

SERVICE INSTRUCTIONS

HYDURA TYPE "CN" AND "CL" PRESSURE COMPENSATOR CONTROLS FOR "PVW" AND "PVWH" PUMPS

PURPOSE OF INSTRUCTIONS:

These instructions have been prepared to simplify and minimize your work of operating HYDURA type "CN" and "CL" 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.

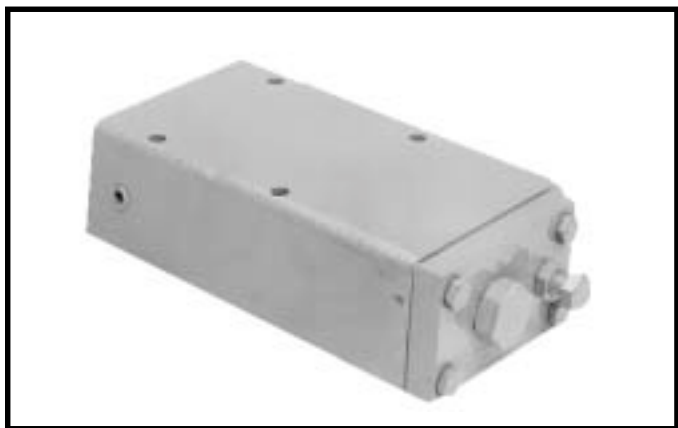
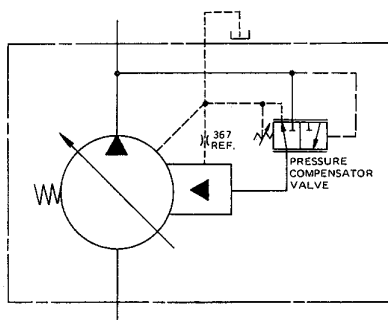


Figure 1. Typical "CN/CL" type control for HYDURA "PVW" pumps (55160).



ASA diagram for "CN/CL" control shown with typical pump.

I. PRINCIPLE OF OPERATION

Refer to figure 3. The pressure compensator control ensures maximum pump flow until the system reaches the controls preset pressure setting. The control then regulates the pump output flow to match the flow requirements of the system while maintaining the preset output pressure. When the system pressure exceeds the compensator control setting, or the system no longer requires flow, the control destroys the pump while maintaining the preset pressure. "CN" controls can be adjusted from 750 psi (51,7 bar) working pressure up to the maximum pressure rating of the applicable pump, "CL" controls can be adjusted from 250 psi (17,2 bar) working pressure up to a maximum of 1500 psi (103,4 bar). Remote pressure compensating control option can be accomplished by using an adjustable sequence type valve (separate) remote from control.

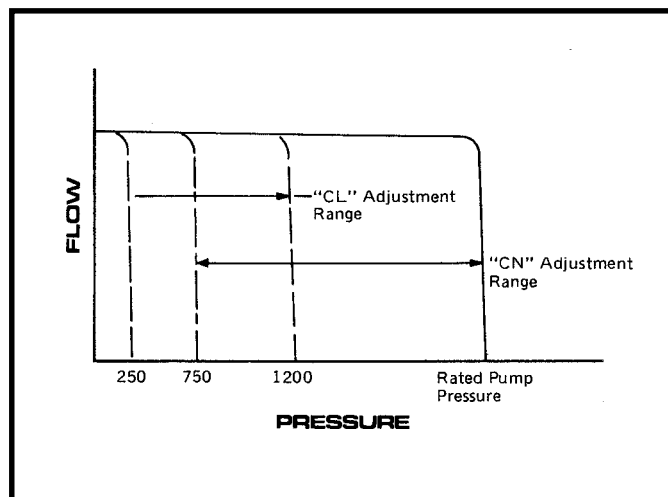


Figure 2. Curve indicating flow vs pressure for "CN/CL" type controls.

REFERENCE MATERIAL

DESCRIPTION	BULLETIN
Fluid Recommendations	90000
Filtration Recommendations	90007
"PVW" and "PVWH" Variable Delivery Pumps	947015

THE OILGEAR COMPANY

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PARTS USED IN THIS ASSEMBLY ARE PER HYDURA SPECIFICATIONS. USE HYDURA PARTS TO INSURE 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.

