

# OPERATORS' GUIDE

## REL-117ST

DOUBLE ACTING  
HYDRAULIC SPEARING TOOL



SHOWN WITH  
OPTIONAL  
GROUNDING  
SET-UP



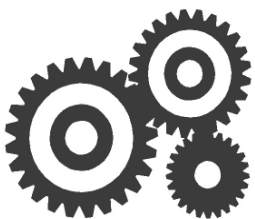
**NOTE:** This tool MUST be used in accordance with the safety guidelines established by your respective utility.

### 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.

REL-117ST Manual 01-04

# DISTRIBUTED BY

## REGISTRATION

UPON RECEIPT OF THIS TOOL, COMPLETE THE REGISTRATION BELOW.

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

DEALER NAME \_\_\_\_\_



CAUTION

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.

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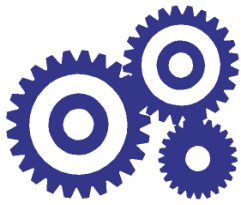
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If you have any questions regarding the information found in this manual please contact RELIABLE EQUIPMENT at 800-966-3530 or FAX 215-357-9193.



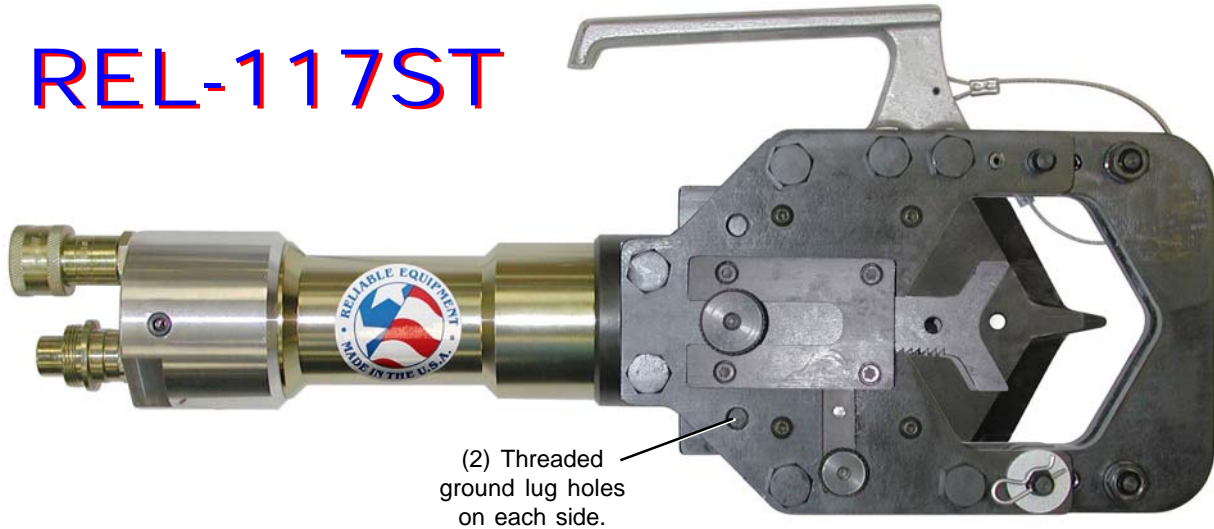
**THIS SYMBOL INDICATES ITEMS OF EXTREME IMPORTANCE.**

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



# RELIABLE EQUIPMENT & SERVICE CO., INC.

## REL-117ST



(2) Threaded ground lug holes on each side.

The REL-117 double acting hydraulic spearing tool was designed to drive a piercing blade into the conductor, ensuring that the conductor is out of service, prior to beginning work.

Designed to accommodate electrical cables from 4/0 to 4" O.D. This double acting tool has the ability to advance and retract, eliminating hang-up. A specially designed piercing blade guarantees contact when a multi-bundled conductor is spiked. The REL-117 features a closed head design. Two sliding guide posts adjust to securely hold smaller conductor, ensuring that the spike will be driven accurately into the conductor. An additional oval head is included for conductor from 3" to 4".

