

# CONTROLPRES™

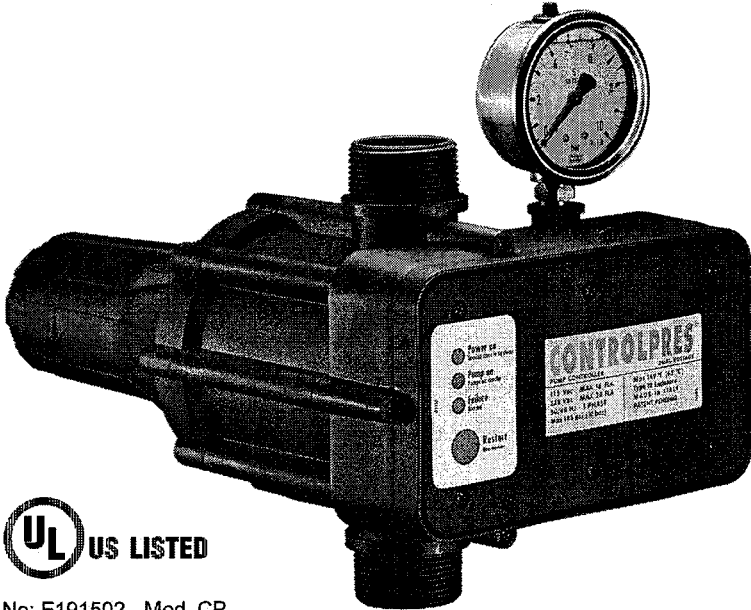
by WATERTECH

DOMESTIC PUMP CONTROL

## OWNER'S MANUAL

1 1/4" connections

115 / 230 Vac DUAL VOLTAGE UNIT



File No: E191502 Mod. CP

### FEATURES & BENEFITS

CONTROLPRES can be installed on surface and submersible pumps for residential, domestic irrigation and booster systems.

- Provides for an adjustable downstream pressure.
- Increases pump life.
- Maintains constant pressure and flow.
- Can be used with surface or submersible pumps.
- Eliminates pump pressure switch.
- Dual voltage 115 / 230 VAC.
- Built-in pressure and flow switch.
- No adjustment or maintenance required.
- Built-in check valve.
- Simple installation saves space and time.
- Built-in dry-run protection.
- Can be used with or without pressure tank.
- Assists in absorbing water hammer.

**READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION**

**INSTALLER - PLEASE LEAVE THIS MANUAL WITH THE UNIT OR GIVE TO END USER.**


# TABLE OF CONTENTS


	Page
Warning and Precautions.....	2
Technical specifications.....	3
Operation.....	3
Troubleshooting.....	3
Maintenance and spare parts.....	3
Hydraulic connection to the system.....	4
Conduit connections.....	4
Typical CONTROLPRES installation on surface and submersible pumps.....	5
CONTROLPRES installation guidelines and warnings.....	6
CONTROLPRES installation with pressure tank option.....	6
Pressure.....	7
Pressure adjusting procedure.....	8
Electrical connections.....	9
Installation wiring diagram - 115 VAC 2-wire pumps.....	9
Installation wiring diagram - 230 VAC single phase 2-wire pumps.....	10
Installation wiring diagram - 230 VAC single phase 3-wire pumps.....	10
Electronic box replacement.....	11
When to use contactors.....	12
Installation wiring diagram - 115 VAC 2-wire pumps exceeding 16 FLA.....	12
Installation wiring diagram - 230 VAC single phase 3-wire pumps exceeding 20 FLA.....	12
Installation wiring diagram - 208 VAC or 230 VAC three phase 3-wire pumps.....	13
Installation wiring diagram - 460 VAC.....	13
Overall dimensions.....	14
Warranty.....	14




## PLEASE READ BEFORE PROCEEDING WITH INSTALLATION

**FAILURE TO READ AND CONSIDER SAFETY INSTRUCTIONS IN THIS MANUAL OR ON CONTROLPRES MAY RESULT IN PERSONAL INJURY OR SERIOUS DAMAGE TO PIPING OR FIXTURES !**


 This is the safety alert. When you see this symbol in this manual, look for one of the following signal words and be alert to the potential for personal injury.


 **DANGER** Warns about hazards that **will** cause serious personal injury, death or major property damaged if ignored.

 **WARNING** Warns about hazards that **can** cause serious personal injury, death or major property damaged if ignored.


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 **DANGER** **Hazardous pressure.**

 **WARNING** Under certain conditions, submersible pumps can develop extremely high pressure. Install a pressure reducing valve to limit pressure to safe levels for application. Be sure well is equipped with a pressure relief valve.


 Do not allow pump, CONTROLPRES, piping, or any other system component containing water to freeze. Freezing may damage system, leading to injury or flooding. Allowing CONTROLPRES or system components to freeze will void warranty.

 **DANGER** **Hazardous voltage.**

 **WARNING** Can shock, burn or cause death.

 Install ground and wire CONTROLPRES according to local code and National Electrical Code requirements.

 Depressurize the system and disconnect power supply before installing or servicing CONTROLPRES.

 Make sure line voltage and frequency of power supply match motor nameplate voltage and frequency and CONTROLPRES voltage and frequency.

Install CONTROLPRES according to all plumbing, pump and well code requirements.

Pipe joint compound can cause cracking in plastic. Use only Teflon tape when sealing joints in plastic pipe or connecting pipe to thermoplastic pumps and CONTROLPRES.

For threaded conduit opening - To be used with UL Listed or Recognized, liquid-tight non-metallic (plastic) conduit fittings.

