Pioneer

The Farmer's Choice

Catalog 3920

PDF Update: June 21, 2023

Hose, Fittings & Equipment

PARKER SAFETY GUIDE FOR SELECTING AND USING HOSE, TUBING, FITTINGS AND RELATED ACCESSORIES

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF HOSE, TUBING, FITTINGS, ASSEMBLIES OR RELATED ACCESSORIES ("PRODUCTS") CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Fittings thrown off at high speed.
- High velocity fluid discharge.
- Explosion or burning of the conveyed fluid.
- Electrocution from high voltage electric powerlines.
- Contact with suddenly moving or falling objects that are controlled by the conveyed fluid.
- Injections by high-pressure fluid discharge.
- Dangerously whipping hose.
- Contact with conveyed fluids that may be hot, cold, toxic or otherwise injurious.
- Sparking or explosion caused by static electricity buildup or other sources of electricity.
- Sparking or explosion while spraying paint or flammable liquids.

Before selecting or using any of these products, it is important that you read and follow the instructions below. Only hose from Parker's Stratoflex Products Division is approved for in flight aerospace applications, and no other hose can be used for such in flight applications.

Parker Publication No. 4400-B1 Revised 2007

DO NOT MIX & MATCH

DO NOT MIX & MATCH – Components from different manufacturers should not be combined to create hose assemblies (apart from rare instances when both manufacturers have approved the exception). To mix and match components is to increase the risk of hose failure – a dangerous situation regardless of setting or application. Possible consequences of hose failure resulting from the use of incompatible components include:

- **Fittings thrown off at high speed**
- **High velocity fluid discharge**
- **Fluid injection injury**
- **Violently "whipping" hose**
- **Sparking or explosion from sprayed flammable fluids**
- **Suddenly moving / falling objects otherwise held static by fluid pressure**

The individual is solely responsible for the hose assemblies he or she fabricates. Fluid power professionals should abide by three basic tenets when fabricating hose assemblies:

- **Only assemble hoses and fittings of the same make**
- **Always use a crimper approved by the manufacturer of the hose and fittings**
- **Crimp only to the manufacturer's specification**

Parker's recommendations are consistent with SAE standard J1273: *Industry Consensus on Best Practices for Using Hydraulic Hose.* The complete technical paper, which includes SAE-recommended practices for hose assembly fabrication, can be purchased from **www.SAE.org.**

Pioneer-The Farmer's Choice since 1949

Pioneer Couplings: The Farmer's Choice

Pioneer brand couplings have been "The Farmer's Choice" for over 70 years now. The Pioneer brand can be found on most U.S. farms and beyond. Since 1964, the quality, care and service associated with the Pioneer company legacy has been preserved by Parker, the global leader in motion and control technologies. For more than 53 years, Parker has integrated the Pioneer brand into its line of high quality motion and control products including hydraulic hose & fittings, crimping equipment, adapters, valves, tubing and more.

The Rise of Hydraulics in Agriculture

In 1936, the first hydraulic lift tractor made its debut in the agricultural market, designed by Harry Ferguson and manufactured by David Brown Tractors of Huddersfield, England. Soon hydraulic technology would become integral in the agriculture industry.

Bill Rawitzer was an employee at a large, hard goods wholesaler based out of St. Paul, Minnesota that sold to more than 3,500 dealers, most in agriculture. Much of his time was spent selling a device that would help farmers convert their equipment from steel wheels to the modern pneumatic tires. He developed a strong interest in the agriculture implement market.

In those days, the expanded use of hydraulics had recently emerged as a key trend. Cable driven front end loaders were becoming obsolete as they were replaced with hydraulic systems. With the rise of these installations, Rawitzer began to hear complaints from his customers about leaking hydraulic fittings and couplings.

The Pioneer Invention

In his travels as a salesman, he met Elmer Olson. Olson was the designer of the ball-check coupler; a coupler that wouldn't leak. Rawitzer was so impressed by Olson's design that he quit his job and went to work for his firm, the Pioneer Pump Manufacturing Company.

They spent the first few years demonstrating the value of the Pioneer quick couplings to major tractor manufacturers until the coupling proliferated across the industry. Eventually, the company became Pioneer Hydraulics, Inc. Its focus was on premium quality and customer service. Attempts were made to replicate the product, but no other competitor could match their repeated value and quality. Further cementing its reputation for quality, Pioneer was known to receive competitive product back for warranty evaluations and replace it with their product at no charge. An excerpt from a 1959 letter:

"These two couplings that you have returned to us as defective are beyond repair. Although these […] couplers were not manufactured by us, we are replacing them with brand new Pioneer hydraulic couplers at 'no charge' so your customer will be completely satisfied."

The Legacy Continues

Quality, care and service have always been synonymous with Pioneer couplings. And the legacy continues today. Parker is your source for quality and performance in the agricultural market.

Pioneer-Your One Stop Source For Hose & Fittings

Pioneer is proud to bring you the best of both worlds when it comes to hydraulic hose. This includes the market tested rubber covered hose that has become the standard in the ag industry, as well as the latest in thermoplastic Hybrid® hose technology. We are your one stop source for hydraulic hose in the agricultural market.

American Pride: At Pioneer, we believe that the best fluid connector products are the ones that get the job done right.

Pioneer's rubber covered hose products are manufactured by Parker's Hose Products Division.

There is a tremendous amount of pressure to continuously adjust with the evolving application requirements in the ag industry. There is constant push for higher pressures, smaller outside diameters, tighter bend radiuses, and more durable cover stocks to extend hose life.

We've got rubber covered hoses that are an exceptional value. Need a hose that can take the heat?
We've designed hoses for that. Looking for a hose to handle the most demanding conditions? No problem. We have hoses made specifically for high temperatures, tight bending and abrasive environments.

Our expanded line of abrasion resistant hose offers you a world of protection, including a choice of covers that include Tough Cover (TC) and SuperTough (ST) for extremely rough conditions.

Hydraulic hose can be referred to by construction style, of which there are two main types: braided and spiral. The majority of "low pressure hoses" have a textile braided construction.

"Medium pressure hoses" typically feature one and two-wire braided construction. These are currently found most agricultural equipment. In general, braided hose is selected for its flexibility.

Today's higher pressure applications require a spiral construction hose where extremely high impulse pressures are encountered. These spiral hoses are mainly found on the hydrostatic drive systems.

All of these hoses exceed various industry specifications including SAE, EN, DIN or ISO. Many of our new hoses are designed to meet the ISO 18752 specification, which allows customers to choose a hose by pressure range, not construction. Hoses in this product family simplify the specification process as well as reduce the compliance complexity on a global platform.

Pioneer's Hybrid® hoses were developed to cross typical SAE boundaries and meet specific design challenges. They are manufactured by Parker's Parflex Division.

The advantages of the Hybrid® hoses are they are lighter in weight, have excellent abrasion resistance and chemical compatibility, a smaller outside diameter and tighter bend radius.

The Hybrid® hoses are created using a patented process where the wire reinforcement is mechanically bonded to the thermoplastic core tube. This process also helps eliminate dangerous pin-hole leaks and allows for long continuous runs that reduce unnecessary scrap and installation delays.

With hundreds of end configurations, Pioneer Chromium-6 free plated steel, stainless steel and brass fittings include O-ring face seal, flare, straight thread, pipe and metric end configurations.

Along with the Pioneer hose, all fittings have been tested and approved, and meet stringent industry standards worldwide.

All of the crimp fittings are designed to be used in the Parkrimp system. The teeth in the crimp fittings bite down to the hose wire for a metal-to-metal grip with maximum integrity.

Parkrimp crimpers

Easy to use for safe and reliable high performance hose assemblies

With Parkrimp, you benefit from a full-length crimp. Our low-profile design makes routing hose assemblies easy. No-Skive hoses and fittings combine with the Parkrimp system to create high-quality, reliable hydraulic hose assemblies every time.

The complete system from one source: No-Skive hose, No-Skive fittings, and crimping machines with worldwide availability and service.

Parker Hose Product Division also offers a full line of crimping accessories, including conversion kits, cabinets, cut-off saws, push-on tables, die racks, and mandrel tool kits. See the Equipment section for full details.

Parker's Parkrimp system provides users with several key advantages:

- **Perfect alignment:** Parker's exclusive Parkalign™ system features a positive-stop design that positions the fitting in the die for a perfect crimp every time. Parkalign benefits operators by enabling them to "feel" that the hose is in the right position to be crimped, as compared to "eyeballing" the proper position of the fitting in a variable crimper.
- **Efficient design:** Bottomloading Parkrimp crimpers make it much easier for operators to manage long hose assemblies.
- **Linked dies:** Parkrimp dies are linked together to prevent segments from being misplaced or worse, mismatched.
- **Color-coded dies:** Parkrimp dies are color coded by size, making for easy identification and reduced set-up time.
- **Durability**: Since they were introduced in 1980, Parkrimp crimpers have been designed and manufactured to provide years of reliable service.
- **Decals:** Parkrimp crimpers come with an information-rich decal that provides the list of proper hose and fitting combinations, tools required and the crimp specification for each hose and fitting combination.
- **Crimpsource:** the most complete online resource for Parker crimp specifications, technical manuals, decals and more.

Modular design with all the familiar Parkrimp system advantages

Parker offers two Parkrimp-style modular crimpers – the Karrykrimp and the Karrykrimp 2. Their modular design enables the customer to choose between the portability that Parker Karrykrimp crimpers have always offered and the new option to make these same crimpers bench-mounted units.

The modular design gives users the flexibility of a portable crimper with the advantage of increased productivity when connected to the stationary power unit.

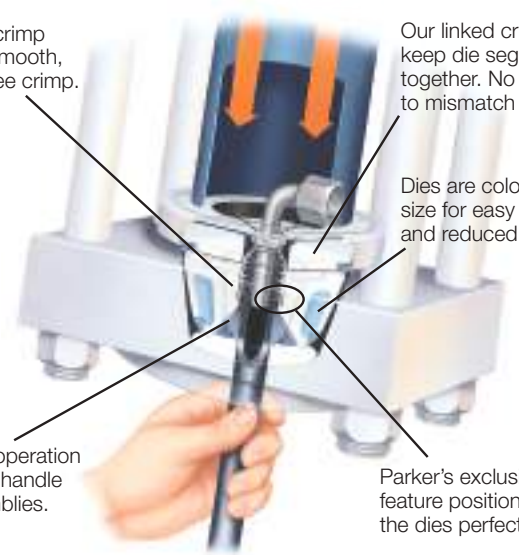
Minikrimp

Karrykrimp

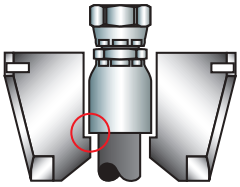
Karrykrimp Bench Mount

Karrykrimp 2

Karrykrimp 2 Bench Mount

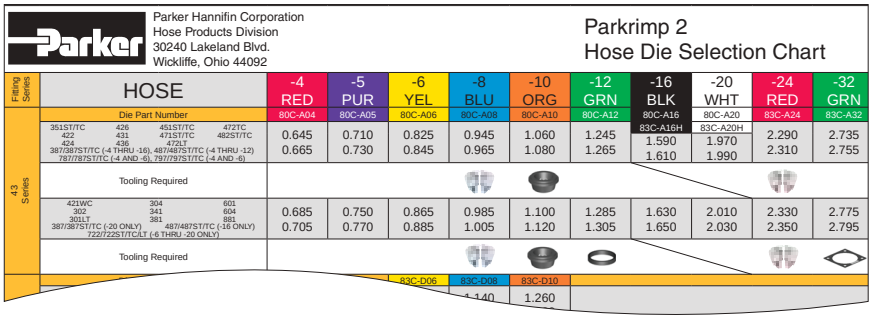


Parkrimp dies are color coded and linked together – making them easy to use.



The Parkalign system's positive stop feature ensures users will make a perfect crimp every time.

Downloadable decals are just one of the many assets found on Crimpsource.



Parker Hannifin Corporation
Hose Products Division
30240 Lakeland Blvd.
Wickliffe, Ohio 44092

Parkrimp 2
Hose Die Selection Chart

Fitting Series	HOSE	-4 RED	-5 PUR	-6 YEL	-8 BLU	-10 ORG	-12 GRN	-16 BLK	-20 WHT	-24 RED	-32 GRN
	Die Part Number	80C-A04	80C-A05	80C-A06	80C-A08	80C-A10	80C-A12	80C-A16	80C-A20	83C-A24	83C-A32
43 Series	351ST/TC 422 424 387/387ST/TC (-4 THRU -16), 787/787ST/TC (-4 AND -6), 426 431 436, 451ST/TC 471ST/TC 472LT, 487/487ST/TC (-4 THRU -12), 797/797ST/TC (-4 AND -6), 472TC 482ST/TC	0.645 0.665	0.710 0.730	0.825 0.845	0.945 0.965	1.060 1.080	1.245 1.265	83C-A16H 1.590 1.610	83C-A20H 1.970 1.990	2.290 2.310	2.735 2.755
	Tooling Required										
	421WC 302 301LT 387/387ST/TC (-20 ONLY), 304 341 381, 487/487ST/TC (-16 ONLY) 722/722ST/TC/LT (-6 THRU -20 ONLY), 601 604 881	0.685 0.705	0.750 0.770	0.865 0.885	0.985 1.005	1.100 1.120	1.285 1.305	1.630 1.650	2.010 2.030	2.330 2.350	2.775 2.795
	Tooling Required										
				83C-D06	83C-D08	83C-D10					
					1.140	1.260					

The modular crimper features:

- A single crimping unit can be either portable or bench-mounted
- Faster cycle times on bench mounted units
- Increased height enables longer bent tube fittings to be crimped
- Cylinder maintenance on the Karrykrimp 2 is now possible

Parker's Parkrimp® System continues to lead the industry in ease of use, accuracy and effectiveness. The Parkrimp system is designed to crimp fittings to the proper diameter every time, meaning fluid power professionals will not waste valuable time dialing variable settings that can produce mis-crimps. Designed to produce accurate crimps from the first time it's used, Parkrimp system crimpers require no calibration and continuously produce proper crimps, time after time.

Parker Crimpsource™

Crimpsource is the industry's most complete resource for crimper technical information. It contains all of the crimp specifications approved for Parker's rubber, industrial and thermoplastic hose:

- **Crimp specs**
- **PDFs of technical manuals for easy downloading**
- **Parts lists**
- **Troubleshooting advice**
- **PDFs of crimper decals for immediate printing**
- **Custom decals available**

Crimpsource provides easy access to all the specifications necessary to correctly fabricate a factory quality hose assembly.

A series of drop-down menus enables users to find what they need quickly and easily. Choose your crimper and then select the hose, fittings and current specifications needed to make hose assemblies.

You can also print a simple-to-follow data specification sheet or crimper decal. Crimpsource is available at **www.parker.com/crimpsource.**

Table of contents


DEMAISER
1150
1150

Hydraulic Hose A

HOSE VISUAL INDEX

Hydraulic Hose	AG2R A-5 *SAE J1942*	HR2C/HR2CR A-6 *ISO 18752*	HTBR A-7 *ISO 18752*
387ST A-8 *ISO 18752*	487/TC/ST A-9 *ISO 18752*	722/TC/ST A-10 *ISO 18752*	787/TC/ST A-11 *ISO 18752*
797/TC/ST A-12 *ISO 18752*	811 A-13 *SAE J517 100R4*	811HT A-14 *SAE J517 100R4*	

HOSE ACCESSORIES VISUAL INDEX

Partek Wrap A-15	Partek Sleeve A-16	PolyGuard (HG) A-16	ParKoil™ (PG) A-16
Spring Guard (SG) A-17	Polyguard Strain Reliever A-17	Firesleeve (FS-F) A-18	FSC Clamp A-18
Protection Shields A-19	PSG-Parker Spiral Guard A-20		

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

HOSE OVERVIEW CHART

	Hose Size	Hose Reinforcement	–4	–5	–6	–8	–10	–12	–16	–20	–24	–32	–40	–48	Standard Temp. Range °F	SAE	ISO	EN	Page
Hydraulic	AG2R		3000		4000	3500	2750	2250	2000						-40/+212	J1942			A-5
	HR2C/HR2CR		5000		4000	3500	2750								-40/+212				A-6
	HTBR		7000		5500	5000	4000	4000	3500						-40/+212				A-7
	387ST		3000		3000	3000	3000	3000	3000	3000	3000	3000			–40/+257		18752		A-8
	487/TC/ST		4000		4000	4000	4000	4000	4000	4000	4000	4000			–40/+212/ +257		18752		A-9
	722/TC/ST		4000		4000	4000	4000	4000	4000						–40/+212/ +257		18752		A-10
	787/TC/ST		5000		5000	5000	5000	5000	5000	5000	5000	5000			–40/+212/ +267		18752		A-11
	797/TC/ST		6000		6000	6000	6000	6000	6000	6000	6000	6000			–40/+212/ +267		18752		A-12
	811							300	250	200	160	100	62		–40/+212	J517 100R4			A-13
	811HT							300	250	200	160	100	62		-50/+257	J517 100R4/ J1942			A-14

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

C

D

Catalog Sections

- Hydraulic Hose
- Hydraulic Hose Fittings
- General Purpose Hose (Push-Lok Plus) & Fittings
- Refrigeration Hose & Fittings
- Specialty Hose
- Crimping Equipment
- Technical

Parker Hose Nomenclature

Example: 387ST-8

387ST-8 - Hose Type

387**ST**-8 - Indicates the special feature of the hose (in this case, 'Tough Cover')

387ST-**8** - Hose inside diameter dash size (in this case, 8/16" or 1/2")

Hose Information
- Base part number
- Description
- SAE, ISO, and EN specifications

Hose Inner Diameter
Measured in 1/16 inch increments identified by use of a "dash"(-) numbering system. i.e., 4/16" = 1/4" = -4.

Hose Outer Diameter
A critical measurement when considering hose clamps and applications where envelope size is limited.

Hose Working Pressure
Should have a working pressure rating meeting or exceeding the maximum operating pressure of the system. The maximum rating is listed below for where the hose is to be used.

Visually shows **hose construction.**

387ST

Hydraulic – Constant Working Pressure

ISO 18752

# Part Number 387ST	Super Tough 387ST ISO 18752 Performance*	Hose I.D. inch	Hose I.D. mm	Hose O.D. inch	Hose O.D. mm	Working Pressure psi	Working Pressure MPa	Minimum Bend Radius inch	Minimum Bend Radius mm	Weight lbs/ft	Weight kg/m	Vacuum Rating inches of Hg	Vacuum Rating kPa	Parkrimp 43 Series	Parkrimp 77 Series
387ST-4	AC	1/4	6,3	0.53	13,4	3000	21,0	2	50	0.16	0,24	24	80	•	
387ST-6	AC	3/8	10	0.69	17,4	3000	21,0	2-1/2	65	0.23	0,34	24	80	•	
387ST-8	AC	1/2	12,5	0.82	20,7	3000	21,0	3-1/2	90	0.29	0,43	24	80	•	
387ST-10	AC	5/8	16	0.94	23,9	3000	21,0	4	100	0.33	0,49	24	80	•	
387ST-12	AC	3/4	19	1.10	27,8	3000	21,0	4-3/4	120	0.58	0,86	24	80	•	
387ST-16	AC	1	25	1.40	35,4	3000	21,0	6	150	0.79	1,17	24	80	•	
387ST-20	CC	1-1/4	31,5	1.82	46,3	3000	21,0	8-1/4	210	1.74	2,59	18	60	•	•
387ST-24	CC	1-1/2	38	2.08	52,8	3000	21,0	10	250	2.01	2,99	18	60		•
387ST-32	CC	2	51	2.61	66,2	3000	21,0	12-1/2	320	2.75	4,09	18	60		•

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Synthetic rubber.

Reinforcement: One-braid steel wire for sizes -4 to -8.
Two-braid steel wire for sizes -10 to -16.
Four-spiral steel wire for sizes -20 to -32.

Cover: Synthetic rubber super abrasion resistant.

For more information regarding hose application and temperature, see the Technical Section.

Minimum Bend Radius
Is the smallest arc that the hose can be bent before its life is greatly reduced. Exceeding the bend radius can cause kinking, inner tube washout and excessive stress on reinforcement.

Weight
Provided by the foot for instances where it is a critical parameter in the design of the system.

Approved Fitting
To be used with the hose. Could be crimped or field attachable.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

HYDRAULIC AG2R

Parker's AG2R hose is a hydraulic industry standard hose that has a pressure range of 2500-5800 PSI, with a synthetic rubber inner tube which provides wide fluid compatibility. The two-wire braided construction offers more flexibility than the standard spiral counterpart in order to fit your needs. Sizes range from ¼" to 1" in diameter.

- Designed as a cost competitive option for applications not requiring industry standard specifications
- 2-wire braided compact construction offers more flexibility
- Half SAE bend radius for ease of installation and low force to flex
- 2500-5800 PSI working pressure in different sizes
- Abrasion resistant synthetic rubber cover
- Approved with 43 Series fittings

AG2R
Hydraulic
SAE J1942

# Part Number	Reel Length	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Vaccum Rating inches of Hg	
	feet	inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m		kPa
AG2R-4	475	1/4	6.3	0.51	13	5800	40.0	2	50	0.20	0.30	28	95
AG2R-6	385	3/8	10	0.68	17	5000	35.0	2-1/2	65	0.28	0.42	28	95
AG2R-8	425	1/2	12.5	0.80	20	4250	29.7	3-1/2	90	0.35	0.52	28	95
AG2R-10	300	5/8	16	0.94	24	3625	25.0	4	100	0.44	0.66	28	95
AG2R-12	250	3/4	19	1.09	28	3125	21.5	4-3/4	120	0.58	0.86	24	80
AG2R-16	135	1	25	1.40	35	2500	17.5	6	150	0.79	1.17	24	80

Application: Petroleum base hydraulic fluids and lubricating oils.
Inner Tube: Synthetic rubber.
Reinforcement: Two braids steel wire.
Cover: Synthetic rubber, MSHA accepted.
Temperature Range: -40°F to +212°F (-40°C to +100°C).

Parkrimp Crimper

Part Number	Fittings	Die	Die Ring
AG2R-4	43 Series	80C-A04	82C-R01 85C-R01 80C-R01
AG2R-6		80C-A06	
AG2R-8		80C-A08	
AG2R-10		80C-A10	
AG2R-12		80C-A12	
AG2R-16		80C-A16	

Adjustable Crimper

Part Number	Crimp Diameter		Minimum Crimp Length		Hose Insertions	
	inch	mm	inch	mm	inch	mm
AG2R-4	0.66	16.76	1.97	50	.81	20.5
AG2R-6	0.84	21.34	2.56	65	1.13	28.7
AG2R-8	0.96	24.38	2.56	65	1.31	33.2
AG2R-10	1.07	27.18	2.56	65	1.56	39.6
AG2R-12	1.26	32.00	2.76	70	1.50	38.1
AG2R-16	1.60	40.64	2.76	70	1.75	44.4

Crimp Diameter Tolerance: +/- 0.010" (0.25 mm)
Die Ring varies by Parkrimp machine. Please visit http://www.parker.com/crimpsource for the latest data.

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

C

D

HYDRAULIC HR2C/HR2CR

The Pioneer®/Parflex HR2C/HR2CR brand hose has been serving the higher 100R2 pressures in the mobile equipment markets for more than 30 years, gaining the trust of operators, construction workers, rental yards and dealers. The durability of the product has proven the Hybrid® hose design stands out in all general hydraulic applications. The light weight, compact design of HR2C/HR2CR carries on the legacy of Hybrid® hose while offering eased force to flex, a tighter bend radius and improved core compatiblity.

Like other Farmex hoses, the thermoplastic core still provides the cleanest fluid conveyance in the market and resists core tube washout and erosion.

- Meets/Exceeds SAE 100R2 and 100R16
- UV, ozone resistant
- MSHA accepted

HR2C
Hydraulic
SAE 100R2 / 100R16

# Part Number	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Hg Vacuum Rating		Parkrimp	Parkrimp
	inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	inches of Hg	kPa	43 Series	HY Series
HR2CR04	1/4	6	0.54	13,72	5076	35,0	1.97	50,0	0.20	0,29	28	95	●	
HR2C06	3/8	10	0.68	17	4000	27,6	2-1/2	64	0.23	0,34	28	95	●	●
HR2C08	1/2	13	0.82	21	3500	24,1	3-1/2	89	0.29	0,43	28	95	●	●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Copolyester.

Reinforcement: One- or two-braids of high tensile steel wire.

Cover: Smooth synthetic rubber

Fittings: 43 Series, pg. B-4.

Temperature Range: -40°F to +212°F (-40°C to +100°C).
(Limited to +185°F (+85°C) for synthetic hydraulic fluids and water-based fluids).

WARNING: This product can expose you to chemicals including Chloroprene, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

HYDRAULIC HTBR

Designed for high pressure hydraulic applications, Pioneer®/Parflex HTBR Eliminator® Hybrid® hose offers superior performance. State of the art manufacturing and specially developed materials yield four-wire spiral hose performance in a two-wired braid construction. The combination of high pressure capability, more compact O.D. and low force to flex covers a wider range of applications while increasing ease of installation.

- Durable thermoplastic core provides the cleanest fluid conveyance available
- Exceptional chemical compatibility
- Specifically engineered rubber jacket for MSHA applications
- UV & ozone resistant

HTBR
Hydraulic

# Part Number	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Parkrimp
	inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	43 Series
HTB06	3/8	10	0.76	19	5500	37,9	6	152	0.37	0,55	●
HTB08	1/2	13	0.90	23	5000	34,5	7	178	0.46	0,68	●
HTB10	5/8	16	1.03	26	4000	27,6	8	203	0.52	0,77	●
HTB12	3/4	10	1.20	30	4000	27,6	9-1/2	241	0.73	1,09	●
HTB16	1	25	1.50	38	3500	24,1	12	305	1.01	1,50	●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Copolyester.

Reinforcement: One- or two-braids of high tensile steel wire.

Cover: Smooth synthetic rubber.

Fittings: 43 Series, pg. B-4.

Temperature Range: -40°F to +212°F (-40°C to +100°C).
(Limited to +135°F (+57°C) for synthetic hydraulic fluids and water-based fluids).

WARNING: This product can expose you to chemicals including Chloroprene, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

C

D

HYDRAULIC 387ST

Parker's GlobalCore 387ST Hose provides 3,000 psi (21 MPa) constant working pressure in sizes -4 through -32. With a lightweight, flexible design, 387ST Hose improves routing capabilities and maximizes efficiency across sizes and markets.

- ½ ISO 18752 minimum bend radius
- Low force to flex for ease of installation
- Exceeds ISO 18752 performance specification (AC and CC)
- Synthetic rubber inner tube provides a wider range of fluid compatibility
- ST cover 450 times abrasion resistance when compared to standard covers

Performance

387ST

Hydraulic – Constant Working Pressure

ISO 18752

# Part Number	Super Tough 387ST ISO 18752 Performance*	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Vacuum Rating		Parkrimp	Parkrimp
387ST		inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	inches of Hg	kPa	43 Series	77 Series
387ST-4	AC	1/4	6,3	0.53	13,4	3000	21,0	2	50	0.16	0,24	24	80	●	
387ST-6	AC	3/8	10	0.69	17,4	3000	21,0	2-1/2	65	0.23	0,34	24	80	●	
387ST-8	AC	1/2	12,5	0.82	20,7	3000	21,0	3-1/2	90	0.29	0,43	24	80	●	
387ST-10	AC	5/8	16	0.94	23,9	3000	21,0	4	100	0.33	0,49	24	80	●	
387ST-12	AC	3/4	19	1.10	27,8	3000	21,0	4-3/4	120	0.58	0,86	24	80	●	
387ST-16	AC	1	25	1.40	35,4	3000	21,0	6	150	0.79	1,17	24	80	●	
387ST-20	CC	1-1/4	31,5	1.82	46,3	3000	21,0	8-1/4	210	1.74	2,59	18	60	●	●
387ST-24	CC	1-1/2	38	2.08	52,8	3000	21,0	10	250	2.01	2,99	18	60		●
387ST-32	CC	2	51	2.61	66,2	3000	21,0	12-1/2	320	2.75	4,09	18	60		●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Synthetic rubber.

Reinforcement: One-braid steel wire for sizes -4 to -8.
Two-braid steel wire for sizes -10 to -16.
Four-spiral steel wire for sizes -20 to -32.

Cover: Synthetic rubber super abrasion resistant.

Fittings: 43 Series, sizes -4 to -20 - pg. B-4.
77 Series, sizes -20 to -32 - pg. B-30.

Temperature Range: -40°F to +257°F (-40°C to +125°C).

*Refer to performance specification details under the Technical Section, page G-27. For additional information about GlobalCore, visit www.parker.com/pioneer.

WARNING: This product can expose you to chemicals including Chloroprene, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

HYDRAULIC 487/TC/ST

Parker's GlobalCore 487/TC/ST Hose provides 4,000 psi (28 MPa) constant working pressure in sizes -4 through -32. Constructed for high performance, 487/TC/ST Hose is designed for easy installation and handling in even the toughest applications. Highly flexible across all sizes, 487/TC/ST Hose excels in multiple applications around the world.

- ½ ISO 18752 minimum bend radius
- Low force to flex for ease of installation
- Exceeds ISO 18752 performance specification (AC, BC & CC)
- TC cover provides 80 times and ST cover 450 times abrasion resistance when compared to standard covers

Performance

½ TC ST

487/TC/ST

Hydraulic – Constant Working Pressure

ISO 18752

# Part Number	Standard Cover	Tough Cover	Super Tough	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Parkrimp	Parkrimp
	487	487TC	487ST												
487	ISO 18752 Performance*			inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	43 Series	77 Series
487-4	AC	AC	AC	1/4	6,3	0.52	13,1	4000	28,0	2	50	0.20	0,30	●	
487-6	AC	AC	AC	3/8	10	0.68	17,2	4000	28,0	2-1/2	65	0.28	0,42	●	
487-8	AC	AC	AC	1/2	12,5	0.81	20,4	4000	28,0	3-1/2	90	0.35	0,52	●	
487-10	AC	AC	AC	5/8	16	0.94	23,9	4000	28,0	4	100	0.44	0,66	●	
487-12	AC	AC	AC	3/4	19	1.10	27,8	4000	28,0	4-3/4	120	0.58	0,86	●	
487-16	BC	CC	CC	1	25	1.49	37,8	4000	28,0	6	150	1.34	1,99	●	
487-20	BC	CC	CC	1-1/4	31,5	1.82	46,3	4000	28,0	8-1/4	210	1.74	2,59		●
487-24	BC	CC	CC	1-1/2	38	2.03	52,8	4000	28,0	10	250	2.07	3,08		●
487-32	BC	CC	CC	2	51	2.65	67,3	4000	28,0	12-1/2	320	4.35	6,47		●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Synthetic rubber.

Reinforcement: Two-braid steel wire for sizes -4 to -12.
Four-spiral steel wire for sizes -16 to -24.
Six-spiral steel wire for size -32.

Cover: Standard Cover: Synthetic rubber.
ToughCover: Synthetic rubber abrasion resistant.
SuperTough Cover: Synthetic rubber super abrasion resistant.

Fittings: 43 Series, sizes -4 to -16 - pg. B-4.
77 Series, sizes -20 to -32 - pg. B-30.

Temperature Range: Standard Cover: -40°F to +212°F (-40°C to +100°C).
ToughCover & SuperTough Cover: -40°F to +257°F (-40°C to +125°C).

*Refer to performance specification details under the Technical Section, page G-27. For additional information about GlobalCore, visit www.parker.com/pioneer.

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

C

D

HYDRAULIC 722/TC/ST

Parker's GlobalCore 722/TC/ST Hose provides 4,000 psi (28 MPa) constant working pressure in sizes -6 through -16. Designed for high-pressure, high-impulse applications, 722/TC/ST Hose delivers maximum performance and efficiency. The 4-spiral construction of 722/TC/ST Hose ensures ease of installation while reducing the amount of hose needed for your application.

- ½ ISO 18752 minimum bend radius
- Exceeds ISO 18752 performance specification (BC and CC)
- 4-spiral construction for longer life in high-impulse, heavy-duty cycle applications
- TC cover provides 80 times and ST cover 450 times abrasion resistance when compared to standard covers

Performance

722/TC/ST

Hydraulic – Constant Working Pressure

ISO 18752

# Part Number	Standard Cover 722	Tough Cover 722TC	Super Tough 722ST	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Parkrimp
	ISO 18752 Performance*			inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	43 Series
722-6	BC	CC	CC	3/8	10	0.78	19,9	4000	28,0	2-1/2	65	0.40	0,60	●
722-8	BC	CC	CC	1/2	12,5	0.89	22,7	4000	28,0	3-1/2	90	0.54	0,80	●
722-10	BC	CC	CC	5/8	16	1.04	26,4	4000	28,0	4	100	0.74	1,10	●
722-12	BC	CC	CC	3/4	19	1.21	30,7	4000	28,0	4-3/4	120	0.94	1,40	●
722-16	BC	CC	CC	1	25	1.50	37,8	4000	28,0	6	150	1.34	1,99	●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Synthetic rubber.

Reinforcement: Four-spiral steel wire.

Cover: Standard Cover: Synthetic rubber.
ToughCover: Synthetic rubber abrasion resistant.
SuperTough Cover: Synthetic rubber super abrasion resistant.

Fittings: 43 Series - pg. B-4.

Temperature Range: Standard Cover: -40˚F to +212˚F (-40˚C to +100˚C) - BC.
ToughCover & SuperTough Cover: -40˚F to +257˚F (-40˚C to +125˚C).

*Refer to performance specification details under the Technical Section, page G-27. For additional information about GlobalCore, visit www.parker.com/pioneer.

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

HYDRAULIC 787/TC/ST

Parker's GlobalCore 787/TC/ST hose provides 5,000 psi (35 MPa) constant working pressure in sizes -4 through -32. With a Compact Spiral design that offers greater advantages in routing and installation, 787/TC/ST hose delivers superior performance in a lightweight, force-to-flex product.

- ½ ISO 18752 minimum bend radius
- Meets ISO 18752 performance specification
- Nearly 30% smaller O.D. by area than SAE spiral
- Twice the impulse/life – tested up to 2,000,000 cycles
- Flex impulse tested providing a hose superior in both performance and service life
- Weighs less than SAE spiral hose
- TC cover provides 80 times and ST cover 450 times abrasion resistance when compared to standard covers

Performance

787/TC/ST

Hydraulic – Constant Working Pressure
ISO 18752

# Part Number	Standard Cover	Tough Cover	Super Tough Cover	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Parkrimp	Parkrimp
	787	787TC	787ST												
	ISO 18752 Performance*			inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	43 Series	77 Series
787-4	AC	AC	AC	1/4	6,3	0.51	13,0	5000	35,0	2	50	0.21	0.31	●	
787-6	AC	AC	AC	3/8	10	0.68	17,2	5000	35,0	2-1/2	63	0.28	0,42	●	
787-8	BC	DC	DC	1/2	12,5	0.83	21,1	5000	35,0	3-1/2	90	0.45	0,67		●
787-10	BC	DC	DC	5/8	16	0.94	23,9	5000	35,0	4	100	0.54	0,80		●
787-12	BC	DC	DC	3/4	19	1.10	27,9	5000	35,0	4-3/4	120	0.78	1,16		●
787-16	BC	DC	DC	1	25	1.40	35,7	5000	35,0	6	150	1.17	1,74		●
787-20	BC	DC	DC	1-1/4	31,5	1.77	44,9	5000	35,0	8-1/4	210	1.95	2,89		●
787-24	BC	DC	DC	1-1/2	38	2.08	52,8	5000	35,0	10	255	2.66	3,96		●
787-32	BC	DC	DC	2	51	2.66	67,6	5000	35,0	12-1/2	318	4.37	6,50		●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Proprietary synthetic rubber.

Reinforcement: Two-braid steel wire for sizes -4 to -6, Four- or six-compact spiral steel wires for sizes -8 to -32.

Cover: Standard Cover: Synthetic rubber.
ToughCover: Synthetic rubber abrasion resistant.
SuperTough Cover: Synthetic rubber super abrasion resistant.

Fittings: 43 Series: sizes -4 to -6 - pg. B-4.
77 Series: sizes -8 to -32 - pg. B-30.

Temperature Range: Standard Cover: -40°F to +212°F (-40°C to +100°C).
ToughCover & SuperTough Cover: -40°F to +257°F (-40°C to +125°C).
(-4 to -6 rated to +212°F).

*Refer to performance specification details under the Technical Section, page G-27. For additional information about GlobalCore, visit www.parker.com/pioneer.

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

C

D

HYDRAULIC 797/TC/ST

Parker's GlobalCore 797 hose provides 6,000 psi (42 MPa) constant working pressure in sizes -4 through -32. Tested up to 2,000,000 cycles, 797 hose provides superior performance and service life with an easy-to-install compact spiral construction for high-pressure, high-impulse applications.

- Meets ISO 18752 performance specification
- Nearly 30% smaller O.D. by area than SAE spiral
- Twice the impulse/life – tested up to 2,000,000 cycles
- Flex impulse tested providing a hose superior in both performance and service life
- Weighs less than SAE spiral hose
- TC cover provides 80 times and ST cover 450 times abrasion resistance when compared to standard covers

Performance

2 TC ST

797/TC/ST

Hydraulic – Constant Working Pressure

ISO 18752

# Part Number	Standard Cover 797	Tough Cover 797TC	Super Tough Cover 797ST	Hose I.D.		Hose O.D.		Working Pressure		Minimum Bend Radius		Weight		Parkrimp	Parkrimp
	ISO 18752 Performance*			inch	mm	inch	mm	psi	MPa	inch	mm	lbs/ft	kg/m	43 Series	77 Series
797-4	AC	AC	AC	1/4	6,3	0.51	13,0	6000	42,0	2	50	0.21	0,31	●	
797-6	BC	CC	CC	3/8	10	0.66	17,0	6000	42,0	2-1/2	63	0.31	0,46	●	
797-8	BC	DC	DC	1/2	12,5	0.83	21,1	6000	42,0	4	100	0.45	0,67		●
797-10	BC	DC	DC	5/8	16	0.94	23,9	6000	42,0	4-1/2	115	0.54	0,80		●
797-12	BC	DC	DC	3/4	19	1.10	27,9	6000	42,0	5-1/4	135	0.78	1,16		●
797-16	BC	DC	DC	1	25	1.40	35,7	6000	42,0	6-1/2	165	1.17	1,74		●
797-20	BC	DC	DC	1-1/4	31,5	1.77	44,9	6000	42,0	8-3/4	225	1.95	2,89		●
797-24	BC	CC	CC	1-1/2	38	2.08	52,8	6000	42,0	12	305	2.66	3,96		●
797-32	BC	CC	CC	2	51	2.66	67,6	6000	42,0	15	380	4.37	6,50		●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Proprietary synthetic rubber.

Reinforcement: Two-braid steel wire for size -4, Four- or six-compact spiral steel wires for sizes -6 to -32.

Cover: Standard Cover: Synthetic rubber.
ToughCover: Synthetic rubber abrasion resistant.
SuperTough Cover: Synthetic rubber super abrasion resistant.

Fittings: 43 Series: sizes -4 to -6 - pg. B-4.
77 Series: sizes -8 to -32 - pg. B-30.

Temperature Range: Standard Cover: -40˚F to +212˚F (-40˚C to +100˚C).
ToughCover & SuperTough Cover: -40˚F to +257˚F (-40˚C to +125˚C).
(-4 rated to +212˚F).

*Refer to performance specification details under the Technical Section, page G-27. For additional information about GlobalCore, visit www.parker.com/pioneer.

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

C

D

HYDRAULIC 811

Parker's 811 hose is a suction and return line that has a working pressure range of 62-300 psi as well as a vacuum rating of 25 in/Hg.

- Up to one-half the SAE minimum bend radius for standard and high-temperature applications
- Meets or exceeds SAE 100R4 requirements
- Suitable for vacuum applications requiring 25 in/Hg
- Oil- and weather-resistant synthetic rubber cover

Performance

1/2

811
Suction and Return Line
1/2 SAE Minimum Bend Radius
SAE J517 100R4

# Part Number	Hose I.D.		Hose O.D.		Working Pressure 81/88DB		88HC		Minimum Bend Radius		Weight		Vacuum Rating		Parkrimp	Field Attachable 88 Series w/HC or DB
	inch	mm	inch	mm	psi	MPa	psi	MPa	inch	mm	lbs/ft	kg/m	inches of Hg	kPa	81 Series	
811-12	3/4	19,0	1.18	30,0	300	2,1	100	0,7	2-1/2	64	0.42	0,63	25	84	●	●
811-16	1	25,4	1.50	38,0	250	1,7	70	0,5	3	76	0.65	0,96	25	84	●	●
811-20	1-1/4	31,8	1.77	45,0	200	1,4	50	0,3	4	102	0.82	1,22	25	84	●	●
811-24	1-1/2	38,1	2.05	52,0	150	1	50	0,3	5	127	1.04	1,55	25	84	●	●
811-32	2	50,8	2.50	63,6	100	0,7	50	0,3	6	152	1.26	1,87	25	84	●	●
811-40	1-1/2	63,5	3.00	76,2	62	0,4	62	0,4	7	178	1.64	2,45	25	84		●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Synthetic rubber.

Reinforcement: Multiple layers of fiber spiral and one helical wire.

Cover: Synthetic rubber.

Temperature Range: -40°F to +212°F (-40°C to +100°C).

Fittings: 81 Series.
88 Series.

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

HYDRAULIC 811HT

Parker's 811HT hose is a suction and return line that has a working pressure range of 62-300 psi as well as a vacuum rating range of 28 in/Hg. Furthermore, the 811HT is specifically designed for high temperature applications.

- Up to one-half the SAE minimum bend radius for standard and high-temperature applications
- Meets or exceeds SAE 100R4 requirements
- Suitable for vacuum applications requiring 28 in/Hg
- Oil- and weather-resistant synthetic rubber cover

Performance

1/2

811HT
Suction and Return Line – High-Temperature
1/2 SAE Minimum Bend Radius
SAE J517 100R4 / SAE J1942

Part Number	Hose I.D.		Hose O.D.		Working Pressure 81/88DB		88HC		Minimum Bend Radius		Weight		Vacuum Rating		Parkrimp	Field Attachable 88 Series w/HC or DB
	inch	mm	inch	mm	psi	MPa	psi	MPa	inch	mm	lbs/ft	kg/m	inches of Hg	kPa	81 Series	
811HT-12	3/4	19,0	1.18	30,0	300	2,1	100	0,7	2-1/2	64	0.42	0,63	28	95	●	●
811HT-16	1	25,4	1.50	38,0	250	1,7	70	0,5	3	76	0.65	0,96	28	95	●	●
811HT-20	1-1/4	31,8	1.77	45,0	200	1,4	50	0,3	4	102	0.82	1,22	28	95	●	●
811HT-24	1-1/2	38,1	2.05	52,0	150	1	50	0,3	5	127	1.04	1,55	28	95	●	●
811HT-32	2	50,8	2.50	63,6	100	0,7	50	0,3	6	152	1.26	1,87	28	95	●	●
811HT-40	1-1/2	63,5	3.00	76,2	62	0,4	62	0,4	7	178	1.82	2,71	28	95		●

Application: Petroleum base hydraulic fluids and lubricating oils.

Inner Tube: Synthetic rubber.

Reinforcement: Multiple layers of fiber spiral and one helical wire.

Cover: Synthetic rubber, MSHA accepted.

Temperature Range: -50°F to +257°F (-46°C to +125°C).

Fittings: 81 Series.
88 Series.

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

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

HOSE ACCESSORIES

Partek Wrap

The need for a protective hose sleeve is not always considered while designing for a hose's application. Many hose assembly installations would benefit from a sleeve, but it is not obvious until all the other hoses and components are in place. Parker's Partek Wrap enables the hose sleeve to be installed after the hose assemblies have been positioned and secured in place. The Partek Wrap can be used as extra abrasion protection or to wrap multiple hoses or cables together.

Product Features

- Post assembly installation
- Light weight and highly flexible
- Urethane-coated 1050 Ballistic Nylon
- Ambient temperature range of -60°F to +200°F
- Fast and easy installation
- MSHA Certified for use in underground mines
- Stays closed using hook & loop fastener

Partek Wrap

Part Number	Bundle O.D. inch	Circumference inch	Open Width (+/- 0.375) inch	Roll Length feet	Color
PS-BV-100	1	3.25	4.00	50	Black
PS-BV-200	2	6.00	7.75	50	Black
PS-BV-300	3	9.40	10.90	50	Black
PS-BV-400	4	12.50	14.00	50	Black
PS-BV-500	5	15.75	17.25	50	Black
PS-BV-700	7	22.00	23.50	50	Black

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

C

D

Protective Coils, Sleeves & Guards

Partek Sleeve

Parker's Partek Nylon Protective Sleeving gives you tough hose abrasion protection two ways. First, per the ISO 6945 specification, Partek has a unique tubular weave nylon construction. Partek "AS" is strong enough to withstand greater than 200,000 abrasion cycles without wearing through the fabric at any location.

Partek "PS" can withstand greater than 50,000 abrasion cycles. In addition, this weave also gives an exceptionally smooth interior wall, allowing rubber hose to move freely inside the sleeve. This provides easy installation and prevents any internal abrasion problems. Partek sleeving is available in either black or yellow and in sizes to fit most hydraulic hose. Partek, the quick and easy solution to hose protection in high-abrasion areas.

Partek Sleeve (Black) Part Number	Partek Sleeve (Yellow) Part Number	Partek PS Sleeve (Black) Part Number	Inside Dia. A inch	Inside Dia. B inch
AS-B-11	AS-Y-11		1.07	0.69
AS-B-13	AS-Y-13	PS-B-13	1.34	0.86
AS-B-15	AS-Y-15	PS-B-15	1.66	1.06
AS-B-17	AS-Y-17	PS-B-17	1.92	1.22
AS-B-19	AS-Y-19		2.12	1.35
AS-B-22	AS-Y-22	PS-B-22	2.24	1.42
AS-B-27	AS-Y-27		2.55	1.63
AS-B-33	AS-Y-33	PS-B-33	2.85	1.81
AS-B-35	AS-Y-35	PS-B-35	3.43	2.19
AS-B-37	AS-Y-37	PS-B-37	3.73	2.38
		PS-B-39	4.12	2.63
		PS-B-45	4.53	2.88
AS-B-47		PS-B-47	4.90	3.13
AS-B-58			5.69	3.63
AS-B-64			6.81	4.00

PolyGuard

Parker's PolyGuard is a black, heavy-duty polyethylene shield that provides protection in rugged operating conditions. PolyGuard is used to prevent hose assemblies from abrasion and cuts while also minimizing kinking of the hose. PolyGuard can be used to bundle high-pressured hose lines.

PolyGuard can be installed without removing hose lines and without the use of clamps for easy installation. This shield resists water, oil, gasoline, hydraulic fluid and most solvents.

Use the formula below to determine the length of sleeve required.

Temperature Range: 0°F to +200°F
(-17°C to +93°C)

Caution: This material will support combustion.

$$\frac{\text{Hose O.D.xLength to be Protected}}{\text{Dimension A}} + \text{Dimension B}$$

Part Number	Inside Diameter "A" (inch)	Coil Width "B" (inch)
HG-075	0.75	0.95
HG-100	1.00	1.25
HG-125	1.25	1.35
HG-150	1.50	1.50
HG-200	2.00	1.60
HG-350	3.50	1.95

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

ParKoil

Parker's ParKoil is a lower-cost protection shield for applications that call for a tighter bend radius and are less demanding. ParKoil is easy to install and is used to prevent hose assemblies from abrasion and cuts while also minimizing kinking of the hose. ParKoil is great for bundling high-pressured hose lines.

Use the formula below to determine the length of sleeve required.

Temperature Range: 0°F to +200°F
(-17°C to +93°C)

Caution: This material will support combustion.

$$\frac{\text{Hose O.D.xLength to be Protected}}{\text{Dimension A}} + \text{Dimension B}$$

Part Number	Inside Diameter "A" (inch)	Coil Width "B" (inch)
PG-038	0.38	0.25
PG-050	0.50	0.40
PG-062	0.62	0.40
PG-075	0.75	0.40
PG-088	0.88	0.40
PG-100	1.00	0.65
PG-119	1.19	0.65
PG-138	1.38	0.65
PG-188	1.88	0.65

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Protective Coils, Sleeves & Guards

Spring Guard

Parker's Spring Guard prolongs the life of hose lines that are exposed to rugged operating conditions. They distribute bending radii to avoid kinking in the hose lines and protects hose from abrasion and deep cuts. Guards are constructed of steel wire and plated to resist rust.

Spring Guard is packaged in 10 ft. pieces.

Spring Guard Part Number	Inside Diameter
SG-050	0.50
SG-060	0.60
SG-066	0.66
SG-072	0.72
SG-084	0.84
SG-097	0.97
SG-106	1.06
SG-113	1.13
SG-122	1.22
SG-131	1.32
SG-155	1.55
SG-166	1.66
SG-182	1.82
SG-209	2.09
SG-220	2.20
SG-232	2.32
SG-292	2.92

Polyguard Strain Reliever

The Polyguard Strain Reliever is designed to limit kinking of hose assemblies. These strain relievers are made from flexible PVC making them easy to install and use.

