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## SAFETY PRECAUTIONS

### IN GENERAL

When using rotating head cutting equipment, basic safety precautions should always be followed to reduce the risk of personal injury.

Operate this tool only in accordance with specific operating instructions.

#### **WARNING:**

Do not override the deadman switch on the power unit. Locking down, obstructing, or in any way defeating the deadman switch on the power drive unit may result in serious injury.

### DRESS CONSIDERATIONS

Use standard safety equipment. Hard hats, safety shoes, safety harnesses, protective clothes, and other safety devices should always be used when appropriate.

Use safety glasses. Do not operate cutting tools without eye protection.

Dress properly. Do not wear loose clothing or jewelry. They can be caught in rotating and moving parts. Avoid slippery floors or wear nonskid footwear. If you have long hair, wear protective hair covering to contain it.

### WORK AREA

Keep the work area clean. Cluttered work areas and benches invite injuries.

Consider the work area environment. Keep the area well lit. Keep electrical cords, cables, rags, rigging straps, and etc. clear of rotating equipment. Do not use power-cutting tools in the presence of flammable liquids and gasses.

Keep visitors away. Do not let visitors or untrained personnel at or near operating tools. Enforce eye protection requirements for all observers.

Do not over reach. Keep proper footing at all times.

Stay alert. Watch what you are doing. Use common sense. Do not operate tools when you are tired.

## **TOOL CARE**

Maintain tools with care. Keep tools in good operating condition. Sharp tool bits perform better and safer than dull tool bits. Well maintained tools function properly when needed.

Check for damaged parts. If a tool has malfunctioned, been dropped or hit, it must be checked for damage. Run no-load tests and feed function checks. Do a complete visual inspection.

Electric motors. Use only with proper AC voltage power sources and observe all normal electric shock hazard procedures.

Do not abuse power and control cords. Pulling or running over cords and cables can result in electrical shock hazards and malfunctions. Keep control and power cords out of all cutting fluids and water.

Hydraulic drives. Observe proper procedures for electrically driven power sources. Avoid damage to hydraulic lines. Keep quick-disconnects clean. Grit contamination causes malfunctions.

Air tools. Check the exhaust muffler. Broken or damaged mufflers can restrict air flow or cause excessive noise. Use air motors only with a filtered, lubricated and regulated air supply. Dirty air, low-pressure air or over pressure air will cause malfunctions, including delayed starting.

## **AREA EQUIPMENT**

Secure work. Whenever possible use clamps, vises, chains and straps to secure pipe.

Make sure the tool is secured; it is safer to have both hands free to operate the tool.

## **TOOL USE**

Use the right tool and tool bit for the job. Do not use a tool, which is incorrect for the job you are doing.

Keep the tool bits fully engaged in the tool bit holders. Loose bits are a safety hazard.

Disconnect power supply during setup and maintenance. Use all 'Stop' or Shut off' features available when changing or adjusting tool bits, maintaining the tool, or when the tool is not in use.

Remove adjusting keys and wrenches before applying power to the equipment. Develop a habit of checking the tool before turning it on to make sure that all keys and wrenches have been removed.

Do not force tools. Tools and tool bits function better and safer when used at the feed and speed rate for which they were designed.

Do not reach into rotating equipment. Do not reach into the rotating head stock to clear chips, to make adjustments, or to check surface finish. A machine designed to cut steel will not stop for a hand or an arm.

Handle chips with care. Chips have very sharp edges and are hot. Do not try to pull chips apart with your hands; they are very tough.

Avoid unintentional starts. Do not carry or handle tools with your hand on the operating switches or levers. Do not lay the tool down in a manner that will start the drive. Do not allow the tool to flip around or move when adjusting or changing tool bits.

Store idle tools properly. Disconnect tools from the power source and store in a safe place. Remove tool bits for safe handling of the tool.

## GENERAL DESCRIPTION

The SQM-1AC Squaring Module mounts on the Model 572AC SEVERMASTER™.

The mount incorporates a pivot post to allow the SQM-1AC to be “parked” over the cutting face during a sever operation.

After a sever is complete, the SQM-1AC may be pivoted into position for performing a burr free end squaring operation.

A manual feed with a helical gear reduction allows the operator to control the depth of the cut to the end squaring operation.

The SQM-1AC covers the full range of the Model 572AC SEVERMASTER™.

