

**MOD 777H
MOD 777D**

**NAVSHIPS 0347-183-0000
NAVSHIPS 0347-0601**

Instruction Book

A. C. PORTABLE SUBMERSIBLE PUMP

MODEL 777H-ALUMINUM

MODEL 777D-BRONZE



CRANE

PUMPS & SYSTEMS

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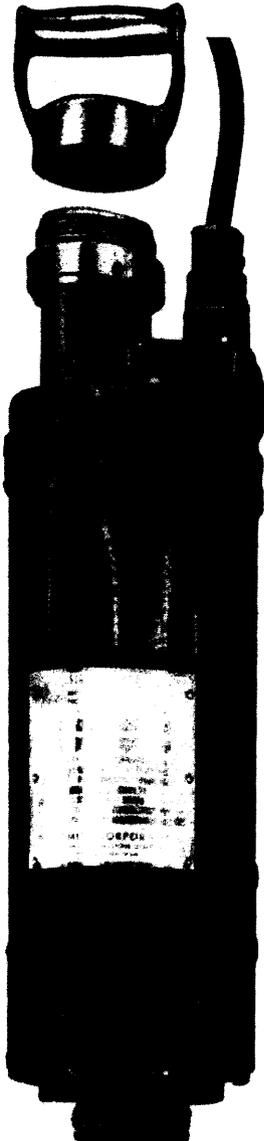
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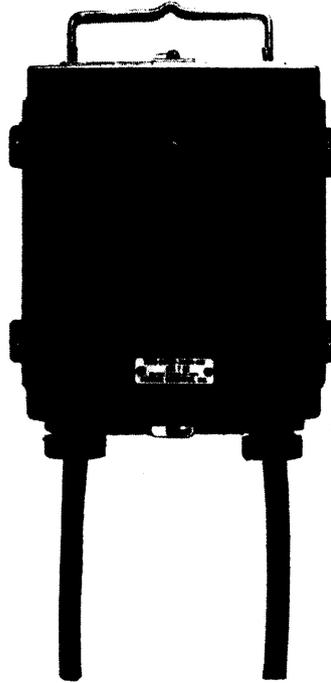
PROSSER INDUSTRIES

MODEL 777 - A. C. PORTABLE SUBMERSIBLE PUMP

carrying handle



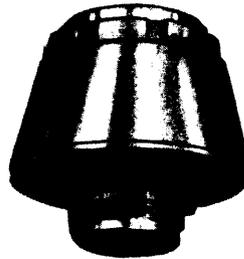
pump unit



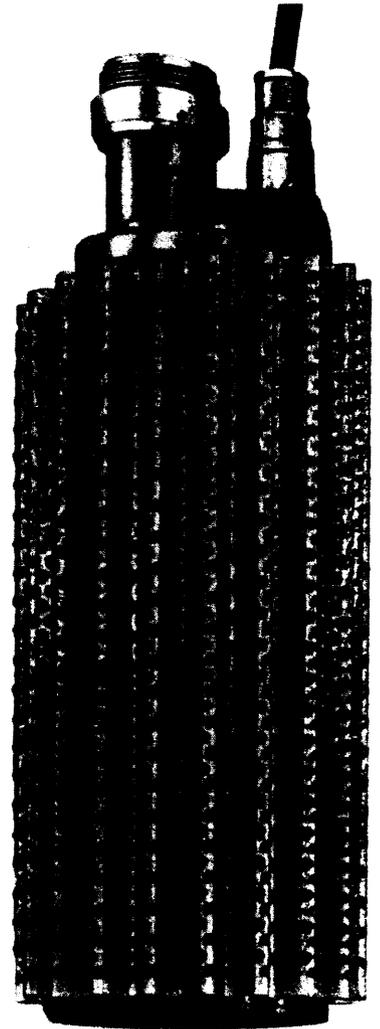
watertight switch



basket strainer



foot valve



pump with
star strainer in place

**COMPLETE MODEL 777 PUMP
FRONTISPIECE**

MODEL 777 - A. C. PORTABLE SUBMERSIBLE PUMP



**VIEW SHOWING
METHOD OF MOUNTING SUCTION HOSE BETWEEN
PUMP AND FOOT VALVE ASSEMBLY**

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SECTION 1
General Data

The portable submersible pump A. C. described, conforms with Military Specification MIL-P-17454. Model 777 is assigned as the designation by Prosser Industries, the manufacturer.

Motor Unit

Motor rating: H.P. 5, Phase 3, Cycle 60, RPM 3450, Voltage (as specified) 115, 220 or 440 A.C.

Voltage	Class	Amperes		
		Full Load	Locked Rotor	Starting Condition
115	3	30	120	60
220	2	15	60	30
440	1	9	30	15

Capacity

Pump rated capacity: 140 G.P.M. at 70 ft. total head.
200 G.P.M. at 50 ft. total head.

Weights

Weight of pump and component parts are as follows:

	MODELS	
	BRONZE 777D	ALUM. 777H
Net weight of pump with basket strainer, less cables, foot valve and switch	103	61 lbs.
Net weight of foot valve	11	11 lbs.
Net weight of handle	3	1 lb.
Net weight of basket strainer	4¾	4¾ lbs.
Net weight of star strainer	18¾	6¼ lbs.
Net weight of cable	20	20 lbs.
Net weight of switch	10½	10½ lbs.
Net weight of repair parts and box	95	80 lbs.
Net weight of complete pump including cable, switch, basket strainer	135	108 lbs.
Net weight of complete pump including cable, switch, star strainer	156	101 lbs.
Shipping weight of pump	200	158 lbs.
Shipping weight of repair parts and box	125	108 lbs.

SECTION 2

Pumps – Detailed Description

Pump

The pump unit is simple in design, consisting of a squirrel cage induction motor mounted within a water-jacketed case and having a pump runner mounted on the motor shaft within the pump casing at the suction end of the pump. The suction and discharge are at opposite ends of the pump, all water passing through the water jacket thus cooling the motor.

The pump is designed to operate either submerged or not submerged and in any position; horizontal, vertical or any midway position. The pump will handle either fresh or salt water.

Motor

The pump motor has a continuous duty rating when pumping water or idling in air.

Strainers

The suction strainers, foot valve and suction and discharge connections of the pump are all furnished with National Standard 2½ inch Fire Hose Threads per FED-STD H28/10. The pump may be operated with or without suction hose. When either strainer is installed directly on the suction end of the pump, without suction hose or foot valve, it is possible to pump down to within one inch of the bottom of compartment being unwatered.

The Star Strainer (Item No. 61) is furnished with National Standard 2½ inch Fire Hose Threads per FED-STD H28/10. This Strainer completely surrounds the pump and extends the full length of the Pump Frame. (Mount Star Strainer on Pump Unit only).

Cable

The pump is provided with 45 feet of 4 conductor type FHO-9 (9030 CM) portable cable from the plug to the switch, in accordance with Military Specification MIL-C-915/6, and from the switch to the pump with 30 feet type THOF-9 cable in accordance with the referenced Military Specification MIL-C-915/6. Two (2) 0.0625 inch diameter

steel strands and one bare copper conductor, size 2½ (26) in accordance with Specification MIL-C-915/6 are cabled with the three insulated conductors, one strand in each of the three filler spaces. This cable complies with all requirements for Type THOF cable except the flexing endurance test. The completed cable has a breaking strength of not less than 950 lbs. The strands are securely anchored to the terminal packing box (Item No. 30) in such a way that the insulated conductors are relieved of any strain if the pump is handled by the cable. The copper conductor acts as the main ground conductor and is grounded to the controller.

General

Care should be taken that the pump is rotating in the proper direction as indicated by the arrow on the pump casting; when looking at the runner end of the pump, the runner should rotate clockwise. The motor terminal and switch cable connections are such that when the black, white and red cable conductors are connected to the A, B and C phases respectively of the ship's service, the pump rotation should be correct. The steel seizing strands are the ground conductor.

DO NOT OPERATE THE PUMP AT ANY TIME WITHOUT THE SUCTION STRAINER ATTACHED.

The Star Strainer is attached directly to the pump, and should not be attached to the lower (suction) side of the foot-valve when suction hose is used. When the pump is used in this combination, the basket strainer should be attached to the foot-valve. (See photo inside frontispiece.)

The foot-valve is not required, and should not be used, when the pump is operated submerged. It should always be attached to the suction end of suction hose when pump is operated not submerged. See photograph frontispiece for completely assembled pump. Not more than 20 feet of suction hose should be used.

The pump is not self priming when operated un-submerged; therefore priming is required if it is to be so used. Priming may be accomplished by lowering the pump into the water until discharge starts and then raising the pump to the level desired. Priming may also be accomplished by removing the discharge hose and filling the pump and suction hose with water prior to starting the pump; the foot valve holding the water until pumping starts.

SECTION 2

General

To raise and lower the pump, on other than submarines where the pump is handled mainly through horizontal passageways with no need for a tending line, **THE PUMP TO BE RAISED OR LOWERED BY A NON-CONDUCTING MANILA OR NYLON ROPE** to preclude damaging the cable insulation against sharp objects or hatch edges.

DO NOT ALLOW PUMP TO CONTINUE RUNNING AFTER DISCHARGE STOPS.

Tools (in italics) referred to in Section 3 are detailed on Figure 9, Master Drawing Miscellaneous Details of Tools, Page 23, and listed on Page. 10.

DRAIN THE INTERMEDIATE OIL CHAMBER AFTER 400-500 HOURS OF USE OR 1 YEAR. This is done by removing the lower pipe plug (Item #5) in the pump housing, marked "OIL HERE" on the connection box cover side (Item No. 29) using wrench. Check for water. If none is found refill with 9 ozs. of Navy symbol 2135th Lubricating Oil. If two teaspoons of water is found, after oil is allowed to settle, replace the slyphon seals, and

refill with oil. This operation eliminates any water that may have leaked into the intermediate chamber, and also insures lubrication of the mechanical seal.

The ball bearings in this pump are of the grease-seal type, and require no lubrication. Excess grease or oil should be avoided since it would cause deterioration of the motor insulation.

Emergency Capabilities of Pump when Considered Expendable

When conditions warrant the risk of burning a motor, submersible pumps may be used for pumping fuel oil using two (2) pumps in series.

The table below is a list of fluids that can be pumped including - time and temperature. The maximum specific gravity of any fluid to be pumped is 1.04, and 10 centipoise (60 SUS Viscosity.) When pumping any flammable material the pump should be submerged.

Fluid	Time	Temperature		Explosion Risk Factor	After Running Flush With
		Min.	Max.		
Fresh Water	Continuous	—	130°F	None	Fresh Water
Sea Water	Continuous	—	130°F	None	
Oil Contaminated Water	Continuous	—	130°F	Low	
Gasoline	2 Hrs.	30°F	90°F	Very High	
Diesel Fuel Marine (DFM)	Continuous	50°F	100°F	Moderate	
Jet Fuel (JP-5)	Continuous	30°F	100°F	Moderate	
Slugs of Oil	15 Sec.	70°F	130°F	Low	Diesel Fuel or Kerosene and Fresh Water
Navy Distillate (ND)	1 Hr.	80°F	120°F	Moderate	
Heavy Fuel Oil	Not Recommended				

SECTION 3

Maintenance

Disassembly

CAUTION: USE CARE TO PROTECT CORROSION RESISTANT PLASTIC COATING DURING DISASSEMBLY AND ASSEMBLY.

To disassemble the pump, refer to master drawing, Fig. 1 thru 7 and proceed as follows:

1. Be sure that the plug at the end of the electric cable is removed from the electric outlet.
2. Drain intermediate chamber by removing the lower pipe plug (Item No. 5) in the pump housing, marked "Oil Here" on the connection box cover side (Item No. 29) using *Wrench*.
3. Unscrew strainer from pump (right hand threads).
4. Remove 8 nuts (Item No. 4) after which the suction cover (Item No. 19) may be removed. Care should be taken not to damage the gasket (Item No. 20) between the suction cover and the pump housing.
5. Remove the runner locking screw (Item No. 16) (right hand threads) and lock washer (Item No. 17). Use *shaft holding fixture*, which is fastened to the runner by means of two screws which fit into two tap holes in the "eye" of the runner. This wrench prevents the runner from turning. Holding the runner stationary, insert *runner retainer and locking screw wrench* through the hole in *shaft holding fixture*.
6. Remove runner retainer (Item No. 14) (right hand thread), and retainer washer (Item No. 14A). Use special wrenches as described in 5.
7. Pull the runner assembly (Item No. 13) off the shaft, and remove the runner key (Item No. 15). Remove retainer washer (Item No. 14A) and runner washer (Item No. 14B). Use *runner and splasher puller*.
8. Unscrew the oil cover (Item No. 7) (right hand thread) from the motor housing using *syphon seal retainer wrench*, remove gasket (oil cover) (Item No. 7A).
Removal of the oil cover also brings with it the syphon seal (Item No. 8) and retainer (Item No. 10). Remove retainer (Item No. 10) using *syphon seal retainer wrench*, remove seal (Item No. 8) and seal gasket (oil cover) (Item No. 8A).
9. Remove the shaft sleeve (Item No. 18) and splasher assembly (Item No. 11). Item No. 11 may be pulled off at the shaft using *runner and splasher puller*, as in 7.
10. Remove syphon seal (Item No. 8) and retainer (Item No. 9) by unscrewing from the pump housing (right hand threads) using *syphon seal retainer wrench*. Remove seal gasket (Item No. 8A).
11. Turn to the discharge end of the pump and remove connection box cover (Item No. 29). Use *wrench* which exposes motor leads and terminal connections. Remove all leads from the terminal block.
12. Unscrew packing gland assembly (Item No. 30) (right hand thread) and remove cable from the pump.
13. Unscrew 8 frame stud nuts (Item No. 4) and remove discharge cover (Item No. 26) and remove bearing spring (Item No. 39). Care should be taken not to damage the gasket (Item No. 27).
14. Remove terminal bushing (Item No. 28) from the motor leads and the grommet (Item No. 67) from the ground lead.
15. Remove motor rotor assembly (Item No. 36). The lower motor bearing (Item No. 37) and upper motor bearing (Item No. 38) will be attached to the rotor shaft.
16. If desired to remove the motor stator, withdraw the motor leads and unscrew the frame motor retainer (Item No. 6) (right hand thread) using *motor retainer wrench*. The stator (Item No. 34) can now be removed from the pump frame by heating the frame and stator (in an oven) to approximately 450°F. Remove frame and stator from oven and tap frame (lead wires down) allowing stator to drop out onto wooden block.

SECTION 3 MAINTENANCE

Assembly

1. To reassemble the pump reverse the above outlined procedure; carefully locking each part in place as it is assembled. Special care should be taken in replacing gaskets, lead connections, etc. Clean all gaskets and metal to metal surfaces, and apply a coating of grease per MIL-G-23549.
See Table on Page 7 for torquing requirements of all threaded parts on pump.
2. Before the suction cover (Item No. 19) is replaced, turn the runner by hand to be sure there is no binding.
3. Be sure to replace the oil in the intermediate chamber.
4. Pipe Plugs (Item No. 5) and connection box cover (Item No. 29) shall be coated with grease and tightened thoroughly.
5. After pump is completely assembled, unscrew motor chamber pipe plug (Item No. 5, ½ inch I.P.), on the connection box cover side insert air connections for air line, connect to dry air line, and apply 50 pounds of air pressure to motor chamber, immerse pump in water to be sure there are no leaks in pump, i.e., no air bubbles appearing out of either intake, discharge, around (Item No. 5) pipe plugs, or (Item No. 29) connection box cover. If there are no leaks, replace motor chamber pipe plug (Item No. 5), grease on threads. Tighten plug using wrench.
6. Run the pump, in air without pumping water, for a few minutes to check for possible rubbing or binding, and to check direction of rotation.
7. Use grease on all the following items:
 - (1) Oil chamber and motor chamber pipe plugs (Item No. 5).
 - (2) Connection box cover threads and seat (Item No. 29).
 - (3) Oil cover threads and seat (Item No. 7).
 - (4) On surface where syphon seal (Item No. 8) contacts seal gasket (Item No. 8A).
 - (5) All gasketed surfaces (Item No. 7A, 8A, 10A, 20, 27) and around the outside of terminal bushings (Item No. 28).

CAUTION: All threads, joints, gaskets, and adjacent unplasticized areas must be covered with grease per MIL-G-23549, to prevent corrosion. This grease is available in one (1) pound (NSN 9150-00-985-7316) and five (5) pound (NSN 9150-00-235-5555) containers. Sealing areas that have become rough or deteriorated are to be made up with sealing compound per MIL-S-45180B (Similar to Permatex 2 or equal) in lieu of grease per MIL-G-23549.

*Do not heat the stator on reassembly. Ambient temperature stator to be dropped in heated frame with the three lead wires located approximately 1.0 inch offset in either direction from the frame lead wire holes.

Electrical Check-Out

1. Ground Continuity Measurement—(See Drawing 576905)
The ground circuit from the ground wire termination at the cable clamp (62) and the motor field (34) depends on intimate **Electrical** contact between the packing box (30) and discharge head (26); The discharge head and the frame studs (2 & 3); the frame studs and frame (1). Units, made to "E" Revision and subsequent, include a ground lead wire assembly, to improve contact between the frame and discharge head.
Whenever the packing box or discharge head is removed and reassembled, the following ground circuit test must be performed.
Clamp together the 3 steel ground wires or the 2 steel and 1 copper ground wire, whichever may be present, to form one terminal of the circuit tester. Use a bridge megger, Biddle 21776 or equivalent, capable of delivering 20 V.D.C., as a circuit tester. The other terminal is attached to the clean interior of the frame plug hole.
If the ground wires are 3 steel wires, the measured resistance must be 2.3 OHMS maximum at 25°C. If the ground wires are 2 steel and 1 copper, the measured resistance must be .015 OHMS maximum at 25°C. If these maximum resistances are exceeded, all joints and fasteners from cable to frame must be reworked.
2. Insulation Test
The following procedure shall be used to conduct insulation resistance tests when required.
Obtain a 500 V.D.C. insulation megger with a range of 0-2000 MEGOHM'S; Biddle, 21778 or equivalent, is satisfactory.
Prior to application of the voltage, discharge the winding by connecting the winding to the frame. After 60 seconds disconnect the winding and frame.
Apply 500 Volts direct current between the stator winding and frame. (Frame Plug Hole.) Maintain the voltage for a minimum of 60 seconds.
Check Insulation Resistance To Ground per paragraph 3.1.31.1 (d) of Spec. MIL-M-17060C. The insulation resistance of the motor (pump) shall not be less than 100 MEGOHMS. Maximum insulation resistance under all conditions is defined in Paragraph 3.1.31.1. (d) of MIL-M-17060C.
The insulation resistance measurements shall be corrected to 25°C. Correction shall be made on the basis of insulation resistance doubling for each 15°C decrease in temperature.

