SERVICE INSTRUCTIONS

OILGEAR TYPE "HP" HORSEPOWER LIMITER CONTROL FOR "PVWH" AND "PVW" PUMPS

PURPOSE OF INSTRUCTIONS

These instructions have been prepared to simplify and minimize your work of operating Oilgear type "HP" 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 make without notice.

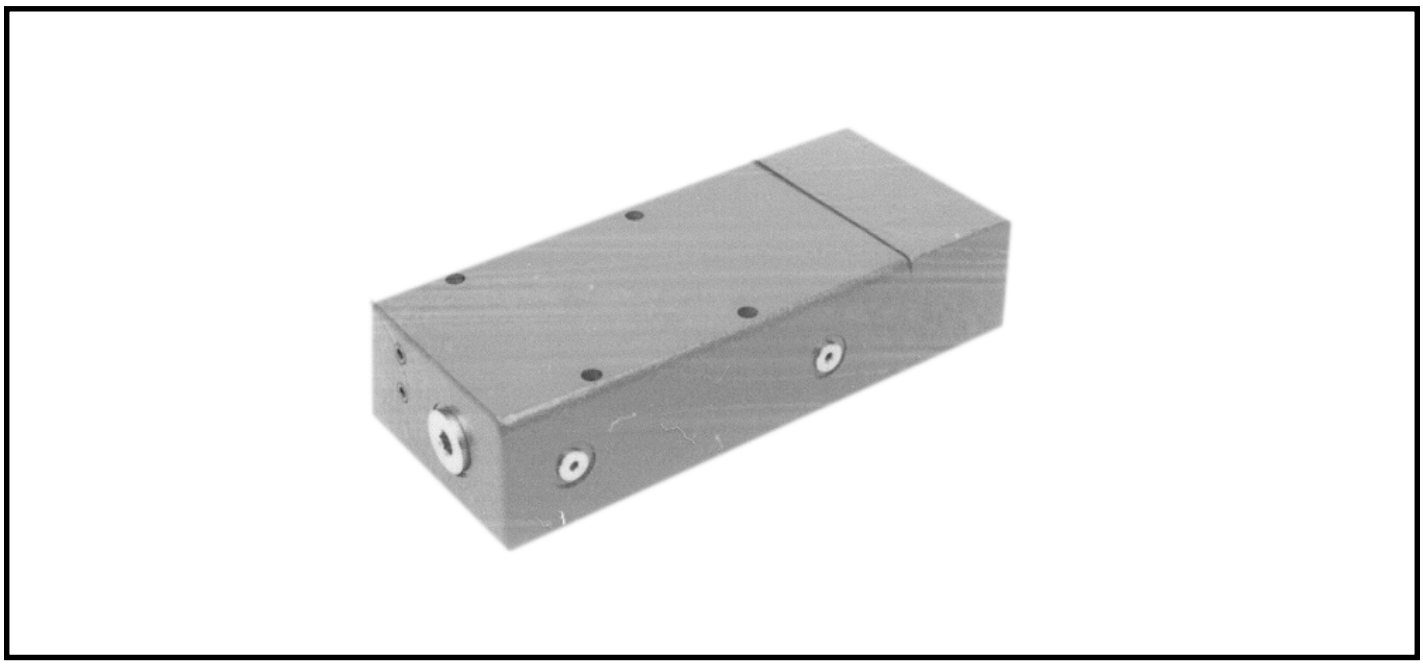

Figure 1. Typical "HP" Control for Oilgear "PVWH" and "PVW" Pumps (N89-002-16).

REFERENCE MATERIAL

Fluid Recommendations	Bulletin	90000
Filtration Recommendation	Bulletin	90007
Piping Information	Bulletin	90011
"PVWH" and "PVW" Open-Loop Pump .	Bulletin	947015

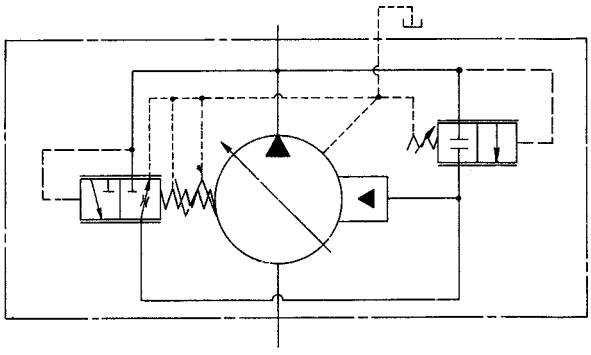

Figure 2. ASA diagram for HP control with "PVWH" Pumps (510335).

