02-25-2026

Crane Data Sheet Package

In Compliance With

ASME/ANSI B30.8-1993
Floating Cranes and Floating Derricks

Imperial Measurement Units

Series 60 Model 6024
100 Foot Boom With Walkways

List = 5 deg Trim = 5 deg Windspeed = 20 knots

Crane Data Sheet

General Information

ASME/ANSI B30.8-1993

Series 60 Model 6024
100 Foot Boom With Walkways
List = 5 deg Trim = 5 deg Windspeed = 20 knots

Serial Number: 4297-100-5
Identification Number: 4297-100-5

FACILITY SPECIFIC ELEVATIONS	
Boom Pivot Height Above Main Deck Level (ft.)	10.000
Main Deck Level to Lowest Hook Position ie. water level (ft.)	15.000
The Maximum Req'd Hook Travel for This Specific Crane (ft.)	125.000
GENERAL CRANE DIMENSIONS	
Gantry height from boom foot pivot (ft.)	35.000
Center of rotation to gantry shaft (ft.)	6.500
Center of rotation to boom foot pivot (ft.)	5.000
Center of rotation to CG. (ft.)	3.000
GF	0.000
KINGPOST	
Kingpost yield stress (ksi)	50.000
Kingpost outside diameter (in.)	60.000
Kingpost wall thickness (in.)	1.500
GANTRY	
Gantry Leg Material Yield Strength (ksi)	50.000
Gantry Leg Square Tube Size (in)	0.000
Gantry Leg Wall Thickness (in)	0.000
Horizontal Dim CL Rot to Rear Leg @ Bottom (ft)	61.450
Horizontal Dim CL Rot to Front Leg @ Bottom (ft)	738.000
BOOM	
Boom Chord Square Tube Yield Strength (ksi)	50.000
Boom Chord Square Tube Size @ Butt (in)	6.000
Boom Chord Wall Thickness @ Butt (in)	0.312
Diagonal Diameter @ Butt (in)	2.375
Diagonal Wall Thickness @ Butt (in)	0.200
Unsuported Chord Length @ Butt (in)	70.200
Height Between Chord Centers @Butt (in)	60.000
Width Between Chord Centers @ Butt (in)	87.500
SLEW GEARS	
Number of Bull Gear Teeth	72.000
Number of Pinion Gear Teeth	11.000
Number of Slew Pinions	2.000
WIRE ROPE COMPONENT DATA	
Main hoist cable length (ft.)	700.000
Main hoist cable diameter (in.)	1.125
Main hoist cable construction	Class DH
Main hoist cable breaking strength (kips)	143.000
Aux. hoist cable length (ft.)	325.000
Aux. hoist cable diameter (in.)	1.000
Aux. hoist cable construction	Class EH
Aux. hoist cable breaking strength (kips)	103.000
Boom hoist cable diameter (in.)	1.000
Boom hoist cable construction	Class CL
Boom hoist cable breaking strength (kips)	114.000
Boom hoist tackle parts of line	10.000
APPROXIMATE SELF WEIGHTS	
Complete Crane & Boom (kips)	149.310
Block(s) (kips)	5.000
HOIST SELECTIONS	
OEM Auxiliary Hoist Model Number	463-EJA
OEM Main Hoist Model Number	763-GJC

02-25-2026
Crane Data Sheet
Safe Working Load Chart
ASME/ANSI B30.8-1993

Series 60 Model 6024
100 Foot Boom With Walkways
List = 5 deg Trim = 5 deg Windspeed = 20 knots
Serial Number: 4297-100-5
Identification Number: 4297-100-5

