Important safety information

Assembly product warning and How to order

Eaton's Aeroquip Hose and Fitting Assembly Product Warning

Flexible hose lines offer many advantages over rigid tubing including routing ease, vibration absorption, sound deafening and the ability to accommodate movement of connected components. However, hose lines require caution in use not only to provide long service, but also to guard against potentially dangerous failure.

Important

The user should carefully observe the precautions listed in this catalog, including the recommendations on the selection of hose and fittings on the relevant pages, and the pages on fluid compatibility. In addition, care should be taken not to exceed the minimum bend radius listed for each hose size and type in the hose section. Maximum operating pressure should not exceed pressures listed in the hose data. Instructions for assembling fittings to different hose should be followed carefully to ensure the performance of the completed assembly.

⚠ **WARNING** Eaton fitting tolerances are engineered to match Eaton's Aeroquip hose tolerances. The use of Eaton fittings on hose supplied by other manufacturers and/or the use of Eaton's Aeroquip hose with fittings supplied by other manufactures may result in the production of unreliable and unsafe hose assemblies and is neither recommended nor authorized by Eaton or any of its affiliates or subsidiaries.

⚠ **WARNING** Application considerations must be observed in selecting appropriate components for the application of these products contained herein. The failure to follow the recommendations set forth in this catalog may result in an unstable application which may result in serious personal injury or property damage.

EATON OR ANY OF ITS AFFILIATES OR SUBSIDIARIES SHALL NOT BE SUBJECT TO AND DISCLAIMS ANY OBLIGATIONS OR LIABILITIES (INCLUDING BUT NOT LIMITED TO ALL CONSEQUENTIAL, INCIDENTAL AND CONTINGENT DAMAGES) ARISING FROM TORT CLAIMS (INCLUDING WITHOUT LIMITATION NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORIES OF LAW WITH RESPECT TO ANY HOSE ASSEMBLIES NOT PRODUCED FROM GENUINE AEROQUIP HOSE FITTINGS, HOSE AND AEROQUIP APPROVED EQUIPMENT, AND IN CONFORMANCE WITH EATON'S AEROQUIP PROCESS AND PRODUCT INSTRUCTIONS FOR EACH SPECIFIC HOSE ASSEMBLY.

Failure to follow these processes and product instructions and limitations could lead to premature hose assembly failures resulting in property damage, serious injury or death.

Routing

If the user follows the recommendations on hose line routing and installation as provided herein, improved safety and longer service life of any hose installation will result.

Hose Installation

Proper installation of the hose is essential to the proper operation and safe use of the hose and related equipment. Improper installation of the hose can result in serious injury or property damage caused by spraying fluids or flying projectiles. In order to avoid serious bodily injury or property damage resulting from improper installation of the hose, you should carefully review the information in this catalog regarding hose installation.

Some of the factors you must consider in installing the hose properly are:

- Changes in length
- Proper bend radius
- Protection from high temperature sources
- Elbows and adapters to relieve strain
- Rubbing or abrasion
- Twisting
- Improper hose movement

These factors and the other information in this catalog regarding hose installation should be considered by you before installing the hose. If you have any questions regarding proper hose installation, please contact Eaton Technical Support at 1-888-258-0222.

Hose Maintenance

Proper maintenance of the hose is essential to the safe use of the hose and related equipment. Hose should be stored in a dry place. Hose should also be visually inspected. Any hose that has a cut or gouge in the cover that exposes the reinforcement should be retired from service. Hoses should also be inspected for kinking or broken reinforcement. If the outside diameter of the hose is reduced by 20% at the spot where it is bent then the hose should be retired from service. Inadequate attention to maintenance of the hose can result in hose leakage, bursting, or other failure which can cause serious bodily injury or property damage from spraying fluids, flying projectiles, or other substances.

How to order

Accurate processing and prompt delivery of your order depends on easy identification of your requirements. Please order Aeroquip brand parts using correct part numbers as described in this catalog. Inquiries and orders should be directed to your Aeroquip distributor or:

Eaton
14615 Lone Oak Road
Eden Prairie, MN 55344
952-937-9800;
888-258-0222;
Fax: 952-974-7722
www.eaton.com/hydraulics

Part numbers and dash sizes

Dash size designates the nominal size in 16th of an inch. This number immediately follows the part number and is separated from it with a dash.

Dimensions

Dimensions given in this catalog for Aeroquip products are approximate and should be used for reference only. Exact dimensional information for a given product is subject to change and varying tolerances; contact Eaton directly for full current information.

⚠ **WARNING**

Hose assemblies

Eaton manufactures the terminal ends of our hose fittings to the appropriate requirements established by the SAE. Therefore, the performance ratings of these hose fittings meet the SAE requirements. It is possible to order a hose assembly with a fitting terminal end that has a performance rating lower than the hose rating. When ordering hose assemblies, please keep the connecting end performance rating in mind since this may affect overall hose assembly performance. Hose assembly components (hose and fittings) are easily assembled in the field. However, factory assembled reusable and crimped hose assemblies are available. For complete information,contact Eaton.

Selection, installation and maintenance of hose and assemblies

The following recommendations on selection, installation and maintenance of hose assemblies were established by the SAE in 1991. Please read these general instructions carefully. More detailed information on many of these subjects is covered in this catalog.

1. Scope

Hose (also includes hose assemblies) has a finite life and there are a number of factors which will reduce its life. This recommended practice is intended as a guide to assist system designers and/or users in the selection, installation, and maintenance of hose.

The designers and users must make a systematic review of each application and then select, install, and maintain the hose to fulfill the requirements of the application. The following are general guidelines and are not necessarily a complete list.

⚠ **Warning: improper selection, installation, or maintenance may result in premature failures, bodily injury, or property damage.**

2. References

2.1 Applicable documents

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE publications

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

J516—Hydraulic hose fittings

J517—Hydraulic hose

3. Selection

The following is a list of factors which must be considered before final hose selection can be made.

3.1 Pressure

After determining the system pressure, hose selection must be made so that the recommended maximum operating pressure is equal to or greater than the system pressure. Surge pressures higher than the maximum operating pressure will shorten hose life and must be taken into account by the hydraulic designer.

3.2 Suction

Hoses used for suction applications must be selected to insure the hose will withstand the negative pressure of the system.

3.3 Temperature

Care must be taken to insure that fluid and ambient temperatures, both static and transient, do not exceed the limitations of the hose. Special care must be taken when routing near hot manifolds.

3.4 Fluid compatibility

Hose selection must assure compatibility of the hose tube, cover and fittings with the fluid used. Additional caution must be observed in hose selection for gaseous applications.

3.5 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 to the hose due to heat generation or excessive turbulence.

3.6 Routing

Attention must be given to optimum routing to minimize inherent problems.

3.7 Environment

Care must be taken to insure that the hose and fittings are either compatible with or protected from the environment to which they are exposed. Environmental conditions such as ultraviolet light, ozone, salt water, chemicals, and air pollutants can cause degradation and premature failure and, therefore, must be considered.

3.8 Mechanical loads

External forces can significantly reduce hose life. 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. Unusual applications may require special testing prior to hose selection.

3.9 Abrasion

While hose is designed with a reasonable level of abrasion resistance, care must be taken to protect the hose from excessive abrasion which can result in erosion, snagging and cutting of the hose cover. Exposure of the reinforcement will significantly accelerate hose failure.

3.10 Proper end fitting

Care must be taken to insure proper compatibility exists between the hose and coupling selected based on the manufacturer's recommendations substantiated by testing to industry standards such as SAE J517. End fitting components from one manufacturer are usually not compatible with end fitting components supplied by another manufacturer (i.e., using a hose fitting nipple from one manufacturer with a hose socket from another manufacturer). It is the responsibility of the fabricator to consult the manufacturer's written instructions or the manufacturer directly for proper end fitting componentry.

3.11 Length

When establishing proper hose length, motion absorption, hose length changes due to pressure, as well as hose and machine tolerances must be considered.

3.12 Specifications and standards

When selecting hose, government, industry and manufacturers' specifications and recommendations must be reviewed as applicable.

3.13 Hose cleanliness

Hose components vary in cleanliness levels. Care must be taken to insure that the assemblies selected have an adequate level of cleanliness for the application.

3.14 Electrical conductivity

Certain applications require that hose be nonconductive to prevent electrical current flow. Other applications require the hose to be sufficiently conductive to drain off static electricity. Hose and fittings must be chosen with these needs in mind.

4. Installation

After selection of proper hose, the following factors must be considered by the installer.

4.1 Pre-installation inspection

Prior to installation, a careful examination of the hose must be performed. All components must be checked for correct style, size and length. In addition, the hose must be examined for cleanliness, I.D. obstructions, blisters, loose cover, or any other visible defects.

Selection, installation and maintenance of hose and assemblies

The following recommendations on selection, installation and maintenance of hose assemblies were established by the SAE in 1991. Please read these general instructions carefully. More detailed information on many of these subjects is covered in this catalog.

4.2 Follow manufacturers' assembly instructions

Hose assemblies may be fabricated by the manufacturer, an agent for or customer of the manufacturer, or by the user. Fabrication of permanently attached fittings to hydraulic hose requires specialized assembly equipment. Field attachable fittings (screw style and segment clamp style) can usually be assembled without specialized equipment although many manufacturers provide equipment to assist in the operation.

SAE J517 hose from one manufacturer is usually not compatible with SAE J516 fittings supplied by another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written assembly instructions or the manufacturers directly before intermixing hose and fittings from two manufacturers. Similarly, assembly equipment from one manufacturer is usually not interchangeable with that of another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written instructions or the manufacturer directly for proper assembly equipment. Always follow the manufacturer's instructions for proper preparation and fabrication of hose assemblies.

4.3 Minimum bend radius

Installation at less than minimum bend radius may significantly reduce hose life. Particular attention must be given to preclude sharp bending at the hose/fitting juncture.

4.4 Twist angle and orientation

Hose installations must be such that relative motion of machine components produces bending of the hose rather than twisting.

4.5 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.

4.6 Proper connection of ports

Proper physical installation of the hose requires a correctly installed port connection while insuring that no twist or torque is put into the hose.

4.7 Avoid 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.

4.8 System check out

After completing the installation, all air entrapment must be eliminated and the system pressurized to the maximum system pressure and checked for proper function and freedom from leaks.

Note: Avoid potential hazardous areas while testing.

5. Maintenance

Even with proper selection and installation, hose life may be significantly reduced without a continuing maintenance program. Frequency should be determined by the severity of the application and risk potential. A maintenance program should include the following as a minimum.

5.1 Hose storage

Hose products in storage can be affected adversely by temperature, humidity, ozone, sunlight, oils, solvents, corrosive liquids and fumes, insects, rodents and radioactive materials. Storage areas should be relatively cool and dark and free of dust, dirt, dampness and mildew.

