

ASSEMBLY DRAWING AND PARTS LIST

ENERGY[®]

Energy Mfg. Co., Inc.

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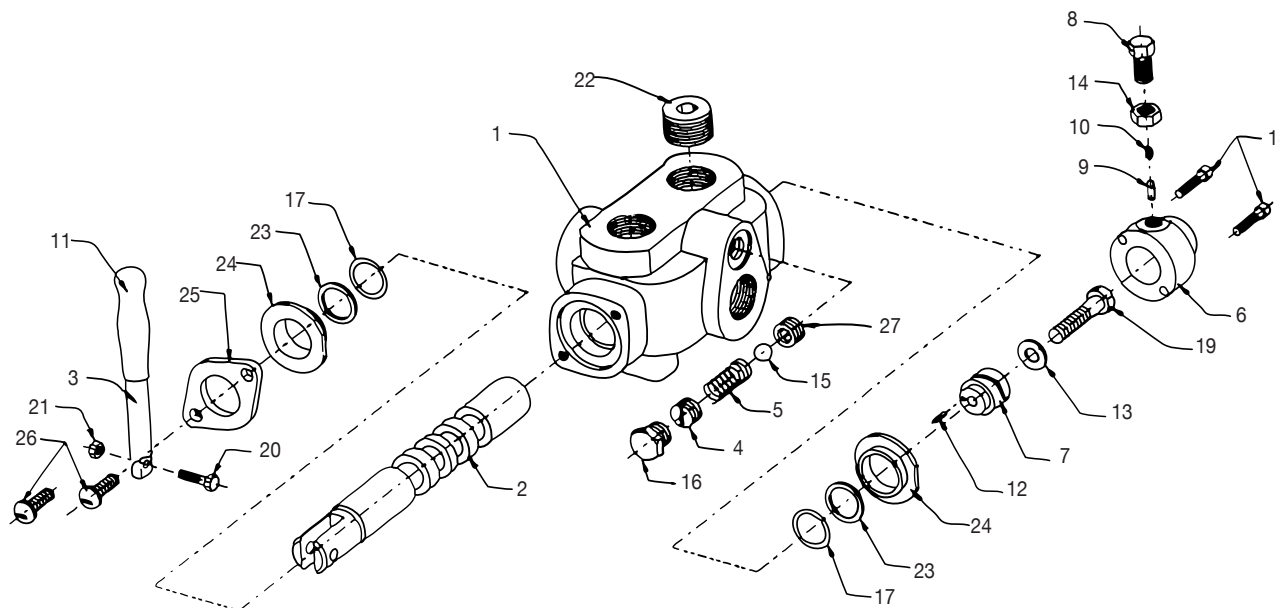
“CVR” SERIES ROTARY-ACTIVATED HYDRAULIC DIRECTIONAL CONTROL VALVES – OPEN CENTER

Model CVR-100 (3-Way)

Model CVRM-100 (3-Way)

Model CVR-200 (4-Way)

Model CVRM-200 (4-Way)



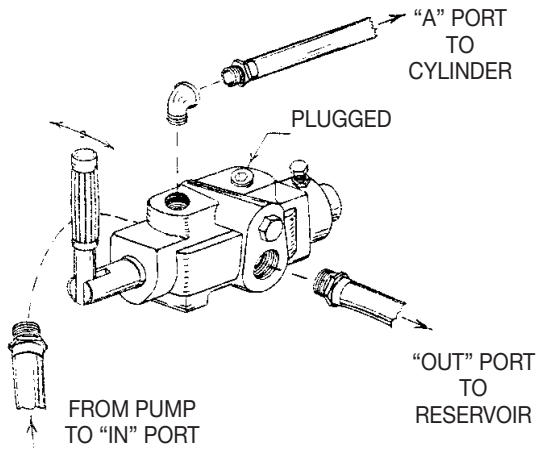
ITEM NO.	PART NO.	DESCRIPTION	QUANTITY PER VALVE
1	0C000737	Control Valve Body (1/2" NPTF Work Ports).....	1
	0C000738	Control Valve Body (3/4" NPTF Work Ports).....	1
2	0B003452	Valve Spool (for Model CVR-100).....	1
	0B003464	Valve Spool (for Model CVR-200).....	1
	0B003466	Valve Spool, 4-way, open center motor (for Model CVRM-200).....	1
	0B003782	Valve Spool, 3-way, open center motor (for Model CVRM-100).....	1
3	0A002935	Control Lever.....	1
4	00082515	Slotted or Hex-keyed Adjustment Screw.....	1
5	19985A	Relief Valve Spring Assembly.....	1
6	0A005011	Cam Cover.....	1
7	0A002856	Detent Cam.....	1
8	0A005010	Index Body.....	1
9	0A002858	Index Pin.....	1
10	0A000076	Spring.....	2
11	15725A	Grip.....	1
12	00080440	Spring Pin.....	1
13	00081530	Lock Washer.....	1
14	00080280	Hex. Jam Nut.....	1

ITEM NO.	PART NO.	DESCRIPTION	QUANTITY PER VALVE
15	19282A	Steel Ball.....	1
16	00082527	O-Ring Boss Plug.....	1
17	00080311	O-Ring.....	2
18	24002A	Cap Screw.....	2
19	00080788	Cap Screw.....	1
20	00080778	Cap Screw.....	1
21	22123A	Nut Center Lock.....	1
22	00080649	1/2" NPTF Pipe Plug (CVR-100, CVRM-100).....	1
	00080650	3/4" NPTF Pipe Plug (CVR-100, CVRM-100).....	1
23	00082131	Back-up Washer.....	2
24	0A004912	Seal Retainer.....	2
25	0A002651	Retaining Plate.....	1
26	22292A	Hex. Soc. Cap Screw.....	2
27	19902A	Valve Seat.....	1

