TRANE
AIR CONDITIONING

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GENERAL SERVICE BULLETIN

ORDERING NUMBER **HCOM-SB-24B**

Since the Trane Company has a policy of continuous product improvement it reserves the right to change specifications and design without notice. The installation and servicing of the equipment referred to in this publication should be done by qualified experienced technicians.

MODEL "R" COMPRESSOR MAIN BEARING REPLACEMENT PROCEDURE

INTRODUCTION:

This Service Bulletin outlines the procedure for replacement of the pump and motor end main bearing inserts on Model "R" compressors.

DISCUSSION:

The motor end of all Model "R" compressors has two bearing inserts. The 40 ton compressor motor end bearings are 2-1/8 inch and 2-7/8 inch diameter, and the pump end bearing is 2-7/8 inch diameter. The 50 and 60 ton compressors have three bearings, all with 2-7/8 inch diameter. For specific bearing tolerances, refer to maintenance manual HCOM-M-6.

Motor and pump end bearing insert replacement on Model "R" compressors requires the use of special tools. Construction details for these tools are included at the end of this bulletin. These tools will work on the motor end bearings of all Model "R" compressors and all pump end bearings on compressors with serial number 7K60B594 and after. Model "R" compressors with serial numbers prior to 7K60B594 should use a new pump end bearing head with an insert (BRG-291) for field rebuilds.

REPLACEMENT PROCEDURE:

40 Ton Compressor

1. Completely disassemble the compressor.

2. The small bearing nearest the motor must be pushed out the motor side, from the oil pump end, using the bearing driver, push rod and utility bar, assembled as shown in Figure 1. Use a liberal amount of compressor oil on the tools to prevent excessive wear.

3. To remove the large motor end bearing, push it through the compressor housing from the suction cover end into the oil sump. The bearing driver, push rod and utility bar should be assembled as shown in Figure 2.

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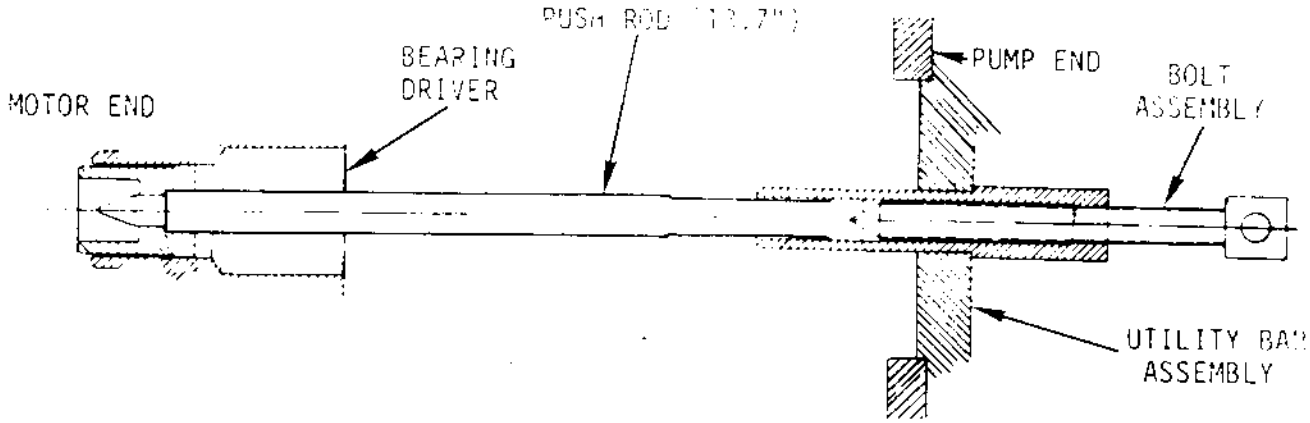


FIGURE 1 - Removing Small Bearing

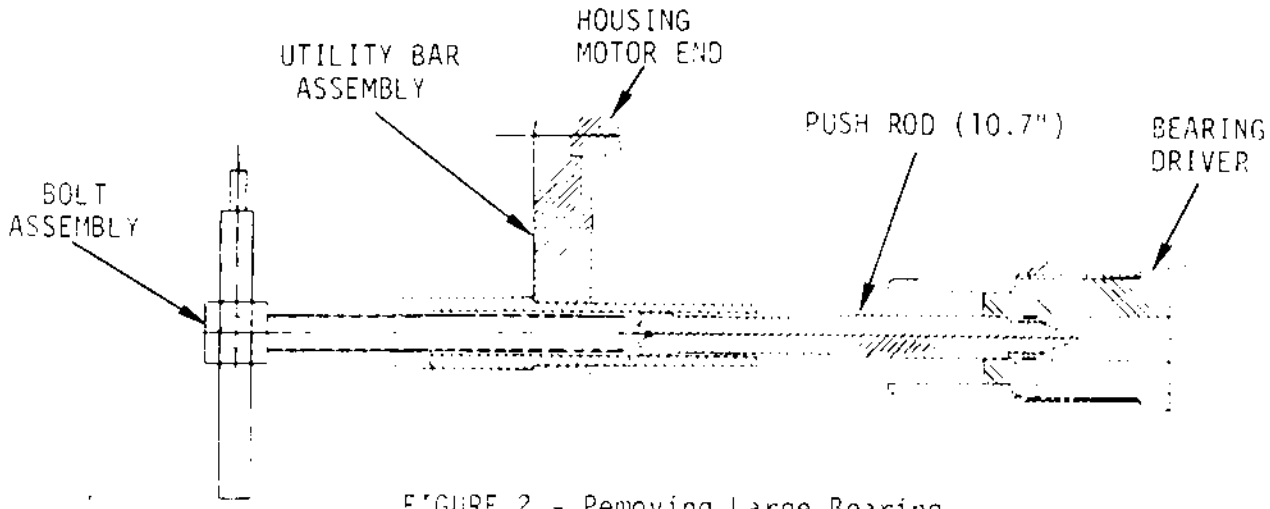


FIGURE 2 - Removing Large Bearing

4. To remove the pump end bearing insert, the bearing head assembly (without the oil pump) must be reinstalled on the compressor. The bearing insert can be pushed through the head assembly into the crankcase, using the bearing driver, push rod, spacer tubes and utility bar as shown in Figure 3.

