

OPERATORS' GUIDE

REL-EP-115/230

**SINGLE / DOUBLE ACTING
10,000 PSI CONTINUOUS DUTY
ELECTRIC HYDRAULIC PUMP**

The REL-EP-115/230 single and double acting hydraulic pump features manual lever operation, continuous duty performance, and a two stage pumping system, to ensure rapid tool advance.

The manual lever control valve, and factory installed couplers are ready to run your single or double acting crimping, cutting and spearing tools.



REL-EP-115

115 Volt

REL-EP-230

230 Volt

2.0 hp
Continuous Duty
Electric Motor



REL-EP-115/230

**SINGLE/DOUBLE ACTING 10,000 PSI
CONTINUOUS DUTY ELECTRIC HYDRAULIC PUMP**

WARNING



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

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

RELIABLE EQUIPMENT & SERVICE CO., INC.
301 Ivyland Road • Warminster, PA 18974 • USA
Phone: 215-357-3500 • Fax: 215-357-9193

MODEL: _____

SERIAL NO.: _____

YEAR: _____



RELIABLE EQUIPMENT & SERVICE CO., INC.

DISTRIBUTED BY

NOTICE

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

REGISTRATION

UPON RECEIPT OF THIS TOOL, COMPLETE THE REGISTRATION BELOW.

COMPANY _____

ADDRESS _____

PHONE _____ FAX _____

SERIAL NUMBER _____

DATE OF PURCHASE _____

DEALER NAME _____

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THIS SYMBOL INDICATES ITEMS OF EXTREME IMPORTANCE.

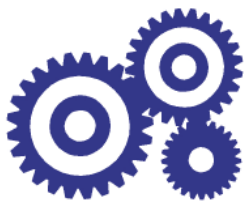
Safety of user and others may be in jeopardy if these instructions are not read and understood.



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.



RELIABLE EQUIPMENT & SERVICE CO., INC.



REL-GB-10 or REL-EP-115 4 CYCLE GASOLINE or ELECTRIC SINGLE AND DOUBLE ACTING 10,000 PSI HYDRAULIC PUMPS

The **REL-GB-10** and **REL-EP-115** single and double acting hydraulic pumps feature manual lever operation, continuous duty performance, and a two stage pumping system, to ensure rapid tool advance.

The manual lever control valve, and factory installed couplers are ready to run your single or double acting crimping, cutting and spearing tools.

RELIABLE EQUIPMENT & SERVICE CO., INC.
301 Ivyland Road • Warminster, PA 18974
Call: 800-966-3530 • FAX: 215-357-9193
Visit our web sight: www.Reliable-Equip.com

REL-EP-115 - 2.0 hp electric
115V (18A) continuous duty motor.

REL-EP-230 - 230V (10A) continuous duty.

REL-GB-10 - 8.75 ft./lb. torque, 190cc
Briggs & Stratton OHV 4 stroke engine.

FEATURES:

10,000 PSI high pressure pump.

Fast, two stage pumping system.

Factory filled 2 gallon fluid reservoir with
recessed sight glass.

High-pressure relief valve.

NO CONVERSION NECESSARY

Single/Double selector knob.

Integral manual lever control valve.

Designed for use with high pressure single
& double-acting, hydraulic tools.

REL-GB-10 has a steel support frame.

REL-EP-___ has a balanced carry handle.



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.



Dust Mask

WARNING

Always wear a Mask. Failure to observe this warning may result in serious health issues and/or breathing difficulty.



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. 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

Safety

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 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.



WARNING

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

Burn Hazard

Do Not connect or disconnect tool, hoses or fittings while power source is running or while hydraulic fluid is hot.

Hot hydraulic fluid may cause serious burns.

Failure to observe this warning could result in serious injury.



WARNING

Electrical Shock Hazard

Use only certified non-conductive hoses and fittings.

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.



CAUTION

Safe Handling

HYDRAULIC FLUID MAY CAUSE SKIN IRRITATION.

Prevent hydraulic fluid from making contact with skin.

IN THE EVENT OF SKIN CONTACT immediately wash thoroughly.

Failure to observe this warning could result in injury.



CAUTION

General Safety

Ensure that all fellow employees and bystanders are clear and protected from possible injury caused by this tool or the operations being performed. Persons in close proximity could be injured and property damaged if the tool were to malfunction.

This tool should always be used within the limits and purposes stated by the product manufacturer. Abuse or usage beyond the manufacturers' intended purposes could cause damage to the tool and severe injury to the operator.

NOTICE

If you have any questions regarding the information found in this manual please contact [RELIABLE EQUIPMENT](#) before continuing.

Phone: **215-357-3500** Toll Free: **800-966-3530** Fax: **215-357-9193**



WARNING

HOSES AND FITTINGS

There exists the potential for shock in using anything other than certified nonconductive 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.



WARNING

UNIT/HOSE CONNECTIONS

ALWAYS DISCONNECT pump/power source and move toggle switch to **OFF** before connecting or disconnecting any components.

ALWAYS DEPRESSURIZE hydraulic system, before slowly disconnecting this unit or any of the systems components.

ALWAYS TIGHTEN couplings completely. Loose or improperly tightened couplings will 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. Worn or leaking parts must be repaired or replaced, or tool damage or severe injury could result.



CAUTION

HOSE INSTALLATION

ALWAYS ENSURE CONNECTORS ARE CLEAN

SINGLE ACTING - Connect the hose to the pressure port on the power source, then connect to the port on the tool.

DOUBLE ACTING - Care must be taken to assure the correct connection of the hoses to the pressure and return (tank) ports. Connect the return hose to the return (tank) port on the power source, then to the return port on the tool.

