



TRI TOOL INC.

TRI TOOL INTERNATIONAL INC.

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TRI TOOL INC.
PRELIMINARY TECHNICAL SPECIFICATION
FOR THE HEADERMASTER™ SYSTEM
MARCH, 2001

MODEL HEADERMASTER™ PORTABLE LATHE SYSTEM

The Model HEADERMASTER™ is a compact portable I.D. mount machine tool to prep a header for new tube installation. The Model HEADERMASTER™ will secure to tubes having an inside diameter ranging from 1.25" (31.8mm) through 2.50" (63.5mm).

A design form is available to produce the tooling and mounting blocks for each application.

The Model HEADERMASTER™ System comes complete with:

A.	HEADERMASTER™	1ea.
B.	Head Kit, 4" Dia.	1ea.
C.	Air Motor Assembly.	1ea.
D.	Mandrel Assembly	1ea.
E.	Jaw Block Set	1ea.
F.	Wrench Kit	1ea.
G.	Operator's Manual	1ea.

Design and Operating Features:

1. The tool accepts it's own torque through the mandrel.
2. The tool is stabilized with a tripod type mandrel support.
3. The expanding mandrel provides fast, accurate self-centering and alignment.
4. All wrenches needed for operation (less Tool Bits) are provided with the system.
5. The tool [at 60 lbs. (27.2 Kg)] is lightweight and is easily handled by one operator.
6. Mandrel shaft heat treated to Rc 50 for maximum strength and to minimize wear damage.
7. Heavy duty tapered mandrel and spindle bearings.
8. Mandrel shaft seal to keep coolants out of the gears.
9. Heat treated Mandrel mounting blocks for maximum life and secure mounting.

10. Compact and heavy-duty in line air motor.
11. Powered through a heavy-duty helical drive assembly for more available torque and a smoother power transfer to the cutting head.

Specifications:

1. Reference Envelope Drawing No.77-1637
2. Pipe Cutting Capacities:
 - a. Basic Prep. sizes:
Up to .531" (13.5mm) wall tubing with a maximum prep O.D. of 4.00" (101.6mm) and a minimum I.D. of 1.25" (31.8mm) may be cut with standard mandrel. Some preps may require special procedures.
 - b. Wall Thickness Capacity:
Wall thickness of all standard pipe schedules [.531" (13.5mm) maximum] in the range listed. Contact Tri Tool for heavier wall procedures.
3. Material Cutting Capabilities:
 - a. Mild steels, Chrome steels (Rc 35 max), stainless steel, copper-nickel alloys and aluminum without limitations except size and wall thickness as specified in paragraph #2.
 - b. Inconel and some other high temperature alloys may require special procedures as a function of wall thickness and type of end preparation. Contact Tri Tool's Engineering Department for details.
4. Clearance and dimensions:

a. Rotating Head Dia.	4.00" (101.6mm)
c. Length (of machine)	19.9" (505.5mm)
d. Available feed travel:	1.75" (44.5mm)
5. Drive System:

a. Final Drive:	Helical
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6. Power Supply:
 - a. Pneumatic motor requires 55cfm (26 L/s) air supply at 90 psi (620.5kPa) for maximum horsepower delivery.

Note: Air Supply must have a filter/regulator/lubricator (FRL) system to protect the warranty on the air motor.
7. Cutting Head Speeds:

a. Maximum Cutting head speed:	32 rpm
b. Cutting head speed @ maximum H.P.	16 rpm

- c. Functional speed range: 8-28 rpm
 - d. Stall torque 750 lb.ft. (955.9 N.m)
 - e. RPM at 300 surface inches per minute:
on 4.00" dia. (101.6mm) 24 rpm
8. Speed Control:
- a. On/off safety lever valve.
9. Mounting:
- a. Manually actuated draw rod expands mandrel ramps.
 - b. Over center tripod clamping.
10. Feed:
- a. Manual Ratchet Handle at a right angle at the back of the machine. Feed rate is .100"(2.5mm) per revolution of the feed nut.

Optional Accessories:

Mandrel Assembly, Reduced Dia., 1.00" (25.4mm) to 1.25" (31.8mm) range. (Does not include Mounting Blocks)

Spare parts and standard tool bits are available from stock.