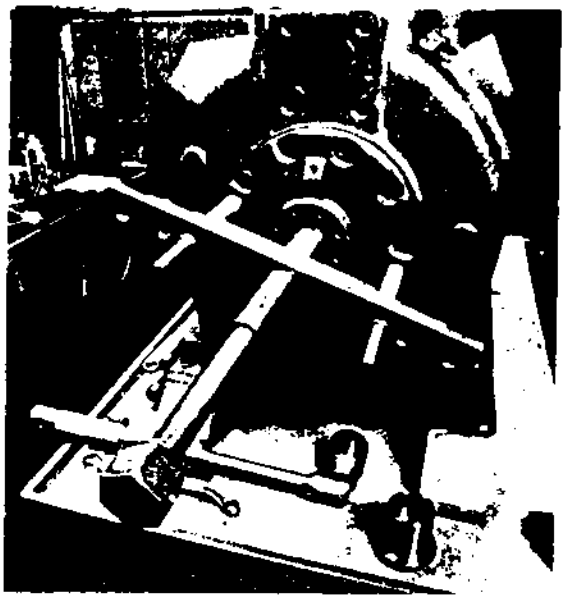


FIGURE 3 - Removing Pump End Bearing Insert

The bearing driver tool (Figure 4) has four fingers that expand when the push rod is inserted in it. The fingers hold the bearing insert during removal. It is important that the bearing driver tool be inserted into the bearing until the fingers contact the backside of the insert. When practical, the pump end bearing head assembly should be taken to a machine shop where a hydraulic press can be used for removal and installation of the bearing insert.

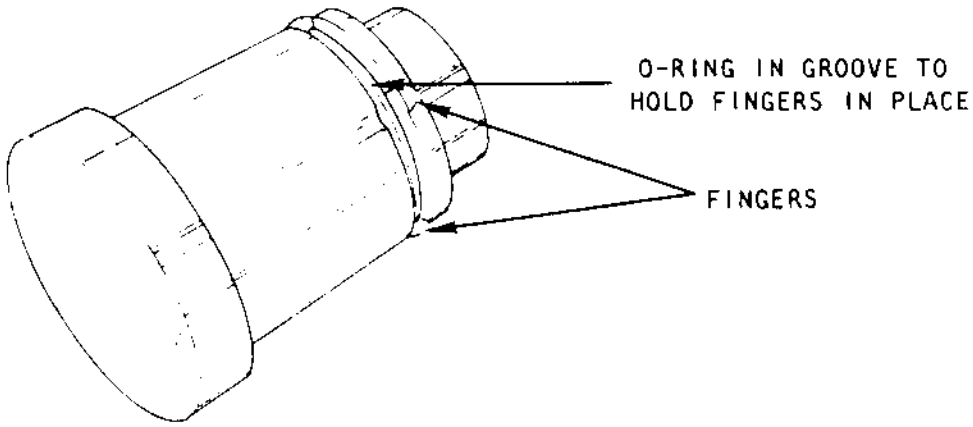


FIGURE 4 - Bearing Driver Tool

CAUTION: EXERCISE CARE WHEN USING THE BEARING TOOLS. DO NOT OVERSTRESS THE TOOLS, AS DAMAGE TO THE TOOL AND/OR COMPRESSOR COULD RESULT.

5. The pump end bearing insert can be reinstalled by using the bearing driver, push rod and utility bar. The insert must be pressed in from the motor suction side. The bearing insert should be placed over the bearing driver as shown in Figure 5, with the lap joint seam in the 12 o'clock position when installed in the compressor housing.

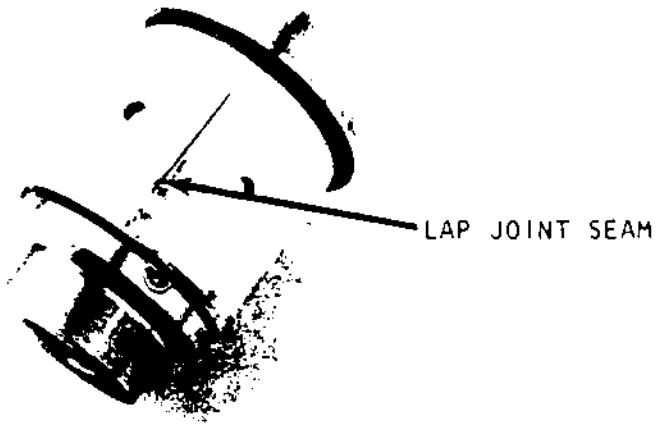


FIGURE 5

Coat the outside of the bearing insert and the bearing bore with compressor oil before installation. Inspect the housing bore for nicks or burrs before reassembly. Be sure the bearing driver and insert are square with the housing during installation.

6. The large motor end bearing insert can be installed using the bearing driver, push rod and utility bar as shown in Figure 6. The insert must be pressed in from the pump end, with the lap joint in the 12 o'clock position when it is installed in the compressor housing. This will require removal of the pump end bearing head assembly.

