Hose Selection Chart

How to use chart: Locate the hose I.D. required and move to the right to the correct pressure. Then move up or down in this column for data on material, temperature, etc. to quickly determine whether the hose meets your requirements. For complete information on any hose refer to hose catalog page number at bottom of column.

⚠ WARNING

Selection of Hose: Selection of the proper hose for the application is essential to the proper operation and safe use of the hose and related equipment. Inadequate attention to selection of the hose for your application can result in hose leaking, bursting, or other failure which can cause serious bodily injury or property damage from spraying fluids or flying projectiles. You should carefully review the information in this catalog.

HOSE #	H057	H077	H338	H229	H239	H429	H285	H105	H275	H201
Usage	Fuel & Oil	Elec. Fuel Inject.	Air Brake	Air & Hydraulic	Transmission Oil Cooler, Diesel Fuel, Air Brake	Transmission Oil Cooler, Fuel and Diesel Lines	Agriculture & Food	Air & Water	Air & Water	General Purpose Air & Oil
Meets	NMMA	–	DOT All	DOT All	DOT All	–	FDA, NSF 51	–	–	MSHA (Black only)
SAE No.	30R7	30R9	J1402 Type A	J1402 Type All	J1402 Type All	J1019	–	–	–	–
Temperature Range	-40°F +275°F	-30°F +275°F	-40°F +200°F	See page 32	See page 33	-55°F +302°F	+25°F +150°F	See page 34	-10°F +150°F	-40°F +212°F
Inner Tube	Nitrile	Fluoro-elastomer Veneer	EPDM	Nitrile	CPE	CPE	Clear PVC	EPDM	PVC	Nitrile
Reinforcement	1 Fiber Braid	Multi Fiber Braid	Multi Fiber Braid	2 Fiber Braids	2 Fiber	1 Wire Braid	2 Fiber Spirals	Multi Fiber Spiral	2 Fiber Spirals	1 Fiber Braid
Outer Cover	Hypalon®[1]	ECO	EPDM	Fiber Braid	Fiber Braid	Fiber Braid	Clear PVC	Red EPDM	Red PVC	Neoprene (black), Vinyl Nitrile (colors)
Hose I.D.	MAXIMUM RECOMMENDED OPERATING PRESSURE - PSI									
3/16	50			225	225					
1/4	50	125					250*	300†	250**	250
5/16	50	125		225						
3/8	50	125	225				225*	300†	250**	250
13/32				225	225	250				
7/16	35									
1/2			225	225	225	250	200*	300†	250**	250
5/8				225	225					250
3/4							150*	300†	250**	250
7/8				225	225					
1							125*	200†	200	
1-1/8					225					
1-1/4										
1-1/2										
1-3/8										
1-13/16										
2										
2-3/8										
3										
Hose	Page 31	Page 31	Page 32	Page 32	Page 33	Page 33	Page 34	Page 34	Page 35	Page 35
Coll-O-Crimp Hose Ends	–	–	157-159	100-103 155	100-103 155	139-146	92-99	163-183	92-99 156	–
Field Attachable Hose Ends	206-208	89	214-217	218-219 230-235	230-235	154	156	206-208 212-213	–	209-211

[1] Hypalon® is a registered trademark of DuPont.

**At 70° F.

† When used with 'U' Series Ends.

*Not NMMA approved.

Hose Selection Chart

⚠ WARNING

Selection of Hose: Selection of the proper hose for the application is essential to the proper operation and safe use of the hose and related equipment. Inadequate attention to selection of the hose for your application can result in hose leaking, bursting, or other failure which can cause serious bodily injury or property damage from spraying fluids or flying projectiles. You should carefully review the information in this catalog.