Connect the pressure hose to the pressure port on the tool, then to the "P" pressure port on the power source.

Operation with hydraulic flow reversed can cause malfunction. Failure to fully comply can result in severe injury or death.

PRE-OPERATION OF TOOL



WARNING

DO NOT connect hoses or fittings to pump before reading all of the instructions in this Manual completely.

Ensure power source is **OFF**, and hydraulic flow is turned **OFF**.

Failure to comply with warnings can result in severe injury or death.

Before attempting to run or use the REL-SERIES pump, check all connections, including hoses, and couplings. (See WARNINGS on page 8)

Wear all safety items required and make sure that the working area is clear of obstructions and non-essential personnel.

HYDRAULIC FLUIDS

All hydraulic fluids that meet these listed specifications or the 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.)



WARNING

DISCONNECTING HOSES

WARNING: DO NOT disconnect the tool, hoses, or fittings while the tool is running, hot, or under pressure. Serious injury or burns could result.

Turn pump **OFF** and disconnect from power source.

NOTE: It is advised that control valves be cycled with the power off to relieve any residual pressure trapped within the line before disconnecting the hoses.

Ensure valve lever is in the RIGHT (RET.) position and remove hose(s).

Disconnect the pressure hose from the pressure “P” port on the pump, then disconnect the hose from the pressure port on the tool.

Disconnect the return hose from the return “T” port on the tool, then disconnect the hose from the return (tank) port on the pump.

Install dust caps on all connectors to prevent dirt and contaminants from entering the hydraulic system.

REL-EP-115 TOOL SPECIFICATIONS

Height.....24 in.
 Depth.....16 in.
 Width.....12 in.
 Weight.....100 lbs.
 Electric Motor115V/230V AC
2.0 hp
 Pump System4 High Pressure Piston Style
 Tool Operation.....Single or Double Acting
 Operating Pressure (Factory Pre-set Relief Valve)10,000 psi
 Return Relief Setting (Factory Pre-set)3,500 psi
 Oil Reservoir.....2 Gallons
 Oil Delivery Per Minute160 cubic inches at 100 psi
60 cubic inches at 10,000 psi

IMPORTANT: THE GREATEST CAUSE OF HYDRAULIC PUMP FAILURE IS DIRT.
 Prevent the introduction of foreign matter into the unit via hydraulic fluid,
 dirty connections or accumulation of sediment.



Mod
No

Industrial Motor
5GD67BA



E47479



225293

HP: 2
VOLTS: 115/208-230
AMPS: 18/10-9
RPM: 3450
DUTY: Continuous
SFA: 20/11.3-10
KVA CODE: H
THERMALLY PROTECTED - None
BALL BRG: Permanently Lubricated, Relubrication Not Required

PH: 1
HZ: 60
FR: 56C
INS CL: B
AMB: 40°C
SF: 1.15
ENCL: TEFC

Note

Read Enclosed Installation & Maintenance Pamphlet
 Read Warning Label on Motor Before Connecting
 or Installing Motor.
 Motor Not Suitable for Use in Hazardous Locations.

Lead Connections

Disconnect Power Before Making Any Electrical Connections or Changes

LOW VOLTAGE
CW SHAFT END

BLUE ————> LINE 1
 ORANGE ————>
 RED ————>

WHITE ————> LINE 2
 YELLOW ————>
 BLACK ————>

HIGH VOLTAGE
CW SHAFT END

BLUE ————> LINE 1
 RED ————>

YELLOW ————> LINE 2
 WHITE ————>
 BLACK ————>
 ORANGE ————>

To Reverse Rotation For Either Voltage,
 Interchange Red Lead And Black Lead.

Mfg. No. E11 P

Mfd for Dayton Electric Mfg. Co. Niles, IL 60714 USA

Made in U.S.A.



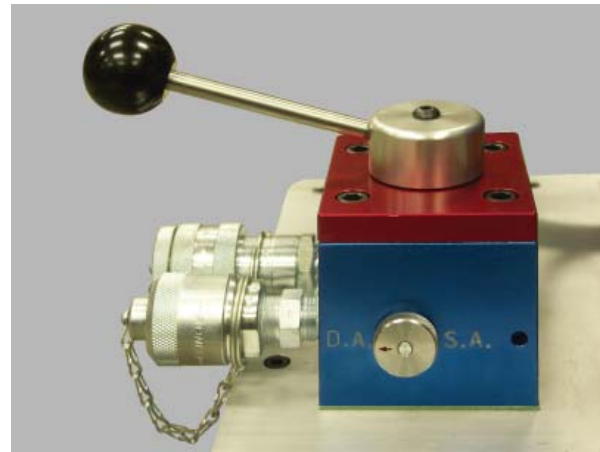
Single Acting - Connect to FWD (left) female coupler.
Double Acting - Connect Pressure to FWD (L) & Return to REV (R). (or S.A. when a Control Valve is used)



Check sight glass to ensure that the pump has proper fluid volume as shown.
Remove vent valve to add proper fluid as needed.



Turn dial to S.A. for single acting applications.
Note: For ALL Single Acting and Double Acting Remote Valve Applications set selector to S.A.



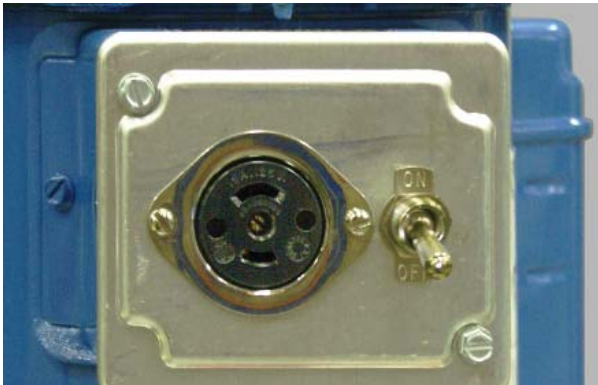
Turn dial to D.A. for double acting applications.
Valve will control both forward and reverse action of the tool virtually eliminating hang-up.