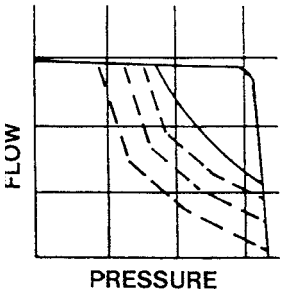

Figure 3. Typical Flow vs. Pressure Curves

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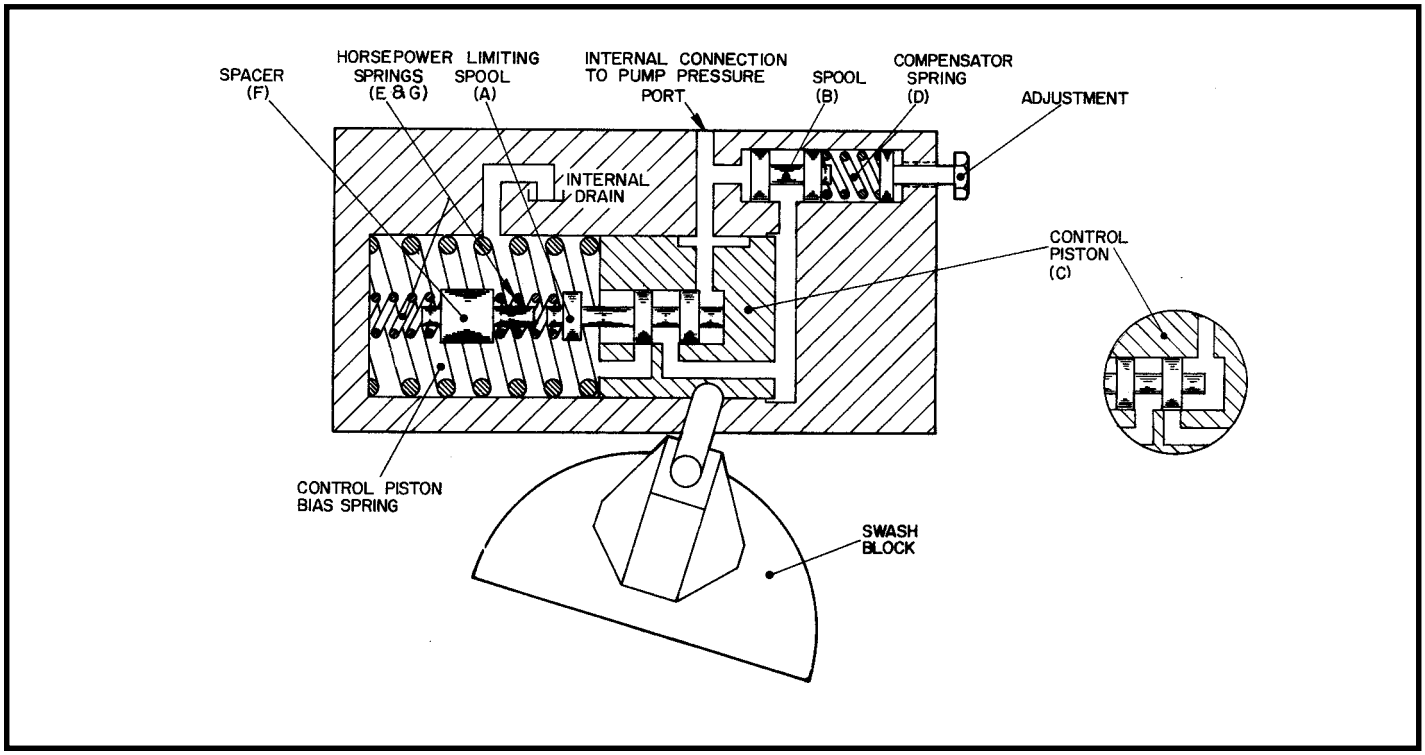

Figure 4. Cut-a-way Diagram of "HP" Horsepower Limiter Control (5V-11414-L).