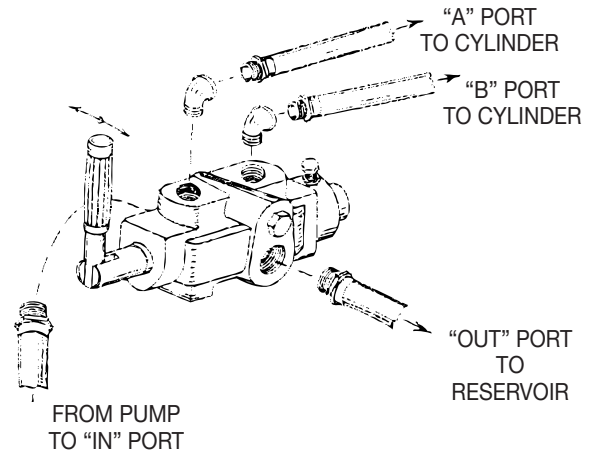
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SINGLE ACTING USE
MODEL CVR-100
MODEL CVRM-100



DOUBLE ACTING USE
MODEL CVR-200
MODEL CVRM-200

Model CVR-100, CVRM-100

3-way control valve designed to operate a one-way hydraulic circuit from a single hydraulic source

Model CVR-200, CVRM-200

4-way control valve designed to operate a two-way hydraulic circuit from a single hydraulic source



WARNING: If the valve will not hold in detent – discontinue use at once. Return valve for repair. Serious injury could result.



WARNING: CONTAMINATION – Energy strongly recommends the use of a hydraulic filter in your system to reduce the risk of malfunction due to contamination. The clearances between the valve spool and body are very small and contamination may bind the spool.



DANGER: LOAD LIFTING – CVR valves do not contain load check valves and therefore should not be used in lifting application unless some other means of holding the load is made where property damage or personal injury could result.



WARNING: Do not modify any parts of this valve. **SERIOUS INJURY COULD RESULT IF VALVE FUNCTION IS ALTERED.**



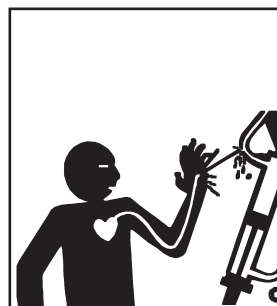
WARNING: If the valve spool binds or will not rotate freely **DISCONTINUE USE.**



WARNING: Do not use these valves on applications where property damage or personal injury may result. There are no check valves to prevent load dropping while changing spool positions or to prevent slow drift of a cylinder or motor.



WARNING: It is possible to turn the slotted adjustment screw to the point of compressing the spring to solid height. **Never adjust to this point; serious injury or death could result. Never turn the adjustment screw with hydraulic pressure on the valve.**



WARNING

DO NOT GO NEAR LEAKS

- High pressure oil easily punctures skin causing serious injury, gangrene or death.
- If injured, seek emergency medical help. Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.

INSTALLATION



WARNING – Before installing product, read and understand all warnings, safety labels and instructions. Failure to do so could result in **SERIOUS INJURY!**

1. Install control lever as shown in drawing.
2. Mount valve using 3/8”-16NC tapped holes in the base of valve. **CAUTION:** Mounting valve to uneven mounting plate may cause the valve body to distort and the valve spool to bind. Move the control lever during the tightening procedure to assure that the valve spool does not lock or bind as a result of the tightening. Exerting heavy pressure on the control lever should be avoided as it may cause valve damage. **IF THE VALVE SPOOL BINDS IN ANY WAY, DISCONTINUE USE AND CALL FACTORY.**
3. Make port connections as shown in drawing. (NOTE: We do not recommend the use of Teflon tape because of potential contamination to the hydraulic system.) **CAUTION:** Excess tightening of the port fittings may cause the valve body to distort and the valve spool to bind. Move the control lever during the tightening procedure to assure the valve spool does not lock or bind as a result of the tightening. **IF THE VALVE SPOOL BINDS IN ANY WAY, DISCONTINUE USE AND CALL FACTORY.**
4. CONTROL LEVER LOCATION: The control valve is designed so that the lever may be located on the opposite end of the valve if desired. To do this, proceed as follows:
 - (a) Remove all parts from both ends of valve.
 - (b) Push valve spool out of valve body and remove seal retainer, back-up washer, and O-ring seal at each end of valve body.
 - (c) Turn valve spool end-for-end and replace in valve body.
 - (d) Install O-ring seal, back-up washer, and seal retainer in end of valve body.
 - (5) Reassemble per pictorial of valve and parts list.

The internal relief valve is factory set to 2,000 PSI (138 bar) ± 200 PSI (14 bar) at 10 GPM (38 lpm) Adjustment can be made by removing the relief valve plug and by turning the slotted or hex-keyed adjustment screw clockwise to increase the pressure and counterclockwise to decrease the pressure. Pressure range is 400 PSI (28 bar) to 2,500 PSI (172 bar) at 10 GPM (38 lpm). **PRESSURE ADJUSTMENTS SHOULD NEVER BE MADE WITH THE PUMP OPERATING AND THE RELIEF VALVE SETTING MUST BE MEASURED WITH A PRESSURE GAUGE TEED TO THE VALVE “IN” PORT.**

INSTRUCTIONS FOR REPLACING THE VALVE SPOOL SEALS

1. Remove all parts from both ends of valve.
2. Remove valve spool from valve body and remove seal retainer, back-up washer, O-ring seal at each end of valve body.
3. Replace valve spool into housing.
4. Install new O-ring seal, back-up washer, and original seal retainer in each end of valve body.
5. Reassemble per pictorial of valve and parts list.