

# TECHNICAL BULLETIN

Number 1028

Rev. 0

**Subject: Repair of Upper Liner Bores In  
825 Series Superior Cylinder Blocks**

## ***I. PREPARATION***

The block should be acid vatted, hand scraped (if need be) and steam cleaned prior to machining. If the machining process is to be performed on a vertical machine, the cylinder head studs must be removed. This is not required if the process is to be performed on a horizontal machine, but is recommended to prevent damaging the studs and/or block during handling.

## ***II. REPAIR INSERTS***

Typically, the inserts are machined from mild steel tubing (preferably seamless). The inserts should be machined per drawing P-G-825-204. All surfaces are finish machined with the exception of the insert depth which is semi-finished oversized.

***NOTE: Upper block (liner flange gasket area) depth prior to machining.***

## ***III. MACHINING***

The cylinder block is placed onto the mill table with the block to bedplate gasket surface facing the boring head stock. The block must be adequately supported with adjustable supports. By traversing the mill table, dial indicate the block perpendicular to the head stock within .002" - .003". By raising and lowering the head stock, dial indicate the block to a true vertical position within .002" - .003".

Once the block is square to the head stock, clamp it to the mill table and recheck indicator readings. The boring bar must then be centered in the upper block bore for each hole to be machined.

***NOTE: It is recommended that the liner flange gasket surface also be indicated at this point.***

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Once the bar is centered the upper bore is finish machined to an I.D. of 11.869/11.870" and to a depth of 11/16" (new style blocks) or 41/64" (old style blocks). These dimensions must be perpendicular within .001" and concentric within .002" T.I.R to the lower block o-ring bore.

#### **IV. *INSTALL INSERTS***

At room temperature, the block I.D. and the insert O.D. are coated with No. 271 Loctite or equal. Once the insert is started into the block, press the insert into the bore until the upper-end of the insert is flush with the block top. (Interference between insert and block is .005-.007".)

#### **V. *FINISH MACHINING***

With all inserts installed the boring bar is again centered in each bore and the insert I.D. bored to a depth of .432/.434" for new style blocks or .388/.390" for old style blocks. Any excess insert that protrudes should be faced off. All bores are concentric to lower block liner o-ring bore within .002" T.I.R. and 63 RMS finish.

*NOTE: When finish machining inserts, extreme care should be given to feed, depth of cut, and speed as too much heat could distort inserts.*

*NOTE: The customer may prefer to machine all counterbores to the new block depth of .432/.434".*

Consult **EnDyn's** Technical Service Department (1-800-723-6396) if you have any questions or require additional information or your local authorized **PowerParts®** Distributor.

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