



INSTRUCTIONS

OILGEAR TYPE "S" HANDWHEEL CONTROL

FOR TYPE "D & DC" UNITS

BULLETIN 947101A

REFERENCE INSTRUCTION BULLETINS

Type "D" Pumps w/o Controls-----947000

Type "DC" Transmissions w/o Controls-----967900

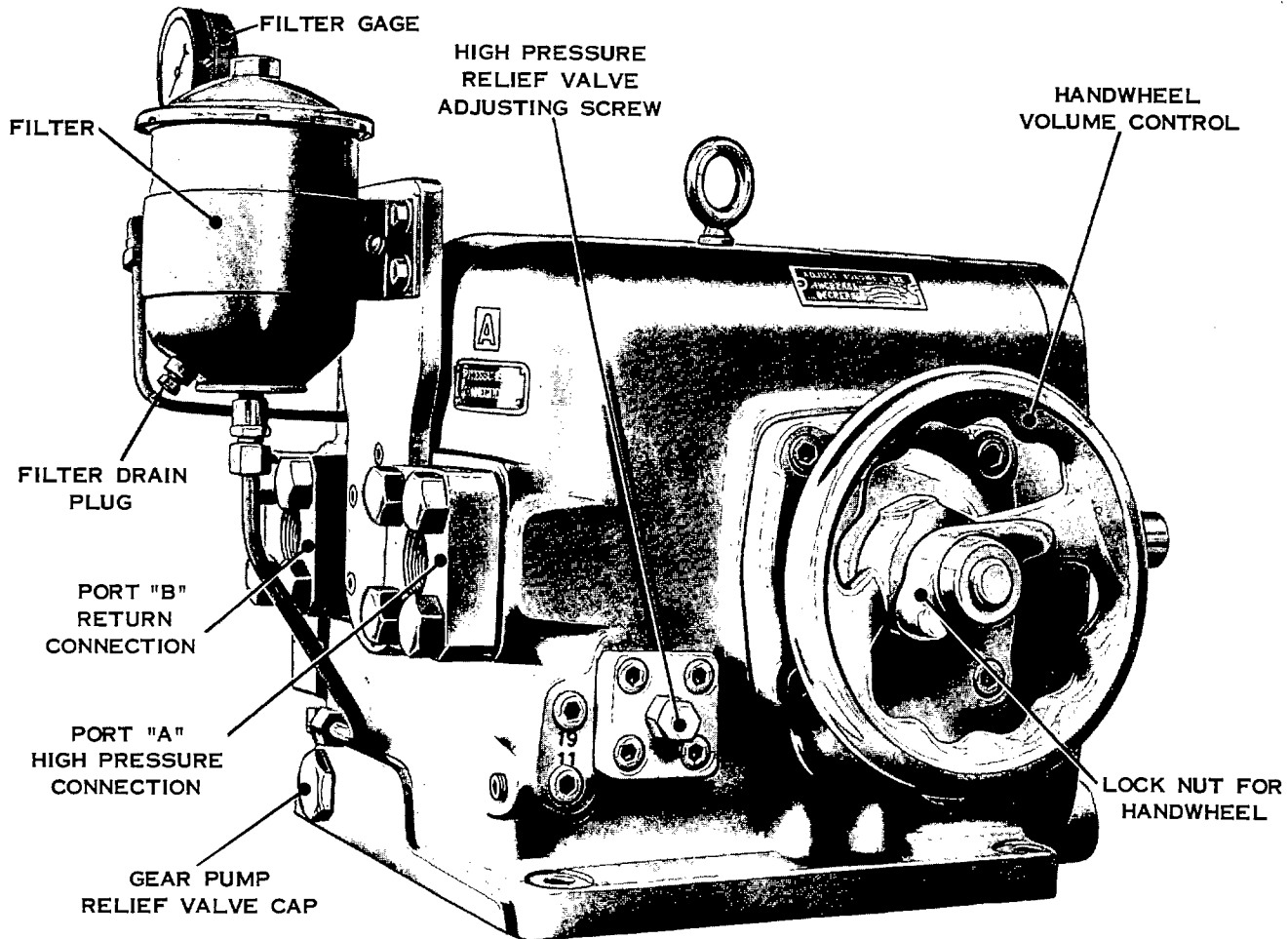


Figure 1. Typical "S" Control on Type "D" Pump. (53263).

