SERVICE INSTRUCTIONS

OILGEAR TYPE "RU" AND "RR" SOLENOID OPERATED CONTROLS FOR "PVWH" AND "PVW" PUMPS

PURPOSE OF INSTRUCTIONS

These instructions have been prepared to simplify and minimize your work of operating Oilgear type "RU" and "RR" controlled units. This material will inform you as to basic construction, principle of operation and service parts listings. Some controls may be modified for specific applications from those described and other changes may be made without notice.

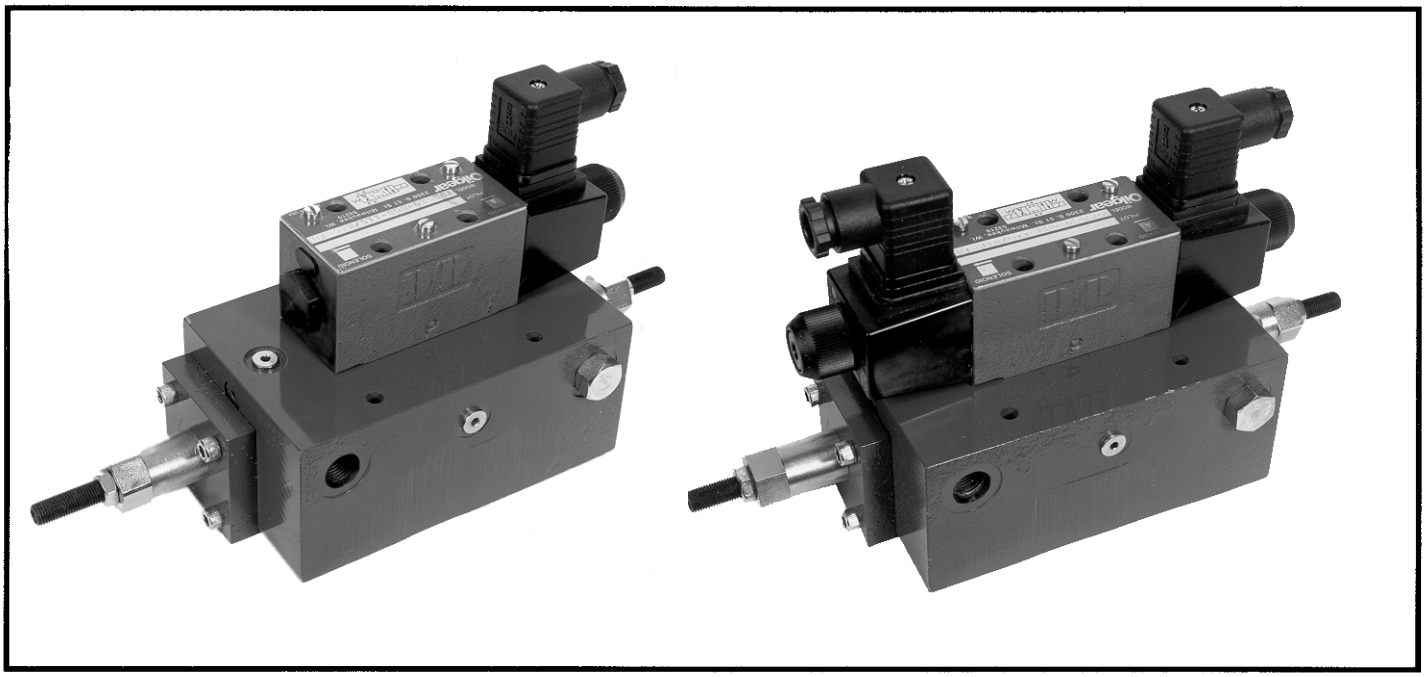

Figure 1. Typical "RU" (left) and "RR" (right) Controls for Oilgear "PVWH" and "PVW" Pumps (95001 and 95002).

REFERENCE MATERIAL

Fluid Recommendations	Bulletin 90000
Filtration Recommendations	Bulletin 90007
"PVWH" and "PVW" Open-Loop Pumps	Bulletin 947015
"PVWC" Closed-Loop Pumps	Bulletin 947018

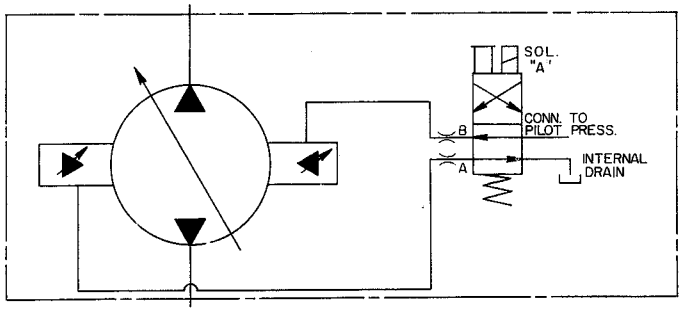

Figure 2. ASA Diagram for "RU" Control with typical Pump. (510334)

