

# FORM 1526 POWER TAPER SET ROLLER INSTALLATION

## Part No. PTSR-A

This Power Taper Set Roller Option helps adjust the position of the log on the bed by moving the log forward or backward as necessary. The enclosed parts include mounting hardware necessary to install the Power Taper Set Roller Option to the LT300 sawmill Rev. A9.00 and later and all WM3000 and WM3500 sawmills.

Item	Description	Part No.	Qty.
1	<b>ROLLER, POWER TAPER SET</b>	PTSR-A	1
2	Hose, 3/8" x 258" Braided Hydraulic	074102	2
	Hose, 3/8" Hydraulic Double Braided H24506	042828 <sup>1</sup>	21.5 ft.
	Fitting, 3/8" Hose End 37Deg Swivel	042829	2
3	Electrical Kit, Power Taper Set Rollers	053045	1
4	PLC Module, 8-Pt. Relay Output	053044	1
5	Relay, 24V 2A DIN Solid State	024925	2
6	Tube Assembly, Power Taper Set Roller	003873	1
7	Tube Weldment, Power Taper Set Roller	003875	1
8	Motor, Hydraulic #MG06-13-13AAAB	P21506	1
9	Sprocket, 40B17 x 1"	003883	1
10	Fitting, 1/2" NPT x 3/8" NPT Hex Reducer	028073	2
11	Fitting, 3/8" NPT-3/8" JIC 90 Elbow	016820	2
12	Bolt, 3/8-16 x 1" Hex Head Grade 5	F05007-87	6
13	Washer, 3/8" Split Lock	F05011-4	8
14	Washer, 3/8" Flat SAE	F05011-3	8
15	Roller Weldment, Toe Board	003879 <sup>2</sup>	1
16	Nut, 3/8-16 Hex Nylon Lock	F05010-10	2
17	Pin Weldment, 5/8" x 4 1/16"	003886	1
18	Pin Weldment, 5/8" x 1 3/4"	003887	1
19	Spacer, .63" x 1.00" x .25"	017719	4
20	Bearing, R-10	P04156	2
21	Sprocket Weldment, Dual 17/17T	W12474	1
22	Washer, 5/8" SAE Flat	F05011-5	1
23	Bearing, 1 1/4" Flange, IPTCI	003896	1
24	Bolt, 3/8-16 x 1 1/4" Hex Head Grade 5	F05007-123	4
25	Sprocket, 40B17 x 1 1/4"	003884	1
26	Key, 1/4" x 1"	S21486	1
27	Roller, Powered Toe Board	003874	1

<b>28</b>	Bolt, 1-8 x 3 1/4" Hex Head Grade 5	F05009-51 <sup>2</sup>	1
<b>29</b>	Washer, 1" Split Lock	F05011-53 <sup>2</sup>	1
<b>30</b>	Nut, 1-8 Hex Self-Locking	F05010-109 <sup>2</sup>	1
<b>31</b>	Chain, #40 x32 Pitches	003895	2
<b>32</b>	Link, #40 Master	P04200	2
<b>33</b>	Valve Assembly, Add-On 300LA	036824	1
<b>34</b>	Valve, 24V Hydraulic Add-On PO Check	025827	1
<b>35</b>	Valve, Hi-Flow Floating Center Hydraulic	045820	1
<b>36</b>	Coil, 24V Hydraulic #CAP-024D	051558	2
<b>37</b>	Fitting, 8 SAE-3/8" JIC	P12703	2
<b>38</b>	Screw, 1/4-20 x 2 1/4" Socket Head Cap	F05005-170	3
<b>39</b>	O-Ring, .070" Dia. x 5/8" OD #2-014 Buna-N	036806	2
<b>40</b>	Screw, 1/4-20 x 6 1/2" Socket Head Cap	F05005-182	2
<b>41</b>	Plate, Add-On Valve Spacer	003929	1

<sup>1</sup> Hose length changed from 300" to 258" to provide actual length required (2/10).

<sup>2</sup> Roller weldment 003879 modified and 1-8 Bolt, lock washer & nut replace 3/8" spacer S02779, lock washer F05011-4 & hex head bolt F05007-87 to position roller lower when not in use (Rev. A.01).

# Installation Instructions

## Power Taper Set Roller Installation



**WARNING!** Before performing service near moving parts such as blades, pulleys, motors, belts and chains, first turn the machine off and perform the lockout procedure. If the machine is turned on and moving parts activated, serious injury may result.

1. Locate the middle rear bed rail (#4) on the sawmill bed.
2. Remove the middle rear bed rail and the toe board from the sawmill bed. **NOTE:** Secure the toe board cylinder in place to make sure it is not damaged when removing the toe board from the sawmill bed.

See Figure 1.

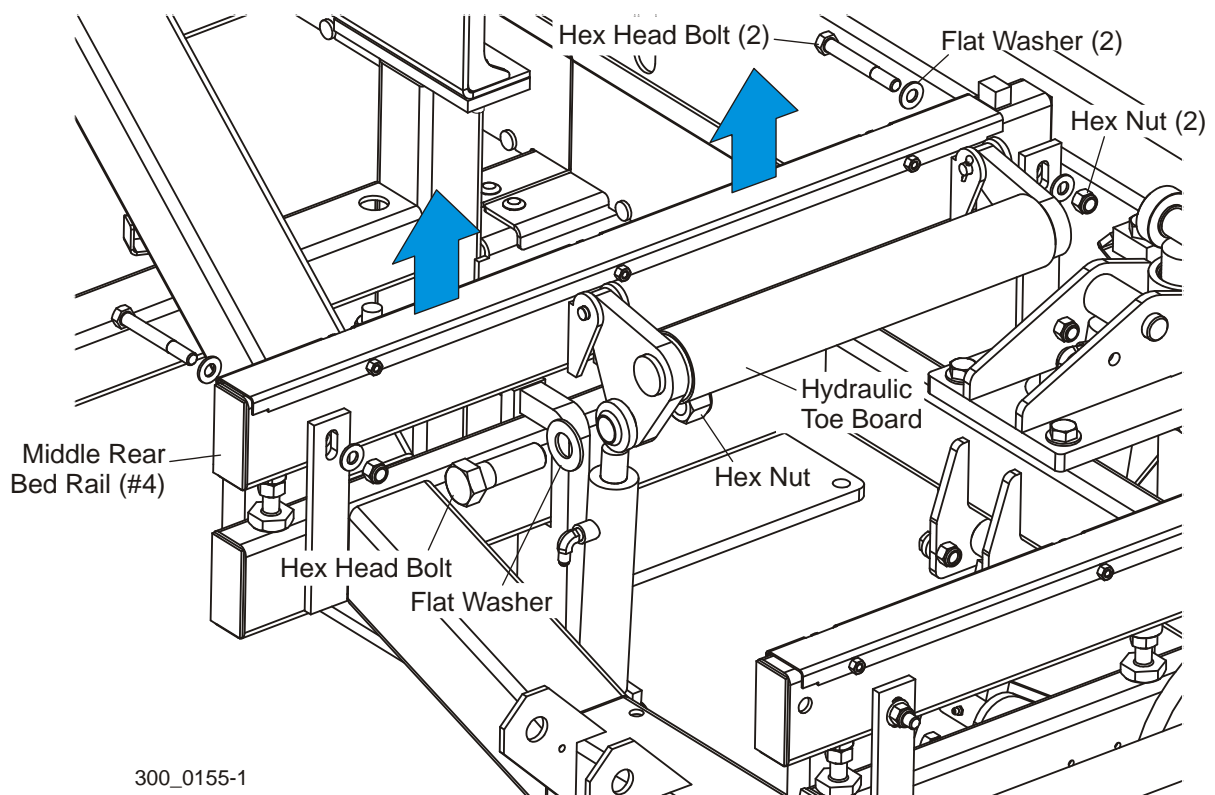


FIG. 1

3. Remove the rail cover from the middle rear bed rail. Reinstall the rail cover to the provided power taper set roller bed rail. Use the existing bolts and nuts to secure the rail cover in place.

See Figure 2.

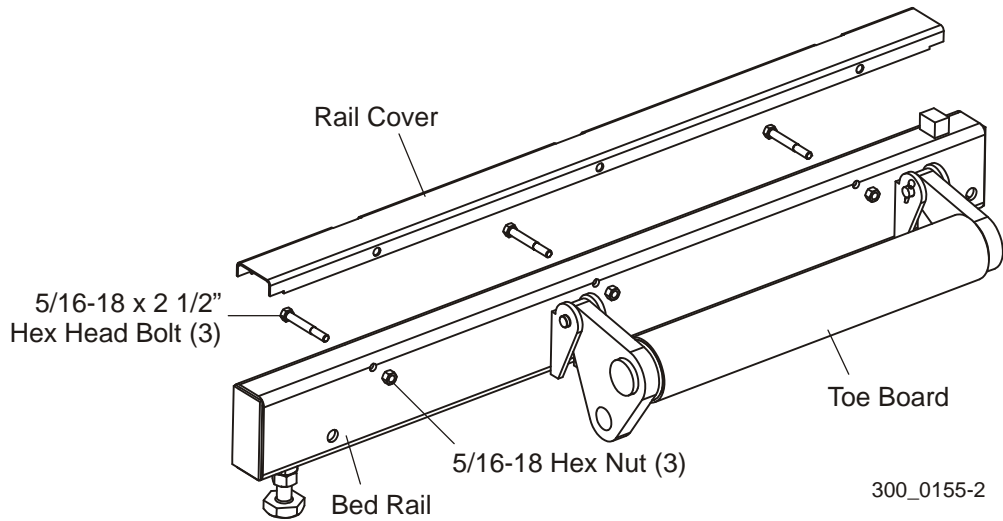


FIG. 2

4. Loosen the hydraulic cylinder mount plate bolts securing the hydraulic cylinder to the lower rail. Move the hydraulic cylinder closer to the sawmill bed frame as shown.

See Figure 3.

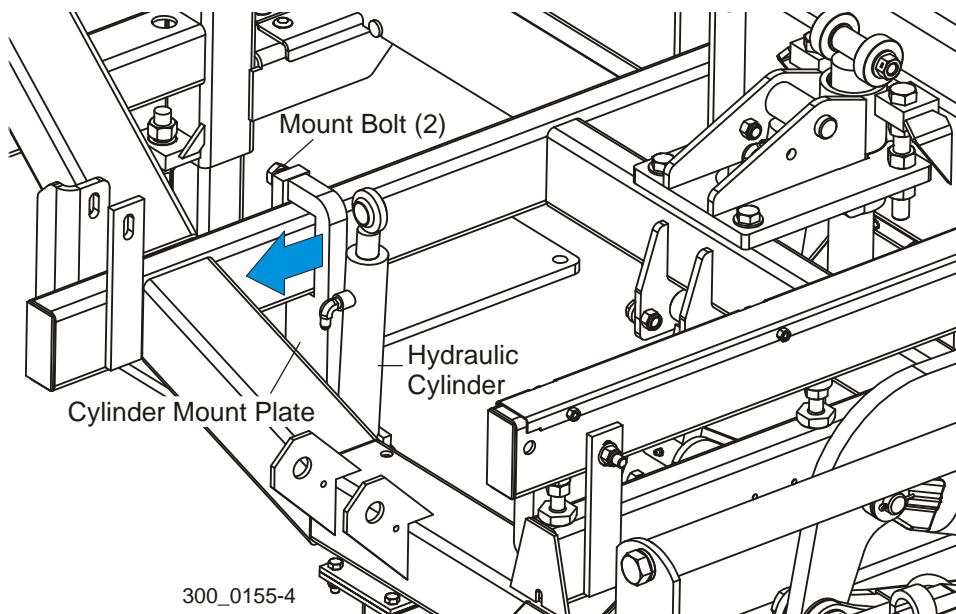


FIG. 3

5. Install the provided power taper set roller assembly to the sawmill bed. Use the existing hex head bolts, washers and nuts to secure the roller assembly in place.

See Figure 4.

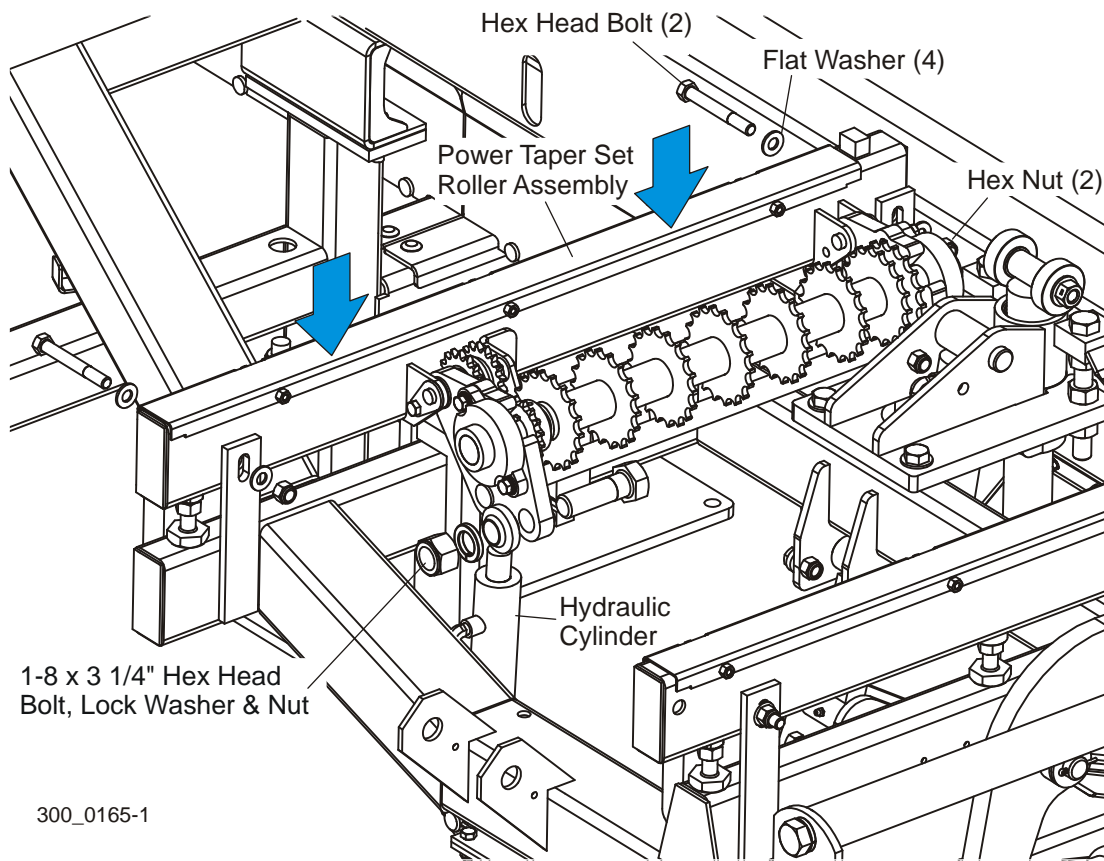
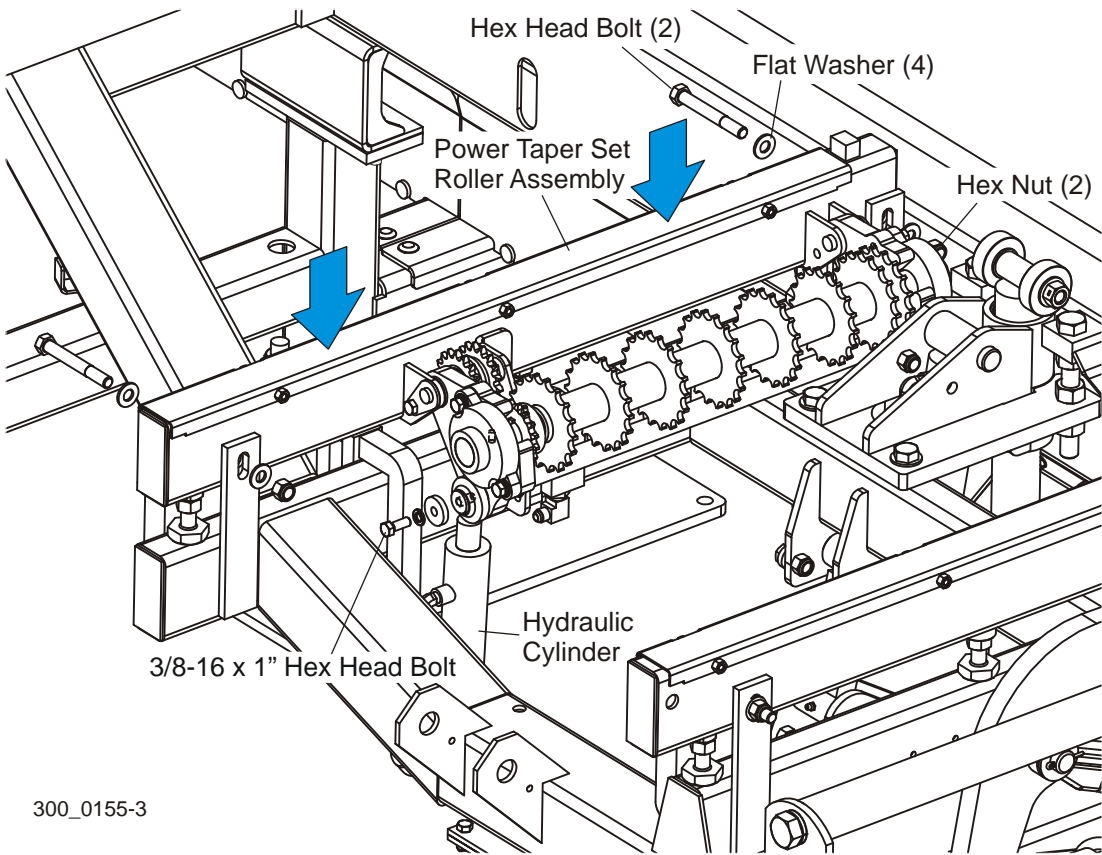


FIG. 4 (REV. A.01+)



300\_0155-3

**FIG. 4 (REV. A.00)**

6. Secure the hydraulic cylinder to the power taper set roller:

**Rev. A.01+:** Place the cylinder over the mounting hole in the roller weldment and secure using the supplied 1-8 x 3 1/4" hex head bolt, lock washer and nut.

**Rev. A.00:** Place the cylinder over the shaft on the roller weldment and secure using the supplied 3/8-16 x 1" hex head bolt, spacer washer and lock washer.

7. Tighten the hydraulic cylinder mount plate bolts to secure the hydraulic cylinder to the lower bed rail.

## Bed Rail Adjustment

See Figure 4-1. Move the log clamp in until it is 10" from the clamp stop. Adjust the clamp down to its lowest position. Raise the saw head until the blade measures 15 5/16" above the top of the clamp. Move the saw carriage so the blade is positioned over the power taper set roller bed rail. Measure the distance from the bottom of the blade to the bed rail cover at each end of the bed rail. Both measurements should be 15" (5/16" above the clamp [ $\pm 1/16$ "]). Loosen the bed rail clamp bolts and turn the bed rail adjustment bolts to raise or lower the bed rail, if necessary. Retighten the clamp bolts to secure the bed rail in place.

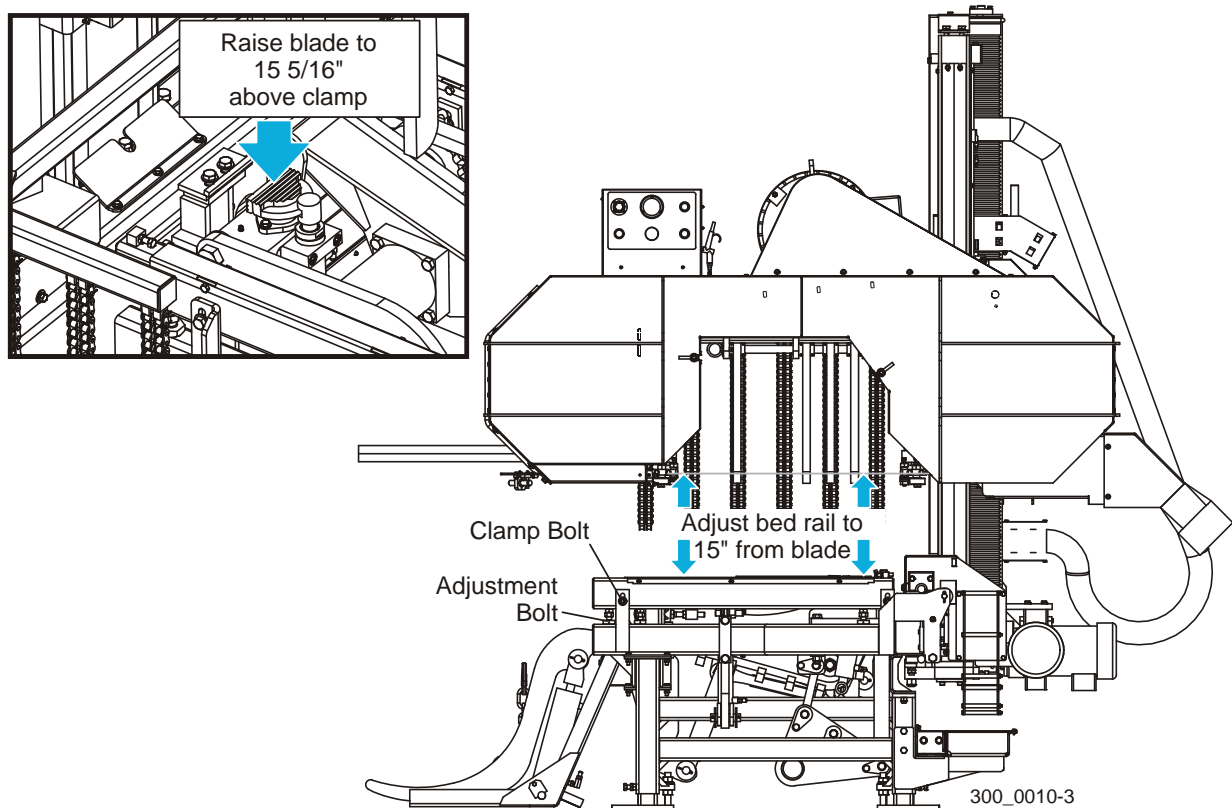


FIG. 4-1

## Hydraulic Installation

1. Install the provided two fittings to the power taper set roller valve. Make sure the fittings are tight to prevent hydraulic fluid leaks.
2. Install the power taper set roller valve to the side of the hydraulic manifold.

**See Figure 5.** The hydraulic manifold is located under the operator station floor. Install the power taper set roller valve to the side of the manifold. Place the two provided o-rings between the hydraulic manifold and the roller valve as shown. Use the 1/4-20 x 2 1/4" socket head screws (3) to secure the valve to the manifold. **NOTE:** If there are additional option valves installed to the hydraulic manifold, use the provided add-on valve spacer plate and longer 1/4-20 x 6 1/2" socket head screws (3) to secure the roller valve to the manifold assembly.

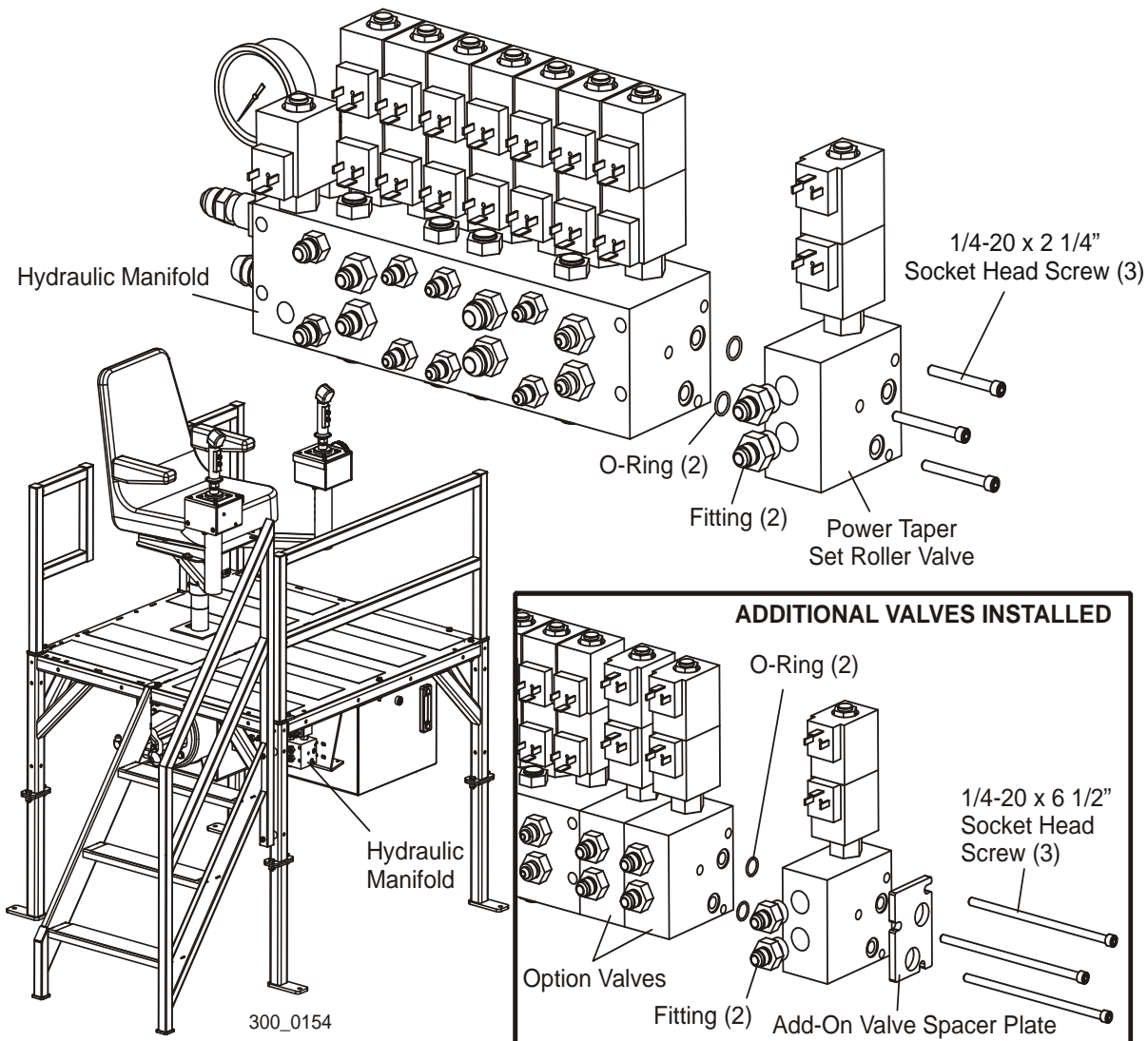
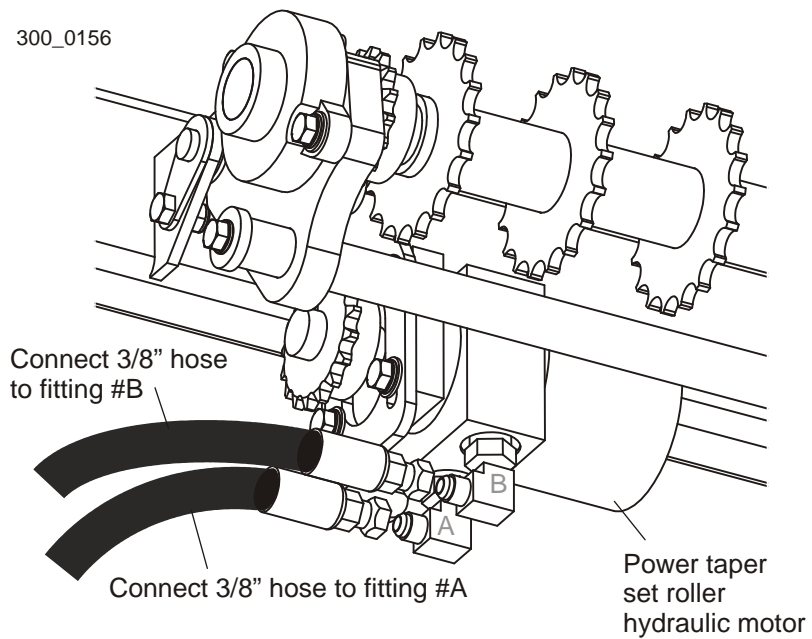


FIG. 5



3. Use the provided 3/8" hydraulic hoses to connect the toe board hydraulic motor and the power taper set roller valve.

**See Figure 6.** Connect one end of each hose to the fittings on the toe board hydraulic motor.

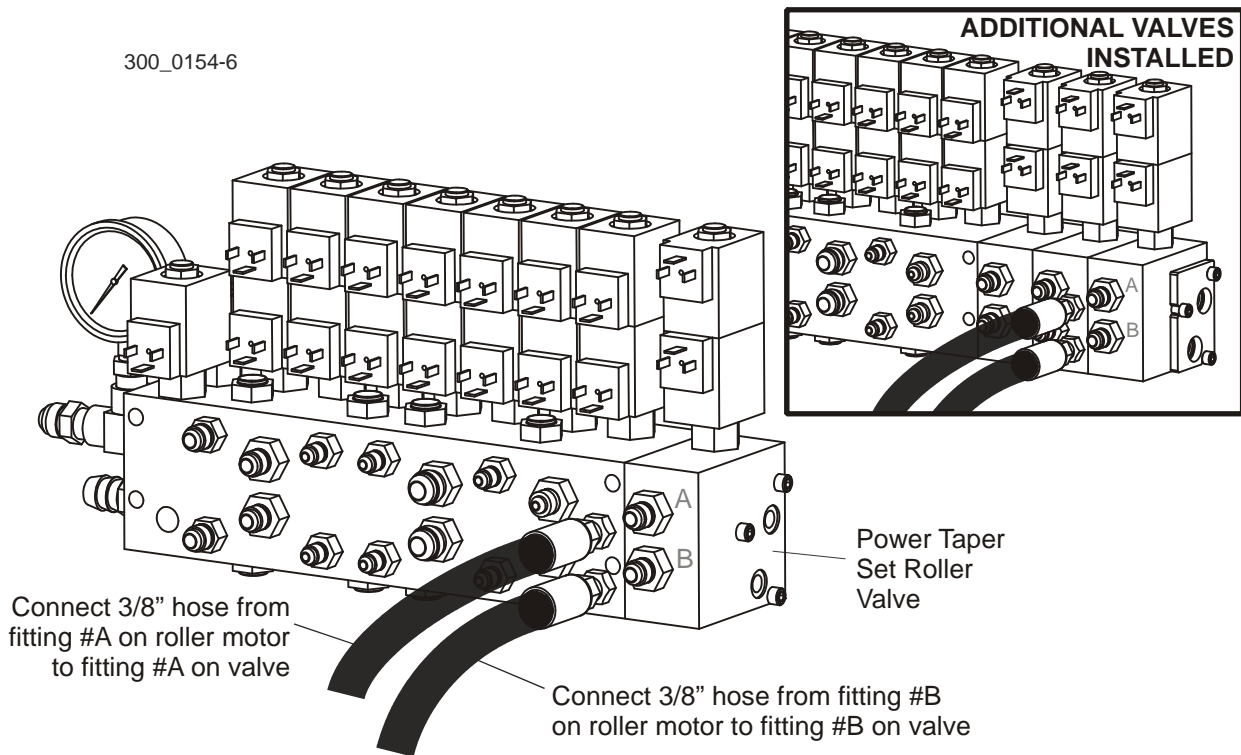


**FIG. 6**

4. Route the hoses along the existing hydraulic toe board hoses to the hydraulic manifold under the operation station floor.

5. Connect the other end of each hose to the fittings on the power taper set roller valve.

**See Figure 7.** Connect the hose from the hydraulic motor fitting labeled #A to the power taper set roller valve fitting labeled #A. Connect the hose from the hydraulic motor fitting labeled #B to the power taper set roller valve fitting labeled #B. Make sure the hoses are tight to prevent hydraulic fluid leaks.



**FIG. 7**

## Electrical Installation



**DANGER!** Make sure all electrical installation, service and/or maintenance work is performed by a qualified electrician and is in accordance with applicable electrical codes.



**WARNING!** Consider all electrical circuits energized and dangerous.

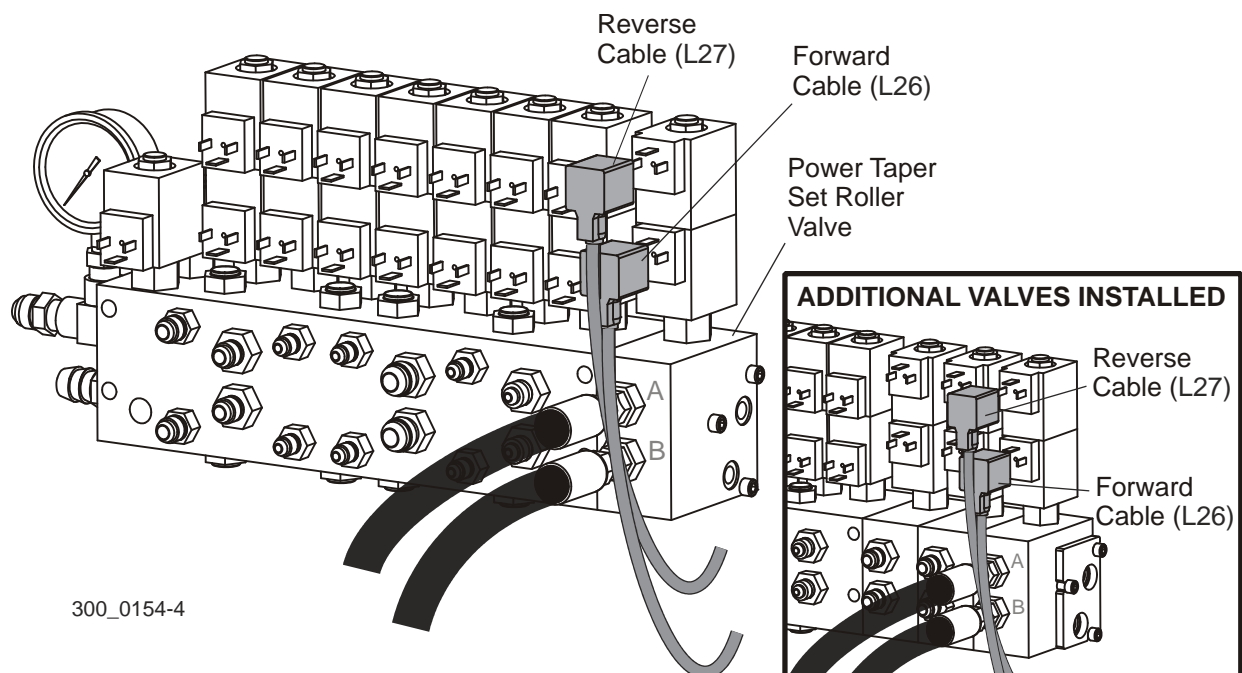
**WARNING!** Never assume or take the word of another person that the power is off; check it out and lock it out.

**WARNING!** Do not wear rings, watches, or other jewelry while working around an open electrical circuit.

**WARNING!** Before performing service near moving parts such as blades, pulleys, motors, belts and chains, make sure the unit is not in use. If the unit is operated and moving parts activated, serious injury may result.

1. Disconnect the power from the machine. Lock and tag out the machine prior to performing this procedure.

**See Figure 8.** Connect the provided power taper set roller cables (L26 & L27) to the solenoids located on the power taper set roller valve. Connect the forward cable (L26) to the bottom solenoid on the valve. Connect the reverse cable (L27) to the top solenoid on the valve.

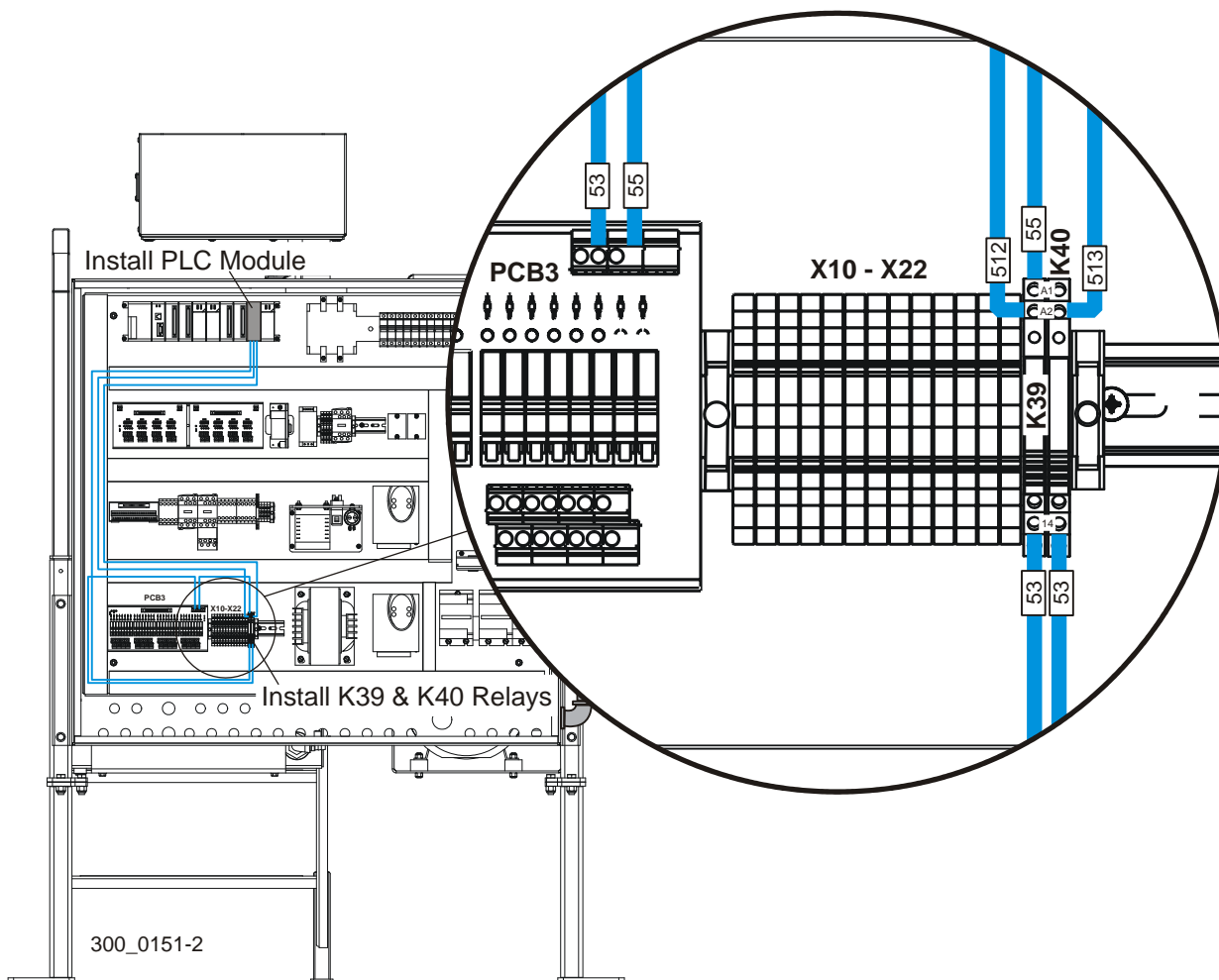


**FIG. 8**

2. Unlock and open the main electrical cabinet on the operation station.
3. Install the provided power taper set roller electrical kit to the insert panel.

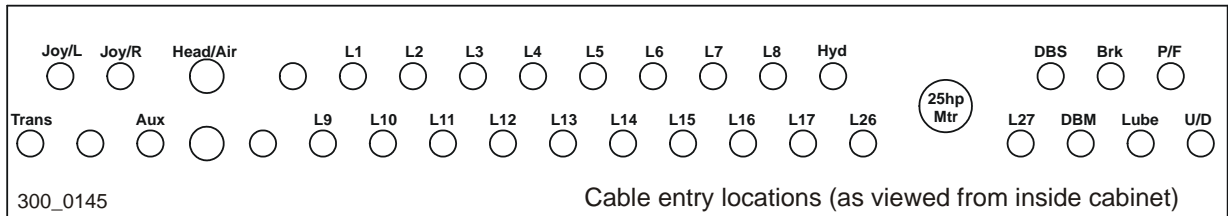
**All WM3000/WM3500 & LT300 Rev. B3.00+ Only**

**See Figure 9.** Install the PLC module to the PLC assembly inside the electrical cabinet. To install, remove the empty slot cover from the PLC module slot as shown below. Insert the provided PLC module in the empty slot. Remove the rail clamp on the right side of the X10-X22 terminal block. Install the two provided relays (K39 and K40) to the right of the X10-X22 terminal block. Replace the rail clamp and secure the relays and terminal block in place. Connect loose wires #55 and #53 from the K39 and K40 relays to the PCB3 module as shown. Place the wires inside the wire-ways.



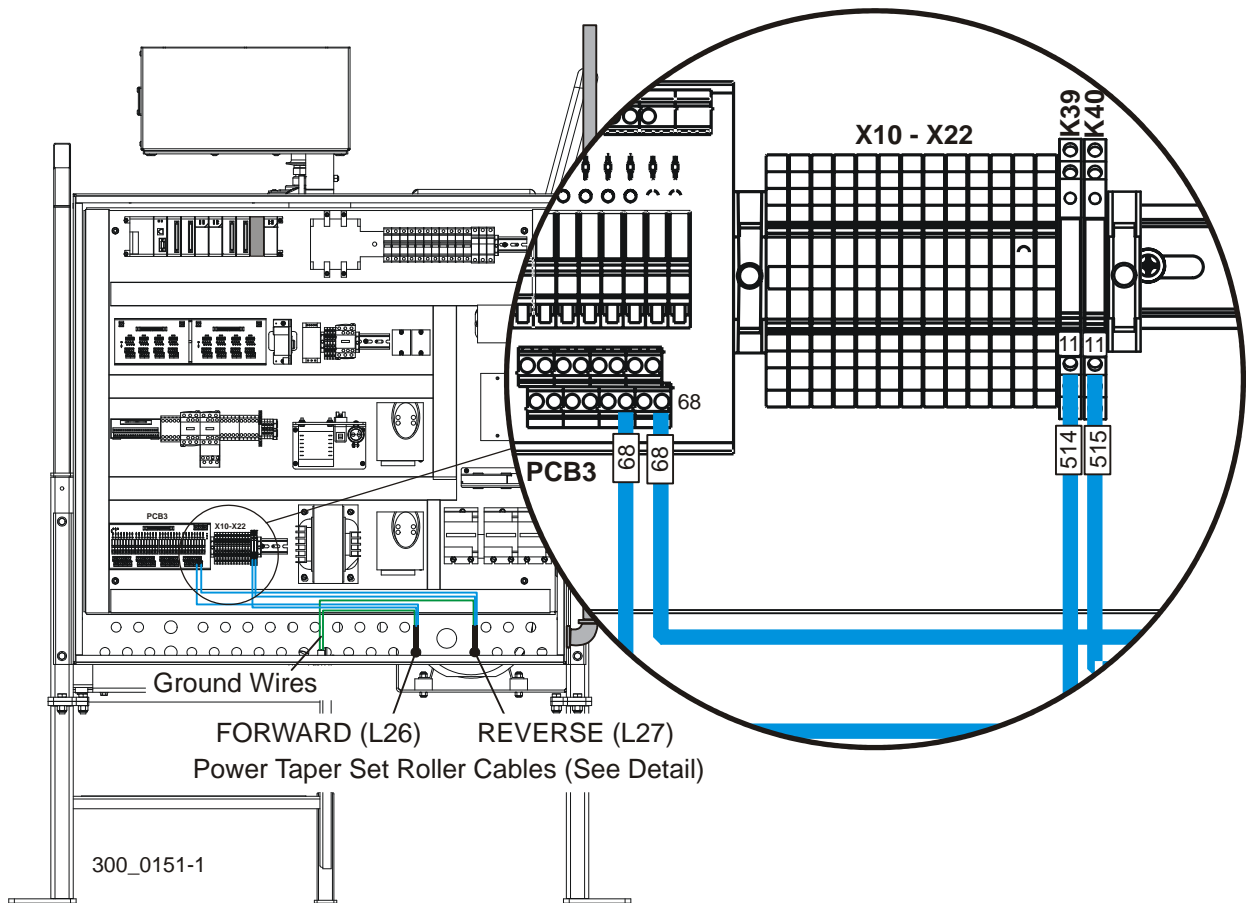
**FIG. 9 LT300 REV. B3.00+**

**See Figure 10.** Locate the power taper set roller forward (L26) and reverse (L27) cables connected to the solenoids on the power roller hydraulic valve. Route the forward cable (L26) through the hole L26 in the electrical cabinet. Route the reverse cable (L27) through the hole L27. Secure each cable to the cabinet with the provided cable connectors.



**FIG. 10 LT300 REV. B3.00+**

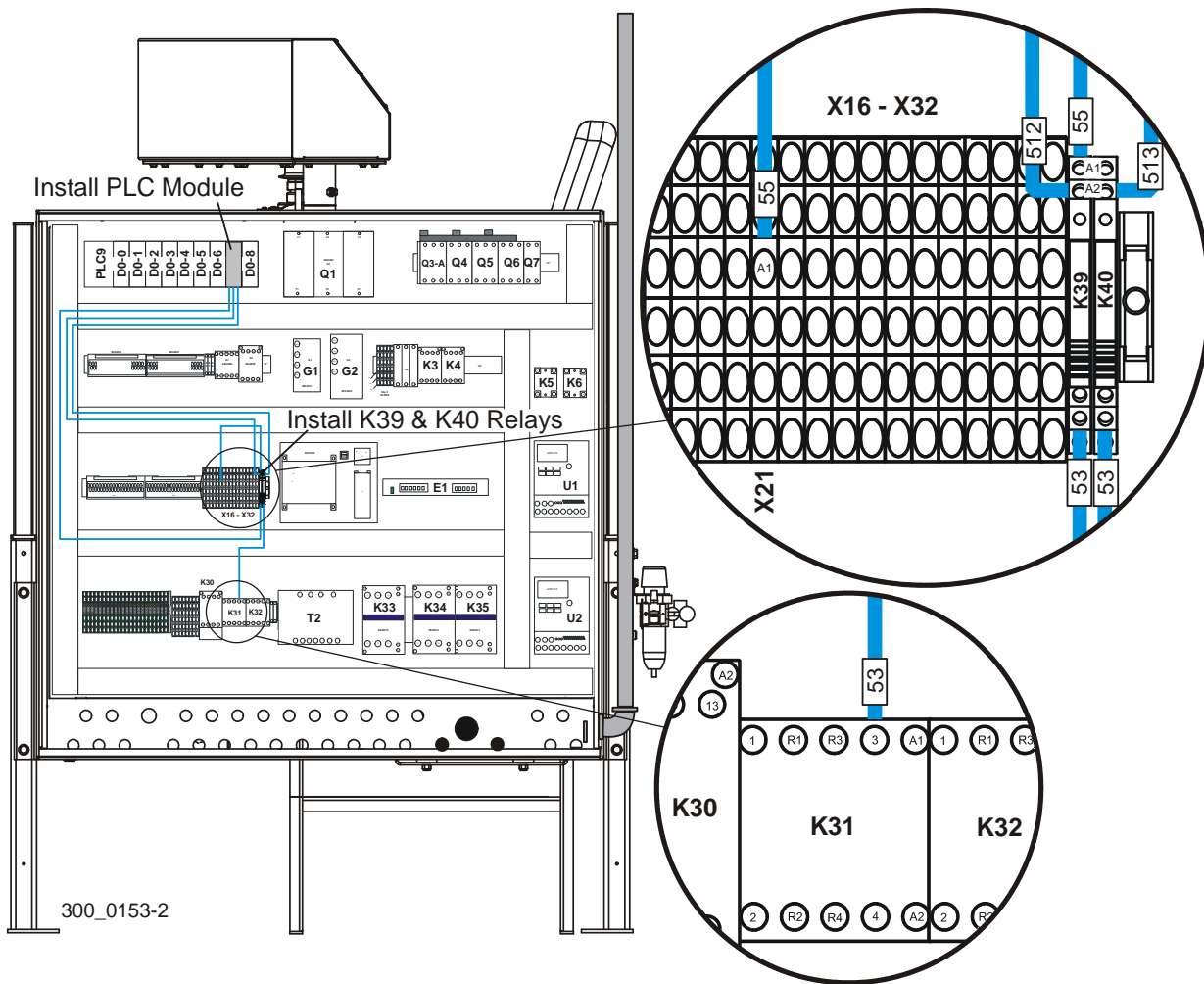
**See Figure 11.** Connect wire #514 to terminal 11 of the relay labeled K39. Connect wire #515 to terminal 11 of the relay labeled K40. Connect wires #68 to any terminal 68 of the PCB3 module. Connect the green ground wires to the ground terminal.



**FIG. 11 LT300 REV. B3.00+**

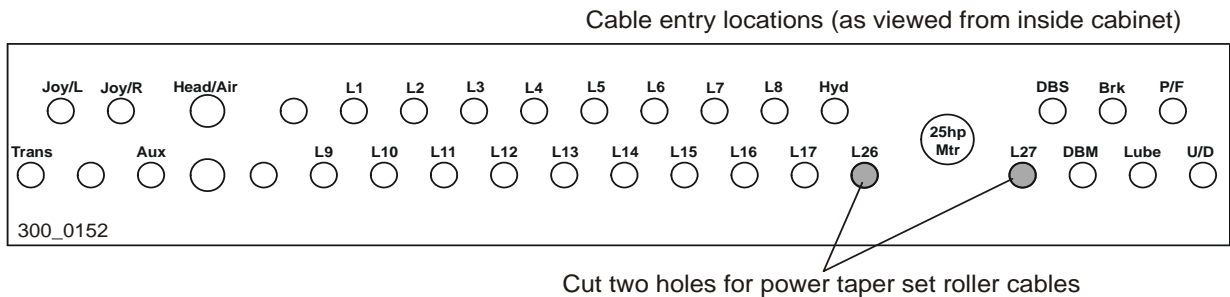
**LT300 Rev. A9.00 - B2.02 Only**

**See Figure 12.** Install the PLC module to the PLC assembly inside the electrical cabinet. To install, remove the empty slot cover from the PLC module slot as shown below. Insert the provided PLC module in the empty slot. Remove the rail clamp on the right side of the X16-X32 terminal block. Install the two provided relays (K39 and K40) to the right of the X16-X32 terminal block. Replace the rail clamp and secure the relays and terminal block in place. Connect the wire #53 from the K40 relay to terminal #3 of the K31 contactor. Connect the wire #55 from the K39 relay to terminal #A1 of the X21 terminal block. Place all the wires inside the wireways.



**FIG. 12 LT300 REV. A9.00 - B2.02 ONLY**

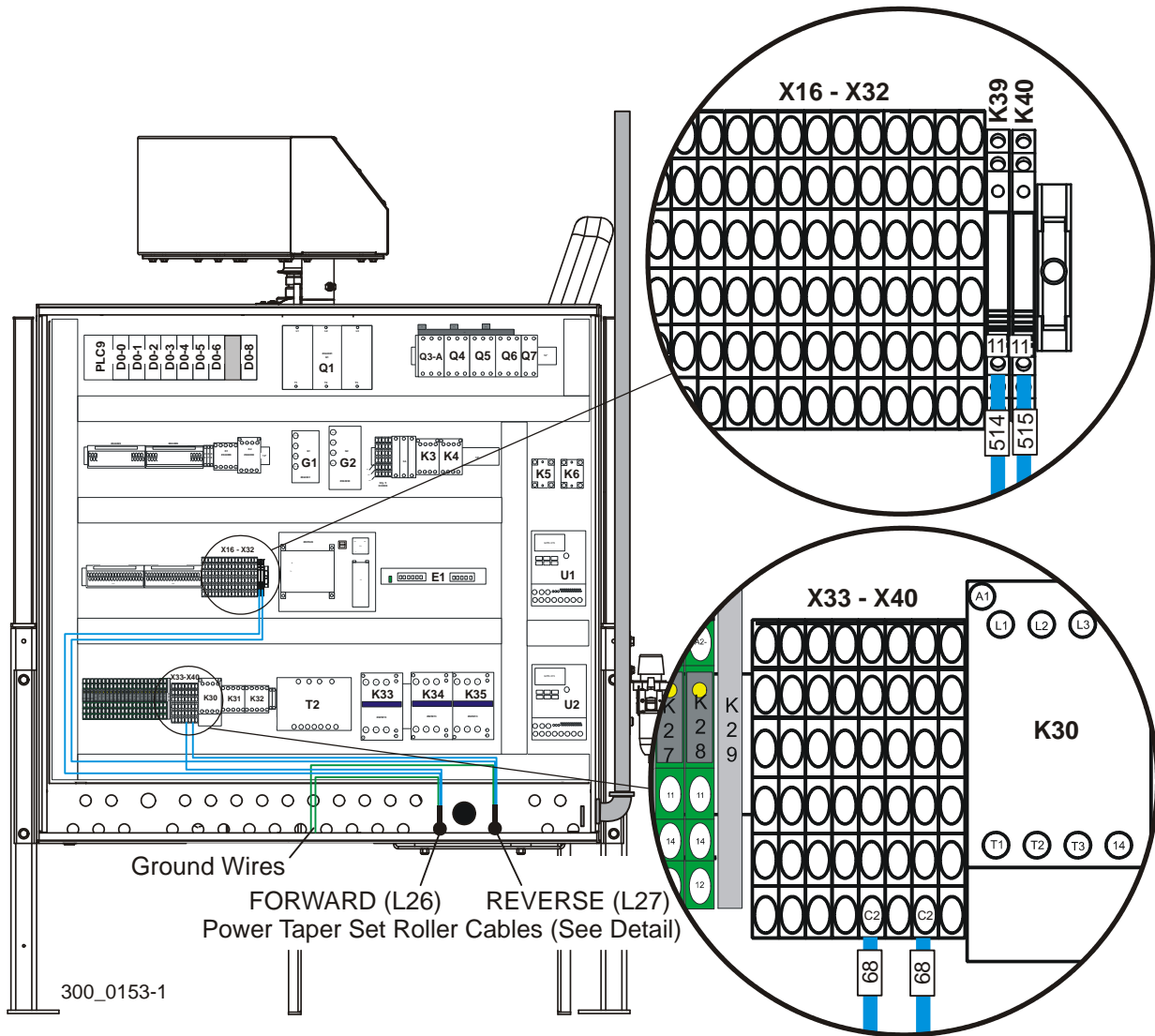
See Figure 13. Cut two 7/8" holes in the cabinet to route the cables inside the electrical cabinet.



**FIG. 13 LT300 REV. A9.00 - B2.02 ONLY**

4. Locate the power taper set roller forward (L26) and reverse (L27) cables connected to the solenoids on the power roller hydraulic valve. Route the roller forward cable (L26) through the hole L26 in the electrical cabinet. Route the roller reverse cable (L27) through the hole L27. Secure the cables to the cabinet wall with the provided cable hole connectors.

**See Figure 14.** Connect wire #514 to terminal 11 of the relay labeled K39. Connect wire #515 to terminal 11 of the relay labeled K40. Connect wires #68 to any terminal C2 of the X33-X40 terminal block. Connect the green ground wires to the ground terminal.





**FIG. 14 LT300 REV. A9.00 - B2.02 ONLY**

5. Close and lock the electrical cabinet.

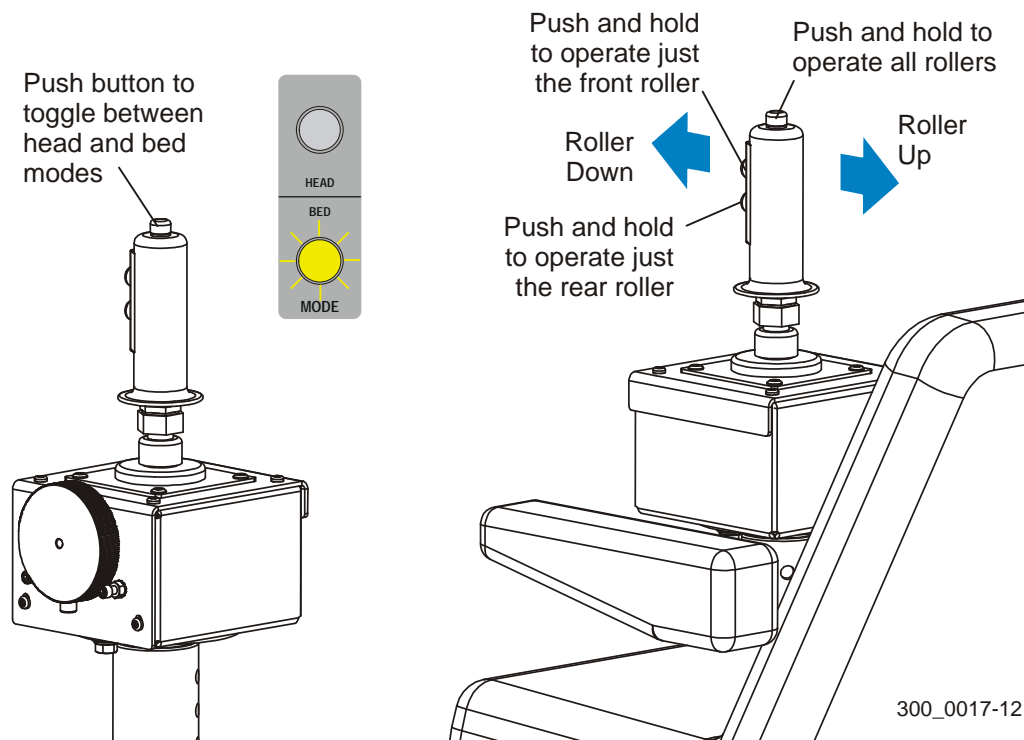


## Power Taper Set Roller Operation

 **DANGER!** Always be aware of and take proper protective measures against rotating shafts, pulleys, fans, etc. Always stay a safe distance from rotating members and make sure that loose clothing or long hair does not engage rotating members resulting in possible injury.

 **WARNING!** Keep all persons out of the path of moving equipment and logs while operating the power taper set roller. Failure to do so may result in serious injury or death.

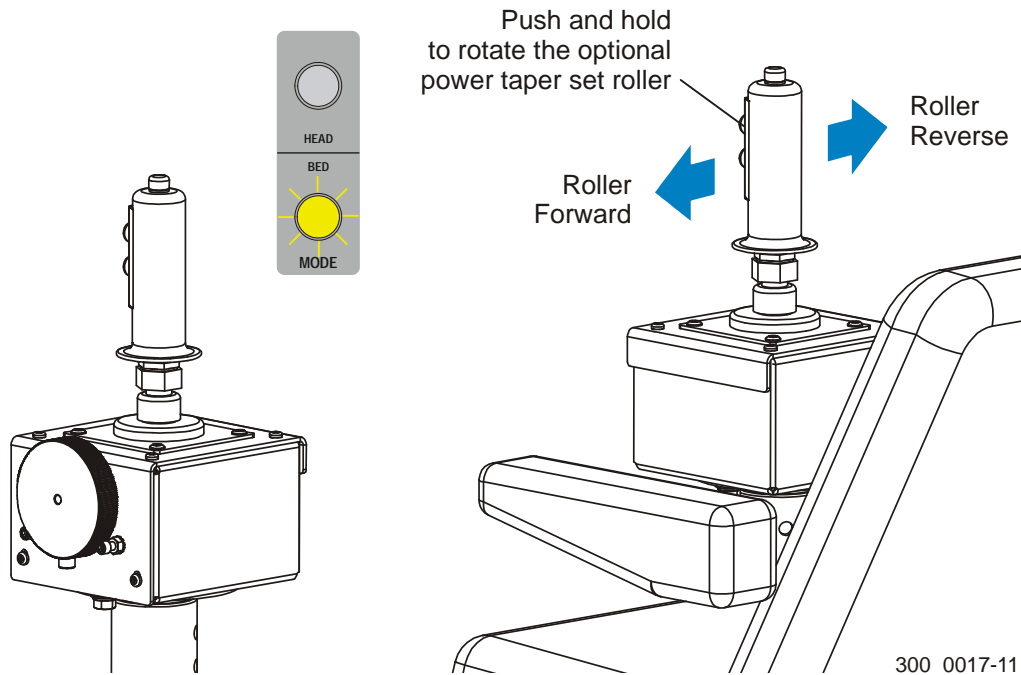
After the Power Taper Set Roller is installed, you can start to operate the unit. Push the top button on the left joystick to change to bed mode. To raise or lower all the bed rollers, push and hold the top button of the right joystick. Push the right joystick forward to lower all the rollers, back to raise all the rollers. To operate just the front or rear roller, push and hold the top or bottom side button to select the front or rear roller. Push the right joystick forward to lower the selected roller, back to raise the selected roller.



**FIG. 14**

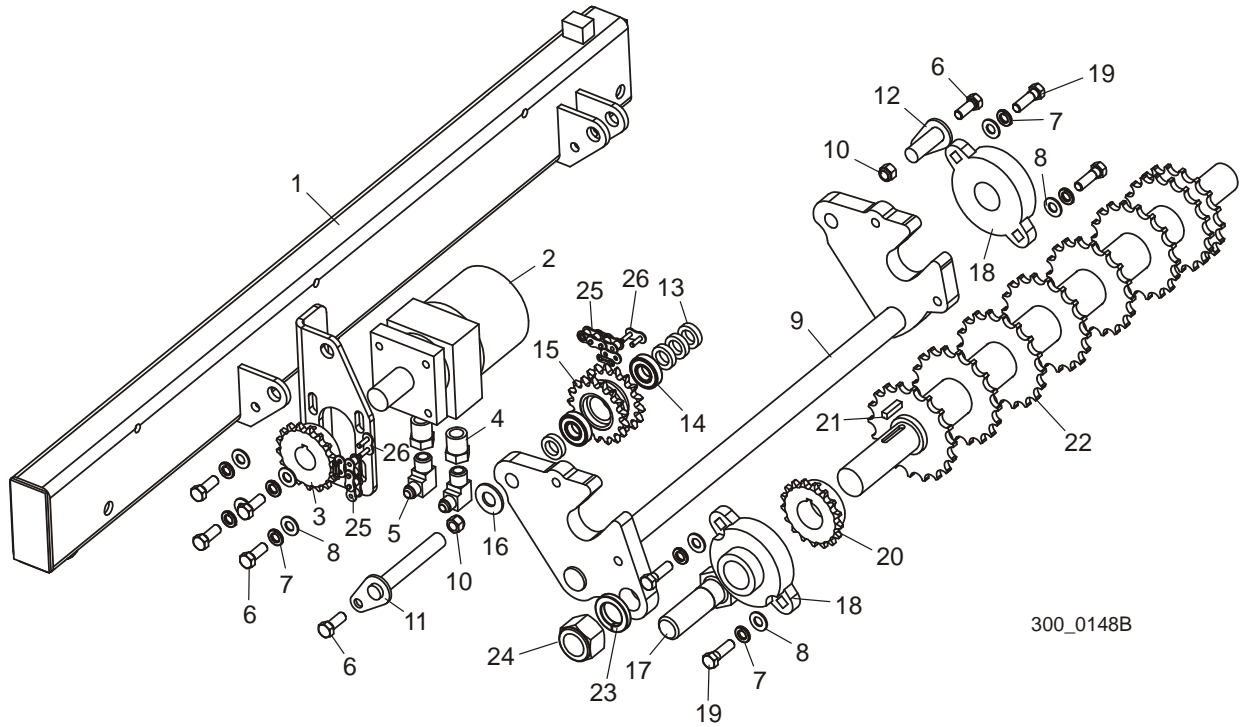
**See Figure 15.** To rotate the optional power taper set roller, push and hold the top side button of the right joystick. Push the right joystick to the right to rotate the roller backward, to the left to rotate the roller forward.

