Pressure Reducing Valve Adjustment

(SPC 50 Series)

80-387 (3-90) Printed in USA

1.1 Introduction

This valve is used to supply the steering control unit with pilot pressure. The valve is mounted directly to the steering control valve and is supplied by steering system pressure. Its output is adjustable from 100 to 200 psi.

A second function of the valve is to relieve the pilot supply pressure to tank when the main steering reaches a pre-determined point. The effect is an increase in steering effort when the steering cylinders have reached relief pressure (the end of their stroke).

1.2 Adjustment

1. Vent the hydraulic tank. This will reduce spillage when the hydraulic system is opened. Be sure to close the tank vent after the adjustment is completed.
2. Study Fig. 1 to identify the valve. Identify adjustment points "A" and "B" and gauge port "C".
3. Locate Adjustment point "A" (Fig. 1). This is the "cut-out" pressure relief. It must be temporarily disabled in order to adjust the pressure reducing valve (point "B"). Remove the acorn nut from adjustment point "A" and turn the stem 2 to 3 turns in.

   CAUTION: Do not bottom this adjustment screw. Damage to the valve seat may occur if it is forcibly bottomed.

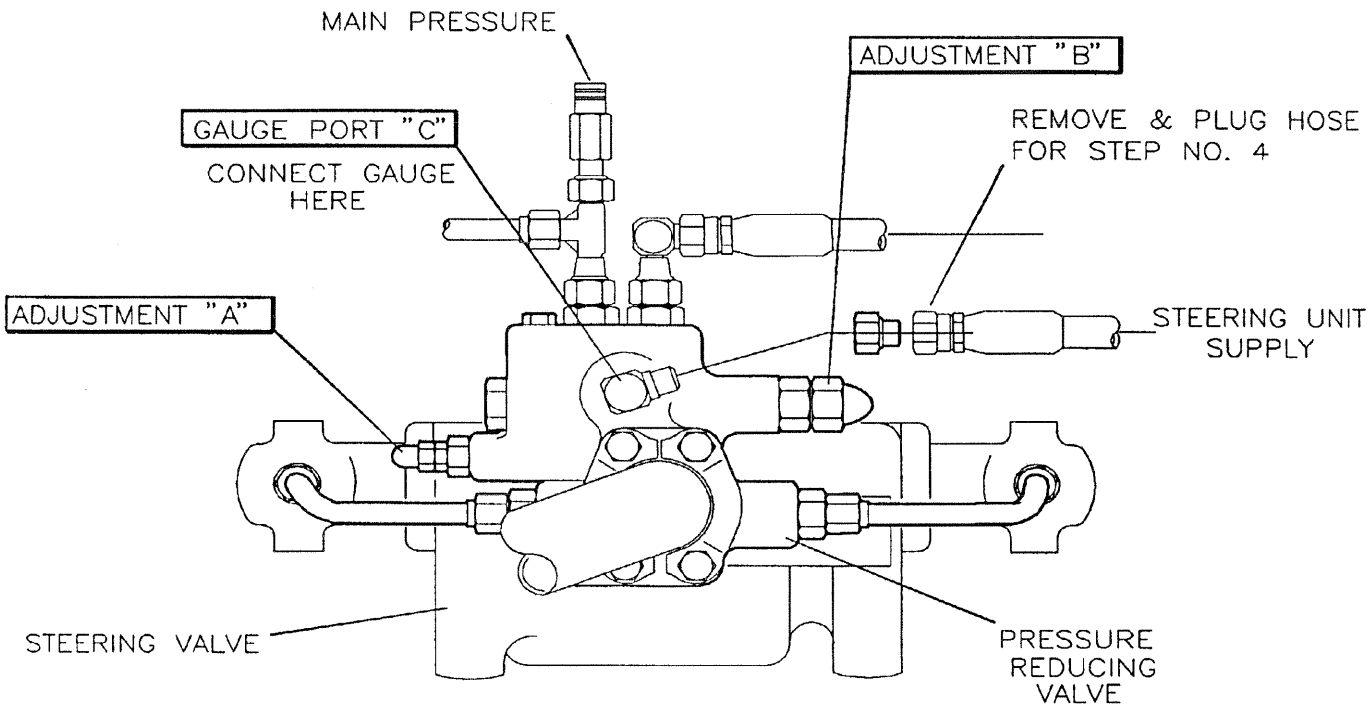

Fig. 1

4. Remove the pilot (control unit) supply hose from port "C" and plug the end of the hose. This will allow an accurate static pressure reading. Connect a 0-500 psi pressure gauge to port "C".

⚠ WARNING

Always shut down the engine and relieve hydraulic system pressure before connecting or disconnecting hydraulic system hoses, fittings or test gauges. Quick disconnect fittings leak during gauge installation or removal. Under pressure this leakage could cause severe personal injury.

NOTE: Tank pressure will influence the reading, particularly following cold starts.

5. Start the engine and bring the hydraulic system to operating temperature. The system must be warm before adjustment can be carried out. The engine should be at idle speed for the adjustment procedure. Slowly turn the steering wheel. This action should cause the steering system to reach relief pressure. Steering effort will be high at this time, since supply pressure has been eliminated. The steering control unit can still operate by drawing oil internally through a make-up check.
6. Remove the acorn nut from adjustment point "B" and adjust the stem until the gauge at port "C" reads 180 psi.
7. Shut down the engine. Replace the hose from the steering control unit to port "C".
8. Once again, initiate a steering action to reach relief pressure. While turning the steering wheel at a moderate rate, back out the stem at adjustment point "A" until high resistance is felt at the wheel. This resistance is the result of a drop in supply pressure.

NOTE: Setting the adjustment in the manner described is adequate as a field adjustment, however, a pressure gauge installed in the main steering circuit will provide the true pressure that the feel change occurs. The objective would be to make the change occur at about 100 psi below the main relief pressure.

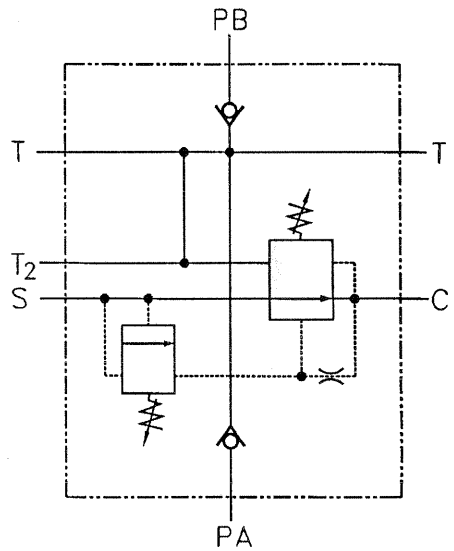

Fig. 2 Hydraulic Schematic