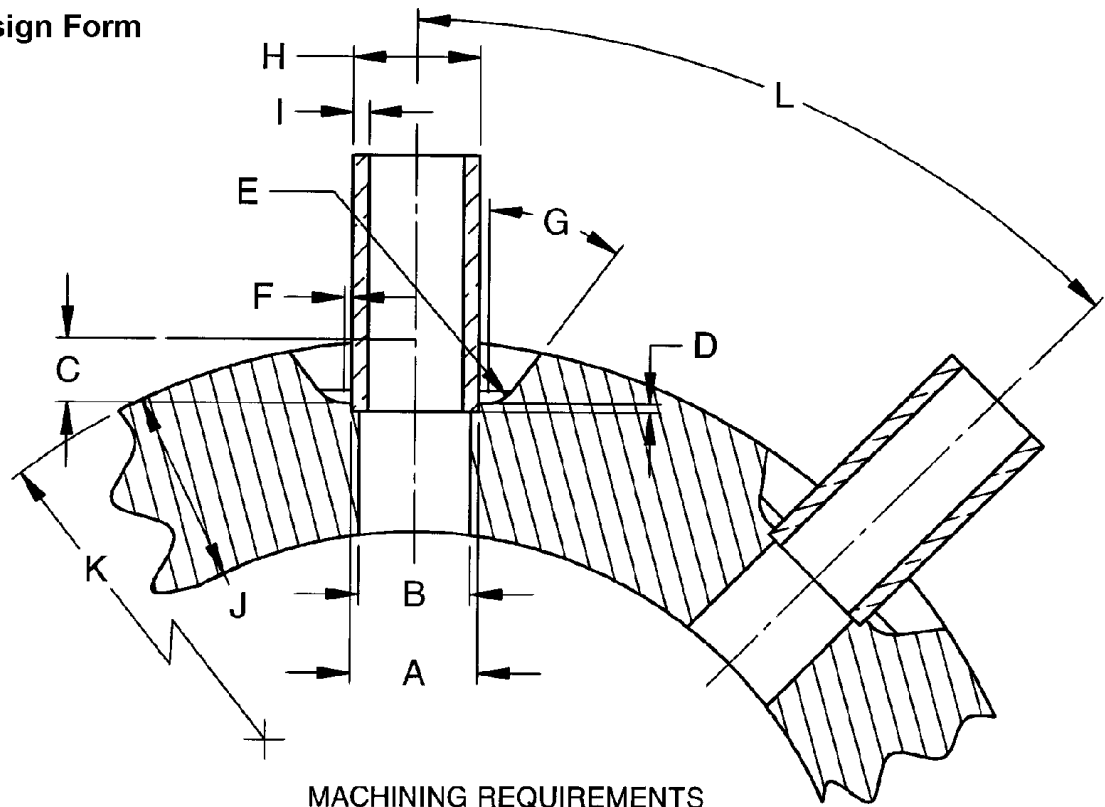
Engineering design services for custom tool bits and special function modifications are available from the factory.

All Tri Tool 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 with tools.

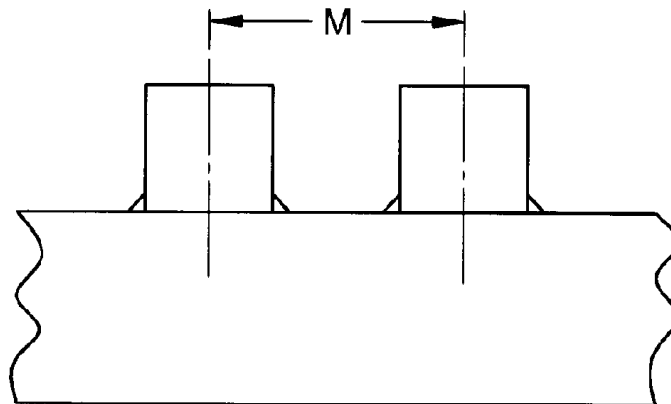
Filter, regulator, lubricator are required to protect warranty on air powered tools.

Design Form



MACHINING REQUIREMENTS

- A. TUBE SEAT DIAMETER _____
- B. HOLE THROUGH HEADER DIAMETER _____
- C. WELD PREP DEPTH _____
- D. TUBE STUD COUNTERBORE DEPTH _____
- E. WELD PREP RADIUS _____
- F. WELD PREP LAND _____
- G. WELD PREP ANGLE _____
- H. TUBE DIAMETER _____
- I. MINIMUM TUBE WALL THICKNESS _____
- J. HEADER THICKNESS _____
- K. HEADER RADIUS _____
- L. DEGREE BETWEEN TUBES (RADIAL) _____
- M. DISTANCE BETWEEN TUBES (AXIAL) _____
- TOTAL # OF TUBES _____