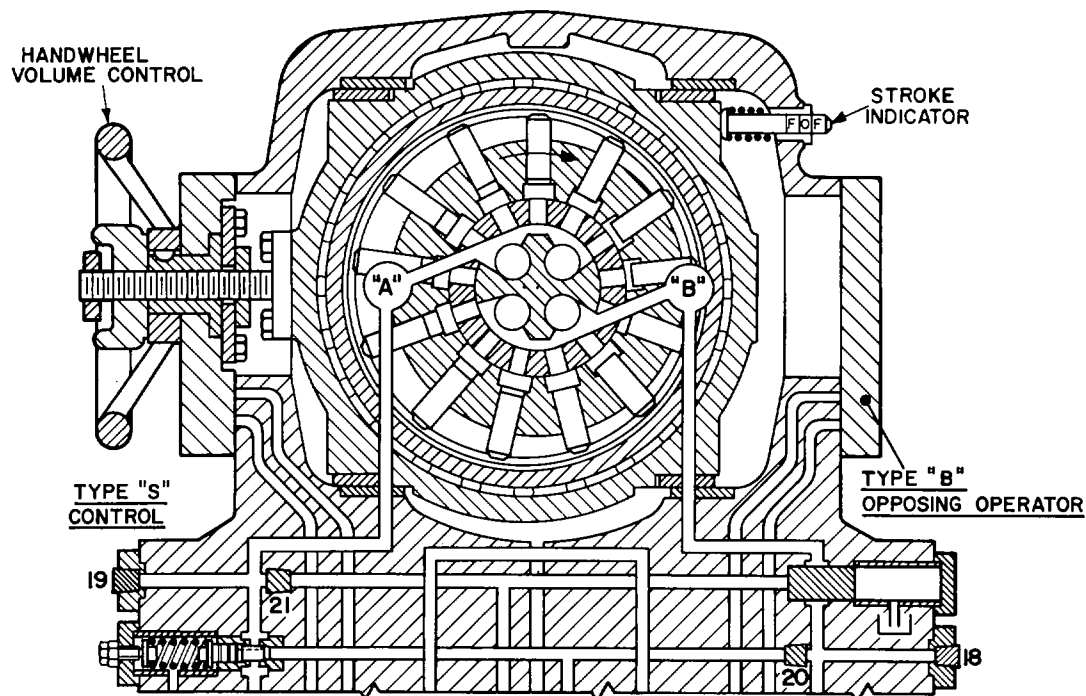
TO THE USER AND OPERATOR OF OILGEAR "S" CONTROLLED UNITS:

These instructions are printed to simplify and minimize your work of operating and maintaining Oilgear "S" controlled units. Your acquaintance with the construction, principle of operation and characteristics of these units will help you obtain optimum performance, reduce shutdowns and increase service life. We feel confident the unit will operate to your satisfaction if these instructions are adhered to. Some controls have been modified from those described in this bulletin for specific applications.

I. CONSTRUCTION.

The control consists of a large handwheel (301) keyed (310) to an internally threaded operating nut (308). An adjusting screw (302) is threaded thru the operating nut and secured to the units slideblock. A winged

lock nut (306) locks control screw in place. The "S" control is normally mounted on the left side of case (facing input driveshaft) and a blank flange type "B" opposing operator is mounted on right side of case. See "Standard Opposing Operators." Some units may be equipped with other opposing controls or operators to provide additional functions.



SEE BASIC UNIT INSTRUCTIONS FOR BALANCE OF CIRCUIT

Figure 2. Cutaway Circuit Diagram of "S" Controlled Units. DS-947120-C (53946-C)

II. PRINCIPLE OF OPERATION. (Refer to figure 2)

See reference instruction bulletin for radial piston unit principle of operation. In operation, turning the handwheel turns the operating nut locked to it. Operating nut is retained in the control housing so, as it rotates, the screw travels in or out thru it. Thus, any setting from zero to full displacement can be made by revolving the handwheel. Stop collars limit movement of adjusting screw. Lock nut prevents handwheel or adjusting screw from creeping. Normally, "S" controls are used on one-way units, but some special controls with longer adjusting screws are made for two-way units.