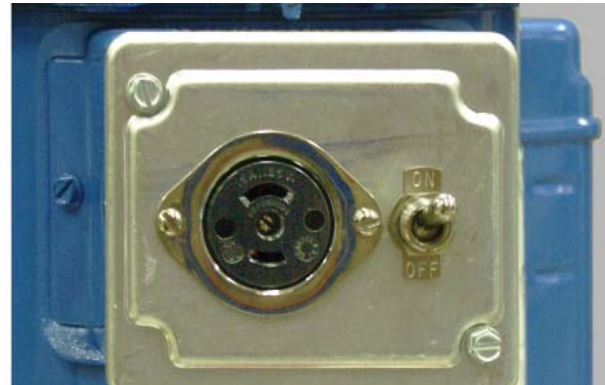
Lift vent lever before operating.



Close vent lever after use and prior to transporta-



Plug pendant switch shown below into the receptacle. Toggle switch is not required when using pendant.



Toggle switch may be used in place of pendant switch for single acting operations. Turn toggle switch ON for remote valve operations.



Press and hold button down to operate tool.
S.A. - Ram will retract upon release.
D.A. - Move valve handle to desired action and activate switch to perform operation.

Optional: [REL-C-FS-1](#) - Foot Control Switch is also available. Consult your [RELIABLE](#) representative for additional information.



ADV. - ADVANCE / FORWARD



HOLD / NEUTRAL



RET. - RETRACT / RETURN

SINGLE ACTING PUMP OPERATION

NOTE: This is a 10,000 psi hydraulic power source.

DO NOT USE with standard low pressure hydraulic tools. (i.e. Impact Wrench, Tamper, Ground Rod Diver, etc. . .) Consult Reliable or the tool manufacturer if you have questions. There are a number of safety items that need to be addressed when using the tool. Seek out the supervisor for basic instruction in handling the tool. Some basic problems are easily overcome by knowing the rules of operation.

Inspect, set-up and connect the tool as described on the previous pages.

Refer to photos and diagrams on the previous pages as needed.

Plug remote hand control “Pendant” switch (included) into pump if required for current operation.

NOTE: REMOTE PENDANT CONTROL IS AVAILABLE FOR SINGLE ACTING OPERATION ONLY.

- 1) Open reservoir vent. (Lift Lever \wedge Vertical)
- 2) Connect tool Pressure hose to the LEFT (Female) FWD valve block coupling.
A Single Acting In-line Control Valve may also be used for remote applications.
Connect Connect Return (Tank) hose to RIGHT (Male) REV valve block coupling.

ENSURE THAT ALL CONNECTIONS ARE TIGHT AND SECURE

- 3) Set D.A./S.A. selector knob to the S.A. position.

NOTE: D.A./S.A. selector knob is located on the right side of the lever valve block.

- 4) Ensure that the valve lever is in the RETURN (RET.) position.
- 5) Ensure that motor switch is in the “OFF” position.
- 6) Plug power cord into a grounded outlet. (**REL-EP-115** 115VAC) (**REL-EP-230** 230 VAC)
- 7) Turn motor on when ready to begin tool operation.

If a pendant switch is to be used continue to next instruction.



WARNING

Turning on toggle switch may prematurely begin tool operation.

Remote Hand Control (Pendant) Switch will operate pump without turning on manual toggle switch located on motor housing.

Toggle switch may be used in place of pendant switch for single acting operation. Note: A 4-way valve may also be used for added control options.

- 6) Move lever to the left to advance the tool ram, blade or spear.
If pendant switch is used activate control to begin tool operation.
Once the crimp/cut has been completed, an audible “POP” will be heard.
This signals that the full pressure/tonnage has been achieved.
- 7) Move lever to the RIGHT to allow the ram to retract.
NOTE: Lever can be moved to the CENTER (HOLD) position at any time during the Advance or Retract cycle.
REPEAT OPERATION AS REQUIRED BY THE CONNECTION OR APPLICATION.
- 8) Once task has been completed: Turn motor OFF.
- 9) Unplug power cord
NOTE: It is advised that control valves be cycled with the power OFF to relieve any residual pressure trapped within the line before disconnecting the hoses.
- 10) Ensure that valve lever is in the RIGHT (RET.) position and remove hose(s).
- 11) Close Reservoir Vent (Turn Lever Clockwise) and secure pump for future use.

DOUBLE ACTING PUMP OPERATION

There are a number of safety items that need to be addressed when using the tool. Seek out the supervisor for basic instruction in handling the tool. Some basic problems are easily overcome by knowing the rules of operation.


Inspect, set-up and connect the tool as described on the previous pages.

Refer to photos and diagrams on the following pages as needed.

Plug remote hand control “Pendant” switch (included) into pump if required for current operation.

Connect to 115V electric power source. (Connect to 230V for REL-EP-230)

NOTE: Remote pendant switch may not be used with remote in-line control valves.

- 1) Open reservoir vent. (Lift Lever  vertical)
- 2) Connect tool hose(s) to the valve block couplings.

A Double Acting In-line Control Valve may also be used for remote applications.

Connect ADVANCE (Forward) hose from tool to the LEFT (female) coupling.

Connect the RETRACT (Reverse) hose to the RIGHT (Male) coupling.

ENSURE THAT ALL CONNECTIONS ARE TIGHT AND SECURE

- 3) Set D.A./S.A. selector knob to the D.A. position for your tool assembly.
Set D.A./S.A. selector knob to the S.A. position if an In-line Control Valve is to be used.

