

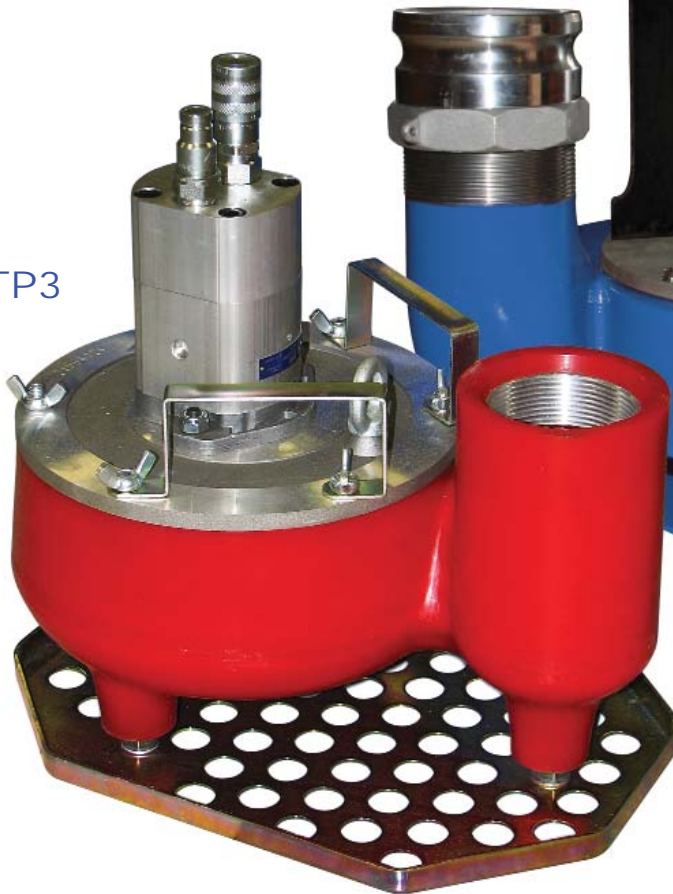
OPERATORS' GUIDE

REL-TP SERIES

HYDRAULIC TRASH PUMPS

The REL-TP SERIES Trash Pumps are a light weight, efficient way to move large quantities of liquids *FAST*.

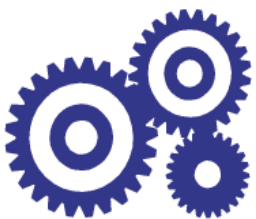
REL-TP3



REL-TP4

NOTICE

Sizes, weights and specifications listed in this manual are subject to change without notice. Please consult factory for information and updates.



RELIABLE EQUIPMENT & SERVICE CO., INC.



All information found in this guide must be read and understood before use or testing of tool.

Failure to read and understand warnings and safe handling instructions could result in severe personal injury and or death.

A digital copy of this manual is available on line at www.Reliable-Equip.com



THIS SYMBOL INDICATES ITEMS OF EXTREME IMPORTANCE.

Obey all safety messages that follow this symbol to avoid possible injury or death. Safety of user and others may be in jeopardy if these instructions are not read and understood.



This Safety Alert and Signal Word indicate a imminently hazardous situation which if not avoided, will result in death or serious injury.



This Safety Alert and signal word indicate a imminently hazardous situation which if not avoided, could result in minor or moderate injury.



This Safety Alert and signal word indicate a imminently hazardous situation which if not avoided, may result in minor or moderate injury.



This Signal word indicate a imminently hazardous situation which if not avoided, may result in Property Damage.



This Signal Word indicate a imminently hazardous situation which if not avoided, will result in Damage to the Equipment.



This Signal word indicate a imminently hazardous situation which if not avoided, may result in Damage to the Equipment.

Always observe these warnings to avoid tool damage, serious injury or death.



WARNING

The information in this manual is intended to guide the user in the use and application of this tool. It is not intended as a substitute for proper training and experience in safe work practices for this type of equipment.

Consult your supervisor or safety personnel if you have any questions regarding the safe operation of this tool.

