

GENERAL INFORMATION

PULSAR adapters conform to SAE J514 and J1453 specifications for hydraulic tube fittings (where applicable), and to various ISO specifications depending on thread types. Pressure ratings given here are a general guide. We recommend that on jump size adapters or adapters with two thread styles, the lowest rating be used. Maximum working pressures are given in psi, based on a 4:1 ratio to minimum burst pressure.

Fitting and Adapter Maximum Recommended Working Pressure (psi)

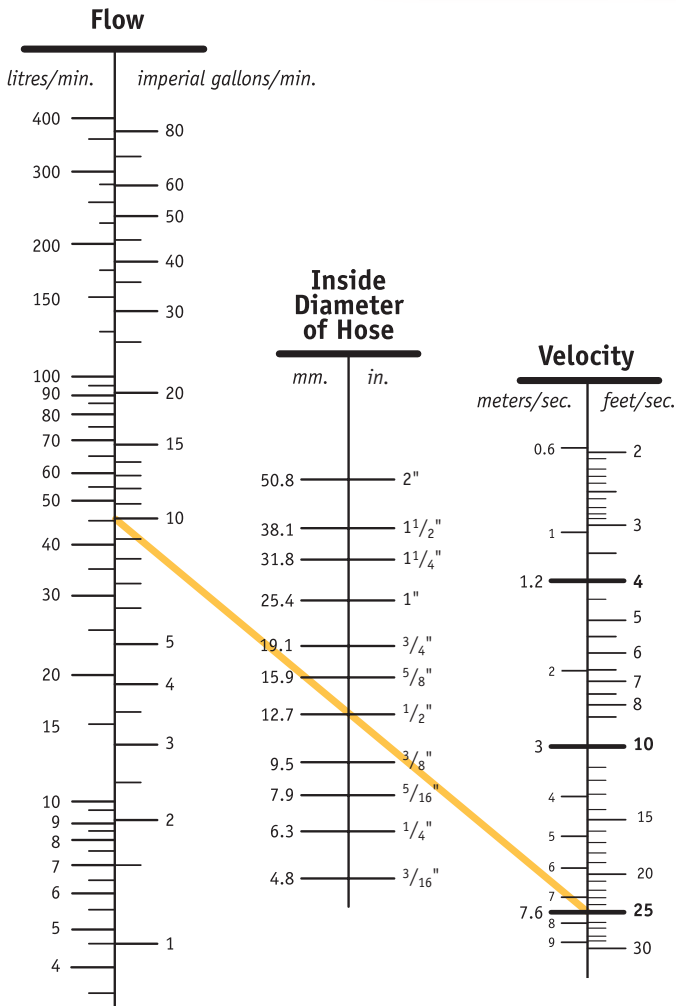
Dash Size	JIC Male Non Swivel	JIC Female Swivel	NPTF Male Pipe Swivel	NPTF Male Pipe Non Swivel	NPTF Female Pipe Non Swivel	NPSM Female Pipe Swivel	Flange Code 61	Flange Code 62	Flange Cat Style	ORB Male Solid	ORB With Adjustable Nut	ORFS Male or Female	SAE 45° Flare Female	Flare-less Byte Type J514
-04	5000	5000	3000	5000	5000	5000				5000	4500	6000	3000	5000
-05	5000	5000	3000							5000	4500			5000
-06	4000	4000	3000	4000	4000	4000				5000	4000	6000	3000	4000
-08	4000	4000	3000	4000	4000	4000	5000	6000		4500	4000	6000	3000	3500
-10	4000	4000	2750				5000	6000		4000	3000	6000	2750	2750
-12	4000	4000	2250	4000	2250	2250	5000	6000	6000	4000	3000	6000	2250	2250
-14														
-16	4000	4000	2000	4000	2000	2000	5000	6000	6000	4000	2500	6000	2000	2000
-20	3000	3000		3000	1625	1625	4000	6000	6000	3000	2000	4000	1625	1625
-24	3000	3000		2500			3000	6000	6000	3000	1500	4000	1250	
-32	3000	3000		2500			3000	6000	6000	3000	1125		1125	

Dash Size	BSPP O-ring Female Swivel	BSPT Male Non Swivel	BSPP Male Non Swivel	DIN 24 Light Female Swivel	DIN 24 Light Male Swivel	DIN 24 Heavy Female Swivel	Din 24 Heavy Male Swivel	JIS 30 Flare Female Swivel	Komatsu Metric Female Swivel
-04	5800	5800	5800	3625	3625			5000	5000
-05				3625	3625	5800	5800		
-06	5800	5800	5800	3625	3625	5800	5800	5000	5000
-08	5000	5000	5000	3625	3625	5800	5800	5000	5000
-10	5000	5000	5000	3625	3625	5800	5800		
-12	4500	4500	4500	2320	2320	5800	5800	4000	4000
-14									
-16	3500	3500	3500	2320	2320	5800	5800	3000	3000
-20	2850	2850	2850	1450	1450	5800	5800	2500	2500
-24	2250	2250	2250	1450	1450	3625	3625	1500	1500
-32	1800	1800	1800	1450	1450	3625	3625	1500	1500

Pressure Rating Hose Assemblies:

The maximum dynamic working pressure of the hose assembly is the LESSER of the rated working pressure of the hose and the fittings used.

