# RT635

Rough-Terrain Hydraulic Crane/Capacity 35 Tons (30 MT)

## SUPERSTRUCTURE SPECIFICATIONS

**ANTI-TWO BLOCK SYSTEMS ("HAP" & *"HLAP") -** Basic "HAP" is an audio-visual (light/buzzer) warning system to alert operator to an impending two-block condition, that further incorporates electronic in-cab display of boom angle with high and low angle presets. Hookblock or headache ball coming in contact with weight suspended from boom nose switch activates the audio-visual warning system on the display panel located within easy view of operator. *HLAP is the same as HAP, but further incorporates selective electronic in-cab display of boom length in feet and meters. An additional option available to all anti-two block systems is Grove control lever lockout of: hoist up, telescope out, and boom down crane functions.

***LOAD MOMENT AND ANTI-TWO BLOCK SYSTEM (KRUEGER "LMI") -** A load moment indicating and anti-two block system with audio-visual warning and control lever lockout of: hoist up, telescope out and boom down crane functions. Dash-mounted console displays relative load moment and also provides operator with selective electronic display of boom length and load radius in feet and meters and boom angle in degrees. Angle indicator has high and low "presets" with audio-visual warning system.

**CAB -** Acoustically treated, one-man turntable-mounted, fully enclosed with tinted safety glass throughout, hinged skylight, sliding left side door, deluxe fabric/vinyl high back seat with folding armrests, sliding right side window, outrigger level indicator, windshield wiper and washer, horn, door and window locks, domelight, dashlight, 2-3/4 lb. (1.25 kg) dry type fire extinguisher and worklight. Optional are: *diesel or propane heaters with hot air defroster, manual skylight wiper, spotlight, air conditioning.

**CONTROLS -** Dash-mounted, hand-operated control levers for swing, boom telescope, rear steer, boom elevation, *auxiliary hoist and main hoist. Foot-operated controls consist of swing brake, boom elevation, service brakes and engine throttle. Right hand console includes transmission gear selection, high-low range selection, engine hand throttle, outrigger controls, emergency parking brake, *heater controls, console panel light, engine start/stop.

**INSTRUMENTATION -** Engine oil pressure and water temperature, voltmeter, tachometer, transmission/converter oil temperature, A/V warning for low air system pressure, and electric fuel gauge. *Optional are: emergency steer indicator, rear wheel alignment indicator, and engine low oil pressure and high water temperature A/V warning.

**MAIN BOOM -** 32 ft. to 106 ft. (9.8m to 32.2m) total length; 3 section trapezoidal† full power positive mechanically synchronized main boom consisting of base section and 2 full power sections to 80 ft. (24.3m) plus a 26 ft. (7.9m) "swingaway" lattice boom extension (2° offset) to 106 ft. (32.3m). Boom extension is accomplished by a 7 in. (178mm) bore, double-acting telescope cylinder with integral holding valve which extends the mid section. Fly section is then mechanically extended by a 1-1/8 in. (29mm) diameter cable attached to the mid section which ensures positive synchronization of all boom lengths.

**BOOM NOSE -** Five lower sheaves, 13-3/4 in. (349mm) tread diameter mounted on roller bearings. Two upper floating idler sheaves, 13-3/4 in. (349mm) tread diameter, mounted on bronze bushing.

***AUXILIARY BOOM NOSE -** Removable sheave, 13-3/4 in. (349mm) tread diameter, mounted to main boom nose for single line work.

**LATTICE BOOM EXTENSION -** Standard 26 ft. (7.9m) lattice "swingaway" boom extension stows alongside base boom section. Boom extension swings into position; attaches and is held to main boom nose with 4 pins. Swingaway is offset 2° from main boom nose.

***JIB -** 22 ft. (6.7m) "A"-frame section attaches to sheave shaft of the 26 ft. (7.9m) lattice "swingaway" boom extension. Jib stows beneath extension alongside base boom section for travel. Jib can be offset 5°, 15° and 30°.

**BOOM ELEVATION -** Single double-acting 10 in. (254mm) bore cylinder with integral holding valves provide elevation from -4° to 75°. Electronic, in-cab boom angle indicator with high and low angle presets (Krueger "HAP") is standard.

