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Section E



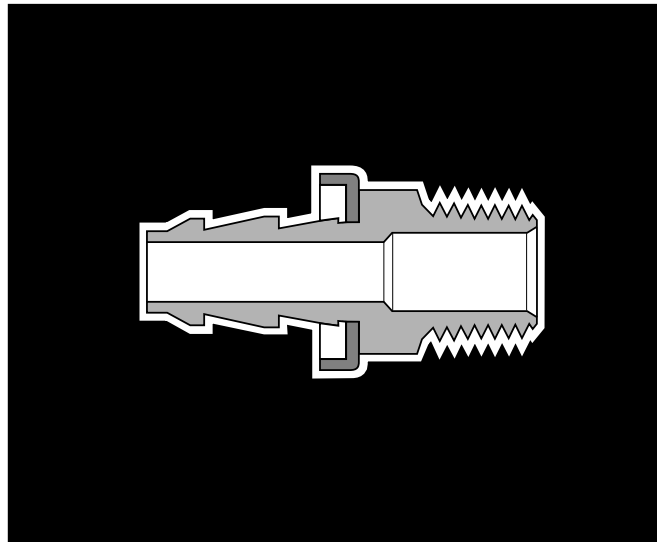
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Fitting & Hose Application Guide

Media (4, 5, 6)	Series of Hose	
	Push-on	General Purpose
	831 (Black Cover)	GPH (Gray & Colors)
Air & Inert Gas	● (1)	● (1)
Ethanol	●	
Ethylene Glycol	● (2)	● (1)
Lubricating Oils (Petroleum Base)	●	●
Methanol	●	
Water	● (2)	● (1)
Water Glycol	● (2)	● (1)
Vacuum	● (3)	●
Other Characteristics	Push-on	GPH
Abrasion Resistant		●
Oil Resistant	●	●
Ozone Resistant	●	●
Ultra Violet Resistant	●	●
Weather Resistant	●	
Notes: (1) 150°F Maximum Temperature (2) 180°F Maximum Temperature (3) Limited by Hose I.D. (4) ⚠ CAUTION: Do not use Synthetic Rubber Hose or PVC Hose if some media permeation (see page 9 & 10) is not acceptable or if such permeation cause a hazard. (5) Consult the supplier for approval of medium not shown. (6) See Guide For Selecting and Using Hose (Tubing) & Fittings on page 9 & 10.		

Synthetic Rubber Hose Reel Footage

Hose Type	I.D.	Approx. Reel Size (Feet)	Maximum Number of Lengths on Reel	Minimum Feet of Hose in Each Length
Push-on 831	1/4"	500 ± 50	4	10
Push-on 831	3/8"	350 ± 35	4	10
Push-on 831	1/2"	220 ± 22	3	10
Push-on 831	5/8"	200 ± 20	3	10
Push-on 831	3/4"	145 ± 15	3	10
Standard Duty	1/4" & 3/8"	500 ± 100	3	100
Standard Duty	1/2"	500 ± 100	2	100



E

Advantages

Push-on Hose Fittings are machined from the highest quality brass or stainless steel. The barbs are specifically engineered to work in conjunction with the I.D. and braid angle of Push-on Hose, ensuring a tight connection **without clamps**.

Assembly

Push-on Hose Fittings are designed only for use with Push-on Hose. Do not use with any other style or manufacturer of hose.

Assembly Instructions:

1. Cut hose cleanly and squarely to length.
2. Lubricate hose I.D. and barbs with light oil or soapy water.
3. Push the hose onto the fitting until it bottoms against the yellow stop ring. This ensures that all of the barbs are engaged with the hose and will also help keep the end of the hose from fraying.
4. ⚠ **CAUTION: Use of clamps may damage sealing integrity of Hose and Fitting Assembly.**

Temperature Range

-40°F to 180°F (-40°C to 82°C)
 Limited by media through hose assembly.

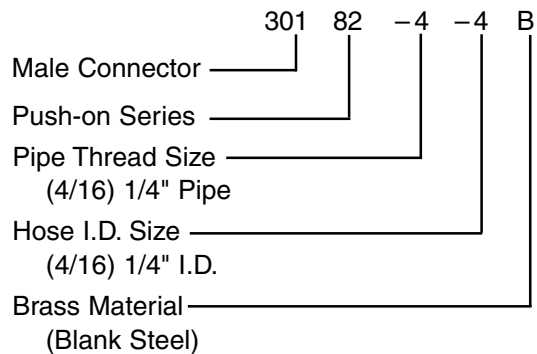
Pressure Range

Limited by hose I.D.






