

FORM 542

ELECTRIC SAWMILL INSTALLATION INSTRUCTIONS



IMPORTANT! This information is provided so that you may have your site prepared for installation of your electric sawmill. In order to properly install your sawmill, you need to:

1. **Prepare a firm, level area where the sawmill can be anchored.** There should be enough room around the sawmill for operators, sawdust removal, log loading and board removal. A cement pad with 5/8" diameter anchor bolts is recommended. The cement pad should be rated to support 6350 lbs./sq.ft. at each sawmill foot position.
2. **Have a qualified electrician install the power supply before receipt of your sawmill.** The power supply must meet the enclosed specifications concerning wire size, fused disconnect, and voltage. The electrical installation must also meet local codes.
3. **Be sure the power supply cables are free to move with the saw head and are high enough to clear the operator.** An overhead boom system for the electrical cables is recommended.
4. **Have a qualified electrician present when the sawmill is to be installed.** All relevant motor specifications and wiring information is provided. When scheduling an electrician for the day of installation, please confirm that they have enough of the proper size cable (wiring), as shown in [Table 1 on page 3](#) . Many electricians may not stock this cable, which could seriously delay installation and training.

Electric Sawmill Wiring



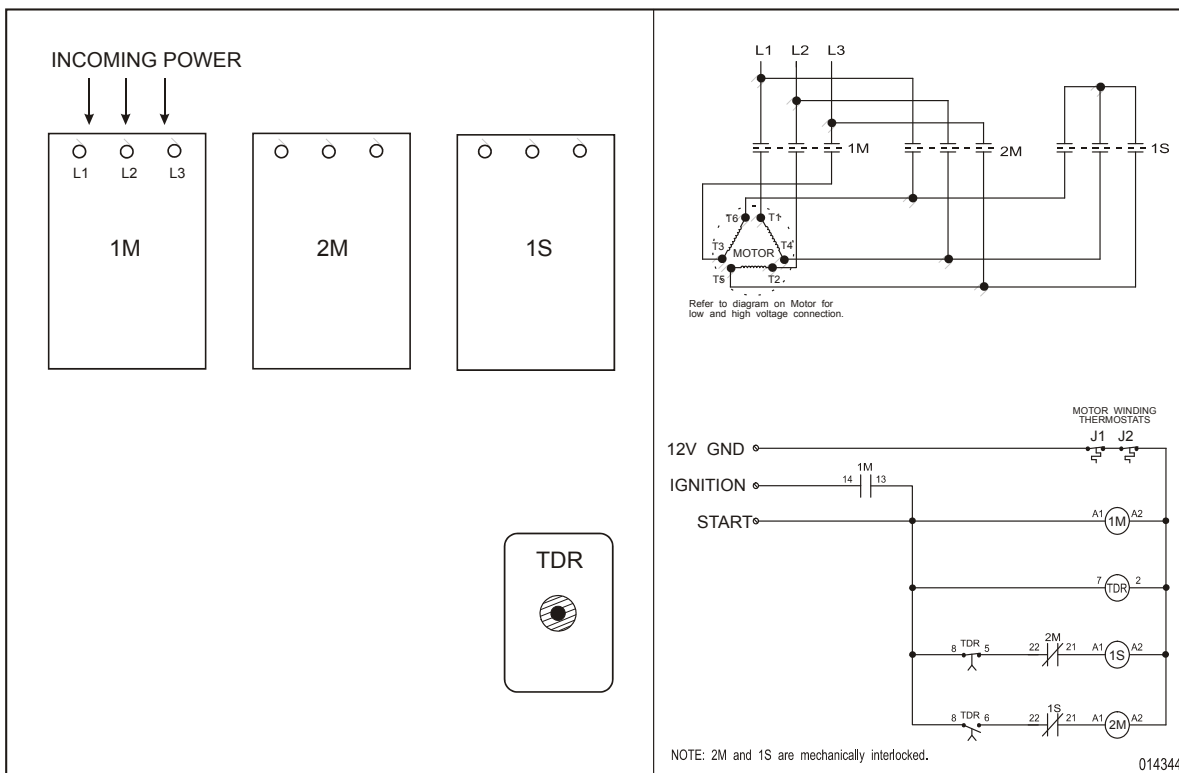
DANGER! Make sure all electrical installation, service and/or maintenance work is performed by a qualified electrician and is in accordance with applicable electrical codes.



CAUTION! The sawmill motor and transformer are pre-wired for 460 volt, 60 Hz power supplies. If you plan to use a 460 volt, 60 Hz mill with another type of power supply, you will need to rewire the motor to avoid damage to the sawmill.

NOTE: To operate the models with 575V (Canada) power supply an additional transformer is required (Part No. 068185). The transformer has the following specifications: 45kVA, 3-Phase, 600V Primary - 480V Secondary.

See Figure 1. The wiring diagram and component layout for the Wye-Delta starter control is shown.



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FIGURE 1

See Figure 2. See the wiring diagram to rewire the motor.

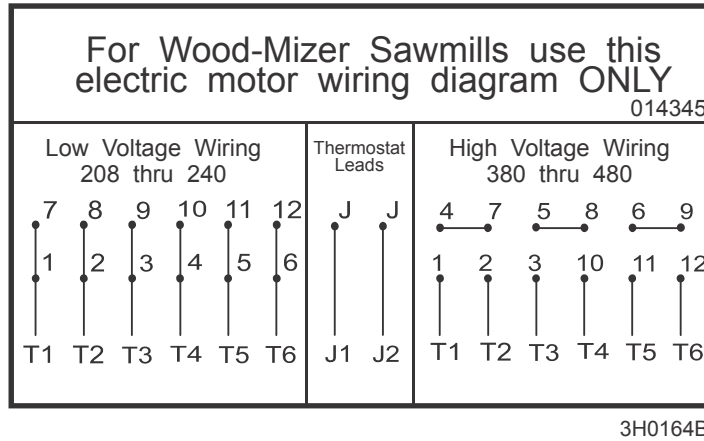


FIGURE 2

See Table 1. Install a fused disconnect switch within sight of the machine. Typical minimum switch, fuse, and wire sizes for use with various operating voltages is shown. All electrical installation must meet local electrical codes. Fuses are sized for short-circuit protection only. The motor is configured with internal thermostats for overload protection. If an overload condition does occur, the thermostats shut the motor down and the motor cannot be restarted until it cools to a safe operating temperature.

3-Phase Volts	Fuse Disconnect	Time Delay Fuse	Suggested Wire Size
208 VAC	100 Amps	100 Amps	3AWG up to 50'
220 VAC	100 Amps	100 Amps	3AWG up to 50'
230 VAC	100 Amps	100 Amps	3AWG up to 50'
380 VAC	60 Amps	60 Amps	6AWG up to 50'
415 VAC	60 Amps	50 Amps	6AWG up to 50'
440 VAC	60 Amps	50 Amps	6AWG up to 50'
460 VAC	60 Amps	50 Amps	6AWG up to 50'

TABLE 1

See Table 2. This table lists the 25 horsepower motor specifications.

25hp Electric Motor Specifications	60 Hz E-Pak		50 Hz E-Pak
	U.S.	Canada	Europe
Horsepower	25	25	25
RPM	3500	3500	2896
Volts	230/460	575	208/415
Amps	56/28	22	64/32
SF	1.15	1.15	1.00
SF Amps	64/32	25	64/32
NOM EFF	91/89.5	91/89.5	89.5/87.5
Frame	256T	256T	256T
Design	B	B	B
AMB	40° C	40° C	40° C
INS	F	F	F
PH	3	3	3
ENCL	TEFC	TEFC	TEFC
Code	G	G	G
Duty	Saw	Saw	Saw

TABLE 2

See Figure 3. (Next page). Make sure the power cords are free to travel the length of the machine and up and down with the saw head. An overhead boom system to keep the cords above the operator's head is recommended. Dimensions to help you determine the best setup for your installation are provided.

The electrical starter box must be kept dust-free. Disconnect and lock out all electrical power. Then, clean inside of box of any dust or wood chips. Do this on a regular schedule. Close and securely fasten the starter box door when finished; do not operate or store with starter box door open.



DANGER! Hazardous voltage inside the disconnect box, starter box, and at the electric motor can cause shock, burns, or death. Disconnect and lock out power supply before servicing! Keep all electrical component covers closed and securely fastened during mill operation.

The time-delay relay in the electrical starter box should be set between 2-3 seconds. The time-delay relay does the automatic switching of the motor windings from Wye to Delta configurations.

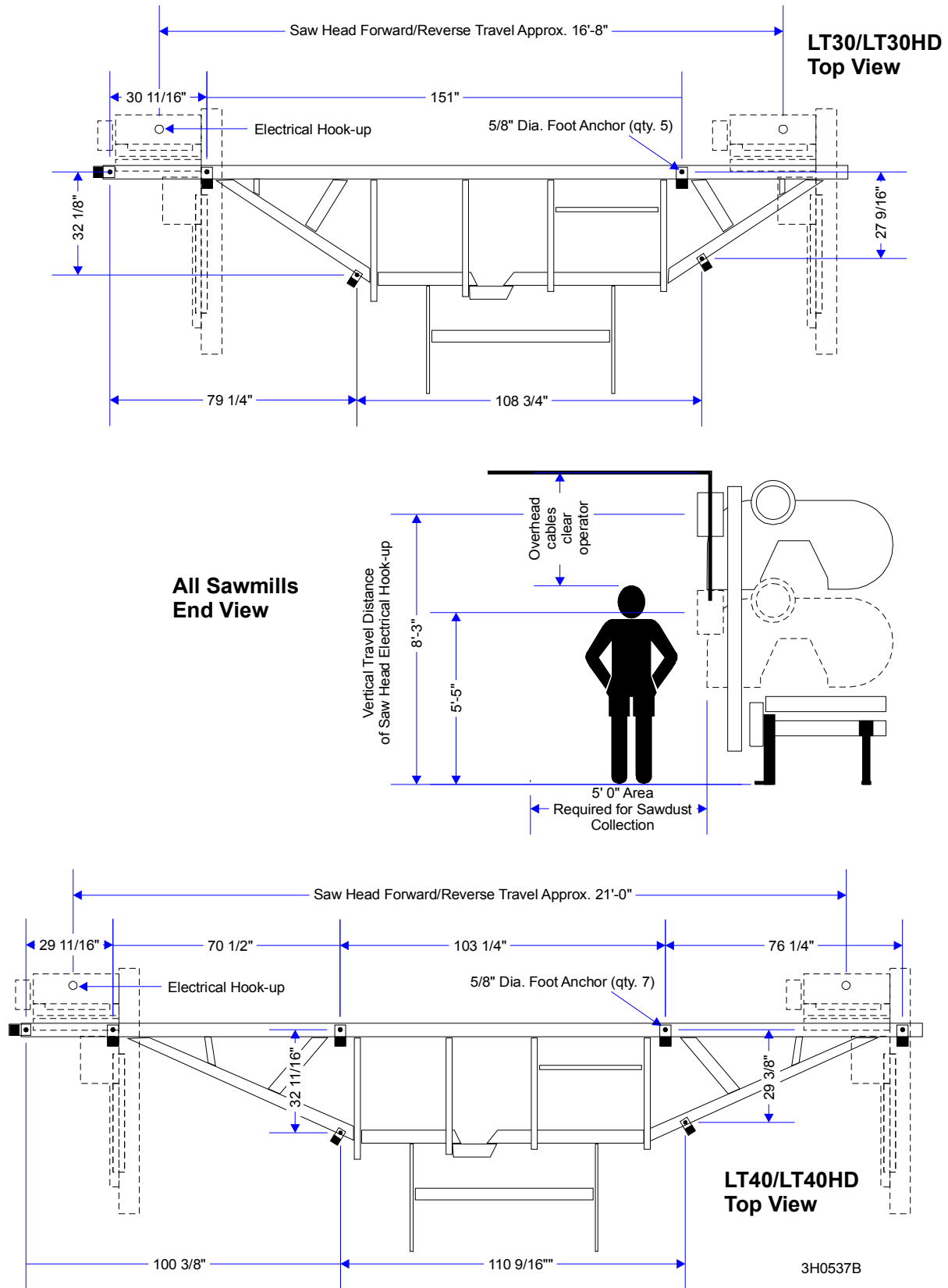


FIGURE 3

Phase Converter

The Roto-Phase is a rotary 3-phase converter. It generates 3-phase power from a single phase.



CAUTION! Wood-Mizer gives service requirements for using the Roto-Phase with the Wood-Mizer sawmill only. If you plan on running additional equipment with the Roto-Phase, follow the manufacturer's recommended specifications. Failure to do so could cause equipment damage.

Inspect the phase converter for damage or missing parts upon receipt. If a part is damaged or missing, call ARCO at **1-800-428-4370**.



CAUTION! Make sure the Roto-Phase is installed in accordance with the National Electric Code, city and local codes. A properly sized magnetic starter is recommended for the Roto-Phase.