Working Radius Feet	2 Part Line Main Drum API Load lbs	4 Part Line Main Drum API Load lbs	6 Part Line Main Drum API Load lbs	Single Line Aux. Drum API Load lbs
25	52,703d	107,205d	N/A	23,440d
30	52,703d	107,205d	N/A	23,440d
35	52,703d	107,205d	N/A	23,440d
40	52,703d	107,205d	N/A	23,440d
45	52,703d	96,969is	N/A	23,440d
50	52,703d	85,489is	N/A	23,440d
55	52,703d	76,085is	N/A	23,440d
60	52,703d	68,254is	N/A	23,440d
65	52,703d	61,545is	N/A	23,440d
70	52,703d	55,816is	N/A	23,440d
75	50,777is	50,777is	N/A	23,440d
80	46,409is	46,409is	N/A	23,440d
85	42,575is	42,575is	N/A	23,440d
90	39,122is	39,122is	N/A	23,440d
95	36,046is	36,046is	N/A	23,440d
100	33,304is	33,304is	N/A	23,440d
105	30,952is	30,952is	N/A	23,440d

Notes
(1) Working Radius is in feet, Safe Working Loads are in lbs.
(2) Working Radius is measured from Main Hook to Centerline of Rotation.
(3) SWL letter Suffixes indicate Load Limiting Factor as defined in API24,4.1.1 (a) thru (i).
(4) Rated Loads are NET loads. Main Block & Aux Ball have been deducted.
(5) Main drum cable is 1.125 dia. Class DH, 143 kip. nom strength, 700 feet long.
(6) Aux. drum cable is 1 dia. Class EH, 103 kip. nom strength, 325 feet long.
(7) The specified hook travel for this machine is 125 feet.

Crane Data Sheet

Kingpost (Pedestal) Reactions

ASME/ANSI B30.8-1993

Series 60 Model 6024
100 Foot Boom With Walkways
List = 5 deg Trim = 5 deg Windspeed = 20 knots

Serial Number: 4297-100-5
Identification Number: 4297-100-5

Hook Radius Feet	ONBOARD Rated SWL (Lbs)	ONBOARD Vertical Load (Kips)	ONBOARD Primary Moment (Kip-Ft)	ONBOARD Side Moment (Kip-Ft)	ONBOARD Slew Moment (Kip-Ft)	OFFBOARD Vertical Load (Kips)	OFFBOARD Primary Moment (Kip-Ft)	OFFBOARD Side Moment (Kip-Ft)	OFFBOARD Slew Moment (Kip-Ft)
25	107205	271	4568	1287	314				
30	107205	271	5256	1274	377				
35	107205	271	5940	1257	440				
40	107205	271	6620	1236	503				
45	96968	260	6696	1117	522				
50	85488	247	6579	987	524				
55	76085	237	6483	876	527				
60	68253	228	6401	781	530				
65	61545	221	6324	696	532				
70	55815	215	6257	619	534				
75	50777	209	6189	547	536				
80	46409	204	6130	480	538				
85	42574	200	6074	415	541				
90	39121	196	6015	350	543				
95	36046	193	5954	281	545				
100	33304	190	5885	201	547				
105	30951	187	5763	53	550				

Notes
(1) Working Radius is measured from Main Hook to Centerline of Rotation.
(2) Reactions are based on a main block reeving system of 4 parts of line.
(3) The Primary Moment is the summation of moments about an axis 90 degrees to the boom centerline.
(4) The Side Moment is the summation of moments about an axis parallel to the boom centerline.
(5) The Slew Moment (torsion) is the rotational moment about the Kingpost (Pedestal) center.
(6) The total Vertical Load is the summation of all vertical loads with 1.5 times SWL times Cv plus dead loads.
(7) All Reactions are based on SWL times 1.1 plus dead loads and all applicable side loads.

02-25-2026

Crane Data Sheet

Theoretical Component Failure Mode Analysis

ASME/ANSI B30.8-1993

Series 60 Model 6024
100 Foot Boom With Walkways
List = 5 deg Trim = 5 deg Windspeed = 20 knots

Serial Number: 4297-100-5
Identification Number: 4297-100-5

Hook Radius Feet	Based on K-Post	Based on Susp	Based on Boom	Based on Gantry	Based on Main Cable	Based on Aux Cable	Calc Fail Load	Comp. First to Fail	Ratio to K-Post
25	561	936	224	0	572	103	224	BOOM	2.50
30	491	873	223	0	572	103	223	BOOM	2.20
35	437	817	221	0	572	103	221	BOOM	1.96
40	393	767	220	0	572	103	220	BOOM	1.78
45	357	724	218	0	572	103	218	BOOM	1.63
50	327	685	217	0	572	103	217	BOOM	1.50
55	302	649	215	0	572	103	215	BOOM	1.40
60	280	616	213	0	572	103	213	BOOM	1.31
65	261	586	212	0	572	103	212	BOOM	1.23
70	244	556	210	0	572	103	210	BOOM	1.16
75	230	529	207	0	572	103	207	BOOM	1.11
80	217	502	201	0	572	103	201	BOOM	1.08
85	206	475	194	0	572	103	194	BOOM	1.06
90	196	448	187	0	572	103	187	BOOM	1.04
95	187	421	178	0	572	103	178	BOOM	1.04
100	179	389	167	0	572	103	167	BOOM	1.07
105	174	337	146	0	572	103	146	BOOM	1.19

Notes
(1) All Loads are measured in KIPS.
(2) Loads shown are calculated in accordance with method given in API Spec 2C, 6th Edition, March 2004, Section 4.6.
(3) Ratio to Kingpost is the ratio of the Component First to Fail to the Kingpost. Aux Cable is excluded from this ratio.

02-25-2026

Crane Data Sheet

Auxiliary Hoist Performance

ASME/ANSI B30.8-1993

Hoist Model 463-EJA
Series 60 Model 6024
100 Foot Boom With Walkways

Serial Number: 4297-100-5
Identification Number: 4297-100-5

General Information

Hyd. Pressure (psi):	3900	Hyd. Flow (gpm):	135
Rexroth Piston Mtr.:	(1)	Motor Displacement (cir):	9.79
Drum Core Diameter (in):	20	Drum Flange Diameter(in):	34
Width Between Flanges (in):	63.000	Wire Rope Dia.:	1.000
Total Gear Reduction:	50.99	Gear Box Efficiency:	.96
Hyd. Mtr. Torque (in-lbs)	5347	Hyd. Mtr. Speed (rpm):	3057
Drum Torque (in-lbs):	261761	Drum Speed (rpm):	59

Installation Dimensions (ft)

Boom length:	100	Boom pivot to deck	10
Deck to water level	15	Required hook travel	125
Cable length supplied	325	Max. cable on drum	225

Hoist Performance - Single Line

Layer of Cable	Line Pull (lbs)	Line Speed (FPM)	Cable Capacity (Feet)
1	24929	329	346
2	23030	356	715
3	21399	384	1118
4	19984	411	1544
5	18745	438	2004

Performance Auxiliary Line (lbs @ fpm)

Max Hook Load @ Boom Tip	24440	Hook Speed @ Boom Tip	329
Max Hook Load @ Deck Level	24440	Hook Speed @ Deck Level	329
Max Hook Load @ Mid Travel	24440	Hook Speed @ Mid Travel	329
Max Hook Load @ Water Level	24440	Hook Speed @ Water Level	329

02-25-2026

Crane Data Sheet

Main Hoist Performance

ASME/ANSI B30.8-1993

Hoist Model 763-GJC
Series 60 Model 6024
100 Foot Boom With Walkways

Serial Number: 4297-100-5
Identification Number: 4297-100-5

General Information

Hyd. Pressure (psi):	3900	Hyd. Flow (gpm):	135
Rexroth Piston Mtr.:	(1)	Motor Displacement (cir):	9.79
Drum Core Diameter (in):	24	Drum Flange Diameter (in):	40
Width Between Flanges (in):	63.000	Wire Rope Dia. (in):	1.125
Total Gear Reduction:	78.65	Gear Box Efficiency:	.94
Hyd. Mtr. Torque (in-lbs)	5347	Hyd. Mtr. Speed (rpm):	3057
Hyd. Mtr. Torque (in-lbs)	5347	Hyd. Mtr. Speed (rpm):	3057
Drum Torque (in-lbs):	395344	Drum Speed (rpm):	38

Installation Dimensions (ft)