**SWING -** Planetary drive, 360° continuous rotation. Equipped with Grove "glide swing" with foot-activated multiple disc swing brake for precision stopping, hydraulic swing parking brake and two position plunger type houselock controlled from inside operator's cab. Externally driven swing circle bearing is bolted to superstructure and carrier. Maximum swing speed is 2.6 rpm. (*Automatic type swing brake and 360° positive swing lock are available.)

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# SUPERSTRUCTURE SPECIFICATIONS (continued)

**COUNTERWEIGHT** - Removable, bolted to turntable mast, stationary.

**MISCELLANEOUS STANDARD EQUIPMENT** - 2-3/4 lb. (1.3 kg) dry type fire extinguisher, console and domelight, circulating air fan, electric horn, seat belt, tachometer, centrally located hydraulic test panel.

***MISCELLANEOUS OPTIONAL EQUIPMENT** - Cab spotlight, 360° beacon light, hoist drum cable follower, air conditioning.

*†Patented Grove feature or patent pending.*
**Denotes optional equipment.*

# MAIN HOIST SPECIFICATIONS

**DESCRIPTION:** Power up and down, equal speed, planetary reduction with integral automatic brake and electronic hoist drum rotation indicator.

| HOIST DATA | MAIN HOIST GROVE MODEL HO15H-16B | *MAIN HOIST GROVE MODEL HO25-16A |
|---|---|---|
| **DRUM DIMENSIONS** | 12 in. dia. (305mm)<br>16 in. length (406mm)<br>17.5 in. flange dia. (445mm) | 16 in. dia. (406mm)<br>16 in. length (406mm)<br>24 in flange dia. (610mm) |
| **PERFORMANCE:** | | |
| **MAX. SINGLE LINE SPEED** | | |
| **BARE DRUM** | 287 FPM (87.5m/min) | 283 FPM (86.3 m/min) |
| **MEAN DRUM** | 327 FPM (99.7m/min) | 333 FPM (101.5 m/min) |
| **FULL DRUM** | 379 FPM (115.5 m/min) | 390 FPM (118.9 m/min) |
| **MAX. SINGLE LINE PULL** | | |
| **BARE DRUM** | 9,165 lbs. (4157 kg) | 9,250 lbs. (4196 kg) |
| **MEAN DRUM** | 8,025 lbs. (3640 kg) | 8,180 lbs. (3710 kg) |
| **FULL DRUM** | 6,930 lbs. (3143 kg) | 6,975 lbs (3164 kg) |
| **DRUM ROPE CAPACITY** | | |
| **+MAX. STORAGE** | 480 ft. of 5/8 in dia. rope (146m of 16mm) | 890 ft of 5/8 in. dia. rope (271.3m of 16mm) |
| **++MAX. USABLE** | 365 ft. of 5/8 in. dia. rope (111m of 16mm) | 740 ft. of 5/8 in. dia. rope (225.6m of 16mm) |
| **PERMISSIBLE SINGLE LINE ROPE PULL W/ 3.5:1 SAFETY FACTOR** | 5/8 in. (16mm) 6x37 class 7,926 lbs. (3595 kg)<br>5/8 in. (16mm) 19x7 class 7,926 lbs. (3595 kg) | 5/8 in. (16mm) 6x37 class 8,418 lbs. (3818 kg)<br>5/8 in. (16mm) 19x7 class 8,418 lbs. (3818 kg) |

# *AUXILIARY HOIST SPECIFICATIONS

**DESCRIPTION:** Power up and down, equal speed, planetary reduction with integral automatic brake and electronic hoist drum rotation indicator.