Temperature Range: -40°F to +225°F (-40°C to +107°C)

Part Number	Length (inch)	Hose O.D. (inch)
4PG	7	0.53
6PG	7	0.63
7PG	7	0.69

WARNING: This product can expose you to chemicals including DNP, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

A

B

C

D

Firesleeve (FS-F)

Parker Firesleeve is a flame resistant sheath that protects the hose from extreme temperature conditions. Firesleeve easily slides over hoses and readily expands over fitting. It can be assembled with Parker FSC or properly sized wormgear clamp.

Construction: Braided fiberglass sleeve and an orange, bonded and seamless silicone rubber cover.

Specifications: Conforms to SAE Aerospace Standard 1072E.

Temperature Range: -54˚C to +260˚C (-65˚F to +500˚F).

Note: The Firesleeve inside dimension (I.D.) must exceed the outside diameter (O.D.) of the hose and offer an allowance for easy hose insertion. For example, 201-16 has a 1.23 in. O.D. FS-S-24, with an I.D. of 1.46 in., is the suggested Firesleeve.

Firesleeve (FS-F)

FSC Clamp (FSC)
(One size fits all hoses up to 2 inch O.D.)

Certifications and Specifications

- UL 1441 Certified
- VW1 Flame Test Certified
- MSHA Certified for use in underground mines
- SAE AS1072E
- GL - Germanischer Lloyd Certified for 800°C for 30 minutes
- BS EN 373 Molten Splash Tested
- BS EN 388 Abrasion Tested
- BS EN ISO 6940 Flame Resistance Tested
- BS EN ISO 6530 Oil Resistance Tested
- BS 2576 Tensile Strength Tested
- DIN 54837 / 5510-2 Rail Vehicle Certified for Resistance to Combustibility
- ASTM C177 Thermal Conductivity
- DIN 5659-2 /5510-2 Rail Vehicle Certified for Toxicity

FS-F Sizes

Part Number	Inside Diameter
FS-F-10	0.58
FS-F-11	0.65
FS-F-12	0.71
FS-F-14	0.84
FS-F-16	0.96
FS-F-18	1.08
FS-F-20	1.21
FS-F-22	1.34
FS-F-24	1.46
FS-F-28	1.72
FS-F-30	1.84
FS-F-32	1.96
FS-F-38	2.34
FS-F-40	2.46
FS-F-48	2.96
FS-F-60	3.71

WARNING: This product can expose you to chemicals including respirable glass fibers, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

Firesleeve Assembly Instructions

1. Cut Firesleeve to the same length as hose.
2. Crimp one end of hose. Slide Firesleeve over uncrimped end of hose.
3. Push Firesleeve back from uncrimped end of hose and crimp second fitting on hose. Align the Firesleeve so it covers the crimp shell on both ends.
4. Clamp Firesleeve in place using the FSC Clamp.

Protection Shields

Prevent hose abrasion while extending your hose life. Parker Hose Protection Shields extend hose life by protecting the hose from abrasion that occurs when hose rubs against other hose, metal or concrete. Parker hose shields are resistant to oil, lubricants, gasoline, most solvents and can withstand ambient temperatures from -40° to +300° F. Easily installed and secured by cable ties without disconnecting any hose lines. Use with hose from 1/4" to 2" I.D.

Assembly Instructions

These flexible protectors simply clamp around the hose and are securely held in place by nylon cable ties which are included. The cable ties are recessed in molded grooves to protect them from abrasion. **You don't need to disconnect a line to install a Parker Hose Protector Shield the way you do with a continuous tubular sleeve. Just wait until the installation is up and running to see exactly where contact needs to be prevented.**

Parker Hose Protector Shields are available in bulk quantities and in convenient assortments in 4", 6" and 8" sizes. Cable ties are included with all protectors and are also available in bulk.

Retail Counter Display

Part number: HP-B-13X18

Kit Includes:
20 - 4" Hose Protectors (HP-B-13)
60 - Tie Wraps (HT-12) for HP-B-13
20 - 6" Hose Protectors (HP-B-15)
60 - Tie Wraps (HT-16) for HP-B-15
20 - 8" Hose Protectors (HP-B-18)
60 - Tie Wraps (HT-22) for HP-B-18

Display Refills

Part Number	Description
HP-B-13-RFL	10 - 4" Hose Protectors (HP-B-13) 30 - Tie Wraps (HT-12)
HP-B-15-RFL	10 - 6" Hose Protectors (HP-B-15) 30 - Tie Wraps (HT-16)
HP-B-18-RFL	5 - 8" Hose Protectors (HP-B-18) 15 - Tie Wraps (HT-22)
HT-12-KIT	30 - Tie Wraps (HT-12) for HP-B-13 Hose Protector
HT-16-KIT	30 - Tie Wraps (HT-16) for HP-B-15 Hose Protector
HT-22-KIT	15 - Tie Wraps (HT-22) for HP-B-18 Hose Protector

Retail Counter Display

Note: Parker Hose Protector Shield products are intended to prevent damage. They are not suitable as patches or repairs for lines which are already damaged or worn beyond safe use standards.

A

B

C

D

PSG – Pioneer Spiral Guard

Features

- High-strength and resilient, Spiral Guard protects hose and cable with superior anti-crush performance
- Exceptionally smooth facing and rounded edges prevent Spiral Guard from getting caught on rough surfaces
- Easy installation and routing
- Low friction interior minimizes wear on hose
- For bundling, organizing and protecting hose and cable, Parflex Spiral Guard is the superior solution for mining operations - In fact, it delivers more advantages than cut pipe or sleeving at a competitive price or less
- Manufactured with high density polyethylene materials
- Spiral Guard is available in:
  - An MSHA/FRAS approved version
  - A standard version (with yellow stripe) for surface applications not requiring fire-resistant, anti-static properties

# Part Number	Hose O.D. Range		Package Qty.		1-Wire Braid Size		2-Wire Braid Size		Multi-Spiral Size		Weight	
	inch	mm	feet	mtr.	inch	mm	inch	mm	inch	mm	lbs/ft	kg/mtr
PGS 12	.394 - .512	10 - 13	65.6	20							0.34	.015
PSG 16 FRAS or PSG 16	.472 - .669	12 - 17	65.6	20	1/4	6	1/4	6			0.40	.018
PSG 20 FRAS or PSG 20	.630 - .866	16 - 22	65.6	20	3/8	10	1/4 3/8	6 10	3/8	10	.060	.027
PSG 25 FRAS or PSG 25	.866 - 1.10	22 - 28	65.6	20	1/2 5/8	13 16	1/2 5/8	13 16	1/2 5/8	13 16	.101	.046
PSG 32 FRAS or PSG 32	1.06 - 1.30	27 - 33	65.6	20	3/4	19	5/8 3/4	16 19	5/8 3/4	16 19	.151	.068
PSG 40 FRAS or PSG 40	1.30 - 1.65	33 - 42	65.6	20	1	25	1	25	1	25	.235	.107
PSG 50 FRAS or PSG 50	1.65 - 2.17	42 - 55	65.6	20	1-1/4 1-1/2	32 38	1-1/4	32	1-1/4	32	.268	.122
PSG 63 FRAS or SPG 63	2.05 - 2.56	52 - 65	65.6	20	2	51	1-1/2	38	1-1/2	38	.402	.182
PSG 75 FRAS or PSG 75	2.56 - 3.15	65 - 80	32.8	10			2	51	2	51	.637	.289
PSG 90 FRAS or PSG 90	3.15 - 5.91	80 - 150	32.8	10							.771	.350
PSG 110 FRAS or PSG 110	5.91 - above	150 - above	32.8	10							1.00	.454

WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

Hydraulic Hose Fittings B

A
B
C
D

HOW TO READ THE FITTINGS SECTION

With more than 750 end configurations, Parker's brass, stainless steel and Chromium-6 free plated steel fittings include O-ring face seal, flare, straight thread, pipe and metric designs, in both crimp and field attachable styles. Along with Parker hose, all fittings have been tested and approved, and meet stringent industry standards worldwide. Fitting page content is defined by the information shown below. Please take a moment and review.

How to Select Parkrimp Hose Fittings

Example: 1JC43-12-8C

- 1JC43-12-8C - Fitting (**1**=Crimp, 2=Field attachable, 3=Push-Lok, Blank=Nipple with clamp)
- 1**JC**43-12-8C - End Connection
- 1JC**43**-12-8C - Fitting Series
- 1JC43-**12**-8C - Size of Fitting End Connection
- 1JC43-12-**8**C - Hose Size
- 1JC43-12-8**C** - Fitting Material
  - No Suffix = Steel
  - B = Brass
  - C = 316 Stainless Steel
  - BA = Brass Nipple with Steel Nut and Socket
  - BS = Brass Nipple and Nut with Steel Shell or Socket
  - SM = Metric Index
  - ZJ = XTR Coating

Hose Inner Diameter
Measured in 1/16 inch increments identified by use of a "dash"(-) numbering system. i.e., 4/16" = 1/4" = -4.

"A" Dimension
Overall Length

Hex size
Use to determine the wrench size

"B" Dimension
(Cutoff Allowance) Dimension used to determine cut length (C.L.) of hose when making a hose assembly

Lists approved hoses for fitting series

Fitting Information
Base part number and end connection description

Catalog 3920 — 43 Series Fittings

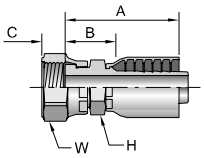
Use with hoses: AG2, TC3, HR2C, HR3C, HTB, 387ST, 487/TC/ST, 722/TC/ST, 787/TC/ST, 797/TC/ST

Standard material for fittings is steel. For additional material, refer to column

1JC43

Female Seal-Lok® - Swivel - Short
ISO 12151-1 - SWSA

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	C inch	C mm	H inch	W inch	B inch	B mm	Additional Material Stainless Steel (C)
1JC43-4-4	1/4	9/16x18	1/4	1.63	41	0.32	8	9/16	11/16	0.88	22	•
1JC43-4-4-SM	1/4	9/16x18	1/4	1.63	41	0.32	8	17 mm	17 mm	0.88	22	
1JC43-4-6	1/4	9/16x18	3/8	1.90	48	0.32	8	11/16	11/16	0.87	22	
1JC43-6-4	3/8	11/16x16	1/4	1.67	42	0.32	8	11/16	13/16	0.92	23	
1JC43-6-4-SM	3/8	11/16x16	1/4	1.67	42	0.32	8	17 mm	22 mm	0.92	23	
1JC43-6-5	3/8	11/16x16	5/16	1.65	42	0.32	8	11/16	13/16	0.90	23	
1JC43-6-6	3/8	11/16x16	3/8	1.94	49	0.32	8	11/16	13/16	0.91	23	•
1JC43-6-6-SM	3/8	11/16x16	3/8	1.94	49	0.32	8	19 mm	22 mm	0.91	23	
1JC43-8-6	1/2	13/16x16	3/8	2.00	51	0.43	11	13/16	15/16	0.97	25	
1JC43-8-6-SM	1/2	13/16x16	3/8	2.00	51	0.43	11	19 mm	24 mm	0.97	25	
1JC43-8-8	1/2	13/16x16	1/2	2.22	56	0.43	11	13/16	15/16	0.96	24	•
1JC43-8-8-SM	1/2	13/16x16	1/2	2.22	56	0.43	11	22 mm	24 mm	0.96	24	
1JC43-10-8	5/8	1x14	1/2	2.30	58	0.53	13	15/16	1-1/8	1.04	26	
1JC43-10-10	5/8	1x14	5/8	2.49	63	0.53	13	15/16	1-1/8	1.05	27	•
1JC43-10-10-SM	5/8	1x14	5/8	2.49	63	0.53	13	24 mm	30 mm	1.05	27	
1JC43-12-8	3/4	1-3/16x12	1/2	2.48	63	0.57	14	1-1/8	1-3/8	1.22	31	



Indicates Fitting Section

Continued on next page

HOW TO SELECT HOSE FITTINGS

To make ordering Parker products easier, we have outlined the nomenclature for hose and fittings on this page. For information on ordering hose assemblies, see Section A.

How to Select Hose

Example: 487TC-4

487TC-4 - Hose type
487**TC**-8 - Indicates the special feature of the hose (in this case, 'Tough Cover')
487TC-**4** - Hose inside diameter dash size (in this case, 4/16" or 1/4")

How to Select Parkrimp Hose Fittings

Example: 1JC43-12-8C

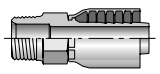
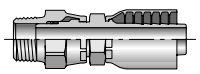
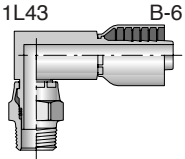
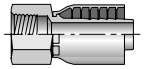
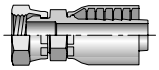
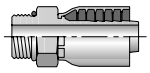
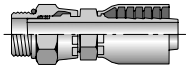
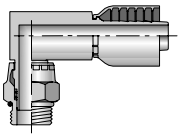
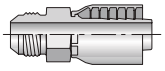
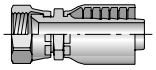
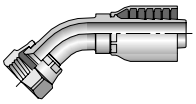
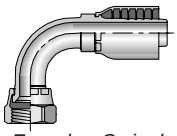
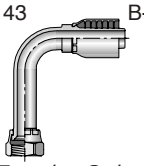
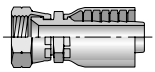
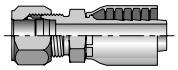
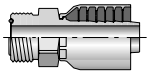
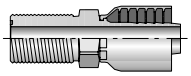
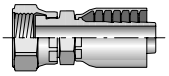
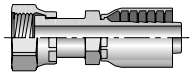
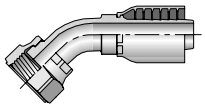
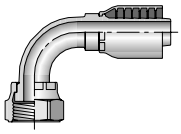
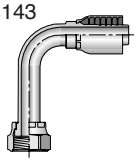
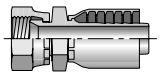
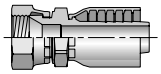
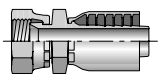
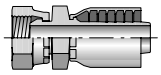
1JC43-12-8C - Fitting (1 = Crimp, 2 = Field Attachable, 3 = Push-Lok, Blank = Nipple with clamp or shell)
1**JC**43-12-8C - End connection (In this case, a female Seal-Lok – swivel – straight)
1JC**43**-12-8C - Fitting series
1JC43-**12**-8C - Size of fitting end connection (In this case, 12/16" or 3/4")
1JC43-12-**8**C - Hose size (In this case, 8/16" or 1/2")
1JC43-12-8**C** - Fitting material:
No Suffix = Steel
B = Brass
C = 316 Stainless Steel
BA = Brass Nipple with Steel Nut and Socket
BS = Brass Nipple with Brass Nut and Socket
SM = Metric Hex

A

B

C

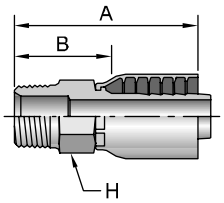
D

NPTF/ NPSM Pipe	10143 B-5  *Male - Rigid*	11343 B-5  *Male - Swivel*	11L43 B-6  *Male - Swivel 90˚ Elbow*	10243 B-6  *Female - Rigid*	10743 B-6  *Female - Swivel*
Straight Thread O-Ring	10543 B-7  *Male - Rigid*	10G43 B-7  *Male - Swivel*	10L43 B-8  *Male - Swivel 90˚ Elbow*	***JIC 37˚***	10343 B-8  *Male - Rigid*
10643 B-9  *Female - Swivel*	13743 B-10  *Female - Swivel 45˚ Elbow - Short*	13943 B-10  *Female - Swivel 90˚ Elbow - Short*	14143 B-11  *Female - Swivel 90˚ Elbow - Long*	***SAE 45˚***	10843 B-11  *Female - Swivel*
Flareless	11143 B-11  *Male - Rigid*	***Seal-Lok® (O-Ring Face Seal)***	1J043 B-12  *Male - Rigid w/O-Ring*	1JB43 B-12  *Male - Bulkhead w/O-Ring*	1JC43 B-13  *Female - Swivel Short*
1JS43 B-14  *Female - Swivel Long*	1J743 B-15  *Female - Swivel 45˚ Elbow*	1J943 B-16  *Female - Swivel 90˚ Elbow - Short*	1J143 B-16  *Female - Swivel 90˚ Elbow - Long*	***Metric 30˚ Flare***	1MU43 B-17  *Female - Swivel*
1XU43 B-17  *Female - Swivel*	***JIS***	1FU43 B-18  *Female - Swivel*	1GU43 B-18  *Female - Swivel*		

10143

Male NPTF Pipe - Rigid

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm	Additional Material Stainless Steel (C)
10143-2-4	1/8x27	1/4	1.80	46	9/16	1.05	27	
10143-4-4	1/4x18	1/4	2.01	51	9/16	1.26	32	•
10143-4-5	1/4x18	5/16	1.94	49	11/16	1.19	30	
10143-4-6	1/4x18	3/8	2.28	58	3/4	1.25	32	
10143-6-4	3/8x18	1/4	1.86	47	11/16	1.11	28	
10143-6-5	3/8x18	5/16	1.94	49	11/16	1.19	30	
10143-6-6	3/8x18	3/8	2.37	60	3/4	1.34	34	•
10143-6-8	3/8x18	1/2	2.59	66	7/8	1.33	34	
10143-6-10	3/8x18	5/8	2.61	66	15/16	1.17	30	
10143-8-4	1/2x14	1/4	2.13	54	7/8	1.38	35	
10143-8-6	1/2x14	3/8	2.39	61	7/8	1.36	35	
10143-8-8	1/2x14	1/2	2.84	72	7/8	1.58	40	•
10143-8-10	1/2x14	5/8	3.04	77	15/16	1.59	40	
10143-8-12	1/2x14	3/4	3.04	77	1-1/16	1.60	41	
10143-12-8	3/4x14	1/2	2.68	68	1-1/16	1.42	36	
10143-12-10	3/4x14	5/8	2.87	73	1-1/16	1.43	36	
10143-12-12	3/4x14	3/4	3.09	78	1-1/16	1.65	42	•
10143-12-16	3/4x14	1	3.40	86	1-3/8	1.78	45	
10143-16-12	1x11-1/2	3/4	3.09	78	1-3/8	1.65	42	
10143-16-16	1x11-1/2	1	3.59	66	1-3/8	1.97	50	•
10143-20-20	1-1/4x11-1/2	1-1/4	4.08	104	1-3/4	2.39	61	•
10143-24-24	1-1/2x11-1/2	1-1/2	3.50	89	2	2.13	54	
10143-32-32	2x11-1/2	2	4.05	103	2-1/2	2.27	58	



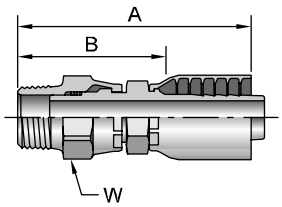
Stainless steel fittings must be assembled with Karrykrimp 2, PHastkrimp, Superkrimp or Parkrimp 2. See CrimpSource for more information.

WARNING: This product can expose you to chemicals including Lead, 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.

11343

Male NPTF Pipe - Swivel

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	W inch	B inch	B mm
11343-2-4	1/8x27	1/4	2.94	75	5/8	2.19	56
11343-4-4	1/4x18	1/4	2.68	68	5/8	1.93	49
11343-4-6	1/4x18	3/8	3.01	76	5/8	1.98	50
11343-6-4	3/8x18	1/4	2.81	71	3/4	2.06	52
11343-6-6	3/8x18	3/8	3.08	78	3/4	2.05	52
11343-6-8	3/8x18	1/2	3.30	84	3/4	2.04	52
11343-8-6	1/2x14	3/8	3.30	84	7/8	2.27	58
11343-8-8	1/2x14	1/2	3.52	89	7/8	2.26	57
11343-12-12	3/4x14	3/4	3.93	100	1-1/4	2.49	63
11343-16-16	1x11-1/2	1	4.52	115	1-1/2	2.90	74



O-Ring not compatible with Phosphate Ester fluids.

Fitting allows minor movement under pressure to relieve stress on hose but is not to be used on continuous or extensive swiveling.

WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

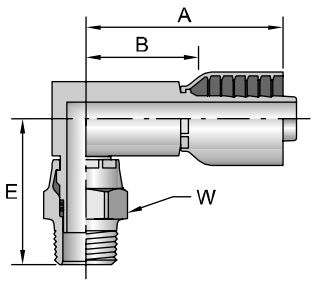
B

C

D

11L43

Male NPTF Pipe - Swivel - 90° Elbow



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
11L43-4-4	1/4x18	1/4	2.23	57	1.79	45	5/8	1.48	38
11L43-4-6	1/4x18	3/8	2.53	64	1.85	47	5/8	1.50	38
11L43-6-6	3/8x18	3/8	2.53	64	1.94	49	3/4	1.50	38
11L43-8-6	1/2x14	3/8	2.66	68	2.17	55	7/8	1.63	41
11L43-8-8	1/2x14	1/2	2.96	75	2.17	55	7/8	1.70	43
11L43-12-12	3/4x14	3/4	3.32	84	2.46	62	1-1/4	1.88	48

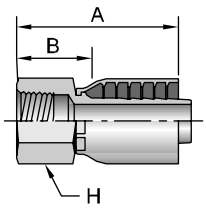
O-Ring not compatible with Phosphate Ester fluids.

Fitting allows minor movement under pressure to relieve stress on hose but is not to be used on continuous or extensive swiveling.

WARNING: This product can expose you to chemicals including Lead, 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.

10243

Female NPTF Pipe - Rigid

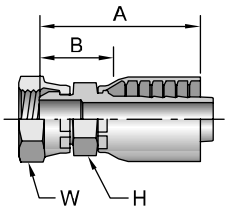


# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
10243-2-4	1/8x27	1/4	1.68	43	5/8	0.93	24
10243-4-4	1/4x18	1/4	1.78	45	11/16	1.03	26
10243-4-6	1/4x18	3/8	2.05	52	3/4	1.02	26
10243-6-4	3/8x18	1/4	2.05	52	7/8	1.30	33
10243-6-6	3/8x18	3/8	2.32	59	7/8	1.29	33
10243-8-6	1/2x14	3/8	2.40	61	1-1/8	1.37	35
10243-8-8	1/2x14	1/2	2.62	67	1-1/8	1.36	35
10243-12-12	3/4x14	3/4	2.72	69	1-1/4	1.28	33

WARNING: This product can expose you to chemicals including Lead, 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.

10743

Female NPSM Pipe - Swivel - (60° Cone)



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
10743-2-4	1/8x27	1/4	1.69	43	9/16	9/16	0.94	24
10743-4-4	1/4x18	1/4	1.74	44	9/16	11/16	0.99	25
10743-6-6	3/8x18	3/8	2.09	53	11/16	7/8	1.06	27
10743-8-8	1/2x14	1/2	2.32	59	15/16	1	1.06	27
10743-12-12	3/4x14	3/4	2.70	69	1-1/16	1-1/4	1.47	37
10743-16-16	1x11-1/2	1	3.09	78	1-3/8	1-1/2	1.47	37
10743-20-20	1-1/4x11-1/2	1-1/4	3.28	83	1-7/8	1-7/8	1.59	40

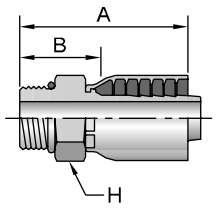
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

10543

Male SAE Straight Thread with O-Ring - Rigid

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
10543-4-4	1/4	7/16x20	1/4	1.64	42	9/16	0.89	23
10543-5-4	5/16	1/2x20	1/4	1.80	46	5/8	1.05	27
10543-6-4	3/8	9/16x18	1/4	1.67	42	11/16	0.92	23
10543-6-6	3/8	9/16x18	3/8	2.10	53	11/16	1.07	27
10543-6-8	3/8	9/16x18	1/2	2.32	59	13/16	1.06	27
10543-8-6	1/2	3/4x16	3/8	2.11	54	7/8	1.08	27
10543-8-8	1/2	3/4x16	1/2	2.46	62	7/8	1.20	30
10543-8-10	1/2	3/4x16	5/8	2.63	67	1	1.19	30
10543-10-6	5/8	7/8x14	3/8	2.13	54	1	1.10	28
10543-10-8	5/8	7/8x14	1/2	2.35	60	1	1.09	28
10543-10-10	5/8	7/8x14	5/8	2.77	70	1	1.33	34
10543-12-8	3/4	1-1/16x12	1/2	2.61	66	1-1/4	1.35	34
10543-12-10	3/4	1-1/16x12	5/8	2.80	71	1-1/4	1.36	35
10543-12-12	3/4	1-1/16x12	3/4	2.81	71	1-1/4	1.37	35
10543-16-12	1	1-5/16x12	3/4	2.81	71	1-1/2	1.37	35
10543-16-16	1	1-5/16x12	1	3.37	86	1-1/2	1.75	44
10543-20-20	1-1/4	1-5/8x12	1-1/4	3.69	94	1-7/8	2.00	51

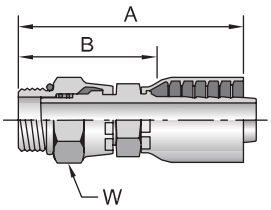


WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

10G43

Male SAE Straight Thread with O-Ring - Swivel

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	W inch	B inch	B mm
10G43-5-4	5/16	1/2x20	1/4	2.98	76	3/4	2.23	57
10G43-6-4	3/8	9/16x18	1/4	2.98	76	3/4	2.23	57
10G43-6-6	3/8	9/16x18	3/8	3.25	83	3/4	2.22	56
10G43-8-6	1/2	3/4x16	3/8	3.06	78	7/8	2.06	52
10G43-8-8	1/2	3/4x16	1/2	3.21	82	7/8	1.95	50
10G43-10-6	5/8	7/8x14	3/8	3.01	76	1	2.01	51
10G43-10-8	5/8	7/8x14	1/2	3.27	83	1	2.01	51
10G43-12-12	3/4	1-1/16x12	3/4	3.78	96	1-1/4	2.34	59



O-Ring not compatible with Phosphate Ester fluids.

Fitting allows minor movement under pressure to relieve stress on hose but is not to be used on continuous or extensive swiveling.

WARNING: This product can expose you to chemicals including Lead, 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.

A

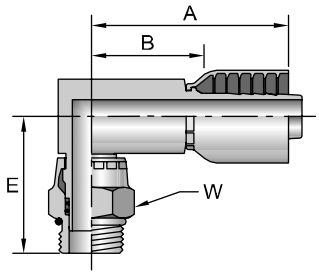
B

C

D

10L43

Male SAE Straight Thread with O-Ring - Swivel - 90° Elbow



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
10L43-6-6	3/8	9/16x18	3/8	2.53	64	2.10	53	3/4	1.50	38
10L43-8-6	1/2	3/4x16	3/8	2.66	68	1.86	47	7/8	1.63	41
10L43-8-8	1/2	3/4x16	1/2	2.96	75	1.87	47	7/8	1.70	43
10L43-10-8	5/8	7/8x14	1/2	2.96	75	1.92	49	1	1.70	43
10L43-12-12	3/4	1-1/16x12	3/4	3.22	82	2.30	58	1-1/4	1.88	48

O-Ring not compatible with Phosphate Ester fluids.

See Technical Section for pressure limitations.

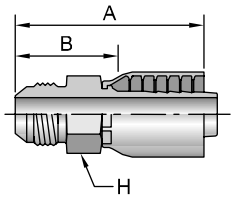
Fitting allows minor movement under pressure to relieve stress on hose but is not to be used on continuous or extensive swiveling.

WARNING: This product can expose you to chemicals including Lead, 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.

10343

Male JIC 37° - Rigid

ISO 12151-5



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
10343-4-4	1/4	7/16x20	1/4	1.99	51	9/16	1.24	31
10343-5-4	5/16	1/2x20	1/4	1.83	46	9/16	1.08	27
10343-5-6	5/16	1/2x20	3/8	2.26	57	3/4	1.23	31
10343-6-4	3/8	9/16x18	1/4	1.84	47	11/16	1.09	28
10343-6-6	3/8	9/16x18	3/8	2.36	60	3/4	1.33	34
10343-8-6	1/2	3/4x16	3/8	2.30	58	7/8	1.27	32
10343-8-8	1/2	3/4x16	1/2	2.68	68	7/8	1.42	36
10343-8-10	1/2	3/4x16	5/8	2.85	72	7/8	1.41	36
10343-10-6	5/8	7/8x14	3/8	2.40	61	15/16	1.37	35
10343-10-8	5/8	7/8x14	1/2	2.62	67	15/16	1.36	35
10343-10-10	5/8	7/8x14	5/8	3.03	77	15/16	1.59	40
10343-12-8	3/4	1-1/16x12	3/8	2.76	70	1-1/8	1.50	38
10343-12-10	3/4	1-1/16x12	5/8	3.07	78	1-1/8	1.63	41
10343-12-12	3/4	1-1/16x12	3/4	3.19	81	1-1/8	1.75	44
10343-14-12	7/8	1-3/16x12	3/4	3.11	79	1-1/4	1.67	42
10343-16-12	1	1-5/16x12	3/4	3.04	77	1-3/8	1.60	41
10343-16-16	1	1-5/16x12	1	3.63	92	1-3/8	2.01	51
10343-20-20	1-1/4	1-5/8x12	1-1/4	3.96	101	1-7/8	2.27	58
10343-24-20	1-1/2	1-7/8x12	1-1/4	3.71	94	2	2.02	51

WARNING: This product can expose you to chemicals including Lead, 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.

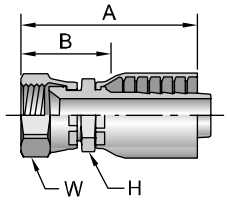
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

10643

Female JIC 37° - Swivel

ISO 12151-5

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm	Additional Material Stainless Steel (C)
10643-4-4	1/4	7/16x20	1/4	1.94	49	9/16	9/16	1.19	30	•
10643-4-6	1/4	7/16x20	3/8	2.20	56	11/16	9/16	1.17	30	
10643-5-4	5/16	1/2x20	1/4	2.03	52	9/16	5/8	1.28	33	
10643-5-5	5/16	1/2x20	5/16	2.08	53	11/16	5/8	1.33	34	
10643-5-6	5/16	1/2x20	3/8	2.26	57	11/16	5/8	1.23	31	
10643-6-4	3/8	9/16x18	1/4	2.05	52	9/16	11/16	1.30	33	
10643-6-5	3/8	9/16x18	5/16	2.10	53	11/16	11/16	1.35	34	
10643-6-6	3/8	9/16x18	3/8	2.29	58	11/16	11/16	1.26	32	•
10643-6-8	3/8	9/16x18	1/2	2.51	64	13/16	11/16	1.25	32	
10643-8-6	1/2	3/4x16	3/8	2.49	63	11/16	7/8	1.46	37	•
10643-8-8	1/2	3/4x16	1/2	2.77	67	13/16	7/8	1.51	35	•
10643-8-10	1/2	3/4x16	5/8	2.82	72	15/16	7/8	1.38	35	
10643-8-12	1/2	3/4x16	3/4	2.83	72	1-1/16	7/8	1.39	35	
10643-10-6	5/8	7/8x14	3/8	2.51	64	7/8	1	1.48	38	
10643-10-8	5/8	7/8x14	1/2	2.85	72	7/8	1	1.59	40	
10643-10-10	5/8	7/8x14	5/8	2.93	74	15/16	1	1.49	38	•
10643-10-12	5/8	7/8x14	3/4	2.93	74	1-1/16	1	1.49	38	
10643-12-8	3/4	1-1/16x12	1/2	2.78	71	1-1/16	1-1/4	1.52	39	
10643-12-10	3/4	1-1/16x12	5/8	3.10	79	1-1/16	1-1/4	1.66	42	
10643-12-12	3/4	1-1/16x12	3/4	3.17	81	1-1/16	1-1/4	1.73	44	•
10643-12-16	3/4	1-1/16x12	1	3.29	84	1-3/8	1-1/4	1.67	42	
10643-14-12	7/8	1-3/16x12	3/4	3.18	81	1-1/4	1-3/8	1.74	44	
10643-16-12	1	1-5/16x12	3/4	3.31	84	1-1/4	1-1/2	1.87	47	
10643-16-16	1	1-5/16x12	1	3.62	92	1-3/8	1-1/2	2.00	51	•
10643-20-16	1-1/4	1-5/8x12	1	3.81	97	1-5/8	2	2.19	56	
10643-20-20	1-1/4	1-5/8x12	1-1/4	3.94	100	1-7/8	2	2.25	57	•
10643-24-24	1-1/2	1-7/8x12	1-1/2	3.84	98	2-1/8	2-1/4	2.47	63	
10643-32-32	2	2-1/2x12	2	4.73	120	2-1/2	2-7/8	2.95	75	



Stainless steel fittings must be assembled with Karrykrimp 2, PHastkrimp, Superkrimp or Parkrimp 2. See CrimpSource for more information.

WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

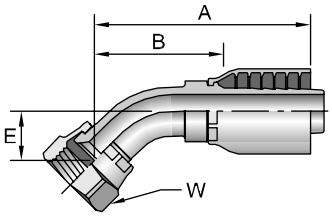
C

D

13743

Female JIC 37° - Swivel - 45° Elbow - Short Drop

ISO 12151-5



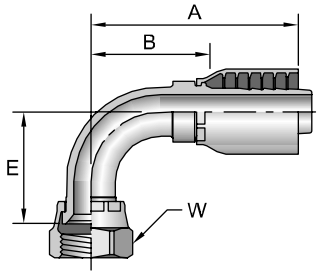
# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
13743-4-4	1/4	7/16x20	1/4	1.96	50	0.39	10	9/16	1.21	31
13743-5-4	5/16	1/2x20	1/4	2.19	56	0.39	10	5/8	1.44	37
13743-6-4	3/8	9/16x18	1/4	2.23	57	0.39	10	11/16	1.48	38
13743-6-6	3/8	9/16x18	3/8	2.39	61	0.39	10	11/16	1.39	35
13743-8-6	1/2	3/4x16	3/8	2.74	70	0.55	14	7/8	1.74	44
13743-8-8	1/2	3/4x16	1/2	2.83	72	0.55	14	7/8	1.57	40
13743-10-8	5/8	7/8x14	1/2	2.93	74	0.63	16	1	1.67	42
13743-10-10	5/8	7/8x14	5/8	3.17	81	0.63	16	1	1.73	44
13743-12-10	3/4	1-1/16x12	5/8	3.62	92	0.83	21	1-1/4	2.08	53
13743-12-12	3/4	1-1/16x12	3/4	3.63	92	0.78	20	1-1/4	2.19	56
13743-16-16	1	1-5/16x12	1	4.34	110	0.95	24	1-1/2	2.72	69
13743-20-20	1-1/4	1-5/8x12	1-1/4	4.59	117	1.19	30	2	2.82	72
13743-24-24	1-1/2	1-7/8x12	1-1/2	5.50	140	1.47	37	2-1/4	4.18	106

WARNING: This product can expose you to chemicals including Lead, 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.

13943

Female JIC 37° - Swivel - 90° Elbow - Short Drop

ISO 12151-5



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
13943-4-4	1/4	7/16x20	1/4	1.78	45	0.83	21	9/16	1.03	26
13943-4-6	1/4	7/16x20	3/8	2.11	54	0.83	21	9/16	1.08	27
13943-5-4	5/16	1/2x20	1/4	1.88	48	0.83	21	5/8	1.13	29
13943-5-5	5/16	1/2x20	5/16	1.96	50	0.83	21	5/8	1.21	31
13943-6-4	3/8	9/16x18	1/4	2.12	54	0.85	22	11/16	1.37	35
13943-6-6	3/8	9/16x18	3/8	2.21	56	0.91	23	11/16	1.18	30
13943-6-8	3/8	9/16x18	1/2	2.51	64	0.85	22	11/16	1.25	32
13943-8-6	1/2	3/4x16	3/8	2.52	64	1.09	28	7/8	1.49	38
13943-8-8	1/2	3/4x16	1/2	2.62	67	1.14	29	7/8	1.36	35
13943-10-8	5/8	7/8x14	1/2	2.74	70	1.26	32	1	1.48	38
13943-10-10	5/8	7/8x14	5/8	2.97	75	1.26	32	1	1.69	39
13943-12-8	3/4	1-1/16x12	1/2	3.25	83	1.83	46	1-1/4	1.99	51
13943-12-10	3/4	1-1/16x12	5/8	3.07	78	1.89	48	1-1/4	1.63	41
13943-12-12	3/4	1-1/16x12	3/4	3.49	89	1.89	48	1-1/4	2.05	52
13943-16-12	1	1-5/16x12	3/4	3.49	89	2.00	51	1-1/2	2.05	52
13943-16-16	1	1-5/16x12	1	4.28	109	2.20	56	1-1/2	2.66	68
13943-20-20	1-1/4	1-5/8x12	1-1/4	4.43	113	2.59	66	2	2.74	70
13943-24-24	1-1/2	1-7/8x12	1-1/2	5.50	140	3.81	81	2-1/4	4.13	105
13943-32-32	2	2-1/2x12	2	6.75	171,4	4.62	117	2-7/8	4.97	126,2

WARNING: This product can expose you to chemicals including Lead, 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.

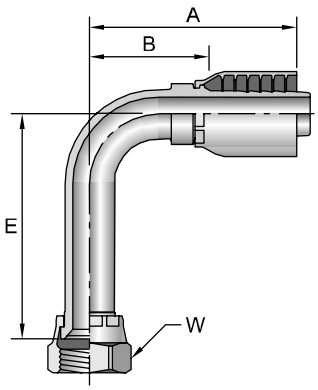
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

14143

Female JIC 37° - Swivel - 90° Elbow - Long Drop

ISO 12151-5

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
14143-4-4	1/4	7/16x20	1/4	1.96	50	1.81	46	9/16	1.21	31
14143-5-4	5/16	1/2x20	1/4	1.93	49	1.80	46	5/8	1.18	30
14143-6-6	3/8	9/16x18	3/8	2.27	58	2.18	55	11/16	1.27	32
14143-8-6	1/2	3/4x16	3/8	2.56	65	2.43	62	7/8	1.56	40
14143-8-8	1/2	3/4x16	1/2	2.62	67	2.52	64	7/8	1.36	35
14143-10-8	5/8	7/8x14	1/2	2.78	71	2.58	66	1	1.52	39
14143-10-10	5/8	7/8x14	5/8	3.16	80	2.58	66	1	1.75	44
14143-12-12	3/4	1-1/16x12	3/4	3.49	89	3.74	95	1-1/4	2.05	52
14143-14-12	7/8	1-3/16x12	3/4	3.38	86	3.93	100	1-3/8	1.95	50
14143-16-16	1	1-5/16x12	1	3.90	99	4.32	110	1-1/2	2.31	59
14143-20-20	1-1/4	1-5/8x12	1-1/4	4.39	112	5.28	134	2	2.73	69

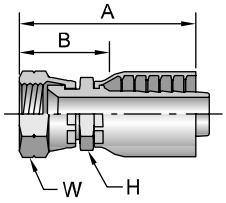


WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

10843

Female SAE 45° - Swivel

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
10843-6-4	3/8	5/8x18	1/4	2.11	54	3/4	3/4	1.36	35
10843-6-6	3/8	5/8x18	3/8	2.38	60	3/4	3/4	1.35	34
10843-12-12	3/4	1-1/16x14	3/4	3.17	81	1-1/16	1-1/4	1.73	44

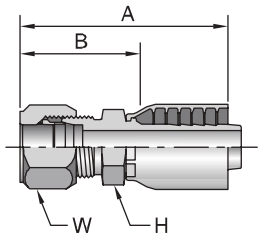


WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

11143

Male Ferulok Flareless - Rigid
(24° Cone with Nut and Ferrule)

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
11143-4-4	1/4	7/16x20	1/4	2.13	54	9/16	9/16	1.40	36
11143-4-6	1/4	7/16x20	3/8	2.44	62	3/4	9/16	1.44	37
11143-5-4	5/16	1/2x20	1/4	2.13	54	9/16	5/8	1.40	36
11143-5-6	5/16	1/2x20	3/8	2.44	62	3/4	5/8	1.44	37
11143-6-6	3/8	9/16x18	3/8	2.50	64	3/4	11/16	1.50	38
11143-8-8	1/2	3/4x16	1/2	2.93	74	7/8	7/8	1.68	43
11143-10-8	5/8	7/8x14	1/2	3.07	78	15/16	1	1.82	46
11143-12-12	3/4	1-1/16x12	3/4	3.39	86	1-1/8	1-1/4	1.96	50
11143-16-16	1	1-5/16x12	1	3.80	97	1-3/8	1-1/2	2.18	55



WARNING: This product can expose you to chemicals including Lead, 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.

Notch on nut signifies SAE 45° flare.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

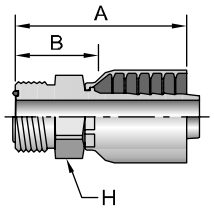
C

D

1J043

Male Seal-Lok® - Rigid - (with O-Ring)

SAE J516 (Apr2016)



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
1J043-4-4	1/4	9/16x18	1/4	1.73	44	5/8	0.98	25
1J043-6-6	3/8	11/16x16	3/8	2.08	53	3/4	1.05	27
1J043-8-6	1/2	13/16x16	3/8	2.20	56	7/8	1.17	30
1J043-8-8	1/2	13/16x16	1/2	2.42	61	7/8	1.17	30
1J043-10-8	5/8	1x14	1/2	2.61	66	1-1/16	1.35	34
1J043-10-10	5/8	1x14	5/8	2.73	69	1-1/16	1.34	34
1J043-12-10	3/4	1-3/16x12	5/8	2.89	73	1-1/4	1.45	37
1J043-12-12	3/4	1-3/16x12	3/4	2.90	74	1-1/4	1.46	37
1J043-16-12	1	1-7/16x12	3/4	2.93	74	1-1/2	1.49	38
1J043-16-16	1	1-7/16x12	1	3.29	84	1-1/2	1.67	42
1J043-20-20	1-1/4	1-11/16x12	1-1/4	3.32	84	1-3/4	1.63	41

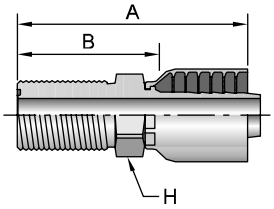
Supplied with Parker's exclusive Trap-Seal™, which leads to improved retention within Seal-Lok's™ ORFS groove and virtually eliminates costly leakage and/or time consuming pre-assembly handling.

WARNING: This product can expose you to chemicals including Lead, 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.

1JB43

Male Seal-Lok® - Bulkhead without Locknut - (with O-Ring)

End Connection per SAE J516 (Apr2016)



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H mm	B inch	B mm
1JB43-4-4	1/4	9/16x18	1/4	2.67	68	22	1.92	49
1JB43-6-6	3/8	11/16x16	3/8	3.08	78	27	2.05	52
1JB43-8-8	1/2	13/16x16	1/2	3.44	87	30	2.18	55
1JB43-10-8	5/8	1x14	1/2	3.69	94	36	2.43	62
1JB43-10-10	5/8	1x14	5/8	3.88	99	36	2.44	62
1JB43-12-12	3/4	1-3/16x12	3/4	3.95	100	41	2.51	64

Fittings are stocked less locknut (part no. WLNL). Locknuts are manufactured by the Parker Tube Fittings Division and must be ordered separately.

Supplied with Parker's exclusive Trap-Seal™, which leads to improved retention within Seal-Lok's™ ORFS groove and virtually eliminates costly leakage and/or time consuming pre-assembly handling.

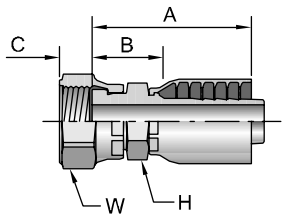
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1JC43

Female Seal-Lok® - Swivel - Short

ISO 12151-1 - SWSA

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	C inch	C mm	H inch	W inch	B inch	B mm	Additional Material Stainless Steel (C)
1JC43-4-4	1/4	9/16x18	1/4	1.63	41	0.32	8	9/16	11/16	0.88	22	•
1JC43-4-4-SM	1/4	9/16x18	1/4	1.63	41	0.32	8	17 mm	17 mm	0.88	22	
1JC43-4-6	1/4	9/16x18	3/8	1.90	48	0.32	8	11/16	11/16	0.87	22	
1JC43-6-4	3/8	11/16x16	1/4	1.67	42	0.32	8	11/16	13/16	0.92	23	
1JC43-6-4-SM	3/8	11/16x16	1/4	1.67	42	0.32	8	17 mm	22 mm	0.92	23	
1JC43-6-5	3/8	11/16x16	5/16	1.65	42	0.32	8	11/16	13/16	0.90	23	
1JC43-6-6	3/8	11/16x16	3/8	1.94	49	0.32	8	11/16	13/16	0.91	23	•
1JC43-6-6-SM	3/8	11/16x16	3/8	1.94	49	0.32	8	19 mm	22 mm	0.91	23	
1JC43-8-6	1/2	13/16x16	3/8	2.00	51	0.43	11	13/16	15/16	0.97	25	
1JC43-8-6-SM	1/2	13/16x16	3/8	2.00	51	0.43	11	19 mm	24 mm	0.97	25	
1JC43-8-8	1/2	13/16x16	1/2	2.22	56	0.43	11	13/16	15/16	0.96	24	•
1JC43-8-8-SM	1/2	13/16x16	1/2	2.22	56	0.43	11	22 mm	24 mm	0.96	24	
1JC43-10-8	5/8	1x14	1/2	2.30	58	0.53	13	15/16	1-1/8	1.04	26	
1JC43-10-10	5/8	1x14	5/8	2.49	63	0.53	13	15/16	1-1/8	1.05	27	•
1JC43-10-10-SM	5/8	1x14	5/8	2.49	63	0.53	13	24 mm	30 mm	1.05	27	
1JC43-12-8	3/4	1-3/16x12	1/2	2.48	63	0.57	14	1-1/8	1-3/8	1.22	31	
1JC43-12-10	3/4	1-3/16x12	5/8	2.67	68	0.57	14	1-1/8	1-3/8	1.23	31	
1JC43-12-12	3/4	1-3/16x12	3/4	2.68	68	0.57	14	1-1/8	1-3/8	1.24	31	•
1JC43-12-12-SM	3/4	1-3/16x12	3/4	2.68	68	0.57	14	32 mm	36 mm	1.24	31	
1JC43-12-16	3/4	1-3/16x12	1	2.99	76	0.57	14	1-5/16	1-3/8	1.37	35	
1JC43-16-12	1	1-7/16x12	3/4	2.83	72	0.58	15	1-3/8	1-5/8	1.39	35	
1JC43-16-16	1	1-7/16x12	1	3.14	80	0.58	15	1-3/8	1-5/8	1.52	39	•
1JC43-20-20	1-1/4	1-11/16x12	1-1/4	3.27	83	0.59	15	1-7/8	1-7/8	1.58	40	•



When measuring overall length to the end of the nut, B+C dimensions must be used to calculate cut-off allowance.
Stainless steel fittings must be assembled with Karrykrimp 2, PHastkrimp, Superkrimp or Parkrimp 2.
See CrimpSource for more information.

WARNING: This product can expose you to chemicals including Lead, 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.

A

B

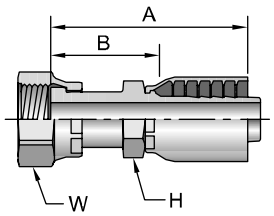
C

D

1JS43

Female Seal-Lok® - Swivel - Long

ISO 12151-1 SWSB



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
1JS43-4-4	1/4	9/16x18	1/4	2.07	53	9/16	11/16	1.32	34
1JS43-4-6	1/4	9/16x18	3/8	2.21	56	11/16	11/16	1.18	30
1JS43-6-4	3/8	11/16x16	1/4	2.14	54	9/16	13/16	1.39	35
1JS43-6-6	3/8	11/16x16	3/8	2.28	58	11/16	13/16	1.25	32
1JS43-6-8	3/8	11/16x16	1/2	2.50	64	13/16	13/16	1.24	31
1JS43-8-4	1/2	13/16x16	1/4	2.26	57	11/16	15/16	1.51	38
1JS43-8-6	1/2	13/16x16	3/8	2.53	64	11/16	15/16	1.50	38
1JS43-8-8	1/2	13/16x16	1/2	2.65	67	13/16	15/16	1.39	35
1JS43-8-10	1/2	13/16x16	5/8	2.82	72	15/16	15/16	1.38	35
1JS43-10-6	5/8	1x14	3/8	2.63	67	11/16	1-1/8	1.62	41
1JS43-10-8	5/8	1x14	1/2	2.89	73	13/16	1-1/8	1.63	41
1JS43-10-10	5/8	1x14	5/8	3.07	78	15/16	1-1/8	1.66	42
1JS43-10-12	5/8	1x14	3/4	3.08	78	1-1/16	1-1/8	1.64	42
1JS43-12-8	3/4	1-3/16x12	1/2	2.90	74	15/16	1-3/8	1.64	42
1JS43-12-10	3/4	1-3/16x12	5/8	3.19	81	1-1/8	1-3/8	1.75	44
1JS43-12-12	3/4	1-3/16x12	3/4	3.31	84	1-1/8	1-3/8	1.87	47
1JS43-12-16	3/4	1-3/16x12	1	3.53	90	1-5/16	1-3/8	1.91	49
1JS43-16-12	1	1-7/16x12	3/4	3.37	86	1-3/8	1-5/8	1.93	49
1JS43-16-16	1	1-7/16x12	1	3.62	92	1-3/8	1-5/8	2.00	51
1JS43-16-20	1	1-7/16x12	1-1/4	3.77	96	1-3/4	1-5/8	2.08	53
1JS43-20-16	1-1/4	1-11/16x12	1	3.64	92	1-3/8	1-7/8	2.02	51
1JS43-20-20	1-1/4	1-11/16x12	1-1/4	3.77	96	1-3/4	1-7/8	2.15	53
1JS43-24-20	1-1/2	2x12	1-1/4	3.88	99	1-3/4	2-1/4	2.23	57
1JS43-24-24	1-1/2	2x12	1-1/2	3.91	99	1-7/8	2-1/4	2.26	65

WARNING: This product can expose you to chemicals including Lead, 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.

