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Manual # 99904617

# 20/138SL Technical Specifications

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## Revisions

DATE	LOCATION	DESCRIPTION
20090813		Added swing clearance dimensions.
20100118	Geometric configuration	Added stabilizer length and extension, stabilizer drawings.
20111214	Specs, Stabilizer drawings	ECN 11628 - Updated stabilizer wording.
20120502	Specifications	Updated crane weight to include mounting kit, tank.

## CHAPTER 1

# Technical Data and Charts

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## 20/138SL Technical Specifications

20/138SL	2-HYDRAULIC	3-HYDRAULIC	4-HYDRAULIC	5-HYDRAULIC	6-HYDRAULIC	7-HYDRAULIC	8-HYDRAULIC
Crane Rating*	133,085 ft lb (18.4 tm)	129,470 ft lb (17.9 tm)	126,580 ft lb (17.5 tm)	122,960 ft lb (17 tm)	120,070 ft lb (16.6 tm)	116,450 ft lb (16.1 tm)	114,280 ft lb (15.8 tm)
Maximum Horizontal Reach	27' 3" (8.3 m)	33' 10" (10.3 m)	41' 0" (12.5 m)	48' 7" (14.8 m)	56' 5" (17.2 m)	63' 8" (19.4 m)	71' 2" (21.7 m)
Maximum Vertical Reach	35' 1" (10.7 m)	42' 0" (12.8 m)	49' 3" (15.0 m)	56' 5" (17.2 m)	64' 4" (19.6 m)	71' 10" (21.9 m)	79' 1" (24.1 m)
Maximum Capacity	15,345 lb (6960 kg)	14,505 lb (6580 kg)	13,715 lb (6220 kg)	12,985 lb (5890 kg)	12,745 lb (5780 kg)	12,080 lb (5480 kg)	11,550 lb (5240 kg)
Max Cap @ Max Reach	4870 lb (2210 kg)	3640 lb (1650 kg)	2710 lb (1230 kg)	2030 lb (920 kg)	1500 lb (680 kg)	1080 lb (490 kg)	815 lb (370 kg)
Crane Weight **	4145 lb (1880 kg)	4485 lb (2035 kg)	4830 lb (2190 kg)	5135 lb (2330 kg)	5410 lb (2455 kg)	5645 lb (2560 kg)	5830 lb (2645 kg)
Hook Approach							
Vertical	7' 3" (2.21 m)	7' 6" (2.29 m)	7' 10" (2.38 m)	8' 1" (2.47 m)	8' 5" (2.56 m)	8' 8" (2.65 m)	9' 0" (2.74 m)
Horizontal	2' 3" (0.69 m)	2' 5" (0.74 m)	2' 7" (0.79 m)	2' 9" (0.84 m)	2' 11" (0.89 m)	3' 1" (0.94 m)	3' 3" (1.0 m)
Center of Gravity - Stored							
Vertical	2' 6" (770 mm)	2' 8" (820 mm)	2' 8" (815 mm)	2' 9" (835 mm)	2' 10" (855 mm)	2' 10" (875 mm)	2' 11" (890 mm)
Horizontal (C/L RotTo Bridge)	13.4" (340 mm)	12.4" (315 mm)	12.2" (310 mm)	11.8" (300 mm)	11.2" (285 mm)	10.6" (270 mm)	10.4" (265 mm)

\* Crane rating (ft-lb) is the rated load (lb) multiplied by the respective distance (ft) from centerline of rotation with all extensions retracted and the inner and outer booms in a horizontal position, per ANSI B30.22. \*\* Crane weight is for standard crane with tank & 4-bolt mounting kit. Does not include stabilizers, oil.

20/138SL TECHNICAL SPECIFICATIONS	
Stabilizer Pad Diameter	7" (175 mm)
Crane Storage Height	7' 6" (2295 mm)
Mounting Space ***	2' 11" (880 mm)
Rotational Torque	17,555 ft lb (2.4 tm)
Rotation	400°
Optimum Pump Performance	14.5 gpm (55 L/min)
System Pressure	4,785 psi (330 Bar)
Oil Reservoir Capacity	23.8 gal (90 L)
Stabilizer Extension Span	
Standard (manual out / hydraulic down)	18' 3" (5575 mm)
Weight	605 lb (275 kg)
Option (hydraulic out / hydraulic down)	21' 2" (6455 mm)
Weight	785 lb (355 kg)
*** Maximum swing clearance radius required is 25" (635 mm) at 8' (2430 mm) from top of chassis frame.	

MINIMUM CHASSIS SPECIFICATIONS	
Front Axle Rating (GAWR)	14,000 lb (6350 kg)
Rear Axle Rating (GAWR)	40,000 lb (18,145 kg)
Resistance To Bending Moment	2,000,000 in-lb (230,425 kg-m)

## 20/138SL Pressure Settings

<b>WORKING PRESSURE ON MAIN-RELIEF VALVES &amp; PORT RELIEF VALVES</b>			
Function	Direction	Port	Pressure Setting
Main-relief valve			4785 psi (330 bar)
Rotation system	Right	A	P
	Left	B	P
Boom cylinder	Down	A	1450 psi (100 bar)
	Up	B	4930 psi (340 bar)
Jib cylinder	Up	A	4930 psi (340 bar)
	Down	B	2900 psi (200 bar)
Extension cylinders	Extend	A	P
	Retract	B	P
Rotator	Right	A	2900 psi (200 bar)
	Left	B	2900 psi (200 bar)
Grab	Open	A	2900 psi (200 bar)
	Close	B	2900 psi (200 bar)
Separate stabilizer valve		All	2175 psi (150 bar)

<b>WORKING PRESSURE ON LOAD-HOLDING VALVES</b>			
Function	Direction	Port	Opening Pressure
Boom cylinder			5075 psi (350 bar)
Jib cylinder			5075 psi (350 bar)
Rotation system			2685 psi (185 bar)
Extension cylinders	Extend	A	3045 psi (210 bar)
	Retract	B	6235 psi (430 bar)

<b>PRESSURE SETTING FOR LOAD-MOMENT LIMITATION (LMB)</b>	
Load moment limitation (LMB)	4640 psi (320 bar)
HDL	4205 psi (290 bar)

<b>MAXIMUM PUMP PERFORMANCE</b>	
Pump performance	14.5 gal/min (55 l/min)