Mount the phase converter in a dry location. It may be mounted either horizontally or vertically. Avoid moisture and chemicals whenever possible.

See Table 3. Service requirements for the 230 volt phase converter (as used for the Wood-Mizer sawmill only) are shown below. Install the phase converter in accordance with ARCO installation data and local electrical codes.

MAIN	ROTO-PHASE			WIRE
Disconnect	Fused Disconnect	Time Delay Fuse	Output of Roto-Phase	To Roto-Phase
200 AMP	200 AMP	125 AMP	100 AMP	1/0 AWG or larger

TABLE 3

After installation, test the sawmill for proper motor rotation. If rotation is incorrect, switch the left two legs of incoming power to the sawmill's starter box. (The right leg is the manufactured leg of the phase converter and should not be used for any single phase loads.)

With the main disconnect on, start the phase converter with the magnetic starter button. Let the phase converter come up to speed. Switch on the sawmill's disconnect box.



CAUTION! The sawmill's electrical starter should only be switched on after the phase converter is up to speed. Do not attempt to operate the sawmill without the phase converter operating properly. Damage to the equipment may result.

See Figure 4. The Roto-Phase wiring diagram is shown below. Additional drawings and information from the manufacturer are supplied with the unit.

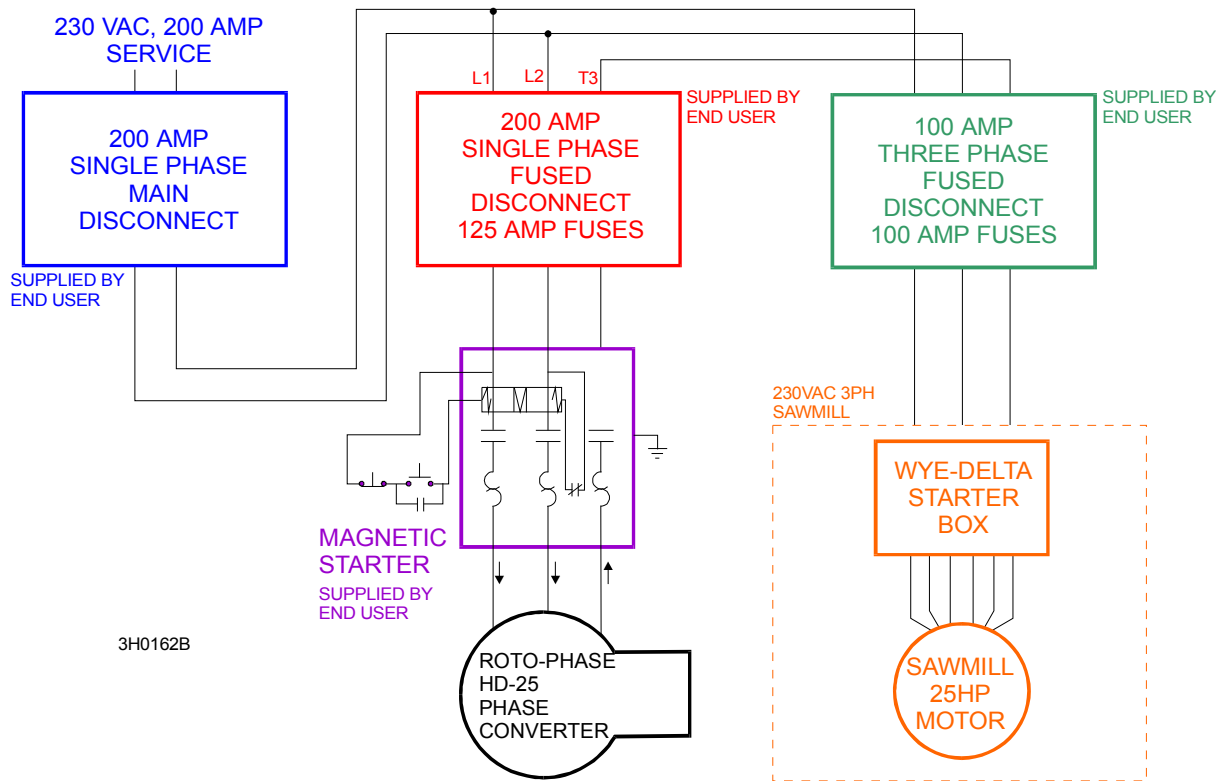


FIGURE 4