

4. Location (Sub Shop name with bay no.): IOH Shed/C&W
depot/ Cherlapalli (CHZ)

5. Type :
(‘√’ one option)

Conventional Double Girder	Single Girder	Underslung Single Girder
✓		

6. Capacity

6.1 Main Hoist (Tons) : 30 T

6.2 Auxiliary Hoist (Tons) : 10 T

7. Class of Duty :
(‘√’ one option)

I	II	III	IV
			✓

8. Crane controls from :
(‘√’ one option)

Cabin	Pendent	Remote	Cabin & Pendent	Cabin & Remote	Pendent & Remote	Cabin. Pendent & Remote
						✓

9. Speeds (metres/minute) (‘√’ one option each for MF, AH, LT & CT)

9.1	Main Hoist (MH)	2.0	3.15	4.0	5.0 ✓	6.3	Any other speed requirement may be indicated as per R 10 series. 1.0, 1.25, 1.6, 2.0, 3.15, 4.0, 5.0, 6.3, 8.0 and 10.0 for Main Hoist & Auxiliary Hoist (for MH, normally limited to 6.3 m/min & for AH, normally limited to 8 m/min 10, 12.5, 16, 31.5, 40, 50, 63, 80, 100 for Long Travel Cross Travel (for LT, normally limited to 63 m/min & for CT normally limited to 31.5 m/min)
9.2	Auxiliary Hoist (AH)	5.0	6.3	8.0 ✓			
9.3	Long Travel (LT)	40.0 ✓	50.0	63.0			
9.4	Cross Travel (CT)	16.0	20.0 ✓	31.5			

9.5	VVVF drive (step less speed for all motions) (✓one option) Advantages of VVVF drive v/s Non VVVF drive	YES ✓					
1.	Energy efficient	If VVVF Drive is specified, then creep speed not be required in 9.6 below.	Please give detailed justification for Non-VVVF drive despite clear-cut advantages of VVVF drive especially being energy efficient.				
2.	Improved load control i.e. no shock loading and load swing, no jerking load						
3.	Multiple speed arrangements for all movements i.e., stepless speeds (creep speed control is not required)						
4.	Smooth start and stop						
5.	Enhanced motor life						
6.	Less electrical maintenance						
9.6	If answer to 9.5 is No Creep speed of MH (Normally kept as 10% of speed of MH) (✓one option)	0.20 NA	0.315 NA	0.40 NA	0.50 NA	0.63 NA	Normally 8.0 & 10.0 metres/minute speed are not desirable for MH.

10. Structural details : All dimensions are in mm unless otherwise indicated

10.1. Weigh/unit length of Gantry Rails : 52 Kg/m

10.2. Rail head width of Gantry Rails B : 67 mm
(Ref: Appended Note item v)

10.3 a. Span (Centre to Centre of Gantry Rail)S: 16450 mm

b. Gauge (Inner face to Inner face of Rail)W= (S-B) : 16383 mm

10.4 Top of Gantry Rail (or bottom flange of I-Beam C : 3432 mm
(In case of underslung crane) to lowest
overhead obstruction

10.5 Top of Gantry Rail (or bottom flange of I Beam D : 10000 mm
(In case of underslung crane) to floor level

10.6.Lift of hook above floor level (MH) H1 (MH) : 9000 mm

10.7 Drop of hook below floor (MH) H2 (MH) : 1000 mm

10.8 Lift of hook above floor level (AH) H1 (AH) : 9000 mm

10.9 Drop of hook below floor (AH) H2 (AH) : 1000mm

10.10 Centre distance between hooks of
:
MH & AH('√' one option)

R	0.800 M up to 20 T cap.	1.00 M above 20 T cap.
		✓

10.11 Side clearance from center line
of gantry rail/I-beam to nearest side
obstruction A1 : 1075mm

10.12 Side clearance from center line
of gantry rail/I-beam to nearest side
obstruction A2 : 725 mm

10.13 Vertical clearance from floor level
to lowest structural member of crane
(Ref: Appended Note item vii) K : 10000mm

10.14 Vertical clearance from floor level
to bottom of cabin L : 8000 mm
(Ref: Appended Note item viii)

10.15 Runway I-beam section Top Flange (mm): NA
(For Underslung Single Bottom Flange (mm): NA
Girder crane only) Web Height (mm): NA
(Not required for other
types of cranes)

