



PERISTALTIC PUMP OUT SYSTEM 286EP

Installation and Operations Manual

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The Pump Out System

A Model 286EP is built with different options that effect installation, performance and service.

- Make sure all the components listed on the packing slip are present
- Make sure the parts list attached to this manual includes all options listed.
- Fill in the important pump information below



ENTER YOUR SYSTEM DATA HERE

SYSTEM SERIAL #
 From Edson Serial # Sticker On Pump Frame

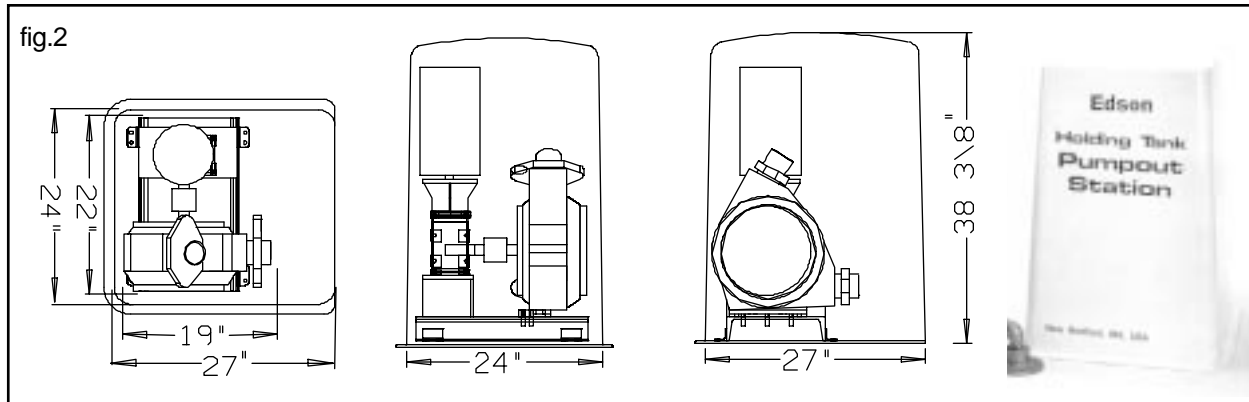
PUMP MODEL #
 From Plate On The Pump i.e.. GZ 40

PUMP DRIVES: Motor
 Reducer
 From Plates On Motor and Reducer. i.e. 2hp/1ph/120/230V/TEFC

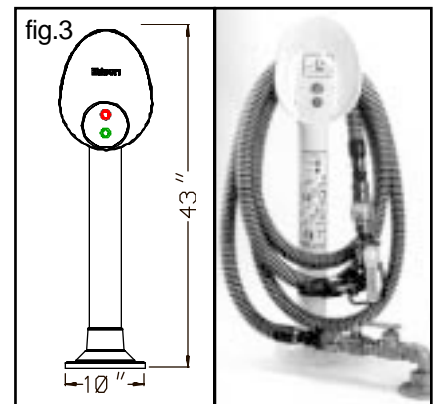
Components Description & Dimensions

Pump Assembly: 2hp/1ph/110-220v/60hz/tefc motor and a 20 to 1 ratio gear reducer coupled to a 35 GPM peristaltic pump. All arranged on a painted aluminum frame with 4 mounting flanges. A contact/timer control box is included. **A 2" 60° schedule 40 pvc elbow and a 2" 90° bronze elbow is provided for the discharge. A 2" X 1 1/2" 90° bronze reducer elbow is provided for the inlet.** fig.1 & 2

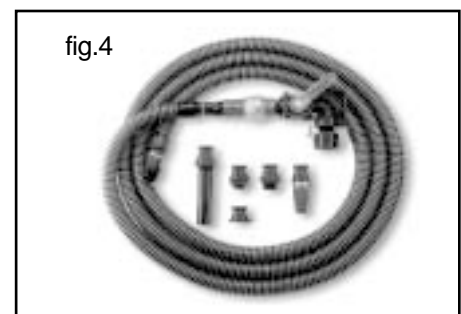
Pump Cover: White Fiberglass and Pump Out Sign. fig.2



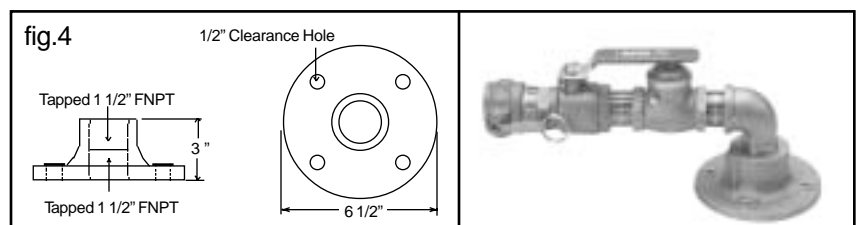
Hose Stand: White Powder Coated Aluminum with Start/Stop Buttons Installed, Operation Instructions and (4) 1/2" X 7" Aluminum Hex Head Mounting Bolts. fig.3



Hose Assembly: 25' X 1 1/2" Polyflex Hose, 90° Ball Valve, Sight Glass/Check Valve, Quick Clamp Adapter, Complete Set of Deck Adapters. fig.4



Hydrant: (Optional) 1 1/2" Bronze Check Valve, Plated Ball Valve and Quick Clamp Hose Adapter with Bronze Elbow and Close Nipple with Bronze Mounting Flange. fig.5



Installation Guidelines

WARNING

Factory Installed Motors Do Not Come Wired.

It is the responsibility of the purchaser to have the electrical service installed by a licensed electrician in accordance with the power requirements of the motor, the electrical service available and local electrical codes.

Failure to have the electricity installed correctly will result in damage to the pump and potential bodily injury, loss of life and property damage from electrical shock and fire.

