



HYDPOWER
HOSE & FITTINGS

TECHNICAL INFORMATION

QUICK CONVERSION

Pressure & Imperial to Metric

Pressure Conversion				
BAR	PSI	KPA	MPA	Kg/cm2
10	145	1000	1	10.2
20	290	2000	2	20.4
30	435	3000	3	30.6
40	580	4000	4	40.8
50	725	5000	5	51
60	870	6000	6	61.2
70	1015	7000	7	71.4
80	1160	8000	8	81.6
90	1305	9000	9	91.8
100	1450	10000	10	102
110	1595	11000	11	112.2
120	1740	12000	12	122.4
130	1885	13000	13	132.6
140	2030	14000	14	142.8
150	2175	15000	15	153
160	2320	16000	16	163.2
170	2465	17000	17	173.4
180	2610	18000	18	183.6
190	2755	19000	19	193.8
200	2900	20000	20	204
210	3045	21000	21	214.2
220	3190	22000	22	224.4
230	3335	23000	23	234.6
240	3480	24000	24	244.8
250	3625	25000	25	255
260	3770	26000	26	265.2
270	3915	27000	27	275.4
280	4060	28000	28	285.6
290	4205	29000	29	295.8
300	4350	30000	30	306
310	4495	31000	31	316.2
320	4640	32000	32	326.4
330	4785	33000	33	336.6
340	4930	34000	34	346.8
350	5075	35000	35	357
360	5220	36000	36	367.2
370	5365	37000	37	377.4
380	5510	38000	38	387.6
390	5655	39000	39	397.8
400	5800	40000	40	408
410	5945	41000	41	418.2
420	6090	42000	42	428.4
430	6235	43000	43	438.6
440	6380	44000	44	448.8
450	6525	45000	45	459
460	6670	46000	46	469.2
470	6815	47000	47	479.4
480	6960	48000	48	489.6
500	7250	50000	50	510

Imperial to Metric Conversion			
Dash size	Inch decimal	Inch fraction	MM
-1	0.06	1/16"	1.59
-2	0.13	1/8"	3.18
-3	0.19	3/16"	4.76
-4	0.25	1/4"	6.35
-5	0.31	5/16"	7.94
-6	0.38	3/8"	9.53
-7	0.44	7/16"	11.11
-8	0.50	1/2"	12.70
-9	0.56	9/16"	14.29
-10	0.63	5/8"	15.88
-11	0.69	11/16"	17.46
-12	0.75	3/4"	19.05
-13	0.81	13/16"	20.64
-14	0.88	7/8"	22.23
-15	0.94	15/16"	23.81
-16	1.00	1"	25.40
-17	1.06	1.1/16"	26.99
-18	1.13	1.1/8"	28.58
-19	1.19	1.3/16"	30.16
-20	1.25	1.1/4"	31.75
-21	1.31	1.5/16"	33.34
-22	1.38	1.3/8"	34.93
-23	1.44	1.7/16"	36.51
-24	1.50	1.1/2"	38.10
-25	1.56	1.9/16"	39.69
-26	1.63	1.5/8"	41.28
-27	1.69	1.11/16"	42.86
-28	1.75	1.3/4"	44.45
-29	1.81	1.13/16"	46.04
-30	1.88	1.7/8"	47.63
-31	1.94	1.15/16"	49.21
-32	2.00	2"	50.80
-33	2.06	2.1/16"	52.39
-34	2.13	2.1/8"	53.98
-35	2.19	2.3/16"	55.56
-36	2.25	2.1/4"	57.15
-37	2.31	2.5/16"	58.74
-38	2.38	2.3/8"	60.33
-39	2.44	2.7/16"	61.91
-40	2.50	2.1/2"	63.50

PRESSURE DROP CHART

Hose

The figures in the chart represent the approximate pressure drop in PSI per metre length of smooth bore hose excluding fittings

Fluid specifications: Viscosity Grade = ISO 46, Specific Gravity = 0.9, Absolute Viscosity = 41.4 at 40°C

Flow Rate		1/4"		3/8"		1/2"		5/8"		3/4"		1"		1.1/4"		1.1/2"		2"	
GPM	LPM	^P	(V)	^P	(V)	^P	(V)	^P	(V)	^P	(V)	^P	(V)	^P	(V)	^P	(V)	^P	(V)
2	7.6	19.0	(13.0)	3.82	(5.8)														
3	11.4	29.0	(19.6)	5.73	(8.7)	1.8	(4.9)												
5	18.9	53.0	(32.6)	9.5	(14.5)	3.0	(8.2)	0.9	(4.5)										
10	37.9			26	(29.0)	6.4	(16.3)	1.8	(9.0)	1.2	(7.2)								
15	56.8					13.5	(24.5)	3.1	(13.4)	1.8	(11.0)	0.6	(6.12)						
20	75.7					23.0	(32.7)	5.3	(17.9)	3.2	(14.5)	0.8	(8.2)						
25	94.6							8.0	(22.0)	4.2	(18.2)	1.2	(10.2)						
30	113.6							11.0	(27.0)	6.7	(21.8)	1.7	(12.3)	0.6	(7.8)				
40	151.4									11.8	(29.0)	2.8	(16.3)	1.0	(10.5)				
50	189.3											4.3	(20.4)	1.4	(13.0)				
60	227.1											6.0	(24.5)	2.0	(15.7)	0.8	(10.9)		
70	265.0											7.9	(28.6)	2.7	(18.3)	1.1	(12.7)	0.3	(7.1)
80	302.8											10.0	(32.7)	3.4	(20.9)	1.4	(14.5)	0.4	(8.2)
100	378.5													5.0	(26.0)	2.1	(18.0)	0.5	(10.2)
150	567.8															4.3	(27.2)	1.1	(15.3)
200	757.0																	1.8	(20.4)
300	1135.5																	3.7	(30.6)

