

TECHNICAL BULLETIN

TB NO. 1023
REV. 1

**SUBJECT: Pre-Combustion Chamber (PCC) Installation
Instructions for Superior Cleanburn Engines**

PROBLEM: Improper installation can lead to incorrect flame burning direction in combustion chamber and/or fatigue cracking (breaking) of the PCC nozzle.

SOLUTION: If you are a Superior Engine cleanburn owner/operator, you understand the importance of the PCC for proper combustion of the power cylinder's lean mixture. If the PCC parts are improperly installed, several problems may occur.

More specifically, the PCC nozzle contains two "flame holes" which directs the flame front to the proper locations in the combustion chamber (for a visual check, each hole points approximately to the center of each valve). The roll pin and corresponding roll pin slot in the power cylinder head ensures that the nozzle is properly positioned (ref. attached Figure 1 - Item 1 & Figure 2).

Equally important is applying the proper torque to these parts. Failure to adhere to below instructions may result in enough nozzle-to-retainer clearance to cause fatigue cracking, leading to a catastrophic failure of several power cylinder components (liner, piston, head, and valves) and possible damage to the con rod, crankshaft, and turbocharger. To assist owners/operators in this task, please follow the below instructions:

Step 1: Prior to installation of the PCC components, verify that *all* seating surfaces, threads, and locating pin slot are clean and in good condition (void of nicks, galls, and dings). Also, check that the ceramic coatings on the cap and nozzle are properly intact (this surface acts as a heat barrier).

Step 2: Exercise caution during the nozzle installation into the head to verify the pin is properly located in the slot (ref. Figure 1 - Item 1, and Figure 2) and to prevent ceramic coating damage. The nozzle installation tool (P-031-090) should be utilized.

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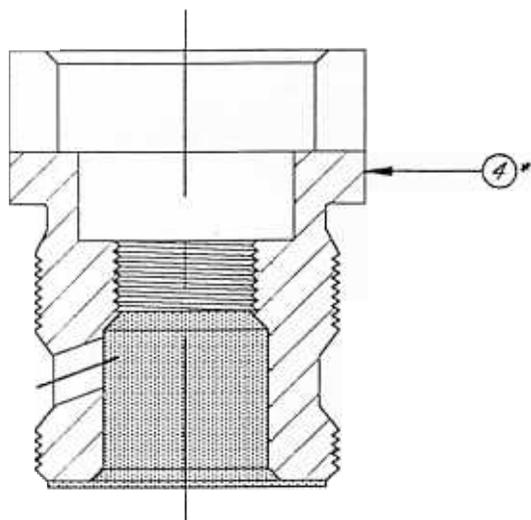
Step 3: Coat the retainer threads lightly with anti-seize compound. Install the retainer (item 2) with special tool (P-031-215). Torque to 75 ft. lbs. Verify nozzle is seated and secured.

Step 4: Verify the gasket surface is clean and free of dings. Install the gasket (item 3) and the cap (item 4) with special tool (P-031-214). Torque to 120 ft. lbs.

For further information or questions, please contact **EnDyn's** Technical Department or your local **EnDyn PowerParts**® Distributor.

7-30-97

Figure 1
e-Combustion Chamber Parts
 (Order Of Installation)



EnDyn
 Pre-Combustion Chamber
 Parts List

| Item No. | Part No. | Description | Qty. |
|----------|---------------|--------------|------|
| 1 | P-033-953 | Nozzle Assy. | 1 |
| **2 | P-030-977 | Retainer | 1 |
| 3 | P-909-981-187 | Gasket | 1 |
| *4 | P-030-974 | Cap | 1 |

*NOTE: Item #4 to be torqued 120 lbs.
 **NOTE: Item #2 to be torqued 75 lbs.; verify that nozzle item #1 is seated & secured.

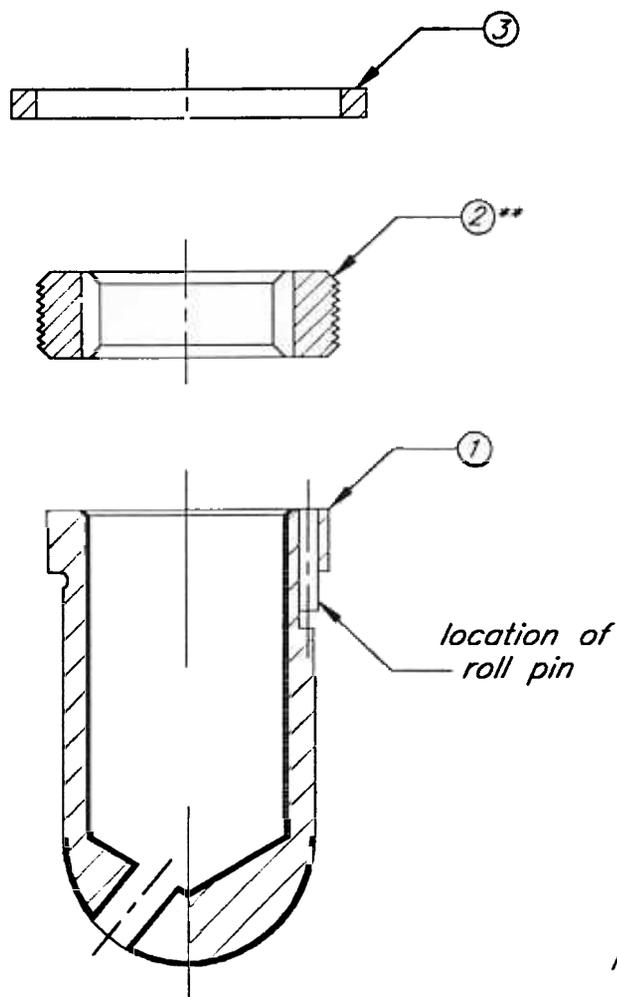
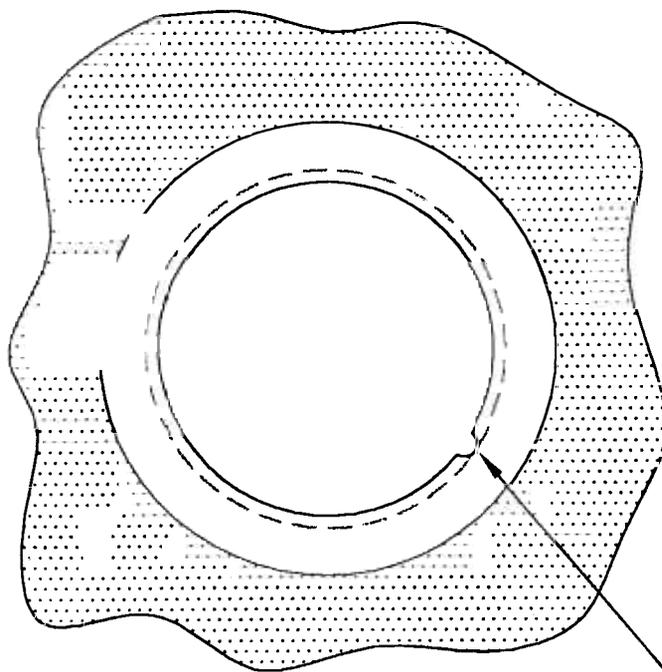


Figure 2
 View of Pre-Chamber Location
 In Power Cylinder Head



NOTE: Ensure nozzle assy. ① roll pin is aligned with slot in power cylinder head.