

Indian Institute of Technology, Kanpur
National Wind Tunnel Facility

Enquiry No. NWTF/IITK/2016-17/11_Revised3

Closing Date: Feb. 08, 2017

Sealed Quotations are invited on the following address from the reputed Vendors/Fabricators for design and fabrication of 4 bladed (1 No.) and 6 bladed (2 Nos.) Balanced Fans (Refer Figs. 1-3) using glass fibre or Carbon fibre composite material. Fans will be assembled on a Aluminum HUB with blade setting altering design (as shown in Figure 4), which will have 5 sets of gear housed in a cylindrical part of typical diameter 180mm and thickness 150mm. To get details on the fan aerofoil coordinate and for any other queries, please contact to **Mr. Sharad Saxena** at saxenas@iitk.ac.in.

Prospective Vendors/fabricators are requested to send their quotations in a sealed envelope within closing date.

Terms and Conditions

1. Fan Models has to be fabricated and assembled in all respects with required inspection plan.
2. The schedule to be followed from the date of receipt of PO must be clearly defined. NWTF reserves the right to negotiate the proposed schedule.
3. Acceptable Tolerances:

Overall

- a. Model length: +/- 1 mm
 - b. Profile of aerofoil: +/-0.1 mm
4. Fabrication work has to meet the following requirements:
 - a. All Aluminum components to be anodized.
 - b. Surface roughness of metallic parts: 5 microns or better for Al parts, and 50 Micron for Fan blades made using composite parts.
 5. Fan Model will be accepted only after demonstration of its dimensional accuracy and overall integrity as per the specifications.
 6. A Design and Fabrication Report has to be submitted on the dimensional accuracy and overall integrity of the fabricated fan model based on inspection.
 7. Inspection is to be in two stages.
 - a) Inspection of parts and assembly at fabrication site.
 - b) Inspection of the complete Fan models at NWTF, IIT Kanpur.The Fan models received by NWTF at the test site will also need to be assembled, inspected and certified by NWTF.
 8. Validity of the quotation should be at least 60 days.
 9. 30% payment will be released after completion of Fan model design and inspection plan documents. The remaining 70% will be released after assembly of Fan model at IITK and acceptance of the complete fan models and preliminary test runs are completed in the NWTF tunnel, to ensure that fan models are dynamically balanced and blade angle changing mechanism is able to change the blade settings while retaining the dynamic balance.

The Coordinator,
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Four Bladed Fan Assembly

