

# **Magnetic Starters (GE) 30A**

## **120, 240 & 575 Volt Coils**

---

### **Wiring Guide**

# Notice

---

Veeder-Root makes no warranty of any kind with regard to this publication, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

**Veeder-Root shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this publication.**

Veeder-Root reserves the right to change system options or features, or the information contained in this publication.

This publication contains proprietary information which is protected by copyright. All rights reserved. No part of this publication may be photocopied, reproduced, or translated to another language without the prior written consent of Veeder-Root.

Contact Red Jacket Technical Support for additional troubleshooting information at 800-323-1799.

## **DAMAGE GOODS/LOST EQUIPMENT**

Thoroughly examine all components and units as soon as they are received. If any cartons are damaged or missing, write a complete and detailed description of the damage or shortage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Refuse only the damaged product, not the entire shipment.

VR must be notified of any damages and/or shortages within 30 days of receipt of the shipment, as stated in our Terms and Conditions.

## **VEEDER-ROOT'S PREFERRED CARRIER**

1. Fax Bill of Lading to V/R Customer Service at 800-234-5350.
2. Call V/R Customer Service at 800-873-3313 with the specific part numbers and quantities that were received damaged or lost.
3. VR will file the claim with the carrier and replace the damaged/missing product at no charge to the customer. Customer Service will work with production facility to have the replacement product shipped as soon as possible.

## **CUSTOMER'S PREFERRED CARRIER**

1. Customer files claim with carrier.
2. Customer may submit a replacement purchase order. Customer Service will work with production facility to have the replacement product shipped as soon as possible.
3. If "lost" equipment is delivered at a later date and is not needed, VR will allow a Return to Stock without a restocking fee.
4. VR will NOT be responsible for any compensation when a customer chooses their own carrier.

## **RETURN SHIPPING**

For the parts return procedure, please follow the instructions in the "General Returned Goods Policy" pages of the "Policies and Literature" section of the Veeder-Root North American Red Jacket Mechanical Products Price Book. Veeder-Root will not accept any return product without a Return Goods Authorization (RGA) number clearly printed on the outside of the package.

**Introduction**

Related Manuals ..... 1  
 Safety Precautions ..... 1

**Installation**

Troubleshooting ..... 3  
 Configuring The Magnetic Starter ..... 3  
 Wiring Diagrams ..... 5

**Figures**

Figure 1. Wiring Diagram for 208/240 Volt Maxxum Pump with  
 120 Volt Coil and 120 Volt Hook ..... 5  
 Figure 2. Wiring Diagram for 575 Volt Maxxum Pump  
 with 120 Volt Coil and 120 Volt Isotrol ..... 6  
 Figure 3. Wiring Diagram for 208-230/460 Volt 5HP RJ DEF Pump  
 (Low Voltage) with 120 Volt Coil and 120 Volt Isotrol (Discontinued) ..... 7  
 Figure 4. Wiring Diagram for 208-230/460 Volt 5HP RJ DEF Pump  
 (High Voltage) with 120 Volt Coil and 120 Volt Isotrol (Discontinued) ..... 8  
 Figure 5. Wiring Diagram for 575 Volt 5HP RJ DEF Pump (Single Voltage)  
 with 120 Volt Coil and 120 Volt Isotrol (Discontinued) ..... 9  
 Figure 6. Wiring Diagram for 208/230 Volt CoreDEF Pump with  
 120 Volt Coil and 120 Volt Hook ..... 10  
 Figure 7. Wiring Diagram for 380/415 Volt Maxxum Pump with  
 240 Volt Coil and 240 Volt Hook ..... 11  
 Figure 8. Wiring Diagram for 380/415 Volt CoreDEF Pump with  
 240 Volt Coil and 240 Volt Hook ..... 12  
 Figure 9. Wiring Diagram For 380/415 Volt TRJ with 240 Volt Coil  
 and 240 Volt Hook ..... 13  
 Figure 10. Wiring Diagram for 208/240 Volt TRJ with 120 Volt Coil  
 and 120 Volt Hook ..... 14  
 Figure 11. Wiring Diagram for 208/240 Volt TRJ with 240 Volt Coil ..... 15  
 Figure 12. Wiring Diagram for 208/240 Volt Maxxum Pump with 240 Volt Coil ..... 16  
 Figure 13. Wiring Diagram for 208/230 Volt Core DEF Pump with 240 Volt Coil ..... 17  
 Figure 14. Wiring Diagram for 575 Volt Maxxum Pump with 575 Volt Coil ..... 18

**Tables**

Table 1. Veeder-Root Magnetic Starters ..... 3  
 Table 2. Veeder-Root Pump Heaters And Wiring Diagrams ..... 4

## Introduction

Magnetic Starters covered in this manual are 30A, 3 phase, full voltage across the line starters with the coil factory wired for 110–120 volts, 208–240 volts or 575-600 volts dependent upon the device (Table 1 on page 3). Check with the local power company to see if their power source is adequate for your requirements. Wiring diagrams are provided to show typical wiring schemes depending upon the pump model and coil voltage rating.

These devices require the installation of 3-leg ambient compensated overload heaters for proper operation and for motor protection. Please refer to Table 2 on page 4 for proper selection of the heaters which are purchased separately. Overload relays contain  $\pm 10\%$  trip adjustment – achieved by turning a dial in the overload relay face to ‘tune’ the protection to the motor on the spot.







**⚠ WARNING** The enclosure is rated NEMA 1 and is to be installed only in a non-hazardous indoor location. Use 75°C copper conductors only. Torque terminals to 20 Lb-in.

### Related Manuals

- 577013-830 The Red Jacket Submersible Turbine Pump Install, Service & Parts
- D042-153 4" Submersible Petroleum and AG Pump Install, Operate and Service
- 577014-089 Maxxum Big-Flo 6" Submersible Pump Install, Operate & Service - FM Motor
- 577014-062 The Red Jacket DEF Pump Installatiion Manual
- 577014-360 CoreDEF Series Submersible DEF Pump
- D051-329 Isotrol 1-8 Control Box Installation and Owner's Manual

### Safety Precautions

The following safety symbols are used throughout this manual to alert you to important safety hazards and precautions.

	<p><b>EXPLOSIVE</b> Fuels and their vapors are extremely explosive if ignited.</p>		<p><b>FLAMMABLE</b> Fuels and their vapors are extremely flammable.</p>
	<p><b>ELECTRICITY</b> High voltage exists in, and is supplied to, the device. A potential shock hazard exists.</p>		<p><b>TURN POWER OFF</b> Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.</p>
	<p><b>WARNING</b> indicates a hazardous situation which, if not avoided, could result in death or serious injury.</p>		<p><b>READ ALL RELATED MANUALS</b> Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.</p>

## ! WARNING



This magnetic starter is to be installed with systems operating near locations where highly combustible fuels or vapors may be present.

**FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD CAUSE DAMAGE TO PROPERTY, ENVIRONMENT, RESULTING IN SERIOUS INJURY OR DEATH.**

Read and follow all instructions in this manual, including all safety warnings.

Comply with all applicable codes including the National Electrical Code (NFPA70); Code for Motor Fuel Dispensing Facilities and Repair Garages (NFPA 30A); federal, state, and local codes; and other applicable safety codes.



This magnetic starter contains high voltages which can be lethal.

Do not connect the Magnetic Starter AC power supply wires at the breaker until all devices are installed. Connecting power wires to a live circuit can cause electrical shock that may result in serious injury or death.

**These starters are designed to be used with copper wire - DO NOT USE ALUMINUM WIRE!**



Explosive vapors or flammable liquids could be present near locations where fuels are stored or being dispensed.

The Magnetic Starter is not explosion proof. Do not install this device in a volatile, combustible, or explosive atmosphere.