## 20/138SL Pressure Settings with Remote Control

<b>WORKING PRESSURE ON MAIN-RELIEF VALVES &amp; PORT RELIEF VALVES</b>				
Function	Direction	Port	Port-Relief Valve Pressure Setting	Load-Sense Pressure Adjustment
Main-relief valve			4785 psi (330 bar)	4785 psi (330 bar)
Rotation system	Right	A	P	2610 psi (180 bar)
	Left	B	P	2610 psi (180 bar)
Boom cylinder	Down	A	1815 psi (125 bar)	1450 psi (100 bar)
	Up	B	5075 psi (350 bar)	5075 psi (350 bar)
Jib cylinder	Up	A	5075 psi (350 bar)	5075 psi (350 bar)
	Down	B	2755 psi (190 bar)	2320 psi (160 bar)
Extension cylinders	Extend	A	P	-
	Retract	B	P	-
Rotator	Right	A	P	725 - 4350 psi (50-300 bar)
	Left	B	P	725 - 4350 psi (50-300 bar)
Grab	Open	A	P	725 - 4350 psi (50-300 bar)
	Close	B	P	725 - 4350 psi (50-300 bar)
Winch (1.5 metric T)	Lift	A	P	2320 psi (160 bar)
	Lower	B	P	2320 psi (160 bar)
Winch (2.5 metric T)	Lift	A	P	2685 psi (185 bar)
	Lower	B	P	2685 psi (185 bar)
Separate stabilizer valve		All		2175 psi (150 bar)

### WORKING PRESSURE ON LOAD-HOLDING VALVES

Function	Direction	Opening Pressure
Rotation System	Right	2685 psi (185 bar)
	Left	2685 psi (185 bar)
Boom cylinder	Up	5075 psi (350 bar)
	Down	-
Jib cylinder	Up	5075 psi (350 bar)
	Down	3045 psi (210 bar)
Extension cylinders	Extend	3045 psi (210 bar)
	Retract	6235 psi (430 bar)

### PRESSURE SETTINGS FOR LOAD-MOMENT LIMITATION (LMB)

Load moment limitation (LMB)	4570 psi (315 bar)
HDL	4135 psi (285 bar)

