

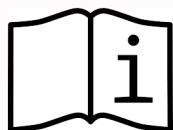
# OPERATION MANUAL



**ELITE INDUSTRIAL SALES**



## **FACING MACHINE TSM-2500M**



**01.2017**

**SERIAL # \_\_\_\_\_**

**For General Questions / Sales / Service**  
**Phone Number: 916-573-7800 or 916-826-5542**  
**[www.eliteindustrialsales.com](http://www.eliteindustrialsales.com)**

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## **1. INTRODUCTION**

### **Warning:**

Elite Industrial Sales is committed to continued product improvement therefore; the machine you received may be slightly different than the one described herein. This manual and the information provided is a basic guide line for our customers. Elite Industrial Sales will do its best to ensure that the information and procedures contained in this manual are correct and up-to-date. However, Elite Industrial Sales cannot guarantee that it is correct for all applications or situations. Furthermore, the contents of this manual are subject to change without notice. It is, therefore, the obligation of the user to read all information in this manual, become familiar with the equipment to be used, and exercise the utmost care in equipment operation. Do not make any modifications to this equipment since this will void all warranty claims, as well as possibly increasing the risk of injury or harm. Also, do not operate this equipment if all parts are not functioning at 100% efficiency. Notify us immediately for any needed repairs.

**Note: Elite Industrial Sales can supply all repair and replacement parts necessary for maintenance and operation of this machine. For repair, service or additional information, please contact us:**

### **USA**

**Elite Industrial Sales (Corporate/Sales/Mfg. Division)**

For General Questions / Sales / Service

Phone Number: 916-573-7800 or 916-826-5542

[www.eliteindustrialsales.com](http://www.eliteindustrialsales.com)

### **When you receive it:**

Inspect the machine for shipping damage. Be sure you received the parts listed on the invoice. Contact Elite Industrial Sales immediately if there are any errors or questions regarding this machine.

## **2. SAFETY PRECAUTIONS**

The following is a list of general safety guidelines to be considered when operating this tool. Standard safe machining practices should always be followed when operating ELITE INDUSTRIAL SALES Machines.

Before operating this machine, read the entire Operating Instructions. Inspect machine, cord and accessories for any damage.

Wear Safety glasses, ear plugs, and safety shoes while operating the machine. Keep your equipment clean and in good condition for maximum protection. Follow company and OSHA safety rules when operating equipment.

The motor should always be disconnected from the power source whenever servicing the machine or changing cutting inserts, collets, or other components.

### **SAFETY INFORMATION**

#### **WARNING!**

**MOVING PARTS.** Keep hands, loose clothing, and hair away from rotating or moving parts. Unplug all equipment prior to adjusting or servicing.

#### **WARNING!**

**ELECTRICAL SHOCK.** Possible shock if not handled properly.

#### **WARNING!**

**KEEP DRY.** Keep all equipment and components away from any water source.

#### **WARNING!**

**EYE PROTECTION.** Eye protection must be worn while operating or working near facing equipment.

#### **WARNING!**

**EAR PROTECTION.** Ear protection should be worn while operating or working near loud equipment.

### **3. DESCRIPTION**

The TSM-2500M Tube Squaring Machine is designed for facing short tubing from ½" to 2 ½" diameter and piping from ¼" to 2" with lengths greater than .550". This machine is portable or may be mounted on a bench for high volume operations.

We also offer two collets: our standard collets for facing micro fitting or short tubing from .625" long and our extended collets for 1" and above. The collets are made from hard Stainless Steel and are designed so the integrity of electro-polished tubing is not affected by their use. Our tool bits are designed to work on the following materials: Stainless Steel, Inconel, Hastelloy, Carbon Steels, Aluminum, and a variety of other alloys.

This machine will let you face quickly and squarely every time. You will also find this machine has an unobstructed view of the tool bit and tubing. Our feed indicator will give you precise length every time.