PRINCIPLE OF OPERATION

Refer to figure 4. Pumps with horsepower limiter control optimize input power without overloads. The control automatically reduces output volume as system pressure rises, thereby limiting input horsepower consumption.

With swashblock at angle shown, pump delivers maximum volume. A rise in system pressure forces horsepower limiting spool (A) against horsepower limiting springs (E & G). Springs and spacer (F) are selected by Oilgear to match your individual horsepower limit requirements. As spool (A) moves against the spring, it allows flow to the area behind control piston (C) which forces it against control piston bias spring thus causing it to shift position and decrease swashblock angle (and pump delivery). The follow-up movement of the piston (C) over the spool (A) stops further flow to the area behind the piston, as well as compressing horsepower limiting springs, (E & G) thereby automatically increasing its resistance to pressure.

If system pressure continues to rise, the horsepower limiting spool (A) is again forced against the spring (E) and additional volume is directed behind control piston (C), which further reduces swashblock angle and pump output volume.

If the system reaches (adjustable) preset pressure, it forces the compensator spool (B) against compensator spring (D). Volume is now allowed to flow directly behind control piston (C) and reduces swashblock angle (and pump output volume) to a point just sufficient to maintain preset pressure on the system. Thus, the compensator overrides the horsepower limiting function.

Leakage is designed into the control to allow some of the volume behind the control piston (C) to slip past the limiting spool (A) to drain. Therefore, the control piston always has a tendency to increase the angle of swashblock (and pump delivery) unless it is replenished by opening of spool (A) to flow. Thus, the pump will increase output volume when system pressure is reduced.

A remote pressure compensating option can be accomplished by using an Oilgear sequence type compensator module remote from the control.