^P = Pressure Drop in PSI
V = Velocity in Ft/Sec

Example

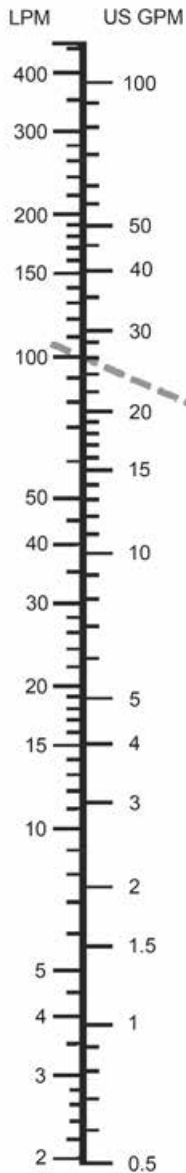
10m of 6G2

Oil flow rate of 5 GPM = 9.5 (^P)

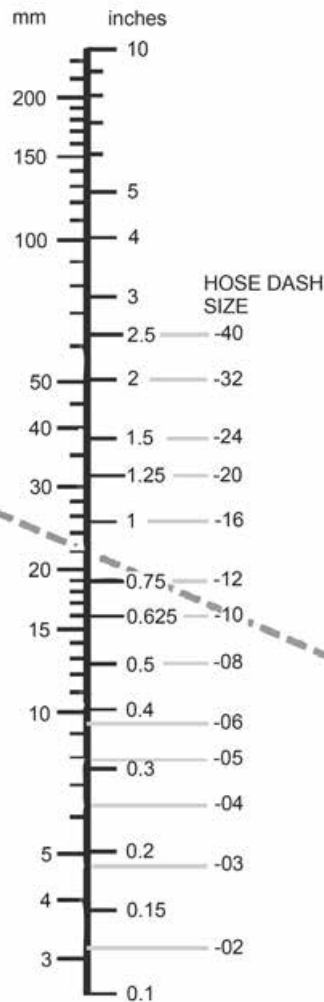
m x P = Pressure Drop

10 x 9.5 = 90.50m psi @ 5GPM

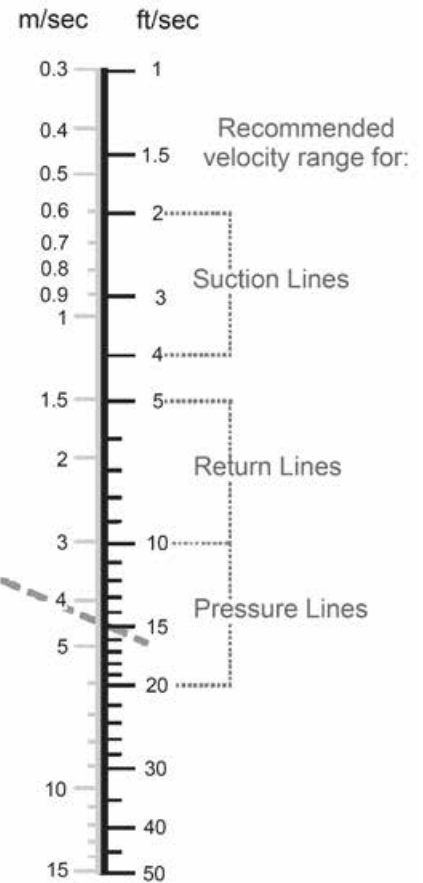
FLOW RATE



HOSE BORE



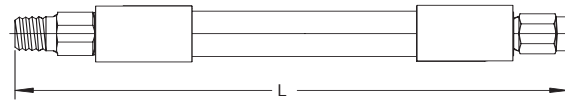
FLOW VELOCITY



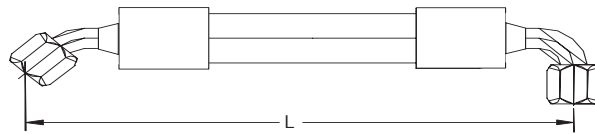
Using any two known factors lay a ruler across to find the value of the unknown factor line

Hose Assembly Length

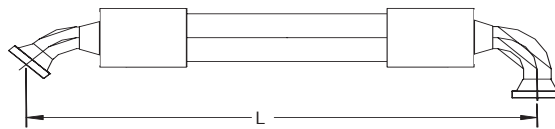
Unless otherwise specified, assembly length shall be the overall length measured from the extreme end of one connector to the extreme end of the other. Where elbow connectors are used, measurement shall be the centerline of the fitting.