Nomenclature

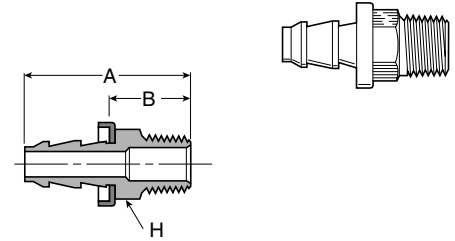
Part numbers are constructed from symbols that identify the style, size and material of the fitting.

Example:








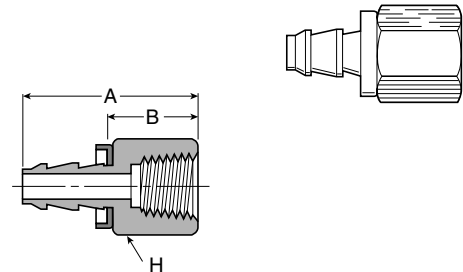
30182 Push-on Hose Barb to Male Pipe

#										
					A		H			
	Part No.	Thread Inch		Hose Size Inch		Inch	mm	Inch	mm	Inch
30182-2-4B	1/8 x 27	-2	1/4	-4	1.39	35	7/16	0.63	.64	16
30182-4-4B	1/4 x 18	-4	1/4	-4	1.57	40	9/16	0.82	.82	21
30182-4-6B	1/4 x 18	-4	1/4	-4	1.78	45	9/16	0.82	.88	22
30182-6-6B	3/8 x 18	-6	3/8	-6	1.78	45	11/16	0.88	.88	22
30182-8-6B	1/2 x 14	-8	3/8	-6	2.03	52	7/8	1.13	1.13	29
30182-6-8B	3/8 x 18	-6	1/2	-8	1.93	49	11/16	0.88	.88	22
30182-8-8B	1/2 x 14	-8	1/2	-8	2.18	55	7/8	1.13	1.13	29
30182-12-8B	3/4 x 14	-12	1/2	-8	2.21	56	1-1/16	1.16	1.16	29
30182-8-10B	1/2 x 14	-8	5/8	-10	2.58	66	7/8	1.13	1.13	29
30182-12-12B	3/4 x 14	-12	3/4	-12	2.61	66	1-1/16	1.16	1.16	29








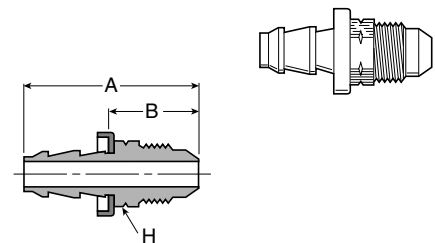
30282 Push-on Hose Barb to Female Pipe

#										
					A		H			
	Part No.	Thread Inch		Hose Size Inch		Inch	mm	Inch	mm	Inch
30282-4-4B	1/4 x 18	-4	1/4	-4	1.56	40	3/4	.81	.81	21
30282-6-6B	3/8 x 18	-6	3/8	-6	1.82	46	7/8	.92	.92	23
30282-8-8B	1/2 x 14	-8	1/2	-8	2.16	55	1-1/16	1.11	1.11	28



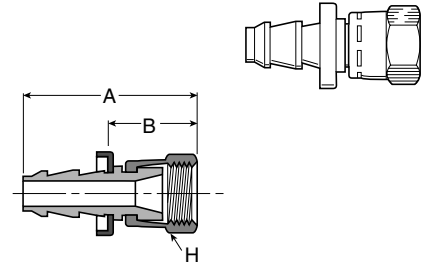
30482 Push-on Hose Barb to Male SAE 45°

#										
					A		H			
	Part No.	Thread Inch		Hose Size Inch		Inch	mm	Inch	mm	Inch
30482-4-4B	1/4	7/16 x 20	-4	1/4	-4	1.51	38	7/16	0.76	19
30482-5-4B	5/16	1/2 x 20	-5	1/4	-4	1.61	41	9/16	0.86	22
30482-6-6B	3/8	5/8 x 18	-6	3/8	-6	1.84	47	5/8	0.94	24
30482-8-8B	1/2	3/4 x 16	-8	1/2	-8	2.15	55	3/4	1.1	28



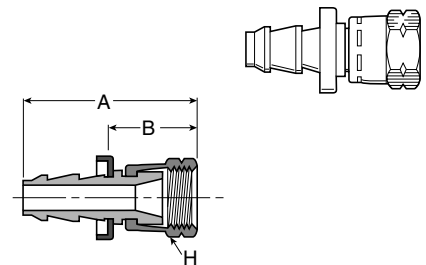
30682 Push-on Hose Barb to Female SAE JIC 37° Swivel