| HOIST DATA | *AUXILIARY HOIST GROVE MODEL HO15S-16B | | *AUXILIARY HOIST (CONTROLLED FREE FALL) GEARMATIC MODEL 25 |
|---|---|---|---|
| **DRUM DIMENSIONS** | 12 in. dia. (305mm)<br>16 in. length (406mm)<br>17.5 in. flange dia. (445mm) | | 9 in. dia. (229mm)<br>13 in. length (330mm)<br>17.5 in. flange dia. (445mm) |
| **PERFORMANCE:** | | | |
| **MAX. SINGLE LINE SPEED** | 5/8 in. (16mm) dia. rope | 1/2 in. (13mm) dia. rope | |
| **BARE DRUM** | 154 FPM (46.9m/min) | 154 FPM (46.9 m/min) | 155 FPM (47.2 m/min) |
| **MEAN DRUM** | 177 FPM (53.9m/min) | 183 FPM (55.8 m/min) | 220 FPM (67.1 m/min) |
| **FULL DRUM** | 204 FPM (62.2 m/min) | 206 FPM (62.8 m/min) | 290 FPM (88.4 m/min) |
| **MAX. SINGLE LINE PULL** | | | |
| **BARE DRUM** | 9,165 lbs. (4157 kg) | 9,165 lbs (4157 kg) | 9,145 lbs. (4148 kg) |
| **MEAN DRUM** | 8,025 lbs. (3640 kg) | 7,730 lbs. (3506 kg) | 7,105 lbs. (3223 kg) |
| **FULL DRUM** | 6,930 lbs. (3143 kg) | 6,890 lbs (3125 kg) | 5,065 lbs. (2297 kg) |
| **DRUM ROPE CAPACITY** | | | |
| **+MAX. STORAGE** | 480 ft. of 5/8 in dia. rope (146.3m of 16mm) | 720 ft of 1/2 in. dia. rope (219.5m of 13mm) | 750 ft of 1/2 in. dia. rope (228.6m of 13mm) |
| **++MAX. USABLE** | 365 ft. of 5/8 in. dia. rope (111.2m of 16mm) | 585 ft. of 1/2 in. dia. rope (178.3m of 13mm) | 640 ft. of 1/2 in. dia rope (198.1m of 13mm) |
| **PERMISSIBLE SINGLE LINE ROPE PULL W/ 3.5:1 SAFETY FACTOR** | 5/8 in (16mm) 6x37 class 7,926 lbs. (3595 kg)<br>5/8 in. (16mm) 19x7 class 7,926 lbs. (3595 kg) | 1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg)<br>1/2 in (13mm) 19x7 class 6,150 lbs. (2790 kg) | 1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg)<br>1/2 in. (13mm) 19x7 class 6,150 lbs. (2790 kg) |

**NOTES:** *Denotes Optional Equipment.
+5th layer of rope not recommended for hoisting operations, (6th layer for model HO15S-16B with 1/2 in. (13mm) rope; 7th layer for model HO25-16 hoist; 9th layer for Gearmatic model 25).
++With wire rope minimum 1/2 in. (13mm) below top of drum flange.
19x7 is a non-spin rope intended for single line operation and is not recommended for multiple part reeving.

Courtesy of Crane.Market

# CHASSIS SPECIFICATIONS

**FRAME** - All-welded box-type construction reinforced to ensure a rigid turntable mounting. Front and rear combination lifting, towing and tie-down lugs are integral with main frame.

**OUTRIGGERS** - Front and rear hydraulic double-box beam and jack type. *Optional are the exclusive Grove †spinlocks which permit the outrigger vertical jacks to be positively locked in any position throughout their stroke.

**TRANSMISSION AND TORQUE CONVERTER** - Remote mounted powershift with rear axle disconnect for (4x2) high range drive. Converter is engine mounted with PTO drive for hydraulic pumps. Transmission has 6 forward and 6 reverse speed ranges; 3 speeds high range (4x2 drive), 3 speeds low range (4x4 drive).

**AXLES** - Front: Planetary drive/steer type mounted rigid to frame. Rear: Planetary drive/steer type pivot mounted to permit 0-10 in. (0-254mm) of oscillation.

**OSCILLATION LOCKOUTS** - Automatic full hydraulic on rear axle permits oscillation only with boom centered over-the-front. Automatic rear axle lockout assures a rigid platform when lifting on-rubber over the side (*manual electric override control for rear axle oscillation lockout is optional).