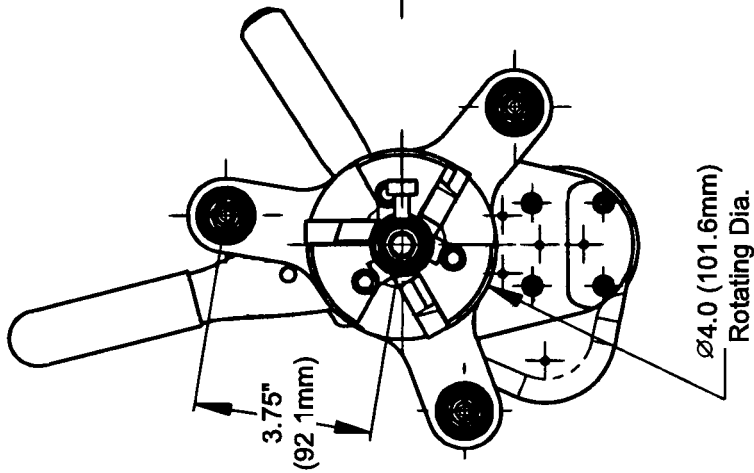
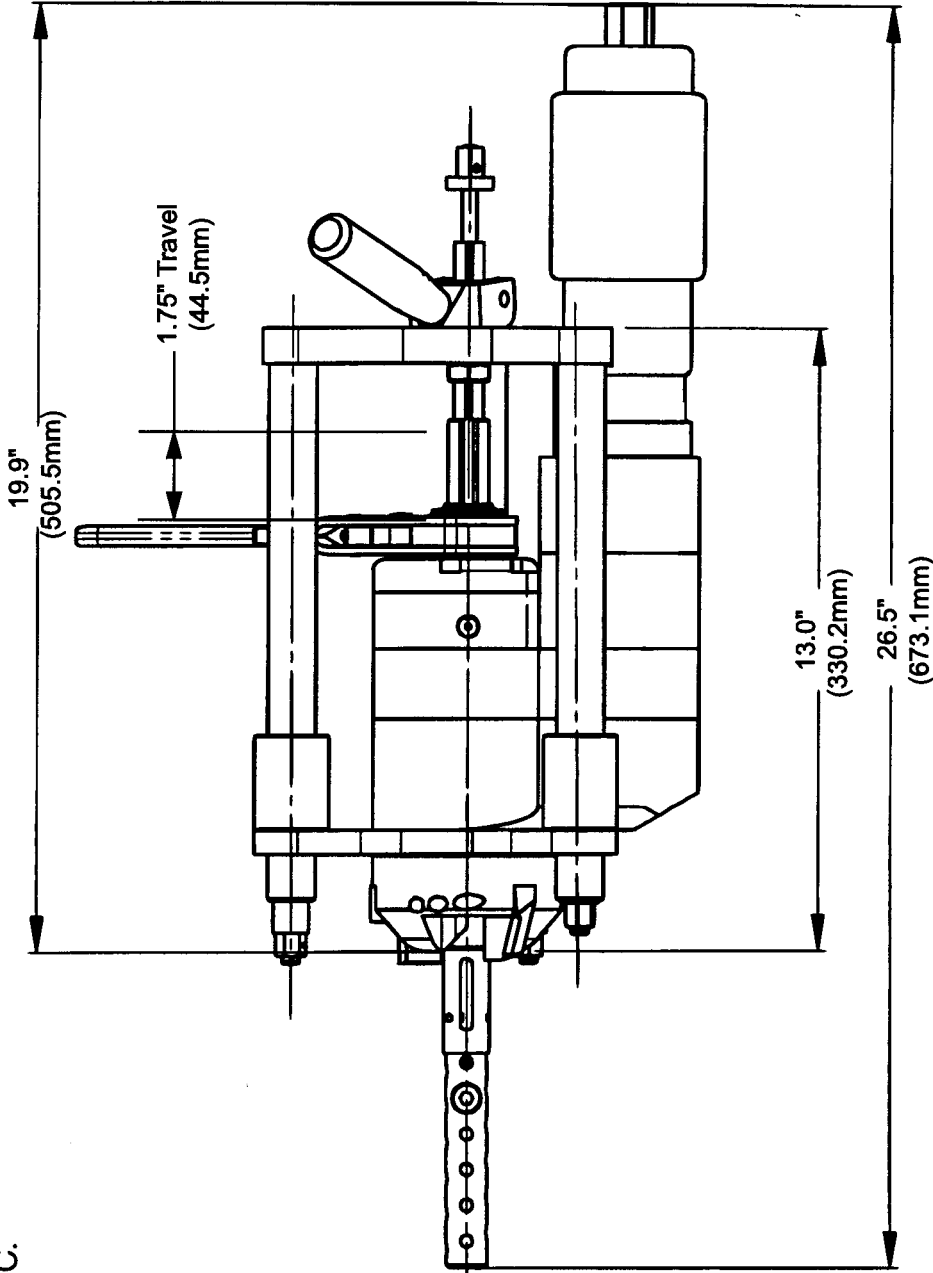


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REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

DWG NO. 77-1637 SHT 1 REV.



UNLESS OTHERWISE NOTED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS FRACTIONS ANGLES
 .XX ± .03 ± 1/16 ± 0° 30'
 .XXX ± .010
 MACHINED SURFACES 125 ✓
 TO BE CONCENTRIC WITHIN .010 TIR
 FLATNESS TO WITHIN .010 TIR
 BREAK ALL SHARP EDGES .005-.015
 FILLET RADIUS TO BE .030 MAX
 C/SINK THD HOLES TO
 MAJ DIA X 82°-90°

CONTRACT NO.	ER-8174
APPROVALS	DATE
DRAWN C. Tremblay	6/20/00
CHECKED	
ISSUED	
NEXT ASSY	USED ON
MATERIAL	
FINISH	
DO NOT SCALE DRAWING	

TRI TOOL INC
 3806 SECURITY PARK DRIVE, RANCHO CORDOVA, CA 95742

ENVELOPE DRAWING
HEADERMASTER™

SIZE	SOLID WORKS	DWG. NO.	REV.
A	AVAILABLE	77-1637	
SCALE	N/A	CAD MODEL	SHEET 1