III. SPECIFICATIONS.

Size	Maximum Eccentricity	Turns for zero to full
2	.150	2.1
4	.198	2.77
8	.187	2.6
12	.250	3.5
20	.250	3.5
35	.375	5.25
60	.375	4.5
100	.406	4.875
150	.531	6.375

IV. MALFUNCTIONS & CAUSES.

A. UNRESPONSIVE CONTROL.

1. Worn control operating nut or adjusting screw.
2. Adjusting screw not secured to slideblock.
3. Operating nut not secure in control housing.
4. Stop collars not properly set.
5. Handwheel not keyed to operating nut.

B. CONTROL WORKS HARD. Stop unit and turn handwheel. It's difficult to turn handwheel when unit is under load.

1. Worn or dirty operating nut or adj. screw threads.
2. Binding slideblock (see reference bulletin).

V. ADJUSTING & TESTING.

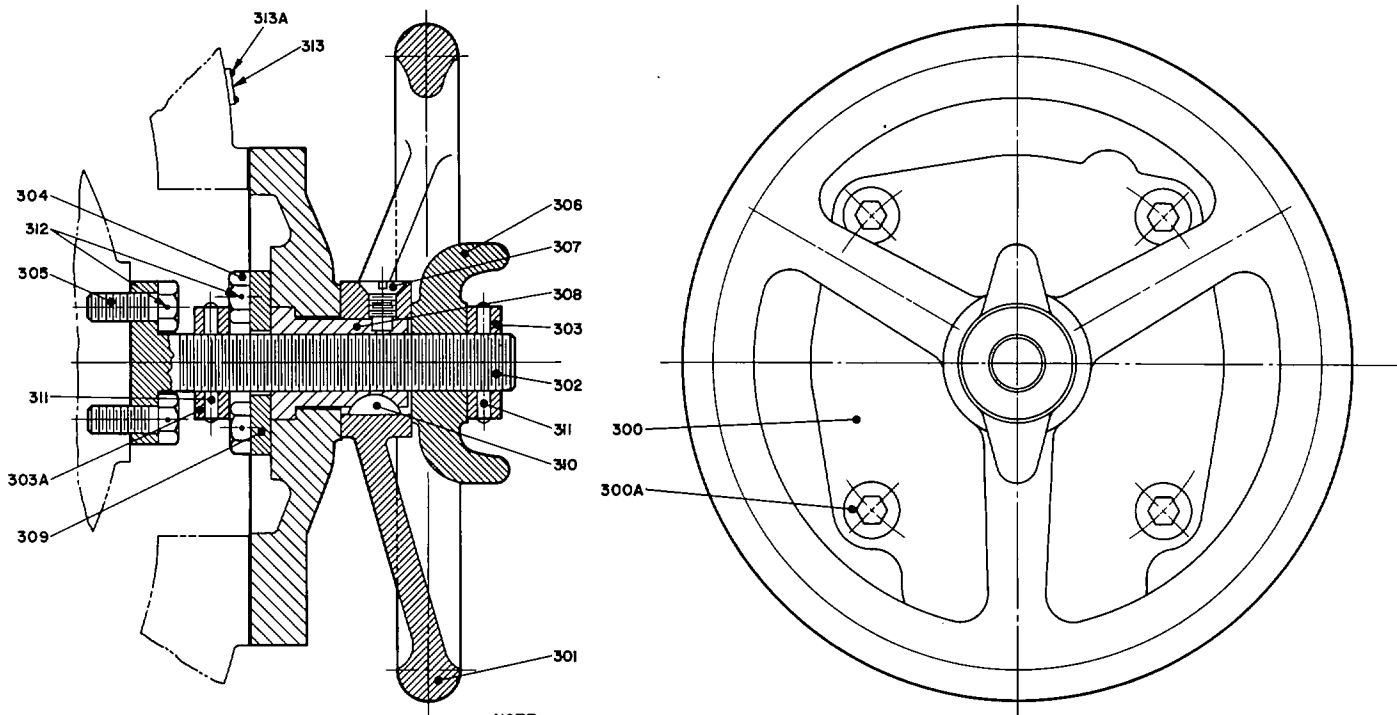
A. Units built for delivery from port A or counter-clockwise output rotation (transmission). With control turned all the way counter-clockwise, the outer stop collar (303) should be flush against the lock nut (306), the indicator stem at "O" and volume or speed should be zero. With handwheel all the way clockwise, indicator should be at "F" and volume or speed should be maximum.