Table for Torquing Threaded Fasteners on Pump

Item No.	Part No.	Name	Torque
2	1493AB	Frame Stud Long	120 In./Lbs.
3	1471AB	Frame Stud Short	120 In./Lbs.
4	A15624HNM1	Frame Stud Nut	100 In./Lbs.
5	1592AB	Frame Pipe Plug	60 Ft./Lbs.
6	1326AB	Stator Retainer	100 Ft./Lbs.
7	4264AB	Oil Cover	100 Ft./Lbs.
9	1485AB	Seal Retainer R.H.	150 Ft./Lbs.
10	1486AB	Seal Retainer L.H.	150 Ft./Lbs.
14	1331AB	Runner Retainer	50 Ft./Lbs.
16	1332AB	Locking Screw	100 In./Lbs.
29	1484AB	Connection Box Cover	90 Ft./Lbs.
30	33259AC	Packing Box	85 Ft./Lbs.
31	1345AB	Gland	80 Ft./Lbs.
43	1492	Terminal Nut	15 In./Lbs.
44	A11024RHB12	Terminal Block Screw	15 In./Lbs.
45	558303-1	Studs	120 In./Lbs.
45A	A1439	Screw	100 In./Lbs.
63	A10632PHC10	Cable Clamp Screw	4 In./Lbs.
65	A10832RHB4	Ground Screw	4 In./Lbs.

LIST OF REPAIR PARTS AND SPECIAL TOOLS

SECTION 4

List of Repair Parts and Special Tools

Pump Parts (Refer Figs. 1, 2, & 7)

Item	Name	Req'd.	Service Part No.	Navsea Dwg. No.	National Stock No.
2	Frame Stud (Long)	1	1493AB	3,175,606	9Z5307-00-206-3187
3	Frame Stud (Short)	1	1471AB	3,175,596	9Z5307-00-206-3177
4	Frame Stud Nut	6	A15624HNM1		
4A	Washer-Stud Nut	16	558378-1	3,175,607	IHS0000-LL-CG1-7382
5	Frame Pipe Plug	2	1592AB	3,175,604	9C4730-00-293-7274
7	Oil Cover	1	4264AB	3,175,607	9C4320-00-308-5888
7A	Gasket (Oil Cover)	2	558383-2	3,175,607	9Z5330-00-222-2562
8	Seal	4	1388D	3,175,606	9C4320-00-302-1960
8A	Seal Gasket (Oil Cover)	2	558377-1	3,175,607	9Z5330-00-292-2456
10A	Bearing Retainer Gasket	1	615701		
11	Splasher Assembly	2	1476AB	3,175,608	9C4320-00-308-6884
13	Runner Assembly	1	25673AD	3,175,596	9C4320-00-035-7378
14	Runner Retainer	1	1331AB	3,175,606	9Z5310-00-638-1142
14A	Retainer Washer	2	558239-1	3,175,606	
14B	Runner Washer	1	558323-1	3,175,604	
15	Key	1	1335AB		9Z5315-00-286-2333
16	Locking Screw	1	1332AB	3,175,606	9Z4320-00-316-2954
17	Lockwasher	1	A1438		9Z5310-00-948-9708
18	Shaft Sleeve	1	1334	3,175,606	9Z3120-00-097-1155
20	Cover Gasket	2	1469-1	3,175,604	9Z5330-00-298-0710
24	Valve Gasket	1	1344-1	3,175,605	9Z5330-00-256-8157
27	Cover Gasket	2	1494-1	3,175,606	9Z5330-00-300-5919
28	Terminal Bushing	6	1466-1	3,175,607	9Z5365-00-598-5322
29	Connection Box Cover	1	1484AB	3,175,606	9Z4730-00-289-1820
33	Packing Ring	4	1495-1	3,175,606	9Z5365-00-598-5365
	440V.		5833B	3,175,593	9Z6105-00-500-4937
34	Stator 220V.	1	15388B	3,175,593	9G6105-00-500-0327
	115V.		45408	3,175,593	1HLLCF-80963
36	Rotor Shaft Assembly	1	15389	3,175,596	1HS0000-LL-CG2-2687
37	Lower Bearing	1	A1491		9Z3110-00-156-3548
38	Upper Bearing	1	A1313		9Z3110-00-156-3508
39	Bearing Spring	1	A1279		9Z5310-00-141-9705
43	Terminal Nut	1	1492	3,175,606	9Z5310-00-934-9764
45	Studs	1	558303-1	3,175,607	9Z5307-00-206-3171
45A	Screw	1	A1439		9Z5305-00-208-0042
67	Grommet	1	2-31024-1		
70	Grease Per MIL-G-23549	9 oz.	550034-2		9Z9150-00-985-7316

PORTABLE SUBMERSIBLE PUMP, A. C.

Switch Parts (Refer Figs. 7 & 10)

Item	Name	Req'd.	Service Part No.	Navsea Dwg. No.
6	Gasket	2	83642AA	9-S-73691-3
	440 V. 15 amps.		A4054AA15	9-S-73691
10	Fusetrons 220 V. 20 amps.	21	A4053AA20	9-S-73691-5
	115 V. 30 amps.		A4053AA30	9-S-73691
13	Rotary Switch Assembly	1	83661AB	9-S-73047
14	Screw	2	A1142OPHT7	
15	Lockwasher	2	A1441AC	9-S-73691-8
17	O-Ring Seal	1	MS28775-010	
24	Stuffing Assembly (4T)	2	33249AB	
25	Packing	1	33250AB	
26	Packing	1	33251AB	
36	Fuse Clip 30 amps.	3	A1317AB	9-S-4296-L-1
37	Fuse Clip Nut	3	33283AB	9-S-4296-L-3
38	Terminal Assembly	3	83655AA	9-S-73055-42
39	Ground Lead Terminal	2	A2926AA3	9-S-1841-L-37
40	Terminal Screw Assembly	3	83651AA	9-S-73055-22

Tools (Refer Figs. 7 & 10)

No.	Name	Req'd.	Service Part No. Non Magnetic	National Stock No.
6	Sylphon Seal Retainer Wrench	1	1487AB	9Q5720-00-468-0916
6	Motor Retainer Wrench	1	15701AB	9Q5120-00-468-0917
6	Shaft Holding Fixture	1	15702AB	9C4320-00-468-0918
6	Runner & Puller	1	15703AB	1HS0000-LL-CE2-8945
6	Wrench Pipe Plug	1	5686AB	9Q5120-00-221-7957
6	Runner Retainer & Locking Screw Wrench	1	23600AB	9Q5120-00-468-0920

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Boxing

Name	Req'd.	Service Part No.
Spare Parts Box with Liners Steel Box	1	23436AA
Spare Parts Packing Box	1	83777AA

SECTION 5

Controller

The Controller, Figure 10, Part No. 576122 (Non-Magnetic) for use with Pump, Model 777, as manufactured by Prosser Industries conforms with NAVSEA Standard Drawing No. 9000-S6202-73691, Alt. 1.

Rating

1. Controller rating: 30 Amperes – 500 Volts, A. C.

Voltage	Amperes			Fusetron Amp. Rating	Prosser Industries Fusetron No.
	Full Load	Locked Rotor	Starting Condition		
115	30	120	60	30A	A4053AA30
220	15	60	30	20A	A4053AA20
440	9	30	15	15A	A4054AA15

2. Navy Service Condition – “Navy A” Ambient temperature 50° C.
3. Degree of Enclosure – Watertight.
4. Control Functions – Motor Starting.
5. Type of Construction – Across-the-line starter.
6. Kinds of Protection – Short Circuit. Type – fusetrons.

Description

The controller is a rotary type. Turn handle clockwise to “on” position to start pump and to “off” position to stop pump. The Box and Cover is constructed of stainless steel. Weight complete, 10 pounds.

All spare parts are boxed with pump and motor spare parts (refer Section 4, List of Repair Parts and Special Tools).

Maintenance

To replace cover gasket, Item No. 6, loosen six hex hold-down bolts, and lift off cover. Remove old gasket from cover and press new gasket firmly into place. Replace cover and tighten hold-down bolts.

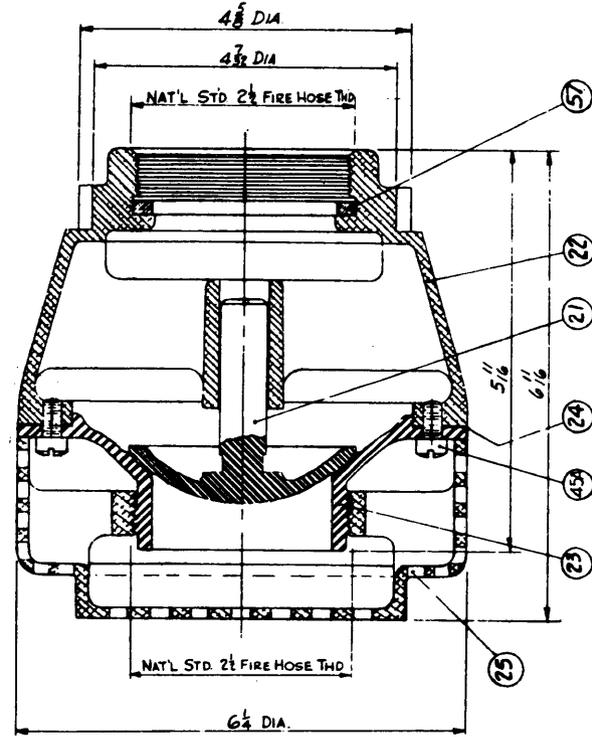
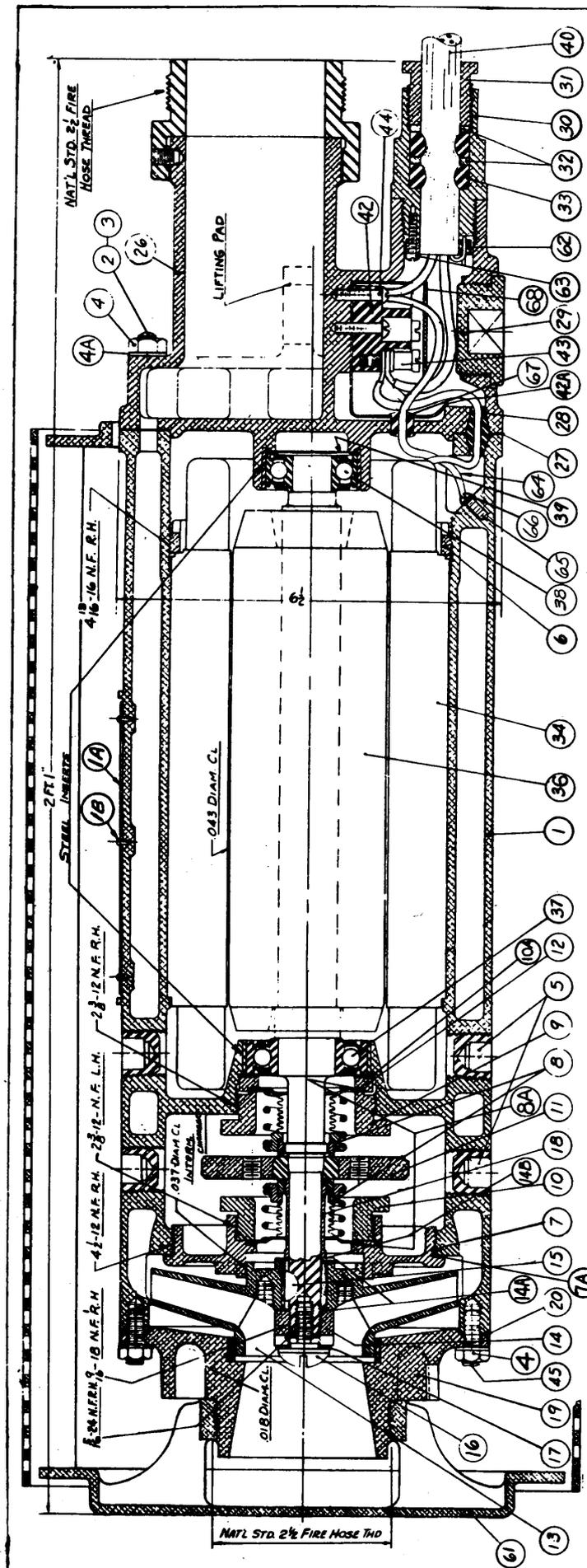
To replace switch assembly, remove cover and two interior mounting nuts, Item No. 14. Remove old switch and insert new switch in place. Replace mounting nuts and cover.

To replace fuses: Be sure that switch handle is in “off” position. Remove cover and draw fuses out of fuse clips. Insert new fuses of proper rating as marked on the fuse base. Replace cover. Three spare fuses are in cover compartment (See Fig. 10–Item No. 10).

To replace O-ring seal, remove screw, Item No. 20. Remove handle, Item No. 19. Loosen six hex hold-down bolts and lift off cover, Item No. 2. Remove old O-ring seal, Item No. 17 and install new O-ring seal. Replace cover and tighten hold-down bolts. Replace handle and tighten in place with screw.

LIST OF ILLUSTRATIONS

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7	OUTLINE DRAWING – OUTLINE CHARACTERISTIC AND REPAIR PARTS (NON-MAGNETIC) (NOT INCLUDED IN MODEL 777D)	21	S4700-F-3,175,594 REV. E	576907
8	MASTER DRAWING – MOTOR WINDING DIAGRAM	22	F-3175593 REV. D	576906
9	MASTER DRAWING – MISCELLANEOUS DETAILS OF TOOLS FOR A.C. AND D.C. PORTABLE SUBMERSIBLE PUMP	23	—	576925
10	MASTER PLAN – MOTOR STARTING SWITCH (NON-MAGNETIC)	24	S6202-F-3181842 REV. F	576122



FOOT VALVE WITH STRAINER
FOOT VALVE ASSY, NO. 35351
LESS STRAINER, ITEM 25

GROUND CIRCUIT TEST

THE GROUND CIRCUIT FROM THE GROUND WIRE TERMINATION AT THE CABLE CLAMP (62) AND THE MOTOR FIELD (34) DEPENDS ON INTIMATE CONTACT BETWEEN THE PACKING BOX (30) AND DISCHARGE HEAD (26); THE DISCHARGE HEAD AND FRAME STUDS (2 & 3); THE FRAME STUDS AND THE FRAME (1). ON UNITS WITH A GROUND LEAD WIRE ASSY (64) CONTACT BETWEEN THE DISCHARGE HEAD AND THE FRAME IS PROVIDED.

WHENEVER THE PACKING BOX OR THE DISCHARGE HEAD IS REMOVED AND REASSEMBLED THE FOLLOWING GROUND CIRCUIT TEST MUST BE PERFORMED:

ON UNITS WITH A GROUND LEAD WIRE ASSY (64), THE LEAD WIRE MUST BE REAPPLIED.

CLAMP TOGETHER THE 3 STEEL GROUND WIRES OR THE 2 STEEL AND 1 COPPER GROUND WIRE, WHICHEVER MAY BE PRESENT, TO FORM ONE TERMINAL OF THE CIRCUIT TESTER. THE OTHER TERMINAL IS ATTACHED TO THE CLEAN INTERIOR OF THE FRAME PIPE PLUG HOLE.

IF THE GROUND WIRES ARE 3 STEEL WIRES THE MEASURED RESISTANCE MUST BE 2.3 OHMS MAXIMUM AT 25 C. IF THE GROUND WIRES ARE 2 STEEL AND 1 COPPER, THE MEASURED RESISTANCE MUST BE .015 OHMS MAXIMUM AT 25 C. IF THESE MAXIMUM RESISTANCES ARE EXCEEDED, ALL JOINTS AND FASTENINGS FROM CABLE TO FRAME MUST BE REMOVED.

NOTE:

COAT ALL THREADS, JOINTS, AND GASKETS WITH GREASE PER MIL-G-23549, P/N 550034-2.

THIS PUMP IS IN ACCORDANCE WITH NAVY DEPARTMENT SPECIFICATIONS MIL-P-17454 B DATED 10 MARCH 1954, AND AMENDMENT 2, DATED 14 NOV 1966, EXCEPT AS AMENDED BY CONTRACT.

REVISIONS				
REV.	DESCRIPTION	DATE	APP'D.	BY
B	REVISION 1			
C	REVISION 2			
D	SEE E.O.			
E	SEE E.O.			
F	SEE E.O.			