5.2 Visual inspection

Any of the following conditions requires replacement of the hose:

a. Leaks at fitting or in hose (leaking fluid is a fire hazard)
b. Damaged, cut, or abraded cover (any reinforcement exposed)
c. Kinked, crushed, flattened, or twisted hose
d. Hard, stiff, heat cracked or charred hose
e. Blistered, soft, degraded, or loose cover
f. Cracked, damaged, or badly corroded fittings
g. Fitting slippage on hose

5.3 Visual inspection

The following items must be tightened, repaired, or replaced as required:

a. Leaking port conditions
b. Clamps, guards, shields
c. Remove excessive dirt buildup
d. 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 freedom from leaks.

Note: Avoid potential hazardous areas while testing.

5.5 Replacement intervals

Specific replacement intervals must be considered based on previous service life, government or industry recommendations, or when failures could result in unacceptable down time, damage, or injury risk.

A

Numbering system

Numbering system

Cut length hose

Cut lengths of hose should be ordered as shown below by specifying lengths in inches.

For numeric part numbers: **2651- 10- 00484**

Hose type
Hose size (in 16th of an inch)
Cut length (in inches)

last digit is in 1/8th of an inch 00484 = 48 1/2 inches

For alpha-numeric part numbers: **FC300- 08- 00484**

Hose type
Hose dash size
Cut length (in inches)

last digit is in **1/8th** of an inch **00484** = **481/2 inches**

Bulk hose

Bulk hose should be ordered by specifying length in feet as shown below. **500 ft.- 2651- 10**

Complete number quantity (in feet)
Hose type
Hose size (in 16ths of an inch)

Notes: Length tolerance for hose, assemblies and sleeves is:

Up to and including 12 inches: ±1/8"

Above 12 inches to and including 18 inches: ±3/16"

Above 18 inches to and including 36 inches: ±1/4"

Above 36 inches: ±1% of length

Hose selection

Agency listings

Agency listings

Government agencies

DOT/FMVSS US Department of Transportation,Federal Motor Vehicle Safety Standard

FDA US Food and Drug Administration (tubes only)

MIL/DOD US Military Specification, Dept. of Defense

MSHA US Mine Safety and Health Administration

USCG/MMT US Coast Guard, Merchant Marine Technical (SAE J1942 has replaced USCG approval)

DNVGL DNVGL (USA) WC

CGA Canadian Gas Association

The listings below are intended only as guides in identifying which Eaton Aeroquip® hoses comply with requirements of various agencies. For current and complete information, contact Eaton.

Industry agencies

AAR American Association of Railroads

DIN Deutsche (German) Industrial Norme (Replaced by EN)

EN Committee for European Normalization

ABS American Bureau of Shipping

SAE Society of Automotive Engineers

UL Underwriters Laboratories

ISO International Standards Organization

✦ Approved details available from Eaton

*Listing may vary by hose style and size, some hoses may require firesleeve or special procedures depending on specific applications, contact Eaton for details.

		Government							Industry						
Hose part no.	**Page**	**DOT/ FMVSS**	**CGA**	**DNVGL**	**FDA***	**MIL/DOD**	**MSHA**	**USCG/ SAE**	**ISO**	**EN**	**DIN**	**AAR**	**ABS**	**SAE**	**UL**
1503	C-9	106 Type A II	-	✦	-	-	-	✦	-	-	-	✦	✦	100R5, J1402	-
1531	F-15	-	-	-	-	-	-	-	-	-	-	M618	-	-	-
15CA	F-5	106	-	-	-	-	-	-	-	-	-	-	-	SAE J844 Type B	-
2550	F-15	106 Type A II	-	-	-	-	-	-	-	-	-	-	-	J1402	-
2554	F-15	-	-	-	-	MIL-DTL-3992	-		-	-	-	-	-	J1402	-
2556	C-5	-	-	✦	-	-	✦	-	-	-	-	-	-	20R2 Type 1	-
2565	C-5	-	-	-	-	MIL-H-13444 Type I	-		-	-	-	-	-	20R2	-
2570	F-14	106 Type A II	-	-	-	-	-	-	-	-	-	-	-	J1402	-
2580	C-8	-	-	-	-	MIL-H-24136/3	✦	✦	-	-	-	-	-	-	-
2583	C-7	-	-	-	-	-	✦	-	-	EN 854 Type R3	-	-	-	100R3	-
2651	C-10	-	-	✦	-	-	✦	✦	-	-	-	-	✦	100R5	-
2661	B-43	-	-		-	-	✦	✦	-	-	-	-	✦+	100R4	-
2681	B-29	-	-	✦	-	-	✦	✦	1436 Type 1ST	EN 853 Type 1ST	20 022 Type 1ST	-	-	100R1A	-
2781	B-30	-	-	✦	-	-	✦	✦	1436 Type 1ST	EN 853 Type 2ST	20 022 Type 2ST	-	✦	100R2A	-
2807	G-8	-	-	✦	-	-	-	✦	-	-	-	-	✦	100R14A	-
30CT	B-49,52	-	-	-	-	-	-		-	-	-	-	-	100R18	-
3130	B-44,52	-	-	-	-	-	-	✦	-	-	-	-	-	100R7	-
3740	B-45	-	-	-	-	-	-		-	-	-	-	-	100R7	-
3E80	B-48	-	-	-	-	-	-		-	-	-	-	-	100R8	-
3R80	B-47	-	-	-	-	-	-	✦	-	-	-	-	-	100R8	-
3SCE	F-5	106	-	-	-	-	-		-	-	-	-	-	J844 Type B	-
3V10	B-50	-	-	-	-	-	-		-	-	-	-	-	-	-
3VE0	B-51	-	-	-	-	-	-		-	-	-	-	-	-	-
35FH	F-13	-	-	-	-	-	-		-	-	-	-	-	J30R6, J30R9, J30R11, J1527B1	-
35NG	F-27	-	-	-	-	-	-		-	-	-	-	-		-
37AL	B-46,52	-	-	-	-	-	-		-	-	-	-	-	100R7	-

+ = Firesleeve required, contact Eaton for details

Agency listings

		Government							Industry						
Hose part no.	Page	DOT/ FMVSS	CGA	DNVGL	FDA*	MIL/DOD	MSHA	USCG/ SAE	ISO	EN	DIN	AAR	ABS	SAE	UL
3270	F-8	106	-	-	-	-	-		-	-	-	-	-	J844 Type B, J1131, J2494-3	-
4245	F-6	106	-	-	-	-	-		-	-	-	-	-	J844 Type A, J1131, J2494-3	-
4247	F-7	106	-	-	-	-	-		-	-	-	-	-	J844 Type A, J1131, J2494-3	-
4294	F-9	-	-	-	-	-	-		-	-	-	-	-	-	-
4297	F-10	-	-	-	-	-	-		-	-	-	-	-	-	-
8000	G-9	-	-	-	-	-	-		-	-	-	-	-	-	-
8500	G-9	-	-	-	-	-	-		-	-	-	-	-	-	-
CR170	F-26	-	Type III	-	-	-	-	-	-	-	-	-	-	-	UL21
EC230	B-35	-	-	-	-	-	-	-	-	-	-	-	-	100R2S	-
EC502	B-33	-	-	-	-	-	-	-	-	EN 853 Type 2SN		-	-	100R2S	-
EC525	B-16	-	-	-	-	-	✦	-	-	-	-	-	-	-	-
EC600	B-20	-	-	✦	-	-	✦	✦	18752-DC	-	-	-	✦	100R15	-
EC810	B-19	-	-	-	-	-	✦	-	-	-	-	-	-	-	-
EC850	B-21	-	-	-	-	-	-	-	18752	-	-	-	-	100R15	
EC910	B-41	-	-	-	-	-	-	-	7751	EN1829	-	-	-	-	-
EH225	F-16	-	-	-	-	-	-	-	-	-	-	-	-	J20 R3 Class A	-
EH226	F-17	-	-	-	-	-	-	-	-	-	-	-	-	J20 R1 Class A	-
EH227	F-18	-	-	-	-	-	-	-	-	EN412, EN2240	-	-	-	J20 Class A	-
FC234	F-24	-	-	✦	-	-	✦	✦	-	-	-	-	✦	J1527 Type A1	-
FC254	B-36	-	-	✦	-	-	✦	✦	-	EN 856 4SP	-	-	✦	-	-
FC273B	B-18	-	-	-	-	-	-	-	3862 Type R13 18752	EN 856 Type R13	-	-	-	100R13	-
FC300	F-22	106 Type A II	-	✦	-	-	-	✦	-	-	-	-	-	100R5, J1019, J1402	-
FC310	B-26	-	-	-	-	-	✦	✦	-	EN 857 Type 1SC	-	-	-	-	-
FC321	F-25	-	-	-	-	-	-	-	-	-	-	-	-	-	UL21
FC332	C-4	-	-		-	-	-	✦	-	-	-	-	✦ +	-	-
FC350	F-21	106 Type A II	-	✦	-	-	-	✦	-	-	-	-	✦	J1402	-
FC355	F-20	106 Type A II	-	-	-	-	-	-	-	-	-	-	-	J1402	-
FC466	C-7	-	-	-	-	-	-	-	-	EN 854 Type R6	-	-	-	100R6	-
FC498	C-6	-	-	-	-	-	✦	-	-	EN 854 Type R6	-	-	-	100R6	-
FC500	B-17	-	-	-	-	-	✦	-	18752	-	-	-	✦	100R13	-
FC510	B-27	-	-	-	-	-	✦	✦	-	EN 857 Type 1SC	-	-	-	100R2	-
FC555	E-6	-	-	-	-	-	-	-	-	-	-	-	-	J2064	
FC579	B-34	-	-	-	-	-	✦	-	-	-	-	-	-	-	-

+ = Firesleeve required, contact Eaton for details

* Listing may vary by hose style and size, some hoses may require firesleeve or special procedures depending on specific applications, contact Eaton for details.

Hose selection

Agency listings

* Listing may vary by hose style and size, some hoses may require firesleeve or special procedures depending on specific applications, contact Eaton for details.