An explosion or fire resulting in serious injury or death, property loss and equipment damage could occur if the Magnetic Starter is installed in a volatile, combustible, or explosive atmosphere (Class I, Division 1 or 2).

# Installation

## Troubleshooting

---



**WARNING! Lockout and tag power before performing either of these two procedures.**

1. If nuisance tripping occurs, check for proper heaters, loose connections, and severe arcing or pitting of contacts.

Overload adjustments should be set no higher than 100% unless necessary to stop nuisance tripping with measured amperage in all lines below maximum pump nameplate value.

2. If the pump rotates backwards as evidenced by low pressure and flow, correct rotation by reversing any two of the three power wires to the pump.

## Configuring The Magnetic Starter

---

Table 1 and Table 2 are used to determine the proper Magnetic Starter, Heaters and Wiring Diagram for the application.

**Table 1. Veeder-Root Magnetic Starters**

V-R Part No.	Description
410648-001	GE Magnetic starter 120V coil CR306C10200AAAAA
410648-002	GE Magnetic starter 240V coil CR306C10300AAAAA
410648-003	GE Magnetic starter 575V coil CR306C10400AAAAA

Table 2. Veeder-Root Pump Heaters And Wiring Diagrams

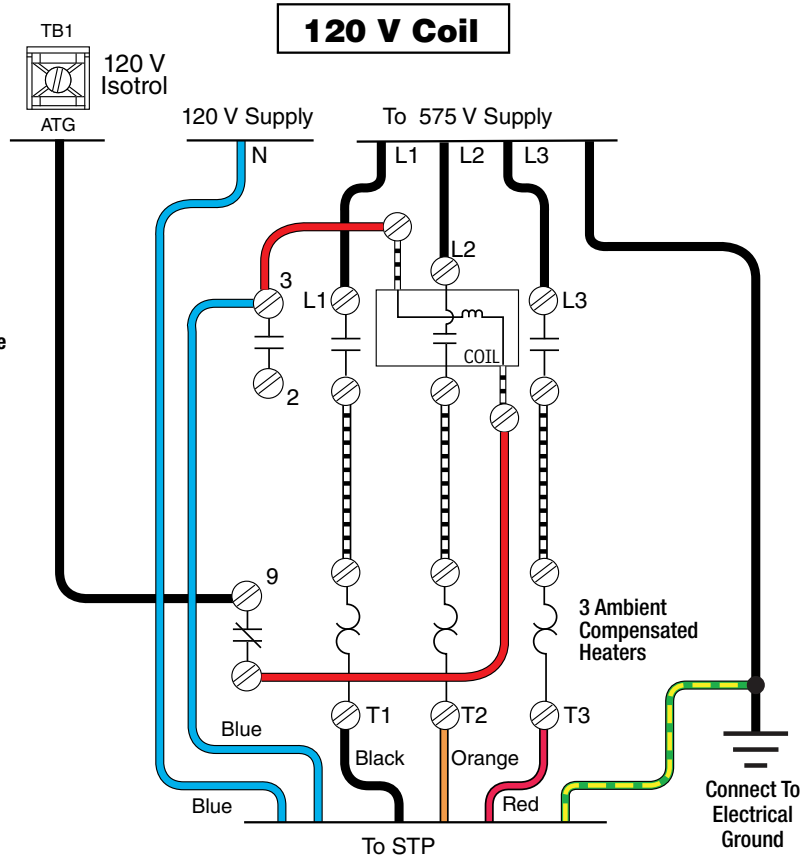
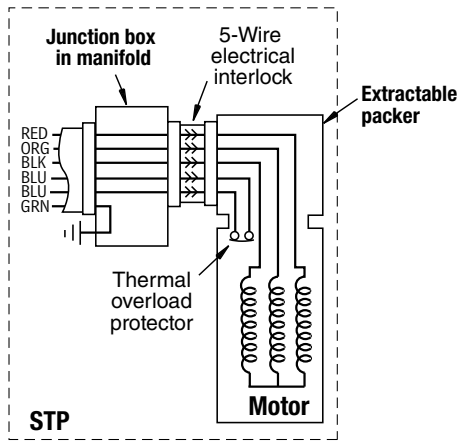
Pump	V-R Pump Model	V-R Heater No.	GE Amb. Comp. Heater (Quantity of 3 Required)	Use These Wiring Diagrams
TRJ	P75U17-3, AGP75S17-3	410649-001	CR123C268A Trip Amps 2.59 ±10%	Figure 9
	P150U17-3, AGP150S17-3	410649-002	CR123C379A Trip Amps 4.20 ±10%	Figure 9
	X4P150U17, X4AGP150S17			
	P200U17-4, AGP200S17-4	410649-003	CR123C526A Trip Amps 5.63 ±10%	Figure 9
	P400U4-3, AGP400S4-3	410649-012	CR123C163B Trip Amps 17.5±10%	Figure 10 or Figure 11
	P400U17-4, AGP400S17-4	410649-004	CR123C778A Trip Amps 8.2±10%	Figure 9
Maxxum	P200J4-2MB	410649-004	CR123C778A Trip Amps 8.18 ±10%	Figure 1 or Figure 12
	P300J17-3HB	410649-005	CR123C592A Trip Amps 6.24 ±10%	Figure 7
	P300J4-2HB	410649-006	CR123C113B Trip Amps 11.8 ±10%	Figure 1 or Figure 12
	P500J17-3K	410649-007	CR123C955A Trip Amps 9.91 ±10%	Figure 7
	P500J4-2K	410649-008	CR123C180B Trip Amps 19.4 ±10%	Figure 1 or Figure 12
	P500J6-2K	410649-009	CR123C695A Trip Amps 7.35 ±10%	Figure 2 or Figure 14
DEF	RJ DEF PUMP 5HP 575V	410649-003	CR123C526A Trip Amps 5.63 ±10%	Figure 5
	RJ DEF PUMP 5HP 460V	410649-009	CR123C695A Trip Amps 7.35 ±10%	Figure 4
	RJ DEF PUMP 5HP 208/240V	410649-011	CR123C137B Trip Amps 14.1 ±10%	Figure 3
	CoreDEF Series DP200U17	410649-003	CR123C526A Trip Amps 5.63 ±10%	Figure 6
	CoreDEF Series DP200U4	410649-010	CR123C867A Trip Amps 9.34±10%	fig 6 or Figure 13





**WARNING** DISCONNECT, LOCK OUT, AND TAG POWER AT THE POWER PANEL BEFORE WIRING THE PUMP.

**NOTICE** Starter is wired for 575 V to pump motor, 120 V from Isotrol. Remove red wire connecting 9 to L2.



**LEGEND**

Overload heater	Normally closed contact	Normally open contact	Screw terminal	Wire added by installer	Wire added by manufacturer

**NOTICE** Make ground connection in accordance with local codes.

045-2

Figure 2. Wiring Diagram for 575 Volt Maxxum Pump with 120 Volt Coil and 120 Volt Isotrol