#### **The Standard TSM-2500M-10 Package Includes:**

- Operating tool (main body)
- Head Assembly
- Electric drive unit with variable speed
- Custom carrying case
- Two facing tool bits
- Tool kit
- Operating manual

#### **Optional Features:**

- Bench mounting hold down kit
- Battery power motor

#### **Specifications:**

- Weight (with motor, without collets): 18.5 lbs. (8.4 kg)
- Overall length: 16 inches (416.56 mm)
- Overall height: 19.5 inches (495.3 mm)
- Motor: 120VAC 60Hz-US style  
220VAC 50 Hz-CE compliant

**NOTE: THIS MACHINE BEVELS TOO, GREAT FOR SMALLER PIPE ½" – 2"!**

## **4. SET UP AND OPERATION**

### **COLLET SET UP:**

1. When you decided which size tubing or pipe collets that you are going to use, take collets and put them in the housing assembly.
2. Take your collet assembly and insert it into the head and align the bevel into the slot on the head and rotate until you hear a click on the lower collet.
3. Adjust the collet clamp. The tension adjustment set screw is located on the upper part of head, which screws down on the collet clamp. Turning the screw "IN" will increase the clamping force.
4. Adjust the screw to clamp the tubing firmly. Further adjustments should not be needed.

### **COLLET SIZES:**

INCHES			METRIC	
TSM-2501	1/2" TUBE		TSM-2516	12mm TUBE
TSM-2502	5/8" TUBE		TSM-2517	13.5mm TUBE
TSM-2503	3/4" TUBE		TSM-2518	14mm TUBE
TSM-2504	7/8" TUBE		TSM-2519	15mm TUBE
TSM-2505	1" TUBE		TSM-2520	17.2mm TUBE
TSM-2506	1 1/8" TUBE		TSM-2521	22mm TUBE
TSM-2507	1 1/4" TUBE		TSM-2522	28mm TUBE
TSM-2508	1 1/2" TUBE		TSM-2523	35mm TUBE
TSM-2509	2" TUBE		TSM-2524	52mm TUBE
TSM-2510	2 1/2" TUBE		TSM-2525	57.1mm TUBE
TSM-2511	1/2" PIPE		TSM-2526	60.5mm TUBE
TSM-2512	3/4" PIPE			
TSM-2513	1" PIPE			
TSM-2514	1 1/2" PIPE			
TSM-2515	2" PIPE			

## **ELITE INDUSTRIAL SALES | TSM-2500M FACING/SQUARING MACHINE**

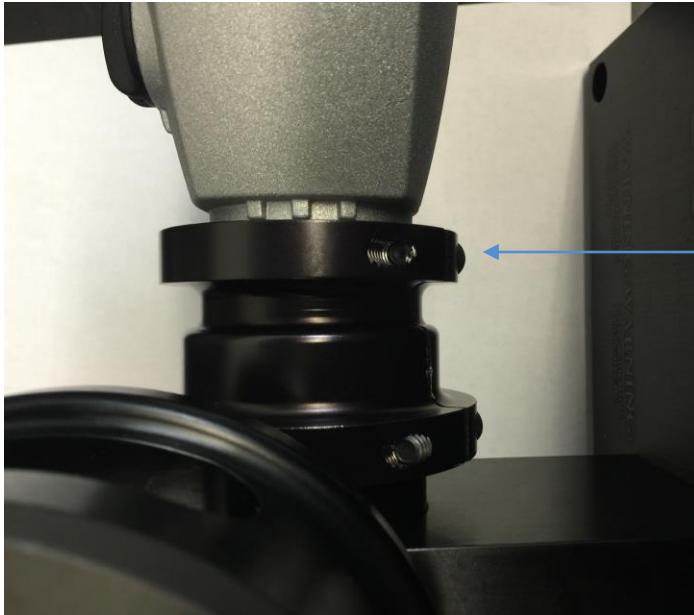
*(Please note: some millimeter sizes are also equivalent to standard US standards) Looking for a special size collet? Contact our sales department for pricing and delivery.*

### **5. ELECTRIC DRILL MOTOR**

The electric motor can be rotated 360 degrees to allow for comfortable machine operation.

#### **TO ROTATE MACHINE:**

1. Loosen the socket head cap screw on the split collar.
2. Rotate the motor to the most comfortable and or convenient position.
3. Tighten the socket head cap screw before turning on the machine.



Loosen screw and then adjust electric motor to desire position and tighten screw.