### SPECIFICATIONS

<b>Weight</b>	<b>19 lbs.</b>
<b>Dimensions</b>	<b>20" L x 5" W x 3" D</b>
<b>Pressure</b>	<b>10,000 psi</b>
<b>Capacity</b>	<b>4/0 - 3.0" O.D. (Tapered Head)</b>
	<b>3" - 4" O.D. (Oval Head)</b>

### INCLUDES

Piercing blade with 1/2" protruding spike and angled fins.



Oval head for conductor from 3" to 4" in dia.



**NOTE:** This tool MUST be used in accordance with the safety guidelines established by your respective utility.



**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 dust 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 personal 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

**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

## 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**

**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.



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.



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 every day. Replace all parts that show signs of wear or damage.

**KEEP ALL PARTS OF THE BODY AWAY** from moving parts of the tool.

**KEEP HANDS OUT FROM BETWEEN FIXED AND MOVING BLADES AT TOOL HEAD.**

**HANDS SHOULD BE OUTSIDE DANGER ZONE PRIOR TO ACTIVATING BLADE.**

**MAKE SURE** there is no person in close proximity to you or the tool 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.

**ALWAYS MAINTAIN** a firm grip on the tool to avoid loss of control during an operation, causing property damage, serious injury or death.

**USE THIS TOOL FOR THE MANUFACTURERS' INTENDED PURPOSE ONLY.**

**OBSERVE CLOSELY ALL SAFETY RULES FOR A PARTICULAR JOB CLASS**

**FAILURE TO HEED THESE WARNINGS COULD RESULT IN PROPERTY DAMAGE, SERIOUS PERSONAL INJURY OR DEATH.**



# DAILY MAINTENANCE

The life, reliability, and safety of the tool is dependent on proper maintenance. **Clean** all surfaces including head, blade, couplers (if coupled), threads, and handles. **Inspect** for wear and 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.** Keep Label Set clean and legible. Replace decals when necessary.

## REL-117ST OPERATION

Read entire manual prior to using this tool.

(Refer to all safety recommendations and warnings)

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

Before spearing, ensure conductor is within the capacity listed for this tool.

Tool must be used in conjunction with a hydraulic system rated at, and adjusted to, 10,000 psi. Any system not operating at 10,000 psi may cause damage to the tool and result in serious injury to the operator.

Use threaded ground lug holes to attach grounding set (If required by intended application)

Connect the tool head to the control valve or hose set. (Refer to warnings on page 6 & 7)

Open spearing tool head by removing locking pin.

Insert conductor between head and piercing blade.

Advance BOTH sliding guides, tight against cable, to ensure proper centering of cable

Close and secure spearing head using locking pin. Failure to secure head may result in severe tool damage and/or personal injury.

The material to be speared **MUST** be at a 90° angle to the blade. This will ensure a proper penetration with minimal distortion. Severe blade damage may occur if material is speared at any other angle.

To ensure completion, continue operation until control valve pops back to neutral position. If you are using a hand operated pump, operate pump until bypass occurs and handle operation becomes very easy.