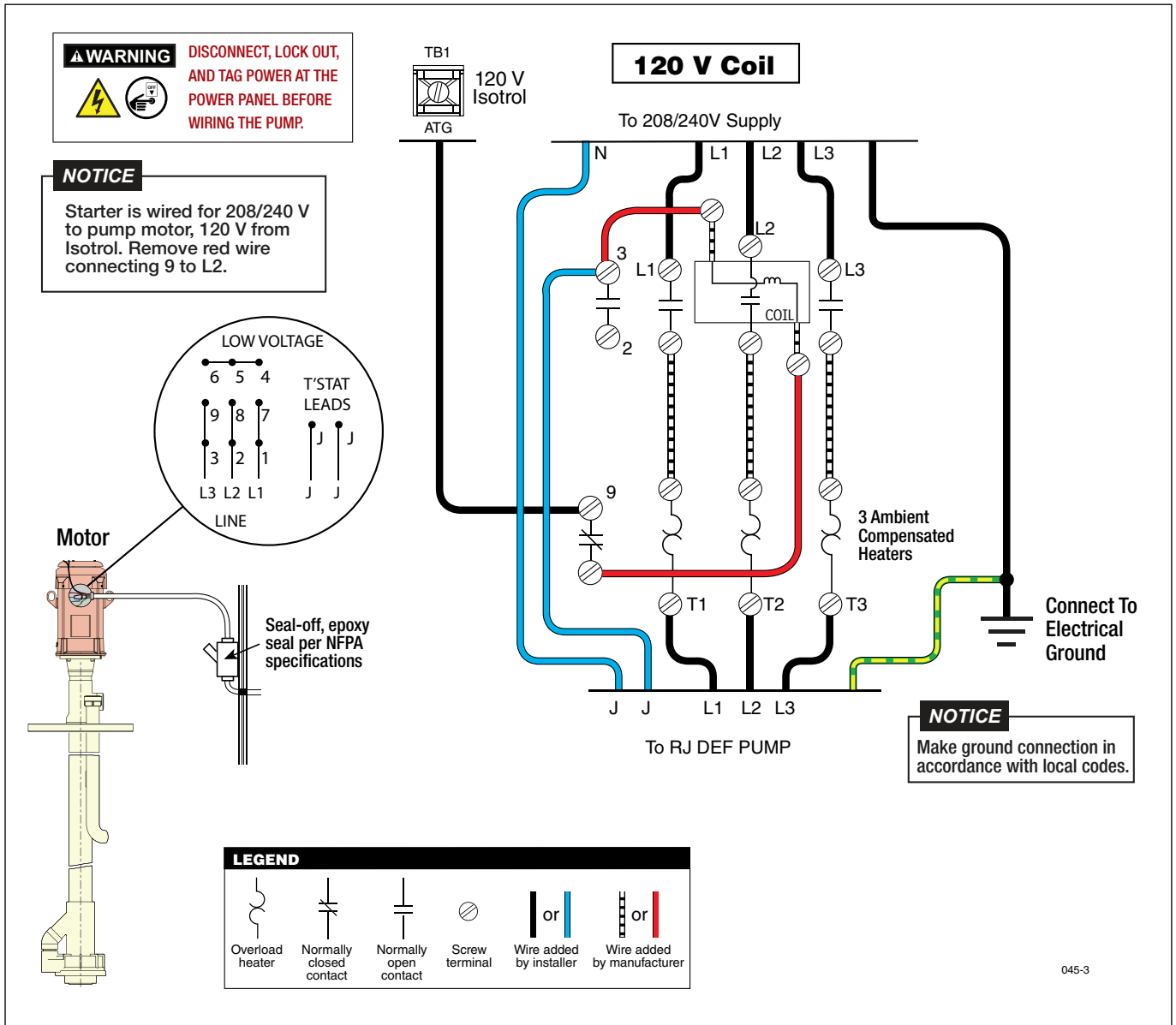


Figure 3. Wiring Diagram for 208-230/460 Volt 5HP RJ DEF Pump (Low Voltage) with 120 Volt Coil and 120 Volt Isotrol (Discontinued)

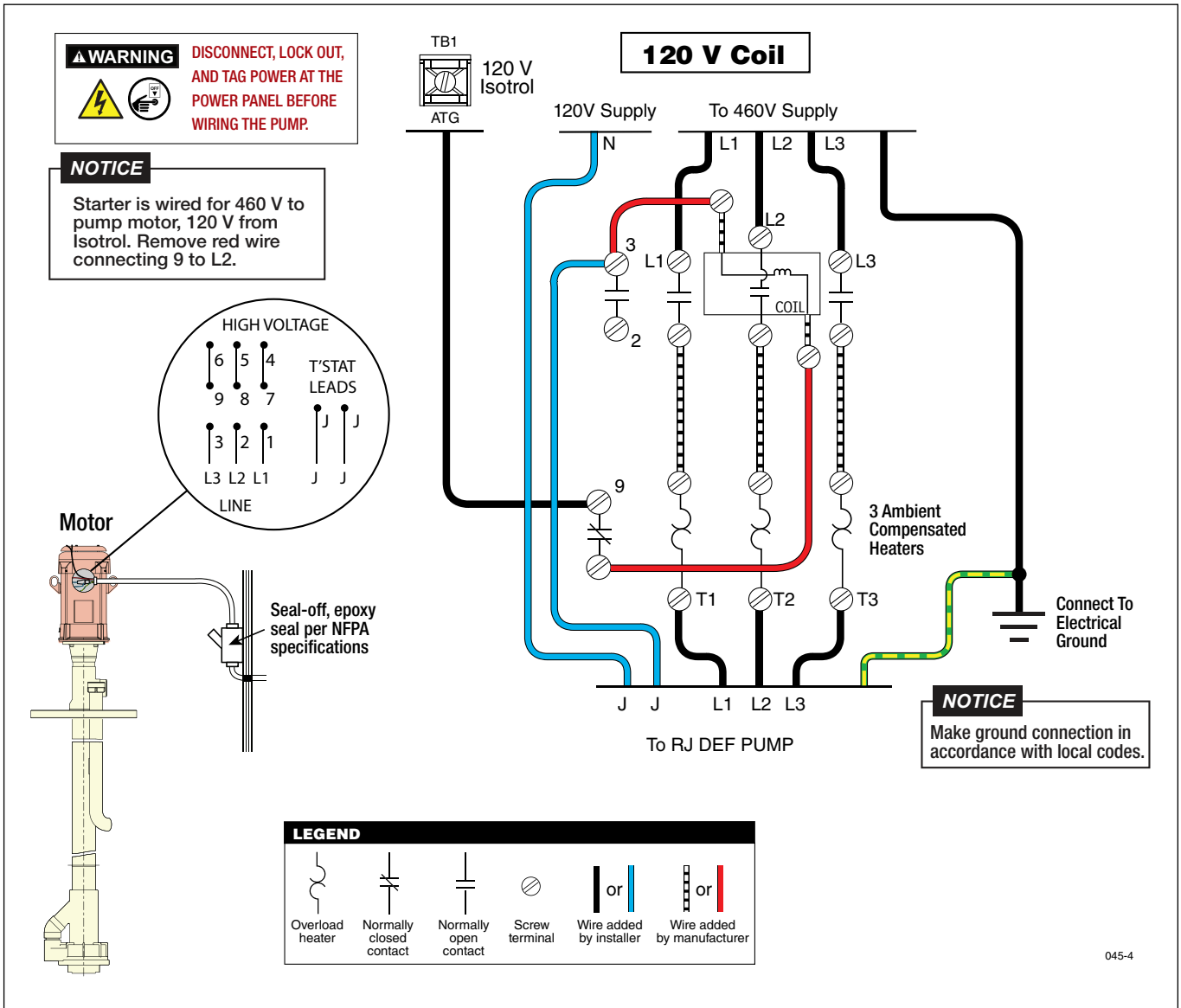


Figure 4. Wiring Diagram for 208-230/460 Volt 5HP RJ DEF Pump (High Voltage) with 120 Volt Coil and 120 Volt Isotrol (Discontinued)

