

MODIFICATIONS

The following modifications may be made should your application warrant.

A. Using a Switch or Relay for a trigger

Any type of switch or relay may be used to trigger the **TIMER** instead of the **PROXIMITY SENSOR** supplied.

This must be done as follows or damage may be done to the Controller. The switch/relay must be used in the "normally open" mode. Install it such that it will be triggered (switched) by the operation of the machinery.

Cut off the connector at the end of the **SENSOR CORD-SET**. Then cut back the jacket to reveal it's wires. Connect the wires to the switch as described below according to it's respective color

a) The Brown Wire

This wire is a 24 Vdc supply. Connect it to one side of the switch/relay.

b) The Blue Wire

This wire is ground and has no purpose when using a switch. Cut this wire off short and insulate it well.

c) The Black Wire

This wire is the sensing lead. When this wire receives 24vdc (shorted to Brown Wire) the **CONTROLLER** is "signaled". Connect it to the other side of the switch/relay.

TIMER. The only requirements being that it operates on 12 Vdc and sinks current when triggered. Install the sensor so it trips appropriately. Wire it per it's instructions, and the information found in paragraph "A" above.

C. Using a Power Signal for a trigger

Never use a power source to directly trigger the TIMER. Introducing an outside voltage directly to any of the wires in the **ACTUATOR LEAD** will most probably damage the **TIMER** immediately.

Using a powered output to trigger the **TIMER**, may only be done through a relay. Get a relay of the same voltage as the power output you wish to use, and use the relay to trigger the **TIMER**. See paragraph "A" above for instruction on wiring the relay to the **TIMER**.

D. Using longer than standard CORD-SETS.

If required, the **POWER CORD**, **PROXIMITY SENSOR CORD-SET**, or the **SOLENOID VALVE CORD-SET** may be lengthened without detriment to performance. Doing this on site, however, is not recommended. It is best to contact **L.S.P. Industries** or our distributor to request an extension cordset.

B. Using another type Sensor for a trigger

Most any other type sensor may be utilized to trigger the

TROUBLESHOOTING INSTRUCTIONS

PROBLEMS	SOLUTIONS
I. No lights are lit.	A. Make sure the POWER CORD is plugged into an electrical outlet, and that power is present. B. Check FUSE to be sure it is not burned out.
II. Controller does not actuate with the press	A. Press the MANUAL CYCLE Button. 1. If the CONTROLLER operates with this button check the SENSOR per Solutions B & C below. 2. If CONTROLLER does not operate, CONTROLLER or SENSOR requires inspection and/or repairs. B. Check the distance between the SENSOR and the Metal Object as they pass. If this gap is not 1/8th inch or less adjust the SENSOR closer to the Magnet. C. Check the SENSOR LEAD to see that it is securely attached to the CONTROL BOX .
III. Controller lights indicated is working but the Blastmatic does not actuate	E. See the Trouble Shooting Sheet for the Blastmatic . F. If the Blastmatic is not the fault , (from solution A above), CONTROLLER is in need of inspection and repair.

If a **SOLUTION** below does not solve the **PROBLEM**, the **CONTROLLER** is probably at fault. Since it is solid-state, there is little that can be done on site. In such cases, contact **L.S.P. Industries** for return authorization.

REPLACEMENT PARTS

Proximity Sensor ZSW014 Screws into fitting on cable from the Control Box.

Proximity Sensor Mounting Bracket 290BRK03

Adjustable Bracket that allows Sensor to move forward and backwards and swivel in all directions.

Actuator VAL011

Solenoid Valve, screws into fitting on cable from Control Box.

Actuator Tube TUB-019

3/16" O.D. plastic tubing which is used to install the Actuator at a remote location..

Tube Fittings FIT-020, (2) required.

