

OPERATING INSTRUCTIONS

THE PUMP: This pump is a totally enclosed, submersible dewatering unit. It is powered by a 1/3 HP, 12 volt DC motor. Battery clips on the power cord allow easy connection to any 12 volt vehicle battery.

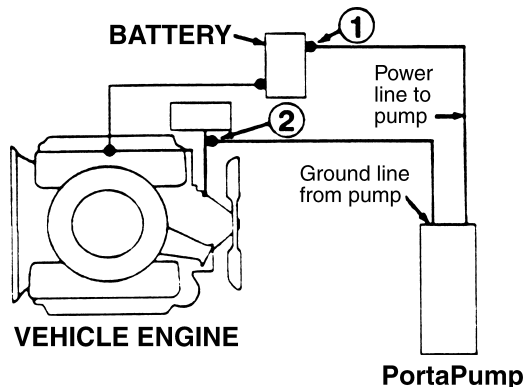
SWITCHING: The on-off switch is located in the enclosed pump-motor assembly. It is activated by a gentle tug of the power cord. It can be operated by a slight upward tug anywhere along the cable, making it convenient for switching from above ground or in a manhole. There is no external indication of whether the switch is in the "on" or "off" position.

CONNECTING TO BATTERY: When connecting the clips to a battery, arcing is eliminated by a relay in the Safety Interlock circuit.

Check vehicle Owner's Manual to determine if the vehicle has a negative ground system or a positive ground system. Then:

1) Connect either cable from the pump to the positive (+) terminal on negative ground systems or the negative (-) terminal on positive ground systems. **Important:** make sure the vehicle and the pump are not in contact during connection.

2) Connect the other cable from the pump to ground: preferably on the vehicle's engine to a solid, metallic, stationary point. The connection should be at least 18 inches (480mm) from the battery.



AS AN ADDITIONAL SAFEGUARD: The Safety Interlock circuit eliminates arcing when the cable is connected to the battery. A relay will close the circuit **only** after the switch goes through an off-on sequence, in that order. If the pull switch has been left on the "on" position, because the pump was stopped after its last operation by disconnecting the battery clips (without using the switch), the cable must be pulled twice to start the pump. This moves the switch first to the "off" position and then to the "on" position. The circuit closes and the pump starts. If the pump was previously stopped correctly, only one pull is required to start it.

HOSE: Since the pump develops relatively low pressure, it is recommended that non-collapsible hose be used for maximum pumping rates.

HOISTING & LOWERING: An eye at the top of the unit is provided for attaching a line for hoisting or lowering. **Do not use power cable for handling unit.**

TO OPERATE: Lower unit into liquid to be pumped and activate switch. Pump can be run for a few minutes without liquid, however, **do not run completely dry for extended periods.** Damage to shaft seal may result.

RUNNING TIME: This unit draws about 30 amperes and can be operated about 45 minutes on a fully charged 55 AMP-hour battery and still permit starting of vehicle under normal conditions. Caution should be used when running time exceeds 30 or 40 minutes without engine running to recharge battery, particularly in cold weather when battery efficiency is lowered. Battery size (AMP-hour rating) and



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the use of other accessories such as lights and radios, etc., must be taken into consideration for practical running periods without engine running.

OVERLOAD PROTECTION is provided by means of a 40 amp automatic reset circuit breaker, located under top cover.

TROUBLE SHOOTING

NOTE: Most common cause of failure to run is due to hardened mud and sand at impeller. Remove strainer to check.

MOTOR WILL NOT RUN:

1. Poor connection at battery.
2. Impeller locked with foreign material.
3. Insufficient impeller clearance.
4. Damaged power cable or loose connection internally in motor assembly.
5. Bad switch, solenoid or circuit breaker. Connect power leads direct to motor leads to check.
6. Worn motor brushes or out of position to make contact with armature.

PERFORMANCE LOW:

1. Strainer screen partially plugged.
2. Impeller rubbing. Check freeness of rotation with screwdriver inserted through hole in base plated into slotted end of shaft.
3. Battery not fully charged.
4. Discharge restriction such as kinked hose or excessive discharge head.