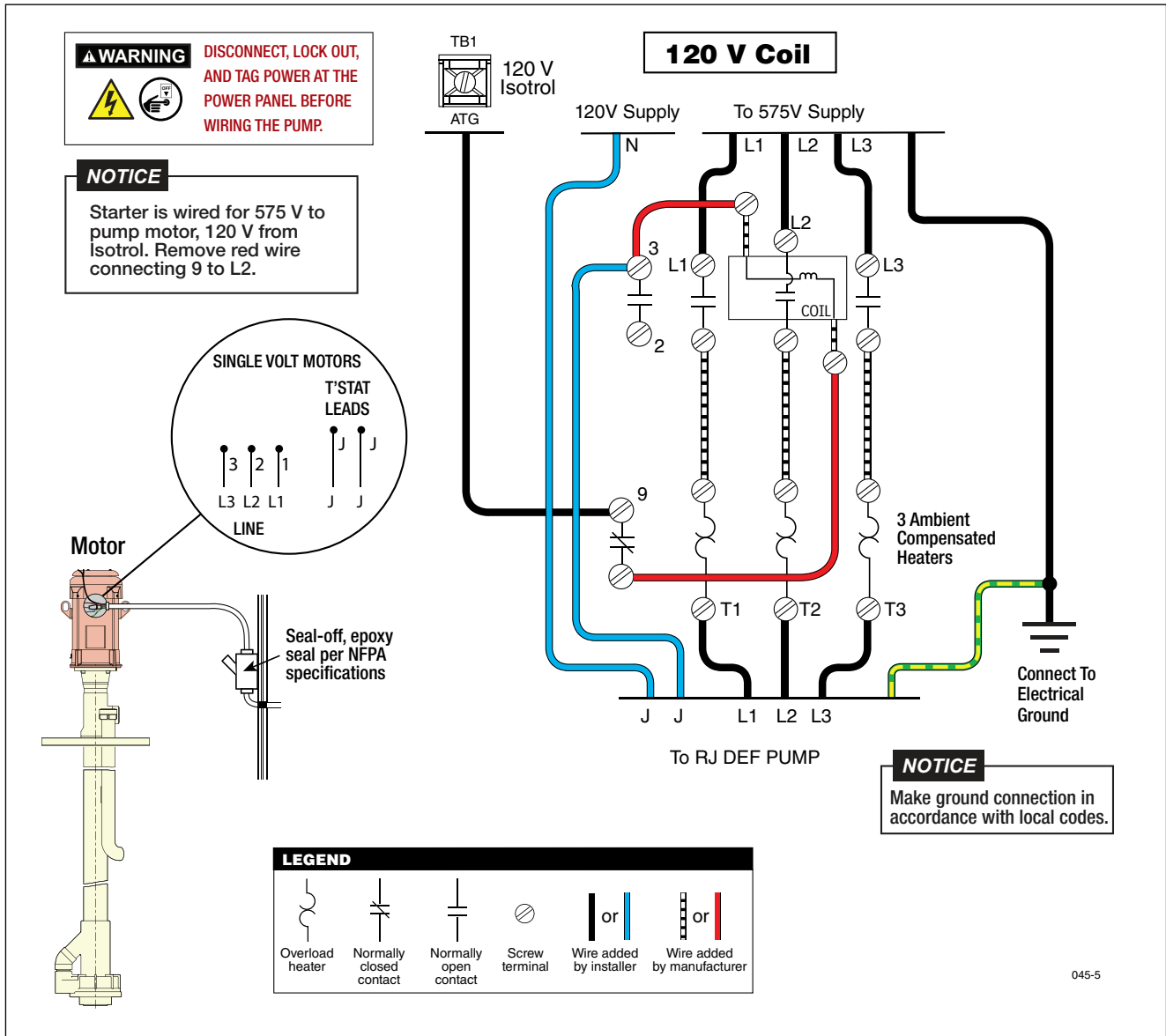


Figure 5. Wiring Diagram for 575 Volt 5HP RJ DEF Pump (Single Voltage) with 120 Volt Coil and 120 Volt Isotrol (Discontinued)

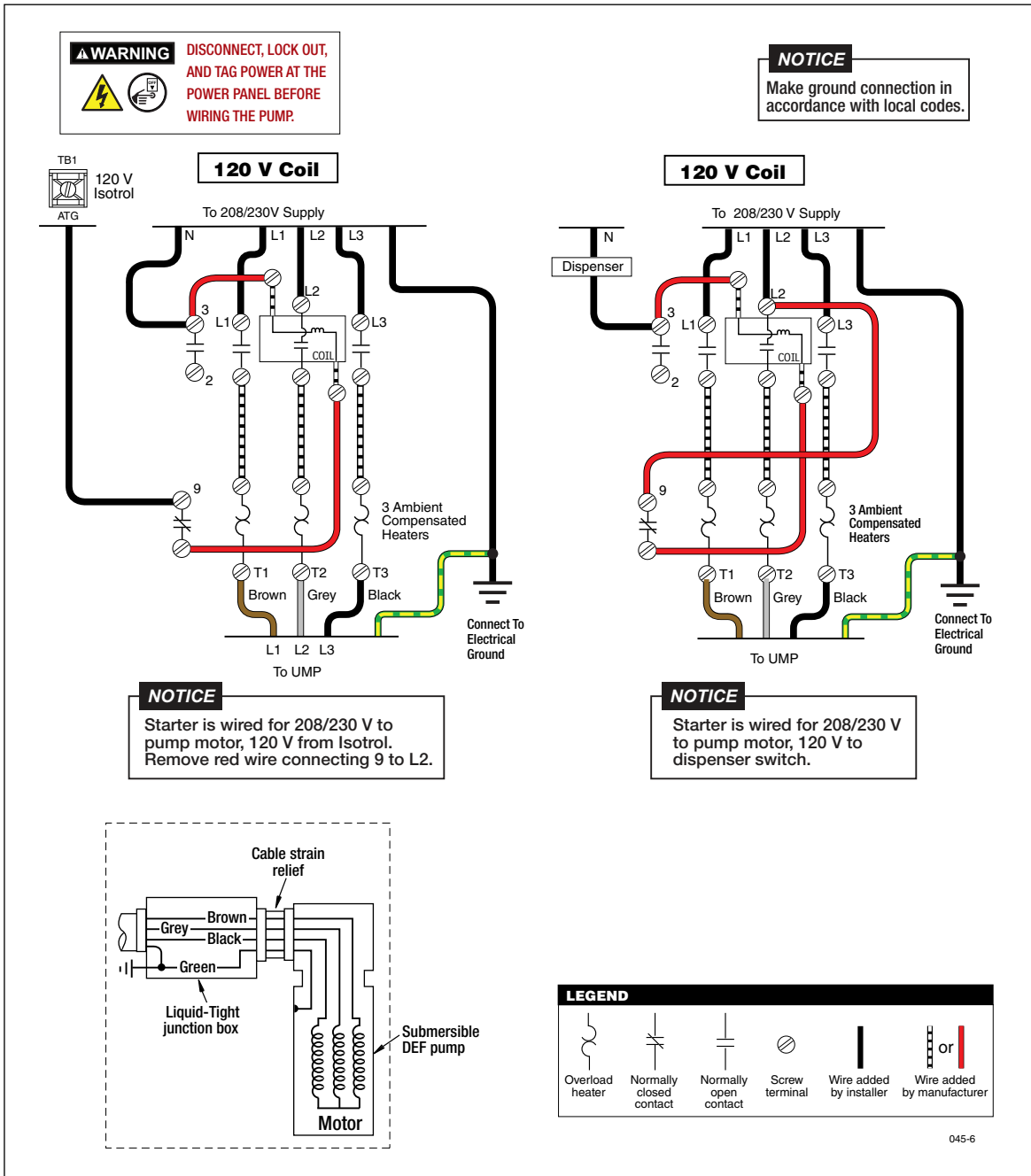


Figure 6. Wiring Diagram for 208/230 Volt CoreDEF Pump with 120 Volt Coil and 120 Volt Hook