HOSE #	H115	H039	H265	H100	H101	H366	H009	H757	GH134	H059
Usage	Air Tool & Water	Hydraulic Suction Vacuum	Air, Water	General Purpose	General Purpose	LPG	Lube	Air Cond. R12 & R134a	Air Cond. R404a, HFC134a, R22, R407C	Fuel Oil/ Lube
Meets	–	USCG ABS MSHA	–	–	MSHA	UL 21	USCG MSHA	–	–	ABS NMMA USCG
SAE No.	–	100R4 J1942/1	–	–	–	–	J1942/1, 100R6	J2064 Type C, Cl-1	J2064 Type E Class 1	J1942/1
Temperature Range	-40°F +160°F	-40°F +212°F	-20°F +180°F	-40°F +212°F	-40°F +212°F	-40°F +300°F	-40°F +212°F	See page 41	-22°F +257°F	-4°F +212°F
Inner Tube	Nitrile	Nitrile	Modified PVC	Nitrile	Nitrile	Nitrile	Nitrile	Rubber/ Nylon/ Rubber	Polyamide Veneer	Nitrile
Reinforcement	Multi Fiber Braid	2 Fiber Ply & Helical Wire	2 Fiber Spirals	1 Fiber Braid	1 Fiber Braid	1 Fiber & 1 S.S. Braid	1 Fiber Braid	1 Fiber Braid	Rubber Backing, 1 Fiber Braid	1 Wire 1 Fiber Braid
Outer Cover	Red Vinyl Nitrile	Neoprene	Blue Rubber Modified Thermoplastic	Fiber Braid	Neoprene	Fiber Braid	Neoprene	Butyl Perforated	Chlorobutyl	Blue Neoprene
Hose I.D.	MAXIMUM RECOMMENDED OPERATING PRESSURE - PSI									
3/16										500
1/4	300		350**	350	350		400			500*
5/16	300			350	350	350	400	400		500
3/8	300		350**	350	350		400		500	
13/32						350		400		500
7/16										
1/2	300		300**	350	350		400	350	500	500
5/8				350	350			350	500	500
3/4	300	300††	250**	350	350				500	
7/8										
1	300	250††	200**							500
1-1/8										
1-1/4	225	200††								
1-1/2	225	150								
1-3/8										
1-13/16										
2		100								
2-3/8										
3										
Hose	Page 36	Page 37	Page 38	Page 38	Page 39	Page 39	Page 40	Page 41	Page 41	Page 42
Coil-O-Crimp Hose Ends	163-183 184-196	160 163-183 184-196	92-99 156	–	–	100-103	92-99	139-146	115-138	100-103 155
Field Attachable Hose Ends	206-208 212-213	220 221	–	209-211	209-211	218-219 230-235	205	–		230-235

††When used with 'U' and 'S'.

**At 70° F.

† When used with 'U' Series Ends.

*Not NMMA approved.

Hose Selection Chart

⚠ WARNING

Selection of Hose: Selection of the proper hose for the application is essential to the proper operation and safe use of the hose and related equipment. Inadequate attention to selection of the hose for your application can result in hose leaking, bursting, or other failure which can cause serious bodily injury or property damage from spraying fluids or flying projectiles. You should carefully review the information in this catalog.

