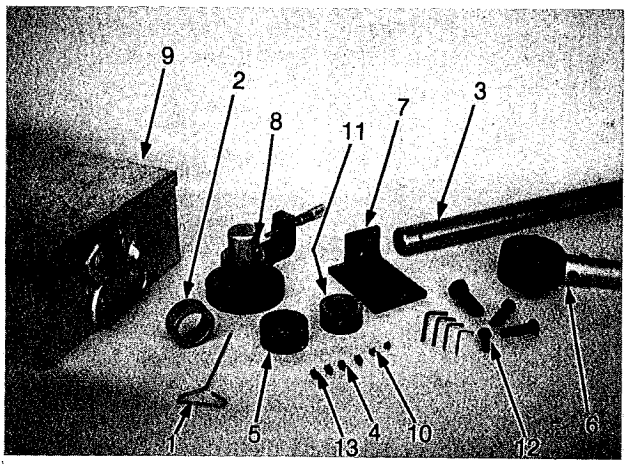
Instructions for use of
PT-1705
CAM BORING TOOL ATTACHMENT BASIC KIT

READ CAREFULLY BEFORE USING



PT-1705 CAM BORING TOOL ATTACHMENT BASIC KIT

DET #	PART #	PART DESCRIPTION	AMT
1	PT-1000-036	Cutter Key	1
2	PT-1700-009	Micrometer Setting Ring	1
3	PT-1700-019	Cam Bore Bar	1
4	PT-1700-025	Cutter (9/16)	2
5	PT-1700-027	Cutter Holder	1
6	PT-1700-028	Upright Bearing Assembly	1
7	PT-1700-030	Mounting Bracket	1
8	PT-1700-032	Micrometer Base Assembly	1
9	PT-1700-036	Steel Box	1
10	PT-1700-038	Cutter (3/8)	2
11	PT-1700-040	Small Cutter Holder	1
12	PT-1700-044	Hardware Package	1
13	PT-1700-063	Cutter (13/32)	2

TOOL AND BLOCK PREPARATION

NOTE: See table on back for proper Replacement bushings for a specific Engine Series.

1. The cylinder block should be cleaned. Make sure the block and Cam Boring Tool stabilize to room temperature.
2. Remove camshaft bearings on journals affected by the boring operation.
3. Remove all rough edges such as burrs and other irregularities from each side of the camshaft bores.
4. Measure and record the diameter of the camshaft bearing bore.
5. Plug all oil passages with thick grease to prevent metal chips from entering the oil hole passages.
6. Determine sizes to bore for repair as shown in the table on back.

SETTING THE MICROMETER AND CUTTER

1. The Micrometer Base Assembly is preset at the factory. Check the Micrometer reading to ensure the setting did not change during shipment.
2. Place the Micrometer Setting Ring over the micrometer shaft. Adjust the micrometer thimble to read 2.00 inches. Check the Micrometer reading in approximately three different places around the micrometer shaft.

   NOTE: The K Series Engine requires use of the 2.00 inch diameter Line Bore Bar. Follow the procedure in the instructions for Line Bore Bar.

3. If adjustment is necessary, loosen the socket head cap screw on the Micrometer Base Assembly. Hold the Micrometer in place and rotate the thimble of the Micrometer Base Assembly until a 2.00 inch reading is obtained. One rotation of the thimble is equal to 0.050 inch of travel. (fig 1).

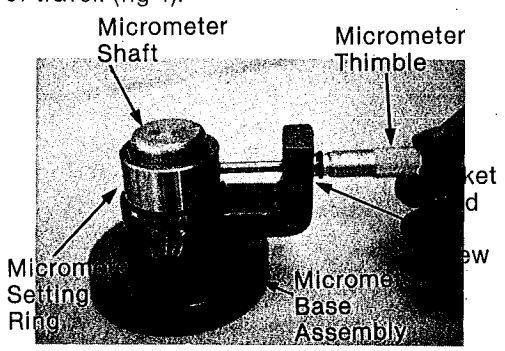


Fig 1 Proper adjustment of the Micrometer

4. Remove the Micrometer Setting Ring and place the Cutter Holder on the micrometer shaft. Align the hole in the micrometer shaft with the square opening in the Cutter Holder, making sure the shaft hole is aligned with the micrometer thimble. Tighten socket head cap screw securing Cutter Holder in place.