NOTE: D.A./S.A. selector knob is located on the right side of the lever valve block.

- 4) Ensure that the valve lever is in the RETURN (RET.) position.

- 5) Start motor when ready to begin tool operation.

If a pendant switch is to be used continue to next instruction.

- 6) Move the valve lever to the Left (ADV.) to advance the tool ram, blade or spear.
Once the crimp/cut has been completed an audible “POP” will be heard.
This signals that the full pressure (tonnage) has been reached.
Move lever to the RIGHT (RET.) to retract the tool ram.

- 7) Move lever to the RIGHT to allow the ram to retract.

NOTE: Lever can be moved to the CENTER (HOLD) position at any time during the Advance or Retract cycle.

REPEAT OPERATION AS REQUIRED BY THE CONNECTION OR APPLICATION.

- 8) Once task has been completed: Turn motor OFF.

NOTE: It is advised that control valves be cycled with the power off to relieve any residual pressure trapped within the line before disconnecting the hoses.

- 9) Ensure that valve lever is in the RIGHT (RET.) position. Remove hose(s).
See **Disconnecting Hoses.**



WARNING: DO NOT disconnect the tool, hoses, or fittings while the tool is running, hot, or under pressure. Serious injury or burns could result.

- 10) Close Reservoir Vent (Turn Lever Clockwise) and secure pump for future use.

**IF YOU HAVE QUESTIONS REGARDING THE USE AND/OR OPERATION
OF THIS TOOL CONTACT RELIABLE EQUIPMENT AT 800-966-3530**

SCHEDULED MAINTENANCE

DAILY MAINTENANCE - The life, reliability, and safety of the tool is dependent on proper maintenance.

Clean all surfaces including, hand control, fittings, hoses and housing.

Inspect tool for wear and damage. Worn or damaged parts can cause malfunction.

Inspect for cracked hoses and leaking fittings.

Check fluid level of the power source reservoir frequently.

Remove Vent to add hydraulic fluid as needed. *Replace vent immediately. (see page 12)*

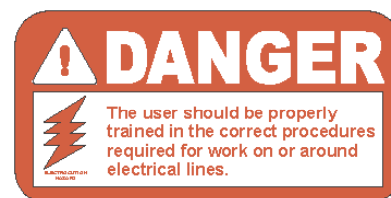
All the above items must be replaced with new parts if signs of wear are evident.

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

FLUID CONTAMINATION: Cover the ends of fittings with a dust cap when disconnected. This will help keep the fluid from becoming contaminated. *(See Reservoir Clean & Fill on pg 15)*

MONTHLY MAINTENANCE: Inspect per Appendix A, SAE Standard J1273, 5/86 for hose or fitting damage such as wear, cracks or leakage; replace the necessary parts.

NOTE: Keep Label Set clean and legible. Replace decals when necessary. Part #RL22400



TROUBLESHOOTING

Determine the source (i.e. tool or hydraulic system) **of the problem before trouble shooting.**

Will not run

Improper power source (REL-EP-115) Verify power source meets specifications 115V AC

Motor runs but pump will not operate

Low hydraulic fluid Check fluid level
Incorrect viscosity Use recommended fluid
Pump damaged Repair by authorized technician
Hoses incorrectly connected Switch hoses (*see hose connection in this manual*)
Dirt in pump Disassemble, clean and repair

Pump runs slow

Power supply not functioning correctly Reset to operator manual specs.
Fluid not warmed to correct temp Allow a warm-up period
Fluid viscosity too high See recommended viscosity
Air in hydraulic system Check hoses for breaks, leaks, or loose connections
Hydraulic fluid level low Fill to level. Check for leaks
Worn or damaged components Replace worn or damaged components

Pump operation is erratic

Hydraulic fluid not warm Allow oil to warm up
Dirt or contaminants in tool Clean and reassemble
Air in system Check hoses for breaks, leaks, or loose connections

Pump runs continuously

Tool locked in "ON" position Release toggle switch
Unplug unit from power source.....

Pump runs hot

Low fluid level Fill pump reservoir to correct level
Fluid viscosity incorrect Use recommended fluid
Fluid dirty Drain tank, flush, and replace fluid
Worn or damaged O-rings or gaskets Replace worn or damaged components

Pump leaks hydraulic fluid

Worn or damaged seals Disassemble and replace worn or damaged seals
Components loose Tighten component hardware

Pump lacks power

Control valve leaking Worn part or seal rings

NOTICE

If you have any questions regarding the information found in this manual please contact **RELIABLE EQUIPMENT** before continuing.
Phone: **215-357-3500** Toll Free: **800-966-3530** Fax: **215-357-9193**

READ BEFORE DISASSEMBLY



WARNING

Safety

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 tool while the tool is connected to the power source. The tool could accidentally start up and cause serious injury.



WARNING

Before disassembly, disconnect hoses as described in this manual. Any residual pressure within the unit can and will spray at high velocity, injuring the person doing the disassembly. Hot or pressurized hydraulic fluid will cause serious injury or death. **Complete disassembly is not recommended. Return the unit to an authorized dealer for total disassembly and/or repair.**

RESERVOIR CLEAN AND FILL

ALWAYS DISCONNECT pump/power source and move toggle switch to **OFF** before connecting or disconnecting system components.

ALWAYS DEPRESSURIZE hydraulic system before slowly disconnecting this unit or any of the system's components.

Disconnect pump from any hoses or tools.

Remove the screws holding the motor housing and pump assembly to reservoir.

Carefully lift assembly out of reservoir, taking care not to damage gasket.