HOSE #	H017	H166	H209	H213	H324	H104	H069	H243	H277	H569	H169
Usage	General Purpose Hydraulic	High Temp. Truck	Car Wash	High Temp. Truck	Power Steering	Hydraulic	Truck & Hydraulic	Hydraulic/ Air/Steam	Hydraulic/ Air/Steam w/ Conductive Static Dissipating Liner	A/B & Hydraulic	Hydraulic
Meets	USCG MSHA	DOT All	–	DOT Al	–	USCG MSHA ABS	DOT All+ ABS	FDA	–	ABS DOT+ All USCG	MSHA
SAE No.	J1942/1, 100R3	J1402 Type All	–	J1402 Type Al	J188 Type 2	J1942 /1/1 100R1AT	J1402 All 100R5	–	–	100R5 J1942 /1 J1402 Type All	–
Temperature Range	-40°F +212°F	See page 43	-40°F +200°F	See page 44	-40°F +250°F	-40°F +212°F	See page 46	-65°F +450°F	-65°F +450°F	See page 48	-40°F +212°F
Inner Tube	Nitrile	Nitrile	Nylon 11	CPE	Neoprene	Nitrile□	Nitrile	PTFE	PTFE	CPE	Nitrile
Reinforcement	2 Fiber Braids	1 Fiber & 1 S.S. Braid	1 Fiber Braid	1 Fiber & 1 Wire Braid	2 Fiber Braids	1 Steel Braid	1 Fiber & Steel Braid	1 S.S. Braid	1 S.S. Braid	1 Fiber & 1 Steel Braid	1 Steel Braid
Outer Cover	Neoprene	Fiber Braid	Polyurethane	Fiber Braid	Neoprene	Neoprene	Fiber Braid	Stainless Steel Braid	Stainless Steel Braid	Blue Fiber Braid	Neoprene (Perforated)
Hose I.D.	MAXIMUM RECOMMENDED OPERATING PRESSURE - PSI										
3/16		1500		2000			3000	3000	3000	3000	3000
1/4	1250	500	2250	1500		2750	3000	3000	3000	3000	3000
5/16		500	1750	1500			2250	2500	2500	2250	2250
3/8	1125		1350		1500	2250		2000	2000		
13/32		500		1250			2000			2000	2000
7/16											
1/2	1000	450	1000	1000		2000	1750	1750	1750	1750	1750
5/8		450		750		1500	1500			1500	1500
3/4	750					1250		1000	1000		
7/8		250		400			800			800	800
1	565					1000		1000	1000		
1-1/8		250					625			625	625
1-1/4	375					625					
1-1/2											
1-3/8							500				500
1-13/16							350				350
2											
2-3/8							350				
3							200				
Hose	Page 42	Page 43	Page 43	Page 44	Page 45	Page 45	Page 46	Page 47	Page 47	Page 48	Page 49
Coll-O-Crimp Hose Ends	163-183	100-103	92-99	–	163-183	160 163-183	100-103	92-99	92-99	100-103	100-103
Field Attachable Hose Ends	–	218-219 230-235	–	226-229	–	222-225	218-219 230-235	–	–	230-235	218-219 230-235

+ Sizes -4 thru -12 only.

Size -4 inner tube Neoprene.

Hose Selection Chart

⚠ WARNING

Selection of Hose: Selection of the proper hose for the application is essential to the proper operation and safe use of the hose and related equipment. Inadequate attention to selection of the hose for your application can result in hose leaking, bursting, or other failure which can cause serious bodily injury or property damage from spraying fluids or flying projectiles. You should carefully review the information in this catalog.

HOSE #	H435	H436	H114	H190	H345	H146	H145	H545	H335	H336
Usage	Hydraulic Non-Conductive	Hydraulic	Ag. Hyd. & Hyd. Synthetic	Hydraulic	Pressure Washer	Ag. Hyd. & Hyd. Synthetic	Hydraulic	Hydraulic	Hydraulic Non-Conductive	Hydraulic
Meets	—	—	MSHA	MSHA, USCG, ISO 1436a, EN 853Type 1SN	MSHA	—	USCG MSHA	—	EN 855Type R8	EN 855 Type R8
SAE No.	100R7	100R7	—	J1942/1, 100R1 AT	—	—	J1942/1, 100R17	—	100R8 Non-Cond.	100R8
Temperature Range	-40°F +200°F	-40°F +200°F	-40°F +250°F	-40°F +212°F	See Page 55	-65°F +250°F	See Page 56	-40°F +250°F	See page 58	See page 58
Inner Tube	Nylon 11	Nylon 11	Hytrel®1	Nitrile	Nitrile	Hytrel®1	Nitrile	Nitrile	Nylon	Nylon
Reinforcement	2 Fiber Braids	2 Fiber Braids	1 Steel Braid	1 Steel Braid	1 Steel Braid	1 Steel Braid	1 Steel Braid†	1 Steel Braid*	Multi Yarn Braids	Multi Fiber Braids
Outer Cover	Orange Polyurethane	Polyurethane Perforated	Neoprene	Vinyl Nitrile	Blue Vinyl Nitrile	Polyester Braid	Neoprene	Abrasive Resistant Nylon	Orange Polyurethane	Black Polyurethane Perforated
Hose I.D.	MAXIMUM RECOMMENDED OPERATING PRESSURE - PSI									
3/16									5000	5000
1/4	2750	2750	3000	3265	3000	3000	3045	3000	5000	5000
5/16	2500	2500								
3/8	2250	2250	3000	2610	3000	3000	3045	3000	4000	4000
13/32										
7/16										
1/2	2000	2000	3000	2320	3000	3000	3045	3000	3500	3500
5/8				1885			3045	3000		
3/4	1250	1250		1525			3045	3000		2250
7/8									2250	
1	1000	1000		1275			3045	3000	2000	2000
1-1/8										
1-1/4										
1-1/2										
1-3/8										
1-13/16										
2										
2-3/8										
3										
Hose	Page 50-51	Page 52-53	Page 54	Page 54	Page 55	Page 55	Page 56	Page 57	Page 58	Page 58
Coil-O-Crimp Hose Ends	92-99	92-99	160 163-183	197-204	147-153	163-183	147-153, 160 163-183 184-196	147-153, 160 163-183 184-196	104-108	104-108
Field Attachable Hose Ends	240-241	240-241	—	—	—	—	—	—	—	—

