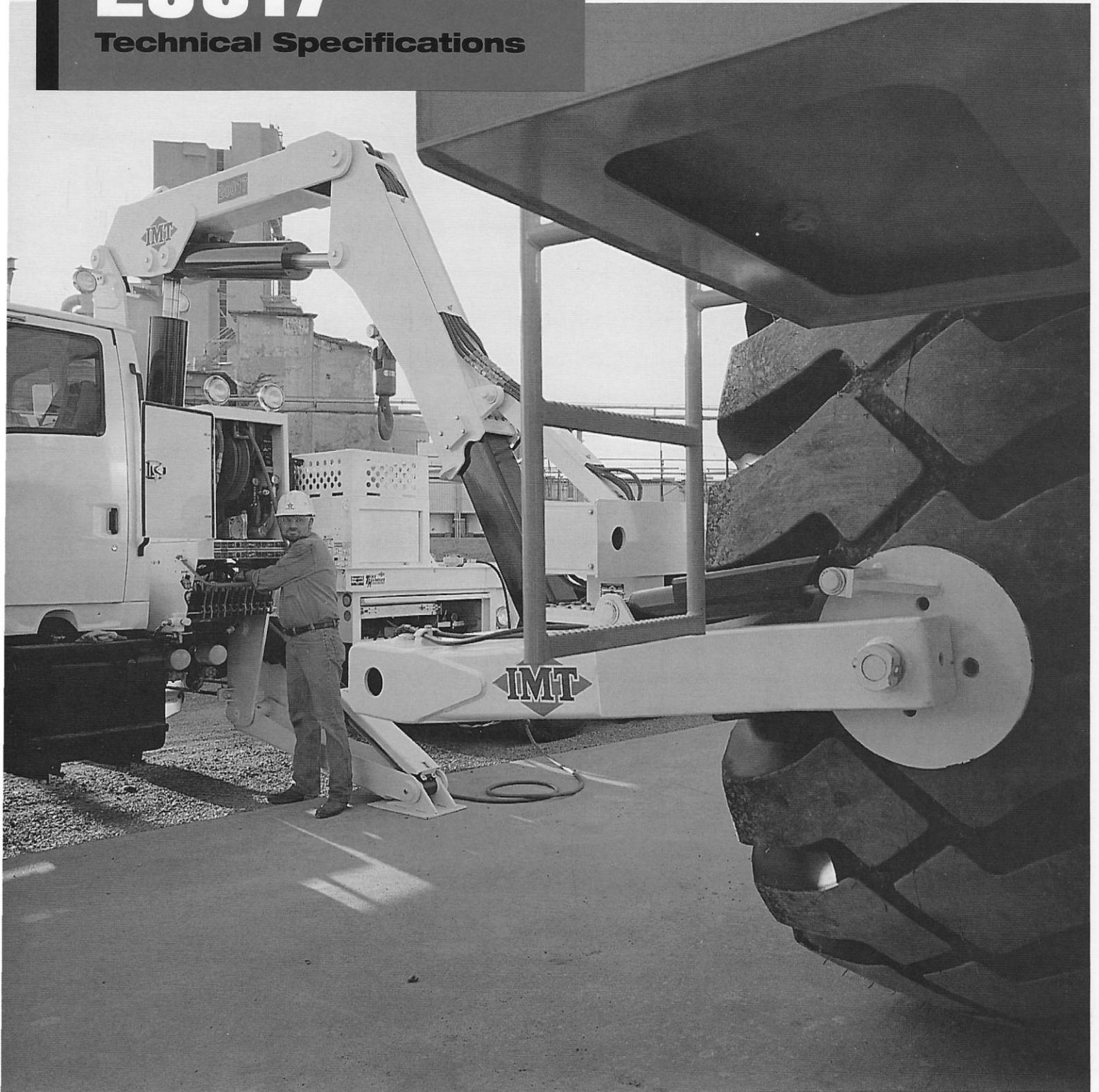


**Articulating Cranes**

**20017**

**Technical Specifications**

**Material Handling Systems**





# 20017 Articulating Crane

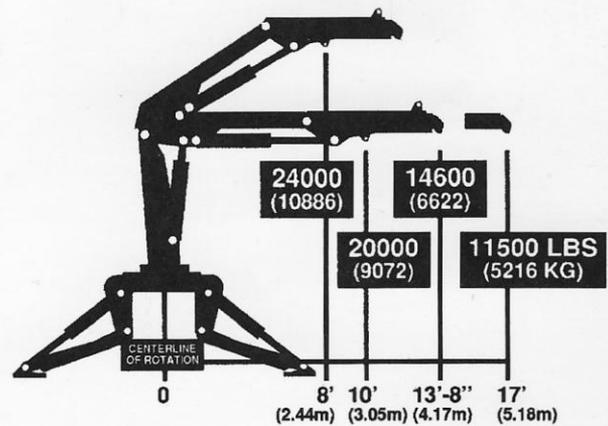
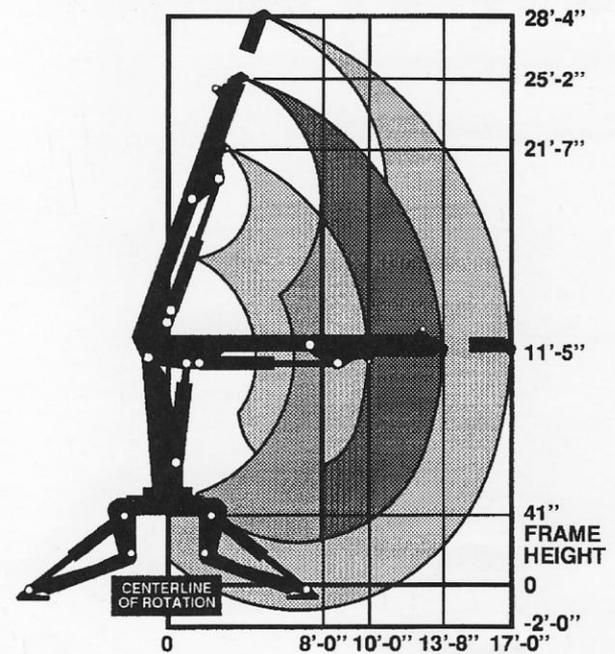
Specifications	1 Hydraulic
<b>Crane Rating (ANSI B30.22)*</b>	199,538 ft-lb (27.6 tm)
<b>Maximum Crane Rating *</b>	200,000 ft-lb (27.6 tm)
<b>Horizontal Reach</b> from centerline of rotation	17' (5.2 m)
<b>Hydraulic Extension</b>	40" (1.0 m)
<b>Manual Extension</b>	None
<b>Vertical Reach</b> from mounting surface	24'11" (7.6 m)
from ground/41" (1.04 m) frame height	28'4" (8.6 m)
<b>Crane Weight</b>	7,630 lbs. (3,461.0 kg)
<b>Outrigger Span</b>	15' (4.6 m)
<b>Outrigger Pads</b>	12" x 19" (30.5 cm x 48.3 cm)
<b>Crane Storage Height With 12" (30.48 cm) Flat-Bed Body</b> from mounting surface	8'9" (2.7 m)
from ground/41" (1.04 m) frame height	12'2" (3.7 m)
<b>Mounting Space Required**</b>	36" (0.9 m)
<b>Rotational Torque</b>	24,150 ft-lb (3.3 tm)
<b>Optimum Pump Capacity</b>	16 U.S. gpm (60.6 L/min)
<b>System Operating Pressure</b>	2,500 psi (172.4 bar)
<b>Oil Reservoir Capacity</b>	26 U.S. gallons (98.4 L)
<b>Hook Approach</b> horizontal from centerline of rotation	5'8" (1.7 m)
vertical from mounting surface	10'11" (3.3 m)

\* Maximum crane rating (ft-lb) is defined as the rated load (lbs.) which when multiplied by its respective distance (ft.) from centerline of rotation gives the greatest ft-lb value. ANSI B30.22 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.

\*\* Allow 4" (10.16 cm) between the truck 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.

## Performance Characteristics

<b>Rotation</b>	370° (6.5 rad)	70 seconds
<b>Inner Boom Elevation</b>	-25° to +70° (-.44 to +1.22 rad)	28 seconds
<b>Outer Boom Articulation</b>	113° (2.0 rad)	24 seconds
<b>Extension Boom</b>	40" (1.0 m)	10 seconds
<b>Outrigger Extension</b>	29-1/4" (0.7 m)	32 seconds

## Power Source

Integral mounted hydraulic pump and PTO application. Other standard power sources may be utilized. Minimum power required is 28 horsepower.

## Cylinder Holding Valves

The holding sides of all cylinders are equipped with integral mounted counterbalance valves to prevent sudden cylinder collapse in case of hose or other hydraulic failure. The extension and outrigger cylinders have double holding 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.