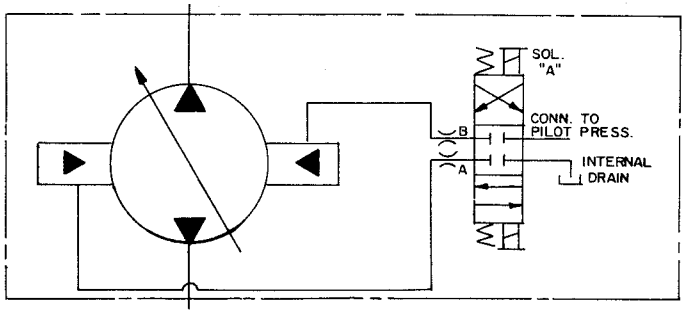

Figure 3. ASA Diagram for "RR" Control with typical Pump. (510334)

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Reissued February, 1995

PRINCIPLE OF OPERATION

The pilot valve must be connected to 350 to 800 psi (24 to 55 bar) pilot source. A SYSTEM relief valve must be used to protect pump and system.

The **"RU" Control** provides two adjustable control (volume) settings as selected by an integral solenoid operated **two-position** four-way valve. For **one-way** (open-loop) pumps, one volume stop can be set for neutral (zero) or minimum delivery, while the other volume stop can be set for maximum volume. For **two-way** (closed-loop) pumps, one volume stop can be set for maximum volume from port "A" and the other stop set for maximum volume from port "B".

In operation (left hand driven pump described) when solenoid is energized, pilot pressure is directed through the four-way valve (342) to one end of the control piston (362) (the other end is ported through the valve to internal drain) and moves the control piston until it is stopped by the maximum volume stop screw (393) and pump delivers maximum volume.

When solenoid is de-energized, pilot pressure is directed through the four-way valve (342) to the opposite end of the control piston (362) (the other end is ported through the valve to internal drain) and moves the piston until it is stopped by the minimum volume stop screw (391) of **one-way** pumps or maximum volume stop screw (393) of **two-way** pumps.

The **"RR" Control** operates in a similar manner. For **one-way** (open-loop) pumps, one volume stop can be set for neutral (zero) or to limit (minimum) delivery, while the other volume stop can be set to limit maximum delivery. For **two-way** (closed-loop) pumps, one volume stop can be set for maximum volume from port "A" and the other stop set for maximum volume from port "B". However, because it utilizes a **three-position** closed center four-way solenoid valve, it provides infinite control (volume) settings as selected by operation of the solenoid operated valve. Energizing solenoid "A" moves the control piston towards the maximum volume stop. Energizing solenoid "B" moves the control piston towards the other stop. De-energizing solenoids blocks flow to and from control piston, and stops movement of control piston wherever it is at the time solenoids are de-energized and thus providing infinite control (volume) settings.

CAUTION!

With (one-way) open-loop "PVWH" or "PVW" pumps, care must be exercised to prevent "RU" and "RR" controls from going past the neutral position (crossing over for delivery from the other port) or damage will result to the pump and or/system.

With (two-way) "PVWC" or "PVW" closed-loop (hydrostatic) pumps, the "RU" and "RR" controls can provide controlled delivery from either port.

PARTS LIST

Parts used in the assembly are per Oilgear specifications. Use Oilgear parts to ensure compatibility with assembly requirements. When ordering replacement parts, be sure to include pump type designation and serial number stamped on nameplate, Bulletin and item number. To assure seal and packing compatibility, specify type of hydraulic fluid used.

ITEM NO.	DESCRIPTION
303	Screw, O'ring
342	Valve, Sol. Oper. (RU or RR)
342A	Solenoid, Side A
342B	Solenoid, Side B
342C	Screw, S.H.C.
342D	Seal, O'ring
342E	Screw, Connector
342F	Connector, Electric
352	Seal, O'ring
353	Seal, O'ring
354	Plug, SAE
356	Seal, O'ring
361	Plug, Hollow Hex.
362	Piston, Control

ITEM NO.	DESCRIPTION
362A	Packing, Piston (RR)
367C	Orifice
368	Housing, "RU" or "RR" Control
369	Gasket, Control Housing
372	Plate, Control Cover
373	Pin, Control Piston
374	Screw, S.H.C.
375	Seal, O'ring
385	Seal, O'ring
390	Nut, Jam
391	Stem, Minimum Volume Stop
392	Adapter, Volume Stem
393	Stem, Maximum Volume Stop
394	Seal, O'ring

