

Telescopic Crane 2020

Technical Specifications

Material Handling Systems



Specifications	1-Hydraulic	1-Hydraulic/1-Manual
Crane Rating*	20,000 ft-lb (2.78 tm)	20,000 ft-lb (2.78 tm)
Horizontal Reach (from center of rotation)	15' (4.57 m)	20' (6.09 m)
Hydraulic Extension	60" (152.4 cm)	60" (152.4 cm)
Manual Extension	None	60" (152.4 cm)
Lifting Height (from base of crane)	16' 2" (4.9 m)	20' 11" (6.4 m)
Crane Weight	830 lb (376.5 kg)	920 lb (417.3 kg)
Crane Storage Height	28" (71.1 cm)	28" (71.1 cm)
Mounting Space Required (crane base)	17" x 17-3/4" (43.1 cm x 45 cm)	17" x 17-3/4" (43.1 cm x 45 cm)
Optimum Pump Capacity PTO-driven Two-stage, electric** (low speed/high speed)	5 gpm (18.9 L/min) 1.5/3.5 gpm (5.7/13.2 L/min)	5 gpm (18.9 L/min) 1.5/3.5 gpm (5.7/13.2 L/min)
System Operating Pressure	2300 psi (158.5 bar)	2300 psi (158.5 bar)
Center of Gravity Horizontal from centerline of rotation Vertical from bottom of crane base	29" (73.6 cm) 16" (40.6 cm)	31" (78.7 cm) 17" (43.1 cm)
Tie-Down Bolt Pattern	14-3/4" x 14-3/4" (37.5 cm x 37.5 cm)	14-3/4" x 14-3/4" (37.5 cm x 37.5 cm)
Rotational Torque	3000 ft-lb (0.42 tm)	3000 ft-lb (0.42 tm)

Minimum Chassis Specifications

Chassis Style	Conventional cab
Front Axle Rating (GAWR)	4000 lb (1814 kg)
Rear Axle Rating (GAWR)	7500 lb (3402 kg)
Wheelbase	137" – 161" (348 cm – 409 cm)
Cab-to-Axle	60" – 84" (152 cm – 213 cm)
Resistance to Bending Moment (RBM) Frame section modulus Frame yield strength	288,000 in-lb (3319 kg-m) 8 cu in (131 cm³) 36,000 psi (2482 bar)

*Crane rating (ft-lb) is the rated load (lb) x the respective distance (ft) from centerline of rotation with all extensions retracted and lower boom in horizontal position, per ANSI B30.5.

**The two-stage pump delivers 1.5 gpm (5.7 L/min) at low speed and 3.5 gpm (13.2 L/min) at high speed. Normally under load, the pump operates as a single-stage pump. The pump operates as a two-stage pump to save time during setup.



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Performance Characteristics

	PTO	Electric
Rotation 400° (7 rad)	37 seconds	54 seconds
Lower Boom Elevation 0° to +72° (0 to +1.3 rad)	10 seconds	15 seconds
Extension Cylinder 60" (152.4 cm)	11 seconds	15 seconds
Winch		
One-part line	25 fpm (7.6 m/min)	12 fpm (3.7 m/min)
Two-part line	12 fpm (3.7 m/min)	6 fpm (1.8 m/min)

Power Source

PTO-Driven

Integral-mounted hydraulic pump and PTO application. Other standard power sources may be used. Minimum power required is 8 hp based on 5 gpm (18.9 L/min) at 2300 psi (158.5 bar).

Electric Motor

Power is supplied to the electric motor by a solenoid connected to the 12VDC truck battery. The chassis must be equipped with a 4000-watt Delco Freedom battery (or equivalent) connected in parallel to the chassis' standard heavy-duty battery. The chassis must be equipped with a heavy-duty alternator (63-amp for GM vehicles and 60-amp for Ford vehicles). For best results, a 130-amp alternator is desirable.