**SERVICE BRAKES** - Full air dual circuit on all 4 wheels. Size: 20-1/4 in. x 4 in. (514mm x 102mm) with 24 sq. in. (155 cm²) chambers. Total lining area 486 sq. in. (3135 cm²). Standard air dryer minimizes moisture accumulation in the system.

**PARKING BRAKE** - Spring-applied, air-released, cab-controlled acting on all four wheels.

**STEERING** - Front: Power assist hydraulic, controlled by steering wheel.
Rear: Full hydraulic, tiller bar control. Independent front and rear steer control allows operator to choose mode of travel for optimum maneuverability. *(Rear wheel steer indicator optional).

**TIRES** - 23.5x25 - (24PR) Earthmover type, tubeless. *Optional are 18:00x25 - (24PR) and 16:00x25 - (28PR) Earthmover type, tubeless, and 23.5x25 Michelin 2 star radial.

**WHEELS** - All steel, disc type.

***TOW WINCH** - Front mounted, cab-controlled by rear steer lever via selector valve, (less rope and hook). Single line pull: 9,070 to 13,500 lb. (4,114 to 6,124 kg); single line speed: 50 to 75 fpm (15-23 m/min.); maximum drum rope storage capacity: 340 ft. (104m) of 5/8" (16mm) diameter.

**MISCELLANEOUS STANDARD EQUIPMENT** - Air cleaner service indicator, complete light package, full width fenders, front storage well, hourmeter, dual rear view mirrors, ether injection cold start aid (less canister).

***MISCELLANEOUS OPTIONAL EQUIPMENT** - Electronic back-up alarm, pintle hooks, tire inflation kit, electric emergency auxiliary steering system.

## HYDRAULIC SYSTEM

**PUMPS** - 3 section, gear-type - combined capacity 112.5 GPM (426 LPM). *Optional is a pump disconnect with engine jogging switch. Separate power steering pump 18.8 GPM (71 LPM).

**RESERVOIR** - 137 gallon (518 liter) with cleanout access, exterior sight level gauge and breather cap. Strap mounted to frame.

**FILTER** - Return line replaceable cartridge 25 micron with bypass protection and filter bypass indicator.

**CONTROL VALVES** - Four-way double-acting with integral relief valves. Three individual valve banks permit simultaneous independent control of multiple crane functions. Maximum operating pressure 2,500 PSI (175.8 kg/cm²).

**OIL COOLER** - Full flow, fin and tube, oil to air.

**POWER DISTRIBUTION** - [Main hoist - 39.5 GPM (150 LPM) at 2,250 PSI (158.1 kg/cm²)]. [Main hoist boost, *auxiliary hoist, lift and telescope - 46.5 GPM (176 LPM) at 2,500 PSI (175.8 kg/cm²)]. [Rear steer, swing, *tow winch and outriggers - 26.5 GPM (100 LPM) at 2,250 PSI (158.1 kg/cm²)].

*†Patented Grove feature or patent pending.*
**Denotes optional equipment.*

Courtesy of Crane.Market

# ENGINE SPECIFICATIONS

| MAKE & MODEL | Detroit Diesel 8.2L | *Cummins Diesel V504C | *Caterpillar 3208 Diesel |
|---|---|---|---|
| TYPE | 8 cyl. OHV, diesel | 8 cyl. OHV, diesel | 8 cyl. OHV, diesel |
| COMBUSTION | 4 cycle, naturally aspirated | 4 cycle, naturally aspirated | 4 cycle, naturally aspirated |
| BORE & STROKE | 4.25"x4.41" (108x112mm) | 4.625"x3.75" (117x95mm) | 4.5"x5.0" (119.3x127mm) |
| DISPLACEMENT | 500 cu. in. (8,194 $cm^3$) | 504 cu. in. (8,261 $cm^3$) | 636 cu. in. (10,424 $cm^3$) |
| HORSEPOWER (GROSS) | 160 @ 2800 RPM (119 kw) | 177 @ 2500 RPM (132 kw) | 160 @ 2500 RPM (119 kw) |
| TORQUE (GROSS) | 324 ft. lb. @ 1200 RPM (41 kg/m) | 339 ft. lb. @ 1900 RPM (46.8 kg/m) | 330 ft. lb. @ 1300 RPM (45.5 kg/m) |
| COOLING SYSTEM | Liquid | Liquid | Liquid |
| ALTERNATOR | 90 AMP, 12 volt | 90 AMP, 12 volt | 90 AMP, 12 volt |
| BATTERY | (2) 625 CCA @ 0° F | (4) 475 CCA @ 0° F | (4) 475 CCA @ 0° F |
| AIR COMPRESSOR | 12.5 CFM (354 liter/min) | 13.2 CFM (374 liter/min) | 12 CFM (340 liter/min) |
| AIR CLEANER | 2 stage, dry type | 2 stage, dry type | 2 stage, dry type |
| ELECTRICAL/ STARTING SYSTEM | 12/24 volt, negative ground | 12/24 volt, negative ground | 12/24 volt, negative ground |
| FUEL TANK | (1) 60 gal. (227 liter) | (1) 60 gal. (227 liter) | (1) 60 gal. (227 liter) |