**The manufacturer is not responsible or liable for damage due to improper installation or use.**

## TECHNICAL SPECIFICATIONS

- Single phase power-supply voltage	115 / 230 VAC
- Voltage variation tolerance	+/- 10 %
- Frequency	50 / 60 Hz
- Full load amp rating 115 VAC	16 FLA
- Full load amp rating 230 VAC	20 FLA
- Electronic box	NEMA 12 enclosure
- Threaded conduit connections	½" NPT
- Max working pressure	174 psi
- Pressure adjusting range	min 45 psi max 95 psi
- Max working temperature	149 °F (65°C)
- Inlet / Outlet connections	1 ¼" MNPT

## OPERATION

- 
- Power On** (green)
  - Displays when power is connected to CONTROLPRES unit.
  - In the event of a temporary power outage, CONTROLPRES resets automatically when power is restored.
- Pump On** (yellow)
  - Displays when pump is running.
- Failure** (red)
  - Displays when there is a problem with the system.
- Restart** (red)
  - Press and hold to reset for 3-5 seconds ( with a tap opened ). Green "Power On" light and yellow "Pump On" should display. This indicates system is operating properly.
  - If red "Failure" light come back on, refer to Troubleshooting Guide.

## TROUBLESHOOTING ( Excluding by-pass installation )

Type of problem	Caused by system
Pump does not start	Check wiring connections. Check inlet piping, see page 6.
Pump turns on and off (short-cycles)	Leakage lower than minimum flow.
Pump does not stop	Water flow above minimum flow.
No water flow	Suction problems.
Low or no pressure at highest point of system	Refer to Pressure Section page 7.
Excessive pressure system	Pump oversized for system. Install pressure reducing valve.
Pump runs +/- 8 seconds after flow to system stops	OK - Pump is repressuring system.

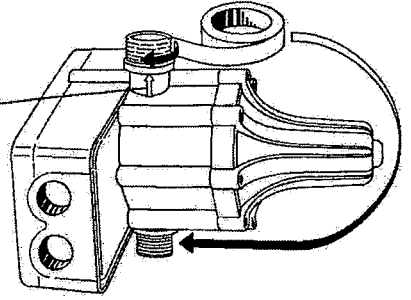
## MAINTENANCE AND SPARE PARTS

Device requires no maintenance.  
The electronic box may be supplied as spare parts.

## HYDRAULIC CONNECTION TO THE SYSTEM

Prepare all threads with Teflon tape only.

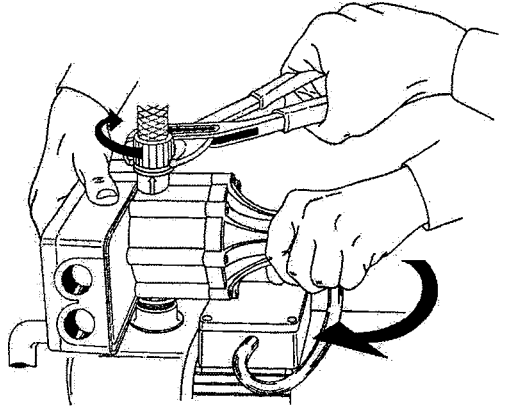
Flow  
Direction



Connect device directly to pump outlet.  
Do not install any tee or tap between pump and CONTROLPRES Unit.

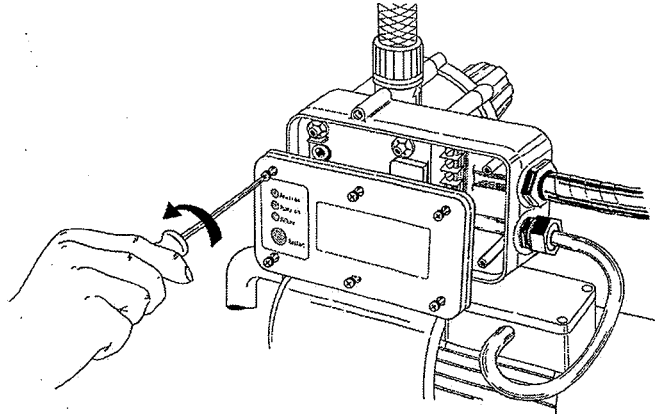
Always install CONTROLPRES with flow arrows in the vertical position. Electronic box should be level.

**Do not over tighten water connections,** especially when installing with metal couplings. Damage to CONTROLPRES may result.



## CONDUIT CONNECTIONS

Open the electronic box cover by removing the six screws from the cover.

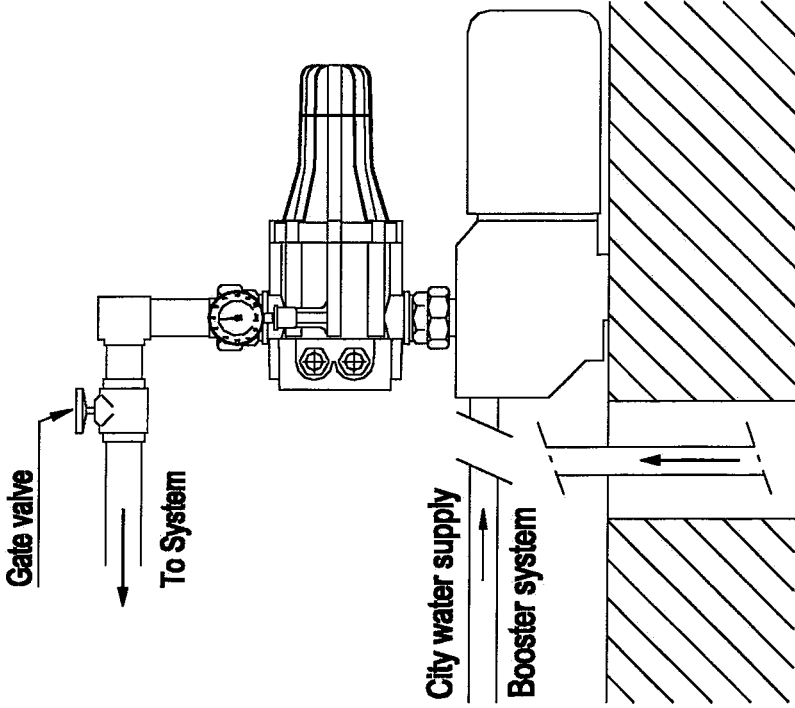


Line voltage and pump wires to the CONTROLPRES should be supplied through "liquid-tight" nonmetallic conduit fittings rated "NEMA 12" or "UL type 12" to achieve NEMA Type 12 enclosure rating.

