

**Tender No.65.11.6507**

**TECHNICAL SPECIFICATION OF HYDRAULIC ROAD MOBILE CRANE**

<b>Major Parameter</b>	1.0	Purpose & Capability	i) Lifting & Lowering of all load & p to the maximum specified working load at different specified clear out reach.
			ii) Travelling of specified speeds under both loaded and unloaded condition.
			iii) Articulating through given range in either direction.
			iv) Travelling & derricking simulteneously.
	2.0	Type of Crane (As per IS 4573)	Hydraulic Road Mobile “ Pick N Carry”
	2.1	Mobility	Self propelled
	2.1.1	Articulation range degree	53 degree on either side.
	2.1.2	Lifting Capacity (Minimum 85 % of tipping load)	5 T at 1.9 m from center of front anile.
			3 T at 3.0 m from center of anile.
			2 T at 4.6 m from center of front anile.
	2.1.3	Type of Cabin	Fixed
	2.1.4	Maximum Travel Speed in Kmph	20 Kmph
	2.1.5	Out reach	6.0 m minimum
	2.1.6	Lift (above ground level measured from hook lifting point)-	7.0 m
	2.1.7	Maximum Turning Radius	5 to 6 m
	2.1.8	Standards	i) Thre crane shall be designed, manufactured and tested generally in accordance with ISS 4573-1982 for power driven mobile cranes.
			ii) ISS 807-1976 are latest IS code of practice for design, manufacture errection & testing of Crane and Hoists.
	3.0	Design Features	i) The Crane should be robust and of study construction.
			ii) The crane should be fitted with a suitable engine capable of meeting all load demands as mentioned in para-I-above.
			iii) The crane should be able to move on its own power on pneumatic rubber tyre wheels on uneven railway workshop/sheds, pathways.
iv) It should have individual pilot switches or lever for control of mderric and articulating motions.			
a) For movement of the crane automotive type of levers/pedals should be provided including the brake pedals for braking the vehicle.			
b) The crane should be counter balanced and should be stable even and maximum specified grades both when stationary and mobile, under all load condition.			
c) The crane should incorporate all safety devices so as to provide complete protection to the operator, like protection against over load pressure relief and over load valves, cooling of engine, hand brake for parking.			

	3.1	Hook	Suitable hooks for, lifting the load at different location should be provided confirming to relevant Indian Standard Specification IS 15560 (latest) Hook should be mounted on grease lubricated antifriction thrust bearing and protective skirt should be provided over the bearings. Proof load test as per ISS from recognized test house should be submitted.
	3.1.2	Hydraulic System	i) Vane type pump directly driven from engine should be used for generating hydraulic pressure.
			ii) The hydraulic pump and its element shall of reputed Indian manufacturerer like M/s REXORTH, VICKER-SPERRY, YUKEN, L&T, DENSSION.
			iii) The piston assembly shall be effectively pressure sealed at both ends to prevent oil leakage.
iv) The material used for seals shall be such as Nitrile Rubber/Turcite/PTEE etc. of reputed make.			
<b>MINOR PARAMETER</b>	4.0.0	Gauges	Air pressure gauge, Hyd. Pressure gauge, Engine oil pressure gauge, Hour Meter shall provided for measurement.
	4.1.1	Derricking System	Articulation should be achieved with the help of double action hydraulic cylinder.
	4.1.2	Transmission	i) Crane should be achieved through a suitable gear Box to achive variable speed in both forward and reverse directions.
			ii) All gears should be of alloy steel suitable hardened and ground with hardness not be less than Rockwell C-50.
			iii) Suitable brakes should be provided on all four wheels and also provide parking brake.
	4.1.3	Operators Cab	The operators casb should be of steel construction trolley enclosed typer with lockable sliding or hinged door, electric fan, interior lights and electric horn. It should have and upholstered seat adjustable on sides. The operator's cab window should be hinged or sliding typeaned fitted with wind screen having tough ended glass panes.
4.1.4	Diesel Engine	The engine should be suitable fitted on the crane and should normally be water cooled.	
4.1.5	Lubrication	All roller/ball bearing should be pre-packed with grease. Grease nipples and other lubrication point should be provided at easily accessible locations.	
	4.1.6	Electric System	A 12/24 volt battery should be provided for lighting and engine system. Suitable controlling battery should be provided. The lighting system should include two head lights, 2 side lights, top and tail lights, cab head light and inspection lamp.
	4.1.7	Colour	The colour scene shall be as per standard yellow and black ivory used.
<b>Concomitenc Accessories</b>	5.0.0		i) First fill of hydraulic oil, adequate to last till change is due. Number of hours of crane operation after which a change of oil that can be used.
			ii) First fill of fuel oil as per tank capacity.
			iii) One set of service tools required for all normal maintenance activities including gear gun for lubrication.

Optional Accessor	6.0.0		Any accessories which in the opinion of the manufacturer can contribute to higher to highly production rates for improved efficiency should be clearly indicated and quoted separately.
Spare s	7.0.0		The following spares shall be delivered with the crane.
			i) Fuel filter Element - 02 Nos.
			ii) Hydraulic Oil Filter Element - 02 Nos.
			iii) Lube Oil Filter Element - 04 Nos.
			iv) Air Cleaner Element - 01 Set.
			v) Seal Kit for Derrick Cylinder - 01 Set.
			vi) Seal Kit for Steering Cylinder - 01 Set.
			vii) Lift Cylinder - 02 Nos.
			viii) Steering Cylinder Hoses - 02 Nos.
			ix) Master Cylinder repair kit - 01 Set.
			x) Brake cylinder repair kit - 02 Set.
			xi) Water pump repair kit - 01 Set
		xii) Fan belt - 01 Nos.	
Warra nty	8.0.0		As per IRS General Condition.
AMC	9.0.0		Not required
Special requirement	10.0		
	10.1	Training	Technical expert of the manufacture during commissioning of crane will fully and adequately train operator/maintenance staff nominated by the consignee.
	10.2	Installation & Commissioning	i. The contractor shall arrange commissioning of the crane after its receipt by the Railway. ii. Contractor or his agent would be required to inspect the consignment at the consignee end before unpacking is done and carry out and joint check of the receipt of components.