# Part No.	Thread Inch				Hose Size Inch		A Inch mm		H Inch	B Inch mm	
30682-4-4B	1/4	7/16 x 20	-4	1/4	-4	1.52	39	9/16	0.77	20	
30682-5-4B	5/16	1/2 x 12	-5	1/4	-4	1.58	40	5/8	0.83	21	
30682-6-6B	3/8	9/16 x 18	-6	1/4	-4	1.61	41	11-16	0.86	22	
30682-8-6B	1/2	3/4 x 16	-8	3/8	-6	1.87	47	7/8	0.97	25	
30682-8-8B	1/2	3/4 x 16	-8	1/2	-8	2.02	51	7/8	0.97	25	
30682-10-8B	5/8	7/8 x 14	-10	1/2	-8	2.14	54	1	1.09	28	
30682-10-10B	5/8	7/8 x 14	-10	5/8	-10	2.54	65	1	1.09	28	
30682-12-12B	3/4	1-1/16 x 12	-12	3/4	-12	2.65	67	1-1/4	1.2	30	



30882 Push-on Hose Barb to Female SAE 45° Swivel

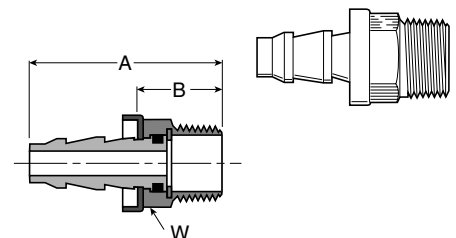
# Part No.	Thread Inch				Hose Size Inch		A Inch mm		H Inch	B Inch mm	
30882-4-4B	1/4	7/16 x 20	-4	1/4	-4	1.52	39	9/16	0.76	19	
30882-5-4B	5/16	1/2 x 20	-5	1/4	-4	1.58	40	5/8	0.83	21	
30882-6-6B	3/8	5/8 x 18	-6	3/8	-6	1.81	46	3/4	0.91	23	
30882-8-6B	1/2	3/4 x 16	-8	3/8	-6	1.87	47	7/8	0.97	25	
30882-8-8B	1/2	3/4 x 16	-8	1/2	-8	2.02	51	7/8	0.97	25	
30882-10-8B	5/8	7/8 x 14	-10	1/2	-8	2.14	54	1	1.09	28	
30882-10-10B	5/8	7/8 x 14	-10	5/8	-10	2.54	65	1	1.09	28	
30882-12-12B	3/4	1-1/16 x 14	-12	3/4	-12	2.65	67	1-1/4	1.19	30	



31382 Push-on Hose Barb to Male Pipe Swivel

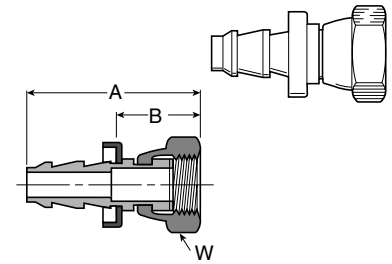
# Part No.	Thread Inch			Hose Size Inch		A Inch mm		W Inch	B Inch mm	
31382-4-4	1/4 x 18	-4	1/4	-4	1.6	41	9/16	.85	22	
31382-6-6	3/8 x 18	-6	3/8	-6	1.79	45	11/16	.89	23	
31382-8-8*	1/2 x 14	-8	1/2	-8	2.2	56	7/8	1.15	29	

* Steel



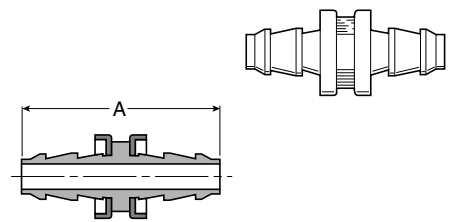
**37G82 Push-on Hose Barb to Female Pipe (NPSM)
Swivel with Gasket**

# Part No.	Gasket	Thread Inch		Hose Size Inch		A		W Inch	B	
				Inch	mm	Inch	mm		Inch	mm
37G82-4-4	07G-4	1/4- 18	-4	1/4	-4	1.55	39	11/16	0.80	20
37G82-4-6	07G-4	1/4- 18	-4	3/8	-6	1.7	43	11/16	0.80	20
37G82-6-6	07G-6	3/8- 18	-6	3/8	-6	1.75	44	7/8	0.85	22
37G82-8-8	07G-8	1/2- 14	-8	1/2	-8	2.07	53	1	1.02	26
37G82-8-10	07G-8	1/2- 14	-8	5/8	-10	2.47	63	1	1.02	26
37G82-12-12	07G-12	3/4- 14	-12	3/4	-12	2.54	65	1-1/4	1.09	28



