

VENDOR QUALIFICATION CRITERIA (VQC) FOR T-90 HULL MANUFACTURING UP TO 1<sup>ST</sup> STAGE MACHINING

Sl. No	Nomenclature & Drawing No.	Manufacturing Technology & Testing / Inspection Facilities required to produce the item	Must be possessed by the Vendor in his own premises (List of Plant & Machinery and Testing/ Inspection facility to be submitted)	May be possessed by the Vendor in his own premises (OR) may be out sourced. In case of outsourcing, then the valid MoU/Agreement to be submitted. Vendor has to submit details alongwith supporting documents regarding Plant & Machinery, Testing Facilities and Inspection facilities of the OUTSOURCED FIRM.
1	188.01.001CB-13CB/1ST-STAGE	Technology 1	RAW MATERIAL	Transport facility for lifting the Raw material from HVF Site and from firm's site to HVF after finishing.
		Technology 2	ASSEMBLY AND WELDING	Firm has to arrange assembly Fixtures / Welding manipulators / Positioners as per the process requirements and drawing dimensions for manufacturing of all SUB ASSEMBLIES, HULL ASSEMBLY & HULL FULL WELDING. To this extent firm has to give undertaking certificate signed by the head of the department of the company with seal.
		Technology 3	WELDERS	The bidder should have sufficient infrastructure to accommodate and handle the HULL STRUCTURE OF APPROX. LENGTH 6.5 metre, WIDTH 2.5 metre & HEIGHT 2.5 metre having weight of 12 Ton, Surface table of dimensions 6.5 metre X 2.5 metre. Relevant documentary evidence for the facilities to be provided.
		Technology 4	FABRICATION FACILITIES	Firm should have closed shed of approx size 20 metre width and 60 metre length having all shop floor facilities for manufacturing all sub- assemblies, Hull assemblies & Hull full welding and Inspections.
1	188.01.001CB-13CB/1ST-STAGE	1. SHOP FLOOR	EOT crane having sufficient SWL capacity (15 T Minimum) to handle the component weight mentioned above.	Qualified Welders only will be engaged for undertaking welding of armour steel.
		2. OVER HEAD CRANE	Minimum 6 nos. of Welding machines (MMAW & MIG/MAG) of welding current minimum 400A capacity or more, 1 set of Oxy Acetylene Gas cutting machines are essentially required for the assembly & welding for getting output as per TE.	CNC profile gas cutting machine of capacity to cut minimum 85 mm thick armour steel plates.
		3. WELDING, GAS CUTTING, GRINDING MACHINES,	4. PRESS	Suitable capacity Press (hydraulic/mechanical) machine is required for bend removal of plates up to 85 mm thickness.

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GM/OPS-IT

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DGM/H&T&TS

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MM/H,T&TS

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JWM/QA(HULL)

*[Signature]*  
HOS/HULL

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		Technology 5 MACHINING		CNC Plano Milling Machine / Horizontal Boring and Milling Machine having size to accommodate the size of Hull and their constituent raw materials and & machining capacity to carry out 1st stage Hull machining (boring of Crank case RH & LH and Stern milling as per process drawing). Minimum table should be to accommodate HULL STRUCTURE OF APPROX. LENGTH 6.5M,WIDTH 2.5M & HEIGHT 2.5M having weight of 12 Ton. (or) Any alternate machine proposed by the firm to complete the above purpose is acceptable if the details and methods is justified with adequate documents. The bidder should produce the proof (Photography and documentary) of the above mentioned facilities.
188.01.001CB-13CB/1ST-STAGE		HEAT TREATMENT ( For CRANK CASE RH&LH ASSEMBLY - STRESS RELIEVING)		MINIMUM FURNACE SIZE : 2500X1500X1000MM Max.Temp : 700 °C Tempering Temperature is 560 °C Holding time : 3 Hrs, Water Cooling.Hardness Range: 285 to 341 BHN
	Technology 6	STRESS RELIEVING 184.01.003-2/SF- SIDE PLATE RH &188.01.004-2/SF- SIDE PLATE LH		Type of furnace: OIL /ELECTRIC (with Temperature recorder facility) Operating Temperature Range 0 to 1200 °C Size of furnace: 8X4X2 meters.
	Technology 7	HVF SUPPLIED SPECIAL STEEL MATERIAL AS PER SCOPE OF WORK- ANNEXURE-E		Hardness Testing Machine (to inspect the test piece) Poldi Hardness Tester (to inspect the hull side plate) (Hardness range of machine from- 255 to 441 BHN)  Suitable Heat treatment facilities to meet the process requirements as referred in Technical documents of components provided by HVF in Annex 'A'
188.01.001CB-13CB/1ST-STAGE	Technology 8	INSPECTION	All required measuring instruments to measure the component at fabrication & machining stages. Measuring instruments and facilities includes vernier calipers, bore inside/outside micrometers, tubular micrometers, bore gauges, vernier height gauges, profile gauges, portable / universal hardness testing equipments, etc that are essentially required for ensuring the dimensions of components as per drawings/technical process documents.	Red oxide Primer coating other than machined surface. SYNTHETIC ENAMEL DARK ADMIRALITY GRAY painting to be carried out in the plates wherever required as per process.

GM/OPS-II

DGM/H/T&TS

WM/H,T&TS

JWM/OA(HULL)

HOS/HULL