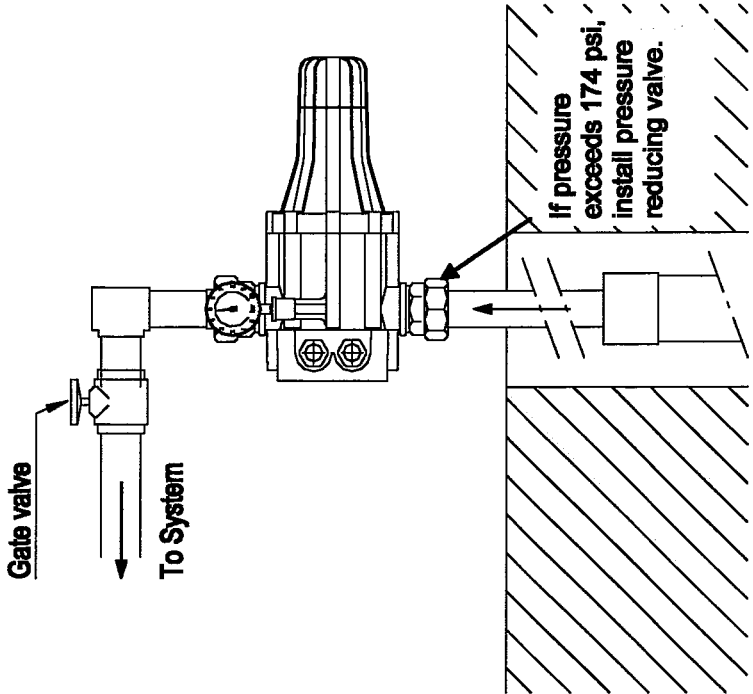
**Failure to install unit without use of liquid tight conduit, voids warranty!**

# TYPICAL CONTROL PRES INSTALLATION ON SURFACE AND SUBMERSIBLE PUMPS

CONTROLPRES can be installed on surface and submersible pumps for residential, domestic irrigation pumps and booster systems.



**SURFACE PUMP**



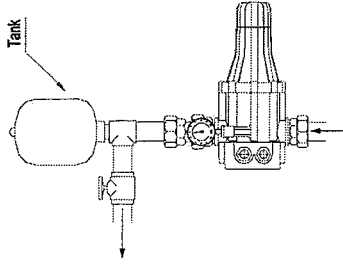
**SUBMERSIBLE PUMP**

## CONTROLPRES INSTALLATION GUIDELINES AND WARNINGS

### PLEASE READ PRECAUTIONS AND WARNINGS ON PAGE 2 BEFORE PROCEEDING WITH INSTALLATION

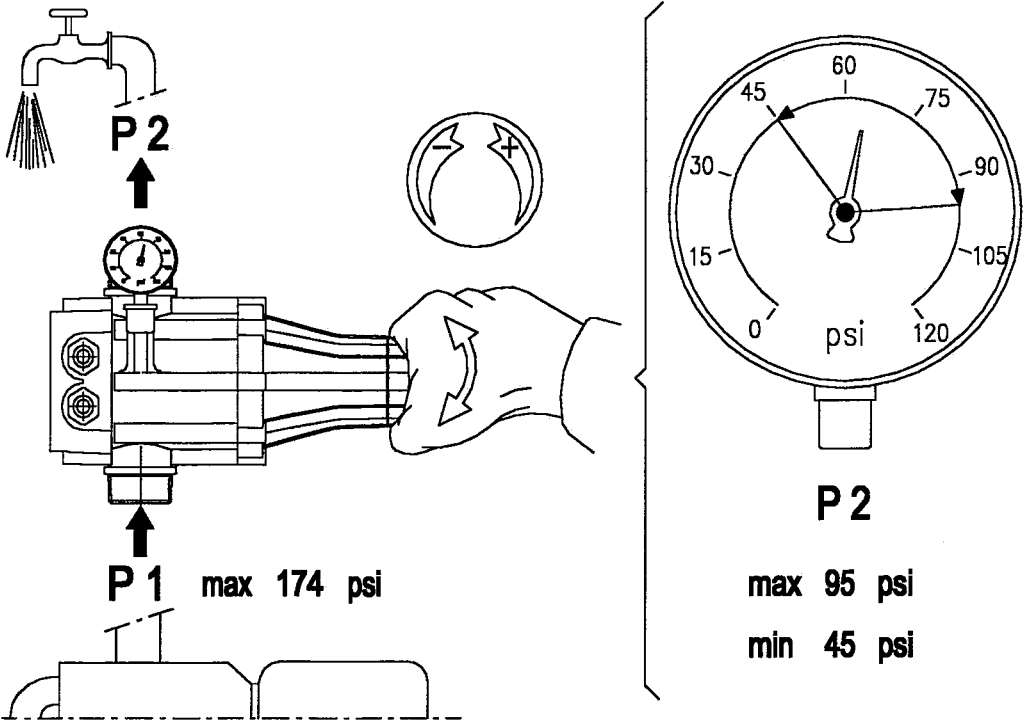
- **CONTROLPRES** provides for an adjustable downstream pressure between 45 psi to 95 psi.
- Must always be installed in the **vertical position**, flow arrows up, electronic box level.
- Must always be installed between the pump and the first tap or tee.
- Do not install any tap or tee between the pump and the CONTROLPRES.
- **Always install a gate valve after the CONTROLPRES unit. This allows testing of the pump and CONTROLPRES unit for efficiency and to confirm pump pressure.**
- Install a pressure-reducing valve between pump and CONTROLPRES when maximum pressure generated by the pump exceeds 174 psi.
- CONTROLPRES's rated maximum operating pressure is 174 psi ( tested at 696 psi ).
- Use only Teflon tape for CONTROLPRES connections. Pipe dope causes failures !
- Always confirm pump and system characteristics before installation, see "PRESSURE" paragraph.
- Always confirm line pressure after installation.
- **Remove pressure switch from pump and wire CONTROLPRES directly to pump.**
- Confirm electrical characteristics of pump motor before installation, e.g. full load amps and voltage.
- Install CONTROLPRES only in clean water applications.