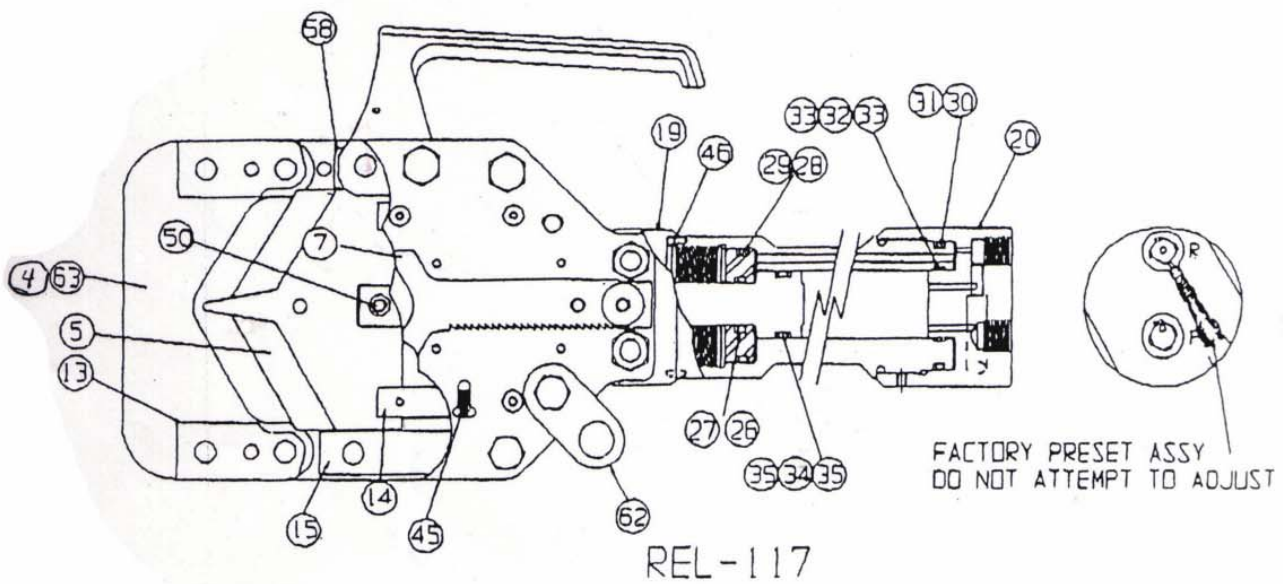
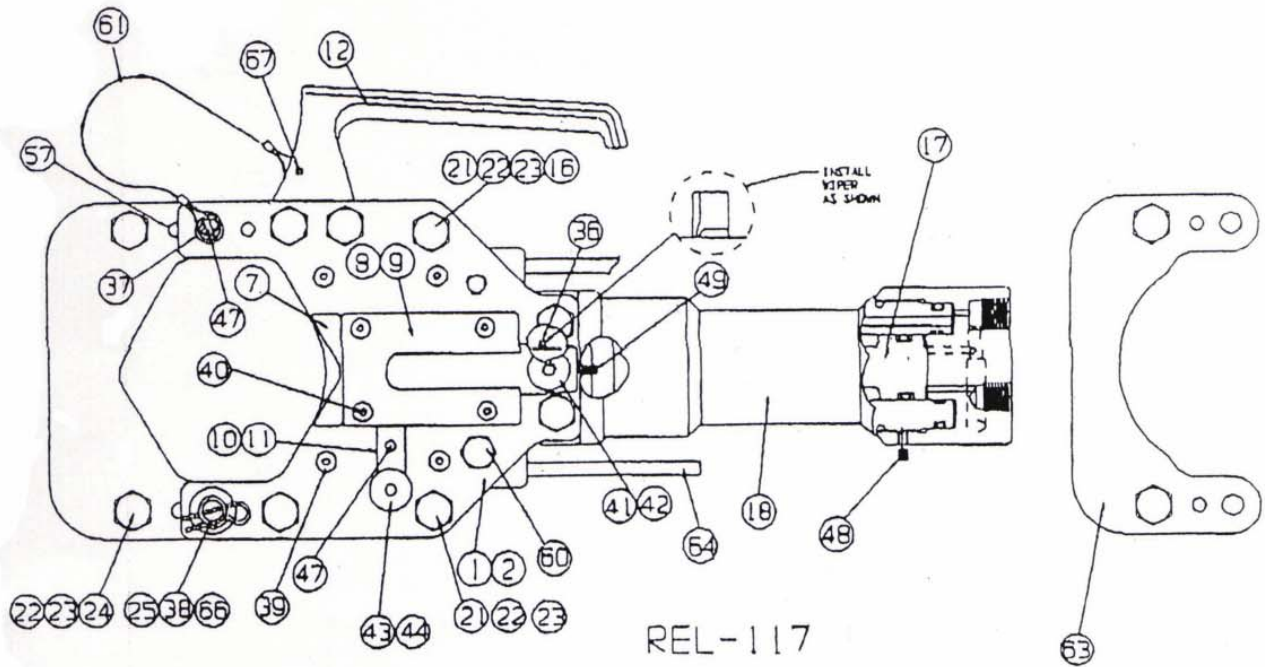
Continue until spearing operation is complete.

Use valve or pump to retract blade.



