

**PRE-QUALIFICATION CRITERIA FOR CYLINDER HEAD LH & RH (FULLY FINISHED) TO DRG No
SB 306-01-36 & 306-02-36**

1. The prospective vendors must be supplying or must have supplied large intricate aluminium engine casting to reputed engine manufactures.
2. The vendors, who are interested in supplying such castings, with fully machining should have their own manufacturing facilities or should have tie up for getting the castings from reputed manufacturers. The firm should have a large manufacturing base, adequate financial strength and well-documented quality system. The manufacturer should have adequate infrastructure like sufficient area of industrial shed, power backup, air compressors etc.
3. The casting manufacturer shall buy all input materials for liquid metal as well as for moulding and core making from reputed manufacturers only. Necessary material certificates for all input materials and additives should be available.
4. The vendors must have adequate trained, experienced and skilled manpower.
5. **Cylinder Head Casting to Drg. No.306-16-22**

THE FIRM/TIED UP FIRM SHOULD HAVE FOLLOWING FACILITIES:

- a) Aluminium melting furnace with adequate capacity.
- b) Suitable core making facilities (like hot box, cold box and shell core) with latest core shooter and related mixers, core ovens etc.
- c) Capacity for manufacturing Die Casting dies with simulation preferably.
- d) Heat treatment for T6 process wherever required (solutionising and ageing facilities.)
- e) Abrasive blasting / surface cleaning facilities.
- f) Fettling facilities like band saw, mechanical grinders etc.
- g) The Firm should have Degassing plant.
- h) Transfer Ladles, holding (preferably with dosing facility) furnaces.
- i) The firm should have density meter and porosity detection systems to check the effect of the degasification.
- j) Hydraulically operated gravity die casting machines.
- k) Vacuum Impregnation plant for sealing micro porosity.
- l) The general quality requirement of the casting to be manufactured by the vendor shall confirm to the technical document TTM 27-75
- m) Pressure testing facilities.
- n) Argon TIG welding facility.

6. THE FIRMSHOULD HAVE THE FOLLOWING FACILITIES AT THEIR PREMISES FOR FULLY FINISHED CYLINDER HEAD TO DRG. NO SB 306-01-36 & SB 306-02-36

- a. HMC/VMC with axes strokes to accommodate component size 1400 x 300 x 150 mm (L x W x H) and weight 45 Kg.
- b. Radial drilling machine.
- c. Special purpose or CNC horizontal boring machine for boring of cam shaft bearing.
- d. Hydraulic press for pressing the valve seat / valve guide.
- e. Valve seat Generation / Chamfering facility.
- f. Firm should have expertise in designing of complex fixtures, special tools and gauges in house or tie up with for designing and manufacturing of complex fixtures, special tools.
- g. Firm should have sufficient space and facilities for deburring and checking the components.
- h. Firm should have skilled fitters to carried out the critical fitting operations.