### CONTROLPRES INSTALLATION WITH PRESSURE TANK OPTION



A small captive air tank ( 1/2 to 2 gallons ) may be used to supply a minimal flow demand such as a glass of water, ice maker machine, reverse osmosis systems, toilet flush, etc.  
The small tank will feed the low flow application and substantially delay the pump start-up.

# PRESSURE



CONTROLPRES has a built-in pressure reducing valve, allowing for downstream pressure adjustment according to system requirements.

**System pressure can be adjusted between minimum 45 psi and maximum 95 psi.**

Open a tap to turn on the pump, close the tap and wait until pump stops, then check the system pressure on the unit pressure gauge, normally factory preset at 45 psi.



## PRESSURE ADJUSTING PROCEDURE

Open a tap.

**TO INCREASE THE PRESSURE** turn the knob in the rear part of the unit clockwise.

**TO DECREASE THE PRESSURE** turn the knob counterclockwise.

Close the tap, wait for pump to stop and check the adjusted pressure.

Repeat the above operations until the desired pressure is obtained.

System pressure must be lower of 25 psi than the pressure generated by the pump and higher than the pressure generated by the column of water on the CONTROLPRES.

Use the appropriate guidelines below to check different adjusting conditions:

### **System pressure adjusted at 45 psi.**

- Max pressure generated by the pump must be at least 70 psi.
- The column of water between CONTROLPRES and the highest tap must not exceed 40 feet.

### **System pressure adjusted at 55 psi.**

- Max pressure generated by the pump must be at least 80 psi.
- The column of water between CONTROLPRES and the highest tap must not exceed 60 feet.

### **System pressure adjusted at 65 psi.**

- Max pressure generated by the pump must be at least 90 psi.
- The column of water between CONTROLPRES and the highest tap must not exceed 80 feet.

### **System pressure adjusted at 75 psi.**

- Max pressure generated by the pump must be at least 100 psi.
- The column of water between CONTROLPRES and the highest tap must not exceed 100 feet.

### **System pressure adjusted at 85 psi.**

- Max pressure generated by the pump must be at least 110 psi.
- The column of water between CONTROLPRES and the highest tap must not exceed 120 feet.

### **System pressure adjusted at 95 psi.**

- Max pressure generated by the pump must be at least 120 psi.
- The column of water between CONTROLPRES and the highest tap must not exceed 140 feet.

In the event the pump pressure does not reach the value stated above, the unit will go into Failure mode and will not restart the pump.

In the event the high of the water column exceeds the level indicated, the unit will not restart the pump.

To overcome these problems install CONTROLPRES at a higher level in order to recreate the above mentioned conditions, otherwise adjust system pressure to higher value.

# ELECTRICAL CONNECTIONS



**WARNING**

OBSERVE WARNINGS AND PRECAUTIONS LISTED AT THE FRONT OF THIS MANUAL.

Electrical connections should be made by a qualified professional in compliance with applicable local codes and National Electric Code.



**DANGER**

**ALWAYS SHUT OFF POWER FOR INSTALLATION OR SERVICE.**

Check voltage of pump and supply to determine pump motor FLA and follow applicable CONTROLPRES wiring diagram. If pump motor FLA exceeds CONTROLPRES rating, use magnetic starter wiring diagram for the applicable voltage ( see pages 12, 13).



**WARNING**

Device must be properly grounded.  
Use 140 / 167 °F Wire.  
Use Copper Conductors only.