1 Hytrel® ia a registered trademarks of Dupont.

† 2 steel braids, sizes -8 thru -16.

* 1 Steel braid sizes -4 thru -12; 2 steel braids sizes -8 thru -16.

Hose Selection Chart

⚠ WARNING

Selection of Hose: Selection of the proper hose for the application is essential to the proper operation and safe use of the hose and related equipment. Inadequate attention to selection of the hose for your application can result in hose leaking, bursting, or other failure which can cause serious bodily injury or property damage from spraying fluids or flying projectiles. You should carefully review the information in this catalog.

HOSE #	H245	H325	H280	H290	H425	H350	H400	H430	H470
Usage	Hydraulic	Low Temp. Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Very High Pressure Hydraulic	Very High Pressure Hydraulic	Very High Pressure Hydraulic
Meets	USCG MSHA ABS	–	USCG, MSHA, ISO 1436, EN 857, Type 2SC	USCG, MSHA, ISO 1436, EN 853, Type 2SN	USCG MSHA ABS	MSHA	MSHA	USCG MSHA, ABS	USCG** MSHA, ABS
SAE No.	J1942 100R16	–	J1942, Code H, 100R16	J1942/1, 100R2 AT	J1942/1, 100R2AT	–	–	J1942, 100R12	J1942/1, 100R13
Temperature Range	-40°F +212°F	-67°F +175°F	See page 61	See page 62	-40°F +212°F	-40°F +212°F	-40°F +212°F	-40°F +250°F	See page 66
Inner Tube	Nitrile	Synthetic Rubber	Nitrile	Nitrile	Nitrile ■	Synthetic Rubber	Nitrile	Neoprene	Neoprene
Reinforcement	2 Steel Braids	2 Steel Braids	2 Steel Braids	2 Steel Braids	2 Steel Braids	2 Steel Braids ■	2 Steel Braids	Multi Spiral Steel	Multi Spiral Steel
Outer Cover	Neoprene	Synthetic Rubber	Vinyl Nitrile	Vinyl Nitrile	Neoprene	Neoprene	Vinyl Nitrile	Hypalon®	EPDM
Hose I.D.	MAXIMUM RECOMMENDED OPERATING PRESSURE - PSI								
3/16									
1/4	5000	5000	5800	5800	5000				
5/16									
3/8	4000	4000	4800	4800	4000	3500			
13/32									
7/16									
1/2	3500	3500	4000	4000	3500	3500		4000	5000
5/8	2750		3630	3630	2750	3500	4000		
3/4	2250	2250	3120	3120	2250	3500	4000	4000	5000
7/8									
1	2000	2000	2400	2400	2000	3500		4000	5000
1-1/8									
1-1/4	1625				1625			3000	5000
1-1/2					1250			2500	5000
1-3/8									
1-13/16									
2					1125			2500	5000
2-3/8									
3									
Hose	Page 60	Page 60	Pages 61	Pages 62	Page 63	Page 64	Page 64	Page 65	Page 66
Coll-O-Crimp Hose Ends	147-153, 160 163-183 184-196	163-183	197-204	197-204	160, 163-183 184-196	147-153 163-183 184-196	147-153	184-196	109-114 161-162
Field Attachable Hose Ends	–	–	–	–	240-241	–	–	–	–

▲ Size -4 inner tube Neoprene.

