



1. Remove the cylinder head and components from the vat. All parts are to be thoroughly steam cleaned including the internal passages of the head, then blown dry for protection against rust.
2. Hydrostatically test the head casting by flanging the passages, filling with water and applying air pressure at 60 PSIG. Hold under pressure for 30 minutes and check for leaks.

If a cylinder head is suspected of leaking when in operation on the engine and a leak was not detected during the 30 minute pressure test, heat may have to be applied to the head, while maintaining pressure.

C. Perform a complete inspection of the cylinder head casting to determine if machining or other repairs are required to maintain tolerances and standards.

1. Inspect the combustion chamber surface (counterbore) for excessive pitting or any abnormal wear in the fire ring seating area. If either is evident, machining may be required to insure a good seal. If machining is required, you must machine or mill the bottom of the head surface to maintain proper depth of the counterbore (.226/.228").

NOTE: Do not remove more than 1/16" of metal from the surface of the combustion chamber. (Minimum cylinder head thickness: 7.406")

The same amount of metal removed from the surface of the combustion chamber must be removed from the bottom of seat counterbores to maintain proper depth (1.025/1.030").

NOTE: The surface is to be machined perpendicular to the guide bores.

2. Measure the inside diameter of the seat counterbores for egg-shaping and proper tolerance (Intake: 4.623/4.624" and Exhaust: 3.934/3.935".)

If repair and machining is required, maintain concentricity with the guide bore. (Maximum .0005) Oversize seats are available.

3. Measure the inside diameter of the guide bores for proper tolerance (1.375/1.376"). Service guides (P-022-935) are .0015" larger on the outside diameter.
4. Inspect the spring seating surfaces on the top of the cylinder head for excessive wear. If required counterbore for a 3/32" or 1/8" steel insert. (TB 1034)
5. Inspect jacket water port gasket surfaces for excessive pitting and cavitation. If required, remove the dead metal with a grinder, build-up with a ni-cast rod, and machine or mill to a smooth surface finish.

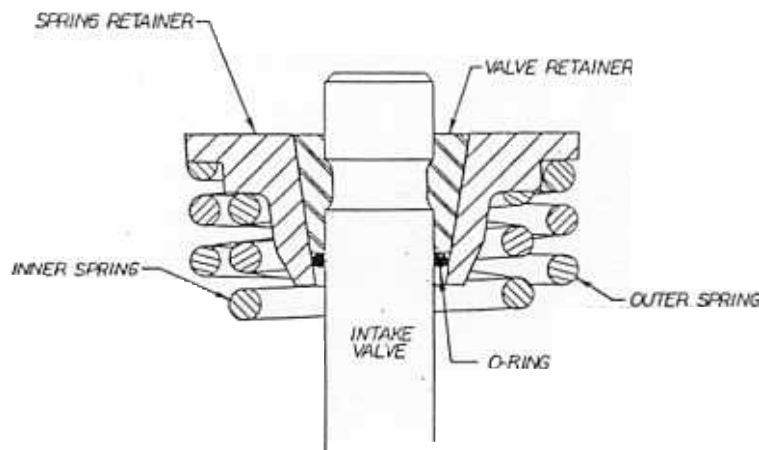


Each valve has to be lapped to the seats. Use a good brand of lapping compound such as Clover, grade E. Lap until you obtain 100% contact, approximately 1/4" in width around the complete circumference of the valve. Test for leakage with solvent or a hand type vacuum plunger pump.

6. Prepare all parts for assembly. It is recommended that the valve stems be pre-lubricated with white hi-temperature grease before assembly.

During assembly, note the inner and outer spring has a tighter coil on one end. This is called the dampening coil and fits against the cylinder head.

During the assembly of the intake valve, it's important to install an o-ring (P/N P-106-420 S/S P-900-835-020) as shown on the sketch below.



The intent is to reduce oil consumption and excessive carbon build-up. The o-ring will create a positive seal in the stem and retainer area. Oil will flow over the outside of the retainer and reduce flow between the guide and stem.

If the heads are going to be stored, they should be protected from the elements by applying Tectyl 502-C or equal preservative.

- E. Establish a cylinder head serial numbering system and maintain records. Suggest: Engine S/N -1 thru 8, etc.
- 1 Record total operating hours since last repair and list new replacement parts.
  2. Record distance from the top of each valve stem to the machine surface on the cylinder head. Use this information for future reference. As the valve and seat wears, the distance will increase.

For further information concerning reconditioning Superior power cylinder heads, please contact **EnDyn's** Technical Service department direct or your local authorized **PowerParts®** Distributor.

5-19-98