



INSTRUCTIONS

OILGEAR SPECIAL TYPE "R" THREE POSITION REMOTE HYDRAULIC CONTROL FOR TYPE "D" UNITS

BULLETIN 947606

Reference Bulletins

Type "D" Units-----947000

I. CONSTRUCTION

Basically the control consists of a large area half stroke or neutral piston (312), a half stroke adjusting screw (310), a large area control piston (301), and a full stroke adjusting screw (313). The opposing operator consists of a small area opposing operator piston (351) and an adjusting screw (362).

II. PRINCIPLE OF OPERATION

The main control is generally mounted on the right side of unit (facing drive shaft). Adjustable preset slideblock positions are selected thru operation of a remote four way valve. Gear pump pressure is constantly directed thru internal passages to the chamber behind the opposing operator piston (351). When the chambers behind the large area pistons (301 and 312) are connected to drain thru the valve, the force behind the opposing piston (351) moves the slideblock towards the main control until control piston (301), pushing against half stroke adjusting screw (310), meets a positive stop against full stroke adjusting screw (313). Thus, the adjusting screw limits pump stroke and delivery from port "B." If the control valve is positioned to direct fluid to the chambers behind both pistons (301 & 312), the force behind the large area pistons overcomes that behind the small opposing piston (351) and the slideblock moves towards the opposing operator until its piston (351) backs up against adjusting screw (362). Thus, this screw adjusts the stroke of the pump and delivery from port "A."

When the valve is positioned to drain the chamber behind control piston (301) and direct fluid behind large area half stroke piston (312), the force behind the opposing piston (351) moves (or holds) the slideblock to the position determined by the hook type half stroke adjusting screw (310). The screw is normally factory set for neutral (zero stroke) position. Mounting main control and opposing operator on opposing sides of unit reverses delivery functions.

III. SPECIFICATIONS

See unit bulletin for eccentricity and other specifications.

IV. MALFUNCTIONS & CAUSES

A. Sluggish or Unresponsive Control

1. Low gear pump (pilot) pressure (see reference bulletin).
2. Binding control pistons or slideblock.
3. Excessive leakage past control piston rings.
4. Broken half stroke chamber spring.
5. Faulty radial piston pump (see reference bulletin).

B. Delivery when control valve is positioned for neutral.

1. Neutral adjusting screw improperly set.

V. ADJUSTING AND TESTING

When facing the pump shaft, the adjusting knob on the left side of the pump limits the volume delivered from port "A" and the knob on the right side of the pump limits the volume delivered from port "B." Loosen thumb screw (307) before adjusting and reset when done. Turning adjusting knobs counterclockwise increases delivery; clockwise decreases delivery. Do NOT exceed "F" position indicated on gland (306) or (364).

Neutral position is normally set and pinned in position at factory and needs no adjustment. However, if adjustment is indicated, test by screwing two gages good for 1000 psi above units rating into auxiliary pressure ports or pressure flange ports. Block main pressure ports, position control valve for neutral and start unit. The gages should show identical pressures. If not, stop unit remove adjusting screw gland (306) as an assembly, remove keeper (311-A) from nut (311). Start unit and turn nut until gages read alike. Stop unit and using keeper, resecure nut (311) in new position then remount assembly (306).

VI. DISASSEMBLY

Note the position of all O'rings, gaskets, seals, pipe plugs, shims and tag them during disassembly so they will be returned to original position during assembly. Disconnect all piping to controls. Remove control housings (300 & 350) from unit as an assembly. Pistons (301 & 351) can be removed from the slideblock by cutting iron wire (303B & 353B), turning out screws (303 & 353) and pulling pistons (301 & 351) with rings (302 & 352) from their bores.

If further disassembly of the main control is necessary, remove gland (306). Before removing adjusting screw (310) mark position of adjusting nut (311) on it. Remove keeper (311A) and back nut off screw. Half stroke piston (312) with ring (302) can be removed from its bore.

If further disassembly of the opposing operator is necessary, drive out taper pin (363) and unscrew knob (360) from screw (362) remove gland (364) and pull out sleeve (365) with O'rings (366 & 367).

VII. INSPECTION

Check for hardening or deterioration of seals, gaskets or packings and replace, if necessary. Inspect all pistons, their rings and bores for scratches, grooves or undue wear. Be sure all pistons move freely in

their bores. Check all threads for wear or damage. Replace any part that appears unduly worn. Wash all parts prior to assembly.

VIII. ASSEMBLY

Anneal copper gaskets. Bolt control pistons (301 & 351) with piston rings (302 & 352) to slideblock and secure bolts (303 & 353) and gaskets (303-A & 353-A) with soft iron lock wire (303-B & 353-B). When

installing half stroke piston (312) be sure to include spring (309). Guide screw (310) thru piston and head (300), turn on nut (311) to original position and secure it. The rest of assembly follows in reverse order of disassembly. When mounting control housings on units case, make certain that holes in housing, gasket and control match up.

Test and adjust per section V.

