

## Scope of Work – Dismantling, Shifting, re E&C and Painting of Gantry Crane

**Type of Crane** : Gantry Crane (12-6047), Span 30.0 m, SWL 40Ton, Make: Mukand

**From Location** : 12 Store Plate Yard

**To Location** : NPP yard (Plate Yard)

S.No		Description of Work
1	Dismantling	Disconnecting Electrical supply to the Crane from DSL line. Disconnecting all the cables from panels, resistance boxes and junction boxes. Removing the cables from cable reeling system. Details / Numbering to be documented properly. Removing the bracket holding the current collectors.
2		Rolling all the removed cables into circles and bringing them down. Bringing down current collectors along with bracket.
3		Dismantling the control panels, resistance boxes, junction boxes and bringing them down to ground level and keep them aside.
4		Dismantling the cable reeling system - 'I' beam and supporting brackets (of the cross trolley) located on the bridges and bringing them down
5		Disconnecting the hooks from the drums by removing the wire rope
6		Dismantling the cross trolley shed (cabin) and bring it down
7		Dismantling the cabin and bringing it down
8		Welding support anglers to the 'A' frames located on east and west side of the gantry crane to ensure they are fully supported during removal of bridges
9		Bringing down the cross trolley and two bridges by external Telescopic boom crane (40T)
10		Bringing down Cross Trolley (Crab). Disconnecting the bridges from the 'A' frames by removing the pin bolts/ removing welding and bringing them down.
11		Bringing down 'A' frames by external Telescopic boom crane (40T)
12		Support activity during dismantling of 'A' frames and shifting of all the dismantled components of the crane to one common place shall be done by 14T hydra cranes
13		Dismantling and removing the platform approach ladder
14		Dismantling the support anglers of 'A' frames and bringing them down using Boom crane
15		Removing the bogie (4nos.) from the rail track using Hydra
16		Hiring of two 20T Hydra Crane to move bridges from 12 yard to NPP yard. Length of bridge is – 32m
17		Manpower/trailer/Hydras/Boom cranes for shifting of Bridges to NPP yard are in vendors scope.
18		Hiring of 50T Trailer for Shifting of A frames and other parts by 50T trailer
19	Engaging of Trailer for shifting of 'A' frames, Crab, bogie(4nos.) and balance items	
20	Erection and Commissioning	Unloading (at new location) the bridges, cross trolley, 'A' frames and other crane items from the trailers and for support activity during erection by 14T hydra
21		Placement of bogie(4nos.) on the rail track, supporting them by welding 'L' anglers and checking the span and diagonal setting.
22		Placement of 'A' frames on bogies by external telescopic boom crane (50T)
23		Placement of A frames on Bogie and welding support anglers.
24		Placement of bridges on the 'A' frames and tie beam with bridges. Placement of Cross trolley on the bridges by external telescopic boom crane(40T)
25		Placement of bridges on the 'A' frames and connecting tie beam with bridges. Fixing Pin bolts / carrying out full welding, between A frames & bridges. Ensure there is no burr and butting surface is flat before welding /fixing pin bolts. Fixing bolts between tie beam and bridges. Placement of Cross trolley on the bridges.