## **6. TOOL BIT SELECTION**

Select the right tool bit for your application. **Note: using the wrong type of tool bit or using dull bits may result in poor performance.**

### **PLEASE NOTE:**

There are two types of facing tool bits, one is designed to move the chip away from the ID of the tubing and not cause damage to inside of the

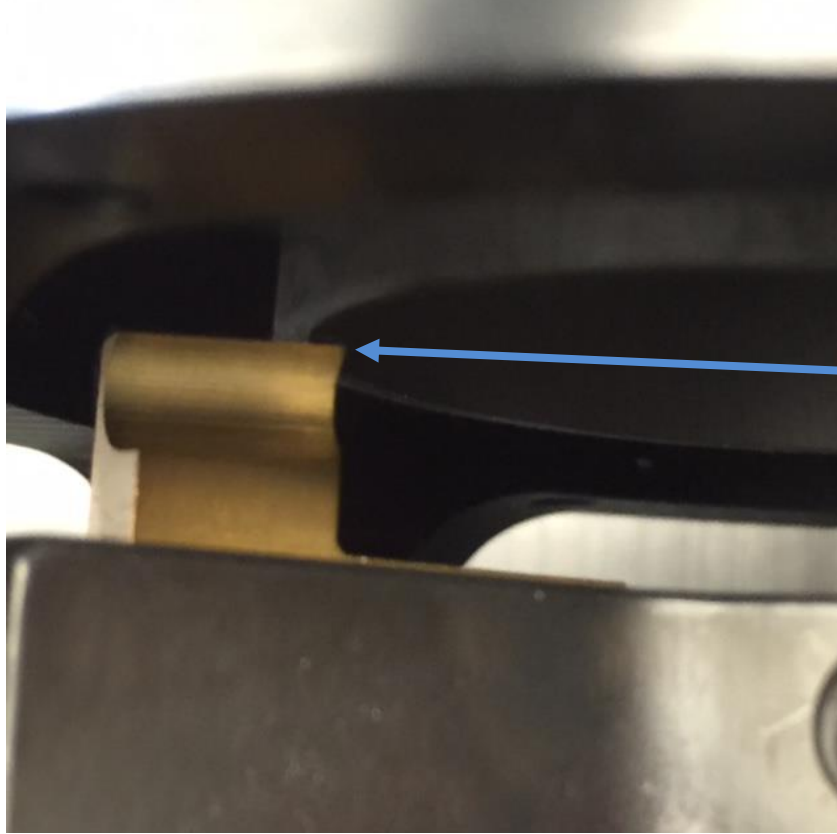
tubing/electropolish. The second type is a straight facing bit that is used on all other tubing or pipe and lasts much longer than the first type.

It is important to understand the design of the tool bit, and we are here to help you understand the right tool bit for the job. We also offer beveling bits that can be used on these facing machines to bevel pipe with a wall thickness of less than .375" thick.

### **TO CHANGE BITS:**

1. Unplug the motor from the power source before installing the tool bits.
2. Insert the tool bit into the slot and align the tool bit to the size of tubing or piping. This will give you a starting point. When using tool bits designed for electropolish tubing, you want to align the inside of the tool bits. (See Picture). When using standard tool bit, it can be aligning anywhere on the tool bit.





This is the area you want to place the edge of tool bit for best cut.

3. Make sure the cutting edge is facing “Counter clockwise” and **set screws are facing away from cutting edge.**
4. **See arrow on cutter head showing direction head should rotate.**
5. Tighten down the set screws.

## **ELITE INDUSTRIAL SALES | TSM-2500M FACING/SQUARING MACHINE**

### **TOOL BIT SELECTION FOR TSM-2500M:**

TB-1506**	For use on 316 or 304 stainless
TB-1506-LC**	Laser coated for abrasion resistance
TB-1506-TIN**	Tin coated for superior heat resistance
TB-5000**	For soft and gummy stainless steel tubing
TB-0206	Heavy duty for larger wall thicknesses
TB-0168	Counterbore bit
TB-0167	37.5 degree bevel
TB-6900	"J" bevel 25 degree w/.032 radius
TB-1510	Double sided tool insert (carbide)
TSM-AD-3000	Tool bit adapter/holder for inserts
TB-0167	Facing straight for pipe or tube .75" tall
TB-4000	Facing straight for pipe or tube .625" tall

