



GoPump Series

Upgrade Kit Installation Manual

Installation of Upgrade Kit Instructions

READ THIS BOOK

This book has important information for safe installation of this equipment. Read and understand this book before starting upgrade. Keep this book and follow all instructions. If you do not follow the instructions, you can cause injury, death or damage to the equipment.

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**Includes Instructions For
Installation of Upgrade Kit:**

**Remote & Self-Contained
Stand Alone
Console
Mechanical Interface**

SAFETY INSTRUCTIONS

WARNING

AVERTISSEMENT

ADVERTENCIA

For safe operation of this equipment, read and understand all safety notices.

“DANGER” means: If you do not follow the instructions, severe injury or death will occur.

“WARNING” means: If you do not follow the instructions, severe injury or death can occur.

“CAUTION” means: If you do not follow the instructions, damage to equipment can occur.

- DANGER:** Fire, explosion, injury or death will occur if fuel filters are changed by untrained personnel. Make sure only trained personnel change filters.
- DANGER:** To prevent injury to you from vehicles and onlookers, always place a barrier around this equipment before performing service or maintenance.
- DANGER:** Gasoline is flammable. **NO SMOKING OR OPEN FLAME.**
- DANGER:** Disconnect all power to this equipment and associated submerged pump(s) during installation, service or any maintenance, ie., changing filters.
- DANGER:** To prevent electric shock, keep the electrical parts of the dispenser dry.
- WARNING:** You must have training in the operation and programming of this dispenser before using.
- WARNING:** You must have training in the service or maintenance of this equipment (dispenser, pump, console, control box, or submerged pump) before working on it. Maintenance repairs must be done by authorized personnel only.
- WARNING:** Do not operate this equipment as a dispenser unless it is completely assembled.
- WARNING:** Make sure this equipment is correctly grounded. Failure to do so can cause injury or damage equipment.
- CAUTION:** Do not drill holes in fuel dispensers. Holes can cause failure of the electronic equipment. The warranty will become void. Use only adhesive backed sign mounting brackets.
- CAUTION:** This dispenser is factory configured for Console or Stand Alone mode of operation. Mechanical Interface requires configuration of jumpers on the CPU and Power Supply circuit boards. See Installation & Operators Manual. Failure to do so can cause injury or damage equipment.

READ AND UNDERSTAND ALL WARNING LABELS ATTACHED TO THE DISPENSER

NOTICE

This equipment generates and uses radio frequency energy. If not installed and used properly, i.e.; in strict accordance with the instructions in the manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device in accordance with Subpart J of Part 15 of FCC Rules. Class A computing devices are designed to provide reasonable protection against such interference when operated in a *commercial* environment.

Operation of the equipment in a *residential* area may cause unacceptable interference to radio and TV reception. In such instances, any necessary corrective measures must be accomplished at the owner's expense.

Installation must be in accordance with the National Electrical Code (NFPA 70), the Automotive and Marine Service Station Code (NFPA 30A), and all state and local codes.

Identification of Dispenser

This upgrade kit will upgrade Bennett mechanical dispensers of the 4000 series or 3900 series models. To identify these units follow these instructions:

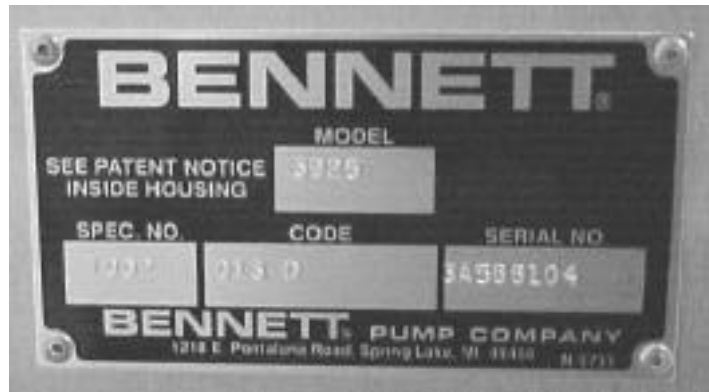
1. Find the Bennett nameplate on the side of the dispenser. The nameplate is located under the hose outlet. The nameplate will contain the model number, serial number, spec number and code. Record these numbers below as they will be required if you need to telephone Bennett for assistance.

Model Number: _____

Serial Number: _____

Spec. Number: _____

Code: _____



Upgrade kit will work with all 3900 series models and will work on 4000 series with SPEC. NO. listed or higher.

Model	SPEC. NO.	Retail		Volume		Notes
		115 V	230 V	115 V	230 V	
4012	1004	104217	104227	104222	104232	
4013	1003	104219	104229	104224	104234	
4014	1004	104217	104227	104222	104232	New face plate set required
4015	1003	104219	104229	104224	104234	New face plate set required
4022	1004	104218	104228	104223	104233	
4024	1004	104218	104228	104223	104233	
4025	1003	104220	104230	104225	104235	
4027	1003	104221	104231	104226	104236	
3912	1000	104217	104227	104222	104232	
3913	1000	104219	104229	104224	104234	
3922	1000	104218	104228	104223	104233	
3924	1000	104218	104228	104223	104233	
3925	1000	104220	104230	104225	104235	
3927	1000	104221	104231	104226	104236	

Codes 534, 559, 693 to 699, 800 and 801 require new upper door assemblies.

Codes 559, 816 to 821 are not able to be upgraded.

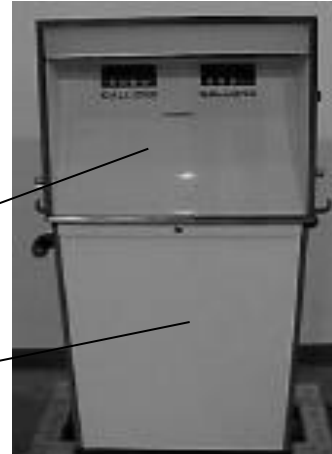
Contact Bennett Order Entry for part numbers and availability.

