

Company Name

OUTPUT TECHNICAL DATA SHEET

GENERAL SPECIFICATION FOR DOUBLE GIRDER EOT CRANE

Enquiry Number : 1
 Company Name : ABC Private Limited, Metoda GIDC, Rajkot
 Crane Location : Indoor
 Main Hoist Capacity in Ton : 20
 Aux. Hoist Capacity in Ton : 5
 Span in Meter : 20
 Height of Lift in Meter : 10
 Design Standard : IS: 3177-1999
 Duty Class of Crane : M5
 Ambient Temperature : 45
 Main Power Supply : AC 415V ±10%, 50Hz ± 5%, 3Phase
 Control Voltage : 110V AC
 Travel Length in Meter : 50
 Operation : Pendant Push Button



TECHNICAL SPECIFICATION:

Speed		MAIN HOIST	AUX. HOIST	CROSS TRAVEL	LONG TRAVEL
Main Speed	m/min	2.5	3.5	15	20
Creep Speed	m/min	10-100% of Main Speed through VVVF Drive			
Motor					
Make		BBL-Sq. Cage	BBL-Sq. Cage	BBL-Sq. Cage	BBL-Sq. Cage
Type		Squirrel Cage	Squirrel Cage	Squirrel Cage	Squirrel Cage
Required Mechanical Motor kw	kW	9.03	3.18	0.30	0.73
Required Electrical Motor kw	kW	10.03	3.53	0.46	1.06
Selected Motor Kw	kW	11.00	3.70	0.55	1.10
No. of Poles		6	6	4	4
Motor RPM	RPM	960	960	1440	1440
CDF & Starts/Hr-S4 Duty		40% & 150 St/hr	40% & 150 St/hr	40% & 150 St/hr	40% & 150 St/hr
Insulation	Class	F	F	F	F
Enclosure		TEFC	TEFC	TEFC	TEFC
Degree of Protection		IP -55	IP -55	IP -55	IP -55
Number		1	1	2	2
Gear Box					
Make					
		Motion	Motion	IC BAUER	IC BAUER
Type		Helical	Helical	GBM	GBM
Model No.		HC-500	HC-300	BF20	BF40
Mounting		Horizontal	Horizontal	Vertical	Vertical
Required Ratio		97.66	47.20	60.32	72.38
Selected Ratio		100.00	50.00	64.08	78.55
Output RPM of Gearbox	RPM	9.60	20.34	22.47	18.33
Gearbox Rated Kw		15.20	6.32	0.99	1.76
Service factor on Required Mechanical Kw		1.68	1.99	3.30	2.40
Service factor on Motor Kw		1.38	1.71	1.80	1.60
Required Centre Distance of Gearbox		359.90	295.55	-	-
Selected Centre Distance of Gearbox		500.00	300.00	-	-
Number		1	1	2	2
Brake					
Make					
		Temporiti / -	Temporiti/-	Temporiti / -	Temporiti / -
Type		AC Disc / -	AC Disc / -	AC Disc / -	AC Disc / -
Thruster Capacity	Kg	- / -	- / -	- / -	- / -
Torque Rating	Nm	250 Nm / -	85 Nm / -	10 Nm / -	15 Nm / -
Size (Dia.)	mm	T140D / -	T100 / -	T70 / -	T75 / -
Number		1 / -	1 / -	2 / -	2 / -
Limit Switch					
Type		Rotary + Gravity type	Rotary + Gravity type	Two Way Lever Type	Two Way Lever Type
Number		1 + 1	1 + 1	1	1
Wire Rope					
Dia.	mm	16	12	N.A	N.A
Construction		6 X 36	6 X 36		
Type of Core		SMC	SMC		
Quality		1960	1960		
No. of Falls		8	4		
Breaking Strength	Nm	179	101		
Factor of Safety		7.12	8.00		