11. Bay length & Down Shop Leads (DSL) : 110.50 meters

11.1 Length of gantry on which crane is : 110.50 meters
to operate (metres)

11.2 Is DSL required? :
:
('√' one option)

Yes	No
✓	

a. If Yes, Type of DSL required :
(✓one option)

MS Angle Type	Shrouded Type
	✓

11.3 Length of DSL required (meters) : 110.50 meters

11.4 If No, type of existing DSL to be indicated : NA

11.5 Whether removal of existing DSL is to be :
Included in scope of supply of firm
(✓one option)

Yes	No
	✓

12. Operator's Cabin :
(✓one option)

Fixed and open	Fixed and closed (in case of outdoor)
✓	

13. Crane has to work in :
(✓one option)

Indoor	Outdoor	Both (Indoor as well as outdoor)
✓		

14. 14. Working environment :
(✓one option)

General Workshop	General Workshop Dusty	Hot Shop (in case of Hot Shop, please indicate maximum temperature of metal to be handled)
	✓	

15. Requirements of lifting tackles/ lifting chains/ lifting wire ropes (capacity asked for shall not exceed capacity of Main Hoist/ Auxiliary Hoist)

15.1

S. No.	Item description	Qty.	Capacity In Tons	Length In meters	Drawing No.	Drawing enclosed or not	
a.	Lifting Tackle (Drgs.to be enclosed along with indent)	02	30T	--	--	Yes	No
						✓	--
b.	Four legged wire rope slings (Drgs. to be enclosed along with indent)	Nil	--	--	--	Yes	No
						--	--
c.	Two legged wire rope slings (Drgs to be enclosed along with indent)	Nil	--	--	--	Yes	No
						--	--

d.	Four legged chain with hook (Drgs. to be enclosed along with indent)	2nos	10.0	4.5	--	Yes	No
						✓	--
e.	Two Legged chain with hook (Drgs. to be enclosed along with indent)	2nos	5.0	4.5	--	Yes	No
						✓	--
f.	Any other (please specify)	Nil	--	--	--	Yes	No
						--	--
g.	Any other (please specify)	Nil	--	--	--	Yes	No
						--	--

15.2. Type of Hook required (MH) :
(✓one option)
(Ref: Appended Note item xii)

C-Type	Ramshorn Type
✓	

15.3. Type of Hook required (AH) :
(✓one option)
(Ref: Appended Note item xii)

C-Type	Ramshorn Type
✓	

15.4. Is lifting tackle/wire rope sling/ chain :

with hooks asked for above having
less capacity than maximum capacity
of MH (✓one option)

Yes	No
	✓

15.5. If 'Yes', then how will maximum : NA
Crane capacity of be checked at
consignee's premises at the time of
commissioning.
(Please explain alternatives available for this)

15.6 Any other specific requirements shall be clearly specified such as:

(i) In case, any specific diameter of LT/ CT :
wheel is required, consignee must clearly
indicate. However, LT/CT wheel diameter
is acceptable only as per IS 3177
(latest), as follows:

Any specific dia. Of LT/CT wheels required	
Yes	No ✓

(The tread diameter of wheels shall be
Standardized to sizes 160 mm, 200 mm,
250 mm, 315 mm, 400 mm, 500 mm,
630 mm, 710 mm, 800 mm, 900 mm,
1000 mm & 1250 mm.)

If yes, please specify
NA

(✓one option)

- (ii) In case, there is any specific requirement for 'C' Type & 'RAMSHORN' Type hooks, chain slings, Wire rope slings, hook blocks etc., it must be clearly indicated.

Any specific requirement of hooks	
Yes	No ✓

Consignee is advised to submit drawings : of such items along with indent.
(✓one option)

Drawings submitted	
Yes	No ✓

- (iii) If indented crane is on Additional Account or under PH-4200/PH-1500 (other than PH-4100), Consignee is

Is crane on additional account	
Yes ✓	No

advised to submit photographs of Shed/Site, where the crane is to be installed specifically showing layout of crane girder columns and girder rails.
(✓one option)

Photographs enclosed showing crane girder columns & girder rails	
Yes	No ✓

- (iv) Standard list of spares asked along with : cranes is enclosed as Annexure- 1. In case, any spares over and above these spares are required, detailed justification is required to be submitted by Consignee. Additional Cost above Compendium Cost may also be required for these additional spares.

Additional spares required	
Yes ✓	No

Justification/ list enclosed	
Yes ✓	No

(✓one option)

(Annexure-1)

Additional spares and tools required

Sl.	Item Description	Quantity required for 2 cranes	Justification
1	Dead man lever Buttons	10nos of each type (i.e., Total 40 Nos)	These buttons damages frequently and it is difficult to find exact suitable button available in market
2	DSL bars	20 meters Each conductor type (i.e., R: 20m, Y: 20m, B: 20m, G: 20m)	Spare DSL lines are not included in Schedule –IV. Whenever a DSL line is found defective it should be replaced immediately to avoid further damage of nearby DSL lines. Hence, to reduce downtime caused by DSL lines, spare lines are required.
3	Drive unit	Two of each type (One no. of drive (each capacity) per crane is required i.e., total MH-2 nos., AH-2 nos., LT-2 nos. CT-2 nos.)	Any internal short circuit or PCB failure leads to replacement of entire drive unit. Moreover, In Schedule IV only spares cards are provided. It will take some time to replace spare card in drive unit and to test it. Meanwhile down time of EOT crane increases and leads to loss of outturn. Hence unit replacement of drive is required. Since 2 nos of drives of different capacity are fitted with each crane totaling 4 drives needed replacement of entire drive unit during fault. Hence, one number of each capacity per one crane is required.

