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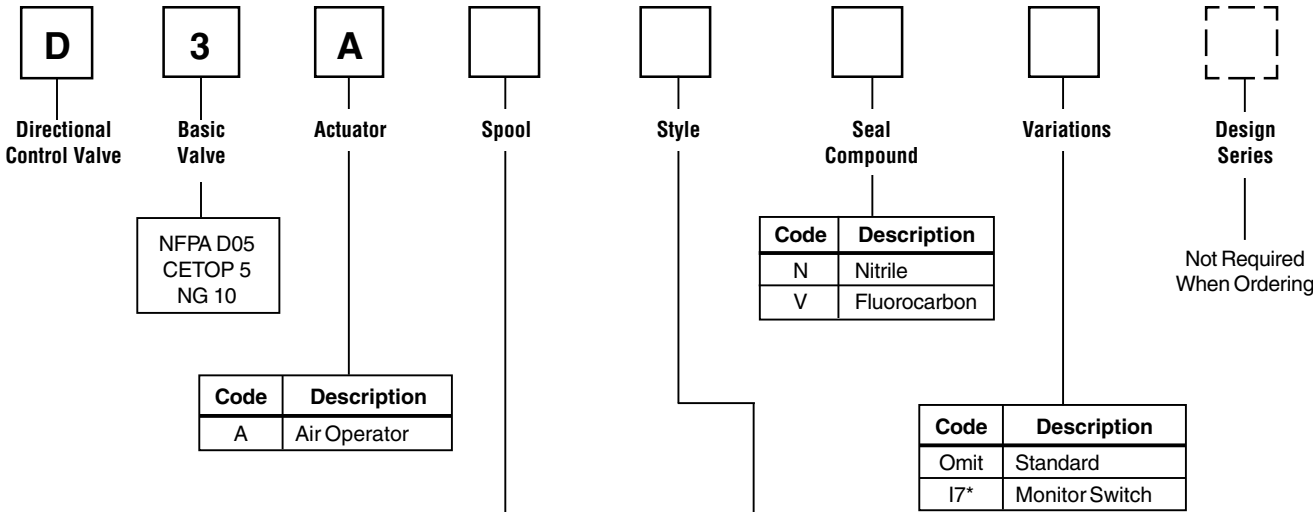
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* Available in B, E, H & K styles only.
Not CE or CSA approved.

Code	Symbol
1	
2	
4	
8 *	
9 **	
20 *	
30 **	
81	
82	

* 8 and 20 spools have closed crossover.
** 9 and 30 spools have open crossover

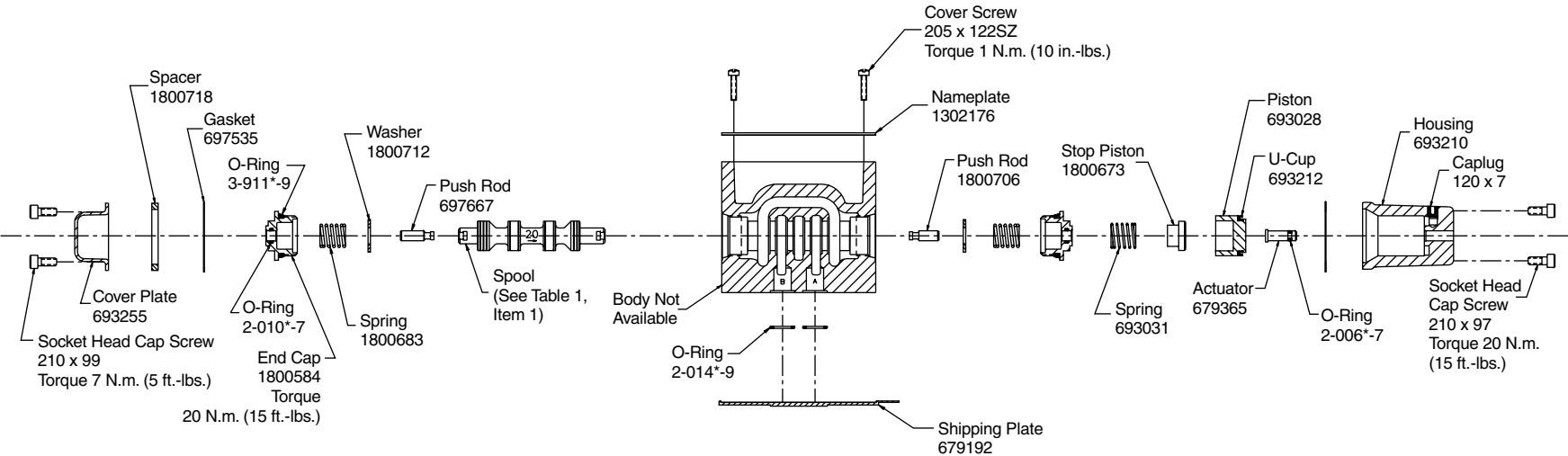
Code	Description
B #	Single operator, two position spring offset. P to A and B to T in offset position.
C	Double operator, three position, spring centered.
D #	Double operator, two position, detent.
E	Two position, spring offset to center. P to B and A to T in offset position.
H #	Single operator, two position, spring offset. P to B and A to T in offset position.
K	Two position, spring offset to center. P to A and B to T in offset position.

