

SERVICE INSTRUCTIONS

Bulletin 947516

HYDURA TYPE "CF" LOAD SENSOR CONTROLS FOR "PVW" AND "PVWH" PUMPS

PURPOSE OF INSTRUCTIONS:

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

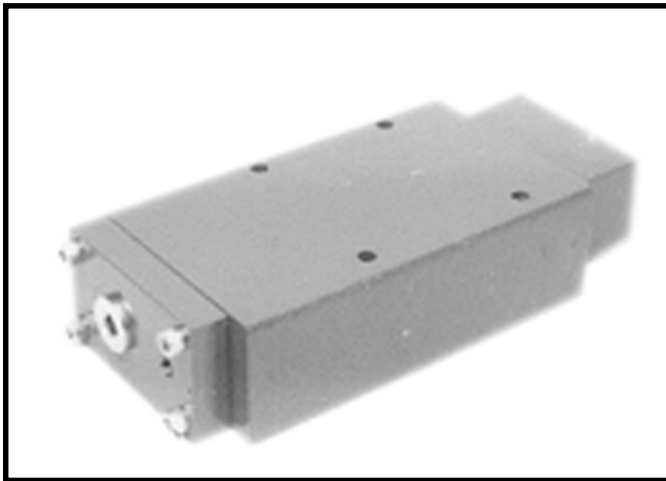
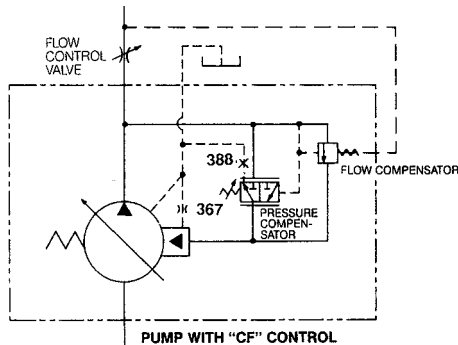


Figure 1. Typical "CF" control for Hydura "PVW" and "PVWH" pumps (N89-002-14).



ASA diagram for "CF" control shown with typical pump.

PRINCIPLE OF OPERATION

Refer to figure 3. "CF" load sensing controlled pumps match flow and pressure to load demand. As the load on the system increases, pump pressure will also increase but the flow (volume) will remain constant. The control senses and maintains a constant pressure differential across an orifice (flow control valve) in the delivery line resulting in pump flow becoming a function of valve position. For a given flow control valve setting, the pump will maintain a constant flow regardless of changes in the pump input speed and/or working pressure. The flow compensator has no tank port therefore, the pressure compensator valve takes priority and short strokes the pump when the compensator setting is reached. As load pressure falls below the compensator setting, the load sensing function automatically resumes. A remote pressure compensating control option can be accomplished by using an Oilgear sequence type compensator module remote from the control. Use module L51542 for units rated continuously for 4000 psi or less, use L51542-1 for units rated above 4000 psi.

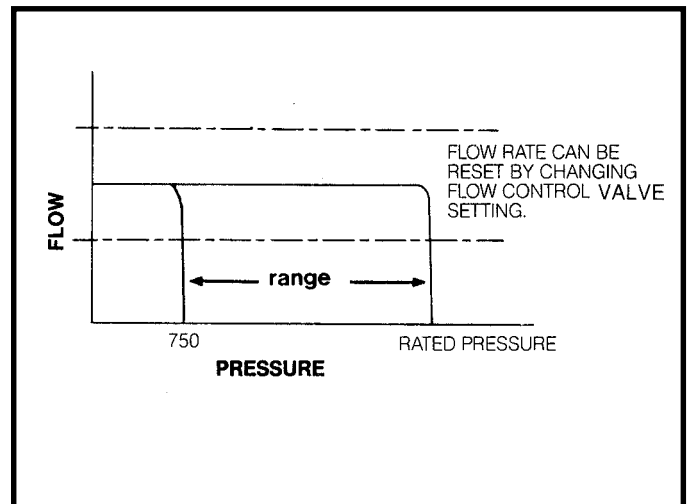


Figure 2. Curve indicating flow vs pressure for "CF" type controls.