Used to connect the Actuator Tube (above) to another piece of equipment

Actuator Bracket 459BRK01

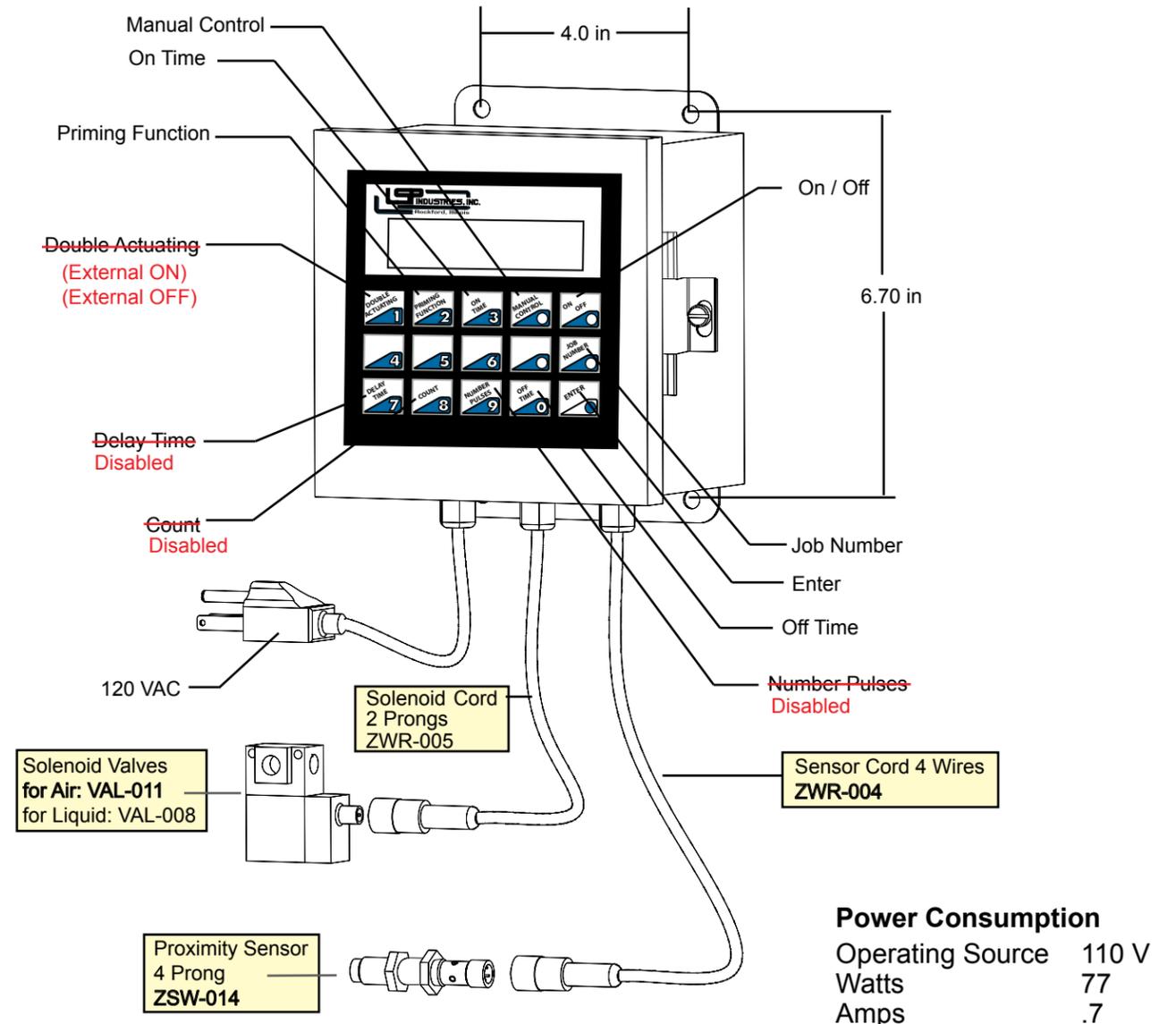
Union Nipple Fitting used to mount the Actuator assembly (above) directly to another piece of equipment.

INSTALLATION, OPERATION, and TROUBLESHOOTING

Electronic Timer Model No. E-315



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TEL: 815-226-8090 • FAX: 815-226-9250
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Power Consumption	
Operating Source	110 V
Watts	77
Amps	.7

The LCD Readout

Shown to the right are the readouts given as the **TIMER** is in the run mode. These readouts with the exception of, Job No., and On/Off Operation, will display in accordance with the **TIMERS** internal Clock. The **Job No.**, and the **On/Off** displays will remain lit and constant during the operation.

Job No.	On/Off Operation	Input Signal	Elapsed On Time
99	XXX	X	99.99
	999	99	99.99
	Elapsed Cycle Time	Elapsed PulseTime	Elapsed Output OffTime

INSTALLATION INSTRUCTIONS

The LSP Industries **Electronic Timer** is designed to control the operation of the LSP PresSpray Lubricating Systems, the LSP CompuSpray Systems, and the LSP FloaterCoater Systems.

A. The CONTROL BOX

This **CONTROL BOX** is the hub of the **Timer**. It supplies the connections to power and to the other components. It is the place where the **Job Parameters** are set.

Locate this **TIMER BOX** where visible and available, but out of the work area. If frequent use of the **MANUAL CONTROL BUTTON** is expected, locate so it can be easily reached.

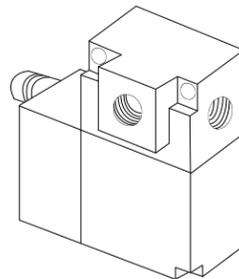
DO NOT locate on surfaces that move or see a lot of shock. On moving surfaces the attached **CORD-SETS** may catch or wear. Although this **TIMER** will take a lot of punishment, shock is never good for anything.