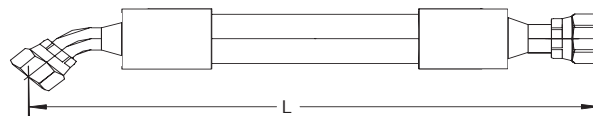
Straight connectors



Female swivel elbow connectors



Flange connectors

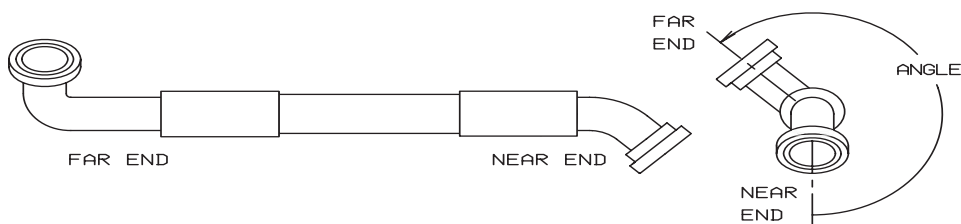


Straight and elbow connectors

How to determine Angular Orientation

When a hose assembly has an elbow connection at each end, it will be necessary to check the offset position of the connections relative to each other.

This can be done by positioning the farthest connection vertically up (or down) and viewing the assembly in a line of sight position, the offset can then be measured in a clockwise direction through the centre of the farthest end to the centre of the nearest end.



CONNECTOR PRESSURE TABLES

JIC, BSPP, BSPT, SAE

IMPORTANT NOTICE

The pressures specified in this document are to be used as a guide only, not as a standard, specification or guaranteed minimum.

Many factors influence the pressure at which a system will operate. These factors include torque settings, alignment, vibration, external environment, correctness of installation, alignment, adequate support, temperature limits, pressures and pulses.

The Maximum Rated Working Pressure on an assembly or installation is the Maximum Rated Working Pressure of the component/connection with the least rating.

JIC				
Dash	Male		Female	
	Bar	PSI	Bar	PSI
07	480	7000	480	7000
08	480	7000	480	7000
09	345	5000	345	5000
12	275	4000	275	4000
14	260	3800	260	3800
17	240	3500	240	3300
21	225	3000	225	3500
26	170	2500	170	2500
30	145	2100	145	2100
40	120	1750	120	1750

BSPP						
DASH	Male - Encapsulated		Male Adjustable		Female - Swivel	
	Bar	PSI	Bar	PSI	Bar	PSI
02	600	8700	275	4000	550	8000
04	600	8700	275	4000	550	8000
06	600	8700	275	4000	520	7500
08	400	6000	275	4000	380	5500
12	400	6000	170	2500	275	4000
16	400	6000	170	2500	240	3500
20	380	5500	140	2000	200	3000
24	380	5500	140	2000	175	2500
32	250	3500			140	2000

BSPT

Dash	Male - Fixed		Male - Swivel		Female - Fixed	
	Bar	PSI	Bar	PSI	Bar	
02	690	10000			550	
04	650	9500	260	3750	550	
06	550	8000	200	3000	520	
08	410	6000	170	2500	380	
10	340	5000	170	2500	275	
12	340	5000	170	2500	275	
16	275	4000			240	
20	200	3000			200	
24	140	2000			175	
32	140	2000			140	

NPT

Dash	Male - Fixed		Male - Swivel		Female - Fixed	
	Bar	PSI	Bar	PSI	Bar	PSI
02	690	10000			550	8000
04	650	9500	260	3750	550	8000
06	550	8000	200	3000	520	7500
08	410	6000	170	2500	380	5500
12	340	5000	170	2500	275	4000
16	275	4000			240	3500
20	200	3000			200	3000
24	140	2000			175	2500
32	140	2000			140	2000

SAE

Dash	CD61		CD62	
	Bar	PSI	Bar	PSI
08	345	5000	410	6000
12	345	5000	410	6000
16	345	5000	410	6000
20	275	4000	410	6000
24	205	3000	410	6000
32	205	3000	410	6000

JIS

Dash	Male		Female	
	Bar	PSI	Bar	PSI
14 (M)	450	6500	410	6000
16 (M)	450	6500	410	6000
22 (M)	410	6000	380	5500
24 (M)	345	5000	310	4500
30 (M)	275	4000	260	3750

CRIMP CHARTS

Hose

One Wire

R1AT 1SN		One Piece	Two Piece
Dash	Size	mm	mm
04	1/4"	17.3	18.4
05	5/16"		19.5
06	3/8"	21.5	21.6
08	1/2"	25	23.6
10	5/8"	28.3	27.2
12	3/4"	31.8	30.8
16	1"	40.5	39.4

Two Wire

R2AT 2SN		One Piece	Two Piece
Dash	Size	mm	mm
04	1/4"	18.3	19.4
05	5/16"	19.8	20.5
06	3/8"	22.5	22.2
08	1/2"	26.0	24.6
10	5/8"	29.2	28.2
12	3/4"	32.7	31.8
16	1"	41.5	40.4



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