

SERVICE INSTRUCTIONS

OILGEAR TYPE "L" & "V" 3-WAY AND 4-WAY DIRECTIONAL CONTROL VALVES

PURPOSE OF INSTRUCTIONS

These instructions are furnished to simplify and minimize your work of operating and maintaining Oilgear type "L" & "V" 3-way and 4-way directional control valves. Your acquaintance with the construction and characteristics of these valves will help you obtain optimum performance, reduce shutdowns and increase service life. Some valves may be modified for specific applications from those described in this bulletin and other changes may be made without notice.

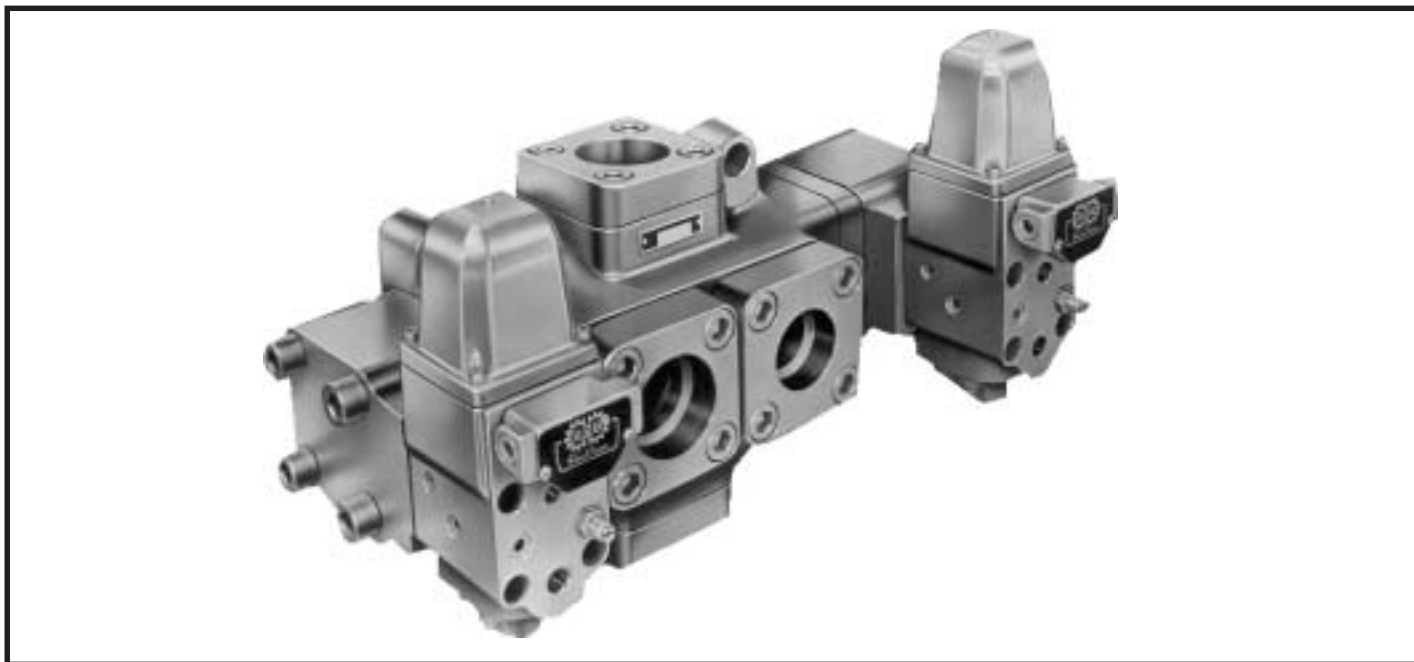


Figure 1. Typical "LG" 4-way Solenoid Operated Valve (55320).

I. GENERAL INFORMATION

FLUID RECOMMENDATIONS: Refer to Oilgear "Fluid Recommendations" Bulletin 90000. To assure long valve life, keep fluids clean at all times.

Refer to "Piping Information" Bulletin 90011 and your individual circuit diagram before connecting valve to the system.