ITEMS ALSO SUPPLIED AS REPAIR PARTS

LIST OF MATERIAL - QUANTITIES FOR ONE PUMP

ITEM	NAME	REQ.	MATERIAL	SPECIFICATION	SERVICE PART NO.	NAVSEA DWG. NO.	UNIT WT. LBS.	NATIONAL STOCK NO.	REMARKS
1	FRAME	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	7123AC	3,175,607	11.50		
1A	FRAME NAME PLATE	1	STAINLESS STEEL	MIL-8-854 CL 2	570986-1	3,175,604			
1B	DRIVE SCREW	6	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	5500S1-1				P & K TYPE "U", #2 X 3/16 CAD. PLATE
2	FRAME STUD - LONG	2	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	1483AB	3,175,606		925307-00-208-3187	CADMIUM PLATE
3	FRAME STUD - SHORT	6	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	1471AB	3,175,596		925307-00-208-3177	CADMIUM PLATE
4	FRAME STUD NUT	16	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	A15624HND1				5/16 - 24 NF-2 HEX CAD. PLATE
4A	WASHER - STUD NUT	16	GLASS CLOTH	MIL-P-15037A TYPE 5MG	55637B-1	3,175,607		IHS0000-11-CG1	1/16 SHEET
5	FRAME PIPE FLUJ	4	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	1592AB	3,175,604		9C4730-00-293-727A	1/2 PIPE SQ. SOCKET CAD. PLATE
6	STATOR RETAINER	1	PHOSPHOR BRONZE	QQ-C-390	1326AB	3,175,596	.3		CADMIUM PLATE
7	OIL COVER	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	4864AB	3,175,607	.6	9C4330-00-308-330B	
7A	GASKET (OIL COVER)	1	BLUE-GARD STYLE 3000	COMMERCIAL	55638B-2	3,175,607		925310-00-222-421A	1/32 SHEET
8	SEAL	2	PHOSPHOR BRONZE	COMMERCIAL	1389B	3,175,606	.3	9C4730-00-302-860	FULTON SYLPHON CO. NO. 92266
8A	SEAL GASKET (OIL COVER)	2	BLUE-GARD STYLE 3000	COMMERCIAL	556377-1	3,175,607		925330-00-282-245B	
9	SEAL RETAINER R. H.	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	1485AB	3,175,607	.2		
10	SEAL RETAINER L. H.	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	1486AB	3,175,607	.2		
10A	BEARING RETAINER GASKET	1	BLUE-GARD STYLE 3000	COMMERCIAL	G15701				.015 THK.
11	SPLASHER ASSEMBLY	1	ALUMINUM	QQ-A-225/B	1476AB	3,175,608	.2	9C4330-00-308-884A	
12	BEARING RETAINER	1	SILICON BRONZE	COMMERCIAL	1327AB	3,175,607	1.6		CADMIUM PLATE
13	RUNNER ASSEMBLY	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	25673AD	3,175,596	.58	9C4330-00-035-177A	BUSHING-GLASS CLOTH EPON RESIN
14	RUNNER RETAINER	1	STAINLESS STEEL	MIL-8-853A CL 7 TYPES C	1331AB	3,175,606		925310-00-638-142	
14A	RETAINER WASHER	2	PHENOLIC LAMINATE	COMMERCIAL	55633B-1	3,175,606			TYPE 4 OR 01 1/32 SHEET
14B	RUNNER WASHER	1	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	556323-1	3,175,604			
15	KEY	1	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	1335AB			925315-00-286-233	#304 WOODRUFF
16	LOCKING SCREW	1	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	1332AB	3,175,606		924320-00-318-295A	
17	LOCKWASHER	1	PHOSPHOR BRONZE	COMMERCIAL	A1439			925310-00-948-295A	1/2 SHAKEPROOF CAD. PLATE
18	SHAFT SLEEVE	1	NICKEL COPPER	QQ-N-281	1334	3,175,606		923120-00-097-1155	
19	SUCTION COVER	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	4178AC	3,175,608	1.5		BUSHING-GLASS CLOTH EPON RESIN
20	COVER GASKET	1	BLUE-GARD STYLE 3000	COMMERCIAL	1469-1	3,175,604		925330-00-298-070	1/32 SHEET
21	FOOT VALVE DISC	1	PHOSPHOR BRONZE	QQ-C-390	1432	3,175,606	1.0	9C4330-00-488-488	
22	VALVE BODY	1	PHOSPHOR BRONZE	QQ-C-390	4224	3,175,606	7.0	9C4330-00-488-488	
23	VALVE SEAT	1	PHOSPHOR BRONZE	QQ-C-390	1343A	3,175,606	2.0	9C4330-00-488-488	
24	VALVE GASKET	1	BLUE-GARD STYLE 3000	COMMERCIAL	1344-1	3,175,606		925330-00-258-815	1/32 SHEET
25	FOOT VALVE STRAINER	1	PHOSPHOR BRONZE	QQ-C-390	6145-1	3,175,606	4.0	9C4330-00-338-488	CADMIUM PLATE
26	DISCHARGE COVER ASSEMBLY	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	6211AD	3,175,596	4.5	9C4330-00-820-820	NOZZLE: MIL-8-867A CL 1 CAD. PLATE
27	COVER GASKET	1	BLUE-GARD STYLE 3000	COMMERCIAL	1494-2	3,175,606		925330-00-300-300	1/32 SHEET
28	TERMINAL BUSHING	3	VITON	MIL-G-23652, TYPE I	1466-1	3,175,607		925315-00-598-388	
29	CONNECTION BOX COVER	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	1484AB	3,175,606		924730-00-289-1820	
30	PACKING BOX	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	33259AC	3,175,606	.2		
31	GLAND	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	1345AB	3,175,606			
32	GLAND RING	2	SILICON BRONZE	COMMERCIAL	1346	3,175,606		925310-00-285-1214	CADMIUM PLATE
33	PACKING RING	2	VITON	MIL-G-23652, TYPE I	1496-1	3,175,606		925365-00-598-5365	
	STATOR 440 VOLT				5693B	3,175,598		926105-00-500-4837	
34	STATOR 220 VOLT	1			15388B	3,175,593	23.2	9C6105-00-500-0327	
	STATOR 115 VOLT				4540B	3,175,593		IHLICF80983	
36	ROTOR SHAFT ASSEMBLY	1	NICKEL COPPER	QQ-N-281	15389	3,175,596	10.0	9C4330-00-035-822	CONTAINS ITEM 28
37	LOWER BEARING	1	COMMERCIAL		A1491		.3	923110-00-156-488	N. D. C88506 X1270CC
39	UPPER BEARING	1	COMMERCIAL		A1313		.2	923110-00-156-488	N. D. C88808 X1270CC
39	BEARING SPRING	1	STEEL	COMMERCIAL	A1279			925310-00-141-9705	N. D. 817
40	CABLE	30 FT.	THOP-9 (SPECIAL)	MIL-C-915	88630AB-1		16.0		9-1/16 DIA. STEEL-11-24(26) COPPER WIRE
41	LUBRICATING OIL	9 OZ.	20 WEIGHT	NAVY SYMBOL	A3195AB		.5		NAVY SYMBOL 2135TH
42	TERMINAL BLOCK	1	MOLDED PHENOLIC	MIL-P-14D TYPE MFH	1490A	3,175,606		9C5940-00-951-8530	
42A	TERM. BLOCK INSULATOR	1	VARN. GLASS CLOTH	MIL-I-17205 GR. 0 CL 1	3302B	3,175,596			.015 SHEET
43	TERMINAL NUT	3	BRASS	COMMERCIAL	1492	3,175,606		925310-00-934-9764	
44	TERMINAL BLOCK SCREW	2	BRASS	COMMERCIAL	A11024B14				#10 - 24 NC-2 X 3/4 RD. HD.
45	STUDS	8	STAINLESS STEEL	MIL-8-853A CL 7 TYPE C	556303-1	3,175,607		925307-00-208-3171	CADMIUM PLATE
46A	SCREW	6	COPPER SILICON	MIL-C-17516	A1439			925305-00-208-0042	5/16 - 24 NF-2 FILL. HEAD
57	WASHER	2	LEATHER	KK-L-271C	23786	3,175,606		925310-01-003-9761	
60	PUMP HANDLE	1	ALUMINUM	MIL-A-17129 CL 3 HT 3	26137AB	3,175,606	.75		
61	STAR STRAINER	1	ALUMINUM	47A11 & MIL-A17129 CL 3 HT 3	17749AB	3,175,604	6.0	9C4730-00-339-2541	
62	CABLE CLAMP	1	SILICON BRONZE	COMMERCIAL	22931AR	3,175,606			CADMIUM PLATE
63	CABLE CLAMP SCREW	3	COPPER SILICON	MIL-C-17516 COMP. 1	A10632PHE10				#6 - 32 NC-2 X 5/8 FILL. HD. CAD. PLATE
64	GROUND LEADWIRE ASSY				COMMERCIAL				
65	GROUND SCREW	1	BRASS	COMMERCIAL	A10332B14				
66	WASHER GROUND SCREW	1	PHOSPHOR BRONZE	COMMERCIAL	A2378				
67	GROMMET GROUND LEAD	1	BUNA-N	COMMERCIAL	M5-35481-81				
68	TERMINAL INSULATOR	1	VARN. GLASS CLOTH	MIL-I-17205 GR. 0 CL 1	G15700				

VOLTS	NATIONAL STOCK NO.
115	H4320-00-273-0874
220	H4320-00-752-9647
440	H4320-00-368-3186

INSTRUCTION MANUAL 2355IAF

DATE: 11/21/77
 CR. DATE: 11/21/77
 APP'D. DATE: 11/21/77
 BY: [Signature]
 TITLE: [Title]

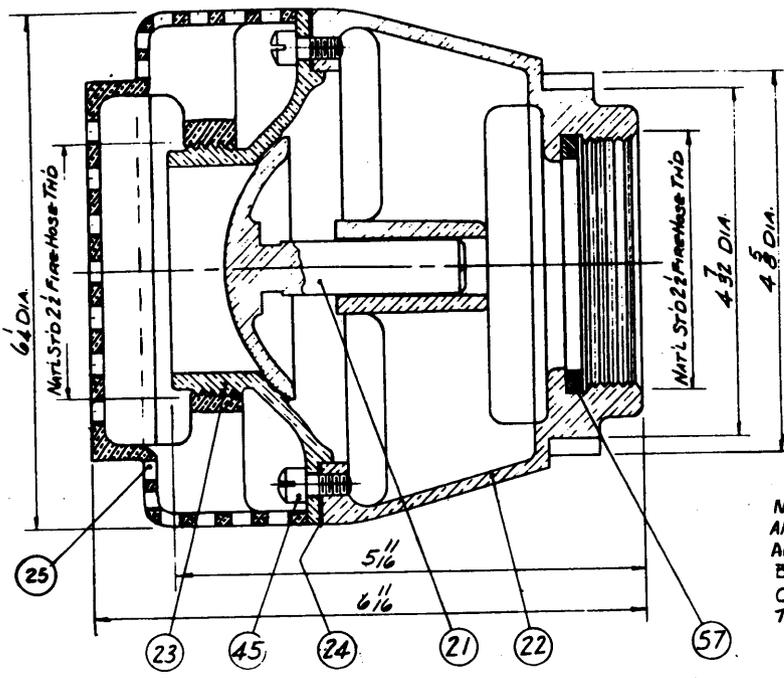
MASTER DRAWING
 SECTIONAL ASSEMBLY AND
 LIST OF MATERIAL FOR A.C.
 PORTABLE SUBMERSIBLE PUMP
 MODEL 7778
 (ALUM.)
 SCALE: 1" = 1" WT. ACTUAL

PROSSER INDUSTRIES INC.
 ANAHEIM, CALIFORNIA
 DWG. NO. 576905
 NAVSEA NO. REV.
 84700 F 9,175,598 F
 CONT ON SHY. SHY. NC.

LIST OF MATERIAL (CONTINUED)

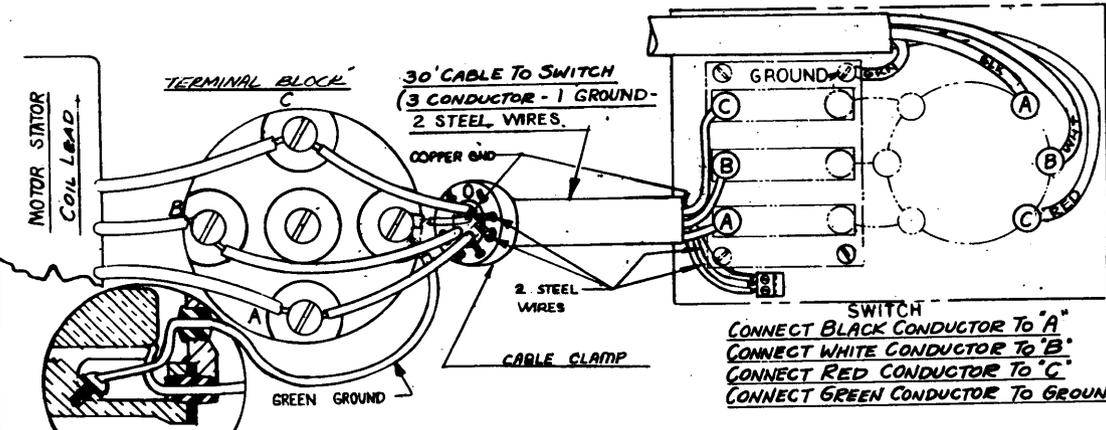
ITEM	PART NO.	QTY	NAME OF PIECE	MAT'L	MAT'L SPEC.	NOTES
65	3-500654	1	END LEADWIRE ASSY	HYFLON	COMMERCIAL	
66	A10832RHB4	1	GROUND SCREW	BRASS	COMMERCIAL	
67	A2579	1	WASHER GROUND SCREW	PHOSPHOR BRONZE	COMMERCIAL	
68	2-31024-1	1	GROMMET GROUND LEAD	BUNA-N	Ms-35489-89	
69	615700	1	TERMINAL INSULATOR	VARN. GLASS CLOTH	MIL-I-17205-6A	
70	615701	1	BEARING RETAINER BASKET	BLUE-GARD	COMMERCIAL	.015 THICK
71	558377-1	2	SEAL GASKET (OIL COVER)	BLUE-GARD	COMMERCIAL	.015 THICK
72	558323-1	1	RUNNER WASHER	STAINLESS STEEL	MIL-S-883A	
73	558299-1	2	RETAINER WASHER	PUBLOC UHMWTE	COMMERCIAL	
74	558383-2	1	GASKET (OIL COVER)	BLUE-GARD	COMMERCIAL	
75	558378-1	16	WASHER, FLUID NUT & SCREW	GLASS CLOTH	MIL-PT3037A TYPE 6MS	1/16 SHEET

ITEM	PART
1	71E
2	14E
3	14E
4	14E
5	15E
6	13E
7	42E
8	13E
9	14E
10	14E
11	14E
12	13E
13	42E
14	13E
15	13E
16	13E
17	14E
18	13E
19	41E
20	14E
21	14E
22	42E
23	13E
24	13E
25	61E
26	62E
27	14E
28	14E
29	14E
30	14E
31	13E
32	13E
33	14E
34	58E
35	15E
36	15E
37	14E
38	13E
39	14E
40	83E
41	13E
42	14E
43	14E
44	14E
45	14E
46	23E
47	25E
48	17E
49	73E
50	14E
51	33E



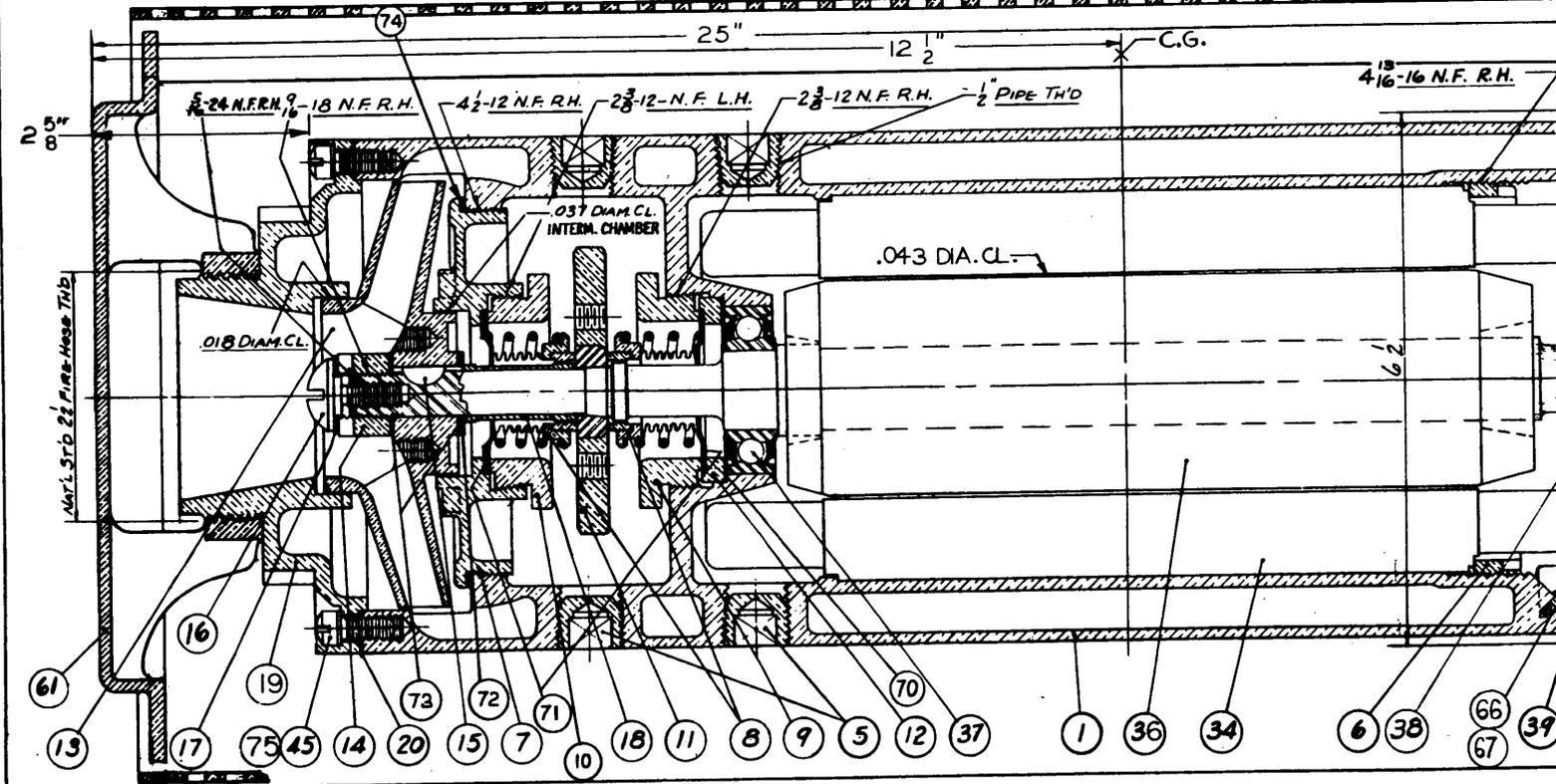
FOOT VALVE ASSY. NO. 35351

MOTOR TERMINALS, SWITCH, AND CABLE CONNECTIONS ARE ARRANGED IN SUCH A MANNER THAT WHEN POWER FROM THE A, B, AND C PHASES OF THE SHIPS SERVICE ARE CONNECTED TO THE BLACK, WHITE, AND RED LEADS RESPECTIVELY OF THE 45' LINE CABLE, THE ROTATION WILL BE CLOCKWISE VIEWING THE IMPELLER END OF THE PUMP.



GROUND CIRCUIT TEST SAME AS ALUM MODEL 777H. REF DWG. 576905.