TABLE OF CONTENTS

DISTRIBUTOR INFORMATION	2
TABLE OF CONTENTS	3
REGISTRATION	3
REL-TP3 TOOL SPECIFICATIONS	4
REL-TP4 TOOL SPECIFICATIONS	5
PUMP PERFORMANCE	6
SAFETY INFORMATION AND WARNINGS	7-10
HYDRAULIC SYSTEM REQUIREMENTS	11
HYDRAULIC FLUIDS	11
OPERATING INSTRUCTIONS	12
DAILY MAINTENANCE & LABELS.....	13
TROUBLESHOOTING & REPAIR INTRO.....	14
OPERATION RECORDS	15
VISUAL WARNINGS.....	16
CONTACT INFORMATION	16

REGISTRATION

UPON RECEIPT OF THIS TOOL, COMPLETE THE REGISTRATION BELOW.

COMPANY _____

ADDRESS _____

PHONE _____ FAX _____

SERIAL NUMBER _____

DATE OF PURCHASE _____

DEALER NAME _____



RELIABLE EQUIPMENT & SERVICE CO., INC.

REL-TP3 - 3" Trash Pump



The **RELIABLE REL-TP3** Hydraulic Trash Pump is lightweight, yet capable of moving high volumes of water, and solids (sand slurries, gravel, and sludge) up to 3 inches (75 mm) in diameter and 30% by volume.

The **REL-TP3** pump is fully submersible, self priming, and may be run dry, without damage to the motor, bearings or impeller. These urethane pumps have a history of pumping sand, gravel, concrete, and even mortar slurries without issue. The **REL-TP3** is even able to pump petroleum products without issue.

The urethane bowl and impeller are extremely durable and light weight. Hard and sharp materials bounce off instead of abrading the interior surfaces, making this design last longer and perform better than aluminum, iron and even steel pumps.

The high volume impeller is complimented by a 3" (75 mm) inlet and outlet to make the **REL-TP3** one of the most productive pumps on the market. This unit is capable of pumping over 450 gpm (1,688 lpm) at a 10 ft. (2.54 m) head from any 2,000 psi (HTMA Type II) hydraulic source using only 9 gpm (34 lpm) of hydraulic flow.

The top cover is attached to the volute with six large wing nuts making routine cleaning, inspection and maintenance **FAST & EASY**.

The convenient **Split Handles** provides a well balanced lift.

The **REL-TP3** Trash Pump can be paired with the **REL-HPU-2000** Hydraulic Power Unit to make a **Powerful Portable Combo** for high volume trash pump and dewatering applications.

Consult your local Reliable representative for more "Tooling Solutions" available from

Reliable Equipment & Service Co., Inc.

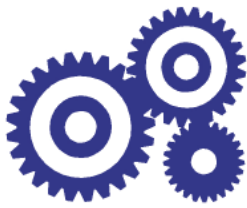
SPECIFICATIONS

Capacity	475 gpm (1,800 lpm)
Discharge Dia.	3 in. (75 mm) Fem Pipe Thd
Inlet Dia.	3 in. (75 mm)
Pressure	2,000 psi (140 bar)
Flow	7-9 gpm (26-34 lpm)
Porting	#10 SAE (pressure)
.....	#12 SAE (return)
Connections	1/2 in. Male Pipe (Pressure)
.....	1/2 in. Male Pipe (Return)
Height	13 in. (33 cm)
Length	14 in. (35.5 cm)
Width	16 in. (41 cm)
Weight	30 lbs (13.6 kg)



301 Ivyland Road • Warminster, PA 18974
Phone: 800-966-3530 • Fax: 215-357-9193

Visit us on the web at www.Reliable-Equip.com



RELIABLE EQUIPMENT & SERVICE CO., INC.

REL-TP4 - 4" Trash Pump



The **RELIABLE REL-TP4** 4 inch, heavy duty Hydraulic Trash Pump is lightweight, yet capable of moving high volumes of water, and solids (sand slurries, gravel, and sludge) up to 3 inches (75 mm) in diameter.

The **REL-TP4** pump is fully submersible, self priming, and may be run dry, without damage to the motor, bearings or impeller.

The high volume impeller is complimented by a 4" (100 mm) inlet and outlet to make the **REL-TP4** one of the most productive pumps on the market. This unit is capable of pumping over 800 gpm (3,028 lpm) at a 10 ft. (2.54 m) head from any 2,000 psi (HTMA Type II) hydraulic source using only 9 gpm (34 lpm) of hydraulic flow.

The top cover is attached to the volute with six large wing nuts making routine cleaning, inspection and maintenance **FAST & EASY**.