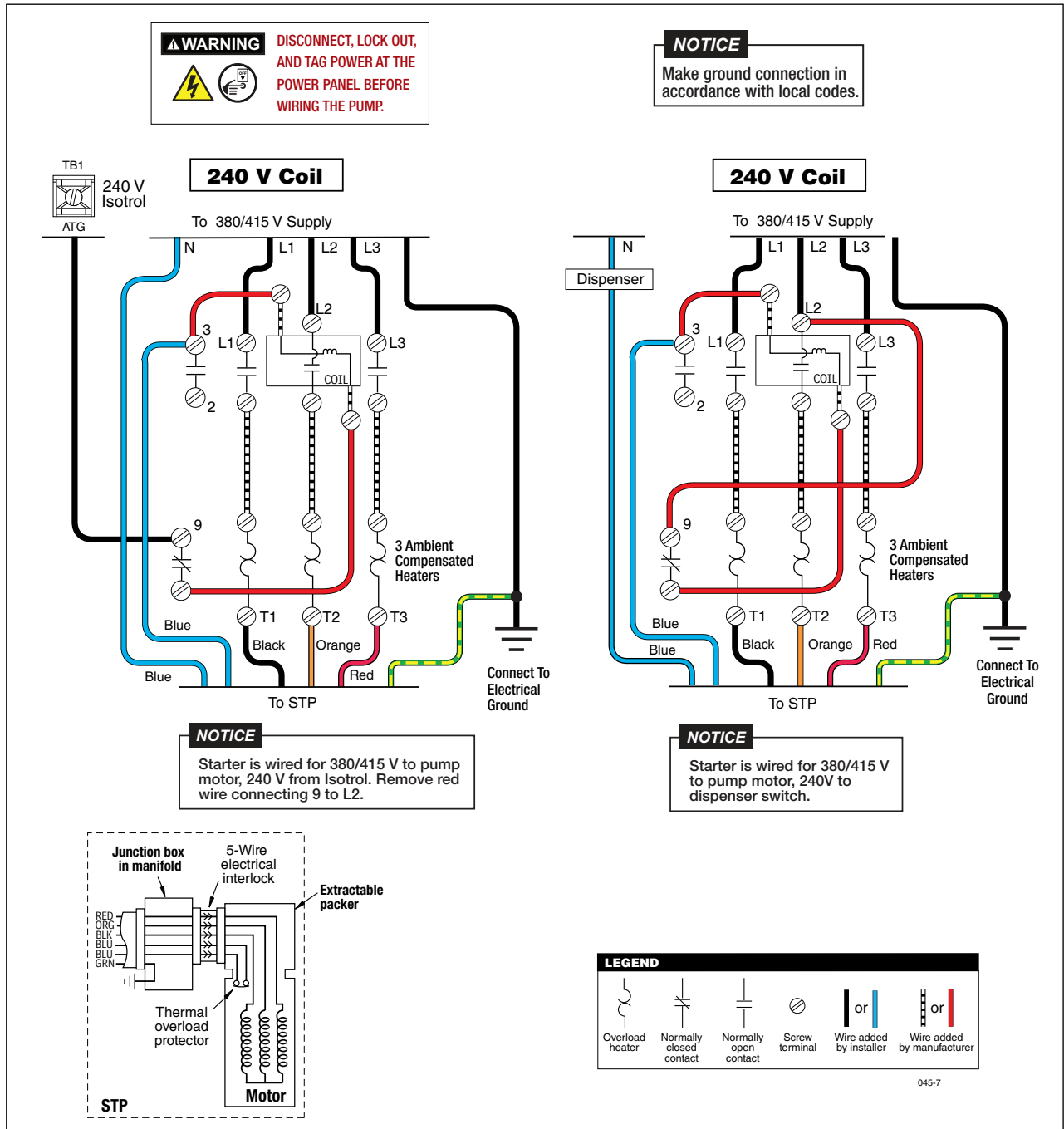


Figure 7. Wiring Diagram for 380/415 Volt Maxxum Pump with 240 Volt Coil and 240 Volt Hook

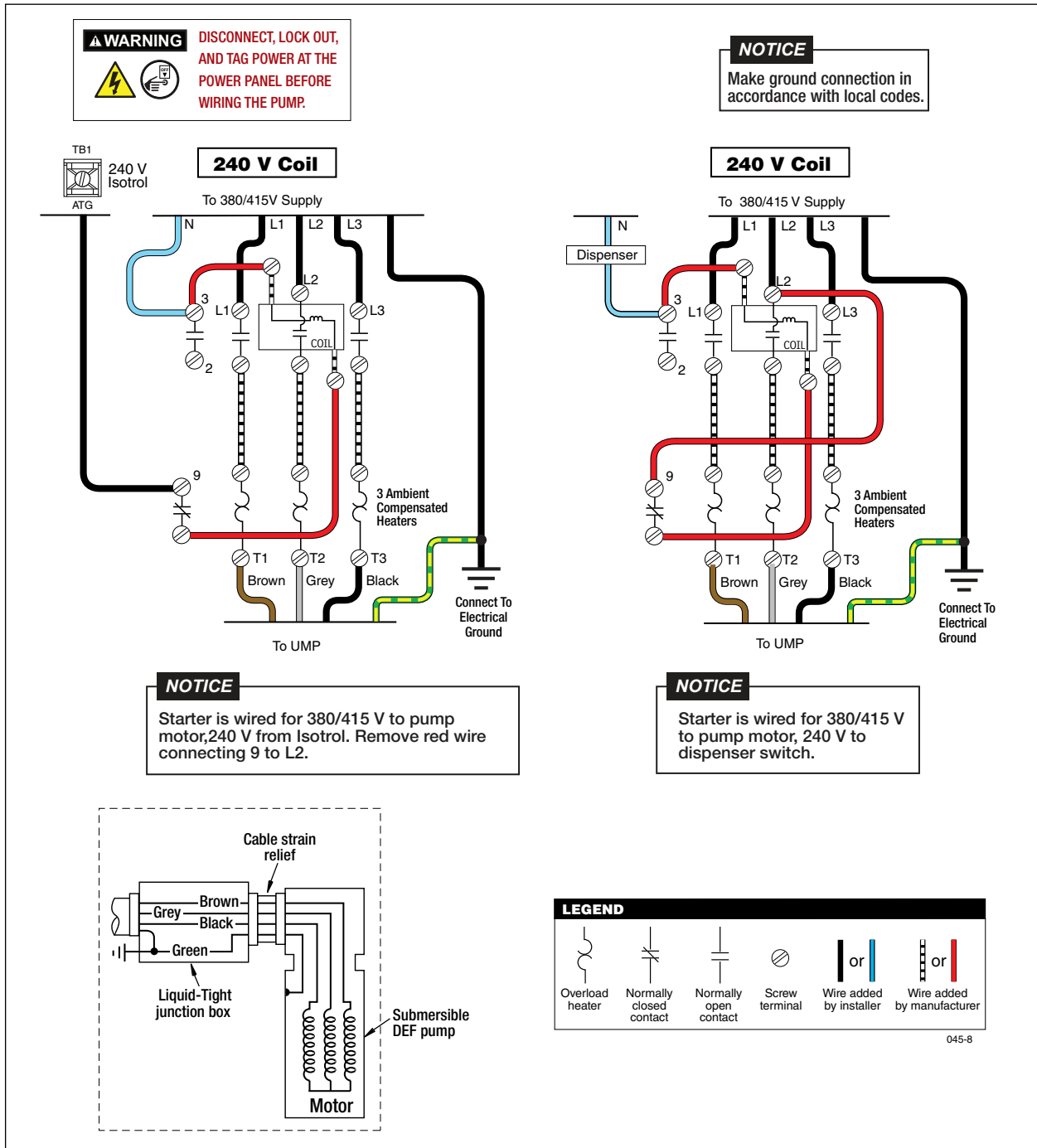
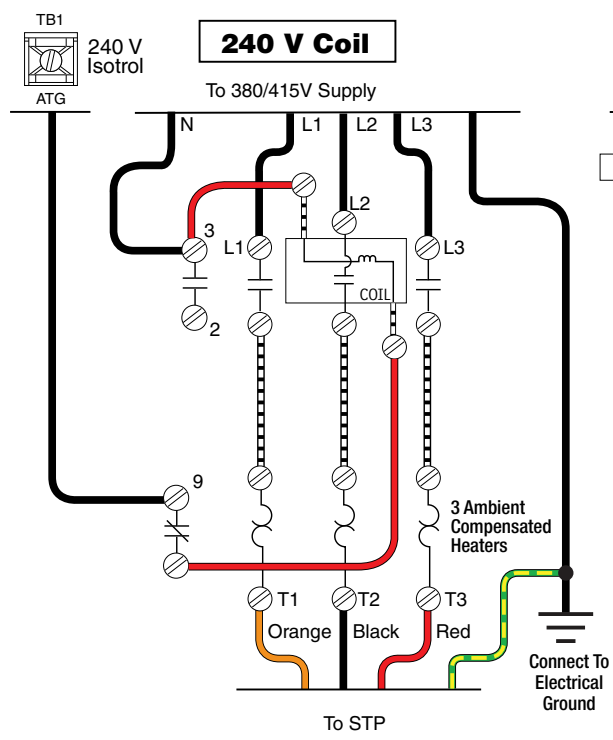