38282 Push-on Hose Barb Union

# Part No.	Hose Size Inch		A	
	Inch	mm	Inch	mm
38282-4-4B	1/4	-4	1.80	46
38282-6-6B	3/8	-6	2.15	55
38282-8-8	1/2	-8	2.51	64





Water Service

Up to 180°F (82°C).

Fitting Recommendations

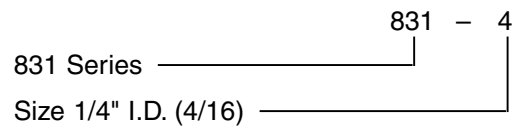
Use only with Push-on Hose Fittings and Quick Couplers with Push-lock Hose Barb.

Nomenclature

Part numbers are constructed from symbols that identify the style and size of the hose. Numbers identify the hose I.D. in 1/16's of an inch.



Example:



Construction

Synthetic rubber core tube, one textile braid reinforcement, MSHA accepted synthetic rubber cover.

Application and Temperature Range

Widely used for shop air systems and general industrial, maintenance and automotive applications.

Petroleum based hydraulic fluids and lubricating oils, and antifreeze solutions within a temperature range of -40°F to +212°F (-40°C to +100°C).

Water, water / oil emulsion, and water / glycol hydraulic fluids up to +185°F (+85°C).

Air within a temperature range of -40°F to +158°F (-40°C to +70°C).

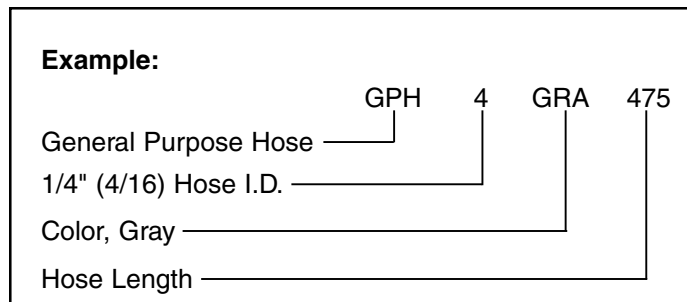
Push-on Hose 831

#	Hose I.D.		Hose O.D.		Working Pressure		Burst Pressure		Minimum Bend Radius		Weight		Vacuum Rating	
	Inch	mm	Inch	mm	PSI	MPa	PSI	MPa	Inch	mm	lbs/ft	kg/m	Inches of Hg	kPa
831-4	1/4	6,3	0.50	12,7	350	2,4	1400	9,7	2-1/2	65	0.09	0,13	28	95
831-6	3/8	10	0.62	16	300	2,0	1200	8,3	3	75	0.11	0,16	28	95
831-8	1/2	12,5	0.75	20	300	2,0	1200	8,3	5	125	0.18	0,27	28	95
831-10	5/8	16	0.91	23	300	2,0	1200	8,3	6	150	0.19	0,28	15	51
831-12	3/4	19	1.03	26	300	2,0	1200	8,3	7	180	0.24	0,36	15	51



Nomenclature

Part numbers are constructed from symbols that identify the style, size and color of the hose. Letters identify style and color. Numbers identify size in 1/16's of an inch, and length in feet.



Construction

PVC (vinyl) core tube, single fiber braid reinforcement, PVC cover. All layers chemically bonded for optimum kink resistance and flexibility.

The flexible PVC cover has excellent abrasion and tear resistance compared to synthetic rubbers; good weathering, ozone and UV resistance. GPH is not suggested for hydraulic service or for fuels and solvents.

Applications

Air and water service for plants and machinery. Lubricated air systems, antifreeze solutions, some acids.

Colors

GRA = Gray, RED, YEL = Yellow, BLU = Blue.

Temperature Ranges

-15°F to 150°F (-25°C to 65°C) continuous.

Fitting Recommendation

Use with HB and PB fittings and 97HC hose clamps.

Vacuum Service

All sizes to 28 inches Hg.