Dump out old oil from reservoir, clean out ALL sludge and sediment. **DO NOT RUN DRY**

Clean inlet screen of dirt and debris.

Fill with **CLEAN HYDRAULIC FLUID** as specified.

Reference hydraulic fluid sight glass for appropriate level, as shown on page 12.

Check gasket for damage, replace if necessary. Re-assemble completely.

Test thoroughly prior to field use.

NOTE: For units with serial #s after **SN # 2158A** remove drain plug located on front (Sight Glass Side) from pump reservoir and drain oil into a suitable container.

Please dispose of hydraulic fluids within the guidelines established by your Safety Guidelines and observe ALL Local, State and Federal Regulations.

FIGURE 1

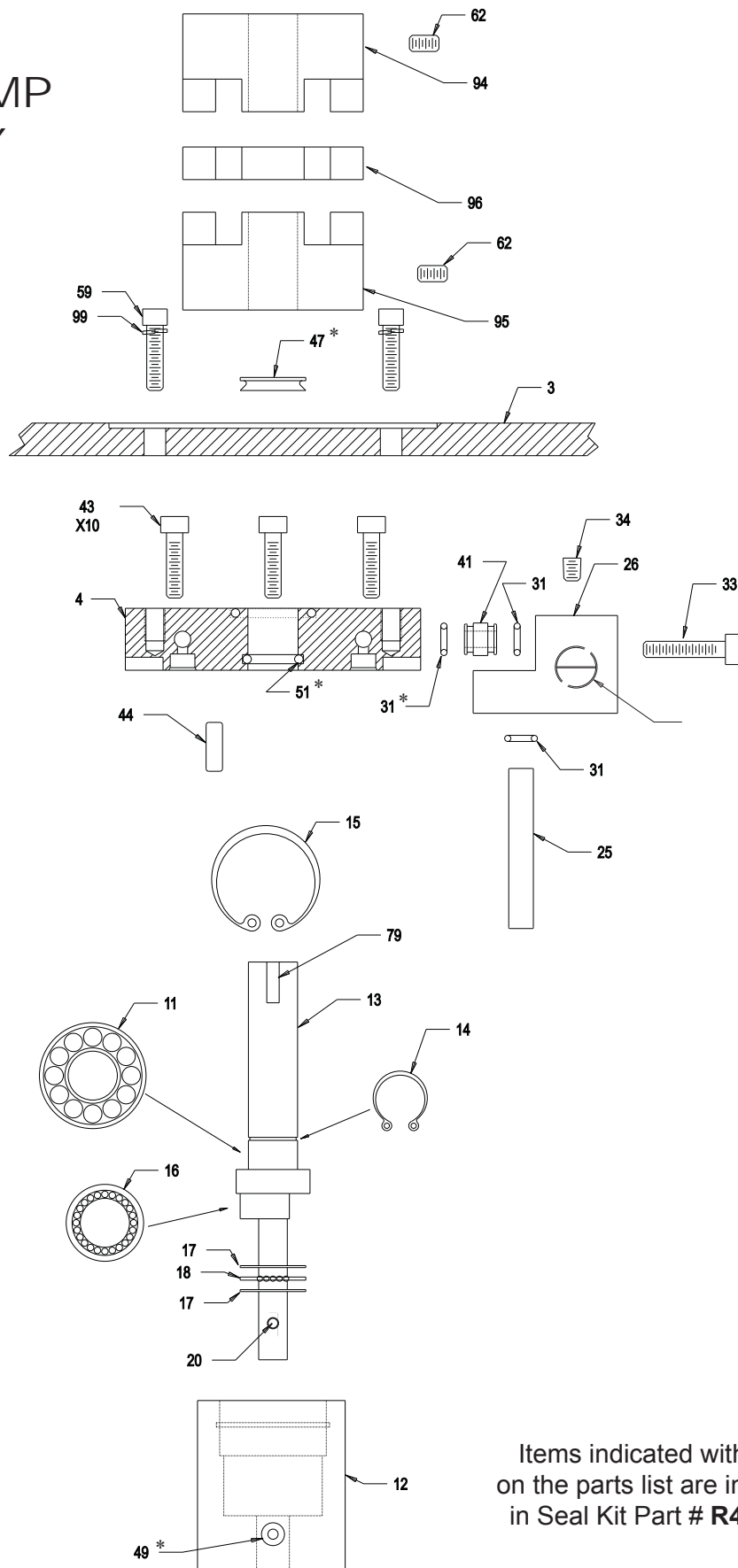
MAJOR COMPONENTS ELECTRIC PUMP



If you have any questions regarding the information found in this manual please contact RELIABLE EQUIPMENT at 800-966-3530 or FAX 215-357-9193.

FIGURE 2

INNER PUMP ASSEMBLY



Items indicated with an *
on the parts list are included
in Seal Kit Part # **R40200**.

FIGURE 1**MAJOR COMPONENTS, ELECTRIC PUMP**

1	R40001	TANK	1
2	R40065	E MOUNT	1
3	R40003	COVER	1
43	R40043	SCREW	16
49	R40049*	O-RING	16
56	CS123-9	115V CORD & PLUG ASSY	1
57	R40205	GRIP, CORD	1
59	R40059	SCREW	4
60	R40204	ELECTRIC MOTOR ASSEMBLY	1
65	R40148	SCREW	2
66	R40066	SCREW	2
67	R40067	LOCKWASHER	4
68	R40207	COUPLER SET (3050-3/3005-3 FEM., 3010-3/3009-3 MALE)	1
75	R40069	HANDLE ASSY.	1
76	R40206	FOOT ASSEMBLY	4
92	R22103	VENT VALVE ASSEMBLY	1
99	R20719	LOCKWASHER	4