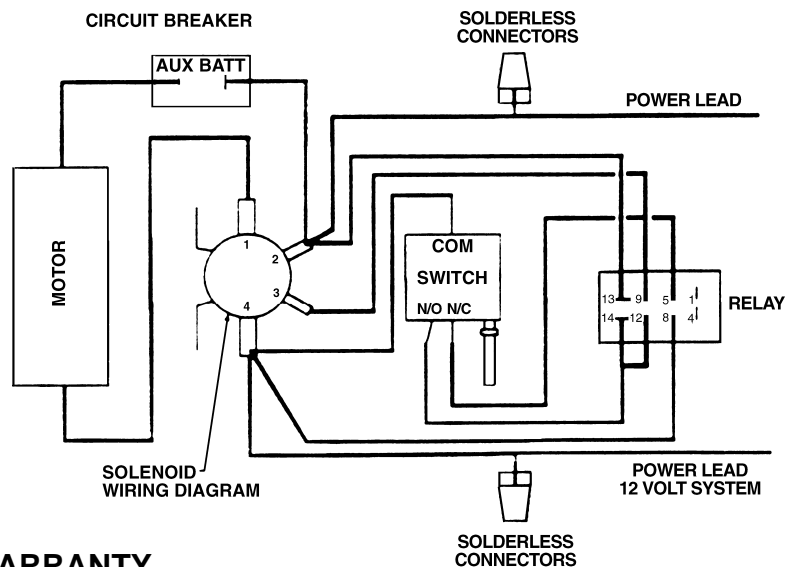
SERVICE AND REPAIR INSTRUCTION

DISASSEMBLY: Impeller and shaft seal can be inspected and serviced from lower end of pump by removal of 4 capscrews securing base plate, strainer screen, and suction cover. Screwdriver slot is provided in end of motor shaft to turn shaft while holding impeller for removal. This permits removal of impeller without disassembly of upper motor housing to hold motor shaft.

To service motor and switch components, remove 4 hex nuts and bump top cover free from housing tube. Raise sufficiently to disconnect switch leads and power cable connections. Slide housing tube up from pump casing and motor will be exposed for service or removal.

IMPORTANT: Make certain that wire leads are installed per diagram below. Incorrect wiring can ruin small switch in cover when connected to battery.

Install top cover as indicated by arrow and instruction on top of cover.



WARRANTY

This unit is guaranteed for a period of 5 years against defective material and workmanship.

NOTE
Should unit not operate, always check freeness of rotation of impeller by inserting screwdriver through hole in base plate into slot in end of shaft.

IMPORTANT
Make certain that wire leads are installed per diagram below. Incorrect wiring can ruin small switch in cover when connected to battery.

ITEM NO.	PART NUMBER	DESCRIPTION	TOTAL RQD.
1	005-002-115	Actuator	1
2	390-001-365	Grommet	1
3	200-007-000	Clamp, Cable	1
4	150-008-000	Cable Assembly	1
5	116-001-330	Bracket Assembly	1
6	770-006-336	Spacer	1
7	780-006-115	Spring	1
8	005-003-115	Actuator	1
9	730-012-120	Shaft	1
10	901-009-115	Washer, Flat	2
11	560-023-360	O-Ring	1
12	706-008-162	Screw, Machine	2
13	545-011-162	Hex Nut	2
14	900-009-330	Lock Washer	2
15	710-004-330	Screw, Self-Tapping	3
16	903-001-330	Star Washer	2
17	765-001-000	Solenoid	1
18	258-008-155	Cover, Motor	1
19	825-002-000	Switch, Unimax	1
20	706-005-330	Screw, Machine	2
21	545-005-330	Hex Nut	1
22	321-001-330	Eye Bolt	1
23	405-001-000	Handle	1
24	706-006-330	Screw, Machine	2
25	543-001-162	Nut, Gland	2
26	770-007-162	Spacer, Gland	2
27	675-016-360	Ring, Sealing	2
28	545-004-330	Hex Nut	4
29	900-004-330	Lock Washer	4
30**	807-011-330	Stud	4
31	270-001-000	Circuit Breaker	1
32	535-005 000	Name Plate (not shown)	1
33	170-028-330	Capscrew, Hex Head	4
34	900-001-330	Lock Washer	8
35	360-001-440	Gasket, Casing	5
36	170-003-115	Capscrew, Hex Head	4
37	444-001-010	Impeller	1
38	740-001-115	Shim	As. Req.*
39	258-001-155	Cover, Suction	1
40	612-001-156	Plate, Strainer	1
41	700-001-330	Screen, Strainer	1
42	181-001-000	Casing, Volute	1
43	560-022-360	O-Ring	2
44	720-005-000	Seal	1
45**	860-011-150	Tube, Casing	1

Repair Parts shown in **bold face (darker)** type are more likely to need replacement after extended periods of normal use. They are readily available from most Warren Rupp distributors. The pump owner may prefer to maintain a limited inventory of these parts in his own stock to reduce repair downtime to a minimum.

IMPORTANT: When ordering repair parts always furnish pump model number, serial number and type number.