**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.

# REL-117ST





REL 117			
26000, 4" SPEAR TOOL			
ITEM	PART. NO.	QUANT	DESCRIPTION
1	R 26001	1	SIDE PLATE, RIGHT SIDE
2	R 26002	1	SIDE PLATE, LEFT SIDE
3	R 26003	2	SWING PLATE, LARGE
4		2	SWING PLATE SMALL (OLD STYLE) (SEE 63)
5	R 26005	1	SPEAR
6	R 26006	1	RETAINER, RIGHT SIDE
7	R 26007	1	RETAINER, LEFT SIDE
8	R 26008	1	HOUSING, RIGHT SIDE
9	R 26009	1	HOUSING, LEFT SIDE
10	R 26010	1	PAWL, RIGHT HAND
11	R 26011	1	PAWL, LEFT HAND
12	R 26012	1	HANDLE
13	R 26013	4	SPACER BLOCK, SWING PLATE
14	R 26014	4	GUIDE
15	R 26015	1	BLOCK
16	R 26016	1	SPOOL
17	R 26017	1	PISTON
18	R 26018	1	BODY
19	R 26019	1	FRONT CAP
20	R 26020	1	REAR CAP
21	R 26021	7	BOLT, SIDE PLATE
22	R 26022	11	LOCK WASHER
23	R 26023	11	NUT
24	R 26024	4	BOLT, SWING PLATE
25	R 26025	1	PIVOT PIN
26	*	1	O'RING
27	*	1	BACKUP RING
28	*	1	O'RING
29	*	1	BACKUP RING
30	*	1	O'RING
31	*	1	BACKUP RING
32	*	1	O'RING
33	*	2	BACKUP RING
34	*	1	O'RING
35	*	2	BACKUP RING
36	*	1	WIPER
37	R 26037	1	DETENT PIN
38	R 26038	1	HAIRPIN CLIP
39	R 26039	8	SCREW, BUTTON HEAD
40	R 26040	8	CAP SCREW
41	R 26041	2	KNOB, LARGE KNURLED
42	R 26042	2	SCREW, FLAT HEAD
43	R 26043	2	KNOB, SMALL KNURLED
44	R 26044	2	SCREW, FLAT HEAD
45	R 26045	2	SPRING, PAWL



# REL-117ST

26000, 4" SPEAR TOOL			
ITEM	PART NO	QUANT	DESCRIPTION
46	R26046	2	PIN
47	R26047	2	PIN
48	R26048	1	SET SCREW
49	R26049	1	SET SCREW
50	R26050	1	CAP SCREW
51		**	1 BALL
52		**	1 PINTLE
53		**	1 SPRING
54		**	1 SET SCREW
55		**	1 LEVEL SEAL PIPE PLUG
56		**	2 ROLL PIN
57	R26057	4	ROLL PIN
58	R26058	1	INSERT
59		**	1 PIPE PLUG, HOLLOW FOR RELIEF VENT
60	R26060	1	HEX HEAD SCREW
61	R26061	1	LANYARD
62	R26062	1	HANGER BLOCK
63	R26063	2	SWING PLATE, MODIFIED SMALL PLATE
64	R26064	2	SIGHT ROD
65	R26065	1	SEAL KIT *
66	R26066	1	WASHER
67	R26067	1	ROLL PIN
	R26005A	1	SPEAR ASSY (ITEMS 5, 50, 64)
			* DENOTES ITEMS IN SEAL KIT
			** FACTORY SET; ITEMS NOT SOLD
	26000PRCLST		10/1/04

# MAINTENANCE


**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.


**IF YOU HAVE QUESTIONS REGARDING THE REPAIR AND MAINTENANCE OF THIS TOOL CONTACT RELIABLE EQUIPMENT AT 800-966-3530**



**WARNING**

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.

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



**DANGER  
BLADE  
CLOSES**



**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



**DANGER**



The user should be properly trained in the correct procedures required for work on or around electrical lines.



**DANGER**

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

## Maintenance Records

Date	Parts or Service Required

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



### **RELIABLE EQUIPMENT & SERVICE CO., INC.**

92 Steamwhistle Drive • Ivyland, PA 18974  
Phone: 800-966-3530 • Fax: 215-357-9193  
Visit us on the web at [www.Reliable-Equip.com](http://www.Reliable-Equip.com)