## IMPORTANT

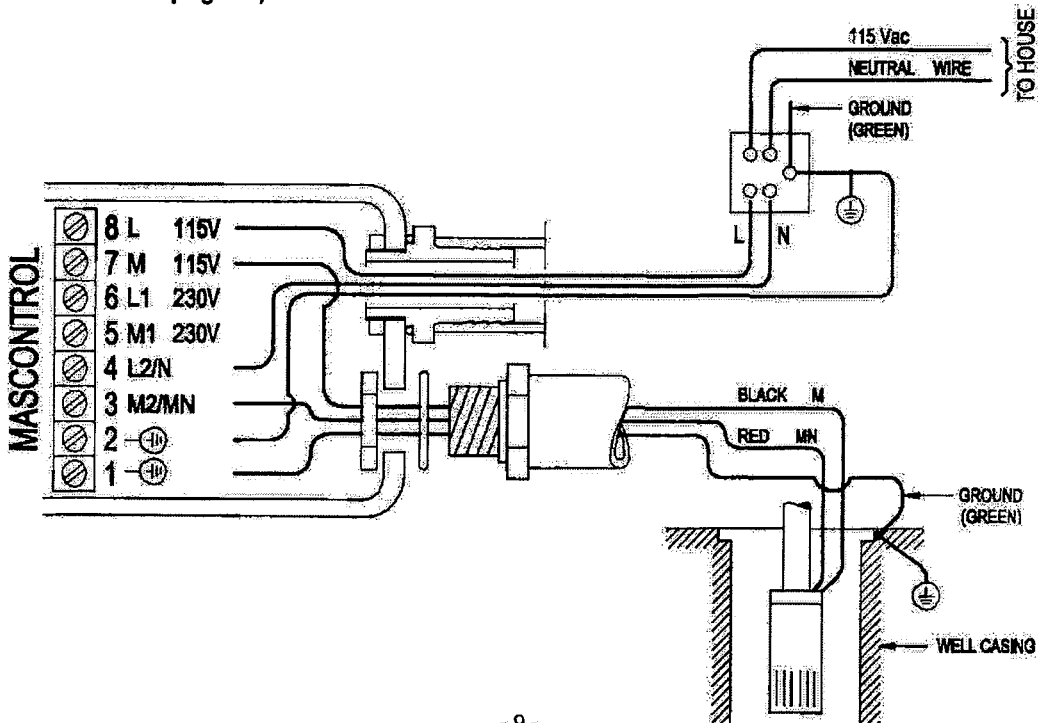
Remove pressure switch from surface pump and wire CONTROLPRES directly to pump.

### INSTALLATION WIRING DIAGRAM - 115VAC 2-WIRE PUMPS



**WARNING**

For 115Vac motors exceeding 16 full load amps, use magnetic starter to avoid damage to CONTROLPRES. ( See magnetic starter wiring diagram, page 12).

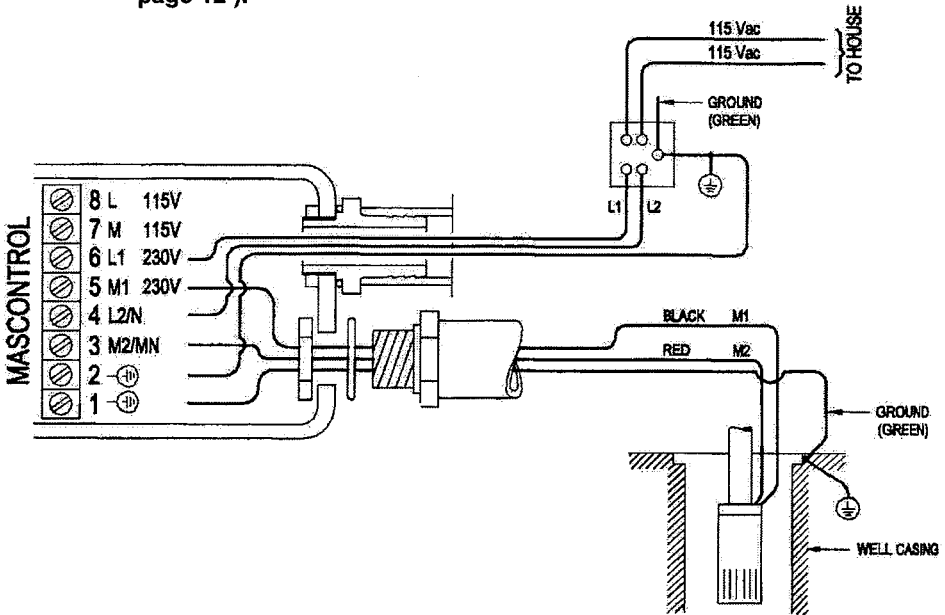


## INSTALLATION WIRING DIAGRAM - 230VAC - SINGLE PHASE 2-WIRE PUMPS



**WARNING**

For 230Vac motors exceeding 20 full load amps, use magnetic starter to avoid damage to CONTROLPRES. ( See magnetic starter wiring diagram, page 12 ).

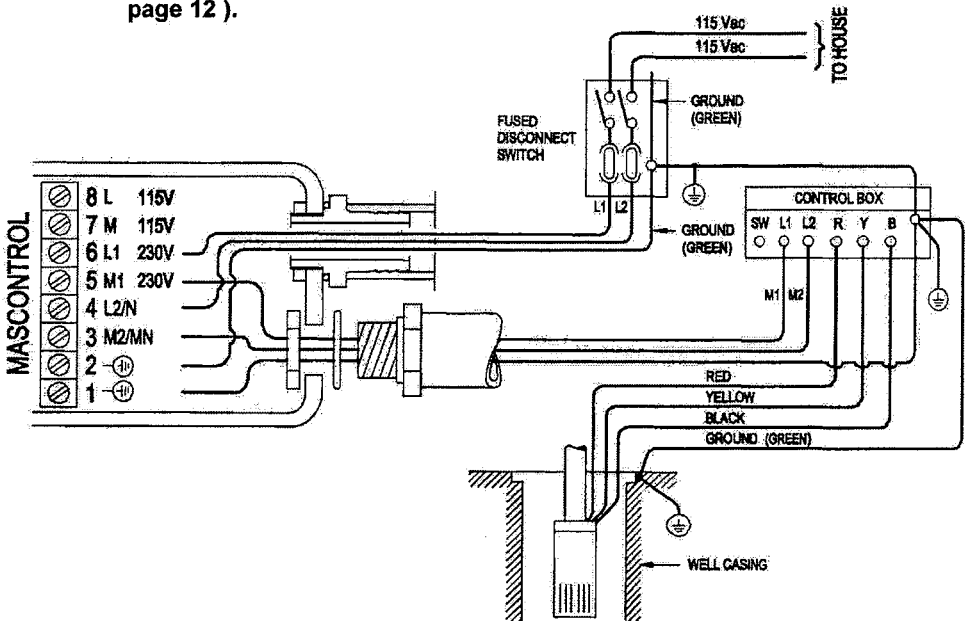


## INSTALLATION WIRING DIAGRAM - 230VAC - SINGLE PHASE 3-WIRE PUMPS



**WARNING**

For 230Vac motors exceeding 20 full load amps, use magnetic starter to avoid damage to CONTROLPRES. ( See magnetic starter wiring diagram, page 12 ).