CONNECT BLACK CONDUCTOR TO "A"
CONNECT WHITE CONDUCTOR TO "B"
CONNECT RED CONDUCTOR TO "C"
CONNECT GREEN CONDUCTOR TO GROUND



LIST OF MATERIAL

NO	REQ'D	NAME OF PIECE	MAT'L	MAT'L SPEC	NOTES
3	1	FRAME	HYDRAULIC BRONZE	MIL-B-16444	
33	2	FRAME STUDS-LONG	SILICON COPPER	MIL-C-17516	3/8-24NF x 9 1/2
71	6	FRAME STUDS-SHORT	SILICON COPPER	MIL-C-17516	3/8-24NF x 2
72	8	FRAME STUD NUTS	SILICON COPPER	MIL-C-17516	3/8-24NF Hex
82	4	FRAME PIPE PLUGS	SILICON COPPER	MIL-C-17516	
6	1	FRAME MOTOR RETAINER	PHOSPHOR BRONZE	QA-C-390	
24	1	OIL COVER	PHOSPHOR BRONZE	QA-C-390	
8D	2	SYLPHON SEAL	COMMERCIAL		
5	1	SYLPHON SEAL	PHOSPHOR BRONZE	QA-C-390	
6	1	RETAINER - R.H.	PHOSPHOR BRONZE	QA-C-390	
76AB	1	RETAINER - L.H.	PHOSPHOR BRONZE	QA-C-390	
7	1	SPLASHER ASSY	ALUM	QA-A-226	
7	1	BEARINGS RETAINER	PHOSPHOR BRONZE	QA-C-390	
10C	1	RUNNER	PHOSPHOR BRONZE	QA-C-390	
71	1	RUNNER RETAINER	SILICON COPPER	MIL-C-17516	COLD DRAWN
75	1	RUNNER KEY	PHOSPHOR BRONZE	QA-N-281	COLD DRAWN
72	1	RUNNER LOCKING SCREW	COPPER	MIL-C-17516	
76	1	RUNNER SCREW	PHOSPHOR BRONZE	QA-C-390	1/2 STAGNATION POINT
76	1	LOCK WASHER	PHOSPHOR BRONZE	QA-C-390	TYPE 2
4	1	SHAFT SLEEVE	PHOSPHOR BRONZE	QA-N-281	COLD DRAWN
18	1	SUCTION COVER	PHOSPHOR BRONZE	QA-C-390	
59-1	1	SUCTION COVER GASKET	COMMERCIAL		1/2 SHEET
32	1	FOOT VALVE	PHOSPHOR BRONZE	QA-C-390	
34	1	FOOT VALVE BODY	PHOSPHOR BRONZE	QA-C-390	
34A	1	FOOT VALVE SEAT	PHOSPHOR BRONZE	QA-C-390	
4-1	1	FOOT VALVE GASKET	COMMERCIAL		1/2 SHEET
15	1	STRAINER	PHOSPHOR BRONZE	QA-C-390	
1	1	DISCHARGE COVER	HYDRAULIC BRONZE	MIL-B-16444	
4-2	1	DISCHARGE COVER GASKET	COMMERCIAL		1/2 SHEET
56-1	3	TERMINAL BUSHING	VITON	MIL-P-140	TYPE 1
24A	1	CONNECTION COLLAR	PHOSPHOR BRONZE	QA-C-390	
29	1	PACKING BOX	PHOSPHOR BRONZE	QA-C-390	
25	1	PACKING BOX GLAND	PHOSPHOR BRONZE	QA-C-390	
26	2	GLAND RING	SILICON COPPER	MIL-C-17516	
95-1	2	TERMINAL PACKING RING	VITON	MIL-P-140	TYPE 1
33B	1	STATOR 440 V			AS SPECIFIED
33B	1	STATOR 220 V			AS SPECIFIED
40B	1	STATOR 115 V			AS SPECIFIED
389	1	ROTOR SHAFT ASSEM	COMMERCIAL		ND-C88505
391	1	MOTOR BEARING LOWER	COMMERCIAL		ND-C88505
39	1	MOTOR BEARING UPPER	COMMERCIAL		ND-C88503
39	1	MOTOR BEARING LOADING SPRING	COMMERCIAL		ND-S17
70AB	1	CABLE	3 CONDUCTOR 30 LBS	MIL-C-315	INSULATED TO MATCH 3 TERMINAL BUSHING
30AB	002	LUBRICATING OIL	20 WEIGHT		WAY ENTREL 300TH
30A	1	TERMINAL BLOCK	MOLDED PHENOLIC	MIL-P-140	TYPE MTS-N-1
32	3	TERMINAL BUSHING	BRASS	COMMERCIAL	
32	2	CABLE TERMINAL SCREW	BRASS	COMMERCIAL	10-24 x 3/8 Hex
39	14	SUCTION COVER SCREW	COPPER SILICON	MIL-C-17516	1/2-20 x 1 1/2 AL. HD.
736	2	WASHER FOR FOOT VALVE BODY AND HANDLE	LEATHER	KK-L-271C	
737	1	PUMP HANDLE	PHOSPHOR BRONZE	QA-C-390	
39AB	1	STAR STRAINER	PHOSPHOR BRONZE	QA-C-390	
39AB	1	CABLE CLAMP	COPPER SILICON	MIL-C-17516	
39BCH	3	SCREW (CABLE CLAMP)	BRASS	COMMERCIAL	
922	1	CORRECTION BOX INSULATOR	VARNISHED CLOTH	MIL-P-170B	0.015 SHEET

LIST OF SPARE PARTS

ITEM	PART NO	REQ'D	NAME OF PIECE	MAT'L	MAT'L SPEC	NOTES
2	1493	1	FRAME STUDS (LONG)	COPPER SILICON	MIL-C-17516	3/8-24NF x 9 1/2
3	1471	1	FRAME STUDS (SHORT)	SILICON COPPER	MIL-C-17516	3/8-24NF x 2
4	1472	4	FRAME STUD NUTS	COPPER SILICON	MIL-C-17516	3/8-24NF Hex
5	1592	2	FRAME PIPE PLUGS	SILICON COPPER	MIL-C-17516	
8	138BD	4	SYLPHON SEALS	COMMERCIAL		
11	1476AB	2	SPLASHER ASSY	ALUM	QA-A-226	
13	4201C	1	RUNNER	PHOSPHOR BRONZE	QA-C-390	
14	1331	1	RUNNER RETAINER	SILICON COPPER	MIL-C-17516	
15	1935	1	RUNNER KEY	PHOSPHOR BRONZE	QA-N-281	COLD DRAWN
16	1932	1	RUNNER LOCKING SCREW	COPPER SILICON	MIL-C-17516	
17	A1438	1	RUNNER SCREW	PHOSPHOR BRONZE	QA-C-390	
18	1934	1	SHAFT SLEEVE	PHOSPHOR BRONZE	QA-N-281	COLD DRAWN
20	1469-1	2	SUCTION COVER GASKET	COMMERCIAL		1/2 SHEET
27	1494-2	2	DISCHARGE COVER GASKET	COMMERCIAL		1/2 SHEET
28	1466-1	6	TERMINAL BUSHING	VITON	MIL-P-140	TYPE 1
29	1484A	1	CONNECTION COLLAR	PHOSPHOR BRONZE	QA-C-390	
33	1495-1	4	TERMINAL PACKING RING	VITON	MIL-P-140	TYPE 1
34	5833B	1	STATOR 440 V			AS SPECIFIED
34	15388B	1	STATOR 220 V			AS SPECIFIED
34	4540B	1	STATOR 115 V			AS SPECIFIED
36	15389	1	ROTOR SHAFT ASSEM	COMMERCIAL		ND-C88505
37	A1491	1	MOTOR BEARING LOWER	COMMERCIAL		ND-C88503
38	A1319	1	MOTOR BEARING UPPER	COMMERCIAL		ND-S17
39	A1279	1	MOTOR BEARING LOADING SPRING	COMMERCIAL		
45	A1499	4	SUCTION COVER SCREW	SILICON COPPER	MIL-C-17516	
46	1487AB	1	SYLPHON SEAL	COMMERCIAL		
7	4264	1	OIL COVER	PHOSPHOR BRONZE	QA-C-390	
48	15701AB	1	MOTOR RETAINER	PHOSPHOR BRONZE	QA-C-390	
49	15702AB	1	MOTOR SHAFT	PHOSPHOR BRONZE	QA-C-390	
50	15703AB	1	RUNNER AND SEAL COLLAR PULLER	EVERGLUR		
52	5686AB	1	ELL HANDLE WRENCH	CRES & AL.		
54	23600AB	1	RUNNER RETAINER & LOCKING SCREW	18-8 CRES		
58	23436	1	SPARE PARTS BOX	UM-B-200		
59	28551AD	1	INSTRUCTION BOOK			

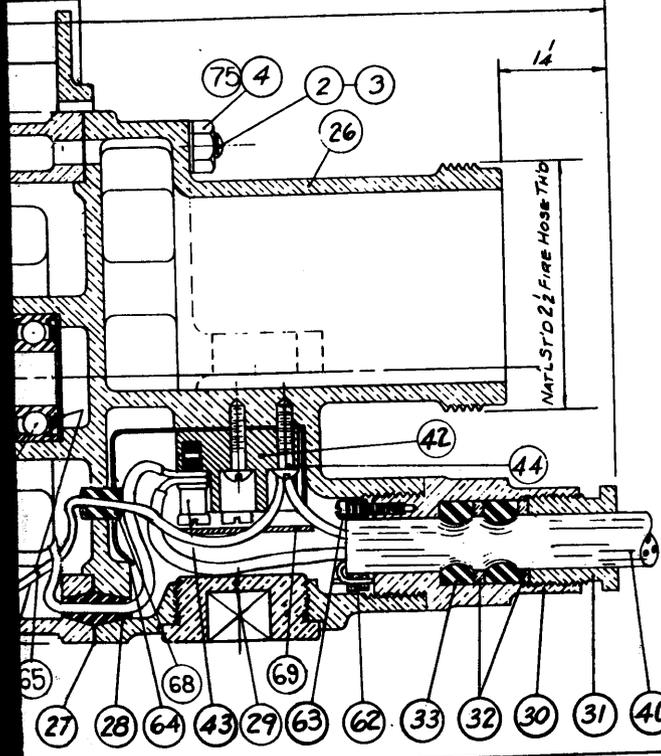
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F	SEE E.O.
E	SEE E.O.
D	SEE E.O.
C	SEE E.O.
B	SEE E.O.
A	SEE E.O.
ALT.	DESCRIPTION

WEIGHT OF PUMP WITH STAR STRAINER LESS 45 LB. CABLE AND 12 LBS. FEELERS.

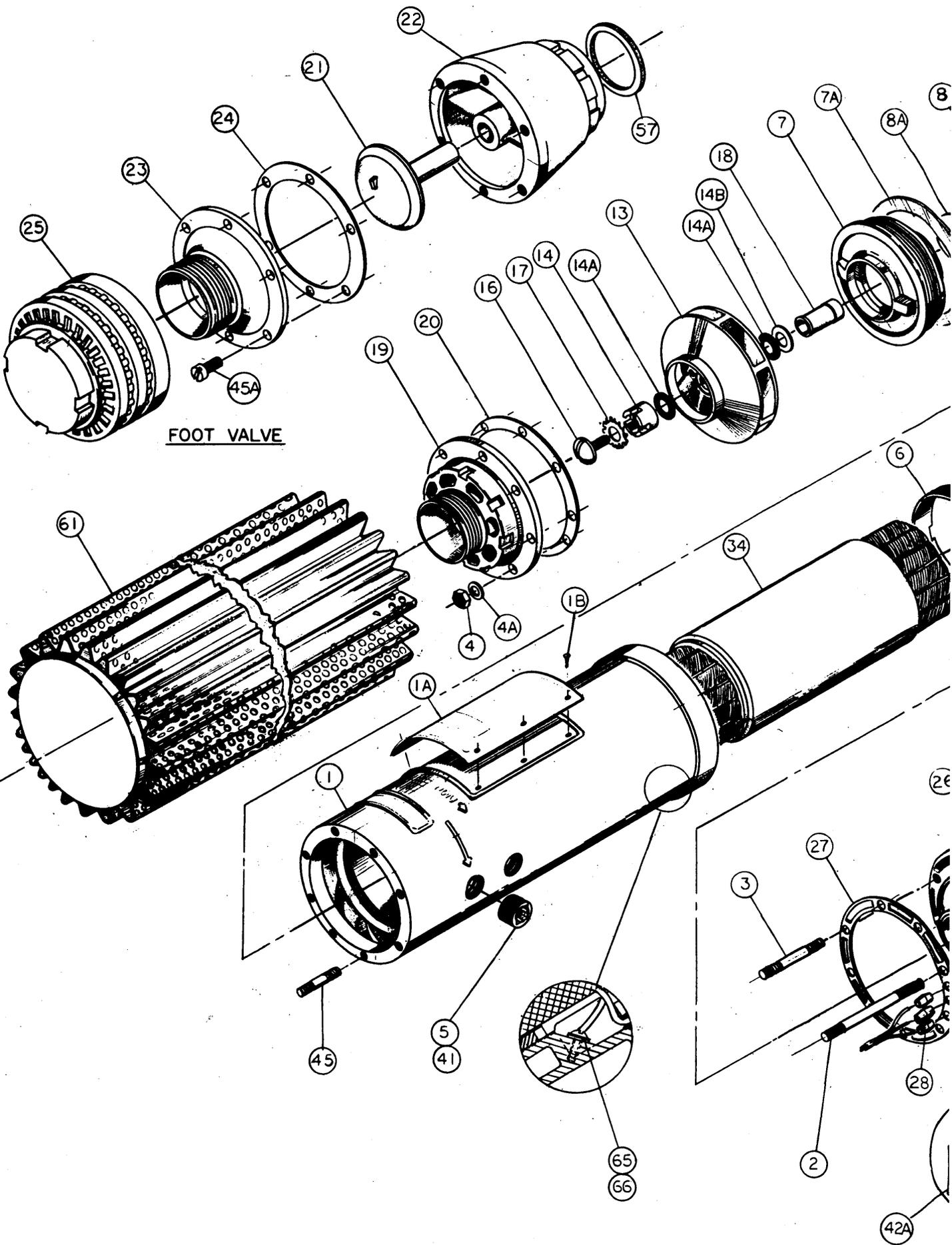
PORTABLE SUBMERSIBLE PUMP
 ALTERNATING CURRENT MOTOR
 140 G.P.M. AT 70 FT. HD. 2000 RPM @ 30% HD.
 3 PHASE
 60 CYCLES
 115, 220 OR 440 VOLTS AS SPECIFIED
 30, 15 OR 9.0 AMPERES AS SPECIFIED
 DUTY - CONTINUOUS WHEN PUMPING
 IDLING IN AIR.
 DRAIN INTERMEDIATE CHAMBER
 SERVICE AND PUMPING
 OIL 20 WEIGHT

VOLTS	NATIONAL	MOORE	(BRONZE)
115			
220	4320	4320	
440	4320	4320	

LIST OF MATERIAL FOR ALUM MODEL 7377D



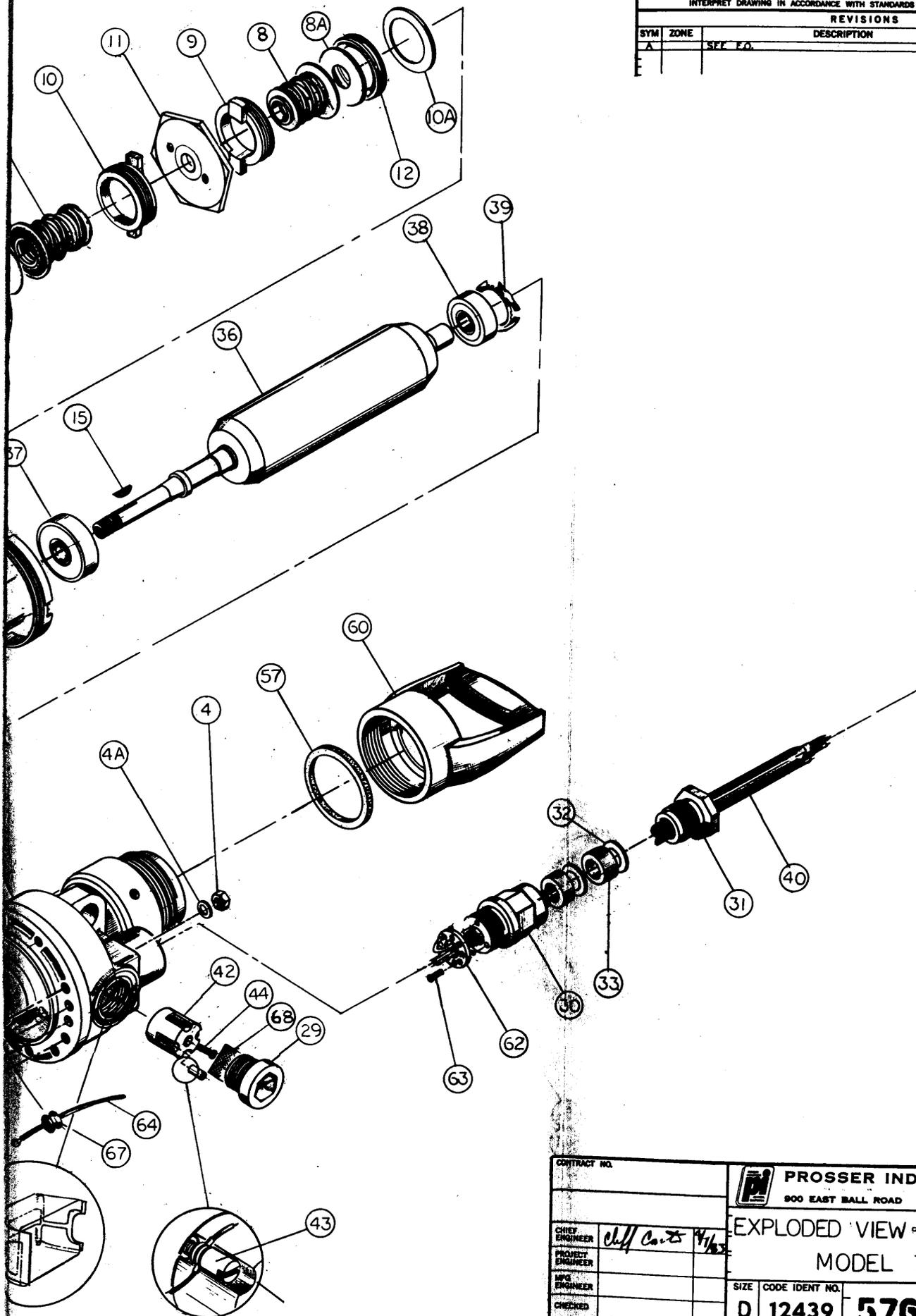
CHIEF ENGINEER	R.W.	1/2	SECTIONAL MATERIAL
PROJECT ENGINEER	R.W.	1/2	FOR PORTABLE
ENGINEER			7377D
CHECKED			SIZE CODE
DRAWN	BANISTER	1/2	D 12439
			SCALE NONE



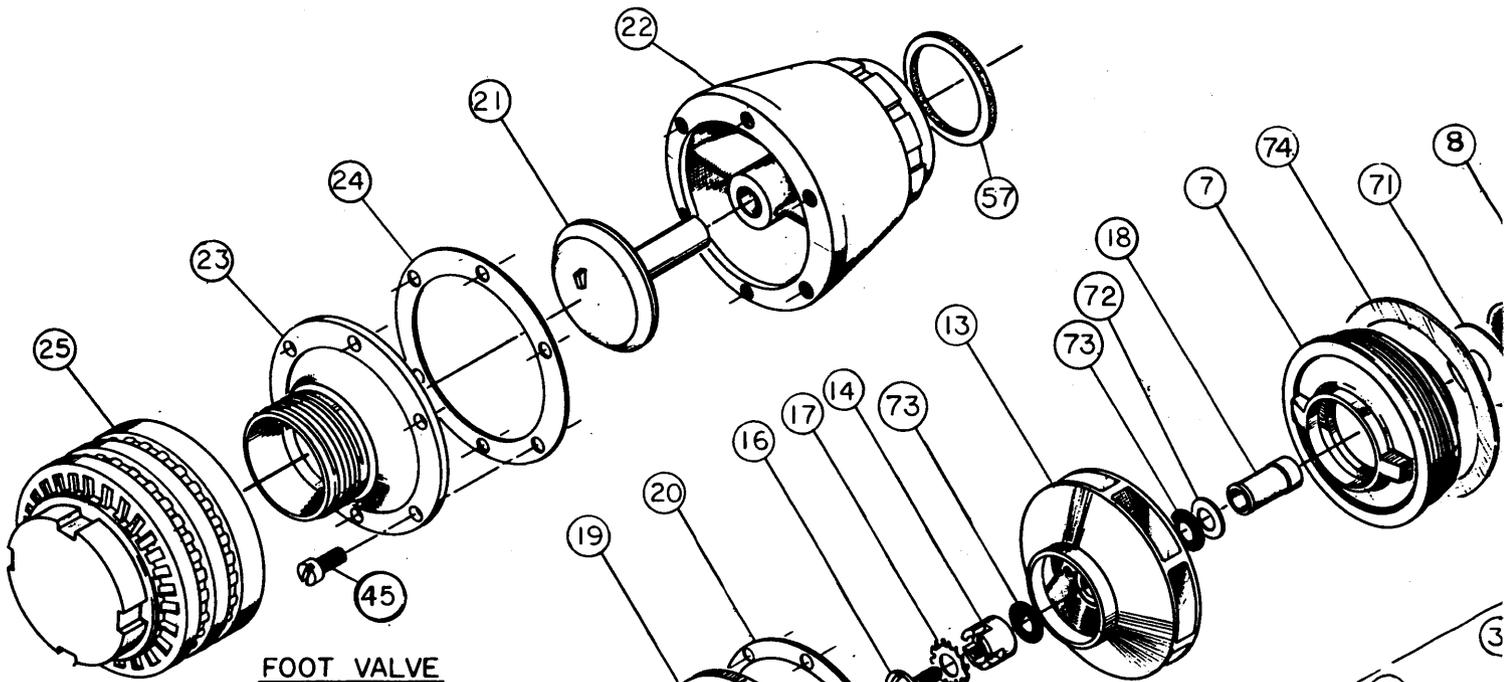
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-189