Disassembly of the unit

1. Disconnect all power to dispenser, multiple disconnects may be required to de-energize this device for servicing.
2. Remove upper and lower doors.

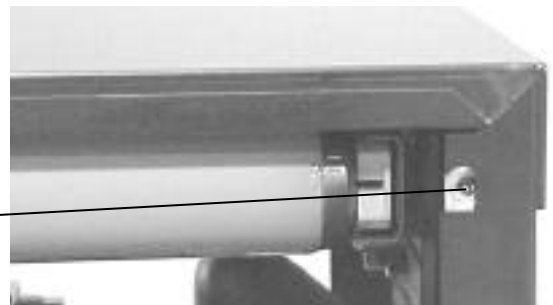
Upper Door

Lower Door



3. Remove pump top cover by removing the 4 screws located on each corner.

Screw Location



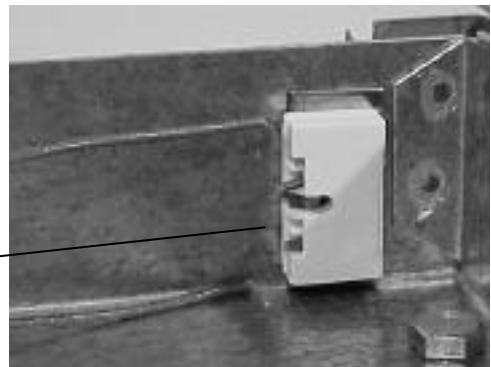
4. Remove top cover from top electrical enclosure. Save cover for later use.

Top Cover



5. Remove fluorescence lamps and ballast from upper electrical enclosure. Use a pair of wire cutters to cut the lamp wires loose from the lamp holders. New lamp holders are furnished in the kit. Remove wire nuts from ballast power supply wires. Save ballast, wire nuts and lamps for later use.

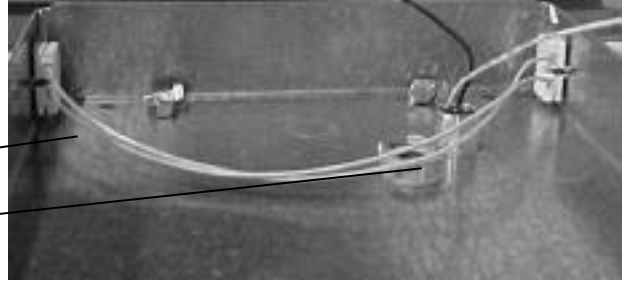
Cut Wires
Close



6. Remove the upper electrical enclosure from the pump frame by removing all conduit nuts with a screwdriver and small hammer. Then remove the 4 bolts from the corners using a $\frac{1}{2}$ -inch socket or wrench.

Bolts

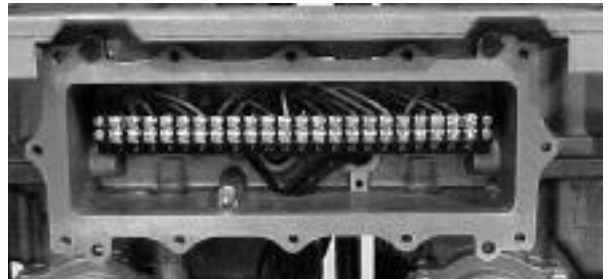
Conduit Nuts



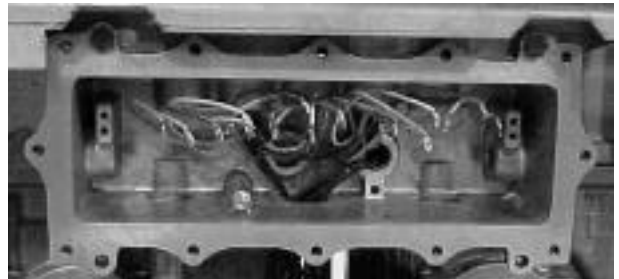
7. Remove the cover from the main wiring box located in the bottom of the dispenser. This will require a $\frac{7}{16}$ -inch socket. Save cover and bolts.



8. Remove the wires from all 22 positions on the terminal strip. Label all wires that go to the service station.



9. Remove the terminal strip from the main wiring box by removing the 4 screws; 2 located at each end. Save terminal strip, marker strip, backer plate and screws.



10. If the unit is equipped with pulser(s), remove the pulser(s) MI Cable from the main wiring box.

11. Using a $\frac{1}{2}$ -inch socket remove the mechanical computer's 4 mounting bolts from the mounting plate.



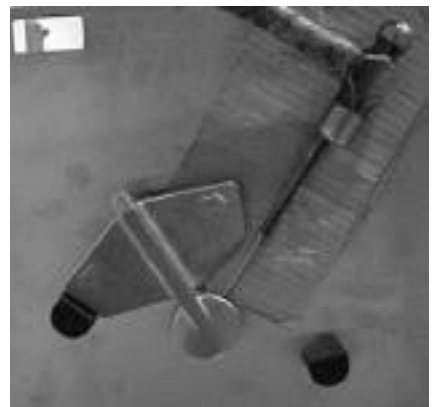
12. Detach the conduit from the main wiring box using a pair of pliers.

13. This step applies only to electric reset models. Split the conduit at the slip joint located near the mechanical computer. Do this by unscrewing the slip joint with a pair of pliers.



14. Remove the mechanical computer from the pump by guiding the conduit free.
15. If the pump is a twin model perform steps 11 through 14 for the second computer.