Agency listings

		Government							Industry						
Hose part no.	Page	DOT/ FMVSS	CGA	DNVGL	FDA*	MIL/DOD	MSHA	USCG/ SAE	ISO	EN	DIN	AAR	ABS	SAE	UL
FC598	C-6	-	-	-	-	-	-	-	-	-	-	-	-	100R6	-
FC606	B-38	-	-	-	-	-	✦	-	-	-	-	-	✦	100R15	
FC611	B-31	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FC619	B-42	-	-	-	-	-	✦	-	18752	-	-	-	✦+	100R4	-
EC038	F-14	106 Type A II	-	-	-	-	-	-	-	-	-	-	-	J1402	-
FC636	B-40	-	-	-	-	-	-	-	-	-	-	-	-	100R12	-
FC639	B-22	-	-	-	-	-	✦	-	-	-	-	-	-	100R17	-
FC647	C-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FC650	F-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FC693	B-32	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FC699	F-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FC735	B-11	-	-	✦	-	-	-	-	11237-1 Type 2SC, 18752	1436 Type 2SN§	20 022 Type 2SN	‡	✦	100R16	-
FC736	B-15	-	-	✦	-	-	-	-	18752	3862 Type R12	EN856 Type R12	-	✦	100R12	-
FC740	G-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FC800	E-5	-	-	-	-	-	-	-	-	-	-	-	-	J2064	-
FC802	E-4	-	-	-	-	-	-	-	-	-	-	-	-	J51	-
FC839B	B-8	-	-	-	-	-	-	-	18752	-	-	-	-	100R17	-
FC849	B-24	-	-	-	-	-	✦	✦	-	-	-	-	✦	100R19	-
FC849B	B-25	-	-		-	-	-	-	-	-	-	-		100R19	-
GH001	E-3	-	-	-	-	-	-	-	-	-	-	-	-	J2064 Type E	-
GH100	F-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GH101	F-19	-	-	-	-	-	-	-	-	EN412, EN2240	-	-	-	-	-
GH120	B-13	-	-	-	-	-	✦	-	-	EN 857 Type 2SC	-	-	-	100R16S	-
GH194	B-9	-	-	✦+	-	-	✦	-	1436 Type 1SN	EN 853 Type 1SN	20 022 Type 1SN	-	✦	100R1S	-
GH195	B-12	-	-	✦	-	-	✦	✦	1436 Type 2SN	EN 853 Type 2SN	20 022 Type 2SN	-	✦	100R2S	-
GH466	B-39	-	-	✦	-	-	✦	-	18752	EN 45545-2	-	-	✦	100R15	-
GH493	B-14	-	-	-	-	-	✦	-	3862 Type R12 18752	EN 856 TypeR12	-	-	✦	100R12	-
GH506	B-37	-	-	✦	-	-	✦	-	3862 Type 4SH 18752	EN856 Type 4SH	20 023 Type T2	-	✦	-	-
GH663	B-23	-	-	✦	-	-	✦	✦	1436 Type 1SN	EN 853 Type 1SN	20 022 Type 1SN	-	✦	100R1S	-
GH681	B-7	-	-	✦	-	-	✦	✦	18752	EN 853 Type 1 SN	20 022 Type 1	-	✦	-	-
GH781	B-10	-	-	✦	-	-	✦	-	11237-1 Type 2SC 18752	EN 857 Type 2SC	-	-	✦	100R16S	-
GH793	B-28	-	-	✦	-	-	✦	✦	1436 Type 2SN	EN 853 Type 2SN	20 022 Type 2SN	-	-	100R2S	-
H057	F-12	-	-	-	-	-	-	-	-	-	-	-	-	30R7	-
H201	C-3	-	-	-	-	-	✦	-	-	-	-	-	-	-	-
S-Series	G-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-TW	G-5	-	-	✦	-	-	-	-	-	-	-	-	-	100R14A	-
SC-Series	G-4	-	-	-	✦	-	-	-	-	-	-	-	✦	-	-
SC-TW Series	G-6	-	-	-	✦	-	-	-	-	-	-	-	-	100R14B	-

+ = Firesleeve required, contact Eaton for details. ‡ = -4 thru -16 only.

Hose dash size to maximum operating pressure

This table is intended as a guide in the selection of hose by maximum operating pressure. It is not a guarantee. Final selection is further dependent on fluid and ambient temperature,concentration of fluid, intermittent or continuous exposure, etc. For further details on a specific hose see the respective catalog pages or contact Eaton.

Pressure expressed in PSI/BAR
† Pressure rating with reusable style fittings.
‡ Pressure rating with global crimp style fittings.
§ 10,000 psi for static jack hose applications. See hose page for details.

* See hose page for dash sizes not listed.
†† 50 psi max with band clamp style fittings.
***Based on 2:1 safety factor.

Hose part number	Page	Tube	Hose -02	-03	-04	-05	-06	-08	-10	-12	-16	-20	-24	-32	-40	-48
EH225	F-16	5	-	-	100/7	75/5.3	62.5/4.3	62.5/4.3	62.5/4.3	50/3.5	43.8/3	-	-	-	-	-
EH226	F-17	5	-	-	-	270/18.6	265/18.3	218/15	199.3/13.8	191/13.2	174.8/12.1	154.3/10.6	130.3/9	105.5/7.6	94.8/6.5	79.3/5.5
2550	F-15	5	-	-	-	-	225/16	-	-	-	-	-	-	-	-	-
2554	F-15	5	-	-	-	-	225/16	-	-	-	-	-	-	-	-	-
2570	F-14	5	-	-	-	-	225/16	225/16	225/16	-	-	-	-	-	-	-
EC038	F-14	6	-	-	225/15.5	-	225/15.5	225/15.5	-	-	-	-	-	-	-	-
GH100	F-19	1	-	-	400/28	-	400/28	400/28	350/24	350/24	-	-	-	-	-	-
GH101	X															
FC647	C-4	1	-	-	360/25	-	300/21	300/21	250/17	250/17	-	-	-	-	-	-
2556	C-5	1	-	-	360/25	-	300/21	300/21	250/17	250/17	-	-	-	-	-	-
FC332	C-4	4	-	-	300/20	-	300/20	300/20	300/20	300/20	-	-	-	-	-	-
2565	C-5	1	-	-	300/21	-	250/17	200/14	175/12	125/8.5	-	-	-	-	-	-
1531	F-15	5	-	-	-	-	-	-	300/21	300/21	300/21	300/21	300/21	-	-	-
2661*	B-43	4	-	-	-	-	-	-	-	300/21†	250/17†	200/14†	150/10.5†	100/7†	62/4	62/4‡
FC619	B-42	1	-	-	-	-	-	-	-	300/21†	250/17†	200/14†	150/10.5†	100/7†	62/4	62/4
CR170	F-26	5	-	-	350/24	-	350/24	350/24	-	350/24	-	-	-	-	-	-
FC321	F-25	5	-	-	350/24	-	350/24	350/24	350/24	350/24	350/24	-	-	-	-	-
FC498	C-6	4	-	-	400/28	-	400/28	400/28	350/24	350/24	-	-	-	-	-	-
FC598	C-6	4	-	-	400/28	-	400/28	400/28	350/24	350/24	-	-	-	-	-	-
FC466	C-7	1	-	-	400/28	-	400/28	400/28	350/24	350/24	-	-	-	-	-	-
FC699	F-23	5	-	-	400/28	-	400/28	400/28	350/24	350/24	250/17	-	-	-	-	-
2580	C-8	1	-	-	1000/70	-	650/45	625/43	600/42	550/38	500/35	450/31	400/28	350/24	-	-
2583	C-7	1	-	-	1250/87	-	1125/78	1000/70	-	750/52	565/39	375/26	-		-	-
FC650	F-23	4	-	-	1000/70	-	1000/70	1000/70	1000/70	1000/70	-	-	-		-	-
FC355	F-20	4	-	-	1500/105		1500/105	1250/87	1250/87	750/52	400/28	300/21	250/17	200/14	-	-
FC234	F-24	5	-	-	-	1500/105	1500/105	1250/87	1250/87	750/52	750/52	-	-	-	-	-
FC350	F-21	4	-	-	2000/140	1500/105	1500/105	1250/87	1250/87	750/52	400/28	300/21	250/17	-	-	-
2807	G-8	2	-	3000/210	3000/210	3000/210	2500/175	2000/140	1500/105	1200/84	1000/70	625/43	-	-	-	-
S-TW	G-5	2	-	-	3000/207	3000/207	2500/172	2000/138	1750/121	1500/103	1000/68	-	-	-	-	-
FC300	F-22	4	-	-	3000/210	3000/210	2250/157	2000/140	1750/122	1500/105	800/56	500/35	500/34	300/21	300/21	-
FC611	B-31	6	-	-		-	2250/155	2000/138	-	1250/87	1000/70	625/43	500/35	375/26	-	-
1503	C-9	1	-	-	3000/210	3000/210	2250/157	2000/140	1750/122	1500/105	800/56	625/43	500/35	350/24	350/24	-
2651	C-10	1	-	-	3000/210	3000/210	2250/157	2000/140	1750/122	1500/105	800/56	625/43	500/35	350/24	350/24	-
FC639/ FC839B	B-22 B-8	1	-		3000/210	-	3000/210	3000/210	3000/210	3000/210	3000/210	-	-	-	-	-
GH681	B-7	1	-	-	3700/255	3250/225	3400/235	3200/221	2025/140	2000/138	1500/103	1000/69	750/52	600/41	-	-
GH194	B-9	4	-	-	3250/227	-	3000/210	2500/175	2000/140	1800/124	1300/90	900/62	725/50	580/40	-	-
GH663	B-23	1	-	-	3700/255†	-	3400/235†	2900/200†	-	2000/138†	1500/103†	1000/69	750/52	600/41	-	-
			-	-	2750/192	-	2250/157	2000/140	-	1250/87	1000/70	1000/69	750/52	600/41	-	-
EC810	B-19	1	-	-	-	-	-	-	-	6100/420	6100/420	6100/420	6100/420	5100/350	-	-
EC600	B-20	1	-	-	-	-	-	-	-	6100/420	6100/420	6100/420	6100/420	6100/420	-	-
EC502	B-33	1	-	-	-	-	-	4250/293	-	3125/215	2500/172	-	-	-	-	-
EC230	B-35	1	-	-	-	-	-	-	-	-	-	-	-	-	1150/79	
FC740	G-10	2		3000/210	3000/210	3000/210	2500/175	2000/140	-	-	-	-	-	-	-	-
3130	B-44	3	2500/172	3000/207	3000/207	2500/172	2250/155	2000/138	-	1250/86	1000/69					
2681	B-29	1	-	4000/280	3250/227	3250/227	3000/210	2500/175	2000/140	1800/124	1300/90	900/60	700/49	600/42	-	-
EC230	B-35	1	-	-	-	-	-	-	-	-	-	-	-		1150/79	-
FC849/ FC849B	B-24	1	-	-	4000/280	-	4000/280	4000/280	4000/280	4000/280	-	-	-		-	-
FC310	B-26	1	-	-	5000/350	-	4000/280	3500/245	2750/192	2250/157	2000/140	1625/113	-		-	-
FC693	B-32	6	-	-	5000/350	-	4000/280	3500/245	-	-	-	-	-	-	-	-
GH120	B-13	1	-	-	6000/414	-	5000/345	4500/310	4000/276	3500/241	2800/193	2300/159	2000/138	1500/103	-	-

Hose selection

Hose dash size to maximum operating pressure

Hose tube identification chart

1. Synthetic rubber
2. PTFE
3. Thermoplastic
4. AQP
5. Special application hose
6. EPDM

† Pressure rating with reusable style fittings.
‡ Pressure rating with global crimp style fittings.
§ 10,000 psi for static jack hose applications. See hose page for details.
* See hose page for dash sizes not listed.
†† 50 psi max with band clamp style fittings.
***Based on 2:1 safety factor.