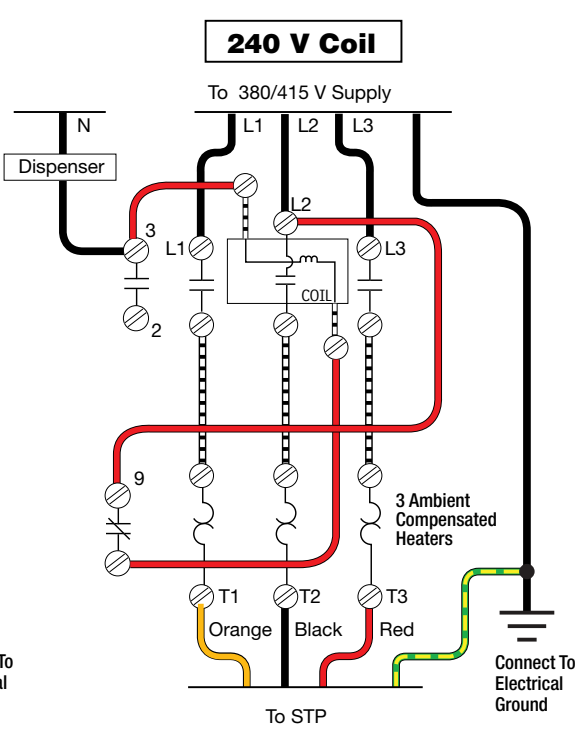
Figure 8. Wiring Diagram for 380/415 Volt CoreDEF Pump with 240 Volt Coil and 240 Volt Hook

**WARNING** DISCONNECT, LOCK OUT, AND TAG POWER AT THE POWER PANEL BEFORE WIRING THE PUMP.

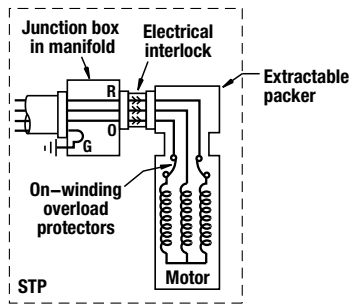
**NOTICE** Make ground connection in accordance with local codes.



**NOTICE** Starter is wired for 380/415 V to pump motor, 240 V from Isotrol. Remove red wire connecting 9 to L2.



**NOTICE** Starter is wired for 380/415 V to pump motor, 208/240 V to dispenser switch.



LEGEND					
Overload heater	Normally closed contact	Normally open contact	Screw terminal	Wire added by installer	Wire added by manufacturer

045-9

Figure 9. Wiring Diagram For 380/415 Volt TRJ with 240 Volt Coil and 240 Volt Hook



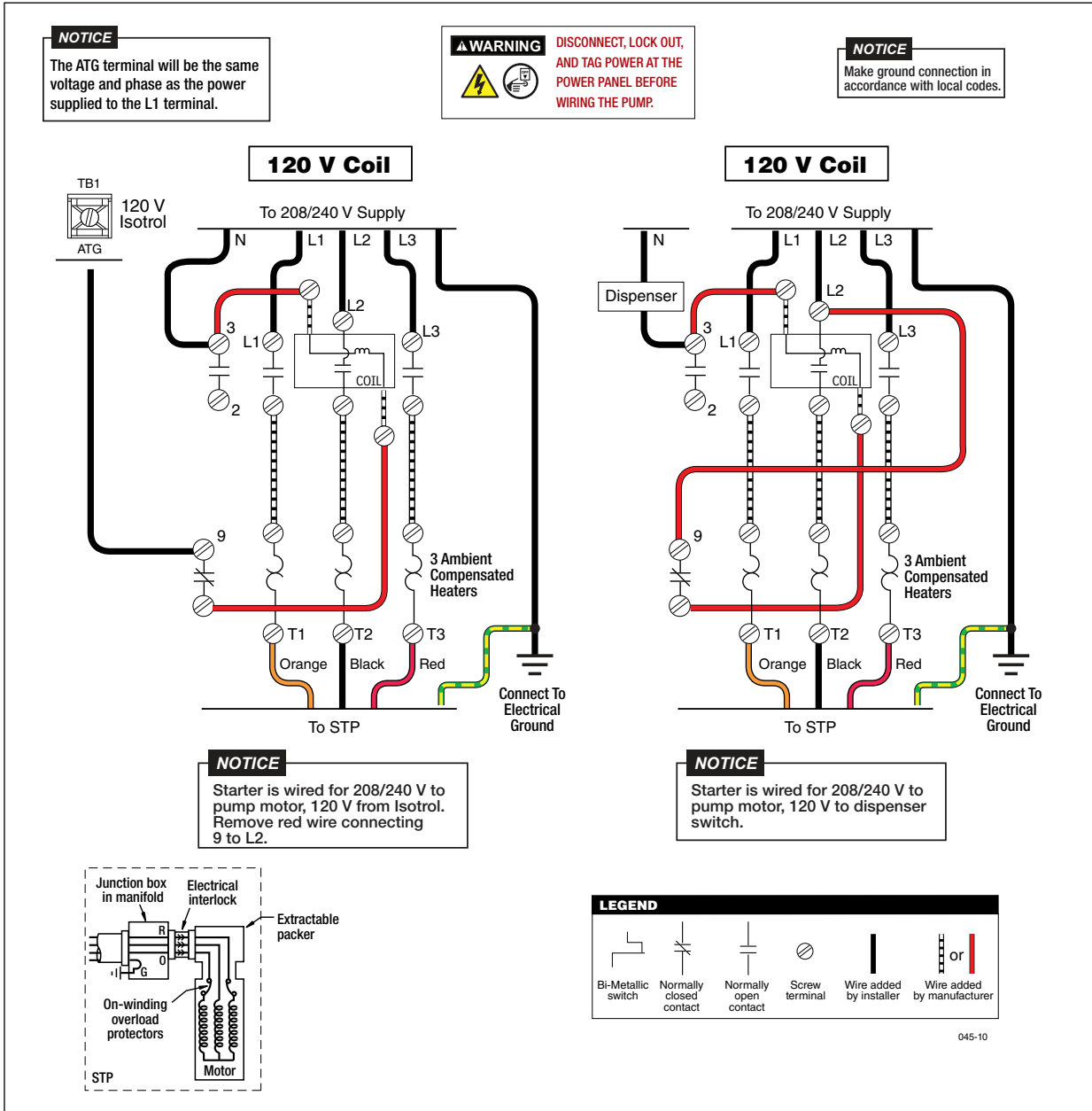


Figure 10. Wiring Diagram for 208/240 Volt TRJ with 120 Volt Coil and 120 Volt Hook