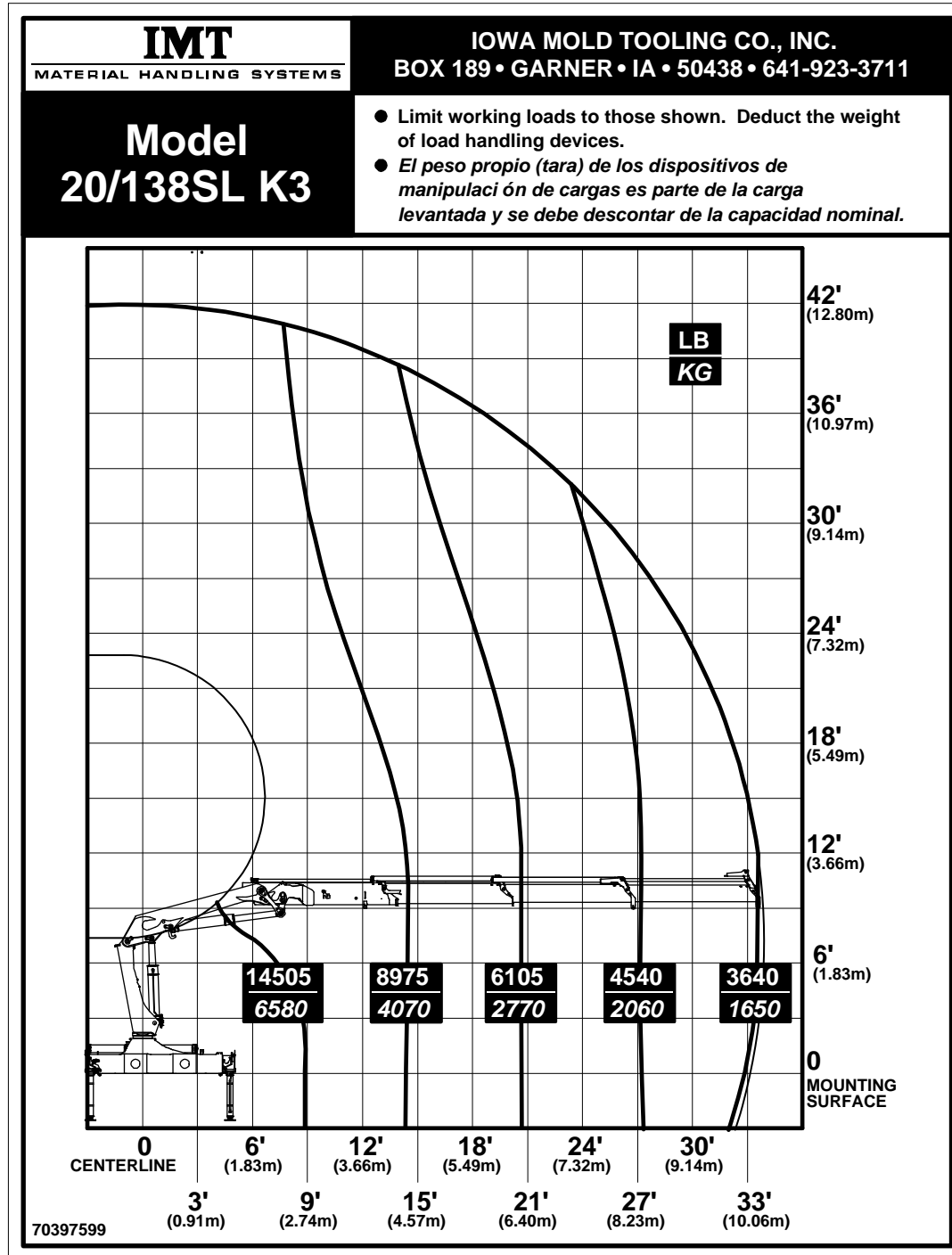
### MAXIMUM PUMP PERFORMANCE

Pump performance	18.5 gal/min (70 l/min)
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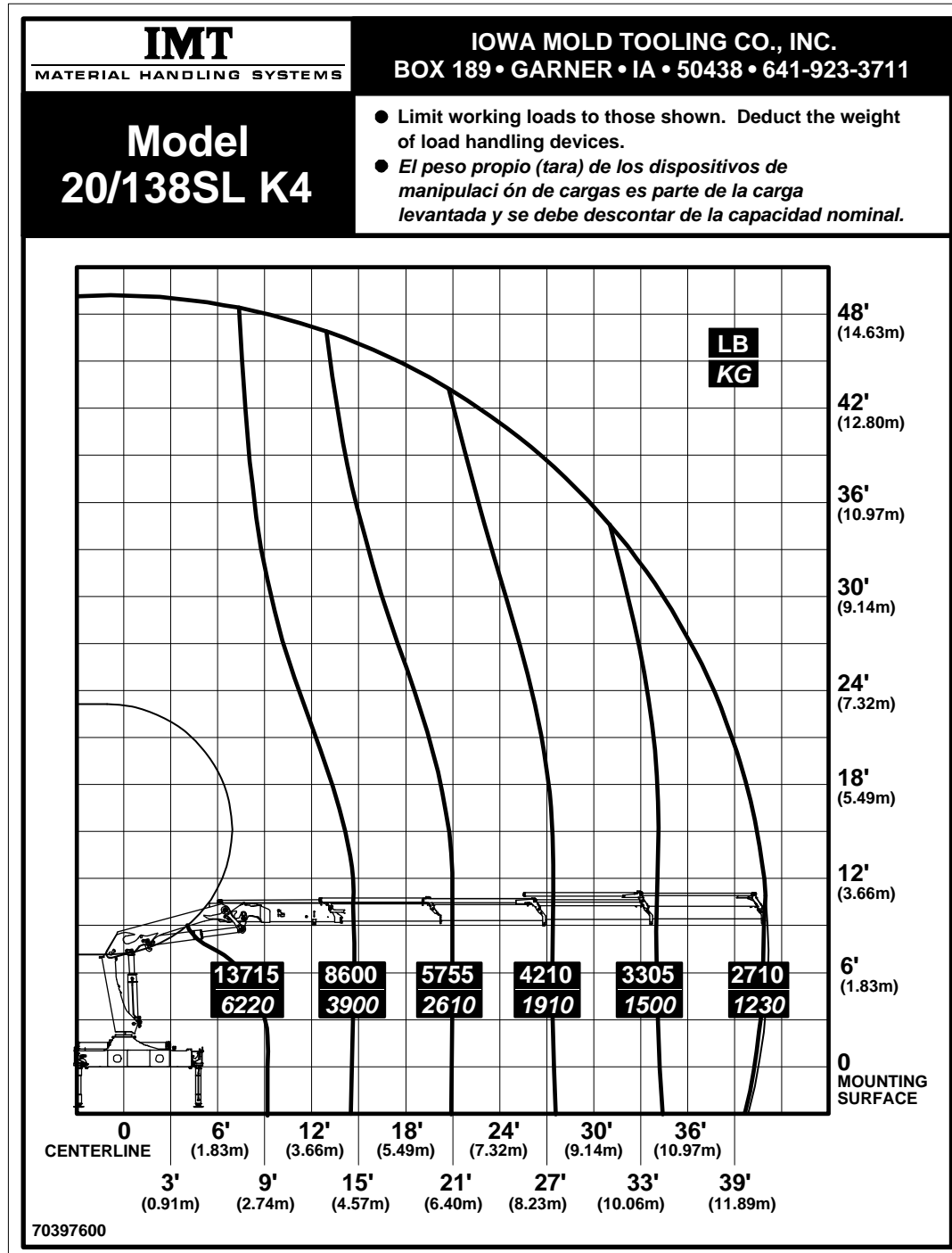