Hose part number	Page	Tube	Hose -02	-03	-04	-05	-06	-08	-10	-12	-16	-20	-24	-32	-40	-48
FC510	B-27	4	-	-	5000/350	-	4000/280	3500/245	2750/192	2250/157	2000/140	1625/1113			-	-
FC273(B)	B-18	1	-	-	-	-	-	-	-	5100/350	5100/350	5100/350	5100/350	5100/350	-	-
FC636	B-40	6	-	-	-	-	-	-	-	4000/275	4000/275	3000/207	2500/172	-	-	-
FC735	B-11	1	-	-	5000/345	-	5000/345	4275/295	3650/250	3125/215	2550/175	2250/155	-	-	-	-
FC736	B-15	1	-	-	-	-	5500/380	5000/345	5000/345	4050/280	4050/280	3050/210	2550/175	2550/175	-	-
2781	B-30	1	-	-	5000/345	-	4000/280	3500/241	2750/190	2250/155	2000/138	1625/112	1250/112	1125/78	-	-
			-	-	5800/400†	-	5000/345†	4300/295†	3650/250†	3100/215†	2550/175†	2250/155†	1800/125†	1300/90†	-	-
GH195	B-12	4	-	-	5800/400	-	5000/345	4250/293	3650/250	3125/215	2550/175	2550/155	1800/125	1525/105	-	-
GH781	B-10	1	-	-	6500/448	-	5300/366	4500/310	4000/276	3500/241	3000/207	2500/172	2000/138	1600/110	-	-
GH793	B-28	1	-	-	5000/350	-	4000/280	3500/245	2750/192	2250/157	2000/140	2500/172	2000/138	1600/110	-	-
			-	-	6500/448†	-	5800/400†	5000/345†	4000/276†	3500/241†	3000/207†	-	-	-	-	-
GH493	B-14	1	-	-	-	-	6500/448	6000/415	6000/415	5500/380	5100/350	4500/310	4000/275	4000/275	-	-
GH506	B-37	1	-	-	-	-	-	-	-	6100/420	5500/380	5100/350	4350/300	3650/250	-	-
FC500	B-17	1	-	-	-	-	-	-	-	5100/350	5100/350	5100/350	5100/350	5100/350	-	-
EC525	B-16	4	-	-	-	-	-	-	-	5000/345	5000/345	3500/240	3500/240	3250/225	-	-
FC254	B-36	1	-	-	-	-	-	7700/530	-	7200/497	6000/415	5100/350	4350/300	4000/275	-	-
GH466	B-39	1	-	-	-	-	-	-	-	-	-	6100/420	6100/420	6100/420	-	-
FC606	B-38	1	-	-	-	-	-	-	-	-	6100/420	6100/420	6100/420	-	-	-
EC850	B-21	1	-	-	-	-	-	-	7250/500	7250/500	7250/500	7250/500	-	-	-	-
FC579***	B-34	1	-	-	10000/690§	-	10000/690§	-	-	-	-	-	-	-	-	-
EC910	B-41	1	-	-	-	-	-	16000/1100	-	14500/1000	10000/690	-	-	-	-	-
3740	B-45	3	-	-	-	-	-	-	-	1250/86	1000/69	-	-	-	-	-
37AL	B-46	3	-	3000/207	2750/190	2500/172	2250/155	2250/155	-	-	-	-	-	-	-	-
3R80	B-47	3	-	5100/350	5100/350	-	4050/280	3550/245	-	2300/157	2050/140	-	-	-	-	-
3E80	B-48	3	-	5100/350	5100/350	-	4050/280	3550/245	-	2300/157	2050/140	-	-	-	-	-
30CT	B-49	3	-	3050/210	3050/210	3050/210	3050/210	3050/210	3050/210	-	-	-	-	-	-	-
3V10	B-50	3	-	10000/689	10000/689	-	8000/552	-	-	-	-	-	-	-	-	-
3VE0	B-51	3	-	10000/689	10000/689	-	8000/551	-	-	-	-	-	-	-	-	-
H201	C-3	5	-	-	300/21	300/21	300/21	300/21	300/21	300/21	200/14	-	-	-	-	-
GH001	E-3	5	-	-	500/35	-	500/35	500/35	500/35	500/35	500/35	-	-	-	-	-
FC802	E-4	5	-	-	500/35	-	500/35	500/35	500/35	500/35		-	-	-	-	-
FC800	E-5	5	-	-	-	-	-	-	-	500/35	500/35	500/35	500/35	-	-	-
FC555	E-6	5	-	-	-	-	-	-	-	500/35	500/35	500/35	-	-	-	-
H057	F-12	5	-	50/3.4	50/3.4	50/3.4	50/3.4	-	-	-	-	-	-	-	-	-
35FH	F-13	5	-	-	175/12	175/12	175/12	-	-	-	-	-	-	-	-	-
EH227	F-18	5	-	-	119.3/8.2	-	119.3/8.2	106.3/7.3	94/6.5	81.3/5.6	81.5/5.6	69/4.75	62.3/4.3	50/3.45	37.3/2.6	21.8/1.5
GH101	F-19	5	-	-	400/28	-	400/28	400/28	350/24	350/24	-	-	-	-	-	-
35NG	F-27	5	-	-	5000/345	-	5000/345	5000/345	-	-	-	-	-	-	-	-
NG-TW	G-28	5	-	-	-	-	435/30	435/30	435/30	-	-	-	-	-	-	-
S-Series	G-3	5	-	3500/241	3000/206	3000/206	2500/172	2000/137	1750/120	1500/103	1000/68	-	-	-	-	-
S-Series	G-3	5	-	-	-	-	-	-	-	-	1250/86	1000/68	-	-	-	-
S-Series	G-3	5	-	-	3000/206	-	2500/172	1500/103	-	1250/86	900/62	-	-	-	-	-
SC-Series	G-4	5	-	3500/241	3000/206	3000/206	2500/172	2000/137	1750/120	1500/103	1000/68	-	-	-	-	-
SC-Series	G-4	5	-	-	3000/206	-	2500/172	1500/103	-	1250/86	900/62	-	-	-	-	-
SC-TW	G-6	5	-	-	3000/207	3000/207	2500/172	2000/138	1750/121	1500/103	1000/69	-	-	-	-	-
SC-TW	G-6	5	-	-	3000/207	-	-	-	-	-	900/62	-	-	-	-	-
Hi-PSI	G-7	5	-	-	5000/345	-	5000/345	5000/345	5000/345	5000/345	5000/345	5000/345	4000/276	-	-	-
8000	G-9	5	-	-	-	-	-	1500/103	-	1250/86	900/62	900/62	750/52	500/35	-	-
8500	G-9	5	-	-	-	-	-	-	-	1250/86	900/62	900/62	750/52	500/35	-	-
FC611	B-31	6	-	-	-	-	-	-	-	1250/87	1000/70	625/43	500/35	375/26	-	-

Thread style pressure performance

Eaton closely follows industry standards in design and in application recommendations. A key principle within ISO, SAE and other standards bodies is that the **maximum dynamic working pressure of the hose or adapter assembly** is the lesser of the hose and end connector(s) used.

The first table below provides excerpts from standard industry pressure rating charts for connector types as published by SAE (Society of Automotive Engineers).

Note: The tables below are applicable for low carbon free machining steels typically used in Fluid Power connections. For port type connections, the material and design of the port must be considered and may reduce expected strength.

For high pressure applications Eaton recommends the use of more robust connector designs such as Code 62 flange or O-Ring face seal.

Selected SAE pressure ratings

Dash size	Inch size	37° JIC SAE J514	Pipe SAE J476	Male ORB SAE J1926 ORS adapt.	Male ORB SAE J1926 non-ORS adapt.	Adjustable ORB SAE J1926 ORS adapt.	Adjustable ORB SAE J1926 non-ORS adapt.	ORS SAE J1453	Male flareless SAE J514	Code 61 SAE J518	Code 62 SAE J518
-2	1/8	5000	5000	-	5000	-	5000	-	5000	-	-
-3	3/16	5000	-	9000	5000	6000	5000	-	5000	-	-
-4	1/4	4500	5000	9000	5000	6000	4500	9000	4500	-	-
-5	5/16	4000	-	9000	5000	6000	4500	9000	4000	-	-
-6	3/8	4000	4000	9000	5000	6000	4000	9000	4000	-	-
-8	1/2	4000	3000	9000	4500	6000	4000	9000	4000	5000	6000
-10	5/8	3000	-	9000	3500	6000	3000	6000	3000	-	-
-12	3/4	3000	2500	6000	3500	6000	3000	6000	3000	5000	6000
-14	7/8	2500	-	6000	3000	6000	2500	6000	2500	-	-
-16	1	2500	2000	6000	3000	5000	2500	6000	2500	5000	6000
-20	1 1/4	2000	1150	4000	2500	4000	2000	3600	2000	4000	6000
-24	1 1/2	1500	1000	4000	2500	3000	2000	3600	1500	3000	6000
-32	2	1125	1000	3000	2000	2500	1500	3000	1125	3000	6000

International pressure rating charts

Maximum working pressure (PSI)

Hose fitting connection	Hose fitting size									
	-04	-05	-06	-08	-10	-12	-16	-20	-24	-32
Male British Pipe (BSP)	5000	-	4000	4000	3500	4000	3500	2500	2,000	2000
Female British Pipe (BSP)	5000	-	4000	4000	3500	4000	3500	2500	2,000	2000
Female Pipe (JIS)	5000	-	5000	5000	-	4000	4000	-	-	-

Maximum working pressure (PSI)

Hose fitting Connection	Hose fitting size									
	-06	-08	-10	-12	-15	-18	-22	-28	-35	-42
DIN light	3625	3625	3625	3625	3625	2325	2325	1450	1450	1450

Hose selection

Hose fitting pressure charts

Hose fitting pressure charts

All Eaton components

With higher pressures it is critical to know the construction materials and manufacturing method to ensure performance. When all components in a system are Eaton supplied, for example an Eaton hose fitting is mated with an Eaton adapter or tube fitting, the combination may be used at higher pressures with confidence. These higher ratings are noted in the chart below.

Maximum dynamic working pressure of the hose or adapter assembly is the lesser of the hose and end connector(s) used.