The **REL-TP4** features a steel volute with replaceable polyethylene wear plates, a self lubricating H/D hydraulic motor, and an abrasion resistant cast iron impeller to extend pump life.

The convenient **Split Grip Handle** provides a well balanced lift and protection for the hydraulic components.

Pair the **REL-TP4** Trash Pump with the **REL-HPU-2000** Hydraulic Power Unit to make a **Powerful Portable Combo** for high volume trash pump and dewatering applications.

Consult your local Reliable representative for more "Tooling Solutions" available from **Reliable Equipment & Service Co., Inc.**

SPECIFICATIONS

Capacity	875 gpm (3312 lpm)
Discharge Dia.	4 in. (100 mm) Cam Lock
Inlet Dia.	3 in. (75 mm)
Pressure	2,000 psi (140 bar)
Flow	7–10 gpm (26–38 lpm)
Porting	#10 SAE (pressure)
.....	#12 SAE (return)
Connections	1/2 in. Male Pipe (Pressure)
.....	1/2 in. Male Pipe (Return)
Height (w/ handle) ..	19 in. (48.2 cm)
Length	19 in. (48.3 cm)
Width	15 in. (38.1 cm)
Weight	59 lbs (26.8 kg)



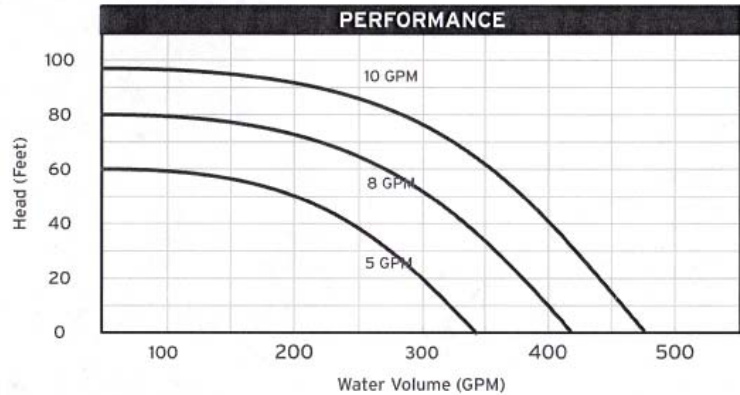
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HYDRAULIC TRASH PUMP PERFORMANCE



REL-TP3 3" TRASH PUMP



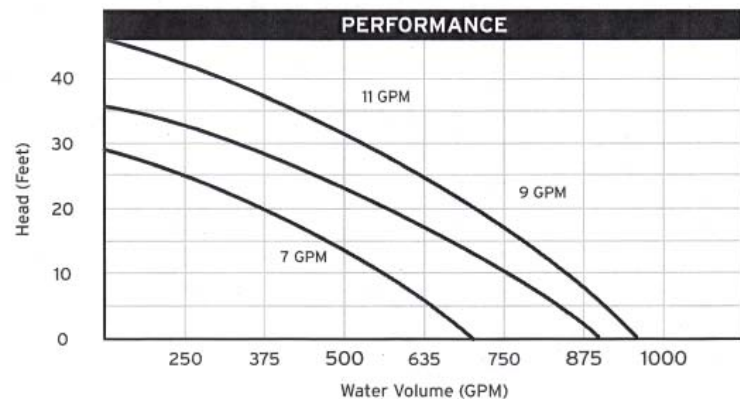
Testing was done in a controlled environment with a fixed discharge assembly using regulated pressures and flows.

Results may vary under field conditions.

The warranty becomes void if the maximum pressures and flows are exceeded.

Backpressure should be measured at the tool before being used. Excessive backpressure will damage shaft seal.

REL-TP4 4" TRASH PUMP



Consult your supervisor, safety personnel, or RELIABLE EQUIPMENT with any questions regarding the safe operation of this tool.



WARNING

BEFORE USING THIS TOOL, READ THE WARNINGS and the recommended practices described in this manual. Failure by the operator to read and fully understand these warnings will leave this person unqualified to use and operate this tool. Property damage, severe personal injury, and/or death could result by not following these warnings.

These warnings will appear in appropriate locations when they are pertinent to the particular subject being shown. Read each one carefully and follow them strictly.



Eye Protection

WARNING

Always wear eye protection to avoid injury from flying debris or hydraulic oil leaks. Failure to do so can result in serious personal injury.