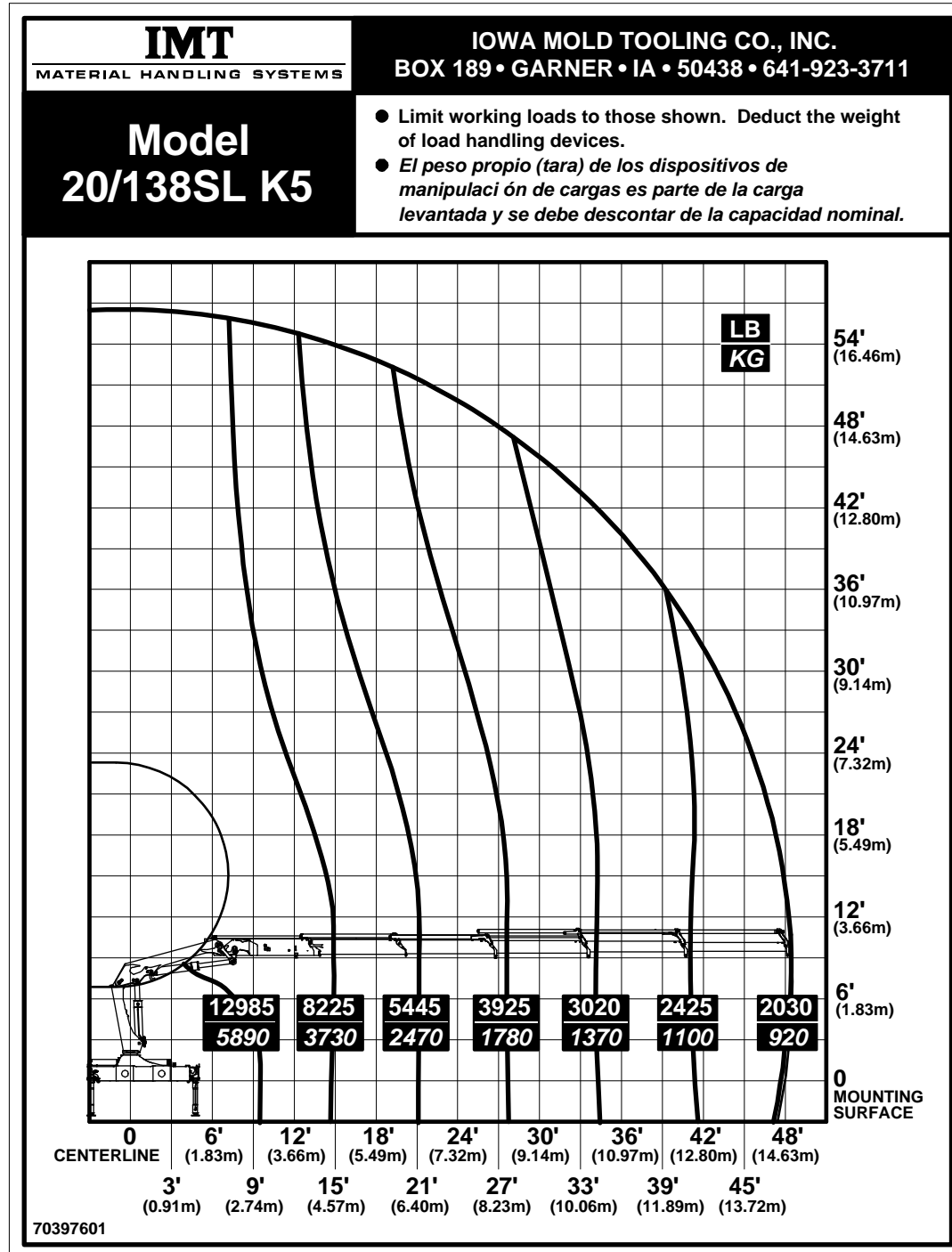
# 20/138SL K3 Capacity Chart



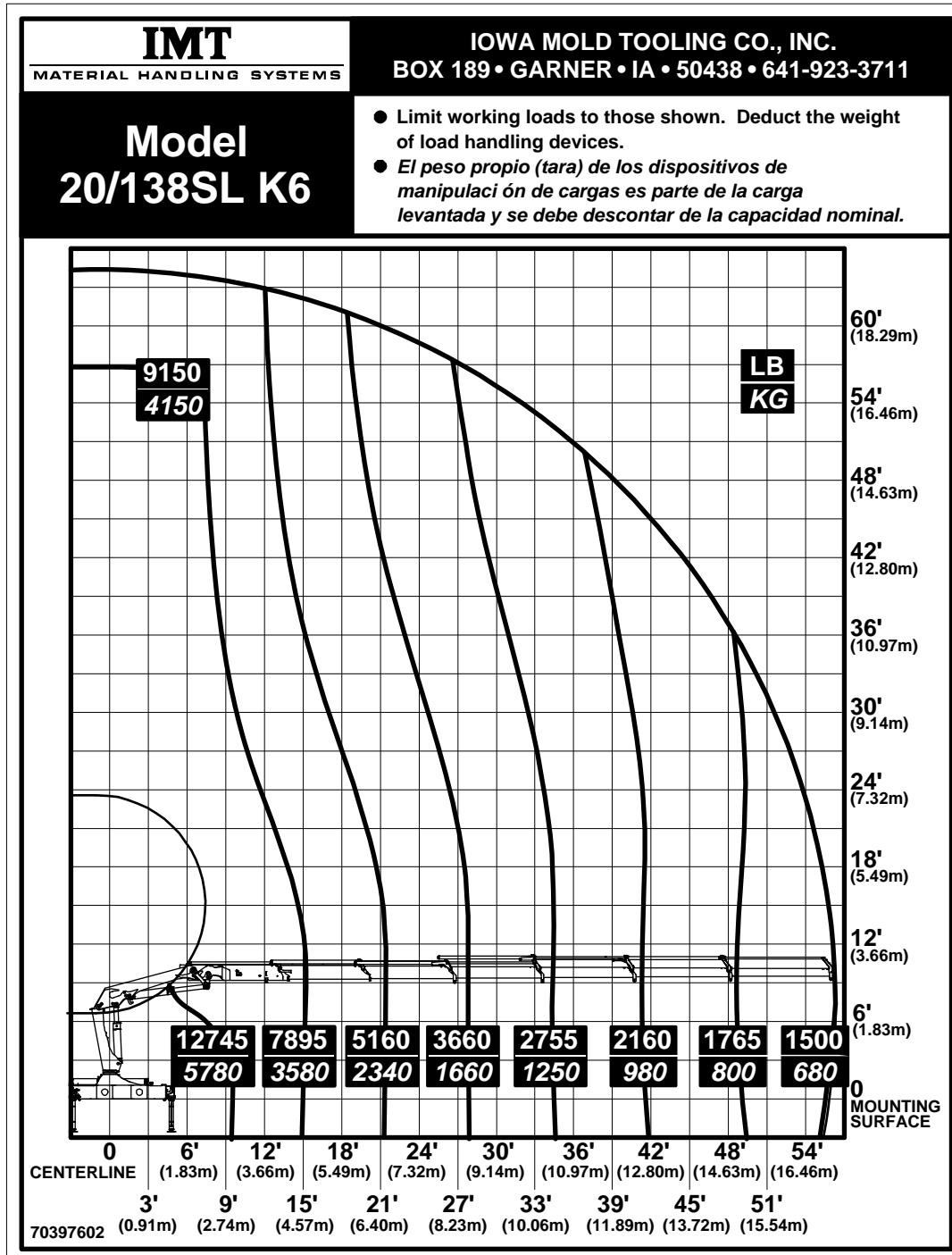
# 20/138SL K4 Capacity Chart