General Purpose Hose GPH

# Part No.	I.D. Inches	Max. O.D. Inches	Max. Working Pressure PSI	Min. Burst Pressure PSI	Min. Bend Radius Inches	Weight lbs./ 100 ft.
GPH-3-GRA-250	3/16	.40	250	1000	7/16	4.9
GPH-4-GRA-475	1/4	.51	250	1000	5/8	7.6
GPH-4-RED-475	1/4	.51	250	1000	5/8	7.6
GPH-4-YEL-475	1/4	.51	250	1000	5/8	7.6
GPH-4-BLU-475	1/4	.51	250	1000	5/8	7.6
GPH-6-GRA-350	3/8	.64	250	1000	7/8	10.1
GPH-6-RED-350	3/8	.64	250	1000	7/8	10.1
GPH-6-YEL-350	3/8	.64	250	1000	7/8	10.1
GPH-6-BLU-350	3/8	.64	250	1000	7/8	10.1
GPH-6-BLU-100	3/8	.64	250	1000	7/8	10.1
GPH-8-GRA-250	1/2	.80	250	1000	1-1/4	14.2
GPH-8-RED-250	1/2	.80	250	1000	1-1/4	14.2
GPH-8-BLU-250	1/2	.80	250	1000	1-1/4	14.2

⚠ DANGER: Failure or improper selection or improper use of hose, fittings, or related accessories can cause death, personal injury and property damage.

Possible consequences of failure or improper selection or improper use of hose, fittings or related accessories include but are not limited to:

- Fittings thrown off at high speed.
- High velocity fluid discharge.
- Explosion or burning of the conveyed fluid.
- Electrocutation from high voltage electric power lines or other sources of electricity.
- Contact with suddenly moving or falling objects that are to be held in position or moved by the conveyed fluid.
- Dangerously whipping hose.
- Contact with conveyed fluids that may be hot, cold, toxic or otherwise injurious.
- Sparking or explosion caused by static electricity buildup.
- Sparking or explosion while paint or flammable liquid spraying.

Before selecting or using any hose or fittings or related accessories, it is important that you read and follow the instructions in the Guide below.

1.0 GENERAL INSTRUCTIONS

1.1 Scope: This guide provides instructions for selecting and using (including assembling, installing, and maintaining) hose (including all rubber and/or plastic products commonly called “hose” or “tubing”), fittings (including all products commonly called “fittings” or “couplings” for attachment to hose), and related accessories (including crimping and swaging machines and tooling). This guide is a supplement to and is to be used with, the specific publications for the specific hose, fittings and related accessories that are being considered for use.

1.2 Fail-Safe: Hose and hose assemblies 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 or hose assembly will not endanger persons or property.

1.3 Distribution: Provide a copy of this guide to each person that is responsible for selecting or using hose and fitting products. Do not select or use hose and fittings without thoroughly reading and understanding this guide as well as the specific publications for the products considered or selected.

1.4 User Responsibility: Due to the wide variety of operating conditions and uses for hose and fittings, the manufacturer and its distributors do not represent or warrant that any particular hose or fitting is suitable for any specific and use system. This guide does not analyze all technical parameters that must be considered in selecting a product. The user, through their own analysis and testing, are solely responsible for:

- Making the final selection of the hose and fitting.
- Assuring that the user’s requirements are met and that the use presents no health or safety hazards.
- Providing all appropriate health and safety warnings on the equipment on which the hose and fittings are used.

1.5 Additional Questions: Consult the supplier if you have any additional questions or require additional information.

2.0 HOSE AND FITTING SELECTION INSTRUCTIONS

2.1 Electrical Conductivity: Certain applications require that a hose be nonconductive to prevent electrical current flow. Other applications require the hose to be sufficiently conductive to drain off static electricity. Extreme care must be exercised when selecting hose and fittings for these or any other applications in which electrical conductivity or nonconductivity is a factor.

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 and fittings that are selected are proper for the application. Do not use any hose or fitting for any such application requiring nonconductive hose, including but not limited to applications near high voltage electric lines, unless (I) the application is expressly approved in the technical publication for the product, (II) the hose is both orange color and marked “nonconductive”, and (III) the manufacturer of the equipment on which the hose is to be used specifically approves the particular hose and fitting for such use.

The manufacturer does not supply any hose or fittings for conveying paint in airless paint spraying or similar applications, and hose and fittings must not be so used. A special hose and fitting assembly is required for this application, to avoid static electricity buildup. If the proper hose and fitting assembly is not used for this application, static electricity can build up and cause a spark that may result in an explosion and/or fire.

The electrical conductivity or nonconductivity of hose 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, 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.