Cylinder Holding Valves

The holding sides of all cylinders are equipped with integral-mounted counterbalance valves or load-holding check valves to prevent sudden cylinder collapse in case of hose failure.

Rotation System

Turntable bearing with external worm gear powered with a high-torque hydraulic motor through a self-locking worm.

Hydraulic System (PTO-driven)

Open-centered, full-pressure system that requires 5 gpm (18.9 L/min) optimum oil flow at 2300 psi (158.5 bar). Four-spool, stack-type, electric, remote control valve with 25' (7.6 m) control cable. System includes separate oil reservoir, suction-line strainer, control valve, and return-line filter.

Electro-Hydraulic System — Two-Speed/ Auto-Shift

Open-centered, full-pressure system that features a two-stage hydraulic pump, with the first stage delivering 1.5 gpm (5.7 L/min) and the second stage delivering 3.5 gpm (13.2 L/min) at 2300 psi (158.5 bar). The control valve bank is a four-spool, stack-type, 12VDC valve system. The system includes a 5-gal hydraulic reservoir, a 10-micron spin-on-type return-line filter, a hydraulic pump driven by a totally enclosed fan-cooled 12VDC motor, and all necessary hoses and fittings.

Excessive Load Limit System (ELLS)

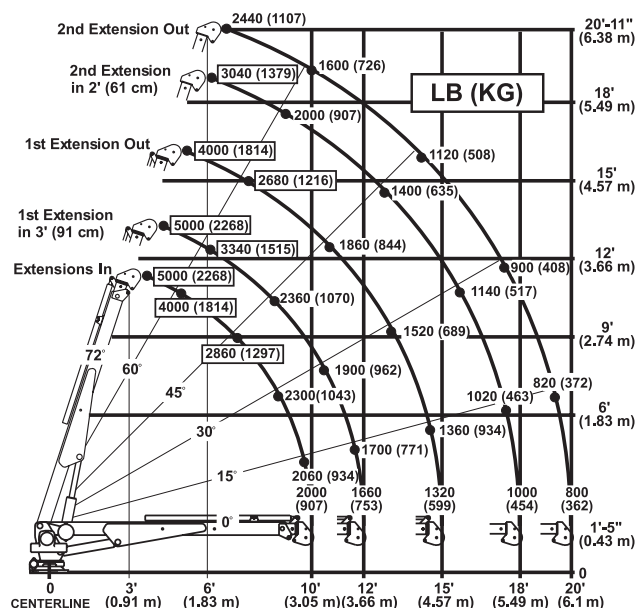
The ELLS limits overloading of the crane. Dual pressure switches mounted on the lift cylinder sense various overload conditions. When in an overload situation, the winch-up, extension-out, and boom-down functions are stopped. To relieve the situation, raise the boom, retract the extensions, or lower the winch.

Winch

The winch is powered by a hydraulic motor through a 38:1 ratio worm gear with a mechanical brake. The winch is equipped with 65' (19.81 m) of 5/16" (7.9 mm), 6x25 FV PRF RRL IWRC XIPS wire rope. An anti-two-block device is included to prevent the lower block or hook assembly from coming in contact with the boom sheave assembly. The winch assembly complies to ANSI B30.5 standards.

Notes:

1. GAWR (Gross Axle Weight Rating) is dependent on all components of the vehicle (axles, tires, wheels, springs, brakes, steering, frame strength, etc.) meeting the manufacturer's recommendations. GAWR is critical information to provide 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 tested by the final assembler to ensure stability per ANSI B30.22.



- Maximum one-part line capacity is 2500 lb (1134 kg). For greater loads, use two-part line (boxes denote two-part line required). Capacity is 5000 lb (2268 kg).
- Weights of load-handling devices are part of the load lifted and must be deducted from the capacity.

Iowa Mold Tooling Co., Inc.

500 Highway 18 West • P.O. Box 189 • Garner, Iowa 50438-0189
800-247-5958 • 641-923-3711 • Fax: 641-923-6063 • www.imt.com

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