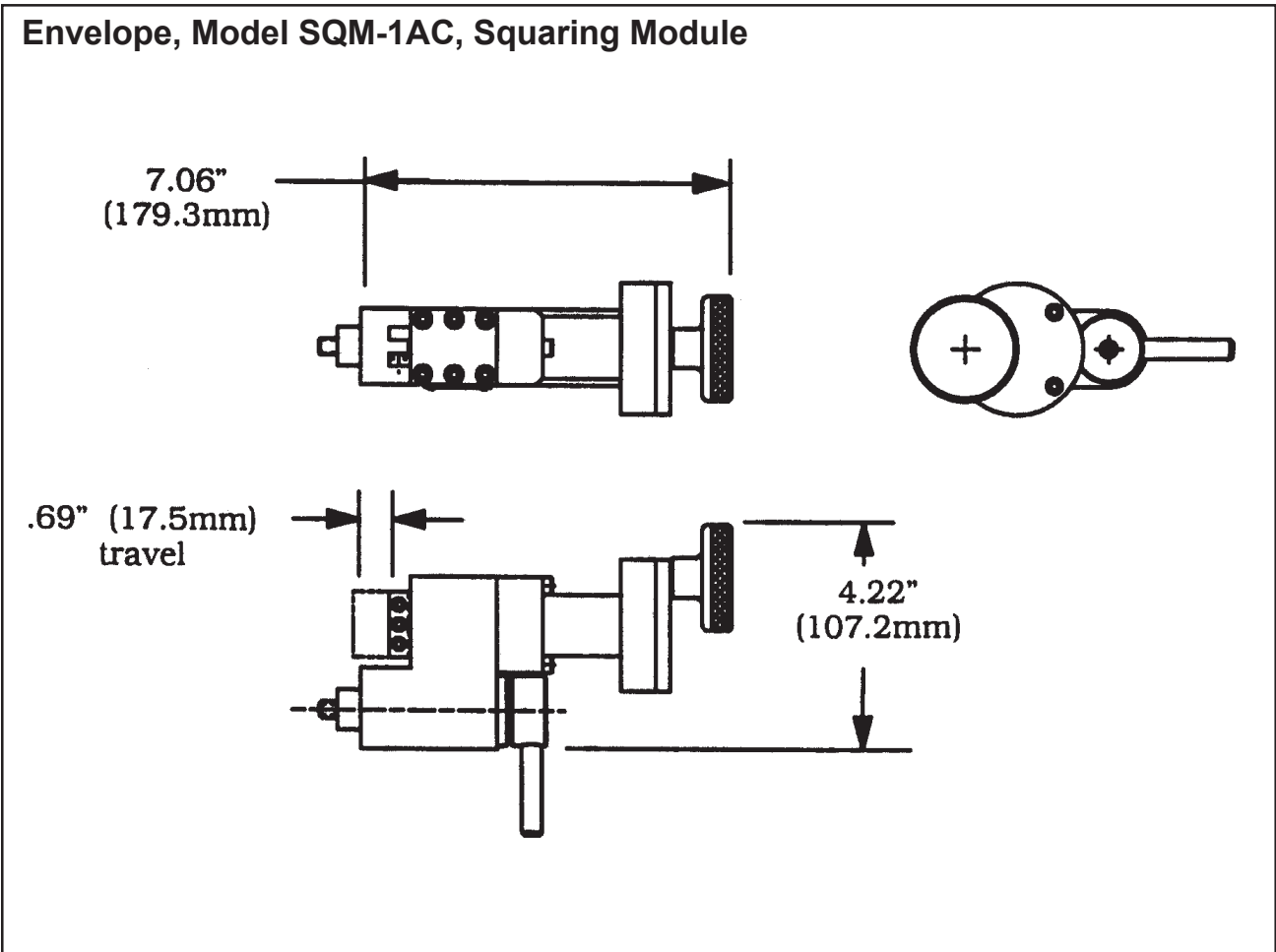
# SPECIFICATIONS

Basic tube or pipe size: .250" through 2.00" diameter  
(6.4 mm through 50.8 mm diameter)  
.065" (1.65 mm) wall maximum.

Clearances: Rotating parts diameter is the same as the Model 572AC.  
Length is 7.06" (179.3 mm) from the face of the Model 572AC.