2.2 Pressure: Hose selection must be made so that the published maximum recommended working pressure of the hose is equal to or greater than the maximum system pressure. Surge pressures in the system higher than the published maximum recommended working pressure will cause failure or shorten hose life. Do not confuse burst pressure or other pressure values with working pressure and do not use burst pressure or other pressure values for this purpose.

2.3 Suction: Hoses used for suction applications must be selected to ensure 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. Care must be taken when routing hose near hot objects such as manifolds.

2.5 Fluid Compatibility: Hose selection must assure compatibility of the hose tube, cover, reinforcement, and fittings with the fluid media used. See the fluid compatibility chart in the publication for the product being considered or used.

2.6 Permeation: Permeation (that is, seepage through the hose) will occur from inside the hose to outside when hose is used with gases, liquid and gas fuels, and refrigerants (including but not limited to such materials as helium, fuel, oil, natural gas, or freon). 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 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 even though the fluid compatibility is acceptable without considering the potential hazardous effects that can result from permeation through the hose assembly.

Permeation of moisture from outside the hose to inside the hose will also occur in hose 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.



- 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). Freon® is a registered trademark of the E.I. DuPont De Nemours Co., Inc.
- 2.9 Environment:** Care must be taken to ensure that the hose and fittings are either compatible with or protected from the environment (that is, surrounding conditions) to which they are exposed. Environmental conditions include but are not limited to ultraviolet radiation, sunlight, heat, ozone, moisture, water, salt water, chemicals, and air pollutants that can cause degradation and premature failure.
- 2.10 Mechanical Loads:** External forces can significantly reduce hose 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 ensure no twist is put into the hose. Applications must be tested prior to hose selection.
- 2.11 Physical Damage:** Care must be taken to protect hose from wear, snagging and cutting, which can cause premature hose failure.
- 2.13 Length:** When establishing a proper hose length, motion absorption, hose length changes due to pressure, and hose and machine tolerances must be considered.
- 2.14 Specifications and Standards:** When selecting hose and fittings, government, industry, and manufacturer specifications and recommendations must be reviewed and followed as applicable.
- 2.15 Hose Cleanliness:** Hose components may vary in cleanliness levels. Care must be taken to ensure that the assembly selected has an adequate level of cleanliness for the application.
- 2.16 Fire Resistant Fluids:** Some fire resistant fluids require the same hose as petroleum oil. Some use a special hose, while a few fluids will not work with any hose at all. See instructions 2.5 and 1.5. The wrong hose may fail after a very short service. In addition, all liquids may burn fiercely under certain conditions, and leakage may be hazardous.
- 2.17 Radiant Heat:** Hose 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.
- 2.18 Welding and Brazing:** 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.
- 2.19 Radiation:** Radiation affects all materials used in hose assemblies. Since the long term effects may be unknown, do not expose hose assemblies to radiation.
- 3.0 HOSE AND FITTING ASSEMBLY AND INSTALLATION INSTRUCTIONS**
- 3.1 Pre-Installation Inspection:** Prior to installation, a careful examination of the hose must be performed. All components must be checked for correct style, size, catalog number, and length. In addition, the hose must be examined for cleanliness, obstructions, blisters, cover looseness, or any other viable defects.
- 3.2 Hose and Fitting Assembly:** Do not assemble fittings onto a hose that is not specifically listed by the manufacturer for that fitting unless authorized in writing by the chief engineer. Do not assemble one manufacturer's fitting on another manufacturer's hose.
- The published instructions must be followed for assembling fittings on the hose. These instructions are provided in the fitting catalog for the specific fitting being used.
- 3.3 Related Accessories:** Do not crimp or swage any hose or fitting with anything but the proper listed swage or crimp machine, and dies, and in accordance with published instructions. Do not crimp or swage one manufacturer's hose fitting with another's crimp or swage die unless authorized in writing by their chief engineer.
- 3.4 Parts:** Do not use any hose fitting part (including but not limited to socket, shell, nipple, or insert) except with the correct mating parts, in accordance with instructions, unless authorized in writing by the chief engineer of the appropriate manufacturer.
- 3.5 Reusable/Permanent:** Do not reuse any reusable hose product that has blown or pulled off a hose. Do not reuse a permanent (that is, crimped or swaged) hose fitting or any part thereof.
- 3.6 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/fitting juncture.
- 3.7 Twist Angle and Orientation:** Hose installations must be such that relative motion of machine components does not produce twisting.
- 3.8 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 ensure such restraints do not introduce additional stress or wear points.
- 3.9 Proper Connection of Ports:** Proper physical installation of the hose requires a correctly installed port connection while ensuring that no twist or torque is transferred to the hose.
- 3.10 External Damage:** Proper installation is not complete without ensuring that tensile loads, side loads, kinking, flattening, potential abrasion, thread damage, or damage to sealing surfaces are corrected or eliminated. See instruction 2.10.
- 3.11 System Checkout:** All air entrapment in hydraulic lines must be eliminated, all systems must be pressurized to the maximum system pressure and checked for proper function and freedom from leaks. Personnel must stay out of potential hazardous areas while testing and using.
- 4.0 HOSE AND FITTING MAINTENANCE INSTRUCTIONS**
- 4.1 Visual Inspection Hose/Fitting:** Any of the following conditions require immediate shut down and replacement of the hose assembly
- Fitting slippage on hose.
 - Damaged, 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.
 - Blistered, soft, degraded, or loose cover.
- 4.2 Visual Inspection All Other:** The following items must be tightened, repaired or replaced as required:
- Leaking port conditions.
 - Remove excess dirt buildup.
 - Clamps, guards, shields.
 - System fluid level, fluid type and any air entrapment.
- 4.3 Functional Test:** Operate the system at maximum operating pressure and check for possible malfunctions and freedom from leaks. Personnel must avoid potential hazardous areas while testing and using.
- 4.4 Replacement Intervals:** Specific replacement intervals must be considered based on previous service life, government or industry recommendations, or when failure could result in unacceptable downtime, damage, or injury risk. See instructions 1.2.