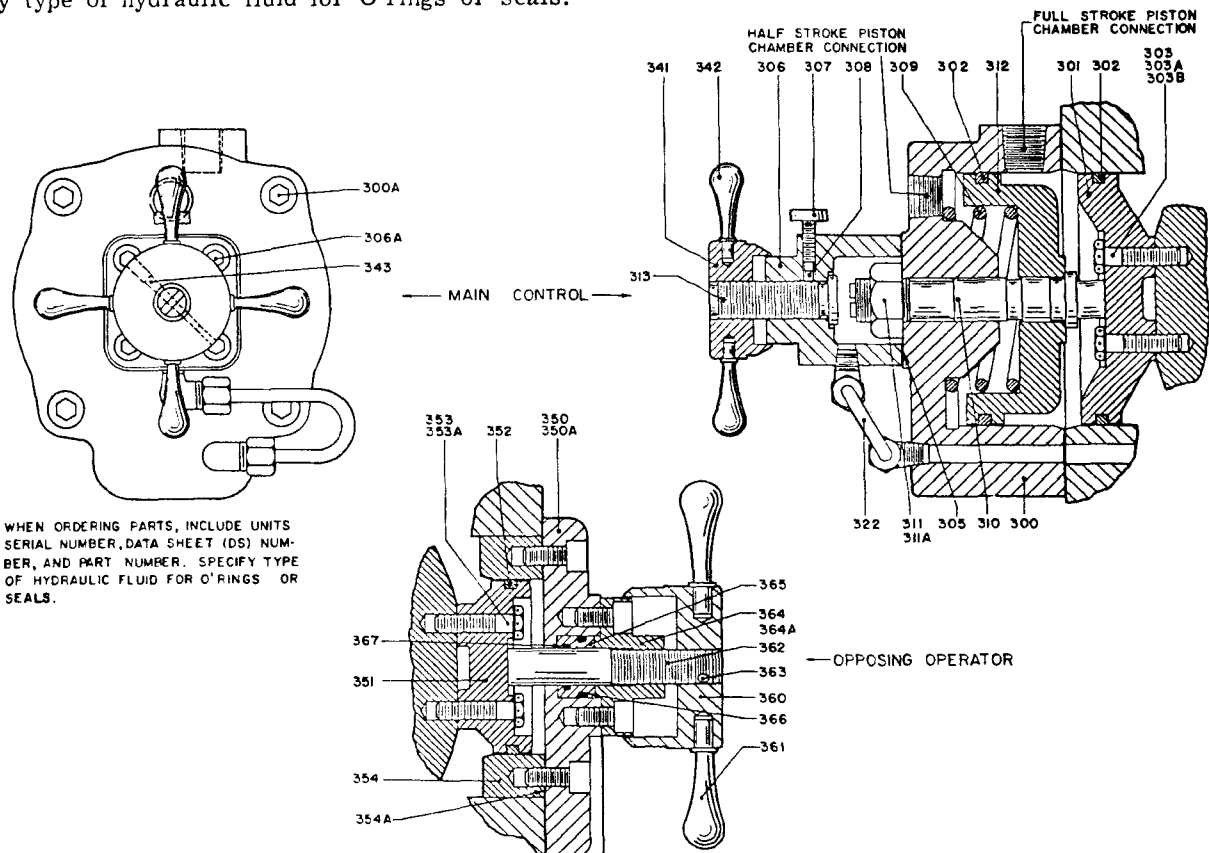
IX. PARTS LIST

Part No.	Description	Part No.	Description	Part No.	Description
300.	Housing, Control	310.	Screw, 1/2 Stroke Adj.	353A.	Gasket, Screw
300A.	Screw, Socket Head Cap	311.	Nut, Adjust.	353B.	Wire, Locking
301.	Piston, Control	311A.	Keeper	354.	Cylinder, Adapter
302.	Ring, Piston	312.	Piston, 1/2 Stroke	354A.	Gasket, Adapter
303.	Screw, Piston	313.	Screw, Stroke Adj.	360.	Knob, Contr. Adj.
303A.	Gasket, Screw	322.	Assembly, Tubing w/fittings	361.	Handle, Contr. Knob
303B.	Wire, Locking	341.	Knob, Control Adj.	362.	Screw, Adjusting
305.	Gasket, Gland	342.	Handle, Knob	363.	Pin, Taper
306.	Gland, Adj. Screw	343.	Pin, Taper	364.	Gland, Adj. Screw
306A.	Screw, Socket Head Cap	350.	Housing, Oppos. Oper.	364A.	Screw, Sock. Hd. Cap
307.	Screw, Thumb	350A.	Screw, Sock. Hd. Cap	365.	Sleeve
308.	Plug, Brass	351.	Piston, Oppos. Control	366.	Seal, O'ring
309.	Spring, 1/2 Stroke Piston	352.	Ring, Piston	367.	Seal, O'ring
		353.	Screw, Piston		

O'RING SIZES (Cross Section x O.D. Duro ± 5)

Part No.	Size	12	90	Size	35	90
366.	1/8	x 1-1/4	90	1/8	x 1-1/2	90
367.	3/32	x 15/16	90	1/8	x 1-1/4	90

When ordering parts, include units serial number, data sheet (DS) number and part number. Specify type of hydraulic fluid for O'rings or seals.



Parts Drawing. Oilgear Special "DR" Three Position Control. (DS-947606 504182).

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