**IN BED MODE:**



**FIG. 15**

# Power Taper Set Roller Replacement Parts



300\_0148B

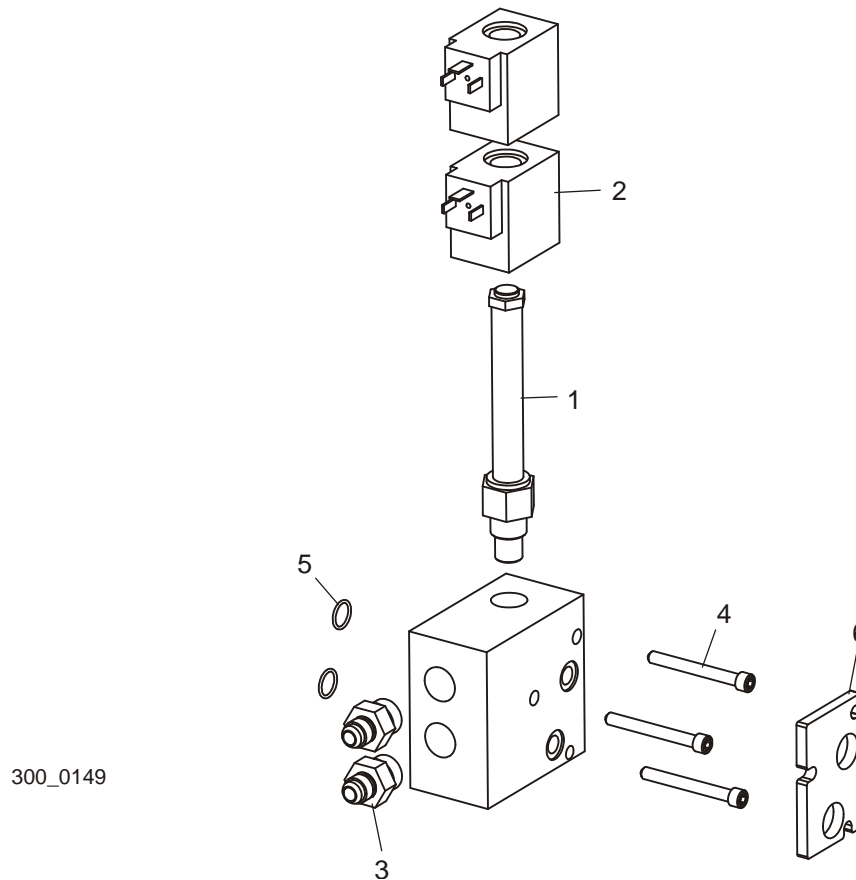
REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	<b>TUBE ASSEMBLY, POWER TAPER SET ROLLER</b>	003873	1
1	Tube Weldment, Power Taper Set Roller	003875	1
2	Motor, Hydraulic #MG06-13-13AAAB	P21506	1
	Seal Kit, Hydraulic Motor	061136	1
3	Sprocket, 40B17 x 1"	003883	1
4	Fitting, 1/2" NPT x 3/8" NPT Hex Reducer	028073	2
5	Fitting, 3/8" NPT-3/8" JIC 90 Elbow	016820	2
6	Bolt, 3/8-16 x 1" Hex Head Grade 5	F05007-87	6
7	Washer, 3/8" Split Lock	F05011-4	8
8	Washer, 3/8" Flat SAE	F05011-3	8
9	Roller Weldment, Toe Board	003879 <sup>1</sup>	1
10	Nut, 3/8-16 Hex Nylon Lock	F05010-10	2
11	Pin Weldment, 5/8" x 4 1/16"	003886	1
12	Pin Weldment, 5/8" x 1 3/4"	003887	1
13	Spacer, .63" x 1.00" x .25"	017719	4
14	Bearing, R-10	P04156	2
15	Sprocket Weldment, Dual 17/17T	W12474	1
16	Washer, 5/8" SAE Flat	F05011-5	1
17	Bolt, 1-8 x 3 1/4" Hex Head Grade 5	F05009-51 <sup>1</sup>	1
18	Bearing, 1 1/4" Flange, IPTCI	003896	1
19	Bolt, 3/8-16 x 1 1/4" Hex Head Grade 5	F05007-123	4

20	Sprocket, 40B17 x 1 1/4"	003884	1	
21	Key, 1/4" x 1"	S21486	1	
22	Roller, Powered Toe Board	003874	1	
23	Washer, 1" Split Lock	F05011-53 <sup>1</sup>	1	
24	Nut, 1-8 Hex Self-Locking	F05010-109 <sup>1</sup>	1	
25	Chain, #40 x32 Pitches	003895	2	
26	Link, #40 Master	P04200	2	
	<b>HOSE, 3/8" X 258" BRAIDED HYDRAULIC</b>	074102	2	
	Hose, 3/8" Hydraulic Double Braided H24506	042828 <sup>2</sup>	21.5 ft.	
	Fitting, 3/8" Hose End 37Deg Swivel	042829	2	
	<b>ELECTRICAL KIT, POWER TAPER SET ROLLERS</b>	053045	1	
	<b>INSTRUCTION SHEET, POWER TAPER SET ROLLER</b>	PTSR-A-1526	1	

<sup>1</sup> Roller weldment 003879 modified and 1-8 Bolt, lock washer & nut replace 3/8" spacer S02779, lock washer F05011-4 & hex head bolt F05007-87 to position roller lower when not in use (Rev. A.01).

<sup>2</sup> Hose length changed from 300" to 258" to provide actual length required (2/10).

## Valve Replacement Parts

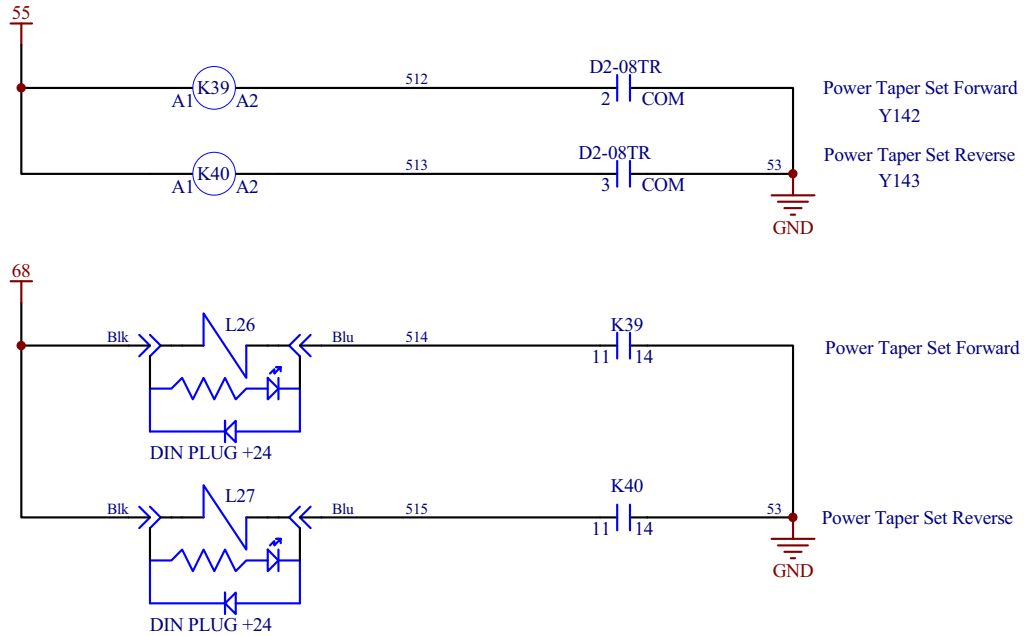


300\_0149

REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	<b>VALVE ASSEMBLY, 300LA ADD-ON</b>	036824	1	
	Valve, 24V Hydraulic Add-On	025827 <sup>1</sup>	1	
<b>1</b>	Valve, 4-Way Hydraulic	051556	1	
<b>2</b>	Coil, 24V Hydraulic #CAP-024D	051558	2	
<b>3</b>	Fitting, 8 SAE-3/8" JIC	P12703	2	
<b>4</b>	Screw, 1/4-20 x 2 1/4" Socket Head Cap	F05005-170	3	
<b>5</b>	O-Ring, .070" Dia. x 5/8" OD #2-014 Buna-N	036806	2	
<b>6</b>	<b>PLATE, ADD-ON VALVE SPACER (REQ'D W/ADDITIONAL VALVES INSTALLED)</b>	003929	1	
	<b>SCREW, 1/4-20 X 6 1/2" SOCKET HEAD CAP (REQ'D W/ADDITIONAL VALVES INSTALLED)</b>	F05005-182	3	

<sup>1</sup> Replaces 036724 valve used from 12/10 to 5/14. 036724 replaced 036733 check valve used prior to PTSR Rev. A.02 (12/10).

# Electrical Schematic



300\_0150

**FIG. 15 SYMBOL DIAGRAM**

## Electrical Component List

Component	Manufacturer Part No.	Manufacturer	Wood-Mizer Part No.	Description
D2-08TR	053044	Automationdirect	D2-08TR	PLC Module, 8-Pt. Relay Output
K39, K40	024925	Neff Engineering	2966634	Relay, Solid State 24V 2A DIN