5. Insert the appropriate Cutter (see Table on Back) in the Cutter Holder. Check that the Cutter does not extend into the bore of the Cutter Holder. Adjust the Micrometer to the desired cut. (See Table on Back for final bore size). To install repair bushings take 3 cuts. The Finish cut should be from .010" to .015".

6. Push the Cutter against the Micrometer spindle. The reading should be made when the tip of the Cutter makes contact with the center of the spindle. Tighten both set screws to lock the Cutter in place (fig 2).

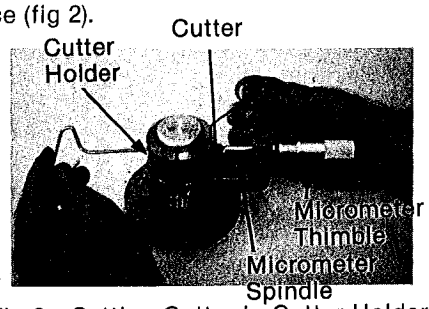


Fig 2 Setting Cutter in Cutter Holder

7. Loosen the Micrometer thimble and verify the Cutter setting again.

8. Back-off the Micrometer and loosen socket head cap screw on the Cutter Holder. Remove Cutter Holder with Cutter from Micrometer Base Assembly.

INSTALLATION AND ASSEMBLY OF CAM BORE TOOL

1. Lubricate the inside diameter of the centering rings with clean engine oil.

2. Install the centering ring on the journals next to the damaged journal. Install the last centering ring in the journal at the end of the block where the Feed Unit will be attached. The Line Bore Bar is driven at the opposite end of the block from the Feed Unit.

   Example: #3 journal needs to be cut, install the centering rings in the #2 and 4 and end journal where the Feed Unit will attach. (fig 3).

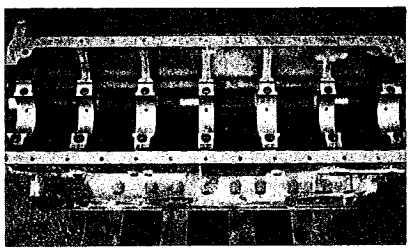


Fig 3 Centering Rings in place

3. Install the Line Bore Bar. Starting from the end of the block to be driven. Place the Cutter Holder on the Line Bore Bar making sure the Cutter will cut in a Clockwise rotation.

   CAUTION: Before tightening Cutter Holder in position, visually inspect the area between the two bores for obstructions. Remove obstructions as required. Ensure the Bar rotates freely. Be sure that the Cutter does not hit the block.

4. To cut the number one camshaft bore of the block, the Mounting Bracket, Line Bore Bridge, and Upright Bearing Assembly are needed for additional support. These parts position and support the Line Bore Bar on the outside of the camshaft bore (fig 4).

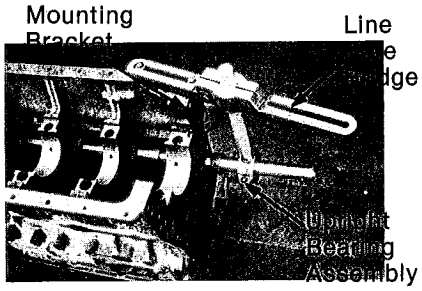


Fig 4 Set-up for boring of #1 cam bearing bore

5. Loosely attach the Torsion Bar Bracket to the cylinder block (fig 5).

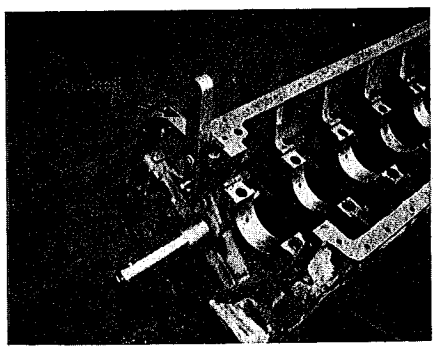


Fig 5 Torsion Bar Bracket in place

6. Rotate the Line Bore Bar slowly by hand before connecting it to the Feed Unit to make sure it turns freely. Install the Feed Unit into the Line Bore Bar.

7. Guide the Feed Unit into the Torsion Bar and secure the Torsion Bar Bracket to the block. Tighten the square head set bolt on the Torsion Bar Bracket to stabilize the bracket.

8. Tighten the set screw to lock the Feed Unit in position. Check for free movement of the Line Bore Bar after installation.

BORING THE CAMSHAFT BORE

1. Turn the drive valve on the Feed Unit to the "OPEN" position. Move the Feed Unit away from the block (fig 6).

   NOTE: The feed travel is towards the Feed Unit. Tighten the thumb screw on the Feed Unit to secure to the Torsion Bar.

