



SURFACE VEHICLE STANDARD

J748™

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Superseding J748 DEC2019

Hydraulic Directional Control Valves, 3000 psi Maximum

RATIONALE

SAE Five-Year Review. Modified Table 1 to more clearly convey the hole diameter and eye width column information. Dimensions will remain imperial to coincide with information contained in supporting SAE documents.

1. SCOPE

This SAE Standard has been set up by Subcommittee 4 of the Off-Road Machinery Technical Committee and is primarily for directional control valves on construction and industrial machinery equipment as referenced in SAE J1116. The purpose is to establish port area to flow relationship and match valve spool eye ends in relation to rated capacity.

Port connections are optional for either the 4-bolt split flange connection or the internal straight thread O-ring connection.

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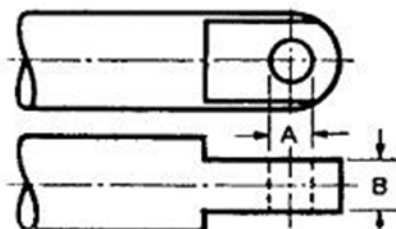
SAE WEB ADDRESS:

Full document details: SAE J748_202510

For more information on this standard, visit
https://www.sae.org/standards/content/J748_202510/

Documents

Standard Sharing Hub

Table 1 - Hydraulic directional control valves, 3000 psi max

Valve Spool Connection Eye End
(For use with SAE J493 - Rod Ends and Clevis Pins)

Valve Port Sizes

GPM Max	Port	SAE 4-Bolt Split Flange Connection Inches ⁽¹⁾⁽²⁾	SAE Internal Straight Thread O-Ring Boss Tube OD Size Inches	Hole Diameter Inches A	Eye Width Inches B
5	Pressure	--	1/2	0.374-0.381	0.427-0.437
	Tank	--	5/8 ⁽³⁾		
10	Pressure	1/2	5/8	0.374-0.381	0.427-0.437
	Tank	3/4 ⁽³⁾	3/4 ⁽³⁾		
25	Pressure	3/4	7/8	0.499-0.506	0.552-0.562
	Tank	1 ⁽³⁾	1 ⁽³⁾		
35	Pressure	1	1	0.499-0.506	0.552-0.562
	Tank	1-1/4 ⁽³⁾	1-1/4 ⁽³⁾		
65	Pressure	1-1/4	1-1/2	0.624-0.631	0.677-0.687
	Tank	1-1/2 ⁽³⁾	2 ⁽³⁾		
100	Pressure	1-1/2	--	0.624-0.631	0.677-0.687
	Tank	2 ⁽³⁾	--		
150	Pressure	2	--	0.749-0.756	0.802-0.812
	Tank	2-1/2 ⁽³⁾	--		
225	Pressure	2	--	0.999-1.006	1.052-1.062
	Tank	2-1/2 ⁽³⁾	--		
300	Pressure	2-1/2	--	0.999-1.006	1.052-1.062
	Tank	3 ⁽³⁾	--		

⁽¹⁾ The 2-1/2-inch 4-bolt split flange is only recommended up to 17.5 MPa per SAE J518-1.

⁽²⁾ The 3-inch 4-bolt split flange is only recommended up to 16 MPa per SAE J518-1.

⁽³⁾ Minimum recommended size for double-acting units only. For single-acting and float units, select size according to maximum system flow based on expected cylinder speed and allowable back pressure.