** Size -12 thru -20.

■ 2 Steel Braids -06 thru -12. 4 Steel Spirals size -16.

Hose Selection Chart

⚠ WARNING

For important safety information concerning hose selection, see page 1 of this catalog.

There are several factors which affect selection of a hose sized such that it will provide the desired rate of flow at the required pressure; these are:

- Hose size
- Hose length
- Hose ends
- Material conveyed
- Bends
- Static head pressure

Hose Size

Undersized pressure lines produce excessive pressure drop with attendant energy loss and heating, and undersized suction lines cause cavitation at the pump inlet. Oversized hose assemblies, on the other hand, are excessively costly and generally too heavy.

In selecting hose for hydraulic systems, the following empirical values can be used to achieve minimum pressure drop consistent with reasonable hose size (see Chart 2):

Velocity of pressure lines 7 to 15 ft./sec.Velocity of short pressure lines to 20 ft./sec. Velocity of suction lines 2 to 5 ft./sec.

To use Chart 2, lay a straight-edge across the chart as shown by the dotted line. To minimize pressure drop, always use the next larger size hose shown if the line passes between sizes listed.

Hose Length

Chart 1 gives the pressure drop in different-sized hoses based on hoses of 100-foot length, and is based on water as the material conveyed. For hoses of a different length, these values must be corrected. For example, a 100-foot length of 1/2" hose causes a pressure drop of 100 lbs./in2 at a flow rate of 10 gal./min. If the hose in question is 50 feet long, the pressure drop derived from Chart 1 must be corrected by multiplying the value by the ratio of the actual length to 100 feet, or 50/100, or 0.5. Therefore, the actual pressure drop caused by a 50-foot length of 1/2" hose, at a flow rate of 10 gal./min., is 50 lbs./in.2 (0.5 x 100 = 50 lb./in.2).

Hose Ends and Fluid Conveyed

In most cases, the end fitting openings are slightly smaller than the hose itself. However, this varies widely with hose end designs from 'full-flow' ends which have the same I.D. as the hose, down to as much as 1/8" smaller I.D. than the hose bore. To allow for this, assume a 10-to-15% greater flow rate than actually measured in the system when determining pressure drop.

Chart 1 is based on water as the material conveyed, and for other fluids it is necessary to correct for the difference in specific gravity and viscosity. Chart 3 lists common fluids, their specific gravities, viscosities, and corresponding correction factors.

To determine the pressure drop for a specific fluid, first determine the pressure drop from Chart 1 for the hose length then divide this by the correction factor found in Chart 3.

For example, the 50-foot length of 1/2" hose just described had a pressure drop of 50 lbs./in.2 at a flow of 10 gal./min. of water. To determine the pressure drop if #2 fuel oil is the material conveyed, divide by 0.752 (from Chart 3)...50 ÷ 0.752 = 66.5 lbs./in.2 pressure drop. If, on the other hand, the material conveyed is Type #3 gasoline, the pressure drop would be 50 ÷ 1.19 = 42 lbs./in.2

CHART 1. Hose Flow Rate vs Pressure Drop

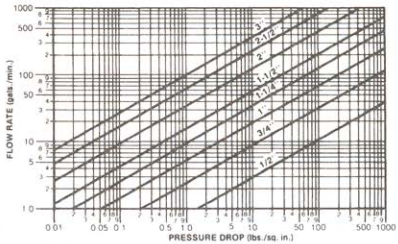
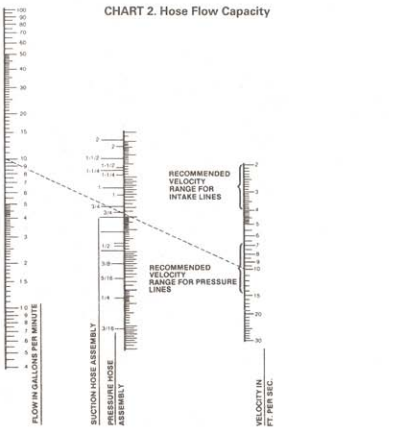


CHART 2. Hose Flow Capacity



Hose Selection Chart

⚠ WARNING

For important safety information concerning hose selection, see page 3 of this catalog.

