



400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE STANDARD

SAE J748

REAF.
MAR86

Issued 1957-10
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Reaffirms J748 OCT80

Submitted for recognition as an American National Standard

HYDRAULIC DIRECTIONAL CONTROL VALVES, 3000 PSI MAXIMUM

Foreword—This Reaffirmed Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. **Scope**—This SAE Recommended Practice 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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TABLE 1—HYDRAULIC DIRECTIONAL CONTROL VALVES, 3000 PSI MAX

GPM, Max	Port	SAE Internal Straight Thread "O" Ring Boss (Tube OD Size) in.	Valve Port Sizes			GPM, Max	Port	SAE 4-Bolt Split Flange Connec- tion ^b , in.	SAE Internal Straight Thread "O" Ring Boss (Tube OD Size) in.	
			Valve Spool Connection Eye End (For use with SAE Standard, Rod Ends and Clevis Pins—SAE J493.)	Valve Spool Connection Eye End (For use with SAE Standard, Rod Ends and Clevis Pins—SAE J493.)	Valve Port Sizes					
5	Pressure Tank	—	1/2 5/8 ^a	0.381 0.374	Hole Dia. in. Eye Height, in.	Hole Dia. in. Eye Height, in.	Hole Dia. in. Eye Height, in.	Eye Width, in. B	100 Pressure Tank	1-1/2 2 ^a
10	Pressure Tank	1/2 3/4 ^a	5/8 3/4 ^a	0.381 0.374	0.437 0.427	0.437 0.427	0.631 0.624	0.687 0.677	150 Pressure Tank	2-1/2 ^a
25	Pressure Tank	3/4 1 ^a	7/8 1 ^a	0.506 0.499	0.562 0.552	0.562 0.552	0.756 0.749	0.812 0.802	225 Pressure Tank	2-1/2 ^a
35	Pressure Tank	1 1-1/4 ^a	1 1-1/4 ^a	0.506 0.499	0.562 0.552	0.562 0.552	1.006 0.999	1.062 1.052	300 Pressure Tank	2-1/2 3 ^a
65	Pressure Tank	1-1/4 1-1/2 ^a	1-1/2 2 ^a	0.631 0.624	0.687 0.677	0.687 0.677	—	—	—	—

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

^b The 2-1/2-in. 4-bolt flange is only recommended up to 2500 psi.

^c The 3-in. 4-bolt flange is only recommended up to 2000 psi.

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2. References

2.1 Applicable Publications

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

SAE J1116—Categories of Off-Road Self-Propelled Work Machines

PREPARED BY THE SAE SUBCOMMITTEE 4—HYDRAULIC FLUID POWER
SYSTEMS AND COMPONENTS OF THE
SAE OFF-ROAD MACHINERY TECHNICAL COMMITTEE

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