

# OPERATORS' GUIDE



SHOWN WITH  
OPTIONAL  
GROUNDING  
SET-UP

## ST-200

SINGLE ACTING HYDRAULIC  
SPEARING TOOL

### NOTICE

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

### 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.

ST-200 Manual 06-06

# 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.

# TABLE OF CONTENTS

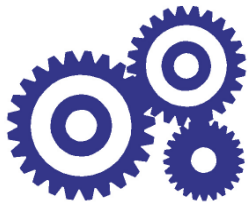
DISTRIBUTOR INFORMATION .....	2
REGISTRATION .....	3
TABLE OF CONTENTS .....	3
DESCRIPTION .....	4
TOOL SPECIFICATIONS .....	4
SAFETY INFORMATION AND WARNINGS .....	5-8
DAILY MAINTENANCE .....	9
OPERATING INSTRUCTIONS .....	9
PARTS DRAWING .....	10
PARTS LIST .....	11
MAINTENANCE .....	12
LABELS .....	12
MAINTENANCE RECORDS .....	13
CONTACT INFORMATION .....	14

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.



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## ST-200

SINGLE ACTING HYDRAULIC  
SPEARING TOOL

The Reliable Equipment **ST-200** single acting hydraulic spearing tool allows the operator to test for energized cable from a safe working distance. This tool features a 6 ton ram and an all aluminum cable retention body. Two sliding plates hold the cable while a spear is driven through the center of the cable. A grounding bolt is attached to the housing for easy grounding cable hook up. The ST-200 operates from any 10,000 psi hydraulic pump or Intensifier and is typically used with a 25' nonconductive high pressure hose. When the spear is completed and the pump pressure is released, the ram will retract without the spear. After removing the speared section, the probe can be used again.

**ST-200** Spearing Tool & 20 Probes

**ST-200K** Spearing Tool Kit

20 probes, 25' H.P. hose,  
hand pump, and carrying bag.

### SPECIFICATIONS

<b>Weight</b>	<b>7.0 lbs.</b>
<b>Length</b>	<b>16"</b>
<b>Pressure</b>	<b>10,000 psi</b>
<b>Capacity</b>	<b>4/0 - 2.25" O.D.</b>

**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.



## **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 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.



**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.





## **WARNING**

# CAUTION

The equipment specified in this document should be installed, used and serviced **ONLY** by competent and trained personnel. All said personnel **MUST** be familiar with and adhere to proper work and safety practices as prescribed by the governing utility. This equipment is intended **ONLY** for such trained personnel, and any information provided is not intended as a substitute for adequate training and experience.

**Appropriate safety procedures must be followed at all times in the use of this equipment.**

The descriptive information contained in our parts list and any instruction sheets are not intended to, and **DO NOT** include all details, usages, methods of use, or situations which may be encountered during the use of this equipment.



## **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 PARTS AT TOOL HEAD.**

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

**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.**



# ST-200 OPERATION

**This information is provided for the purpose of general description only, and is NOT intended to be relied upon or utilized by any purchaser or operator as Instructions for use, Warranties, Specifications or Certification.**

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.

This product is for spiking of Single conductor cable only.

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 loosening cable guides. (Figure A)

Insert probe as shown below until it snaps securely into place. (Figure A/B)

Insert conductor between upper jaw and piercing probe.

Advance BOTH sliding guides against cable, and tighten thumb screw, to ensure proper centering of cable within the tool jaw. (Figure C)

The material to be speared MUST be at a 90° angle to the blade. This will ensure a proper penetration with minimal distortion. Damage or incorrect spearing operation may occur if material is speared at any other angle.

Exit manhole or danger zone, and operate power source from a safe distance as prescribed by the governing utility.

To ensure completion, continue operation until control valve pops back to neutral position.

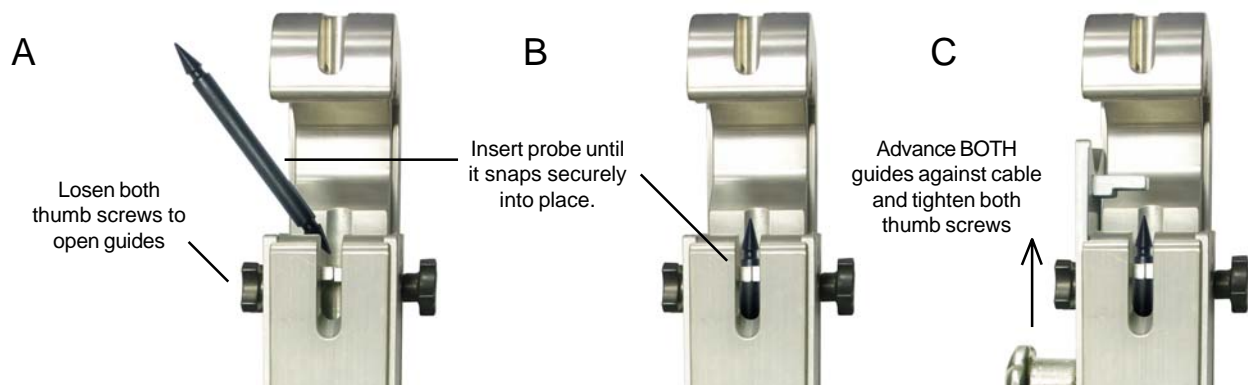
If you are using a hand operated pump, operate pump until bypass occurs and handle operation becomes very easy.

Continue until spearing operation is complete and cable is proven to be de-energized.