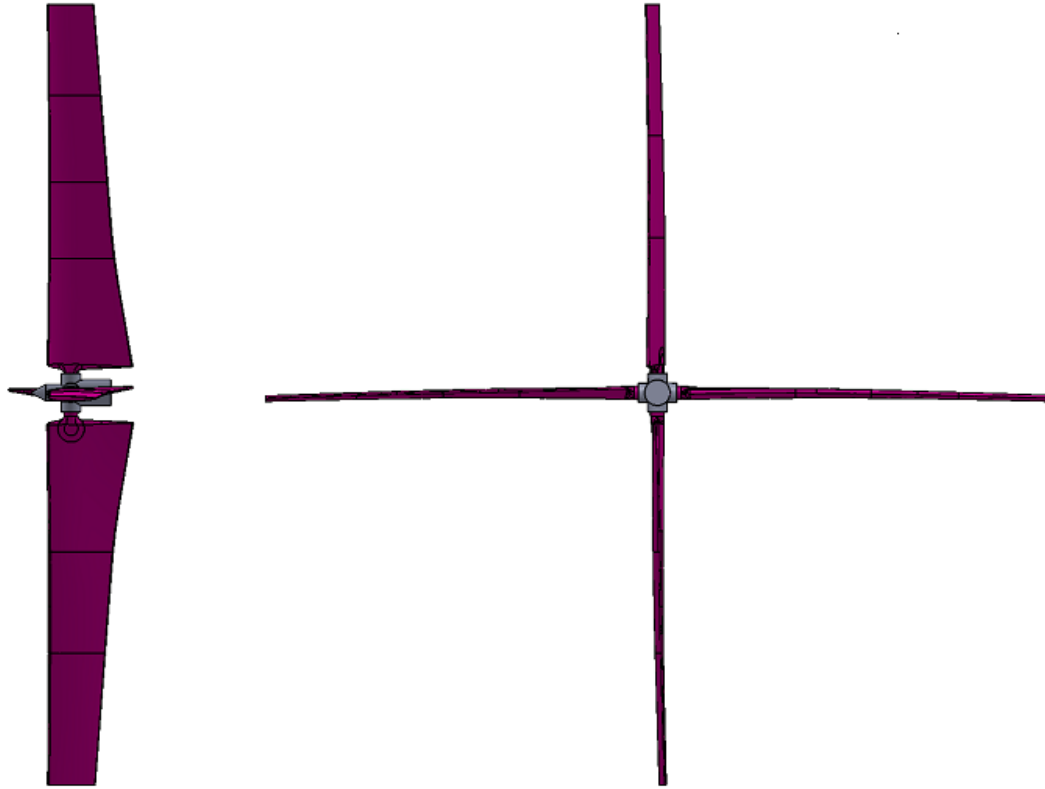


Figure 1: Typical Four Bladed Fan assembly (Actual dimension can be collected from Mr. Sharad Saxena, Email: saxenas@iitk.ac.in)

Six Bladed Fan Assembly

6 Fan Assemblies

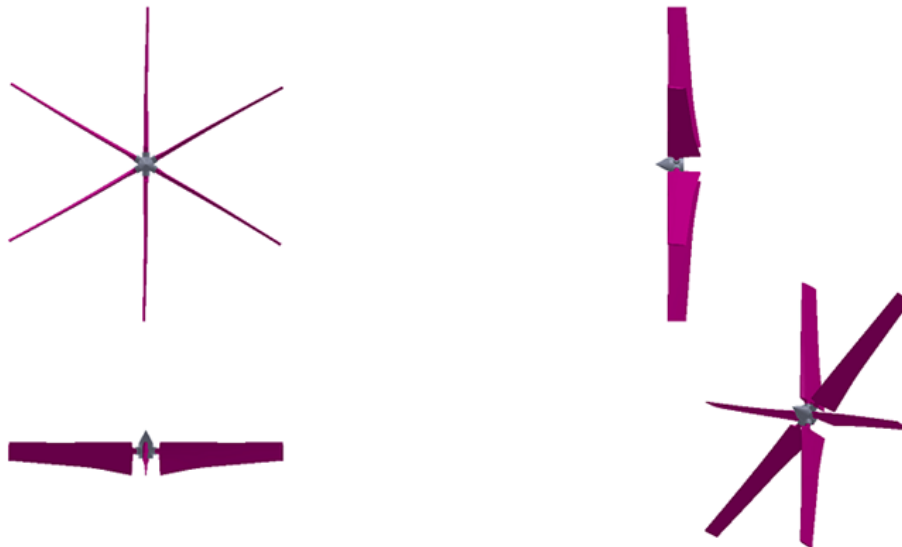


Figure 2: Typical Six Bladed Fan assembly (Actual dimension can be collected from Mr. Sharad Saxena, Email: saxenas@iitk.ac.in)