All Eaton pressure ratings[1]

Dash size	Inch size	37° JIC	Male pipe	Female pipe[2]	Male ORB ORS adapter	Male ORB non-ORS adapter	Adjustable ORB ORS adap	Adjustable ORB non-ORS adapter	ORS	Male flareless	Code 61	Code 62	STC
-2	1/8	-	10000	6000	-	5000	-	5000	-	5000	-	-	-
-3	3/16	-	-	-	9000	5000	6000	5000	-	5000	-	-	-
-4	1/4	7000	9500	5000	9000	5000	6000	4500	9000	4500	-	-	6000
-5	5/16	7000	-	-	9000	5000	6000	4500	-	4000	-	-	-
-6	3/8	5000	8000	4000	9000	5000	6000	4000	9000	4000	-	-	5000
-8	1/2	4000	6000	4000	9000	4500	6000	4000	9000	4000	5000	6000	4250
-10	5/8	3800	-	-	9000	3500	6000	3000	9000	3000	-	-	4000
-12	3/4	3300	5000	3500	6000	3500	6000	3000	6000	3000	5000	6000	4000
-14	7/8	-	-	-	6000	3000	6000	2500	-	2500	-	-	-
-16	1	3500	4000	3000	6000	3000	5000	2500	6000	2500	5000	6000	4000
-20	1 1/4	2500	3000	2000	4000	2500	4000	2000	4500	2000	4000	6000	-
-24	1 1/2	2100	2000	1500	4000	2500	3000	2000	4000	1500	3000	6000	-
-32	2	1750	2000	1500	3000	2000	2500	1500	3000	1125	3000	6000	-

Note:

1) These ratings are based on both brazed and one piece construction, one-piece pressures could be increased. Please contact Eaton in these situations.

2) This rating is for thin walled adapters or fittings, the use of manifolds or oversized female ports would allow full rated male pressures.

Dynamic operating pressure

Dynamic operating conditions refers to cyclic pressure impulses, usually considered to be from near zero to the highest system pressure. Hydraulic standards typically represent these as square waves and expect a component to handle on the order of 200,000 to well over one million such cycles with a burst: operating safety factor of 4:1. The above charts are created with dynamic applications in mind. Most industrial and mobile hydraulic systems fit the dynamic operating pressure profile, for example hydraulic work circuits on construction equipment or on injection molding equipment.

Static operating pressure

Static operating conditions typically range from zero to operating pressure, but with far fewer cycles expected for the system life – perhaps 30,000 to 50,000 cycles and sharp pressure spikes are not expected, allowing a burst: operating safety factor of 3:1 or less. For static operating conditions, the Eaton ratings above can be safely increased by 25-30%. For example, a 3000 psi dynamic rated hose might be used in a 4000 psi static pressure application. Typical examples of static applications are water blast and hydraulic jacking.

Materials

The above tables represent performance using common low carbon steel material. Other materials and their characteristics influence these ratings. Medium carbon steels or heat treated materials can support higher working pressures. Conversely non-ferrous materials such as aluminum or brass will have reduced capability – as much as 50%, or less, pressure handling capability. It is important to consider material properties in designing a system to ensure pressure rating compatibility of all materials.

Design & application

Eaton's Fluid Conveyance engineering and support teams have many decades of experience in designing, manufacturing and servicing hydraulic and other fluid conveyance systems globally. Eaton's product line is designed as a comprehensive collection of hose, fittings, connectors, couplings and accessories that allow a system designer to select components to complete a fluid power system or a service technician to replace a component with confidence. The individual product specifications, the above pressure ratings and other technical information are intended as supporting guidelines for system design and service needs and are not to be construed as a guarantee of performance of the system or of individual Eaton components. Eaton provides comprehensive technical support so please call with questions about pressure needs not covered by these charts or for specific application support.

Fluid compatibility

This chart indicates the suitability of various elastomers and metals for use with fluids to be conveyed. It is intended as a guide only and is not a guarantee. Final selection of the proper hose style, seal, or material of metal components is further dependent on many factors including pressure, fluid and ambient temperature, concentration, duration of exposure, etc.

How to use the chart

1. The chart has separate sections for rating elastomers for use as hose inner tubes and as seals. Ratings for a given elastomer may not always be the same in both sections.
2. Both the elastomer and the metal must be considered when determining suitability of a combination for a hose assembly, adapter with o-ring, swivel joint or coupling.
3. Locate the fluid to be conveyed and determine the suitability of the elastomeric and metal components according to the resistance ratings shown for each.
4. Specific hose part numbers can be found under the inner tube material groupings in the Hose Tube Identification Chart.
5. Dimensional and operating specifications for each hose can be found on the catalog pages shown with each hose part number.
6. Information on o-rings and seal options for swivel joints and couplings, and how to specify them, are shown in the respective sections of this catalog.
7. For further details on the products shown in this catalog, and their applications, contact:

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Resistance key rating

E = Excellent – Fluid has little or no effect.

G = Good – Fluid has minor to moderate effect.

C = Conditional – Service conditions should be described to Eaton Aeroquip for determination of suitability for application.

U = Unsatisfactory

The differences between ratings "E" and "G" are relative. Both indicate satisfactory service. Where there is a choice, the materials rated "**E**" may be expected to give better or longer service than those rated "**G**"

NOTE: Special precautions are necessary in gaseous applications due to the potential volume of gaseous fluid in the system. Unless the cover is perforated, hose styles with rubber or thermoplastic covers are not suitable for gases above 250 psi. Hose styles with perforated covers are so noted in their construction descriptions.

⚠ **WARNING**: Compatibility of hose fittings with conveyed fluid is an essential factor in avoiding chemical reactions that may result in release of fluids or failure of the connection with the potential of causing severe personal injury or property damage.

Hose tube identification chart

1. Synthetic rubber

1503	(p.C-9)	EC502	(p.B-33)	FC579	(p.B-34)	FC849B	(p.B-25)
2556	(p.C-5)	EC600	(p.B-20)	FC619	(p.B-42)	FC500	(p.B-17)
2565	(p.C-5)	EC850	(p.B-21)	FC639	(p.B-22)	GH120	(p.B-13)
2580	(p.C-8)	EC910	(p.B-41)	FC606	(p.B-38)	GH466	(p.B-39)
2583	(p.C-7)	EC810	(p.B-19)	FC647	(p.C-4)	GH493	(p.B-14)
2651	(p.C-10)	FC254	(p.B-36)	FC735	(p.B-11)	GH506	(p.B-37)
2681	(p.B-29)	FC273B	(p.B-18)	FC736	(p.B-15)	GH663	(p.B-23)
2781	(p.B-30)	FC310	(p.B-26)	FC839B	(p.B-8)	GH681	(p.B-7)
EC230	(p.B-35)	FC466	(p.C-7)	FC849	(p.B-24)	GH781	(p.B-10)
						GH793	(p.B-28)

2. PTFE

2807	(p.G-8)	S-TW	(p.G-5)	FC740	(p.G-10)	S-Series	(p.G-3)
SC-Series	(p.G-4)	Hi-PSI	(p.G-7)	8000	(p.G-9)	8500	(p.G-9)

3. Synflex thermoplastic elastomer

3E80	(p.B-48)	3VE0	(p.B-51)	30CT	(p.B-49)	3130	(p.B-44)
3R80	(p.B-47)	3V10	(p.B-50)	37AL	(p.B-46)	3740	(p.B-45)

4. AQP

2661	(p.B-43)	FC300	(p.F-22)	FC498	(p.C-6)	FC650	(p.F-23)
EC525	(p.B-16)	FC332	(p.C-4)	FC510	(p.B-27)	FC699	(p.F-23)
FC234	(p.F-24)	FC350	(p.F-21)	FC598	(p.C-6)	GH194	(p.B-9)
		FC355	(p.F-20)	FC598	(p.C-6)	GH195	(p.B-12)

5. Special application hose (not included in fluid chart)

Fuel	FC650	(p. G-5)	GH100	(p.F-19)	GH101	(p.F-19)	35FH (p.F-13)
LPG	FC321	(p. F-25)	35NG	(p.F-27)	NG-TW	(p.F-28)	CR170 (p.F-26)
Railroad air brake	1531	(p.F-15)					
Silicone	EH225	(p.F-16)	EH226	(p. F-17)	EH227	(p.F-18)	EC038 (p.F-14)
Truck air brake	2554	(p.F-15)	2570	(p. F-14)	FC350	(p.F-21)	
A/C	GH001	(p.E-3)	FC802	(p.E-4)	FC800	(p.E-5)	FC555 (p.E-6)

6. EPDM rubber

FC611	(p.B-31)	FC636	(p.B-40)	FC693	(p.B-32)		

Seal elastomer data

Seal elastomer	Application specification	Max. operating temperature range
Buna-N†	none	–40°C to +121°C [–40°F to +250°F]
Neoprene	none	–54°C to +100°C [–65°F to +212°F]
EPR (Ethylene Propylene Rubber)/EPDM	none	–54°C to +149°C [–65°F to +300°F]
Viton*	MIL-R-25897	–29°C to +204°C [–15°F to +400°F]

†Buna-N temperature range -65°F to +225°F. Also per MIL-R-6855.

*Viton is a trademark of The Chemours Company FC, LLC

Hose selection

Fluid compatibility

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‡Monel is a registered trademark of Special Metals Corporation group of Companies.
Note 1 - Rubber-covered hose must be perforated to allow gas to escape.
Note 2 - Due to the widely different additives in these fluids, testing should be done on the actual fluid being considered.