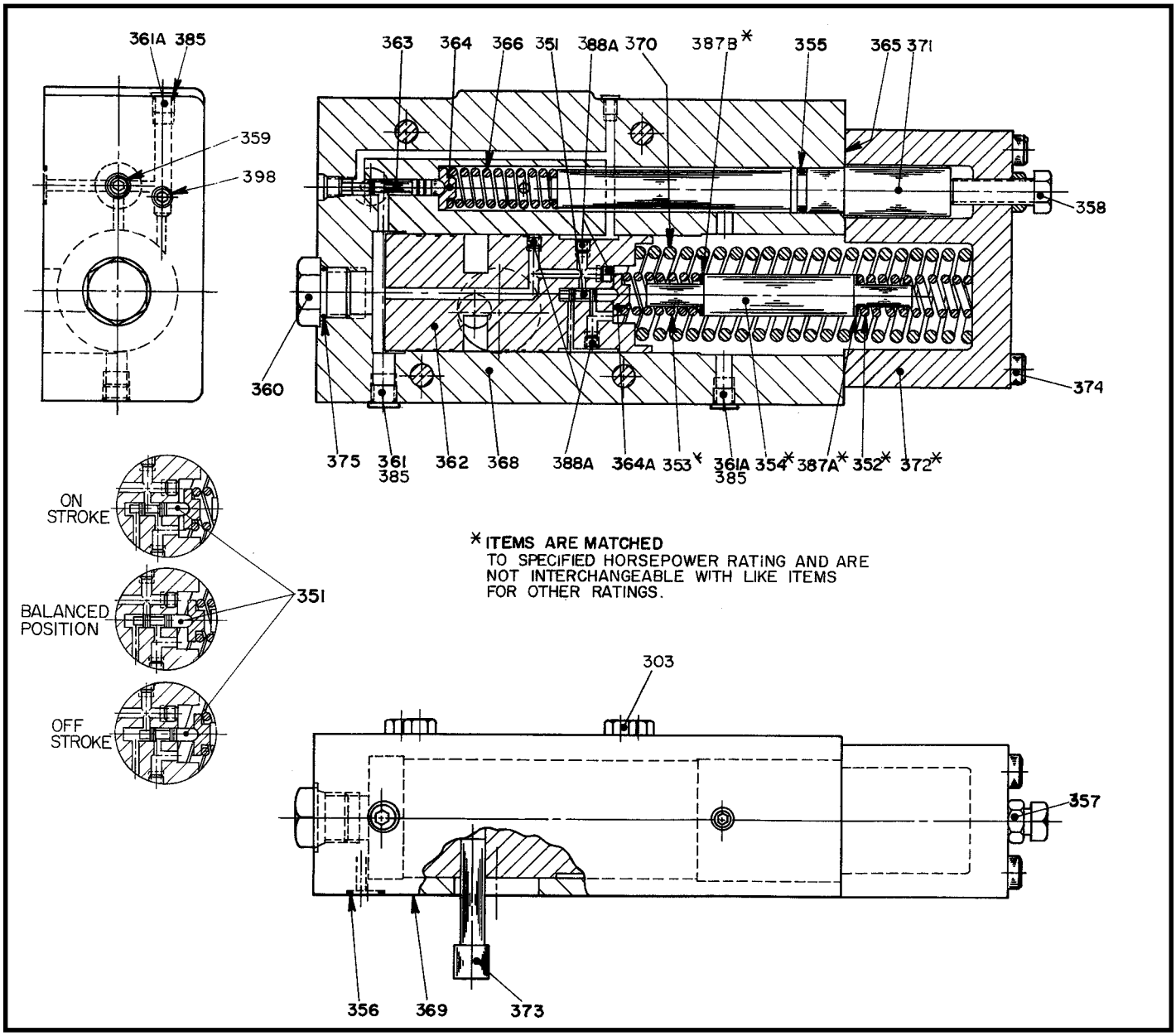

Figure 5. Parts Drawing, Oilgear Type "HP" Control (510335B).

PARTS LIST

Parts used in this 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	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
303	Screw, HHC Mounting	361	Plug, SAE	371	Plug, Control
351	Spool, Horsepower	361A	Plug, SAE	372*	Cover, Control
352*	Spring, Compression	362	Piston, Control	373	Pin, Control Piston
353*	Spring, Compression	363	Spool, Pressure Comp.	374	Screw, SHC
354*	Guide, Spring	364	Seat, Spring	375	Seal, O'ring
355	Seal, O'ring	364A*	Seat, Spring	385	Seal, O'ring
356	Seal, O'ring	365	Gasket, Cover	387A*	Shim
357	Nut, Heavy Hex.	366	Spring, Pressure Comp.	387B*	Shim
358	Screw, Compensator Adj.	368	Housing, "HP" Control	388A	Screw, Set
359	Plug, Pipe	369	Gasket, Control	398	Plug, Pipe
360	Plug, SAE	370	Spring, Control Piston		

* Item 373 thru 380 will vary for different horsepower ratings.

REMOTE CONTROL

Refer to figure 6. Remote operation of "HP" controls can be accomplished by installing an Oilgear remote compensator module at the location shown in the control circuit. Use L-51542 for units rated continuously for 3500 (241,4 bar) psi or less, use L-51542-1 for units rated above 3500 psi.

When system pressure reaches the setting of remote pressure compensator valve, the valve opens and ports fluid into the control piston cylinder via the port from which plug (360 or 361) has been removed. This fluid causes the pump to destroke.

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 remote adjustable compensator (sequence) module.

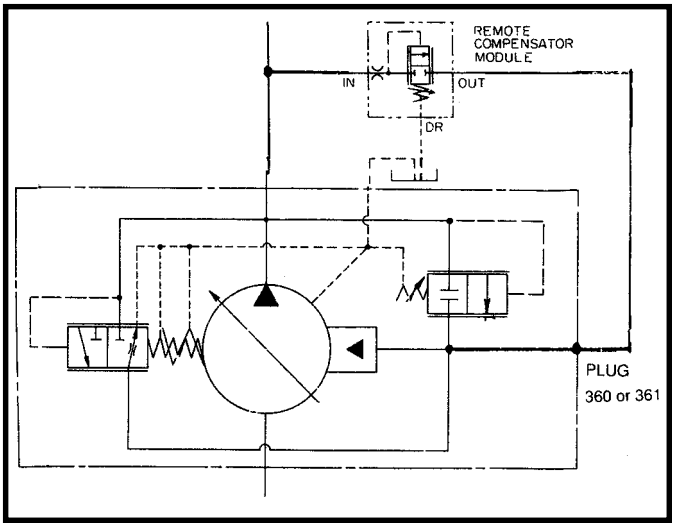

Figure 6. "HP" Control Circuit with remote pressure control.

NOTES:

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