

# **OPERATING AND INSTRUCTION MANUAL**

**LAD1-42**

Manual C-15 Rev 7/77

**Despatch Industries**

1-800-473-7373

INSTRUCTIONS FOR OPERATING  
DESPATCH OVEN MODEL LAD 1-42H

Remove all packing materials and inspect unit and accessories for damage.

Attach rubber feet to the bottom corners of the oven. They are required for proper cooling of the control compartment and to prevent damage to counter surfaces.

Install shelf angles and shelves supplied.

WARNING:

THE USER(S) OF THIS EQUIPMENT MUST COMPLY WITH OPERATING PROCEDURES AND TRAINING OF OPERATING PERSONNEL AS STATED IN THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF 1970, SECTION 5, AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), 86A OF 1973 (ARTICLE 100, SECTION 2d, AND APPENDIX I).

DO NOT USE ANY ENCLOSED CONTAINERS, FLAMMABLE SOLVENT, OR OTHER FLAMMABLE MATERIALS IN THIS EQUIPMENT. (EXAMPLES: SPRAY CAN, SEALED JAR OF WATER, ALCOHOL, KEROSENE, PAPER, ETC.). (See design specification sheet.)

DO NOT ATTEMPT ANY SERVICE ON THIS EQUIPMENT WITHOUT TURNING OFF THE MAIN POWER DISCONNECT SWITCH.

POWER CONNECTIONS

Connect electric supply directly to unit as indicated on electrical drawing with all required grounding or safety equipment and in compliance with applicable codes, ordinances and accepted safe practices.

The oven was wired at the factory for 240 volts, 1 phase, 60 Hz. The oven can be easily converted to 208 volts with the addition of a 12 gauge jumper between terminals 2 and 4.

INITIAL START-UP

See additional instructions on the Digitronic Control regarding operation.

Turn the control switch on. The motor(s), red pilot light and the controller display will come on.

To set the control instrument, press the square button and turn the knob until the desired temperature is displayed. When the button is released, the control will alternately display the setpoint temperature for 3 seconds and the inside chamber temperature for 7 seconds.

Turn the heater switch on. The white pilot light will indicate when the heater is on.

If the optional hi-limit is used, initially set the control and hi-limit to a temperature setting 10-15 degrees above the operating temperature. After allowing the oven to operate at this temperature for 30 minutes, turn the hi-limit down until the heater shuts off. Turn the control down to the operating temperature.

If the optional signal timer is used, set the timer to the desired interval. At the end of this period, the bell will sound.

If the optional process timer is used, set the timer to the desired interval. At the end of this period, the heater will shut off. To operate the oven independently of the timer, turn the timer to the "on" position.

#### LOADING:

When placing material in oven, center it as much as possible and allow the maximum amount of air space around the various parts being processed. This will tend to equalize the temperature throughout the work chamber.

#### SHUT DOWN

Turn the control switch and the heater switch off.

#### ADJUSTMENT OF CONTROLLER

If the display shows a dot in the lower right hand corner of each LED, there is a break in the thermocouple. Replace with 20 gauge Type J thermocouple (available from Despatch).

If the display shows the oven temperature different from the set point temperature, the control may be adjusted in this manner:

Before making any adjustments, allow the oven to operate at the desired temperature for one hour. Remove the top cover of the oven by loosening the screw located on each side of the cover. There is an off-set adjustment potentiometer located on the right side of the base printed circuit board. 1/4 turn of the pot will result in 5°C (10°F) shift in the temperatures displayed.

## HI-LIMIT CALIBRATION

If the temperature indicated on the dial of the hi-limit thermostat is not the same as the temperature indicated on the controller, the thermostat may be recalibrated.

Before making any adjustments, oven should be at operating temperature for one hour. Pull knob from thermostat shaft. Calibrating screw is located in center of thermostat shaft. If the temperature indicated on the dial of the thermostat is higher than the temperature indicated on the control, turn calibrating screw counterclockwise. If the temperature indicated on the dial of the thermostat is lower than the temperature indicated on the control, turn calibrating screw clockwise. 1/4 turn of the calibrating screw equals approximately 20°C (35°F). Replace knob on thermostat shaft. Repeat operation in 30 minutes if necessary.

