



Articulating Cranes

12916

Technical Specifications

Material Handling Systems





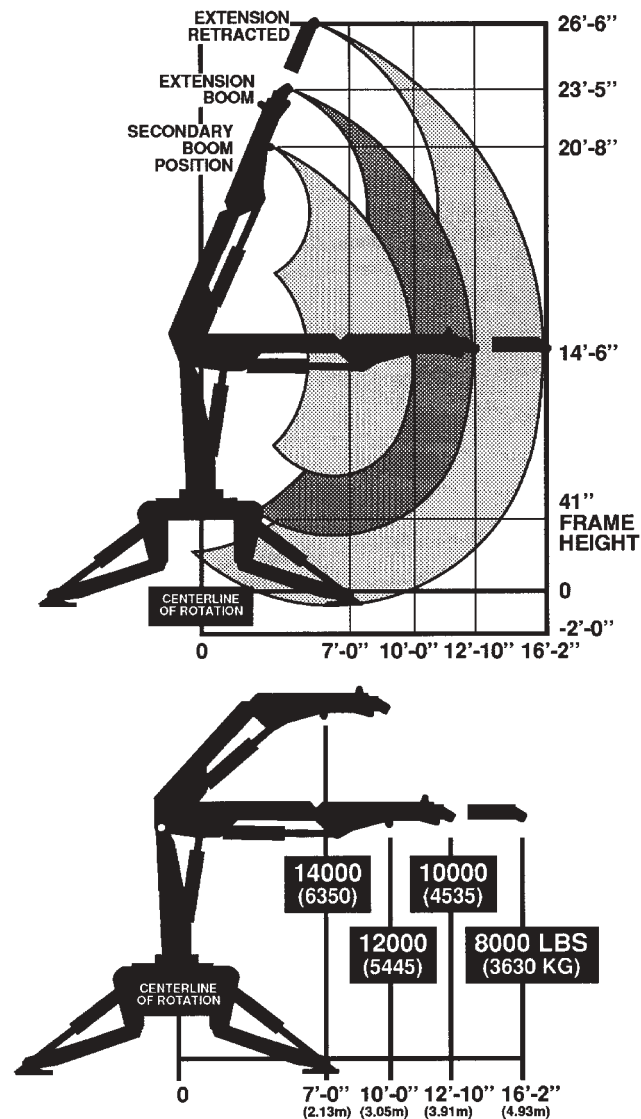
Specifications	1 Hydraulic
Crane Rating*	129,000 ft-lb (17.8 tm)
Horizontal Reach from centerline of rotation	16'2" (4.9 m)
Hydraulic Extension	40" (1.1 m)
Manual Extension	None
Vertical Reach from mounting surface from ground/41" frame height	23'1" (7.0 m) 26'6" (8.1 m)
Crane Weight	6,040 lb (2,739.7 kg)
Outrigger Span	15'0" (4.6 m)
Outrigger Pads	12" x 19" (30.5 cm x 48.3 cm)
Crane Storage Height from mounting surface from ground/41" frame height	8'2" (2.5 m) 11'7" (3.5 m)
Mounting Space Required**	32" (81.5 cm)
Rotational Torque	16,200 ft-lb (2.2 tm)
Optimum Pump Capacity	13 U.S. gpm (49.2 L/min)
System Operating Pressure	2,300 psi (158.6 bar)
Oil Reservoir Capacity	21 U.S. gallons (79.5 L)
Hook Approach horizontal from centerline of rotation vertical from mounting surface	5'10" (1.8 m) 9'8" (3.0 m)

* Crane rating (ft-lb) is the rated load (lb) x the respective distance (ft) from centerline of rotation with all extensions retracted and the inner and outer booms in a horizontal position. This is the ANSI B30.22 standard.

** Allow an additional 3" (7.62 cm) between the cab and crane base for swing clearance.

Capacity Charts

1 Hydraulic Extension



- Capacities (for above charts) through geometric range are limited to those shown in horizontal position.
- Loads shown are based on crane structural or hydraulic capability. Before lift is made, stability must be checked per SAE J765A.
- Working loads will be limited to those shown. Deduct the weight of load-handling devices.
- Winch-lifting capacity is limited to those shown. Maximum 4,000 lb for one-part line.



Performance Characteristics

Rotation	370° (6.5 rad)	45 seconds
Inner Boom Elevation	-23° to +67° (-40 to +1.17 rad)	25 seconds
Outer Boom Articulation	113" (2.9 m)	19 seconds
Extension Boom	40" (1.0 m)	6 seconds
Outrigger Extension	29-1/4" (74.3 cm)	40 seconds

Power Source

Integral mounted hydraulic pump and PTO application. Other standard power sources may be utilized. Minimum power required is 21 horsepower.

