



**COGSDILL TOOL**

*products, inc.*

# APPLICATION *news*

DATE August 5, 2005

NUMBER CAN3-05

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## Special Twin Coin Punch Tool Achieves Chamfer Diameter and Location Specs, Greatly Reduces Costs

### Special tool based on Cogsdill recessing head design

A MAJOR MANUFACTURER OF AUTOMOTIVE BRAKE SYSTEMS used a coining arbor to punch the hole and chamfer in the bottom of the reservoir in their master cylinders. The tool fed into the bore and then was offset, which caused the punch to make contact with the surface. They could only manufacture one punched hole at a time. The method by which the tool was offset caused deflection problems, especially with the punched hole closest to the bottom of the bore. This particular tool was directly responsible for their high scrap rate.

The parts had a Ppk requirement of 2.0 or higher. The coining arbor could not consistently meet the requirement.

Cogsdill designed a special tool for this difficult application using our automatic recessing head technology. The tool has a slipper and tool slide which actuate the two punches. Hard nylon support pads prevent marking of the bore surface. (The coin punch tool performs one of the last operations, therefore the tool cannot mark the finished ID.)

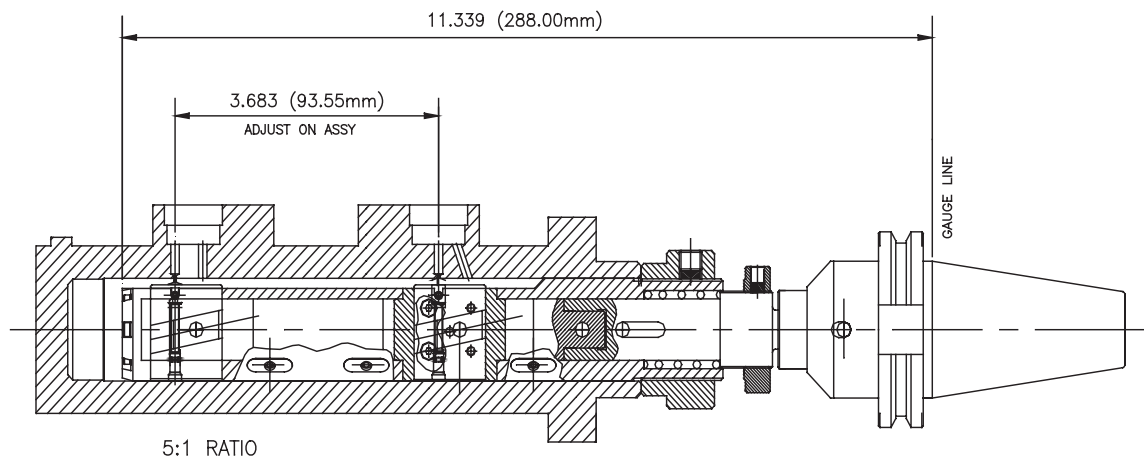
Results of a capability study confirmed the success of the tool design and the superior performance of the tool. The average punch location had a Ppk of 2.51. Chamfer diameter had a Ppk of 1.93, slightly under the 2.0 requirement, due to a chip problem in the flange mounting holes. (The chip problem was NOT attributed to our tool; had the problem not existed, our tool would have performed well over the 2.0 Ppk standard.)

The customer is excited about the results. Their scrap rate was formerly about 10%; with the use of Cogsdill's coining tool, the *scrap rate is virtually zero*. They will use Cogsdill coining tools in new applications currently in development.

— More —

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Special Twin Coin Punch Tool from Cogsdill

### **Machining data**

**Machine type:** Horizontal machining center

**Tool type:** Special Cogsdill coining tool

**Material type:** Cast aluminum

**Machine stroke:** 9.25mm (0.364 in.); tool stroke set at 9.00mm (0.354 in.)

**Feed rate:** 2000 mm/min. (78.74 IPM); spindle does not rotate

**Cycle time:** 13 minutes per pallet (4 complete parts)

**Coolant:** Semi-synthetic

**Size required:** 0.65  $\pm$ 0.05mm with 1.2  $\pm$ 0.3mm x 140°  $\pm$ 1° included angle  
(0.026  $\pm$ 0.002 in. with 0.047  $\pm$ 0.012 in. x 140°  $\pm$ 1° included angle)

**Size achieved:** Same as required