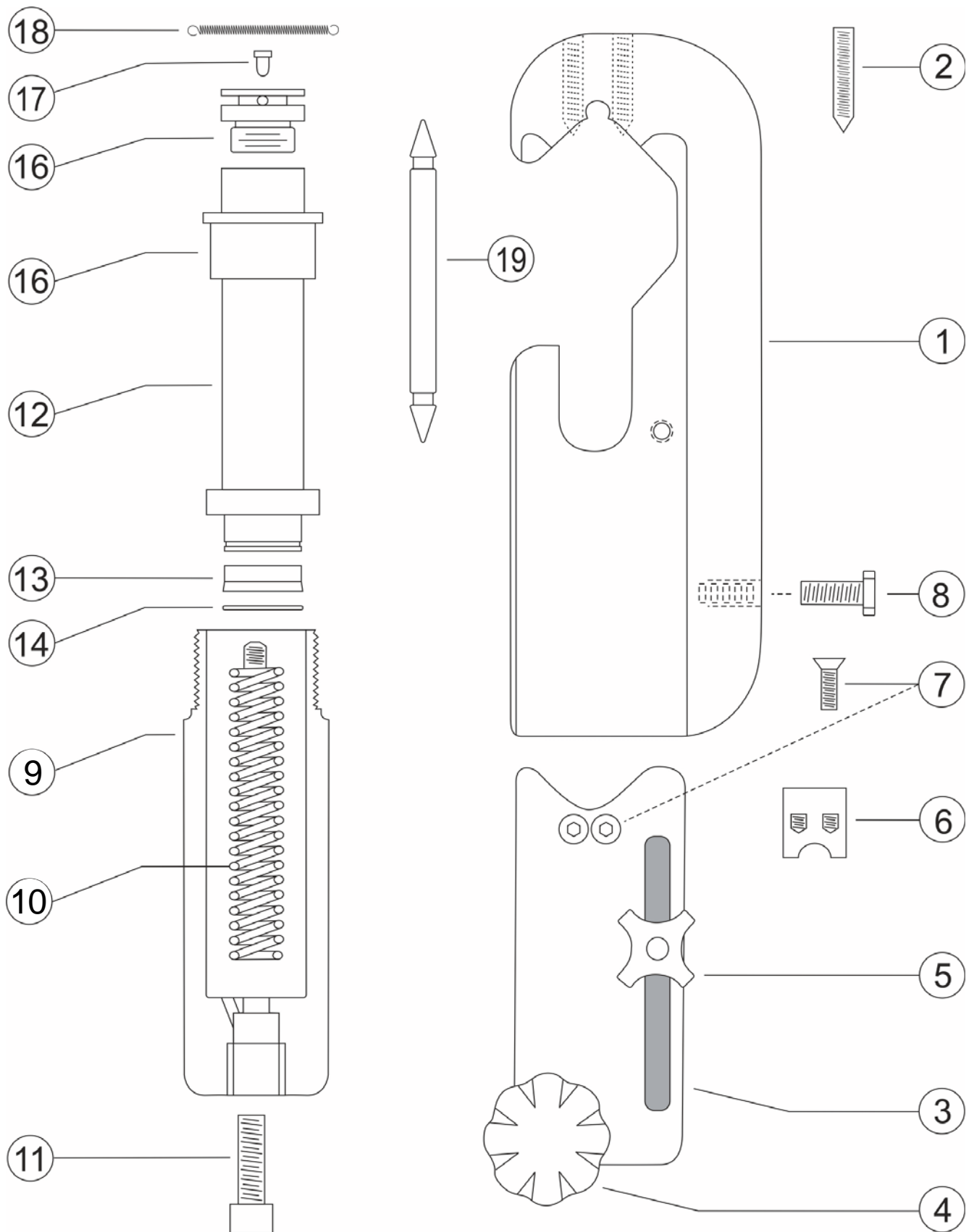
Once cable has been confirmed to be de-energized the tool may be removed.

Probe remains in cable to provide visual confirmation of spearing operation, and to prevent breaker from resetting and re-energizing the cable.

Probe may be removed later for re-use as needed.



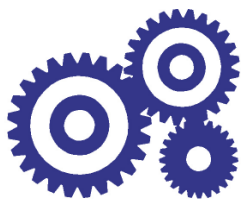
# ST-200 SPEARING TOOL



# ST-200 SPEARING TOOL PARTS

KEY #	PART #	DESCRIPTION	QTY
1	12661	HEAD	1
2	12641	PINCH SCREW, CONE PT	4
3	12638R	SLIDE CLAMP - RIGHT (SHOWN)	1
	12638L	SLIDE CLAMP - LEFT (NOT SHOWN)	1
4	12644	PUSH KNOB	2
5	12645	CLAMP LOCK	2
6	12642	SPEAR GUIDE	2
7	12658	SCREW, FHCS	4
8	12670	BOLT, HEX HEAD	1
9	12663S	CYLINDER	1
10	20510S	RETURN SPRING ASSEMBLY	1
11	12669	SCREW, SHCS	1
12	12664	PISTON	1
13	12667	U-CUP SEAL	1
14	20505	SNAP RING, SH-100	1
15	12665S	COLLAR	1
16	12666S	HOLDER, SPEAR	1
17	12651	DETENT PIN	1
18	12653	SPRING, DETENT	1
19	12652	SPEARS, BOX OF	1

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



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

# 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.

## 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.

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



**Any additional information which may be required by any purchaser or potential operator regarding the use, maintenance, installation or operation of this equipment should be referred to the governing utility, or Reliable Equipment.**





**RELIABLE EQUIPMENT  
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