B, D & H styles available with 20 and 30 spools only.

Indicates air pilot

This condition varies with spool code

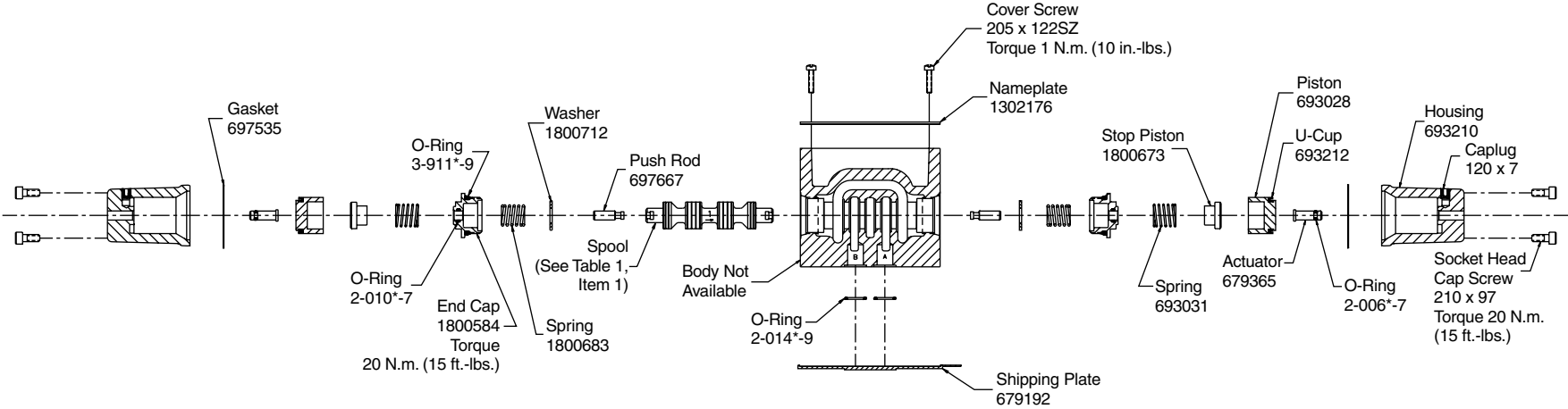
Table 1 (Spools)				
CODE	ITEM	PART NUMBER	QTY	DESCRIPTION
20	1	1800120	1	#20 SPOOL
30	1	1800130	1	#30 SPOOL



D3A Single Air Actuator Model

NOTES:
1) * Indicates Seal Compound: N-Nitrile, V-Fluorocarbon.