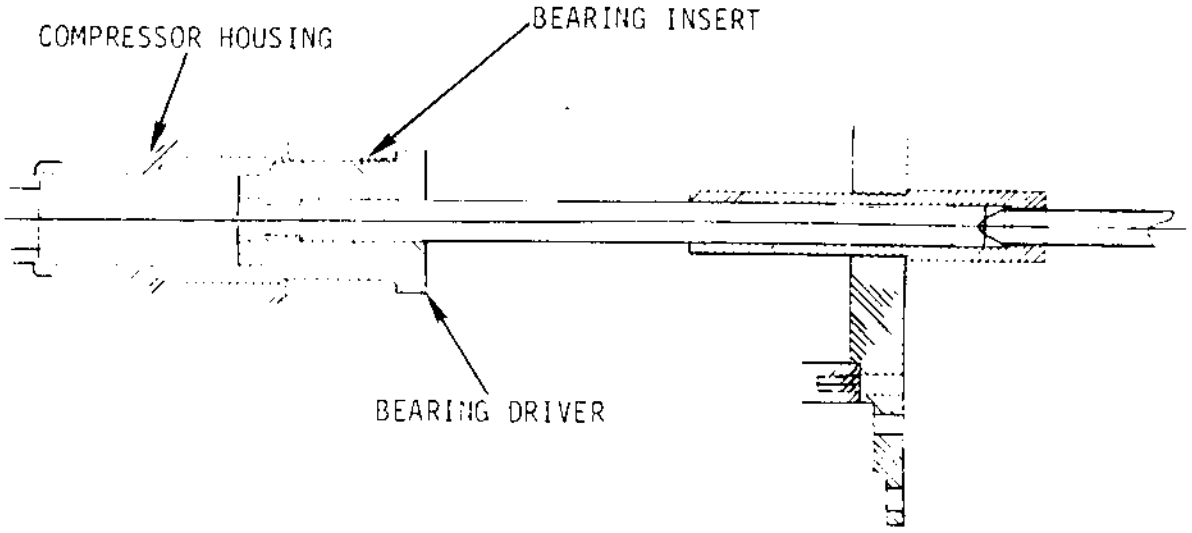


FIGURE 6 - Installing Large Motor End Bearing Insert

7. The small diameter motor end bearing insert can be installed from the suction end using the small bearing driver and spacer ring, push rod and utility bar as shown in Figure 7. The lap joint must be positioned at the 12 o'clock position when installed in the compressor housing.

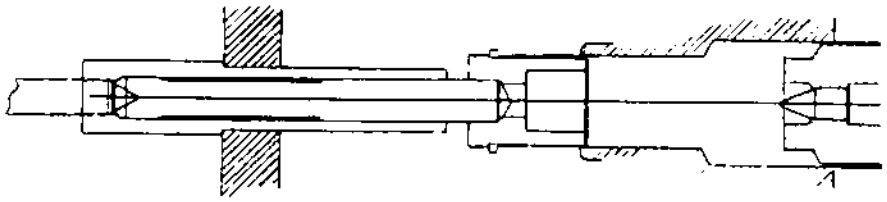


FIGURE 7 - Installing Small Motor End Bearing Insert

The bearing driver must have the spacer ring installed to insure that the proper bearing setback is established by the collar on the spacer ring. See Figure 8.

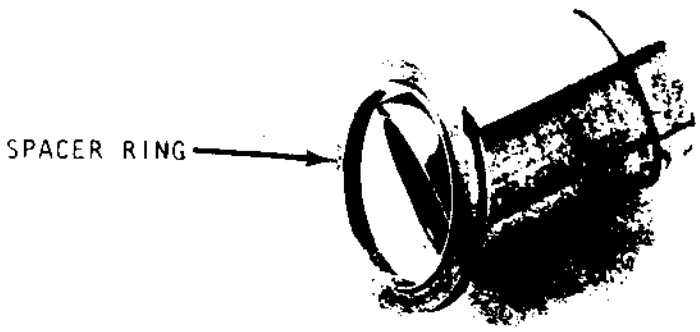


FIGURE 8

50 and 60 Ton Compressors

The bearing replacement procedures for 50 and 60 ton compressors are identical to the 40 ton compressor except for the removal and reinstallation of the motor end bearing nearest the motor. This bearing is 2-7/8 inch diameter compared to 2-1/8 inch diameter on the 40 ton compressor. The outboard bearing insert is removed by using the bearing driver, push rod and utility bar, assembled from the pump end as shown in Figures 9 and 10.