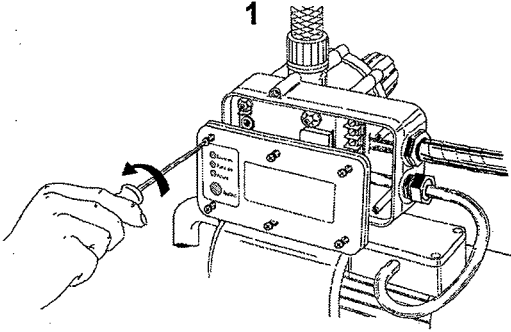
# ELECTRONIC BOX REPLACEMENT



**WARNING**

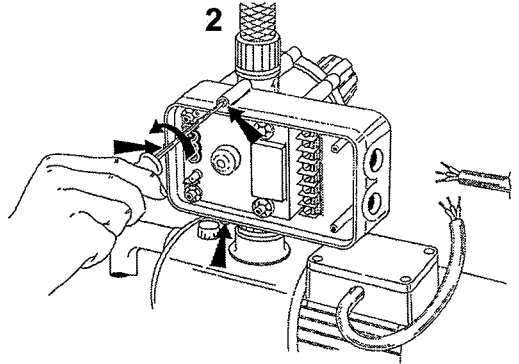
Prior to removing the electronic box ensure that power to unit is off and unit is depressurized.

1



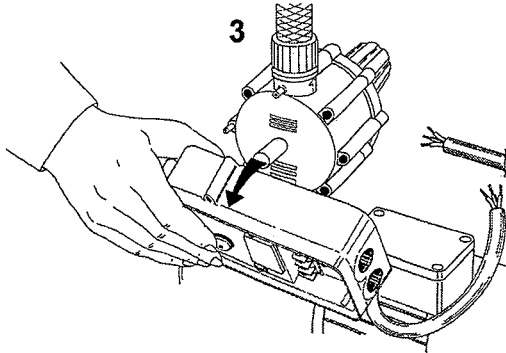
1) Remove the box cover and disconnect the electrical wires.

2



2) Take off the box by removing the three screws attaching the electronic box to the unit body.

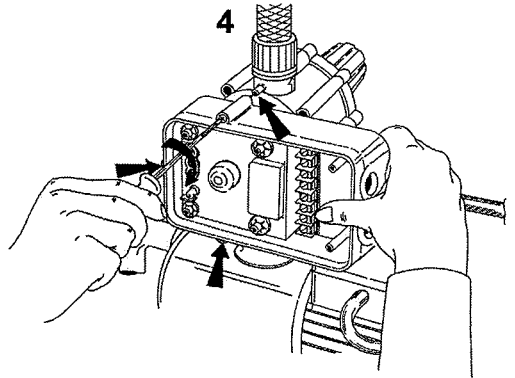
3



3) Remove the electronic box.

4) Install the new electronic box and tighten the three screws. Do not overtighten or damage to threads may result.

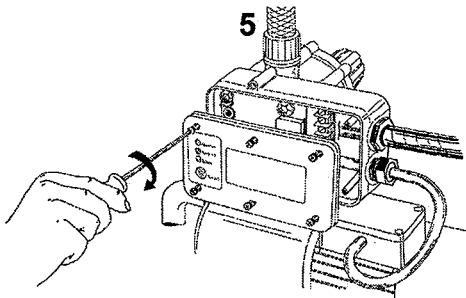
4



5) Tighten the six screws on the cover of the electronic box to ensure water tight seal.

**If cover is not securely fastened, RESET button will not operate.**

5



**WARNING: Do not turn on power until the box cover has been securely fastened.**

## WHEN TO USE CONTACTORS

Use a contactor when:

- On 115V installations pump motor full load amps exceed 16 FLA.
- On 230V installations pump motor full load amps exceed 20 FLA.
- On all three-phase applications.

Use of magnetic starter is determined by pump motor. If required, use contactor in conjunction with starter.

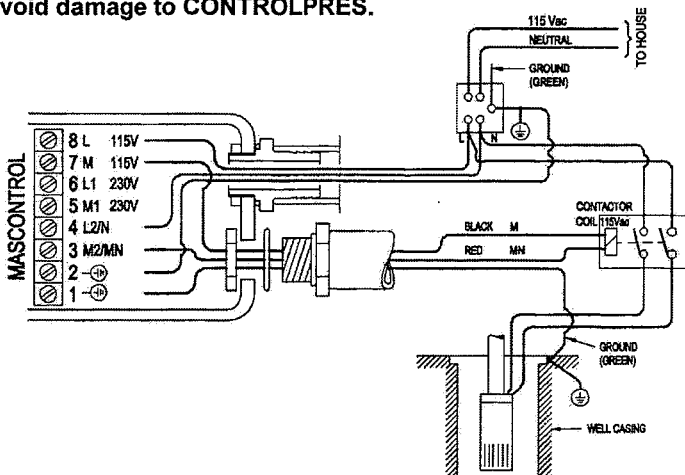
**Remember**, match coil voltage on contactor with CONTROLPRES voltage. Either 115V or 230V coils may be used.