Skin Irritation

WARNING

Hydraulic oil may cause irritation. Use care to prevent contact with skin. In case of accidental contact, wash affected area immediately



Hard Hat

WARNING

Always wear a hard hat to avoid injury from falling debris. Failure to do so can result in serious personal injury.



Foot Protection

WARNING

Always wear foot protection. Failure to do so can result in serious personal injury.



Hearing Protection

WARNING

Always wear hearing protection, to avoid hearing loss due to long term exposure to high noise levels.



Protective Gloves

WARNING

Always wear protective gloves & cloths. Failure to do so can result in serious personal injury.



WARNING

SAFE OPERATION & CARE

USE THIS TOOL FOR ITS INTENDED PURPOSE ONLY

Any other use can result in injury or property damage.

INSPECT TOOL BEFORE USE. Replace any worn, damaged or missing parts. A damaged or improperly assembled tool may malfunction, injuring operator and/or nearby personnel.

INSPECT HYDRAULIC HOSES AND COUPLINGS before each use. Repair or replace if any cracking, leakage, wear or damage is found. Worn or damaged hoses may fail resulting in personal injury or property damage.

CLEAR WORK AREA of all bystanders and unnecessary personnel before operating this tool.

KEEP ALL PARTS OF THE BODY AWAY FROM MOVING PARTS.

Failure to observe this warning could result in serious injury.



WARNING

HYDRAULIC POWER SUPPLY

TURN HYDRAULIC SOURCE OFF before making any connection

DO NOT attempt to make any changes to any of the component parts or accessories when connected to the power source.

DO NOT adjust, inspect, or clean any tool while the tool is connected to the power source. The tool could accidentally start up and cause serious injury.

DO NOT lock the tool in the On Position. In an emergency, serious damage or injury could occur during the time required to stop the tool.



DANGER

OIL INJECTION INJURY

Hydraulic oil or fluid under the skin is a serious injury. Oil under pressure can penetrate the skin and may cause dismemberment or loss of life. Seek medical assistance immediately if such an injury should occur.

Always wear safety gloves, eye protection and all required safety equipment when operating or handling this tool.

DO NOT use fingers or hands to attempt to locate a leak.

DO NOT handle hoses or couplers while system is pressurized.

NEVER open or service the system before depressurizing.



WARNING

HOSES AND FITTINGS

There exists the potential for shock in using anything other than certified non-conductive hoses and hydraulic oil with dielectric properties, when using system components near energized electrical lines. Failure to recognize these conditions could cause electrocution.

Hoses and fittings used with this tool must comply with S.A.E. J1273 which covers recommended practice for selection, installation, and maintenance of hose and hose assemblies. The **correct hoses and fittings are available from your supplier.**

WARNING: Failure to comply with these warnings could result in severe bodily injury or death.



WARNING

UNIT/HOSE CONNECTIONS

ALWAYS DISCONNECT pump/power source and turn the key to the **OFF** position before connecting or disconnecting any components.

ALWAYS DEPRESSURIZE hydraulic system, before connecting or disconnecting any of the systems components.

ALWAYS TIGHTEN COUPLINGS COMPLETELY. Loose or improperly connected couplings may not allow fluid to pass through the hose creating a blockage in the supply or return line.

ALWAYS INSPECT HOSES AND CONNECTORS before connection to tool. Replace or repair if any leakage is evident. Leakage is a sign of deterioration in component parts.

Connect hoses and confirm proper flow direction to & from tool.



WARNING

SERIOUS BURN HAZARD

HOT SURFACES MAY CAUSE SERIOUS BURN INJURY

The hydraulic motor may be hot during and after operation.

CAUTION: HYDRAULIC FLUID MAY CAUSE SERIOUS BURNS

Never disconnect tool, hoses, or fittings while the hydraulic power source is running or if the hydraulic fluid is hot.

**IF YOU HAVE ANY QUESTIONS REGARDING THE SAFE USE
AND/OR OPERATION OF THIS TOOL, CONSULT YOUR AREA SUPERVISOR,
OR CONTACT RELIABLE EQUIPMENT AT 800-966-3530**



WARNING

ELECTRICAL SHOCK HAZARD

Always wear and use the necessary clothing, equipment and safety practices to protect against electrical shock. Failure to follow these rules can result in serious personal injury or death.



