



# PLUMBING CHELSEA 270 SERIES ON AISIN A445

## PTO-TEC-91

### TECHNICAL

**DATE:** October 30, 1998

**TO:** All Chelsea® Power Take-Off Customers

Chelsea is pleased to offer the popular 270 Series hot shift P.T.O. in five speed ratios for the new Aisin automatic transmission. This transmission may be identified by Aisin model number A445 with case serial number 8D3394 or later.

Proper system plumbing is critical to all hot shift applications. To assist you in helping your customers, two plumbing diagrams are included here for the Aisin transmission application. For other hot shift applications, this same type of information can be found in the appropriate Chelsea P.T.O. owners manual.

The overwhelming majority of trouble experienced with newly-installed hot shift P.T.O.s can be traced directly back to improper plumbing. To further help you, some hot shift P.T.O. troubleshooting tips are included on the back of this page.

Jeff King  
Product Manger  
Chelsea Auxiliary Products

-Over-

**PTO INFO**





## 270 Series Installation Troubleshooting Tips

COMPLAINT	POSSIBLE CAUSES
P.T.O. won't engage	<p>Check solenoid to make sure it is functioning (opening to allow fluid from the transmission to flow to the P.T.O.).</p> <p><i>Solution:</i> Check and correct wiring and power supply.</p>
	<p>Customer is trying to shift 270 Series with air instead of hydraulic fluid. The seals in the 270 Series P.T.O. seal against hydraulic fluid, not against air.</p> <p><i>Solution:</i> shift with hydraulic fluid.</p> <p>Installer misidentified transmission ports and did not connect transmission "main pressure" port to solenoid "IN" port. Result is not enough pressure to compress P.T.O. clutch pack and engage P.T.O.</p> <p><i>Solution:</i> plumb correctly.</p> <p>Hose between transmission and solenoid "IN" port or between solenoid "CYL" port and P.T.O. bearing cap is kinked or plugged, preventing flow and pressure to the P.T.O. Also check fitting screens and solenoid for debris.</p> <p><i>Solution:</i> clean system, route hoses correctly, and replace components as necessary.</p> <p>Check transmission main pressure port. Minimum 90 PSI continuous pressure needed to compress the P.T.O. clutch pack and engage the P.T.O.</p> <p><i>Solution:</i> call transmission manufacturer.</p>
P.T.O. won't disengage	<p>Solenoid plumbed backwards (solenoid "IN" port connected to P.T.O. bearing cap), not allowing fluid access to exhaust port during attempted disengagement.</p> <p><i>Solution:</i> plumb correctly.</p>
	<p>Hose between solenoid "CYL" port and P.T.O. or between solenoid "EXH" port and P.T.O. housing port kinked or plugged, preventing flow and pressure to the P.T.O. Also check fitting screens and solenoid for debris.</p> <p><i>Solution:</i> clean system, route hoses correctly, and replace components as necessary.</p>