REFERENCE MATERIAL

DESCRIPTION	BULLETIN
Fluid Recommendations	90000
Filtration Recommendations	90007
"PVW" & "PVWH" Variable Delivery Pumps.	SW-I or 947015

THE OILGEAR COMPANY

2300 So. 51st. Street
Milwaukee, Wisconsin 53234

PARTS USED IN THIS ASSEMBLY ARE PER HYDURA SPECIFICATIONS. USE HYDURA PARTS TO ENSURE COMPATIBILITY WITH ASSEMBLY REQUIREMENTS. WHEN ORDERING REPLACEMENT PARTS, INCLUDE TYPE DESIGNATION, SERIAL NUMBER STAMPED ON NAMEPLATE, ITEM NUMBER AND BULLETIN NUMBER. WHEN ORDERING O-RINGS AND SEALS, SPECIFY TYPE OF HYDRAULIC FLUID USED.

PARTS LIST

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
303	Screw, HHC Mounting	374	Screw, SHC
355	O-ring	375	O-ring
356	O-ring	376	O-ring
357	Nut, Jam	377	Screw, SHC
358	Screw, Pressure Adjusting	** 378	Stop, Control Piston
359	Plug, Pipe, NPT	379	O-ring
360	Plug, SAE	380	O-ring
361	Plug, SAE	381	Adapter, Control Pressure Stop
362	Piston, Control	+ 382	Sleeve, Control Pressure Stop
363	Spool, Pressure Compensator	383	Housing, Flow Compensator
364	Seat, Spring	384	Spool, Flow Compensator
365	Gasket, Cover	385	Plug, Pipe
366	Spring, Pressure Compensator	386	Spring, Flow Compensator
* 367	Orifice, Control Piston	387	Shims
368	Housing, Control	388	Plug, (Set Screw)
369	Gasket, Control Housing	390	Nut, Jam
370	Spring, Control Piston	391	Stem, Minimum Volume Stop
371	Plug, Control	932	Adapter, Minimum And Maximum Stop
372	Cover, Control Housing	393	O-ring
373	Pin, Control Piston		

* Spring side: For sizes 15 thru 60 on "PVW" models; for sizes 11 thru 20 on "PVWH" models. Outer Side: For sizes 06 and 10 on "PVW" models; For sizes 06, 10 and 25 thru 60 on "PVWH" models.

**For sizes 15 thru 60 on "PVW" models; For sizes 11 thru 60 on "PVW" models.

+ For size 34 thru 60 on "PVW" models ONLY; Exists as one piece (Item 362) on "PVWH" models.

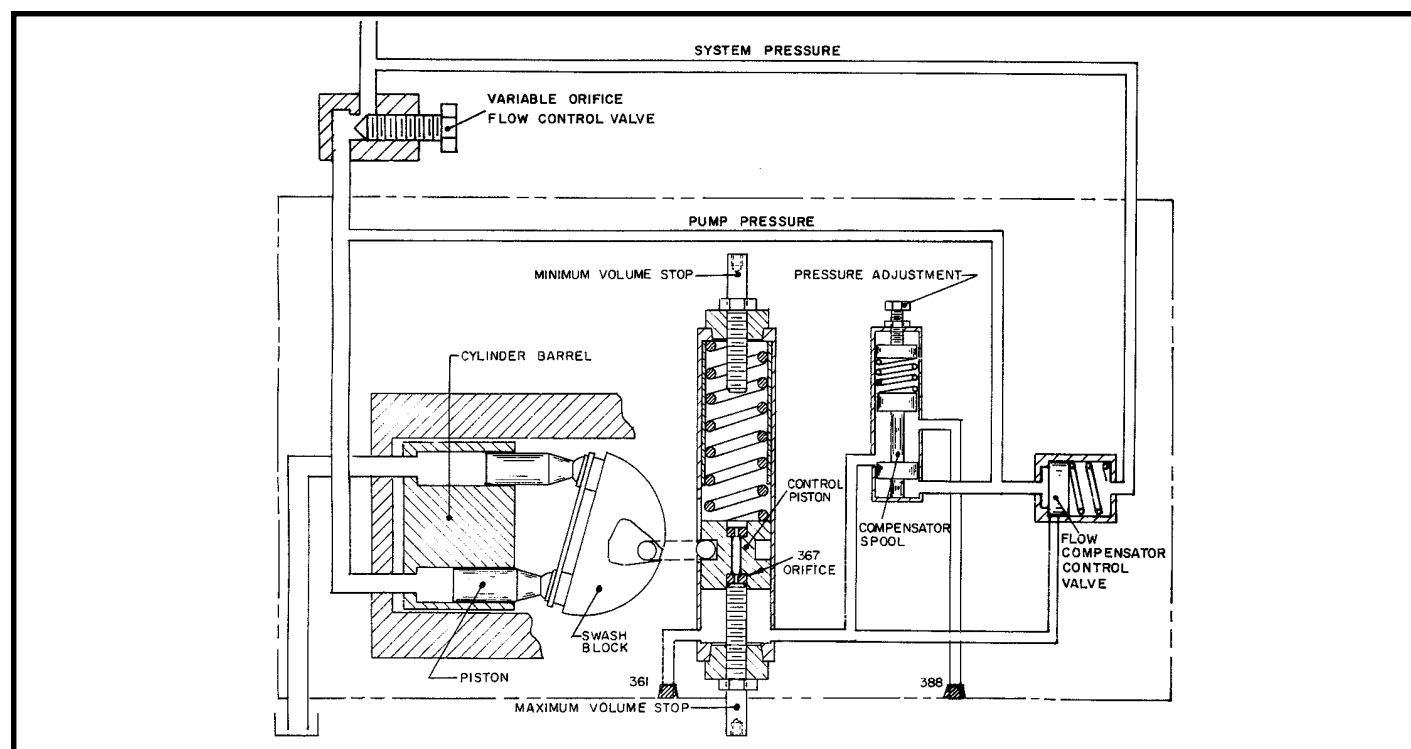


Figure 3. Diagram illustrating swashblock at full delivery and type "CF" control at maximum volume stop.