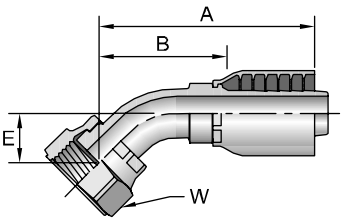
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

1J743

Female Seal-Lok® - Swivel - 45° Elbow

ISO 12151-1 - SWE45

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
1J743-4-4	1/4	9/16x18	1/4	1.97	50	0.39	10	11/16	1.22	31
1J743-4-4-SM	1/4	9/16x18	1/4	1.97	50	0.39	10	17 mm	1.22	31
1J743-4-6	1/4	9/16x18	3/8	2.23	57	0.39	10	11/16	1.20	30
1J743-6-4	3/8	11/16x16	1/4	2.08	53	0.43	11	13/16	1.33	34
1J743-6-4-SM	3/8	11/16x16	1/4	2.08	53	0.43	11	22 mm	1.33	34
1J743-6-5	3/8	11/16x16	5/16	2.37	60	0.43	11	13/16	1.62	41
1J743-6-6	3/8	11/16x16	3/8	2.34	59	0.43	11	13/16	1.31	33
1J743-6-8	3/8	11/16x16	1/2	2.66	68	0.43	11	13/16	1.41	36
1J743-8-4	1/2	13/16x16	1/4	2.56	65	0.59	15	15/16	1.81	46
1J743-8-6	1/2	13/16x16	3/8	2.53	64	0.59	15	15/16	1.50	38
1J743-8-6-SM	1/2	13/16x16	3/8	2.53	64	0.59	15	24 mm	1.50	38
1J743-8-8	1/2	13/16x16	1/2	2.83	72	0.59	15	15/16	1.57	40
1J743-8-8-SM	1/2	13/16x16	1/2	2.83	72	0.59	15	24 mm	1.57	40
1J743-8-10	1/2	13/16x16	5/8	3.09	78	0.59	15	15/16	1.65	42
1J743-10-8	5/8	1x14	1/2	2.93	74	0.63	16	1-1/8	1.67	42
1J743-10-10	5/8	1x14	5/8	3.17	81	0.63	16	1-1/8	1.73	44
1J743-10-12	5/8	1x14	3/4	3.36	85	0.65	16	1-1/8	1.93	49
1J743-12-8	3/4	1-3/16x12	1/2	3.57	91	0.82	21	1-3/8	2.31	59
1J743-12-10	3/4	1-3/16x12	5/8	3.62	92	0.83	21	1-3/8	2.18	55
1J743-12-12	3/4	1-3/16x12	3/4	3.63	92	0.83	21	1-3/8	2.19	56
1J743-12-16	3/4	1-3/16x12	1	3.67	93	0.81	21	1-3/8	2.05	52
1J743-16-12	1	1-7/16x12	3/4	4.02	102	0.94	24	1-5/8	2.59	66
1J743-16-16	1	1-7/16x12	1	4.38	111	0.94	24	1-5/8	2.76	70
1J743-16-20	1	1-7/16x12	1-1/4	4.59	117	0.94	24	1-5/8	2.94	75
1J743-20-16	1-1/4	1-11/16x12	1	4.52	115	1.00	25	1-7/8	2.93	74
1J743-20-20	1-1/4	1-11/16x12	1-1/4	4.78	121	1.00	25	1-7/8	3.09	78
1J743-24-20	1-1/2	2x12	1-1/4	4.99	127	1.11	28	2-1/4	3.30	84
1J743-24-24	1-1/2	2x12	1-1/2	4.70	119	1.07	27	2-1/4	3.33	85



WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

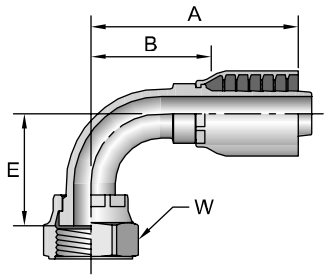
C

D

1J943

Female Seal-Lok® - Swivel - 90° Elbow - Short Drop

ISO 12151-1 - SWES90



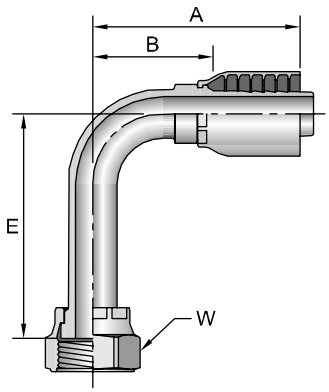
# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
1J943-4-4	1/4	9/16x18	1/4	1.78	45	0.83	21	11/16	1.03	26
1J943-4-6	1/4	9/16x18	3/8	2.05	52	0.83	21	11/16	1.02	26
1J943-6-4	3/8	11/16x16	1/4	1.93	49	0.91	23	13/16	1.18	30
1J943-6-6	3/8	11/16x16	3/8	2.21	56	0.91	23	13/16	1.18	30
1J943-6-8	3/8	11/16x16	1/2	2.53	64	0.90	23	13/16	1.27	32
1J943-8-4	1/2	13/16x16	1/4	2.28	58	1.15	29	15/16	1.53	39
1J943-8-6	1/2	13/16x16	3/8	2.28	58	1.14	29	15/16	1.25	32
1J943-8-8	1/2	13/16x16	1/2	2.59	66	1.14	29	15/16	1.33	34
1J943-8-8-SM	1/2	13/16x16	1/2	2.59	66	1.14	29	24 mm	1.33	34
1J943-8-10	1/2	13/16x16	5/8	2.81	71	1.15	29	15/16	1.37	35
1J943-10-8	5/8	1x14	1/2	2.74	70	1.26	32	1-1/8	1.48	38
1J943-10-10	5/8	1x14	5/8	2.97	75	1.26	32	1-1/8	1.53	39
1J943-10-10-SM	5/8	1x14	5/8	2.97	75	1.26	32	30 mm	1.53	39
1J943-10-12	5/8	1x14	3/4	3.08	78	1.27	32	1-1/8	1.64	42
1J943-12-8	3/4	1-3/16x12	1/2	3.21	82	1.89	48	1-3/8	1.95	50
1J943-12-10	3/4	1-3/16x12	5/8	3.49	89	1.89	48	1-3/8	2.05	52
1J943-12-12	3/4	1-3/16x12	3/4	3.06	78	1.89	48	1-3/8	2.05	52
1J943-12-16	3/4	1-3/16x12	1	3.88	99	1.89	48	1-3/8	2.26	57
1J943-16-12	1	1-7/16x12	3/4	4.06	103	2.22	56	1-5/8	2.62	67
1J943-16-16	1	1-7/16x12	1	4.31	109	2.20	56	1-5/8	2.69	68
1J943-16-20	1	1-7/16x12	1-1/4	4.56	116	2.21	56	1-5/8	2.87	73
1J943-20-16	1-1/4	1-11/16x12	1	4.64	118	2.54	65	1-7/8	3.02	80
1J943-20-20	1-1/4	1-11/16x12	1-1/4	4.88	124	2.51	64	1-7/8	3.19	81
1J943-24-24	1-1/2	2x12	1-1/2	5.50	140	2.68	68	2-1/4	4.13	105

WARNING: This product can expose you to chemicals including Lead, 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.

1J143

Female Seal-Lok® - Swivel - 90° Elbow - Long Drop

ISO 12151-1 - SWEL90



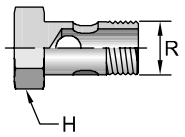
# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
1J143-4-4	1/4	9/16x18	1/4	2.02	51	1.81	46	11/16	1.27	32
1J143-6-4	3/8	11/16x16	1/4	2.26	57	2.13	54	13/16	1.51	38
1J143-6-6	3/8	11/16x16	3/8	2.39	61	2.13	54	13/16	1.36	35
1J143-8-6	1/2	13/16x16	3/8	2.45	62	2.52	64	15/16	1.42	36
1J143-8-8	1/2	13/16x16	1/2	2.59	66	2.52	64	15/16	1.33	34
1J143-10-8	5/8	1x14	1/2	2.74	70	2.79	71	1-1/8	1.48	38
1J143-10-10	5/8	1x14	5/8	2.97	75	2.76	70	1-1/8	1.53	39
1J143-10-12	5/8	1x14	3/4	3.15	80	2.76	70	1-1/8	1.73	44
1J143-12-12	3/4	1-3/16x12	3/4	3.49	89	3.78	96	1-3/8	2.05	52
1J143-16-16	1	1-7/16x12	1	4.28	109	4.49	114	1-5/8	2.66	68
1J143-20-20	1-1/4	1-11/16x12	1-1/4	4.84	123	5.09	129	1-7/8	3.15	80
1J143-24-20	1-1/2	2x12	1-1/4	4.77	121	5.54	141	2-1/4	3.12	79

WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

AM Banjo Bolt w/DIN Metric Thread

# Part Number	R Thread mm		H mm	Copper Washer 2
AM-03	8	M8x1	12	853009-8
AM-04	10	M10x1	14	853009-10
AM-06	12	M12x1,5	17	853009-12
AM-08	14	M14x1,5	19	853009-14
AM-10	16	M16x1,5	22	853009-16
AM-13	18	M18x1,5	24	853009-18
AM-16	22	M22x1,5	27	853009-22
AM-20	26	M26x1,5	32	853009-26
AM-30	30	M30x1,5	36	853009-30



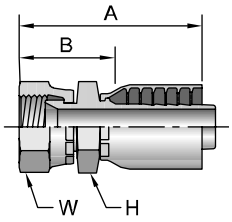
Two (2) copper washers per bolt must be ordered separately.

WARNING: This product can expose you to chemicals including Lead, 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.

1MU43

Female Metric - Swivel - (30° Flare)

# Part Number	Thread mm	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1MU43-4-4	M14x1,5	1/4	2.07	53	19	19	1.32	34
1MU43-6-4	M18x1,5	1/4	2.18	55	24	24	1.43	36
1MU43-6-6	M18x1,5	3/8	2.45	62	24	24	1.42	36
1MU43-8-8	M22x1,5	1/2	2.84	72	27	27	1.58	40



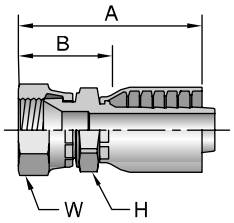
Japanese Fittings - Female Swivel 30° Flare with Metric Threads. All 30° flared fitting sizes are available by combining the 1MU43 fittings in sizes up to -8 with the 1XU43 fittings in sizes -10 and larger.

WARNING: This product can expose you to chemicals including Lead, 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.

1XU43

Female Metric - Swivel - (30° Flare)

# Part Number	Thread mm	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1XU43-10-10	M24x1,5	5/8	3.25	83	30	32	1.81	46
1XU43-12-12	M30x1,5	3/4	3.40	86	32	36	1.96	50
1XU43-16-16	M33x1,5	1	4.03	102	36	41	2.41	61



Japanese Fittings - Female Swivel 30° Flare with Metric Threads. All 30° flared fitting sizes are available by combining the 1MU43 fittings in sizes up to -8 with the 1XU43 fittings in sizes -10 and larger.

WARNING: This product can expose you to chemicals including Lead, 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.

A

B

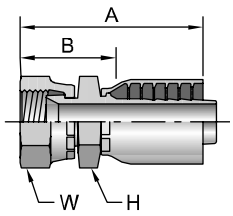
C

D

1FU43

Female BSP Parallel Pipe - Swivel - (30° Flare)

B8363 Code F



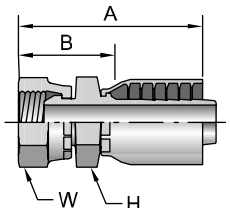
# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1FU43-4-4	1/4x19	1/4	1.90	48	19	19	1.15	29
1FU43-6-6	3/8x19	3/8	2.32	59	22	22	1.29	33
1FU43-8-8	1/2x14	1/2	2.66	68	27	27	1.40	36
1FU43-12-12	3/4x14	3/4	3.06	78	36	36	1.62	41
1FU43-16-16	1x11	1	3.53	90	41	41	1.91	49
1FU43-20-20	1-1/4x11	1-1/4	3.87	98	50	50	2.18	55

WARNING: This product can expose you to chemicals including Lead, 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.

1GU43

Female BSP Parallel Pipe - Swivel - (60° Cone)

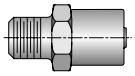
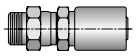
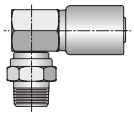
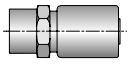
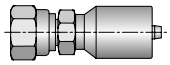
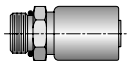
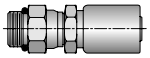
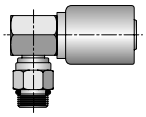
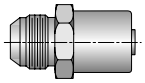
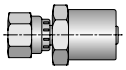
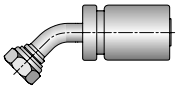
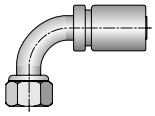
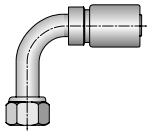
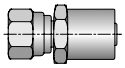
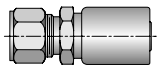
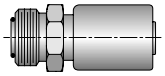
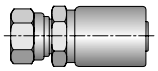
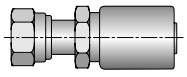
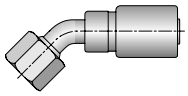
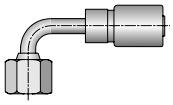
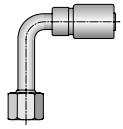
B8363 Code C



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1GU43-4-4	1/4x19	1/4	2.08	53	19	19	1.33	34
1GU43-6-6	3/8x19	3/8	2.45	62	22	22	1.42	36
1GU43-8-8	1/2x14	1/2	2.81	71	27	27	1.56	40
1GU43-12-12	3/4x14	3/4	3.24	82	36	36	1.81	46
1GU43-16-16	1x11	1	3.74	95	41	41	2.12	54
1GU43-20-20	1-1/4x11	1-1/4	4.07	103	50	50	2.38	60

WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

NPTF Pipe	101HY B-20  *Male - Rigid*	113HY B-20  *Male - Swivel*	11LHY B-21  *Male - Swivel 90˚ Elbow*	102HY B-21  *Female - Rigid*	***NPSM Pipe***
107HY B-21  *Female - Swivel (60˚ Cone)*	***Straight Thread***	105HY B-22  *Male - Rigid*	10GHY B-22  *Male - Swivel*	10LHY B-23  *Male - Swivel 90˚ Elbow*	***JIC 37˚***
103HY B-23  *Male - Rigid*	106HY B-24  *Female - Swivel*	137HY B-25  *Female - Swivel 45˚ Elbow - Short*	139HY B-25  *Female - Swivel 90˚ Elbow - Short*	141HY B-26  *Female - Swivel 90˚ Elbow - Long*	***SAE 45˚***
108HY B-26  *Female - Swivel*	***Flareless***	111HY B-27  *Male - Rigid*	***Seal-Lok® (O-Ring Face Seal)***	1J0HY B-27  *Male - Rigid w/O-Ring*	1JCHY B-27  *Female - Swivel Short*
1JSHY B-28  *Female - Swivel Long*	1J7HY B-28  *Female - Swivel 45˚ Elbow*	1J9HY B-29  *Female - Swivel 90˚ Elbow - Short*	1J1HY B-29  *Female - Swivel 90˚ Elbow - Long*		

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

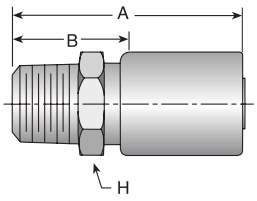
B

C

D

101HY

Male NPTF Pipe - Rigid



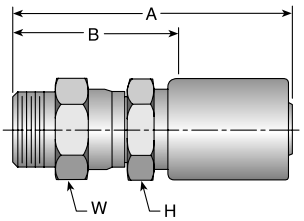
# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm	Additional Material Stainless Steel (C303)
101HY-2-4	1/8x27	1/4	2.34	59	5/8	1.00	25	
101HY-4-4	1/4x18	1/4	2.53	64	9/16	1.19	30	
101HY-4-5	1/4x18	5/16	2.56	65	11/16	1.22	31	
101HY-4-6	1/4x18	3/8	2.55	65	11/16	1.19	30	
101HY-6-4	3/8x18	1/4	2.53	64	3/4	1.19	30	
101HY-6-5	3/8x18	5/16	2.56	65	3/4	1.22	31	
101HY-6-6	3/8x18	3/8	2.55	65	3/4	1.19	30	•
101HY-6-8	3/8x18	1/2	2.72	69	7/8	1.38	35	
101HY-8-4	1/2x14	1/4	2.72	69	7/8	1.38	35	
101HY-8-6	1/2x14	3/8	2.73	69	7/8	1.38	35	
101HY-8-8	1/2x14	1/2	2.91	74	7/8	1.41	40	•
101HY-8-10	1/2x14	5/8	2.94	75	1-1/8	1.59	40	
101HY-8-12	1/2x14	3/4	3.08	78	1-1/4	1.50	38	
101HY-12-8	3/4x14	1/2	2.91	74	1-1/16	1.56	40	
101HY-12-12	3/4x14	3/4	3.08	78	1-1/4	1.50	38	•
101HY-12-16	3/4x14	1	3.23	82	1-3/8	1.63	41	
101HY-16-12	1x11-1/2	3/4	3.27	83	1-3/8	1.69	43	
101HY-16-14	1x11-1/2	7/8	3.27	83	1-3/8	1.78	43	
101HY-16-16	1x11-1/2	1	3.42	87	1-3/8	1.81	46	•
101HY-20-20	1-1/4x11-1/2	1-1/4	3.84	98	1-3/4	2.00	51	

Stainless steel fittings must be assembled with Karrykrimp 2, Phastkrimp, Superkrimp or Parkrimp 2. See CrimpSource for more information.

WARNING: This product can expose you to chemicals including Lead, 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.

113HY

Male NPTF Pipe - Swivel



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
113HY-2-4	1/8x27	1/4	2.97	75	9/16	5/8	1.63	41
113HY-4-4	1/4x18	1/4	3.06	78	9/16	5/8	1.72	44
113HY-4-6	1/4x18	3/8	3.17	81	11/16	11/16	1.81	46
113HY-6-4	3/8x18	1/4	3.13	80	5/8	11/16	1.78	45
113HY-6-6	3/8x18	3/8	3.11	79	11/16	11/16	1.75	44
113HY-6-8	3/8x18	1/2	3.31	84	7/8	7/8	1.97	50
113HY-8-6	1/2x14	3/8	3.38	86	7/8	7/8	2.03	52
113HY-8-8	1/2x14	1/2	3.50	89	7/8	7/8	2.16	55
113HY-12-12	3/4x14	3/4	3.95	100	1-1/4	1-1/4	2.38	60
113HY-16-16	1x11-1/2	1	4.23	107	1-1/2	1-1/2	2.63	67

Fitting allows minor movement under pressure to relieve stress on hose but is not to be used for continuous swiveling.
See Technical Section for Pressure Limitations.

WARNING: This product can expose you to chemicals including Lead, 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.

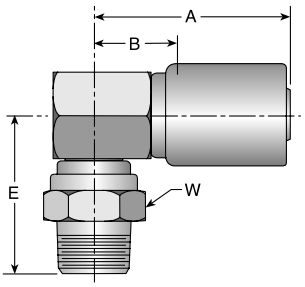
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

11LHY

Male NPTF Pipe - Swivel - 90˚ Elbow

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
11LHY-2-4	1/8x27	1/4	2.31	59	1.50	38	5/8	0.97	25
11LHY-4-4	1/4x18	1/4	2.31	59	1.69	43	11/16	0.97	25
11LHY-6-6	3/8x8	3/8	2.33	59	1.63	41	11/16	0.97	25
11LHY-8-6	1/2x14	3/8	2.73	69	1.88	48	7/8	0.97	25
11LHY-8-8	1/2x14	1/2	3.00	76	1.93	49	7/8	1.09	28

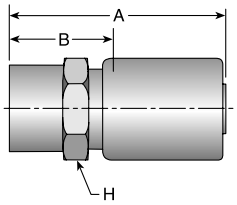


WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

102HY

Female NPTF Pipe - Rigid

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
102HY-2-4	1/8x27	1/4	2.34	59	5/8	1.00	25
102HY-4-4	1/4x18	1/4	2.47	63	11/16	1.13	29
102HY-4-6	1/4x18	3/8	2.48	63	11/16	1.13	29
102HY-6-6	3/8x18	3/8	2.48	63	7/8	1.13	29
102HY-8-6	1/2x14	3/8	2.75	70	1	1.41	36
102HY-8-8	1/2x14	1/2	2.84	72	1	1.50	38
102HY-12-12	3/4x14	3/4	2.83	72	1-1/4	1.25	32
102HY-16-16	1x11-1/2	1	3.27	83	1-1/2	1.66	42

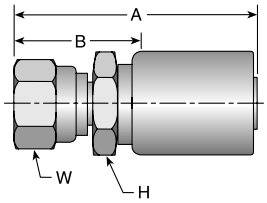


WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

107HY

Female NPSM Pipe - Swivel - (60˚ Cone)

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
107HY-4-4	1/4x18	1/4	2.66	68	9/16	11/16	1.31	33
107HY-6-4	3/8x18	1/4	2.72	69	3/4	7/8	1.38	35
107HY-6-6	3/8x18	3/8	2.55	65	3/4	7/8	1.19	30
107HY-8-8	1/2x14	1/2	2.91	74	1	1	1.56	40
107HY-12-12	3/4x14	3/4	3.22	82	1-1/4	1-1/4	1.66	42
107HY-16-16	1x11-1/2	1	3.39	86	1-3/8	1-1/2	1.78	45



WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

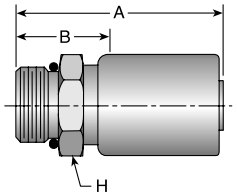
B

C

D

105HY

Male SAE Straight Thread with O-Ring - Rigid

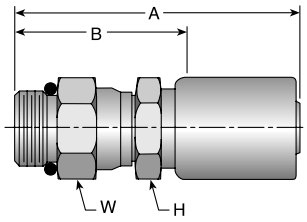


# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
105HY-4-4	7/16x20	1/4	2.33	59	9/16	0.97	25
105HY-6-4	9/16x18	1/4	2.42	61	11/16	1.06	27
105HY-6-6	9/16x18	3/8	2.38	60	11/16	1.03	26
105HY-8-6	3/4x16	3/8	2.42	61	7/8	1.06	27
105HY-8-8	3/4x16	1/2	2.59	66	7/8	1.25	32
105HY-10-8	7/8x14	1/2	2.66	68	1	1.31	33
105HY-10-10	7/8x14	5/8	2.80	71	1-1/8	1.41	36
105HY-12-8	1-1/16x12	1/2	2.81	71	1-1/4	1.47	37
105HY-12-12	1-1/16x12	3/4	2.92	74	1-1/4	1.34	34
105HY-16-12	1-5/16x12	3/4	2.92	74	1-1/2	1.34	34
105HY-16-16	1-5/16x12	1	3.08	78	1-1/2	1.47	37

WARNING: This product can expose you to chemicals including Lead, 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.

10GHY

Male SAE Straight Thread with O-Ring - Swivel



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
10GHY-4-4	7/16x20	1/4	3.00	76	9/16	5/8	1.66	42
10GHY-6-6	9/16x18	3/8	3.14	80	11/16	11/16	1.78	45
10GHY-8-6	3/4x16	3/8	3.24	82	13/16	7/8	1.88	48
10GHY-8-8	3/4x16	1/2	3.36	85	7/8	7/8	2.00	51
10GHY-10-8	7/8x14	1/2	3.44	87	1	1	2.09	53
10GHY-12-8	1-1/16x12	1/2	3.66	93	1-1/4	1-1/4	2.31	59
10GHY-16-16	1-5/16x12	1	3.95	100	1-3/8	1-1/2	2.34	59

Fitting allows minor movement under pressure to relieve stress on hose but is not to be used on extensive or continuous swiveling.

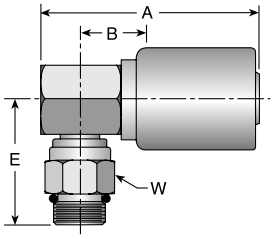
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

10LHY

Male SAE Straight Thread with O-Ring - Swivel - 90° Elbow

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
10LHY-6-4	9/16x18	1/4	2.31	59	1.66	42	7/8	0.97	25
10LHY-6-6	9/16x18	3/8	2.33	59	1.66	42	11/16	0.97	25
10LHY-8-6	3/4x16	3/8	2.33	59	1.73	44	7/8	0.97	25
10LHY-8-8	3/4x16	1/2	3.00	76	1.80	46	7/8	1.09	28
10LHY-10-8	7/8x14	1/2	3.00	76	1.88	48	1	1.09	28
10LHY-12-12	1-1/16x12	3/4	2.77	70	2.23	57	1-1/4	1.19	30



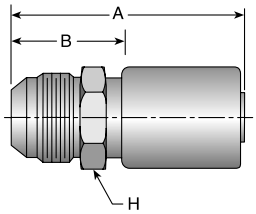
Fitting allows minor movement under pressure to relieve stress on hose but is not to be used on extensive or continuous swiveling.

WARNING: This product can expose you to chemicals including Lead, 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.

103HY

Male JIC 37° - Rigid

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
103HY-4-4	7/16x20	1/4	2.52	64	5/8	1.19	30
103HY-5-4	1/2x20	1/4	2.52	64	5/8	1.19	30
103HY-6-4	9/16x18	1/4	2.53	64	11/16	1.19	30
103HY-6-5	9/16x18	5/16	2.56	65	11/16	1.22	31
103HY-6-6	9/16x18	3/8	2.54	65	11/16	1.19	30
103HY-8-6	3/4x16	3/8	2.64	67	13/16	1.28	33
103HY-8-8	3/4x16	1/2	2.81	71	7/8	1.47	37
103HY-10-6	7/8x14	3/8	2.81	71	1	1.47	37
103HY-10-8	7/8x14	1/2	2.91	74	1	1.56	40
103HY-10-10	7/8x14	5/8	2.98	76	1-1/8	1.59	40
103HY-12-8	1-1/16x12	1/2	3.02	77	1-1/8	1.66	42
103HY-12-10	1-1/16x12	5/8	3.09	78	1-1/8	1.72	44
103HY-12-12	1-1/16x12	3/4	3.19	81	1-1/4	1.63	41
103HY-14-12	1-3/16x12	3/4	3.19	81	1-1/4	1.63	41
103HY-16-12	1-5/16x12	3/4	3.23	82	1-3/8	1.66	42
103HY-16-16	1-5/16x12	1	3.39	86	1-3/8	1.78	45



WARNING: This product can expose you to chemicals including Lead, 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.

O-Ring not compatible with Phosphate Ester fluids.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

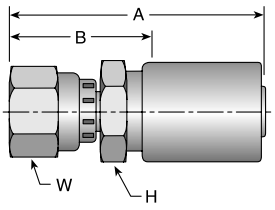
B

C

D

106HY

Female JIC 37° - Swivel



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm	Additional Material Stainless Steel (C303)
106HY-3-4	3/8x24	1/4	2.58	66	9/16	1/2	1.22	31	
106HY-4-4	7/16x20	1/4	2.60	66	9/16	9/16	1.25	32	•
106HY-4-6	7/16x20	3/8	2.67	68	3/4	9/16	1.31	33	
106HY-5-4	1/2x20	1/4	2.65	67	9/16	5/8	1.31	33	
106HY-5-5	1/2x20	5/16	2.69	68	5/8	5/8	1.34	34	
106HY-5-6	1/2x20	3/8	2.73	69	3/4	5/8	1.38	35	
106HY-6-4	9/16x18	1/4	2.67	68	9/16	11/16	1.31	33	
106HY-6-5	9/16x18	5/16	2.70	69	5/8	11/16	1.34	34	
106HY-6-6	9/16x18	3/8	2.69	68	11/16	11/16	1.34	34	•
106HY-8-6	3/4x16	3/8	2.72	69	7/8	7/8	1.38	35	
106HY-8-8	3/4x16	1/2	2.90	74	7/8	7/8	1.41	40	•
106HY-8-10	3/4x16	5/8	2.98	76	1-1/8	7/8	1.59	40	
106HY-8-12	3/4x16	3/4	3.08	78	1-1/4	7/8	1.53	39	
106HY-10-6	7/8x14	3/8	2.81	71	7/8	1	1.47	37	
106HY-10-8	7/8x14	1/2	2.98	76	1	1	1.63	41	
106HY-10-10	7/8x14	5/8	3.06	78	1-1/8	1	1.69	43	
106HY-10-12	7/8x14	3/4	3.16	80	1-1/4	1	1.59	40	
106HY-12-8	1-1/16x12	1/2	3.05	77	1-1/8	1-1/4	1.69	43	
106HY-12-10	1-1/16x12	5/8	3.12	79	1-1/8	1-1/4	1.75	44	
106HY-12-12	1-1/16x12	3/4	3.22	82	1-1/4	1-1/4	1.66	42	•
106HY-12-16	1-1/16x12	1	3.38	86	1-3/8	1-1/4	1.75	44	
106HY-14-12	1-3/16x12	3/4	3.23	82	1-1/4	1 3/8	1.66	42	
106HY-16-12	1-5/16x12	3/4	3.30	84	1-3/8	1-1/2	1.72	44	
106HY-16-14	1-5/16x12	7/8	3.30	84	1-3/8	1-1/2	1.72	44	
106HY-16-16	1-5/16x12	1	3.45	88	1-3/8	1-1/2	1.84	47	•
106HY-20-16	1-5/8x12	1	3.70	94	1-3/4	2	2.09	53	
106HY-20-20	1-5/8x12	1-1/4	4.09	104	2	2	2.25	57	

Stainless steel fittings must be assembled with Karrykrimp 2, PHastkrimp, Superkrimp or Parkrimp 2. See CrimpSource for more information.

WARNING: For Carbon Steel Fittings Only: This product can expose you to chemicals including Lead, 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.

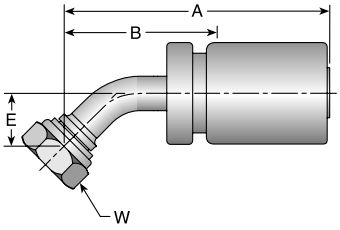
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

137HY

Female JIC 37° - Swivel - 45° Elbow - Short Drop

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
137HY-4-4	7/16x20	1/4	2.59	66	0.39	10	9/16	1.32	34
137HY-6-4	9/16x18	1/4	2.70	69	0.43	10	3/4	1.43	36
137HY-6-6	9/16x18	3/8	2.72	69	0.43	11	11/16	1.44	37
137HY-8-6	3/4x16	3/8	2.88	73	0.58	15	7/8	1.60	41
137HY-8-8	3/4x16	1/2	3.10	79	0.59	15	7/8	1.81	46
137HY-10-8	7/8x14	1/2	3.20	81	0.63	16	1	1.91	49
137HY-10-10	7/8x14	5/8	3.29	84	0.63	16	1	1.93	49
137HY-12-12	1-1/16x12	3/4	3.82	97	0.83	21	1-1/4	2.29	58
137HY-16-16	1-5/16x12	1	4.31	109	0.89	23	1-1/2	2.69	68

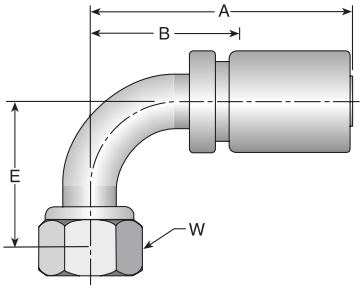


WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

139HY

Female JIC 37° - Swivel - 90° Elbow - Short Drop

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
139HY-4-4	7/16x20	1/4	2.40	61	0.83	21	9/16	1.13	29
139HY-5-4	1/2x20	1/4	2.50	64	0.83	21	5/8	1.23	31
139HY-6-4	9/16x18	1/4	2.65	67	0.91	23	3/4	1.38	35
139HY-6-6	9/16x18	3/8	2.57	65	0.91	23	11/16	1.29	33
139HY-8-6	3/4x16	3/8	2.64	67	1.14	29	7/8	1.37	35
139HY-8-8	3/4x16	1/2	2.85	72	1.14	29	7/8	1.56	40
139HY-10-8	7/8x14	1/2	3.01	76	1.26	32	1	1.72	44
139HY-10-10	7/8x14	5/8	3.09	78	1.26	32	1	1.73	44
139HY-12-8	1-1/16x12	1/2	3.61	92	1.83	46	1-1/4	2.25	57
139HY-12-10	1-1/16x12	5/8	3.61	92	1.89	48	1-1/4	2.25	57
139HY-12-12	1-1/16x12	3/4	3.68	93	1.89	48	1-1/4	2.15	55
139HY-16-12	1-5/16x12	3/4	4.33	110	2.14	54	1-1/2	2.78	71
139HY-16-16	1-5/16x12	1	4.31	109	2.31	59	1-1/2	2.69	68



WARNING: This product can expose you to chemicals including Lead, 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.

A

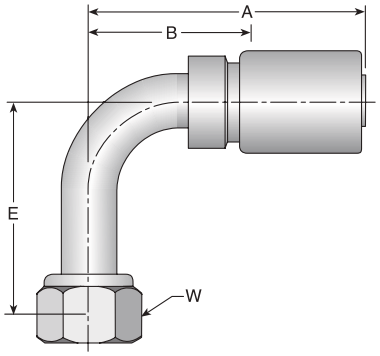
B

C

D

141HY

Female JIC 37° - Swivel - 90° Elbow - Long Drop

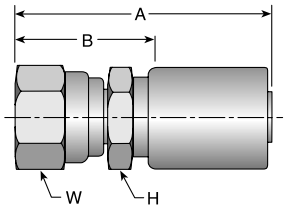


# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
141HY-4-4	7/16x20	1/4	2.68	68	1.81	46	9/16	1.41	36
141HY-6-4	9/16x18	1/4	2.89	73	2.13	54	11/16	1.62	41
141HY-6-6	9/16x18	3/8	2.76	70	2.13	54	11/16	1.49	39
141HY-8-6	3/4x16	3/8	2.85	72	2.52	64	7/8	1.58	40
141HY-8-8	3/4x16	1/2	2.89	73	2.52	64	7/8	1.60	41
141HY-10-8	7/8x14	1/2	3.01	76	2.76	70	1	1.72	44
141HY-12-12	1-1/16x12	3/4	3.59	91	3.73	95	1-1/4	2.03	52
141HY-16-16	1-5/16x12	1	4.56	116	4.33	110	1-1/2	2.94	75

WARNING: This product can expose you to chemicals including Lead, 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.

108HY

Female SAE 45° - Swivel



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
108HY-5-5	1/2x20	5/16	2.68	68	5/8	5/8	1.34	34
108HY-6-4	5/8x18	1/4	2.73	69	11/16	3/4	1.38	35
108HY-6-5	5/8x18	5/16	2.76	70	5/8	3/4	1.41	36
108HY-6-6	5/8x18	3/8	2.75	70	11/16	3/4	1.41	36
108HY-8-8	3/4x16	1/2	2.90	74	7/8	7/8	1.56	40
108HY-8-12	3/4x16	3/4	3.17	81	1-1/4	7/8	1.59	40
108HY-12-12	1-1/16x12	3/4	3.41	87	1-1/4	1-1/4	1.84	47

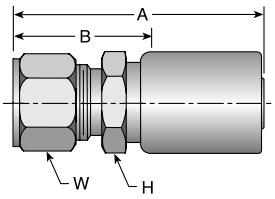
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

111HY

Male Ferulok Flareless - Rigid (24° Cone w/Nut and Ferrule)

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
111HY-4-4	7/16x20	1/4	2.42	61	9/16	9/16	1.06	27
111HY-6-6	9/16x18	3/8	2.45	62	11/16	11/16	1.09	28
111HY-8-6	3/4x16	3/8	2.61	66	7/8	7/8	1.25	32
111HY-8-8	3/4x16	1/2	2.72	69	7/8	7/8	1.38	35
111HY-10-8	7/8x14	1/2	2.78	71	1	1	1.44	37
111HY-12-12	1-1/16x12	3/4	3.02	77	1-1/4	1-1/4	1.44	37



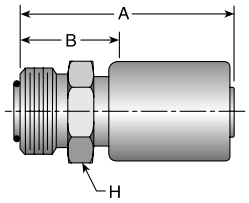
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1J0HY

Male Seal-Lok® - Rigid - (with O-Ring)

SAE J516 (Apr2016)

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	B inch	B mm
1J0HY-4-4	9/16x18	1/4	2.36	60	5/8	1.00	25
1J0HY-6-6	11/16x16	3/8	2.49	63	3/4	1.13	29
1J0HY-8-8	13/16x16	1/2	2.69	68	7/8	1.34	34
1J0HY-12-8	1-3/16x12	1/2	2.91	74	1-1/4	1.56	40



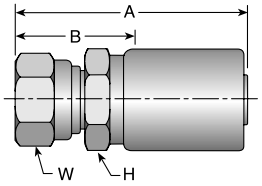
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1JCHY

Female Seal-Lok® - Swivel - Short

ISO 12151-1 - SWSA

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
1JCHY-4-4	9/16x18	1/4	2.61	66	9/16	11/16	0.94	24
1JCHY-6-6	11/16x16	3/8	2.69	68	11/16	13/16	0.94	24
1JCHY-8-8	13/16x16	1/2	2.91	74	7/8	15/16	1.13	29
1JCHY-12-12	1-3/16x12	3/4	3.31	84	1-1/4	1-3/8	1.13	29



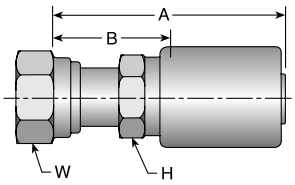
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

A B C D

1JSHY

Female Seal-Lok® - Swivel - Long

ISO 12151-1 - SWSB



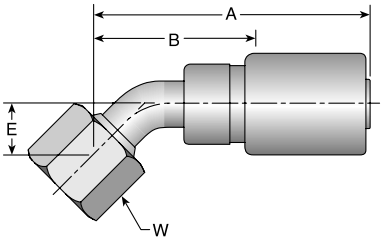
# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H inch	W inch	B inch	B mm
1JSHY-4-4	9/16x18	1/4	2.59	66	9/16	11/16	1.25	32
1JSHY-6-4	11/16x16	1/4	2.67	68	5/8	13/16	1.31	33
1JSHY-6-5	11/16x16	5/16	2.70	69	5/8	13/16	1.34	34
1JSHY-6-6	11/16x16	3/8	2.75	70	11/16	13/16	1.34	34
1JSHY-8-6	13/16x16	3/8	2.84	72	7/8	15/16	1.50	38
1JSHY-8-8	13/16x16	1/2	2.95	75	7/8	15/16	1.59	40
1JSHY-10-8	1x14	1/2	3.16	80	15/16	1-1/8	1.81	46
1JSHY-10-10	1x14	5/8	3.17	81	1-1/8	1-1/8	1.78	45
1JSHY-10-12	1x14	3/4	3.27	83	1-1/4	1-1/8	1.69	43
1JSHY-12-10	1-3/16x12	5/8	3.20	81	1-1/8	1-3/8	1.81	46
1JSHY-12-12	1-3/16x12	3/4	3.30	84	1-1/4	1-3/8	1.72	44
1JSHY-16-12	1-7/16x12	3/4	3.44	87	1-3/8	1-5/8	1.88	48
1JSHY-16-16	1-7/16x12	1	3.59	91	1-3/8	1-5/8	1.97	50
1JSHY-20-16	1-11/16x12	1	3.47	88	1-5/8	1-7/8	1.75	59
1JSHY-20-20	1-11/16x12	1-1/4	3.98	101	1-3/4	1-7/8	2.16	55

WARNING: This product can expose you to chemicals including Lead, 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.

1J7HY

Female Seal-Lok® - Swivel - 45° Elbow

ISO 12151-1 - SWE45



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
1J7HY-4-4	9/16x18	1/4	2.59	66	0.39	10	11/16	1.32	34
1J7HY-6-4	11/16x16	1/4	2.70	69	0.43	11	13/16	1.43	36
1J7HY-6-6	11/16x16	3/8	2.72	69	0.43	11	13/16	1.44	37
1J7HY-8-4	13/16x16	1/4	2.95	75	0.59	15	15/16	1.68	43
1J7HY-8-6	13/16x16	3/8	2.89	73	0.59	15	15/16	1.62	41
1J7HY-8-8	13/16x16	1/2	3.10	79	0.59	15	15/16	1.81	46
1J7HY-10-8	1x14	1/2	3.20	81	0.63	16	1-1/8	1.91	49
1J7HY-10-10	1x14	5/8	3.29	84	0.63	16	1-1/8	1.93	49
1J7HY-12-12	1-3/16x12	3/4	3.82	97	0.83	21	1-3/8	2.29	58
1J7HY-16-16	1-7/16x12	1	4.55	116	0.97	25	1-5/8	2.94	75

WARNING: This product can expose you to chemicals including Lead, 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.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

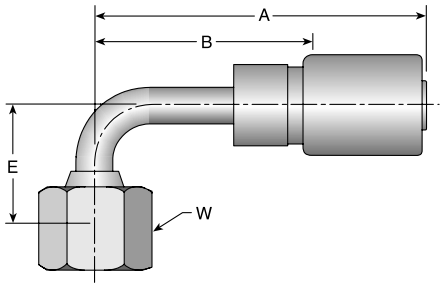
Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

1J9HY

Female Seal-Lok® - Swivel - 90° Elbow - Short Drop

ISO 12151-1 - SWES90

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
1J9HY-4-4	9/16x18	1/4	2.40	61	0.83	21	11/16	1.13	29
1J9HY-4-6	9/16x18	3/8	3.08	78	0.83	21	11/16	1.72	44
1J9HY-6-4	11/16x16	1/4	2.65	67	0.91	23	13/16	1.38	35
1J9HY-6-5	11/16x16	5/16	3/14	80		23	13/16	1.72	44
1J9HY-6-6	11/16x16	3/8	2.57	65	0.91	23	13/16	1.29	33
1J9HY-8-6	13/16x16	3/8	2.64	67	1.14	29	15/16	1.37	35
1J9HY-8-8	13/16x16	1/2	2.85	72	1.14	29	15/16	1.56	40
1J9HY-10-8	1x14	1/2	3.01	76	1.26	32	1-1/8	1.72	44
1J9HY-10-10	1x14	5/8	3.09	78	1.26	32	1-1/8	1.73	44
1J9HY-10-12	1x14	3/4	3.52	89	1.33	34	1-1/8	1.97	50
1J9HY-12-10	1-3/16x12	5/8	3.61	92	1.89	48	1-3/8	2.25	57
1J9HY-12-12	1-3/16x12	3/4	3.68	93	1.89	48	1-3/8	2.15	55
1J9HY-16-12	1-7/16x12	3/4	4.27	108	2.25	57	1-5/8	2.69	68
1J9HY-16-16	1-7/16x12	1	4.45	113	2.25	57	1-5/8	2.84	72



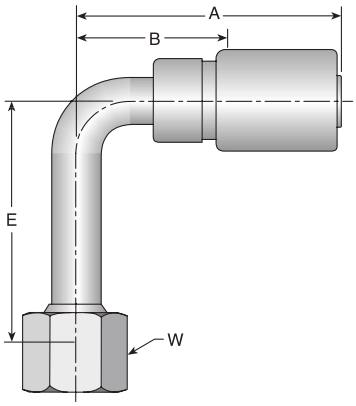
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1J1HY

Female Seal-Lok® - Swivel - 90° Elbow - Long Drop

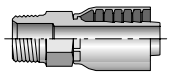
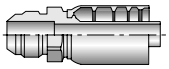
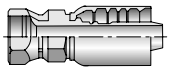
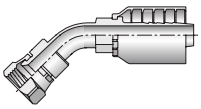
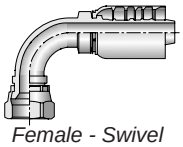
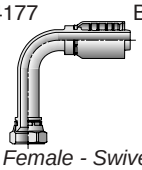
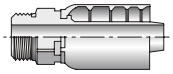
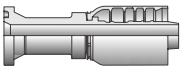
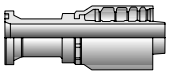
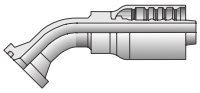
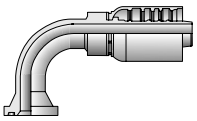
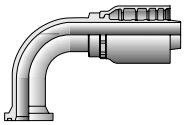
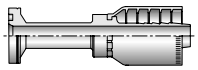
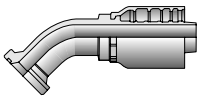
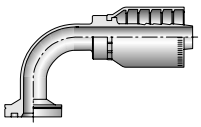
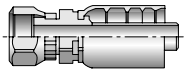
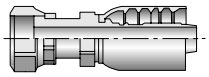
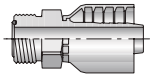
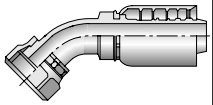
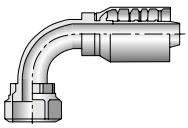
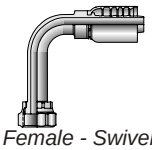
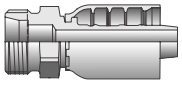
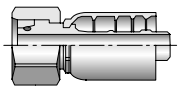
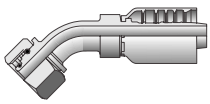
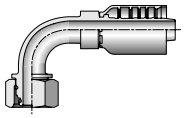
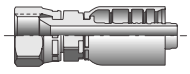
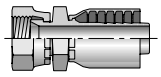
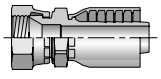
ISO 12151-1 - SWEL90

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W inch	B inch	B mm
1J1HY-4-4	9/16x18	1/4	2.68	68	1.81	46	11/16	1.41	36
1J1HY-6-6	11/16x16	3/8	2.76	70	2.13	54	13/16	1.49	38
1J1HY-8-8	13/16x16	1/2	2.94	75	2.52	64	15/16	1.65	42
1J1HY-10-10	1x14	5/8	3.42	87	2.76	70	1-1/8	2.03	52



WARNING: This product can expose you to chemicals including Lead, 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.

A
B
C
D

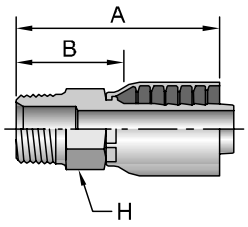
NPTF Pipe	10177 B-31  *Male - Rigid - Straight*	***JIC 37˚***	10377 B-31  *Male - Rigid - Straight*	10677 B-32  *Female - Swivel Straight*	13777 B-33  *Female - Swivel 45˚ Elbow - Short*
13977 B-33  *Female - Swivel 90˚ Elbow - Short*	14177 B-34  *Female - Swivel 90˚ Elbow - Long*	***Straight Thread O-Ring***	10577 B-34  *Male - Rigid - Straight*	***Flange Code 61***	11577 B-35  *Code 61 - Straight*
14A77 B-35  *Straight (5,000 psi)*	11777 B-36  *Code 61 - 45˚ Elbow*	11977 B-36  *Code 61 - 90˚ Elbow*	14N77 B-37  *90˚ Elbow (5,000 psi)*	***Flange Code 62***	16A77 B-37  *Code 62 - Straight*
16F77 B-38  *Code 62 - 45˚ Elbow*	16N77 B-38  *Code 62 - 90˚ Elbow*	***Seal-Lok®***	1JC77 B-39  *Female - Swivel Straight - Short*	1JS77 B-39  *Female - Swivel Straight - Long*	1J077 B-40  *Male - Rigid w/O-Ring*
1J777 B-40  *Female - Swivel 45˚ Elbow*	1J977 B-41  *Female - Swivel 90˚ Elbow - Short*	1J177 B-41  *Female - Swivel 90° Elbow - Long*	***DIN "S" Series w/O-Ring***	1D277 B-42  *Male Metric S Rigid - 24˚ Cone*	1C977 B-42  *Female - Swivel Straight*
10C77 B-43  *Female Metric S Swivel - 45˚ Elbow*	11C77 B-43  *Female - Swivel 90˚ Elbow*	***BSP***	1FU77 B-43  *Female - Swivel Straight - 30˚ Flare*	1MU77 B-44  *Female - Metric Swivel - 30˚ Flare*	1XU77 B-44  *Female - Swivel 30˚ Flare*

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

10177

Male NPTF Pipe - Rigid

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H mm	B inch	B mm	Additional Material Stainless Steel (C)
10177-6-8	3/8x18	1/2	2.51	63,9	22	1.29	32,9	
10177-8-8	1/2x14	1/2	2.72	69,2	22	1.50	38,2	•
10177-8-12	1/2x14	3/4	3.43	87,1	30	1.79	45,5	
10177-12-12	3/4x14	3/4	3.43	87,1	30	1.79	45,5	•
10177-16-16	1x11-1/2	1	4.04	102,6	36	2.09	53,1	•
10177-20-16	1-1/4x11-1/2	1	4.34	110,2	46	2.39	60,7	
10177-20-20	1-1/4x11-1/2	1-1/4	4.57	116,1	46	2.30	58,4	•
10177-24-20	1-1/2x11-1/2	1-1/4	4.76	120,9	50	2.49	63,2	
10177-24-24	1-1/2x11-1/2	1-1/2	4.89	124,2	50	2.50	63,5	•
10177-32-32*	2x11-1/2	2	5.64	143,1	65	2.88	73,2	•



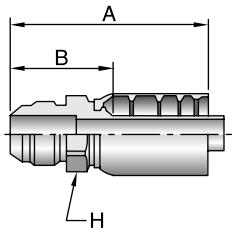
*This specific size in stainless is not able to be crimped in any Parkrimp machine.