Axial feed length: .69" (17.5 mm)

Axial feed rate: .005" (.13 mm) per revolution at full speed.



### MACHINE FEATURES

The SQM-1AC Squaring Module can be mounted directly to the Headstock of the Model 572AC SEVERMASTER™.

Manual axial feed.

No loose pieces.

No reset of the Model 572AC after severing and/or beveling pipe.

Spare parts and standard tool bits are available from stock.

Engineering design services for custom tool bits and special function modifications are available from the factory.

All TRI TOOL Inc. and allied equipment products are subject to design improvements and specification changes at any time with no obligation to units already sold.

Warranty (limited), parts and/or equipment are warranted against defects in material and workmanship for a period of one year from the date of purchase.

Full details supplied on request and/or tools.

Filter, regulator, lubricator (FRL) is required to protect the warranty on air products.

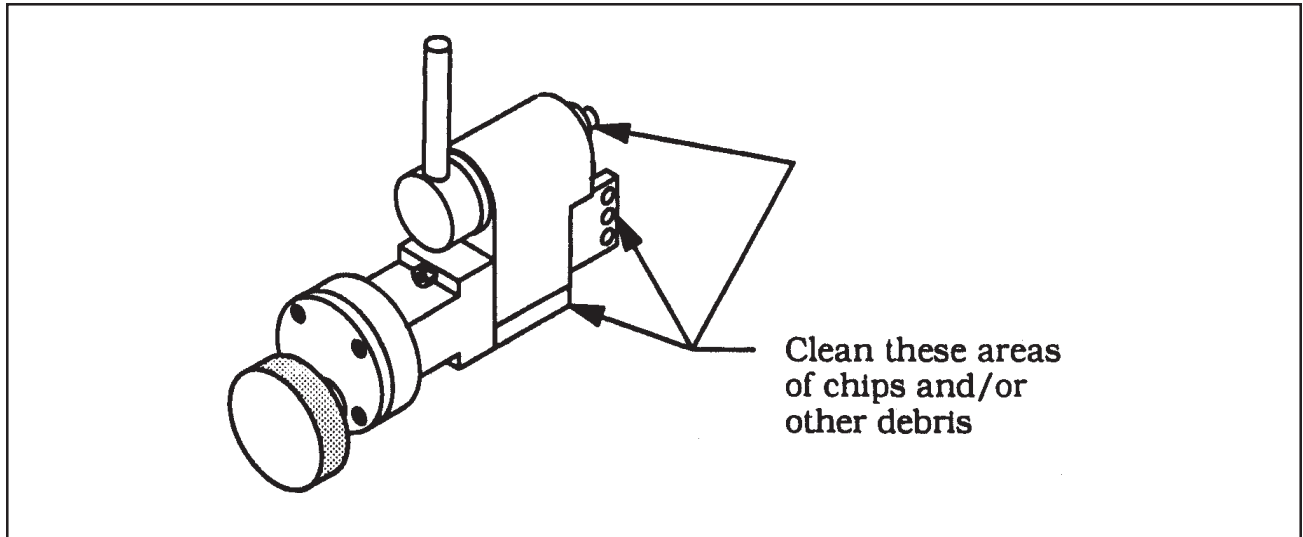


## MAINTENANCE

### GENERAL

All components should be cleaned and coated with a light film of oil prior to use.

Use a clean, non-detergent oil, preferably SAE 10 (90 SSU) or lighter.



If the Model SQM-1AC is operated in such a manner that it collects debris while cutting, it should be cleaned after each cutting operation.

**WARNING:** Tool life may be severely shortened, unless chips and/or other debris that have been deposited on the cutting head during the machining operation are removed.

### RECOMMENDED MAINTENANCE SCHEDULE

Daily maintenance when the unit is in operation includes wiping the unit down and spraying it with a rust preventative under severe humidity conditions.

Visually inspect for loose screws, missing screws, damage, etc.

If the Model SQM-1AC is to be stored or if it will remain out of service for a significant period of time (30 days or more), it should be thoroughly cleaned, lubricated and sprayed with a rust preventative prior to storage.

## OPERATION

### PREPARE THE MACHINE

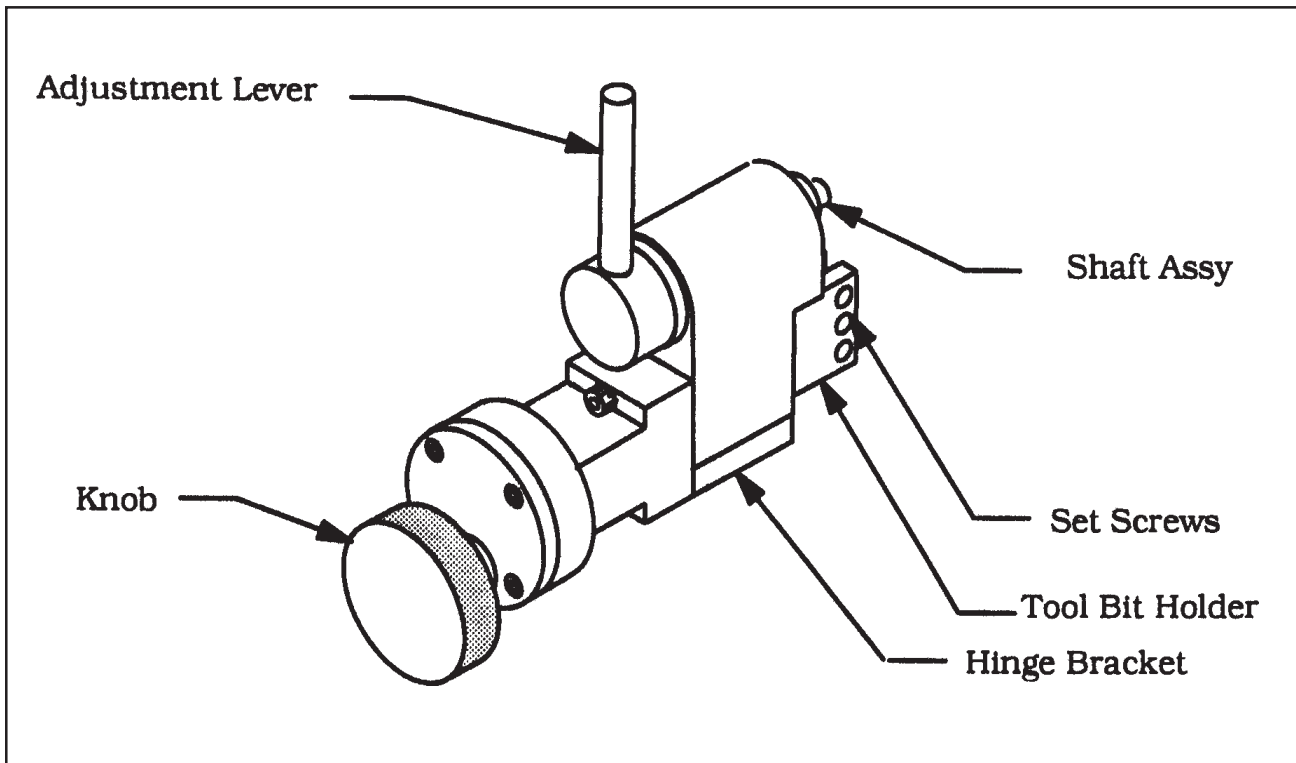
Read the operating instructions carefully before attempting to operate the Model SQM-1AC Squaring Module.

Refer to the Operator's Manual for operating instructions for the Model 572AC SEVERMASTER™.

**WARNING:** The use of dull or improperly designed tool bits or tool bits not manufactured by TRI TOOL Inc. may result in poor performance and may constitute abuse of this machine and therefore voids the TRI TOOL Inc. factory warranty.

Remove the shaft assembly by rotating the adjustment lever.

Tighten the shaft assembly onto the face of the Model 572AC.



Mount the Squaring Module onto the shaft assembly and tighten the adjustment lever.

Loosen the (3) three set screws to let the tool bit slide.

Slide the tool bit into the desired position for the diameter of the pipe or tube to be machined.

Tighten the (3) three set screws to secure the tool bit.

Turn the Model 572AC on and let it rotate slowly while ensuring that the tool bit is making contact with the end of the pipe.  
not

Bring the motor up to speed.

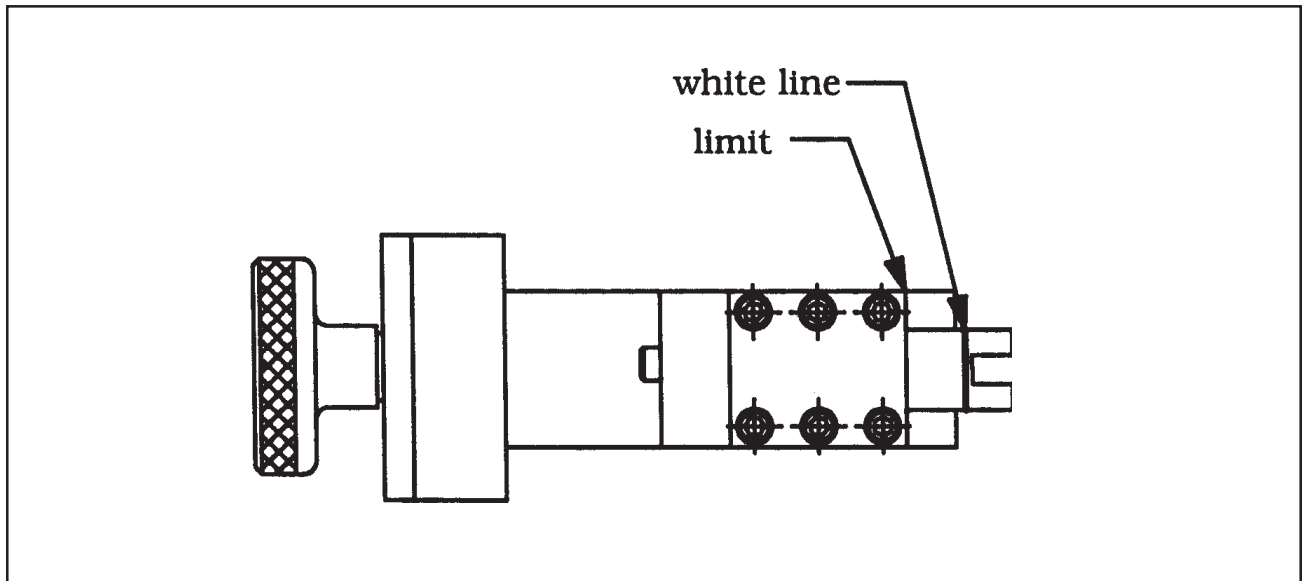
Turn the feed knob to feed the tool bit into the end of the pipe.

After the face of the pipe has been machined let the tool bit make three more rotations to clean up the face.

Back the tool bit off of the pipe by turning the Feed Knob.

**WARNING:** Damage to the gear box will occur if the white line on the tool holder is retracted beyond where it can be seen.

Turn off the motor.



## CUTTING SPEEDS

<b>Cutting Speeds (approximate)</b>				
<b>Mean Cutting Diameter</b>		<b>RPM for 200 in/min (5080 mm/min)</b>	<b>RPM for 250 in/min (6350 mm/min)</b>	<b>RPM for 300 in/min (7620 mm/min)</b>
.25"	6.4 mm	254	318	382
.50"	12.7 mm	127	159	191
1.00"	25.1 mm	64	80	95
1.50"	38.1 mm	42	53	64
2.00"	50.8 mm	32	40	48

Use 200 surface inches per minute (5080 surface millimeters per minute) for: Stainless steels in general when no coolant is allowed, all heavy wall tube and some of the chrome/molybdenum steels.

Use 250 surface inches per minute (6350 surface millimeters per minute) for: Mild steels and some thin wall stainless steels when coolants are permitted and applied.

Use 300 surface inches per minute (7620 surface millimeters per minute) for: Aluminum and thin-wall mild steel tube with coolants.

**TOOL BITS**

<b>Squaring Tool Bits</b>				
<b>Range</b>	<b>Max Wall Thickness</b>	<b>Pipe or Tube Material</b>	<b>Tool Bit Height</b>	<b>Squaring Tool Bit P/N</b>
.250" thru 1.625" OD (6.4 mm thru 41.3 mm OD)	.065" 1.65 mm	CS, SS	.750" (19.1 mm)	99-1479
		SS (316L)		99-2490
1.00" thru 2.00" OD (25.4 mm thru 50.8 mm OD)	.065" 1.65 mm	CS, SS	.750" (19.1 mm)	99-1445
				99-1331*
		SS (316L)		99-1506
				99-3650*
				DURABIT1

\*M42

## TROUBLE SHOOTING

**Problem: The Tool Bit Chatters**

**Probable causes:**

- The tool bit is loose or overextended.
- The tool bit is damaged.
- The tool holder is too loose in the slides.
- The cutting speed is too fast.
- The clamping pads are loose on the pipe or tube.
- Cutting fluid is required.
- The main bearing pre-load is loose.

**Problem: There is excessive Tool Bit wear**

**Probable causes:**

- The pipe or tube material is too hard or abrasive.
- The cutting speed is too fast.
- Cutting fluid is required.
- A dull Tool Bit is causing surface hardening conditions (Stainless pipe or tubing).
- There is scale or other foreign matter on the pipe or tube, which is dulling the tool bit at the start of the cut.
- The tool bit is incorrect for the material being cut.

**Problem: The surface finish is rough**

**Probable causes:**

- The tool bit is dull, chipped, etc.
- Metal build-up on the cutting edge of the tool bit is creating a false cutting edge.
- Cutting fluid is required.
- The cutting speed is incorrect.

**Problem: The tool holder is not feeding**

**Probable causes:**

- The feed pin is broken or out of position.
- The feed sprocket shear pin is broken.
- The feed screw is stripped.
- The feed nut is stripped.
- The slide rails are too tight.

**Problem: There is a loss of air power**

**Probable causes:**

The air supply pressure is too low.

The air filter is plugged.

The air line size is insufficient.

The air line is too long.

**Problem: There is a loss of hydraulic power**

**Probable causes:**

The hydraulic supply pressure is too low.

The hydraulic filter is plugged.

The hydraulic line size is insufficient.

The hydraulic line is too long.

**Problem: The tool bit will not reach the work**

**Probable causes:**

Incorrect tool blocks are installed for the size of the pipe or tube being worked on.

Incorrect tool bit is installed.