MATERIAL CODES
The Last 3 Digits of Part Number

- 000...Assembly, sub-assembly; and some purchased Items
- 010...Cast Iron
- 012...Powered Metal
- 015...Ductile Iron
- 020...Ferritic Malleable Iron
- 025...Music Wire
- 080...CarbonSteel AISI B-1112
- 100...Alloy 20
- 110... Alloy Type 316 Stainless Steel
- 111... Alloy Type 316 Stainless Steel (Electro Polished)
- 112... Alloy "C"
- 113... Alloy Type 316 Stainless Steel (Hand Polished)
- 114...303 Stainless Steel
- 115...302/304 Stainless Steel
- 117...440-C Stainless Steel (Martensitic)
- 120...416 Stainless Steel (Wrought Martensitic)
- 123...410 Stainless Steel (Wrought Martensitic)
- 148...Hardcoat Anodized Aluminum
- 149...2024-T4 Aluminum
- 150...6061-T6 Aluminum
- 151...6063-T6 Aluminum
- 152...2024-T4 Aluminum (2023-T351)
- 154...Almag 35 Aluminum
- 155 or 156...356-T6 Aluminum
- 157...Die Cast Aluminum Alloy #380
- 158...Aluminum Alloy SR-319
- 159...Anodized Aluminum
- 162...Brass, Yellow, Screw Machine Stock
- 165...Cast Bronze, 85-5-5-5
- 166...Bronze SAE 660
- 170...Bronze, Bearing Type, Oil Impregnated
- 180...Copper Alloy
- 310...Kynar Coated
- 330...Zinc Plated Steel
- 331...Chrome Plated Steel
- 332...Electroless Nickel Plated
- 335...Galvanized Steel
- 336...Zinc Plated Yellow Brass
- 337...Silver Plated Steel
- 340...Nickel Plated
- 342...Filled Nylon
- 354...Injection Molded #203-40 Santoprene - Duro 40D ± 5; Color: RED
- 355...Thermoplastic Elastomer
- 356...Hytrell
- 357...Rupplon (Urethane Rubber) Color coded: PURPLE
- 358...Rupplon (Urethane Rubber) Color coded: PURPLE (Some Applications, Compression Mold)
- 359...Urethane Rubber
- 360...Buna-N Rubber Color coded: RED
- 361...Buna-N
- 363...Viton (Fluorel) Color coded: YELLOW
- 364...E.P.D.M. Rubber Color coded: BLUE
- 365...Neoprene Rubber Color coded: GREEN
- 366...Nitrile, USDA Approved
- 368...EPDM, USDA Approved

* Typically 7

** Items 30 & 45 available as a kit #475-132-000

List continued next page

ITEM NO.	PART NUMBER	DESCRIPTION	TOTAL RQD.
46	525-004-000	Motor	1
46-1	7004100001	Stator	1
46-2	7004292004	Armature	1
46-3	7004104007	Motor Housing (lower)	1
46-4	7076708006	Motor Housing (upper)	1
46-5	7002406003	Brush Holder Assembly	1
46-6	6230170030	Spring Washer	1
46-7	7026471001	Brush	2
46-8	6310432001	Ball Bearing (upper)	1
46-9	6310432031	Ball Bearing (lower)	1
47	210-001-000	Clip, Battery	2
48	200-003-000	Clamp, Cable	1
49	706-007-330	Screw, Machine	1
51	660-001-000	Relay, Electric	1
52	033-002-000	Wire Assembly	1
53	840-001-000	Tie Wrap	2
54	840-002-000	Tie Wrap Base	1
55	900-008-330	Lock Washer, I-E-T	3
56	150-011-000	Power Cable Assembly Complete	1
57	900-002-330	Washer, Lock	1

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MATERIAL CODES
The Last 3 Digits of Part Number

Continued from previous page

- 370...Butyl Rubber Color coded: BROWN
- 371...Phlithane (Tuftane)
- 375...Fluorinated Nitrile
- 378...High density Polypropylene
- 405...Cellulose Fibre
- 408...Cork and Neoprene
- 425...Compressed Fibre
- 426...Blue Gard
- 440...Vegetable Fibre
- 465...Fibre
- 500...Delrin 500
- 501...Delrin 570
- 505...Acrylic Resin Plastic
- 520...Injection Molded PVDF Natural Color
- 540...Nylon
- 541...Nylon
- 542...Nylon
- 544...Nylon Injection Molded
- 550...Polyethylene
- 551...Polypropylene
- 552...Unfilled Polypropylene
- 553...Unfilled Polypropylene
- 555...Polyvinyl Chloride
- 570...Rulon II
- 580...Ryton
- 590...Valox
- 591...Nylatron G-S
- 592...Nylatron NSB
- 600...Virgin PTFE Tetrafluoroethylene (TFE)
- 601...Virgin PTFE (Bronze and moly filled)
- 602...Filled Virgin PTFE
- 603...Blue Gylon
- 604...Virgin PTFE
- 606...Virgin PTFE
- 610...Virgin PTFE Encapsulated Silicon
- 611...Virgin PTFE Encapsulated Viton

Delrin, Viton and Hytrel are registered tradenames of E.I. DuPont.