WARNING: This product can expose you to chemicals including Lead, 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.

10377

Male JIC 37° - Rigid

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H mm	B inch	B mm
10377-8-8	1/2	3/4x16	1/2	2.61	66,4	22	1.39	35,4
10377-10-8	5/8	7/8x14	1/2	2.71	68,9	24	1.49	37,9
10377-10-10	5/8	7/8x14	5/8	3.01	76,4	24	1.66	42,2
10377-12-10	3/4	1-1/16x12	5/8	3.22	81,8	30	1.87	47,5
10377-12-12	3/4	1-1/16x12	3/4	3.53	89,6	30	1.89	48,1
10377-12-16	3/4	1-1/16x12	1	3.94	100,0	36	1.99	50,6
10377-16-12	1	1-5/16x12	3/4	3.69	93,6	36	2.05	52,2
10377-16-16	1	1-5/16x12	1	3.99	101,3	36	2.04	51,8
10377-20-16	1-1/4	1-5/8x12	1	4.33	109,9	50	2.38	60,5
10377-20-20	1-1/4	1-5/8x12	1-1/4	4.66	118,4	50	2.39	60,7
10377-24-24	1-1/2	1-7/8x12	1-1/2	4.93	125,2	50	2.54	64,5
10377-32-32	2	2-1/2x12	2	5.83	148,0	65	3.07	78,0



WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

A

B

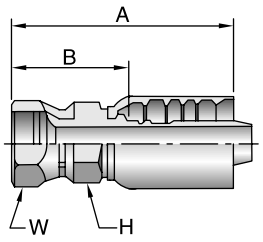
C

D

10677

Female JIC 37° - Swivel

ISO 12151-5



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
10677-6-8	3/8	9/16x18	1/2	2.75	69,7	22	19	1.53	38,8
10677-6-8C	3/8	9/16x18	1/2	2.75	69,7	22	19	1.53	38,8
10677-8-8	1/2	3/4x16	1/2	2.79	71,1	22	22	1.58	40,1
10677-8-8C	1/2	3/4x16	1/2	2.79	71,1	22	22	1.58	40,1
10677-10-8	5/8	7/8x14	1/2	2.91	74,0	22	27	1.69	43,0
10677-10-10	5/8	7/8x14	5/8	3.18	80,7	24	27	1.83	46,5
10677-10-10C	5/8	7/8x14	5/8	3.18	80,7	24	27	1.83	46,5
10677-10-12	5/8	7/8x14	3/4	3.62	91,8	30	27	1.98	50,3
10677-12-8	3/4	1-1/16x12	1/2	3.17	80,4	30	32	1.95	49,5
10677-12-10	3/4	1-1/16x12	5/8	3.30	83,9	30	32	1.95	49,6
10677-12-12	3/4	1-1/16x12	3/4	3.68	93,5	30	32	2.05	52,0
10677-12-12C	3/4	1-1/16x12	3/4	3.77	95,7	30	36	2.13	54,2
10677-12-16	3/4	1-1/16x12	1	4.12	104,7	36	32	2.17	55,2
10677-14-12	7/8	1-3/16x12	3/4	3.88	98,5	36	36	2.24	56,9
10677-16-12	1	1-5/16x12	3/4	3.89	98,7	36	41	2.25	57,3
10677-16-12C	1	1-5/16x12	3/4	4.01	101,8	36	46	2.37	60,3
10677-16-16	1	1-5/16x12	1	4.16	105,7	36	41	2.21	56,2
10677-16-16C	1	1-5/16x12	1	4.16	105,7	36	41	2.21	56,2
10677-16-20	1	1-5/16x12	1-1/4	4.84	123,0	46	41	2.57	65,3
10677-20-16	1-1/4	1-5/8x12	1	4.29	109,1	41	50	2.34	59,5
10677-20-20	1-1/4	1-5/8x12	1-1/4	4.86	123,5	46	50	2.59	65,8
10677-20-20C	1-1/4	1-5/8x12	1-1/4	4.92	125,0	46	60	2.65	67,3
10677-24-20	1-1/2	1-7/8x12	1-1/4	4.98	126,5	50	60	2.71	68,6
10677-24-24	1-1/2	1-7/8x12	1-1/2	5.34	135,7	50	60	2.95	75,0
10677-24-24C	1-1/2	1-7/8x12	1-1/2	5.55	140,9	50	65	3.16	80,3
10677-32-24	2	2-1/2x12	1-1/2	5.70	144,8	65	60	3.31	84,1
10677-32-32	2	2-1/2x12	2	6.29	159,8	65	75	3.54	89,9
10677-32-32C*	2	2-1/2x12	2	6.29	159,8	65	75	3.54	89,9

All sizes of 10677 fittings are rated at 5,000 psi working pressure.

"C" suffix indicates stainless steel part. Some stainless steel parts are dimensionally different than the standard part.

*This specific size in stainless is not able to be crimped in any Parkrimp machine.

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

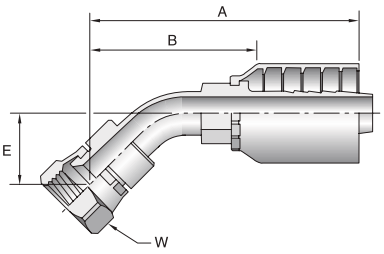
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

13777

Female JIC 37° - Swivel - 45° Elbow - Short Drop

ISO 12151-5

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm
13777-8-8	1/2	3/4x16	1/2	2.86	72,7	0.59	15	22	1.64	41,8
13777-8-8C	1/2	3/4x16	1/2	2.86	72,7	0.59	15	22	1.64	41,8
13777-10-8	5/8	7/8x14	1/2	3.06	77,8	0.63	16	27	1.84	46,8
13777-10-10	5/8	7/8x14	5/8	3.40	86,3	0.63	16	27	2.05	52,1
13777-12-12	3/4	1-1/16x12	3/4	4.37	110,9	0.83	21	32	2.73	69,4
13777-12-12C	3/4	1-1/16x12	3/4	4.37	110,9	0.83	21	32	2.73	69,4
13777-16-12	1	1-5/16x12	3/4	4.49	114,0	0.94	24	41	2.85	72,5
13777-16-16	1	1-5/16x12	1	4.79	121,7	0.94	24	41	2.84	72,2
13777-20-20	1-1/4	1-5/8x12	1-1/4	6.42	163,1	1.26	32	50	4.15	105,4
13777-32-32*	2	2-1/2x12	2	8.58	218,0	2.20	56	75	5.83	148,1



All sizes of 13777 fittings are rated at 5,000 psi working pressure.

"C" suffix indicates stainless steel part. Some stainless steel parts are dimensionally different than the standard part.

*This specific size is not able to be crimped in any Parkrimp machine.

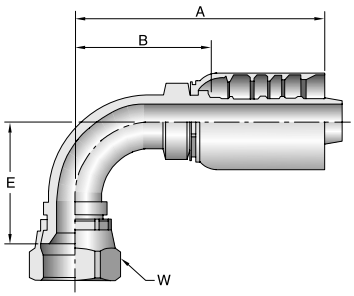
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

13977

Female JIC 37° - Swivel - 90° Elbow - Short Drop

ISO 12151-5

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm
13977-8-8	1/2	3/4x16	1/2	2.78	70,7	1.14	29,0	22	1.56	39,7
13977-8-8C	1/2	3/4x16	1/2	2.78	70,7	1.14	29,0	22	1.56	39,7
13977-10-8	5/8	7/8x14	1/2	2.77	70,5	1.26	32,0	27	1.55	39,5
13977-10-10	5/8	7/8x14	5/8	3.21	81,5	1.26	32,0	27	1.86	47,3
13977-12-10	3/4	1-1/16x12	5/8	3.21	81,5	1.89	48,0	32	1.86	47,3
13977-12-12	3/4	1-1/16x12	3/4	4.23	107,4	1.89	48,0	32	2.60	66,0
13977-12-12C	3/4	1-1/16x12	3/4	4.23	107,4	1.89	48,0	32	2.60	66,0
13977-16-12	1	1-5/16x12	3/4	4.23	107,4	2.93	74,5	41	2.59	65,9
13977-16-16	1	1-5/16x12	1	4.72	119,9	2.93	74,4	41	2.77	70,4
13977-16-16C	1	1-5/16x12	1	4.72	119,9	2.93	74,4	46	2.77	70,4
13977-20-20	1-1/4	1-5/8x12	1-1/4	6.28	159,5	3.07	78,0	50	4.01	101,8
13977-20-20C	1-1/4	1-5/8x12	1-1/4	6.28	159,5	3.07	78,0	60	4.01	101,8
13977-24-24	1-1/2	1-7/8x12	1-1/2	7.24	183,9	3.74	95,0	60	4.85	123,2
13977-32-32	2	2-1/2x12	2	8.75	222,1	5.51	140,0	75	5.99	152,2



All sizes of 13977 fittings are rated at 5,000 psi working pressure.

"C" suffix indicates stainless steel part. Some stainless steel parts are dimensionally different than the standard part.

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

A

B

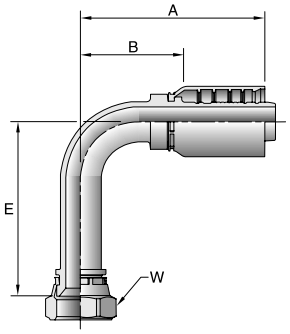
C

D

14177

Female JIC 37° - Swivel - 90° Elbow - Long Drop

ISO 12151-5



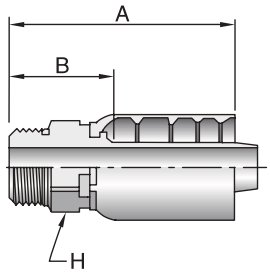
# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm	Additional Material Stainless Steel (C)
14177-8-8	1/2	3/4x16	1/2	2.78	70,7	2.52	64,0	22	1.56	39,7	●
14177-12-12	3/4	1-1/16x12	3/4	4.24	107,6	3.78	96,0	32	2.60	66,1	
14177-16-16	1	1-5/16x12	1	4.72	119,9	4.49	114,0	41	2.77	70,4	

All sizes of 14177 fittings are rated at 5,000 psi working pressure.

WARNING: This product can expose you to chemicals including Lead, 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.

10577

Male SAE Thread with O-Ring - Rigid



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H mm	B inch	B mm	Additional Material Stainless Steel (C)
10577-8-8	1/2	3/4x16	1/2	2.39	60,8	22	1.17	29,8	●
10577-12-12	3/4	1-1/16x12	3/4	3.17	80,5	32	1.53	38,9	●
10577-16-16	1	1-5/16x12	1	3.73	94,7	41	1.78	45,2	
10577-20-20	1-1/4	1-5/8x12	1-1/4	4.17	105,9	50	1.90	48,2	
10577-32-20	2	2-1/2x12	1-1/4	4.35	110,5	2-3/4	2.08	52,8	

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

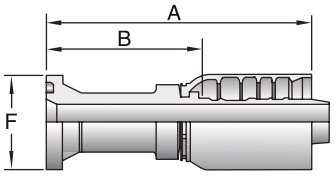
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

11577

SAE Code 61 Flange Head

ISO 12151-3-S-L

# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	F inch	B inch	B mm	Additional Material Stainless Steel (C)
11577-8-8	1/2	1/2	3.52	89,6	1-3/16	2.30	58,6	●
11577-10-10	5/8	5/8	3.90	99,0	1-11/32	2.55	64,8	
11577-12-8	3/4	1/2	2.52	64,0	1-1/2	1.30	33,0	
11577-12-12	3/4	3/4	4.23	107,4	1-1/2	2.59	65,9	●
11577-12-16	3/4	1	4.70	119,4	1-1/2	2.75	69,8	
11577-16-12	1	3/4	3.27	82,9	1-3/4	1.63	41,5	
11577-16-16	1	1	4.70	119,4	1-3/4	2.75	69,9	
11577-16-20	1	1-1/4	5.11	129,8	1-3/4	2.84	72,1	
11577-20-12	1-1/4	3/4	3.66	92,9	2	2.31	58,6	
11577-20-20	1-1/4	1-1/4	5.42	137,7	2	3.15	80,0	
11577-20-24	1-1/4	1-1/2	5.76	146,3	2	3.37	85,6	
11577-24-16	1-1/2	1	3.78	96,0	2-3/8	1.83	46,5	
11577-24-20	1-1/2	1-1/4	3.94	100,1	2-3/8	1.67	42,4	
11577-24-24	1-1/2	1-1/2	5.52	140,2	2-3/8	3.13	79,5	
11577-24-32	1-1/2	2	6.42	162,9	2-3/8	3.66	93,0	
11577-32-24	2	1-1/2	4.59	116,6	2-13/16	2.20	55,9	
11577-32-32*	2	2	6.43	163,2	2-13/16	3.67	93,2	
11577-40-32	2-1/2	2	5.28	133,9	3-5/16	2.52	64,0	



*This specific size in stainless is not able to be crimped in any Parkrimp machine.

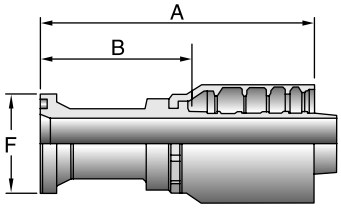
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

14A77

SAE Code 61 Special Flange Head - 5,000* psi

ISO 12151-3-S-L

# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	F inch	B inch	B mm
14A77-20-12	1-1/4	1-1/2	3.66	92,9	2	2.02	51,4
14A77-20-16	1-1/4	1	3.54	89,9	2	1.59	40,4
14A77-20-20	1-1/4	1-1/4	5.42	137,7	2	3.15	80,0
14A77-20-24	1-1/4	1-1/2	5.76	146,3	2	3.37	85,6
14A77-24-16	1-1/2	1	3.78	96,0	2-3/8	1.83	46,5
14A77-24-20	1-1/2	1-1/4	3.94	100,1	2-3/8	1.67	42,4
14A77-24-24	1-1/2	1-1/2	5.52	140,2	2-3/8	3.13	79,6
14A77-24-32	1-1/2	2	6.42	162,9	2-3/8	3.66	93,0
14A77-32-24	2	1-1/2	4.59	116,6	2-13/16	2.20	55,9
14A77-32-32	2	2	6.43	163,3	2-13/16	3.67	93,2



*Must be used with 5050HK Flange Kits

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

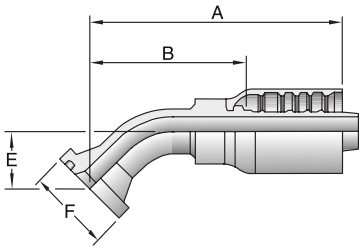
C

D

11777

SAE Code 61 Flange Head - 45° Elbow

ISO 12151-3-E45M-L



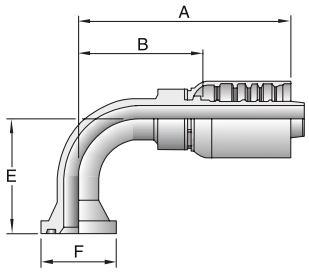
# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	E inch	E mm	F inch	B inch	B mm
11777-8-8	1/2	1/2	3.11	79,0	0.79	20,0	1-3/16	1.89	48,0
11777-12-8	3/4	1/2	3.33	84,7	0.87	22,0	1-1/2	2.11	53,7
11777-12-12	3/4	3/4	4.57	116,0	1.02	26,0	1-1/2	2.93	74,5
11777-16-12	1	3/4	4.57	116,0	1.02	26,0	1-3/4	2.93	74,5
11777-16-16	1	1	5.11	129,8	1.26	32,0	1-3/4	3.16	80,3
11777-16-20	1	1-1/4	6.47	164,4	1.50	38,0	1-3/4	4.20	106,8
11777-20-16	1-1/4	1	5.11	129,8	1.26	32,0	2	3.16	80,3
11777-20-20	1-1/4	1-1/4	6.66	169,2	1.50	38,0	2	4.39	111,5
11777-24-20	1-1/2	1-1/4	6.66	169,2	1.50	38,0	2-3/8	4.39	111,5
11777-24-24	1-1/2	1-1/2	7.61	193,3	1.73	44,0	2-3/8	5.22	132,6
11777-32-24	2	1-1/2	7.61	193,3	1.73	44,0	2-13/16	5.22	132,6
11777-32-32	2	2	8.58	218,0	2.20	56,0	2-13/16	5.83	148,1

WARNING: This product can expose you to chemicals including Lead, 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.

11977

SAE Code 61 Flange Head - 90° Elbow

ISO 12151-3-E90M-L



# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	E inch	E mm	F inch	B inch	B mm	Additional Material Stainless Steel (C)
11977-8-8	1/2	1/2	2.99	76,0	1.61	41,0	1-3/16	1.77	45,0	●
11977-10-10	5/8	5/8	3.62	91,9	2.09	53,0	1-11/32	2.27	57,7	
11977-12-8	3/4	1/2	2.77	70,5	1.61	41,0	1-1/2	1.55	39,5	
11977-12-10	3/4	5/8	3.40	86,3	2.09	53,0	1-1/2	2.05	52,1	
11977-12-12	3/4	3/4	4.24	107,6	2.28	58,0	1-1/2	2.60	66,1	●
11977-12-16	3/4	1	4.41	112,0	2.76	70,0	1-1/2	2.46	62,5	
11977-16-10	1	5/8	3.21	81,5	2.09	53,0	1-3/4	1.86	47,3	
11977-16-12	1	3/4	4.24	107,6	2.28	58,0	1-3/4	2.60	66,1	●
11977-16-16	1	1	4.72	119,9	2.76	70,0	1-3/4	2.77	70,4	●
11977-16-20	1	1-1/4	5.44	138,2	3.54	90,0	1-3/4	3.17	80,5	
11977-20-12	1-1/4	3/4	4.23	107,4	2.28	58,0	2	2.59	65,9	
11977-20-16	1-1/4	1	4.72	119,9	2.76	70,0	2	2.77	70,4	
11977-20-20	1-1/4	1-1/4	6.28	159,5	3.54	90,0	2	4.00	101,8	
11977-20-24	1-1/4	1-1/2	6.69	169,9	4.09	104,0	2	4.30	109,2	
11977-24-16	1-1/2	1	4.72	119,9	2.76	70,0	2-3/8	2.77	70,4	
11977-24-20	1-1/2	1-1/4	6.28	159,5	3.54	90,0	2-3/8	4.00	101,8	
11977-24-24	1-1/2	1-1/2	7.24	183,9	4.09	104,0	2-3/8	4.85	123,2	
11977-32-24	2	1-1/2	7.24	183,9	4.09	104,0	2-13/16	4.85	123,2	
11977-32-32	2	2	8.75	222,1	5.43	138,0	2-13/16	5.99	152,2	

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

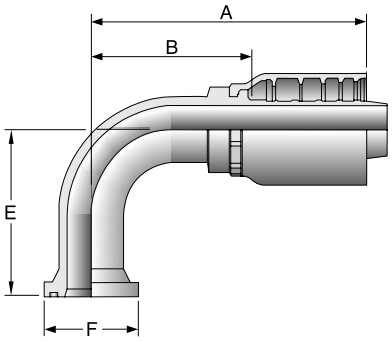
Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

14N77

SAE Code 61 Special Flange Head - 90° Elbow - 5,000* psi

ISO 12151-3-E90M-L

# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	E inch	E mm	F inch	B inch	B mm	Additional Material Stainless Steel (C)
14N77-20-16	1-1/4	1	4.72	119,9	2.76	70,0	2	2.77	70,3	
14N77-20-20	1-1/4	1-1/4	6.28	159,5	3.54	90,0	2	4.00	101,8	●
14N77-24-20	1-1/2	1-1/4	6.28	159,5	3.54	90,0	2-3/8	4.00	101,8	
14N77-24-24	1-1/2	1-1/2	7.24	183,9	4.09	104,0	2-3/8	4.85	123,2	
14N77-24-32	1-1/2	2	7.65	194,2	5.43	138,0	2-3/8	4.89	124,2	
14N77-32-24	2	1-1/2	7.24	183,9	4.09	104,0	2-13/16	4.85	123,2	
14N77-32-32	2	2	8.75	222,1	5.43	138,0	2-13/16	5.99	152,2	



*Must be used with 5050HK Flange Kits

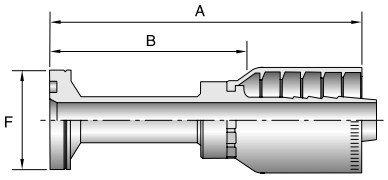
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

16A77

SAE Code 62 Flange Head

ISO 12151-3-S-S

# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	F inch	B inch	B mm	Additional Material Stainless Steel (C)
16A77-8-8	1/2	1/2	3.51	89,3	1-1/4	2.29	58,3	
16A77-8-10	1/2	5/8	3.83	97,3	1-1/4	2.48	63,0	
16A77-12-10	3/4	5/8	2.95	74,9	1-5/8	1.60	40,7	
16A77-12-12	3/4	3/4	4.49	113,9	1-5/8	2.85	72,5	●
16A77-12-16	3/4	1	4.96	126,0	1-5/8	3.01	76,5	
16A77-16-12	1	3/4	3.47	88,1	1-7/8	1.83	46,6	
16A77-16-16	1	1	4.45	113,0	1-7/8	2.50	63,5	●
16A77-16-20	1	1-1/4	5.66	143,8	1-7/8	3.39	86,1	
16A77-20-16	1-1/4	1	4.05	102,9	2-1/8	2.10	53,4	●
16A77-20-20	1-1/4	1-1/4	5.73	145,6	2-1/8	3.46	87,8	●
16A77-20-24	1-1/4	1-1/2	6.06	153,9	2-1/8	3.67	93,2	
16A77-24-16	1-1/2	1	4.25	108,0	2-1/2	2.30	58,4	
16A77-24-20	1-1/2	1-1/4	4.65	118,1	2-1/2	2.38	60,4	
16A77-24-24	1-1/2	1-1/2	6.39	162,3	2-1/2	4.00	101,6	●
16A77-32-24	2	1-1/2	5.23	132,8	3-1/8	2.84	72,2	
16A77-32-32*	2	2	7.17	182,1	3-1/8	4.41	112,0	●



*This specific size in stainless is not able to be crimped in any Parkrimp machine.

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

B

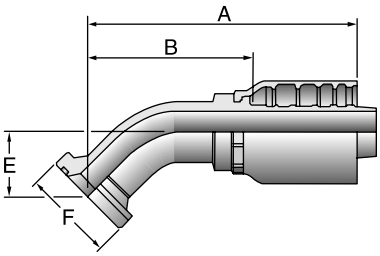
C

D

16F77

SAE Code 62 Flange Head - 45° Elbow

ISO 12151-3-E45M-S



# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	E inch	E mm	F inch	B inch	B mm	Additional Material Stainless Steel (C)
16F77-8-8	1/2	1/2	3.11	79,0	0.75	19,0	1-1/4	1.89	48,0	
16F77-12-10	3/4	5/8	3.77	95,7	1.00	25,5	1-5/8	2.42	61,5	
16F77-12-12	3/4	3/4	4.57	116,0	1.02	26,0	1-5/8	2.93	74,5	
16F77-12-16	3/4	1	4.98	126,5	1.26	32,0	1-5/8	3.03	77,0	
16F77-16-12	1	3/4	4.57	116,0	1.02	26,0	1-7/8	2.93	74,5	
16F77-16-16	1	1	5.11	129,8	1.26	32,0	1-7/8	3.16	80,3	
16F77-16-20	1	1-1/4	6.06	153,9	1.50	38,0	1-7/8	3.79	96,2	
16F77-20-16	1-1/4	1	5.11	129,8	1.26	32,0	2-1/8	3.16	80,3	
16F77-20-20	1-1/4	1-1/4	6.66	169,2	1.50	38,0	2-1/8	4.39	111,5	●
16F77-24-20	1-1/2	1-1/4	6.66	169,2	1.50	38,0	2-1/2	4.39	111,5	
16F77-24-24	1-1/2	1-1/2	7.61	193,3	1.73	44,0	2-1/2	5.22	132,6	
16F77-32-24	2	1-1/2	7.61	193,3	1.73	44.0	3-1/8	5.22	132,6	
16F77-32-32*	2	2	8.58	218,0	2.20	56,0	3-1/8	5.83	148,1	

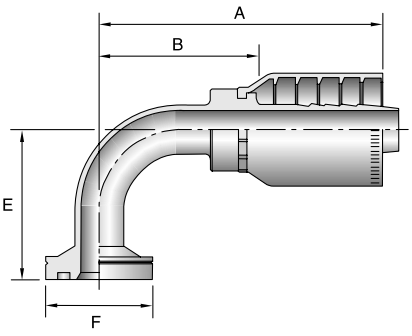
*This specific size in stainless is not able to be crimped in any Parkrimp machine.

WARNING: This product can expose you to chemicals including Lead, 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.

16N77

SAE Code 62 Flange Head - 90° Elbow

ISO 12151-3 - E90M - S



# Part Number	Flange inch	Hose I.D. inch	A inch	A mm	E inch	E mm	F inch	B inch	B mm	Additional Material Stainless Steel (C)
16N77-8-8	1/2	1/2	2.77	70,5	1.61	41,0	1-1/4	1.55	39,5	
16N77-8-10	1/2	5/8	3.09	78,5	2.13	54,0	1-1/4	1.74	44,2	
16N77-12-12	3/4	3/4	4.24	107,6	2.28	58,0	1-5/8	2.60	66,1	●
16N77-12-16	3/4	1	4.41	112,0	2.76	70,0	1-5/8	2.46	62.5	
16N77-16-12	1	3/4	4.24	107,6	2.28	58,0	1-7/8	2.60	66,1	
16N77-16-16	1	1	4.72	119,9	2.76	70,0	1-7/8	2.77	70,4	●
16N77-16-20	1	1-1/4	5.44	138,2	3.54	90,0	1-7/8	3.17	80,5	●
16N77-20-16	1-1/4	1	4.83	122,7	2.76	70,0	2-1/8	2.88	73,2	
16N77-20-20	1-1/4	1-1/4	6.28	159,5	3.54	90,0	2-1/8	4.00	101,8	●
16N77-20-24	1-1/4	1-1/2	6.69	169,9	4.09	104,0	2-1/8	4.30	109,2	
16N77-24-20	1-1/2	1-1/4	6.28	159,5	3.54	90,0	2-1/2	4.00	101,8	●
16N77-24-24	1-1/2	1-1/2	7.24	183,9	4.09	104,0	2-1/2	4.85	123,2	●
16N77-32-24	2	1-1/2	7.24	183,9	4.09	104,0	3-1/8	4.85	123,2	
16N77-32-32*	2	2	8.75	222,1	5.43	138,0	3-1/8	5.99	152,2	●

*This specific size in stainless is not able to be crimped in any Parkrimp machine.

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

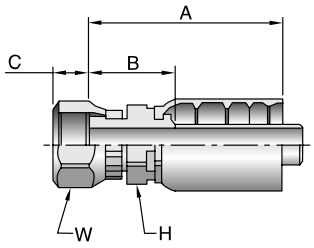
Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

1JC77

Female Seal-Lok® - Swivel - Short

ISO 12151-1-SWSA

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	C inch	C mm	H mm	W mm	B inch	B mm	Additional Material Stainless Steel (C)
1JC77-8-8	1/2	13/16x16	1/2	2.35	59,8	0.43	11,0	22	24	1.13	28,8	●
1JC77-10-10	5/8	1x14	5/8	2.75	69,8	0.48	12,0	24	30	1.40	35,6	
1JC77-12-8	3/4	1-3/16x12	1/2	2.63	66,9	0.55	14,0	30	36	1.41	35,9	
1JC77-12-12	3/4	1-3/16x12	3/4	3.16	80,2	0.55	12,0	30	36	1.52	38,7	●
1JC77-16-12	1	1-7/16x12	3/4	3.35	85,0	0.57	14,5	36	41	1.71	43,5	
1JC77-16-16	1	1-7/16x12	1	3.59	91,2	0.57	14,5	36	41	1.64	41,7	
1JC77-20-16	1-1/4	1-11/16x12	1	3.74	95,0	0.59	15,0	41	50	1.79	45,5	
1JC77-20-20	1-1/4	1-11/16x12	1-1/4	4.25	108,0	0.59	15,0	46	50	1.98	50,3	
1JC77-24-24	1-1/2	2x12	1-1/2	4.55	115,6	0.62	15,7	60	60	2.16	54,9	
1JC77-32-32*	2	2-1/2X12	2	5.64	143,1	0.73	18,4	65	75	2.88	73,2	●



*This specific size in stainless is not able to be crimped in any Parkrimp machine.

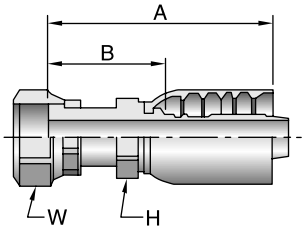
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1JS77

Female Seal-Lok® - Swivel - Long

ISO 12151-1-SWSB

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm	Additional Material Stainless Steel (C)
1JS77-6-8	3/8	11/16x16	1/2	2.67	67,8	22	22	1.45	36,8	
1JS77-8-8	1/2	13/16x16	1/2	2.80	71,2	22	24	1.58	40,2	●
1JS77-10-8	5/8	1x14	1/2	2.95	75,0	24	30	1.73	44,0	
1JS77-10-10	5/8	1x14	5/8	3.21	81,5	24	30	1.86	47,3	
1JS77-10-12	5/8	1x14	3/4	3.58	90,8	30	30	1.94	49,4	
1JS77-12-8	3/4	1-3/16x12	1/2	3.15	80,1	30	36	1.93	49,1	
1JS77-12-10	3/4	1-3/16x12	5/8	3.35	85,1	30	36	2.00	50,8	
1JS77-12-12	3/4	1-3/16x12	3/4	3.68	93,4	30	36	2.04	51,9	
1JS77-12-16	3/4	1-3/16x12	1	4.18	106,2	36	36	2.23	56,7	
1JS77-16-12	1	1-7/16x12	3/4	3.90	99,0	36	41	2.26	57,5	
1JS77-16-16	1	1-7/16x12	1	4.19	106,4	36	41	2.24	56,9	●
1JS77-16-20	1	1-7/16x12	1-1/4	4.71	119,7	46	41	2.44	62,0	
1JS77-20-16	1-1/4	1-11/16x12	1	4.29	108,9	41	50	2.34	59,5	
1JS77-20-20	1-1/4	1-11/16x12	1-1/4	4.78	121,4	46	50	2.51	63,8	●
1JS77-24-24	1-1/2	2x12	1-1/2	5.12	130,0	60	60	2.73	69,4	●
1JS77-32-32*	2	2-1/2x12	2	6.28	159,5	65	75	3.52	89,4	



*This specific size in stainless is not able to be crimped in any Parkrimp machine.

*This specific size in stainless is not able to be crimped in any Parkrimp machine.

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

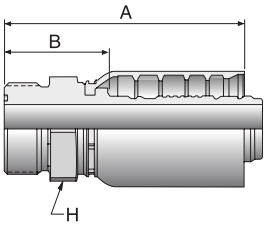
Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A B C D

1J077

Male Seal-Lok® - Rigid - (with O-Ring)

ISO 12151-1-S



# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H mm	B inch	B mm
1J077-8-8	13/16x16	1/2	2.61	66,3	22	1.39	35,3
1J077-10-8	1x14	1/2	2.79	71,0	27	1.57	40,0
1J077-10-10	1x14	5/8	2.98	75,7	27	1.63	41,4
1J077-12-10	1-3/16x12	5/8	3.12	79,2	32	1.77	44,9
1J077-12-12	1-3/16x12	3/4	3.48	88,4	32	1.84	46,9
1J077-16-12	1-7/16x12	3/4	3.66	92,9	41	2.02	51,4
1J077-16-16	1-7/16x12	1	4.05	102,9	41	2.10	53,4
1J077-20-16	1-11/16x12	1	4.13	104,9	46	2.18	55,4
1J077-20-20	1-11/16x12	1-1/4	4.54	115,4	46	2.27	57,7
1J077-24-20	2x12	1-1/4	4.70	119,4	55	2.43	61,7

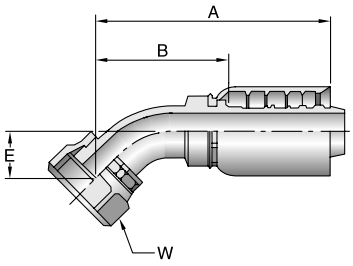
Supplied with Parker's exclusive Trap-Seal™, which leads to improved retention within Seal-Lok's™ ORFS groove and virtually eliminates costly leakage and/or time consuming pre-assembly handling.

WARNING: This product can expose you to chemicals including Lead, 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.

1J777

Female Seal-Lok® - Swivel - 45° Elbow

ISO 12151-1-SWE45



# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm
1J777-8-8	1/2	13/16x16	1/2	2.86	72,7	0.59	15	24	1.64	41,8
1J777-10-8	5/8	1x14	1/2	2.97	75,5	0.63	16	30	1.75	44,6
1J777-10-10	5/8	1x14	5/8	3.40	86,0	0.63	16	30	2.05	52,0
1J777-12-12	3/4	1-3/16x12	3/4	4.39	111,4	0.83	21	36	2.75	70,0
1J777-16-12	1	1-7/16x12	3/4	4.49	114,0	0.94	24	41	2.85	72,5
1J777-16-16	1	1-7/16x12	1	4.79	121,7	0.94	24	41	2.84	72,2
1J777-20-16	1-1/4	1-11/16x12	1	4.83	122,7	0.98	25	50	2.88	73,2
1J777-20-20	1-1/4	1-11/16x12	1-1/4	6.12	155,5	0.98	25	50	3.85	97,8
1J777-24-24	1-1/2	2x12	1-1/2	7.53	191,3	1.65	42	60	5.14	130,6

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

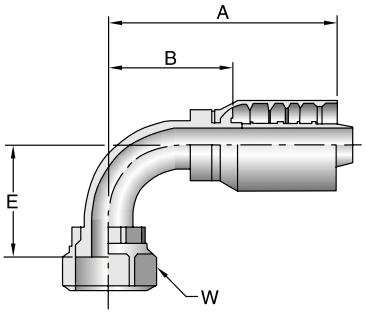
Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

1J977

Female Seal-Lok® - Swivel - 90° Elbow - Short Drop

ISO 12151-1-SWES90

# Part Number	Thread inch		Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm
1J977-8-8	1/2	13/16x16	1/2	2.78	70,7	1.14	29	24	1.56	39,7
1J977-10-8	5/8	1x14	1/2	2.77	70,5	1.26	32	30	1.55	39,5
1J977-10-10	5/8	1x14	5/8	3.21	81,5	1.26	32	30	1.86	47,3
1J977-12-8	3/4	1-3/16x12	1/2	2.77	70,5	1.89	48	36	1.55	39,5
1J977-12-10	3/4	1-3/16x12	5/8	3.21	81,5	1.89	48	36	1.86	47,3
1J977-12-12	3/4	1-3/16x12	3/4	4.24	107,6	1.89	48	36	2.60	66,1
1J977-16-12	1	1-7/16x12	3/4	4.23	107,4	2.20	56	41	2.59	65,9
1J977-16-16	1	1-7/16x12	1	4.73	120,1	2.20	56	41	2.78	70,6
1J977-16-20	1	1-7/16x12	1-1/4	5.63	143,0	2.20	56	41	3.36	85,3
1J977-20-16	1-1/4	1-11/16x12	1	4.72	119,9	2.52	64	50	2.77	70,4
1J977-20-20	1-1/4	1-11/16x12	1-1/4	6.20	157,5	2.52	64	50	3.93	99,8



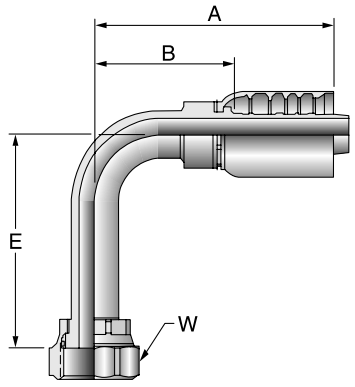
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1J177

Female Seal-Lok® - Swivel - 90° Elbow - Long Drop

ISO 12151-1-SWEL90

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm	Additional Material Stainless Steel (C)
1J177-8-8	13/16x16	1/2	2.77	70,5	2.52	64	24	1.55	39,5	
1J177-10-10	1x14	5/8	3.21	81,5	2.76	70	30	1.86	47,3	
1J177-12-10	1-3/16x12	5/8	3.21	81,5	3.78	96	36	1.86	47,3	
1J177-12-12	1-3/16x12	3/4	4.23	107,4	3.78	96	36	2.59	65,9	
1J177-16-12	1-7/16x12	3/4	4.23	107,4	4.49	114	41	2.59	65,9	
1J177-16-16	1-7/16x12	1	4.73	120,1	4.49	114	41	2.78	70,6	
1J177-20-16	1-11/16x12	1	4.73	120,1	5.08	129	50	2.78	70,6	
1J177-20-20	1-11/16x12	1-1/4	6.29	159,8	5.08	129	50	4.02	102,1	•



WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

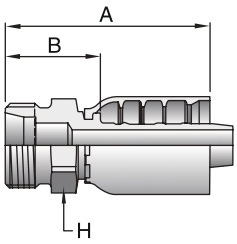
C

D

1D277

Male Metric S - Rigid - (24° Cone)

End Connection per ISO 8434-1-BHS



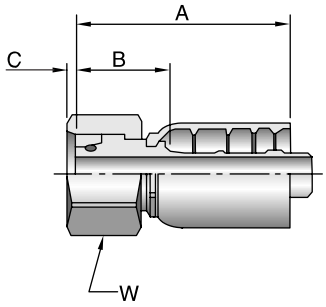
# Part Number	Thread mm	Hose I.D. inch	A inch	A mm	H mm	B inch	B mm
1D277-16-8	M24x1,5	1/2	2.53	64,4	24	1.31	33,4
1D277-20-10	M30x2	5/8	2.85	72,4	30	1.50	38,1
1D277-20-12	M30x2	3/4	3.29	83,6	30	1.66	42,1
1D277-25-12	M36x2	3/4	3.39	86,3	36	1.76	44,8
1D277-30-16	M42x2	1	3.91	99,3	46	1.96	49,8
1D277-38-20	M52x2	1-1/4	4.50	114,3	55	2.23	56,6

WARNING: This product can expose you to chemicals including Lead, 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.

1C977

Female Metric S - Swivel - (24° Cone with O-Ring)

ISO 12151-2-SWS



# Part Number	Thread mm		Hose I.D. inch	A inch	A mm	C inch	C mm	W mm	B inch	B mm	Additional Material Stainless Steel (C)
1C977-12-8	12	M20x1,5	1/2	2.39	60,8	0.03	1,0	24	1.17	29,8	
1C977-16-8	16	M24x1,5	1/2	2.34	59,5	0.09	2,0	30	1.12	28,5	•
1C977-16-10	16	M24x1,5	5/8	2.64	67,0	0.09	2,0	30	1.29	32,8	
1C977-20-8	20	M30x2	1/2	2.46	62,5	0.05	1,3	36	1.24	31,5	
1C977-20-10	20	M30x2	5/8	2.64	67,0	0.05	1,3	36	1.29	32,8	
1C977-20-12	20	M30x2	3/4	2.97	75,5	0.05	1,3	36	1.34	34,0	•
1C977-25-12	25	M36x2	3/4	3.00	76,5	0.10	2,6	46	1.37	35,0	
1C977-25-16	25	M36x2	1	3.60	91,4	0.10	2,6	46	1.65	41,9	
1C977-30-12	30	M42x2	3/4	3.17	80,4	0.19	5,0	50	1.53	39,0	
1C977-30-16	30	M42x2	1	3.50	89,0	0.19	5,0	50	1.55	39,5	
1C977-30-20	30	M42x2	1-1/4	4.09	103,9	0.19	5,0	50	1.82	46,2	
1C977-38-20	38	M52x2	1-1/4	3.92	99,6	0.27	6,9	60	1.65	42,0	
1C977-38-24	38	M52x2	1-1/2	4.08	103,7	0.24	6,0	60	1.69	43,1	

When measuring overall length to end of nut, B + C dimensions must be used to calculate cut-off allowance.

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

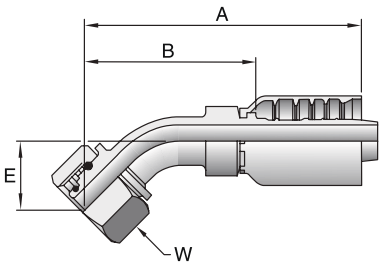
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

10C77

Female Metric S - Swivel - 45° Elbow - (24° Cone with O-Ring)

ISO 12151-2-SWE-45

# Part Number	Thread mm		Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm
10C77-16-8	16	M24x1,5	1/2	3.28	83,4	0.93	23,5	30	2.06	52,4
10C77-20-10	20	M30x2	5/8	4.20	106,7	1.10	28,0	36	2.85	72,4
10C77-20-12	20	M30x2	3/4	4.74	120,4	1.18	30,0	36	3.10	78,8
10C77-25-12	25	M36x2	3/4	4.70	119,3	1.14	29,0	46	3.06	77,8
10C77-25-16	25	M36x2	1	5.59	141,9	1.30	33,0	46	3.64	92,4
10C77-30-16	30	M42x2	1	5.58	141,8	1.30	33,0	50	3.63	92,3
10C77-38-20	38	M52x2	1-1/4	6.60	167,7	1.44	36,5	60	4.33	110,0
10C77-38-24	38	M52x2	1-1/2	7.81	198,4	1.93	49,0	60	5.42	137,7



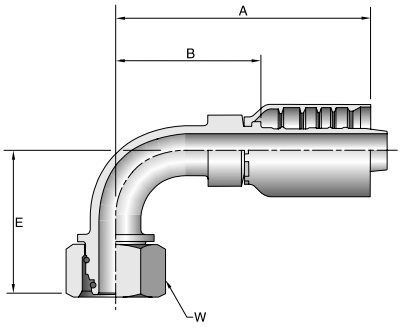
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

11C77

Female Metric S - Swivel - 90° Elbow - (24° Cone with O-Ring)

ISO 12151-2-SWE

# Part Number	Thread mm	Hose I.D. inch	A inch	A mm	E inch	E mm	W mm	B inch	B mm
11C77-16-8	M24x1,5	1/2	3.02	76,6	1.77	45	30	1.80	45,6
11C77-20-10	M30x2	5/8	3.62	92,0	2.09	53	36	2.27	57,8
11C77-20-12	M30x2	3/4	4.25	107,9	2.36	60	36	2.61	66,4
11C77-25-12	M36x2	3/4	4.25	107,9	2.32	59	46	2.61	66,4
11C77-25-16	M36x2	1	5.16	131,1	2.75	70	46	3.21	81,6
11C77-30-16	M42x2	1	5.16	131,0	2.72	69	50	3.21	81,6
11C77-38-20	M52x2	1-1/4	6.28	159,5	3.07	78	60	4.01	101,8
11C77-38-24	M52x2	1-1/2	7.24	183,9	3.98	101	60	4.85	123,2



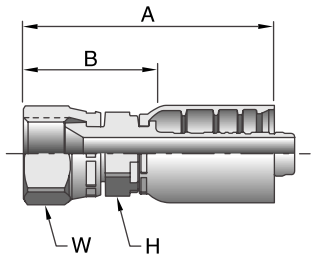
WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

1FU77

Female BSP Parallel Pipe - Swivel - (30° Flare)

B8363 Code F

# Part Number	Thread inch	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1FU77-8-8	1/2x14	1/2	2.89	73,4	22	27	1.67	42,4
1FU77-12-12	3/4x14	3/4	3.71	94,1	32	36	2.07	52,6
1FU77-16-16	1x11	1	4.31	109,5	41	41	2.36	60,0
1FU77-20-20	1-1/4x11	1-1/4	4.88	123,9	50	50	2.60	66,1
1FU77-24-24	1-1/2x11	1-1/2	5.42	137,7	60	60	3.03	77,1



WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

A

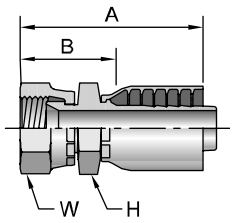
B

C

D

1MU77

Female Metric - Swivel - (30° Flare)

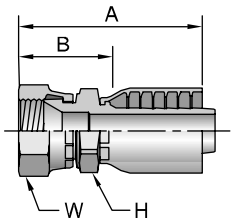


# Part Number	Thread mm	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1MU77-8-8	M22x1,5	1/2	2.89	73,4	22	27	1.67	42,4

WARNING: This product can expose you to chemicals including Lead, 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.

1XU77

Female Metric - Swivel - (30° Flare)



# Part Number	Thread mm	Hose I.D. inch	A inch	A mm	H mm	W mm	B inch	B mm
1XU77-10-10	M24x1,5	5/8	3.44	87,5	30	32	2.09	53,2
1XU77-12-12	M30x1,5	3/4	3.93	99,7	32	36	2.29	58,3
1XU77-16-16	M33x1,5	1	4.55	115,6	36	41	2.60	66,1
1XU77-20-20	M36x1,5	1-1/4	5.18	131,4	46	46	2.90	73,7
1XU77-24-24	M42x1,5	1-1/2	5.65	143,4	50	55	3.26	82,7

WARNING: This product can expose you to chemicals including Lead, 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.

Refer to Pressure Rating of Hose End Connections Chart on page G-22.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

NOTES

A

B

C

D

NOTES

Crimping Equipment C

A
B
C
D

Crimpers	KrimpNODE™ C-6 	Karrykrimp C-7 	Karrykrimp Bench Mount C-7 	Karrykrimp 2 C-9 	Karrykrimp 2 Bench Mount C-9 
Parkrimp 1 C-11 	Parkrimp 2 C-13 	MiniKrimp C-15  Hand Pump/Air Over Hydraulic Pump	***Portable Pumps***	82C-0HP C-17  Hand Pump	85C-0HP C-17  Hand Pump
82C-0EP E-17  Electric Pump	85C-0EP E-17  Electric Pump	82C-0AP E-17  Air/Hydraulic Pump	***Hose Cut-Off Machines***	86C-220V and 86C-220V3 E-23 	TH3-EM3-110V E-23 
Hose Cleaning Kits	TH6-10-HL-10-2 C-24  Premium Hose Cleaning Kit	TH6-10-EL-8 C-24  Economy Hose Cleaning Kit	***Accessories***	Parker Clean Seal C-25 	871522 C-26  Handycut - Hose Cut-Off Machine
881540 C-26  Push-Lok Cut-Off & Assembly Tool	TH9-1 C-26  Hose Insertion Depth Blocks	TH11-1 C-26  Hose Cut-Off Tool	432-115V C-27  Hozembler	80C-0DR C-27 and 83C-0DR  Die Storage Racks	80C-SDR C-27  Swivel Die Rack
TH2-7 E-27  Fittings Push-On Stand					

Notes

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

C

D

Hose Assemblies Are Easy With the Parkrimp System.

Since its introduction in 1980, the Parkrimp family of crimping machines has led the industry in ease of use and rugged durability.

With Parkrimp, you benefit from a full length crimp.

No-Skive hoses and fittings combine with the Parkrimp system to create high quality, reliable hydraulic hose assemblies every time.

Our low profile design makes routing hose assemblies easy.

When it comes to hose assemblies, no one puts it all together like Parker. From high-volume productivity to portable on-site assembly, we offer a variety of crimping machines, No-Skive hoses, and No-Skive fittings to meet your needs.