**\*\* These are tool bits that are design for Electropolish Tubing.**

**(Tool bits can be requested with TIN or Laser coating)**

### **NOTE:**

**Slower speeds produce minimum burrs when working with Electropolishing Stainless Tubing.**

### **CAUTION!**

**Running the drill too fast will harden the stainless-steel tubing and quickly damage the tool bits.**

## **7. FEED HANDLE & FEED DIAL INDICATOR**

1. For the comfort and convenience of the operator, the feed handle is located at the back of the machine. Rotate the feed handle “clockwise” to move tool bit toward tubing.
2. On the inside of the feed handle is a feed dial indicator to control the distance travel with the feed handle. When using this feature, make sure the motor is off; use the feed handle to advance the tool bit forward just until it is in contact with the work piece/tubing.
3. Then move the indicator to zero position, and then turn the tool bit back away from the tubing.
4. Now you can start the motor and feed the handle in “clockwise”, cutting the tubing to desire length. Each mark is .015 increments

### **FEED DIAL INDICATOR:**

The feed dial indicator is only used when a certain amount of travel is needed. Typically, just giving the tube end a 100% clean up is enough.

### **TO USE FEED DIAL INDICATOR:**

1. With the motor off, use the feed handle to advance the tool bit forward just until it contacts the work piece.
2. Holding the cutter against the work piece, rotate feed dial indicator to any reference mark on the feed dial. The feed dial is stamped in .015” increments.
3. Back the tool bit away from the work piece.
4. Start the motor and feed as before using the referenced feed dial setting as a depth of cut guide.

## **8. MAINTENANCE**

### **GENERAL MACHINE MAINTENANCE**

During heavy operation, regularly use a brush to clean chips away from the machine. Wipe the machine down thoroughly when you are through with the machine. Do not spray anything into the electric motor body.

### **ELECTRIC MOTOR MAINTENANCE**

Periodically check the motor brushes for excess wear or damage. Replace as needed. Check the power cord for cuts, tears, or abrasions.

### **COLLET MAINTENANCE**

Keep clamp collets together in their respective sets. When not in use, store in case. Collet repair kits are available from your retailer.

### **TOOL BIT MAINTENANCE**

When possible, leave unused tool bits in their packages to prevent them from being damaged. Please store tool bits that have been taken from their original package in a safe place.

## **9. WARRANTY**

EVERY ELITE INDUSTRIAL SALES MACHINE IS THOROUGHLY INSPECTED AND TESTED BEFORE LEAVING OUR MANUFACTURING FACILITIES. ALL PRODUCTS MANUFACTURED BY ELITE INDUSTRIAL SALESSYSTEMS, INC. ARE WARRANTED TO THE ORIGINAL PURCHASER TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP. UNDER NORMAL USE, THE MACHINE IS WARRANTED FOR A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE. THIS DOES NOT INCLUDE TOOL BITS OR OTHER CONSUMABLE ITEMS. SHOULD ANY TROUBLES OR CONCERNS DEVELOP, RETURN THE COMPLETE TOOL PREPAID TO ELITE INDUSTRIAL SALESSYSTEMS, INC. OR TO THE NEAREST AUTHORIZED SERVICE CENTER. IF INSPECTION SHOWS THE TROUBLE IS CAUSED BY DEFECTIVE WORKMANSHIP OR MATERIAL, ELITE INDUSTRIAL SALESAT ITS OPTION WILL REPAIR OR REPLACE WITHOUT CHARGE FOR EITHER PARTS OR LABOR. THE PRODUCT WILL BE RETURNED TO THE PURCHASER FREIGHT PREPAID AND BILLED TO THE PURCHASER.