To use the **CORD-SETS** as supplied, the **CONTROL BOX** must be within given distances of the other components.

- Locate within 6 feet of an 110vac outlet.
- Locate within 10 feet of the **SENSOR**.
- Locate within 10 feet of the **SOLENOID**.

NOTE: These distances provide no slack in the lines. Shorter distances are highly recommended for good **CORD-SET** routing.

At the location selected, drill and tap four holes using the dimensions shown in drawing on page 1. If using the screws and washers supplied, tap with 1/4-28 thread to 3/8" min. deep. Insert the screws (w/ washers) through the slots in the mounting feet of the **CONTROL BOX** and tighten securely.



B. The SOLENOID VALVE

Whenever it is energized from the **CONTROL BOX** it allows air or solution to pass through on a controlled time sequence as set by the **PARAMETERS**.

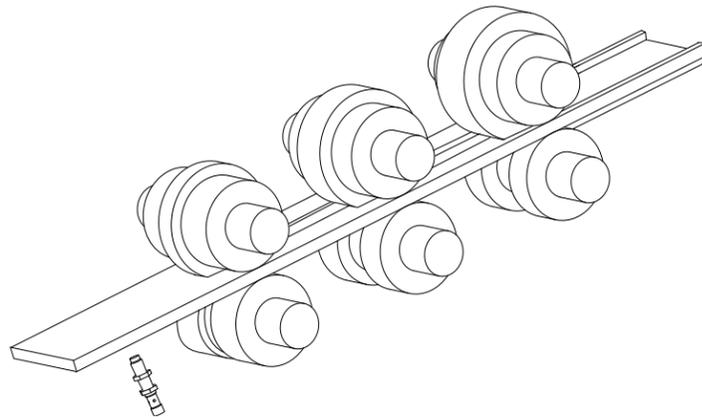
C. The PROXIMITY SENSOR

Used as the ON/Off switch for the **TIMER**. To turn the **Timer** ON place the **SENSOR** within 1/8" of a metal object, a **Signal** is seen at the **CONTROL BOX** which turns the timing sequence on until the **Sensor** is removed from the metal object. **NOTE:** This is the standard triggering device. Any type switch may be used instead. See the **MODIFICATIONS** area if interested.

Figures 1, 2 and 3 in the following column describes the proper locating of the **PROXIMITY SENSOR** and the versatility and adjustability of the **MOUNTING BRACKET** used with the **PROXIMITY SENSOR**.

Positioning of the Proximity Switch

The **PROXIMITY SENSOR** is positioned so that something in relation to the machine that it is monitoring moves in front of it and remains there as long as the **TIMER** is to be active. If using the **PROXIMITY SENSOR**, it could pickup a constant signal from the coil stock. Place the **PROXIMITY SENSOR** within 1/8" of the stock in a location where the stock will not buckle and damage the **SENSOR**. Have the **TIMER** in the OFF position when the machine is at rest. When the machine starts up and the stock starts to move set the **Timer** to ON and it will start tripping the Solenoid on a timed basis.



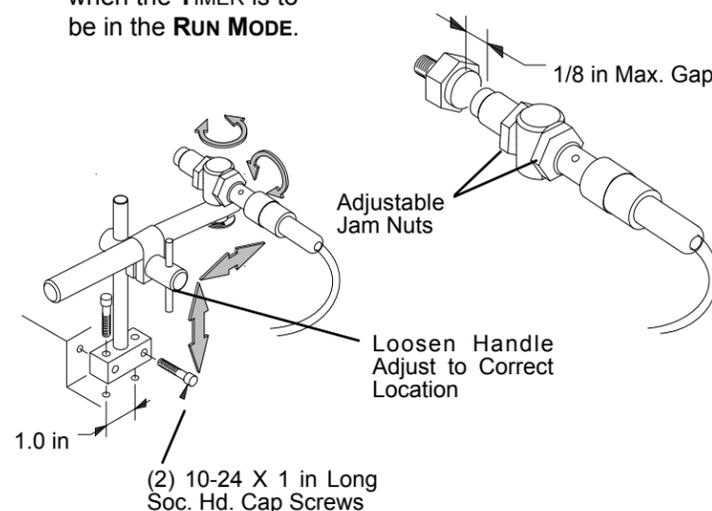
The PROXIMITY SENSOR AND MOUNTING BRACKET

Locate the **PROXIMITY SENSOR** per the instructions shown above. The surface must be sound enough to insure the **SENSOR** will remain in position during operation. Make sure this location is within reach of the **SENSOR CORD-SET**.

Before mounting the **SENSOR**, assemble it onto its **MOUNTING BRACKET**, and hold this assembly in place to check if the positioning described in **Figure #2** is possible. See **Figure #3** for instruction on using the **MOUNTING BRACKET** to adjust the location of the **SENSOR**.