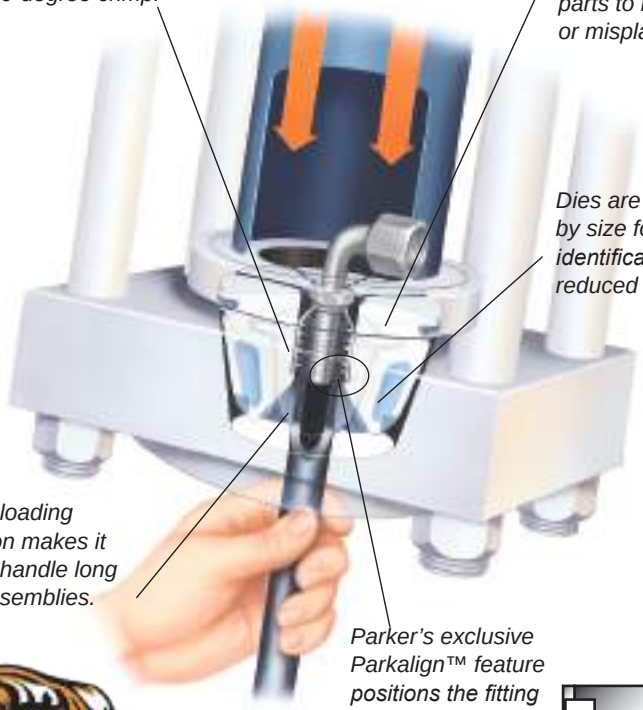
With Parkrimp equipment, anyone can make factory-quality hose assemblies quickly, easily, and cost effectively. Parkrimp machines are simple to operate and they're built to provide years of dependable service. Seven Parkrimp models – an entire family of crimpers – are available to meet your bench-mounted or portable needs, crimping straight or bent-stem fittings from 1/4" to 2" in diameter. Just use our No-Skive hoses and fittings to create leak-free hose assemblies whenever and wherever you need them.

The complete system from one source: No-Skive hose, No-Skive fittings, and crimping machines with worldwide availability and service.

Eight segment crimp dies provide a smooth, even, 360-degree crimp.

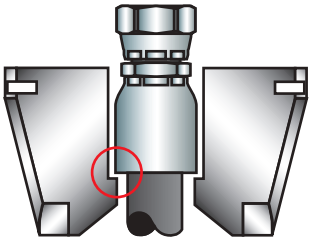
Our linked crimp dies keep die segments together. No loose parts to mismatch or misplace.

Dies are color-coded by size for easy identification and reduced set-up time.



Bottom-loading operation makes it easy to handle long hose assemblies.

Parker's exclusive Parkalign™ feature positions the fitting in the dies perfectly every time.



Selecting the right die.

Once the proper Parker Hose and Fitting is selected that meets your application requirements, you will need to select the proper die to assemble them together.

Based on the hose size and approved fitting, select the proper color coded die, as called out in the chart below.

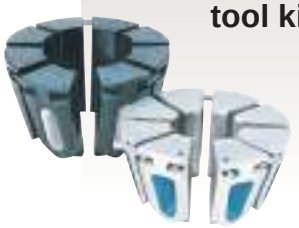
Example:

Hose	387-4
Fitting	43 Series
Die Body Color	Silver
Die Cavity Color (-4)	RED

Based on the Parkrimp machine being used to assemble the hose and fitting, individual die part numbers and tooling selection for your assembly can be found in Section C of this catalog.

For general hose assembly instructions for all Parkrimp machines, please turn to pages C-19 and C-20. (An instructional video is a standard part of each Parkrimp machine shipped from the manufacturer.)

Parker Hose Products Division also offers a full line of crimping accessories, including conversion kits, cabinets, cut-off saws, push-on tables, die racks, and mandrel tool kits.



Hose Dash Size	Die Cavity Color Code	43 & 26 Series Die Body Color	77 Series Die Body Color	79 Series Die Body Color	76 Series Die Body Color	25 Series Die Body Color	81 Series Die Body Color
		Silver	Black	Olive Drab	Silver	Silver	Silver
-4	RED		N/A	N/A	N/A	N/A	N/A
-5	PURPLE		N/A	N/A	N/A	N/A	N/A
-6	YELLOW			N/A	N/A		N/A
-8	BLUE			N/A	N/A		N/A
-10	ORANGE			N/A	N/A	N/A	N/A
-12	GREEN			N/A		N/A	
-16	BLACK			N/A		N/A	
-20	WHITE				N/A	N/A	
-24	RED				N/A	N/A	
-32	GREEN				N/A	N/A	

Hose Dash Size	Die Cavity Color Code	HY Series Die Body Color
		Silver
-4	BROWN	
-5	BROWN	
-6	BROWN	
-8	BROWN	
-10	BROWN	
-12	BROWN	
-16	BROWN	

WARNING: This product can expose you to chemicals including Lead, 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.

Reference pages C-6 through C-14 for specific tool information regarding hose, fitting, and crimper combinations. Be sure to check **www.parker.com/crimpsource** for the most up to date information and crimp specifications.

A

B

C

D

KrimpNODE™

Smarter Crimper. Smarter Choice.

Do you know where your crimpers are? Parker's Hose Products Division can help you take the guess work out of determining their location. Are your crimpers being used? Our new KrimpNODE™ sensor can track crimper usage and deliver this data, allowing you to analyze both usage and location.

If you have an existing crimper, order our KrimpNODE™ Retrofit Kit or if you need a new crimper, order one of our Parkrimp crimpers that come standard with KrimpNODE™.

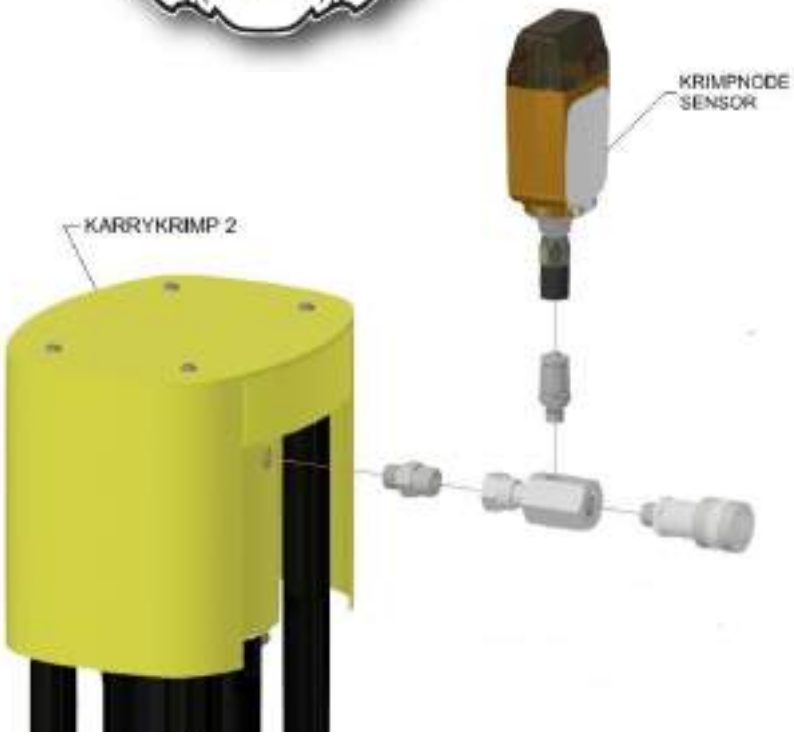
KrimpNODE™ sensors can be added to existing crimpers via our KrimpNODE™ Retrofit Kit through any Parker Distributor.

Karrykrimp 2, Parkrimp 1, Parkrimp 2, and Phastkrimp 2 come standard with KrimpNODE™ sensor.

Activate, track and increase sales with Parker Hose Products KrimpNODE™.

For anyone having existing crimpers that want to order the sensor to attach:

Crimper	Sensor Retrofit Kit:
Parkrimp 1	PT# PKT26189
Parkrimp 2	PT#PKT26189
Karrykrimp 2	PT#PK26190



Capability:

- Records crimp activity
- Real time connection to the cloud
- GPS position
- Unlimited capacity, all your crimpers can be monitored

Features:

- Alerts/notifications via email or text
- Customizable dashboards

Specifications:

- Available on Parkrimp1, Parkrimp2, Karrykrimp2, and Phastkrimp 2
- Retrofit kits available for installed units

Note:
- For crimp instructions, see pages C-19 and C-20.
- Hose assemblies must be inspected for cleanliness and free of all foreign particles.
- Parker Hannifin will not accept responsibility for the operation of, or provide warranty coverage for, a crimper that is operated by a power unit other than equipment supplied by Parker Hannifin for the express purpose of operating the crimper.

Karrykrimp

The Karrykrimp is now available in a modular design with all the familiar Parkrimp System advantages.

The same unit now offers portability and bench mountability.

Capability

view on web page

- Up to 1-1/4" ID 2 wire braided hose
- Up to 5/8" ID 4 wire spiral hose
- Only steel fittings

Features

- Now comes standard with KrimpNODE
  See page C-6 for more information on KrimpNODE™
- Portable, compact rugged design
- Numerous portable power unit options available
- Pivoting pusher design for easy die change out
- Increased height enables longer bent tube fittings to be crimped
- For use with 25, 26, 43, 81, and HY Series fittings

Specifications

- Dimensions: 15" wide, 12" deep, 30" high
- Weight: 70 lbs (without power unit)
- Rating: 30 ton force @ 10,000 psi maximum
- Crimp Cycle Time: 30 seconds 82C-0EP power unit (1/2" 43 Series)
- Reference pages C-16 and C-17 for information on available power units

Standard Equipment

Part Number			Description	Individual Part Number
82C-CHD	82C-061L	82C-KKB		
●	●	●	Crimp Head	82C-CHD
		●	Bench Power Unit Assembly	*85C-ZMS
●	●	●	Silver Die Ring	82C-R01
●	●	●	Black Die Ring	82C-R02
	●		Hose Assembly	85C-00L
	●		Stand Assembly	85C-STD
		●	Hose Assembly	85C-03L

Karrykrimp Bench Mount

Capability

view on web page

- Up to 1-1/4" ID 2 wire braided hose
- Up to 5/8" ID 4 wire spiral hose
- Only steel fittings

Features

- Faster cycle times on bench mounted units
- Pivoting pusher design for easy die change out
- Compact bench mount design
- Increased height enables longer bent tube fittings to be crimped
- For use with 25, 26, 43, 81, and HY Series fittings

Specifications

- Dimensions: 19" wide, 23" deep, 27-1/2" high
- Weight: 220 lbs
- Rating: 30 ton force @ 10,000 psi maximum
- Crimp Cycle Time: 8 seconds (1/2" 43 Series straight fittings)
- Full Stroke Crimp Time: 15 seconds
- Hydraulic Fluid: Enerpac Oil
- This unit is designed to make about 200 crimps per day and is not designed to be a production crimper. Exceeding these suggested production amounts will significantly reduce the life expectancy of the crimper components.

***Note:** Power unit is factory wired to operate at 115 volt. **A 20 amp dedicated circuit is required to operate at this voltage. Do not use extension cords to operate this machine.**

The electric motor is dual voltage, 50/60 HZ, suitable for 208-230/115 volt. The motor and control circuit can be rewired by a qualified electrician to operate at alternate voltage. See motor name plate and wiring diagrams.

Optional Tooling

- Die Kit 43K-KDA (Includes 43 Series dies in sizes 1/4", 3/8", 1/2", 3/4", 1" and1-1/4" only)

WARNING: This product can expose you to chemicals including Lead, 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.

Note:
- For crimp instructions, see pages C-19 and C-20.
- Hose assemblies must be inspected for cleanliness and free of all foreign particles.
- Parker Hannifin will not accept responsibility for the operation of, or provide warranty coverage for, a crimper that is operated by a power unit other than equipment supplied by Parker Hannifin for the express purpose of operating the crimper.

A

B

C

D

Parker Hannifin Corporation
Hose Products Division
30240 Lakeland Blvd.
Wickliffe, Ohio 44092

Karrykrimp/Karrykrimp Bench Mount Hose Die Selection Chart

Fitting Series	HOSE	-4 RED	-5 PUR	-6 YEL	-8 BLU	-10 ORG	-12 GRN	-16 BLK	-20 WHT	Die Ring
43 Series	Die Part Number	80C-A04	80C-A05	80C-A06	80C-A08	80C-A10	80C-A12	80C-A16	80C-A20	
	GLOBALCORE 187/187ST/TC (-8 THRU -16) 387/387ST/TC (-4 THRU -16), 487/487ST/TC (-4 THRU -12) 787/787ST/TC (-4 & -6), 797/797ST/TC (-4 & -6)	0.645 0.665	0.710 0.730	0.825 0.845	0.945 0.965	1.060 1.080	1.245 1.265	1.590 1.610	1.970 1.990	SILVER
	351ST/TC 422 426 431 436 451ST/TC 471ST/TC 472LT, 482ST/TC 777/777ST/TC (-6 THRU -10)									
	GLOBALCORE 722/722ST/TC (-6 THRU -10)	0.685 0.705	0.750 0.770	0.865 0.885	0.985 1.005	1.100 1.120	1.285 1.305	1.630 1.650	2.010 2.030	BLACK
	302 421WC 722LT (-6 THRU -10) 881									
25 Series	Die Part Number			80C-Y06	80C-Y08					
	271			0.680 0.700	0.825 0.845					SILVER
26 Series	Die Part Number	80C-E04	80C-E05	80C-E06	80C-E08	80C-E10	80C-E12	80C-E16		
	213 285 (-4, -6, -10) 293	0.460 0.480	0.520 0.540	0.575 0.595	0.670 0.690	0.805 0.825	0.915 0.935	1.175 1.195		SILVER
	201 225 266 206 226 SS25UL 221FR 244 285(-8 & -12)	0.500 0.520	0.560 0.580	0.615 0.635	0.710 0.730	0.845 0.865	0.955 0.975	1.215 1.235		BLACK
81 Series	Die Part Number						80C-V12	80C-V16	80C-V20	
	811 811HT 881						1.155 1.175	1.450 1.470	1.740 1.760	SILVER
HY Series	Die Part Number	80C-H595				80C-H1015	80C-H1170	80C-H1365		
	801 836 611HT (-4 THRU -12)	0.575 0.595				0.995 1.015	1.140 1.160	1.350 1.370		SILVER
	Die Part Number			80C-H735	80C-H860					
	801 836 611HT			0.755 0.775	0.890 0.910					BLACK

Caution: Read the operations and technical manual before attempting to operate this machine. Do not operate this machine without guard in place. Keep hands clear of moving parts when operating machine.

Note: Do not use this machine to assemble stainless steel fittings.

Information on this decal is subject to change without notice. For the most current crimp specifications, please visit Crimpsource at www.parker.com/crimpsource. New decals can be ordered at Parker website https://parker.cp.imtco.com/Account/Login.

Decal Part Number:
82C-CRIMPDECAL
REV. J

WARNING: This product can expose you to chemicals including Lead, 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.

Karrykrimp 2

The Karrykrimp 2 is now available in a modular design with all the familiar Parkrimp System advantages.

The same unit now offers portability and bench mountability.

view on web page

Capability

- Up to 1-1/4" ID 2 wire braided hose
- Up to 1-1/4" ID 4 wire spiral hose
- Up to 1" ID 6 wire spiral hose

Features

- Now comes standard with KrimpNODE
  See page C-6 for more information on KrimpNODE™
- Portable, compact rugged design
- Numerous portable power unit options available
- Pivoting pusher design for easy die change out
- For use with 25,26, 43, 70, 71, 77, 81 and HY Series fittings

Specifications

- Dimensions: 14" wide, 14" deep, 31-1/2" high
- Weight: 120 lbs (without power unit)
- Rating: 60 ton force @ 10,000 psi maximum
- Cycle Time: 15 seconds with 85C-0EP power unit (1/2" 43 series)
- Reference pages C-16 and C-17 for information on available power units

Standard Equipment

Part Number			Description	Individual Part Number
85C-CHD	85C-061L	85C-KKB		
●	●	●	Crimp Head	85C-CHD
		●	Bench Power Unit Assembly	*85C-ZMS
●	●	●	Silver Die Ring	85C-R01
●	●	●	Black Die Ring	85C-R02
	●		Hose Assembly	85C-00L
	●		Stand Assembly	85C-STD
		●	Hose Assembly	85C-03L

Karrykrimp 2 Bench Mount

view on web page

Capability

- Up to 1-1/4" ID 2 wire braided hose
- Up to 1-1/4" ID 4 wire spiral hose
- Up to 1" ID 6 wire spiral hose

Features

- Faster cycle times on bench mounted units
- Pivoting pusher design for easy die change out
- Compact bench mount design
- For use with 25, 26, 43, 70, 71, 77, 81 and HY Series fittings

Specifications

- Dimensions: 19" wide, 24" deep, 28" high
- Weight: 265 lbs
- Rating: 60 ton force @ 10,000 psi maximum
- Crimp Cycle Time: 15 seconds (1/2" 43 series straight fitting)
- Full Stroke Cycle Time: 24 seconds
- Hydraulic Fluid: Enerpac Oil
- This unit is designed to make about 200 crimps per day and is not designed to be a production crimper. Exceeding these suggested production amounts will significantly reduce the life expectancy of the crimper components.

***Note:** Power unit is factory wired to operate at 115 volt. **A 20 amp dedicated circuit is required to operate at this voltage. Do not use extension cords to operate this machine.**

The electric motor is dual voltage, 50/60 HZ, suitable for 208-230/115 volt. The motor and control circuit can be rewired by a qualified electrician to operate at alternate voltage. See motor name plate and wiring diagrams.

Optional Tooling

- Die Kit KK2-KDA (Includes 43 Series dies in sizes 1/4", 3/8", 1/2", 3/4", 1" and 1-1/4" and 77 Series dies in sizes 1/2", 5/8", 3/4" and 1" only.

WARNING: This product can expose you to chemicals including Lead, 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.

Note:
- For crimp instructions, see pages C-19 and C-20.
- Hose assemblies must be inspected for cleanliness and free of all foreign particles.
- Parker Hannifin will not accept responsibility for the operation of, or provide warranty coverage for, a crimper that is operated by a power unit other than equipment supplied by Parker Hannifin for the express purpose of operating the crimper.

A B C D

Parker Hannifin Corporation
Hose Products Division
30240 Lakeland Blvd.
Wickliffe, Ohio 44092

Karrykrimp 2/Karrykrimp 2 Bench Mount Hose Die Selection Chart

Fitting Series	HOSE	-4 RED	-5 PUR	-6 YEL	-8 BLU	-10 ORG	-12 GRN	-16 BLK	-20 WHT	Die Ring
43 Series	Die Part Number	80C-A04	80C-A05	80C-A06	80C-A08	80C-A10	80C-A12	80C-A16	80C-A20	
	GLOBALCORE 187/187ST/TC (-8 THRU -20) 387/387ST/TC (-4 THRU -16), 487/487ST/TC (-4 THRU -12) 787/787ST/TC (-4 & -6), 797/797ST/TC (-4 & -6)	0.645 0.665	0.710 0.730	0.825 0.845	0.945 0.965	1.060 1.080	1.245 1.265	1.590 1.610	1.970 1.990	SILVER
	351ST/TC 422 426 431 436 451ST/TC 471ST/TC 472TC/LT 482ST/TC									
	GLOBALCORE 387/387ST/TC (-20 ONLY) 487/487ST/TC (-16 ONLY) 722/722ST/TC (-6 THRU -16)	0.685 0.705	0.750 0.770	0.865 0.885	0.985 1.005	1.100 1.120	1.285 1.305	1.630 1.650	2.010 2.030	BLACK
	302 421WC 722LT (-6 THRU -20) 722ST/TC (-20 ONLY) 881									
	NOTES	Crimp Diameter range for 722/722LT/ST/TC Size -16 is 1.630/1.660. Crimp Diameter range for 722/722LT/ST/TC Size -20 is 2.010/2.040.								
71 Series	Die Part Number			83C-D06	83C-D08	83C-D10	83C-D12	83C-D16	83C-D20	
	721/721ST/TC			0.950 0.970	1.100 1.120	1.220 1.240	1.355 1.375	1.695 1.715	2.025 2.045	SILVER
	NOTES	71 Series Size -20 Stainless Steel Fittings can not be Crimped on this Machine.								
77 Series	Die Part Number				80C-CS08	80C-CS10	80C-CS12	80C-CS16		
	GLOBALCORE 787/787ST/TC 797/797ST/TC (-8 THRU -12)				0.930 0.950	1.057 1.077	1.245 1.265	1.541 1.571		BLACK
	NOTES	77 Series Size -16 Stainless Steel Fittings can not be Crimped on this Machine.								
25 Series	Die Part Number			80C-Y06	80C-Y08					
	271			0.680 0.700	0.825 0.845					SILVER
26 Series	Die Part Number	80C-E04	80C-E05	80C-E06	80C-E08	80C-E10	80C-E12	80C-E16		
	213 285 293	0.460 0.480	0.520 0.540	0.575 0.595	0.670 0.690	0.805 0.825	0.915 0.935	1.175 1.195		SILVER
	201 206 221FR 225 226 244 266 SS25UL	0.500 0.520	0.560 0.580	0.615 0.635	0.710 0.730	0.845 0.865	0.955 0.975	1.215 1.235		BLACK
81 Series	Die Part Number						80C-V12	80C-V16	80C-V20	
	811 811HT 881						1.155 1.175	1.450 1.470	1.740 1.760	SILVER
HY Series	Die Part Number	80C-H595				80C-H1015	80C-H1170	80C-H1365		
	801 836 611HT (-4 THRU -12)	0.575 0.595				0.995 1.015	1.140 1.160	1.350 1.370		SILVER
	Die Part Number			80C-H735	80C-H860					
	801 836 611HT			0.755 0.775	0.890 0.910					BLACK

Caution: Read the operations and technical manual before attempting to operate this machine. Do not operate this machine without guard in place. Keep hands clear of moving parts when operating machine.

Note: Stainless steel crimp diameters can be up to .010" greater than table listings.

Information on this decal is subject to change without notice. For the most current crimp specifications, please visit Crimpsource at www.parker.com/crimpsource. New decals can be ordered at Parker website https://parker.cp.imtco.com/Account/Login.

Decal Part Number:
85C-CRIMPDECAL REV. H

WARNING: This product can expose you to chemicals including Lead, 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.

Parkrimp 1

Features

- Now comes standard with KrimpNODE
  See page C-6 for more information on KrimpNODE™
- Compact bench mount design
- Engineered for optimal reliability, consistency, and durability
- All in one crimper and power unit design
- For use with 25, 26, 43, 81, and HY Series fittings

Specifications

- Dimensions: 26” wide, 20” deep, 25” high
- Weight: 275 lbs (with power unit)
- Rating: 30 ton force @ 3,000 psi maximum
- Full Cycle Time: 20 seconds
- Hydraulic Fluid: AW32 oil
- **Note:** Includes a 115/230 volt, 1 phase, 60 hertz power unit wired for 115V. This unit comes with a 20 AMP male plug and must be run on a dedicated 20 AMP circuit.

Standard Equipment

Part Number 80C-061	Description	Individual Part Number
●	Parkrimp 1 crimper with 115/230 volt, 1 phase, 60 Hz power unit wired for 115V	80C-181
●	Silver die ring	80C-R01
●	Black die ring	80C-R02

Capability

For use with 25, 26, 43, 81, and HY fittings.

1"	1 and 2 wire braided hose
5/8"	4 spiral hose
3/8"	Compact Spiral Hose

No Stainless Steel Fittings

Crimp Cycle Time: 15-20 seconds, depending on Pusher position. (1/2" 43 series straight fittings)

Note: Cycle times vary depending on hose, fitting styles and sizes.

This machine may require the use of the Molykote GN grease for larger hose and fittings. For best performance and longevity of crimper components, use the Molykote GN grease for all crimping.

This machine is designed to make about 200 crimps per day and is not designed for production use.Exceeding the suggested production amounts will significantly reduce the life expectancy of the machine components.

80C-061 Includes:

- Parkrimp 1 Crimper
- Die ring Silver
- Die ring Black
- No Dies - Order Separately

⚠ **WARNING:** This product can expose you to chemicals including Lead, 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.

Note:
- For crimp instructions, see pages C-19 and C-20.
- Hose assemblies must be inspected for cleanliness and free of all foreign particles.
- Parker Hannifin will not accept responsibility for the operation of, or provide warranty coverage for, a crimper that is operated by a power unit other than equipment supplied by Parker Hannifin for the express purpose of operating the crimper.

A B C D

Parker Hannifin Corporation
Hose Products Division
30240 Lakeland Blvd.
Wickliffe, Ohio 44092

Parkrimp 1
Hose Die Selection Chart

Fitting Series	HOSE	-4 RED	-5 PUR	-6 YEL	-8 BLU	-10 ORG	-12 GRN	-16 BLK	-20 WHT	Die Ring
43 Series	Die Part Number	80C-A04	80C-A05	80C-A06	80C-A08	80C-A10	80C-A12	80C-A16		
	GLOBALCORE 187/187ST/TC (-8 THRU -16) 387/387ST/TC 487/487ST/TC (-4 THRU -12) 787/787ST/TC (-4 & -6), 797/797ST/TC (-4 & -6)	0.645 0.665	0.710 0.730	0.825 0.845	0.945 0.965	1.060 1.080	1.245 1.265	1.590 1.610		SILVER
	351ST/TC 422 426 431 436 451ST/TC 471ST/TC 472LT 482ST/TC 777/777ST/TC (-6 &-10)									
	GLOBALCORE 722/722ST/TC (-6 THRU -10)	0.685 0.705	0.750 0.770	0.865 0.885	0.985 1.005	1.100 1.120	1.285 1.305	1.630 1.650		BLACK
	421WC 302 722LT (-6 THRU -10) 881									
25 Series	Die Part Number			80C-Y06	80C-Y08					
	271			0.680 0.700	0.825 0.845					SILVER
26 Series	Die Part Number	80C-E04	80C-E05	80C-E06	80C-E08	80C-E10	80C-E12	80C-E16		
	213 285 (-4, -6, -10) 293	0.460 0.480	0.520 0.540	0.575 0.595	0.670 0.690	0.805 0.825	0.915 0.935	1.175 1.195		SILVER
	201 206 221FR 225 226 244 266 SS25UL 285 (-8 & -12)	0.500 0.520	0.560 0.580	0.615 0.635	0.710 0.730	0.845 0.865	0.955 0.975	1.215 1.235		BLACK
81 Series	Die Part Number						80C-V12	80C-V16	80C-V20	
	811 811HT 881						1.155 1.175	1.450 1.470	1.740 1.760	SILVER
HY Series	Die Part Number	80C-H595		80C-H735	80C-H860	80C-H1015	80C-H1170			
	801 836 611HT (-4 THRU -12)	0.575 0.595				0.995 1.015	1.140 1.160	1.350 1.370		SILVER
	Die Part Number			80C-H735	80C-H860					
	801 836 611HT			0.755 0.775	0.890 0.910					BLACK

Caution: Read the operations and technical manual before attempting to operate this machine. Do not operate this machine without guard in place. Keep hands clear of moving parts when operating machine.

Note: Do not use this machine to assemble stainless steel fittings.

Information on this decal is subject to change without notice. For the most current crimp specifications, please visit Crimpsource at www.parker.com/crimpsource. New decals can be ordered at Parker website https://parker.cp.imtco.com/Account/Login.

Decal Part Number:
82C-CRIMPDECAL
REV. K

WARNING: This product can expose you to chemicals including Lead, 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.

Parkrimp 2

view on web page

Capability

- Up to 2” ID 2 wire braided hose
- Up to 2” ID 4/6 wire spiral hose*

Features

- Now comes standard with KrimpNODE
  See page C-6 for more information on KrimpNODE™
- Easy to use vertical design
- Crimps full range of Parker hoses from 1/4” through 2” I.D.*
- Crimps both steel and stainless steel fittings*
- For use with 25, 26, 43, 70, 71, 76, 77, 79, 81 and HY Series fittings

Specifications

- Dimensions: 31” wide, 24” deep, 77” high
- Weight: 842 lbs (Head is 558 lbs and base is 284 lbs)
- Rating: 125 ton force @ 5,000 psi maximum
- Full Stroke Cycle Time: 30 seconds without adapter bowl, 20 seconds with adapter bowl
- Hydraulic oil: Enerpac oil

Standard Equipment

Part Number		Description	Individual Part Number
83C-081	83C-082		
●	●	Parkrimp 2 Crimper Head Assembly	83C-080
●		Parkrimp 2 Stand Assembly with 230/460 volt, 3 phase, 50/60 Hz power unit (wired for 230 volt)	83C-S40
	●	Parkrimp 2 Stand Assembly with 230 volt, 1 phase, 50/60 Hz power unit	83C-S20
●	●	Adapter Bowl	83C-OCB
●	●	Spacer Ring	83C-R02
●	●	Spacer Plate	83C-R02H

*Can crimp 77 Series stainless steel fittings up to 1-1/2”

Optional Tooling

- Die Kit PK2-KDA (Includes 43 Series dies in sizes 1/4”, 3/8”, 1/2”, 3/4”, 1”, 1-1/4” and 77 Series dies in sizes 1/2”, 5/8”, 3/4”, 1”, 1-1/4”, 1-1/2” and 2” only)
- Die Kit 77K-KDA (Includes 77 Series dies in sizes 1/2”, 5/8”, 3/4”, 1”, 1-1/4”, 1-1/2” and 2” only)

WARNING: This product can expose you to chemicals including Lead, 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.

A B C D

Parker Hannifin Corporation
Hose Products Division
30240 Lakeland Blvd.
Wickliffe, Ohio 44092

Parkrimp 2
Hose Die Selection Chart

Fitting Series	HOSE	-4 RED	-5 PUR	-6 YEL	-8 BLU	-10 ORG	-12 GRN	-16 BLK	-20 WHT	-24 RED	-32 GRN
43 Series	Die Part Number	80C-A04	80C-A05	80C-A06	80C-A08	80C-A10	80C-A12	80C-A16 83C-A16H	80C-A20 83C-A20H	83C-A24	83C-A32
	GLOBAL ONE 187/187ST/TC (-8 THRU -32) 387/387ST/TC (-4 THRU -16) 487/487ST/TC (-4 THRU -12) 787/787ST/TC (-4 AND -6) 797/797ST/TC (-4 AND -6) 351ST/TC 422 426 431 436 451ST/TC 471ST/TC, 472TC/LT, 482ST/TC, 777/777ST/TC (-6 THRU -16)	0.645 0.665	0.710 0.730	0.825 0.845	0.945 0.965	1.060 1.080	1.245 1.265	1.590 1.610	1.970 1.990	2.290 2.310	2.735 2.755
	Tooling Required										
	GLOBAL ONE 387/387ST/TC (-20 ONLY) 487/487ST/TC (-16 ONLY) 722/722ST/TC (-6 THRU -16) 302 421WC 722LT (-6 THRU -20) 722ST/TC (-20 ONLY) 881	0.685 0.705	0.750 0.770	0.865 0.885	0.985 1.005	1.100 1.120	1.285 1.305	1.630 1.650	2.010 2.030	2.330 2.350	2.775 2.795
	Tooling Required										
	NOTES	Crimp Diameter range for 722/722LT/ST/TC Size -16 is 1.630/1.660. Crimp Diameter range for 722/722LT/ST/TC Size -20 is 2.010/2.040.									
71 Series	Die Part Number			83C-D06	83C-D08	83C-D10	83C-D12	83C-D16 83C-D16H	83C-D20 83C-D20H	83C-D24	83C-D32
	721/721ST/TC 722/722ST/TC/LT (-24 AND -32 ONLY)			0.950 0.970	1.100 1.120	1.220 1.240	1.355 1.375	1.695 1.715	2.025 2.045	2.290 2.310	2.775 2.795
	Tooling Required										
77 Series	Die Part Number				80C-CS08	80C-CS10	80C-CS12	83C-CS16	83C-CS20	83C-CS24	83C-CS32
	GLOBAL ONE 387/387ST/TC (-20 THRU -32) 787/787ST/TC 487/487ST/TC (-20 THRU -32) 797/797ST/TC				0.930 0.950	1.057 1.077	1.245 1.265	1.541 1.561	1.970 1.990	2.320 2.340	2.865 2.885
	Tooling Required										
	NOTES	Crimp Diameter range for 387/387ST/TC Size -32 is 2.860/2.885. 77 SERIES SIZE -32 STAINLESS STEEL FITTINGS CAN NOT BE CRIMPED ON THIS MACHINE.									
25 Series	Die Part Number			80C-Y06	80C-Y08						
	271			0.680 0.700	0.825 0.845						
	Tooling Required										
26 Series	Die Part Number	80C-E04	80C-E05	80C-E06	80C-E08	80C-E10	80C-E12	80C-E16	83C-E20	83C-E24	83C-E32
	213 285 (-4, -6, -10) 293	0.460 0.480	0.520 0.540	0.575 0.595	0.670 0.690	0.805 0.825	0.915 0.935	1.175 1.195	1.420 1.440	1.670 1.690	2.160 2.180
	Tooling Required										
	201 225 266 206 226 SS25UL 221FR 244 285 (-8 & -12)	0.500 0.520	0.560 0.580	0.615 0.635	0.710 0.730	0.845 0.865	0.955 0.975	1.215 1.235	1.460 1.480	1.710 1.730	2.200 2.220
	Tooling Required										
81 Series	Die Part Number						80C-V12	80C-V16	80C-V20	83C-V24	83C-V32
	811 811HT 881						1.155 1.175	1.450 1.470	1.740 1.760	2.010 2.030	2.430 2.450
	Tooling Required										
HY Series	Die Part Number	80C-H595				80C-H1015	80C-H1170	80C-H1365			
	801 836 611HT (-4 THRU -12)	0.575 0.595				0.995 1.015	1.140 1.160	1.350 1.370			
	Tooling Required										
	Die Part Number			80C-H735	80C-H860						
	801 836 611HT			0.755 0.765	0.890 0.910						
	Tooling Required										

Caution: Read the operations and technical manual before attempting to operate this machine. Do not operate this machine without guard in place. Keep hands clear of moving parts when operating machine.

Note: Stainless steel crimp diameters may be up to 0.010" greater than table listings. Do not use lubricant to assemble spiral hose and fittings.

- 83C-R12 Split Die ring is used for all crimping operations
- 80C-xxx/83C-xxx small dies and 83C-OCB adapter bowl used on sizes 4 thru -20
- 83C-R02 Spacer Ring used with adapter bowl when called out above
- 83C-xxx Large dies used on sizes -16 thru -32
- 83C-R02H Spacer Plate used when called out above

Information on this decal is subject to change without notice. For the most current crimp specfications, please visit Crimpsource at www.parker.com/crimpsource. New decals can be ordered at Parker website https://parker.cp.imtco.com/Account/Login.

Decal Part Number:
83C-CRIMPDECAL REV. L

WARNING: This product can expose you to chemicals including Lead, 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.

Minikrimp

MiniKrimp™ is an all-in-one unit delivering the performance of a full-sized crimper. With no additional power source required for operation and a built-in carry handle, the MiniKrimp is easy to transport to remote locations and is ready to go at a moments notice.

Minikrimp - Hand Pump

Minikrimp - Air Over Hydraulic

Capability

- Up to 1” ID 2 wire braided hose
- Only steel fittings

Features

- Portable and lightweight crimper
- Generates 30 tons of force
- Easy set-up and operation
- Reduces inventory and saves time, leading to substantial cost savings
- No gauges to set – exclusive Parkalign feature positions the fitting correctly in the die set every time
- Available in adjustable Hand Pump or Air Over Hydraulic models
- Stand and/or mounting accessories available

Specifications

MiniKrimp™ - Hand Pump 94C-001-PFD
(Comes assembled and ready to use)

- Dimensions: 6” wide, 13” deep, 15” high
- Weight: 42 lbs (with hand pump)
- Rating: 30 ton force @ 10,000 psi maximum
- Full Cycle Time: 30 seconds

MiniKrimp™ - Air Over Hydraulic Model 94C-002-PFD
(Comes assembled and ready to use)

- Dimensions: 6” wide, 12” deep, 15” high
- Weight: 45 lbs (with air/hydraulic pump)
- Rating: 30 ton force @ 10,000 psi maximum
- Full Cycle Time: 30 seconds

Standard Equipment

MiniKrimp - Hand Pump

Part Number	Description	Individual Part Number
94C-001-PFD	Crimper (Base)	94C-080-PFD
	Hand Pump	015301
	Silver Die Ring	82C-R01-PFD

MiniKrimp - Air Over Hydraulic

Part Number	Description	Individual Part Number
94C-002-PFD	Crimper (Base)	94C-080-PFD
	Air/Hydraulic Pump	025399
	Silver Die Ring	82C-R01-PFD

Additional Components

- Black Die Ring - 82C-R02-PFD
- Table Mount - 015306
- Upright Vise - Mount 015307
- Side Vise Mount - 015736
- Folding Stand - 94C-MKS

WARNING: This product can expose you to chemicals including Lead, 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.

A

B

C

D

Parker Hannifin Corporation
Hose Products Division
30240 Lakeland Blvd.
Wickliffe, Ohio 44092

Minikrimp
Hose Die Selection Chart

Fitting Series	HOSE	-4 RED	-6 YEL	-8 BLU	-10 ORG	-12 GRN	-16 BLK	Die Ring
43 Series	Die Part Number	80C-A04	80C-A06	80C-A08	80C-A10	80C-A12	80C-A16	
	AG2R (-4 thru -16) 387/387TC/ST (-4 thru -12) 487/487TC/ST (-4 thru -12) 787/787TC/ST (-4 thru -6) 797/797TC/ST (-4 thru -6)	0.645 0.665	0.825 0.845	0.945 0.965	1.060 1.080	1.245 1.265	1.590 1.610	SILVER
	Tooling Required							
	722/722TC/ST (-6 through -10)		0.865 0.885	0.985 1.005	1.100 1.120			BLACK
	Tooling Required							
	Die Part Number	80C-P0660	80C-P06H	80C-P0945				
	HR2CR (-4 only) HR2C (-6 through -8)	0.650 0.670	0.785 0.805	0.935 0.955				SILVER
	Tooling Required							
	Die Part Number		80C-R0825	80C-A08	80C-A10	80C-A12		
	HTBR (-6 through -12)		0.815 0.835	0.945 0.965	1.060 1.080	1.245 1.265		SILVER
	Tooling Required							
HY Series	Die Part Number		80C-P735H	80C-P0870				
	HR2C (-6 through -8)		0.725 0.745	0.860 0.860				SILVER
	Tooling Required							

Caution: Read the operations and technical manual before attempting to operate this machine. Do not operate this machine without guard in place. Keep hands clear of moving parts when operating machines. The complete Parker safety guide can be viewed by going to www.parker.com/safety

Note: Do not use this machine to assemble stainless steel fittings.

Information on this decal is subject to change without notice. For the most current crimp specfications, please visit Crimpsource at www.parker.com/crimpsource. New decals can be ordered at Parker website https://parker.cp.imtco.com/Account/Login.

Decal Part Number:
94C-PIONEER_CRIMPDECAL REV A

WARNING: This product can expose you to chemicals including Lead, 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.

Hand Pump*
Part No. 82C-0HP

(for use with the Minikrimp, Karrykrimp and Karrykrimp 2)
Ease of operation hand pump delivers 10,000 psi

Length:	23”
Width:	4”
Height:	5”
Port Size:	3/8” NPTF
Weight:	9 lbs
Hydraulic Fluid:	Enerpac oil

Hand Pump*
Part No. 85C-0HP

(for use with the Minikrimp, Karrykrimp and Karrykrimp 2)
Ease of operation hand pump delivers 10,000 psi

Length:	29”
Width:	13”
Height:	11”
Port Size:	3/8” NPTF
Weight:	61 lbs
Hydraulic Fluid:	Enerpac oil

Electric Pump*
Part No. 82C-0EP

(for use with the Minikrimp, Karrykrimp and Karrykrimp 2)
Ease of operation electric pump delivers 10,000 psi

Length:	13”
Width:	13”
Height:	15”
Port Size:	3/8” NPTF
Weight:	31 lbs
Hydraulic Fluid:	Enerpac oil
Power Source:	115 volt, 1 phase, 50/60 Hz, 9 amp

Electric Pump*
Part No. 85C-0EP

(for use with the Minikrimp, Karrykrimp and Karrykrimp 2)
Heavy duty electric pump delivers 10,000 psi at a faster cycle time

Length:	19”
Width:	11”
Height:	17”
Port Size:	3/8” NPTF
Weight:	59 lbs
Hydraulic Fluid:	Enerpac oil
Power Source:	115 volt, 1 phase, 50/60 Hz, 20 amp

Air/Hydraulic Pump*
Part No. 82C-0AP

(for use with the Minikrimp, Karrykrimp and Karrykrimp 2)
Lightweight pump operates with 80-110 psi shop air pressure and delivers 10,000 psi

Length:	15”
Width:	6”
Height:	6”
Intake Port Size:	1/4” NPTF
Output Port Size:	3/8” NPTF
Weight:	14 lbs
Hydraulic Fluid:	Enerpac oil

WARNING: *This product can expose you to chemicals including Lead, 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.

Enerpac Warranty Statement
Enerpac products are warranted to be free of defects in materials and workmanship. Any product that does not conform to specification will be repaired or replaced at Enerpac's expense, anywhere in the world; simple as that! This warranty does not cover ordinary wear and tear, abuse, misuse, alterations, or the use of improper fluids. Determination of the authenticity of a warranty claim will be made only by Enerpac or its Authorized Service Centers.

A

B

C

D

www.parker.com/crimpsource

Crimpsource is the industry's most complete resource for crimper technical information. It contains all of the crimp specifications approved for Parker's rubber, industrial and thermoplastic hose:

- Crimp specs
- PDFs of technical manuals for easy downloading
- Parts lists
- Troubleshooting advice
- PDFs of crimper decals for immediate printing

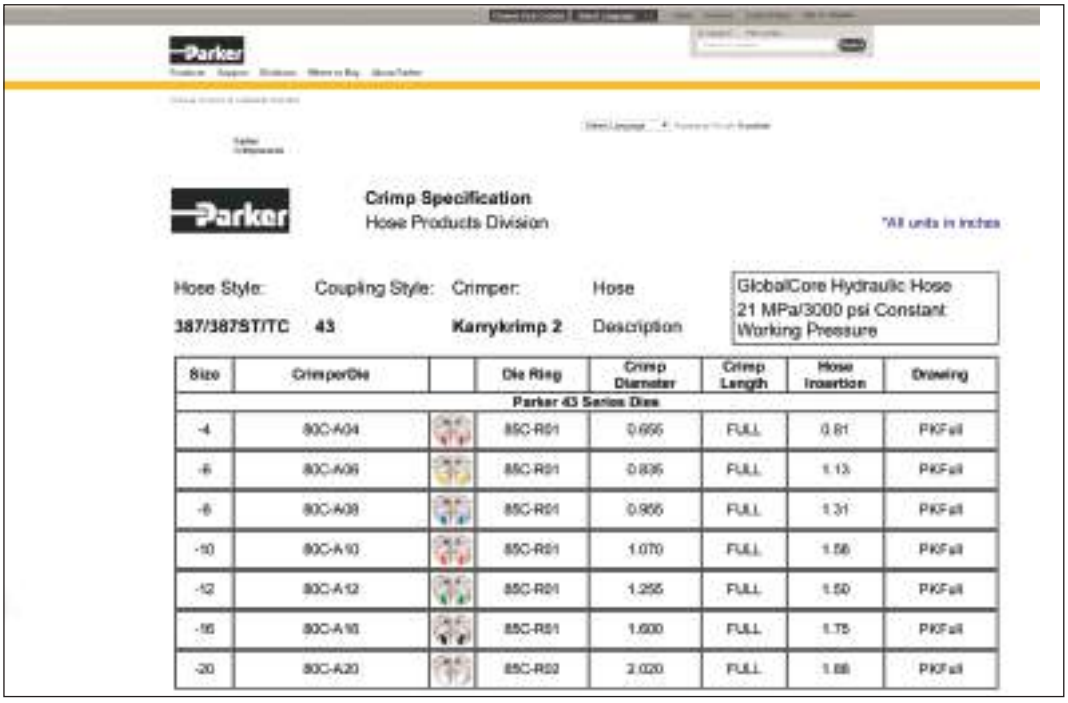
Crimpsource provides easy access to all the specifications necessary to correctly fabricate a factory quality hose assembly.

A series of dropdown menus enables users to find what they need quickly and easily.

Choose your crimper, and then select the hose, fittings and current specifications needed to make hose assemblies.

You can also print a simple-to-follow data specification sheet or crimper decal.

Crimpsource Home Page



Parker

Crimp Specification
Hose Products Division

*All units in inches

Hose Style:	Coupling Style:	Crimper:	Hose
387/387ST/TC	43	Kennykrimp 2	Description

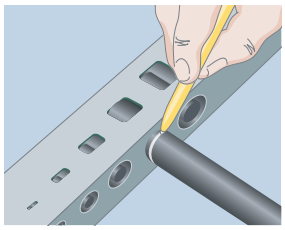
GlobalCore Hydraulic Hose
21 MPa/3000 psi Constant Working Pressure

Size	CrimperDie		Die Ring	Crimp Diameter	Crimp Length	Hose Insertion	Drawing
Parker 43 Series Dies							
-4	80C-A04		85C-R01	0.695	FULL	0.81	PKFull
-6	80C-A06		85C-R01	0.835	FULL	1.13	PKFull
-8	80C-A08		85C-R01	0.955	FULL	1.31	PKFull
-10	80C-A10		85C-R01	1.070	FULL	1.56	PKFull
-12	80C-A12		85C-R01	1.255	FULL	1.50	PKFull
-16	80C-A16		85C-R01	1.600	FULL	1.75	PKFull
-20	80C-A20		85C-R02	2.020	FULL	1.88	PKFull

Crimping using Minikrimp, Karrykrimp 2 and Karrykrimp 2 Bench Mount

Parkrimp Fittings Series 25, 26, 43, 70, 71, 77, 81, HY

1 Mark insertion depth and push on fitting



Mark the hose insertion depth and push hose into fitting until the mark on the hose is even with the end of the shell. Lubricate hose if necessary, however, **DO NOT lubricate if using spiral hose.** See Hose Insertion Depth table below.

For 81 Series Shells with 88 Series Fittings

Place shell onto end of hose and make sure the end of the shell lines up with the Insertion Depth mark.

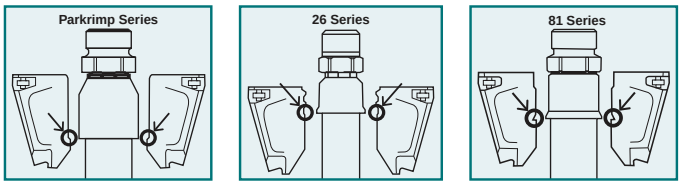
Push hose onto the 88 Series fitting until the shell bottoms against the fitting's stop ring or hex. Lubricate hose if necessary.

2 Insert unitized die train

Pull pin at the top of pusher to swing it back. Place unitized die-train into base plate. See decal on crimper for proper die set.

Important:
Lubricate the crimper's die bowl using a premium quality lithium-base grease.

3 Position the fitting



Position the hose and fitting in dies from below.
Rest bottom of coupling on die step using the PARKALIGN® feature.

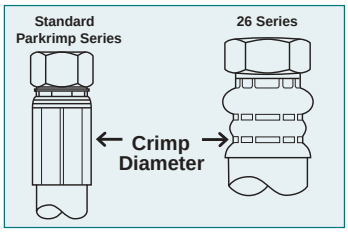
4 Place die ring and crimp

Place correct die ring on top of the dies. See decal on crimper for proper die ring.

Position pusher by replacing the pin and operate pump until the die ring bottoms out. Release pressure within the pump — remove finished assembly.

Note: Minikrimp, Karrykrimp & Karrykrimp 2 have several types of power sources, all of which are separate units from the crimping machine.

5 Measure crimp diameter



Measure crimp diameter on the flat surfaces of the crimped shell, referenced in the illustration to the left. Reference decal on crimper for crimp diameters. Never use hose assemblies with incorrect crimp diameters.

Important: Hose assemblies must be inspected for cleanliness and free of all foreign particles.