16. Remove the pump handle by driving out the retaining pin using a long $\frac{1}{8}$ -inch punch. Use cardboard to protect pump outer skin. Save handle for later use.



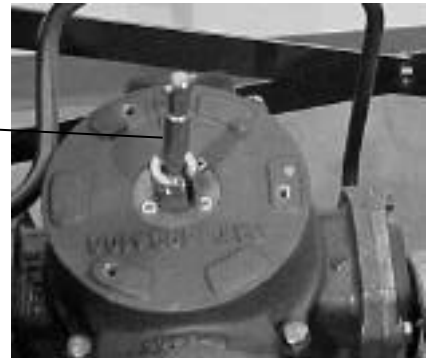
17. Remove the pump handle shaft by removing the retaining clip with a screwdriver and sliding the shaft out. Cam-Ac models do not require the removal of a retaining clip.

Retaining Ring



18. Remove the universal link(s) from the meter(s).

Universal Link



19. When you are finished you will need to keep the following parts as they are used in the upgrade.

- * Light box cover
- * Lamp ballast
- * Main electrical box cover
- * Bolts and screws
- * Marker Strip
- * 2 lamps
- * Pump handle(s)
- * Terminal strip
- * Backer Plate



Preparation for installation of the upgrade kit.

Remove top cover and faceplates to a non-hazardous location when performing the following work.

Totalizer Window.

1. Using template provided mark top cover with hole size and location.
2. Using a nibbler cut hole and smooth edges with a file. Or new top covers may be purchased from Bennett.

Upper door modifications.

1. Remove face plate from upper doors.
2. Using template provided mark face plate with hole size and location.
3. Using a nibbler or jig saw cut hole and smooth edges with a file. Left, right and twin Faceplates are available from Bennett Pump Co.
4. Touch up paint edges that were cut.

Assembly of Pump Handle

1. Remove the two nuts holding the bearing plate assembly to pump side frame with 7/16 wrench. Save nuts for reuse.

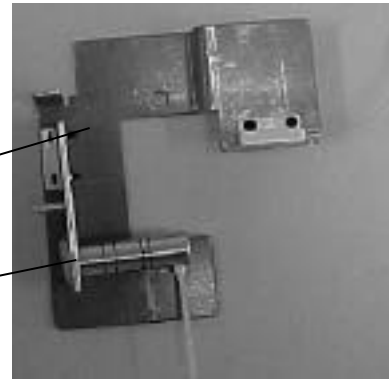
Bearing Plate



2. Open box labeled "HANDLE A" for a single hose or "HANDLE A / HANDLE B" for a twin model.
3. Separate shaft and lever assembly from switch bracket.

Switch bracket

Shaft and lever



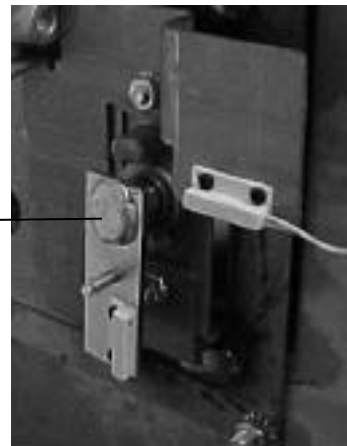
4. Install switch bracket on plate and bearing assembly using nuts from step one.

Install nuts from step 1



5. Insert shaft and lever assembly through pump handle sleeve bearing.

Shaft and lever assembly inserted



6. Install outside retaining clip to pump handle shaft. For electric reset models place ring in outer groove (shown). For cam-ac models place the ring in the groove closest to the outside of the pump.

Cam-ac groove

Electric reset groove



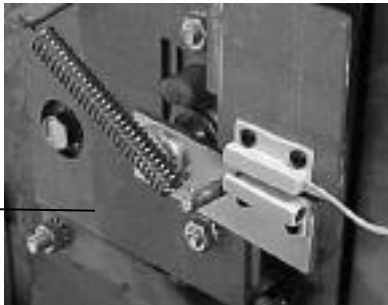
7. Install inside retaining clip to pump handle shaft. For electric reset models place ring in groove closest to lever. For cam-ac models place ring in the groove closest to bearing.

Inside clip



8. Attach spring from switch bracket to pin on shaft and lever assembly as shown in the picture.
9. Turn pump handle shaft to on position.

Handle shown in "ON" position.



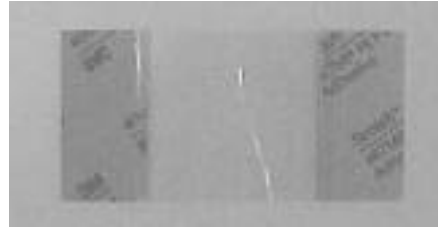
10. Locate pump handle.
11. Press the pump handle onto the shaft aligning the hole in the handle with the hole in the shaft. The handle should be in the on position. Locate the roll pin from the handle hardware bag and drive the pin through the pump handle and shaft.



12. If model is twin repeat steps 1 through 11 noting that box "HANDLE A / HANDLE B" contains parts and hardware for two assemblies.

Installation of Totalizer Lens

1. Locate the totalizer lens(es) (103857) in the box(es) marked “PULSER A” and “PULSER B”. There is one lens in each pulser box.