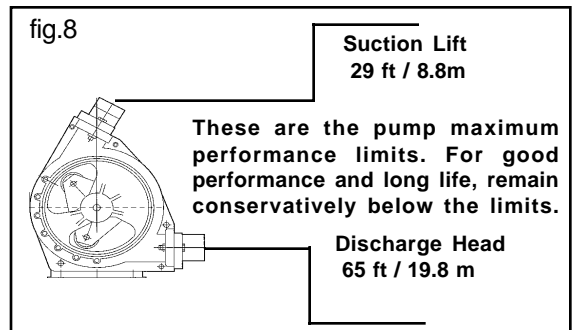
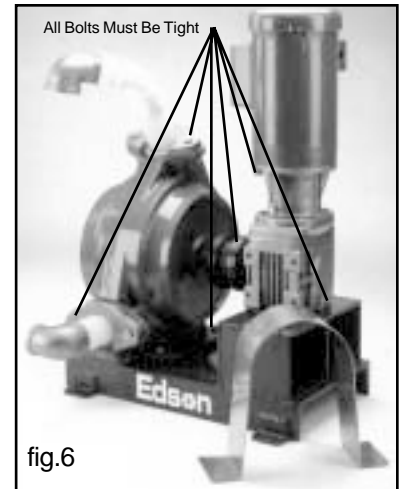
The Pump:

1. Inspect the Pump Unit

- Check All Bolts - Make sure that all bolts on the pump are secure. fig.6
- Plumbing Fittings - All fittings including those supplied with the pump must be installed with thread sealant. fig7

2. Locate the Pump Unit:

- Position Pump Unit & Rough In Plumbing - use figs. 2, 4 & 7 for guidance
- Install for Maintenance - Install the pump in a manner that allows easy access for inspection & maintenance. Connect plumbing to the pump using unions or easily removed couplings. fig 7
- Install the pump in accordance with the performance specification. fig 8
- Install the Pump On a Smooth & Level Surface -In order to prevent unnecessary vibration and frame distortion, the pump unit must be installed on a relatively smooth and level surface.
- Bolt Pump Frame To Surface - Pump frame has 4 bolt down flanges use these to secure the unit to the surface with lag bolts or similar fasteners. fig 9
- Allow Room for The Cover - See fig.4 for dimensions of the cover.



CAUTION

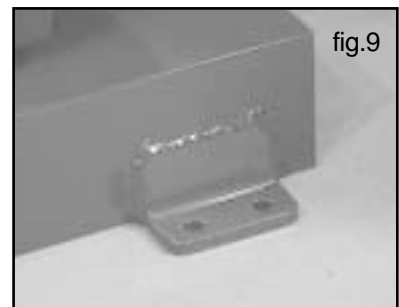
Bolt Pump Securely To Level Surface

Peristaltic pumps are pulsating pumps. They can cause vibrations. The pump must be firmly bolted into position. Surface conditions may require the use of isolation pads on the frame.

CAUTION

Do Not Distort The Mounting Frame When Bolting Pump Unit In Place.

If the surface on which the pump unit is located is not smooth and level, bolting down the pump unit without shimming will distort the pump mounting frame. This may cause unnecessary vibration between the pump and the motor drive resulting in undue wear on the shaft bearings of both pump and motor drive.



The Hose Stand & Hydrant:

1. Inspect the Hose Stand

- Check the hose stand and 4 mounting bolts. Make sure stop/start switches are installed and are secure. fig.10

2. Assemble The Hydrant per fig 11

- Use thread sealant on all components to insure all fittings are air tight.

Important

Plan for the electrical cable to be installed to the switches through the bottom of the hose stand and the 1 1/2" suction line to the bottom of the hydrant

3. Arrange the Stand and Hydrant at Pump Out Location:

- Position the hose stand and the hydrant so the hose can be easily wound and unwound from the stand. fig 11
- Position the hose stand and hydrant so that the 25 ft. hose can easily reach the boats to be pumped.
- Support hydrant with a plumbing hanger if necessary.
- Use the aluminum mounting bolts to secure the hose stand to the surface. If the 7" mounting bolts supplied can not be used, use appropriate substitutes. Aluminum is recommended.
- Secure hydrant to surface with appropriate hardware.

Install the Plumbing:

1. Install in Accordance with Local Codes & Standard Plumbing Practices

2. Use 1 1/2" ID Hose and/or Pipe on The Inlet and 2" ID On the Discharge fig. 14

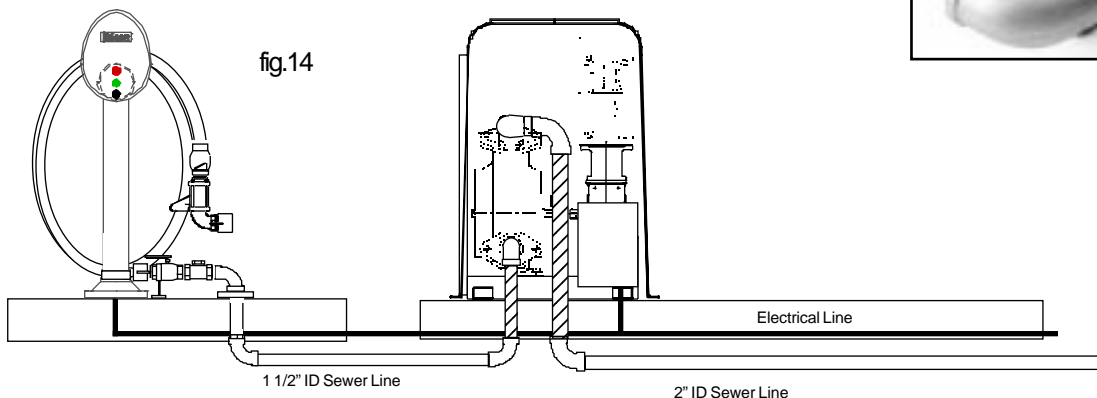
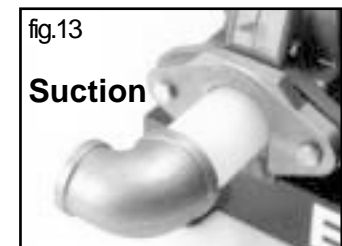
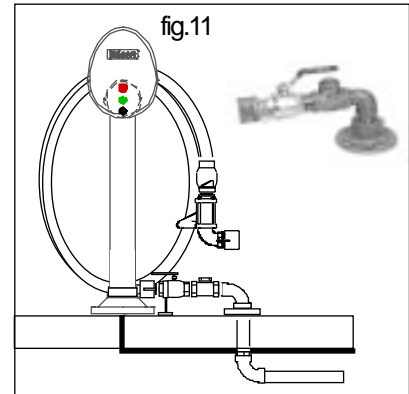
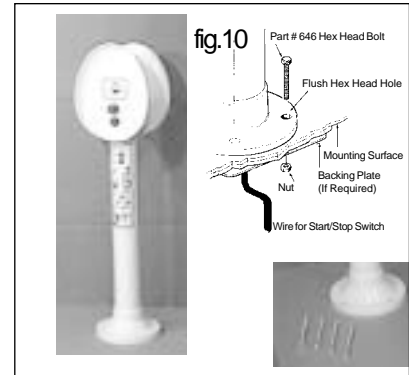
- Make all connections air tight on the suction line.
- Use long radius sewer sweep fittings for all elbows
- Use unions when connecting to the pump. fig 12 & 13
- Use thread sealant on all components to insure all fittings are air tight.