Hose insertion depths

Fitting Size	Fitting Series																	
	25		26		43		70		71		77		79		81		HY	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
-4	-	-	0.81	21	0.81	21	-	-	-	-	-	-	-	-	-	-	1.38	35
-5	-	-	0.81	21	0.94	24	-	-	-	-	-	-	-	-	-	-	1.41	36
-6	0.88	22	0.81	21	1.13	29	1.06	27	1.06	27	-	-	-	-	-	-	1.35	34
-8	0.88	22	0.81	21	1.31	33	1.31	33	1.25	32	1.36	34,6	-	-	-	-	1.44	37
-10	-	-	0.88	22	1.56	40	1.38	35	1.31	33	1.53	38,9	-	-	-	-	1.46	37
-12	-	-	0.88	22	1.50	38	1.50	38	1.44	37	1.78	45,2	2.18	56	1.12	29	1.55	39
-16	-	-	1.00	25	1.75	44	1.81	46	1.75	44	2.13	54,1	2.31	59	1.25	32	1.69	43
-20	-	-	1.00	25	1.88	48	1.75	44	1.81	46	2.51	63,8	2.81	71	1.31	33	-	-
-24	-	-	1.06	27	1.44	37	-	-	2.31	59	2.67	67,7	-	-	1.31	33	-	-
-32	-	-	1.25	32	1.81	46	-	-	2.44	62	3.05	77,5	-	-	1.69	43	-	-

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

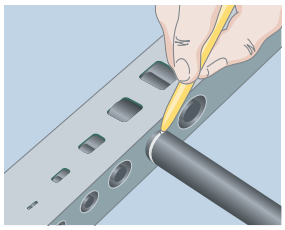
C

D

Crimping using Parkrimp 2

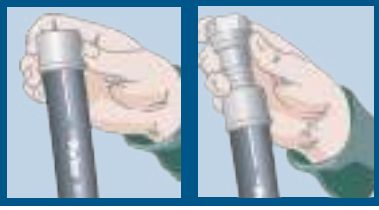
Parkrimp Fittings Series 25, 26, 43, 70, 71, 77, 81, HY

1 Mark insertion depth and push on fitting



Mark the hose insertion depth and push hose into fitting until the mark on the hose is even with the end of the shell. Lubricate hose if necessary, however, **DO NOT lubricate if using spiral hose.** See Hose Insertion Depth table on previous page.

For 81 Series Shells with 88 Series Fittings

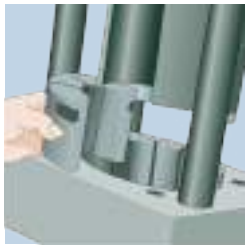


Place 81 Series Shell onto end of hose and make sure the end of the shell lines up with the Insertion Depth mark.

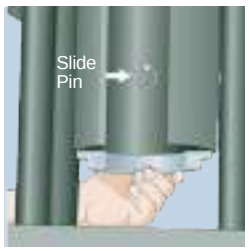
Push hose onto the 88 Series fitting until the shell bottoms against the fitting's stop ring or hex. Lubricate hose if necessary.

2a If using large two-piece dies

Insert the proper die set into the die bowl. (The die sets are in two halves of four dies each. Place one half in the back and one half in the front to accommodate bent tube fittings.) Reference decal on crimper for proper tool selection.

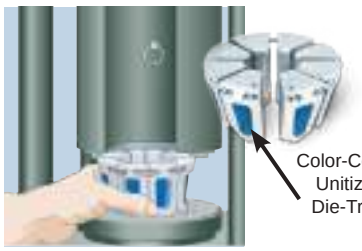


2b If using small unitized dies



With the pusher in the full up position, lift the back half of the split die ring. Lock it in the up position by pushing the slide pin in. (The slide pin is located inside the pusher at the back.)

Lubricate die bowl using a premium quality lithium-base grease. Carefully insert the adapter bowl, 83C-OCB, into the base bowl. The adapter bowl must be tilted toward the back of the crimper during insertion.



Lubricate die bowl using a premium quality lithium-base grease. Place unitized die-train into the adapter bowl. Select die and die ring by hose size and type. See decal on crimper for proper die set.

Note: Die sets have color-coded cavities indicating size and have the fitting series and dash size stamped on the top.

3 Place spacer ring

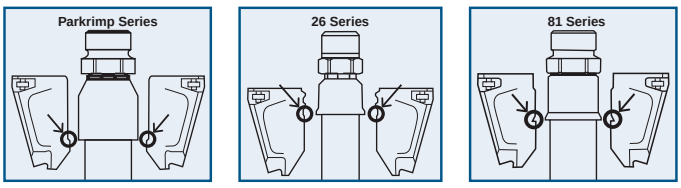
If required, place spacer ring on locating step of adapter bowl. Reference decal on crimper for tool selection.

4 Position the split die ring

Lower the back half of the split die ring onto the dies by pulling the slide pin forward.

Insert the front half of the split die ring aligning the pins in the back half with the hole in the front half.

5 Position the fitting



Position the hose and fitting in dies from below.

Rest bottom of coupling on die step using the PARKALIGN® feature.

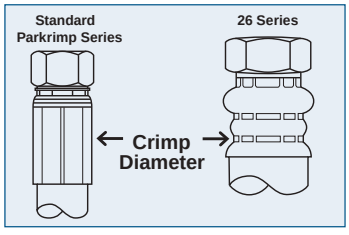
6 Crimp hose

Turn on the pump by pressing the "ON" switch. Pull the valve handle forward to bring the pusher down for crimping. When the split die ring contacts the base plate, the crimp is complete. Push the valve handle back to lift the pusher, open the dies, and release the finished assembly.

Note: You do not have to remove any tooling to insert or remove straight fittings. The front half of the split die ring and the front die train must be removed to insert and remove bent tube fittings.

7 Measure crimp diameter

Measure crimp diameter on the flat surfaces of the crimped shell, referenced in the illustration to the right. Reference decal on crimper for crimp diameters. Never use hose assemblies with incorrect crimp diameters.



Important: Hose assemblies must be inspected for cleanliness and free of all foreign particles.

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

Assembling Twin Tough Rubber Hose

Required Equipment:

Twin Tough hose, fittings, knife, tape measure, heat shrink sleeve, scissors, grease pencil, heat gun, and calipers.

Set-up:

Position the bonded rubber hose so that it lies flat on a work surface without tendency to twist or turn.

Measure hose tear back length:

Measure and mark the length that the hoses are to be separated. A minimum of 12 inches is required for crimping the hose ends. A 24 inch tear back is recommended for use with hydraulic tools.

Note: If length of separation/tear back is specified from the threaded or swivel nut end of the coupling, then deduct the cut off allowance dimension for the specific style of coupling used. The cutoff allowance can be obtained from the hose fitting tables in the 4400 Catalog “B” dimension, or can be calculated by subtracting the insertion depth of the shell from the overall coupling length.

Cut hose tear back to length:

Press the bonded hose assembly firmly and flat against the work surface with your free hand so that it does not move.

A.) Using a sharp blade, pierce the center of the valley (web) formed by the hoses.

B.) To start the cut, place the blade in the center of that valley (web) drawing the knife with constant pressure.

C.) Once you have a 1 to 2 inch starter cut, firmly pull each hose end apart to your required separation length.

Note: It is important that the knife blade be perpendicular to the hose during this procedure so the blade cuts only the centerline of the valley (web). EXTREME CARE MUST BE TAKEN TO AVOID CUTTING THROUGH THE COVER OF THE HOSES AND THEREBY EXPOSING THE HOSE REINFORCEMENT. If this occurs, the hose assembly must be discarded.

A

B

C

D

Measure Separation: It is suggested that the separation length be at least 12 inches, so the crimping operation can be accomplished without risk of kinking the hoses.

Stopping Separation: Parker recommends installing a heat shrink sleeve of at least 2 inches in length at the termination of the separated hose to provide protection against tearing of the valley (web) or hose covers. This heat shrink sleeve should be placed on the hose assembly prior to the crimping of the hose fittings. Once you have your heat shrink sleeve in place, use a heat gun to shrink the sleeve in place.

Note: EXTREME CARE MUST BE TAKEN TO AVOID EXPOSING THE HOSE ASSEMBLY TO THE DIRECT HIGH TEMPERATURES OF THE HEAT GUN WHILE INSTALLING THE HEAT SHRINK SLEEVE. LONG EXPOSURE FROM A HEAT GUN MAY ADVERSELY AFFECT THE HOSE INNER TUBE OR ITS COVER.

Crimping Fittings: All of your crimping information can be found on Crimpsource (www.parker.com/crimpsource).

First, place your fittings onto each hose end making sure that both have been installed to the correct hose insertion depth. Choose the correct die and die rings. Place half of your hose assembly through the bottom of your Parkrimp crimper. Rest the bottom of the fitting on the die step using the Parkalign system. While lightly holding the hose assembly, operate your crimper pump so that the pusher on the crimper comes down in contact with the die ring until it bottoms out on the crimper base. Then release the pressure within the pump and remove the first half of your finished assembly. Always measure your hose assemblies for the correct crimp diameter. Now, repeat the crimping process on the other fitting.

Note: EXTREME CARE MUST BE TAKEN TO AVOID KINKING THE HOSE THAT IS NOT BEING CRIMPED DURING THIS PROCESS.

Hose Cut-Off Machine
Part No. 86C-220V

Features
- Engineered for workshop, retail, or production use
- Cuts hoses with less friction, no heat, and less debris
- Vacuum port eliminates any very small amount of smoke or debris created
- Comes standard with a Parker branded advanced scallop blade
- Cuts wire reinforced hoses including 6 heavy wire constructions up to 2” ID

Specifications
- Dimensions: 27” wide X 16.5” long X 24” high (when handle is at the highest point)
- Shipping Weight: 108 lbs

Standard Equipment

view on web page

Part Number 86C-220V	Description	Individual Part Number
●	Hose cut off machine with 220V single phase motor	
●	Parker branded advanced scallop blade- 10” OD x .125 THK X 40 mm arbor	HYD10X125X40

WARNING: This product can expose you to chemicals including Lead, 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.

Hose Cut-Off Machine
Part No. 86C-220V3

Features
- Engineered for workshop, retail, or production use
- Cuts hoses with less friction, no heat, and less debris
- Vacuum port eliminates any very small amount of smoke or debris created
- Comes standard with a Parker branded advanced scallop blade
- Cuts wire reinforced hoses including 6 heavy wire constructions up to 2” ID

Specifications
- Dimensions: 27” wide X 16.5” long X 24” high (when handle is at the highest point)
- Shipping Weight: 108 lbs

Standard Equipment

view on web page

Part Number 86C-220V3	Description	Individual Part Number
●	Hose cut off machine with 220V three phase motor	
●	Parker branded advanced scallop blade- 10” OD x .125 THK X 40 mm arbor	HYD10X125X40

WARNING: This product can expose you to chemicals including Lead, 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.

Hose Cut-Off Machine
Part No. TH3-EM3-110V

Features
- Engineered for workshop or production use
- Comes with a vacuum port to remove smoke and debris while cutting
- Comes standard with a diamond-coated cutting blade
- Cuts wire reinforced hoses including 6 heavy spiral constructions up to 1 1/4” I.D.

Specifications
- Dimensions: 17” wide, 21” long and 12” high
- Shipping Weight: 95 lbs.

Standard Equipment

view on web page

Part Number TH3-EM3-110V	Description	Individual Part Number
●	Hose cut-off machine with 110V single phase motor	
●	Industrial diamond coated cutting blade	TM-V
	Cutting blade with inclined slots	TM-G
	Flat cutting blade	TM-F

WARNING: This product can expose you to chemicals including Lead, 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.

A

B

C

D

Premium Hose Cleaning Kit

view on web page

Part No. TH6-10-HL-10-2 (10 Nozzle Kit)

Features

- Capable of cleaning 1/4” through 2” hose, tube or pipe
- The launcher is supplied with a Full-Flow Quick Release Coupling and unique 360° Rotary Plug for proper air flow and non-fatigue operator use
- Unique Safety Release Bar that locks the faceplate into a closed position for firing Ultra Clean projectiles

Nozzles Included in Kits

End Type	Size	Nozzle Part Number*	Projectile Part Number†	Projectile Quantity†
Hose	1/4”	TH6-10-H06	TH6-10-P10	100
Hose	5/16”	TH6-10-H08	TH6-10-P12	100
Hose	3/8”	TH6-10-H10	TH6-10-P14	100
Hose	1/2”	TH6-10-H13	TH6-10-P18	100
Hose	5/8”	TH6-10-H16	TH6-10-P22	50
Hose	3/4”	TH6-10-H19	TH6-10-P26	50
Hose	1”	TH6-10-H25	TH6-10-P33	40
Hose	1-1/4”	TH6-10-H32	TH6-10-P40	30
Hose	1-1/2”	TH6-10-H38	TH6-10-P50	20
Hose	2”	TH6-10-H50	TH6-10-P60	15

*Nozzles are not available individually

†Projectiles sold separately

Additional Available Nozzles

End Type	Size	Nozzle Part Number	Projectile Part Number†	Projectile Quantity†
JIC	1/4”	TH6-10-J06	TH6-10-P06	100
JIC	3/8”	TH6-10-J10	TH6-10-P12	100
JIC	1/2”	TH6-10-J13	TH6-10-P16	100
JIC	5/8”	TH6-10-J16	TH6-10-P22	50
JIC	3/4”	TH6-10-J19	TH6-10-P26	50
JIC	1”	TH6-10-J25	TH6-10-P33	40
JIC	1-1/4”	TH6-10-J32	TH6-10-P40	30
JIC	1-1/2”	TH6-10-J38	TH6-10-P50	20
JIC	2”	-	TH6-10-P60	15

†Projectiles sold separately

Economy Hose Cleaning Kit

view on web page

Part No. TH6-10-EL-8 (8 Nozzle Kit)

Features

- Capable of cleaning 1/4” through 1-1/4” hose, tube or pipe
- Has a quarter-turn locking ring for easy nozzle change and projectile loading
- The launcher is constructed of durable brass and aluminum internals, strong plastic handle, and anodized aluminum firing head and locking ring.
- Ideal for mobile and job site applications because of its size and portability

Air Requirements

- 80 PSI (5.5 Bar) minimum to 110 PSI (7.5 Bar) maximum
- 1/2” I.D. air hose
- 5 micron filter and regulator with gauge are strongly suggested
- Requires a 1/2” I.D. air hose with 80 PSI (minimum) / 110 PSI (maximum), and it is strongly recommended that you use a 5 micron filter and regulator with a gauge.

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

Parker Clean Seal

Parker's Clean Seal cap is a simple, easy and clean alternative to cap your hose and fitting assemblies. The Clean Seal cap enables a secure fit due to an easy to use heat shrink system. Reduce your cap complexity as one Clean Seal cap will seal multiple end configurations and sizes, eliminating many unique traditional caps.

The Clean Seal process utilizes heat shrink technology to cover the end of a hose assembly. The heat shrink technology eliminates problems due to re-contamination issues. When traditional caps and plugs are forced onto assemblies, plastic debris and particles shred off into your hose, ultimately causing re-contamination.

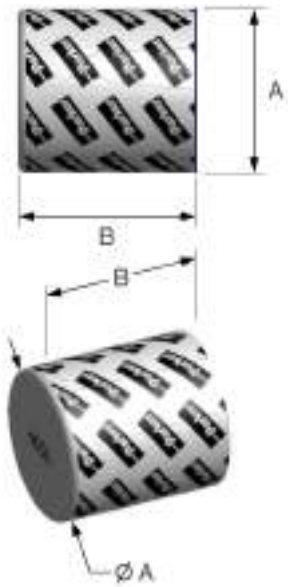
Product Features:

- For use on fittings up to -24 (1-1/2")
- Fits straight and elbow fittings
- Easy pull tab removal
- Reduced environmental impact compared to traditional caps
  - Less plastic used
  - More crushable
- Multiple hoses can be capped at one time

view on web page

Cap Part Numbers

Packaged		Bulk		Sizing	
Parker P/N (Package)	Package Quantity	Parker P/N (Bulk)	Bulk Quantity	Hex Sizes Covered (in mm)	Hex Sizes Covered (in inches)
PCS-2023P	810	PCS-2023B	23,400	12mm to 18mm	.47" to .71"
PCS-2030P	810	PCS-2030B	23,400	12mm to 18mm	.47" to .71"
PCS-2224P	810	PCS-2224B	23,500	16mm to 21mm	.63" to .83"
PCS-2527P	800	PCS-2527B	17,600	18mm to 23mm	.71" to .91"
PCS-2540P	800	PCS-2540B	17,600	18mm to 23mm	.71" to .91"
PCS-2840P	720	PCS-2840B	15,200	22mm to 26mm	.87" to 1.02"
PCS-3133P	640	PCS-3133B	12,240	24mm to 29mm	.94" to 1.14"
PCS-3140P	640	PCS-3140B	12,240	24mm to 29mm	.94" to 1.14"
PCS-3440P	640	PCS-3440B	10,240	27mm to 32mm	1.07" to 1.26"
PCS-3840P	560	PCS-3840B	7,800	30mm to 36mm	1.09" to 1.42"
PCS-4345P	480	PCS-4345B	6,240	32mm to 41mm	1.26" to 1.61"
PCS-4650P	480	PCS-4650B	5,760	34mm to 44mm	1.34" to 1.73"
PCS-5260P	400	PCS-5260B	4,400	41mm to 50mm	1.62" to 1.97"
PCS-5860P	400	PCS-5860B	3,600	49mm to 56mm	1.93" to 2.20"
PCS-6760P	320	PCS-6760B	2,560	55mm to 65mm	2.16" to 2.56"



PCS-4650B

"A" "B" B=Bulk P=Package

"A" and "B" dimensions in mm. Shorter length capsules recommended for elbow/bent fittings.

Equipment Part Numbers

UC-CSS-230V	UC-HL1910E	UC-HG-STAND	UC-1.5HD
Production Heat Shrink machine with timer 	Electric heat gun with case 	Flex vacuum pumpstand for heat gun 	95mm diffuser for 1-1/2" heat gun connection 

A B C D

Hose Cut-Off Tool - Handykut

Part No. 871522

view on web page

Features

- Portable tool for efficient cutting of hose
- Can be positioned onto a flat surface by clamps or by locking it in a vise, properly align the hose in a radius and cut it with a hacksaw

Specifications

- Dimensions: 6” wide x 18” long x 6” high
- Shipping Weight: 10 lbs.

Push-Lok Cut-Off & Assembly Tool

Part No. 881540

view on web page

Features

- Combined hose cutter and toggle action press that cuts and assembles Parker Push-Lok in sizes 1/4” through 3/4” I.D.

Specifications

- Dimensions: 16” long
- Shipping Weight: 4 lbs.

WARNING: This product can expose you to chemicals including Lead, 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.

Hose Insertion Depth Blocks

Part No. TH9-1-XXX

view on web page

Features

- For quick easy marking of hose insertion depth
- Ensures accuracy and increased productivity

Available Blocks

Part Number	Description
TH9-1-26A	26 Series -4 through -10
TH9-1-26B	26 Series -12 through -32
TH9-1-43A	43 Series -4 through -10
TH9-1-43B	43 Series -12 through -32
TH9-1-77	77 Series -8 through -32
TH9-1-HY	HY Series -4 through -16

WARNING: This product can expose you to chemicals including Lead, 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.

Hose Cut-Off Tool

Part No. TH11-1

view on web page

Features

- Designed for quick, easy cutting of textile reinforced hose.
- Squarely cuts Push-Lok hose in sizes 1/4” through 3/4” I.D.

Specifications

- Dimensions: 8” long
- Shipping Weight: 0.3 lbs.

Hozembler

Part No. 432-115V

view on web page

Features

- Power machine to facilitate the attachment of field attachable fittings
- Handles all hose and fittings up to 4 spiral wire, in sizes 3/16” through 2” I.D., including bent tube elbows
- Comes with vise, all adapters, foot switch and safety guard with 115V, 30 amp, universal AC motor

Specifications

- Shipping Weight: 141 lbs.

Optional Parts

- Mounting stand (662451)

WARNING: This product can expose you to chemicals including Lead, 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.

Die Storage Racks

Part No. 80C-0DR and 83C-0DR

view on web page

Features

- Modular die rack designed to hold small and large Parkrimp dies
- Can be bolted together to a work bench horizontally or vertically

Standard Equipment

Part Number		Description
80C-0DR	83C-0DR	
●		Storage of three sets of small dies
	●	Storage of two sets of large dies

Swivel Die Rack

Part No. 80C-SDR-XXXX

view on web page

Features

- Holds up to 30 Parkrimp dies of any size
- Powder-coated, heavy-duty steel construction
- Consists of a base unit and up to five circular holders
- Floor or bench mounted

Standard Equipment

Part Number	Description
80C-SDR-SM	Swivel Die Rack and Small Die Holder
80C-SDR-LG	Swivel Die Rack and Large Die Holder
80C-SDR-BASE	Swivel Die Rack Base

Fitting Push-On Stand

Part No. TH2-7

view on web page

Features

- Quickly and easily pushes fittings onto hose
- Boosts productivity and quality
- Eliminates the need of rubber mallets and oils to get fittings onto the end of the hose for crimping
- Standard with straight tooling required for sizes 1/4” through 2” for all crimped fittings, 82 Series Push-Lok and 88 Series field attachable fittings

Specifications

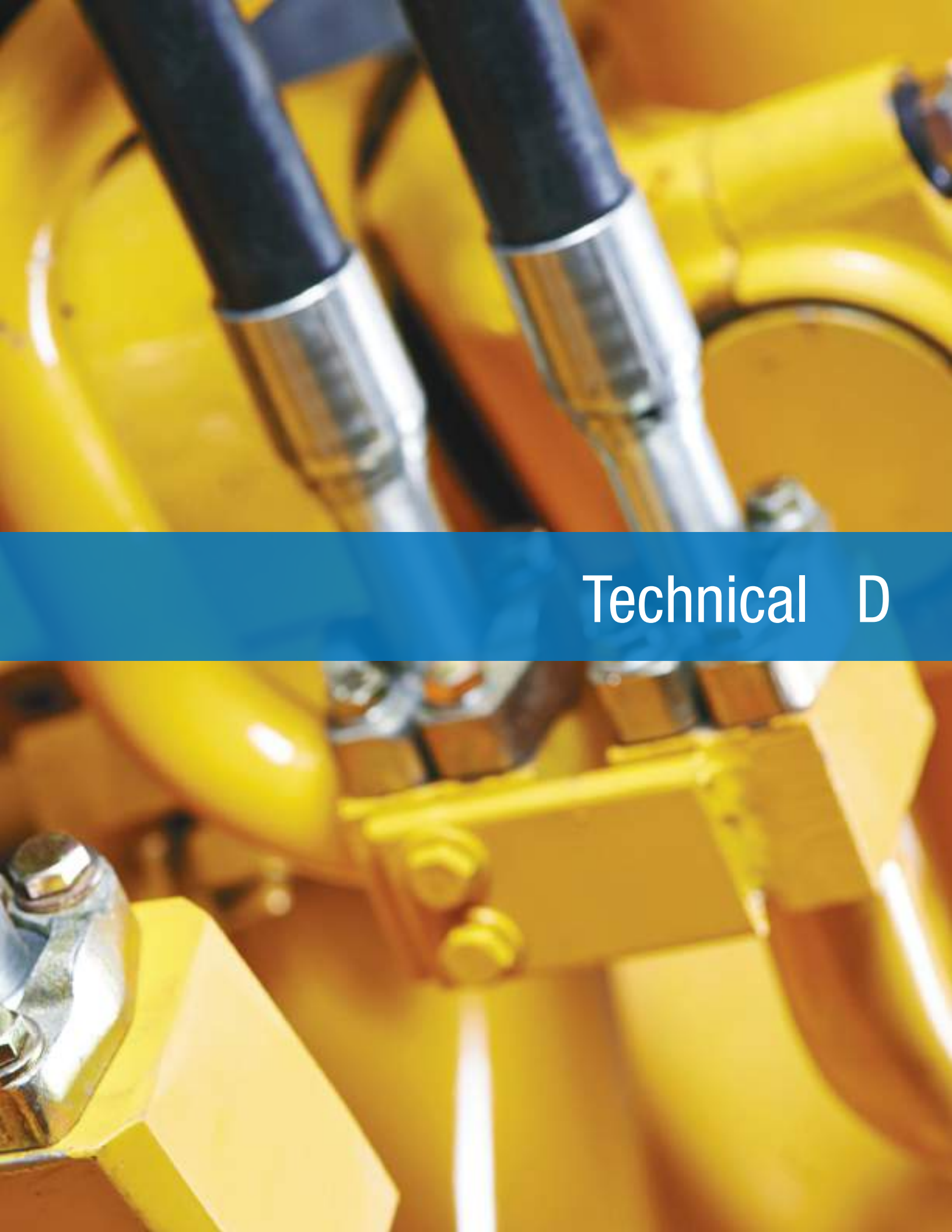
- Requires a minimum of 80 psi
- Shipping Weight: 200 lbs.

Optional Tooling

- Elbow Pusher Set (TH2-7-ELS)
- -32 Monoblock Elbow Pusher Set (TH2-7-ELSH)

WARNING: This product can expose you to chemicals including Lead, 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.


Parker
GLOBALCORE
TO +257° F
MADE IN USA
2Q2015



Technical D

A

B

C

D

TABLE OF CONTENTS

Size

Temperature

Application

Media

Pressure

Size

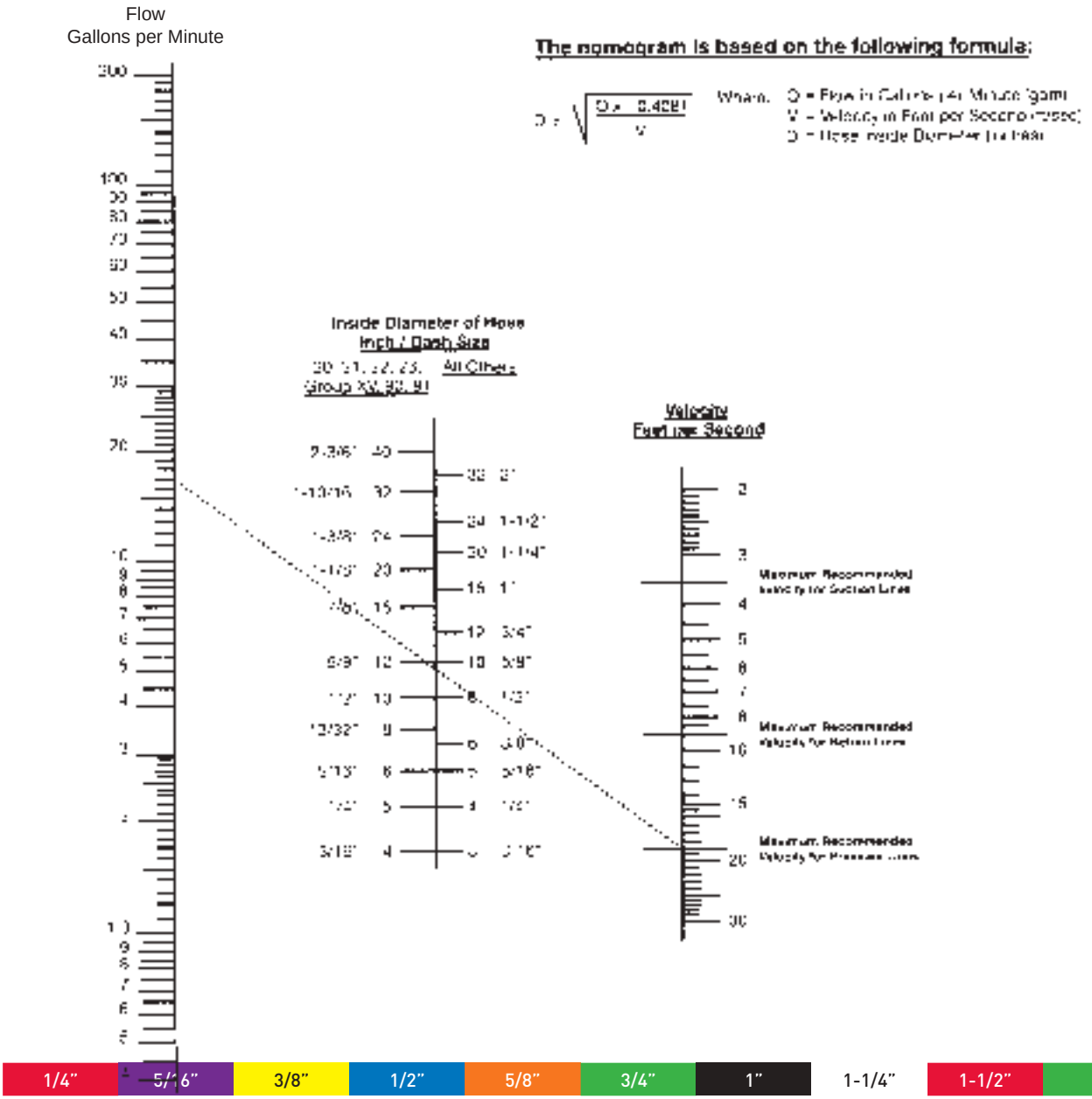
Flow Capacities at Recommended Flow Velocities

The nomogram below is provided as an aid in determining the correct hose size.

How to use the nomogram: Determine the proper flow rate your system requires, then connect a straight edge from the selected flow rate to the recommended velocity range. The required hose I.D. will appear at the intersection of the straight edge and the center column. If the straight edge passes through the scale between sizes listed, use the next larger I.D. hose.

Example: Locate 16 gallons per minute in the left-hand column and 20 feet per second (fps) in the right-hand column (the maximum recommended velocity range for pressure lines). Lay a straight edge across these two points. The inside diameter required is shown in the center column at or above the straight edge. In this case, we need a hose I.D. of 0.625 (5/8") inch (or larger).

Use the same procedure for suction of return lines, except utilizing their respective maximum recommend velocities.



1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A
B
C
D

Size

Hose Flow Capacities Pressure Drop

Hose Dash Size		-04		-05		-06		-08		-10		-12		-16		-20		-24		-32	
Hose I.D. (Inches)		0.19	0.25	0.25	0.31	0.31	0.38	0.41	0.50	0.50	0.63	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.81	2.00
U.S. Gallons per Minute	0.25	10.0	3.1	3.1																	
	0.5	19.0	6.0	6.0	2.7	2.7															
	1	40.0	12.0	12.0	5.5	5.5	2.4														
	2	95.0	24.0	24.0	10.0	10.0	4.8	3.5													
	3	185.0	46.0	46.0	17.0	17.0	7.0	5.0	2.2	2.2											
	4		78.0	78.0	29.0	29.0	12.0	8.0	3.0	3.0	1.2	1.2									
	5		120.0	120.0	44.0	44.0	18.0	12.0	4.5	4.5	1.6	1.6	0.7								
	8				95.0	95.0	39.0	26.0	10.0	10.0	3.6	3.6	1.4	0.6							
	10						59.0	40.0	15.0	15.0	5.7	5.7	2.0	1.0	0.6						
	12						80.0	52.0	20.0	20.0	7.2	7.2	2.6	1.5	0.8	0.4					
	15							75.0	30.0	30.0	10.0	10.0	4.2	2.2	1.2	0.7	0.4				
	18							107.0	40.0	40.0	15.0	15.0	6.3	3.0	1.5	0.7	0.6	0.4			
	20								49.0	49.0	19.0	19.0	8.0	3.4	2.0	1.1	0.7	0.4	0.3		
	25								72.0	72.0	26.0	26.0	11.0	5.5	3.0	1.6	1.0	0.6	0.4	0.2	
	30										34.0	34.0	14.0	7.0	3.6	2.2	1.3	0.8	0.5	0.2	0.1
	35										47.0	47.0	19.0	9.5	5.0	2.8	1.7	1.1	0.7	0.3	0.2
	40												25.0	12.0	6.5	3.4	2.2	1.4	0.9	0.4	0.2
	50												36.0	17.0	9.0	5.3	3.3	2.0	1.3	0.5	0.4
	60												50.0	23.0	12.0	7.5	4.4	2.8	1.8	0.8	0.5
	70													31.0	17.0	9.3	6.0	3.8	2.4	1.0	0.7
	80													38.0	21.0	12.0	7.1	4.6	3.0	1.2	0.8
	90													49.0	27.0	15.0	9.0	5.9	3.8	1.5	1.0
	100														33.0	19.0	12.0	7.0	4.7	1.9	1.3
	150														60.0	36.0	22.0	13.0	8.5	3.4	2.2
	200																36.0	23.0	15.0	6.0	3.9
	250																54.0	33.0	22.0	8.5	5.3
	300																	45.0	29.0	12.0	7.5
	400																		51.0	21.0	14.0
	500																			32.0	20.0
	800																				
	1000																				

Pressure drop in psi (pounds per square inch) per 10 feet of hose (smooth bore) without fittings.

Fluid specification: Specific gravity = 0.85; Viscosity = v = 20 centistokes (C.S.), (20 C.S. = 97 S.S.U.)

Pressure drop values listed are typical of many petroleum based hydraulic oils at approximately +100ºF (+38ºC). Differences in fluids, fluid temperature and viscosity can increase or decrease actual pressure drop compared to the values listed.

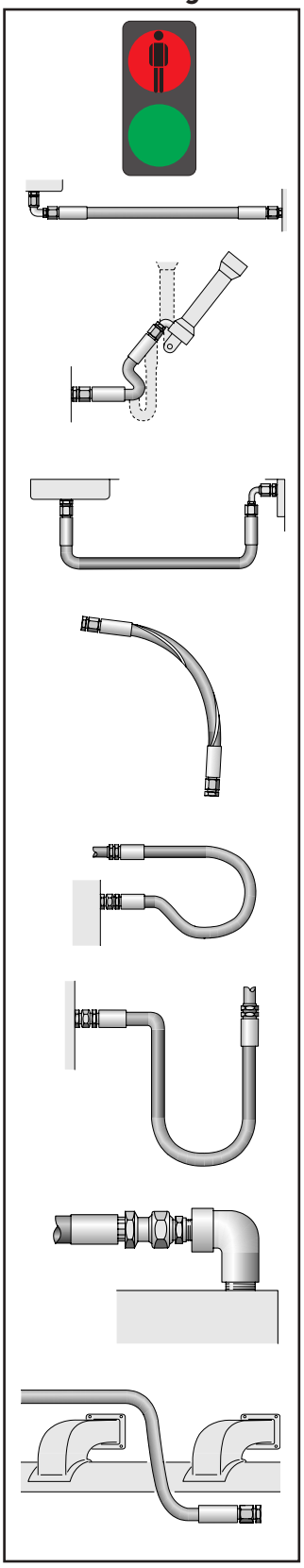
Temperature

When specifying hose, there are two temperatures you need to identify. One is the ambient temperature, which is the temperature that exists outside the hose where it is being used; the other is the media temperature, which is the temperature of the media conveyed through the hose. Very high or low ambient temperatures can have adverse affects on the hose cover and reinforcement materials, resulting in reduced service life. Media temperatures can have a much greater impact on hose life. For example, rubber loses flexibility if operated at high temperatures for extended periods. So, when choosing a hose, please select based on the specific temperature ratings for the fluids used for the specific application.

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Application

wrong



Hose Installation Tips

The routing of the hose assembly and the environment in which the hose assembly operates directly influence the service life of the hose assembly. The following diagrams indicate the correct routing of hose assemblies that will maximize its service life and assure a safe working functionality.

When hose installation is straight, there must be enough slack in the hose to allow for changes in length that occur when pressure is applied. When pressurized, hose that is too short may pull loose from its hose fittings or stress the hose fitting connections, causing premature metallic or seal failures.

The hose length must be determined so that the hose assembly has enough slack to allow the system components to move or vibrate without creating tension in the hose.

However, do not to allow too much slack and therefore introduce the risk of the hose snagging on other equipment or rubbing on other components.

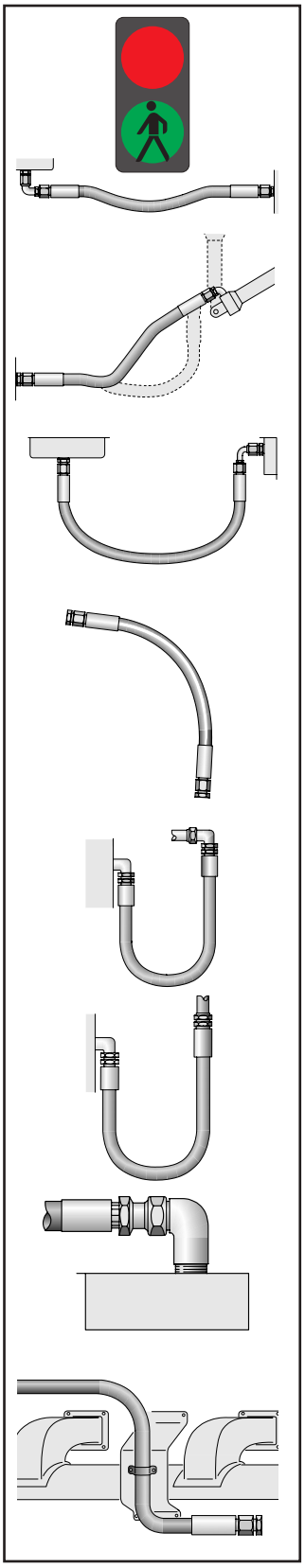
Mechanical straining of the hoses needs to be avoided, so the hose must not be bent below its minimum bend radius or twisted during installation. The minimum bending radii for each hose is stated in the hose tables in the catalog.

The plane of movement must also be considered and the hose routing selected accordingly.

Hose routing also plays an important role on the selection of the hose fittings, as the correct fittings can avoid straining the hoses, unnecessary hose length or multiple threaded joints.

Correct clamping (holding/supporting) of the hose should be exercised to securely route the hose or to avoid the hose contacting surfaces that will cause the hose damage. It is however, vital that the hose be allowed to keep its functionality as a “flexible-pipe” and not be restricted from changing in length when under pressure.

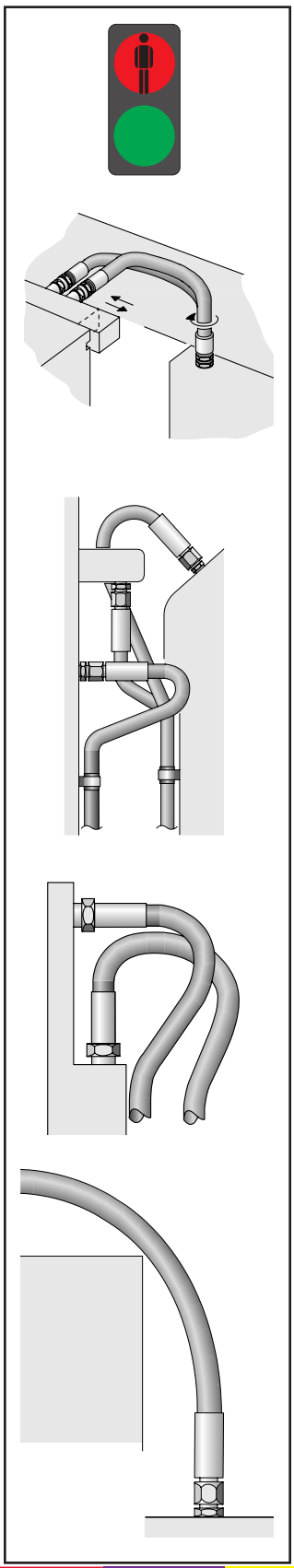
right



Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A
B
C
D

wrong



It should also be noted that hoses for high- and low-pressure lines shall not be crossed or clamped together, as the difference in changes in length could wear the hose covers.

Hose should not be bent in more than one plane. If hose follows a compound bend, it shall be coupled into separate segments or clamped into segments that each flex in only one plane.

Hoses should be kept away from hot parts as high ambient temperatures shorten hose life. Protective insulation may need to be used in unusually high ambient temperature areas.

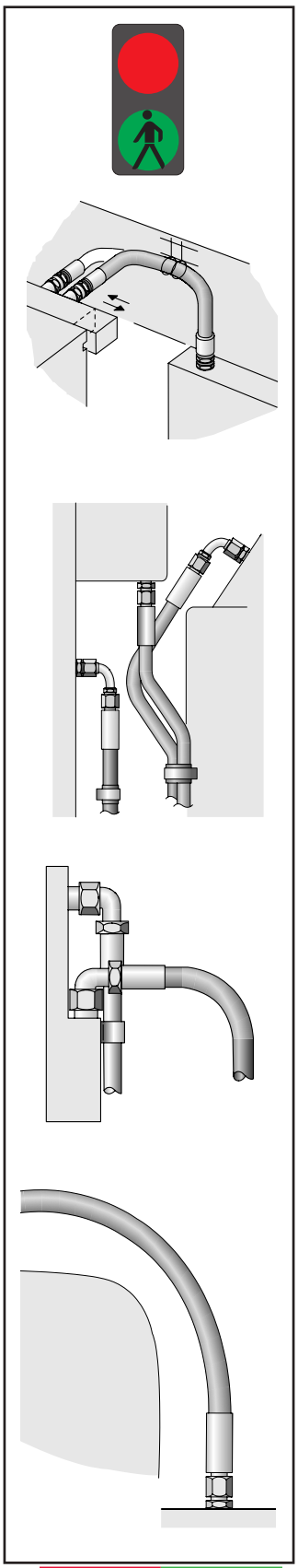
While the importance of the functionality is primary, the aesthetics and practicality of the installation should also be considered in the design. Maintenance might be necessary at some point in the future, so prohibitive design routings should be avoided.

Abrasive influences

In general care should be taken so that the hose is not exposed to direct surface contact that will cause abrasive wearing of the outer cover (either hose to object or hose to hose contact). If however, the application is such that this cannot be avoided, either a hose with a higher abrasion resistant hose cover or a protective sleeve need to be used.

Parker TOUGH COVER (TC) or SUPER TOUGH (ST) covers offer 80 times or respectively 450 times the abrasion resistance of standard rubber covers.

right



1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

Application

Assembly Methods

JIC 37° and SAE 45° Flare

Parker's recommended assembly method for JIC 37° flare and SAE 45° flare is the Flats From Wrench Resistance (FFWR) method. This includes steel as well as other materials.

The torque values assigned by size are for reference only, and are only applicable to Parker system components using the FFWR method with trivalent chromate passivation on zinc plating of carbon steel components without lubrication.

Dash Size	Flats From Wrench Resistance (FFWR)	Swivel Nut Torque	
		Newton Meters (Ref)	Pound Feet (Ref)
-4	2	18	13
-5	2	19	14
-6	1-1/2	30	22
-8	1-1/2	57	42
-10	1-1/2	81	60
-12	1-1/4	114	84
-16	1	160	118
-20	1	228	168
-24	1	265	195
-32	1	360	265

Seal-Lok®

Parker's recommended assembly method for Seal-Lok® connections is the torque method.

Dash Size	Swivel Nut Torque		Flats From Wrench Resistance (FFWR)
	Newton Meters (+10% / -0)	Pound Feet (+10% / -0)	
-4	25	18	1/2 - 3/4
-6	40	30	1/2 - 3/4
-8	55	40	1/2 - 3/4
-10	80	60	1/2 - 3/4
-12	115	85	1/3 - 1/2
-16	150	110	1/3 - 1/2
-20	205	150	1/3 - 1/2
-24	315	230	1/3 - 1/2
-32	-	-	-

Note: The assembly torques listed are higher than the test torques published in SAE J1453.

Torque Conversion Equivalents

Torque Conversion Equivalents Pound Inch - Pound Foot - Newton Meter		
Pound Foot x 12	=	Pound Inch
Pound Foot x 1.356	=	Newton Meter
Newton Meter x 8.850	=	Pound Inch
Newton Meter x 0.737	=	Pound Foot
Pound Inch x .083	=	Pound Foot
Pound Inch x 0.113	=	Newton Meter

The torque values for other materials are as follows:

- Brass fittings and adapters - 65% of the torque value for steel.
- Stainless steel, and Monel - Use 5% higher than listed for steel. Threads to be lubricated for these materials..
- Dissimilar metals - use torque value designated for the lower of the two metals.
- All fittings are dry except as noted above.

The Flats From Wrench Resistance (FFWR) and torque values listed above are consistent with the values recommended by Parker Tube Fittings Division (614) 279-7070 or www.parker.com/tfd).

A

B

C

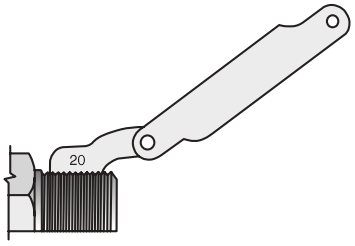
D

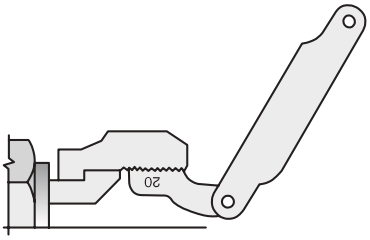
Determining the Thread Type

In general of the threads of various fittings look similar and hinder the easy identification of the thread. To assure the correct identification, the threads must be measured and compared to the tables listed in the following section.

Thread Gauge

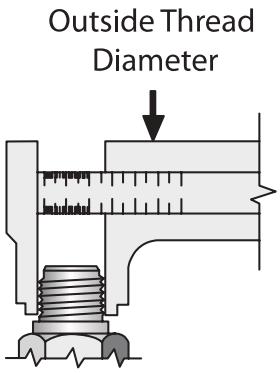
Using a thread gauge, the number of threads per inch can be determined. Holding the gauge and coupling threads in front of a lighted background helps to obtain an accurate measurement.

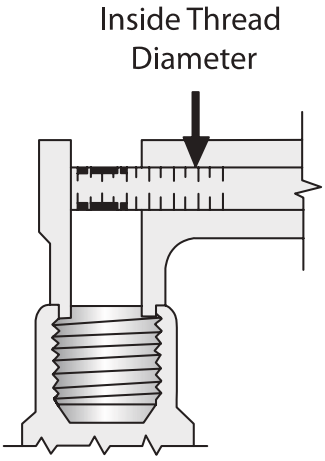




Caliper Measure

A vernier caliper should be used to measure the thread diameter of the largest point. (Outside diameter (O.D.) of male threads – Inside Diameter (I.D.) of female threads.)





German DIN Hose Fittings

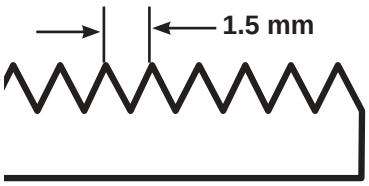
Often referred to as metric fittings, these fittings seal using the angled sealing surfaces (metal-to-metal) or the combination of metal-to-metal with O-rings.

They are available in very light (LL), light (L) or heavy series (S).

The sealing face angles are either 24° with or without O-rings, or 24°/60° universal cones.

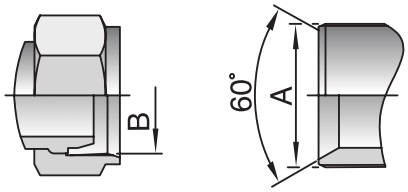
Identification is made by measuring the thread size and also the tube outside diameter.

Defined by the outside diameter and the pitch (distance between 2 crests of the thread) example: M22x1.5 - pitch of 1.5mm.



DIN Very Light Series (LL)

The male 60° cone will mate with the female 60° cone only.
The male has a 60° sealing angle (seat) and straight metric thread.
The female has a 60° seat and straight metric thread.



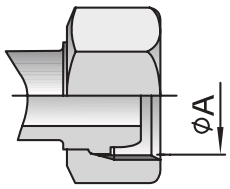
Standard
DIN 20078 Part 3 [1)]
Parker end configurations
C0

Tube O.D. (DN)	Thread metric	ØA (mm)	ØB (mm)
20	M30x1.5	30.00	28.50
25	M38x1.5	38.00	36.50
32	M45x1.5	45.00	43.50
40	M52x1.5	52.00	50.50
50	M65x2	65.00	63.00

DIN Light (L) and Heavy Series (S) without O-ring

The male 24° cone will mate with the female universal 24° or 60° cone only.

The male has a 60° sealing angle (seat) and straight metric threads.
The female has a 24° and 60° universal seat and straight metric threads.



without O-ring

Standard
DIN 20078 Part 2 [1)]
(previously known as
DIN 20078 A, D & E)
Parker end configurations
light series
C3, C4, C5, C6
(Often also referred to
as “Ball nose cones”)

[1)] obsolete standard, no exact replacement

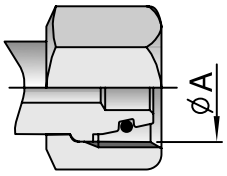
1/4” 5/16” 3/8” 1/2” 5/8” 3/4” 1” 1-1/4” 1-1/2” 2”

A
B
C
D

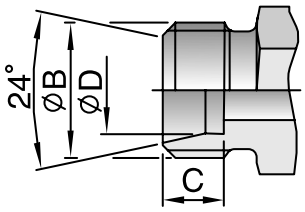
DIN 24° Light (L) and Heavy Series (S) with O-ring

The male has a 24° sealing angle cone seat with straight metric threads.
The female has a 24° convex cone with O-ring and a swivel straight metric threaded nut.