Cylinder Holding Valves

The holding sides of all standard cylinders are equipped with integral mounted holding or counterbalance valves to prevent sudden cylinder collapse in case of hose or other hydraulic failure. The outrigger cylinders have positive, pilot-operated holding valves that open only on command. The inner cylinders have single pilot-operated counterbalance valves while the outer and extension boom cylinders have double counterbalance valves. The counterbalance valve serves several functions. First, it is a holding valve. Second, it is so constructed that it will control the lowering function and allow that motion to be feathered while under load. Finally, if a hose breaks the only oil loss will be that in the hose.

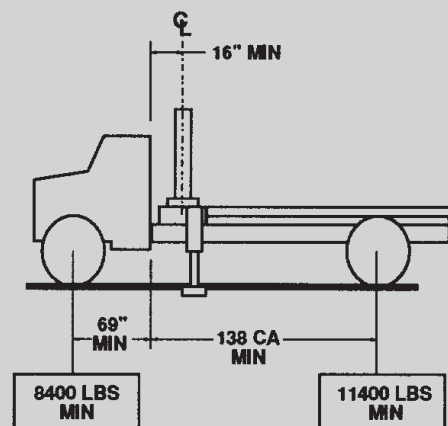
Rotation System

Rotation of the crane is accomplished through a turntable bearing, powered by a high-torque hydraulic motor through a ring-and-pinion type spur gear train. Total gear reduction is 56.7:1.

Hydraulic System

The hydraulic system is an open-centered, full-pressure system, requiring 13 gpm (49.2 L/min) optimum oil flow at 2,300 psi (158.6 bar). Eight-spool, stack-type control valve, six of which are used for the standard crane and the remaining two which are plugged but easily adapted for additional optional features. Dual operational handles for six functions are located at both sides of crane for convenient operation. System includes hydraulic oil reservoir, suction-line strainer, pump, 8-section control valve, return-line filter and all hoses and fittings.

Minimum Chassis Specifications



Crane Mount	Behind Cab
Crane Working Area	360°
Chassis Style	Conventional Cab
Front Axle Rating (GAWR)	12,000 lb
Rear Axle Rating (GAWR)	21,000 lb Single Axle
Wheelbase	207"
Cab-To-Axle	138"
Outrigger Width Required	15'
Resistance To Bending Moment	1,664,000 in-lb
Frame Section Modulus	26 in ³
Frame Yield Strength	50,000 psi
Minimum Finished Unit Weight To Maintain Vehicle Stability	
Front Axle	8,400 lb*
Rear Axle	11,400 lb*
Total Finished Unit Weight	19,800 lb

* Allows lifting full-capacity load in a 360° arc when crane is installed immediately behind the cab. Great care should be taken when swinging the load from rear of vehicle to front of vehicle since the front axle springs will compress, thus affecting the levelness of the vehicle.

Notes

1. GAWR means Gross Axle Weight Rating and is dependent on all components of the vehicle such as axles, tires, wheels, springs, brakes, steering and frame strength meeting the manufacturer's recommendations. Always specify GAWR when purchasing a truck.
2. Minimum axle requirements may increase with use of diesel engines, longer wheelbase or service bodies. Contact the factory for further information.
3. Weight distribution calculations are required to determine final axle loading.
4. All chassis and crane combinations must be stability-tested to ensure stability per ANSI B30.22



Optional TireHand #10

TireHand #7 Specifications

Tire Size Capacity	18.00x25 through 40/65x39
Maximum Capacity	5,000 lb (2,268 kg)
Clamping Span	55" – 115" (139.7 cm – 292.1 cm)
Method of Clamping	horizontal, telescoping
Clamping Pad Rotation	none, stationary pads
Body Rotation	340° (5.96 rad)
TireHand Tilt provided by crane extension boom	+98° to -41° (+1.71 to -.72 rad)
Clamping Load-Holding Valves	pilot-operated, check valves on clamping side
Hydraulic Controls	included with crane controls
Rotation System	spur gear drive
TireHand Weight	1,750 lb (794 kg)

Capacity Chart

Maximum Capacity - 5,000 lb (2,268 kg)