### INSTALLATION WIRING DIAGRAM - 115VAC 2-WIRE PUMPS EXCEEDING 16 FLA

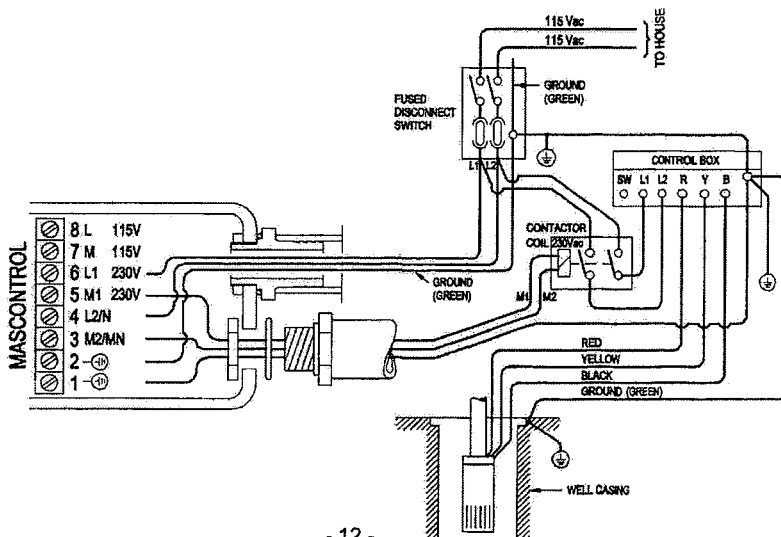


**WARNING**

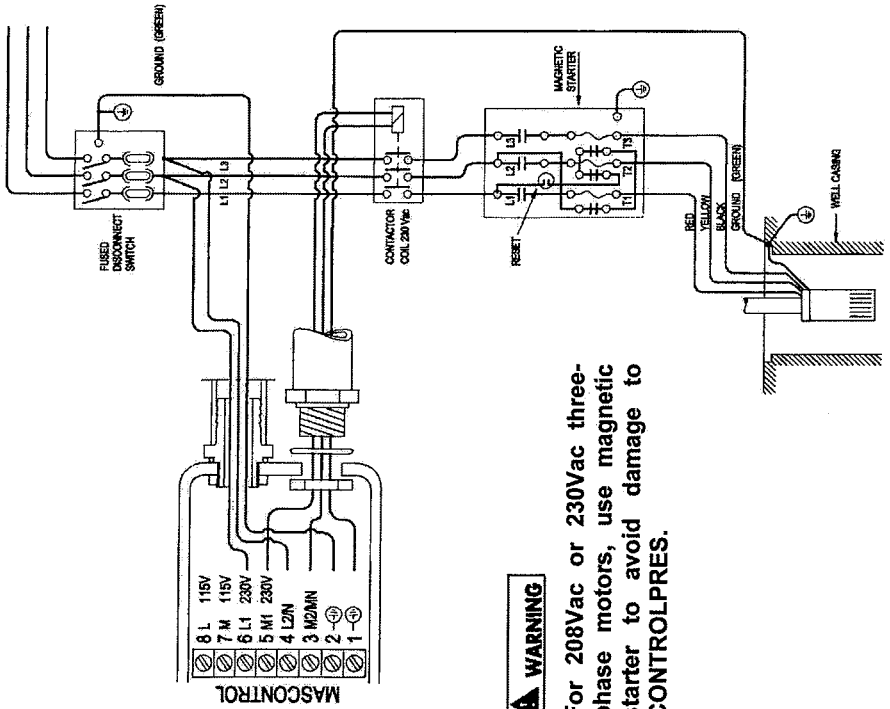
For 115Vac motors exceeding 16 full load amps, use magnetic starter to avoid damage to CONTROLPRES.



### INSTALLATION WIRING DIAGRAM - 230VAC - SINGLE PHASE 3-WIRE PUMPS EXCEEDING 20 FLA



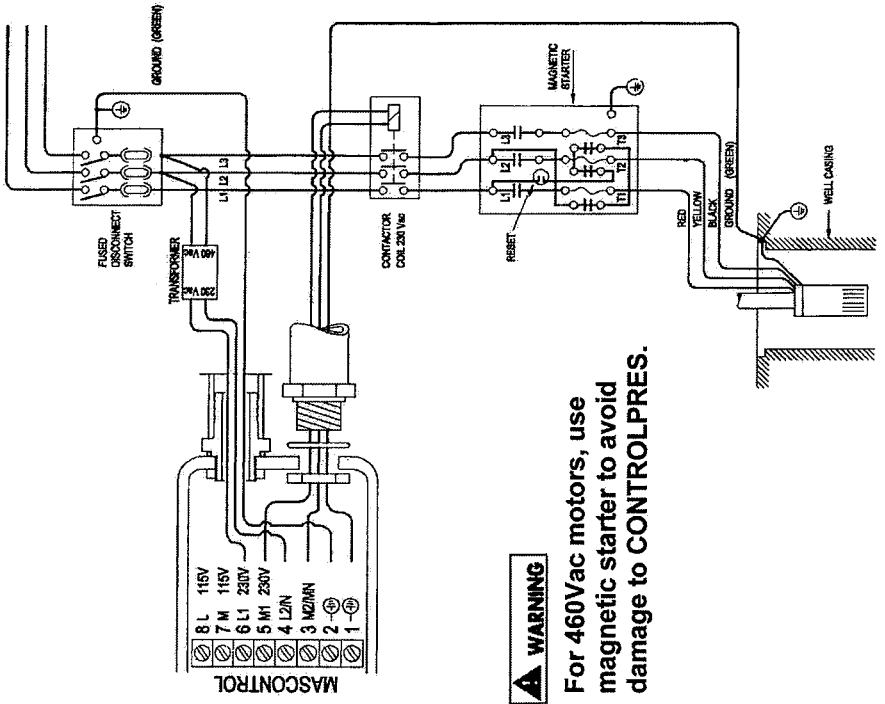
# INSTALLATION WIRING DIAGRAM - 208 VAC OR 230 VAC THREE PHASE - 3-WIRE PUMPS



**WARNING**

For 208Vac or 230Vac three-phase motors, use magnetic starter to avoid damage to CONTROLPRES.

