



## Annexure 1

### **Technical Specification For**

**“Procurement of 1 No. 23 T Next Generation Diesel Operated Hydraulic Mobile (Pick n Carry) Crane at ITPS.”**

## **Technical Specification of 23 T Next Generation Diesel Operated Hydraulic Mobile (Pick n Carry) Crane**

This section of the specification includes, but not limited to supply, erection, testing (load and reach testing) at manufacturer's works before dispatch, packing, forwarding, transportation & delivery of one no. 23 T Next Generation Diesel Operated Hydraulic Pick n Carry Crane at OPGC ITPS site. The design, manufacturing and testing of the crane shall be as per IS 4573-1982/Latest revision. The equipment specified in the specification shall be supplied and commissioned at OPGC ITPS site.

The contractor shall be responsible for providing all material, equipment & services, which are required to fulfil the intent of ensuring operability, maintainability, reliability and complete safety of the complete work covered under this specification, irrespective of whether it has been specifically listed herein or not.

### **a. Completeness of Equipment**

The Vendor shall be responsible for providing all material, equipment & services, which are required to fulfil the intent of ensuring operability, maintainability, reliability and complete safety of the complete work covered under this specification, irrespective of whether it has been specifically listed herein or not.

The equipment shall be robust in design and must be suitable for climatic conditions at site. All the accessories essential for complete operation of the equipment are also in the scope of supply.

### **b. Technical Specification**

<b>Sl. No.</b>	<b>Description</b>	<b>Requirement</b>
<b>1.</b>	<b>Crane Type</b>	Self Propelled, Next Generation, Hydraulic Road Mobile " Pick N Carry" Crane as per IS:4573.
<b>2.</b>	<b>Purpose &amp; Capability</b>	a) Lifting & Lowering of all load up to the maximum specified working load at different specified clear out reach. b) Suitable for rough terrain c) Travelling & Derricking simultaneously
<b>3.</b>	<b>Load Lifting Capacity</b> (The mentioned loads are 85 % of tipping load)	a) Minimum 23 T @ 1.5 M radius from centre of front wheel b) Minimum 5 T @ 6 M radius from centre of front wheel c) Minimum 0.9 T @ 16 M radius from centre of front wheel

<b>4.</b>	<b>Engine</b>	a) Diesel Engine, Water cooled b) Minimum 90 HP @ 2200 RPM
<b>5.</b>	<b>Steering</b>	a) Hydraulic operated articulated power steering b) Articulation up to 35 deg on either side c) Turning Radius – Maxm 8 M ( $\pm$ 0.5 M)
<b>6.</b>	<b>Transmission</b>	
a)	Clutch	Heavy duty hydraulic clutch
b)	Travel Speed	Minimum 35 KMPH without load
c)	Gradeability	35 % (unladen)
d)	Brakes	Air actuated or pneumatically assisted hydraulic brakes shall be provided on front and rear wheels. Also, fail safe type parking brake shall be provided.
<b>7.</b>	Hydraulic System	a) Vane type pump directly driven from engine shall be used for generating hydraulic pressure. b) The hydraulic pump and its element shall of reputed Indian manufacturerer like M/s REXORTH, VICKER, YUKEN, L&T or any other reputed make. c) The piston assembly shall be effectively pressure sealed at both ends to prevent oil leakage. d) The material used for seals shall be such as Nitrile e) Rubber/PTEE etc. of reputed make f) Pressure relieve valve and safety valve shall be provided in all hydraulic cylinders. g) Filter shall be provided in both suction and return line.
<b>8.</b>	Telescopic Boom	4 part slotted boom of height minimum 18 M, 3 parts hydraulically operated & synchronized and 4 <sup>th</sup> part power extended & manually pinned for safety
<b>9.</b>	Hoist & Hook	a) Hoist - Hydraulically operated six falls with suitable dia rope through self adjusting hook block b) Hoist Speed – 50 M/Min. c) Hook - Suitable hooks for lifting the load at different location shall be provided confirming to relevant Indian Standard Specification IS 15560 (latest). Hook should be mounted on grease lubricated antifricition thrust bearing and protective skirt should be provided over the bearings. Proof load test as per IS from recognized test house shall be submitted.