Bends

If a hose of a given length is bent, the pressure drop will increase by some definite amount...the sharper the bend and the smaller the radius of bend the greater the pressure drop. The effect of a bend may be neglected if it is slight or if there are but few bends in a long length of hose. This is because the additional pressure drop caused by these bends is not significant when compared to the total pressure drop.

However, a dock hose may have four sharp 90° bends in a 25-foot length, and if pressure drop is important, these bends must be considered because they constitute a significant portion of the overall pressure drop.

The curves in Chart 4 show the effects of resistance due to 90° bends. This data can also be used as a guide for smooth bends less or greater than 90°. For example, a 45° bend has about 4/10 the resistance of a 90° bend.

Problem: Determine the equivalent length, in terms of hose inside diameters, of a 90° and a 180° bend whose relative radii are 12 inches.

Solution: Referring to the "total resistance curve," the equivalent length for a 90° bend is 34.5 hose diameters. The equialent length of a 180° bend is 34.5 diameters for one 90° bend, 18.7 diameters for resistance due to length, and 15.8 ÷ 2 diameters for bend resistance. Adding these 34.5, 18.7, and 15.8 ÷ 2 = 61.1 diameters for a 180° bend.* Note that this loss is less than the sum of losses through two 90° bends separated by tangents.

Static Head Pressure

Static head is the difference in height between the inlet and outlet ends of a hose. Before using Chart 1, it is necessary to correct for static head pressure because the values in Chart 1 are pressure losses due to friction only.

To correct for static head pressure, the difference in height is determined and multiplied by 0.433 to convert the head to an equivalent pressure in PSI (one foot of water exerts 0.433 PSI pressure).

If the inlet is higher than the outlet, the pressure equivalent is added to the pump pressure. If the outlet is higher than the inlet, the pressure equivalent is subtracted from the pump pressure. In both cases, it is assumed that the pump pressure is the pressure available at the inlet end and that the pump is outside of the hose system.

Liquid	Specific Gravity	Viscosity Centistokes (CS)	Viscosity Centipoises (CP)	Correction Factor, R
Acetic Acid - 100%	1.05	-	1.3	0.975
Acetic Acid - 70%	1.07	-	2.7	0.843
Ammonia liquid - 100%	0.66	0.30	-	1.290
Ammonia liquid - 26%	0.901	-	1.3	0.943
*Asphalt = 120 °F	1.40	-	300	0.350
*Beer	1.01	1.15	-	0.990
Benzol, Benzol	0.88	1.44	-	1.08
Brine, Calcium Chloride - 25%	1.23	3.80	-	0.78
Brine, Sodium Chloride - 25%	1.19	2.07	-	0.88
Butyl Alcohol	0.81	3.64	-	0.783
*Castor Oil	0.96	900	-	0.27
*Crude Petroleum Typical: 1 Pennsylvania Crude = 100 °F	0.80	-	3	0.78
2 California Crude = 150 °F	0.915	-	9	0.64
3 +30 API Crude = 100 °F	0.86	7.2	-	0.685
4 Texas Crude = 150 °F	0.875	-	3	0.792
5 Mexican Crude = 150 °F	0.96	-	550	0.287
Decane - n	0.73	1.24	-	0.975
Ethyl Alcohol - 100%	0.794	-	1.25	0.93
Ethyl Alcohol - 95%	0.808	-	1.45	0.904
Ethyl Alcohol - 40%	0.939	-	3.00	0.807
Ethyl Glycol	1.12	-	24.00	0.55
Formic Acid - *Fuel Oils	1.22	-	-	0.94
No. 1 = 100 °F Sp. Gr. - 82 to 95 Vis. - 30 to 40 SSU	0.88	7.45	-	0.85
No. 2 = 100 °F Sp. Gr. - 82 to 95 Vis. - 35 to 50 SSU	0.88	4.50	-	0.752
No. 3 = 100 °F Sp. Gr. - 82 to 95 Vis. - 55 SSU min	0.88	6.6	-	0.66
No. 5 = 100 °F Sp. Gr. - 82 to 95 Vis. - 150 to 450 SSU	0.88	55.0	-	0.47
No. 6 = 122 °F Sp. Gr. - 82 to 95 Vis. - 430 to 2900 SSU	0.88	38.0	-	0.493