3. Pulsation - depending on the head conditions peristaltic pumps can generate considerable pulsation in both the suction and discharge lines .

- Insure all plumbing connections are secured to fixed structures.
- Insure that the pump unit is securely bolted in place.

4. Prevent Vapor locks

- Prevent vapor locks. Install plumbing so air travels up and out and is not trapped in pipes or fittings.



Caution
All Electrical Connections Must Be Installed By a Licensed Electrician In Accordance With Local Codes

Contact Timer Can Be Wired for 120 Volt Or 240 Volt Follow Instructions On Wiring Diagram Page 6 Copy Also Enclosed Inside Control Box

1. Wire The Pump Out Station:

- Use the wiring diagram, page 6 and the following guidelines.
- Open the Contact /Timer Control Box. fig.15

Important
Transformer Jumper/Jumpers Must Be Installed For Either 120 Volt or 240 Volt

- Install the appropriate terminal jumper/jumpers on the transformer per the wiring diagram (TRANSFORMER CONNECTIONS) page 6. Two contact jumpers are provided in a small package inside the control box.

Important
2 hp Motors Operating On 120 Volt Are Rated At Full Load AMPS of 23 & 12 AMPS for 240 Volt

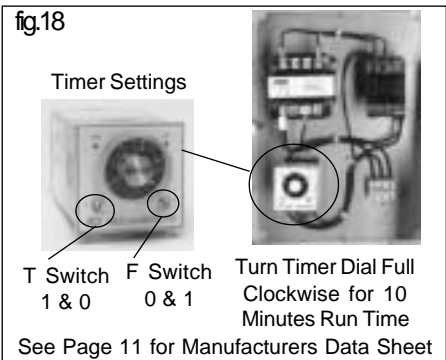
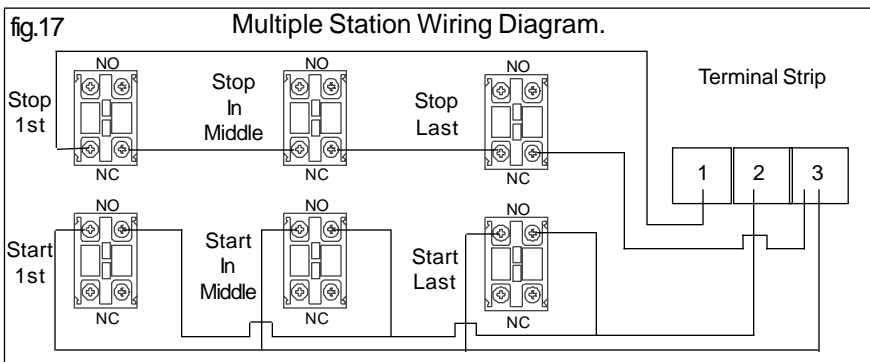
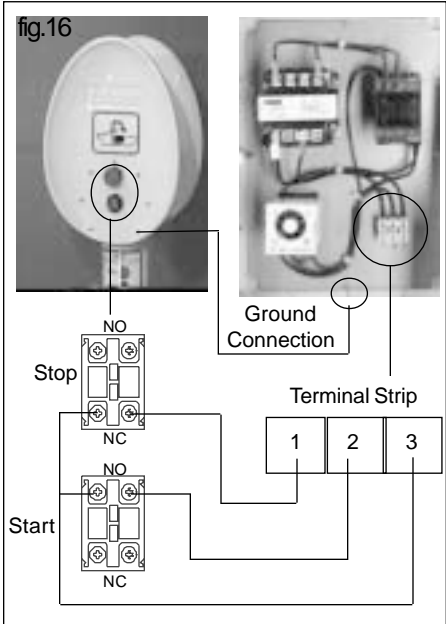
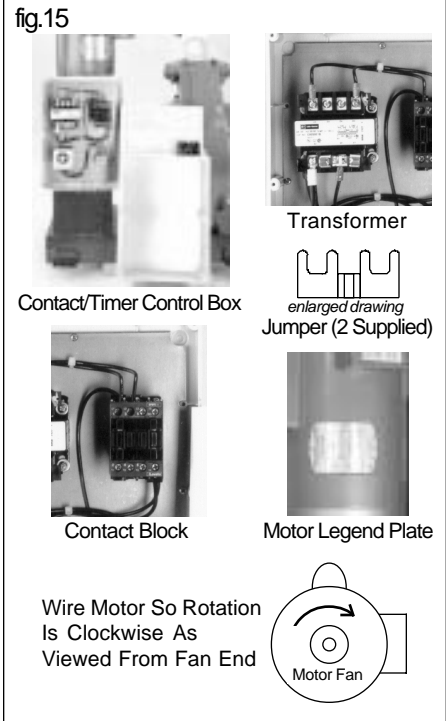
- Wire motor per voltage diagram on motor legend plate. fig. 15. Pay attention to motor rotation.