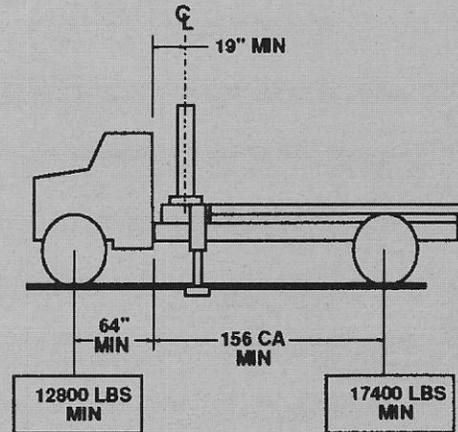
## Rotation System

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. A spring-loaded brake is supplied between the drive gear and motor providing rotational and parking brake action.

## Hydraulic System

The hydraulic system is an open-centered, full-pressure system, requiring 16 gpm (60.56 L/min) optimum oil flow at 2,500 psi (172.41 bar.) Eleven-spool, stack-type control valve, with six functions for standard crane controls, three functions for optional TH-14 articulation and two thru-selector functions for optional hydraulic out-and-down auxiliary outrigger system, is supplied. The optional valve sections will be plugged if not utilized. Dual operational handles for the six standard crane functions are located at both sides of crane for convenient operation. System includes hydraulic oil reservoir, suction-line filter, return-line filter, control valve bank and all hoses and fittings.

## Minimum Chassis Specifications



<b>Crane Mount</b>	Behind Cab
<b>Crane Working Area</b>	360° (6.3 rad)
<b>Chassis Style</b>	Conventional Cab
<b>Front Axle Rating (GAWR)</b>	16,000 lbs. (7,257.6 kg)
<b>Rear Axle Rating (GAWR)</b>	40,000 lbs. (18,144 kg) Tandem Axle
<b>Wheelbase</b>	220" (5.6m)
<b>Cab-To-Axle</b>	156" (4.0 m)
<b>Outrigger Width Required</b>	15' (4.6 m)
<b>Resistance To Bending Moment</b>	3,000,000 in-lb (34,564 kg-m)
Frame Section Modulus	30 in <sup>3</sup> (491.7cm <sup>3</sup> )
Frame Yield Strength	100,000 psi (690 N/mm <sup>2</sup> )
<b>Minimum Finished Unit Weight To Maintain Vehicle Stability</b>	
Front Axle	12,800 lbs.* (5,806.1 kg*)
Rear Axle	17,400 lbs.* (7,892.6 kg*)
Total Finished Unit Weight	30,200 lbs. (13,698.7 kg)

\* Allows lifting full-capacity load in a 360° (6.28 rad) 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 #14

## TireHand #14 Specifications

<b>Tire Size Capacity</b>	18.00x25 through 50/65x51
<b>Maximum Capacity</b>	8,000 lbs. (3,629 kg)
<b>Clamping Span</b>	64" - 132" (162.6 - 35.3 cm)
<b>Method of Clamping</b>	horizontally, telescoping
<b>Clamping Pad Rotation</b>	90° (1.57 rad)
<b>Body Rotation</b>	340° (5.96 rad)
<b>TireHand Tilt</b> provided by crane extension boom	+79° to -21° (+1.38 to -.37 rad)
<b>Clamping Load Holding Valves</b>	pilot-operated, check valves on clamping side
<b>Hydraulic Controls</b>	included with crane controls
<b>Rotation System</b>	spur gear drive
<b>TireHand Weight</b>	3,400 lbs. (1,542 kg)

## Capacity Chart

Maximum Capacity - 8,000 lbs. (3,629 kg)