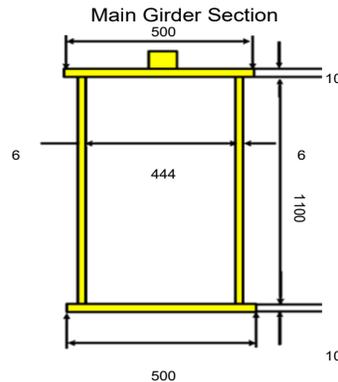
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Rope Drum					
Diameter	mm	323.8	219.1		
Length	mm	2200.0	1600.0		
Thickness	mm	21.4	15.1		
Rope Drum Padestal Bearing		22208	22208		
Crab Guage	mm	3000			
Pulley					
Main Pulley Diameter	mm	400	250		
Main Pulley Bearing Size		6211	6210		
Eq. Pulley Diameter	mm	250	160		
Hook Type		C Hook Type	C Hook Type		
Wheel		MAIN HOIST	AUX. HOIST	CROSS TRAVEL	LONG TRAVEL
No. of Wheels		N.A	N.A	4	4
Required Wheel Dia.	mm			117	264
Selected Wheel Dia.	mm			200	320
Wheel Bearing Size				22210	22216
Material				Forged Steel (C55 Mn75)	Forged Steel (C55 Mn75)
Hardness	BHN	300 to 350	300 to 350		
Rail Size		50mm Sq.bar	50mm Sq.bar		
General					
Weight of Crane in Ton(Approx)		18.67			
Weight of Crab in Ton(Approx)		3.81			
LT Wheel Load (max) Without impact in Ton		15.08			
LT Wheel Load (max) With impact in Ton		18.14			
Platform/Walkway		Full length on drive side of girder			
Painting		Two coat of epoxy primer & two coat of Synthetic Enamel Paint			
Lubrication		Local point type lubrication.			
Limit Switches		Limit Switches to avoid/prevent over hoisting & lowering and over travel & traverse			
Cross Travel Power Feeding type		Through Fastoon Cable System			

Girder Section in mm

Girder Weight in Ton	8.75
End Carriage Weight in Ton	1.60
C.T. Rail Weight in Ton	0.79
Platofrm Weight in Ton	1.20
Crab Structure Weight in Ton	1.27



Actual Deflection in mm	23.60
Allowable Deflection in mm	26.70
Span/750	

Basic Girder Section Properties

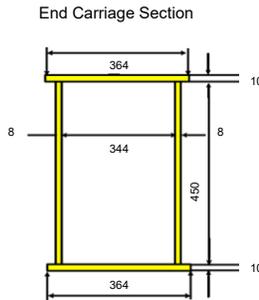
lx	423004.53	cm4	Zx	7690.99	cm3
ly	86447.22	cm4	Zy	3457.89	cm3
Yt	55.00	cm	ryy	19	cm
Area	230	cm2	Yc	55.00	cm
ly/lx	0.20		Zy/Zx	0.45	
Span / Web Height	18.18	<=25	Span / Box Width	40.00	<=60
Box Width / Top Plate Thick	50.00	<=60			
h/t	180.00	<=180	Hence, First Horizontal Stiffeners Not Required		
h/t	180.00	<=250	Hence, Second Horizontal Stiffeners Not Required		
Spacing between Full Length Vertical Diaphragm			1200	mm	
Short Length Vertical Diaphragm			Short Diaphragm Required, 300 mm Depth		
Additional Bearing Plate For Diaphragm			Hence, Additional Bearing Plate for Diaphragm required, Size 100 mm Height, 70 mm Width, 6 mm Thickness		

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Description	Actual	Allowable	Result
Bending Compressive Stress @ Major Axis in Kg/cm ²	1124.08	1449.28	Section is Safe
Bending Tensile Stress @ Major Axis in Kg/cm ²	1124.08	1666.67	Section is Safe
Bending Compressive/Tensile Stress @ Minor Stress in Kg/cm ²	99.63	1666.67	Section is Safe
Shear Stress in Kg/cm ²	302.98	962.28	Section is Safe
Combined Stress due to compressive stress in Kg/cm ²	1240.60	2250.00	Section is Safe
Combined Stress due to tensile stress stress in Kg/cm ²	1240.60	2250.00	Section is Safe
Deflection in mm	23.60	26.70	Section is Safe

Basic End Carriage Section Properties



lx	45842.00	cm ⁴	Zx	2037.42	cm ³
ly	26098.00	cm ⁴	Zy	1433.96	cm ³
Yt	22.50	cm	ryy	13.58	cm
Area	141.60	cm ²	Yc	22.50	cm
ly/lx	0.57		Zy/Zx	0.70	

Description	Actual	Allowable	Result
Allowable Bending Compressive stress in Kg/cm ²	477.56	1514.70	Section is Safe
Allowable Tensile stress in Kg/cm ²	445.85	1514.70	Section is Safe
Allowable shear stress in Kg/cm ²	820.02	1445.85	Section is Safe
Deflection in mm	1.31	5.20	Section is Safe

LT Wheel Base in mm