Important
Motor Rotation Must Be As Shown Fig. 15 In order For Pump Suction Port To Be As Shown In Fig 13

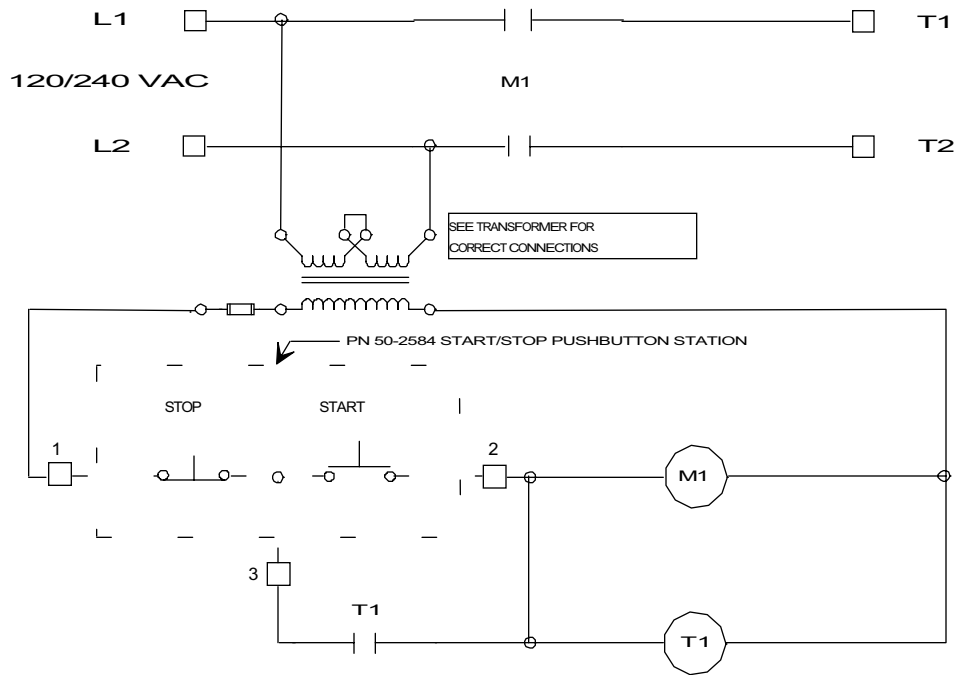
- Wire motor to contact block per wiring diagram.

Important
Requires (4) Wires To Connect Start Stop Switches to Contact/Timer Control Box

- Wire start & stop switch on hose stand to terminal strip in contact control blocks. Wire a ground from hose stand to control box mounting plate. fig. 16
 Wire multiple start stop stations to the contact timer according to fig.17
- Set the timer. fig. 18



50-3178



OPERATION:

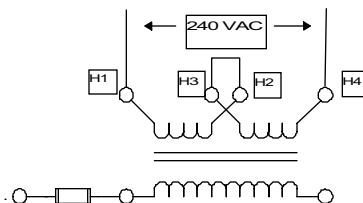
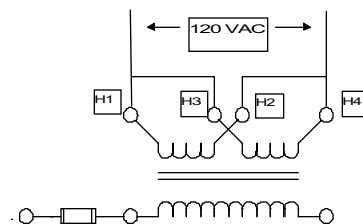
- 1) PUSHING "START" BUTTON:
 - A) ENERGIZES MOTOR CONTACTOR M1
 - B) ENERGIZES TIMER COIL T1
 - C) CONTACT T1 IMMEDIATELY TRANSFERS MAINTAINING POWER IN CONTROL CIRCUIT

- 2) WHEN TIMER T1 REACHES END OF TIMING CYCLE
 - A) CONTACT T1 RELEASES REMOVING POWER FROM CONTROL CIRCUIT
 - B) MOTOR CONTACTOR M1 RELEASES
 - C) TIMER RESETS WHEN POWER IS REMOVED

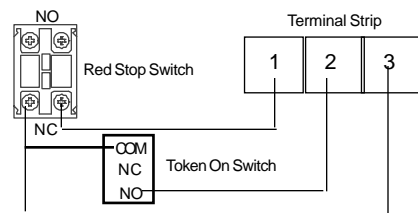
- 3) PUSHING "STOP" BUTTON OR REMOVING POWER
 - A) REMOVES POWER FROM CONTROL CIRCUIT
 - B) RESETS TIMER TO ZERO
 - C) UNIT WILL NOT RESTART UNTIL "START" BUTTON IS PUSHED

NOTE: TRANSFORMER JUMPERS MUST BE CONFIGURED FOR CORRECT INPUT (PRIMARY) VOLTAGE

TRANSFORMER CONNECTIONS



231- A-1415 Optional Happ Token Operated Control Box- When ordered this unit is shipped in place of the start and stop switches on the hose stand. The same wiring applies.



ADVANCE CONTROLS, INC.
 4505 18TH STREET EAST BRADENTON, FL
 941-746-3221

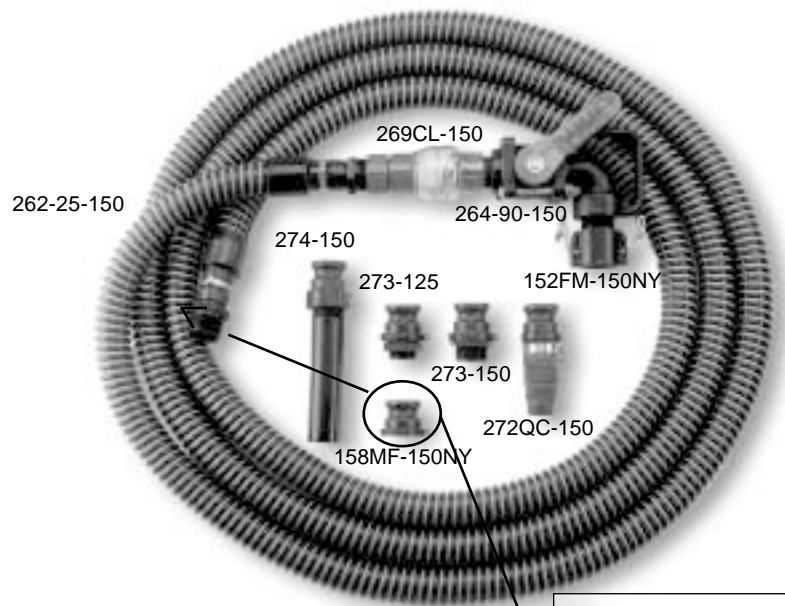
50-3178 117616
 EDSON INTERNATIONAL
 STARTER CONTROL PANEL
 WITH TIMED OPERATION

SCALE	DRAWN	APPROVE	DATE	DRAWING NUMBER	REV
	PJF		03/23/99	50-3178	

Install the Pump Out Hose Assembly

1. Assemble and Install the Pump Out Hose

- **Use Pipe Sealant On All Threads When Assembling Hose Components.**
- Part 158MF-150NY is an optional fitting used to adapt the thread on the hose end to quick clamp.
- 274-150 is a nozzle extension for use when pumping out portable toilets
- 273-150 & 125 are waste deck fitting adapters. They are screwed into a boat waste deck fitting so the hose can be clamped in place.
- 272QC-150 is a nozzle for use when either of the waste deck fitting adapters do not fit into the boat fitting. It is clamped onto the suction end of the hose and then held into the boat waste deck fitting.



2. Parts List

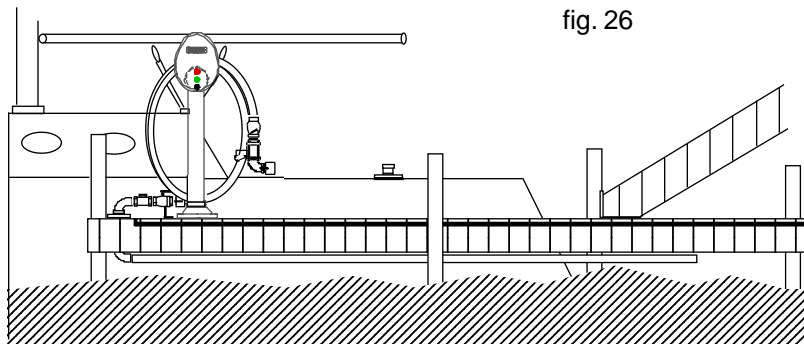
- 152FM-150NY Quick Clamp Adapter 1 1/2" QC Fe X Ma Npt
- 158MF-150NY Quick Clamp Adapter 1 1/2" QC Ma X Fe Npt
- 262-25-150 Hose Assembly
- 264-90-150 90° Ball Valve
- 269CL-150 Check Valve
- 272QC-150 Pump Out Nozzle
- 273-125 Deck Adapter 1 1/4"
- 273-150 Deck Adapter 1 1/2"
- 274-150 Potty Wand

Pumping Out

1. Make Sure Hydrant Ball Valve Is Open & Hose 90° Ball Valve is Closed.

2. Prepare The Waste Deck Fitting On the Boat.

- Remove the cap from the deck fitting.
- Screw in a deck adapter, 1 1/2" or 1 1/4".
- If neither fit, clamp the universal nozzle to the hose.
- If pumping out a portable holding tank or bucket, clamp the potty wand to the hose.

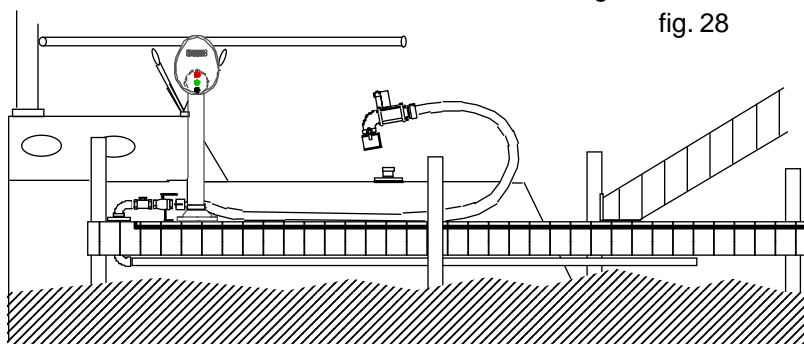
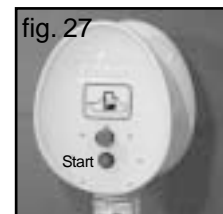


3. Turn On The Pump Out System.

- Push the green start button

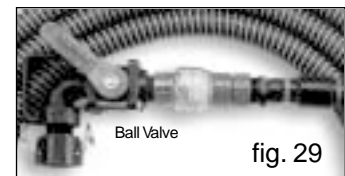
4. Connecting The Hose To The Boat

- Unwind the hose all the way from the hose stand.
- Clamp the hose to the deck adapter or hold the universal nozzle in the deck fitting.



5. Open The Ball Valve Slowly & Pump Out.

- When the holding tank is empty, close the ball valve.
- Pump water through your toilet into the holding tank.
- Pump out again. This procedure rinses the entire system and helps to prevent odor.
- Close The Ball Valve & Disconnect The Hose

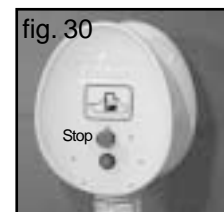


6. Flush the Hose.

- Put the hose into water & open the ball valve for 10 sec.
- Lift the hose and close the ball valve.
- Push the Red Stop Button.

7. Clean Up.

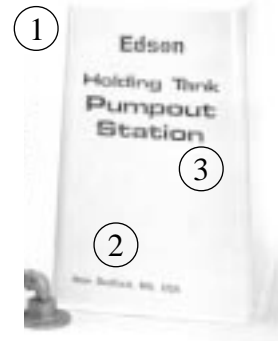
- Curl the hose onto the hose stand.
- Secure the boat deck fitting.
- Rinse the deck and pump out with water.
- Wash your hands.



Parts

Enclosure

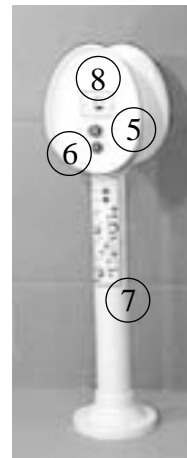
- 1 B-808 White Fiberglass Enclosure
- 2 A-1421-1 Edson New Bedford MA Sign
- 3 A-1421-3 Holding Tank Pump Out Sign



Enclosure

Hose Stand 260-284

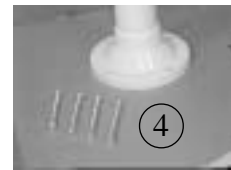
- 4 646-7hex Hex Head Aluminum Bolts
- 5 A-1705 Momentary Mushroom Switch Red
- 6 A-1704 Momentary Switch Green
- 7 A-1693-2 Pump-Out Instruction Sign
- 8 A-1693-3 Pump-Out Logo Sign



Hose Stand 260-284

Bronze Hydrant 270BR-150

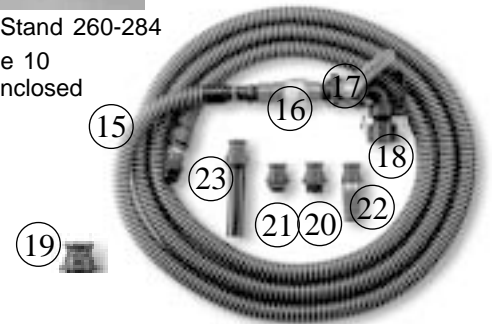
- 9 152MF-150BR Quick Clamp Adapter 1 1/2" FQC X MNPT
- 10 269BR-150 Bronze Swing Check Valve
- 11 264-150BR Ball Valve 1.5" Brass
- 12 A-0000 90 Degree Street Elbow Bronze
- 13 A-0000 1 1/2" Close Nipple, Bronze
- 14 A-0000 Threaded Bronze Mounting Plate



Bronze Hydrant 270BR-150

Hose Assembly 261-25-150

- 15 262-25-150 Hose
- 16 269CL-150 Clear Swing Check Valve
- 17 264-90-150 90 Degree Ball Valve 1.5"
- 18 152FM-150NY Quick Clamp Adapter 1 1/2" FQC X MNPT
- 19 158MF-150NY Quick Clamp Adapter 1 1/2" MQC X FNPT



Hose Assembly 261-25-150
Pump Out Adapters

Pump Out Adapters

- 20 273-150 1 1/2" Deck Adapter
- 21 273-125 1 1/4" Deck Adapter
- 22 272QC-150 QC Pump Out Nozzle
- 23 274-150 Potty Wand

Pump Assembly

- 24 A-2000 2 HP Contact Timer w/ 24 Volt Transformer
- 25 A-1911 Peristaltic Pump See Manufacturers Parts Drawing Page 10
- 26 A-1977 Nord Worm Gear Reducer See Manufacturers Manual Enclosed
- 27 A-1912 2HP Single Phase 120/240 V, 3450RPM,56C, TEFC
- 28 D-180 Mounting Platform
- 29 Coupling, Motor to Pump (3 Parts)
 - 29a A-1913 Coupling Section on Motor
 - 29b A-1914 Coupling Flexible Insert
 - 29c A-1977 Coupling Section on Pump
- 30 A-1997 Coupling Cover



Pump Assembly

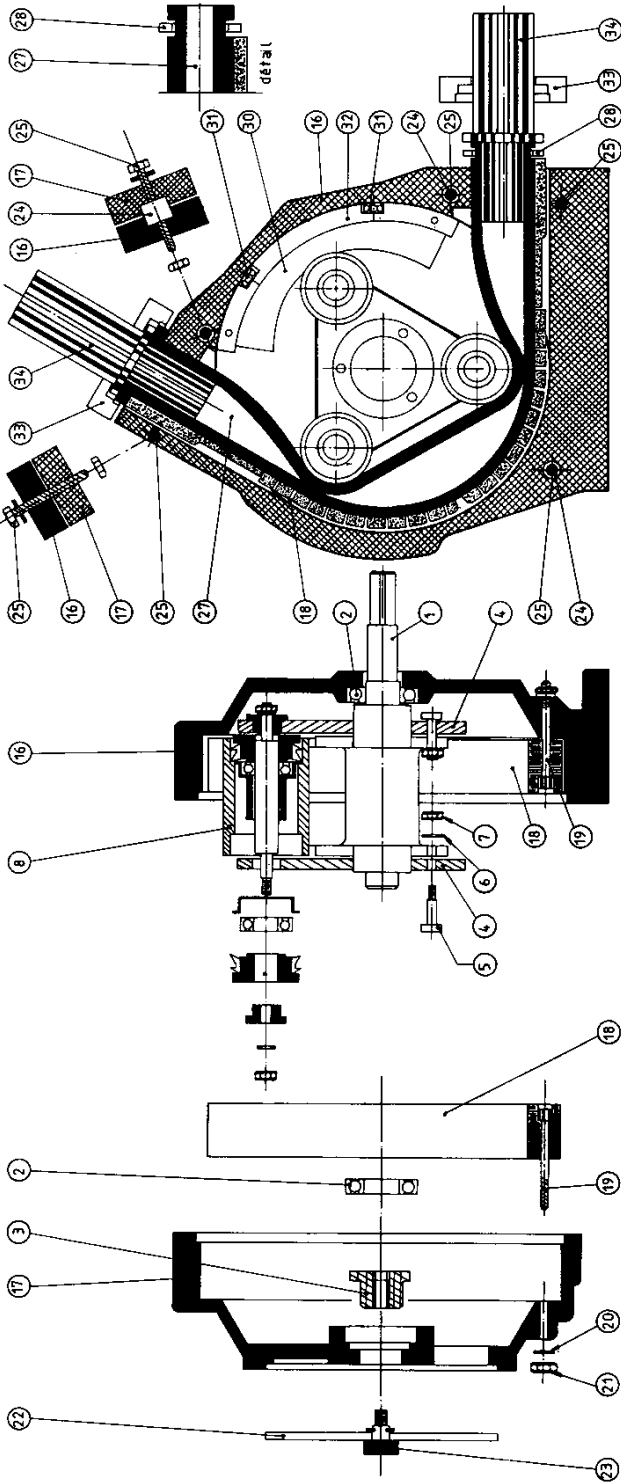


No 731 B

TECHNICAL SHEET

GZ 40 PUMP

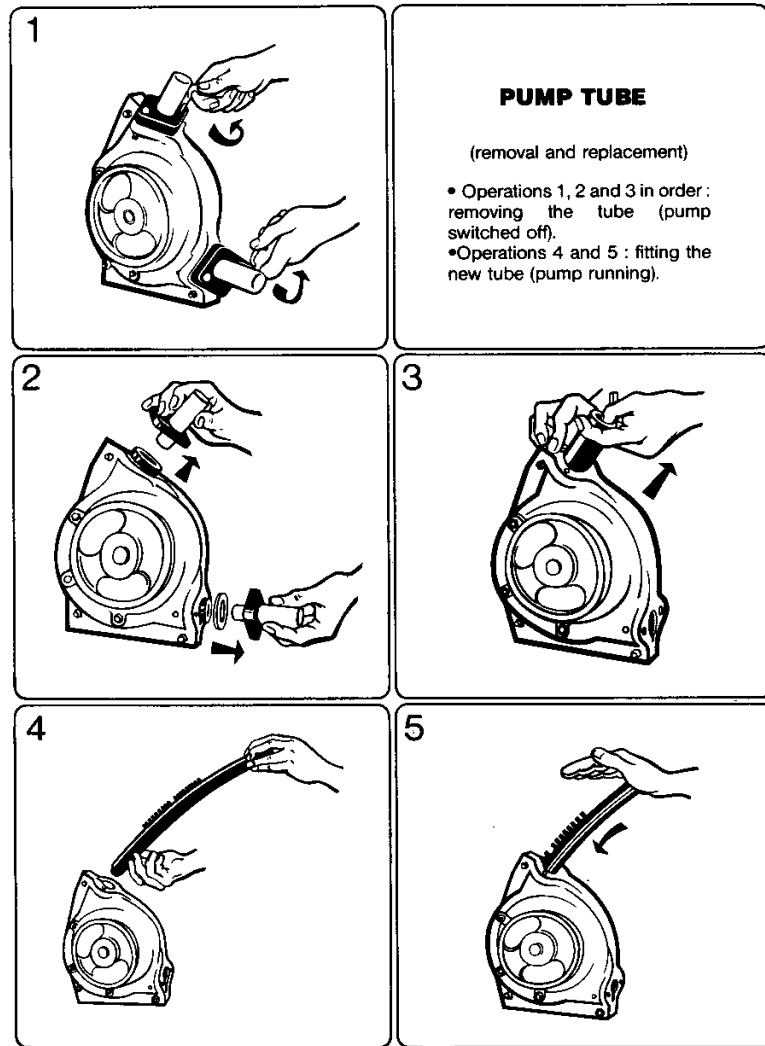
240991



Rep	No	Qty	ROTOR	Rep	No	Qty	ROLLER	Rep	No	Qty	STATOR
1	35103	1	ROTOR SHAFT	8	35201	3	ROLLER INCLUDING:	16	35010	1	SOLID PART OF STATOR
2	39051	2	SCALED BALL BEARING 6305/2RS			1	ROLLER BODY	17	35011	1	OPEN PART OF STATOR
3	35105	1	RNG			1	ROLLER AXLE	18	35035	2	SLIDE BAR
4	32106	2	ROTOR CHEEK			2	SCALED BALL BEARING 6201/2RS	19	35038	10	SLIDE BAR FIXING STUDBOLT
5		6	ROTOR CHEEK STUDBOLT			2	RUBBER SEAL VR 225 TYPE	20		10	FAN SHAPED WASHER $\phi 6$
6		6	FAN SHAPED WASHER $\phi 6$			2	PROTECTING WASHER	21		10	NUT $\phi 6$
7		6	BOLT $\phi 6$		39207	2	FAN SHAPED WASHER	22	35012	1	CAP
						2	CENTERING WASHER	23	39040	1	CAP FIXING SCREW (with ercips)
						2	NUT $\phi 6$	24	39043	3	STATOR CENTERING TEAT
						2	BEARING CARRIER	25		5	STATOR FIXING SCREW M8 AND NUT
						1	BEARING SPACER				

WHEN ORDERING SPARE PARTS, KINDLY REFER TO TECHNICAL SHEET No 731B AND QUOTE:
 1- TYPE OF PUMP INVOLVED AS WELL AS SERIAL NUMBER STAMPED ON NAME PLATE.
 2- REFERENCE NUMBER OF PART REQUESTED; MANUFACTURING MARKS OF TUBES ARE CAST ON THEIR WALL.

Pompes DELASCO®



PUMP TUBE

(removal and replacement)

- Operations 1, 2 and 3 in order : removing the tube (pump switched off).
- Operations 4 and 5 : fitting the new tube (pump running).

**GENERAL
MAINTENANCE
INSTRUCTIONS**

REMOVING AND REPLACING THE TUBE

The diagrams above show how to perform these two operations (figures 1 to 5 inclusive).

DISASSEMBLING THE PUMP CASING

Although replacing the pump hose does not require the dismantling of the casing, it may happen that internal parts of same have to be checked, cleaned or replaced.

In such case, we recommend following procedure :

- Remove counter-flanges.
- Unscrew nuts and screws holding stator set together.
- Remove the open part of casing by pulling it towards you.
- If there is any difficulty in separating the two stators, insert a piece of wood or a blunt tool handle into the suction and discharge openings of the pump. Never use a hammer or a sharp tool which might cause damage.
- Flush down casing to eliminate abrasive or corrosive substances.
- Check that the rollers turn easily on their spindles. If they have seized up, replace the rollers.
- Replace the brake tube if it is worn.

N.B. : When ordering spare parts, refer to the technical sheet for the pump model in question.

Grease Hose Periodically See Instructions Attached Page 13



85 SERIES TIMER • MULTI FUNCTION/RANGE/VOLTAGE

ADVANCE CONTROLS' 85 SERIES MULTI FUNCTION/RANGE VOLTAGE TIMERS OFFER A CHOICE OF FOUR (4) TIMING FUNCTIONS, FOUR (4) TIMING RANGES, AND A WIDE RANGE OF INPUT VOLTAGES



MULTI FUNCTION: WITH THE PROPER SETTING OF THE "F" (FUNCTION) DIP SWITCH, THIS ACI TIMER CAN FUNCTION EITHER AS AN ON DELAY, REPEAT CYCLE, INTERVAL (REVERSE ON DELAY) OR A REVERSE REPEAT CYCLE TIMER.

MULTI RANGE: WITH THE PROPER SETTING OF THE "T" (TIME) DIP SWITCH, THE ACI TIMER OFFERS A CHOICE OF FOUR (4) TIMING RANGES (0.05 / 1 SEC : 0.12/10 SEC: 0.6 SEC/1 MIN: 6 SEC/10 MIN. OR 0.05/1 MIN: 0.12/10 MIN: 0.6 MIN/1 HOUR: 1 MIN/10 HOUR).

WIDE RANGE INPUT VOLTAGE: A WIDE RANGE OF INPUT VOLTAGES ARE ALLOWED (24 VAC/VDC THROUGH 240 VAC/VDC, 50/60 HZ) WITHOUT WIRING CHANGES OR DIP SWITCH SETTINGS.

THE FEATURES OF THE ADVANCE CONTROLS TIMER MINIMIZE INVENTORY WHILE MAXIMIZING THE BENEFITS FOR TIMER APPLICATIONS.

CATALOG NUMBERS / TIME RANGES

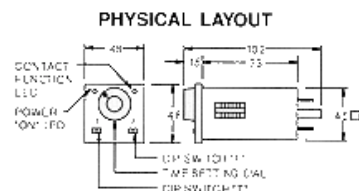
CATALOG NUMBER	MODEL NUMBER	OUTPUT	TIMING RANGE	DIP SWITCH "T" (TIME RANGE) SETTING				LIST PRICE
				0 0	1 0	0 1	1 1	
104214	8511A240	11 PIN	SEC [s] - MIN [m]	0.05s - 1s	0.12s -10s	0.6s-1m	6s-10m	\$ 64.00
104216	8521A240	DPDT	MIN [m] - HOUR [h]	0.05m - 1m	0.12m-10m	0.6m-1h	1m-10h	64.00
104217	8542A240	8 PIN	SEC [s] - MIN [m]	0.05s - 1s	0.12s-10s	0.6s-1m	6s-10m	62.00
104218	8552A240	SPDT	MIN [m] - HOUR [h]	0.05m - 1m	0.12m-10m	0.6m-1h	1m-10h	62.00

FUNCTION CHART

FUNCTION	DIP SWITCH "F" (FUNCTION) SETTING	DESCRIPTION
"ON" DELAY	0 0	TIMING BEGINS WHEN POWER IS APPLIED TO THE UNIT. THE OUTPUT CONTACTS TRANSFER WHEN THE TIME DELAY SETTING IS REACHED TO RESET THE TIMER. REMOVE THE INPUT POWER OR OPERATE THE CUSTOMER SUPPLIED EXTERNAL "RESET" SWITCH.
REPEAT CYCLE	1 0	TIMING BEGINS WHEN POWER IS APPLIED TO THE UNIT. THE OUTPUT CONTACTS TRANSFER WHEN THE TIME DELAY SETTING IS REACHED. THE OUTPUT CONTACTS REMAIN TRANSFERRED UNTIL THE TIME DELAY SETTING IS AGAIN REACHED. THE OUTPUT CONTACTS ARE THEN RELEASED AND RETURN TO THE ORIGINAL STATE. THE TIMER THEN AUTOMATICALLY RESETS AND REPEATS THE TIMING CYCLE UNTIL THE INPUT POWER IS REMOVED.
INTERVAL (REVERSE ON DELAY)	0 1	APPLYING POWER TO THE TIMER IMMEDIATELY TRANSFERS THE OUTPUT CONTACTS AND TIMING BEGINS. ONCE THE TIME DELAY SETTING IS REACHED, THE OUTPUT CONTACTS ARE RELEASED. THE TIMER IS RESET EITHER BY REMOVING THE INPUT POWER OR OPERATING THE CUSTOMER SUPPLIED EXTERNAL "RESET" SWITCH.
REVERSE REPEAT CYCLE	1 1	APPLYING POWER TO THE TIMER IMMEDIATELY TRANSFERS THE OUTPUT CONTACTS AND TIMING BEGINS. THE OUTPUT CONTACTS REMAIN TRANSFERRED UNTIL THE TIME DELAY SETTING IS REACHED. THE OUTPUT CONTACTS ARE THEN RELEASED AND WHEN THE DELAY SETTING IS AGAIN REACHED, THE OUTPUT CONTACTS TRANSFER AND REMAIN TRANSFERRED UNTIL THE TIME DELAY SETTING IS AGAIN REACHED. THE TIMER CONTINUES TO AUTOMATICALLY REPEAT THE CYCLE UNTIL THE POWER IS REMOVED.

RESET SWITCH: RESETS THE TIMER TO ZERO. REQUIRES CUSTOMER SUPPLIED MOMENTARY SWITCH.

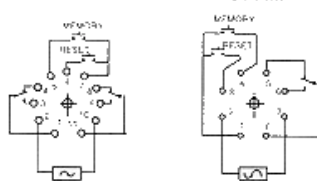
MEMORY SWITCH: PAUSES THE TIMING CYCLE AT THAT POINT IN THE CYCLE. WHEN RELEASED, IT ALLOWS THE CYCLE TO RESUME FROM THE SAME POINT. REQUIRES A CUSTOMER SUPPLIED MOMENTARY SWITCH.



NOTE:

- 1) SQUARE PANEL MOUNT ADAPTOR (DIN 48 MM) AVAILABLE FOR SNAP MOUNTING INTO A PANEL CUTOUT
- 2) ALL DIMENSIONS ARE IN MILLIMETERS (INCHES = MM/25.4)

CONNECTION DIAGRAM



INPUT VOLTAGE: 24 - 240 VAC/VDC 50/60 HZ

SOCKET: ZVR11 OR ZVD11 SOCKET: ZVR8 OR ZVD8

SPECIFICATIONS

INPUT VOLTAGE: 24-240 VAC/VDC 50/60 HZ
 CONTACT RATING: 10A/250 VAC 10A/30 VDC
 MOUNTING: 8 OR 11 PIN OCTAL BASE
 INPUTS: POWER, MEMORY (OPTIONAL), RESET (OPTIONAL)
 ELECTRICAL LIFE: 250,000 CYCLES
 REPEATABILITY: +/- 1%
 SETTING TOLERANCE: +/- 10%
 RESET TIME: 0.1 SEC MAX
 OPERATING TEMP: +15 +120 DEG. F (-10 +50 DEG. C)
 OPERATING HUMIDITY: 85% RH MAX

Maintenance

WARNING

Turn Off & Lock Out Electrical Service To The Pump Motor Before Performing Any Pump Maintenance .

Failure To Do This Could Result in Bodily Injury

1. Greasing The Hose

- Turn off and lock out all electrical power to the peristaltic pump.
- Remove the main fiberglass cover from over the pump unit.
- Remove the clear plastic cover from the face of the pump.
- Using the grease gun and the long nozzle, apply a bead of grease along the surface of the hose where the rollers make contact. Apply grease to the exposed surface of the rollers.