## POWER REQUIREMENT

208/240 volt - 1 phase - 60 cycle

3000 watts heating capacity - 17.3/15.4 amps

340°C (650°F) maximum temperature

## OPTIONAL EQUIPMENT

There are several that available from Despatch can be easily installed on the oven by the user:

- A. Process hi-limit, for over-temperature control.
- B. Signal timer, which rings after specified time.
- C. Process timer, which turns heater off after specified time.

For information, please contact a Despatch representative (see yellow pages under "Ovens-Industrial") or contact Despatch directly at Box 1320, Minneapolis, MN 55440, 612/331-1873.

# Operating Instructions For The Despatch Digitronic Control

The DIGITRONIC is a solid state temperature control with  $\frac{1}{2}$ " high digital readout and thermocouple input.

## OPERATION

1. Turn power switch to "on" (indicator light should light). This activates fan and control circuits.
2. Depress and hold the button labeled "push to set". The display will be in the set point mode as long as the button is depressed.
3. Turn the knob labeled "turn to set" until the desired chamber temperature is displayed. Release the set point button. Note that set point will be changed if knob is turned when button is **not** depressed.
4. Turn heater switch to "on" (indicator light should light). This activates the heating elements. When the desired temperature is reached, the DIGITRONIC will proportion power to the heater as needed and the heater indicator light will flash on and off.
5. The readout area will alternately display set point and actual chamber temperature. Set point is on display when a small light shows above the label "set point".
6. Oven set point can be displayed at any time by manually depressing and holding the "push to set" button. This does not disengage the control function.
7. Turn heater switch to "off" after heating cycle is complete. Do not turn power off until oven temperature is below 100°C (212°F). If oven is turned off before properly cooled fan shaft and motor bearings may become overheated, which will shorten the life of the motor.

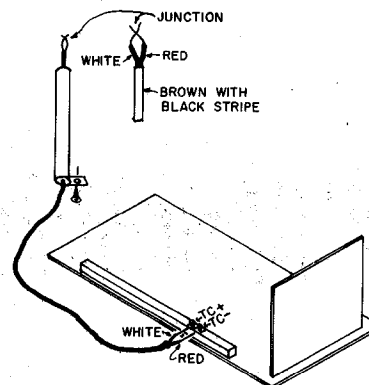
For information on how the Despatch DIGITRONIC can be used as a signal device and/or interfaced with your computer, call Despatch at 612/331-1873.

## THERMOCOUPLE BREAK PROTECTION

If the thermocouple breaks, the DIGITRONIC will shut off power to the heater to prevent excessive temperature in the chamber. This condition will be indicated in the DIGITRONIC digital display area by decimal points between the numerals.