CCA = Cold Cranking Amperage per battery.
*Denotes optional equipment.

# DIMENSIONS

| | A | B | C | D | E | F | G | Main Hoist | H |
|---|---|---|---|---|---|---|---|---|---|
| 16:00x25 (28PR) | 77-1/2" (1968) | 96" (2438) | 16-3/4" (427) | 15-1/4" (390) | 7-1/2" (190) | 27" (685) | 11'7-1/2" (3543) | 15H-16B | 108" (2743) |
| 18:00x25 (24PR) | 77-1/2" (1968) | 107" (2717) | 18" (457) | 16-1/2" (419) | 8-1/2" (214) | 28-1/4" (716) | 11'8-3/4" (3576) | 25-16A | 111-1/2" (2832) |
| 23.5x25 (24PR) | 81-3/8" (2066) | 107" (2717) | 18-1/2" (473) | 17-1/4" (436) | 7-3/4" (198) | 28-3/4" (731) | 11'9-3/8" (3591) | | |

**NOTE:** Dimensions shown in parentheses ( ) are metric.

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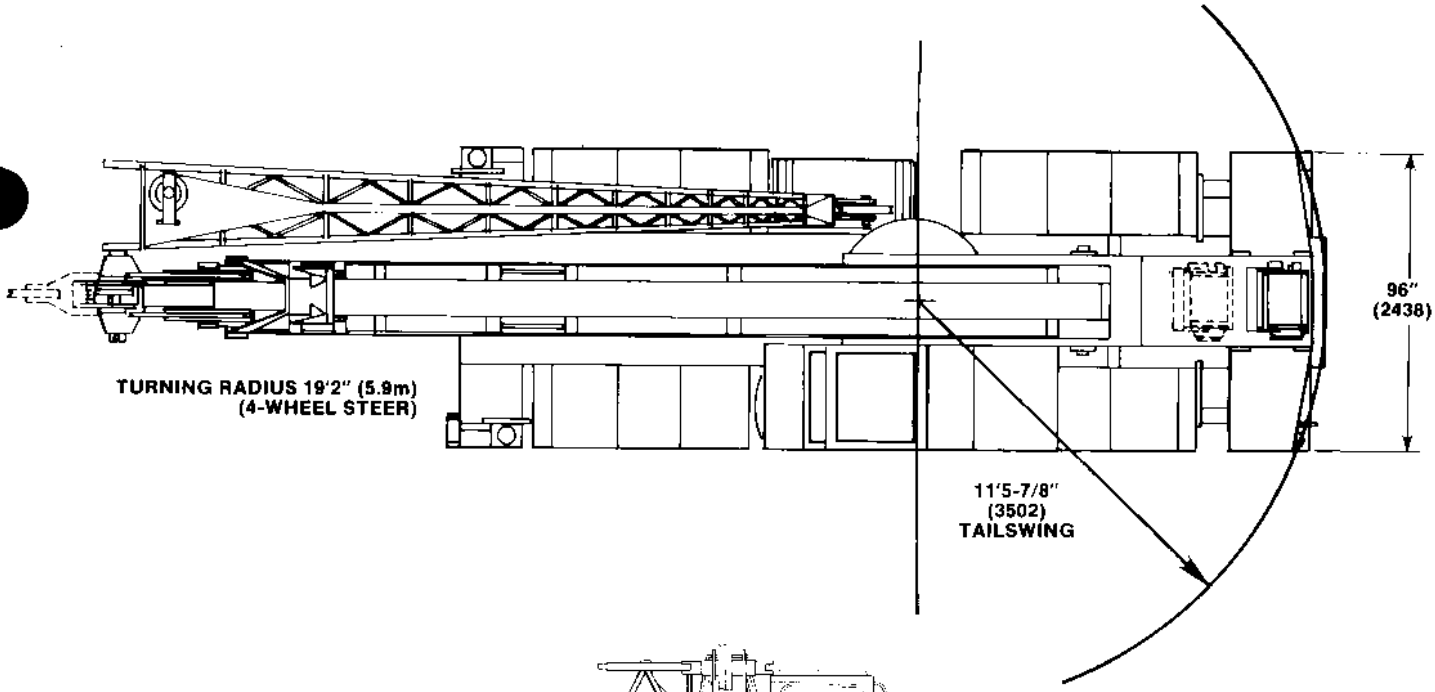