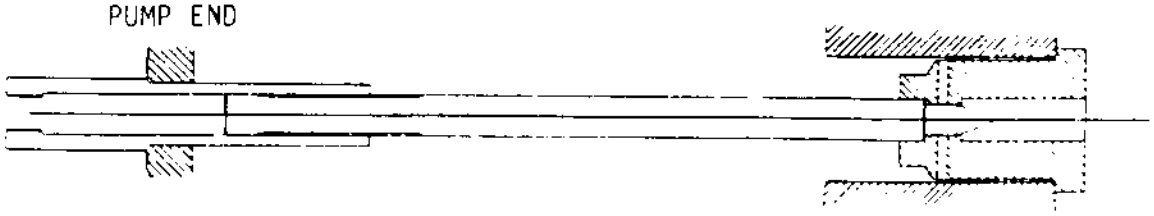


FIGURE 9 - Removing Outboard Bearing Insert

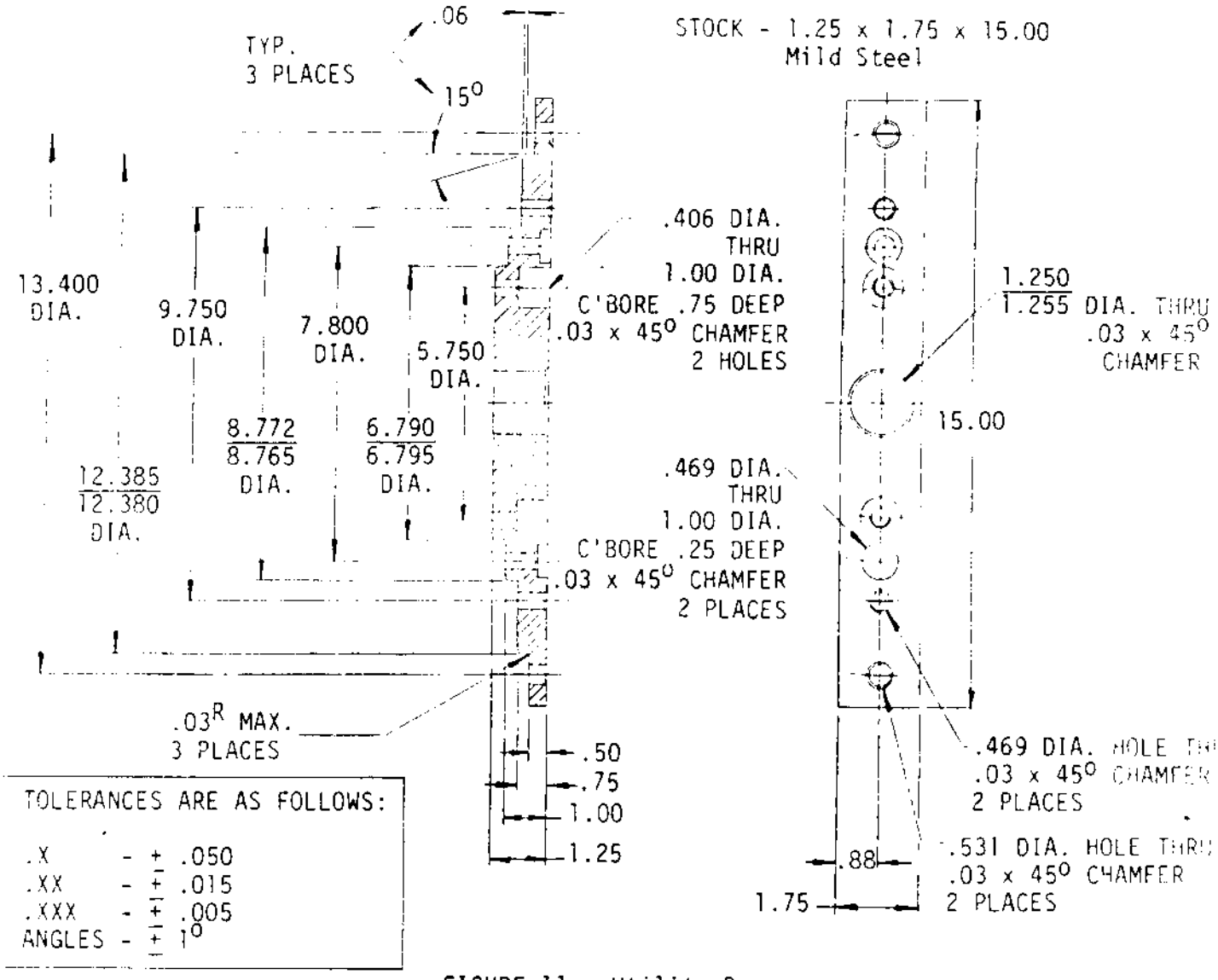
FIGURE 10

After the new bearing inserts have been installed, they should visually inspected for nicks or gouges. Small nicks or gouges should be removed by using a bearing scraper or equivalent, and refinished with a crocus cloth to insure adequate oil clearance. Oil the bearings liberally and reassemble the compressor immediately. Care should be taken to insure that no foreign material enters the compressor during reassembly.

TOOL CONSTRUCTION:

The drawings in this section show the construction details for fabrication of the bearing tools.

NOTE: Finish to be 125 Unless Otherwise Specified.



TOLERANCES ARE AS FOLLOWS:

.X	- ±	.050
.XX	- ±	.015
.XXX	- ±	.005
ANGLES	- ±	1°

FIGURE 11 - Utility Bar

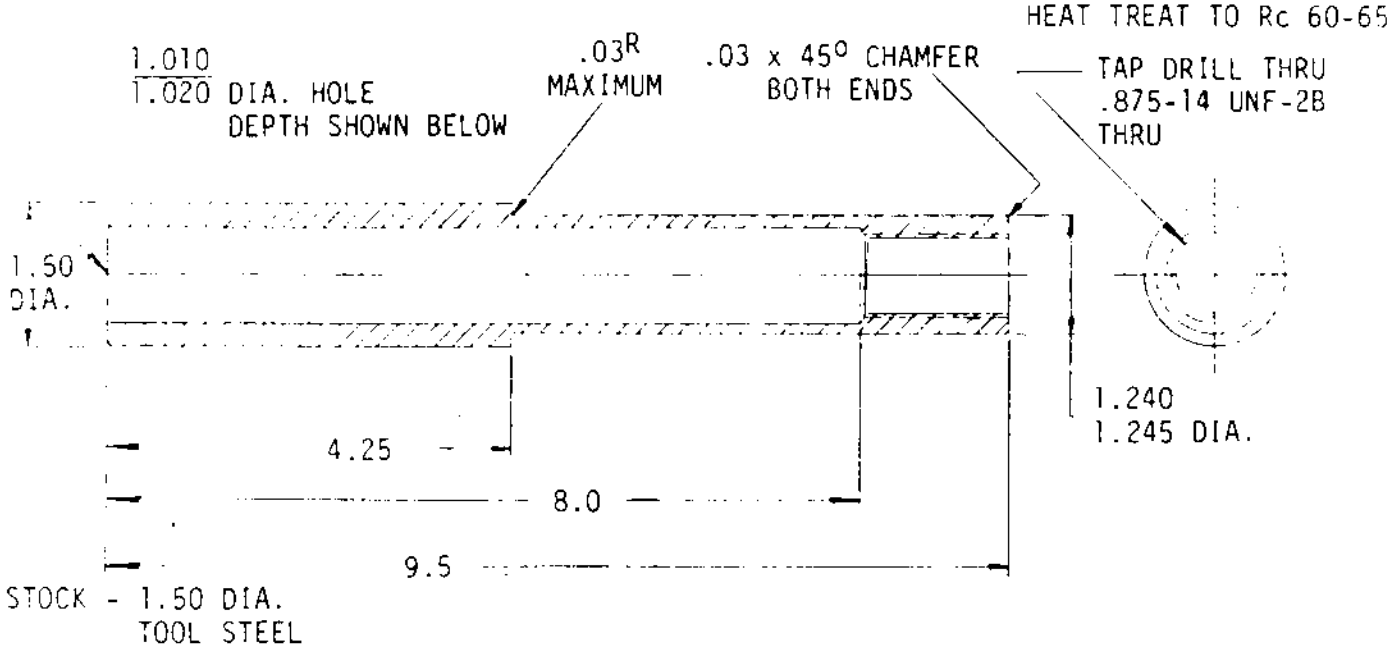


FIGURE 12 - Utility Bar Pilot Tube

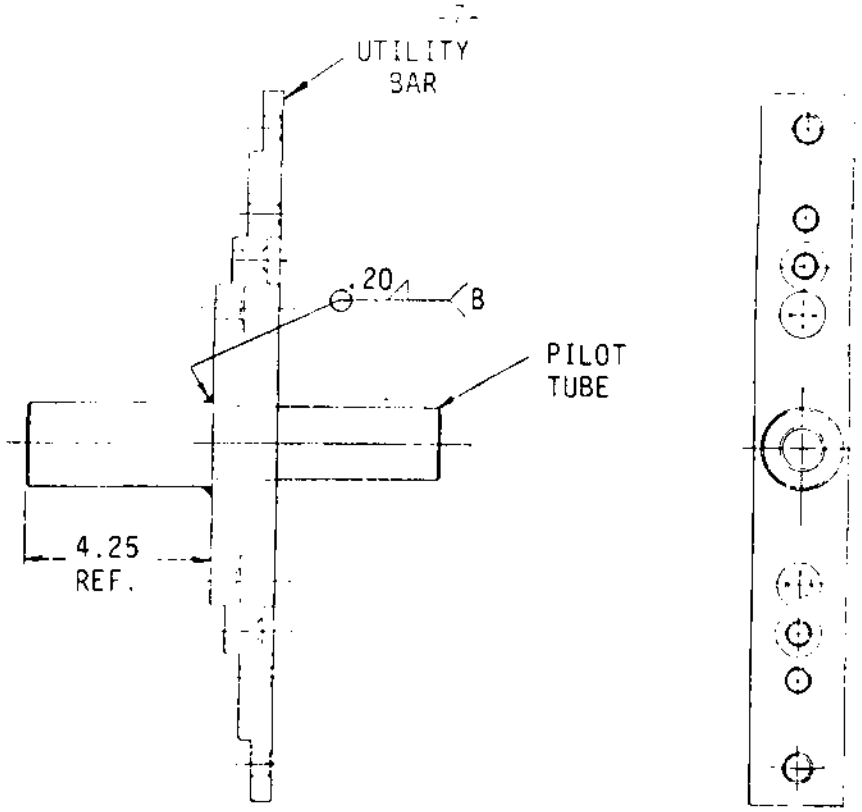


FIGURE 13 - Utility Bar Assembly

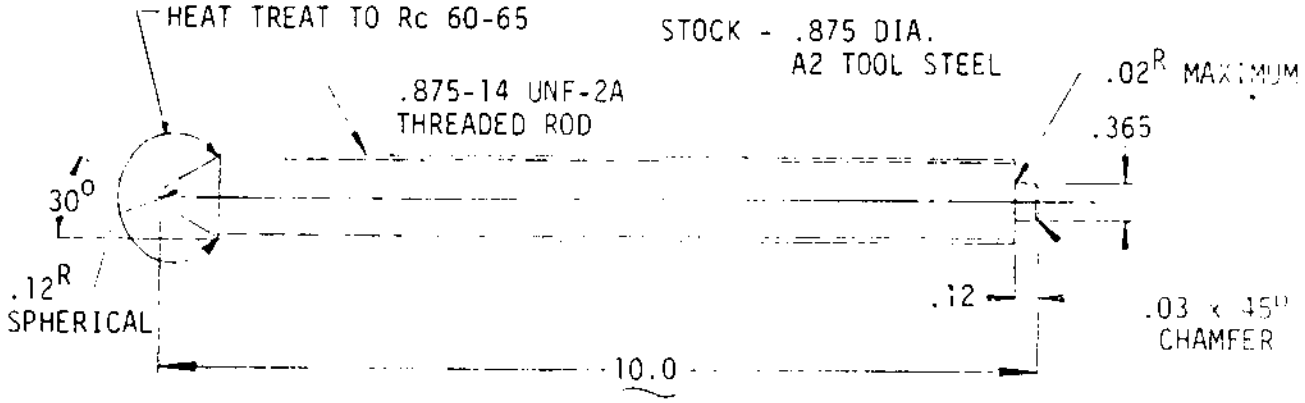