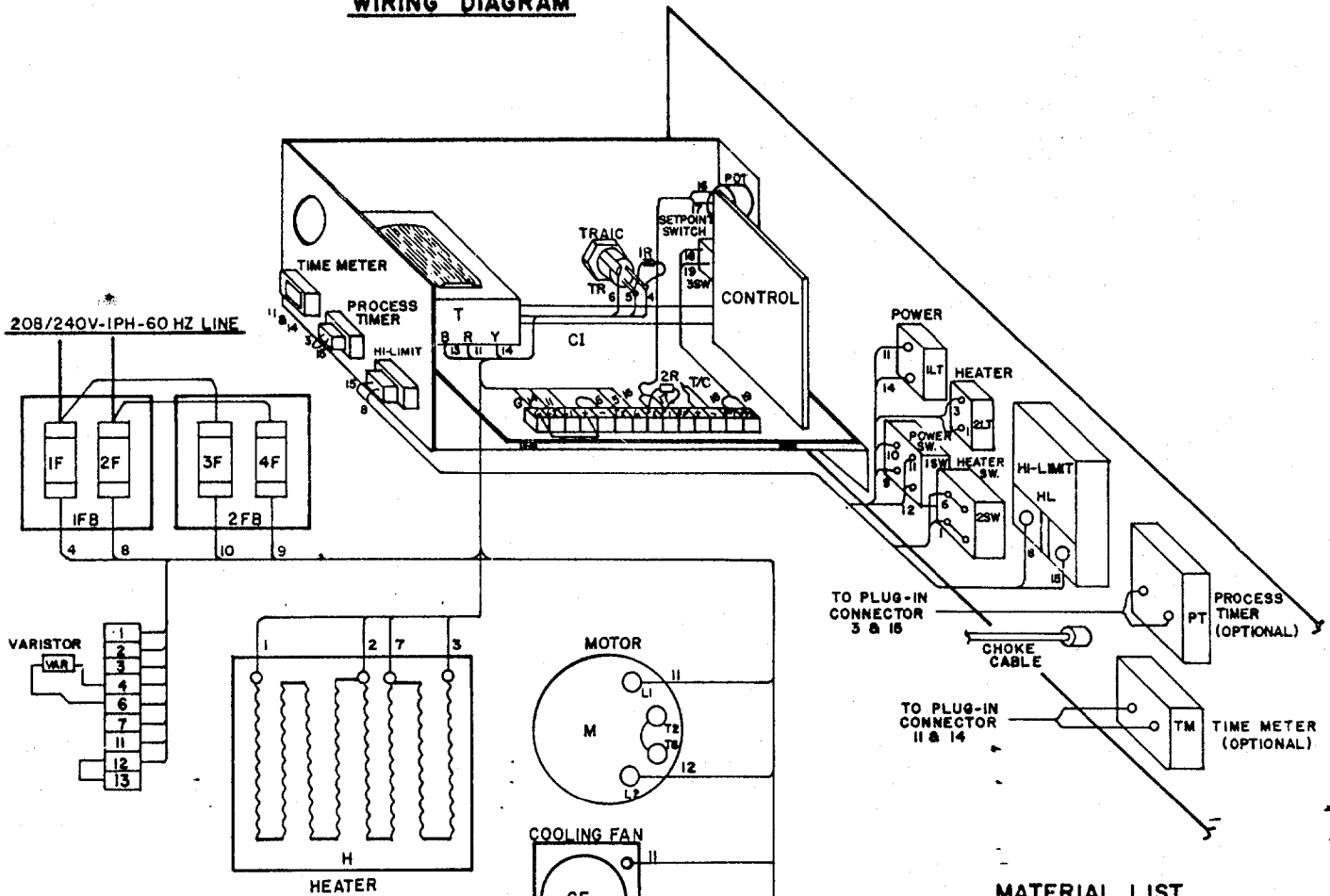
The thermocouple is type J (iron/constantan) and is replaceable, using the following procedure:

1. Disconnect power and tip oven on its back.
2. Remove feet and oven bottom.
3. Locate thermocouple and hi-limit bulb shield along the left side of the control chamber.
4. Remove shield by removing retainer screw and pulling shield out.
5. Pull thermocouple out of shield.
6. Feed new thermocouple into shield making sure that thermocouple junction (welded end) is exposed at least 1" above the end of the shield. Junction point should not be touching anything.
7. Reattach shield into original position.
8. Replace oven bottom and feet, and return oven to upright position.
9. Remove control panel and pull out for access to the terminal strip on the PC board.
10. Remove old thermocouple from terminals marked "TC+" and "TC-".
11. Attach new thermocouple to "TC+" and "TC-" making sure that white lead is attached to the "+" terminal and the red lead is attached to the "-".
12. Replace control panel.
13. If decimal points still appear between numerals, repeat procedure.

