



A Division of Thiessen Products, Inc.

INSTRUCTION SHEET FOR TOOL #789

TWIN CAM CASE SAVER OVERSIZE TAPPET REAMER

This new tool can be a case saver if you have worn out or damaged tappet bores on any Twin Cam engine case. This reamer tool is designed to ream the case to fit JIMS No.1811 +.010" oversize Twin Cam Powerglide™ II lifter.

No. 789 - Use on any Twin Cam engine, OEM, or aftermarket engine.

JIMS® No.1811 +.010" oversize tappet must be used after reaming with JIMS Tool No. 789. This reamer has been machined to less than .0001" TIR (Total Indicator Reading). JIMS controls the TIR tolerance to ensure a quality fit for the new oversize tappet.



Note: This reamer may only be used in stock tappet bore sizes. If you have a case with an oversize tappet bore, then you will need to find other ways of fitting a larger tappet.



Caution: This reamer is very sharp. It will cut fingers. Handle it with care.

Look the reamer over for any imperfections. This reamer is very sharp. Lightly slide your fingernail down each of the cutting surfaces looking for any imperfection. With this precision tool and reading and following these instructions, you can be confident of performing a superior reaming job. All parts manufactured in house at JIMS USA Camarillo, CA.

Note: Please read all instructions completely and thoroughly before performing any reaming.

Caution: Before installing any new parts, you and only you are responsible to make sure all components are within serviceable wear limits after a tappet has damaged the tappet bore. If any tappet and / or case material has gone through the engine, then all bearings and running surfaces will need to be inspected and / or replaced as required to bring them back to H-D specifications. This may also require you to wash out the entire oiling system; oil tank, filter assembly, oil lines including oil cooler and engine case.

Note: If you are going to repair a case that needs a +.010" oversize tappet, then you and only you will need to determine if other components will require replacing. You will also need to determine the amount of engine disassembly required to ream a tappet bore. Some repairs will need more than others. JIMS can't make that call for you.

Attention: This tool is a precision instrument. If you treat it as such, it will give you a lifetime of use.

**NOTE: PLEASE READ ALL INSTRUCTIONS COMPLETELY BEFORE PERFORMING ANY WORK!
IF YOU DO NOT KNOW WHAT YOU ARE DOING, DO NOT DO IT!**

No information in this instruction sheet pertaining to motorcycle repair is represented as foolproof or even altogether safe. Even something safe, done incorrectly or incompletely can and will backfire. You and only you are responsible for the safety of your repair work and for your understanding the application and use of repair equipment, components, methods and concepts.

Each and every step this tool is designed to do must be carefully and systematically performed safely by you. All information listed in this instruction sheet has been tested, re-tested and used daily in JIMS® Research and Development Department.

ALWAYS WEAR SAFETY GLASSES OR OTHER FACE AND EYE PROTECTION SUCH AS FULL FACE SHIELD. JIMS® IS NOT RESPONSIBLE FOR DAMAGE, INJURY, OR YOUR WORK. JIMS® IS NOT RESPONSIBLE FOR THE QUALITY AND SAFETY OF YOUR WORK.

Performance Parts For Harley-Davidson Motorcycles



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JIMS Tools needed to perform this service;

1. JIMS engine stand; see catalog for all engine stands.
2. JIMS case splitter; see catalog for all engine case splitters.
3. See JIMS catalog for all other tools needed for repairing engines.



Other parts and tools needed

1. Parts and Service Manual for the year and model you will be repairing.
2. Tap handle that will fit a 9/16" (.562") square drive.

Components that have been supplied with JIMS No. 789 Tool:

1. JIMS Reamer No.789, has been designed to ream the tappet bore to a size of .8536" + / - .0002" with a Ra finish of 32 or better. This will give you a running clearance for JIMS No. 1811 +.010" over tappet of .0017" ± .0003".
2. Tap Magic cutting fluid, JIMS No.1698.

The four design features of this reamer listed below.

- A. The leading diameter is the same size as your stock tappet bore less .0002" and is 1.00" long. This is called the piloting diameter of reamer.
- B. Next is the first cutting diameter. It will cut the bore to about .002" under finished size.
- C. The remaining surface is a finishing diameter and is called the burnishing diameter.
- D. The reamer is designed to cut without pushing cutting chips into the finished bore.

Note: You will need to acquire JIMS + .010" over size tappets No.1811, to install in your now oversize bore.

Preparing engine cases for tappet bore reaming

1. You will need to determine all necessary components that must be removed or masked off. Refer to your Service Manual before removing any components.
2. Apply Tap Magic Tapping oil, JIMS No. 1698 to the cutting surfaces. Use a generous amount. Also, apply Tap Magic to the I.D. of the bore you will be reaming.
3. Attach your tap handle to the reamer and gently install the reamer with the cutting portion toward the tappet bore.
4. With the first 1.00" or so of reamer in bore, apply more Tap Magic to the cutting surfaces.

Note: You can not use too much Tap Magic.

5. Turn reamer clockwise **only** with a light inward pressure until the reamer has either stopped on the inner cam bearing boss or has completely passed thru its bore.

Note: When the right amount of inward pressure is being applied, it will require at least 2 minutes to ream one tappet bore. If done any faster, you will be taking the chance of developing a rough finish. Taking longer than 2 minutes is acceptable. Also during the reaming process, continuously reapply Tap Magic to cutting surfaces of reamer.

6. Remove reamer by turning it clockwise and slowly pulling out of the bore. Never rotate a reamer counter clockwise.
7. Before assembly you must remove all reaming chips from engine. Also, check all passageways to make certain they are clean and free of cutting chips.
8. Again, before assembling make certain all chips are removed from case. Follow your Service Manual for reassembly.

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CAUTION: WEAR SAFETY GLASSES OVER YOUR EYES.
SEE JIMS® CATALOG FOR HUNDREDS OF TOP QUALITY PROFESSIONAL TOOLS.
THE LAST TOOLS YOU WILL EVER NEED TO BUY.

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555 DAWSON DRIVE, CAMARILLO, CA 93012 PHONE 805-482-6913 • FAX 805-482-9224
VISIT US ON THE WEB AT WWW.JIMSUSA.COM