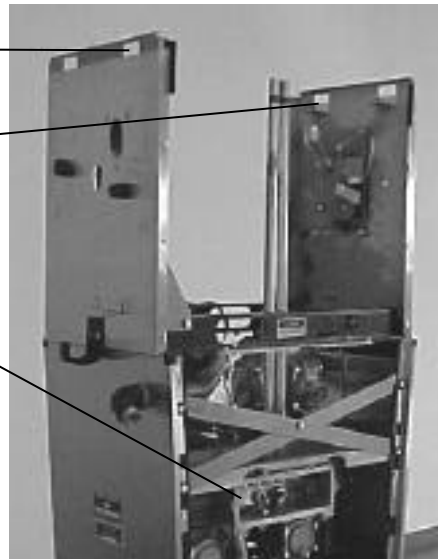


2. Clean metal where lens will be attached. Place the lens over the totalizer hole located in the top of the pump. For a single hose pump this hole will be located on the left side front of the dispenser as viewed from the side of the main wiring box. Attach the lens by removing the paper backing and protective covering from the lens and press the lens onto the metal. Be sure to center the lens over the hole. This will require sliding the lens behind the outer metal.

Single hose lens location

Second hose lens location

Main wiring box reference

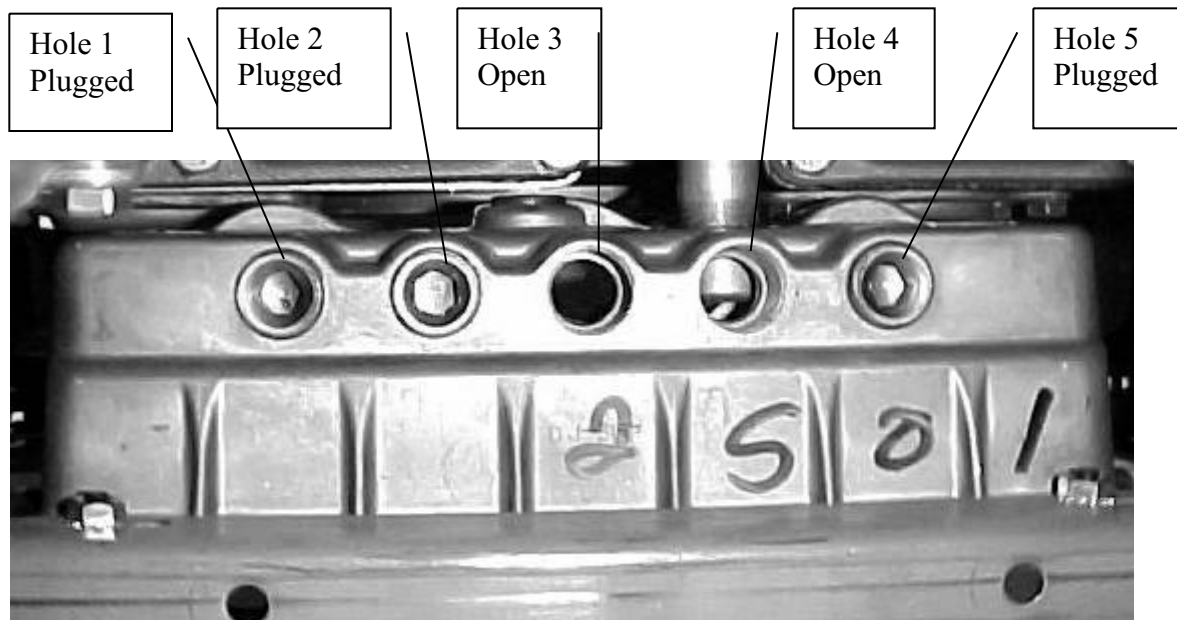


3. If the pump is a twin, place the second lens over the totalizer hole located on the right side, back as viewed from the side of the main wiring box. Attach the lens by removing the paper backing and protective covering and press the lens onto the metal. Be sure to center the lens over the hole. This will require sliding the lens behind the outer metal.
4. This picture shows a lens properly installed.



Installation of conduits

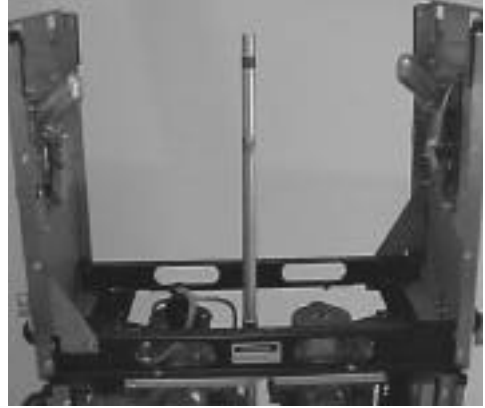
1. All joints in conduit system must have 5 full threads of engagement and be wrench tight.
2. Locate the top of the main wiring box on the pump. Install $\frac{1}{2}$ " pipe plugs in locations 1, 2 and 5. If the unit is a single, install a $\frac{1}{2}$ " pipe plug in location 4, leaving location 3 open. If the unit is a twin leave locations 3 and 4 open.



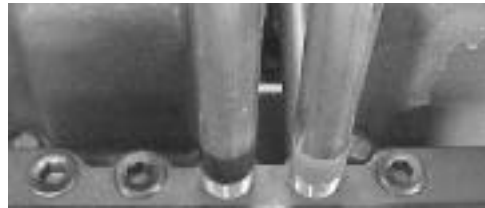
3. Find conduits located in the box labeled “MAIN DISPLAY A” of your upgrade kit. Each conduit is supplied in two pieces that are identifies by colored stripes. A single hose upgrade will require 1 green striped and 1 red striped conduit. A dual hose upgrade will require 1 green striped, 1 yellow striped, 1 red striped and 1 blue striped conduit. Set connecting link(s) to the side for later use.
4. Locate the conduit with green stripe. Holding the conduit with the green stripe down, install the conduit into hole number 3 located on the top of the main wiring box.



