LINCOLN
A PENTAIR COMPANY

Model 90103
TIMER/POWER CONVERTER For 24 VDC
TYPE 103 QUICKLUB ELECTRIC PUMP
Series "B"

CSA CERTIFIED - FILE NO. LR 60891

ELECTRICAL SPECIFICATIONS

120 volt 50/60 Hz input 120 volt amp

110 volt at 100 milliamp D.C. output

10 volt at 1,100 milliamp D.C. output

Nominal 24 volt at 960 milliamp D.C. output

On Time: One minute fixed

Off Time. Selectable from 3 minutes to 2 hours

Enclosure: NEMA 13 dust and liquid tight

Application limitations: This timer is designed to operate Lincoln's Model 600401761 103 electric motor driven lubrication pump only.

(See section Q3 page 1 in Lincoln Service Manual for 103 pump service data):

⚠ WARNING

Shock hazard. Turn power off before servicing.

CAUTION

Open circuit voltage across terminals 3 and 4 can reach 170 V.D.C.

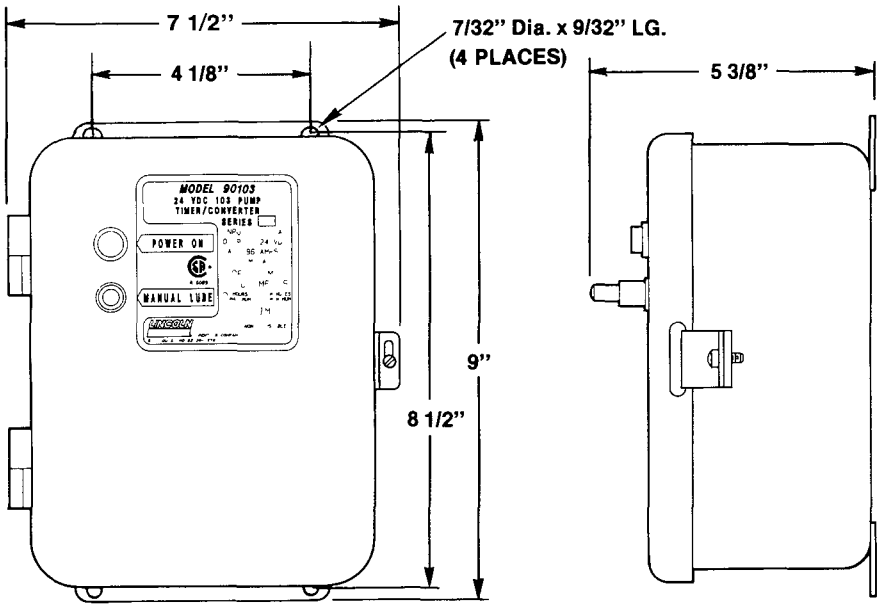


Figure 1.

OPERATION

The Model 90103 Timer/Power Converter allows the 24V DC Model 600401761 103 pump to be used in industrial applications where 24V DC power is unavailable. The unit converts 120V AC to 24V DC, and also programs the lubrication cycle frequency from 3 minutes to 2 hours. The manual run button, located on the front of the enclosure, can be programmed to either begin a 1 minute run cycle or cause the pump to run as long as it is depressed.

CAUTION

1. **Follow local electrical codes concerning equipment grounding. Use slotted, hex head, green colored terminal for connecting grounding conductor.**

CAUTION

Vibrations in excess of 3 g's can damage the assembly.

PRELUBE

When power to the timer is turned on, the first lube event will begin (prelube). Subsequent lube events will occur per the programmed time.

This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS** READ AND RETAIN FOR REFERENCES

One Lincoln Way
St Louis, Missouri 63120-1578
(314) 679-4200

CAUTION

Enclosure door must be closed to maintain its dust & liquid resistance.

CAUTION

Can only be used with Lincoln style 103 pumps with 24 volt D.C. motor

INSTALLATION

Install in a position where the pilot light can be viewed and where the manual lube button on the door can be reached. Also, locate it where there is enough clearance to fully open the door and where a minimum amount of dust and liquid can enter the enclosure when the door is open.

