Technical Specification of Hydraulic Road Mobile CraneCap-5T

. Unit –WRS-Kota

MAJOR PARAMETER	1	Purpose and capability.	i.)Lifting and lowering of all loads up to the maximum specified working load at different specified clear out reach. ii.)Traveling at specified speeds under both loaded and unloaded conditions. iii.)Articulating through given range in either direction iv.)Traveling & derricking simultaneously.
	2	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	Type of cabin	Fixed
	2.1.3	Lifting capacity (minimum 85%of tipping load)	5T at 1.9M from center of front axle.,3T at 3.0 M from center of axle. 2T at 4.6 M from center of front axle
	2.1.4	Maximum travel speed in Kmph	20Kmph
	2.1.5	Out reach	6.0M minimum
	2.1.6	Lift (above ground level measured from hook lifting point)	7.0M
	2.1.7	Maximum Turning radius	5 to 6 M
	2.1.8	Standards	i.)The crane shall be designed, manufactured and tested generally in accordance with ISS:4573-1982 for power driven mobile cranes ii.) ISS 807-1976 or latest IS code of practice for design, manufacture, erection and testing of cranes and hoists.
	3.0	Design Features.	i.)The crane should be robust and of sturdy construction. ii.)The crane should be fitted with a suitable engine capable of meeting all load demands as mentioned in para1above. iii.)The crane should be able to move on its own power on pneumatic rubber tyre wheels on uneven workshop pathways. iv)It should have individual pilot switches or lever for control of derrick 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 at 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 overload valves, cooling of Engine, Hand brake for parking.
	3.1	Hook	Suitable hooks for lifting the load at different locations should be provided conforming to relevant Indian Stanadrd 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 .
	3.1.1	Boom	The boom should be built of different steel sections. It should be manually telescoping sliding arrangement for sliding section and should be durable and easily maintenance.

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<tr><td></td><td>3.1.2</td><td>Hydraulic System</td><td>i).Vane type pump directly driven from engine should be used for generating hydraulic pressure.
ii.) The hydraulic Pump and its element shall be of reputed Indian manufacturer like M/s REXORTH, VICKERS, YUKEN, L&T
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 Nitride rubber/PTFE or reputed make.
v.)The hydraulic system shall be provided with double safety pressure relief valves and safety valves in all hydraulic cylinder</td></tr>
<tr><td rowspan="4">MINOR PARAMETER.</td><td>4.00</td><td>Gauges</td><td>Air Pressure gauge, Hydraulic Pressure gauge, Engine oil pressure Gauge, Hour Meter shall be provided for measurement`</td></tr>
<tr><td>4.1.1</td><td>Derricking System</td><td>Articulation should be achieved with the help of double acting hydraulic cylinder.</td></tr>
<tr><td>4.1.2</td><td>Transmission</td><td>I. Crane should be achieved through a suitable gear Box to achieve variable speed in both forward and reverse directions.
Ii, All gears should be of alloy steel suitably hardened and ground with hardness not being less than Rockwell C-50
Iii, Suitable brakes should be provided on all four wheels and also provide parking brake.</td></tr>
<tr><td>4.1.3</td><td>Operator `s Cab</td><td>The operator `s Cab should be of steel construction totally enclosed type with lockable sliding or hinged door, electric fan, cab interior lights and electric horn.. It should have an upholstered seat adjustable on sides. The operator `s cab windows should be hinged or sliding type and fitted with wind screen having toughened glass panes.</td></tr>
<tr><td rowspan="4"></td><td>4.1.4</td><td>Diesel engine</td><td>The engine should be suitably fitted on the crane and should normally be water-cooled.</td></tr>
<tr><td>4.1.5</td><td>Lubrication</td><td>All roller/ball bearings should be pre-packed with grease. Grease nipples and other lubrication points should be provided at easily accessible locations.</td></tr>
<tr><td>4.1.6</td><td>Electric system</td><td>A12/24 Volt battery should be provided for lighting and engine system. Suitable controlled 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.</td></tr>
<tr><td>4.1.7</td><td>Colour</td><td>The colour scheme shall be as per standard yellow and black ivory used</td></tr>
<tr><td>Concomitant Accessories</td><td>5.0.0</td><td></td><td>i.)First fill of hydraulic oil, adequate to last till a change is due. Number of hours of crane operation after which a change is due should be indicated and the brand 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 .</td></tr>
<tr><td>Optional Accessories</td><td>6.00</td><td></td><td>Any accessories which in the opinion of the manufacturer can contribute to higher to higher production rates for improved efficiency should be clearly indicated and quoted separately.</td></tr>
<tr><td>spares</td><td>7.00</td><td></td><td>The following spares shall be delivered with the crane.
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<tr><td>i.</td><td>Fuel filter element</td><td>2nos</td></tr>
<tr><td>ii.</td><td>Hydraulic oil filter element</td><td>2nos</td></tr>
<tr><td>iii</td><td>Lube. Oil filter element</td><td>04 nos</td></tr>
<tr><td>iv</td><td>Air cleaner element</td><td>1set</td></tr>
<tr><td>v</td><td>Seal kit for derrick cylinder</td><td>1set</td></tr>
<tr><td>vi.</td><td>Seal Kit for steering cylinder</td><td>1set</td></tr>
<tr><td>vii</td><td>Lift cylinder</td><td>2 nos</td></tr>
<tr><td>viii</td><td>Steering cylinder hoses</td><td>2nos</td></tr>
<tr><td>ix</td><td>Master cylinder repair kit</td><td>1set</td></tr>
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<tr><td>Warranty</td><td>8.0.0</td><td></td><td>As per IRS General condition</td></tr>
<tr><td>AMC</td><td>9.0.0</td><td></td><td>Not required</td></tr>
<tr><td rowspan="2">Special requirement.</td><td>10.0</td><td>Training</td><td>Technical experts of the manufacture during commissioning of crane will fully and adequately trained operator/maintenance staff nominated by the consignee.</td></tr>
<tr><td>10.1</td><td>Installation & Commissioning.</td><td>The contractor shall arrange commissioning of the crane after its receipt by Railway.</td></tr>
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DY.CME (P)