TIRE APPLICATION CHART					
NARROW BASE TIRE SIZE			WIDE BASE TIRE SIZE		
TIRE SIZE	MAX TIRE DIA (in)	TIRE & RIM WEIGHT (lbs)	TIRE SIZE	MAX TIRE DIA (in)	TIRE WEIGHT ONLY (lbs)
18.00x25	66	1100	23.5x25	66	1200
18.00x33	74	1300	26.5x25	71	1600
21.00x35	82	1800	29.5x29	75	2500
24.00x35	87	2500	33.25x29	83	1500
24.00x49	101	3000	33.25x35	91	3400
27.00x49	107	4000	35/65x33	81	2900
30.00x51	115	5400	37.25x35	95	4000
33.00x51	122	6800	37.5x39	100	4200
36.00x51	129	7700	37.5x51	113	3200
37.00Rx57	136	10000	40/65x39	94	3800
40.00x57	143	11000	45/65x45	108	5800
Wide base tire weights DO NOT include rim. Any tires which are shaded are NOT within Tirehand capacity. 71393700			49.5x57	143	9000
			50/65x51	121	8000
			50/80/57	142	9500
			53.5/85x57	154	12000
			54.5/80x57	143	13000
			57.5/85x57	154	13000
			67.5/65x51	138	13000

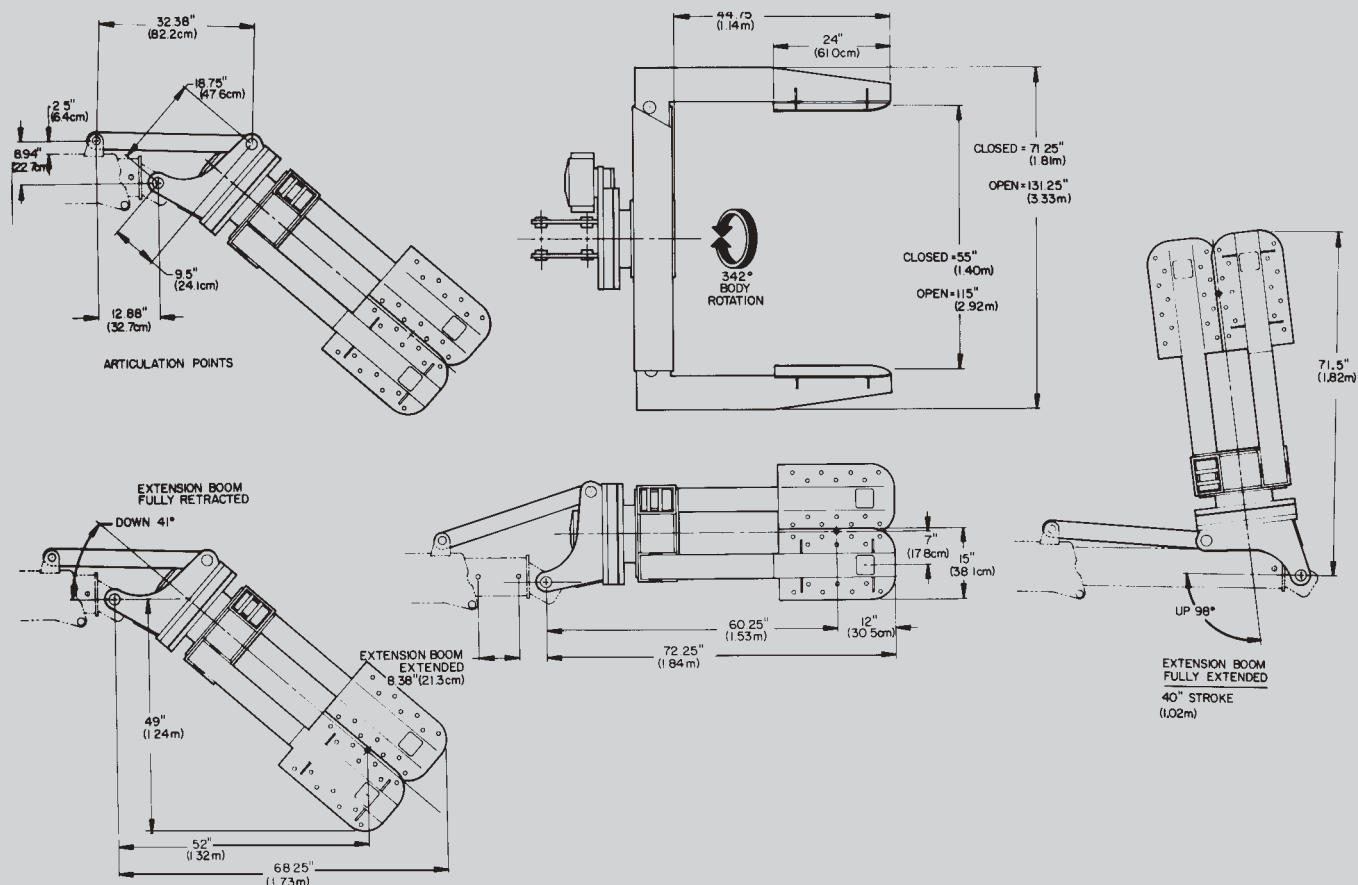
Note

Where applicable, specifications are in accordance with SAE standards.