GENERAL SAFETY



USE ALL APPROPRIATE AND APPLICABLE PERSONAL SAFETY EQUIPMENT as required by the operating company.

ALWAYS INSPECT TOOL for wear or deterioration or damage every day. Worn or damaged parts may cause malfunction of tool or unsafe circumstance.

KEEP ALL BODY PARTS AWAY FROM MOVING PARTS OF THE PUMP.

DO NOT DIRECT DISCHARGE TOWARDS ANY PERSON, ANIMAL OR VEHICLE.

MOVE OUTSIDE DANGER ZONES BEFORE ACTIVATING THE PUMP

MAKE SURE THERE IS NO PERSON IN CLOSE PROXIMITY to you, the tool, or the discharge who could be injured by any operation being performed, tool malfunction or flying debris.

DO NOT OVEREXTEND your position by overreaching or unbalancing the footing necessary to maintain physical control of your body.

USE THIS TOOL FOR THE MANUFACTURERS' INTENDED PURPOSE ONLY.

OBSERVE CLOSELY ALL SAFETY RULES FOR A PARTICULAR JOB CLASS



WARNING

Operation/Safety methods may vary in accordance with the working guidelines established by each utility or contractor.

For your own safety, ensure that you fully comply with all safe operation guidelines required by your employer.

Consult your training or safety personnel or supervisor as needed.

HYDRAULIC SYSTEM REQUIREMENTS

Operating Pressure: 1200-2000 PSI (70-140 bar)
 Max. Relief Setting: 2100 psi (145 bar)
 Flow Range: 5-9 gpm **REL-TP3** 7-10 gpm (26-45 lpm) **REL-TP4**
 Max. Backpressure: 250 psi (17 bar)
 Cooling System: Required
 Min. Filtration: 25 Micron
 Sound Pressure <85 dBA @ 1m
 Hydraulic Fluids: All hydraulic fluids that meet these listed specifications or listed HTMA specifications may be used for this tool.

S. U. S.

@ 100° F (38° C).....**140 TO 225**
 @ 210° F (99° C)..... **40 minimum**
FLASH POINT **340° F min.** (170° C min.)
POUR POINT **-30° F min.** (-34° C min.)

Hydraulic Hoses: 2500 psi (175 bar) minimum working pressure (Ref. J517)
 Hose assembly should include flush face quick disconnect couplers as recommended by the HTMA.
 (Hydraulic Tool Manufacturers Association)

CAPACITY

Intake Port:	3 in. (75mm)	3 in. (100 mm)
Discharge Port:	3" NPFT (75mm)	4" NPT (100 mm)
Discharge Capacity:	Up to 450 gpm (Illustration pg 6)	Up to 875 gpm (3,312 lpm) (Illustration pg 6)

WEIGHT & CLEARANCE

Weight:	30 lbs.	60 lbs. (9.5 kg)
Height:	13" (over handle)	19 in. (over handle)
Width:	14" L x 12" W	19" L x 15" W



WARNING

Operation/Safety methods may vary in accordance with the working guidelines established by each utility or contractor.
For your own safety, ensure that you fully comply with all safe operation guidelines required by your employer.
Consult your training or safety personnel or supervisor as needed.

OPERATION

PRE-OPERATION

Do not use this tool under unsafe working conditions or locations.

Use this pump only for its intended purpose.

This pump is not designed for operation with a suction pipe inlet.

Read entire manual prior to operation of this tool.

(Refer to all safety recommendations and warnings)

Observe all safety precautions & procedures required by the operating company.

Check the Pump inlet screen and discharge for debris or obstruction.

Connect a compatible discharge hose and securely tighten.

Ensure that hydraulic source is OFF and Control Valve is in the OFF position before making any connections.

Connect appropriate hydraulic hose to the tools' return and pressure ports. (Length may vary) Use a length of hose that will not restrict free movement, or pose any hazard to the operator or other personnel on the work site.

OPERATION

Observe ALL required safety guidelines established by the Utility or Contractor.

Lower the pump into the liquid, or position tool as required by the application.

Remove any kinks from discharge hose to ensure proper flow of discharge.

Position and direct the discharge hose in a manner that neither hose, or discharge will restrict free movement, or pose a hazard to the operator or other personnel.