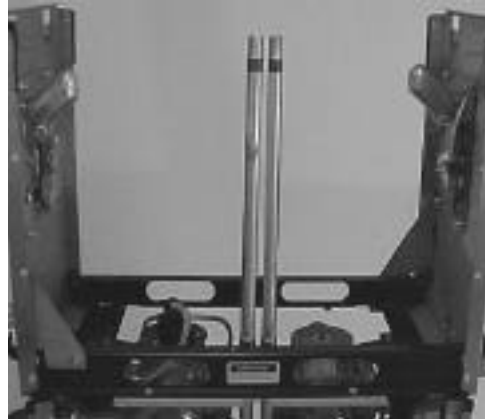
5. Locate the conduit with the red stripe. Holding the red stripe up, install conduit onto the green conduit using the coupling provided.



6. If the unit is a twin model, locate the conduit with the yellow stripe. Holding the conduit with the yellow stripe down, install the conduit into hole 4 located on the top of the main wiring box.



7. If the unit is a twin model, locate the conduit with the blue stripe. Holding the blue stripe up, install the conduit onto the yellow conduit using the coupling provided.
8. This completes the conduit installation.



Pulser Connecting Link

1. Lay straight edge across top rails directly above meter drive shaft.
2. Measure from top of meter drive shaft to bottom of straight edge, and add 3/8". This is the cut off length



Measurement _____
 +3/8" _____.

Cut link to = _____.

3. Measure connecting link(s) to this length and cut off.
4. Insert link into coupling being sure that pins are 90 deg apart.



Installation of Electronic Computer

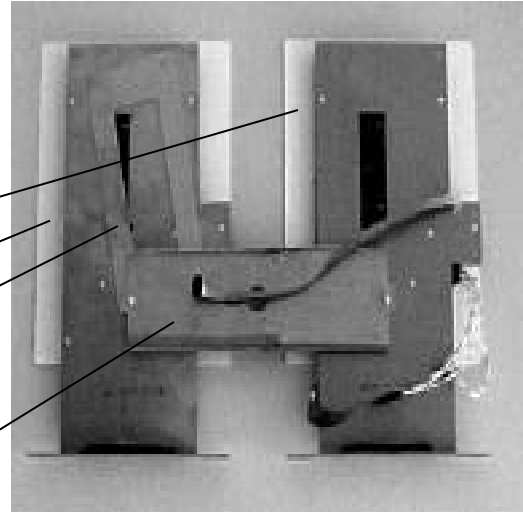
1. Open Box labeled “MAIN DISPLAY A”.
Install conduits per conduit instructions.
2. Remove nuts holding “103819” support
bracket and “104238” pulser mounting
bracket to “MAIN DISPLAY A” and “AUX
DISPLAY A”

MAIN DISPLAY

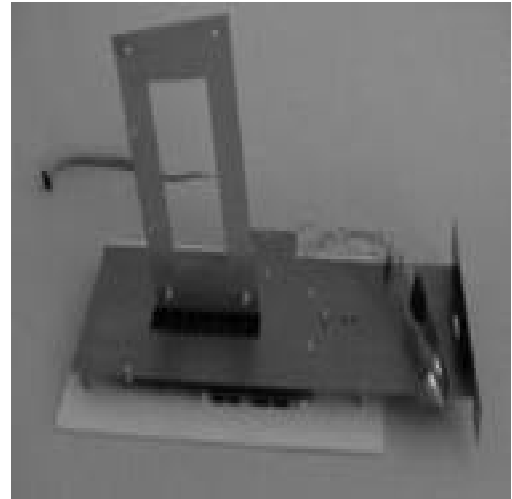
AUX DISPLAY

103819

104238



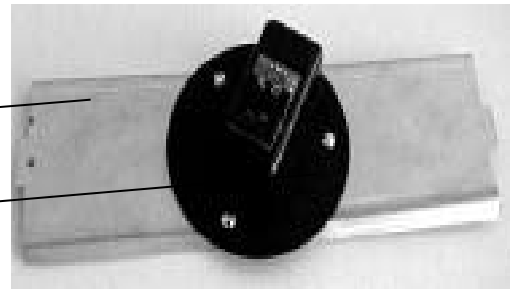
3. With nuts just removed, attach 103819 to
“MAIN DISPLAY A”.



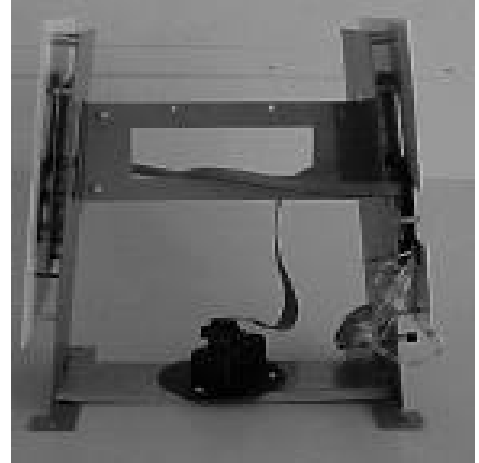
4. Open “PULSER A” box and attach “103784”
to “104238” with bolts provided.

104238

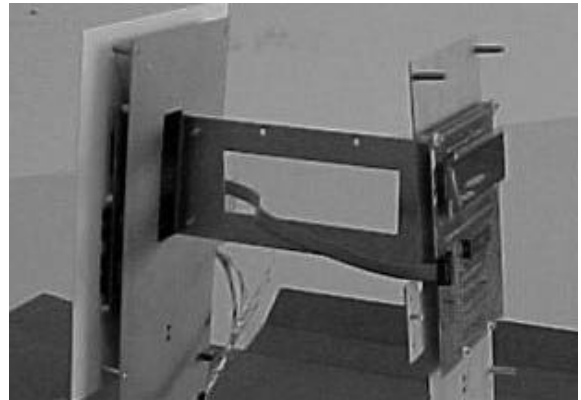
103784



5. Slide one end tab of “104238” into slot at the bottom of “MAIN DISPLAY A”.
6. Slide “AUX DISPLAY A” onto other end tab of “104238” and attach to 103819 with nuts provided in the pump handle hardware bag.