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
303	Screw, HHC Mounting	370	Spring, Control Piston
355	O-ring	371	Plug, Control
356	O-ring	372	Cover, Control Housing
357	Nut, Jam	373	Pin, Control Piston
358	Screw, Pressure Adjusting	374	Screw, SHC
359	Plug, SAE	375	O-ring
360	Plug, SAE	376	Assembly, Pressure Compensator Adjusting
361	Plug, SAE	380	O-ring
362	Piston, Control	381	Stop, Control Piston (Sizes 15-60 Only)
363	Spool, Pressure Compensator	382	Sleeve, Control Piston Stop (Sizes 34-60 Only)
364	Seat, Spring	390	Nut, Jam
365	Gasket, Cover	391	Stem, Minimum Volume Stop
366	Spring, Pressure Compensator	392	Adapter, Minimum And Maximum Volume Stem
367	Orifice, Control Piston (.040)	393	Stem, Maximum Volume Stop
368	Housing, Control	394	O-ring
369	Gasket, Control Housing		

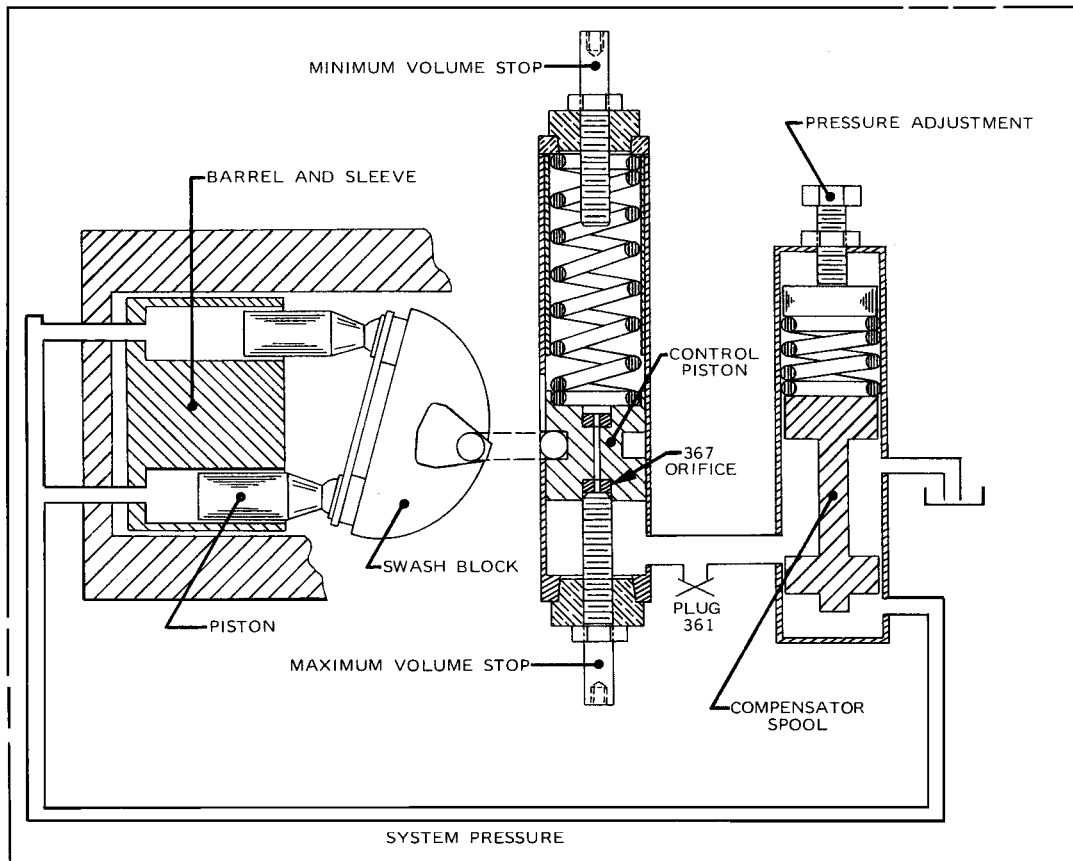


Figure 3. Diagram illustrating swashblock at full delivery and type "CN/CL" control at maximum volume stop.

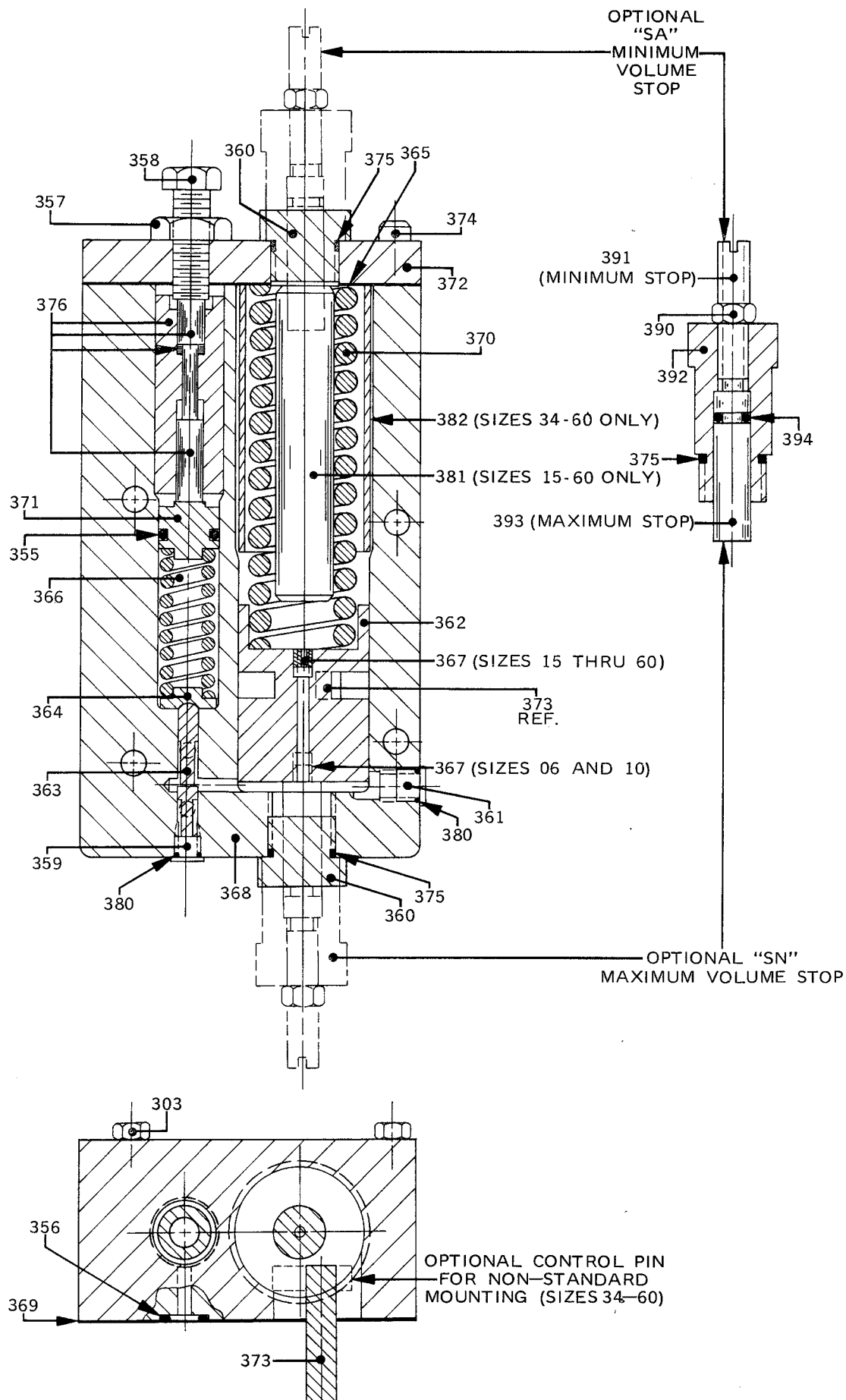


Figure 4. Parts drawing, HYDURA type "CN/CL" control (509820-B).

LINE MOUNTED REMOTE PRESSURE CONTROL FOR TYPE "CN/CL" PUMP CONTROLS

Refer to figure 5. Remote operation of "CN/CL" controls can be accomplished by installing a HYDURA remote compensator valve (Number LM-HSS-801-35) at the locations shown in the control circuit.

REMOTE PRESSURE CONTROL OPERATION:

When system pressure reaches the setting of the remote pressure compensating valve, the valve 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 "CN/CL" 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 system pressure.

MINOR CHANGES TO PUMP CONTROL:

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

NOTE:

Maximum volume stop adjusts from zero stroke to full stroke as follows:

SIZE	NUMBER OF TURNS
04/06/10	11 TURNS
11/15/20	14.5 TURNS
25/34/45/60	18 TURNS

REMOTE COMPENSATOR/MINIMIZING CASE LEAKAGE:

Refer to figure 6. To minimize case leakage and power loss, plug the drain port of the compensating spool (located on the underside of the control body) with a number 10-24 setscrew. This will result in maintaining the standard "CN" or "CL" control case leakage although response time will decrease slightly by a few milliseconds. Standard response time, if needed, can be obtained by installing a .040" orifice in the compensating spool drain instead of plugging it.

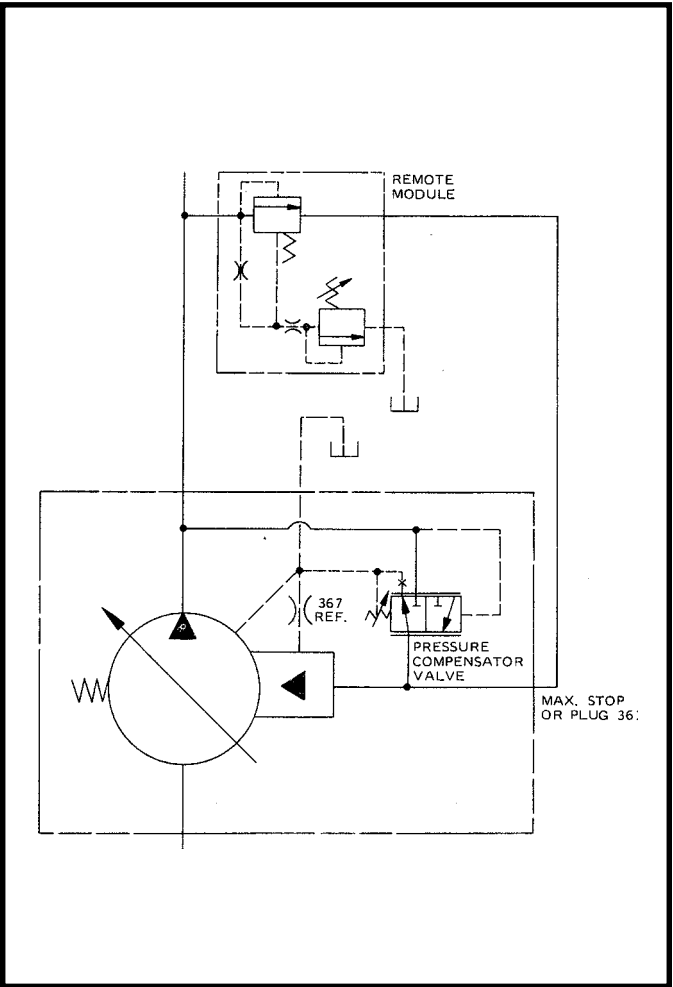


Figure 5. "CN/CL" control circuit with remote pressure control..

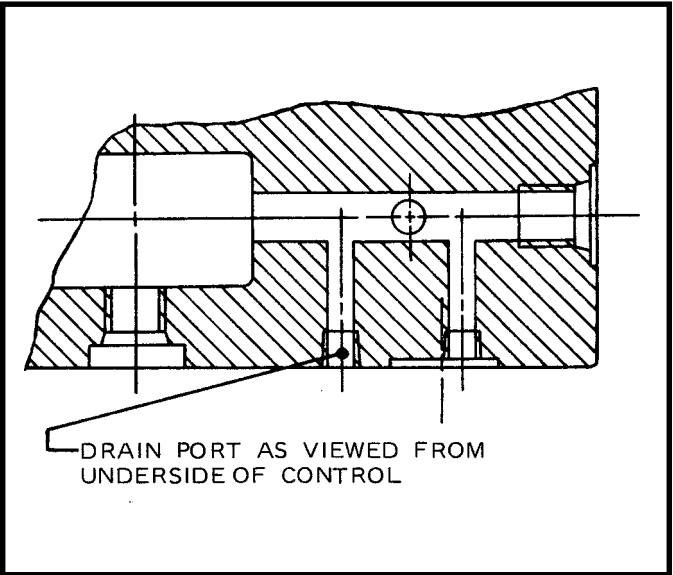


Figure 6. "CN/CL" control drain port location.