NOTE: Don't place unit in a position where it is exposed to the direct spray of cutting oil, or grinding dust, or machine chips. The door should be closed at all times except when making timing adjustments. Vibration or physical jarring should also be avoided.

Follow local electrical codes when making installation. An independent grounding terminal is provided to accept a grounding conductor, for those installations where grounding through conduit raceway is not available (See Figure 3).

CAUTION

To prevent electrical shock, when working with the pump, install the type switch that can be locked in the "OFF" position (switch is provided by the user). If this is not possible, the switch should be located so it can be seen from the pump and timer (as a safety precaution).

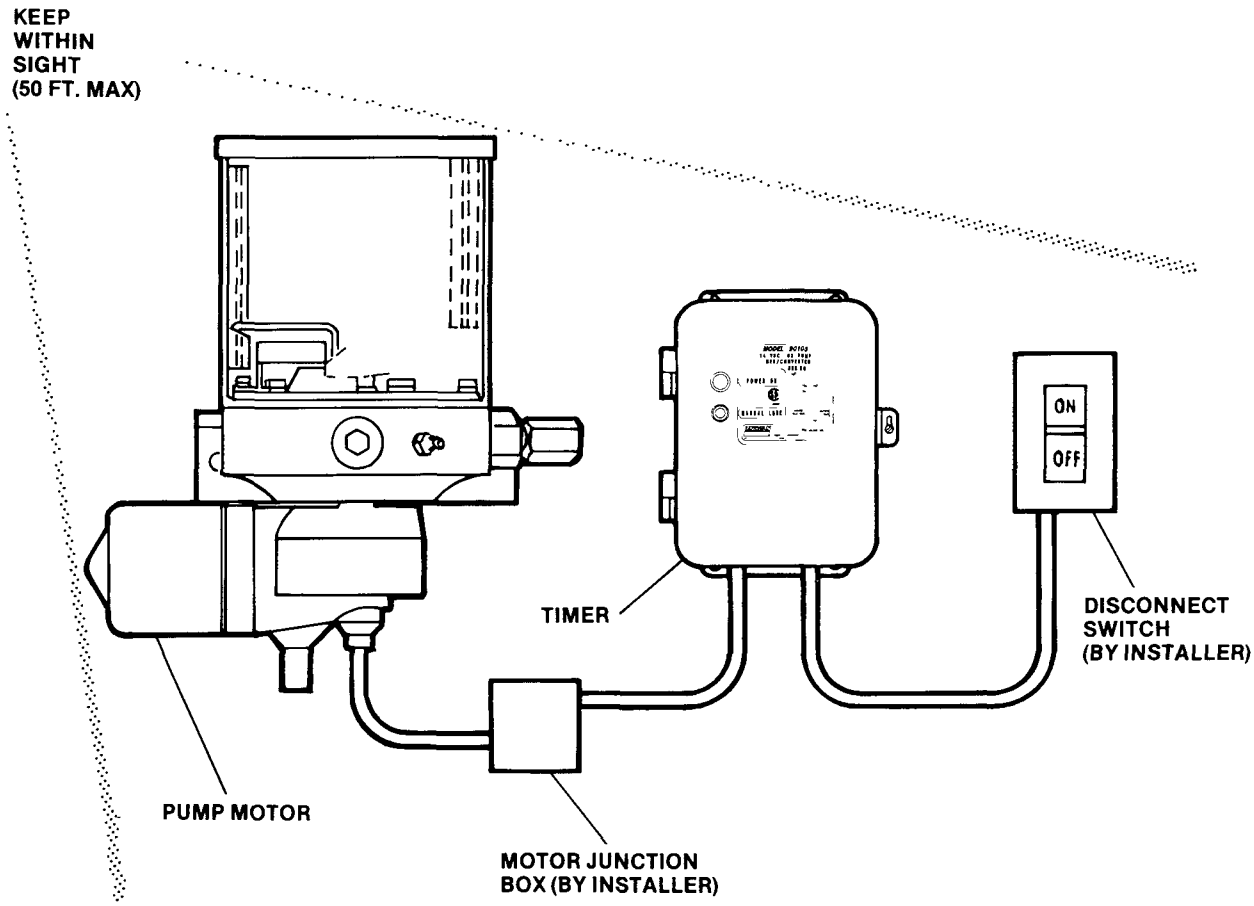


Figure 2.