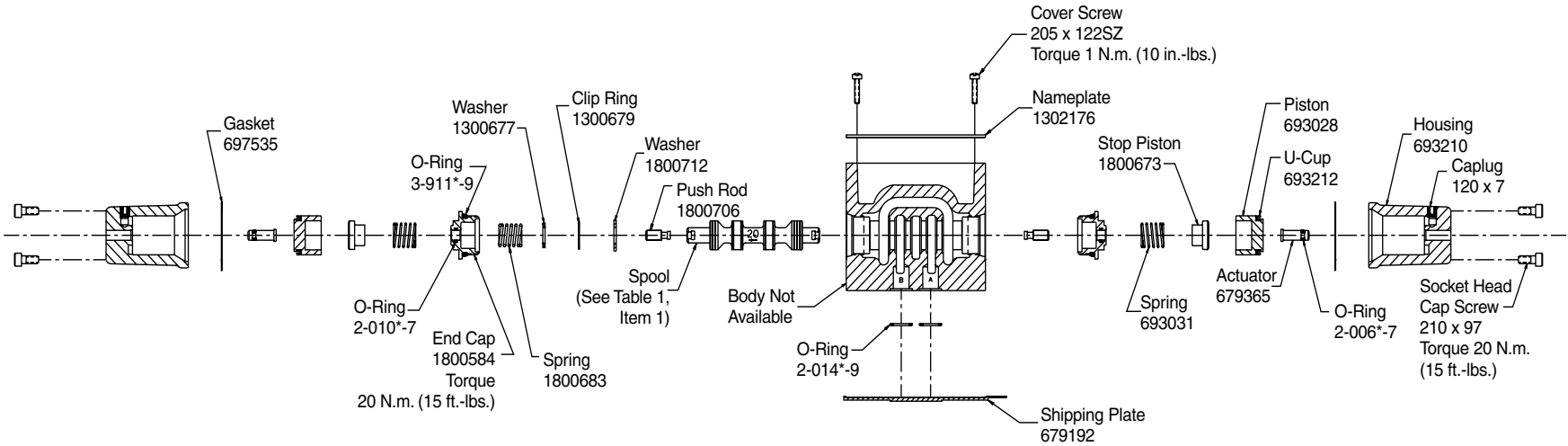
Table 1 (Spools)				
CODE	ITEM	PART NUMBER	QTY	DESCRIPTION
1	1	1800101	1	#1 SPOOL
2	1	1800102	1	#2 SPOOL
4	1	1800104	1	#4 SPOOL
8	1	1800108	1	#8 SPOOL
9	1	1800109	1	#9 SPOOL
81	1	1800181	1	#81 SPOOL
82	1	1800182	1	#82 SPOOL



D3A Dual Air Actuator Model

NOTES:
1) * Indicates Seal Compound: N-Nitrile, V-Fluorocarbon.

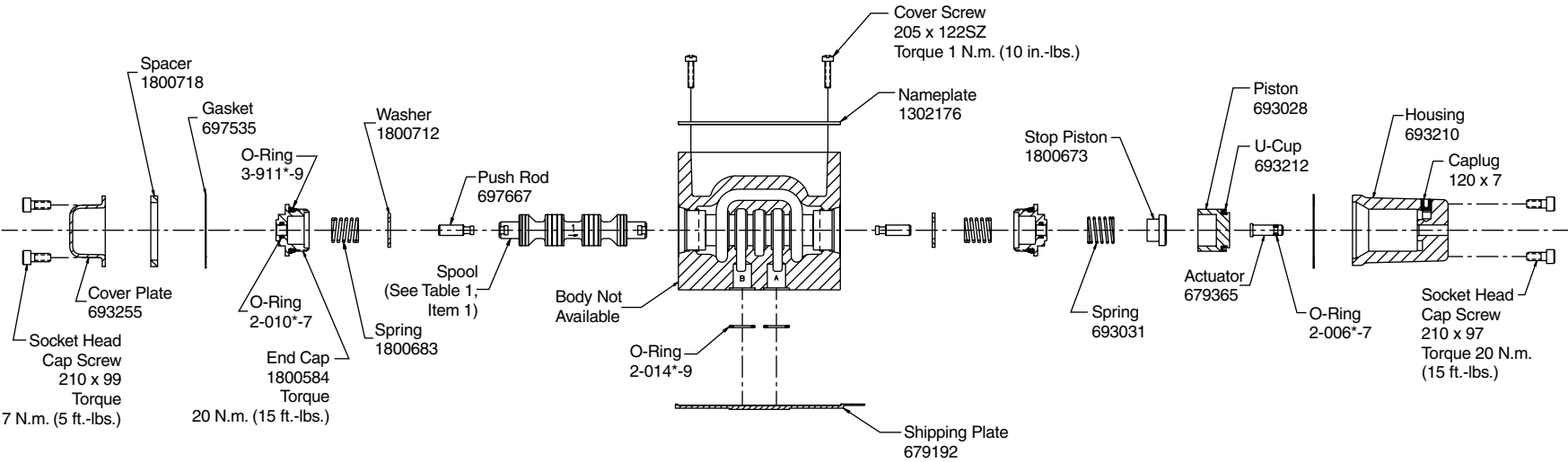
Table 1 (Spools)				
CODE	ITEM	PART NUMBER	QTY	DESCRIPTION
20	1	1800120	1	#20 SPOOL
30	1	1800130	1	#30 SPOOL



D3A Dual Air Actuator Model

NOTES:
1) * Indicates Seal Compound: N-Nitrile, V-Fluorocarbon.