Gylon is a registered tradename of Garlock. Inc.

Nylatron is a registered tradename of Polymer Corp.

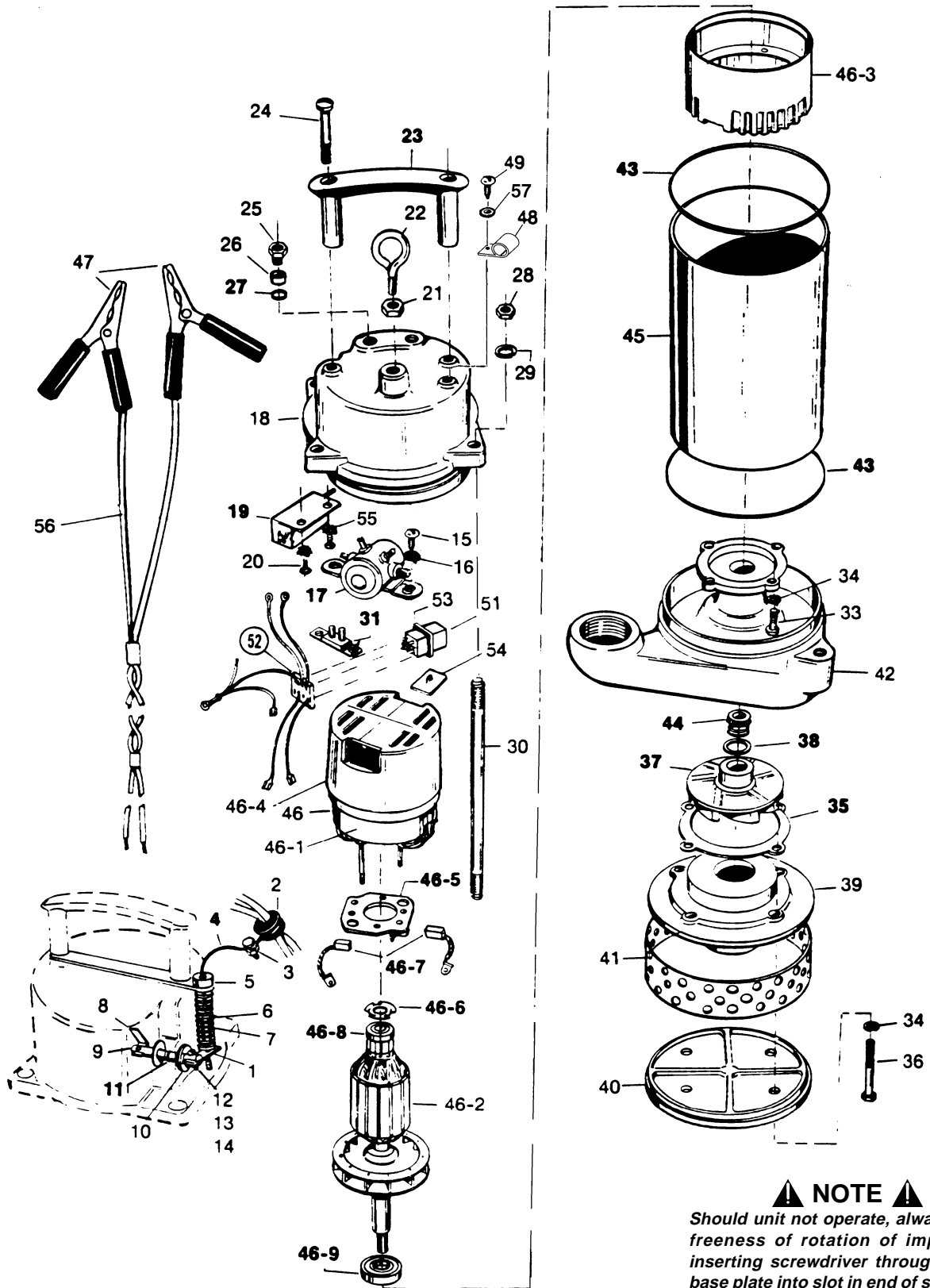
Rulon II is a registered tradename of Dixon Industries Corporation.

Hastelloy-C is a registered tradename of Cabot Corp.

Ryton is a registered tradename of Phillips Chemical Company.

Valox is a registered tradename of General Electric Company.

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▲ NOTE ▲

Should unit not operate, always check freeness of rotation of impeller by inserting screwdriver through hole in base plate into slot in end of shaft.

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