

## 5A-18 - TRANSMISSION

### OPERATION OF PTO SOLENOID

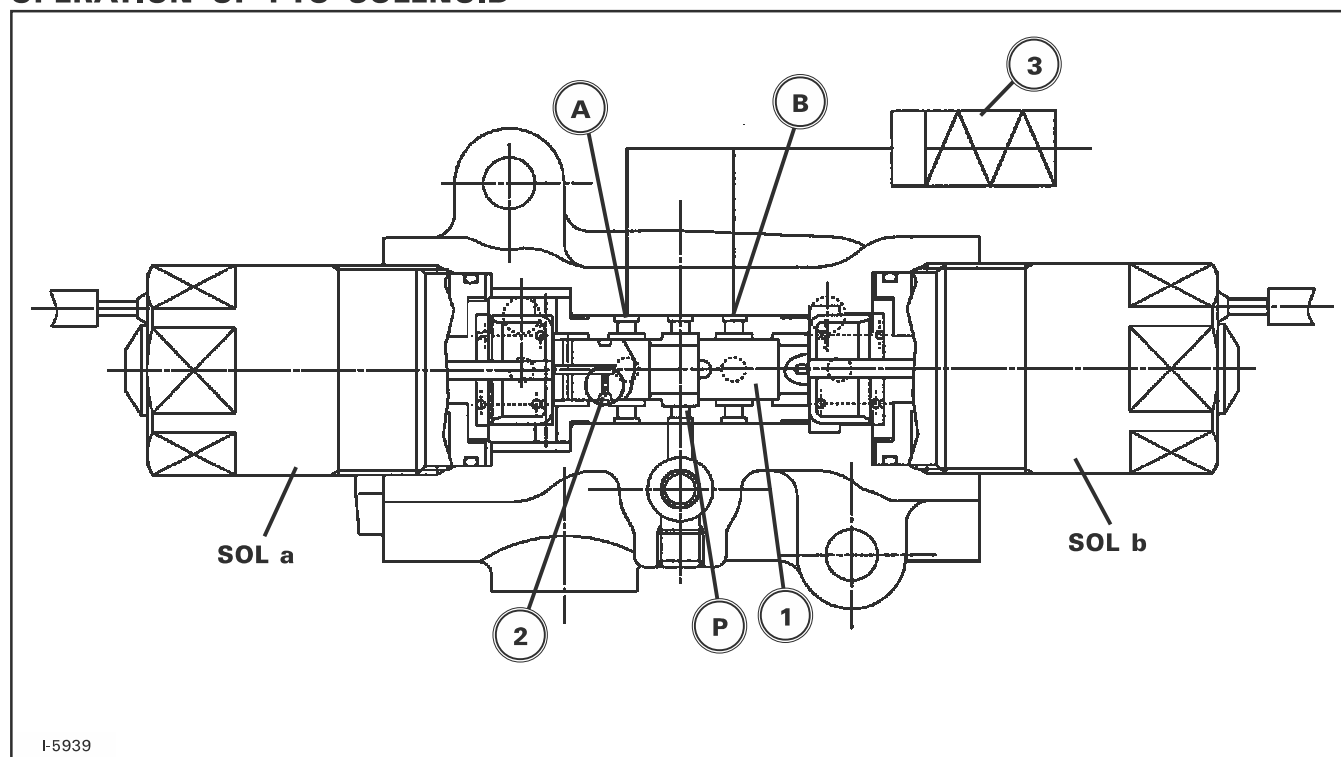


FIG. 5A-18

**FIG. 5A-18:** This solenoid valve turns on and off the PTO output by engaging the clutch smoothly without shock by controlling the flow and pressure of the fluid whose pressure is regulated at a constant level by the reducing valve to the PTO clutch, 3.

The fluid regulated by the reducing valve flows to port P of the solenoid valve. While the solenoid valve is in neutral, no fluid flows to the clutch.

When the solenoid on "SOL a" side is energized by the signal from the timer unit, spool, 1, shifts to the right and fluid flows to port, B, which is connected to port A. The flow from port B interconnected with port A brings about half clutch engagement because part of the fluid escapes to the drain port through orifice, 2, in spool, 1, relevant to port A when clutch discs are met to each other by means of the clutch piston.

**NOTE:**  $Kgf/cm^2 \times 14.223 = psi$

Half pressure: 7.5-9 kg/cm<sup>2</sup> (106-128 psi)

Full pressure: 16-18 kg/cm<sup>2</sup> (227-256 psi)

**FIG. 5A-22:** The PTO solenoid is located on the LH side of the transmission housing on both mechanical shuttle and power shuttle tractors.