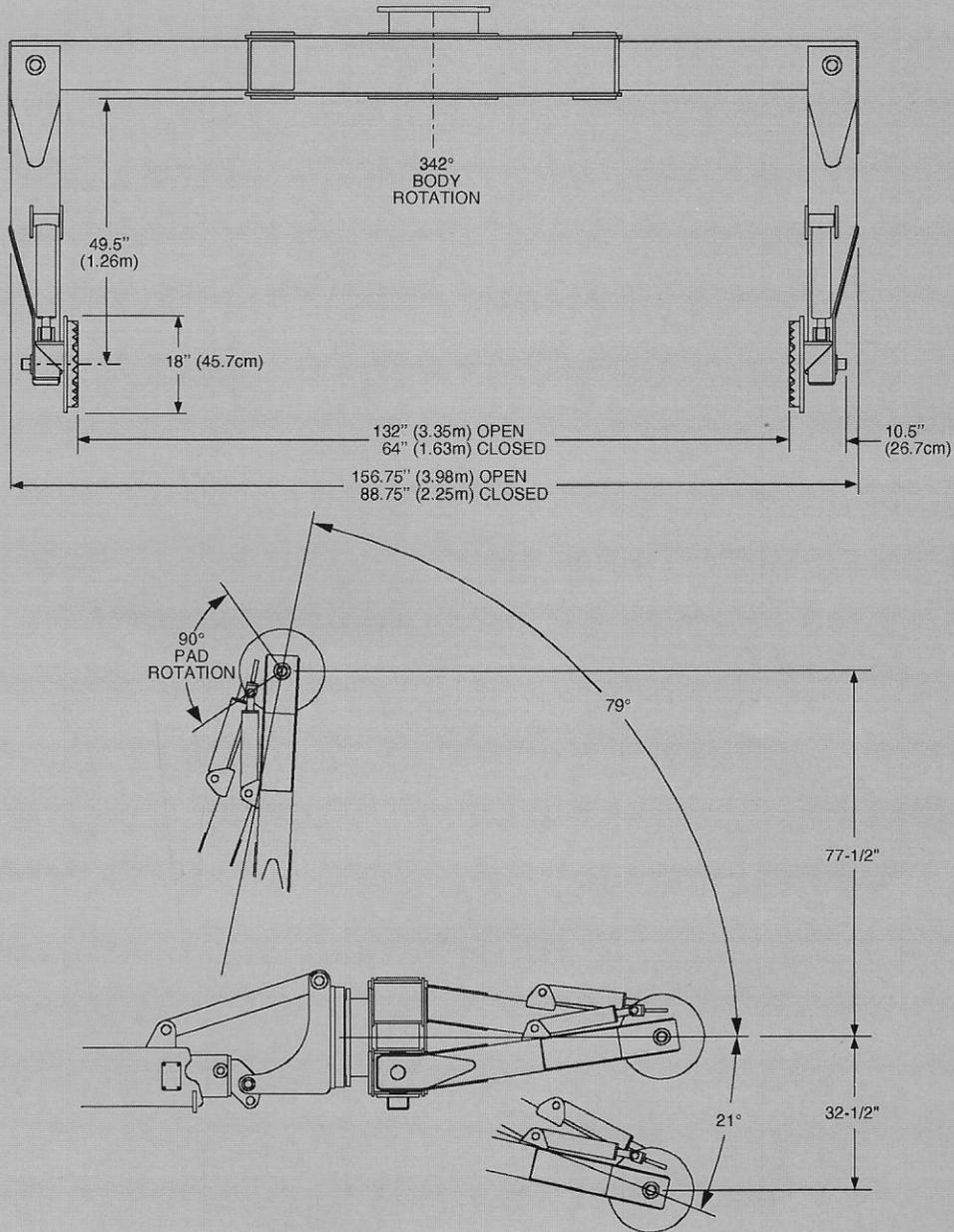
TIRE APPLICATION CHART					
NARROW BASE TIRE SIZE			WIDE BASE TIRE SIZE		
TIRE SIZE	MAX TIRE DIA (in)	TIRE & RIM WEIGHT (lbs)	TIRE SIZE	MAX TIRE DIA (in)	TIRE WEIGHT ONLY (lbs)
18.00x25	66	1100	23.5x25	66	1200
18.00x33	74	1300	26.5x25	71	1600
21.00x35	82	1800	29.5x29	75	2500
24.00x35	87	2500	33.25x29	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
<b>Wide base tire weights DO NOT include rim.</b>  <b>Any tires which are shaded are NOT within Tirehand capacity.</b>			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
71393825			67.5/65x51	138	13000

### Note

Where applicable, specifications are in accordance with SAE standards.