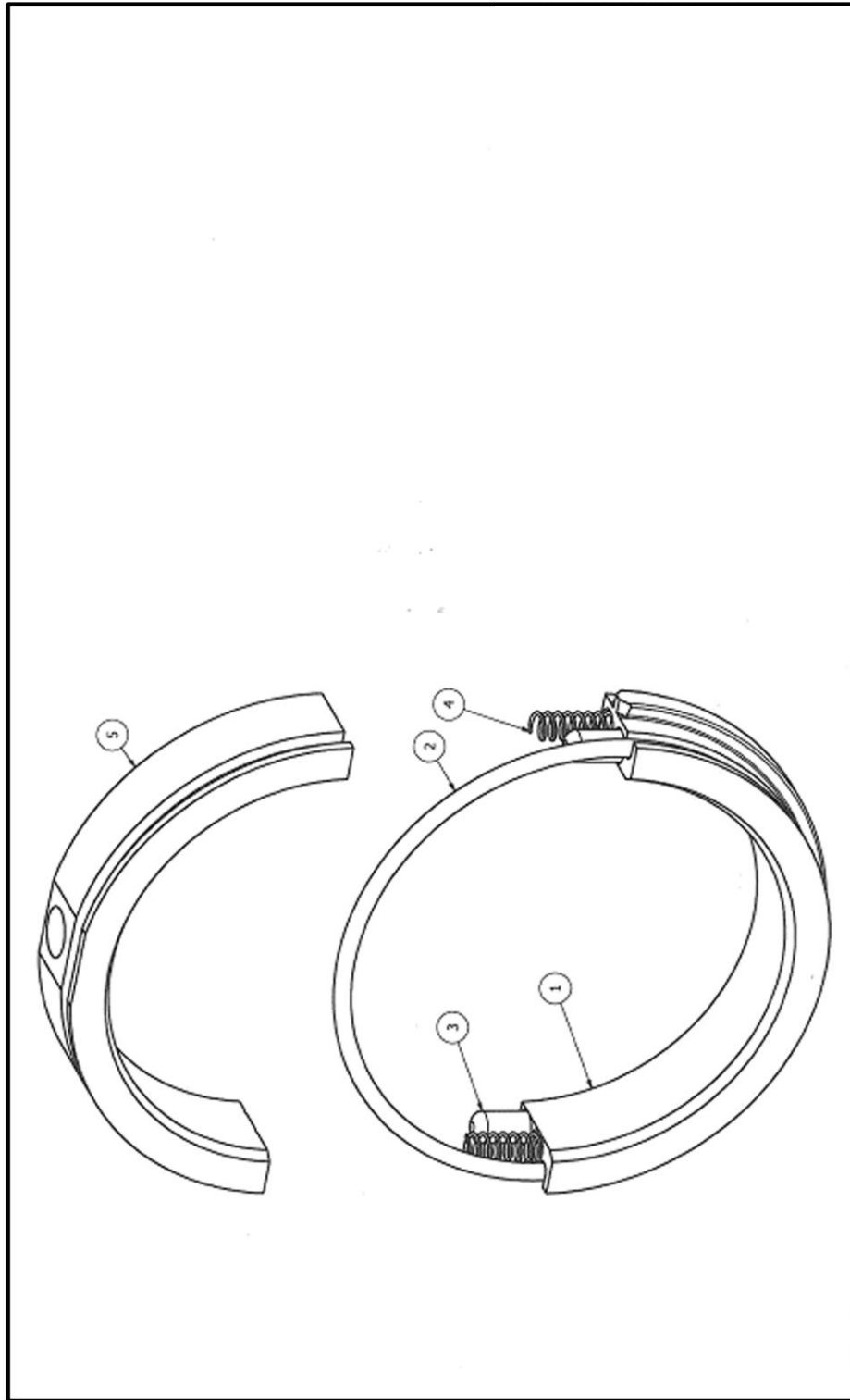
WARRANTY IS TWELVE MONTHS (12MO) 1 YEAR WARRANTY FROM DATE OF PURCHASE. PLEASE REVIEW BELOW INFORMATION REGARDING THE WARRANTY DETAILS. THIS DOES NOT INCLUDE TOOL BITS OR OTHER CONSUMABLE ITEMS.