E=Excellent G=Good C=Conditional U=Unsatisfactory	Synthetic rubber	PTFE	Thermoplastic elastomer	AQP	Special application hose	EPDM	Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Steel	Brass	Stainless steel	Aluminum	Monel‡
	1	2	3	4	5	6											
Fluid	**Hose**						**Seals**						**Metal**				
Acetaldehyde	U	E	C	U	-	G	U	C	C	U	U	G	G	E	E	E	E
Acetic acid, 10%	U	E	C	C	-	E	U	U	E	G	U	C	U	U	C	C	U
Acetic acid, glacial	U	E	C	C	-	E	U	U	C	U	U	C	U	U	C	C	C
Acetone	U	E	G	U	-	E	U	U	G	U	U	G	E	E	E	E	E
Acetophenone	U	E	-	U	-	E	U	U	E	U	U	-	E	E	E	C	E
Acetyl acetone	U	E	U	U	-	E	U	U	G	U	U	G	U	C	C	C	C
Acetyl chloride	U	E	U	U	-	U	U	U	U	E	U	U	C	C	C	U	E
Acetylene[1]	G	E	G	G	-	E	U	U	G	E	G	G	E	E	E	E	E
Air, hot (up to +160°F)1	E	E	E	E	-	E	E	E	E	E	E	E	E	E	E	E	E
Air, hot (161°F – 200°F)[1]	C	E	U	E	-	E	G	G	E	E	G	G	E	E	E	E	E
Air, hot (201°F – 300°F)[1]	U	E	U	C	-	G	U	U	G	E	U	U	E	E	E	E	E
Air wet, below 160°F[1]	E	E	C	E	-	E	E	E	E	E	G	C	U	G	E	E	E
Aluminum chloride, 10% aq	E	E	E	E	-	E	E	E	E	E	G	E	U	U	U	U	U
Aluminum fluoride, 10% aq	E	E	E	U	-	E	E	E	E	E	G	E	U	U	U	E	C
Aluminum nitrate, 10% aq	E	E	E	C	-	E	E	E	E	E	G	E	U	U	C	C	C
Aluminum sulfate, 10% aq	E	E	G	E	-	E	E	E	E	E	-	G	U	C	E	C	C
Alums, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	U	C	E	C	C
Ammonia, anhydrous[1]	C	U	U	C	-	E	E	E	E	U	-	-	E	U	E	E	E
Ammonia, aqueous	G	G	U	C	-	E	E	E	E	U	-	-	E	U	E	E	E
Ammonium carbonate, 10% aq	U	E	C	U	-	E	U	E	E	U	-	C	C	U	C	C	C
Ammonium chloride, 10% aq	E	E	C	U	-	E	E	E	E	U	-	-	U	U	C	U	C
Ammonium hydroxide, 10% aq	U	E	U	U	-	E	C	C	E	C	U	U	G	U	C	C	U
Ammonium nitrate, 10% aq	E	E	C	U	-	E	E	G	E	U	G	C	G	U	G	G	U
Ammonium phosphate, 10% aq	E	E	C	U	-	E	E	E	E	-	G	C	U	C	G	U	G
Ammonium sulfate/sulfide, 10% aq	E	E	C	U	-	E	E	E	E	U	G	C	U	U	G	U	G
Amyl acetate	U	E	U	U	-	E	U	U	G	U	U	U	E	E	E	E	E
Amyl alcohol	G	E	E	C	-	E	G	C	E	G	C	E	G	G	E	U	G
Aniline, aniline oil	U	E	U	U	-	E	U	U	G	U	U	U	E	U	E	G	G
Aniline dyes	U	E	U	U	-	E	U	G	G	G	U	U	U	C	G	C	G
Asphalt, < 200°F	C	E	G	G	-	U	G	C	U	E	G	G	E	G	E	C	E
IRM 901	E	E	E	E	-	U	E	E	C	E	E	E	E	E	E	E	E
ASTM #2	E	E	E	E	-	U	E	G	U	E	G	E	E	E	E	E	E
IRM 903	E	E	E	E	-	U	E	G	U	E	G	E	E	E	E	E	E
Automatic trans. fluid [2]	G	E	G	G	-	U	E	G	U	E	C	G	E	E	E	E	E
Barium chloride, 10% aq	E	E	C	C	-	E	E	E	E	E	G	C	U	G	G	G	G
Barium hydroxide, 105 aq	E	E	G	C	-	E	E	E	E	E	E	G	G	U	G	U	G
Barium sulfide, 10% aq	E	E	C	C	-	E	E	E	E	E	G	C	C	U	G	U	U
Benzene, benzol	U	E	U	U	-	U	U	U	U	E	U	C	G	E	E	G	E
Benzoic acid	U	E	C	U	-	U	U	U	E	E	C	C	U	G	G	G	G
Benzyl alcohol	U	E	C	U	-	E	U	G	G	E	C	C	E	G	E	G	G
Biodiesel (<180˚F)	G	E	G	C	-	U											
Biodiesel (>180˚F)	C	E	U	U	-	U											
Black sulfate liquor	G	E	C	C	-	E	C	C	C	E	U	C	E	C	E	U	U
Blast furnace gas	C	U	C	G	-	U	U	U	U	E	U	C	E	C	E	U	U
Borax, 10% aq	E	E	G	C	-	E	G	G	E	E	G	E	E	E	E	G	-
Boric acid, 10% aq	E	E	C	E	-	E	G	G	G	E	G	G	U	G	C	C	C
Brine	G	E	C	C	-	C	E	G	E	E	G	C	U	G	G	U	E
Bromine, dry	U	E	U	U	-	U	U	U	U	E	U	U	U	C	U	C	C
Butane[1]	LPG approved hose only				-	E	C	U	E	-	-	E	E	E	E	E	
Butyl acetate	U	E	U	U	-	E	U	U	G	U	U	C	E	E	E	E	E
Butyl alcohol	E	E	G	G	-	C	E	E	G	E	G	G	G	G	G	G	G

Resistance key rating

E = Excellent – Fluid has little or no effect.
G = Good – Fluid has minor to moderate effect.
C = Conditional – Service conditions should be described to Eaton Aeroquip for determination of suitability for application.
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Fluid	Hose: Synthetic rubber 1	PTFE 2	Thermoplastic elastomer 3	AQP 4	Special application hose 5	EPDM 6	Seals: Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Metal: Steel	Brass	Stainless steel	Aluminum	Monel‡
Butyl cellosolve	U	E	U	U	-	E	U	U	G	U	U	C	E	E	E	E	E
Butylene (butene)[1]	C	E	-	C	-	U	C	U	U	E	U	-	E	E	E	E	E
Butyl stearate	U	E	-	U	-	U	G	U	U	E	-	-	G	G	G	G	G
Butyraldehyde	U	E	-	U	-	E	U	U	G	U	U	-	E	E	E	E	G
Calcium acetate, 10% aq	G	E	C	C	-	E	G	G	E	U	U	C	G	G	G	C	G
Calcium bisulfate, 10% aq	U	E	C	G	-	U	E	E	U	E	G	G	U	C	C	U	U
Calcium chloride, 10% aq	E	E	E	C	-	E	E	E	E	E	E	E	G	G	G	C	G
Calcium hydroxide, 10% aq	E	E	C	C	-	E	E	E	E	E	U	C	G	G	G	U	G
Calcium hydroxide, 10% aq	C	E	C	U	-	E	U	U	E	E	U	C	U	G	C	U	U
Calcium nitrate, 10% aq	E	E	E	G	-	E	E	E	E	E	E	E	G	G	G	G	G
Carbitol	G	E	G	C	-	G	G	G	G	G	U	G	E	E	E	E	E
Carbolic acid (phenol)	U	E	U	U	-	C	U	U	G	E	U	U	U	E	E	-	-
Carbonic acid	C	E	C	U	-	E	G	E	E	E	C	C	U	C	E	G	E
Carbon dioxide, dry gas[1]	E	E	E	E	-	E	G	G	E	E	G	E	E	E	E	E	E
Carbon disulfide	U	E	U	U	-	U	U	U	U	E	C	C	G	G	G	E	G
Carbon monoxide[1]	E	E	E	E	-	E	G	G	E	E	G	E	E	E	E	E	E
Carbon tetrachloride	U	E	U	U	-	U	U	U	U	E	U	U	U	G	G	U	E
Castor oil	E	E	G	E	-	G	E	E	G	E	G	G	E	E	E	E	E
Cellosolve acetate	U	E	U	U	-	E	U	U	G	U	U	U	U	E	G	G	E
China wood oil (tung Oil)	E	E	C	C	-	U	G	G	U	E	U	C	E	G	E	E	E
Chlorine1	U	G	U	U	-	U	U	U	U	G	U	U	C	C	C	C	C
Chloroacetic acid	U	E	U	U	-	E	U	U	G	U	U	U	U	U	G	U	G
Chloroacetone	U	E	U	U	-	E	U	U	E	U	U	U	G	G	G	U	G
Chlorobenzene	U	E	U	U	-	U	U	U	U	G	U	U	G	G	G	G	G
Chloroform	U	E	U	U	-	U	U	U	U	E	U	U	G	G	G	G	G
O-Chlorophenol	U	E	U	U	-	U	U	U	U	E	U	U	G	G	G	U	G
Chlosulfonic acid	U	U	U	U	-	U	U	U	U	U	U	U	G	U	G	G	C
Chrome plating solution	U	E	-	U	-	U	U	U	G	E	U	-	C	U	U	U	U
Chromic acid	U	E	-	U	-	C	U	U	C	E	U	-	C	U	U	U	U
Citric acid	G	E	C	G	-	E	E	E	E	E	E	C	C	C	C	C	C
Coke oven gas	U	E	-	U	-	U	U	U	U	E	U	-	E	C	E	U	U
Copper chloride, 10% aq	E	E	E	G	-	E	E	E	E	E	G	E	U	U	U	U	U
Copper cyanide, 10% aq	E	E	-	G	-	E	E	E	E	E	E	-	E	U	G	U	G
Copper sulfate, 10% aq	E	E	G	G	-	E	E	E	E	E	G	G	U	C	G	U	G
Cotton seed Oil	E	E	E	G	-	C	E	G	C	E	E	E	E	E	E	E	E
Creosote (coal tar)	G	E	U	G	-	U	G	C	U	E	U	U	E	C	E	E	E
Crude oil	G	E	C	E	-	U	E	G	U	E	G	C	G	U	G	U	U
Cyclohexanol	C	E	C	G	-	U	E	G	U	E	C	C	E	E	E	C	E
Cyclohexanone	U	E	C	U	-	G	U	U	G	U	G	G	E	E	E	C	E
Detergent/ Water solution	E	E	C	G	-	E	E	E	E	E	C	C	G	E	E	E	E
Diacetone alchohol (acetol)	U	E	U	U	-	E	U	U	E	U	C	C	E	E	E	E	E
Dibenzyl ether	U	E	-	U	-	G	U	U	G	U	-	-	G	G	G	G	G
Diesel oil [2]	G	E	C	G	-	U	E	C	U	E	C	C	E	E	E	E	E
Diethylamine	C	E	-	C	-	C	G	G	G	U	-	-	E	U	E	-	E
Dioctyl phthalate (DOP)	U	E	C	C	-	G	U	U	G	G	C	C	E	E	E	E	E
Dowtherm A&E	U	E	-	U	-	U	U	U	U	E	-	-	G	U	E	E	E
Ethyl alcohol (Ethanol)	E	E	C	G	-	E	E	E	E	E	C	C	E	E	E	G	E
Ethyl acetate	U	E	C	U	-	G	U	U	G	U	C	C	E	E	E	E	E
Ethyl benzene	U	E	-	U	-	U	U	U	U	E	U	-	E	G	G	G	E
Ethyl cellulose	G	E	U	U	-	G	G	G	G	U	C	C	E	G	G	G	G
Ethyl chloride	C	E	U	U	-	U	U	U	U	E	U	U	E	E	E	G	G
Ethylene dichloride	U	E	U	U	-	U	U	U	U	G	U	U	G	C	G	G	G
Ethylene glycol	E	E	C	G	-	E	E	E	E	E	C	C	U	G	E	E	E