# Optional TireHand #14

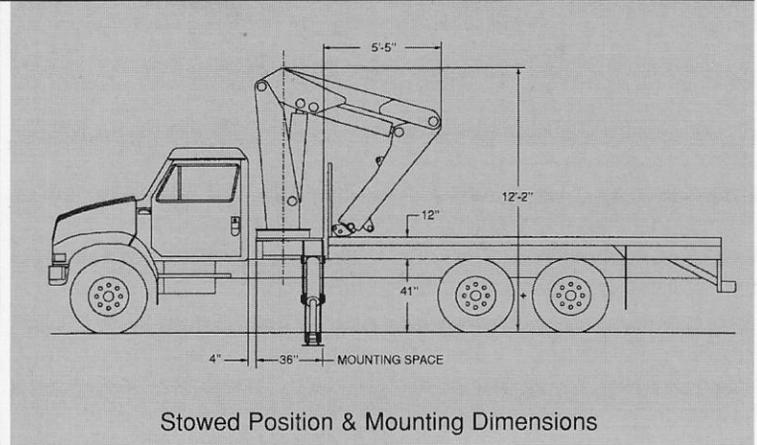
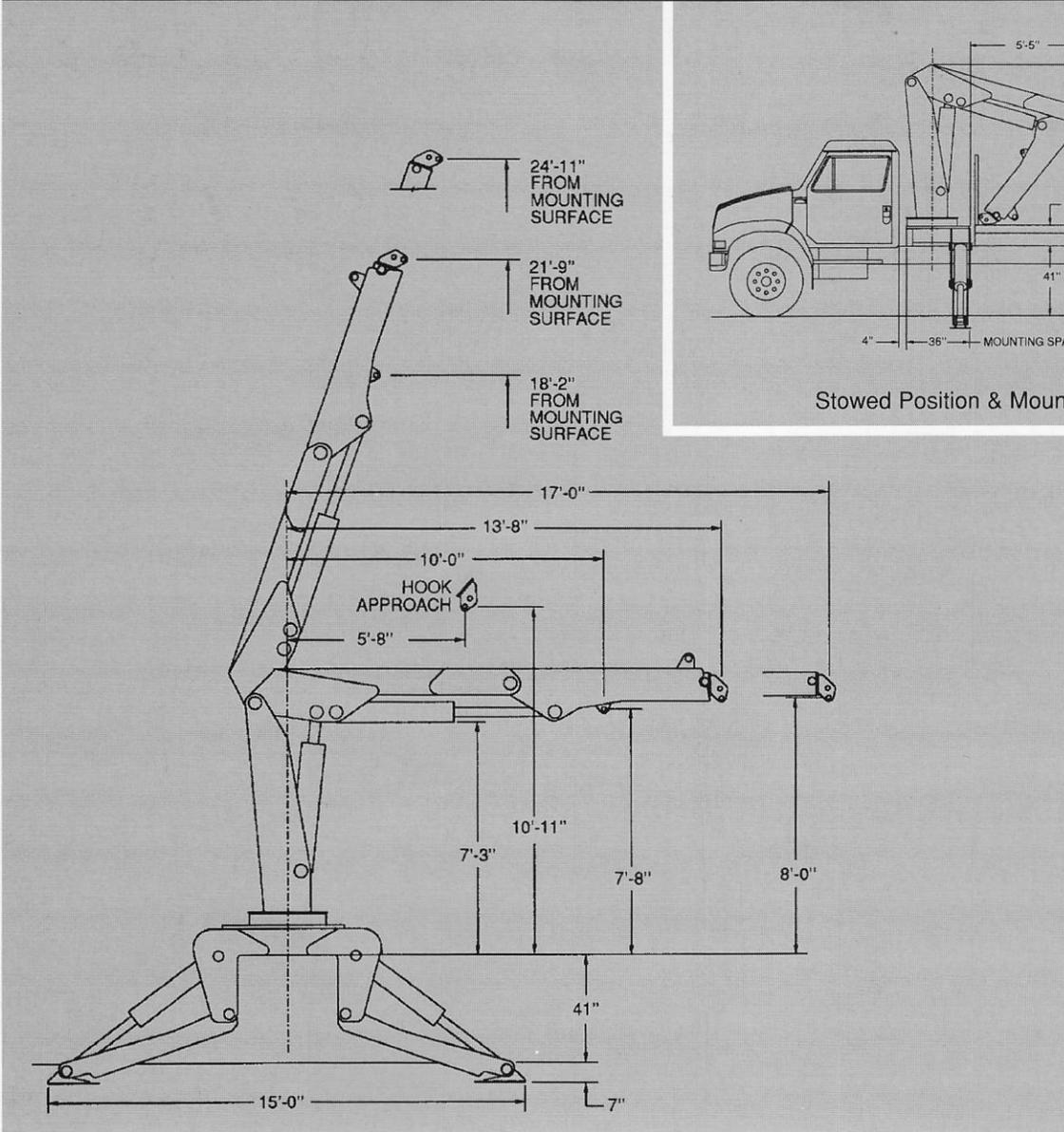
## Geometric Configurations





# 20017 Articulating Crane

## Geometric Configurations



### Iowa Mold Tooling Co., Inc.

500 Highway 18 West  
 P.O. Box 189  
 Garner, Iowa 50438-0189  
 (515) 923-3711  
 Fax: (515) 923-2424  
 Web Site: www.imt.com

**(800) 247-5958**

An Internet Company

### 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. Ninety (90) days: labor on IMT workmanship from the date of shipment to the end user.
2. One (1) year: original IMT parts from the date of shipment to the end user.

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