3/8	0.42	1.09	4.0	4.0

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TUBE FITTING PART #	TUBE O.D. (in.)	T6 UN/UNF-2B	C HEX (in.)	LL (in.)	Z (in.)
2 FNU	1/8	5/16 - 24	3/8	0.34	0.55
4 FNU	1/4	7/16 - 20	9/16	0.36	0.73
5 FNU	5/16	1/2 - 20	5/8	0.40	0.77
6 FNU	3/8	9/16 - 18	11/16	0.42	0.80
8 FNU	1/2	3/4 - 16	7/8	0.44	0.87
10 FNU	5/8	7/8 - 14	1	0.47	0.98
12 FNU	3/4	1 1/16 - 12	1 1/4	0.48	1.00
16 FNU	1	1 5/16 - 12	1 1/2	0.58	1.08
20 FNU	1 1/4	1 5/8 - 12	2	0.64	1.11

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