1	Spool
2	Orifice
3	PTO Clutch
A	Port A
B	Port B
P	Port P
SOL a	Solenoid a (half pressure)
SOL b	Solenoid b (full pressure)

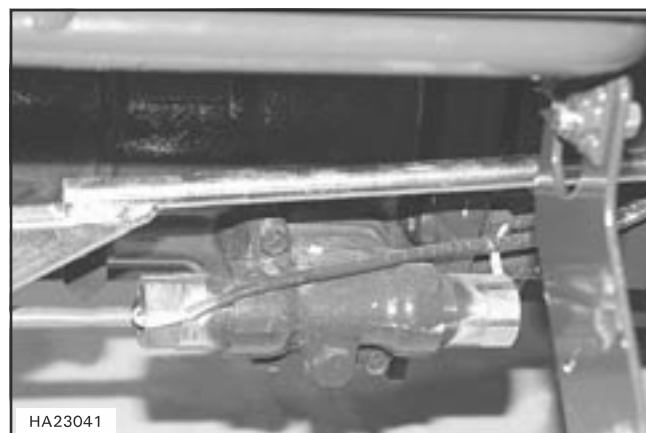


FIG. 5A-22

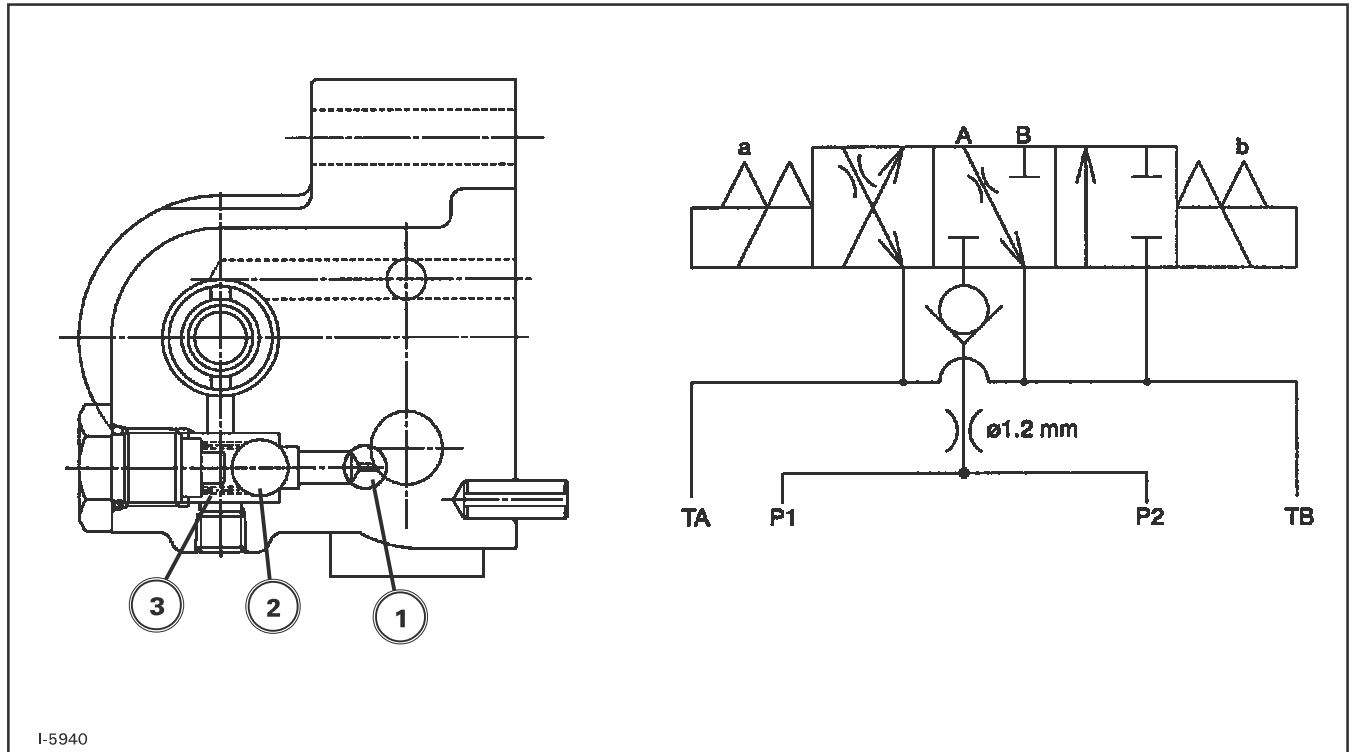


FIG. 5A-19 PTO Valve

**FIG. 5A-19:** The half engagement (half pressure) condition is maintained for about 1.1 seconds. Then the solenoid on "SOL b" side is energized, the spool shifts to the left, port A becomes the supplying port and port B is blocked. Then the pressure rises to the preset level by the reducing valve and the clutch becomes fully engaged. Steel ball, 2, prevents the contacting pressure of the clutch from falling due to the checking mechanism, even when line pressure drops momentarily.

Orifice, 1.

Steel ball, 2.

Spring, 3.