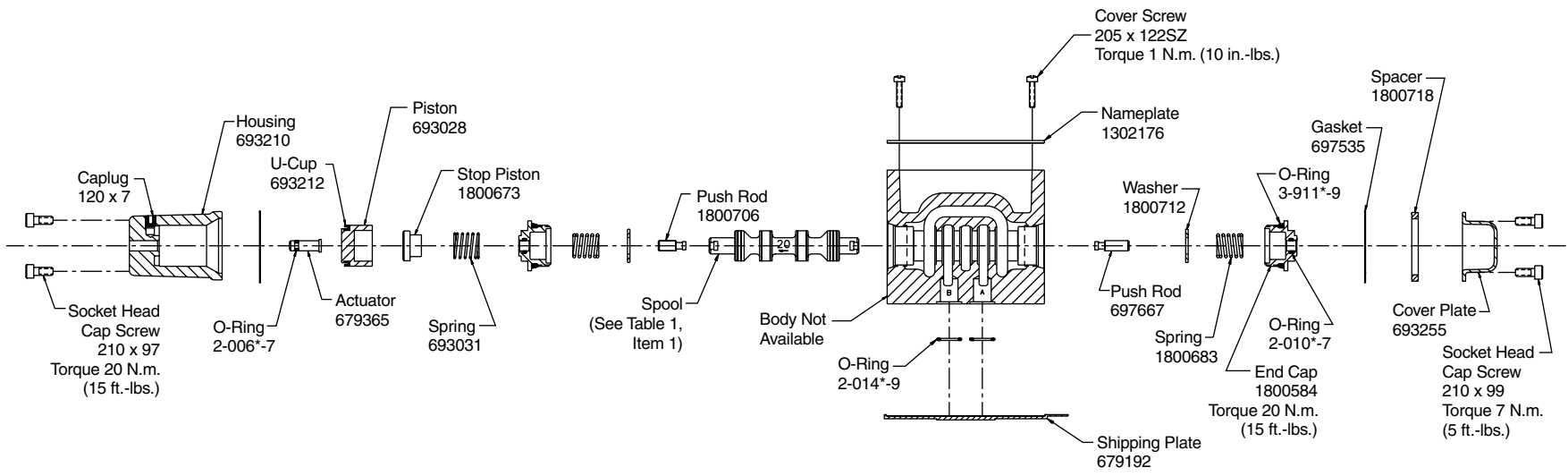
Table 1 (Spools)				
CODE	ITEM	PART NUMBER	QTY	DESCRIPTION
1	1	1800101	1	#1 SPOOL
2	1	1800102	1	#2 SPOOL
4	1	1800104	1	#4 SPOOL
8	1	1800108	1	#8 SPOOL
9	1	1800109	1	#9 SPOOL
81	1	1800181	1	#81 SPOOL
82	1	1800182	1	#82 SPOOL



D3A Single Air Actuator Model

NOTES:
1) * Indicates Seal Compound: N-Nitrile, V-Fluorocarbon.

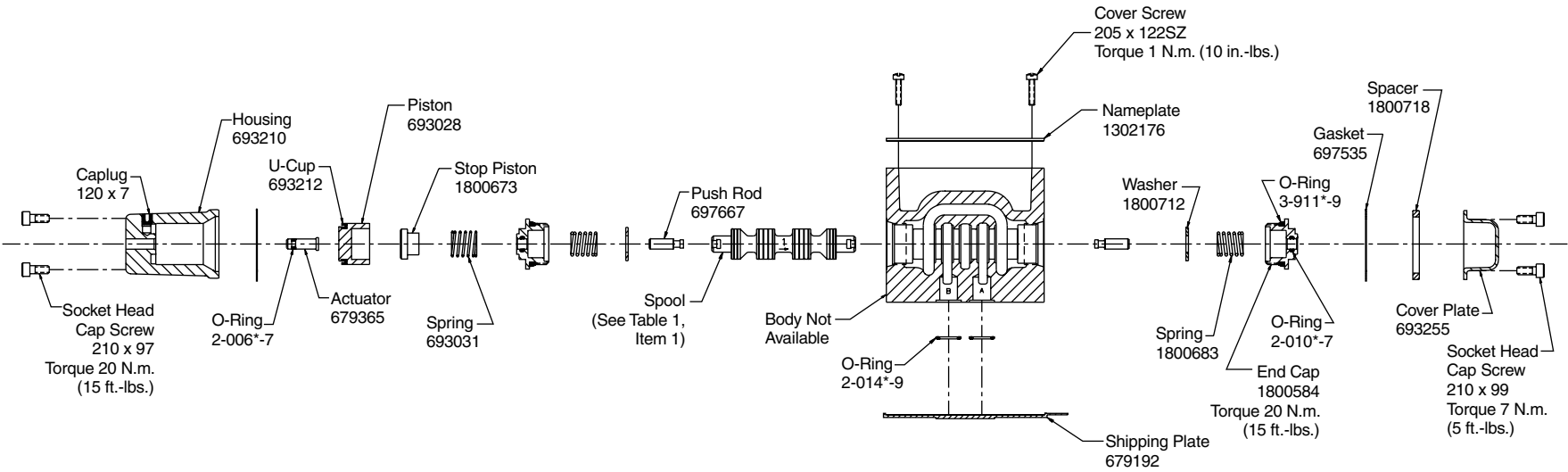
Table 1 (Spools)				
CODE	ITEM	PART NUMBER	QTY	DESCRIPTION
20	1	1800120	1	#20 SPOOL
30	1	1800130	1	#30 SPOOL