 **WARNING DO NOT direct discharge towards any person, animal or vehicle.**

Turn ON hydraulic source and select an appropriate flow for the tool. (7 gpm)

COLDER WEATHER - Allow hydraulic fluid to warm for 3-5 minutes before operating.

NOTE: Do Not lift water with solids beyond 40 ft. if hydraulic flow is below 7 gpm

Move the Control Valve to the ON position.

Allow unit to run, watching for excessive solids and/or reduced discharge flow.

Possible Cause: The hydraulic flow/head ratio may be insufficient to carry excess solids. The pump may have settled into excessive solids beneath the liquid to be pumped.

Stop Pump to check & resolve.

Reduced flow may cause accumulation of solids in the volute, and increase pump wear.

Failure to resolve may result in reduced discharge capacity and/or pump damage.

Move the Control Valve to the OFF position.

Return the Flow Selector to the OFF position, and Turn KEY to the OFF position.

DAILY MAINTENANCE



IMPORTANT: The greatest cause of hydraulic system failure is dirt. Prevent the introduction of foreign matter into the pump via hydraulic fluid, dirty connections or accumulation of sediment in the hydraulic system.

The life, reliability, and safety of the tool is dependent on proper maintenance. Maintenance must be performed by authorized and trained personnel ONLY.

Inspect pump for wear or damage. Worn or damaged parts may malfunction during operation.

All parts must be replaced with new parts if signs of wear or damage are evident.

Inspect the fittings, and hydraulic lines. (i.e. kinks, leaks, dirt, etc.) *Do Not use hands!*

Inspect Hoses. Worn or damaged and aged hoses may malfunction during operation.

Clean and inspect pump before storage. Solids, fibers and sand may become attached to the volute, or trapped within the pump chamber and hose assembly.

Remove the volute by removing the six (6) wing nuts (TP3) connecting the cover to the volute.

Lift the entire assembly straight up, from the volute.

CAUTION: Impeller may be sharp.

Clean the inner screen, discharge and the impeller. *Impeller removal should not be necessary.*

Visually Inspect the impeller for cracks, breakage, and excessive wear. *Replace as required.*

NOTE: A worn or damaged impeller may reduce pump performance.

If required the impeller may be removed by removing the center cap screw and lockwasher while holding the impeller. **CAUTION:** Impeller may be sharp.

Install or replace the impeller using the center cap screw and lockwasher.

Re-assemble the pump by replacing motor/flange assembly and securing the handle, flange and volute.

Clean and empty the discharge hose before storage.

Inspect and clean hydraulic couplers before and after each use.

NOTE: Keep Label Set clean and legible. Replace decals when necessary.



CAUTION

Failure to observe all warnings and instructions could result in property damage, severe personal injury, and/or death.

BEFORE USING THIS PRODUCT READ THE SAFETY WARNINGS and recommended practices described in the manual. Failure by the operator to read and fully understand the warnings will leave this person unqualified to use and operate the tool.

CAUTION

Operation and safety methods may vary in accordance with the guidelines established by each utility. For your safety, ensure that you fully comply with all safe operation guidelines established by your respective power utility.

REL-SM

EXTREME CAUTION SHOULD BE TAKEN TO ENSURE THE SAFETY OF ALL PERSONNEL

Any attempt to resolve a performance related issue, or to repair a product that is not working as expected in the field, will require knowledge of the tool and the application being performed.

TROUBLESHOOTING TIPS AND FIELD SOLUTIONS

Pump Will Not Start	No Hydraulic Flow or Pressure	Check Hydraulic Supply - Pressure and Flow
	Impeller Jammed	Disconnect from Source - Ensure that Impeller Moves Freely by Turning the Center Cap Screw. Clean/Clear as required.
	Improper or Defective Coupling	Check Coupler Connections and Flow Direction
Poor Performance	Insufficient Hydraulic Flow	Check Flow /Head (refer to illustration on pg. 5)
	Flow Reversed	Check Coupler Connections and Flow Direction
	Volute Screen Restricted	Pump may have settled into solids. Raise Pump Volute Screen may be Obstructed. Clear Screen
	Discharge Kinked or Restricted	Straighten Discharge Hose & Clear Obstructions
	Impeller Worn or Damaged	Check Impeller for Damage or Excessive Wear Replace Impeller as Required.
	Pump Not Matched to Application	Check Requirements - Adjust or Replace Pump.
Excessive Solids in Liquid	Reduce Solids Increasing Flow May Remove Excess Solids, but may result in wear or damage to the pump.	

