Articulating Cranes

12916 Technical Specifications

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Material Handling Systems



IMT



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	23'1" (7.0 m)		
from ground/41" frame height	26'6" (8.1 m)		
Crane Weight	6,040 lb (2,739.7 kg)		
Autrigger Snan	15'0'' (4.6 m)		
Outrigger Span	15.0 (4.0 III)		
Outrigger Pads	12" x 19"		
	(30.5 cm x 48.3 cm)		
Crane Storage Height			
from mounting surface	8'2" (2.5 m)		
from ground/41" frame height	11'7" (3.5 m)		
Mounting Space Required**	32" (81.5 cm)		
0.1			
Rotational Torque	16,200 ft-lb (2.2 tm)		
Ontimum Pump Canacity	13 US gnm (40.2 J/min)		
Optimum I ump Capacity	15 0.5. gpin (49.2 L/min)		
System Operating Pressure	2,300 psi (158.6 bar)		
Oil Reservoir Capacity	21 U.S. gallons (79.5 L)		
2 · · · V			
Hook Approach			
horizontal from centerline of rotation	5'10" (1.8 m)		
vertical from mounting surface	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 Frame Section Modulus Frame Yield Strength	1,664,000 in-lb 26 in ³ 50,000 psi
Minimum Finished Unit Weight To Maintain Vehicle Stability Front Axle Rear Axle Total Finished Unit Weight	8,400 lb* 11,400 lb* 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	i.
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 to72 rad)	
Clamping Load-Holding Valves	pilot-operated, check valves on clamping side	
Hydraulic Controls	included with crane controls	i.
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 BA	SE TI	RE 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 18.00x33 21.00x35 24.00x35 24.00x49 27.00x49 30.00x51 33.00x51 36.00x51 37.00Rx57	66 74 82 87 101 107 115 122 129 136	1100 1300 2500 3000 4000 5400 6800 7700 10000	23.5x25 26.5x25 29.5x29 33.25x35 35/65x33 37.25x35 37.5x39 37.5x51 40/65x39	66 71 75 83 91 81 95 100 113 94	1200 1600 2500 1500 3400 2900 4000 4200 3200 3800	
40.00x57 Wide base DO NOT in Any tires w shaded are Tirehand ca	143 tire w clude hich a NOT apacit	11000 eights rim. are within ry.	45/65x45 49.5x57 50/65x51 50/80/57 53.5/85x57 54.5/80x57 57.5/85x57 67.5/65x51	108 143 121 142 154 143 154 154 138	5800 9000 8000 9500 12000 13000 13000	

Note

Where applicable, specifications are in accordance with SAE standards.

Optional TireHand #10

Geometric Configurations





12916 Articulating Crane

Geometric Configurations





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Manufacturer's Limited Warranty Coverage

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.