Technical Information

Chemical Compatibility Guide (GPH Hose)

Media	GPH	Media	GPH
Acetaldehyde	P	Gas (Oil) (2)	G
Acetic Acid	G	Gas (Natural) (4)	(2)
Acetone	P	Gasoline (Aromatic and Non-Aromatic) (2)	L
Acetylene	(2)	Glue	(3)
Air (4)	G	Glycerine	G
Alcohols (Menthanol-Ethanol) (6)	G	Glycol to 150°F	G
Ammonium Chloride	G	Greases	G
Ammonium Hydroxide	L	Heptachlor (Insecticide)	—
Anhydrous Ammonia (2)	P	Hexane (2)	L
Aniline	L	Houghto Safe—600 Series (Hydraulic Fluid/ Water Glycol)	G
Animal Oils (6)	G	Houghto Safe—1000 Series (Phosphate Ester Base)	G
Aromatic Hydrocarbons	P	Hydraulic Fluid—Petroleum Base	G
Asphalt	G	Hydraulic Fluid—Phosphate Ester Base	G
Baygon (Insecticide)	—	Hydraulic Fluid—Water Glycol Base	G
Beer	G	Hydraulic Oil	L
Benzene	L	Hydrochloric Acid	—
Brake Fluid (DOT #3)	P	Hydrofluoric Acid	L
Butane (2) (4)	G	Hydrogen Gas (2) (4)	G
Butter (6)	G	Hydrolube (Hydraulic Fluid/Water Glycol Base)	G
Calcium Chloride Solutions	L	IRUS 902 (Hydraulic Fluid/Water-Oil Emulsion)	G
Carbon Dioxide (4)	G	Isocyanates	—
Carbon Monoxide (4)	G	Isooctane (2)	L
Carbon Tetrachloride	L	Isopropyl Alcohol	—
Castor Oil	G	Kerosene (2)	L
Chlorinated Hydrocarbon Base Fluids	P	Ketones	P
Chlorinated Petroleum Oil	—	Lacquer Solvents	P
Chlorinated Solvents	L	Lactic Acid	G
Chlorine Gas, Dry	G	Lime	G
Chlordane (Insecticide)	—	Lindol	—
Chloroform	P	(Hydraulic Fluid/Phosphate Esters)	—
Chromic Acid	G	Linseed Oil	G
Citric Acid Solutions	G	LP-Gas	(2)
Crude Petroleum Oil	G	Lubricating Oils (Diester Base)	—
Cyclohexane (2)	—	Lubricating Oils (Petroleum Base)	G
Cygon (Insecticide)	—	Malathion (Insecticide)	—
Diazinon (Insecticide)	—	Magnesium Hydroxide	G
Diesel Fuel (2)	L	Magnesium Salts	G
Diester Oils	—	Mercury	G
Enamels	L	Meropa Oil (Sulphur Base)	—
Ethanol (6)	L	Methane	(2)
Ethers	L	Methanol	P
Ethylene Glycol (to 150°F)	G	Methoxychlor (Insecticide)	—
Ethylene Oxide	—	Methyl Alcohol	P
Fatty Acid	G	Methylene Chloride	L
Formaldehyde	G	Methyl Ethyl Keytone (MEK)	P
Formic Acid	G	Methyl Ethyl Keytone Peroxide (MEKP)	—
Freon 12 (5)	G		
Freon 22 (5)	G		
Fruit Juices (6)	G		
Fuel Oil (2)	L		

Ratings Code (1)

G — Good to excellent. Little or no swelling, tensile or surface changes. Preferred choice.