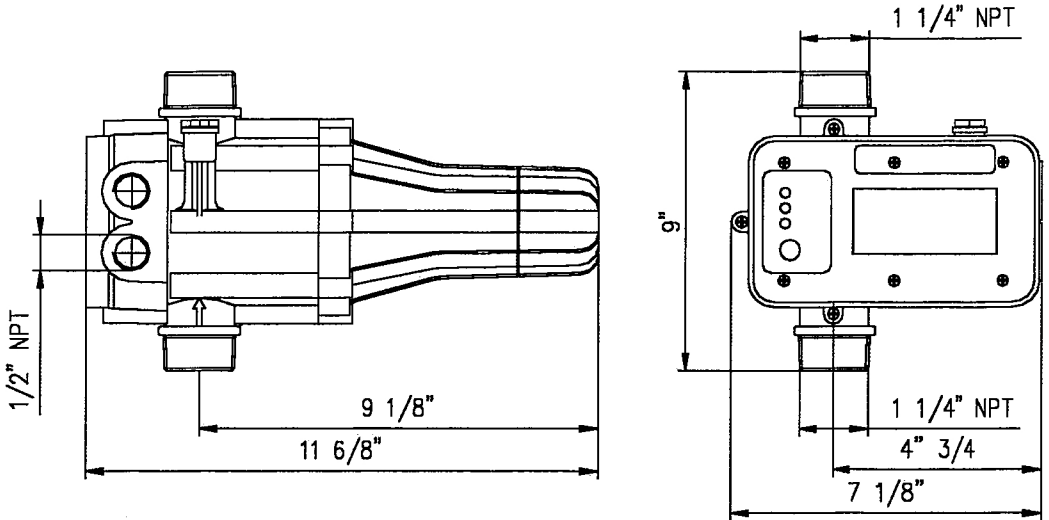
# INSTALLATION WIRING DIAGRAM - 460VAC



**WARNING**

For 460Vac motors, use magnetic starter to avoid damage to CONTROLPRES.

## OVERALL DIMENSIONS



## WARRANTY

### THE WARRANTY PERIOD IS 2 YEARS FROM INSTALLATION DATE

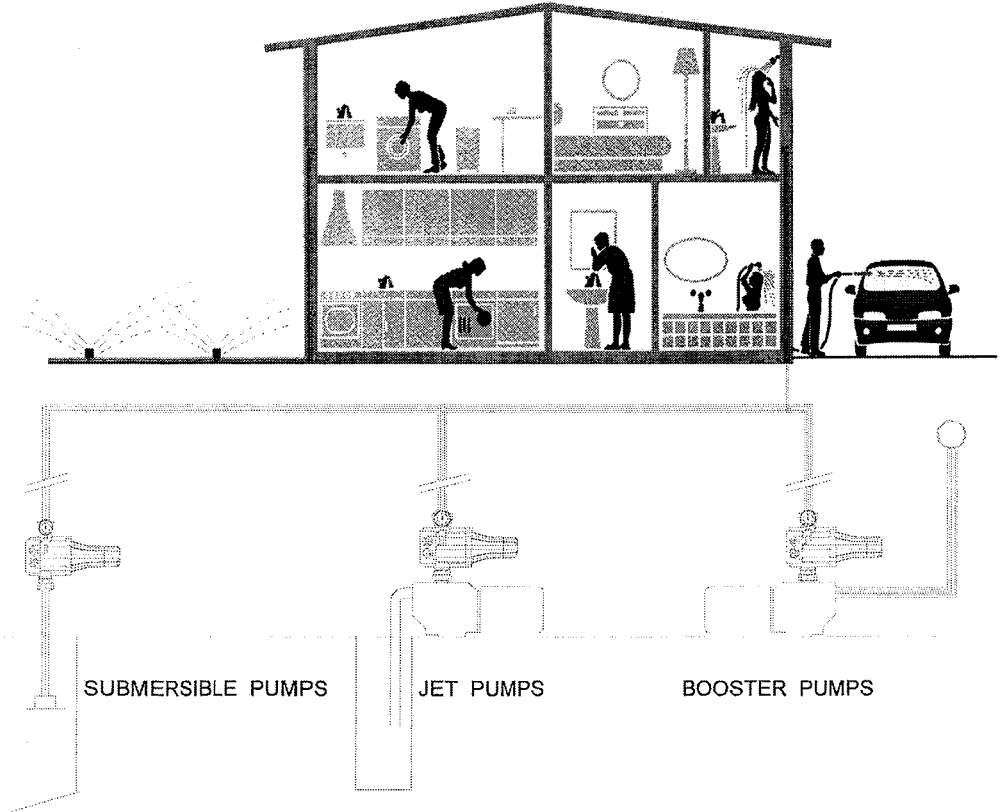
#### WARRANTY AND DISCLAIMER OF WARRANTY

The following warranty for the product is in lieu of all other conditions or warranties, whether express, implied or statutory, including but not limited to any implied conditions or warranties of merchantability or fitness for a particular purpose and on any implied conditions or warranty obligation on the part of manufacturer or its distributors, which are hereby expressly disclaimed. CONTROLPRES is warranted to be free of defects occurring either in hydraulic or electronic parts for a period of one year from the date of installation when installed by a licensed professional in accordance with the product manual and due professional care. Manufacturer reserves the right to inspect and evaluate defective units prior to warranty claim settlement. Improper installation, application or mishandling of unit voids the warranty.

# CONTROLPRES<sup>TM</sup>

by WATERTECH

## DOMESTIC PUMP CONTROL



Locally distributed by: