

	Technical Specification for pinion gear and rack gear for IGV mechanism.	Ref.: 001-TML- 2017_gear
		Dt. : 28.02.2017
		Rev. no.: 01

1. Scope of work:

The scope of work includes manufacturing & supply of pinion gears and rack gear for IGV mechanism of axial flow compressor as per the manufacturing drawings RDDG35017051 & RDDG35017052 respectively. Teeth of rack gear and entire pinion gears except bore and tapped hole have to be cadmium plated. Delivery, packing, forwarding and unloading of the gears at BHEL R & D, Hyderabad is also included in the scope of work.

2. Material:

The gears and rack shall be manufactured as per the material indicated below. Vendor should submit the material test certificate and heat treatment documents along with the finished product.

a) Pinion gear:

Material: IS: 2004 Class 4 (C-45); Hardness & tempered to 200 to 235 BHN

b) Rack gear:

Material: IS: 2004 Class 4 (C-45); Normalized. Min. hardness 175 BHN

3. Inspection:

BHEL will conduct witness tests for checking of dimensions and tolerances of the components. Components shall be dispatched only after clearance from BHEL.

4. General:

1. Attached drawings (No. RDDG35017051 & RDDG35017052) are tentative, subjected to minor changes, which will not have cost implications.
2. Gears and rack are to be supplied with one coat of rust preventive coating on all the surfaces.
3. Vendor should get clarified from BHEL, for any ambiguity found in the drawing before proceeding further.
4. Vendor should quote price of total 28 pinion gears and rack gear (entire ring) in two halves with horizontal split.
5. In the system, rack gear will be in contact with all the pinion gears mounted on the guide vane spindle to rotate them. Vendor has to ensure smooth running of the pinion gears and rack gear after assembly in the IGV mechanism at BHEL R & D, Hyderabad.
6. Any defect in the manufacturing/ fabrication of the gears identified during assembly shall be rectified by the vendor without any cost to BHEL. Also, associated disassembly, machining, rework and re-assembly will be under the scope of the vendor.
7. Any stress relieving as required after machining has to be done by the vendor.
8. DP test on rack teeth after bending has to be done by the vendor. No cracks are allowed.
9. Vendor must submit dimensional report along with all the finished product.

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