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Hose selection

Fluid compatibility

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Ferric chloride, 10% aq	E	E	-	G	-	E	E	G	E	E	-	-	U	U	U	U	U
Ferric nitrate, 10% aq	E	E	C	E	-	E	E	E	E	E	C	C	U	U	G	U	U
Ferric sulfate, 10% aq	E	E	C	E	-	E	G	G	G	E	C	C	U	U	E	U	U
Formaldehyde	U	E	C	U	-	E	C	C	G	G	C	C	E	E	E	G	G
Formic acid	G	E	U	C	-	E	C	G	E	U	U	U	U	C	C	C	C
Fuel oil	E	E	G	E	-	U	E	G	U	E	G	G	E	E	E	E	E
Furfural	U	E	-	U	-	G	C	C	G	U	U	-	G	G	G	G	G
Gallic acid, solution	G	E	-	C	-	G	G	G	G	E	U	-	U	-	G	C	G
Gasoline[2]	G	E	E	G	-	U	E	C	U	E	E	E	E	E	E	E	E
Gasohol[2]	G	E	G	C	-	U	G	G	U	E	E	E	E	E	E	G	E
Glycerine/ Glycerol	E	E	E	E	-	E	E	E	E	E	G	E	E	G	E	E	E
Green sulfate liquor	G	E	-	U	-	E	G	G	E	E	-	-	U	U	E	U	U
Helium[1]	E	G	C	E	-	E	E	E	E	E	E	E	E	E	E	E	E
Heptane	E	E	E	C	-	U	E	G	U	E	G	G	E	E	E	E	E
Hexaldehyde	U	E	-	U	-	E	U	G	G	U	U	-	G	G	E	E	G
Hexane	E	E	E	E	-	U	E	G	U	E	G	G	E	E	E	E	E
Hydraulic oils[2]																	
Ester blend	C	E	C	G	-	C	E	U	U	E	U	E	E	E	E	E	E
Phos. Ester/ petroleum blend	U	E	C	U	-	U	U	U	U	C	U	G	E	E	E	E	E
Silicone oils	E	E	E	E	-	E	E	E	E	E	E	E	E	E	E	E	E
Straight petroleum base	E	E	E	E	-	U	E	G	U	E	E	E	E	E	E	E	E
Straight phosphate ester	U	E	C	U	-	E	U	U	G	C	U	G	E	E	E	E	E
Water glycol	E	E	C	G	-	E	E	E	E	E	C	C	E	E	E	G	E
Water petroleum emulsion	E	E	C	G	-	U	E	G	U	E	C	C	C	E	E	G	E

Fluid	Hose: Synthetic rubber 1	PTFE 2	Thermoplastic elastomer 3	AQP 4	Special application hose 5	EPDM 6	Seals: Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Metal: Steel	Brass	Stainless steel	Aluminum	Monel‡
Hydrobromic acid	U	E	U	E	-	G	U	U	E	E	U	U	E	U	E	E	U
Hydrochloric acid, cold	U	E	U	U	-	G	U	U	G	E	U	U	U	U	U	U	U
Hydrocyanic acid	C	E	-	U	-	E	C	C	E	E	-	-	E	E	G	E	G
Hydrofluoric acid	U	E	U	U	-	U	U	U	C	U	U	U	U	U	U	U	C
Hydrofluorosilic acid	E	E	-	G	-	G	G	G	E	E	-	-	U	U	U	U	U
Hydrogen[1]	G	C	G	G	-	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen peroxide	C	E	G	C	-	G	G	G	G	E	G	G	U	U	G	E	U
Hydrogen sulfide, dry	C	C	C	U	-	E	U	G	E	U	-	G	E	G	G	G	G
Isocyanate	U	E	U	U	-	U	U	U	G	E	U	U	G	-	G	-	-
Iso octane	G	E	E	G	-	U	E	G	U	E	G	E	E	E	E	E	E
Isopropyl acetate	U	E	C	U	-	C	U	U	G	U	U	C	E	-	E	E	E
Isopropyl alcohol	G	E	C	G	-	E	G	G	E	E	U	C	E	E	E	G	E
Isopropyl ether	G	E	-	C	-	U	G	U	U	U	C	-	G	G	G	-	-
JP-4, JP-5	E	E	G	E	-	U	E	U	U	E	U	G	E	E	E	E	E
Kerosene	G	E	G	E	-	U	E	U	U	E	U	G	E	E	E	E	E
Lacquer/ lacquer solvents	U	E	U	U	-	E	U	U	U	U	U	G	U	E	E	E	E
Lime sulfur	U	E	C	U	-	E	U	E	E	E	C	C	G	U	G	-	U
Linseed oil	E	E	G	G	-	U	E	G	U	E	G	G	E	E	E	E	E
LPG[1]	LPG approved hose only						E	G	U	E	-	-	E	E	E	E	E
Lubricating oils[2]	See hydraulic oils						See hydraulic oils						See hydraulic oils				
Magnesium chloride, 10%aq	E	E	C	E	-	E	E	E	E	E	C	C	E	C	C	G	G
Magnesium hydroxide, 10% aq	G	E	C	G	-	E	G	G	E	E	C	C	E	G	E	G	G
Magnesium sulfate, 10% aq	E	E	C	E	-	E	E	E	E	E	C	C	E	E	E	E	E
Maleic acid	U	E	C	C	-	G	U	U	U	E	C	C	E	G	G	G	G
Maleic anhydride	U	E	C	U	-	C	U	U	U	E	C	C	G	U	E	G	E
Malic acid	G	E	-	G	-	U	G	G	U	G	-	-	U	-	E	G	E
Mercuric chloride	G	E	E	G	-	G	E	E	E	E	E	E	U	U	U	U	U
Mercury	E	E	E	E	-	E	E	E	E	E	E	E	E	U	E	U	G
Methanol	E	E	C	E	-	E	G	G	E	U	C	C	G	G	E	C	E

Resistance key rating

E = Excellent – Fluid has little or no effect.
G = Good – Fluid has minor to moderate effect.
C = Conditional – Service conditions should be described to Eaton Aeroquip for determination of suitability for application.
U = Unsatisfactory

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Note 1 - Rubber-covered hose must be perforated to allow gas to escape.
Note 2 - Due to the widely different additives in these fluids, testing should be done on the actual fluid being considered.

E=Excellent G=Good C=Conditional U=Unsatisfactory	Hose						Seals						Metal				
	Synthetic rubber	PTFE	Thermoplastic elastomer	AQP	Special application hose	EPDM	Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Steel	Brass	Stainless steel	Aluminum	Monel‡
	1	2	3	4	5	6											
Fluid																	
Methyl bromide	C	E	U	U	-	U	G	U	U	E	U	U	E	E	G	U	E
Methyl chloride	U	E	U	U	-	U	U	U	U	E	U	U	E	E	E	U	G
Methyl butyl ketone	U	E	U	U	-	E	U	U	E	U	C	C	E	E	E	-	E
Methyl ethyl ketone	U	E	U	U	-	E	U	U	E	U	U	G	G	G	G	G	G
Methylene chloride	U	E	U	U	-	U	U	U	U	G	U	U	G	G	G	G	G
Methyl isobutyl ketone	U	E	U	U	-	E	U	U	U	U	U	U	G	G	G	G	G
Methyl isopropyl ketone	U	E	U	C	-	E	U	U	U	U	U	U	G	G	G	G	G
Methyl salicylate	U	E	-	U	-	C	U	U	C	U	-	-	E	G	G	E	G
MIL-L-2104	E	E	E	E	-	U	E	G	U	E	E	E	E	E	E	-	E
MIL-H-5606	E	E	E	E	-	U	E	G	U	E	E	E	E	E	E	E	E
MIL-H-6083	E	E	E	E	-	U	E	E	U	E	E	E	E	E	E	-	E
MIL-L-7808	G	E	G	G	-	U	G	U	U	E	G	G	G	G	E	-	-
MIL-L-23699	E	E	-	G	-	U	G	U	U	E	-	-	E	E	E	E	E
MIL-H-46170	G	E	-	G	-	C	E	G	U	E	-	-	E	E	E	-	E
MIL-H-83282	G	E	-	G	-	U	E	U	U	E	-	-	E	E	E	-	E
Mineral oils	E	E	G	E	-	U	E	G	U	E	G	G	E	E	E	E	E
Naphtha	C	E	G	E	-	U	C	U	U	E	C	G	-	-	-	-	-
Naphthalene	U	E	U	U	-	U	U	U	U	E	C	G	E	G	E	G	G
Naphthenic acid	U	E	-	U	-	U	C	U	U	E	-	-	-	G	E	G	G
Natural gas[1]	LPG approved hose only						E	E	U	E	-	-	G	G	G	G	G
Nickel acetate, 10% aq	G	C	U	G	-	E	C	C	E	G	U	U	G	C	E	G	E
Nickel chloride, 10% aq	E	E	U	E	-	E	E	G	E	E	U	U	U	U	G	U	G
Nickel sulfate, 10% aq	E	E	U	E	-	E	E	E	E	E	U	U	U	G	G	U	G
Nitric acid, to 10%	U	E	U	U	-	G	U	U	U	E	U	C	U	U	E	U	U
Nitric acid, over 10%	U	C	U	U	-	U	U	U	U	G	U	U	U	U	E	C	U
Nitrobenzene	U	E	U	U	-	E	U	U	U	G	U	U	E	G	E	E	E

E=Excellent G=Good C=Conditional U=Unsatisfactory	Hose						Seals						Metal				
	Synthetic rubber	PTFE	Thermoplastic elastomer	AQP	Special application hose	EPDM	Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Steel	Brass	Stainless steel	Aluminum	Monel‡
	1	2	3	4	5	6											
Fluid																	
Nitrogen[1]	E	E	E	E	-	E	E	E	E	E	E	E	E	E	E	E	E
Octyl alcohol	C	E	E	U	-	U	E	E	E	E	E	E	E	E	E	E	E
Oleic acid	G	E	G	U	-	U	U	U	C	G	G	E	C	E	G	C	G
Ortho-dichlorobenzene	U	E	-	U	-	U	U	U	U	E	-	-	G	G	G	G	G
Oxalic acid, 10% aq	C	E	C	C	-	E	G	G	E	E	C	C	U	C	C	C	C
Oxygen[1]	U	U	U	U	-	E	-	-	-	-	-	-	G	G	G	G	G
Palmitic acid	E	E	E	E	-	G	E	G	G	E	-	E	G	-	E	G	G
Para-dichlorobenzene	U	E	-	U	-	U	U	U	U	E	-	-	G	G	G	G	G
Pentane[1]	Lpg approved hose only						E	E	U	E	U	G	G	G	G	E	G
Perchloric acid	U	E	U	U	-	G	E	G	G	E	U	U	U	U	U	U	U
Per-chloroethylene	U	E	U	U	-	U	U	U	U	E	U	U	C	G	G	G	E
Petroleum base oils	G	E	E	E	-	U	E	G	U	E	E	E	E	E	E	E	E
Phenol (carbolic acid)	U	E	U	U	-	U	U	U	G	E	U	U	U	E	E	E	G
Phosphate ester[2]	U	E	C	U	-	E	U	U	G	C	U	G	E	E	E	E	E
Phosphoric acid 20%	U	E	U	U	-	E	U	U	G	E	U	U	U	E	U	C	E
Phosphorous trichloride	U	E	U	U	-	E	U	U	E	E	U	U	C	U	C	E	E
Potassium Acetate, 10% aq	G	E	-	G	-	E	G	G	E	U	-	-	C	G	C	U	G
Potassium chloride, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	E	C	E	U	G
Potassium cyanide, 10% aq	E	E	E	G	-	E	E	E	E	E	E	E	C	U	G	U	C
Potassium dichromate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	C	C	C	C	C
Potassium hydroxide, to 10%	G	E	C	C	-	E	G	G	E	G	C	C	G	G	G	U	E
Potassium hydroxide, over 10%	C	E	U	C	-	E	C	C	E	U	U	U	G	G	G	U	E
Potassium nitrate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	G	G	E	G	-
Potassium sulfate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	-	-	-	-	-
Propane[1] (liquified)	LPG approved hose only						C	-	-	-	-	-	E	E	E	E	E