B. Units built for delivery from port B or clockwise output rotation (transmission). With control turned all the way clockwise, the indicator stem should read "O" and volume or speed should be zero. With handwheel turned all the way counter-clockwise, the outer stop collar (303) should be against the lock nut (306), indicator stem at "F" and volume or speed should be maximum. If control settings and indicator stem markings do not correspond, it may be necessary to recalibrate control by repositioning inner or outer stop collars. See VIII. "Assembly" for repositioning.

VI. DISASSEMBLY.

Observe positions of all parts, seals, gaskets, and plugs during disassembly. Tap out taper pin (311) in outer stop collar (303) and unscrew stop collar and lock nut (306) from adjusting screw (302). Remove screws (300A) and turn housing (300) counter-clockwise until housing and handwheel (301) are free from adjusting screw. Loosen handwheel retaining

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NOTE:
 WHEN ORDERING REPLACEMENT PARTS
 BE SURE TO INCLUDE UNITS SERIAL NO.,
 DATA SHEET (DS) NO. & PART NO.
 SPECIFY TYPE OF HYDRAULIC FLUID
 FOR O'RINGS & SEALS.

Figure 3. Parts Drawing, Type "S" Control. DS-947100-E (51719-E)

IX. PARTS LIST

Part No.	Description	Part No.	Description
300.	Housing, Control	307.	Screw, Retaining
300A.	Screw, Sock. Hd. Cap	308.	Nut, Operating
301.	Handwheel	309.	Plate, Cover
302.	Screw, Adjusting	310.	Key, Woodruff
303.	Collar, Outer Stop	311.	Pin, Taper
303A.	Collar, Inner Stop	312.	Wire, Lock
304.	Screw, Cover Plate	313.	Plate, Rotation
305.	Screw, Cap	313A.	Screw, Drive
306.	Nut, Lock		

When ordering replacement parts, be sure to include part no., data sheet (DS) numbers and units serial number. Specify type of hydraulic fluid used.

screw (307) and remove handwheel from operating nut (308). Clip lock wire and remove cover plate screws (304). Remove cover plate (309) and operating nut (308) from the inside of control housing. Clip locking wire and remove capscrews (305) and adjusting screw from slideblock. Tap out taper pin (311) and unscrew inner stop collar (303A) from control screw.

VII. INSPECTION.

Clean all parts thoroughly. Inspect all components of control for signs of wear or undue stress. Replace any part which appears unduly worn or any seals or gaskets which appear deteriorated.

VIII. ASSEMBLY.

If a new adjusting screw (302) is being installed or the control is being recalibrated, it will be necessary to drill holes in adjusting screw to position the stop collars correctly. Position the slideblock at "F" on the indicator stem. Secure adjusting screw (302) to slideblock. Thread the inner stop collar (303A) on adjusting screw so its outer face extends beyond control housing flange on units case the thickness of compressed control housing gasket. Remove adjusting screw from slideblock and drill thru adjusting screw using collar for a guide. Ream for taper and pin collar in position.

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If original adjusting screw is re-installed, thread inner stop collar (303A) on adjusting screw and lock with a taper pin (311). Bolt adjusting screw (302) to slideblock and secure with new soft iron wire. Insert operating nut (308) in control housing (300) and fasten cover plate (309) with screws (304) and lock with new soft iron wire. Install Woodruff key (310) in operating nut (308) and slip handwheel on operating nut. Secure handwheel with retaining screw (307). Install control assembly and gasket by turning the assembly clockwise along the adjusting screw (302). Fasten control housing and gasket to case. Thread lock nut (306) and outer stop collar (303) on adjusting screw (302) and pin stop collar in position.

If a new adjusting screw was installed or recalibrated, turn handwheel until indicator is at "0." Turn lock nut (306) until it is tight against the handwheel and outer stop collar (303) is tight against the lock nut. Drill and ream a hole thru control screw and secure outer stop collar with taper pin (311). Turn the handwheel all the way clockwise & then counter-clockwise while observing the indicator stem to be sure the slideblock moves from "0" to "F."