### **WARRANTY DOES NOT APPLY IF:**

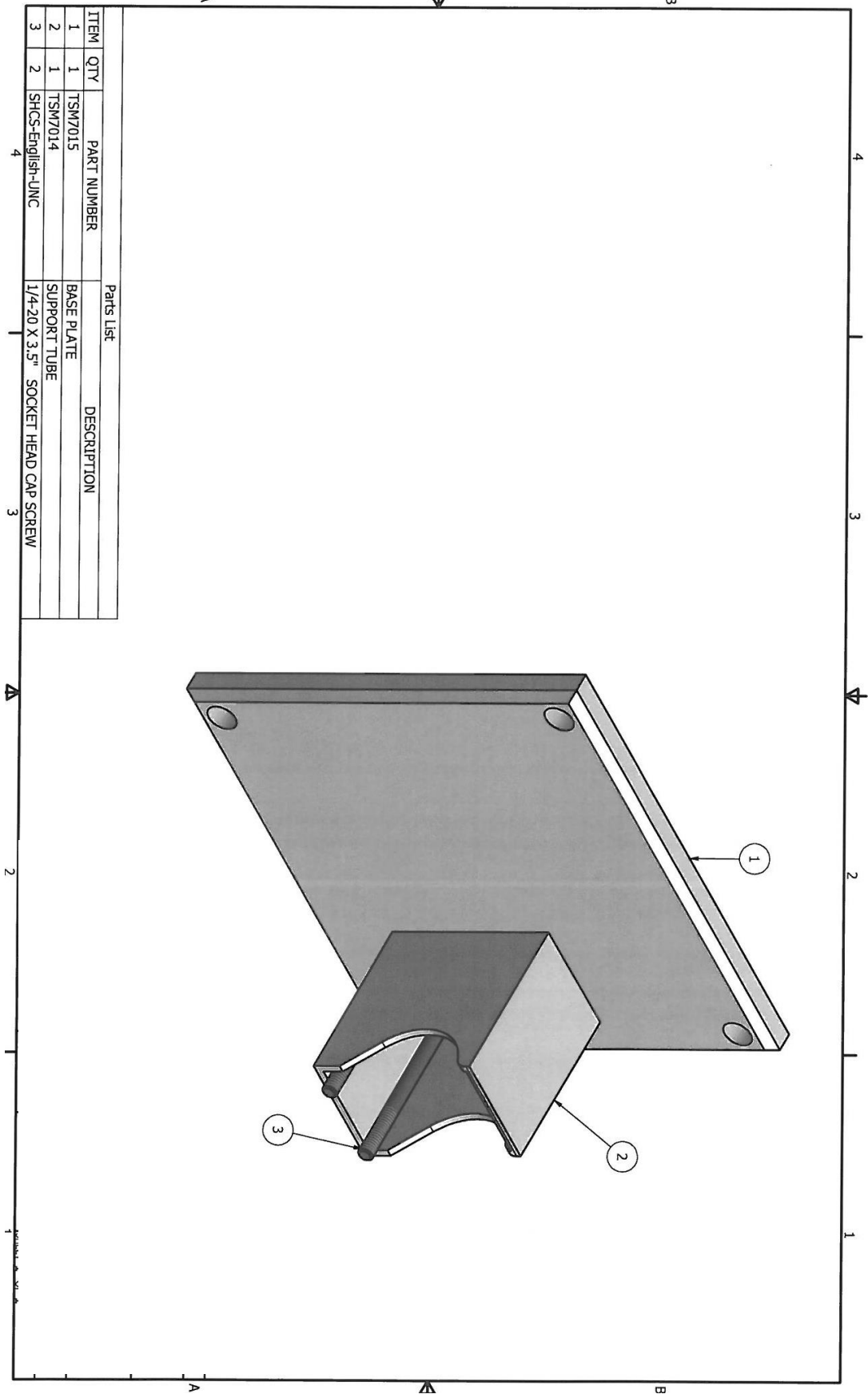
- 1) REPAIRS OR ATTEMPTED REPAIRS HAVE BEEN MADE BY PERSONS OTHER THAN ELITE INDUSTRIAL SALESPERSONAL, OR UNAUTHORIZED SERVICE REPAIR PERSONNEL.
- 2) REPAIRS ARE REQUIRED BECAUSE OF NORMAL WEAR.
- 3) THE TOOL HAS BEEN ABUSED OR INVOLVED IN AN ACCIDENT.
- 4) MISUSE IS EVIDENT, SUCH AS OVERLOADING THE TOOL BEYOND ITS RATED CAPACITY. THE TOOL HAS BEEN USED AFTER PARTIAL FAILURE, OR THE TOOL HAS BEEN USED WITH AN IMPROPER ACCESSORIES.
- 5) THE MOTOR IS DAMAGED DUE TO NOT USING OILER/MISTER WHILE USING (PENDING MOTOR TYPE).