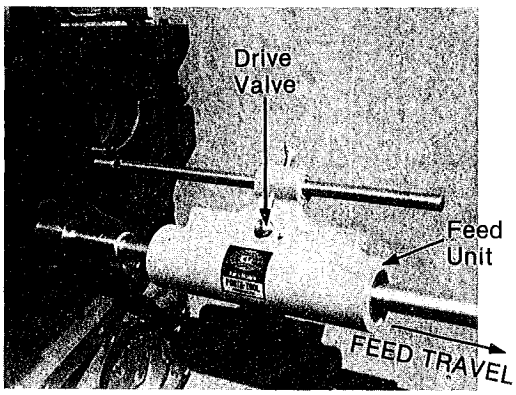


Fig 6 Feed Unit in position

2. Turn the drive valve to the "CLOSED" position.

3. Install the Drive Adapter onto the Line Bore Bar. Tighten socket set screw to lock in position.

4. Install the Universal Drive in a ½ inch righthand heavy-duty drill (450-500 rpm).

5. Position the Cutter Holder near the bore to be cut. Tighten the socket head cap screw to secure the Cutter Holder to the Line Bore Bar.

6. Make sure the Line Bore Bar and Centering Rings are well lubricated.

   NOTE: Do Not use a lubricant on the Cutter.

7. Cut the camshaft bore completely through (fig 7).

   NOTE: CAUTION! Do Not force the cut! Allow the Feed Unit to regulate the amount of Cut.

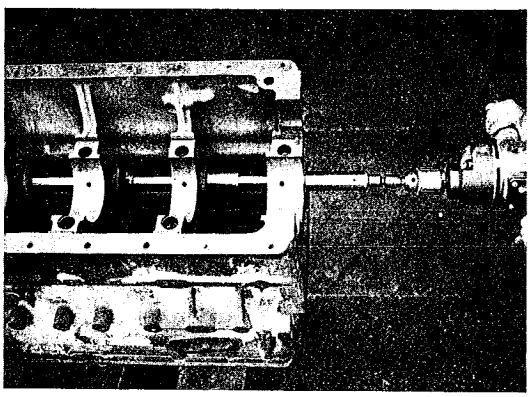


Fig 7 Boring the cam bore

8. After the Bore has been completely cut remove the Feed Unit, Cutter Holder, and the Line Bore Bar. Measure and record the bore size.

9. Reset the Cutter and repeat the boring procedure until the dimension in the Table (back of sheet) is obtained (fig 8).

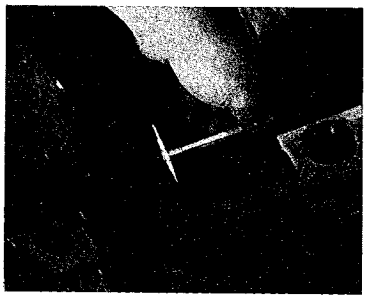


Fig 8 Measuring the bore

10. After the boring operation has been completed, deburr the edges of the camshaft bore. Clean the block thoroughly, making sure all foreign material and shavings have been removed.

CAMSHAFT REPAIR BUSHING AND CAMSHAFT BEARING INSTALLATION

Recommendation: Use the "PT-6555" Cam Bearing Driver for removing and installing cam bearings.

1. Press the camshaft bearing into the Repair Bushing. Make sure the oil hole in both parts are aligned (fig 9).

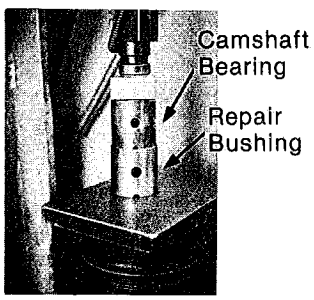


Fig 9 Installing cambearing in the Repair Bushing

2. Use the Loctite Primer-T "PT-7270" to wash the outside diameter of the Repair Bushing and block camshaft bore. Use a light coat of Loctite Compound "PT-7260" to coat the outside diameter of the Repair Bushing and the inside diameter of the camshaft bore.

3. Use an appropriate driver to install the Repair Bushing and camshaft bearing into the camshaft bore.

4. Make sure all oil passages are aligned for maximum oil flow.

5. Check alignment of the camshaft bore by installing a camshaft, making sure it rotates freely.

6. Reassemble the engine after allowing the sealer to dry approximately 5-10 minutes.

   NOTE: Sealer will fully harden in 5-6 hours.