<b>10.</b>	Derricking System	Articulation shall be achieved through double acting hydraulic cylinder
<b>11.</b>	Safety System	<ul style="list-style-type: none"> <li>a) Safe load indicator with hydraulic cut off</li> <li>b) Safety brakes on Hoist</li> <li>c) Self adjusting Hook Block</li> <li>d) Front &amp; Rear Wheel Guards</li> <li>e) Overload audio warning system</li> <li>f) Hose failure protection</li> <li>g) Rope compensating snatch block</li> <li>h) Rear view camera with LCD</li> </ul>
<b>12.</b>	Standard Accessories	<ul style="list-style-type: none"> <li>a) Front outriggers</li> <li>b) Front mounted fully enclosed wide view all weather cabin</li> <li>c) Front &amp; rear work lights</li> <li>d) Reflectors &amp; rear view mirrors</li> <li>e) One set of all service tools for maintenance</li> <li>f) Cabin fan</li> <li>g) Wiper Motor</li> <li>h) Beacon rotating light</li> <li>i) Reverse lamp &amp; horn</li> <li>j) Turn lamp</li> <li>k) Cabin front glass protector</li> <li>l) Fire Extinguisher</li> <li>m) Front Bumper</li> <li>n) Helper Seat</li> </ul>
<b>13.</b>	Painting	As per manufacturer standard
<b>14.</b>	Electric System	A 12/24 volt battery shall 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, inspection lamp etc. Battery discharge indicator shall also be provided.
<b>15.</b>	Lubrication	<ul style="list-style-type: none"> <li>a) Provision shall be made for lubrication of all bearings which shall be easily accessible from the working platforms of the crane.</li> <li>b) A lubrication chart shall be provided in the maintenance manual indicating all lubrication points, type &amp; qty of lubricants and frequency of lubrication</li> </ul>
<b>16.</b>	Hydraulic Oil and Lubricants 1st Fill	First fill of hydraulic oil and lubricants shall be in the scope of the crane supplier.

**c. Operation and Maintenance Manuals (In English only)**

For guidance of the plant operating and maintenance staff, Supplier shall prepare manuals for operation & maintenance of the machine. Soft copy and three hard copies of these manuals shall be provided to the purchaser.

**d. Installation & Commissioning**

The installation & commissioning of the crane shall be done by the vendor at OPGC site, including the demonstration of the relevant tests.

**e. Guarantee/ warranty**

Machine shall have minimum one year standard warranty from the date of the commissioning of the machine at site.

In case of breakdown of the machine during the warranty period, the crane supplier shall send their expert with required spares within 48 hrs.

**f. Spares and Service**

The bidder shall submit list of recommended spares (along with competitive rates) to be maintained at site. Further, bidder shall also inform AMC Rates for AMC of Crane for 5 years period from expiry of warranty period.

However, the spare parts rates and AMC charges shall not be considered for evaluation of tenders for supply of the crane.

The vendor will provide free service visits at OPGC site in each quarter during warranty period.

**g. Training**

Supplier has to impart operation and maintenance training to OPGC Staffs .

**h. Test**

All test shall be conducted as per IS 4573-1982/latest revision. The test certificates shall be provided by the vendor along with delivery of the crane.

**i. Standard compliance**

Crane Engine must comply with emission norms eq. to BS-IV or latest.

QAP shall be put up for approval by the EIC of purchaser.

j. Test certificate of the relevant parts and equipments as a whole shall be supplied by the supplier.

**k. Predispatch Inspection:**

To be done at supplier's premises.

l. The crane should be fitted with safe load indicator(SLI) with alarm.