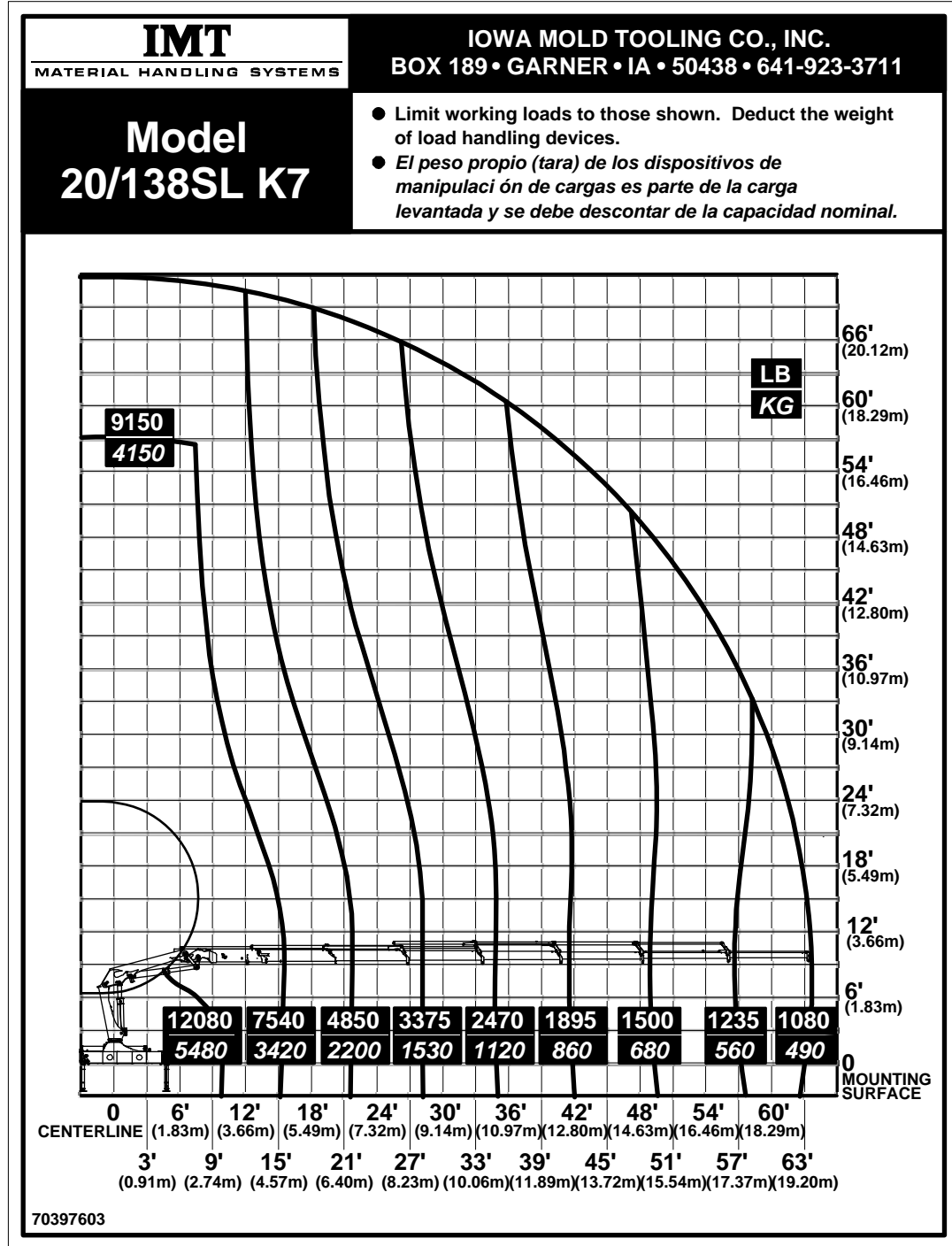
# 20/138SL K5 Capacity Chart



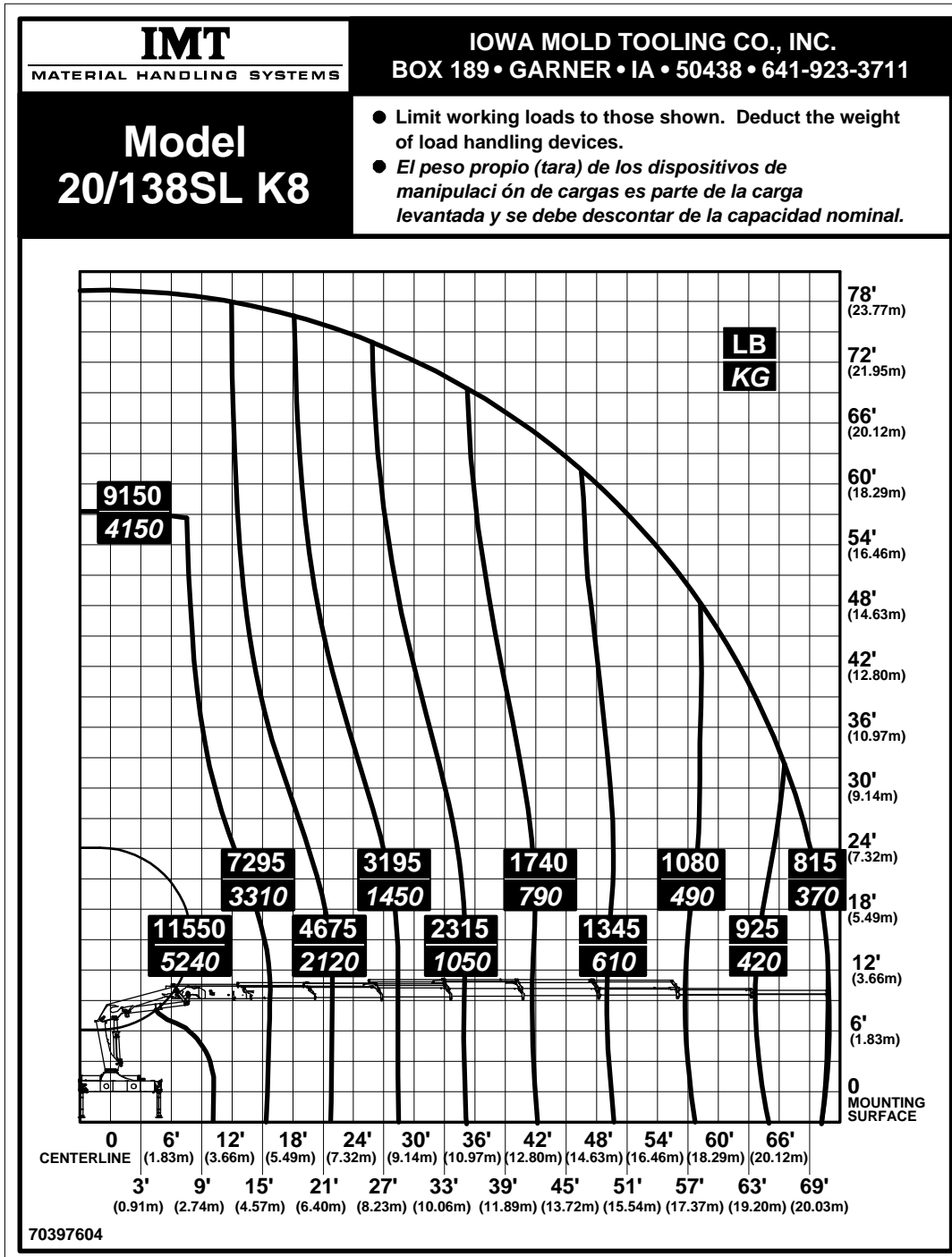
# 20/138SL K6 Capacity Chart