(Annexure-2)**SPECIAL CONDITIONS:**

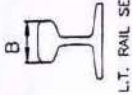
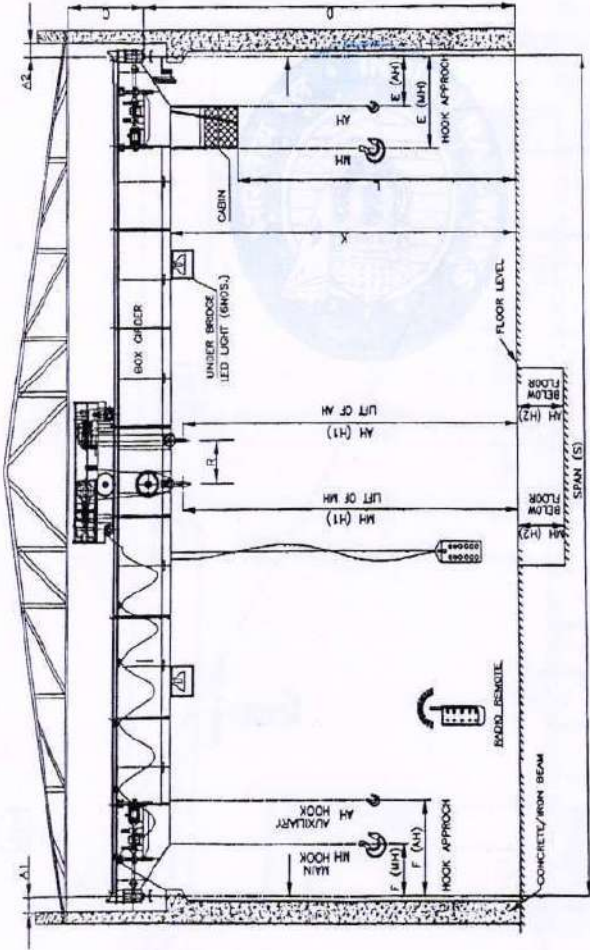
1. Cabin operating control should be of lever type.
2. Operating levers should be provided with dead man switch buttons.
3. Anti-collision switch and proper buffers should be provided to prevent collisions.
4. Wire rope for main hoist should be diameter 22 mm or more
5. Hoist should be provided with double brake system. Double brake should be provided for Auxiliary hoist also.
6. Platform, railing and cabin should be provided robust and vibration free.
7. Entry into cabin from maintenance platform should be ergonomic and safe; cabin ladder should be stair case type.
8. EOT Crane should be provided with four speed control for each direction i.e., forward and reverse.
9. Cabin should be closed type and should be provided with mesh windows to open whenever required.
10. Shank hook of snatch box in EOT crane should be confirming to IS 15560:2005
11. Insulated Shrouded Bus Bar Conductor material shall be of suitable metal (Galvanized Iron up to 100Amps & copper above 100Amps) and detailed Calculations of current density in DSL and Current collector section selection calculations must be submitted
12. The Rail wheels shall be of material C55Mn75, and shall be solid forged and heat treated to have minimum hardness of 300 to 350 BHN on the tread and flanges to minimum depth of 10mm. The method of heat treatment shall be described in the offer.
13. The crane shall be designed, manufactured, erected and tested in accordance with the available Latest Indian Standards (IS) only
14. Footwalk should be minimum 600 mm with rigid supports and platform chequered sheet should be minimum 6mm

Overhead Travelling Crane Diagram

Annexure-3

Important Parameters of EOT Crane

S. No.	Description	
1.	Weight/unit length of Gantry Rails (Note: Supply & laying of rails is not in scope of supplier)	52 kg/m
2.	Rail head width of Gantry Rails (Ref: Appendix Note item vi)	B : 67 mm
3.	a. Span (Centre to Centre of Gantry Rail) b. Gauge (inner face to inner face of Rail) W = (S-B) : C :	S : 16450 mm 1638.3 mm
4.	Top of Gantry Rail (or bottom flange of I-Beam (in case of underslung crane) to lowest overhead obstruction	C : 3482 mm
5.	Top of Gantry Rail (or bottom flange of I Beam (in case of underslung crane) to floor level	D : 10000 mm
6.	Lift of hook above floor level (MH)	H1 (MH) : 9000 mm
7.	Drop of hook below floor level (MH)	H2 (MH) : 1000 mm
8.	Lift of hook above floor level (AH)	H1 (AH) : 9000 mm
9.	Drop of hook below floor level (AH)	H2 (AH) : 1000 mm
10.	Centre distance between hooks of MH & AH	R : 1.00 M
11.	Side clearance from center line of gantry rail/beam to nearest side obstruction	A1 : 1075 mm
12.	Side clearance from center line of gantry rail/beam to nearest side obstruction	A2 : 735 mm
13.	Vertical clearance from floor level to lowest structural member of crane (Ref: Appendix Note item vi)	K : 10000 mm
14.	Vertical clearance from floor level Bottom of cabin (Ref: Appendix Note item viii)	L : 8000 mm
15.	Hook approach to center line of gantry rail (Cabin end) and Hook approach to center line of gantry rail (at other end), dimensions E (MH) / E (AH) and F (MH) / F (AH)	



INDIAN RAILWAYS

CENTRAL ORGANIZATION FOR MODERNIZATION OF WORKSHOP

SPEC: REF: COP/MOW/IR/ROTC/N/N/Z/1-2020

DESIGNED

CHECKED

APPROVED

OVERHEAD TRAVELLING CRANE
CLEARANCE DIAGRAM

REF : IS-3177:1998

SCALE : NTS