**NO OTHER WARRANTY VALID IF EITHER WRITTEN OR VERBALLY IS AUTHORIZED.**

## **10. TSM-2500M EXPLODED VIEWS AND PARTS LIST**

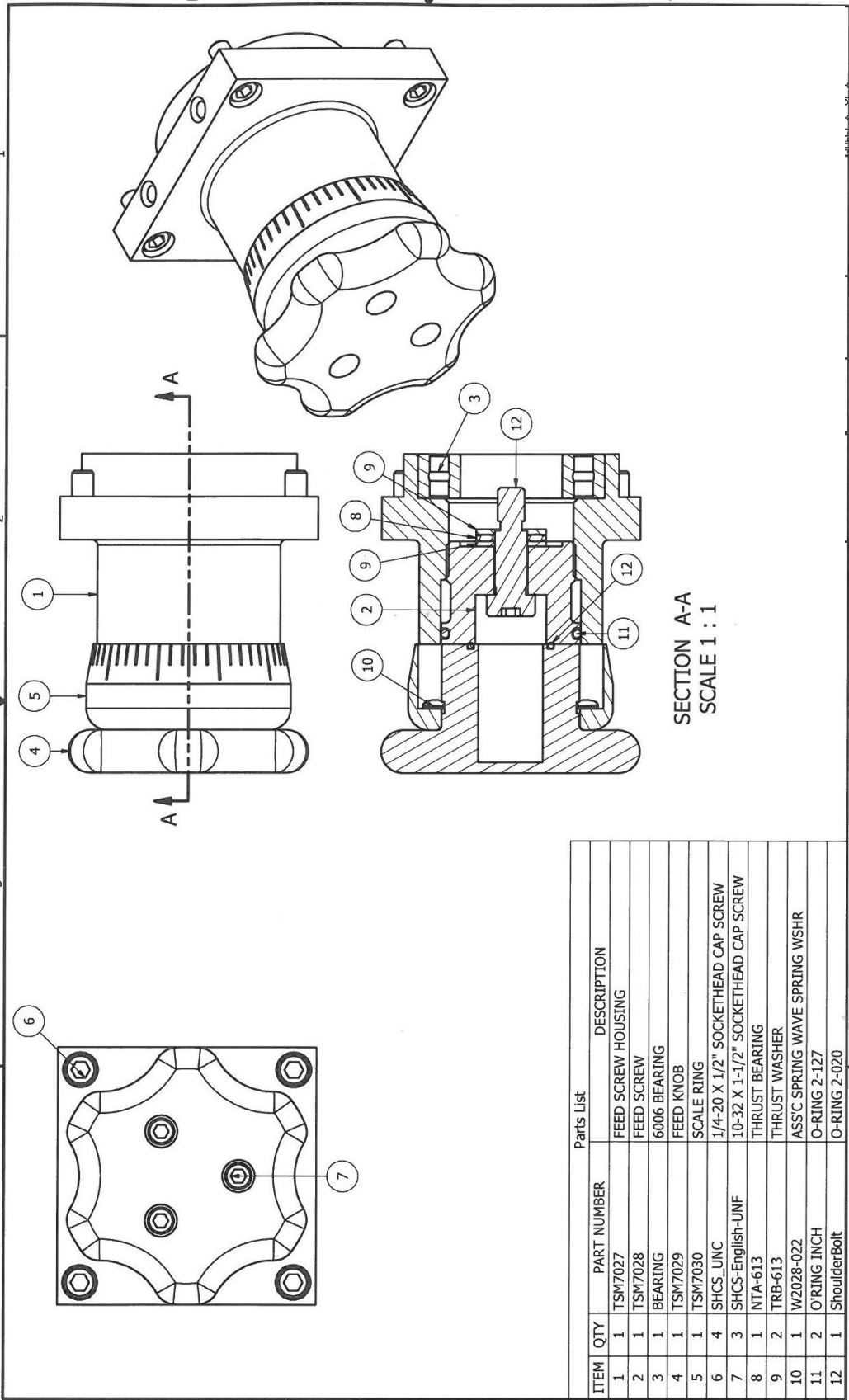


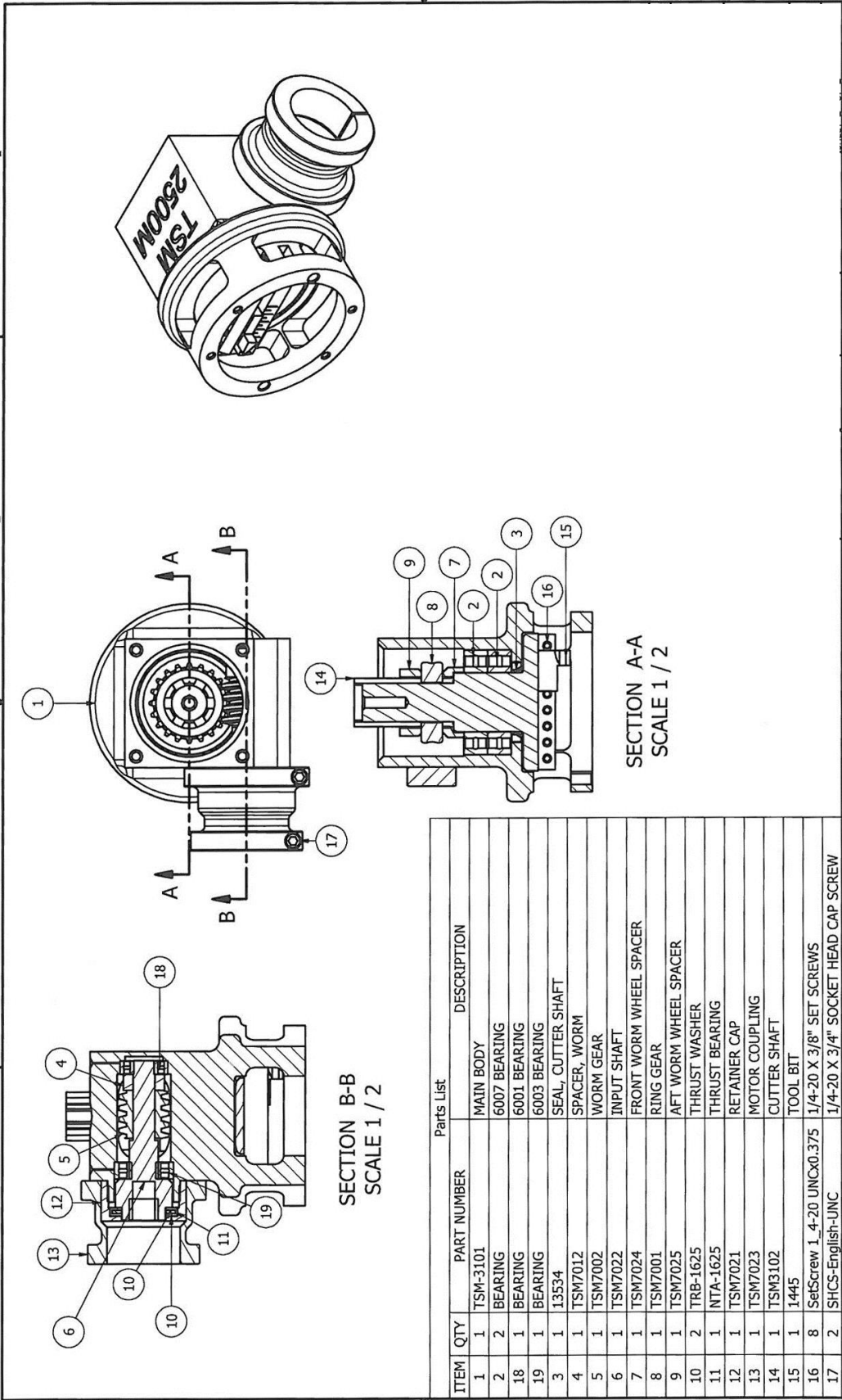
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