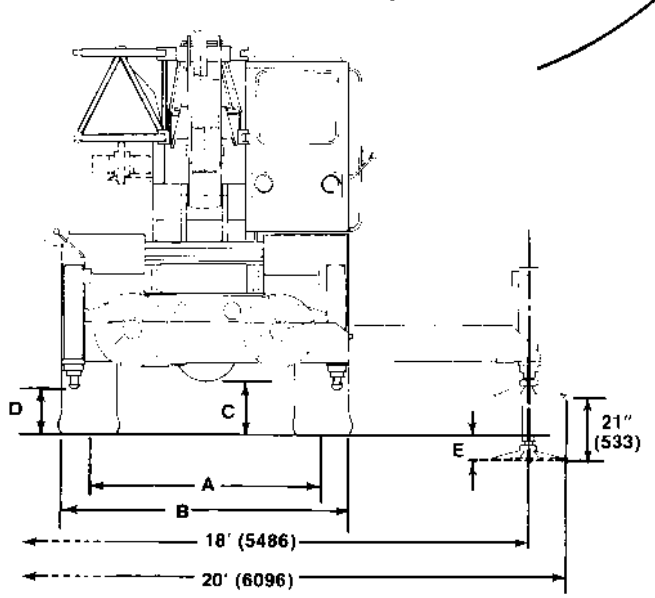


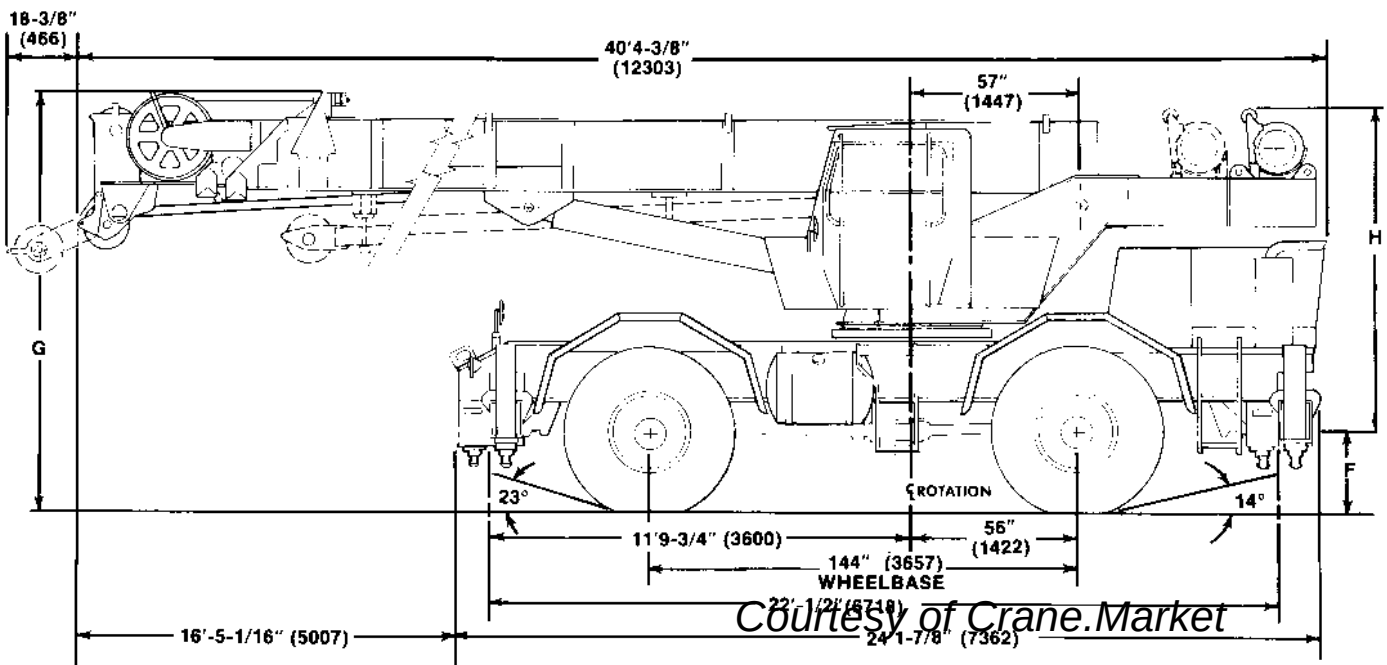


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# SPEED AND GRADEABILITY PERFORMANCE

| | SPEED @ MAX. GOVERNED RPM | | | | MAX. TRACTIVE EFFORT AND GRADEABILITY @ STALL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GEAR | LOW RANGE (4x4) | | HIGH RANGE (4x2) | | LOW RANGE (4x4) | | | HIGH RANGE (4x2) | | |
| SHIFT | MPH | KM/HR | MPH | KM/HR | LBS | KG | % GRADE | LBS | KG | % GRADE |
| 1st | 2.8 | 4.2 | 6.8 | 10.3 | 42,312 | 18,830 | 93.7 | 17,017 | 7,573 | 27.3 |
| 2nd | 6.0 | 9.0 | 14.0 | 21.2 | 19,496 | 8,676 | 31.9 | 7,815 | 3,478 | 11.1 |
| 3rd | 13.1 | 19.8 | 27.6 | 39.3 | 8,404 | 3,740 | 12.1 | 3,361 | 1,496 | 3.6 |

**NOTE:** Performance data based on 59,000 lb. (26,762 kg) GVW and standard SAE engine rating conditions for a unit with standard tires, transmission, engine, and axles. Performance data may vary plus or minus 10% due to variations in engine perfomance and vehicle weights. Machines should be operated within the limits of crank case design (30°-CAT., 20°-GM, and 40°-CUMMINS).

# APPROXIMATE MACHINE WEIGHTS

| CONFIGURATION | GVW | FRONT | REAR |
|---|---|---|---|
| **Basic Std. Machine w/ 26′ Swingaway** | 57,467 lbs. (26,067 kg) | 29,508 lbs. (13,385 kg) | 27,959 lbs. (12,682 kg) |
| **Basic Std. Machine w/ 26′ Swingaway and 22′ A-Frame Jib** | 58,467 lbs. (26,521 kg) | 30,880 lbs. (14,007 kg) | 27,587 lbs. (12,514 kg) |

**NOTE:** With boom lowered in travel position and with standard tires, engine, axles, counterweight, etc. Weights include maximum capacity hookblock suspended from boom and properly secured for travel. Weights can vary ± 2% due to manufacturing tolerances, etc. Figures within parentheses ( ) are metric.


WORLD LEADER IN HYDRAULIC CRANES

**GROVE MANUFACTURING COMPANY**

Division of Kidde, Inc.

**KIDDE**

Shady Grove, Pennsylvania 17256-0021



Constant improvement and engineering progress makes it necessary that we reserve the right to make specification, equipment, and price changes without notice. Illustrations shown may include optional equipment and accessories and may not include all standard equipment.



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