**Problem: The hydraulic motor will not start**

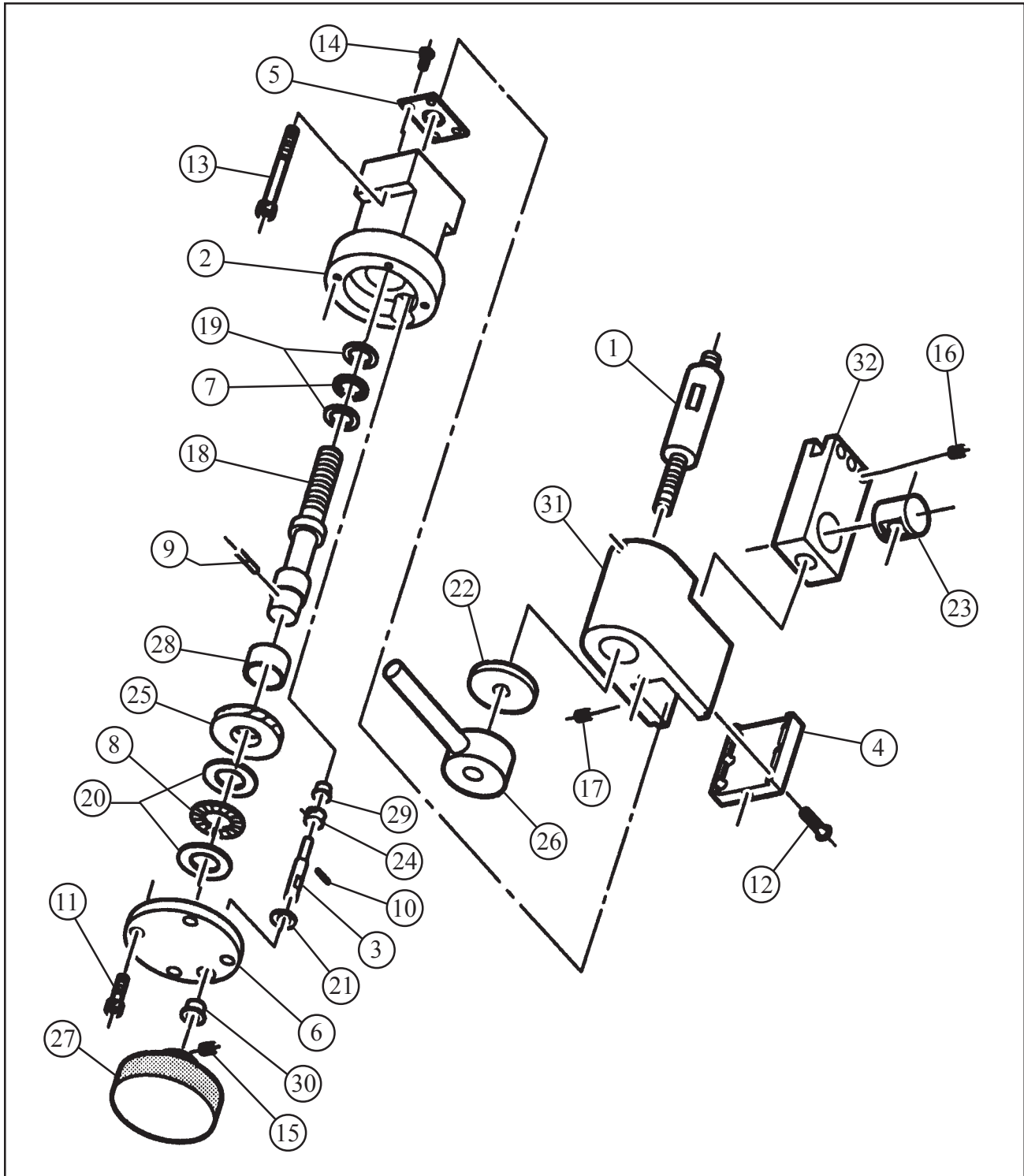
**Probable causes:**

The hydraulic power supply is shut off.

The hydraulic motor is damaged and will not run free.

# ILLUSTRATED PARTS BREAKDOWN

## SQUARING MODULE ASSEMBLY





## Model SQM-1AC Squaring Module

### Parts List, Squaring Module Assembly (P/N 82-0119)

Item No.	Part No.	Description	Qty
1.	14-0080	SHAFT ASSY, PIVOT	1
2.	19-0669	HOUSING, GEAR	1
3.	20-0564	SHAFT, DRIVE	1
4.	24-1080	PLATE, COVER	1
5.	24-1083	PLATE, RETAINING	1
6.	24-1269	PLATE, COVER	1
7.	29-0068	BEARING, THRUST	1
8.	29-0150	BEARING, THRUST	1
9.	32-0220	PIN, DOWEL, 1/8 DIA X 3/8"	1
10.	32-0250	PIN, DOWEL, 1/16 DIA X 1/2"	1
11.	33-0019	SCREW, CAP, #8-32 X 3/8"	4
12.	33-0029	SCREW, CAP, #10-24 X 5/8"	6
13.	33-0033	SCREW, CAP, #10-24 X 1 1/4"	2
14.	33-0269	SCREW, BUTTON, #6-32 X 3/8"	4
15.	33-0488	SCREW, SET, #10-24 X 1/4", CUP PT	1
16.	33-0499	SCREW, SET, 1/4-20 X 1/4", CUP PT	3
17.	33-1735	SCREW, SET, BRASS TIP, 3/8-16 X 1/4"	1
18.	33-1854	SCREW, FEED, 3/8-40, LH	1
19.	34-0107	WASHER, THRUST	2
20.	34-0192	WASHER, THRUST	2
21.	34-0279	WASHER, THRUST	1
22.	34-0257	WASHER, THRUST	1
23.	35-0400	NUT, FEED	1
24.	39-0733	GEAR, HELICAL, 24DP, 8T	1
25.	39-0734	GEAR, HELICAL, 24DP, 36T	1
26.	41-0139	LEVER ASSY, ADJUSTMENT	1
27.	42-0100	KNOB, FEED	1
28.	45-0223	BUSHING, BRONZE	1
29.	45-0224	BUSHING, FLANGED, BRONZE	1
30.	45-0225	BUSHING, FLANGED, BRONZE	1
31.	47-1124	BRACKET, HINGE	1
32.	49-0215	HOLDER, TOOL	1
NOT SHOWN:			
	36-0008	WRENCH, L, 3/16", HEX	1
	36-0018	WRENCH, T, 1/8", HEX	1
	36-0230	WRENCH, COMBINATION, 5/8"	1