CARE AND MAINTENANCE OF THE TOOL

The Tool requires cleaning and lubrication to obtain precision performance. Wipe all the parts clean after use and coat with a thin layer of light weight oil to prevent rust or corrosion during storage. Do Not drop or damage any part of the Tool as this may cause difficulty in obtaining true finish bores.

The Feed Unit must always be completely filled with oil to prevent chatter or erratic feed. To fill reservoir, place Feed Unit in a level position and pull the feed shaft all-the-way back. Remove the furthest pipe plug and fill with clean 30W nondetergent oil. Replace pipe plug. Continue repeating procedure until all air bubbles in the oil disappear.

It is recommended that Keeping the Cutters well honed will help prevent chatter. Cutters may be sent for sharpening to:

KENT-MOORE Tool Group
29784 Little Mack
Roseville, MI 48066-2298
(313) 774-9500

ENGINE SERIES	CENTERING RING	CUTTER HOLDER	CUTTER	REPLACEMENT BUSHINGS	BUSHING SET	SIZE TO BORE ± .0005
NH BIG CAM 2.625 DIA CAM BORE	PT-1700-011	*PT-1700-027	9/16" *PT-1700-025	Bore Size for Thick Wall Bearings	Not Avail.	2.6870
NH BIG CAM 2.687 DIA CAM BORE	PT-1700-026	*PT-1700-027	9/16" *PT-1700-025	PT-8614 #1, 2, 4, 6, 7 PT-8627 #3, 5	PT-8615	2.8120
V8-903 2.687 DIA CAM BORE	PT-1700-026	*PT-1700-027	9/16" *PT-1700-025	PT-8607 Intermediate PT-8608 Front, Back	PT-8613	2.8120
V378 2.187 DIA CAM BORE	PT-1700-043	*PT-1700-040	13/32" *PT-1700-063	PT-8605 Intermediate PT-8606 Front, Back	PT-8618	2.3120
V378 2.687 DIA CAM BORE	PT-1700-026	*PT-1700-027	9/16" *PT-1700-025	PT-8619 Intermediate PT-8620 Front, Back	PT-8621	2.8120
V504 / V555 2.187 DIA CAM BORE	PT-1700-043	*PT-1700-040	13/32" *PT-1700-063	PT-8605 Intermediate PT-8606 Front, Back	PT-8612	2.3120
V504 / V555 2.687 DIA CAM BORE	PT-1700-026	*PT-1700-027	9/16" *PT-1700-025	PT-8619 Intermediate PT-8620 Front, Back	PT-8622	2.8120
5-1/8 NH, 5-1/2 NH 2.129 DIA CAM BORE	PT-1700-045	*PT-1700-040	3/8" *PT-1700-038	PT-8603 Intermediate PT-8604 Front	PT-8609	2.2500
V-1710 PH II & III 2.254 DIA CAM BORE	PT-1700-046	*PT-1700-027	3/8" *PT-1700-038	PT-8602 2Rqd/Journal	PT-8611	2.3750
V6, V8 5-1/2 VIM-VINE 2.625 DIA CAM BORE	PT-1700-047	*PT-1700-027	9/16" *PT-1700-025	PT-8600 Intermediate PT-8601 Front, Back	PT-8610	2.7500
**K6 SERIES 3.254 DIA CAM BORE	PT-1000-027	PT-1000-009	5/8" PT-1000-001	PT-8616	PT-8623	3.3750
**K6 SERIES 3.188 DIA CAM BORE	PT-1000-026 PT-1000-117 PT-1000-118	PT-1000-009	5/8" PT-1000-001	PT-8617	PT-8624	3.3120
**KV12 SERIES 3.188 DIA CAM BORE	PT-1000-026 PT-1000-117 PT-1000-118	PT-1000-009	5/8" PT-1000-001	PT-8617	PT-8625	3.3120
**KV16 SERIES 3.188 DIA CAM BORE	PT-1000-026 PT-1000-117 PT-1000-118	PT-1000-009	5/8" PT-1000-001	PT-8617	PT-8626	3.3120
MACK 675/676	PT-1700-047	*PT-1700-027	9/16" *PT-1700-025	PT-8631 #1 PT-8632 #2, 3, 5, 6 PT-8633 #4 PT-8634 #7	PT-8630	2.7500

*PART of "PT-1705" KIT **Used with 2 inch Dia. BORING BAR

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