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26		Placement of panels, resistance boxes, cable reeling system brackets (CT & Pendent) and 'I' section on the platform and fixing them.
27		Placement of cabin in position and connecting it to the bridges. Putting back CT shed in position. Placement of all the ladders in position and fixing them
28		Connecting the cables inside the panels, junction boxes and components on the crane and reconnection of Electrical supply to DSL line
29		Putting back platform approach ladder and carrying out necessary welding.
30		Connecting hooks and wire rope onto wire rope drums respectively.
31		Trial run and ensure Current collector are smoothly running on DSL line. LT, CT and Hoist movements checking and ensure they are smooth.
32		Load testing (for SWL only). Arranging the load and required slings, etc., for carrying out load test.
1	<b>General</b>	Necessary tools and other equipment like Welding Generator, cutting set are in the scope of the contractor. Consumables like Oxygen, DA, cotton waste, electrode rods, etc., will be supplied by BHEL.
2		Safety of the workmen is the sole responsibility of the contractor
3		The contractor and his/her workmen shall use the necessary safety equipment (like safety belts, helmets etc.,) and shall comply with BHEL safety rules
4		Necessary tools and other equipment like painting brushes, spray gun, brooms etc., are in the scope of the contractor
5		Mobile crane, trailer lorry for shifting etc., are in the scope of the contractor
6		Minor repair works shall be attended before installing the crane. 1) Main hoist Gear box oil leakages to be arrested. 2) Main hoist (worn out) brake drum to be replaced. 3) Panel shed of crane to be repaired (bents to be removed) etc. oil seals, Brake drum will be supplied by BHEL.
7		The contractor shall engage a <b>supervisor</b> during the execution of the work, to oversee important milestones in project.
	<b>Painting</b>	<p><b>Painting : Scope: Total Area To be painted: 740Sq.Mtrs</b></p> <ol style="list-style-type: none"> <li>1. Preparation of surface: Stripping of paint with gas heater, cleaning with brush and removing any falling off loose paint.</li> <li>2. One coat of Red oxide coat to be applied, where base metal is exposed.</li> <li>3. Two coats of Epoxy 'Golden Yellow' paint to be applied after preparation of surface. General Materials required such as Paints, kerosene, thinner, cotton waste, will be supplied by BHEL.</li> <li>4. Two coats of black paint to be applied for CT, Ladder, CT panel shed, Platforms etc</li> <li>5. Two coats of Black/Blue/Aluminium Silver (as given by BHEL) to be applied to CT shed.</li> <li>6. Safety of the workmen is the sole responsibility of the contractor.</li> <li>7. The contractor and his/her workmen shall use the necessary safety equipment (PPE like safety belts, helmets etc.,) and shall comply with BHEL safety rules.</li> <li>8. Necessary tools and other equipment like painting brushes, spray gun, Roller, brooms etc., are in the scope of the contractor.</li> <li>9. Mobile crane, Lift and shift crane, if required are in the scope of the contractor (or) Contractor should make necessary temporary platform to reach under the area of CT and Platforms and other areas of crane, for the purpose of painting. Such temporary platform need to be removed after the work is completed</li> </ol>

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## Painting work

Location : NPP yard (Painting to be done after shifting and Erection of crane to NPP yard)

### Surface Area of Crane:


S.No.	Surface	Area	Remarks
1	<b><u>Bridges:</u></b> Length 32m x Height 2m x2 surface per bridge x 2 bridges + Top and Bottom Plate (Length 32m x Width 0.8m x2 plates x 2 bridges)= 358.4 sq.m	358.4 Sq.Mtrs	
2	<b><u>A frames:</u></b> <b>Legs-</b> { 0.5*(Bottom Width .6+ Top width 1.5)*Height 6*2 sides x 2 legs} +{(0.8*6)*2 sides *2 Nos.}= 44.4 sq.m <b>Tie Beams beams(2Nos)-</b> <b>2 sq.m.</b>	46.4 Sq.Mtrs	
3	<b><u>End Carriages:</u></b> Length 6m*0.6 width * 4 sides*2 nos. =28.8 sq.m	28.8 Sq.Mtrs	
4	<b><u>Cross Trolley</u></b> : length 6* width 4*2sides=48 sq.m <b>CT shed sides:</b> 6*4*2=48 sq.mts CT Top: 6*4=24mts	120 Sq.Mtrs	
5	<b><u>Platform:</u></b> Drive side: width 1* length 32* 2sides=64	64 Sq.Mtrs	
6	<b><u>Panel shed:</u></b> Length 12 mtrs* width(including top) 5mtrs =60	60 Sq.Mtrs	

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7	<b><u>Bogies:</u></b> 2 sides (Length 0.5+Breadth 0.5)*2 mts height* 4nos	16 Sq.Mtrs	
8	<b><u>Others:</u></b> A)Ladder, Handrails, Motor covers, Current collector unit, Cabin, Cable trolley beams and brackets= Approximately 5% of total area)	35 Sq.Mtrs	
<b>Total</b>		<b>740 Sq.Mtrs.</b>	

### Other Information

Picture	Details
	Type of Crane: Gantry Crane, Make: Mukund, Construction: Bogie type Span-30m, Hook: 40T (Single Hook). Others: CT shed and Cabin are there.
	Side: East Bogie type End Carriage

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Swivelling is there on East side



West side – Bridge girders are fixed to A frame by welding. Two tie beams are there for A frame. Ladder also there on West side