FIGURE 14 - Threaded Rod

STOCK - 1.50 HEX - MILD STEEL

.50-.52 DIA. HOLE THRU
.03 x 45° CHAMFER
BOTH SIDES

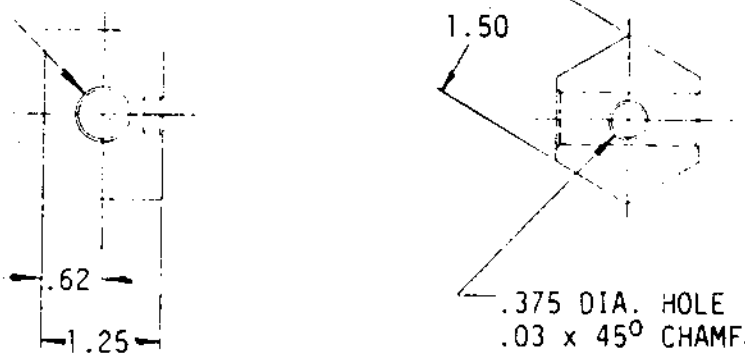


FIGURE 15 - Hex for Threaded Rod

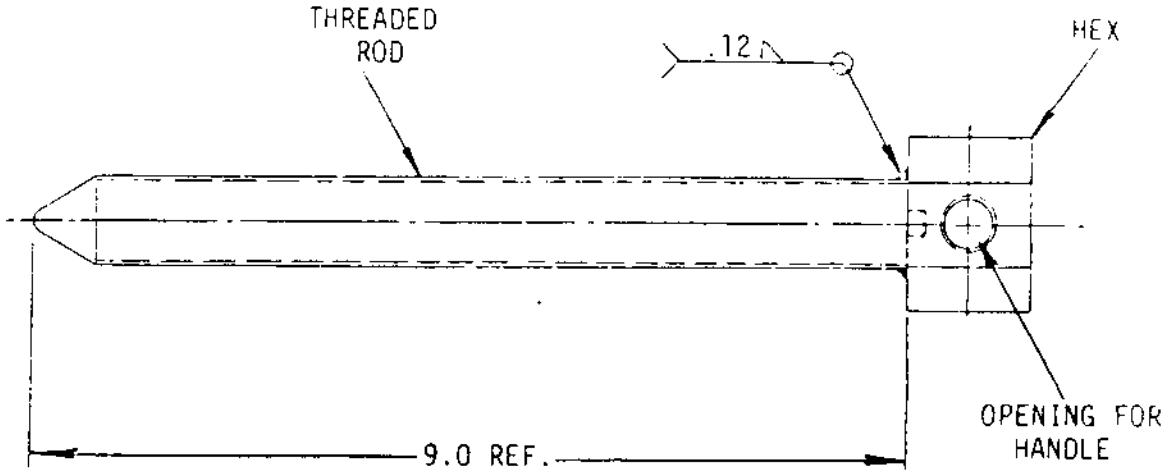


FIGURE 16 - Bolt Assembly

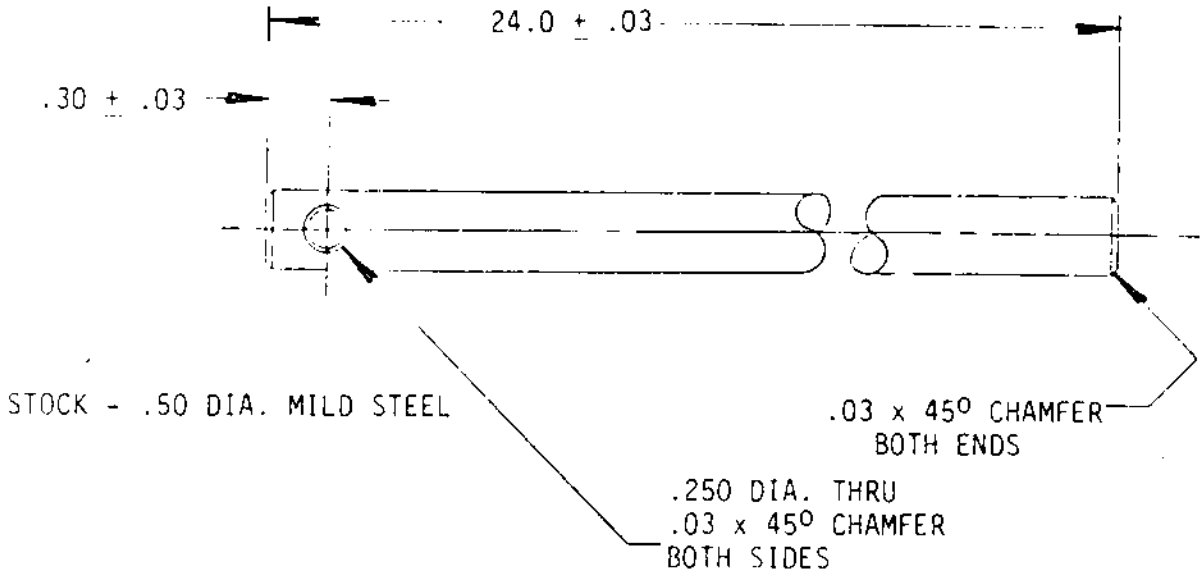