Liquid	Specific Gravity	Viscosity Centistokes (CS)	Viscosity Centipoises (CP)	Correction Factor, R
*Gasoline representative: Type #1	.74	.88	-	1.04
Type #2	.72	.64	-	1.11
Type #3	.68	.46	-	1.19
Glycerine (Glycerol) - 100% @ 150°F	1.26	-	75.0	0.45
Glycerine & Water - 50%	1.13	-	6.5	0.717
Heptane - n	.684	0.60	-	1.16
Hexane - n	.66	0.49	-	1.21
Hydrochloric Acid - 31.5%	1.15	-	1.92	0.92
Isobutyl Alcohol	0.817	-	3.90	0.745
Isopropyl Alcohol	0.785	-	2.20	0.828
Kerosene	0.80	2.23	-	0.897
Lubricating Oil - Machine Oil	0.90	-	198	0.35
Lubricating Oil - Automotive	0.893	-	110	0.39
Methyl Alcohol - Methanol - 100%	0.79	.74	0.60	1.072
Methyl Alcohol - 90%	0.824	-	0.77	1.03
Methyl Alcohol - 40%	0.937	-	2.00	0.863
*Milk	1.03	1.15	-	0.99
Motor Oil	0.893	-	110	0.39
Naphthalene	1.10	0.9	-	1.04
Nitric Acid - 95%	1.50	-	1.13	1.07
Nitric Acid - 60%	1.37	-	2.35	0.913
Nonane - n	0.718	.97	-	1.02
Octane - n	0.70	.77	-	1.068
Olive Oil	0.91	93.0	-	0.41
Pentane - n	0.63	0.37	-	1.24
Propyl Alcohol	0.804	2.8	-	0.828
Rapeseed Oil	0.91	180	-	0.36
Sodium Hydroxide - 50%	1.53	-	95.0	0.443
Soybean Oil	0.924	85	-	0.418
Sperm Oil	0.88	21	-	0.55
Sugar Solution - 20%	1.08	1.9	-	0.895
Sugar Solution - 40%	1.18	5.3	-	0.728
Sugar Solution - 60%	1.29	44.0	-	0.475
Sulfuric Acid - 100%	1.83	14.6	-	0.59
Sulfuric Acid - 95%	1.83	14.5	-	0.593
Sulfuric Acid - 60%	1.50	4.4	-	0.755
Toluene	0.866	-	0.6	1.092
Turpentine	0.86	1.83	-	0.90
Water - Fresh	1.0	1.10	-	1.00
Water - Salt	1.03	1.10	-	1.00
Xylene - Xylol	0.87	0.93	-	1.03

*These figures are approximate or averages of those values available.

CHART 3. Fluid Flow Correction Factors

Installation Design

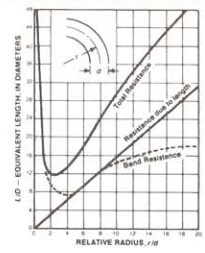
Hose should not be twisted or put in torsion either during the installation or while in service. Sharp or excessive bends may cause the hose to kink or rupture.

Be sure to allow enough slack to provide for changes in length which will occur when pressure is applied. This change in length can vary from +2% to -4%.

Design the installation so the hose assembly is accessible for inspection and easy removal.

Bend radius is important. A good working rule is that the minimum bend radius should be five or more times the O.D. dimension of the hose.

CHART 4. Resistance of 90° Bends



*In a continuous bend of 180 degrees the second 90 degree bend produces approximately one-half the resistance of the first bend.