CONTROL FUNCTIONS

+ = SOLENOID ENERGIZED

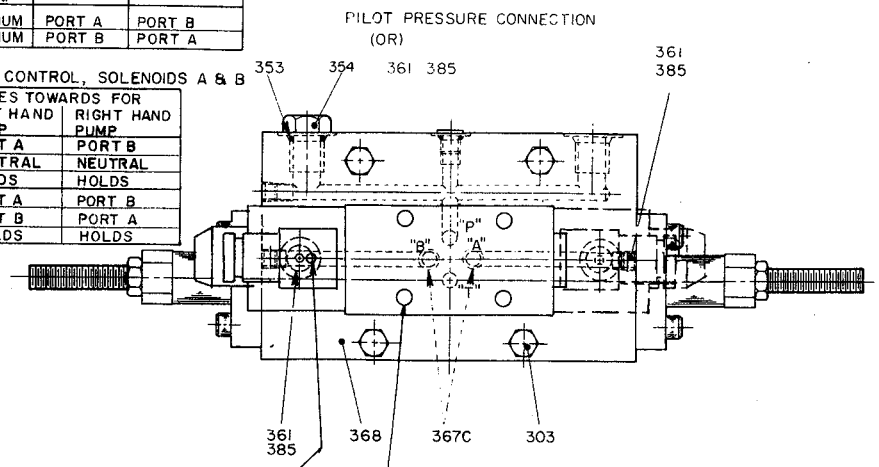
− = SOLENOID DE-ENERGIZED

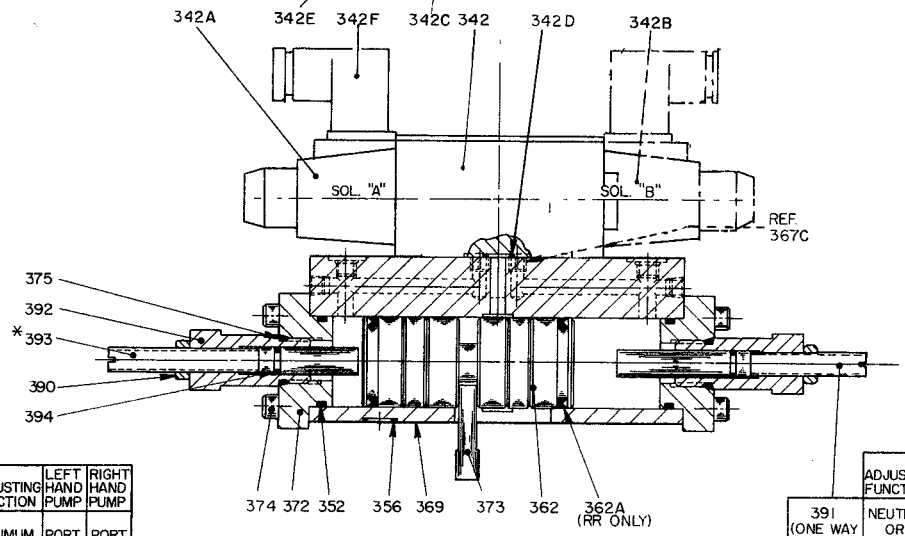
"RU" TWO POSITION CONTROL, SOLENOID A

	SOLENOID "A"	DELIVERY FUNCTION	LEFT HAND PUMP	RIGHT HAND PUMP
ONE WAY PUMP	+	MAXIMUM	PORT A	PORT B
	−	NEUTRAL OR MIN.	PORT A	PORT B
TWO WAY	+	MAXIMUM	PORT A	PORT B
	−	MAXIMUM	PORT B	PORT A

"RR" INFINITE POSITION CONTROL, SOLENOIDS A & B

	SOLENOIDS A	SOLENOIDS B	MOVES TOWARDS FOR LEFT HAND PUMP	MOVES TOWARDS FOR RIGHT HAND PUMP
ONE WAY PUMP	+	−	PORT A	PORT B
	−	+	NEUTRAL	NEUTRAL
	−	−	HOLDS	HOLDS
TWO WAY PUMP	+	−	PORT A	PORT B
	−	+	PORT B	PORT A
	−	−	HOLDS	HOLDS





*	ADJUSTING FUNCTION	LEFT HAND PUMP	RIGHT HAND PUMP
393 (ONE OR TWO WAY CONTROL)	MAXIMUM DELIVERY	PORT A	PORT B

	ADJUSTING FUNCTION	LEFT HAND PUMP	RIGHT HAND PUMP
391 (ONE WAY CONTROL)	NEUTRAL OR MIN DEL.	PORT A	PORT B
— OR —			
393 (TWO WAY CONTROL)	MAXIMUM DELIVERY	PORT B	PORT A

Figure 4. Parts Drawing, Oilgear Type "RU" and "RR" Controls. (510334)

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