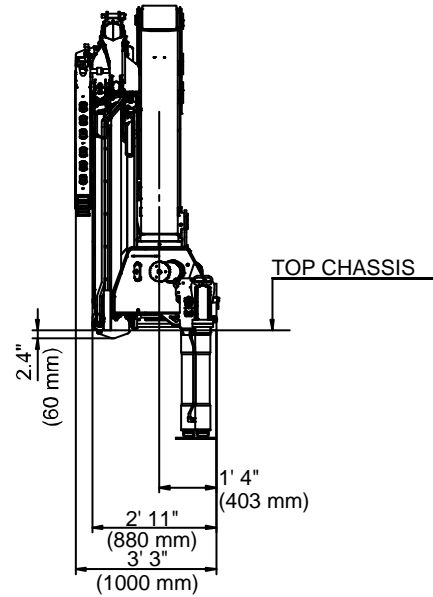
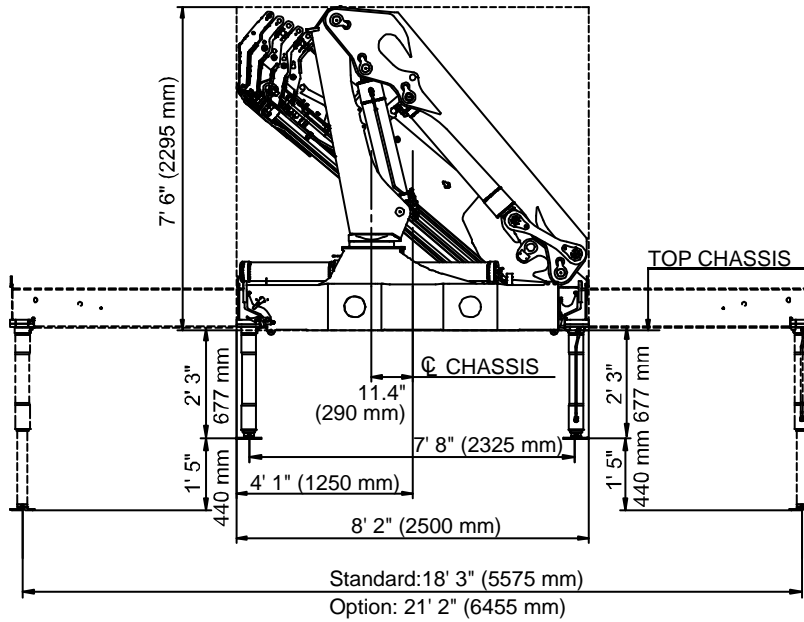
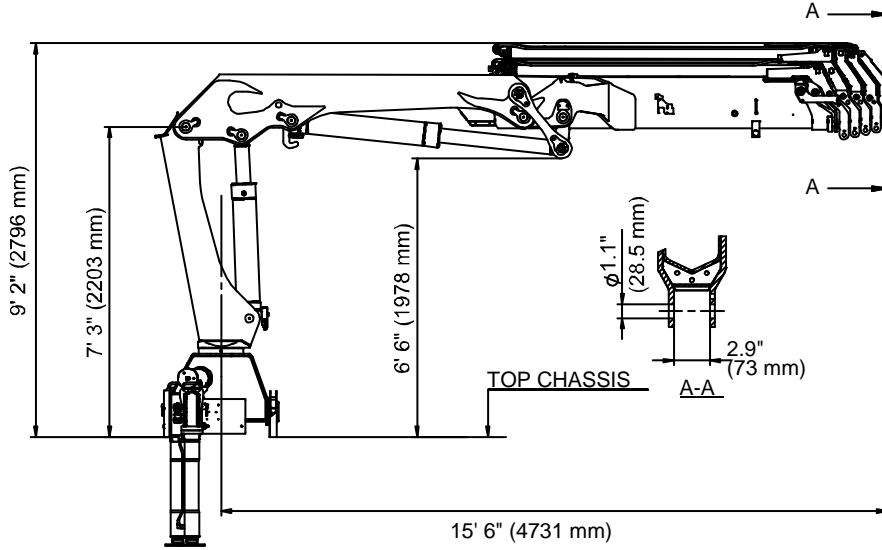
# 20/138SL K7 Capacity Chart