FIGURE 17 - Handle for Bolt Assembly

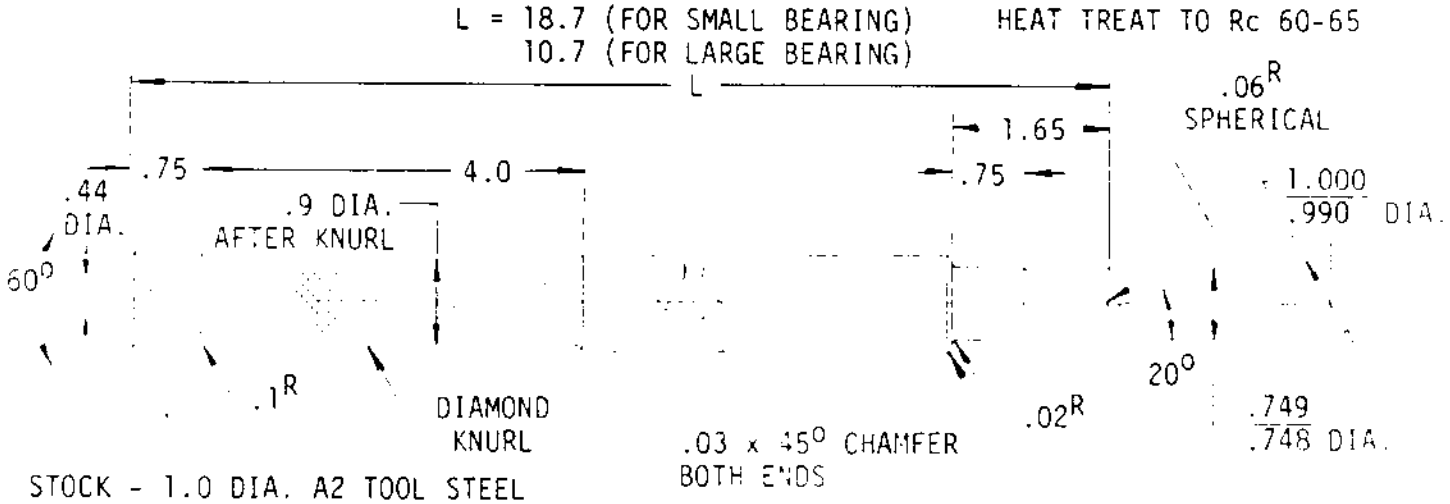


FIGURE 18 - Push Rod

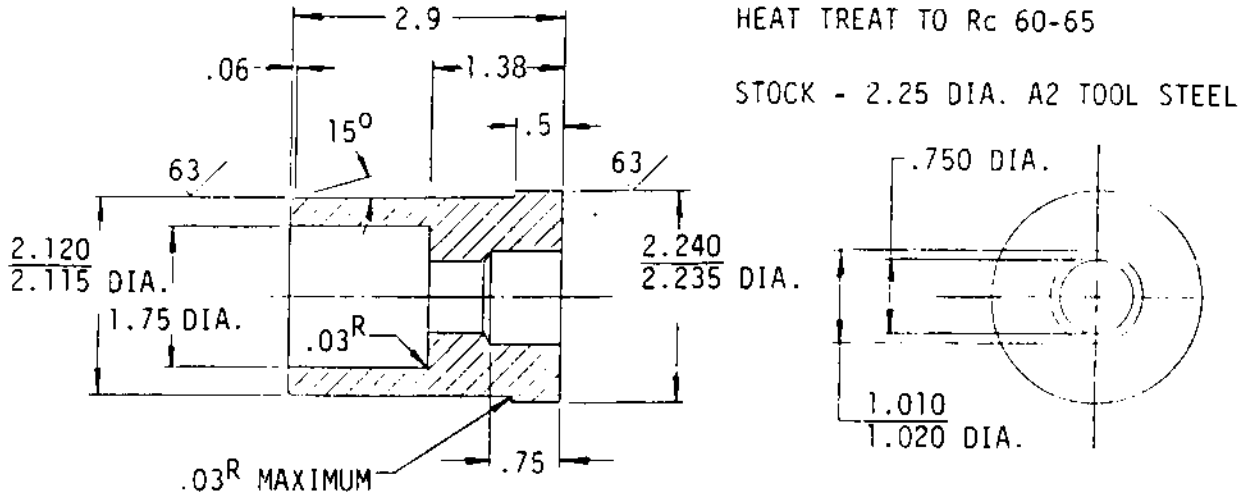


FIGURE 19 - Bearing Driver (Small Insert)

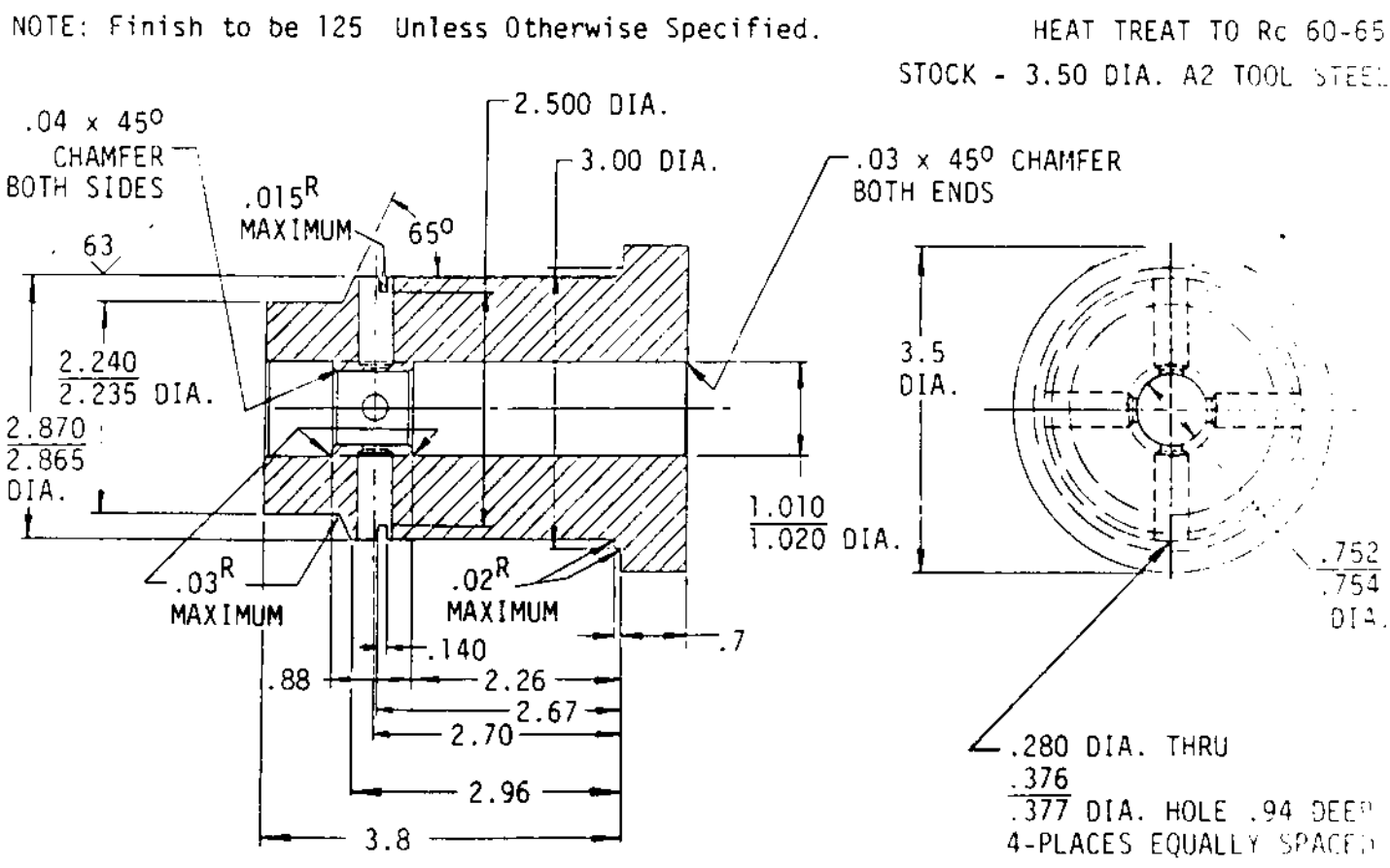


FIGURE 20 - Bearing Driver (Large Insert)