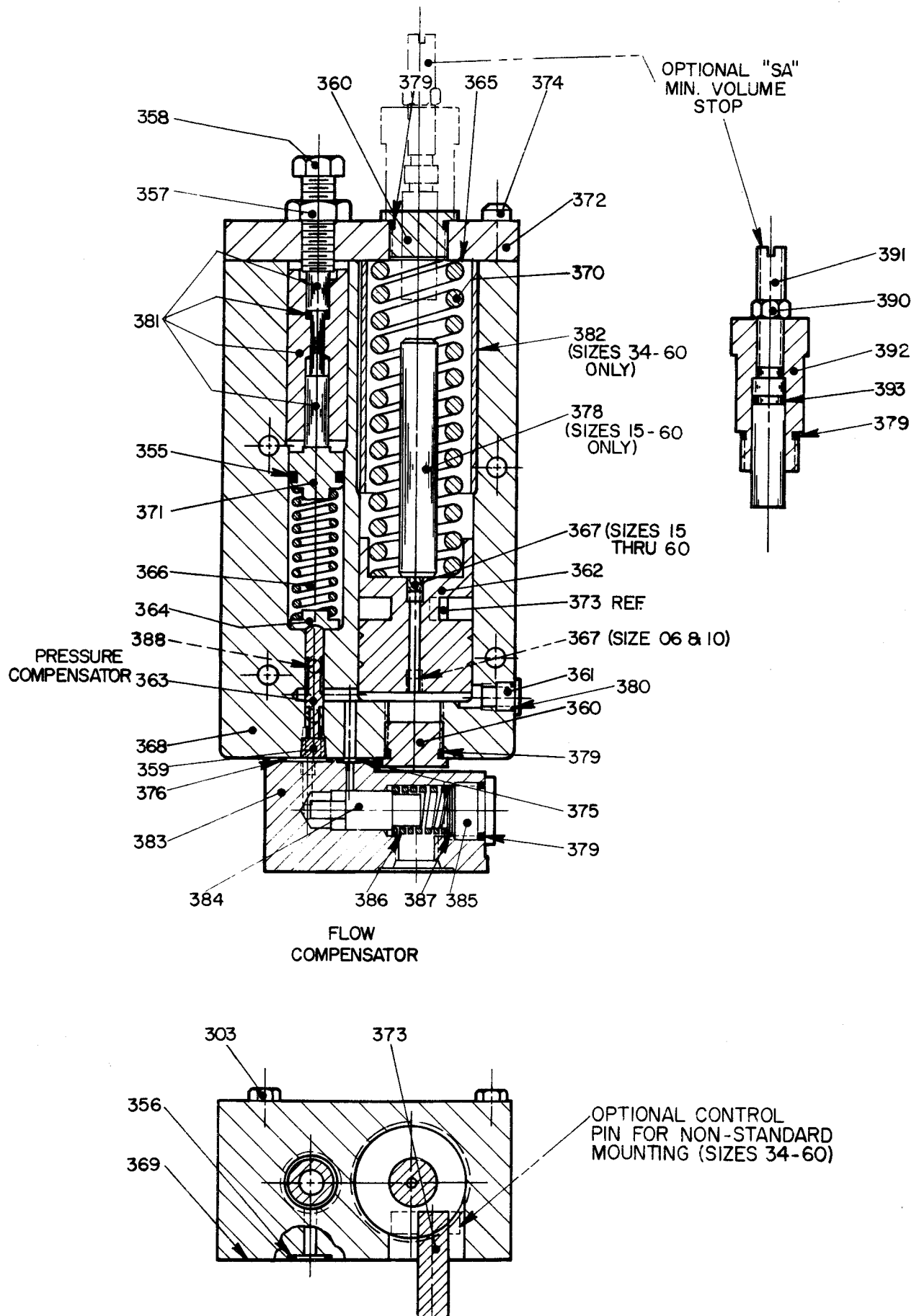


Figure 4. Parts drawing, Hydura type "CF" control (509816-B).

LINE MOUNTED REMOTE PRESSURE CONTROL FOR "CF" TYPE PUMP CONTROLS

Refer to figure 5. Remote operation of type "CF" controls can be accomplished by installing a Hydura remote compensator module at the location shown in the control circuit. Use module L51542 for units rated continuously for 4000 psi or less, use L51542-1 for units rated above 4000 psi.

PRINCIPLE OF OPERATION

When system pressure reaches the setting of the remote compensating module, the module opens and ports fluid into the control piston chamber via the maximum volume stop hole. When a maximum volume stop is used, a plug (number 361 on "CF" controls) must be removed to allow fluid to be ported to the control piston chamber. This fluid flow causes the pump to destroke and maintain remote pressure setting.

MINOR CHANGES TO PUMP CONTROL

The compensator setting on the pump control must be set at least 200 psi (13,8 bar) higher than required maximum system pressure setting of the remote compensator module. Doing this will prevent the pump compensator control from interacting with the remote adjustable compensator module.

NOTE:

The compensating spool drain is plugged (388) at the factory, therefore, a set screw is not necessary and the response time remains unchanged.

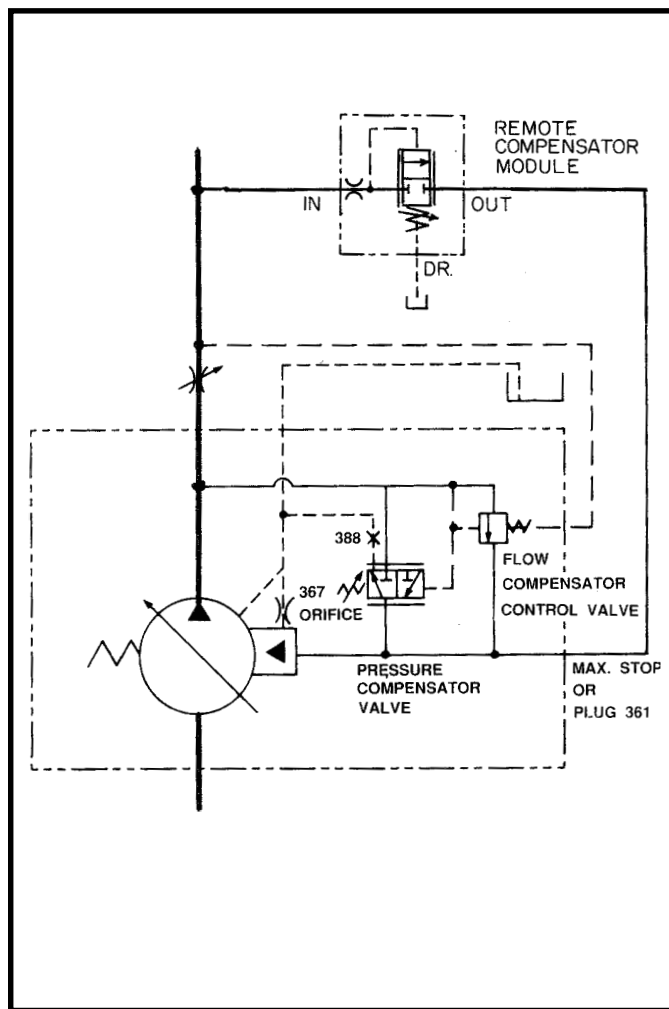


Figure 5. "CF" control circuit with remote pressure control

NOTES: