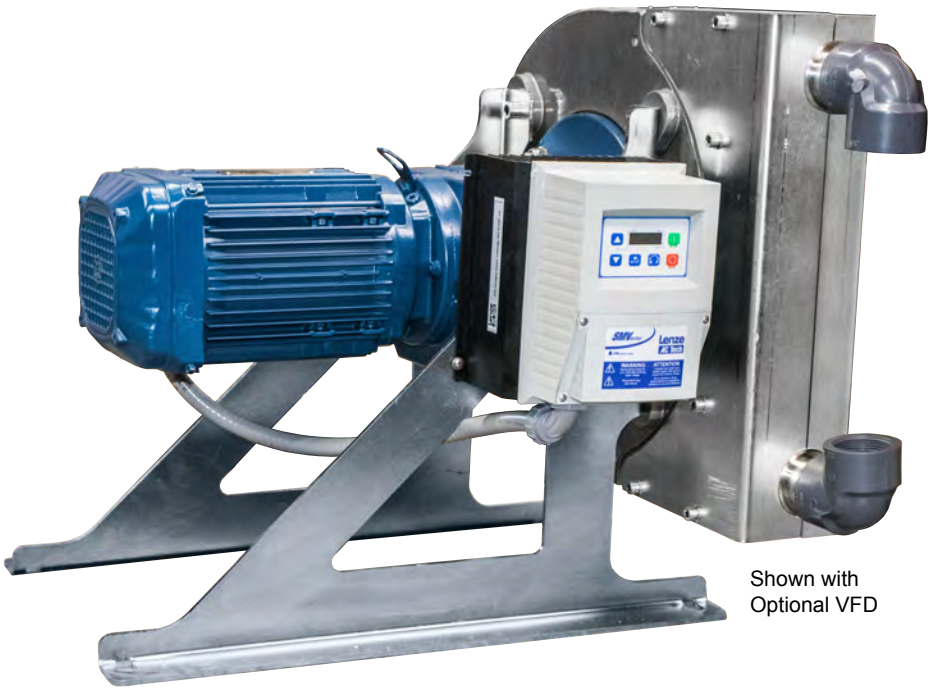
Owners Operation and Maintenance Manual

28631/28633/28634 Silver Series Peristaltic Pump

The 28631/28633/28634 peristaltic pumps can be supplied with many options that effect installation, performance and operations. This manual may contain items that are not part of your system. Be sure to verify the components ordered for your specific application.



Shown with Optional VFD

Motor is **220/440V 3 phase**. VFD drive is required for single phase input voltage.

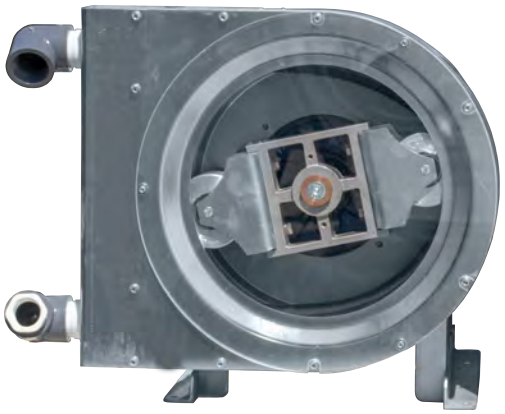
Edson Serial #_____ (found on blue tag on pump

146 Duchaine Blvd., New Bedford, MA 02745 www.edsonpumps.com

Tel. 508-995-9711 Fax 508-995-5021 pumps@edsonintl.com

Pump Description:

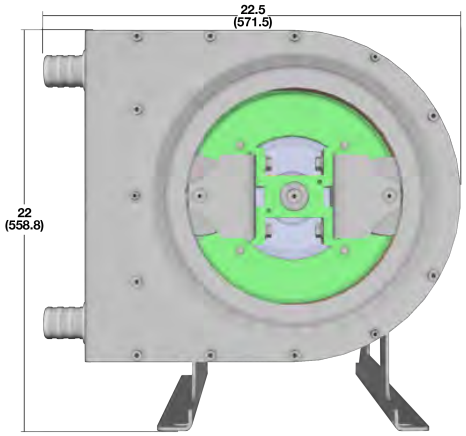
The 2863X is a peristaltic pump fabricated of cast marine grade aluminum with corrosion resistant frame. It has a direct coupled, gearmotor designed with the RPM and HP specific to the application.

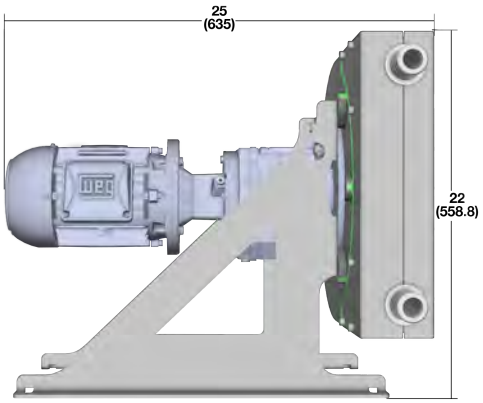


Option available:

- Variable Frequency Drive (VFD)
- Low Voltage Control Panel with Built in Timer
- Internal Hose Leak detector
- Custom Options

Pump Dimensions:





Routine Maintenance

Periodically inspect hose for signs of failure caused by chemical attack, material fatigue, etc.

Check non-petroleum silicone lubricant on hose, and reapply if worn off.

Inspect roller bearings for damage, and replace if necessary (See Parts List, item 11).

Check that all fasteners are properly tightened.

Troubleshooting

If the hose fails prematurely, check for:

- Chemical attack. If the hose becomes soft, spongy, or harder than when originally supplied, chemical attack may be the problem.
- Improper hose selection for the fluid being pumped.
- Improper roller setting. If flow fluctuates back and forth or up and down in the discharge line, the rollers may not be adjusted with equal pressure on the hose.
- See Figure 3. If the hose fails in area A, this may occur from operating the pump at a discharge pressure higher than the hose is rated for, or with a closed discharge line. If the hose fails in area B, this may occur from operating the pump under a higher vacuum or higher inlet pressure than the hose is rated for, or with a closed suction line.

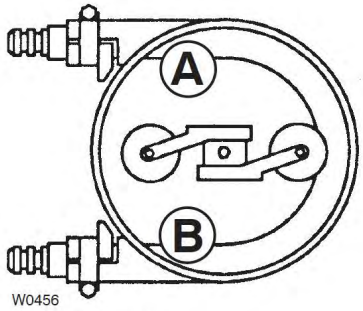


Figure 3

- Line system problems — debris, closed valves, or a clogged or packed line.
- Fluid temperature too high.
- Abrasive material being pumped, or solid size too large.
- Hose connector becomes loose:
  - Wrong size connector.
  - Suction pressure too high

Pump Test and Installation

Before you install the pump in the system, set the direction of pump rotation and the position of the pressure rollers:

1. Remove front cover from pump.
2. See Figure 1. For easier adjustment, check that pressure rollers are in position shown (one roller compressing middle of hose, and one roller free).

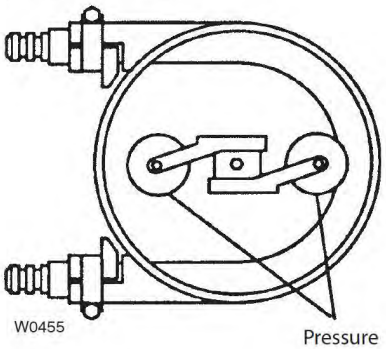


Figure 1

3. Connect incoming power supply to motor (refer to motor manufacturer's instructions).
4. See Figure 2. Run pump and check direction of rotation, "A" or "B" as shown. All pumps must rotate in direction "A" (counterclockwise). To reverse rotation, exchange two of three wires that connect incoming power to motor.

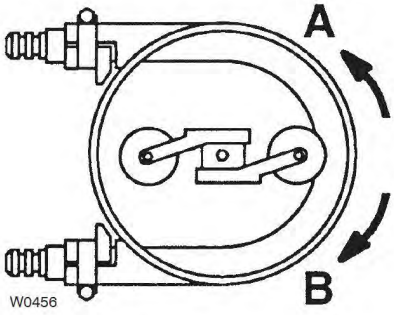


Figure 2

5. Set pressure rollers (see "Service: Setting the Roller Pressure"). Roller pressure is not set at factory, because it must be adjusted to compensate for size of inlet and discharge lines and specific gravity of fluid being pumped.
6. Verify all fasteners are properly tightened.
7. Reattach front cover.
8. Install pump in system.

Before Initial Start-Up

Before you pump fluid through the system, be sure that:

1. All shutoff valves are open.
2. All connections are tightly secured.
3. See Hose Identification Table. Hose material is compatible with fluid being pumped, and hose design matches duty cycle and discharge pressures.

Hose Identification		
Extruded	**Code**	**Description**
Hypalon	HE	Black color, shinny smooth surface
Neoprene	PE	Flat black color, rough surface, rubber smell
Varprene	VE	Cream color, smooth surface
Silicone	SE	Rust color, smooth surface
Pharmed®	FE	Cream color, Pharmed® name on hose
Fiber Braided		
Hypalon	HF	Black color, yellow or blue stripe, double braided
EPDM	EF	Black color, white stripe, double braided
Natural Rubber	NF	Black color, green stripe, double braided (standard duty)
Natural Rubber	MF	Black color, no stripes, thick double braids (heavy duty)
Nitrile Rubber	BF	Black color, white inner hose
Nitrile Rubber - Oil Rated	OF	Black color, HBRF-HY-K stamped on hose

4. See Material Operating Temperatures Table. Temperature of fluid pumped is within operating temperature range of hose material installed in pump.

CAUTION: Contact factory when pumping a fluid that is within 15˚ F of the maximum hose temperature. Take safety precautions to insure hot pumpage does not harm operators if a hose leaks.

Material Operating Temperatures	
Material	**Operating Temperatures**
EPDM	32 to 185˚ F
Hypalon	32 to 180˚ F
Neoprene	50 to 130˚ F
Silicone	14 to 185˚ F
Varprene	14 to 185˚ F
Natural Rubber	14 to 185˚ F
Nitrile Rubber	23 to 160˚ F
Pharmed®	32 to 180˚ F

Replacing a Worn Hose

Remove Old Hose

1. Turn off and lock out all power to pump motor.
2. Remove front cover from pump.
3. See Figure 9. Position rotor as shown.

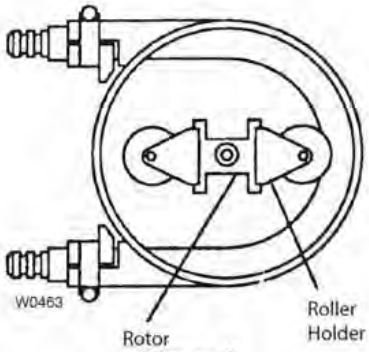


Figure 9

4. Remove roller holder not compressing hose. Also remove any shims under it.
5. See Figure 10. Turn rotor 180° as shown.

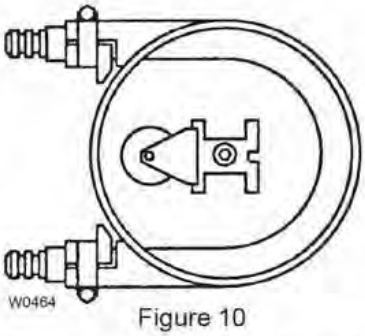


Figure 10

5. See Figure 11. Loosen clamp bolts. Remove hose supports and clamps that secure both ends of hose.

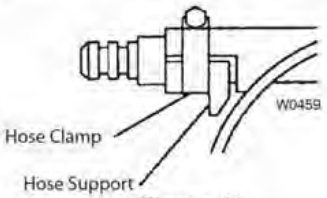


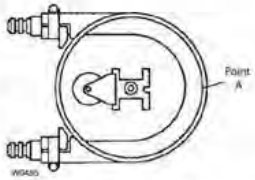
Figure 11

6. Remove hose from pump casing.
7. Pull (cut hose if needed) hose connectors from worn hose. Clean if reusable.
8. Carefully clean pump casing and front cover.
9. Spin each roller to determine integrity of the bearings. Replace roller and bearing assembly if either roller does not spin or either roller runs rough.

Install New Hose

1. Check for correct length of hose:
   2863X : 45 1/4 in. (1150 mm)
2. Install connectors in new hose.
3. Position bent hose inside pump casing.
4. Push upper connector against end of pump casing. Install top clamp and secure clamp bolt.
5. Repeat Step 4 on the lower connection.

   Important: On models 2863X & 2862X, allow a 1-1.5 mm gap between the hose and the inside of the pump casing at Point A as shown in the illustration at right.



6. Smear non-petroleum silicone grease on inner surface of hose (where rollers contact hose).
7. Turn the rotor 180°. Reinstall the roller holder without shims.
8. Set roller pressure according to procedure following (steps 3 thru 7).

Setting Roller Pressure

Note: The pressure setting must be checked when a new hose is installed, because of variations in hose thickness.

1. Remove front cover from pump.
2. Remove any shims under two roller holders.
3. Be sure bolts securing roller holders are tight.
4. See Figure 12. Start pump. Place palm of hand over suction opening and check for vacuum.
   a. If there is vacuum on first attempt, rollers are set.
   b. If not enough vacuum, gradually add 0.02 in. (0.5 mm). shims under one of rollers and repeat test until suction seems to be correct. **Contact factory before installing more than four shims under each roller.**

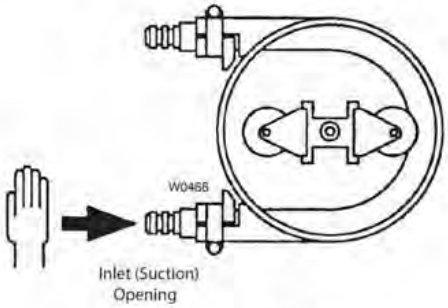
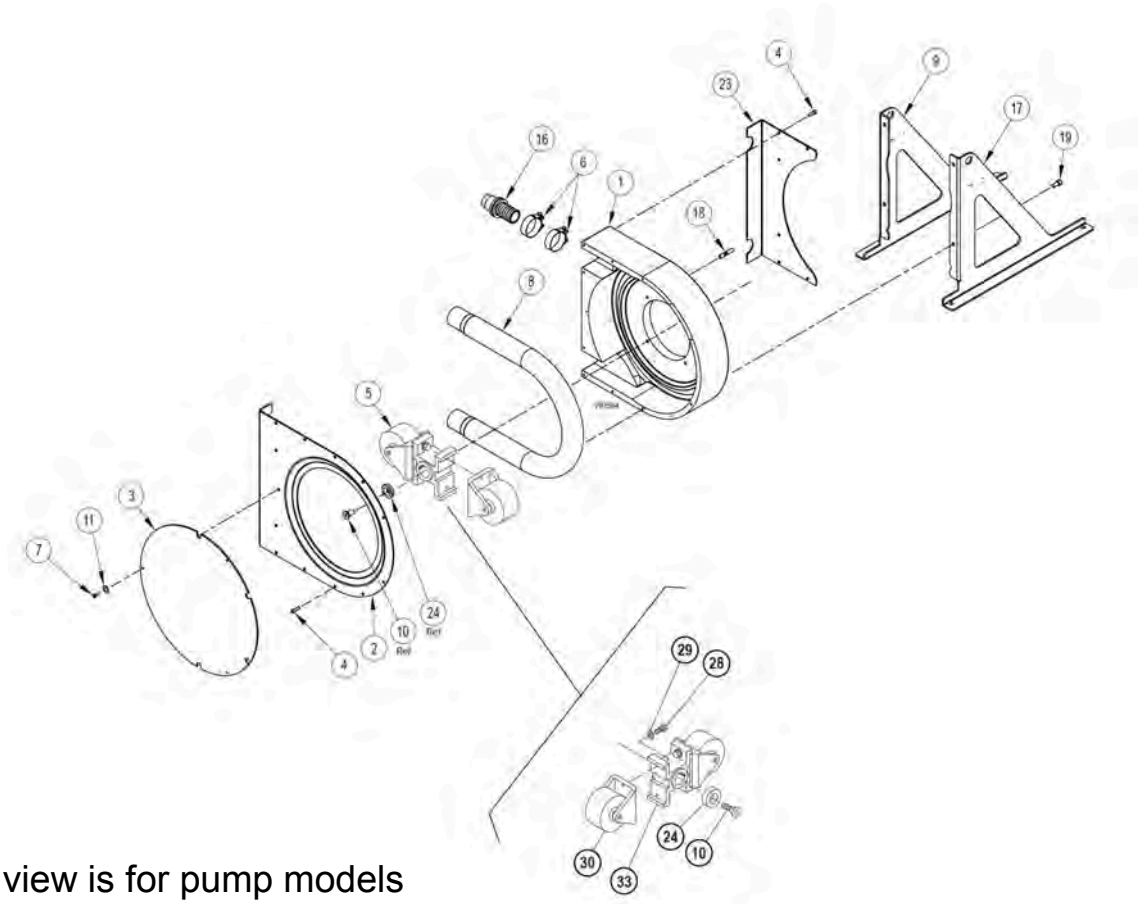


Figure 12

5. Add same number of shims under other roller.
6. Test pump in full operation, and readjust as necessary.
7. Reattach front cover.



Note:

Exploded view is for pump models 2863X.

Ref. No.	Description	Qty, per Pump
1	Casing	1
2	Bracket, front	1
3	Window, front	1
4	Screw, rear bracket and cover	16
5	Roller Assembly	1
6	Clamp, hose	4
7	Screw, front cover	3
8	Hose	1
9	Frame, left	1
10	Screw, roller mounting	1

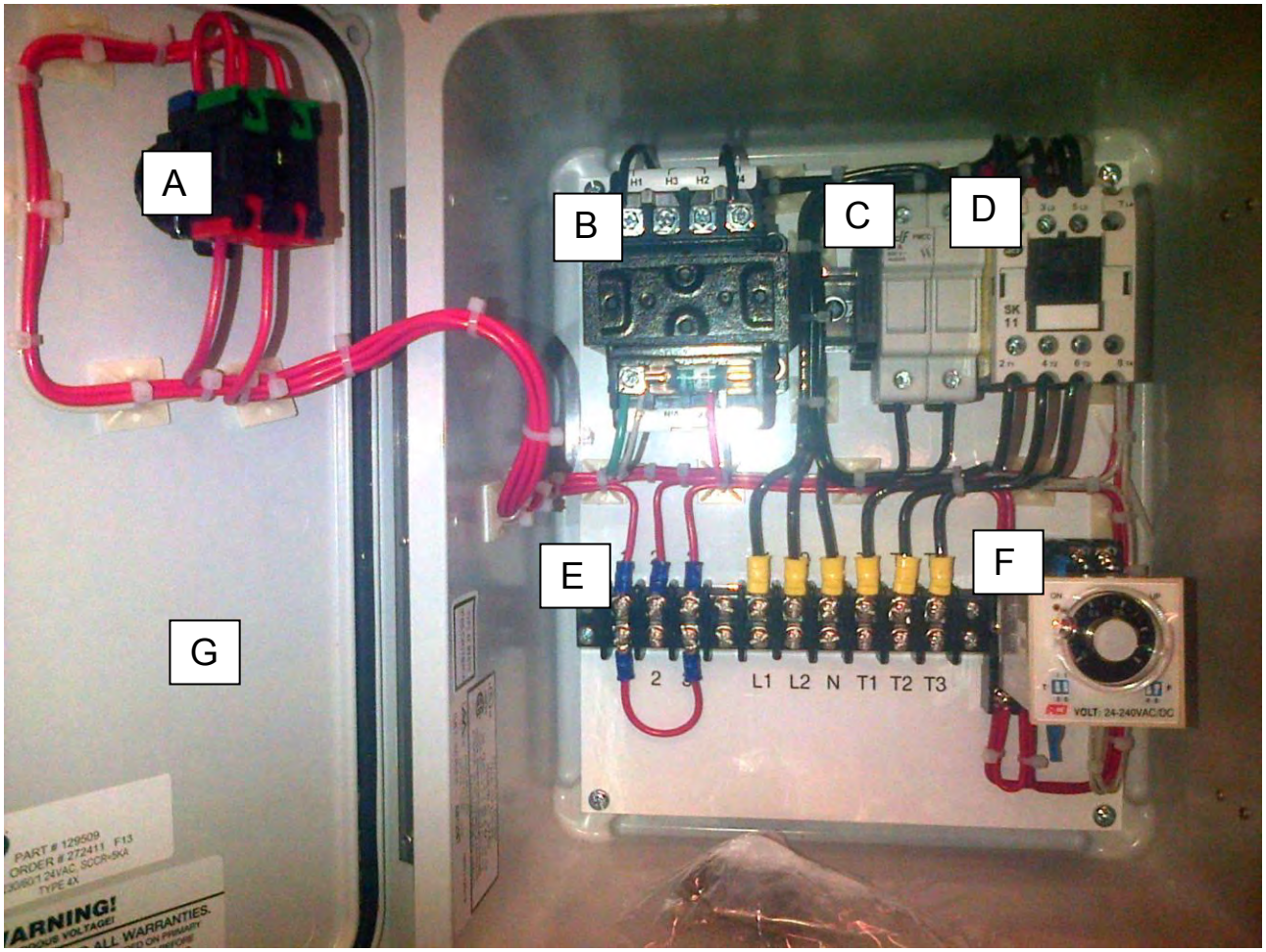
Ref. No.	Description	Qty, per Pump
11	Washer, front cover screw	3
16	Connector, hose	2
17	Frame, right	1
18	Stud	4
19	Screw, gearbox mounting	4
23	Bracket, rear	1
24	Washer, roller mounting	1
28	Screw	4
29	Washer	4
30	Roller and Bearing Assembly	2
33	Rotor	1
	Shim	8

Control Panel Timer
Order No. 161-A-2324
Control Panel Installed On Pump Unit. ***Order No. 161-K-0006B***

High inpact resistant NEMA4X rated enclosure comes complet with contactor, programable run timer and step down transformer for low 24 volt power at the start/stop controls. It includes terminal connections for the remote start/stops.

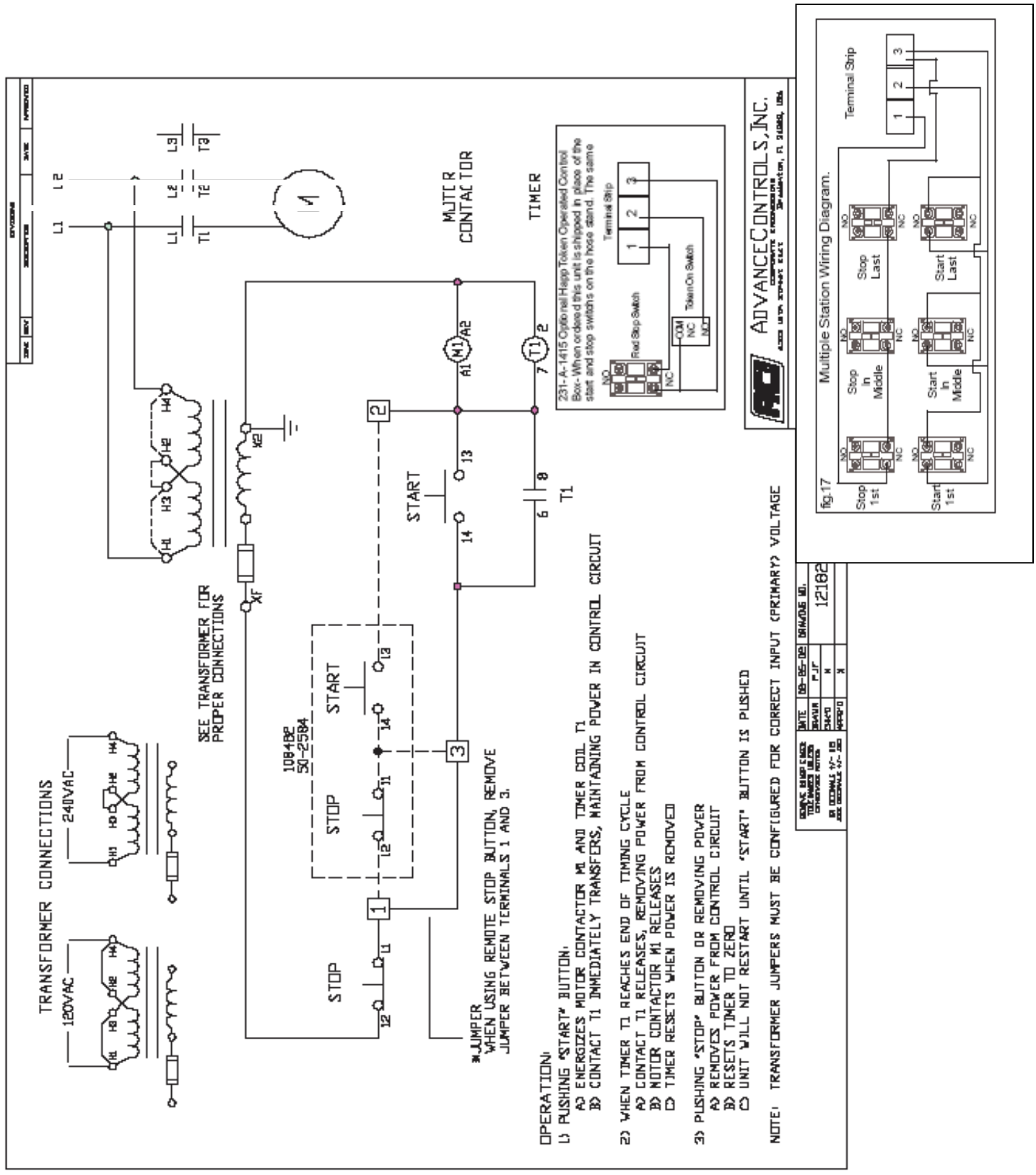
Control Panel 161-A-2324 (optional):

Components Locator



Components:

A.	Switch Assembly		
B.	Transformer	Part #	161-A-2324-TRAN
C.	Fuse Holder/Fuse	Part #	161-A-2324FUSE2
D.	Motor Contactor	Part #	161-A-2324-CONT
E.	Terminal Strip	Part #	161-A-2939
F.	Multi Function Timer	Part #	161-A-1861
G.	Control Panel Box	Part #	161-A-2324-BOX


TRANSFORMER CONNECTIONS
120VAC
240VAC
SEE TRANSFORMER FOR PROPER CONNECTIONS
MOTOR CONTACTOR
TIMER
STOP
START
10B48E
50-2584
*JUMPER
WHEN USING REMOTE STOP BUTTON, REMOVE JUMPER BETWEEN TERMINALS 1 AND 3.
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
Red Stop Switch
Token On Switch
Terminal Strip
ADVANCE CONTROLS, INC.
Multiple Station Wiring Diagram.
fig.17
Stop 1st
Stop In Middle
Stop Last
Start 1st
Start In Middle
Start Last
OPERATION:
1) PUSHING "START" BUTTON:
A) ENERGIZES MOTOR CONTACTOR M1 AND TIMER COIL T1
B) 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
12102

Hose Stand 260-284 w/ Electrics (option):

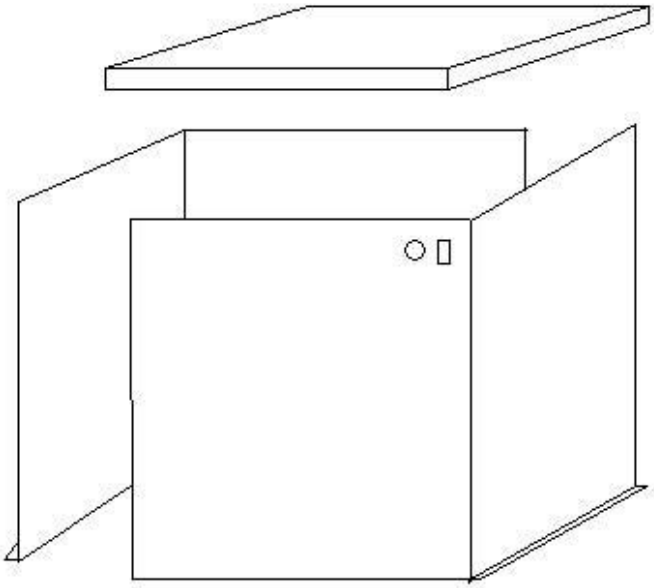
Component:

A. Stop Button Part # 161-A-1705-FL
B. Start Button Part # 161-A-2043
C. Cheek Part # 161-D-128
D. Unit without switches 260-HS
E. Token Option Part # 160-A-2425-A

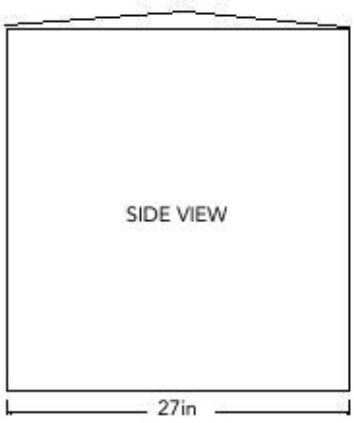
260-TOKEN

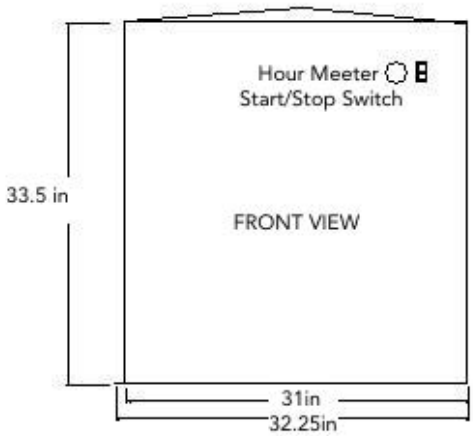
260-284

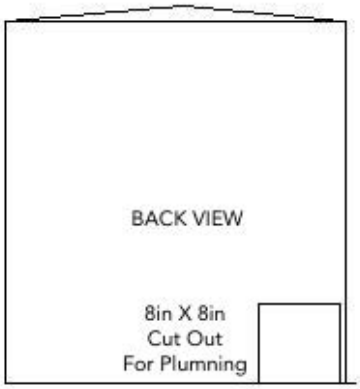
Stainless Steel Cover 26170 (option):



Shown with optional hose rack 160-B-1363 and hose assembly w/ deck fitting 261-25-150







261 Pumpout Hose Assemblies

Standard Length Assemblies
25 ft. Order No. 261-25-150
33 ft. Order No. 261-33-150
50 ft. Order No. 261-50-150
Custom Length Assemblies 5ft to 100ft

The Edson Pumpout Hose (length 25 Ft [picture to the left], 1½" ID x 2" OD, EPDM tube with Polyethylene helix) comes complete with all fittings and adapters including 90° ball valve and sight glass. It's two part construction of smooth inner bore and rugged outer spiral cap provides a pump out hose that is corrosion resistant, extremely flexible, crush-proof, collapse-proof and abrasive resistant. It can be used with any suction pump and at 104 degrees F has a vacuum rating of 28" Hg and pressure rating of 35 psi.

#261-25-150
25ft Assembly Shown

Deck Adapters (Included)

Ⓐ *Universal w/Splash Guard*
#272QC-150-SG

Ⓑ *1½ inch*
#273-150

Ⓕ *Potty Wand*
#274-150

Ⓖ *1¼inch*
#273-125

Assembly Components (Included)

Ⓒ *Suction Hose*
#262-XX-150

Ⓓ *Clear Check Valve*
#269CL-150

Ⓔ *90° Ball Valve*
#264-90-150

Ⓗ *Female QC x Female NPT*
#151FF-150NY

Ⓘ *Male QC x Female NPT*
#158MF-150NY

Ⓙ *Female QC Male NPT*
#152FM-150NY

Ⓚ *1½ inch Close Nipple*
#266-150

Assembly Instructions:

Insert appropriate size deck fitting adapter to fit boat waste/sewage connector.
NOTE: Use threaded adapters when possible for best results. Potty wand is for portable toilets only.
NOT FOR BILGES

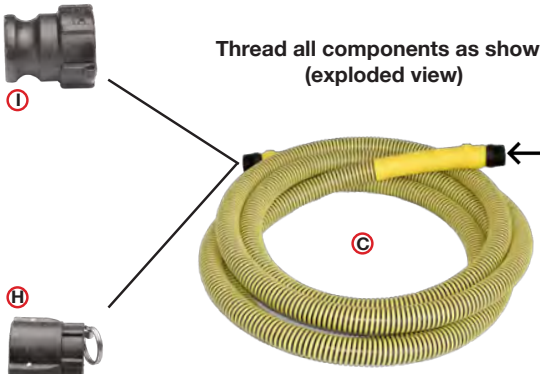
Thread appropriate Quick Connect Adapter to it either the existing suction hydrant or pump inlet

Pumpout Hydrant
Dry Disconnect Pumpout Hydrant
#270PV-150/200

Powered Pump
Double Diaphragm Pump #25200
Shown w/Optional Wheels & Handle

Ⓚ *1½ inch Close Nipple can be used connect two female pipe thread together.*

Thread all components as shown (exploded view)



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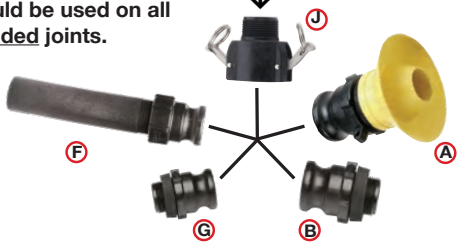
Thread sealant (Teflon Tape or Paste) should be used on all threaded joints.



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270BR-150
BRONZE PUMP OUT HYDRANT

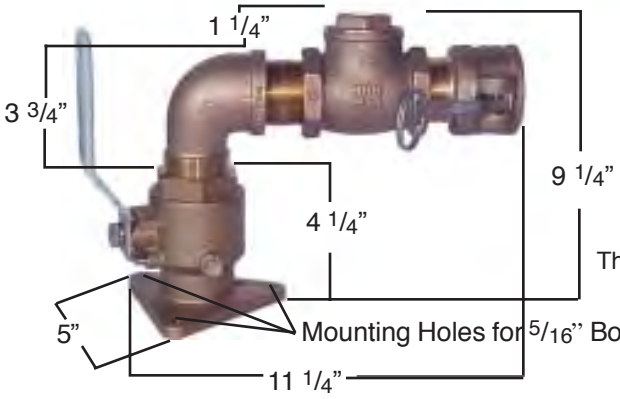
1. Assemble Hydrant Per Photo

- **Use Pipe Sealant On All Threads When Assembling Components.**

2. Install the Hydrant at Pump Out Location.

- Position the hydrant so that the pump out hose can easily reach the boats to be pumped and so the suction plumbing to the pump is connected to the 1 1/2" Female Straight Pipe Thread on the underside of the mounting flange.
- Secure hydrant to surface with appropriate hardware.

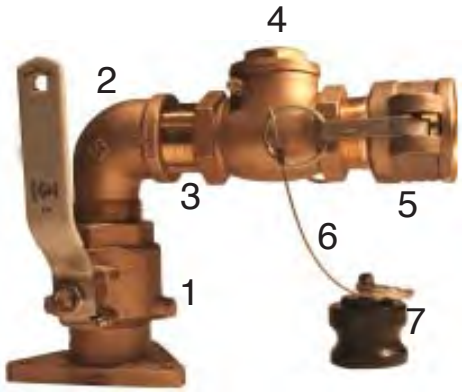
3. Dimensions



Thread Size: 1 1/2" Female SPT
(Will accept 1 1/2" Male NPT)

4. Parts List

Key No.	Order Number
1	160-A-2551-150
2	160-A-1708-150
3	160-A-1711-150
4	269BR-150
5	152FM-150BR
6	160-A-2592
7	153QP-150NY



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Tel. 508-995-9711 Fax 508-995-5021 pumps@edsonintl.com

OPTIONS

Heavy Duty Fiberglass Cover
Order No. 161-B-808

White Gelcoat
28”(71.1cm) X 26”(66cm) X 38”(96.5cm)

Control Panel Timer
Order No. 161-A-2324
Control Panel Installed On Pump Unit.
Order No. 161-K-0006B

High inpact resistant NEMA4X rated enclosure comes complet with contactor, programable run timer and step down transformer for low 24 volt power at the start/stop controls. It includes terminal connections for the remote start/stops.

Hose Stands
Order Nos. 260

White Powder Coated Aluminum or Stainless, for pump out stations setup remote from the pump. They can be equipped with start/stop buttons or token operated starter. All versions come with Operation Instruction Sign and (4) 1/2” X 7” Aluminum Hex Head Mounting Bolts.

Recessed Hydrant Containers
Order Nos. 265

Used to hide pump out hydrants out of the way, below the dock. Available in aluminum or heavy duty plastic. Both come with a flush aluminum cover.

Stainless Deck Fitting Rack
Order No. 160-B-1363

Stainless steel wire form designed to organize loose deck adapters. The rack holds up to four fittings most often used in performing pump outs. No need to keep a bucket or box for your adapters. The rack mounts vertically with predrilled feet that makes it simple to mount on a pole, wall, hose stand or the pump cover.

Hose Rack
Order No. 160-A-2876

Mounts to any vertcal surface including enclosures. Holds up to 75 ft of 1 1/2” hose.

Pump Out Hydrants
Order Nos. 270

Used for connecting a pump out hose to a central suction line remote from the pumping unit.

OTHER PUMP OPTIONS

Optional Length Hose Assemblies
Up To 100 ft In Length

Edson can provide any continuous length pump out hose from 5 ft to 100ft. What ever is required for the installation

Peristaltic Pump Units - Diaphragm Pump Units

Need a pump with greater discharge capability or just more power consider the Edson peristaltic pump units. Available from 3/4Hp to 5Hp.

Double Diaphragm
Order No. 2500

3/4 HP Peristaltic
Order No. 286EP-.75

3/4 HP Diaphragm
Order No.120ELB-40-200

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