

SIDE GEAR BOX MANUFACTURING GROUP (GROUP-1)

SI no.	Nomenclature & drawing No.	Manufacturing technology & Testing / Inspection Facilities required to produce the item	Essential (To be possessed by the vendor in his premises)(P&M list and testing / inspection equipment list to be submitted)	Desirable (May be posses by the vendor in his premises or out sourced)(Self declaration to be submitted)	FIRM Compliance (Y/N)	Remarks	
1	172.48.001CB-2CB Gear Box with Suction pump and Final Drive (RH) 172.48.002CB-2CB Gear Box with Suction & Delivery pump and Final Drive (LH)	TECHNOLOGY-I	Turning	CNC Turning dia 500mm, 400mm, 200mm with 0.010mm accuracy			
			Milling HMC	HMC 800 x 800 & 630 x 630 with 0.010 accuracy			
			Milling VMC	VMC 800 x 1500, 500 x 100, 300 x 400 with 0.010 accuracy			
			Gear Hobbing	Gear Hobbing of Mod 8 x cutting ϕ 250 & Mod 5 x Cutting ϕ 440mm with gear cutting accuracy of class of Din 7			
			Gear Shaping	Gear Shaping of Mod 8 x cutting ϕ 510 (component height 450mm) with gear cutting accuracy of class of Din 7			
			Internal Grinding	Internal grinding machine 300mm dia & 650mm dia with 0.005 accuracy			
			External Grinding	Ext. Grinding machine Dia 300 x 600mm with 0.005 accuracy			
			Surface grinding	Horizontal spindle type Rotary table surface grinder dia 600mm & Reciprocating surface grinder 250 x 1000 with 0.005 accuracy			
			Gear Grinding	Generation and Profile type Gear grinding Mod 8 x 200 grind dia and spline grinding with gear grinding accuracy class of Din 5			
			Broaching	Vertical Broaching 80mm Dia & Horizontal Broaching dia 80mm. Firm has to give undertaking that the same will be installed and proof of the same is to be given after confirmation of order			

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1	172.48.001CB-2CB Gear Box with Suction pump and Final Drive (RH)		Honing	Honing for Dia 20mm to 110mm with accuracy of 0.002 mm			
			Lapping	1.Rotary lapping machine for achieving flatness accuracy of 0.002 mm 2.Manual lapping on rotating fixture			
			Drilling	Radial drill for dia 50mm & Bench Drill dia 4mm			
	172.48.002CB-2CB Gear Box with Suction & Delivery pump and Final Drive (LH)	TECHNOLOGY-2	Assembly	Work Benches and standard tools for assembly Dynamic Balancing machine (horizontal or vertical) with drilling facility of unbalancing accuracy min. 2 gms Material handling Equipment including crane, Forklifts etc. for capacity of handling 1000 Kgs min. Should develop/position the suitable fixtures required for assembly, balancing machine etc. and firm should submit the undertaking in this regard at the time of submission of bids that they will create the required fixture facilities/ balancing machine within 6 months from the date of receipt of order. Firm should have experience in manufacturing the Epicycle type gear box assemblies.			
		TECHNOLOGY-3	Fabrication	Arc Welding machine Co2 Welding machine Pressure testing of welded joints			

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1	172.48.001CB-2CB Gear Box with Suction pump and Final Drive (RH)	TECHNOLOGY-4	Gas Carburizing		Gas carburising furnace		
			Hardening & Tempering		Hardening & Tempering furnace with Oil quenching facility		
			Induction Hardening		Electrical type Induction hardening furnace with 50KHz with induction softening cycles		
			Hard Chromium		Hard chromium plating plant		
			Protection coating		Oxidising & Phosphating Plant, Zinc plating plant		
	172.48.002CB-2CB Gear Box with Suction & Delivery pump and Final Drive (LH)	TECHNOLOGY-5	Casting		Casting facility of size dia 800 x 450 – 150 Kgs max. weight should be available to manufacture the casting of required accuracy class & technical requirements.		
		TECHNOLOGY-6	Forging		Forging facility up to maximum weight of 150 Kgs. should be available to manufacture the forging of required accuracy class & technical requirements		
	TEST / INSPECTION-1	Hydraulic type Pressure Testing	Should develop/position Hydraulic type Pressure Test stand and firm should submit the undertaking in this regard at the time of submission of bids that they will create the Hydraulic type Pressure test stand facilities within 6 months from the date of receipt of order				
	TEST / INSPECTION-2	Test bench for testing the assembly performance	Should develop/position Gear box Test stand and firm should submit the undertaking in this regard at the time of submission of bids that they will create the Gear box Test stand facilities within 6 months from the date of receipt of order				

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1	172.48.001CB-2CB Gear Box with Suction pump and Final Drive (RH)	TEST / INSPECTION-3	3D CMM	3D CMM 650 x 650 with accuracy of 0.001mm		
			Gear Profile Tester		Gear Profile Tester (Max module 8)	
	Gear Roll Tester			Gear Roll Tester (Max module 8)		
	Roundness Tester			Roundness tester with accuracy of 0.5 microns		
	Surface Roughness Tester			Surface Roughness Tester for Ra &Rz values		
	Gauges			Standard Gauges for checking Holes and threads suitable to the requirement of the components		
	Measuring Instruments			Gear Teeth Micrometer, Vernier Caliper, Groove Vernier, Radius gauge, Feeler Gauge etc. suitable to the requirement of the components		
		TEST / INSPECTION-4		Brinell Hardness Tester Vickers Hardness Tester Hardness Case depth testing facility		
		TEST / INSPECTION-5		Coat thickness testing facility		
	172.48.002CB-2CB Gear Box with Suction & Delivery pump and Final Drive (LH)					