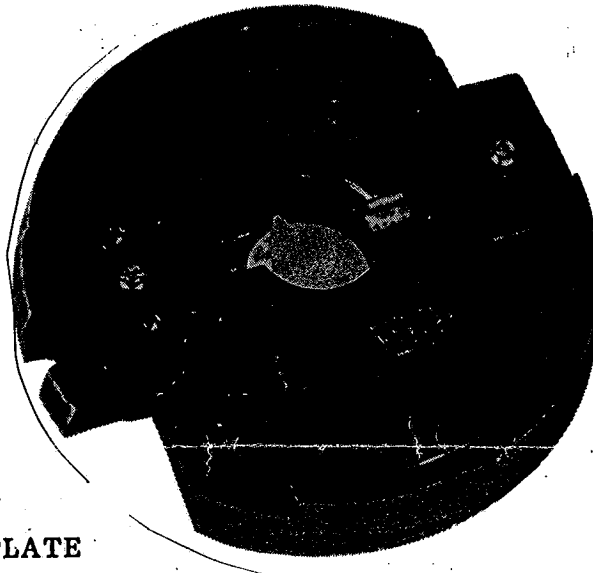




KENT-MOORE

Heavy Duty Division

PT 2000-180 INSTRUCTIONS



PT 2000-180
DUAL CUTTER PLATE

Application: The PT 2000-180 Dual Cutter Plate is used with our Porta-Matic Boring Tool to machine Cummins 855 Cylinder Block Counterbores, to accept Lower Press Fit (LPF) Liners, Oversize Flange Liners, and Repair Bushings.

Introduction: The PT 2000-180 Cutter Plate was specifically designed to machine the counterbore area for Lower Press Fit Liners. This cutter plate replaces all previous Porta-Matic cutter plates for the Cummins 855 NH/NT Engine.

The PT 2000-180 features our unique two cutter bit design that permits the counterbore and Lower Press Fit area to be machined at the same time. The ability to cut both areas at one time, can save up to an hour per engine block, and insures concentricity of both bores.

You can, if so desired, use this cutter plate with just one cutter bit for installation of repair bushings. Simply use the appropriate cutter bit in the lower cutter slot. However, this instruction sheet will deal mainly with the exclusive Kent-Moore two cutter bit method.

PREPARATION:

- 1) The block deck surface and boring tool base plate must be clean and burr free.
- 2) Plug off push tube openings, oil galley's and lower liner packing areas to seal out contaminating particles.

SETTING THE CUTTERS

- 1) The two cutters required are one each of PT 2000-109 and PT 2000-185.
- 2) The cutters should be set to the following dimensions as outlined in your Porta-Matic instruction sheet:

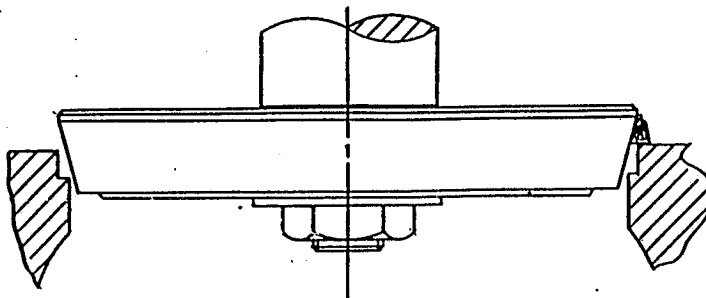
<u>Area to be machined</u>	<u>Use Cutter #</u>	<u>Set Cutter to:</u>
Upper Counterbore	PT 2000-185	6.608" \pm .002" Dia.
Lower Press Fit Area	PT 2000-109	6.334" \pm .001" Dia.

NOTE:

IT IS A GOOD MACHINING PRACTICE TO MAINTAIN SHARPENED CUTTER BITS. A SHARP CUTTER BIT INSURES A HIGH QUALITY, ACCURATELY MACHINED BORE.