D3A Single Air Actuator Model

NOTES:
1) * Indicates Seal Compound: N-Nitrile, V-Fluorocarbon.

Table 1 (Spools)				
CODE	ITEM	PART NUMBER	QTY	DESCRIPTION
1	1	1800101	1	#1 SPOOL
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4	1	1800104	1	#4 SPOOL
8	1	1800108	1	#8 SPOOL
9	1	1800109	1	#9 SPOOL
81	1	1800181	1	#81 SPOOL
82	1	1800182	1	#82 SPOOL



D3A Single Air Actuator Model

NOTES:
1) * Indicates Seal Compound: N-Nitrile, V-Fluorocarbon.

B-SOLENOID * (A-SOLENOID)	A-SOLENOID * (B-SOLENOID)
	1 Spool 1800101
	2 Spool 1800102
	4 Spool 1800104
	8 Spool* 1800108
	9 Spool** 1800109
	20 Spool* 1800120
	30 Spool** 1800130
	81 Spool 1210161
	82 Spool 1210162

* 8 and 20 spools have closed crossover

** 9 and 30 spools have open crossover

Warning

Before any circuit connection is broken, be sure to turn off all power and relieve system pressure. Lower all vertical loads and cylinders, lock any load which could produce pressure and discharge any accumulators. Plug and cap all lines and openings to prevent contamination from entering the system.

Cleaning and Inspection

1. Proper cleaning is a critical part of preventive maintenance in the use of directional control valves. All parts should be cleaned with a solvent that is compatible with the system fluid. Compressed air may also work well when cleaning orifices and passage ways, but proper filtration must be employed to remove water and contamination.

NOTE: Always make sure all parts have been cleaned before reassembling.

2. Inspection
 - a. Inspect all passage ways for obstructions.
 - b. Inspect all washers, push pins, plungers and pole faces for signs of wear and/or mushrooming. Inspect all springs for signs of distortion. Replace parts as necessary.
 - c. Look for nicks and burrs on the spool and bore lands. Nicks in these areas indicate likely contamination of the system fluid.
3. If there are no signs of nicks or burrs on the spool and bore, check the spool movement as follows:
 - a. Lubricate the spool and bore with clean system fluid.
 - b. Insert the spool back into the body and slowly move the spool back and forth. The spool should move freely. If there is any sticking between the spool and the bore, remove the spool and repeat 2a, 2c and 3a.
 - c. The spool movement can also be checked by placing the valve body on end and inserting the spool. Gravity will pull the spool to the other end if there is no sticking.
 - d. After several attempts have been made without resolution, replace the valve.

Troubleshooting

Problem: Valve spool fails to move

Cause	Recommendation
Recommended flow exceeded	Check maximum flow rate for appropriate spool by spool function.
Recommended pressure exceeded	Check maximum pressure rating for valve.
Improper installation connections	Check installation drawings.
Contamination in system	Disassemble, inspect, clean and flush.
Improper assembly	Check proper assembly. Refer to drawing for appropriate model.
Valve has silted	Disassemble and clean valve.
Pilot supply off	Turn supply on.
Inadequate pilot pressure	Check pilot pressure specifications for valve model. Check pilot/connections for leak.

Problem: Valve produces undesirable response

Cause	Recommendation
Recommended flow exceeded	Check maximum flow rate for appropriate spool by spool function.
Recommended pressure exceeded	Check maximum pressure rating for valve.
Improper installation connections	Check installation drawings.
Contamination in system	Disassemble, inspect, clean and flush.
Improper assembly	Check proper assembly. Refer to drawing for appropriate model.
Improper fluid	Check fluid recommendations.
Recommended temperature exceeded (indicated by fluid discoloration or spool tarnishing)	Check maximum temperature recommendations.
Inadequate pilot pressure	Check pilot pressure specifications for valve. Check pilot/connections for leak.



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