REVISIONS

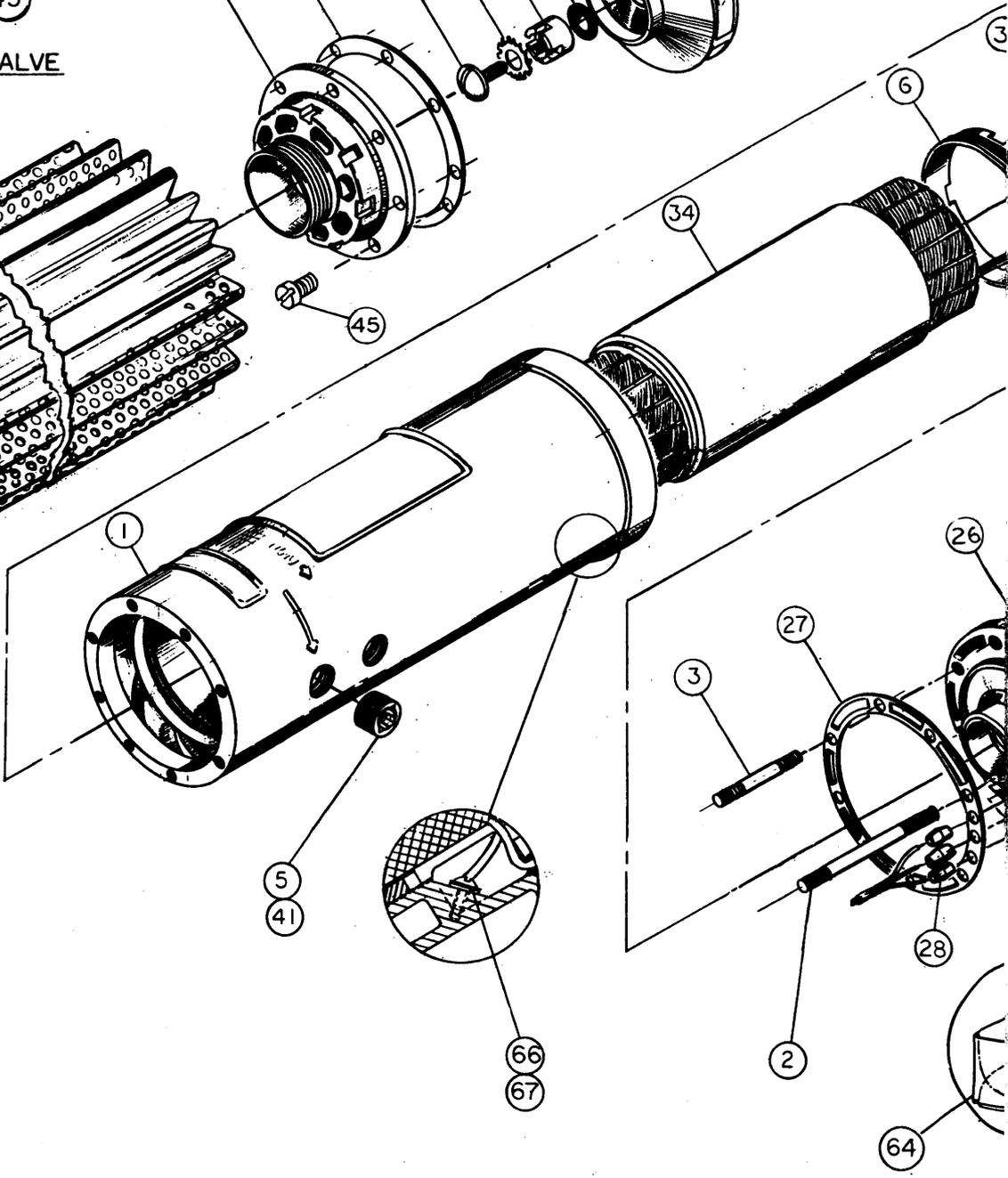
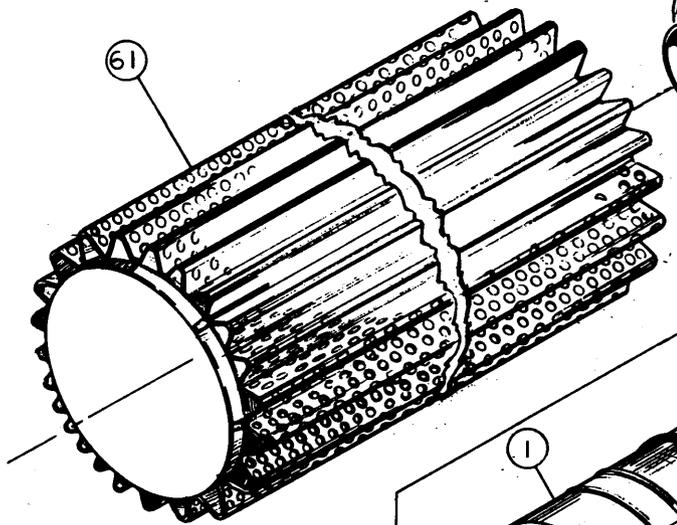
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		SEE F.O.	7-27-84	C.L.C.



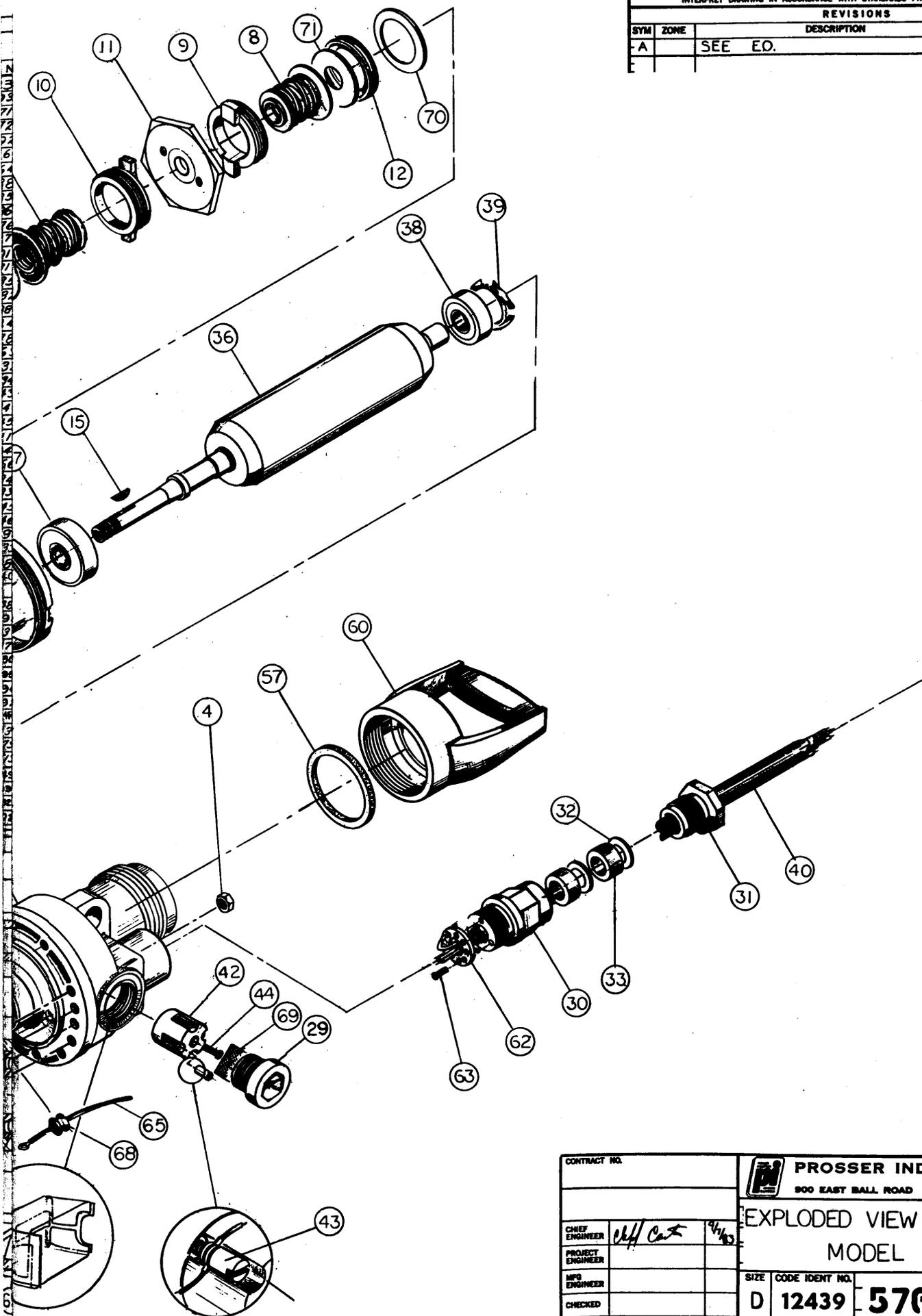
CONTRACT NO.		 PROSSER INDUSTRIES INC. 900 EAST BALL ROAD ANAHEIM, CALIF. 92803	
CHIEF ENGINEER	<i>Chf. Co. 75</i>	EXPLODED VIEW = PUMP ASSY.	
PROJECT ENGINEER		MODEL 777H (ALUM)	
MFG ENGINEER		SIZE	CODE IDENT NO.
CHECKED		D 12439	5769.30
DRAWN	W.V.S.	SCALE	WEIGHT
	5/4/82		
			A
			REV
			SHEET 1 OF 1



FOOT VALVE



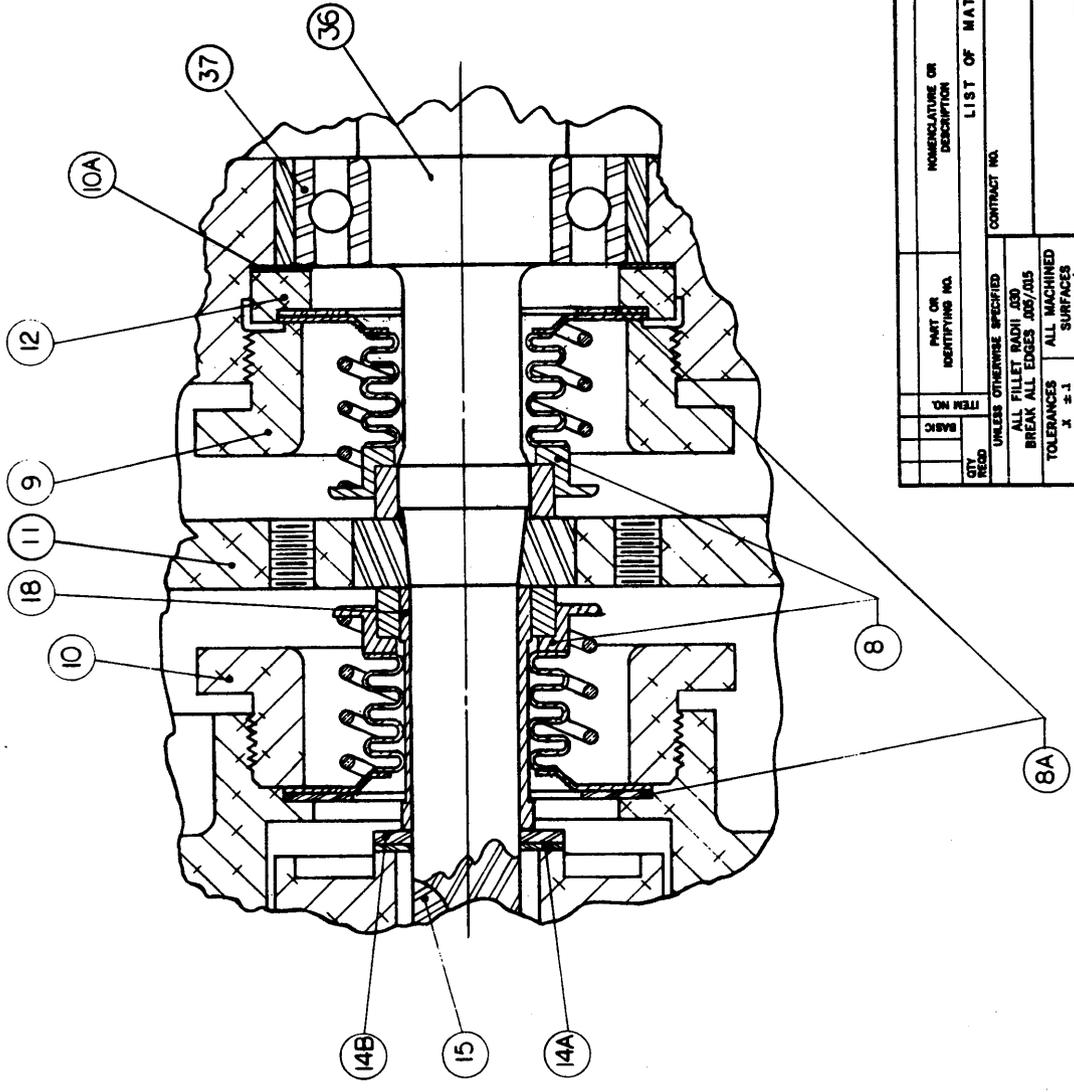
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-883				
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APP
A		SEE EO.	7-27-84	ep



CONTRACT NO.		PROSSER INDUSTRIES	
		900 EAST BALL ROAD ANAHEIM, CALIF. 91	
CHIEF ENGINEER <i>W.H. Coats</i>		EXPLODED VIEW - PUMP ASS	
PROJECT ENGINEER		MODEL 777D (BRONZ	
MFG ENGINEER		SIZE	CODE IDENT NO.
CHECKED		D 12439	5769.33
DRAWN <i>W.V.S.</i>		SCALE	WEIGHT
		5/14/82	SHEET 1 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-100

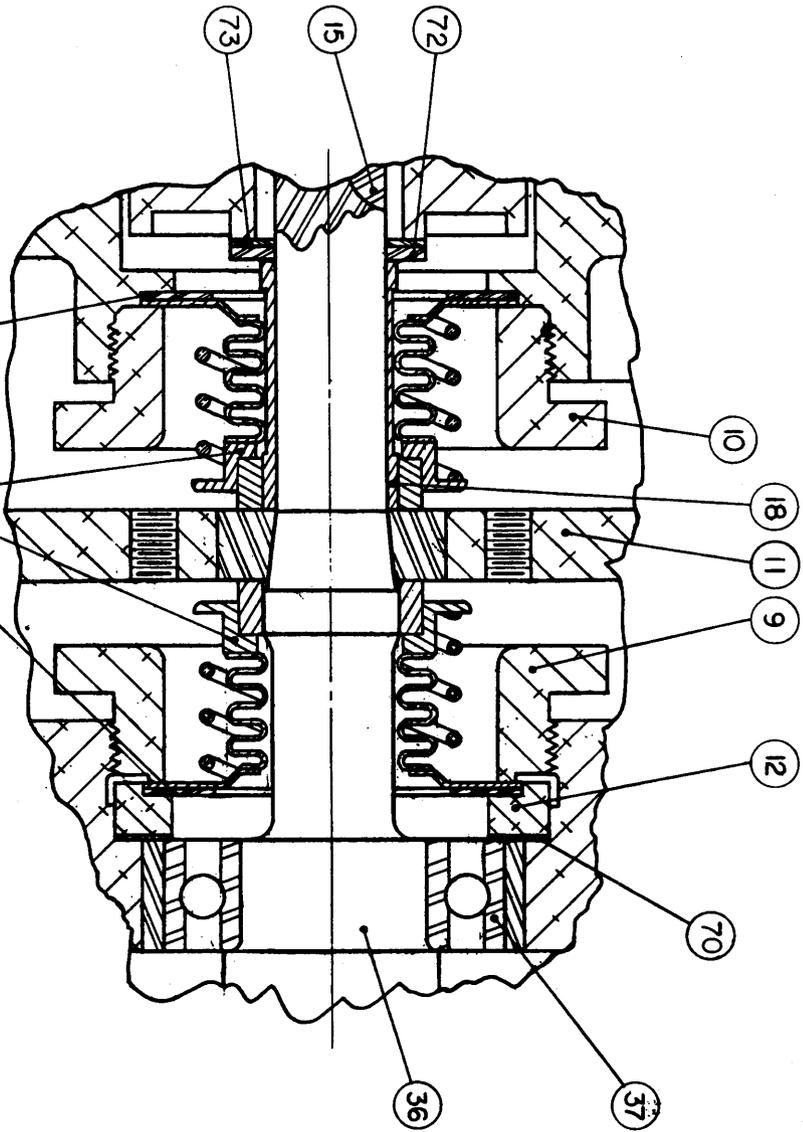
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		SEE E.O.	6-5-84	S.M.
B		SEE E.O.	7-31-94	S.M.