Fan blade section and plan details

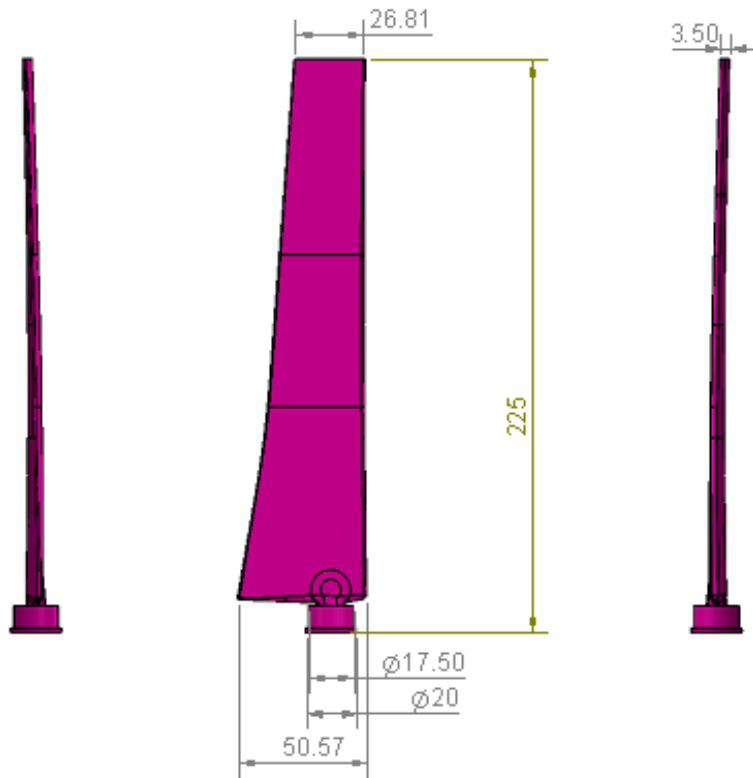


Figure 3: Typical Fan blade section and plan details (Actual dimension can be collected from Mr. Sharad Saxena, Email: saxenas@iitk.ac.in)

HUB Assembly with Motor Shaft

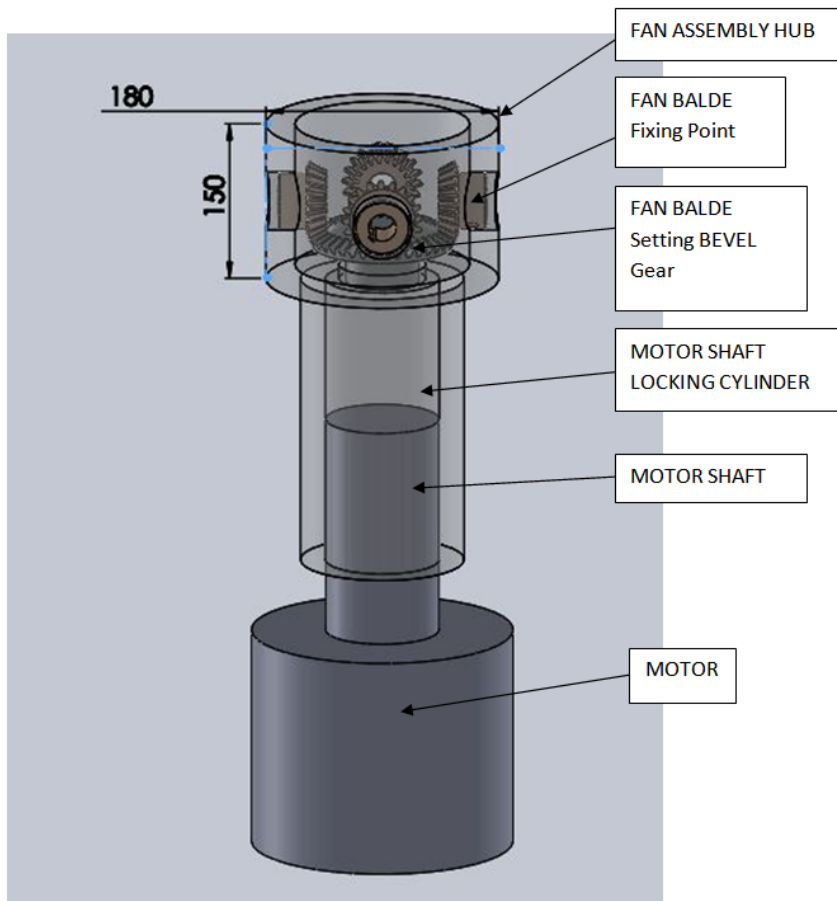


Figure 4: Details of Fan HUB Assembly with Motor Shaft