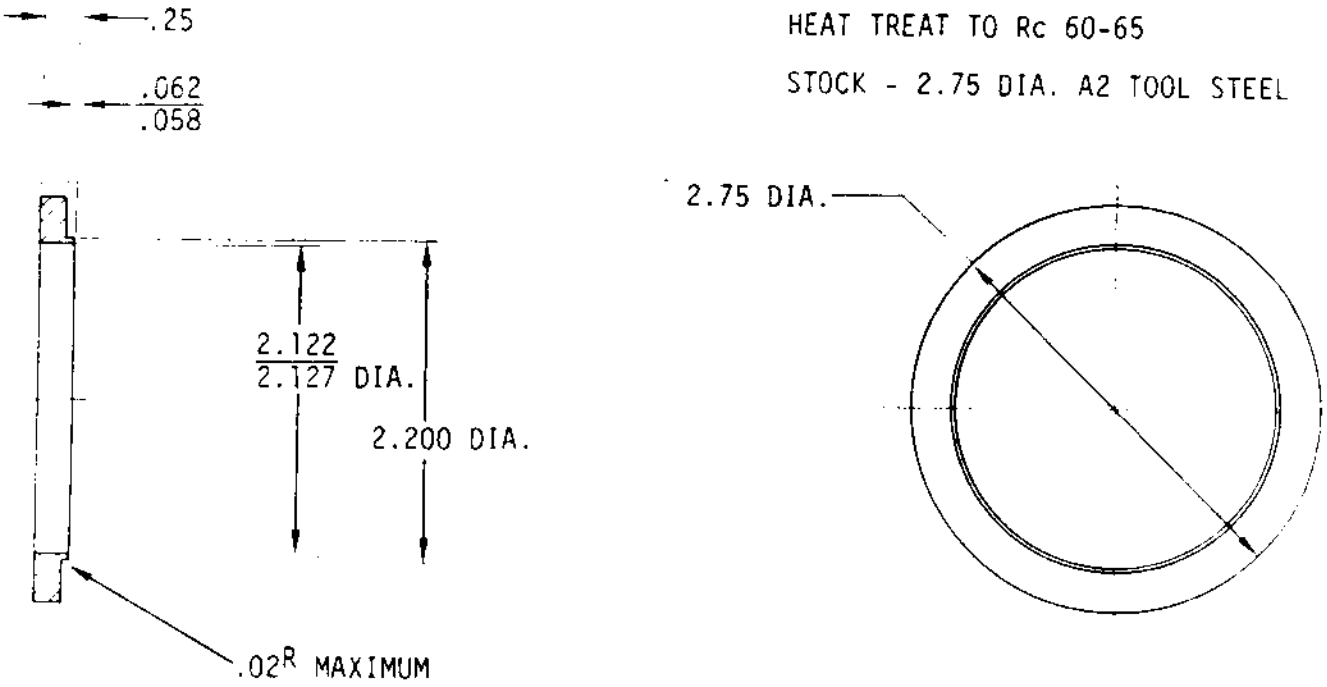


FIGURE 21 - Bearing Driver Spacer Ring

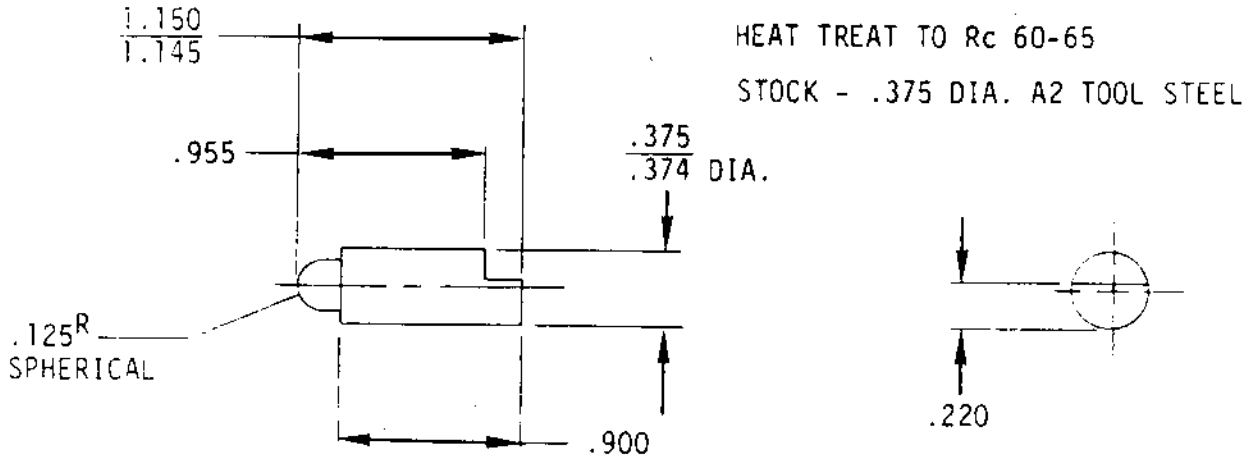


FIGURE 22 - Bearing Driver Fingers