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VELOCITY CHART NOMOGRAPH

- Conversion Rates: gal/min x 4.546 = liters/min
feet/sec x 0.3048 = meters/sec
- Recommended velocities are according to hydraulic fluids of maximum viscosity 315 S.S.U. at 38°C working at room temperatures within 18 to 68°C.
- The Yellow line represents a pressure hose at 10 gallons per minute. The minimum hose size should be 1/2

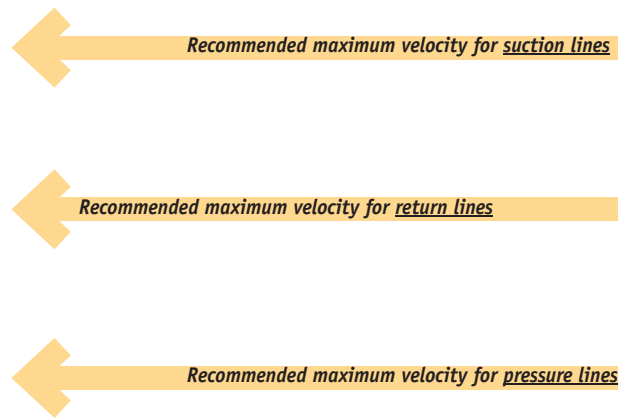


TABLE OF EQUIVALENTS:

Pressure:

- 1 psi = 2.307 ft of head (ft of water column)
- = 2.036 Hg
- = 0.06895 Bar
- = 0.006895 MPa (MegaPascals)
- = 0.07031 Kg/sq cm
- = 0.06805 Atmospheres

Volume:

- 1 Cubic foot = 7.48 US Gallons
- 1 Imp Gallon = 1.201 US Gallons
- = 160 Imp oz.
- = 4.546 liters
- = 4546 milliliters (cc's)
- 1 US Gallon = 128 US oz
- = 3.785 liters
- 1 Barrel = 42 US Gallons

Weight:

- 1 lb = 453.59 grams
- = 0.45359 Kg
- 1 Kg = 2.2046 lb

Length:

- 1 inch = 2.54cm
- 1 meter = 3.28084 ft
- 1 Kilometer = 0.62137 Miles

Power:

- 1 hp = 745.7 Watts

USEFUL INFORMATION AND RULES OF THUMB

- 1 Cubic foot of water weighs 62.4 lb.
- 1 Imp Gallon of water weighs 10 lb.
- Each 1 HP of drive in a hydraulic system will produce the equivalent of 1 GPM (U.S. Gallon Per Minute) at 1500 psi.
- Each 1 HP on an electric air compressor produces 3.5 to 4.0 SCFM (Standard Cubic Feet Per Minute) of air at 100 psi.

Optimum maximum flow velocity in hydraulic lines:

- Pump suction 2 to 4 feet per second
- Pressures to 500 psi 10 to 15 feet per second
- 500 to 3000 psi 15 to 20 feet per second

Velocity of oil flow in pipe:

$$V = \text{GPM} \times 0.3208/A$$

V is oil velocity in feet per second, GPM is flow in U.S. gallons per minute, and A is the inside area of the pipe in square inches

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Pressure Drop per 100 Feet of Hose (PSI)

These pressure reductions are typical for petroleum based hydraulic oils at 40°C (104°F) and are approximate values only. Differences in fluid temperature and viscosity can increase or decrease pressure drop significantly.

Flow/Minute		— Hose I.D. in inches —															
Litres	Imp.Gal.	0.19	0.25	0.31	0.38	0.41	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.81	2.00
1	0.22	110	35														
2	0.44	210	65	30													
4	0.88	480	140	65	30												
8	1.76	1140	290	120	60	42											
11	2.42	1520	385	160	65	50	20										
15	3.30	1740	430	290	120	80	30	12									
19	4.18		780	440	180	120	45	16	7								
30	6.60		1200	930	380	260	100	35	14	6							
38	8.30				585	395	150	55	20	10							
45	10.10				800	520	200	70	25	15							
57	12.50					750	300	100	42	22	12	7	4				
68	14.50					1070	400	150	65	30	15	7	6	4			
76	16.80						500	200	85	35	20	12	7	5	3		
95	20.90						725	275	120	60	30	17	10	7	4		
114	25.10							350	150	75	40	25	15	8	6		
133	29.30							480	200	100	50	30	18	12	7	3	2
150	33.00								240	115	65	33	21	14	9	4	3
190	41.90								360	170	90	53	33	20	13	6	4
227	50.00								500	230	120	75	45	28	18	8	5
265	58.30									310	170	93	60	40	25	10	7
300	66.00									375	200	120	70	45	30	12	8
340	74.80									490	270	150	90	60	40	15	10
380	83.50										330	190	120	70	50	20	13
568	125.00										600	370	220	130	85	35	22
757	167.00												360	230	150	60	40
1136	250.00													450	290	120	75
1514	333.00														510	210	140
1893	417.00															320	200