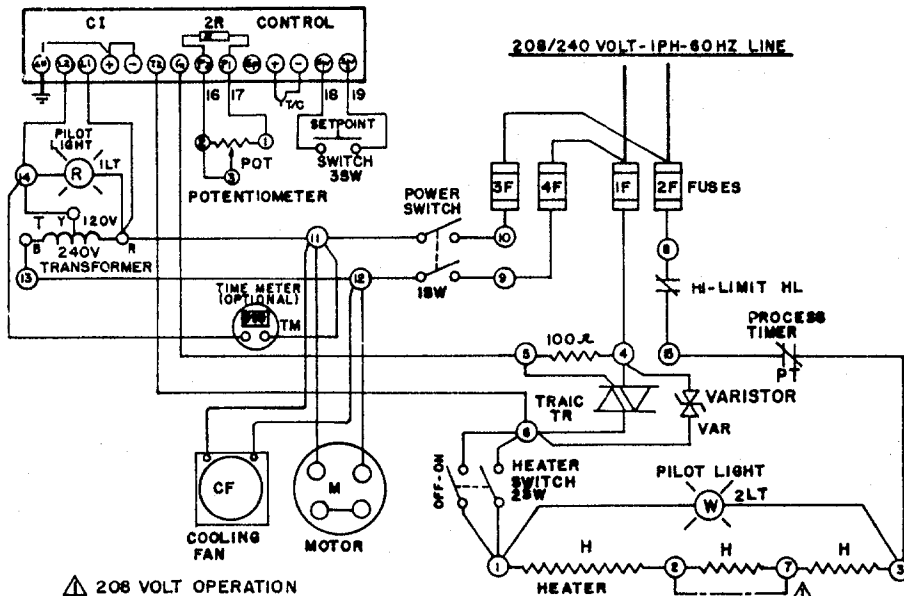


# LAD I-42

## WIRING DIAGRAM



## SCHEMATIC



⚠ 208 VOLT OPERATION  
-ADD 2-7 JUMPER

## MATERIAL LIST

ITEM	QTY	DESCRIPTION OF PART
CI	1	61-06-AF CONTROL
HL	1	B-10 HI-LIMIT
M	1	1/3 HP. MOTOR
1-2F	2	A25X20 FUSE
3-4F	2	250 VOLT 5 AMP FUSE
H	1	3000 WATT HEATER
TR	1	T6420M TRAC
1R	1	100 OHM RESISTOR
2R	1	6.8K OHM RESISTOR
POT	1	5K OHM POTENTIOMETER
1LT	1	LT-C2-NR-NI-MF LIGHT
2LT	1	LT-C2-NR-NI-MF LIGHT
1-2SW	2	TIGK-51-SS-WH-NBL SWITCH
3SW	1	UP-101M SWITCH
TM	1	TIME METER (OPTIONAL)
PT	1	PROCESS TIMER (OPTIONAL)
VAR	1	V275LA15A VARISTOR
1-2FB	2	F30A2 FUSE BLOCK
T	1	50VA TRANSFORMER
CF	1	COOLING FAN

CUST. NO.  
SERIAL NO.

**DESPATCH INDUSTRIES, INC.**  
Massachusetts, Massachusetts 02440

LADI-42 WIRING  
DESIGNED FOR

ENGINEER: MS SCALE: 1" = 1 FT. DATE: 3/23/78  
CHECKED: \_\_\_\_\_  
APPROVED: \_\_\_\_\_

BE-7416-8

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# Material List

LAD1-42

Item	Part Number	Description
CI	208745	DES2000 Digitronic Replacement Controller Kit
T/C	051443	Thermocouple Type J
HL	012383	B-10 Hi-limit
M	008341	Motor 1/3 HP
	007293	Fan Wheel 9-1/8" Dia.
1-2F	007471	Fuse Block 2 Pole 250V
	007457	A25X20 Fuse 250V
3-4F	007471	Fuse Block 2 Pole 250V
	007532	5 Amp Fuse 250V
H	055166	3000 Watt Heater 208/240V
TR	203580	SSR Relay replacement Kit
T	012479	Transformer 50VA
1LT	008662	Red Light 120V
2LT	008670	White Light 240V
1-2SW	074116	Power and Heater Switches
TM	013439	Elapse Time Meter
PT	105068	6 Hour Process Timer Kit (Spring Wound)
	105069	1 Hour Process Timer Kit (Spring Wound)
	105070	12 Hour Process Timer Kit (Spring Wound)
CF	015229	Cabinet Cooling Fan 240V
Seal	011181	Door Seal
Latch	008199	Latch Adjustable