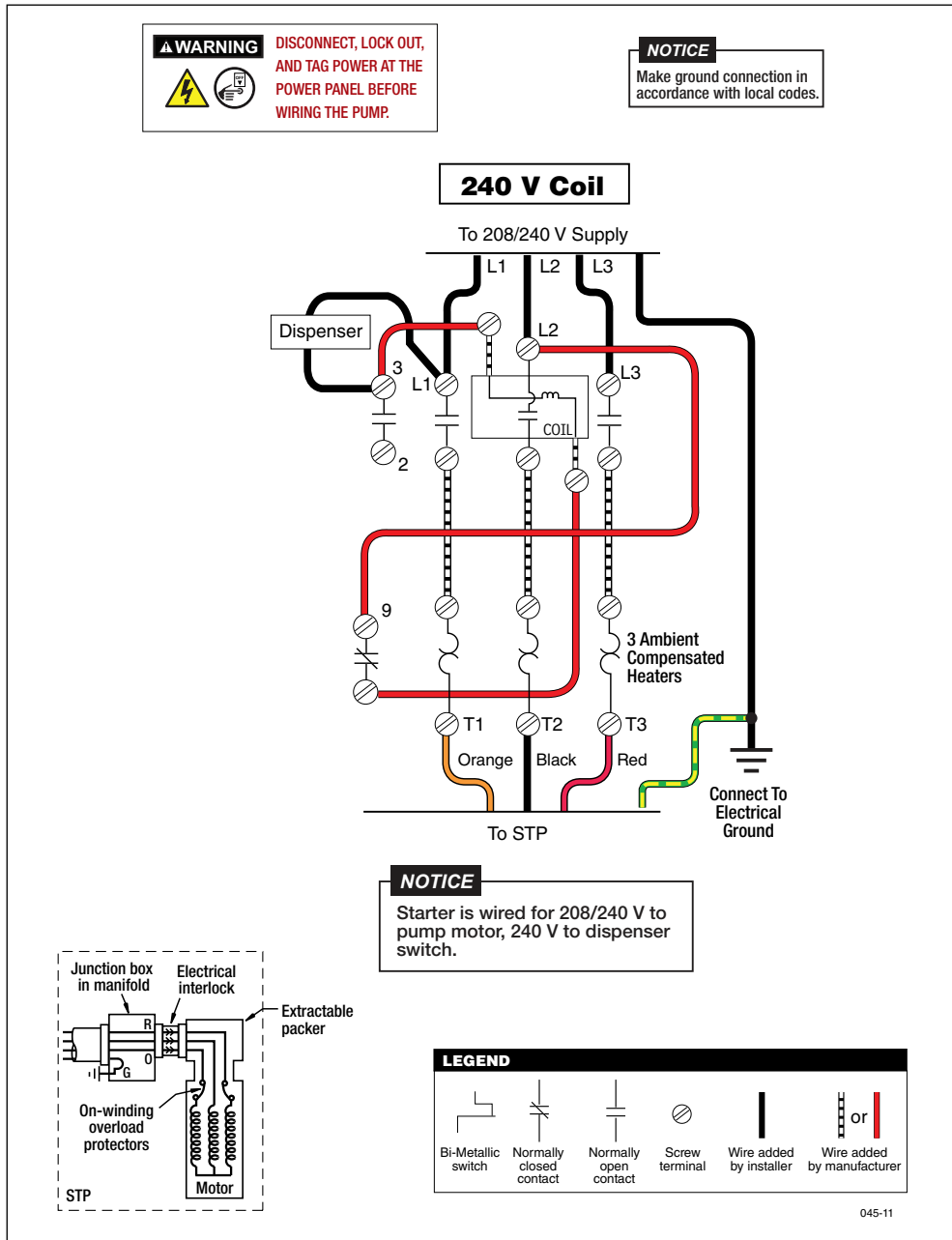


Figure 11. Wiring Diagram for 208/240 Volt TRJ with 240 Volt Coil

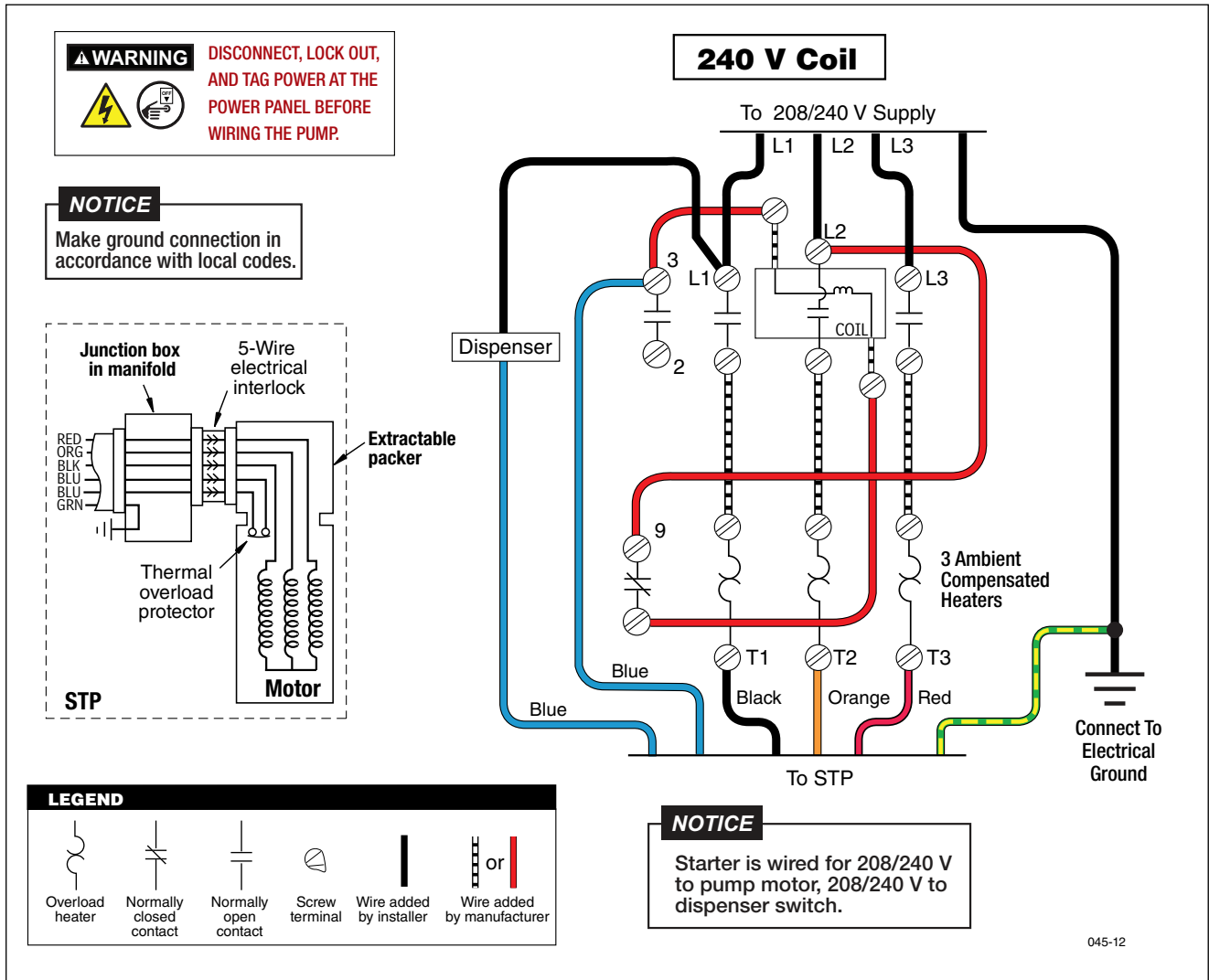


Figure 12. Wiring Diagram for 208/240 Volt Maxxum Pump with 240 Volt Coil