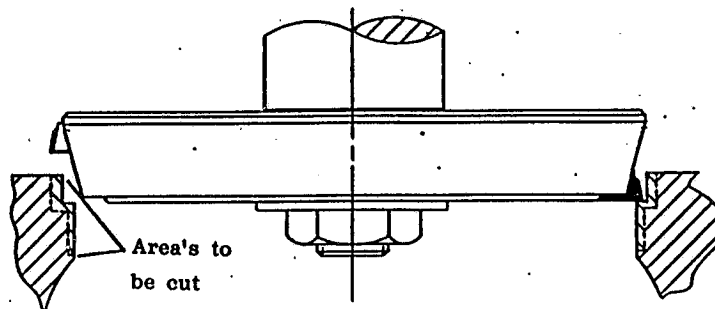
STEP BY STEP INSTRUCTIONS FOR PT 2000-180 DUAL CUTTER PLATE

- 1) Assemble PT 2000-180 Cutter Plate to the Porta-Matic mainshaft.
- 2) Mount Porta-Matic over cylinder to be bored. Open feed valve to lower cutter plate into cylinder bore. Push down firmly while rotating mainshaft to insure proper alignment of Porta-Matic.
- 3) With cutter plate centered in the cylinder bore, align base plate with four cylinder head bolt holes in block deck while maintaining as much base plate to block deck contact as possible.
- 4) Cross torque all four head bolts gradually to 50 ft/lbs. Rotate mainshaft to insure that the cutter plate is centered and moves freely. If binding occurs, loosen head bolts and repeat centering and torque sequences.
- 5) Pull up on mainshaft to retract the cutter plate to highest position; close feed valve to lock in position.
- 6) Insert PT 2000-185 Cutter Bit (thin) into upper slot of cutter plate. Hold cutter bit in all the way against the main shaft of the boring tool, and tighten the cutter plate set screw to secure cutter.
- 7) Gently lower the cutter and allow to rest onto the engine block deck surface. Adjust depth, set collar upward. If your Porta-Matic can be used with the PT-2000-138 Depth Spacer Block. Then attach it onto the main shaft, below the depth collar and resting on the Porta-Matic housing. Set the depth of cut using the PT 2000-194 .375" Depth Set Block.



SHOWN ABOVE: Setting for depth of cut.

- 8) Retract cutter plate to the up position and lock machine.
- 9) Install lower bore cutter bit PT 2000-109 into the bottom cutter slot. Tighten set screw.



SHOWN ABOVE: Beginning of cut with both cutters installed.

- 10) Machine the bore using our 8 amp Drill Motor PT 7145.
NOTE: DURING THE CUT, ABOUT HALF WAY DOWN, YOU WILL BEGIN CUTTING INTO THE COUNTERBORE LEDGE. THE OPERATOR SHOULD HAVE A FIRM GRIP ON THE DRILL AND BE PREPARED FOR INCREASED LOAD ON THE DRILL MOTOR FROM THE ADDITIONAL MATERIAL BEING CUT. STOP WHEN CUTTER FREE WHEELS.
- 11) Retract cutter plate from the bore and lock it in the full up position. Loosen cutter set screws and insert cutter key in shallow hole in bottom of each cutter. Remove cutters from cutter plate. Remove Porta-Matic and clean block.
- 12) If one or more counterbores are being machined and you do not or cannot use the PT 2000-138 Depth Spacer, you will have to readjust the depth set collar each time you set up to bore. If the PT 2000-138 Depth Spacer is used, it will not be necessary to change the depth set collar adjustment on the mainshaft. Follow normal procedures to mount the Porta-Matic onto the next bore (See Step 2 of Boring Instructions), then remove PT 2000-138 Depth Spacer from mainshaft. This allows the cutter plate the additional travel necessary to center the machine in the bore without the need for re-setting depth of cut. Once the Porta-Matic is properly centered and torqued in place, raise cutter plate from bore. Lock in up position, and REPLACE PT 2000-138 ONTO MAINSHAFT. Install cutters into the cutter plate and proceed with normal boring operations.
- 13) Follow counterbore ledge cutting procedures to achieve proper counterbore depth and liner protursion using our PT 2250-A Counterbore Tool with our PT 2200-64 LPF Counterbore Cutter Plate.
NOTE: PT 2000-180 DUAL BIT CUTTER PLATE CAN BE USED TO MACHINE THE BLOCK FOR A LOWER PRESS FIT SALVAGE BUSHING. CONSULT CUMMINS SERVICE PART TOPICS NO. 87 T1-18 AND 87 T22-3 FOR INSTRUCTIONS.

