

**PRE-QUALIFICATION CRITERIA FOR CRANKCASE (FULLY FINISHED) TO DRG No  
SB 3301-15-44**

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. **Crank Case Castings to drg.no. 3301-16-58SB and drg. no. 402-06-43:**

**THE FIRM/TIED UP FIRM SHOULD HAVE FOLLOWING FACILITIES:**

- a) Aluminium melting (Electrical resistance or LPG fired only) furnaces with control systems of adequate capacity from 500 kg to 1 ton.
- b) Transfer Ladles, holding (preferably with dosing facility) furnaces.
- c) Capacity for manufacturing Die Casting dies with simulation preferably.
- d) Resin sand moulding.
- e) Capacity of the Auto resin mixer should be 5 to 10 ton preferably.
- f) Jolt squeeze/high pressure machines for making sand moulds to suit the above castings requirements.
- g) Suitable core making facilities (like hot box, cold box and shell core) with latest core shooter and related mixers, core ovens etc.
- h) Ladle with LPG pre – heating facilities.
- i) The firm should have Argon Degassing (MDU) plant.
- j) The firm should have density meter and porosity detection systems to check the effect of the degasification.
- k) Facilities for backelizing.
- l) Heat treatment for T6 process wherever required (solutionising and ageing facilities.)
- m) Vacuum Impregnation plant for sealing micro porosity.
- n) Firm should have or create autoclave chamber with 6 bar pressure. Firm to indicate the commitment in the tender alternative facility (incase autoclave chamber not available for making the casting).
- o) The general quality requirement of the casting to be manufactured by the vendor shall confirm to the technical document TTM 27-87 for upper crank case casting to drg.no. 3301-16-58SB and M27-25 for lower crank case casting to drg. no. 402-06-43.
- p) Pressure testing facilities.
- q) Abrasive blasting / surface cleaning facilities.
- r) Fettleing facilities like band saw, mechanical grinders etc.
- s) Firm should have Argon TIG welding facility.

6. **THE FIRMSHOULD HAVE THE FOLLOWING FACILITIES COMPULSORY AT THEIR PREMISES FORFULLY FINISHEDCRANKCASE TO DRG. NO SB 3301-15-44:**

- a. HMC/VMC with axes strokes to accommodate component size 1400 x 700 x 450 mm and weight 130 Kg.
- b. CNC horizontal borer / HMC / SPM to machine Crank Shaft bore.