# 20/138SL K8 Capacity Chart

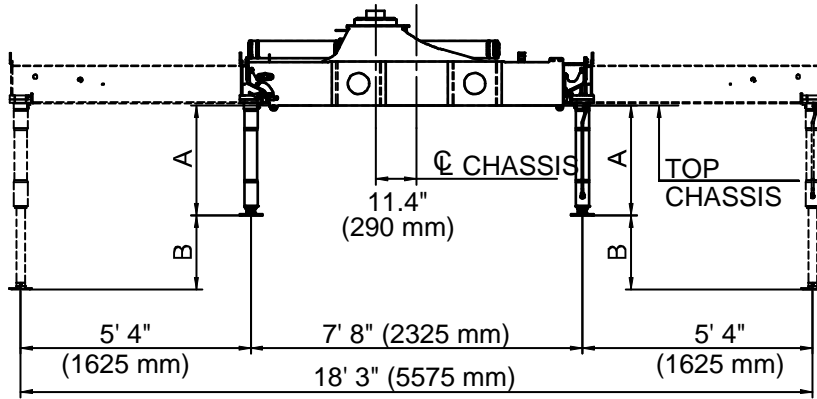


# 20/138SL Geometric Configuration

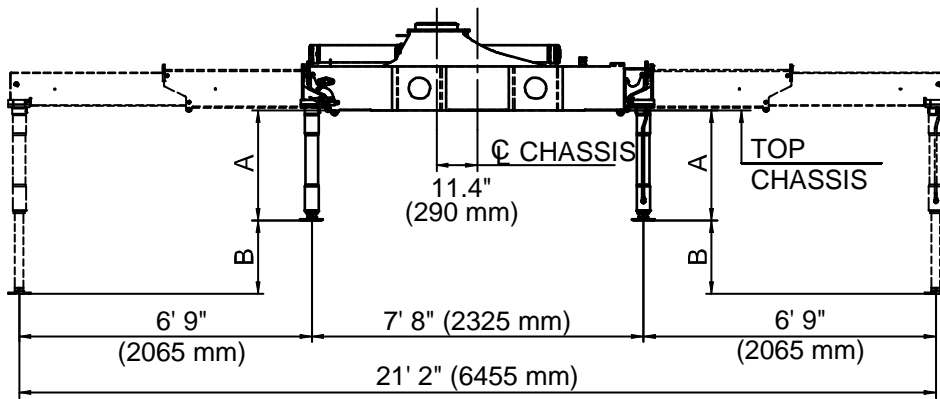








# Stabilizer Dimensions, Fixed Legs, 18 tm up



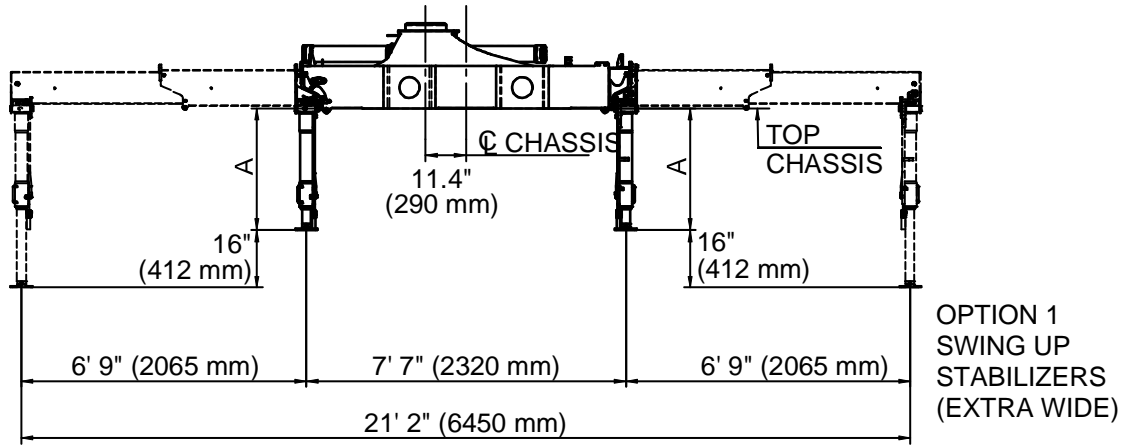
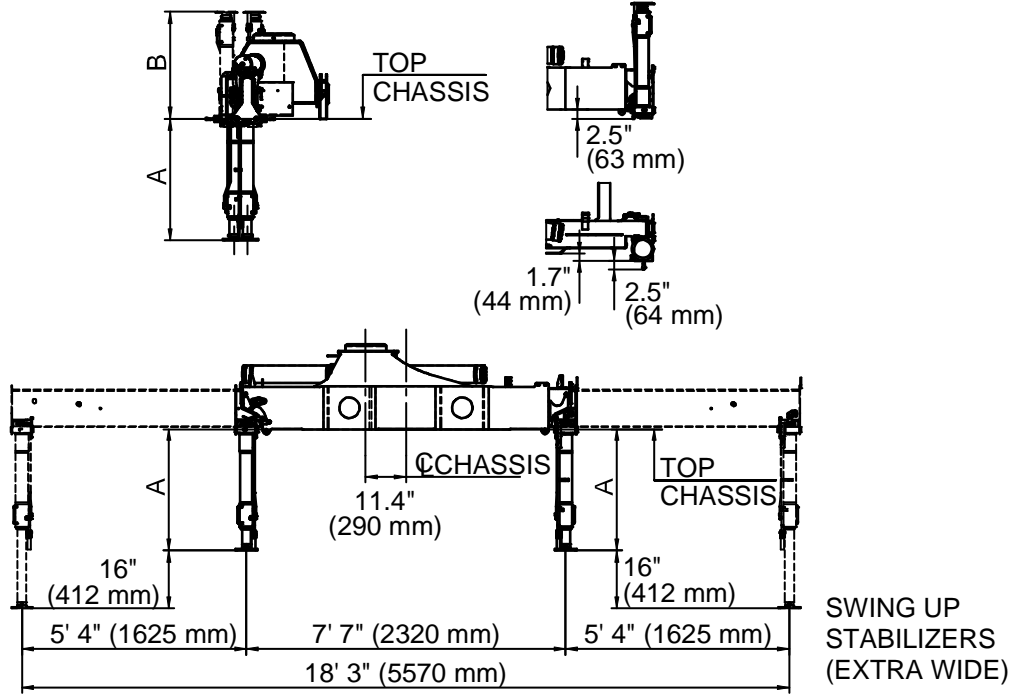
STANDARD  
(Hydraulic Out /  
Hydraulic Down)






OPTION 1  
(Extra Wide  
Hydraulic Out /  
Hydraulic Down)