Standard
ISO 12151-2 / ISO 8434-1 & ISO 8434-4
(Previously
DIN 20 078 Part 4, 5, 8, 9)
Parker end configurations light series
CA, CE, CF, D0
Parker end configurations heavy series
C9, 0C, 1C, D2



with O-ring

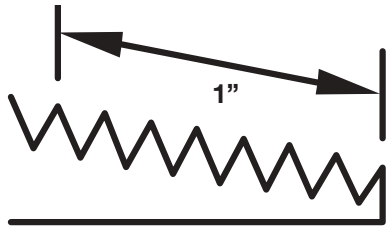


Tube O.D. (mm)	Spec.	Thread metric	ØA (mm)	ØB (mm)	C (mm)	ØD (mm)
6.00	6L	M12X1.5	10.50	12.00	7.00	6.20
6.00	6S	M14X1.5	12.50	14.00	7.00	6.20
8.00	8L	M14x1.5	12.50	14.00	7.00	8.20
8.00	8S	M16x1.5	14.50	16.00	7.00	8.20
10.00	10L	M16x1.5	14.50	16.00	7.00	10.20
10.00	10S	M18x1.5	16.50	18.00	7.50	10.20
12.00	12L	M18x1.5	16.50	18.00	7.00	12.20
12.00	12S	M20x1.5	18.50	20.00	7.50	12.20
14.00	14S	M22x1.5	20.50	22.00	8.00	14.20
15.00	15L	M22x1.5	20.50	22.00	7.00	15.20
16.00	16S	M24x1.5	22.50	24.00	8.50	16.20
18.00	18L	M26x1.5	24.50	26.00	7.50	18.20
20.00	20S	M30x2	27.90	30.00	10.50	20.20
22.00	22L	M30x2	27.90	30.00	7.50	22.20
25.00	25S	M36x2	33.90	36.00	12.00	25.20
28.00	28L	M36x2	33.90	36.00	7.50	28.20
30.00	30S	M42x2	39.90	42.00	13.50	30.20
35.00	35L	M45x2	42.90	45.00	10.50	35.30
38.00	38S	M52x2	49.90	52.00	16.00	38.30
42.00	42L	M52x2	49.90	52.00	11.00	42.30

British Standard Pipe (BSP)

Also referred to as Whitworth threads, the BSP thread type fittings seal use metal-to-metal angled surfaces or a combination of metal-to-metal and an O-ring.
The angle of the sealing surfaces is 60° for both forms.
There are two popular thread forms:
British Standard Pipe Parallel (BSPP) and
British Standard Pipe Tapered (BSPT).

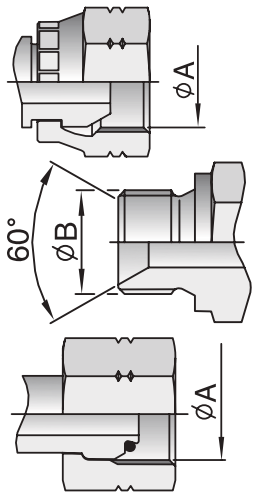
Identification is made by measuring the outside diameter of the thread and the number of threads per inch (25.4 mm)



BSPP

BS5200
Parker end configurations
92, B1, B2, B4, D9

BSPP
metal-to-metal with O-ring
Standard
ISO 12151-6
Some Parker end configurations may be non-standard parts.

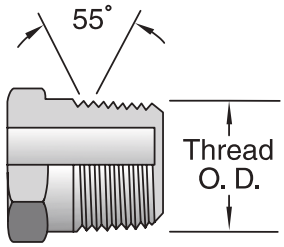


Tube I.D./O.D. (mm)	Size	Thread BSP	ØA (mm)	ØB (mm)
6/10	-2	1/8x28	8.60	9.70
8/13	-4	1/4x19	11.50	13.20
12/17	-6	3/8x19	14.90	16.70
15/21	-8	1/2x14	18.60	20.90
18/23	-10	5/8x14	20.60	22.90
20/27	-12	3/4x14	24.10	26.40
26/34	-16	1x11	30.30	33.20
33/42	-20	1-1/4x11	38.90	41.90
40/49	-24	1-1/2x11	44.90	47.80
50/60	-32	2x11	56.70	59.60

BSPT

fittings seal through the thread interface mechanism. Care should be taken not to confuse the BSPT fitting with the NPTF male fitting. BSPT has a 55° thread angle. NPTF has 60° thread angle.

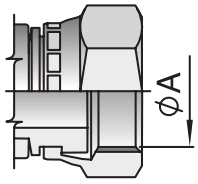
Parker end configuration
91



Tube I.D./O.D. (mm)	Size	Thread BSP	ØA (mm)
5/10	-2	1/8x28	9.73
8/13	-4	1/4x19	13.16
12/17	-6	3/8x19	16.66
15/21	-8	1/2x14	20.96
20/27	-12	3/4x14	26.44
26/34	-16	1x11	33.25
33/42	-20	1-1/4x11	41.91
40/49	-24	1-1/2x11	47.80
50/60	-32	2x11	59.61

BSP Flat Seal

These fittings have BSP parallel threads but the sealing surface is flat. The seal is made when the composite seal is compressed against the female flat face.
Some Parker end configurations may be non-standard parts.



Tube I.D./O.D. (mm)	Size	Thread BSP	ØA (mm)
6/10	-2	1/8x28	8.6
8/13	-4	1/4x19	11.5
12/17	-6	3/8x19	14.9
15/21	-8	1/2x14	18.6
18/23	-10	5/8x14	20.6
20/27	-12	3/4x14	24.1
26/34	-16	1x11	30.3

A
B
C
D

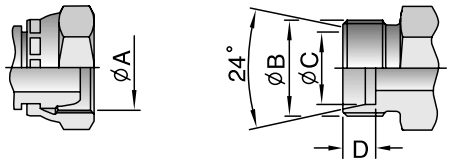
French Gas Fittings

Typical to the French market the French Gas fittings have a 24° sealing surfaces seat with metric straight threads. Although similar to German DIN fittings the threads differ in some sizes as the French Gas fittings have fine threads in all sizes whereas the German DIN fittings use standard threads in the larger sizes.

French Metric 24° Cone Gas Fittings

The sealing mechanism is metal-to-metal.
The fittings are not specified in any international standard.

Some Parker end configurations may be non-standard parts.



Tube O.D. (mm)	Spec.	Thread metric	ØA (mm)	ØB (mm)	ØC (mm)	D (mm)
6.00	6N	M12x1	11.00	12.00	6.20	9.00
8.00	8N	M14x1.5	12.50	14.00	8.15	9.00
10.00	10N	M16x1.5	14.50	16.00	10.20	9.00
12.00	12N	M18x1.5	16.50	18.00	12.15	9.00
13.25	13G	M20x1.5	18.50	20.00	13.50	9.00
14.00	14N	M20x1.5	18.50	20.00	14.15	9.00
15.00	15N	M22x1.5	20.50	22.00	15.15	9.00
16.00	16N	M24x1.5	22.50	24.00	16.15	9.00
16.75	17G	M24x1.5	22.50	24.00	17.00	9.00
18.00	18N	M27x1.5	25.50	27.00	18.15	9.00
20.00	20N	M27x1.5	25.50	27.00	20.15	9.00
21.25	21G	M30x1.5	28.50	30.00	21.50	9.00
22.00	22N	M30x1.5	28.50	30.00	22.15	9.00
25.00	25N	M33x1.5	31.50	33.00	25.15	9.00
26.75	27G	M36x1.5	34.50	36.00	27.00	9.00
28.00	28N	M36x1.5	34.50	36.00	28.25	9.00
30.00	30N	M39x1.5	37.50	39.00	30.25	9.00
32.00	32N	M42x1.5	40.50	42.00	32.25	9.00
33.25	34G	M45x1.5	43.50	45.00	33.80	9.00
35.00	35N	M45x1.5	43.50	45.00	35.25	9.00
38.00	38N	M48x1.5	46.50	48.00	38.25	9.00
40.00	40N	M52x1.5	50.50	52.00	40.35	9.00
42.25	42G	M52x1.5	50.50	52.00	42.55	9.00
48.25	49G	M58x2	55.90	58.00	49.00	11.00

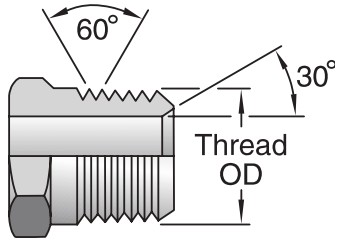
North American Thread Types

This type of fitting uses the thread interface to seal and as such has a tapered thread that deforms and forms the seal.
They have 30° sealing angle surfaces, forming a 60° inverted (concave) seat.
The fittings are most frequently seen on machines of US origin.

Dryseal American Standard Taper Pipe Thread (NPTF)

The NPTF male will mate with the NPTF, NPSF, or NPSM females. Care should be taken not to confuse the NPTF fitting with the BSPT male fitting. NPTF fittings have a 60° thread angle.
BSPT has a 55° thread angle.
Standard
SAE J516

Parker end configuration
01



ØA dimension is measured on the 4th pitch of the thread

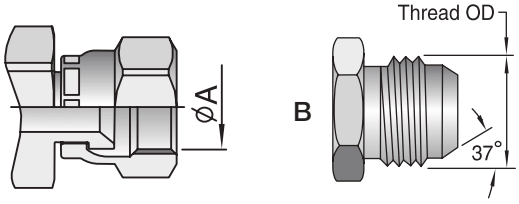
Size	Thread NPTF	ØA (mm)	ØB (mm)
-2	1/8x27	10.24	8.73
-4	1/4x18	13.61	11.90
-6	3/8x18	17.05	15.90
-8	1/2x14	21.22	19.05
-12	3/4x14	26.56	24.60
-16	1x11.5	33.22	30.95
-20	1-1/4x11.5	41.98	39.69
-24	1-1/2x11.5	48.05	45.24
-32	2x11.5	60.09	57.15

SAE JIC 37°

Commonly referred to as JIC fittings, these metal-to-metal sealing type fittings have a 37° flare (sealing surface angle) and straight United National Fine Threads (UNF).
The original design specification for the fittings comes from the Society of Automotive Engineers (SAE) and these fittings are the most common American fitting types in Europe.
Standard
ISO 12151-5, ISO8434-2 and SAE J516

Parker JIC hose fittings are fully compatible with Parker Triple-Lok Tube Fittings and adapters.

Parker end configurations
03, 06/68, 37/3V, 39/3W, 41/3Y, L9

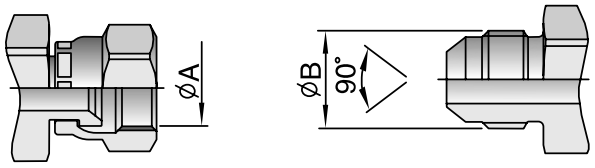


Tube O.D. (inch)	Tube O.D. (mm)	Thread UNF	Size	ØA (mm)	ØB (mm)
3/16		3/8x24	-3	8.60	9.50
1/4	6	7/16x20	-4	10.00	11.10
5/16	8	1/2x20	-5	11.60	12.70
3/8	10	9/16x18	-6	13.00	14.30
1/2	12	3/4x16	-8	17.60	19.10
5/8	14-15-16	7/8x14	-10	20.50	22.20
3/4	18-20	1-1/16x12	-12	24.60	27.00
7/8	22	1-3/16x12	-14	28.30	30.10
1	25	1-5/16x12	-16	31.30	33.30
1-1/4	30-32	1-5/8x12	-20	39.20	41.30
1-1/2	38	1-7/8x12	-24	45.60	47.60
2		2-1/2x12	x32	61.50	63.50

A
B
C
D

SAE 45° Flare

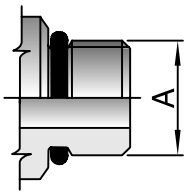
The angle of the flare is commonly used as a name when referring to these metal-to-metal sealing fittings.
The female fittings have a 90° concave inverted seat, created by the 45° angle sealing surfaces.
The SAE 45° flare male will mate with an SAE 45° flare female only or a dual seat JIC 37°/SAE45°.
Standard
SAE J516
Parker end configurations
04, 08/68, 77/3V, 79/3W, 81/3Y



Tube O.D. (inch)	Size	Thread UNF	ØA (mm)	ØB (mm)
1/4	x4	7/16x20	9.90	11.10
5/16	-5	1/2x20	11.50	12.70
3/8	-6	5/8x18	14.30	15.90
1/2	-8	3/4x16	17.50	19.10
5/8	-10	7/8x14	20.60	22.20
3/4	-12	1-1/16x14	25.00	27.00

SAE O-ring (Boss Type)

This male fitting has straight threads, a sealing face and an O-ring. It is compatible only with female boss type fittings generally found in the ports of machines. Sealing is achieved through the O-ring of the male and through the sealing face of the female.
Parker end configuration
05

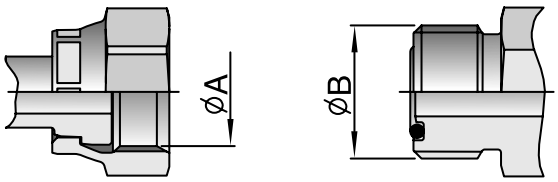


Thread UNF	Size	ØA (mm)
5/16x24	-2	7.93
3/8x24	-3	9.52
7/16x20	-4	11.11
1/2x20	-5	12.70
9/16x18	-6	14.28
3/4x16	-8	19.10
7/8x14	-10	22.22
1-1/16x12	-12	27.00
1-3/16x12	-14	30.10
1-5/16x12	-16	33.30
1-5/8x12	-20	41.30
1-7/8x12	-24	47.60
2-1/2x12	-32	63.50

O-ring Face Seal (ORFS)

ORFS fittings are becoming the most popular international fitting type used on global OEM machines due to their high level of sealing and their good vibration resistance.
The fittings use the O-ring compression mechanism to seal.
The female fittings have flat faces and straight threaded UNF swivel nuts. The male fittings have the O-ring in a groove in the flat face.
Seen as a major advantage, these fittings offer the possibility to build the hose assemblies into fixed distances/spaces, without having to move back other system components due the flat faces of the male and female fittings – the hose assembly can be slotted in.

Standard
ISO 12151-1, ISO8434-3 and SAE J516
Parker end configurations
JC, JM/J0, JS, JU, J1, J3, J5, J7, J9



Tube O.D. (inch)	Tube O.D. (mm)	Thread UNF	Size	ØA (mm)	ØB (mm)
1/4	6	9/16x18	-4	13.00	14.20
3/8	10	11/16x16	-6	15.90	17.50
1/2	12	13/16x16	-8	19.10	20.60
5/8	16	1x14	-10	23.80	25.40
3/4	20	1-3/16x12	-12	28.20	30.10
1	25	1-7/16x12	-16	34.15	36.50
1-1/4	32	1-11/16x12	-20	40.50	42.90
1-1/2	38	2x12	-24	48.80	50.80

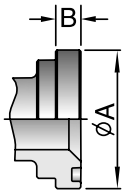
Flange Fittings
Code 61 and Code 62

The 4-bolt split flange (or full flange) fitting is used worldwide for connecting high-pressure hoses typically to pumps, motors and cylinders, where the hose assemblies are subjected to large pressure loadings.
The sealing mechanism is through compression of the O-ring in the face of the flange head against the surface of the port/connection.
The flange fittings are generally separated into two pressure classes referred to as 3000 psi (SFL) or 6000 psi (SFS).
ISO 12151-3 refers to the flange fittings as code 61 for the 3000 psi and code 62 for the 6000 psi.
In addition to these flanges, customer-specific Komatsu® and CATERPILLAR® flanges can also be found in the market.

Parker end configurations
Code 61 (3000 psi)
15, 16, 17, 19, P5, P7, P9
5000 psi (Code 61 dimensions)
4A, 4F, 4N
Code 62 (6000 psi)
6A, 6F, 6N, PA, PF, PN, 89
Caterpillar flange
XA, XF, XG, XN

Although not in the SAE or the ISO standard the size -10 (5/8) flange head is gaining popularity.
This flange is often found on Komatsu equipment or hydrostatic drives in agricultural machines.

- Standard Code 61 for 3000 to 5000 psi max.,depending on size
- High Pressure Code 62 for 6000 psi max. regardless of size



Flange (inch)	Size	Code 61 MPa / psi	Code 62 MPa / psi
1/2	-8	34.5 / 5000	41.3 / 6000
3/4	-12	34.5 / 5000	41.3 / 6000
1	-16	34.5 / 5000	41.3 / 6000
1-1/4	-20	27.5 / 4000	41.3 / 6000
1-1/2	-24	20.7 / 3000	41.3 / 6000
2	-32	20.7 / 3000	41.3 / 6000

Note: 5000 psi in size -20/-24/-32 with 4A,4F and 4N fittings and 50H flange halves.

Code 61 – SAE – 3000 psi

Flange (inch)	Size	ØA (mm)	B (mm)	O-Ring
1/2	-8	30.18	6.73	18.64x3.53
3/4	-12	38.10	6.73	24.99x3.53
1	-16	44.45	8.00	32.92x3.53
1-1/4	-20	50.80	8.00	37.69x3.53
1-1/2	-24	60.33	8.00	47.22x3.53
2	-32	71.42	9.53	56.74x3.53
2-1/2	-40	84.12	9.53	69.44x3.53
3	-48	101.60	9.53	85.32x3.53

Code 62 – SAE – 6000 psi

Flange (inch)	Size	ØA (mm)	B (mm)	O-Ring
1/2	-8	31.75	7.75	18.64x3.53
3/4	-12	41.28	8.76	24.99x3.53
1	-16	47.63	9.53	32.92x3.53
1-1/4	-20	53.98	10.29	37.69x3.53
1-1/2	-24	63.50	12.57	47.22x3.53
2	-32	79.38	12.57	56.74x3.53

CATERPILLAR®

Flange (inch)	Size	ØA (mm)	B (mm)	O-Ring
3/4	-12	41.28	14.22	25.40x5.00
1	-16	47.63	14.22	31.90x5.00
1-1/4	-20	53.98	14.22	38.20x5.00
1-1/2	-24	63.50	14.22	44.70x5.00

Komatsu®

Flange (inch)	Size	ØA (mm)	B (mm)	O-Ring
5/8	-10	34.25	6.00	21.7x3.5

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

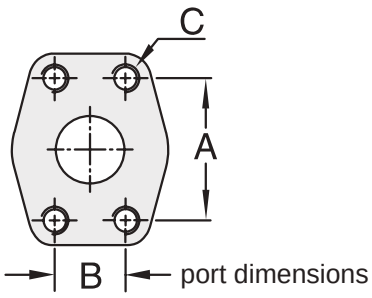
C

D

4-Bolt Split Flange

A 4-bolt split flange is used to attach the flange fittings to their ports.

- Standard Code 61 for 3000 to 5000 psi max., depending on size
- High Pressure Code 62 for 6000 psi max., regardless of size



Code 61 – SAE – 3000 psi

Flange (inch)	Size	A (mm)	B (mm)	C (inch)	C (metr.)
1/2	-8	38.1	17.5	5/16x18	M8x1.25
3/4	-12	47.6	22.3	3/8x16	M10x1.5
1	-16	52.4	26.2	3/8x16	M10x1.5
1-1/4	-20	58.7	30.2	7/16x14	M10x1.5
1-1/2	-24	69.9	35.7	1/2x13	M12x1.75
2	-32	77.8	42.8	1/2x13	M12x1.75*

Code 62 – SAE – 6000 psi

Flange (inch)	Size	A (mm)	B (mm)	C (inch)	C (metr.)
1/2	-8	40.5	18.2	5/16x18	M8x1.25
3/4	-12	50.8	23.8	3/8x16	M10x1.5
1	-16	57.2	27.8	7/16x14	M12x1.75
1-1/4	-20	66.7	31.8	1/2x13	M12x1.75*
1-1/2	-24	79.4	36.5	5/8x11	M16x2
2	-32	96.8	44.4	3/4x10	M20x2.5

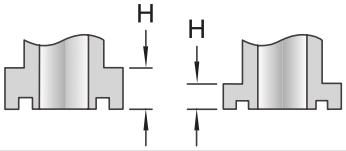
*M14x2 still used in the market but no longer in accordance with ISO 6162

Replacing Caterpillar® 6000 PSI Flange Fittings with SAE Code 62 Flange Fittings and Parker "Caterpillar®" Style Flange Fittings

Caterpillar® has a proprietary 6000 PSI hydraulic flange fitting for use on their equipment. This fitting is similar to the SAE Code 62 hydraulic flange (SAE J518). Flange diameters and bolt hole spacing are the same. The Caterpillar® flange head is thicker (.560" in all sizes) and the configuration and location of the O-ring groove is different, requiring the use of a special O-ring.

The Caterpillar® 6000 PSI flange fitting can be replaced with a Parker "Caterpillar®" style flange fitting such as the 1XA78 using the existing Caterpillar® flange halves and bolts. In this case the XARG O-ring would be used. The fitting could also be replaced with a standard Code 62 flange fitting such as the 16A78. In this case use HFH flange halves or the HFHFHK kit with the standard SAE O-ring (711510).

Do not use the Caterpillar® 6000 PSI split flange halves on SAE Code 62 flange fittings or SAE Code 62 flange halves on Caterpillar® 6000 PSI flange fittings.



Size		H (in) Caterpillar®	H (in) SAE Code 62
3/4	(-12)	.560	.345
1	(-16)	.560	.375
1-1/4	(-20)	.560	.405
1-1/2	(-24)	.560	.495

Procedure	P-ring P/N	Flange Half P/N	Flange Kit P/N
When replacing Caterpillar® 6000 PSI Flange Fittings with Parker "Caterpillar® Style" Fittings:	XARG-Size	Use existing flange halves and bolts	Use existing flange halves and bolts
When replacing Caterpillar® 6000 PSI Flange Fittings with SAE Code 62 Flange Fittings:	711510*	HFH-Size	HFHF-HK-Size

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

Japanese Fittings

The Japanese Industrial Standard (JIS) is seen on most Japanese equipment and uses a 30° sealing angle seat and either British Standard Pipe Parallel or metric threads.
Care must be taken not to confuse the JIS fittings with BSP or JIC fittings.

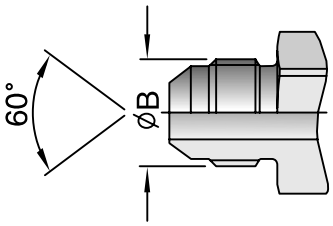
Japanese fittings - JIS

The sealing mechanism of the fittings is the 30° metal-to-metal angled surfaces

Parker end configurations
MU, XU (Metric)
FU (BSP)

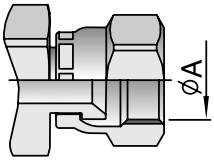
JIS 30° metric

Symbol	Thread metric	ØA (mm)	ØB (mm)
MU-6	M14x1.5	12.50	14.00
MU-9	M18x1.5	16.50	18.00
MU-12	M22x1.5	20.50	22.00
MU-15	M27x2	25.00	27.00
MU-19	M27x2	25.00	27.00
MU-25	M33x2	31.00	33.00
MU-32	M42x2	40.00	42.00
MU-38	M50x2	48.00	50.00
MU-50	M60x2	58.00	60.00



JIS 30° BSP

Symbol	Thread BSP	ØA (mm)	ØB (mm)
GUI-3	1/8x28	8.60	9.70
GUI-5/-6	1/4x19	11.50	13.20
GUI-8/-9	3/8x19	14.90	16.70
GUI-12	1/2x14	18.60	20.90
GUI-15/-19	3/4x14	24.10	26.40
GUI-25	1x11	30.30	33.20
GUI-32	1-1/4x11	38.90	41.90
GUI-38	1-1/2x11	44.90	47.80
GUI-50	2x11	56.70	59.60



A
B
C
D

Application

Standard Fitting Connections by Connection Type

	Description	End Code
Pipe	Male NPTF Pipe - Rigid - Straight	01
	Male NPTF Pipe - Swivel - Straight	13
	Male NPTF Pipe - Swivel - 90° Elbow	1L
	Male API Pipe - Rigid - Straight	AP
	Female NPTF Pipe - Rigid - Straight	02
	Female NPSM Pipe - Swivel - Straight (60° Cone)	07
	Female NPTF Pipe - Swivel - Straight	S2
	Female NPSM Pipe - Gasket Joint - Swivel - Straight	7G
	Female Grease Connection - SPL-PTF Taper Thread - Rigid Straight - ½ x 27	GJ
	Male NPTF Pipe - Rigid - 45° Elbow	31
	Male NPTF Pipe - Rigid - 90° Elbow or Side Outlet	21
SAE Str. Trd.	Male SAE Straight Thread with O-Ring - Rigid - Straight	05
	Male SAE Straight Thread with O-Ring - Swivel - Straight	0G
	Male SAE Straight Thread with O-Ring - Adjustable - 45° Elbow	25
	Male SAE Straight Thread with O-Ring - Swivel - 90° Elbow	0L
	Male SAE Straight Thread with O-Ring - Adjustable - 90° Elbow	35
Flare	Male JIC 37° - Rigid - Straight	03
	Male JIC 37° - Bulkhead without Locknut - Straight	LB
	Female JIC 37° - Swivel - Straight	06
	Female JIC 37° - Swivel - 45° Elbow - Short Drop	37
	Female JIC 37° - Swivel - 45° Elbow - Medium Drop	L7
	Female JIC 37° - Swivel - 90° Elbow - Short Drop	39
	Female JIC 37° - Swivel - 90° Elbow - Medium Drop	L9
	Female JIC 37° - Swivel - 90° Elbow - Long Drop	41
	Female JIC 37° - Swivel - 90° Elbow - Long Drop	41
	Female JIC 37° - Swivel - Straight	48
	Female JIC 37° - Swivel - 150° Elbow	4V
	Male SAE 45° - Rigid - Straight	04
	Female SAE 45° - Swivel - Straight	08
	Female SAE 45 / Swivel - 45° Elbow	77
	Female SAE 45 / Swivel - 90° Elbow	79
	Female SAE 45 / Swivel - 90° Elbow - Long Drop	81
	Female JIC 37°/SAE 45° Dual Flare - Swivel - Straight	68
Inverted Flare	Male Ferulok Flareless - Rigid - Straight (24° Cone with Nut and Ferrule)	11
	Female Ferulok Flareless - Swivel - Straight (24° Cone)	12
	Male Inverted SAE 45° - Swivel - Straight	28
	Male Inverted SAE 45° - Swivel - 45° Elbow	67
	Male Inverted SAE 45° - Swivel - 90° Elbow	69
	Male Inverted SAE 45° - Swivel - 90° Elbow - Long (In-Line)	71
	Female Inverted SAE 45° - Rigid - Straight	29
Tube-O	Male Tube-O - Swivel - Straight - Short Pilot	S5
	Male Tube-O - Swivel - Straight - Short Pilot with Charge Port for R12	S5-PR
	Male Tube-O - Swivel - Straight - Long Pilot	45
	Male Tube-O - Swivel - Straight - Long Pilot with Charge Port for R12	45-PR
	Male Tube-O - Swivel - Straight - Long Pilot with Charge Port for R134a	45-PT
	Female Tube-O - Swivel - 90° Elbow - Long Pilot	5L
	Female Tube-O - Swivel - 90° Elbow - Long Pilot with Charge Port for R12	5L-PB

	Description	End Code
Tube-O	Female Tube-O - Swivel - 90° Elbow - Long Pilot with Charge Port for R12	5L-PR
	Female Tube-O - Swivel - 90° Elbow - Long Pilot with Charge Port for R134a	5L-PT
	Male Tube-O - Swivel - 90° Elbow - Long Pilot	5M
	Male Tube-O - Swivel - 90° Elbow - Long Pilot with Charge Port for R12	5M-PR
	Male Tube-O - Swivel - 90° Elbow - Long Pilot with Charge Port for R134a	5M-PT
	Male Tube-O - Swivel - 90° Elbow - Long Pilot with Charge Port for R134a	5M-PV
	Male Tube-O - Rigid - Straight - Internal Long Pilot (3-Step)	5G
	Male Tube-O - Rigid - Straight - Internal Long Pilot (3-Step) with Charge Port for R12	5G-PR
	Male Tube-O - Swivel - 45° Elbow - Short Pilot	5R
	Male Tube-O - Swivel - 45° Elbow - Long Pilot	5P
	Male Tube-O - Swivel - 45° Elbow - Long Pilot with Charge Port for R134a	5P-PT
	Male Tube-O - Swivel - 90° Elbow - Short Pilot	5K
	Male Tube-O - Swivel - 90° Elbow - Short Pilot with Charge Port for R12	5K-PB
	Male Tube-O - Swivel - 90° Elbow - Short Pilot with Charge Port for R12	5K-PR
	Female Tube-O - Swivel - Straight - Short Pilot	5S
	Female Tube-O - Swivel - Straight - Long Pilot	59
	Female Tube-O - Swivel - Straight - Long Pilot with Charge Port for 134a	59-PB
	Female Tube-O - Swivel - Straight - Long Pilot with Charge Port for 134a	59-PT
	Female Tube-O - Swivel - 45° Elbow - Short Pilot	5H
	Female Tube-O - Swivel - 45° Elbow - Long Pilot	5N
	Female Tube-O - Swivel - 45° Elbow - Long Pilot with Charge Port for 134a	5N-PB
	Female Tube-O - Swivel - 45° Elbow - Long Pilot with Charge Port for 134a	5N-PT
	Female Tube-O - Swivel - 90° Elbow - Short Pilot	5T
Compressor	Female Air Brake Jounce Line - Swivel - Straight	7B
	Female Compressor - Swivel - 45° Elbow	5V
	Female Compressor - Swivel - 90° Elbow	5W
	Female Compressor - Swivel - 90° Elbow - Block Type	5Z
	Female Compressor - Swivel - 135° Elbow	RV
	Female Compressor - Swivel - 180° Elbow - Block Type	RZ
	Male Refrigerant Tube Mender - Straight (with Nut and Ferrule)	T1
	Female PTT 30° - Swivel - Straight	32
	Male SAE Compression Seat (without Nut or Sleeve)	61
	Male Hydra-Clip - Rigid - Straight	S0
	Two Hole (2.25" X 0.44") Flange - Rigid - 90° Elbow	2H
Flange	SAE Code 61 Flange Head - Straight - ISO 12151-3- S - L	15
	SAE Code 61 Flange Head - Straight - ISO 12151-3 - S - L	4A
	SAE Code 61 Flange Head - 22½° Elbow - ISO 12151-3 - E22M - L	16
	SAE Code 61 Flange Head - 30° Elbow - ISO 12151-3 - E30S - L (1 Piece: ISO 12151-3 - E30M - L)	26

Continued on next page

Application

Standard Fitting Connections by Connection Type

Continued from previous page

	Description	End Code
Flangev	SAE Code 61 Flange Head - 45° Elbow - ISO 12151-3 - E45S - L (1 Piece: ISO 12151-3 - E45M - L)	17
	SAE Code 61 Flange Head - 45° Elbow - ISO 12151-3 - E45S - L (1 Piece: ISO 12151-3 - E45M - L)	4F
	SAE Code 61 Flange Head - 60° Elbow - ISO 12151-3 - E60S - L (1Piece: ISO 12151-3 - E60M - L	27
	SAE Code 61 Flange Head - 67½° Elbow - ISO 12151-3 - E67S - L (1Piece: ISO 12151-3 - E67M - L)	18
	SAE Code 61 Flange Head - 90° Elbow - ISO 12151-3 - E90S - L (1 Piece: ISO 12151-3 - E90M - L)	19
	SAE Code 61 Flange Head - 90° Elbow - ISO 12151-3 - E90S - L (1 Piece: ISO 12151-3 - E90M - L)	4N
	SAE Code 61 Flange Head - 90° Elbow - Long Drop	89
	SAE Code 61 Flange Head - 110° Elbow	2U
	SAE Code 62 Flange Head - Straight - ISO 12151-3- S - S	6A
	SAE Code 62 Flange Head - 22½° Elbow - ISO 12151-3 - E22S - S (1 Piece: ISO 12151-3 - E22M - S)	6B
	SAE Code 62 Flange Head - 30° Elbow - ISO 12151-3 - E30S-S (1 Piece: ISO 12151-3 - E30M - S)	6E
	SAE Code 62 Flange Head - 45° Elbow - ISO 12151-3 - E45S-S (1 Piece: ISO 12151-3 - E45M - S)	6F
	SAE Code 62 Flange Head - 60° Elbow - ISO 12151-3 - E60S-S (1Piece: ISO 12151-3 - E60M - S	6G
	SAE Code 62 Flange Head - 90° Elbow - ISO 12151-3 - E90S-S (1 Piece: ISO 12151-3 - E90M - S)	6N
	CaterpillarÒ Flange Head - Straight	XA
	CaterpillarÒ Flange Head - 22½° Elbow	XB
	CaterpillarÒ Flange Head - 30° Elbow	XE
	CaterpillarÒ Flange Head - 45° Elbow	XF
	CaterpillarÒ Flange Head - 60° Elbow	XG
	CaterpillarÒ Flange Head - 67½° Elbow	XM
	CaterpillarÒ Flange Head - 90° Elbow	XN
Seal-Lok	Male Seal-Lok - Rigid - Straight (with O-Ring) - ISO 12151-1 - S	J0
	Male Seal-Lok - Bulkhead without Locknut - Straight (without O-Ring) - ISO 8434-3 - BH	JB
	Female Seal-Lok - Swivel - Straight - Long - ISO 12151-1 - SWSB	JS
	Female Seal-Lok - Swivel - Straight - Short - ISO 12151-1 - SWSA	JC
	Female Seal-Lok - Swivel - 22½° Elbow - ISO 8434-3	J6
	Female Seal-Lok - Swivel - 45° Elbow - ISO 12151-1 - SWE45	J7
	Female Seal-Lok - Swivel - 90° Elbow - Short Drop - ISO 12151-1 - SWES90	J9
	Female Seal-Lok - Swivel - 90° Elbow - Medium Drop - ISO 12151-1 - SWSB	J5
	Female Seal-Lok - Swivel - 90° Elbow - Long Drop - ISO 12151-1 - SWEL90	J1
	Male Standpipe - Rigid - Straight (Inch Size Tube O.D.)	34
	Push-Lok Union	82
	Hose Splicer	88

	Description	End Code
Metric	Male Metric L - Rigid - Straight (24° Cone) - ISO 8434-1	D0
	Male Standpipe Metric L - Rigid - Straight	1D
	Female Metric - Swivel - Straight (Ball Nose)	C0
	Female Metric L - Swivel - Straight (Ball Nose)	C3
	Female Metric L - Swivel - 45° Elbow (Ball Nose)	C4
	Female Metric L - Swivel - 90° Elbow (Ball Nose)	C5
	Female Metric L - Swivel - Straight (24° Cone with O-Ring) - ISO 12151-2 - SWS	CA
	Female Metric L - Swivel - 45° Elbow (24° Cone with O-Ring) - ISO 12151-2 - SWE45	CE
	Female Metric L - Swivel - 90° Elbow (24° Cone with O-Ring) - ISO 12151-2 - SWE	CF
	Male Metric S - Rigid - Straight (24° Cone) - ISO 12151-2 - S - S	D2
	Male Standpipe Metric S - Rigid - Straight	3D
	Female Metric S - Swivel - Straight (Ball Nose)	C6
	Female Metric S - Swivel - 45° Elbow (Ball Nose)	C7
	Female Metric S - Swivel - 90° Elbow (Ball Nose)	C8
	Female Metric S - Swivel - Straight (24° Cone with O-Ring) - ISO 12151-2 - SWS - S	C9
	Female Metric S - Swivel - 45° Elbow (24° Cone with O-Ring) - ISO 12151-2 - SWE45 - S	0C
	Female Metric S - Swivel - 90° Elbow (24° Cone with O-Ring) - ISO 12151-2 - SWE - S	1C
BSP	Male BSP Taper Pipe - Rigid - Straight	91
	Female BSP Parallel Pipe - Swivel - Straight (60° Cone) - ISO 228-1	92
	Male BSP Parallel Pipe - Rigid - Straight (60° Cone) - ISO 228-1	D9
	Female BSP Parallel Pipe - Swivel - 45° Elbow (60° Cone) - ISO 228-1	B1
	Female BSP Parallel Pipe - Swivel - 90° Elbow (60° Cone) - ISO 228-1	B2
	Female BSP Parallel Pipe - Swivel - 90° Elbow Block Type (60° Cone) - ISO 228-1	B4
	Female BSP Parallel Pipe - Swivel - Straight (Flat Seat) - ISO 228-1	B5
	Female Metric - Swivel - Straight (30° Flare)	MU
	Female Metric - Swivel - Straight (30° Flare)	XU
	Female BSP Parallel Pipe - Swivel - Straight (30° Flare) - ISO 228-1	FU
	Male BSP Taper Pipe - Rigid - Straight (60° Cone)	UT
	Male BSP Taper Pipe - Rigid - 45° Elbow	BV
	Male BSP Taper Pipe - Rigid - 90° Elbow or Side Outlet	BZ
	Female BSP Parallel Pipe - Swivel - Straight (60° Cone) - ISO 228-1	GU
	Female BSP Parallel Pipe - Swivel - 45° Elbow (60° Cone)	G1
	Female BSP Parallel Pipe - Swivel - 90° Elbow (60° Cone)	G2
Fr. Gaz	Male French Gaz Series - Rigid - Straight (24° Cone)	FG
	Female French Gaz Series - Swivel - Straight (Ball Nose)	F4
Specialty	DIN Metric Banjo - Straight	49
	88 Series Heavy Duty Hose Clamp (Double Bolt Hose Clamp)	88DB
	88 Series Hose Clamp-SAE 100R4 Two-Bolt Clamp Subas-sembly	88HC-H
	88 Series Hose Clamp (Worm Gear)	88HC

1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

C

D

Application

Standard Fitting Connections by End Code

Standard Fitting Configurations by Connection and End Code Listed in Numerical Order

Description End	End Code
Female Metric S - Swivel - 45° Elbow (24° Cone with O-Ring)	0C
Male SAE Straight Thread with O-Ring - Swivel - Straigh	0G
Male SAE Straight Thread with O-Ring - Swivel - 90° Elbow	0L
Male NPTF Pipe - Rigid - Straight	01
Female Metric S - Swivel - 90° Elbow (24° Cone with O-Ring)	1C
Male Standpipe Metric L - Rigid - Straight	1D
Male NPTF Pipe - Swivel - 90° Elbow	1L
Female NPTF Pipe - Rigid - Straight	02
Two Hole (2.25" X 0.44") Flange - Rigid - 90° Elbow	2H
SAE Code 61 Flange Head - 110° Elbow	2U
Male JIC 37° - Rigid - Straight	03
Male Standpipe Metric S - Rigid - Straight	3D
Male SAE 45° - Rigid - Straight	04
SAE Code 61 Flange Head - Straight (5,000 psi)	4A
SAE Code 61 Flange Head-45° Elbow (5,000 psi)	4F
SAE Code 61 Flange Head - 90° Elbow - (5,000 psi)	4N
Female JIC 37° - Swivel - 150° Elbow	4V
Male SAE Straight Thread with O-Ring - Rigid - Straight	05
Male Tube-O - Rigid - Straight - Internal Long Pilot (3-Step)	5G
Female Tube-O - Swivel - 45° Elbow - Short Pilot	5H
Male Tube-O - Swivel - 90° Elbow - Short Pilot	5K
Male Tube-O - Swivel - 90° Elbow - Short Pilot with High Pressure Charge Port for R134a	5K-PB
Female Tube-O - Swivel - 90° Elbow - Long Pilot with Low Pressure Charge Port for R134a	5L-PT
Male Tube-O - Swivel - 90° Elbow - Long Pilot	5M
Male Tube-O - Swivel - 90° Elbow - Long Pilot with Low PressureCharge Port for R134a	5M-PT
Male Tube-O - Swivel - 90° Elbow - Long Pilot with Low PressureCharge Port for R134a	5M-PV
Female Tube-O - Swivel - 45° Elbow - Long Pilot	5N
Female Tube-O - Swivel - 45° Elbow - Long Pilot with High Pressure Charge Port for R134a	5N-PB
Female Tube-O - Swivel - 45° Elbow - Long Pilot with Low Pressure Charge Port for R134a	5N-PT
Male Tube-O - Swivel - 45° Elbow - Long Pilot	5P
Male Tube-O - Swivel - 45° Elbow - Long Pilot with Low Pressure Charge Port for R134a	5P-PT
Male Tube-O - Swivel - 45° Elbow - Short Pilot	5R
Female Tube-O - Swivel - Straight - Short Pilot	5S
Female Tube-O - Swivel - 90° Elbow - Short Pilot	5T

Standard Fitting Configurations by Connection and End Code Listed in Numerical Order

Description End	End Code
Female Compressor - Swivel - 45° Elbow	5V
Female Compressor - Swivel - 90° Elbow	5W
Female Compressor - Swivel - 90° Elbow - Block Type	5Z
Female JIC 37° - Swivel - Straight	06
SAE Code 62 Flange Head - Straight	6A
SAE Code 62 Flange Head - 22½° Elbow	6B
SAE Code 62 Flange Head - 30° Elbow	6E
SAE Code 62 Flange Head - 45° Elbow	6F
SAE Code 62 Flange Head - 60° Elbow	6G
SAE Code 62 Flange Head - 90° Elbow	6N
Female NPSM Pipe - Swivel - Straight (60° Cone)	07
Female Air Brake Jounce Line - Swivel - Straight	7B
Female NPSM Pipe - Gasket Joint - Swivel - Straight	7G
Female SAE 45° - Swivel - Straight	08
Male Ferulok Flareless-Rigid-Straight (24° Cone with Nut and Ferrule)	11
Female Ferulok Flareless - Swivel - Straight (24° Cone)	12
Male NPTF Pipe - Swivel - Straight	13
SAE Code 61 Flange Head - Straight	15
SAE Code 61 Flange Head - 22½° Elbow -	16
SAE Code 61 Flange Head-45° Elbow	17
SAE Code 61 Flange Head - 67½° Elbow	18
SAE Code 61 Flange Head - 90° Elbow 19	19
Male NPTF Pipe - Rigid - 90° Elbow or Side Outlet 21	21
Male SAE Straight Thread with O-Ring - Adjustable - 45° Elbow	25
SAE Code 61 Flange Head-30° Elbow	26
SAE Code 61 Flange Head-60° Elbow	27
Male Inverted SAE 45° - Swivel - Straight	28
Female Inverted SAE 45° - Rigid - Straight	29
Male NPTF Pipe - Rigid - 45° Elbow	31
Female PTT 30° - Swivel	32
Male Standpipe - Rigid - Straight (Inch Size Tube O.D.)	34
Male SAE Straight Thread with O-Ring - Adjustable - 90° Elbow	35
Female JIC 37° - Swivel - 45° Elbow - Short Drop	37
Female JIC 37° - Swivel - 90° Elbow - Short Drop	39
Female JIC 37° - Swivel - 90° Elbow - Long Drop	41
Male Tube-O - Swivel - Straight - Long Pilot	45
Male Tube-O - Swivel - Straight - Long Pilot with Low Pressure Charge Port for R134a	45-PT
Female JIC 37° - Swivel - Straight	48

Continued on next page

Application

Continued from previous page

Standard Fitting Configurations by Connection and End Code Listed in Numerical Order

Description End	End Code
DIN Metric Banjo - Straight	49
Female Tube-O - Swivel - Straight - Long Pilot	59
Female Tube-O - Swivel - Straight - Long Pilot with Charge Port for 134a	59-PB
Female Tube-O - Swivel - Straight - Long Pilot with Charge Port	59-PT
Male SAE Compression Seat (without Nut or Sleeve)	61
Male Inverted SAE 45° - Swivel - 45° Elbow	67
Female JIC 37°/SAE 45° Dual Flare - Swivel - Straight	68
Male Inverted SAE 45° - Swivel - 90° Elbow	69
Male Inverted SAE 45° - Swivel - 90° Elbow - Long (In-Line)	71
Female SAE 45 / Swivel - 45° Elbow	77
Female SAE 45 / Swivel - 90° Elbow	79
Female SAE 45 / Swivel - 90° Elbow - Long Drop	81
Push-Lok Union	82
Hose Splicer	88
88 Series Heavy Duty Hose Clamp (Double Bolt Hose Clamp)	88DB
88 Series Hose Clamp (Worm Gear)	88HC
88 Series Hose Clamp-SAE 100R4 Two-Bolt Clamp	88HC-H
SAE Code 61 Flange Head - 90° Elbow - Long Drop	89
Male BSP Taper Pipe - Rigid - Straight	91
Female BSP Parallel Pipe - Swivel - Straight (60° Cone)	92
Male API Pipe - Rigid - Straight	AP
Female BSP Parallel Pipe - Swivel - 45° Elbow (60° Cone)	B1
Female BSP Parallel Pipe - Swivel - 90° Elbow (60° Cone)	B2
Female BSP Parallel Pipe - Swivel - 90° Elbow Block Type (60° Cone)	B4
Female BSP Parallel Pipe - Swivel - Straight (Flat Seat)	B5
Male BSP Taper Pipe - Rigid - 45° Elbow	BV
Male BSP Taper Pipe - Rigid - 90° Elbow or Side Outlet	BZ
Female Metric - Swivel - Straight (Ball Nose)	C0
Female Metric L - Swivel - Straight (Ball Nose)	C3
Female Metric L - Swivel - 45° Elbow (Ball Nose)	C4
Female Metric L - Swivel - 90° Elbow (Ball Nose)	C5
Female Metric S - Swivel - Straight (Ball Nose)	C6
Female Metric S - Swivel - 45° Elbow (Ball Nose)	C7
Female Metric S - Swivel - 90° Elbow (Ball Nose)	C8
Female Metric S - Swivel - Straight (24° Cone with O-Ring)	C9
Female Metric L - Swivel - Straight (24° Cone with O-Ring)	CA
Female Metric L - Swivel - 45° Elbow (24° Cone with O-Ring)	CE
Female Metric L - Swivel - 90° Elbow (24° Cone with O-Ring)	CF
Male Metric L - Rigid - Straight (24° Cone)	D0
Male Metric S - Rigid - Straight (24° Cone)	D2
Male BSP Parallel Pipe - Rigid - Straight (60° Cone)	D9
Female French Gaz Series - Swivel - Straight (Ball Nose)	F4

Standard Fitting Connections by End Code

Standard Fitting Configurations by Connection and End Code Listed in Numerical Order

Description End	End Code
Male French Gaz Series - Rigid - Straight (24° Cone)	FG
Female BSP Parallel Pipe - Swivel - Straight (30° Flare) FU	FU
Female BSP Parallel Pipe - Swivel - 45° Elbow (60° Cone) G1	G1
Female BSP Parallel Pipe - Swivel - 90° Elbow (60° Cone) G2	G2
Female Grease Connection - SPL-PTF Taper Thread - Rigid Straight - ½ x 27	GJ
Female BSP Parallel Pipe - Swivel - Straight (60° Cone)	GU
Male Seal-Lok - Rigid - Straight (with O-Ring)	J0
Female Seal-Lok - Swivel - 90° Elbow - Long Drop	J1
Female Seal-Lok - Swivel - 90° Elbow - Medium Drop	J5
Female Seal-Lok - Swivel - 221/2° Elbow	J6
Female Seal-Lok - Swivel - 45° Elbow	J7
Female Seal-Lok - Swivel - 90° Elbow - Short Drop	J9
Male Seal-Lok - Bulkhead without Locknut - Straight	JB
Female Seal-Lok - Swivel - Straight - Short	JC
Female Seal-Lok - Swivel - Straight - Long	JS
Female JIC 37° - Swivel - 45° Elbow - Medium Drop	L7
Female JIC 37° - Swivel - 90° Elbow - Medium Drop	L9
Male JIC 37° - Bulkhead without Locknut - Straight	LB
Female Metric Swivel - Straight (30° Flare)	MU
Female Compressor - Swivel - 135° Elbow	RV
Female Compressor - Swivel - 180° Elbow - Block Type	RZ
Female NPTF Pipe - Swivel - Straight	S2
Male Tube-O - Swivel - Straight - Short Pilot	S5
Male Tube-O - Swivel - Straight - Short Pilot with Charge Porfor R12	S5-PR
Male Refrigerant Tube Mender - Straight (with Nut and Ferrule)	T1
Male BSP Taper Pipe - Rigid - Straight (60° Cone)	UT
Caterpillar® Flange Head - Straight	XA
Caterpillar® Flange Head - 22½° Elbow	XB
Caterpillar® Flange Head - 30° Elbow	XE
Caterpillar® Flange Head - 45° Elbow	XF
Caterpillar® Flange Head - 60° Elbow	XG
Caterpillar® Flange Head - 67½° Elbow	XM
Caterpillar® Flange Head - 90° Elbow (with O-Ring)	XN
Female Metric - Swivel - Straight (30° Flare)	XU

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

A

B

C

D

Media

What will the hose convey? Some applications require the use of specialized oils or chemicals. The hose you order must be compatible with the medium being conveyed. Compatiblity must cover the inner tube, the cover, hose fittings, and o-rings as well. Please reference the chemical compatibility when choosing a hose for your application.

Pressure

Pressure Rating of Hose End Connections

PRESSURE RATINGS HOSE ASSEMBLIES - PSI

THE MAXIMUM DYNAMIC WORKING PRESSURE OF THE HOSE ASSEMBLY IS THE LESSER OF THE RATED WORKING PRESSURE OF THE HOSE AND THE END CONNECTIONS USED.