Resistance key rating

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Hose selection

Fluid compatibility

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Fluid	Hose: Synthetic rubber 1	PTFE 2	Thermoplastic elastomer 3	AQP 4	Special application hose 5	EPDM 6	Seals: Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Metal: Steel	Brass	Stainless steel	Aluminum	Monel‡
Propyl acetate	U	E	-	U	-	G	U	U	G	U	-	-	E	-	E	E	E
Propyl alcohol	E	E	U	E	-	E	E	E	E	E	U	U	E	E	E	E	E
Propylene[1]	U	E	-	U	-	U	U	U	U	E	-	-	E	E	E	E	E
Refrigerant R-121	E	-	G	C	-	C	G	E	C	E	E	E	E	E	E	E	E
Refrigerant R-131	E	-	G	C	-	G	G	E	C	E	E	E	E	E	E	E	E
Refrigerant R-221	U	C	U	U	-	E	U	E	C	U	U	U	E	E	E	E	E
Refrigerant R-134a1	C	C	U	U	-	E	E	C	U	U	U	E	E	E	E	E	E
Sewage	G	E	E	G	-	E	E	E	E	E	U	E	G	G	G	G	G
Silicone oils	G	E	E	G	-	E	E	E	E	E	E	E	E	E	E	E	E
Soap (water solutions)	E	E	C	E	-	E	E	E	E	E	C	C	E	E	E	U	E
Sodium acetate, 10% aq	G	U	-	G	-	E	G	G	E	U	-	-	E	E	G	E	E
Sodium Bicarbonate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	G	G	E	G	E
Sodium borate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	E	E	E	G	-
Sodium carbonate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	E	G	E	U	E
Sodium chloride, 10% aq	E	E	E	G	-	E	E	E	E	E	E	E	U	C	C	C	E
Sodium cyanide, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	E	-	C	U	U
Sodium hydroxide, to 10%	C	E	G	C	-	E	U	G	E	E	G	G	C	G	C	U	C
Sodium hydroxide, over 10%	U	E	C	U	-	E	U	U	G	E	C	C	C	C	C	U	C
Sodium hypochlorite, 10% aq	C	E	C	G	-	G	C	C	E	C	C	C	U	U	U	U	C
Sodium metaphosphate, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	E	G	G	U	G

Fluid	Hose: Synthetic rubber 1	PTFE 2	Thermoplastic elastomer 3	AQP 4	Special application hose 5	EPDM 6	Seals: Buna-N	Neoprene	EPR	Viton*	Urethane	Hytrel†	Metal: Steel	Brass	Stainless steel	Aluminum	Monel‡
Sodium nitrate, 10% aq	G	E	E	G	-	E	G	G	E	-	E	E	E	C	E	E	E
Sodium perborate, 10% aq	G	E	-	G	-	E	G	G	E	E	-	-	C	U	C	U	C
Sodium peroxide, 10% aq	G	E	-	G	-	G	G	G	E	E	U	-	U	U	C	C	C
Sodium phosphates, 10% aq	E	E	E	C	-	E	E	E	E	E	E	E	U	E	G	U	E
Sodium silicate, 10% aq	E	E	E	G	-	E	E	E	E	E	E	E	E	E	E	E	E
Sodium sulfate, 10% aq	E	E	E	G	-	E	E	E	E	E	E	E	C	G	G	G	G
Sodium sulfide, 10% aq	E	E	E	G	-	E	E	E	E	E	E	E	C	U	C	U	G
Sodium thiosulfate, 10% aq	G	E	E	G	-	E	G	E	E	E	E	E	U	U	C	G	E
Soy bean oil	E	E	G	C	-	U	E	G	U	E	G	G	E	E	E	E	E
Stannic chloride	G	E	C	G	-	E	E	G	E	E	C	C	U	U	U	U	U
Steam[1] (up to 388°F)	U	E	U	U	-	G	U	U	C	C	U	U	E	E	E	G	E
Stearic acid	G	E	G	G	-	G	G	G	G	E	G	G	C	C	E	C	E
Stoddard solvent	G	E	U	C	-	U	E	G	U	E	U	U	E	E	E	E	E
Styrene	U	E	U	U	-	U	U	U	U	G	U	U	E	E	E	E	E
Sulfur, slurry	C	E	G	E	-	E	U	E	E	E	G	G	E	U	G	E	E
Sulfur chloride, Wet	U	E	-	U	-	U	U	U	U	E	-	-	G	-	G	G	U
Sulfur dioxide, dry[1]	U	E	U	U	-	E	U	U	G	E	U	U	E	G	G	E	G
Sulfuric acid, to 10%	U	E	U	U	-	E	U	G	U	E	C	C	U	G	C	-	E
Sulfuric acid, over 10%	U	E	U	U	-	U	U	U	U	G	U	U	C	C	C	U	C
Sulfurous acid	U	E	U	G	-	G	C	C	U	G	U	U	U	C	C	C	U
Tannic acid	G	E	G	G	-	E	G	E	E	E	G	G	E	E	E	C	E
Tar (Bituminous)	G	E	G	G	-	U	G	U	U	E	G	G	E	G	E	E	E
Tartaric acid	E	E	G	E	-	G	E	G	G	E	G	G	U	C	C	E	E
Tertiary butyl alcohol	G	E	G	E	-	G	G	G	G	E	G	G	G	G	G	G	G
Titanium tetrachloride	U	E	-	U	-	U	C	U	U	E	-	-	E	U	G	U	
Toluene (toluol)	U	E	U	U	-	U	U	U	U	E	U	U	E	E	E	E	E

Resistance key rating

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G = Good – Fluid has minor to moderate effect.
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Hydraulic fluids & lubricating oils

The following is a representative list of fluids and manufacturers. The fluids are grouped under generic "family" heads and arranged alphabetically. For each generic "family" listing we have included maximum fluid temperature recommendations for the six hose classifications on page A-15 (1 through 6). Two maximum fluid temperature ratings are listed under designations of "H" and "LP". The "H" designation is for hydraulic service up to the maximum rated operating pressure of any particular hose in the classification. The "LP" designation is for low-pressure service such as lubricating oil systems or low-pressure hydraulic return lines. The letter "U" in the box indicates unsatisfactory resistance to the fluid type. Fluid temperature ratings are predicated on maximum allowable ambient temperatures as follows:

Classifications 1 and 3

(Synthetic rubber and thermoplastic elastomer)

"H" fluid temp. ratings: +140°F ambient

"LP" fluid temp. ratings: +180°F ambient

Classification 2 (PTFE)

"H" fluid temp. ratings: +400°F ambient

"LP" fluid temp ratings: +400°F ambient

Classification 4 (AQP)

"H" fluid temp. ratings: +160°F ambient

"LP" fluid temp. ratings: +250°F ambient

(If "H" fluid temperature is +225°F or less, allowable ambient temperature may be increased to +200°F)

Ambient temperatures in excess of those recommended, in conjunction with maximum fluid temperatures, can materially shorten the service life of the hose.

Caution: The fluid manufacturer's recommended maximum operating temperature for any specific name brand fluid should be scrupulously observed by the user. These recommended temperatures can vary widely between name brands of different fluid compositions, even though they fall into the same generic "family" of fluids. Exceeding the manufacturer's recommended maximum temperature can result in fluid breakdown, producing by-products that are harmful to elastomeric products, as well as other materials in the system. If a manufacturer's recommended maximum temperature for his specific fluid is lower than that for the hose rating, it should take precedence over the hose rating for service usage.

E=Excellent
G=Good
C=Conditional
U=Unsatisfactory

Fluid	Hose: Synthetic rubber 1	Hose: PTFE 2	Hose: Thermoplastic elastomer 3	Hose: AQP 4	Hose: Special application hose 5	Hose: EPDM 6	Seals: Buna-N	Seals: Neoprene	Seals: EPR	Seals: Viton*	Seals: Urethane	Seals: Hytrel†	Metal: Steel	Metal: Brass	Metal: Stainless steel	Metal: Aluminum	Metal: Monel‡
Trichlorethylene	U	E	U	U	-	U	U	U	U	E	U	U	E	G	E	E	E
Tricresyl Phosphate	U	E	U	U	-	E	U	U	E	G	U	U	E	-	C	-	G
Triethanolamine	G	E	U	G	-	E	E	U	E	U	U	U	E	U	E	E	E
Tung Oil	E	E	C	C	-	U	G	G	U	E	U	C	E	G	E	E	E
Turpentine	E	E	G	G	-	U	G	U	U	E	G	G	G	G	G	G	G
Varnish	C	E	G	G	-	U	G	U	U	E	G	G	E	G	E	E	E
Vinyl Chloride	U	E	U	U	-	U	U	U	U	E	U	U	E	U	C	E	E
Water (to +150°F)	E	E	E	G	-	E	E	E	E	E	E	E	C	G	E	G	E
Water (+151°F to +200°F)	C	E	U	C	-	E	E	E	E	E	U	U	C	G	E	G	E
Water (+201°F to +350°F)	U	E	U	U	-	E	U	U	G	G	U	U	C	G	E	G	E
Water Glycol	E	E	C	E	-	E	E	E	E	E	C	C	E	E	E	G	E
Water Petroleum Emulsion[2]	E	E	C	C	-	U	E	G	U	E	C	C	C	E	E	G	E
Xylene	U	E	C	U	-	U	U	U	U	E	U	C	E	E	E	E	E
Zinc Chloride, 10% aq	E	E	E	E	-	E	E	E	E	E	E	E	E	U	U	C	G
Zinc Sulfate, 10% aq	E	E	-	E	-	E	E	E	E	E	-	-	U	C	G	C	G

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