IF THE ISSUE OR THE PROPER SOLUTION IS NOT FOUND ABOVE CONTACT YOUR RELIABLE SERVICE REPRESENTATIVE

WARNING: ALL tool repair and service must be performed by authorized and trained personnel ONLY. Improper maintenance or tampering could result in malfunction causing damage to equipment and/or injury to personnel.

Complete disassembly is not recommended. Return the unit to an authorized dealer for total disassembly and/or repair.

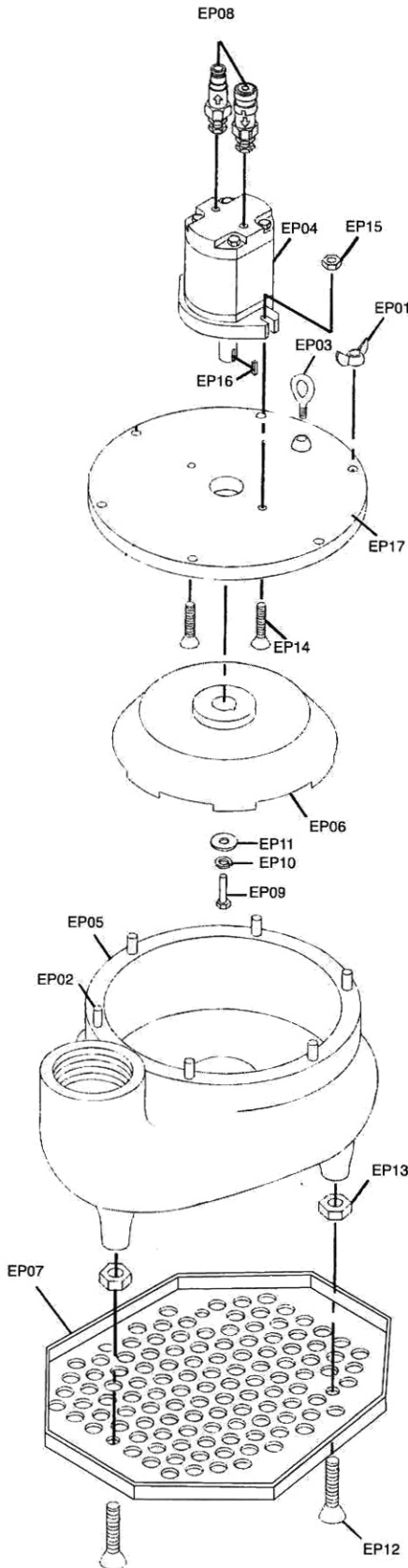
All maintenance or disassembly should take place on a flat, clean work surface covered with towels or wipers so as to have a clean space for the disassembled parts.

Inspect each part during disassembly for wear, scratches, and cuts. Discard the worn or damaged parts and replace with new factory authorized parts.

O-rings are sensitive to sharp edges. Inspect closely for cuts or damage. A small cut will cause a leak. When assembling or disassembling O-rings, use hydraulic fluid as a lubricant to help disassembly or installation.

REL-TP3

HYDRAULIC SUBMERSIBLE TRASH PUMP



P/N	Qty	Description
EP01	6	Wing Nut
EP02	6	Stud
EP03	1	Lifting Eye
EP04	1	Motor
EP05	1	Urethane Volute
EP06	1	Impeller
EP07	1	Base
EP08	1	FF Coupler Set
EP09	1	Bolt
EP10	1	Lock Washer
EP11	1	Washer
EP12	3	Base Mounting Bolts
EP13	3	Base Mounting Nuts
EP14	2	Motor Mounting Bolts
EP15	2	Motor Mounting Nuts
EP16	1	Motor Shaft Key
EP17	1	Motor Mount Plate



OPERATION RECORDS

Date	Hours	Liquid Type	Solid Type & Concentration	Flow	Head

USER NOTES

If you have any questions regarding the information in this manual please contact RELIABLE EQUIPMENT at the address, phone or fax numbers shown below.

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Read Manual



Protective Head Wear



Protective Eye Wear



Protective Clothing



Hearing Protection



Protective Foot Wear



Electrical Shock



Hot Surfaces



Hydraulic Injection