L — Marginal or conditional. Noticeable effects but not necessarily indicating lack of serviceability. Further testing suggested for specific application. Very long term effects such as stiffening or potential for crazing should be evaluated.

P — Poor or unsatisfactory. Not recommended without extensive and realistic testing.

— — Not tested.

NOTE: For Footnotes (1), (2), (3), (4), (5), (6) & (7), See Page 12.

Media	GPH	Media	GPH
Methyl Isobutyl Keytone (MIBK)	P	Silicone Oil	—
Milk (6)	G	Skydrol 500, 7000	P
Mineral Oil	G	Soap Sol utions	G
Mineral Spirits	P	Soda Water (6)	G
Motor Oils	G	Sodium Borate	G
Naphtha	P	Sodium Carbonate	(3)
Natural Gas (4)	(2)	Sodium Chloride Solutions	G
Nitric Acid	G	Sodium Hydroxide, 50%	L
Nitrobenzene	P	Sodium Hypochlorite	L
Nitrogen Gas (4)(5)	G	Steam	P
Oil	G	Stoddard Solvent	L
Oil of Turpentine	G	Straight Synthetic Oils (Phosphate Ester and Phosphate Ester Base)	P
Oleic Acid	L	Chlorinated Hydrocarbon Base	—
OS 45 Hydraulic Fluid (Silicate Ester Base)	—	Sulphur	G
Oxygen Gas (4) (5) (6)	G	Sulphur Hexafluoride Gas (4) (5)	—
Ozone	G	Sulphuric Acid	P
Paint Solvents (Oil Base) (7)	P	Toluene	P
Paints (Oil Base) (7)	P	Toluol	P
Pentane (2)	L	Transmission Fluid	—
Perchloric Acid	L	Trichloroethylene	L
Perchlorethylene	L	Trisodium Phosphate Solutions	G
Petroleum Ether	P	Turpentine	G
Petroleum Oils	G	Ucon (Hydraulic Fluid — Water Glycol Base)	G
Phenols	L	Varnish	P
Phosphate Esters (Above 150°F)	P	Vinegar (6)	G
Phosphate Esters (to 150°F)	P	Water (to 135°F) (6)	G
Polyol Esters	P	Water (Above 135°F) (6)	L
Potassium Hydroxide, 50%	L	Water Glycols (to 135°F)	G
Propane (4) (5)	(2)	Water Glycols (Above 135°F)	G
Propylene Glycol	L	Water in Oil Emulsions (to 135°F)	G
Pydraul F-9, 150,160 (to 135°)	P	Water in Oil Emulsions (Above 135°F)	L
Pydraul 312 C, 625 (to 135°F)	P	Whiskey (6)	G
Quintolubric 822 Fluid	—	Wood Oil	G
Salt Water	(3)	Xylene	P
Sevin (Insecticide in Water)	—	Zinc Chloride	G
Silicone Grease	—		

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- — Not tested.

- (1) The Chemical Compatibility Guides are simplified rating tabulations based on immersion tests at 75°F. Higher temperatures tend to reduce ratings. **Since final selection depends on pressure, media and ambient temperature and other factors not known to Parker Hannifin Corporation, no performance guarantee is expressed or implied.** Ratings do not imply compliance with specialized codes such as FDA, NSF, AGA or UL and do not cover possible fluid discoloration, taste or odor effects. For conveying foodstuffs use FDA sanctioned materials, and for potable water use NSF approved materials. For chemicals not listed, or for advice on particular applications, please consult the supplier.
- (2) Hose applications for these fluids must take into account legal and insurance regulations. This does not imply AGA or UL compliance.
- (3) Satisfactory at some concentrations and temperatures, unsatisfactory in others.
- (4) For high pressure gases, the cover should be pinpricked and the pressure must not be released quickly. Chain or restrain the hose to prevent personal injury in the event of damage or failure.
- (5) Chemical compatibility **does not** imply low permeation rates. Consult the supplier for a recommendation for your specific requirements.
- (6) Does not imply NSF or FDA compliance.
- (7) Chemical compatibility does not imply acceptability for use in **airless paintspray** applications. These applications require a special **conductive** hose.