WIRE CONNECTIONS

Connect the 110/120 volt, 50/60 Hz power to terminals 1 and 2. The identified grounded conductor (white wire) connects to terminal 2.

The 103 Pump leads are connected as follows: brown to terminal 3, blue to terminal 4, and green to the grounding terminal, located left of the main terminal board below the stamped letter "G" (See Figure 3).

Access holes to accept conduit fittings must be cut into the enclosure by the installer.

NOTE: Grounding may be accomplished through conduit raceway by connecting the motor green wire to the raceway at the motor junction box (provided by the installer). In these instances, there will be no green wire brought into the 90103 Timer.

The power resistor and full wave rectifier deliver an unregulated and unfiltered D.C. output.

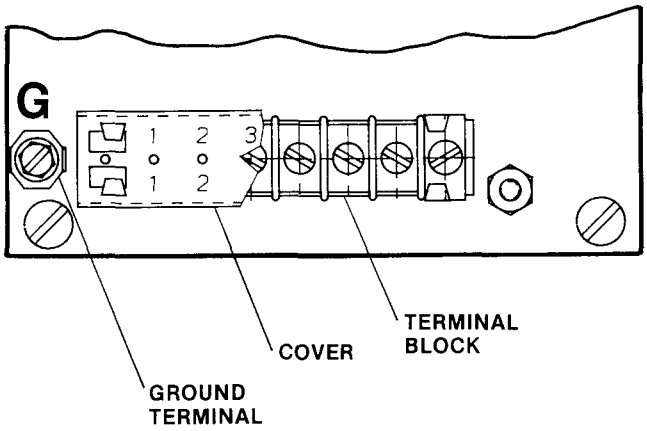


Figure 3.

TIME SELECTION

Select the off-time by adjusting the timer potentiometer as required. Line up shaft slot with graduation on dial corresponding to the number of minutes selected. Off-time adjustments range from 3 minutes to 120 minutes (See Figure 4).

When A.C. power is turned on, the "Power On" pilot light (white) on the door will light, the motor on the pump will be energized, and the pump will begin dispensing lubricant (pre-lube). The motor will run for 60 seconds, then it will stop. The next lube event will take place when the selected off-time has elapsed, the motor will again run for 60 seconds, and the cycle will continue to repeat as long as power is maintained.

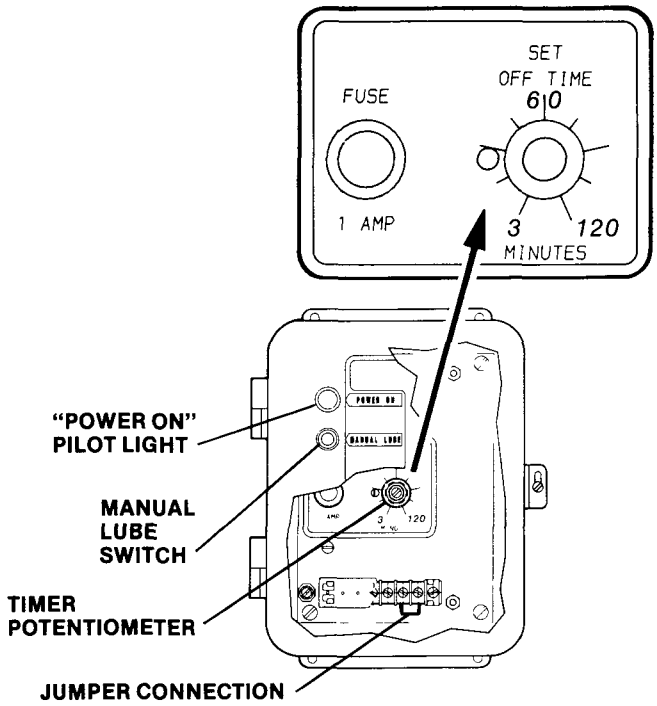


Figure 4.