To mount the **SENSOR**, drill two holes 1 inch apart. If using the screws supplied, tap these holes with #10-24 thread to 3/8" min. deep. Insert the screws thru the holes in the feet of the **MOUNTING BRACKET** and tighten securely.

Adjust **SENSOR** so that metal is always within 1/8" of it when the **TIMER** is to be in the **RUN MODE**.



OPERATING INSTRUCTIONS

A. Power Up

When the **POWER CORDSET** is plugged in, the **TIMER** will go through a **Power-Up** routine. Briefly, the following information will be displayed.

- LSP INDUSTRIES, Inc.
- Model No E-315
- Version No.

B. Input Signal

The **TIMER** is normally kept in the OFF position when the **TIMER** is at rest. When the **TIMER** is to be activated it is manually turned to the ON position. As long as the **PROXIMITY SENSOR** sees a metal object, such as the coil stock it will send a constant signal to the **TIMER** so it can go into its **Operation Mode**. At that moment, a small **LED** will illuminate from the **PROXIMITY SENSOR** and WILL stay on as long as there is metal in front of the **SENSOR**. At the same time an asterisk "*" illuminates on the **TIMER DISPLAY**.

C. Operating Modes

During operation, the **TIMER** will be in one of two **Modes**, either **Run Mode** or **Set Mode**. In **Run Mode**, the **TIMER DISPLAY** will be full of **SETTINGS** and **JOB PARAMETERS**. To change to **Set Mode**, press any named key. In **Set Mode**, the **TIMER DISPLAY** will give a prompt to enter a specific **TIMER** or **JOB PARAMETER**. Changes to **PARAMETERS** are stored immediately after pressing the **ENTER** key and will effect the current **Operation Cycle**.

D. Setting TIMER PARAMETERS

The **TIMER PARAMETERS** are universal settings which take effect during the **Operating Cycle** regardless of the **JOB PARAMETERS**.

1. DOUBLE ACTUATION KEY

Used to SET whether the **CONTROLLER** will be activated **Internally** or **Externally**. If the unit is to use the **PROXIMITY SENSOR**, (**External Control**) the **KEY** is pushed so that, **External Control ON** shows on the **DISPLAY**. If the unit is to be controlled **Internally**, (without the **PROXIMITY SENSOR**) the **Key** is pushed so that, **External Control OFF** shows on the **DISPLAY**.

2. PRIMING FUNCTION KEY

Used to help prime equipment during the initial setup. Set to **ON** to continuously energize **SOLENOID VALVE** on/off at rate of 3 times per second. Press key to toggle setting between **OFF** and **ON**.

3. ON TIME KEY

Sets the time duration for **SOLENOID VALVE** to be energized during the **Operation Cycle**. The range is 1 to 999; incremented at 10mSec; giving .01 to 9.99 seconds.

4. MANUAL CONTROL KEY

Used to manually energize the **SOLENOID VALVE**. When pressed, the **SOLENOID VALVE** becomes energized until key is released. This function is available at any time.

5. ON/OFF Operation KEY

Used to turn **CONTROLLER** operation **ON** and **OFF**. It is used during setups and other times the machinery is operated but the **CONTROLLER** operated equipment of the necessary. Press key to toggle setting between **OFF** and **ON**.

E. Setting JOB PARAMETERS

There are 5 parameters stored with each **JOB NUMBER**.

1. JOB NUMBER Key

Sets the current **JOB NUMBER**. Range is 1 to 99.

2. DELAY TIME KEY

(Not Available.)

3. COUNT KEY

(Not Available.)

4. NUMBER PULSES KEY

(Not Available.)

5. OFF TIME KEY

Sets the time duration for **SOLENOID VALVE** to be OFF between **Actuations**. The range is 1 to 999; incremented at .010 Sec; giving .01 to 9.99 seconds of **OFF TIME**.

6. ENTER KEY

After entering values into any of the above **JOB PARAMETERS**, press the **ENTER KEY** to save the value.

F. The Operation Cycle

After the **CONTROLLER** is **Powered Up** and the **ON** Button is pushed it will perform according to the **Values** set for its **Parameters**. The operator will set the ON time that the Solenoid is Open and the OFF time that the Solenoid is OFF. A description of its **Operation** is given below (described as operating in **Run Mode**).

When a Metal Object comes in the vicinity of the Proximity Sensor the **Operation Cycle** begins. There will be just one Input Signal and it will be continuous during the entire **Operation Cycle**.

The **Timer** Sets the Solenoid to stay open for its set time. The **Timer** then Sets the OFF time for the Solenoid and it goes into its rest mode. The **Timer** will then continue to alternate the ON/OFF operation until the Metal Object passing the Proximity Sensor is removed or the timer is manually shut down.