FIGURE 2**INNER PUMP ASSEMBLY**

3	R40003	COVER	1
4	R40004	MANIFOLD PLATE	1
11	R40011	BEARING	1
12	R40012	CENTER BLOCK	1
13	R40013	DRIVESHAFT	1
14	R40014	RETAINING RING	1
15	R40015	HOUSING RETAINING RING	1
16	R40016	CAM BEARING ASSY	1
17	12769	THRUST WASHER	2
18	12774	THRUST BEARING	1
20	13427	KEY	1
25	R40025	BYPASS TUBE	1
26	R40026	OUTLET BLOCK	1
31	R40031*	O-RING	9
33	R40033	SCREW (OUTLET BLOCK)	1
34	R40034	1/16 PIPE PLUG	8
41	R40041	LARGE BAYONET	1
43	R40043	SCREW	10
44	R40044	DOWEL	6
47	R40047*	V-SEAL	1
49	R40049*	O-RING	16
51	R40051*	O-RING	1
59	R40059	SCREW	4
62	R40062	SET SCREW	2
79	R40079	KEY 3/16 SQ X 3/4	4
95	R40095	PUMP COUPLER	1
96	R40096	SPIDER	1
97	R40097	ELEC. MOTOR COUPLER	1
98	R40098	SCREW	2
99	R40099	5/16 LOCKWASHER	6
100	2956S	VALVE	1
101	12257	SNUBBER	1

FIGURE 3**VALVE BLOCK ASSEMBLY (R40100)**

31	R40031*	O-RING	9
55	13167	BALL 1/4"	3
102	R40102	CAP	1
103	R40103	SHAFT	1
104	R35017	TOP BLOCK / HANDLE BOSS	1
105	R40105	ROTOR	1
106	R40106	GROMMET	3
107	R40107	WAVE SPRING	3
108	R40108	BEARING	1
109	R40109	WASHER	1
110	R40110*	O-RING	1
111	R24542	SPRING PIN 3/16 X 1.25	1
112	R40112*	V-SEAL	1
113	R35008	SPRING	1
114	R40114*	VALVE GASKET	1
115	R40115	STEM	1
116	R40116	RETAINING NUT	1
117	R40117	SELECTOR KNOB	1
118	R40118	SPRING	2
119	R40119	REGULATOR SCREW	1
120	R40120	PINTLE	1
121	13189	REGULATOR SPRING	1
122	R40122	BALL 1/8	1
123	R35018	STUD	1
124	R35019	PLASTIC KNOB	1
125	R35020	SCREW	1
126	R40126*	O-RING	3
127	R40127*	B/U RING	3
128	R40128	3/32 X 3/4 SPRING PIN	1
129	R40129	SET SCREW	1
130	R40130	SPRING PIN 1/4 X 1/2	1
131	R40063	DUMP PIPE	1
	R40101	VALVE BODY	1

It is highly recommended that this unit be returned to RELIABLE EQUIPMENT or a factory trained and authorized service center for all repair and maintenance.

Complete disassembly is not recommended.

ELECTRIC MOTOR - Refer to the manufacturers (*supplied*) motor Operators Manual for Operation, Care & Maintenance information.

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.