MANUAL LUBE

There are two options for operating the manual lube feature. When you connect the timer as described above under "Wire Connections," you reset the timer by pushing the manual lube button, on the enclosure door, and begin a 60 second lube cycle by releasing the button. The next lube event will take place when the selected off-time has again elapsed.

When you connect a jumper from terminal 5 to terminal 6, you start the pump motor by pressing the manual lube button and stop the pump motor by releasing the button. The off-time remains as selected, therefore, these manual lube events will be **in addition** to the programmed lube events (See Figure 5).

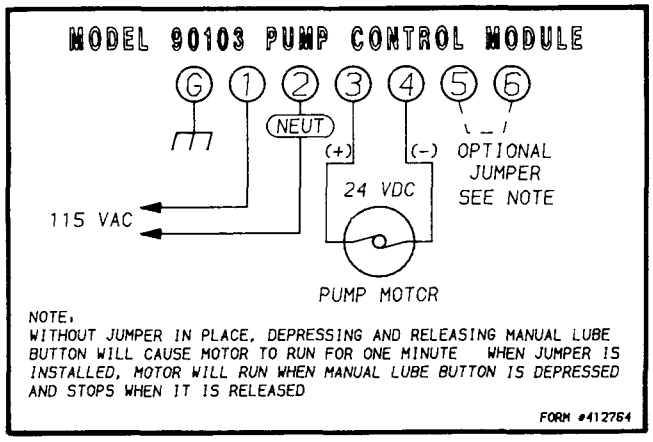
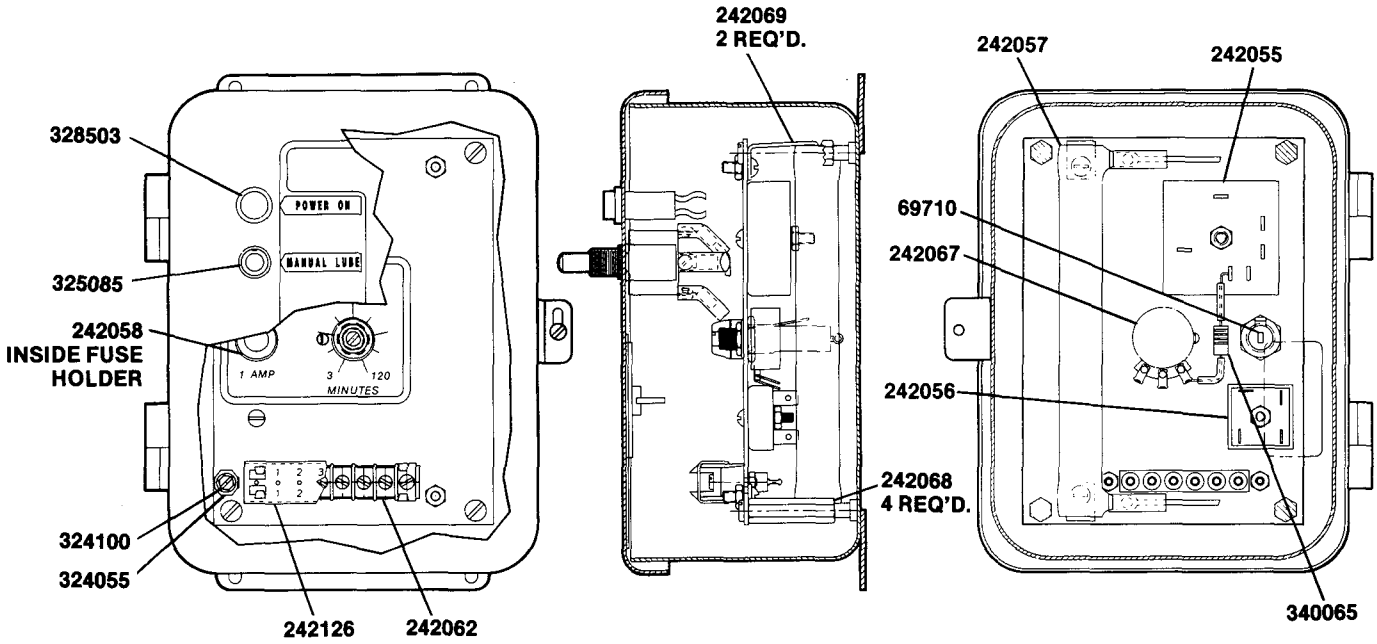


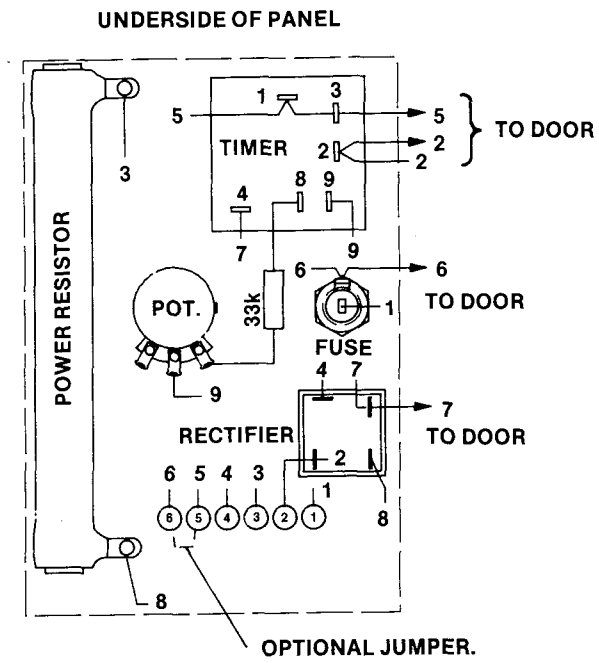
Figure 5.

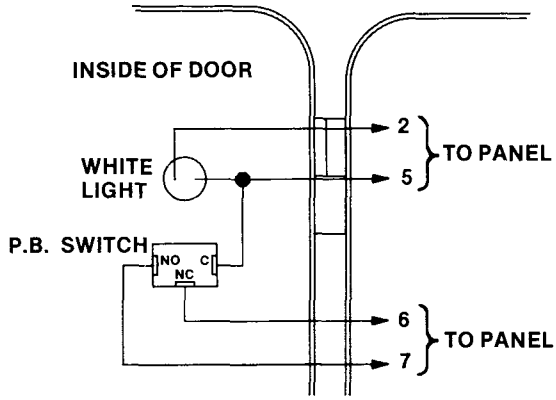
TROUBLE SHOOTING GUIDE

Symptom	Possible cause	Other Symptoms	Correction
No white light (power on)	No power to terminals 1 & 2	No AC volts at terminals 1 & 2	Restore power
	Fuse blown	No AC volts at terminals 6 & 2	Replace fuse
	325085 switch damaged	No AC volts at terminals 5 & 2	Replace switch
	Lamp burnt out	110 to 120 V AC at terminals 5 & 2	Replace lamp
Pump motor does not run when power is turned on.	Defective pump motor	20 to 80 V.D.C. at terminals 3 & 4	Replace pump motor
	Open wiring between timer and pump	110 to 170 V.D.C. at terminals 3 & 4	Reconnect wiring
	Open pump motor wiring		Replace pump motors
	Defective timer	Add jumper between term 5 & 6 and press manual lube button	If motor runs replace timer
	Defective rectifier or power resistor		If motor does not run replace rectifier or resistor
Pump motor runs only at power turn on or manual lube	Defective timer		Replace timer
Pump motor turns in wrong direction	Brown and blue wire are connected in error		Connect brown wire to terminal 3 and blue wire to terminal 4



INTERCONNECTION DIAGRAM





REPAIR PARTS

Part	Description	Part	Description
69710	Fuse holder	242068	Spacer
242055	Timer	242069	Bracket
242056	Rectifier	242126	Terminal cover
242057	Resistor	325085	P.B. switch
242058	Fuse	328503	Pilot light
242062	Terminal block	340065	Resistor
242067	Potentiometer		