7. Remove display mask from “AUX DISPLAY” by removing 1 screw.



8. Route ribbon cable from MAIN DISPLAY through large hole in support bracket and plug into J7 on the AUX DISPLAY.
9. Remove protective shipping plastic from display(s) lens.
10. Reinstall display mask.
11. Attach “103786” ribbon cable to J2 of pulser assembly.

12. Position Display assembly into pump. The MAIN Display for a single hose will be on the back left of the pump as viewed from the main wiring box. The Main Display for the second hose will be on the front right of the pump as viewed from the main wiring box.
13. Install Display assembly into pump using the four bolts and nuts from the pump handle hardware bag. Use ” wrench.

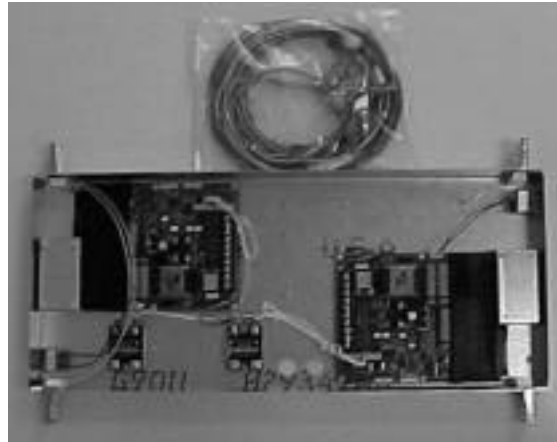


14. Remove display mask from “MAIN DISPLAY”. Set aside.
15. Attach pump handle wires to J5.
16. Attach pulser ribbon cable to J4.
17. If the unit is a twin model, open box labeled “MAIN DISPLAY B” repeating steps 2 through 16 with “B” parts in place of “A” parts.



Installation of Upper Electrical Enclosure.

1. Remove upper electrical enclosure (UEE) from box. Remove wire and hardware bag from electrical enclosure and set aside.



2. Place "UEE" on pump with conduit hole(s) on the same side as the main electrical enclosure.

Conduit Holes



3. Insert conduit(s) through conduit hole(s) and start conduit nut(s), from wire and hardware bag, onto conduit(s).



4. Install upper electrical enclosure mounting bolts and nuts from wire and hardware bag into four holes in the corners. Tighten bolts and nuts securely.

Mounting Bolts

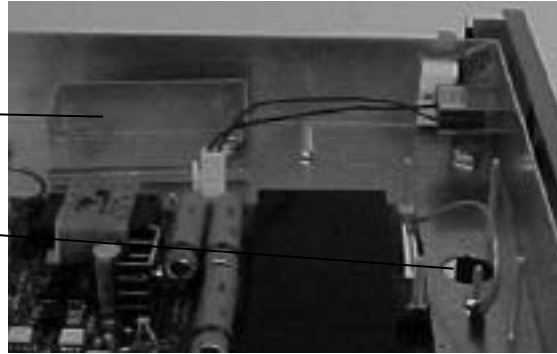


5. Tighten conduit nut(s) securely with screwdriver and small hammer without bending UEE.

6. Remove cover shield and set aside.

Removed
Cover Shield

Display Wire
Mounting Hole



7. Locate “103792A” display wire assembly for side A and “103792B” for side B from wire and hardware bag.

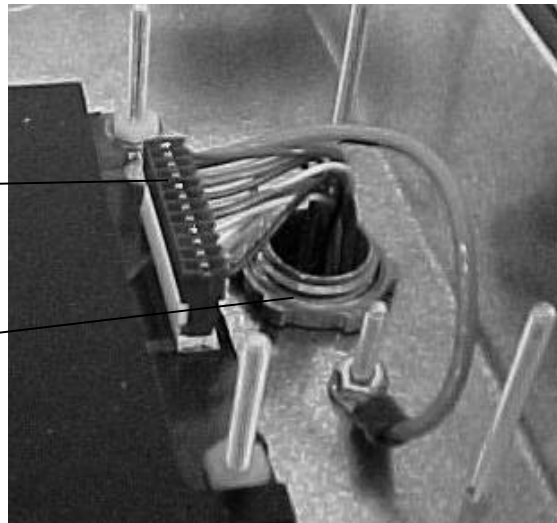
8. Install Snap-in bushing into hole at end of power supply.

9. Install display wire assembly into pump by pushing red connector into the UEE through the snap-in bushing.

10. Connect red connector to J3 of power supply.

Red Connector

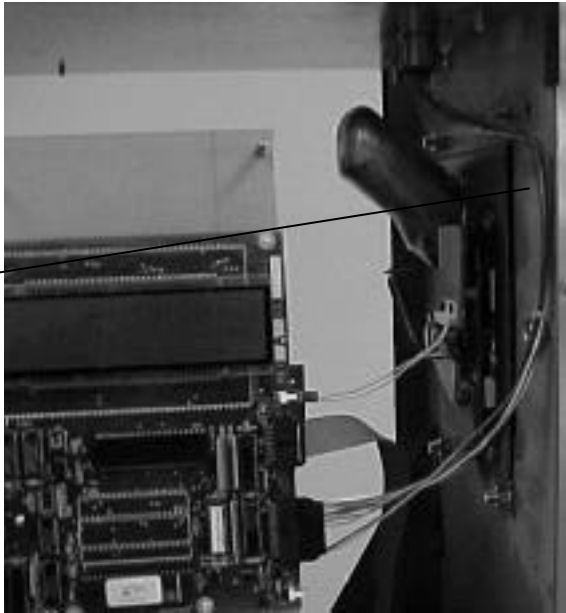
Snap-in Bushing
Not as Shown



11. Reinstall cover shield insuring that no wires are under the edge of the shield.

- 12. Connect black connector of display wire assembly “103792A” to J3 on “MAIN DISPLAY A”. Route wires away from Pump switch.

Routed Wires



- 13. If the unit is a twin model repeat steps 6 through 12.

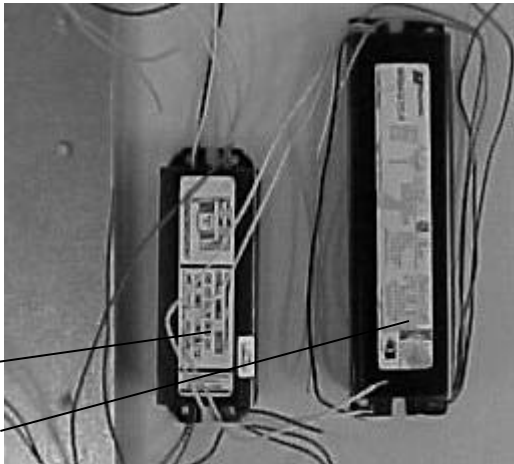
- 14. Locate the ballast that was saved from disassembly.

- 15. Strip $\frac{1}{2}$ ” (0.6 cm) of insulation from cut wires.

- 16. If unit has short ballast (5 $\frac{1}{2}$ ” , 14cm) locate self tapping screw and 10-32 nut in wire and hardware bag. If unit has long ballast (8 $\frac{1}{2}$ ” , 22cm) locate the two 10-32 nuts in wire and hardware bag. If unit is unlighted locate self-tapping screw and install in open hole for ballast mounting.

Short ballast

Long Ballast



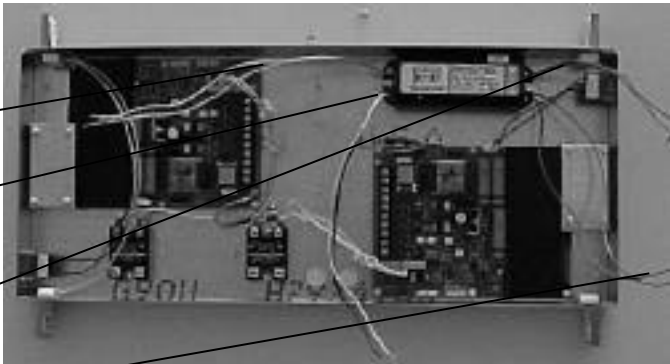
- 17. Install ballast into pump with the black and white wire located in the center of the pump using hardware just located.

Yellow wires

Black and White wires

Red wires

Blue wires



18. Wire lamp holders according to instructions on ballast, routing wire away from circuit boards. Wires may need to be extended with two yellow wires and wire nuts supplied in kit.

