

Issued 1957-10
Reaffirmed 2008-05

Superseding J748 MAR1986

HYDRAULIC DIRECTIONAL CONTROL VALVES, 3000 PSI MAXIMUM

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.

SAENORM.COM : Click to view the full PDF of J748-200805

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2008 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER:

Tel: 877-606-7323 (inside USA and Canada)
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

TABLE 1—HYDRAULIC DIRECTIONAL CONTROL VALVES, 3000 PSI MAX

Valve Port Sizes			Valve Spool Connection Eye End (For use with SAE Standard, Rod Ends and Clevis Pins—SAE J493.)						Valve Port Sizes		
GPM, Max	Port	SAE 4-Bolt Split Flange Conne- ction ^{b, c} in.	SAE Internal Straight Thread "O" Ring Boss (Tube OD Size) in.	SAE Internal Straight Thread "O" Ring Boss (Tube OD Size) in.		SAE 4-Bolt Split Flange Connection ^{b, c} in.		GPM, Max	Port	SAE 4-Bolt Split Flange Conne- ction ^{b, c} in.	SAE Internal Straight Thread "O" Ring Boss (Tube OD Size) in.
				Hole Dia. in. A	Eye Width, in. B	Hole Dia. in. A	Eye Width, in. B				
5	Pressure Tank	—	1/2 5/8 ^a	0.381	0.437	0.631	0.687	100	Pressure Tank	1-1/2 2 ^a	—
				0.374	0.427	0.624	0.677				
10	Pressure Tank	1/2 3/4 ^a	5/8 3/4 ^a	0.381	0.437	0.756	0.812	150	Pressure Tank	2 2-1/2 ^a	—
				0.374	0.427	0.749	0.802				
25	Pressure Tank	3/4 1 ^a	7/8 1 ^a	0.506	0.562	1.006	1.062	225	Pressure Tank	2 2-1/2 ^a	—
				0.499	0.552	0.999	1.052				
35	Pressure Tank	1 1-1/4 ^a	1 1-1/4 ^a	0.506	0.562	1.006	1.062	300	Pressure Tank	2-1/2 3 ^a	—
				0.499	0.552	0.999	1.052				
65	Pressure Tank	1-1/4 1-1/2 ^a	1-1/2 2 ^a	0.631	0.687						
				0.624	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 split flange is only recommended up to 2500 psi.

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

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

REAFFIRMED BY THE COMMON TESTS TECHNICAL COMMITTEE SC1—
HYDRAULIC SYSTEMS

SAENORM.COM : Click to view the full PDF of J748-200805