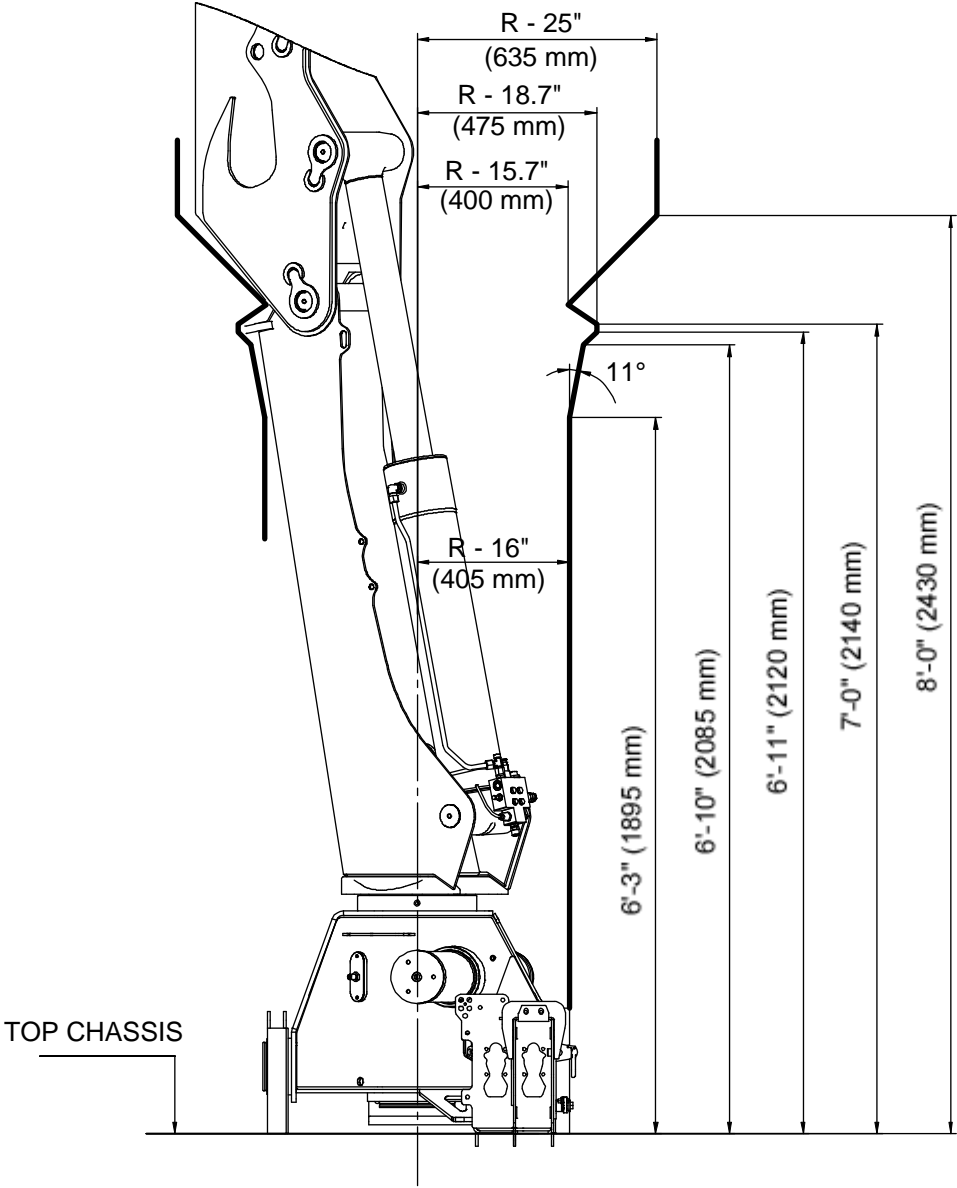
				
A	2' 3" (677 mm)	2' 6" (777 mm)	2' 11" (877 mm)	3' 2" (977 mm)
B	1' 5" (440 mm)	1' 8" (515 mm)	1' 8" (515 mm)	1' 8" (515 mm)

# Stabilizer Dimensions, Swing-up, 18 tm up



			
A	35" (879 mm)	39" (979 mm)	42.5" (1079 mm)
B	30.5" (777 mm)	34.4" (877 mm)	38.4" (977 mm)

# 20/138SL Swing Clearance





## CHAPTER 2

# Hydraulic Schematics

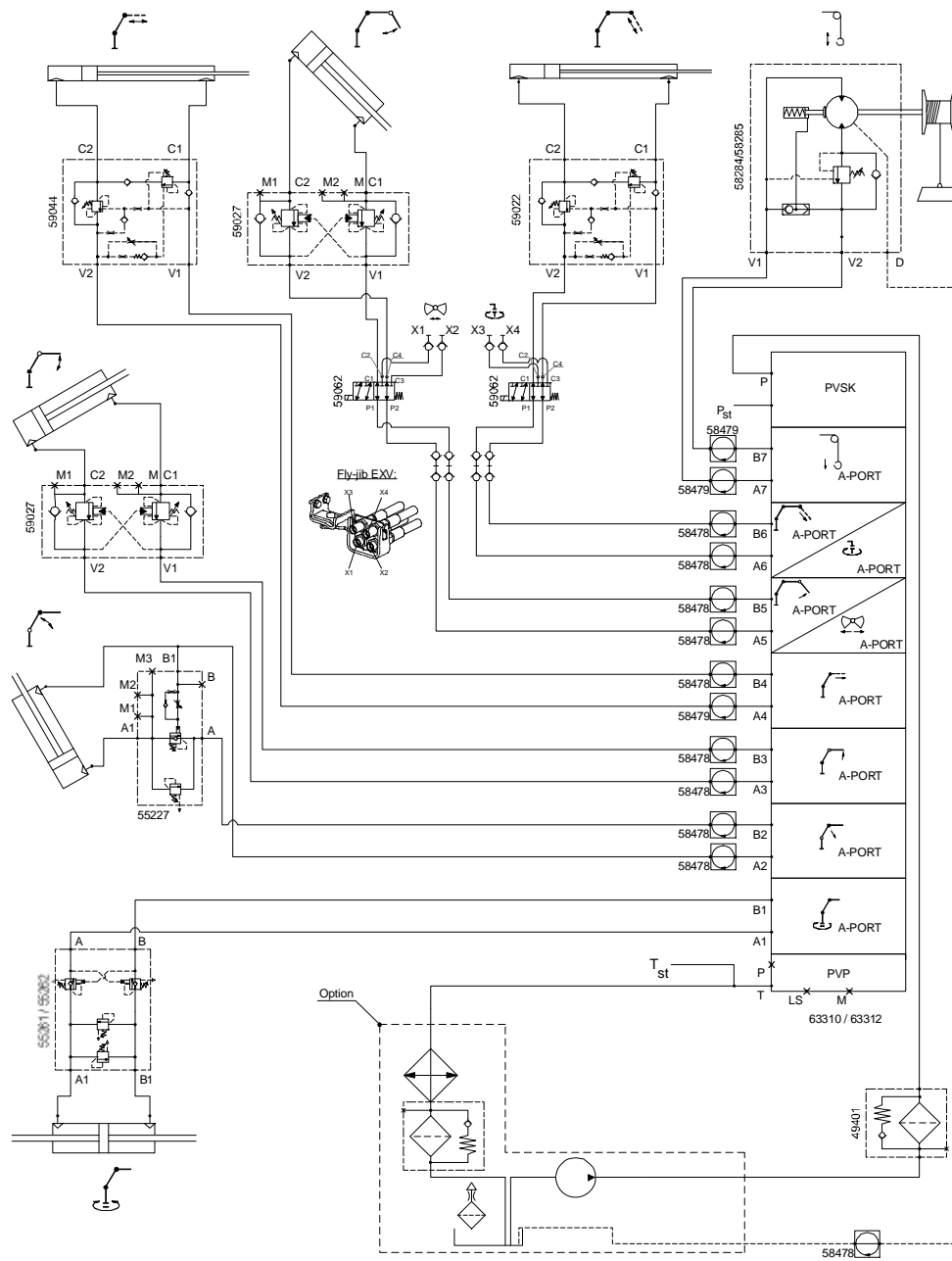
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# Hydraulic Diagram - 20/138SL Danfoss 7-Function Radio

This diagram applies to a 20/138SL crane with a single-circuit fixed pump, and 7-function Danfoss radio controls.



# Hydraulic Diagram - 20/138SL Hydrocontrol 6-Function Manual

This diagram applies to a 20/138SL crane with a single-circuit fixed pump, and 6-function Hydrocontrol manual controls.