FIGURE 3 VALVE BLOCK ASSEMBLY

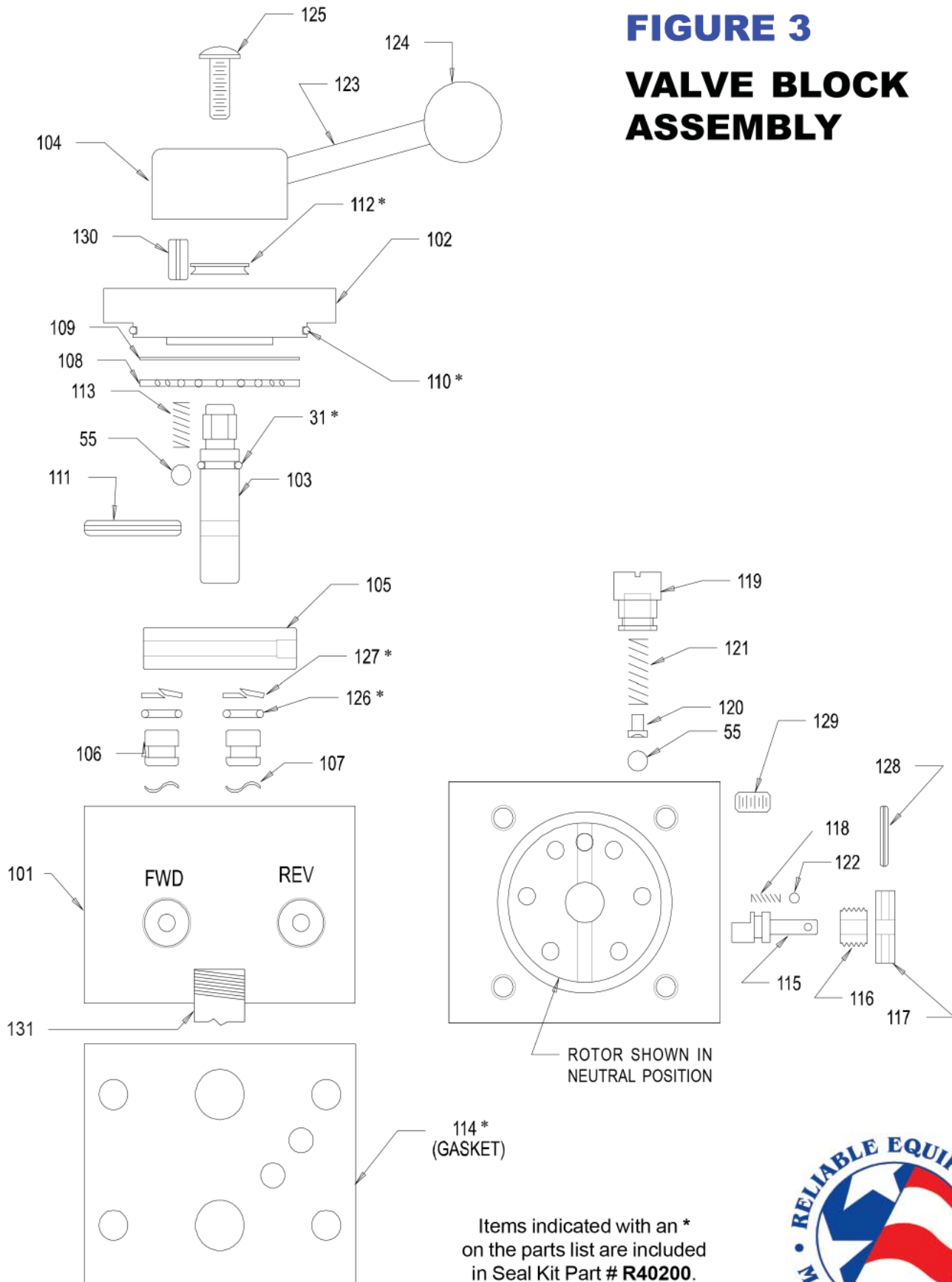


FIGURE 4

HIGH PRESSURE PUMP BLOCK

Items indicated with an *
on the parts list are included
in Seal Kit Part # R40200.

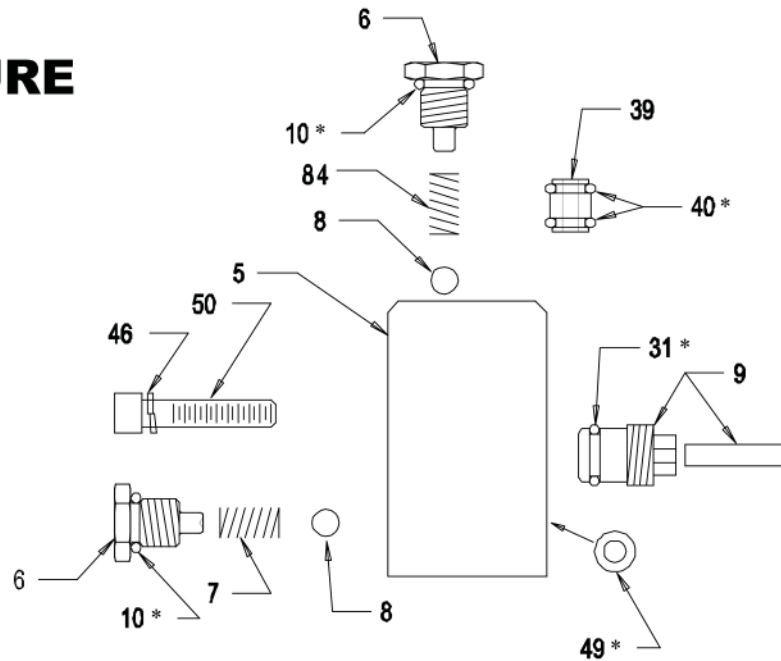


FIGURE 5

MANIFOLD OUTLET BLOCK

Items indicated with an *
on the parts list are included
in Seal Kit Part # R40200.