Optional TireHand #10

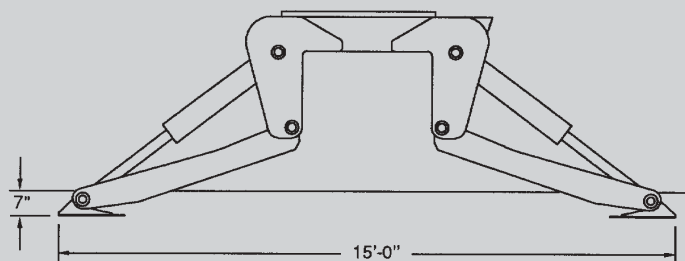
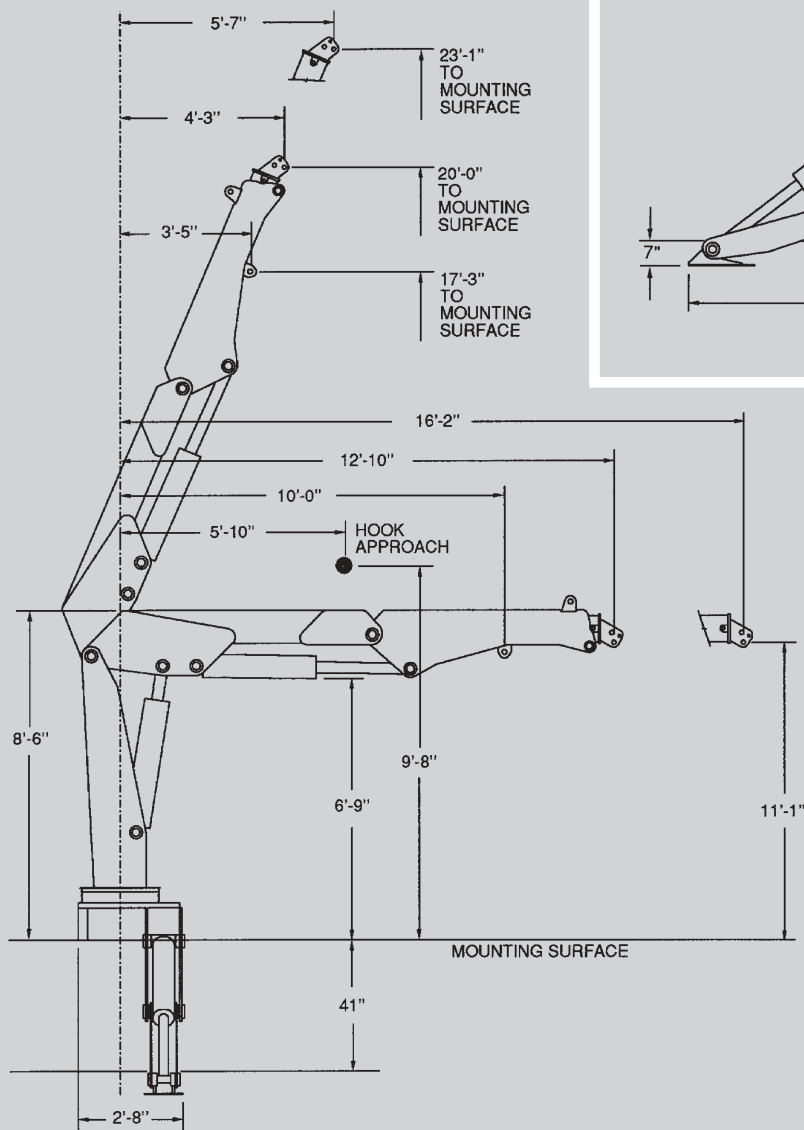
Geometric Configurations





12916 Articulating Crane

Geometric Configurations



Outrigger Dimensions



Iowa Mold Tooling Co., Inc.

500 Highway 18 West
P.O. Box 189
Garner, Iowa 50438-0189
(641) 923-3711
Fax: (641) 923-6063
Web Site: www.imt.com

(800) 247-5958

IMT and the IMT LOGO are registered trademarks or trademarks of Iowa Mold Tooling Co., Inc.

Copyright © 2002 Iowa Mold Tooling Co., Inc.
All Rights Reserved

PN 660018.06/02.250

Manufacturer's Limited Warranty Coverage

Products manufactured by IMT are warranted to be free from defects in material and workmanship, under proper use, application and maintenance in accordance with IMT's written recommendations, instructions and specifications as follows:

1. One (1) year: labor on IMT workmanship.
2. One (1) year: original IMT parts.
3. Three (3) years: crane structural.

For policy details please refer to the IMT warranty policy.

IMT reserves the right to change specifications and design without notice.