19. Locate wire bundle with red electrical tape in wire and hardware bag.

20. Insert red tape end of wire bundle into top of red conduit.

Red wire bundle

Red conduit

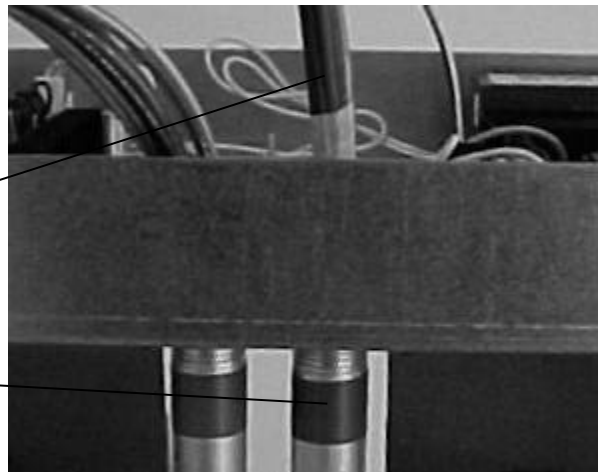


21. If unit is a twin model locate wire bundle with blue electrical tape in wire and hardware bag.

22. Insert blue tape end of wire bundle into top of blue conduit.

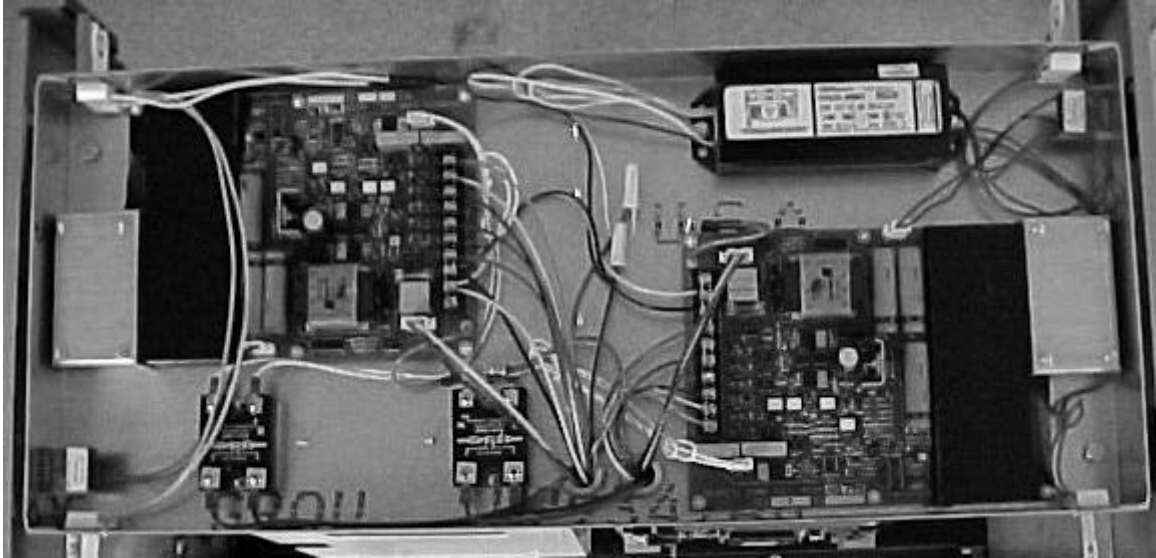
Blue wire bundle

Blue conduit



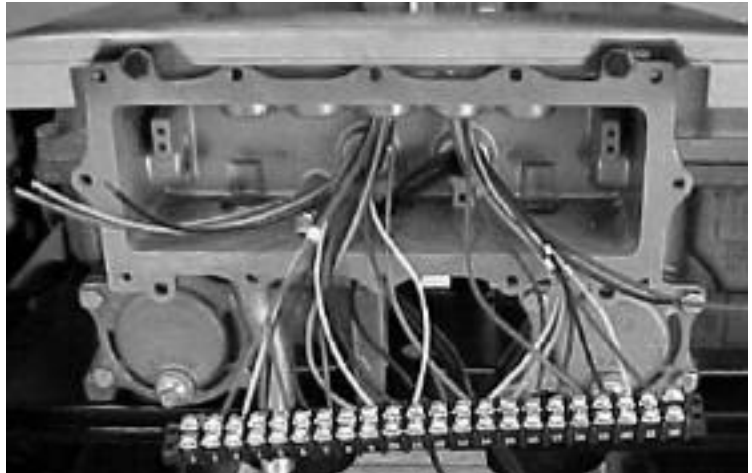
23. Locate appropriate wiring diagram in Go Pump Installation and Operation Manual and use for the next four steps.

24. Wire upper electrical enclosure using wiring diagram for your pump and controller as supplied in the operator’s manual. Remove wire tie(s) from wire bundle(s). Red conduit contains all wiring for a single hose installation. Blue conduit contains additional wiring for the second computer in a twin installation. Note: in twin installations the AC power for power supply “B” is supplied from power supply “A”.



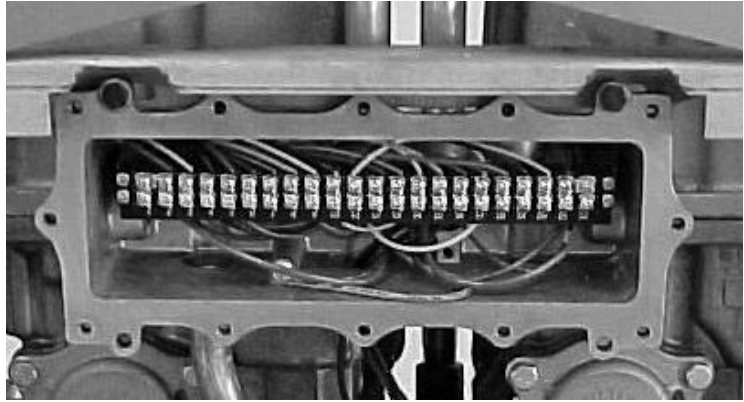
Fully wired upper electrical enclosure for a twin pump.

25. Remove excess length of wire from upper electrical enclosure by pulling into main electrical enclosure.
26. Wire main electrical enclosure using terminal strip removed in disassembly. Trim wires from upper electrical enclosure to 8" (20 cm) and attach to top row of terminal strip.



27. Connect the Red 14 gauge motor control wire side A to the main motor power supply. Connect the Black 14 gauge wire side A to motor A wire. Connect the remaining motor wire to the main motor power supply wire to complete the circuit. Repeat this connection for side B motors in twin installations.

28. Install terminal strip back into main electrical box using the market strip, backer plate and screws removed during disassembly. Be careful not to cut or pinch wires in the main electrical enclosure.



29. Locate appropriate installation wiring diagram from you manual and connect wires from station according to the diagram.
30. Reinstall main electrical box cover removed in disassembly. All 12 bolts must be installed and tightened to protect against fire and/or explosion.
31. Set selection jumpers on CPU and Power supply board as required for your control system. This is explained in the operator's manual.
32. Reinstall display mask that was set aside during Installation of Electronic Computer.
33. Apply local applicable volume and money labels from sheets supplied.
34. Apply Electronic Calibration decals to the inside of the upper door.
35. Locate GO PUMP UPGRADE nameplate and cut out triangle pointing to Model created.
36. Apply GO PUMP UPGRADE nameplate directly above dispenser's ID plate.
37. The wiring exiting the conduits in the upper electrical enclosure must be sealed inside the conduit to prevent gasoline vapors from entering the enclosure. Local safety authorities require this.
- Wrap "CHICO X" fiber around wires and push into conduit.
 - Push wire separator on wire bundles into conduit to at least _".
 - Prepare "CHICO A3" potting compound according to directions
 - Using a funnel, pour potting into conduit, be sure to get potting in between each wire.
38. Locate upper electrical enclosure cover and place on top of upper electrical enclosure being sure that the cover fits between tabs on upper electrical enclosure.

39. Locate modified top housing cover and reinstall.
40. Reinstall lamps removed in disassembly.
41. Remove or mark-out old wiring diagram and electrical ratings on lower door.
42. Finish by placing modified upper and existing lower doors back on pump.
43. Refer to Operator's manual for programming instructions.