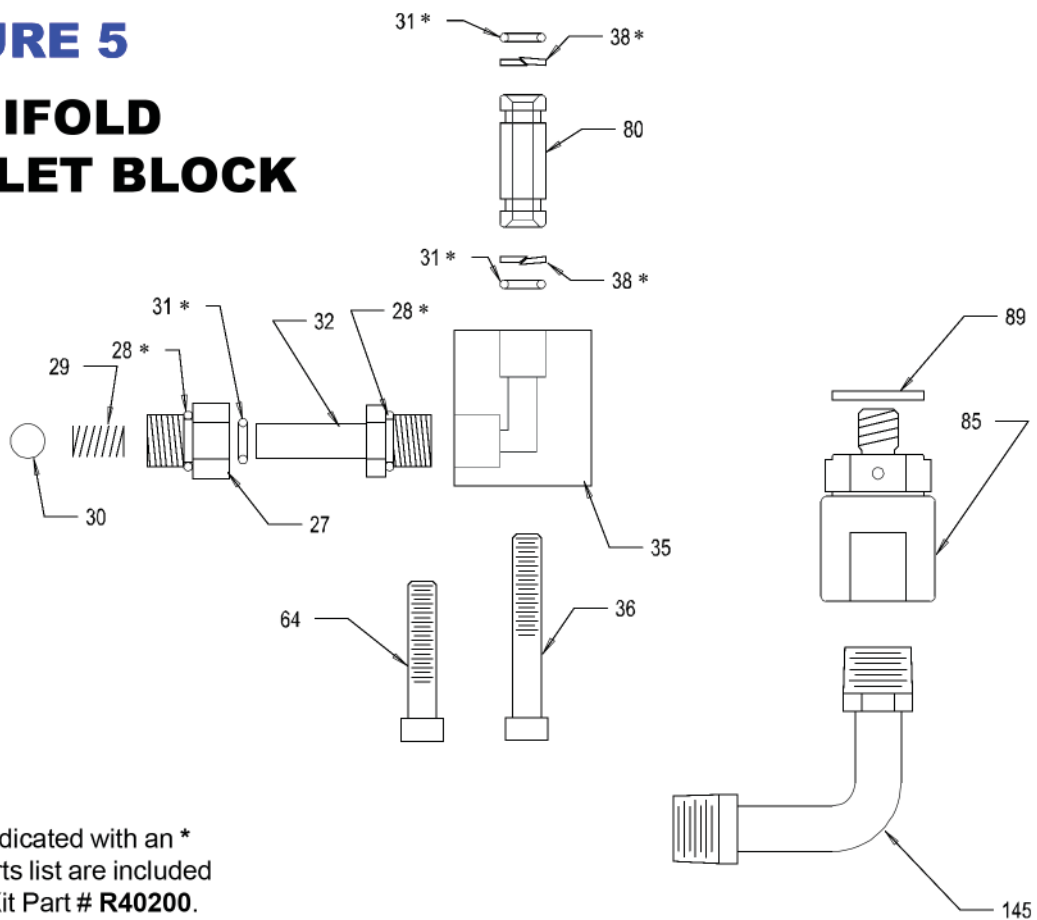


FIGURE 4 HIGH PRESSURE PUMP BLOCK

5	R40005	PRESSURE BLOCK	4
6	R40006	CHECK PLUG	8
7	R40007	SPRING	8
8	13191	BALL 9/32	8
9	R40009	PISTON + BUSHING SET	4
10	R40010 *	O-RING	8
31	R40031 *	O-RING	9
39	R40039	SMALL BAYONET	4
40	R40040 *	O-RING	8
46	R40046	LOCKWASHER	20
49	R40049 *	O-RING	16
50	R40050	SCREW	8
84	R40084	SPRING (HP SIDE)	4

FIGURE 5 MANIFOLD OUTLET BLOCK

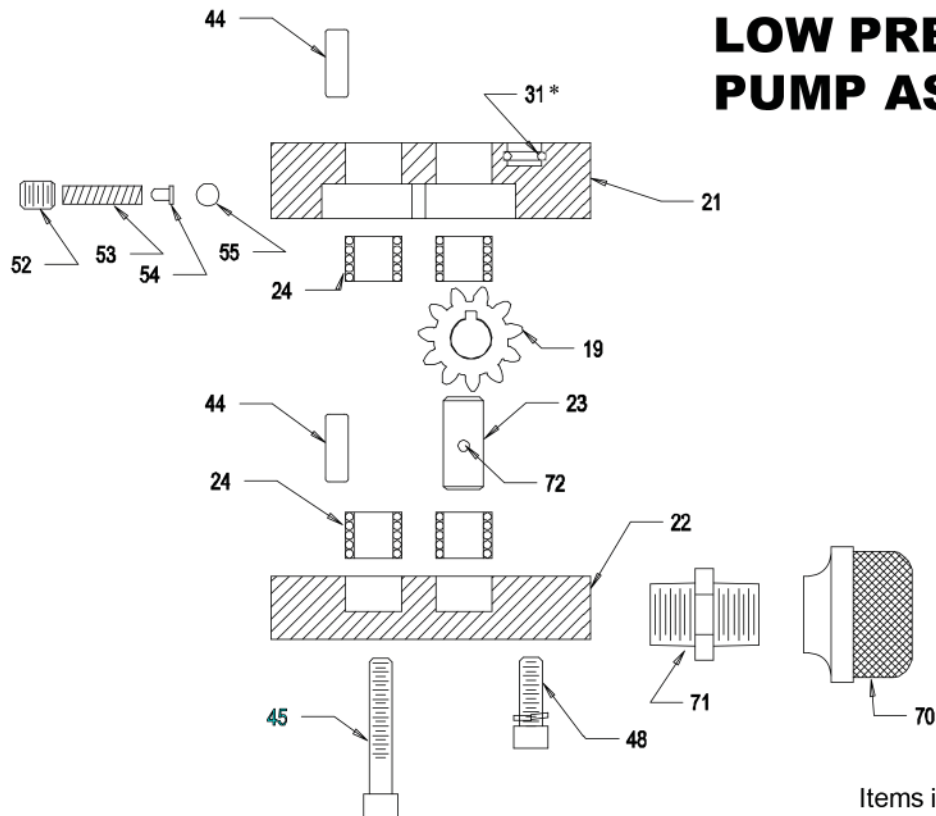
27	R40027	TRANSFER BUSHING	1
28	R40028 *	O-RING	2
29	R40029	SPRING	1
30	12744	BALL 3/8 DIA	1
31	R40031 *	O-RING	9
32	R40032	TRANSFER TUBE	1
35	R40082	VALVE CLAMP	1
36	R40036	SCREW	2
38	R40038 *	B/U RING	2
64	R40064	SCREW	2
80	R40080	VALVE TUBE	1
85	R40085	SUPPLY LINE DUMP VALVE	1
89	R12254	COPPER WASHER	1
145	R40208	HOSE ASSEMBLY	1

FIGURE 6 LOW PRESSURE PUMP ASSEMBLY

19	12727	GEAR	2
21	R40221	PUMP BLOCK	1
22	R40022	INTAKE BLOCK	1
23	R40023	IDLER SHAFT	1
24	13130	NEEDLE BEARING	4
31	R40031 *	O-RING	9
44	R40044	DOWEL	6
45	R40045	SCREW	4
48	R40048	SCREW	16
52	R40052	ADJUSTING SCREW	1
53	R18204	SPRING	1
54	R40054	PINTLE	1
55	13167	BALL 1/4"	3
70	R40070	FILTER	1
71	R40071	ADAPTER	1
72	12795	DRIVE PIN	1

FIGURE 6

**LOW PRESSURE
PUMP ASSEMBLY**



Items indicated with an *
on the parts list are included
in Seal Kit Part # **R40200**

MAINTENANCE RECORDS

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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