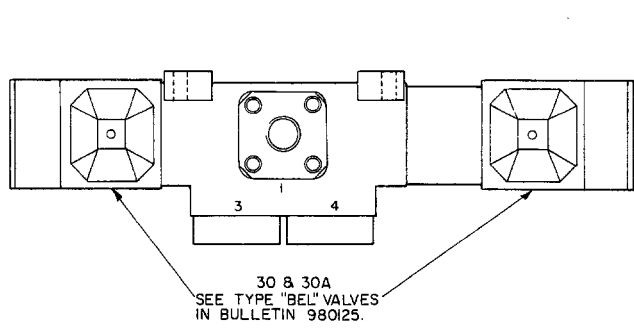
PIPING AND FITTINGS: Refer to Oilgear "Piping Informa-

(Continued on page 5)

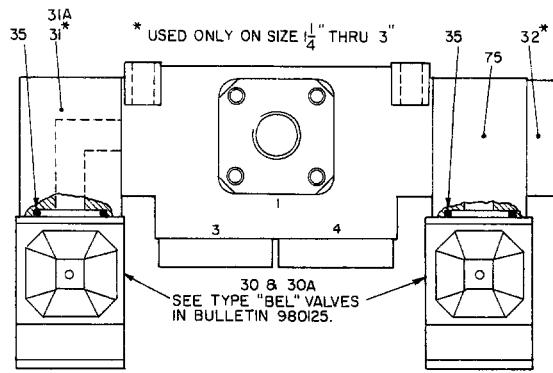
REFERENCE MATERIAL

<u>DESCRIPTION</u>	<u>BULLETIN NO.</u>
Fluid Recommendations	90000
Piping Information	90011
Solenoid Operated Pilot Valves	980125

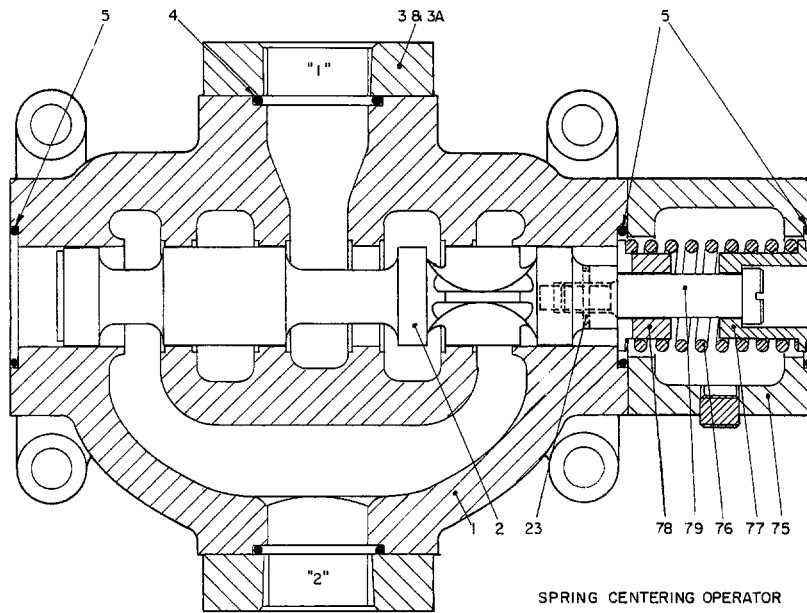
THE OILGEAR COMPANY
 2300 So. 51st. Street
 Milwaukee, WI 53219



TYPICAL CONFIGURATION FOR SIZE $\frac{3}{4}$ " & 1"
"L" TYPE VALVES

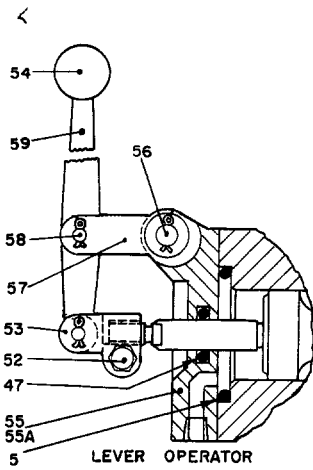


TYPICAL CONFIGURATION FOR SIZE $\frac{1}{4}$ " THRU 3"
"L" TYPE VALVES

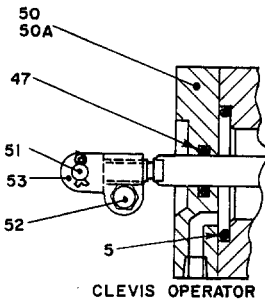


MAIN VALVE

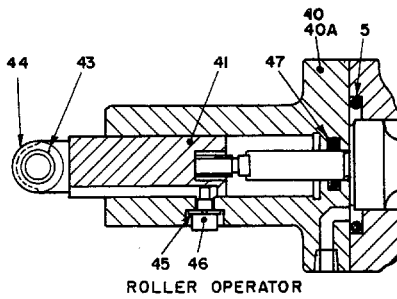
SPRING CENTERING OPERATOR



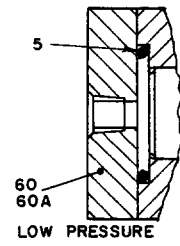
LEVER OPERATOR



CLEVIS OPERATOR



ROLLER OPERATOR



LOW PRESSURE

Figure 2. Parts drawing of Oilgear type "L" & "V" 3-way and 4-way valves (507008B Sheet 1).

PARTS USED IN THIS ASSEMBLY ARE PER OILGEAR SPECIFICATIONS. USE OILGEAR SUPPLIED PARTS TO INSURE COMPATIBILITY WITH ASSEMBLY REQUIREMENTS. WHEN ORDERING REPLACEMENT PARTS, INCLUDE TYPE DESIGNATION AND "L" NUMBER STAMPED ON NAMEPLATE, ITEM NUMBER AND BULLETIN NUMBER. WHEN ORDERING O-RINGS AND SEALS, SPECIFY TYPE OF HYDRAULIC FLUID USED. SPECIFY VOLTAGE AND HERTZ WHEN ORDERING SOLENOIDS OR COILS.

PARTS LIST

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1	Body, Valve	48	Ring, Retaining	71	Pin, Spacer
2	Plunger, Typical	50	Head, Clevis	75	Head, Spring Center
3	Flange, Pressure	50A	Screw, Sckt. Hd. Cap	76	Spring, Centering
3A	Screw, Sckt. Hd. Cap	51	Pin, Yoke	77	Guide, Spring
(S) 4	O-ring	52	Screw, Hex Hd. Cap	78	Guide, Spring
(S) 5	O-ring	53	Yoke	79	Screw, Plunger
20	Head, Spring Return	54	Knob	80	Head, Detent
20A	Screw, Sckt. Hd. Cap	55	Head, Lever	80A	Screw, Sckt. Hd. Cap
21	Spring, Return	57	Link	81	Cap, Detent
22	Screw, Plunger	58	Pin	82	Spring, Detent
23	Pin, Connection	59	Lever	83	Ball, Detent
30	Valve, Pilot	60	Head, Low Pressure	84	Screw, Detent
30A	Screw, Sckt. Hd. Cap	60A	Screw, Sckt. Hd. Cap	85	Packing
31	Head, Pilot Valve	61	Head, Free-flow-in	90	Head Hydraulic Centering
31A	Screw, Sckt. Hd. Cap	61A	Screw, Sckt. Hd. Cap	90A	Screw, Sckt. Hd. Cap
32	Head, End	62	Head, Free-flow-out	91	Head, End
(S) 35	O-ring	62A	Screw, Sckt. Hd. Cap	92	Piston, Centering (Port 3)
40	Head, Roller	63	Spring, Check	93	Spool, Stroking (Port 3)
40A	Screw, Sckt. Hd. Cap	64	Gasket	94	Spring
41	Guide, Roller	65	Seat, Check Valve	95	Spacer
43	Bushing, Roller	66	Cap, Check Valve	96	Piston, Centering (Port 4)
44	Roller	68	Screw, Choke	97	Spool, Stroking (Port 4)
45	Washer, Lock	69	Nut, Choke, Lock		
46	Screw, Guide	69A	Packing		
(S) 47	O-ring	70	Head, Spacer		

(S) Indicates item is included in Seal (A) Kit.

O-RING SIZES

ITEM NUMBER	LAST TWO DIGITS OF DESIGNATION			
	06 & 25 Or 08	10 & 40 Or 12	16 & 63 Or 20	80 Or 24
4	1/8 x 1-1/2 x 90	3/16 x 2-1/4 x 90	3/16 x 3 x 90	3/16 x 3-3/4 x 90
5	3/16 x 2 x 90	3/16 x 2-1/2 x 90	3/16 x 3-1/2 x 90	3/16 x 4-3/8 x 90
35	—————	3/16 x 2-1/2 x 90	3/16 x 2-1/2 x 90	3/16 x 2-1/2 x 90
47	3/32 x 7/8 x 70	3/32 x 7/8 x 70	3/32 x 7/8 x 70	—————

NOTE:

All o-ring sizes given in cross section x O.D., Duro ±5.

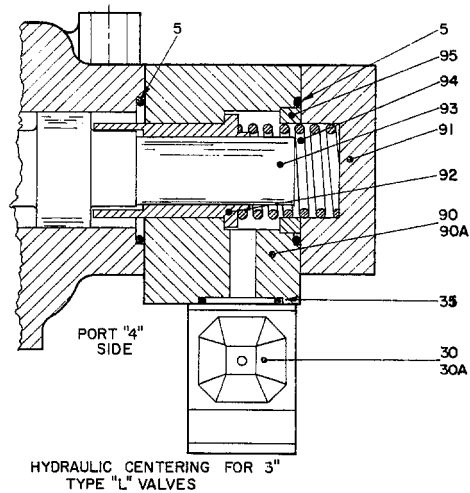
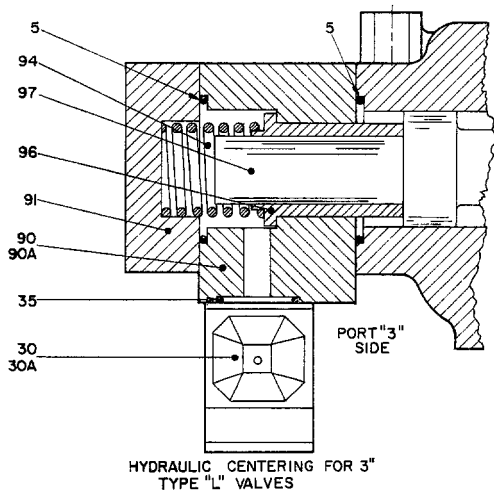
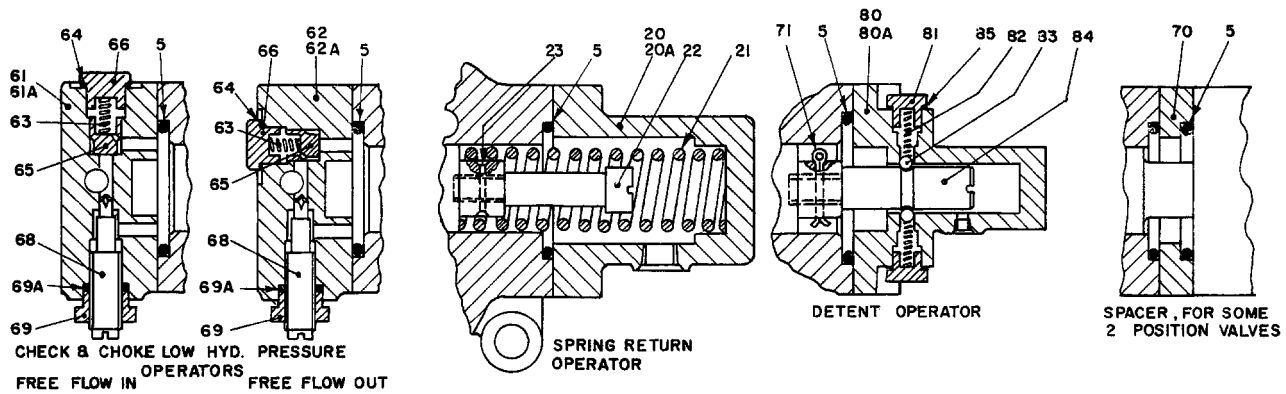


Figure 3. Parts drawing of Oilgear type "L" & "V" 3-way and 4-way valves (507008B Sheet 2).

CAUTION!

Cleanliness is essential when working on any hydraulic component. Always work in a clean area. Dirt and foreign material entering a hydraulic valve may result in malfunction or serious damage.

II. INSTALLATION

The last letter and first number of the type designation indicates style of plunger. The letter "X" designates a special plunger. Flanges must be removed from the valve when welding to pipe. Mount the valve on a flat finished surface to avoid deflecting body. Drain lines should be connected to the reservoir below fluid or have the surge dissipated and be connected above the fluid level. Minimum pilot pressure is 75psi (5,2 bar) and maximum 3500 psi (241,4 bar). When solenoid pilot valve operator is used, arrange drain (port 12) piping so solenoid cover is kept full of fluid (a loop or 1 - 10 psi [0,1 - 0,7 bar] check valve in the line can be used).

III. CONSTRUCTION

Operators include solenoid operated pilot valve, plain hydraulic, hydraulic check and choke, roller clevis and lever heads. Opposing heads include plain drain, detent, spring returned, hydraulic centered, spring centered (often inserted as a spacer), plain hydraulic, check and choke and solenoid pilot valve.

IV. SPECIFICATIONS

LAST TWO DIGITS OF DESIGNATION	06	25 Or 08	10	40 Or 12	16	63 Or 20	80 Or 24
	VALVE SIZE IN INCHES	.75	1.00	1.25	1.50	2.00	2.50
PLUNGER STROKE IN INCHES	1.25		1.625		2.00		2.75

V. ADJUSTING

Turning the choke in on free-flow-in heads, slows down the plunger movement in the direction toward choke adjusted. Turning the choke in on free-flow-out heads, slows down plunger movement in the direction away from the choke adjusted. For adjustment of the pilot valve see reference Bulletin 980125.



NEVER attempt to remove or install any hydraulic component

while system is running! Always stop the pump, shut power off and release pressure from the system before servicing or testing. Severe personal injury or death could result if system pressure is not released before servicing or testing.

VI. DISASSEMBLY

Disassembly is easily understood by studying the parts drawings (figures 2 and 3). Be sure to mark port 3 end of main plunger so it will be returned to its original position. For disassembly of the pilot valve, see reference Bulletin 980125.

VII. INSPECTION

Inspect all plungers and bores, choke needles, check valves and seats for foreign matter, scratches or scored surfaces. Any o-rings or seals which have hardened, deteriorated or been damaged should be replaced. For inspection of the pilot valve, see reference Bulletin 980125. Wash all parts thoroughly with CLEAN mineral spirits.



Always wear safety goggles when using solvents or compressed air. Failure to wear safety goggles could result in serious personal injury.

VIII. ASSEMBLY

If plunger (2) is replaced, the replacement plunger will be furnished unground. Measure the inside diameter of the plunger bore and grind plunger undersized for a minimum clearance slip fit. Wash all parts thoroughly with CLEAN mineral spirits prior to assembly. For assembly of the pilot valve, see reference Bulletin 980125.

CAUTION!

Care should be taken to avoid pinching or damaging o-rings and seals.

Plunger MUST be returned to its original position. Make certain the plunger moves freely in the body before assembling return end operator heads. When assembling mechanical operators, be sure the head is aligned so plunger stem does not bind or place an excessive strain on one side of the seal. Assemble valve and heads in reverse order of disassembly. When possible, operate the plunger manually to make certain that it moves through its entire stroke without binding.

Style of Plunger	ASA SYMBOLS		I — CLEVIS OUT	II — CLEVIS CENTERED	III — CLEVIS IN
			PRESSURE AT PORT 6	SPRING CENTERED	PRESSURE AT PORT 5
	Three Position		SOLENOID "2" ENERGIZED	SPRING CENTERED	SOLENOID "1" ENERGIZED
B-3			 PORTS 1 AND 3 CONNECTED PORT 4 BLOCKED	 PORTS 1, 3 AND 4 CONNECTED	 PORTS 1 AND 4 CONNECTED PORT 3 BLOCKED
N-3			 PORTS 1 AND 3 CONNECTED PORT 4 BLOCKED	 ALL PORTS BLOCKED	 PORTS 1 AND 4 CONNECTED PORT 3 BLOCKED
B-4			 PORTS 1 AND 3 CONNECTED PORTS 2 AND 4 CONNECTED	 ALL PORTS OPEN	 PORTS 1 AND 4 CONNECTED PORTS 2 AND 3 CONNECTED
Y-4			 PORTS 1 AND 3 CONNECTED PORTS 2 AND 4 CONNECTED	 PORTS 1, 2 AND 4 CONNECTED PORT 3 BLOCKED	 PORTS 1 AND 4 CONNECTED PORTS 2 AND 3 CONNECTED
Z-4			 PORTS 1 AND 3 CONNECTED PORTS 2 AND 4 CONNECTED	 PORTS 1, 2 AND 3 CONNECTED PORT 4 BLOCKED	 PORTS 1 AND 4 CONNECTED PORTS 2 AND 3 CONNECTED
N-4			 PORTS 1 AND 3 CONNECTED PORTS 2 AND 4 CONNECTED	 ALL PORTS BLOCKED	 PORTS 1 AND 4 CONNECTED PORTS 2 AND 3 CONNECTED
T-4			 PORTS 1 AND 3 CONNECTED PORTS 2 AND 4 CONNECTED	 PORTS 2, 3 AND 4 CONNECTED PORT 1 BLOCKED	 PORTS 1 AND 4 CONNECTED PORTS 2 AND 3 CONNECTED

Figure 4. Plunger functions for 3-way and 4-way standard directional control valves.

NOTE:

The last letter and first number of the type designation indicates style of plunger.