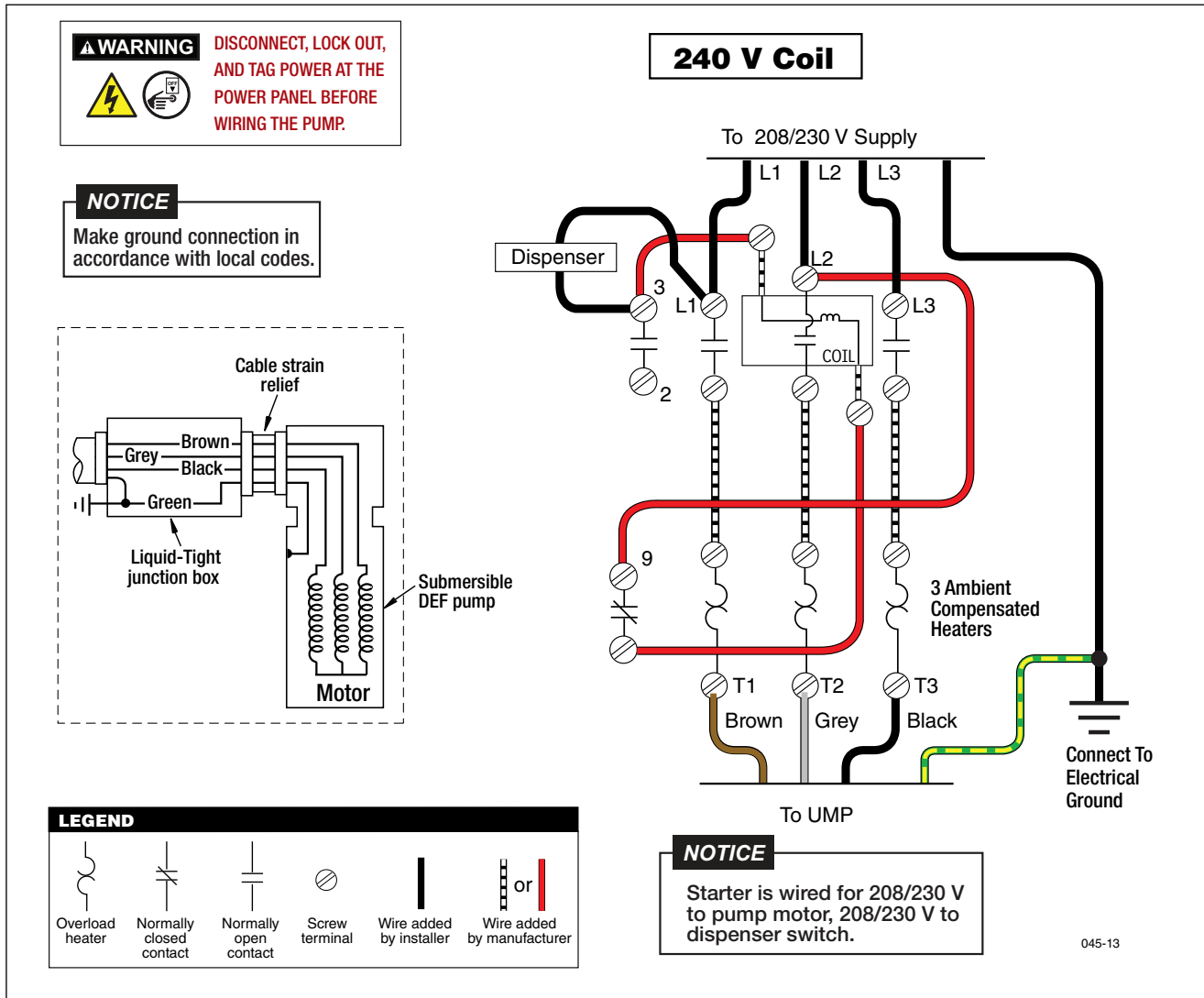


Figure 13. Wiring Diagram for 208/230 Volt Core DEF Pump with 240 Volt Coil

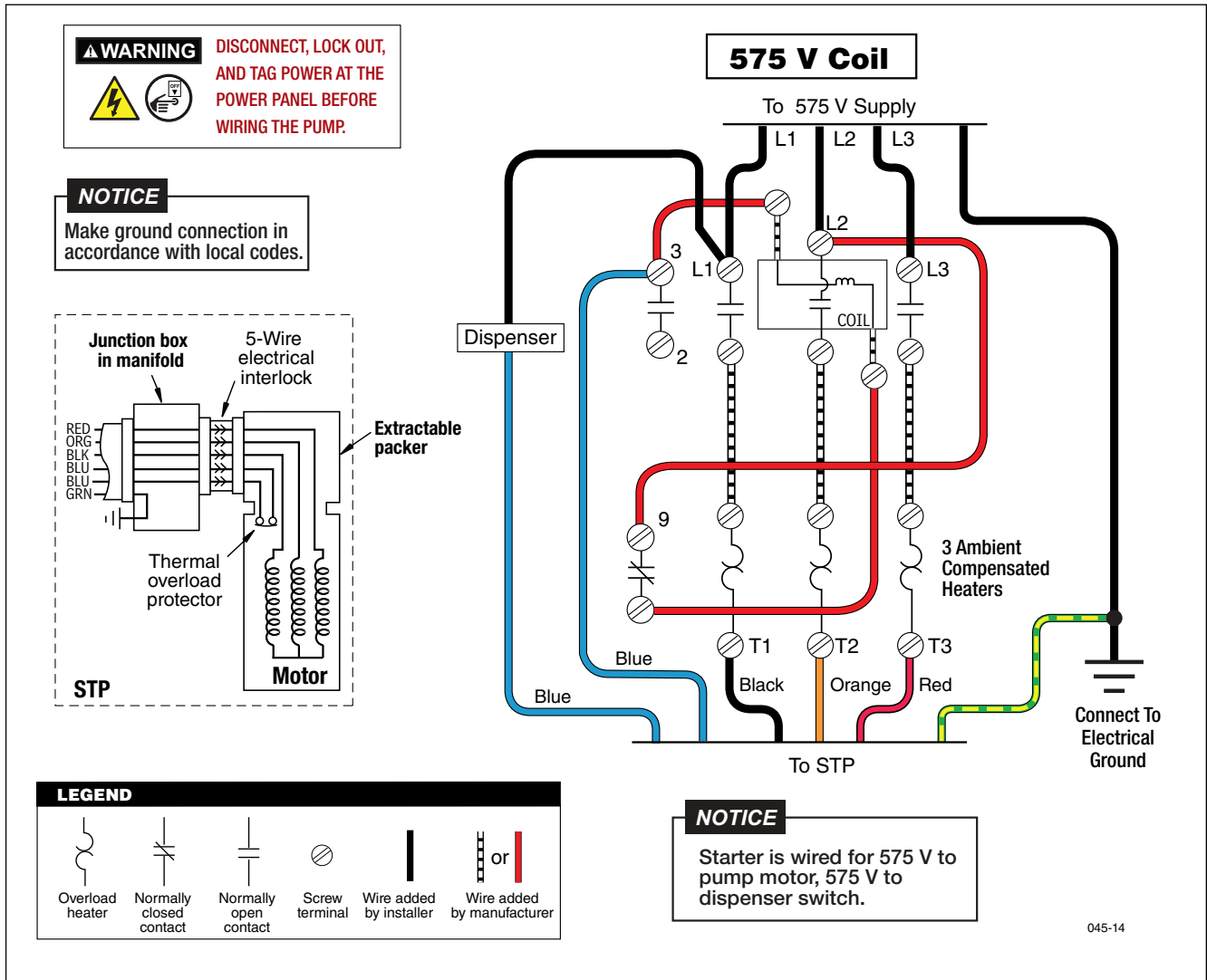


Figure 14. Wiring Diagram for 575 Volt Maxxum Pump with 575 Volt Coil