Boom length:	100	Boom pivot to deck	10
Deck to water level	15	Required hook travel	125
Cable length supplied	700	Max. cable on drum	600

Hoist Performance - Single Line

Layer of Cable	Line Pull (lbs)	Line Speed (FPM)	Cable Capacity Feet
1	31470	255	368
2	29205	275	758
3	27244	295	1183
4	25530	315	1629
5	24019	335	2112

Performance 2 part line (lbs @ fpm)

Max Hook Load @ Boom Tip	56703	Hook Speed @ Boom Tip	137
Max Hook Load @ Deck Level	56703	Hook Speed @ Deck Level	137
Max Hook Load @ Mid Travel	56703	Hook Speed @ Mid Travel	137
Max Hook Load @ Water Level	61101	Hook Speed @ Water Level	127

Performance 4 part line (lbs @ fpm)

Max Hook Load @ Boom Tip	111205	Hook Speed @ Boom Tip	68
Max Hook Load @ Deck Level	111205	Hook Speed @ Deck Level	68
Max Hook Load @ Mid Travel	119829	Hook Speed @ Mid Travel	63
Max Hook Load @ Water Level	119829	Hook Speed @ Water Level	63

02-25-2026

Crane Data Sheet

INFORMATION CHART

In Compliance with API Specification 2C 6th Edition Section 4.2.2

Series 60 Model 6024
100 Foot Boom With Walkways

Using the Specific User Supplied Conditions

Serial Number: 4297-100-5
Identification Number: 4297-100-5

Marine Crane Operating Notes

(1) This is a Kingpost Marine Crane. Unlike conventional cranes, It CANNOT separate from its foundation (pedestal) due to slew bearing failure.

(2) This Marine Crane has Hoists with Fail-Safe Drum Brakes. Releasing the controls will set all Hoist Brakes automatically. In case of emergency, do NOT pull back on the controls as this action signals the brakes to remain off. Release the controls to set the brakes.

(3) This Marine Crane is equipped with a patented mechanical anti-two-block system. Lowering the boom will NOT cause the boom to contact the hook block(s).

(4) For optimum safety and service life, follow the operating, inspection,& maintenance instructions in the OEM Operation and Maintenance Manual or CD.

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Wire Rope Component Data

Main hoist cable length (ft.)	700.000
Main hoist cable diameter (in.)	1.125
Main hoist cable construction	Class DH
Main hoist cable breaking strength (kips)	143.000
Aux. hoist cable length (ft.)	325.000
Aux. hoist cable diameter (in.)	1.000
Aux. hoist cable construction	Class EH
Aux. hoist cable breaking strength (kips)	103.000
Boom hoist cable diameter (in.)	1.000
Boom hoist cable construction	Class CL
Boom hoist cable breaking strength (kips)	114.000
Boom hoist tackle parts of line	10.000

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Additional Data

Boom Pivot Height Above Main Deck Level (ft.)	10.000
Main Deck Level to Lowest Hook Position ie. water level (ft.)	15.000
The Maximum Req'd Hook Travel for This Specific Crane (ft.)	125.000
OEM Auxiliary Hoist Model Number	463-EJA
OEM Main Hoist Model Number	763-GJC
OEM Boom Hoist Model Number	463-DJA
Auxiliary Hoist Max Available Hook Speed @ Water Level (FPM)	329.000
Main Hoist Max Available Hook Speed @ Water Level with 2 Part Reeving (FPM)	137.000
Main Hoist Max Available Hook Speed @ Water Level with 4 Part Reeving (FPM)	68.000

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Marine Crane Inspection & Maintenance Notes

(1) There are no time based internal inspection or overhaul requirements for OEM Hoists.

(2) There are no time based replacement requirements for hydraulic hoses. Replace hoses only as needed and based on condition.

(3) When installing wire ropes, it may be necessary to add or subtract drum flange spacers in order to assure proper spooling. This is because of manufacturing differences in rope diameter. This can occur with ropes of the same construction & from the same manufacturer.

(4) Wire rope must be installed tightly on the hoist drums and tension must be maintained at all times during operation. Failure to do so can result in crushing and poor spooling.