Hose End Connection Description	Part Number Codes	Inch Size Fittings (psi)												
		-2	-4	-5	-6	-8	-10	-12	-16	-20	-24	-32	-40	-48
Male Pipe (NPTF)	01	12,000	12,000		10,000	10,000		7,500	6,500	5,000	3,000	2,500		
Female Pipe (NPTF, NPSM)	02 & 07	7,500	7,000		6,000	5,000		4,000	3,000	2,500	2,000	2,000		
Male Pipe (BSP)	91 & D9	5,000	9,000		8,000	6,250		5,000	4,000	3,500	3,000	3,000		
Female Pipe (BSP)	92, B1, B2 & B4	5,000	9,000		8,000	6,250	5,500	5,000	4,000	3,500	3,000	3,000		
JIS	FU, GU, MU & UT		5,000		5,000	5,000		4,000	3,000	2,500	1,500	1,500		
O-Ring Swivel and 45° Flare*	13, 1L, S2, 0G, 0L,48, 08, 77 & 79		3,000	3,000	3,000	3,000	2,750	2,250	2,000	1,625	1,250	1,125		
37° Flare and Straight Thread*	03, 05, 06**, 37, 39**,41, L7 & L9		6,000	6,000	5,000	5,000	5,000	5,000	4,000	3,000	2,500	2,500		
SAE Flareless	11 & 12		6,000	6,000	5,600	5,600	4,200	4,200	3,500	3,500	3,000	3,000		
SAE Inverted Flare	28, 67 & 69		2,750	2,500	2,250	2,000								
Seal-Lok®* (O-ring Face Seal)	JM, JC, JS, J0, J1, J5, J7 & J9		9,200		9,200	9,200	6,000	6,000	6,000	4,000	4,000	3,000		
SAE Flanges Code 61	15, 16, 17, 18, 19, 26, 27 & 89					5,000		5,000	5,000	4,000	4,000	3,000	2,500	2,000
SAE Flanges Code 61 Special	4A, 4B, 4F, 4G & 4N									5,000	5,000	5,000		
SAE Flanges Code 62	6A, 6E, 6F, 6G, 6N,XA, XF, XG & XN							6,000	6,000	6,000	6,000	6,000		

For adapter pressure ratings, see Tube Fittings Division catalog 4300.

*NOTE: 45°, 37° and Seal-Lok Torque Tables are on page G-7.

**NOTE: For pressure rating of 01, 06 and 39 end configurations in 73, 77, 78, and 79 series, see each description in Section B.

Hose End Connection Description	Part Number Codes	Metric Fittings (psi)															
		-6	-8	-10	-12	-14	-15	-16	-18	-20	-22	-25	-28	-30	-35	-38	-42
DIN Light "L" without O-Ring	C3, C4, C5 & 1D	3,500	3,500	3,500	3,500		3,500		2,250		2,250		1,400		1,400		1,400
DIN Light "L" with O-Ring	D0, CA, CE & CF	4,500	4,500	4,500	4,500		4,500		2,250		2,250		2,250		2,250		2,250
DIN Heavy "S" without O-Ring	C6, C7, C8 & 3D		9,000	9,000	9,000	9,000		5,750		5,750		5,750		3,500		3,500	
DIN Heavy "S" with O-Ring	C9, 0C, 1C & D2		9,000	9,000	9,000	9,000		6,000		6,000		6,000		6,000		4,500	
DIN 20078 Form C	C0										900		900		900		900
Banjo	49	3,000	3,000	3,000	3,000		3,000			3,000	3,000	3,000					
French Metric	F9 & FA			3,000	3,500	2,000			2,250	2,000	1,900			1,750			

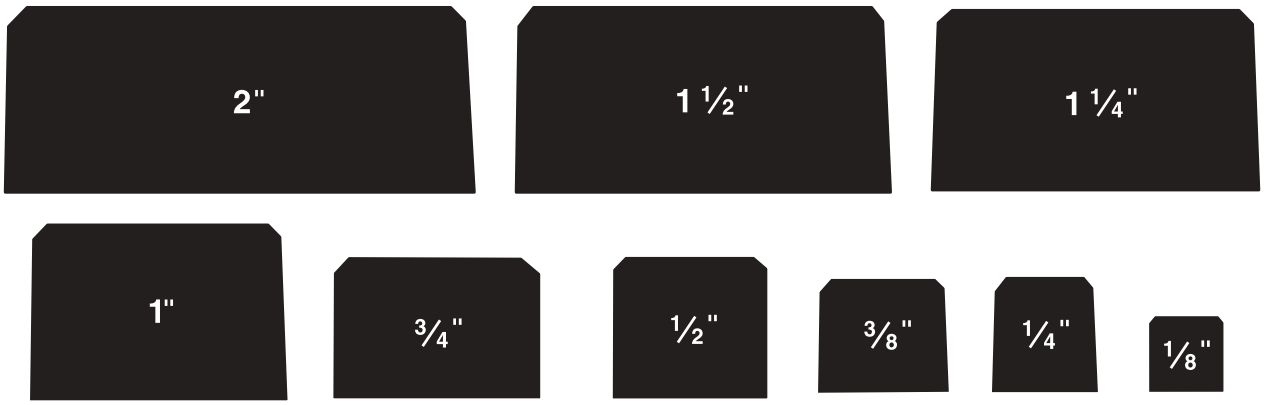
Hose End Connection Description	Part Number Codes	French Gaz Fittings (psi)				
		-13	-17	-21	-27	-33
French Gaz	F4, FG, GJ & GE	5,250	3,900	3,700	3,000	2,500

*NOTE: ALL THE ABOVE RATINGS ARE BASED ON LOW CARBON STEEL HOSE FITTINGS. HIGHER PRESSURE RATINGS CAN BE ATTAINED WITH MEDIUM CARBON AND ALLOY STEEL HOSE FITTINGS AND MATING ADAPTERS.

The Maximum working pressure of hoses are listed with each hose description in Section A.

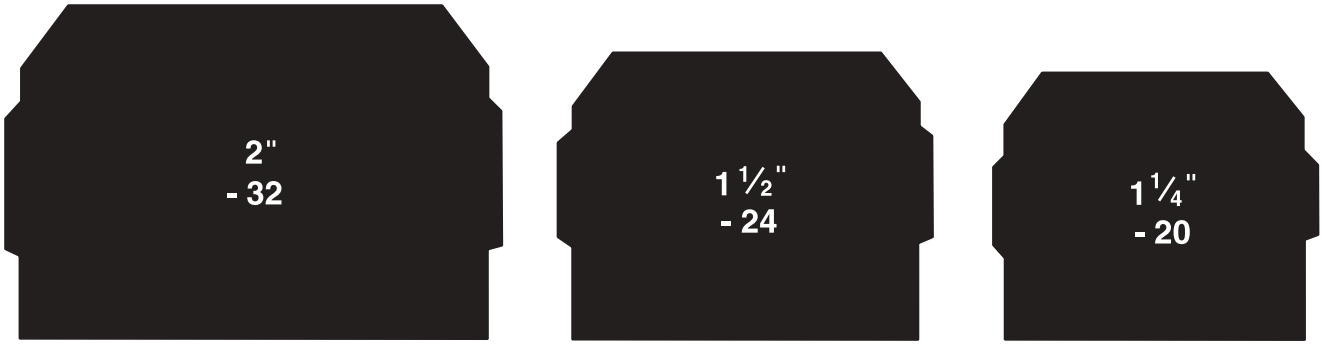
1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1" 1-1/4" 1-1/2" 2"

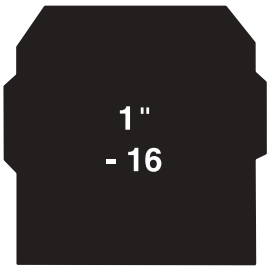
Male Pipe Thread Sizes

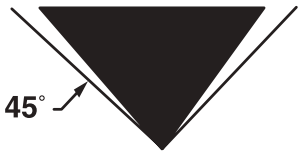


SAE (JIC) 37° Flare Nose Cone Sizes

SAE (JIC) 37° Flare Nose Cone Sizes

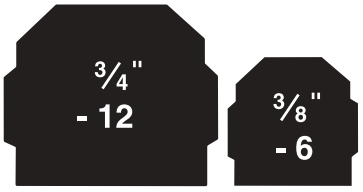




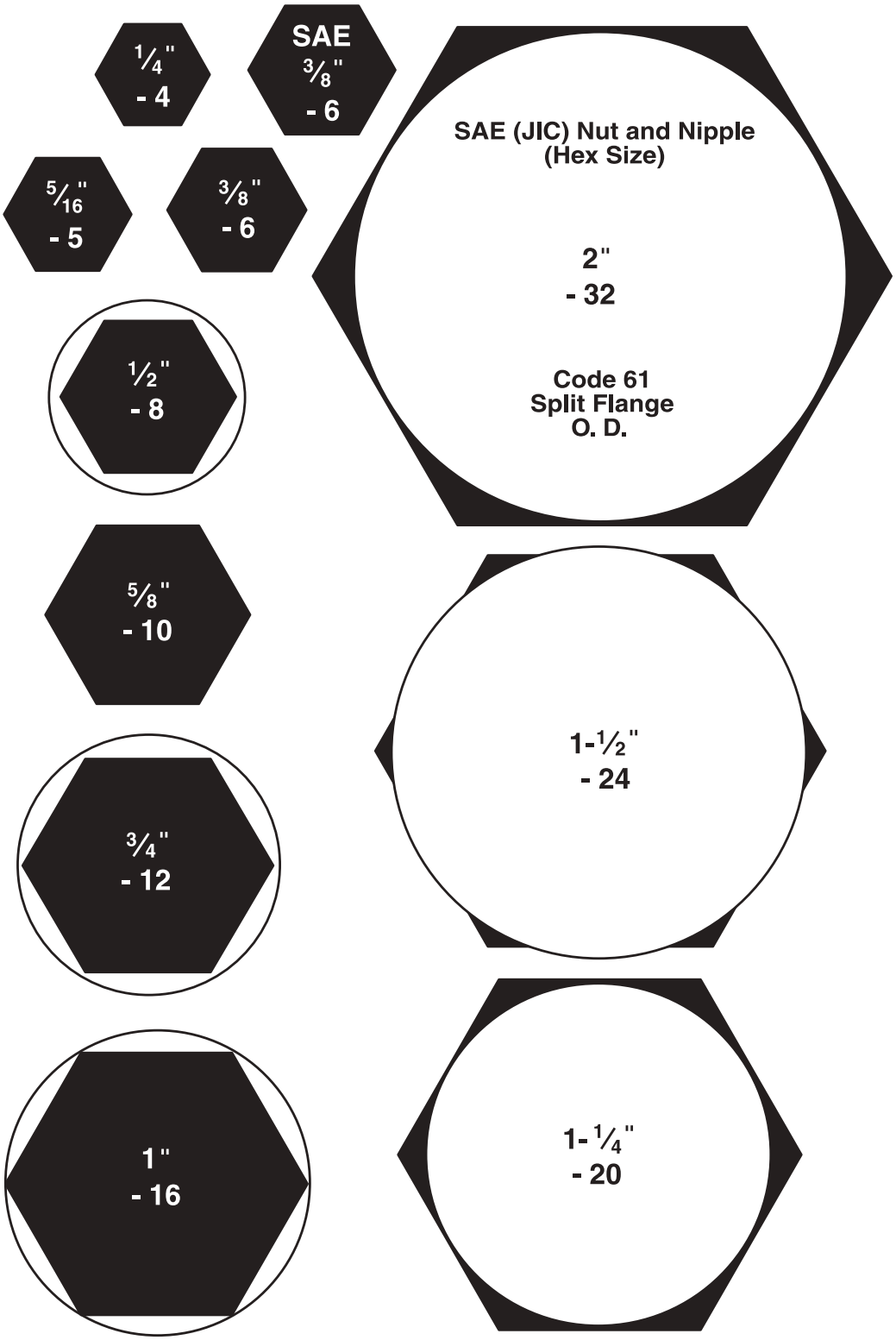


37° and 45° Flare Nose Angles

SAE 45° Flare Nose Cone Sizes



A
B
C
D



1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2"

Parker Hannifin Corporation
Pioneer Products Group
Minneapolis, MN
http://www.parker.com/pioneer

ISO 18752 HYDRAULIC HOSE SPECIFICATION INFORMATION

For decades, SAE J517 has published guidelines for 100R1 through 100R12 series hydraulic hoses. These manufacturer-driven SAE standards have been based on design, construction, and pressure ratings to ensure that hydraulic hoses meet minimum construction requirements. SAE established minimum pressure ratings for various hose IDs (inside diameters) and were later revised to also include constant-pressure hoses, such as R13, R15, R17 and R19, which are hoses that maintain pressure ratings within a group regardless of size.

More recently, however, hydraulic system designers began adopting ISO specifications. Many large OEMs switched to ISO standards in their design and manufacturing process to ensure the sale and service of their equipment globally.

ISO Standard 18752, released in 2006, takes a different approach centered around the design practices of users who typically design hydraulic systems based on performance and pressure requirements. The ISO 18752 Standard has nine pressure classes for maximum working pressure, ranging from 500 to 8,000 psi. Hydraulic hoses meeting ISO 18752 specifications are classified according to their resistance to impulse pressure in four grades: A, B, C, and D. Each grade requires a specific number of impulse cycles at a certain temperature and impulse pressure in order to meet the standard. Additionally, the grade is then classified by the outside diameter (O.D.) of the hose into standard types (AS, BS, CS) or compact types (AC, BC, CC, DC). Compact types have a smaller O.D. and bend radius than the standard types.

Each grade level requires a specific number of impulse cycles the hose must meet at a specified temperature and impulse pressure. The chart below explains, in detail, the ISO 18752 performance specifications.

ISO 18752 Performance Definitions (4.2 Grades and Types)

Grade	Type[a]	Resistance to Impulse		
		Temperature °C	Impulse Pressure (% of MWP[b])	Minimum Number of Cycles
A	AS	100	133%	200,000
	AC			
B	BS	100	133%	500,000
	BC			
C	CS	120	133% and 120%[c]	500,000
	CC			
D	DC	120	133%	1,000,000

[a] Standard or compact, e.g. CS is grade C and standard type.

Standard types have larger outside diameters and larger bend radii and compact types have smaller outside diameters and smaller bend radii.

[b] Maximum working pressure.

[c] 120% of the MWP shall be used for classes 350, 420 and 560 instead of 133%.

ISO 18752 classifies according to their resistance to impulse into four grades: A, B, C and D. Each grade is classified by outside diameter into standard types (AS, BS and CS) and compact types (AC, BC, CC and DC) as shown in this table.

It is important to note that ISO 18752:2014 does not include requirements for the connection ends. It is limited to the performance of hoses and hose assemblies. The hose assembly maximum working pressure is governed by the lowest maximum working pressure of the components.

Please reference pages A-XX through A-XX for the hydraulic hoses Parker offers that meet or exceed the ISO 18752 specification requirements.

A

B

C

D

Parker Safety Guide for Selecting and Using Hose, Tubing, Fittings, Connectors, Conductors, Valves and Related Accessories

Parker Publication No. 4400-B.1

WARNING: Failure or improper selection or improper use of hose, tubing, fittings, assemblies, valves, connectors, conductors or related accessories ("Products") can cause death, personal injury and property damage. Possible consequences of failure or improper selection or improper use of these Products include but are not limited to:

- Fittings thrown off at high speed.
- High velocity fluid discharge.
- Explosion or burning of the conveyed fluid.
- Electrocution from high voltage electric powerlines.
- Contact with suddenly moving or falling objects that are controlled by the conveyed fluid.
- Injections by high-pressure fluid discharge.
- Dangerously whipping Hose.
- Tube or pipe burst.
- Weld joint fracture.
- Contact with conveyed fluids that may be hot, cold, toxic or otherwise injurious.
- Sparking or explosion caused by static electricity buildup or other sources of electricity.
- Sparking or explosion while spraying paint or flammable liquids.
- Injuries resulting from inhalation, ingestion or exposure to fluids.

Before selecting or using any of these Products, it is important that you read and follow the instructions below. No product from any division in Parker Fluid Connectors Group is approved for in-flight aerospace applications. For hoses and fittings used in in-flight aerospace applications, please contact Parker Aerospace Group.

1.0 GENERAL INSTRUCTIONS

1.1 Scope: This safety guide provides instructions for selecting and using (including assembling, installing, and maintaining) these Products. For convenience, all rubber and/or thermoplastic products commonly called "hose" or "tubing" are called "Hose" in this safety guide. Metallic tube or pipe are called "tube". All assemblies made with Hose are called "Hose Assemblies". All assemblies made with Tube are called "Tube Assemblies". All products commonly called "fittings", "couplings" or "adapters" are called "Fittings". Valves are fluid system components that control the passage of fluid. Related accessories are ancillary devices that enhance or monitor performance including crimping, flaring, flanging, presetting, bending, cutting, deburring, swaging machines, sensors, tags, lockout handles, spring guards and associated tooling. This safety guide is a supplement to and is to be used with the specific Parker publications for the specific Hose, Fittings and Related Accessories that are being considered for use. Parker publications are available at www.parker.com. SAE J1273 (www.sae.org) and ISO 17165-2 (www.ansi.org) also provide recommended practices for hydraulic Hose Assemblies, and should be followed.

1.2 Fail-Safe: Hose, Hose Assemblies, Tube, Tube Assemblies and Fittings can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of the Hose, Hose Assembly, Tube, Tube Assembly or Fitting will not endanger persons or property.

1.3 Distribution: Provide a copy of this safety guide to each person responsible for selecting or using Hose, Tube and Fitting products. Do not select or use Parker Hose, Tube or Fittings without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the Products.

1.4 User Responsibility: Due to the wide variety of operating conditions and applications for Hose, Tube and Fittings. Parker does not represent or warrant that any particular Hose, Tube or Fitting is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the Products.
- Assuring that the user's requirements are met and that the application presents no health or safety hazards.
- Following the safety guide for Related Accessories and being trained to operate Related Accessories.
- Providing all appropriate health and safety warnings on the equipment on which the Products are used.
- Assuring compliance with all applicable government and industry standards.

1.5 Additional Questions: Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the Products being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2.0 HOSE, TUBE AND FITTINGS SELECTION INSTRUCTIONS

2.1 Electrical Conductivity: Certain applications require that the Hose be nonconductive to prevent electrical current flow. Other applications require the Hose and the Fittings and the Hose/Fitting interface to be sufficiently conductive to drain off static electricity. Extreme care must be exercised when selecting Hose, Tube and Fittings for these or any other applications in which electrical conductivity or nonconductivity is a factor.

The electrical conductivity or nonconductivity of Hose, Tube and Fittings is dependent upon many factors and may be susceptible to change. These factors include but are not limited to the various materials used to make the Hose and the Fittings, Fitting finish (some Fitting finishes are electrically conductive while others are nonconductive), manufacturing methods (including moisture control), how the Fittings contact the Hose, age and amount of deterioration or damage or other changes, moisture content of the Hose at any particular time, and other factors.

The following are considerations for electrically nonconductive and conductive Hose. For other applications consult the individual catalog pages and the appropriate industry or regulatory standards for proper selection.

2.1.1 Electrically Nonconductive Hose: Certain applications require that the Hose be nonconductive to prevent electrical current flow or to maintain electrical isolation. For applications that require Hose to be electrically nonconductive, including but not limited to applications near high voltage electric lines, only special nonconductive Hose can be used. The manufacturer of the equipment in which the nonconductive Hose is to be used must be consulted to be certain that the Hose, Tube and Fittings that are selected are proper for the application. Do not use any Parker Hose or Fittings for any such application requiring nonconductive Hose, including but not limited to applications near high voltage electric lines or dense magnetic fields, unless (i) the application is expressly approved in the Parker technical publication for the product, (ii) the Hose is marked "nonconductive", and (iii) the manufacturer of the equipment on which the Hose is to be used specifically approves the particular Parker Hose, Tube and Fittings for such use.

2.1.2 Electrically Conductive Hose: Parker manufactures special Hose for certain applications that require electrically conductive Hose. Parker manufactures special Hose for conveying paint in airless paint spraying applications. This Hose is labeled "Electrically Conductive Airless Paint Spray Hose" on its layline and packaging. This Hose must be properly connected to the appropriate Parker Fittings and properly grounded in order to dissipate dangerous static charge buildup, which occurs in all airless paint spraying applications. Do not use any other Hose for airless paint spraying, even if electrically conductive. Use of any other Hose or failure to properly connect the Hose can cause a fire or an explosion resulting in death, personal injury, and property damage. All hoses that convey fuels must be grounded.

Parker manufactures a special Hose for certain compressed natural gas ("CNG") applications where static electricity buildup may occur. Parker CNG Hose assemblies comply with the requirements of ANSI/IAS NGV 4.2; CSA 12.52, "Hoses for Natural Gas Vehicles and Dispensing Systems" (www.ansi.org). This Hose is labeled "Electrically Conductive for CNG Use"

Parker Safety Guide, Parker Publication No. 4400-B.1 *(continued)*

on its layline and packaging. This Hose must be properly connected to the appropriate Parker Fittings and properly grounded in order to dissipate dangerous static charge buildup, which occurs in, for example, high velocity CNG dispensing or transfer. Do not use any other Hose for CNG applications where static charge buildup may occur, even if electrically conductive. Use of other Hoses in CNG applications or failure to properly connect or ground this Hose can cause a fire or an explosion resulting in death, personal injury, and property damage. Care must also be taken to protect against CNG permeation through the Hose wall. See section 2.6, Permeation, for more information. Parker CNG Hose is intended for dispenser and vehicle use within the specified temperature range. Parker CNG Hose should not be used in confined spaces or unventilated areas or areas exceeding the specified temperature range. Final assemblies must be tested for leaks. CNG Hose Assemblies should be tested on a monthly basis for conductivity per ANSI/IAS NGV 4.2; CSA 12.52.

Parker manufactures special Hose for aerospace in-flight applications. Aerospace in-flight applications employing Hose to transmit fuel, lubricating fluids and hydraulic fluids require a special Hose with a conductive inner tube. This Hose for in-flight applications is available only from Parker's Stratoflex Products Division. Do not use any other Parker Hose for in-flight applications, even if electrically conductive. Use of other Hoses for in-flight applications or failure to properly connect or ground this Hose can cause a fire or an explosion resulting in death, personal injury and property damage. These Hose assemblies for in-flight applications must meet all applicable aerospace industry, aircraft engine and aircraft requirements.

2.2 Pressure: Hose, Tube and Fitting selection must be made so that the published maximum working pressure of the Hose, Tube and Fittings are equal to or greater than the maximum system pressure. The maximum working pressure of a Hose, or Tube Assembly is the lower of the respective published maximum working pressures of the Hose, Tube and the Fittings used. Surge pressures or peak transient pressures in the system must be below the published maximum working pressure for the Hose, Tube and Fitting. Surge pressures and peak pressures can usually only be determined by sensitive electrical instrumentation that measures and indicates pressures at millisecond intervals. Mechanical pressure gauges indicate only average pressures and cannot be used to determine surge pressures or peak transient pressures. Published burst pressure ratings for Hose is for manufacturing test purposes only and is no indication that the Product can be used in applications at the burst pressure or otherwise above the published maximum recommended working pressure.

2.3 Suction: Hoses used for suction applications must be selected to insure that the Hose will withstand the vacuum and pressure of the system. Improperly selected Hose may collapse in suction application.

2.4 Temperature: Be certain that fluid and ambient temperatures, both steady and transient, do not exceed the limitations of the Hose, Tube, Fitting and Seals. Temperatures below and above the recommended limit can degrade Hose, Tube, Fittings and Seals to a point where a failure may occur and release fluid. Tube and Fittings performances are normally degraded at elevated temperature. Material compatibility can also change at temperatures outside of the rated range. Properly insulate and protect the Hose Assembly when routing near hot objects (e.g. manifolds). Do not use any Hose in any application where failure of the Hose could result in the conveyed fluids (or vapors or mist from the conveyed fluids) contacting any open flame, molten metal, or other potential fire ignition source that could cause burning or explosion of the conveyed fluids or vapors.

2.5 Fluid Compatibility: Hose, and Tube Assembly selection must assure compatibility of the Hose tube, cover, reinforcement, Tube, Plating and Seals with the fluid media used. See the fluid compatibility chart in the Parker publication for the product being considered or used. This information is offered only as a guide. Actual service life can only be determined by the end user by testing under all extreme conditions and other analysis.

Hose, and Tube that is chemically compatible with a particular fluid must be assembled using Fittings and adapters containing likewise compatible seals. Flange or flare processes can change Tube material properties that may not be compatible with certain requirements such as NACE

2.6 Permeation: Permeation (that is, seepage through the Hose or Seal) will occur from inside the Hose or Fitting to outside when Hose or Fitting is used with gases, liquid and gas fuels, and refrigerants (including but not limited to such materials as helium, diesel fuel, gasoline, natural gas, phosphate esters, Skydrol, or LPG). This permeation may result in high concentrations of vapors which are potentially flammable, explosive, or toxic, and in loss of fluid. Dangerous explosions, fires, and other hazards can result when using the wrong Hose for such applications. The system designer must take into account the fact that this permeation will take place and must not use Hose or Fitting if this permeation could be hazardous. The system designer must take into account all legal, government, insurance, or any other special regulations which govern the use of fuels and refrigerants. Never use a Hose or Fitting even though the fluid compatibility is acceptable without considering the potential hazardous effects that can result from permeation through the Hose or Tube Assembly.

Permeation of moisture from outside the Hose or Fitting to inside the Hose or Fitting will also occur in Hose or Tube assemblies, regardless of internal pressure. If this moisture permeation would have detrimental effects (particularly, but not limited to refrigeration and air conditioning systems), incorporation of sufficient drying capacity in the system or other appropriate system safeguards should be selected and used. The sudden pressure release of highly pressurized gas could also result in Explosive Decompression failure of permeated Seals and Hoses.

2.7 Size: Transmission of power by means of pressurized fluid varies with pressure and rate of flow. The size of the components must be adequate to keep pressure losses to a minimum and avoid damage due to heat generation or excessive fluid velocity.

2.8 Routing: Attention must be given to optimum routing to minimize inherent problems (kinking or flow restriction due to Hose collapse, twisting of the Hose, proximity to hot objects or heat sources). For additional routing recommendations see SAE J1273 and ISO 17165-2. Hose Assemblies have a finite life and should be installed in a manner that allows for ease of inspection and future replacement. Hose because of its relative short life, should not be used in residential and commercial buildings inside of inaccessible walls or floors, unless specifically allowed in the product literature. Always review all product literature for proper installation and routing instructions.

2.9 Environment: Care must be taken to insure that the Hose, Tube and Fittings are either compatible with or protected from the environment (that is, surrounding conditions) to which they are exposed. Environmental conditions including but not limited to ultraviolet radiation, sunlight, heat, ozone, moisture, water, salt water, chemicals and air pollutants can cause degradation and premature failure.

2.10 Mechanical Loads: External forces can significantly reduce Hose, Tube and Fitting life or cause failure. Mechanical loads which must be considered include excessive flexing, twist, kinking, tensile or side loads, bend radius, and vibration. Use of swivel type Fittings or adapters may be required to insure no twist is put into the Hose. Use of proper Hose or Tube clamps may also be required to reduce external mechanical loads. Unusual applications may require special testing prior to Hose selection.

2.11 Physical Damage: Care must be taken to protect Hose from wear, snagging, kinking, bending smaller that minimum bend radius and cutting, any of which can cause premature Hose failure. Any Hose that has been kinked or bent to a radius smaller than the minimum bend radius, and any Hose that has been cut or is cracked or is otherwise damaged should be removed and discarded. Fittings with damages such as scratches on sealing surfaces and deformation should be replaced.

2.12 Proper End Fitting: See instructions 3.2 through 3.5. These recommendations may be substantiated by testing to industry standards such as SAE J517 for hydraulic applications, or MIL-A-5070, AS1339, or AS3517 for Hoses from Parker's Stratoflex Products Division for aerospace applications.

2.13 Length: When determining the proper Hose or Tube length of an assembly, be aware of Hose length change due to pressure, Tube length change due to thermal expansion or contraction, and Hose or Tube and machine tolerances and movement must be considered. When routing short hose assemblies, it is recommended that the minimum free hose length is always used. Consult the hose manufacturer for their minimum free hose length recommendations. Hose assemblies should be installed in such a way that any motion or flexing occurs within the same plane.

2.14 Specifications and Standards: When selecting Hose, Tube and Fittings, government, industry, and Parker specifications and recommendations must be reviewed and followed as applicable.

2.15 Hose Cleanliness: Hose and Tube components may vary in cleanliness levels. Care must be taken to insure that the Hose and Tube Assembly selected has an adequate level of cleanliness for the application.

2.16 Fire Resistant Fluids: Some fire resistant fluids that are to be conveyed by Hose or Tube require use of the same type of Hose or Tube as used with petroleum base fluids. Some such fluids require a special Hose, Tube, Fitting and Seal, while a few fluids will not work with any Hose at all. See instructions 2.5 and 1.5. The wrong Hose, Tube, Fitting or Seal may fail after a very short service. In addition, all liquids but pure water may burn fiercely under certain conditions, and even pure water leakage may be hazardous.

A

B

C

D

Parker Safety Guide, Parker Publication No. 4400-B.1 *(continued)*

2.17 **Radiant Heat:** Hose and Seals can be heated to destruction without contact by such nearby items as hot manifolds or molten metal. The same heat source may then initiate a fire. This can occur despite the presence of cool air around the Hose or Seal. Performance of Tube and Fitting subjected to the heat could be degraded.

2.18 **Welding or Brazing:** When using a torch or arc welder in close proximity to hydraulic lines, the hydraulic lines should be removed or shielded with appropriate fire resistant materials. Flame or weld spatter could burn through the Hose or Seal and possibly ignite escaping fluid resulting in a catastrophic failure. Heating of plated parts, including Hose Fittings and adapters, above 450°F (232°C) such as during welding, brazing or soldering may emit deadly gases. Any elastomer seal on fittings shall be removed prior to welding or brazing, any metallic surfaces shall be protected after brazing or welding when necessary. Welding and brazing filler material shall be compatible with the Tube and Fitting that are joined.

2.19 **Atomic Radiation:** Atomic radiation affects all materials used in Hose and Tube assemblies. Since the long-term effects may be unknown, do not expose Hose or Tube assemblies to atomic radiation. Nuclear applications may require special Tube and Fittings.

2.20 **Aerospace Applications:** The only Hose, Tube and Fittings that may be used for in-flight aerospace applications are those available from Parker's Stratoflex Products Division. Do not use any other Hose or Fittings for in-flight applications. Do not use any Hose or Fittings from Parker's Stratoflex Products Division with any other Hose or Fittings, unless expressly approved in writing by the engineering manager or chief engineer of Stratoflex Products Division and verified by the user's own testing and inspection to aerospace industry standards.

2.21 **Unlocking Couplings:** Ball locking couplings or other Fittings with quick disconnect ability can unintentionally disconnect if they are dragged over obstructions, or if the sleeve or other disconnect member, is bumped or moved enough to cause disconnect. Threaded Fittings should be considered where there is a potential for accidental uncoupling.

3.0 HOSE AND FITTINGS ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1 **Component Inspection:** Prior to assembly, a careful examination of the Hose and Fittings must be performed. All components must be checked for correct style, size, catalog number, and length. The Hose must be examined for cleanliness, obstructions, blisters, cover looseness, kinks, cracks, cuts or any other visible defects. Inspect the Fitting and sealing surfaces for burrs, nicks, corrosion or other imperfections. Do NOT use any component that displays any signs of nonconformance.

3.2 **Hose and Fitting Assembly:** Do not assemble a Parker Fitting on a Parker Hose that is not specifically listed by Parker for that Fitting, unless authorized in writing by the engineering manager or chief engineer of the appropriate Parker division. Do not assemble a Parker Fitting on another manufacturer's Hose or a Parker Hose on another manufacturer's Fitting unless (i) the engineering manager or chief engineer of the appropriate Parker division approves the Assembly in writing or that combination is expressly approved in the appropriate Parker literature for the specific Parker product, and (ii) the user verifies the Assembly and the application through analysis and testing. For Parker Hose that does not specify a Parker Fitting, the user is solely responsible for the selection of the proper Fitting and Hose Assembly procedures. See instruction 1.4.

To prevent the possibility of problems such as leakage at the Fitting or system contamination, it is important to completely remove all debris from the cutting operation before installation of the Fittings. The Parker published instructions must be followed for assembling the Fittings on the Hose. These instructions are provided in the Parker Fitting catalog for the specific Parker Fitting being used, or by calling 1-800-CPARKER, or at www.parker.com.

3.3 **Related Accessories:** Do not crimp or swage any Parker Hose or Fitting with anything but the listed swage or crimp machine and dies in accordance with Parker published instructions. Do not crimp or swage another manufacturer's Fitting with a Parker crimp or swage die unless authorized in writing by the engineering manager or chief engineer of the appropriate Parker division.

3.4 **Parts:** Do not use any Parker Fitting part (including but not limited to socket, shell, nipple, or insert) except with the correct Parker mating parts, in accordance with Parker published instructions, unless authorized in writing by the engineering manager or chief engineer of the appropriate Parker division.

3.5 **Field Attachable/Permanent:** Do not reuse any field attachable Hose Fitting that has blown or pulled off a Hose. Do not reuse a Parker permanent Hose Fitting (crimped or swaged) or any part thereof. Complete Hose Assemblies may only be reused after proper inspection under section 4.0. Do not assemble Fittings to any previously used hydraulic Hose that was in service, for use in a fluid power application.

3.6 **Pre-Installation Inspection:** Prior to installation, a careful examination of the Hose Assembly must be performed. Inspect the Hose Assembly for any damage or defects. DO NOT use any Hose Assembly that displays any signs of nonconformance.

3.7 **Minimum Bend Radius:** Installation of a Hose at less than the minimum listed bend radius may significantly reduce the Hose life. Particular attention must be given to preclude sharp bending at the Hose to Fitting juncture. Any bending during installation at less than the minimum bend radius must be avoided. If any Hose is kinked during installation, the Hose must be discarded.

3.8 **Twist Angle and Orientation:** Hose Assembly installation must be such that relative motion of machine components does not produce twisting.

3.9 **Securement:** In many applications, it may be necessary to restrain, protect, or guide the Hose to protect it from damage by unnecessary flexing, pressure surges, and contact with other mechanical components. Care must be taken to insure such restraints do not introduce additional stress or wear points.

3.10 **Proper Connection of Ports:** Proper physical installation of the Hose Assembly requires a correctly installed port connection insuring that no twist or torque is transferred to the Hose when the Fittings are being tightened or otherwise during use.

3.11 **External Damage:** Proper installation is not complete without insuring that tensile loads, side loads, kinking, flattening, potential abrasion, thread damage or damage to sealing surfaces are corrected or eliminated. See instruction 2.10.

3.12 **System Checkout:** All air entrapment must be eliminated and the system pressurized to the maximum system pressure (at or below the Hose maximum working pressure) and checked for proper function and freedom from leaks. Personnel must stay out of potential hazardous areas while testing and using.

3.13 **Routing:** The Hose Assembly should be routed in such a manner so if a failure does occur, the escaping media will not cause personal injury or property damage. In addition, if fluid media comes in contact with hot surfaces, open flame or sparks, a fire or explosion may occur. See section 2.4.

3.14 **Ground Fault Equipment Protection Devices (GFEPDs): WARNING! Fire and Shock Hazard.** To minimize the danger of fire if the heating cable of a Multitube bundle is damaged or improperly installed, use a Ground Fault Equipment Protection Device. Electrical fault currents may be insufficient to trip a conventional circuit breaker.

For ground fault protection, the IEEE 515: (www.ansi.org) standard for heating cables recommends the use of GFEPDs with a nominal 30 milliampere trip level for "piping systems in classified areas, those areas requiring a high degree of maintenance, or which may be exposed to physical abuse or corrosive atmospheres".

4.0 TUBE AND FITTINGS ASSEMBLY AND INSTALLATION INSTRUCTIONS

4.1 **Component Inspection:** Prior to assembly, a careful examination of the Tube and Fittings must be performed. All components must be checked for correct style, size, material, seal, and length. Inspect the Fitting and sealing surfaces for burrs, nicks, corrosion, missing seal or other imperfections. Do NOT use any component that displays any signs of nonconformance.

4.2 **Tube and Fitting Assembly:** Do not assemble a Parker Fitting with a Tube that is not specifically listed by Parker for that Fitting, unless authorized in writing by the engineering manager or chief engineer of the appropriate Parker division. The Tube must meet the requirements specified to the Fitting.

The Parker published instructions must be followed for assembling the Fittings to a Tube. These instructions are provided in the Parker Fitting catalog for the specific Parker Fitting being used, or by calling 1-800-CPARKER, or at www.parker.com.

4.3 **Related Accessories:** Do not preset or flange Parker Fitting components using another manufacturer's equipment or procedures unless authorized in writing by the engineering manager or chief engineer of the appropriate Parker division. Tube, Fitting component and tooling must be check for correct style, size and material. Operation and maintenance of Related Accessories must be in accordance with the operation manual for the designated Accessory.

4.4 **Securement:** In many applications, it may be necessary to restrain, protect, or guide the Tube to protect it from damage by unnecessary flexing, pressure surges, vibration, and contact with other mechanical components. Care must be taken to insure such restraints do not introduce additional stress or wear points.

Parker Safety Guide, Parker Publication No. 4400-B.1 *(continued)*

4.5 **Proper Connection of Ports:** Proper physical installation of the Tube Assembly requires a correctly installed port connection insuring that no torque is transferred to the Tube when the Fittings are being tightened or otherwise during use.

4.6 **External Damage:** Proper installation is not complete without insuring that tensile loads, side loads, flattening, potential abrasion, thread damage or damage to sealing surfaces are corrected or eliminated. See instruction 2.10.

4.7 **System Checkout:** All air entrapment must be eliminated and the system pressurized to the maximum system pressure (at or below the Tube Assembly maximum working pressure) and checked for proper function and freedom from leaks. Personnel must stay out of potential hazardous areas while testing and using.

4.8 **Routing:** The Tube Assembly should be routed in such a manner so if a failure does occur, the escaping media will not cause personal injury or property damage. In addition, if fluid media comes in contact with hot surfaces, open flame or sparks, a fire or explosion may occur. See section 2.4.

5.0 **HOSE AND FITTING MAINTENANCE AND REPLACEMENT INSTRUCTIONS**

5.1 Even with proper selection and installation, Hose life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a possible Hose failure, and experience with any Hose failures in the application or in similar applications should determine the frequency of the inspection and the replacement for the Products so that Products are replaced before any failure occurs. Certain products require maintenance and inspection per industry requirements. Failure to adhere to these requirements may lead to premature failure. A maintenance program must be established and followed by the user and, at minimum, must include instructions 5.2 through 5.7

5.2 **Visual Inspection Hose/Fitting:** Any of the following conditions require immediate shut down and replacement of the Hose Assembly:
- Fitting slippage on Hose;
- Damaged, cracked, cut or abraded cover (any reinforcement exposed);
- Hard, stiff, heat cracked, or charred Hose;
- Cracked, damaged, or badly corroded Fittings;
- Leaks at Fitting or in Hose;
- Kinked, crushed, flattened or twisted Hose; and
- Blistered, soft, degraded, or loose cover.

5.3 **Visual Inspection All Other:** The following items must be tightened, repaired, corrected or replaced as required:
- Leaking port conditions;
- Excess dirt buildup;/
- Worn clamps, guards or shields; and
- System fluid level, fluid type, and any air entrapment.

5.4 **Functional Test:** Operate the system at maximum operating pressure and check for possible malfunctions and leaks. Personnel must avoid potential hazardous areas while testing and using the system. See section 2.2.

5.5 **Replacement Intervals:** Hose assemblies and elastomeric seals used on Hose Fittings and adapters will eventually age, harden, wear and deteriorate under thermal cycling and compression set. Hose Assemblies and elastomeric seals should be inspected and replaced at specific replacement intervals, based on previous service life, government or industry recommendations, or when failures could result in unacceptable downtime, damage, or injury risk. See section 1.2. Hose and Fittings may be subjected to internal mechanical and/or chemical wear from the conveying fluid and may fail without warning. The user must determine the product life under such circumstances by testing. Also see section 2.5.

5.6 **Hose Inspection and Failure:** Hydraulic power is accomplished by utilizing high pressure fluids to transfer energy and do work. Hoses, Fittings and Hose Assemblies all contribute to this by transmitting fluids at high pressures. Fluids under pressure can be dangerous and potentially lethal and, therefore, extreme caution must be exercised when working with fluids under pressure and handling the Hoses transporting the fluids. From time to time, Hose Assemblies will fail if they are not replaced at proper time intervals. Usually these failures are the result of some form of misapplication, abuse, wear or failure to perform proper maintenance. When Hoses fail, generally the high pressure fluids inside escape in a stream which may or may not be visible to the user. Under no circumstances should the user attempt to locate the leak by "feeling" with their hands or any other part of their body. High pressure fluids can and will penetrate the skin and cause severe tissue damage and possibly loss of limb. Even seemingly minor hydraulic fluid injection injuries must be treated immediately by a physician with knowledge of the tissue damaging properties of hydraulic fluid.

If a Hose failure occurs, immediately shut down the equipment and leave the area until pressure has been completely released from the Hose Assembly. Simply shutting down the hydraulic pump may or may not eliminate the pressure in the Hose Assembly. Many times check valves, etc., are employed in a system and can cause pressure to remain in a Hose Assembly even when pumps or equipment are not operating. Tiny holes in the Hose, commonly known as pinholes, can eject small, dangerously powerful but hard to see streams of hydraulic fluid. It may take several minutes or even hours for the pressure to be relieved so that the Hose Assembly may be examined safely.

Once the pressure has been reduced to zero, the Hose Assembly may be taken off the equipment and examined. It must always be replaced if a failure has occurred. Never attempt to patch or repair a Hose Assembly that has failed. Consult the nearest Parker distributor or the appropriate Parker division for Hose Assembly replacement information.

Never touch or examine a failed Hose Assembly unless it is obvious that the Hose no longer contains fluid under pressure. The high pressure fluid is extremely dangerous and can cause serious and potentially fatal injury.

5.7 **Elastomeric seals:** Elastomeric seals will eventually age, harden, wear and deteriorate under thermal cycling and compression set. Elastomeric seals should be inspected and replaced.

5.8 **Refrigerant gases:** Special care should be taken when working with refrigeration systems. Sudden escape of refrigerant gases can cause blindness if the escaping gases contact the eye and can cause freezing or other severe injuries if it contacts any other portion of the body.

5.9 **Compressed natural gas (CNG):** Parker CNG Hose Assemblies should be tested after installation and before use, and at least on a monthly basis per instructions provided on the Hose Assembly tag. The recommended procedure is to pressurize the Hose and check for leaks and to visually inspect the Hose for damage and to perform an electrical resistance test.

Caution: Matches, candles, open flame or other sources of ignition shall not be used for Hose inspection. Leak check solutions should be rinsed off after use.

6.0 **HOSE STORAGE**

6.1 **Age Control:** Hose and Hose Assemblies must be stored in a manner that facilitates age control and first-in and first-out usage based on manufacturing date of the Hose and Hose Assemblies. Unless otherwise specified by the manufacturer or defined by local laws and regulations:

6.1.1 The shelf life of rubber hose in bulk form or hose made from two or more materials is 28 quarters (7 years) from the date of manufacture, with an extension of 12 quarters (3 years), if stored in accordance with ISO 2230;

6.1.2 The shelf life of thermoplastic and polytetrafluoroethylene hose is considered to be unlimited;

6.1.3 Hose assemblies that pass visual inspection and proof test shall not be stored for longer than 2 years.

6.1.4 **Storage:** Stored Hose and Hose Assemblies must not be subjected to damage that could reduce their expected service life and must be placed in a cool, dark and dry area with the ends capped. Stored Hose and Hose Assemblies must not be exposed to temperature extremes, ozone, oils, corrosive liquids or fumes, solvents, high humidity, rodents, insects, ultraviolet light, electromagnetic fields or radioactive materials.

Issue Date	ECO Number:	Revision Letter:	Revision Date:	Specification
24-SEP-2015	XXXXXX	A	30-OCT-2015	FC-Safety Guide

A

B

C

D

Offer of Sale

Definitions. As used herein, the following terms have the meanings indicated.

Buyer:	means any customer receiving a Quote for Products from Seller.
Goods:	means any tangible part, system or component to be supplied by the Seller.
Products:	means the Goods, Services and/or Software as described in a Quote provided by the Seller.
Quote:	means the offer or proposal made by Seller to Buyer for the supply of Products.
Seller:	means Parker-Hannifin Corporation, including all divisions and businesses thereof.
Services:	means any services to be supplied by the Seller.
Software:	means any software related to the Products, whether embedded or separately downloaded.
Terms:	means the terms and conditions of this Offer of Sale or any newer version of the same as published by Seller electronically at www.parker.com/saleterms.

1. **Terms**. All sales of Products by Seller are contingent upon, and will be governed by, these Terms and, these Terms are incorporated into any Quote provided by Seller to any Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic date interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms of purchase. No modification to these Terms will be binding on Seller unless agreed to in writing and signed by an authorized representative of Seller.

2. **Price; Payment.** The Products set forth in Seller's Quote are offered for sale at the prices indicated in Seller's Quote. Unless otherwise specifically stated in Seller's Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices at any time to adjust for any raw material price fluctuations. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2010). All sales are contingent upon credit approval and payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law.

3. **Shipment; Delivery; Title and Risk of Loss**. All delivery dates are approximate. Seller is not responsible for damages resulting from any delay. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the shipment carrier at Seller's facility. Unless otherwise agreed, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyers' request beyond the respective indicated shipping date will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.

4. **Warranty.** The warranty related to the Products is as follows: (i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the completion of the Services by Seller; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer:

DISCLAIMER OF WARRANTY: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED. BUYER AGREES AND ACKNOWLEDGES THAT UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".

5. **Claims; Commencement of Actions**. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to the Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the non-conformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

6. **LIMITATION OF LIABILITY**. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCT, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. **IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON- DELIVERY, SERVICING, NON-COMPLETION OF SERVICES, USE, LOSS OF USE OF, OR INABILITY TO USE THE PRODUCTS OR ANY PART THEREOF, LOSS OF DATA, IDENTITY, PRIVACY, OR CONFIDENTIALITY, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.**

7. **Loss to Buyer's Property.** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which are or become Buyer's property, will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

   Special Tooling. Special Tooling includes but is not limited to tooling, jigs, fixtures and associated manufacturing equipment acquired or necessary to manufacture Products. A tooling charge may be imposed for any Special Tooling. Such Special Tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in Special Tooling belonging to Seller that is utilized in the manufacture of the Products, even if such Special Tooling has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property in its sole discretion at any time.

   Security Interest. To secure payment of all sums due, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

8. **User Responsibility**. The Buyer through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. The Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and other technical information provided with the Product. If Seller provides Product options based upon data or specifications provided by the Buyer, the Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event the Buyer is not the end-user, Buyer will ensure such end-user complies with this paragraph.

9. **Use of Products, Indemnity by Buyer.** Buyer shall comply with all instructions, guides and specifications provided by Seller with the Products. Unauthorized Uses. If Buyer uses or resells the Products for any uses prohibited in Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products provided by Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's

use of patterns, tooling, equipment, plans, drawings, designs or specifications or other information or things furnished by Buyer; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing or tampering with the Products for any reason; or (e) Buyer's failure to comply with these Terms. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

10. **Cancellations and Changes.** Buyer may not cancel or modify any order for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller, at any time, may change Product features, specifications, designs and availability.

11. **Limitation on Assignment.** Buyer may not assign its rights or obligations without the prior written consent of Seller.

12. **Force Majeure.** Seller does not assume the risk and is not liable for delay or failure to perform any of Seller's obligations by reason of events or circumstances beyond its reasonable control ("Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

13. **Waiver and Severability.** Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of these Terms by legislation or other rule of law shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

14. **Termination.** Seller may terminate any agreement governed by or arising from these Terms for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or one if filed by a third party (d) makes an assignment for the benefit of creditors; or (e) dissolves its business or liquidates all or a majority of its assets.

15. **Ownership of Software.** Seller retains ownership of all Software supplied to Buyer hereunder. In no event shall Buyer obtain any greater right in and to the Software than a right in the nature of a license limited to the use thereof and subject to compliance with any other terms provided with the Software.

16. **Indemnity for Infringement of Intellectual Property Rights.** Seller is not liable for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights ("Intellectual Property Rights") except as provided in this Section. Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on a third party claim that one or more of the Products sold hereunder infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by the Seller to the Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products sold hereunder is subject to such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products so as to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) arising from information provided by Buyer; or (ii) directed to any Products provided hereunder for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products provided hereunder. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for such claims of infringement of Intellectual Property Rights.

17. **Governing Law.** These Terms and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

18. **Entire Agreement.** These Terms, along with the terms set forth in the main body of any Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. In the event of a conflict between any term set forth in the main body of a Quote and these Terms, the terms set forth in the main body of the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. These Terms may not be modified unless in writing and signed by an authorized representative of Seller.

19. **Compliance with Laws.** Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti- Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer acknowledges that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Product from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws.

5/2017

Pioneer has been "The Farmer's Choice" for over seventy years.

The Pioneer brand represents quality and value, and has become the product of choice for farmers around the globe. The original Pioneer quick coupling design is still the standard today.

Parker Hannifin Corporation
Pioneer Products Group
8145 Lewis Road
Minneapolis, MN 55427

Catalog 3920 March 2023