576931 B

PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		CODE IDENT	MATERIAL	SPECIFICATION																												
LIST OF MATERIAL OR PARTS LIST																																		
UNLESS OTHERWISE SPECIFIED		CONTRACT NO.		PROSSER INDUSTRIES INC.																														
ALL FILLET RADIUS		777H, 822H & 822A		900 EAST BALL ROAD ANAHEIM, CALIF. 92803																														
BREAK ALL EDGES .005/.015		CROSS-SECTION VIEW, NAVY		PUMP SEAL AREA																														
TOLERANCES		ALL MACHINED SURFACES		777H, 822H & 822A																														
X ± .1		125		SIZE CODE IDENT NO.																														
XX ± .05		125		C 12439																														
XXX ± .03		125		SCALE 2:1																														
ANGULARITY ± 0.20		HEAT TREAT		WEIGHT																														
		PROTECTIVE FINISH		SHEET 1 OF 1																														
<table border="0" style="width: 100%;"> <tr> <td style="width: 10%;">CHIEF ENGINEER</td> <td style="width: 10%;"><i>S.M.</i></td> <td style="width: 10%;">PROJECT ENGINEER</td> <td style="width: 10%;"></td> <td style="width: 10%;">MFG ENGINEER</td> <td style="width: 10%;"></td> <td style="width: 10%;">CHECKED</td> <td style="width: 10%;"></td> <td style="width: 10%;">DRAWN</td> <td style="width: 10%;">S. MENDEZ</td> </tr> </table>							CHIEF ENGINEER	<i>S.M.</i>	PROJECT ENGINEER		MFG ENGINEER		CHECKED		DRAWN	S. MENDEZ																		
CHIEF ENGINEER	<i>S.M.</i>	PROJECT ENGINEER		MFG ENGINEER		CHECKED		DRAWN	S. MENDEZ																									
<table border="1" style="width: 100%;"> <tr> <th>BASIC</th> <th>NEXT ASY</th> <th>FINAL ASY</th> <th>POST ASY</th> <th>FINAL ASY</th> <th>QTY</th> <th>REQD</th> </tr> <tr> <td> </td> </tr> <tr> <th colspan="5">APPLICATION</th> <th colspan="2">QTY REQD</th> </tr> <tr> <td colspan="5"> </td> <td colspan="2"> </td> </tr> </table>							BASIC	NEXT ASY	FINAL ASY	POST ASY	FINAL ASY	QTY	REQD								APPLICATION					QTY REQD								
BASIC	NEXT ASY	FINAL ASY	POST ASY	FINAL ASY	QTY	REQD																												
APPLICATION					QTY REQD																													

REVISIONS		DATE	APPROVED
SYMBOL	DESCRIPTION		
A	SEE E.O.	7-31-84	S. M.



576932 A

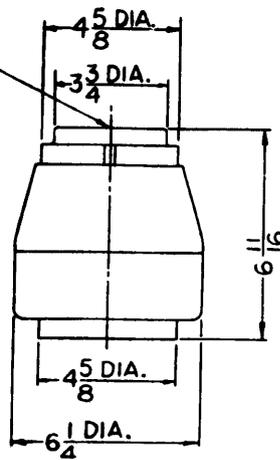
DATE	REV	DESCRIPTION	BY

LIST OF MATERIAL OR PARTS LIST		CONTRACT NO.	SCALE	WEIGHT	SHEET	OF
UNLESS OTHERWISE SPECIFIED	ALL PARTS SHALL BE TO SPECIFICATION		2:1			
ALL DIMENSIONS SHALL BE IN INCHES AND DECIMALS THEREOF	ALL DIMENSIONS SHALL BE IN MILLIMETERS					
TOLERANCES UNLESS OTHERWISE SPECIFIED	ALL DIMENSIONS SHALL BE TO SPECIFICATION					
±.0005	±.0005					
±.001	±.001					
±.002	±.002					
±.005	±.005					
±.010	±.010					
±.015	±.015					
±.020	±.020					
±.030	±.030					
±.040	±.040					
±.050	±.050					
±.060	±.060					
±.070	±.070					
±.080	±.080					
±.090	±.090					
±.100	±.100					
±.125	±.125					
±.150	±.150					
±.175	±.175					
±.200	±.200					
±.250	±.250					
±.300	±.300					
±.350	±.350					
±.400	±.400					
±.450	±.450					
±.500	±.500					
±.562	±.562					
±.625	±.625					
±.688	±.688					
±.750	±.750					
±.812	±.812					
±.875	±.875					
±.938	±.938					
±.1000	±.1000					
±.1250	±.1250					
±.1500	±.1500					
±.1750	±.1750					
±.2000	±.2000					
±.2500	±.2500					
±.3000	±.3000					
±.3500	±.3500					
±.4000	±.4000					
±.4500	±.4500					
±.5000	±.5000					
±.5625	±.5625					
±.6250	±.6250					
±.6875	±.6875					
±.7500	±.7500					
±.8125	±.8125					
±.8750	±.8750					
±.9375	±.9375					
±.10000	±.10000					

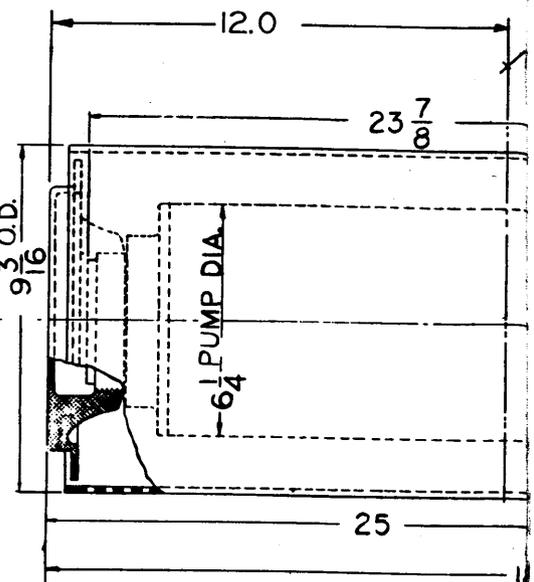
DATE	BY	DESCRIPTION

DATE	BY	DESCRIPTION

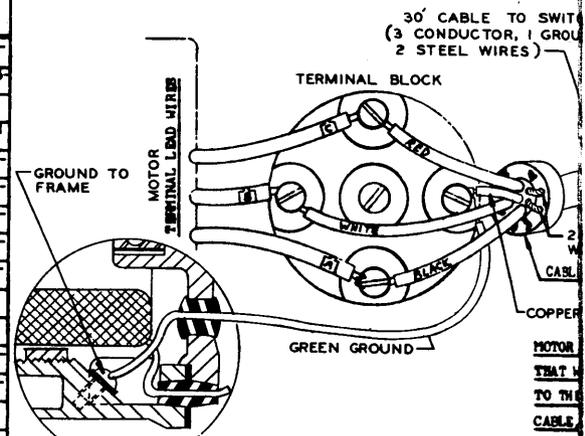
NAT'L. STD. 2 1/2 FIRE HOSE THD.



FOOT VALVE WITH STRAINER



REPAIR PARTS LIST FOR ONE PUMP					
ITEM	NAME	REQ'D.	SERVICE PART NO.	NAVSEA DNG. NO.	NATIONAL STOCK NO.
2	FRAME STUD - LONG	1	1483AB	3,178,606	9E5307-00-208-3187
3	FRAME STUD - SHORT	1	147LAB	3,178,596	9E5307-00-208-3177
4	FRAME STUD NUT	6	A156248871		
4A	WASHER - STUD NUT	16	558378-1	3,178,607	JHS0000-LL-CGI-7382
5	FRAME PIPE PLUG	2	1592AB	3,178,604	9C4730-00-293-7274
7	OIL COVER	1	4264AB	3,178,607	9C4320-00-308-6888
7A	GASKET (OIL COVER)	2	558383-2	3,178,607	9E5330-00-222-2582
8	SEAL	4	1388D	3,178,606	9C4320-00-302-1980
8A	SEAL GASKET (OIL COVER)	2	558377-1	3,178,607	9E5330-00-292-2458
10A	BEARING RETAINER GASKET	1	615701		
10B					
11	SPLASHER ASSEMBLY	2	1476AB	3,178,608	9C4320-00-308-6884
13	RUNNER ASSEMBLY	1	25673AD	3,178,596	9C4320-00-035-7378
14	RUNNER RETAINER	1	1331AB	3,178,606	9E5310-00-638-1142
14A	RETAINER WASHER	2	558332-1	3,178,606	
14B	RUNNER WASHER	1	558323-1	3,178,604	
15	KEY	1	1335AB		9E5315-00-288-2333
16	LOCKING SCREW	1	1332AB	3,178,606	9E4320-00-316-2580
17	LOCKWASHER	1	A143B		9E5310-00-948-9708
18	SHAFT SLEEVE	1	1334	3,178,606	9E3120-00-097-1155
20	COVER GASKET	2	1469-1	3,178,604	9E5330-00-298-0710
24	VALVE GASKET	1	1344-1	3,178,606	9E5330-00-256-8157
27	COVER GASKET	2	1494-2	3,178,606	9E5330-00-300-5919
28	TERMINAL BUSHING	6	1466-1	3,178,607	9E5385-00-598-5322
29	CONNECTION BOX COVER	1	1484AB	3,178,606	9E4730-00-289-1820
33	PACKING RING	4	1495-1	3,178,606	9E5385-00-598-5365
	440 VOLT		55832B	3,178,598	9E8105-00-500-4937
34	STATOR - 220 VOLT	1	15388B	3,178,598	9C8105-00-500-0327
	115 VOLT		4540B	3,178,598	IHL LCF-80963
35	ROTOR SHAFT ASSEMBLY	1	1536B	3,178,596	9C4320-00-035-8922
37	LOWER BEARING	1	A1481		9E3110-00-158-3548
38	UPPER BEARING	1	A1313		9E3110-00-158-3508
39	BEARING SPRING	1	A1279		9E5310-00-141-9705
43	TERMINAL NUT	1	1482	3,178,606	9E5310-00-934-9764
45	STUDS	1	558308-1	3,178,607	9E5307-00-208-3171
45A	SCREW	1	A143B		
	GREASE PER MIL-G-23549	1/2 PT	550084-1		9C 9150-00-985-7316
67	GROMMET	1	2-31024-1		



REPAIR PARTS LIST FOR SWITCH			
NAME	REQ.	SERVICE PART NO.	NAVSEA DNG. NO.
GASKET	2	B3642AA	9000-88-7360
440 VOLT 15 AMP		A4054AA15	9000-88-7360
FUSETRON 220 VOLT 20 AMP	21	A4053AA20	9000-88-7360
115 VOLT 30 AMP		A4053AA30	9000-88-7360
PACKING	1	33250AB	
ROTARY SWITCH ASSEMBLY	1	B3661AB	9000-88-7360
SCREW	2	A11420PH7	
LOCKWASHER	2	A1441AC	9000-88-7360
O RING SEAL	1	MS 28775-010	
PACKING	1	33251AB	
FUSE CLIP 30 AMP	3	A1317AB	9-8-4226
FUSE CLIP NUT	3	33283AB	9-8-4226
TERMINAL ASSEMBLY	3	B3665AA	9000-88-7360
GROUND LEAD TERMINAL	2	A2926AA3	9-8-1841
TERMINAL SCREW ASSEMBLY	3	B3661AA	9000-88-7360
STUFFING ASSY (4T)	2	33249AB	

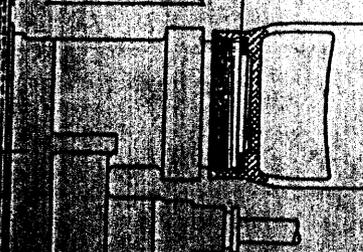
REFERENCE:

DETAIL OF TOOLS-USE MFR. DNG. NO. 5764

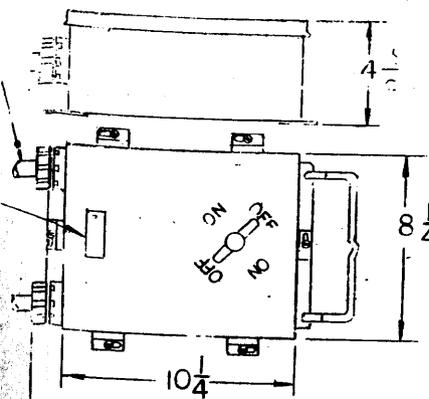
LIST OF TOOLS				
ITEM	NAME	REQ.	SERVICE PART NO.	NAVSEA DNG. NO.
1	SYLPHON SEAL RETAINER WRENCH	1	1487AB	3,178,606
2	MOTOR RETAINER WRENCH	1	15701AB	3,178,606
3	SHAFT HOLDING FIXTURE	1	15702AB	3,178,606
4	RUNNER & SPLASHER PULLER	1	15703AB	3,178,606
5	WRENCH	1	5686AB	3,178,606
6	RUNNER RETAINER & LOCK SCR. WRENCH	1	23600AB	3,178,606

CONTROL SWITCH IN ACCORDANCE WITH
STANDARD DRAWING NO. 117-703 EXCEPT
THAT THE ENCLOSURE IS OF 1/2" 302 STAINLESS STEEL.
FOR IDENTIFICATION SWITCH NAME PLATE IS STAMPED

MAT'L. STD. 1/2" PINE
ROSE THREAD



45 FT. FHOFC CABLE

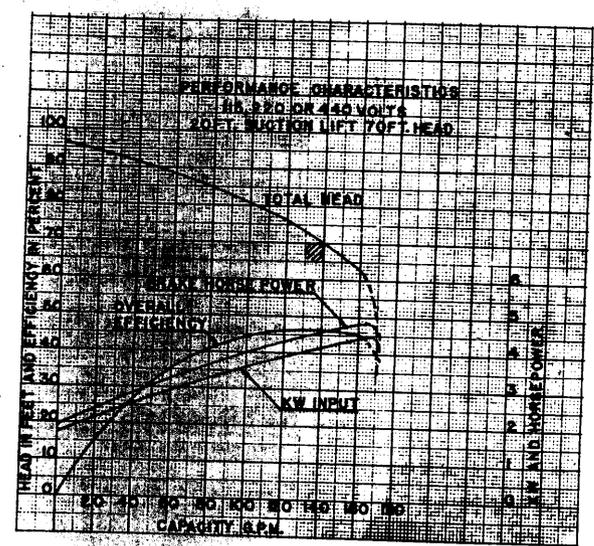
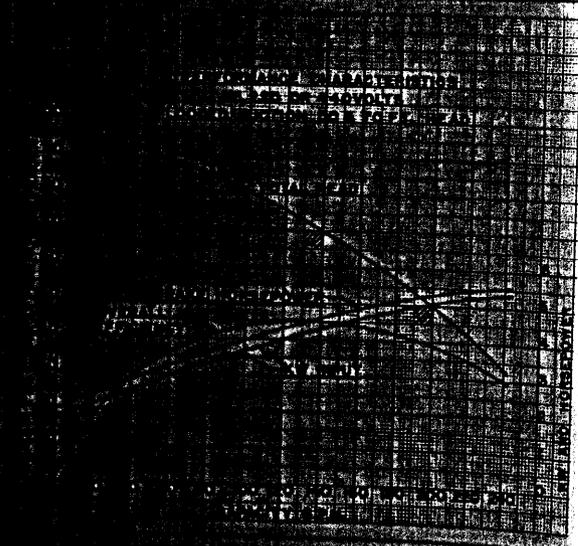


REVISIONS			
REV.	DESCRIPTION	DATE	BY
B	REVISION 117-703		
C	REVISION 117-703		
RECORD CHANGE			
D	SEE E.O.	1/10/60	P.F.
E	SEE E.O.	7/5/60	S.M.
			K.L.S.

STAINLESS STEEL 302 STRANDED STEEL
1/2" PINE



STAINLESS STEEL 302 STRANDED STEEL
1/2" PINE



HYDRAULIC CHARACTERISTICS:
200 GPM AT 60 FEET TOTAL HEAD
140 GPM AT 70 FEET TOTAL HEAD
SHUT-OFF HEAD NOT LESS THAN 90 FEET

VOLTS	NATIONAL STOCK NO.
115	H4320-00-273-0874
220	H4320-00-752-9847
440	H4320-00-368-3186

WEIGHTS:
PUMP AND STAR STRAINER LESS CABLE . 67 LBS.
FOOT VALVE ASSEMBLY 9 3/4 LBS.
SMALL STRAINER 4 LBS.
CABLE 30 FEET 7 1/2 LBS.
CABLE 45 FEET 12 1/2 LBS.
SWITCH 10 1/2 LBS.
REPAIR PARTS & TOOLS (BOXED) 80 LBS.

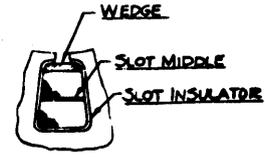
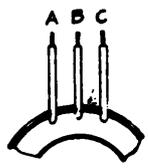
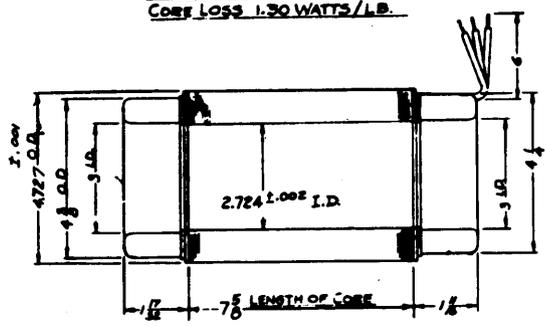
REFERENCE:
FOR DETAIL OF TOOLS USE
NAVSEA NO. F-3,217,682
FOR SECTIONAL ASSEMBLY USE
MFG. DRAWING NO. 576606
NAVSEA NO. 84700-P-3,176,504

FIELD INSTRUCTIONS
PUMP OPERATING INSTRUCTIONS
PUMP OPERATING INSTRUCTIONS
PUMP OPERATING INSTRUCTIONS

PIPES ON OUTLINE DRAWING 84700-P-3,176,504 ARE IDENTICAL
TO THOSE ON OUTLINE DRAWING 84700-P-3,176,506 EXCEPT
THAT THOSE ON 84700-P-3,176,504 HAVE NON-MAGNETIC SWITCH
PARTS LIST.

OUTLINE DRAWING	PROSSER INDUSTRIES INC
OUTLINE CHARACTERISTIC AND REPAIR PARTS LIST FOR A.C. PORTABLE SUSPENSIBLE PUMP	ANAHAM, CALIFORNIA
MODEL 777H (ALUM)	DWG. NO. 576607
SCALE	NAVSEA NO. REV.
	84700 F 3,176,504
	CONT ON SHIT. SHIT. NO.

LAMINATION MATERIAL:
 #24 GA. (0.025) E. EC. SHEET STEEL
 CORE LOSS 1.30 WATTS/L.B.



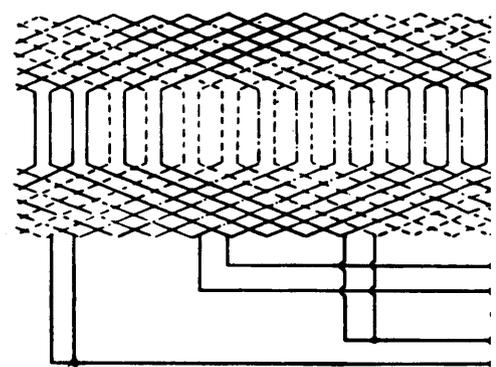
ENLARGED SECTION THROUGH STATOR SLOT

STATOR
 ITEM NO. 34

LAMINATION
 #24 GA
 CORE
 1.000 ±
 TO BE
 CHECKED
 NUMBER OF BAL
 MATERIAL OF I
 MATERIAL OF I

STATOR WINDING DATA			
SERVICE PART NO.	56338	153668	45408
NATIONAL STOCK NO.	926105-00-500-4937	9C6105-00-500-0327	1HLLCF-80963
VOLTAGE	440	220	115
NUMBER OF POLES	2	2	2
TYPE OF CONNECTION	SERIES Y	PARALLEL Y	PARALLEL Y
NUMBER OF SLOTS	24	24	24
NUMBER OF COILS	24	24	24
GROUPING OF COILS	4 COILS PER GROUP	4 COILS PER GROUP	4 COILS PER GROUP
WINDING PITCH IN SLOTS	1 - 11	1 - 11	1 - 11
TURNS IN SERIES PER COIL	16	16	10
CONDUCTOR	2-#21	2-#21	4-#21
CONDUCTOR INSULATION	HEAVY FORMEX	HEAVY FORMEX	HEAVY FORMEX
RESIS. BETWEEN TERM. @ 25° C	4.2 OHMS	1.16 OHMS	.30 OHMS
WEIGHT OF COPPER - POUNDS	4.8 LBS	4.8 LBS	5.3 LBS

STATOR INSULATION MATERIAL		
INSULATION CLASS A AND B		
APPLICATION	MATERIAL	SPECIFICATIONS
SLOT INSULATOR	.016" BONDED FISH PAPER & NICA	MIL-I-606A & NF-I-536
SLOT MIDDLE	.016" EPOXY CTD FIBERGLASS CLOTH	ASTM D-149, HT. ENDURANCE: CL. H
TOP WEDGE	INMANCO#DMDS 20-15-11 (.020 THK)	
INSULATION BETWEEN PHASES	.016" VARNISHED GLASS CLOTH	MIL-I-17205 OR. 0 CL. 1
INSULATION ON COIL EXTENSION	HIGH TEMP GLASS TAPE	MIL-I-15126F, TYPE GFT-AMEND. 2
INSULATION ON COIL LEADS	VARNISHED GLASS SLEEVE	MIL-I-5190 CL. B C-1
VARNISH		JAN-Y-1137, OR. C, B, TYPE H
ASSY BINDER	A2940AA6 GLASS TAPE	



IMPREGNATION & BAKING SPECIFICATIONS

1.0 IMPREGNATION & BAKE

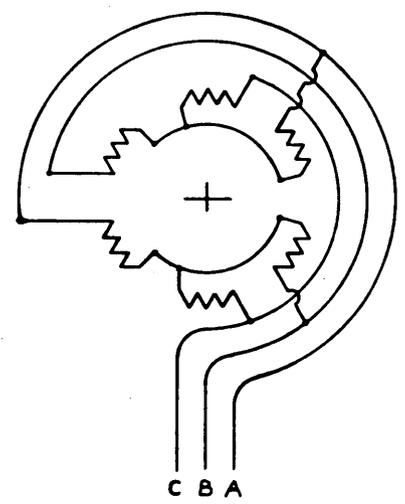
- 1.1 PREHEAT THE STRATOR FOR 30 MINUTES AT 295°F. HEAT RINGS AND PLUGS.
- 1.2 WHILE HOT (150-170°F), IMMERSIVE IN A VERTICAL POSITION IN ISONEL #31 VARNISH. IMMERSIVE SLOWLY AT A RATE OF APPROXIMATELY 12-18 INCHES PER MINUTE. THE UNITS SHOULD BE IMMERSIVE FOR FIVE (5) TO FIFTEEN (15) MINUTES (DETERMINED BY THE CESSATION OF RISING BUBBLES).
- 1.3 REMOVE FROM TANK AND DRAIN FOR THIRTY (30) MINUTES TO ONE (1) HOUR IN A VERTICAL POSITION. DRAINING OF UNITS SHOULD BE DONE IN FREE AIR ABOVE THE TANK OR A DRAINTABLE. INSTALL HOT RINGS AND PLUGS.
- 1.4 FIRST BAKE: BAKE FOR FOUR (4) HOURS AT 295°F IN A VERTICAL POSITION. REMOVE RINGS AND PLUGS WHILE HOT.
- 1.5 COOL TO 150-170°F.
- 1.6 REPEAT DIP AND DRAIN STEPS 1.2 AND 1.3, EXCEPT ALLOW FIVE (5) MINUTES IMMERSION TIME.
- 1.7 SECOND BAKE: BAKE FOR FIVE (5) HOURS AT 295°F, IN A VERTICAL POSITION.
- 1.8 COOL TO 150-170°F.
- 1.9 REPEAT DIP AND DRAIN STEPS 1.2 AND 1.3, EXCEPT ALLOW FIVE (5) MINUTES IMMERSION TIME.
- 1.10 THIRD BAKE: BAKE FOR SIX (6) HOURS AT 295°F, IN A VERTICAL POSITION.

2.0 FINISHING

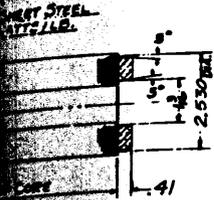
- 2.1 CLEAN LEADS AND END COILS.
- 2.2 PAINT END COILS WITH INSULATING PAINT, PROSSER PART NO. A2959AA.
- 2.3 AIR DRY FOR TWO (2) HOURS MINIMUM.

NOTE:

CHECK VARNISH VISCOSITY AT INTERVALS OF ONE (1) WEEK MINIMUM OR BEFORE EACH DIP, IF DIP INTERVALS EXCEED ONE (1) WEEK.
 RECOMMENDED THINNER: V M & P NAPHTHA #66.
 TO MAINTAIN THE PROPER BALANCE BETWEEN VOLATILE AND NON-VOLATILE CONTENT, EACH TIME THAT THINNER IS ADDED, AN EQUAL AMOUNT OF FRESH VARNISH MUST BE ADDED ALSO.



CONNECTION DIAGRAM FOR 220 & 115 VOLT STATORS
 CCW ROTATION AS VIEWED FROM LEAD END

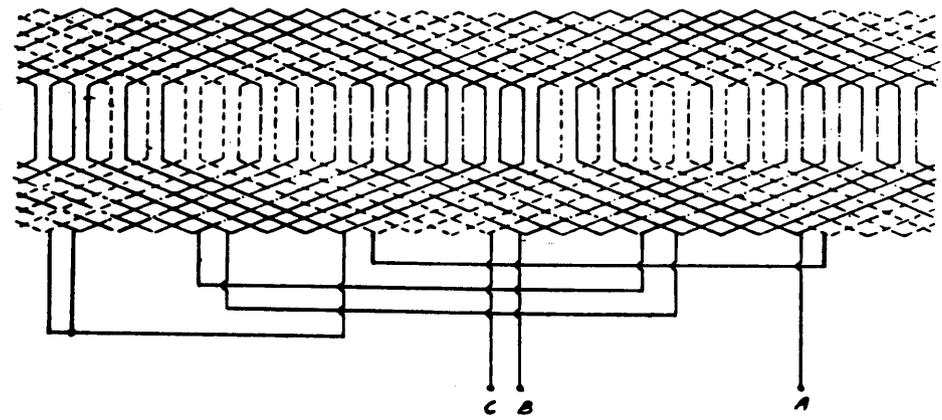


MOTOR
 PART NO. 7770
 SEE ITEM NO. 28

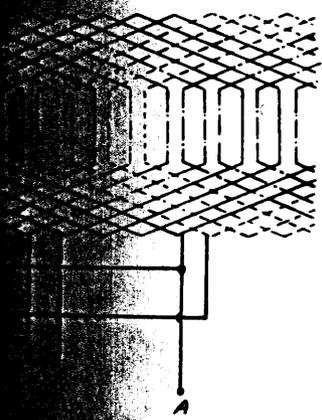
**NOT SERVICED
 SEPARATELY**

29
(DIE CAST)
(DIE CAST)

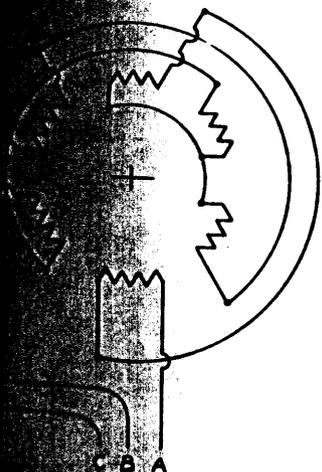
REVISIONS			
REV.	DESCRIPTION	DATE	BY
B	REVISED TO SHOW...		
C	REVISED TO SHOW...		
D	SEE E.O.		R.F.
E	SEE E.O.		S.M.



WINDING DIAGRAM 440 VOLT STATOR



WINDING DIAGRAM 415 VOLT STATOR

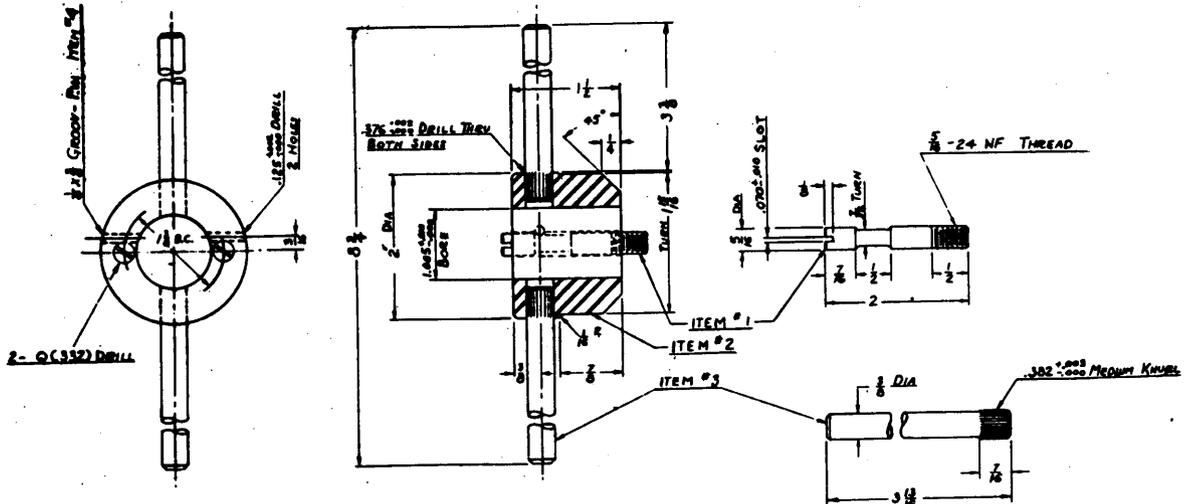


WINDING DIAGRAM FOR 440 VOLT STATOR
 SECTION AS VIEWED FROM LEAD END

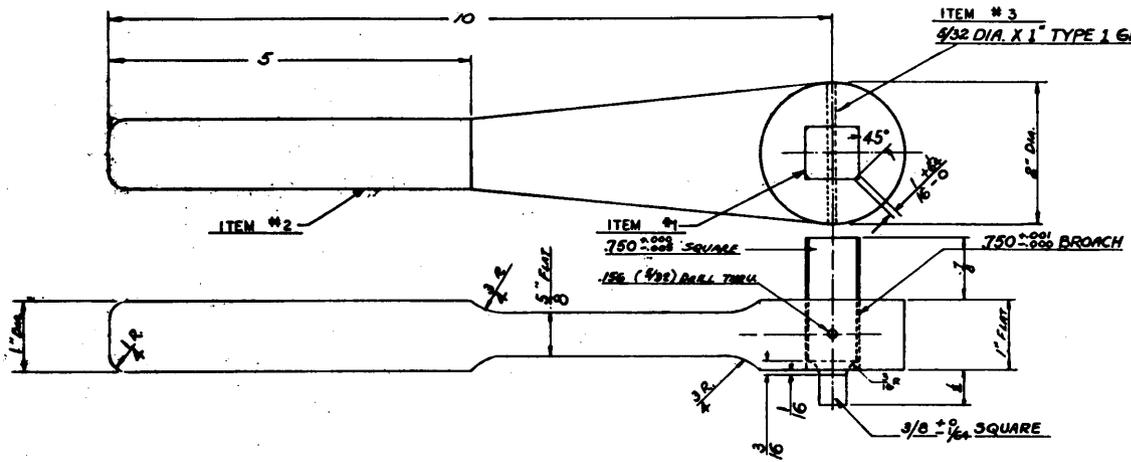
CLASSIFICATION DATA

MFR'S. TYPE: 777H SPEED CLASS: CONSTANT
 ENCLOSURE: SUBMERSIBLE
 DUTY: CONTINUOUS IDLING IN AIR: CONTINUOUS
 RATED H.P.: 5 RATED RPM: 3450 CYCLE 60 PH. 3
 DESIGN: A. C. INDUCTION TYPE ROTOR: SQUIRREL CAGE
 INSULATION: CLASS A & B NAVY SERVICE A
 AMBIENT TEMP.: 40 C (AIR) 30 C (WATER)
 VOLTAGE 440 220 115
 FULL LOAD AMPS. 9.0 15 30
 LOCK. ROTOR AMPS. 30 60 120
 START. LOAD AMPS. 15 30 60
 FULL LOAD P. F. % 87 87 87

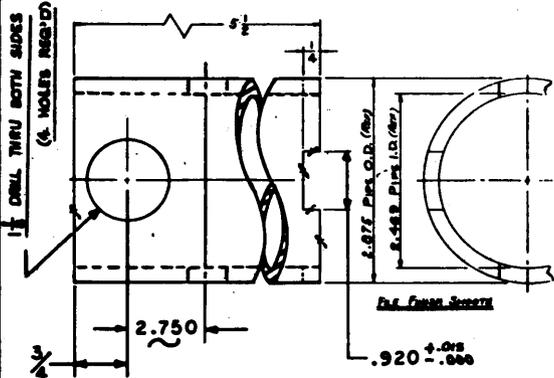
DATE	APPROVED	SCALE	WT.	REV.	CONT ON SHY.	SHY. NO.
MASTER DRAWING MOTOR WINDING DIAGRAM AND DATA FOR A.C. PORTABLE SUBMERSIBLE PUMP MODELS 777D, H ALUM & BRONZE			PROSSER INDUSTRIES INC. ANAHEIM, CALIFORNIA DWG. NO. 576906 NAVSEA NO.			
			F	3,175,593	E	



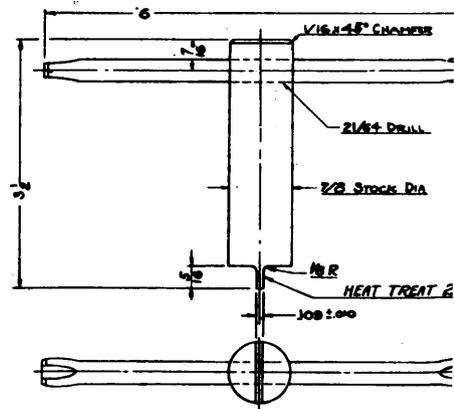
SHAFT HOLDING FIXTURE (NON-MAGNET)
 ITEM NO. 3 SERVICE PART NO. 1570
 NATIONAL STOCK NO. 9C4320-00-4
 MATERIAL - ITEMS 1, 2 & 3 EVERDUR
 ITEM NO. 4 303 STAINLESS



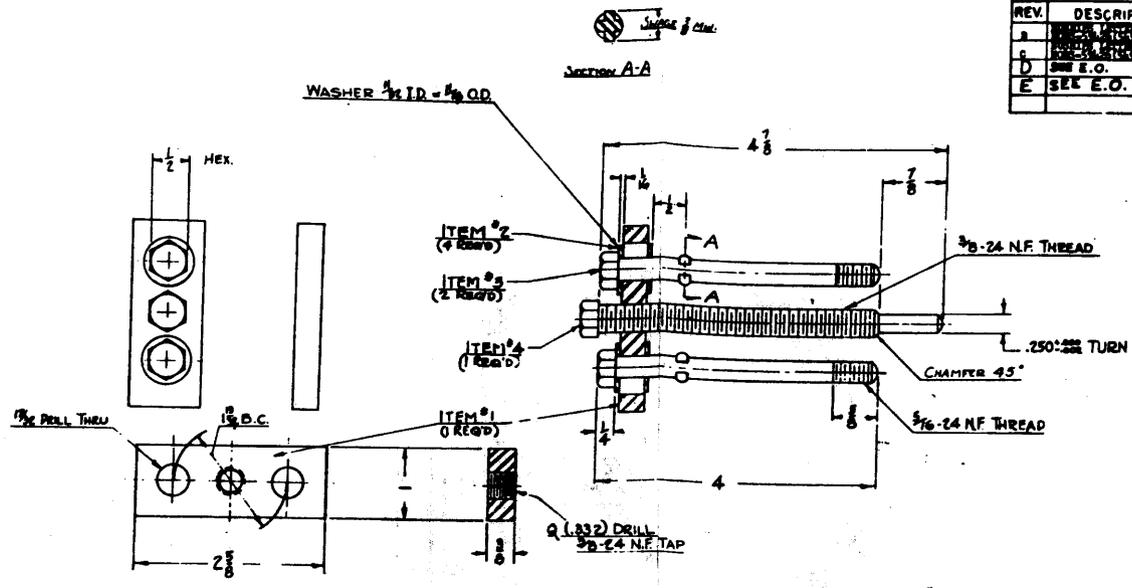
WEDGE (NON-MAGNETIC)
 ITEM NO. 5 SERVICE PART NO. 5686AB
 NATIONAL STOCK NO. 9Q5120-00-221-795
 MATERIAL - ITEMS 1 & 3 18-8 CRES
 ITEM 2 ALUMINUM 356T6



BALL PINNED BALL RETAINER WEDGE (NON-MAGNETIC)
 ITEM NO. 1 SERVICE PART NO. 1487AB
 NATIONAL STOCK NO. 9Q5120-00-488-0918
 MATERIAL - 18-8 CRES

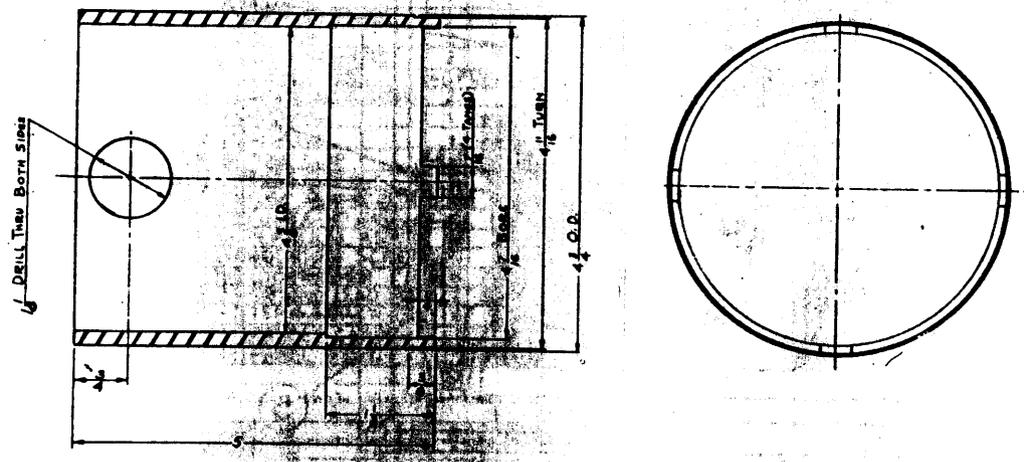


REVISIONS			
REV.	DESCRIPTION	DATE	BY
A	SEE E.O.		
B	SEE E.O.		
C	SEE E.O.		
D	SEE E.O.	7-20-61	J.M.
E	SEE E.O.		J.M.



0918
1/2 HARD
STEEL

RUNNER & SPLASHER FILLER (NON-MAGNETIC)
ITEM NO. 4 SERVICE PART NO. 15703AB
NATIONAL STOCK NO. IHS0000-LL-CE2-9845
MATERIAL - EVERDRUM NO. 1012 1/2 HARD



MOTOR RETAINING WRENCH (NON-MAGNETIC)
ITEM NO. 2 SERVICE PART NO. 15701AB
NATIONAL STOCK NO. 9G5120-00-468-0917
MATERIAL - MARIANNE BRONZE

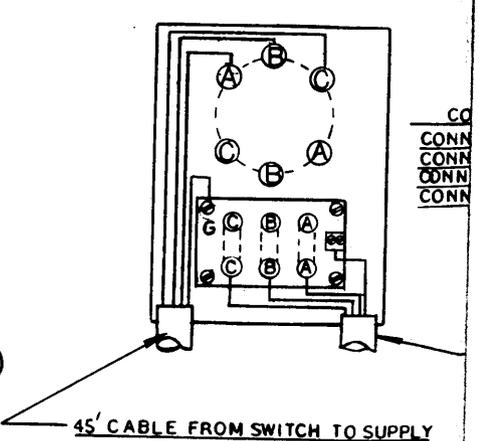
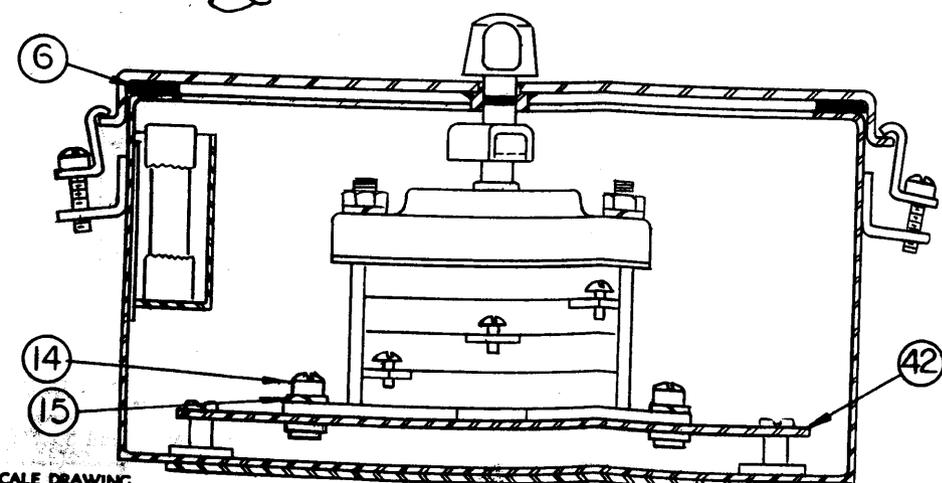
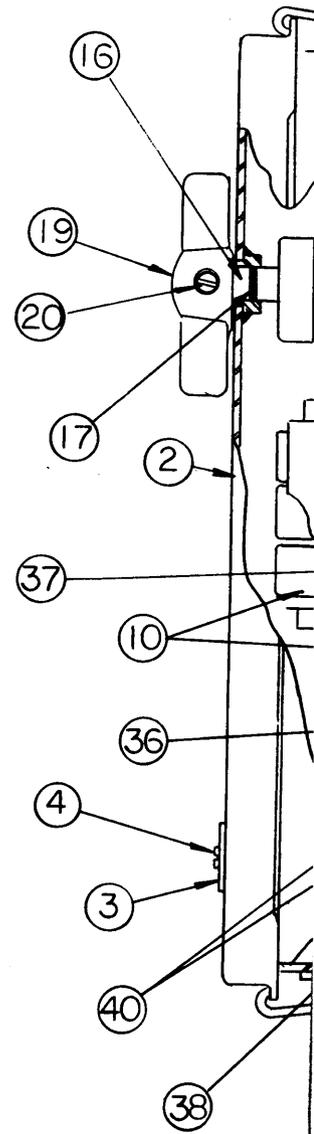
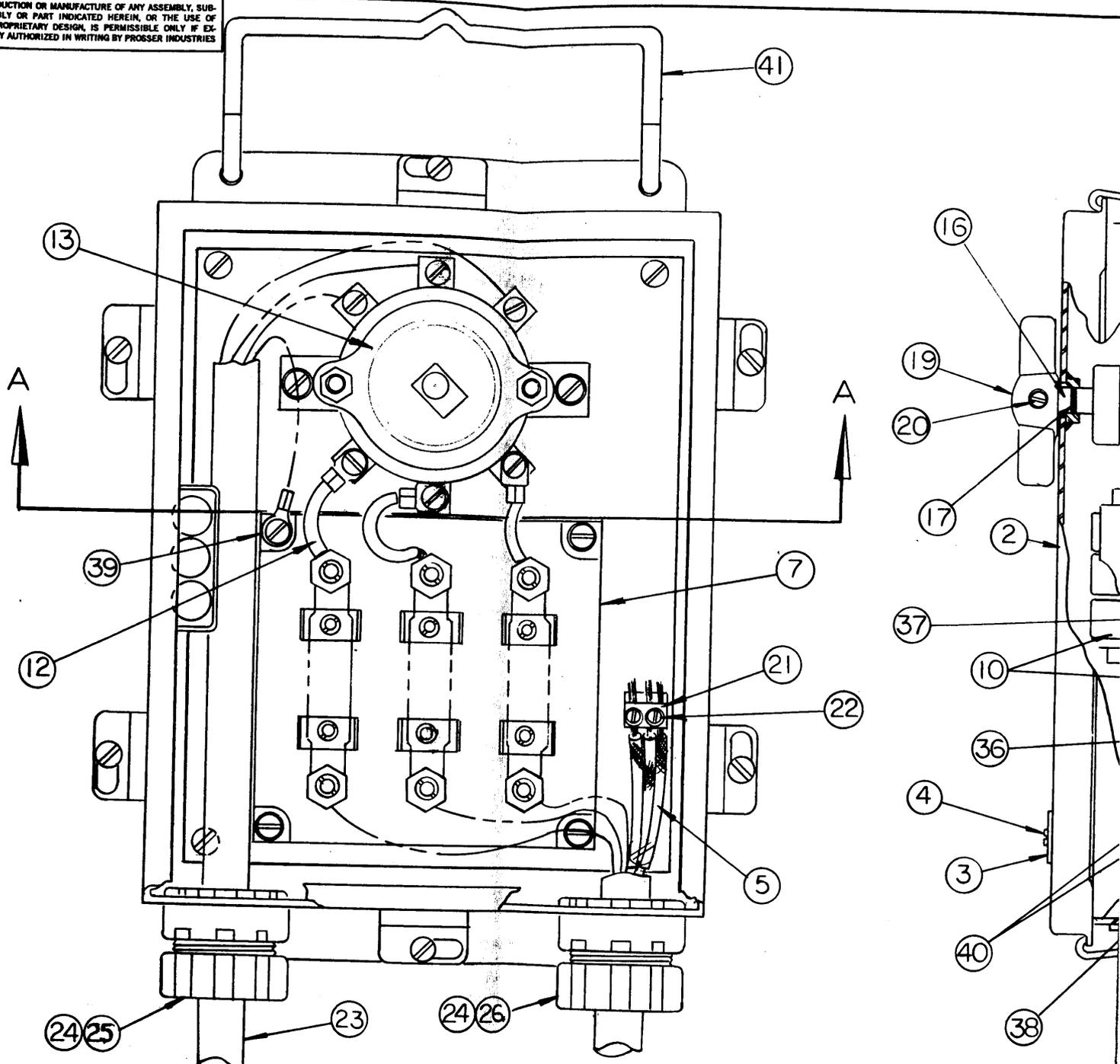
SWAGE ENDS TO
PREVENT REMOVAL

75 BRINELL

RUNNER RETAINER & LOCK SCREW WRENCH (NON-MAGNETIC)
ITEM NO. 6 SERVICE PART NO. 23600AB
NATIONAL STOCK NO. 9G5120-00-468-0920
MATERIAL - 18-8 STAINLESS STEEL

DATE APPR. DATE SCALE	MASTER DRAWING MISCELLANEOUS DETAILS OF TOOLS FOR A.C. & D.C. PORTABLE SUBMERSIBLE PUMP MODELS 777R & D MODELS 882H & A ALUM & BRONZE	PROBER INDUSTRIES INC. ANAHEIM, CALIFORNIA DWS. NO. 576825 NAVSEA NO. F 3217,862 REV. E
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REPRODUCTION OR MANUFACTURE OF ANY ASSEMBLY, SUB-ASSEMBLY OR PART INDICATED HEREIN, OR THE USE OF THIS PROPRIETARY DESIGN, IS PERMISSIBLE ONLY IF EXPRESSLY AUTHORIZED IN WRITING BY PROSSER INDUSTRIES



1. DO NOT SCALE DRAWING
 NOTIS: UNLESS OTHERWISE SPECIFIED.

SECTION A-A

REVISIONS

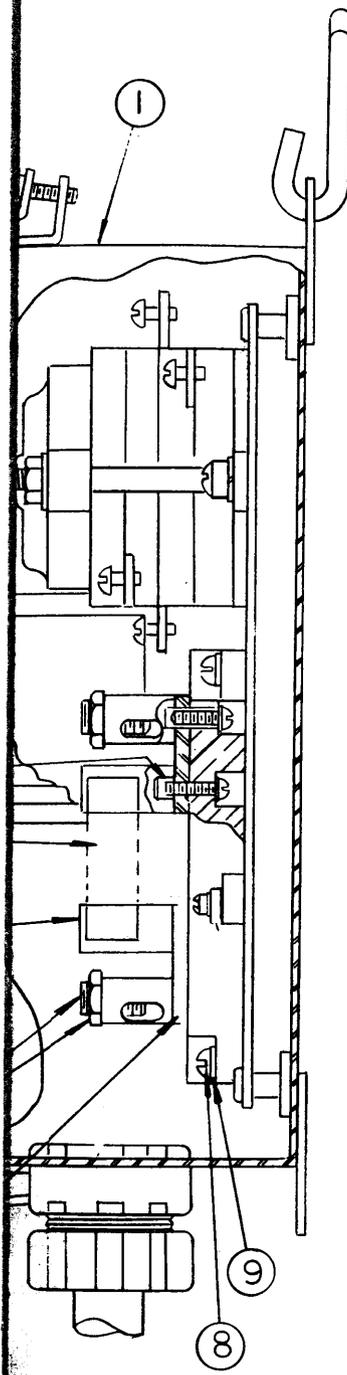
LTR	DESCRIPTION	DATE	APPROVED
J	SEE E.O.	9-2-85	WLS.

*ITEMS ALSO SUPPLIED AS REPAIR PARTS

NO.	NAME	REQ.	MATERIAL	SPECIFICATION	SERVICE PART	NAVSEA DWG. NO.	REMARKS
1	BOX ASSY.	1	STAIN STEEL	AISI 302	83681		
2	COVER ASSY.	1	STAIN STEEL	AISI 302	83680		
3	NAME PLATE	1	BRASS	COML 20GA.032	566154-1		CADMIUM PLATE (UNDERSIDE)
4	SCREW	2	STAIN STEEL	18-8 COML.	A10632PHT3		6-32 NC-2X 3/16 RD. HD.
5	SLEEVING	A/R	FIBERGLASS		A 3551DGG		ACRYLIC COATED .166 I.D.
6	GASKET	1	SOLID NEOPRENE	COMMERCIAL	83683		
7	FUSE BASE	1	GLS MELAMINE	MIL P15037A(GM)	45655AA		
8	SCREW	4	STAIN STEEL	18-8 COML	A11024RHT10		10-24 NC-2X 5/8 RD. HD
9	LOCKWASHER	4	PHOS. BRONZE	COMMERCIAL	A1553AC		10 INTERNAL SHAKEPROOF (CAD)
10	FUSE TRON/220V		COMMERCIAL		SEE BELOW	9000-56202-73691-5	
	" 440V		COMMERCIAL	TYPE F61	SEE BELOW	9000-56202-73691	
	" 115V		COMMERCIAL		SEE BELOW		
12	LEAD WIRE ASSY.	3	TINNED COPPER	COMMERCIAL	73810SB-1		TYPE TW #10AWG. 600V SERVICE
13	ROTARY SWITCH ASSY	1		COMMERCIAL	83681AB		
14	SCREW	2	STAIN STEEL	18-8 COML	A11420PHT7		1/4-20 NC-2X 7/16 FIL. HD.
15	LOCKWASHER	2	PHOS. BRONZE	COMMERCIAL	A1441AC	9000-56202-73691-8	CAD PLATE
16	CONN. SHAFT ASSY.	1	NICKEL-COPP.	QQ-N-291	83670AA	9000-56202-74089-150	
17	O-RING SEAL	1	NITRILE	MIL-P-3516	MS28775-O10		
19	HANDLE, SWITCH	1	BRASS	MIL-B-17680	A1108AA	9000-56202-74089-193	
20	SCREW	1	BRASS	COMMERCIAL	A10832RHBB		6-32 NC-2X 1/2 RD. HD.
21	GROUND PLATE	1	STAIN STEEL	AISI 302	83683AB		
22	SCREW	2	STAIN STEEL	18-8 COML	A10832PHT5		8-32 NC-2X 5/16 FIL. HD.
22A	LOCKWASHERS	2	PHOS. BRONZE		A2579		8 INTERNAL SHAKEPROOF (CAD)
23	CABLE ASSY.	45 FT	FHOF-9	MIL-C-915	83630AA		
24	STUFFING ASSY(4T)	2		MIL-S-19622/1	33249AB		
25	PACKING	1	NEOPRENE		33250AB		MIL-S-19622/19-0005
26	PACKING	1	NEOPRENE		33251AB		MIL-S-19622/19-0004
36	FUSE CLIP	6	STEEL	MIL-F-21346/1D	A1317AB		FC 21DF, COPPER CLAD.
37	FUSE CLIP NUT	6	BRASS 1/2 HARD	COMMERCIAL	33253AB	95-4296-153	
37A	FUSE CLIP SCREW	6	BRASS	COMMERCIAL	A10832RH810		8-32 NC-2X 5/8 RD. HD.
37B	FUSE CLIP WASH	6	PHOS. BRONZ.	COMMERCIAL	A2579		8 INTERNAL SHAKEPROOF (CAD)
38	TERMINAL ASSY.	6	BRASS	COMMERCIAL	83665AA	9000-56202-73055-421	
38A	MOUNTING SCREW	6	BRASS	COMMERCIAL	A11024RHBB		10-24 NC-2X 1/2 RD. HD.
38B	LOCKWASHER	6	PHOS. BRONZE	COMMERCIAL	A1553AC		10 INTERNAL SHAKEPROOF (CAD)
39	GROUND LEAD TERM. E	1	SOFT COPPER	COMMERCIAL	A2926AA3	9-5-1841-13712-10WIRE #10 STUD T48 STAKO1	
40	TERM. SCREW ASSY	6	BRASS	COMMERCIAL	83651AA	9000-56202-73055-221	
41	HANDLE CARRYING	1	STAIN STEEL	AISI 302	83686		
42	PANEL ASSY.	1	STAIN STEEL	AISI 302	83684		

SWITCH ASSY.	VOLTS	ITEM NO. 10	QTY. REQD.
576122-10	115V	A4053AA30	6
576122-20	220V	A4053AA20	6
576122-40	440V	A4054AA15	6

576122 J



CONNECTION DIAGRAM
 1. BLACK CONDUCTOR TO (A)
 2. WHITE CONDUCTOR TO (B)
 3. RED CONDUCTOR TO (C)
 4. GREEN CONDUCTOR TO GROUND

30' CABLE FROM PUMP TO SWITCH (3 CONDUCTOR, 3 TENSION MEMBERS TO GROUND.)

CONTROL SWITCH IN ACCORDANCE WITH NAVSEA STANDARD DRAWING 815-11970-03

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT	MATERIAL	SPECIFICATION
	576122-10		MOTOR START SWITCH 115V			
	576122-20		MOTOR START SWITCH 220V			
	576122-40		MOTOR START SWITCH 440V			

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED ALL FILLET RADII .030 BREAK ALL EDGES .005/015		CONTRACT NO.		PROSSER INDUSTRIES 900 EAST BALL ROAD ANAHEIM, CALIF. 92808	
TOLERANCES X ± .1 XX ± .05 XXX ± .010 ANGULARITY ± 0°30'	ALL MACHINED SURFACES 125/	HEAT TREAT	CHIEF ENGINEER <i>[Signature]</i>	PROJECT ENGINEER <i>[Signature]</i>	MFG ENGINEER <i>[Signature]</i>
PROTECTIVE FINISH			CHECKED C. CARTER	SCALE W.V.S.	MOTOR STARTING SWITCH ROTARY TYPE WITH FUSETRON 30 AMP 500 VOLTS A.C. SYMBOL 817.1
DASH NO.		NEXT ASSY	FINAL ASSY	NEXT ASSY	FINAL ASSY
APPLICATION		QTY REQD		SIZE	CODE IDENT NO.
				D 12439	576122
				SCALE	WEIGHT
				SHEET	OF

REPAIR PARTY MANUAL ANNEX ELECTRICAL SUBMERSIBLE PUMP OPERATIONS

Background: To provide standard procedures for complete rigging and operation of the electrical submersible pump. Due to limited use of the ESP by repair party and emergency personnel, procedures must be established to ensure safe operations and basic guidance for use.

Scope: To ensure proper and safe rigging and operation of the Electrical Submersible pump during dewatering evolutions by Repair Party personnel

RIGGING ESP

1. Repair Locker Officer will identify conditions for using a ESP for dewatering
 - Clean water, no oil, fuel or contaminants

2. Dewatering team members will lay out 440v electrical cable and handling line for electrical cable and handling line inspection, by Repair Electrician
 - If 440v extension cable is to used, then members will lay out extension cable for inspection by Repair Electrician

3. Repair Electrician will inspect 440v outlet and power available
 - If extension is required, Repair Electrician will plug 440v extension cable into 440v outlet and lay cable for connection to nearest point for final connection to ESP cable.
 - Repair electrician will energize 440v power to extension cable and verify power available at extension cable box. **(word will be passed: "STAND BY WHILE ENERGIZING 440V POWER CABLE")**

4. Repair Electrician will inspect ESP, power switchbox and plug prior to connection to 440v extension cable box. **(440V EXTENSION IS ENERGIZED TO THE CONNECTION BOX)**
 - Repair Electrician will verify that ESP power switch is in the OFF position prior to making final connection to extension cable box.

5. Upon the Scene leaders' direction and verification of ESP setup. The word will be passed ("**STAND BY WHILE ENERGIZING ESP**")
 - Repair Electrician will make final connection to extension cable box
 - Repair Electrician will operate power switch to energize ESP
 - Scene Leader will verify pump operation.

SECURING ESP OPERATIONS

1. Scene Leader will make determination to secure dewatering operations.
 - Repair Electrician will secure ESP by operating power switch.
 - Repair Electrician will secure power at 440v outlet
 - Repair Electrician will verify 440v power is secured.