

# RT625

## SPECIFICATIONS



**GROVE MANUFACTURING COMPANY**

Division of Walter Kidde & Company, Inc.

**KIDDE**

SHADY GROVE, PA 17256



## SUPERSTRUCTURE SPECIFICATIONS

**BOOM** – 32 ft. – 80 ft. (9.8m – 24.4m); 3 section Trapezoidal full power positive synchronization. Cable synchronization system is a positive mechanical method of equally extending individual boom sections at all boom lengths. This system incorporates a 1½ in. (29mm) diameter extension cable with 24¾ in. (629mm) tread diameter boom extension sheaves and a separate 5/8 in. (16mm) retraction cable. Power is supplied by one 7 in. (178mm) diameter bore mid telescoping cylinder with integral holding valve. Boom telescope sections are supported on graphite impregnated nylatron wear pads. Side adjustable wear pads prevent metal to metal contact of inner boom sections and permit ease of boom side alignment.

\***LATTICE BOOM EXTENSION** – 26 ft. (7.9m) lattice “swingaway” (2° offset) stows alongside base boom section. Boom extension swings into position; attached and held to main boom nose with 4 corner pins. Single metallic sheave, 13¾ in. (349mm) tread diameter, with removable pin-type rope guard and rope dead end.

\***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, or can be detached from “swingaway” and held firmly in place on base section when extension is used independently. Jib can be offset from a minimum of 5° to a maximum of 30° and includes jib back-stops, single rope self-equalizing suspension and removable pin-type rope guard.

**BOOM NOSE** – High strength steel weld-on construction. Four metallic sheaves, 13¾ in. (349mm) tread diameter, mounted on heavy-duty tapered roller bearings.

(Note: Three sheaves provided with optional Grove Model 25H-16 main hoist.) Removable pin-type rope guard permits easy reeving. Rope dead ends on either side of boom nose.

\***AUXILIARY BOOM NOSE** – Single metallic sheave, 13¾ in. (349mm) tread diameter, mounted to main boom nose for single part line work. Equipped with a removable pin-type guard.

**BOOM ELEVATION** – Single 10 in. (254mm) diameter bore, double-acting, hydraulic cylinder with integral holding valve. Elevation –4° to 75°; combination controls provided for hand or foot operation.

**SWING** – Grove planetary speed reducer powered by a hydraulic high torque, low RPM orbit motor providing smooth/precise 360° continuous rotation. Equipped with Grove “glide swing” with foot activated multiple disc swing brake for precision stopping. Electric/hydraulic swing parking brake and hand-operated 360° positive swing lock controlled from operator’s cab. Externally driven sealed ball bearing. Precision machined bearing mounting surface prevents distortion of swing circle bearing. Maximum speed 2.6 RPM (\*non-free swing available.)

**CAB** – Turntable-mounted. Fully-enclosed, all-steel with acoustical treatment. Full vision with tinted tempered safety glass (except removable front windshield, with storage provisions, and hinged skylight which are tinted laminated safety glass), sliding left side door and sliding right side window provided for ventilation. Dash mounted control levers, combination hand and foot controls for boom elevation and engine throttle, outrigger sight leveling bubble, electronic boom-angle indicator with high and low angle pre-sets and A/V warning, electric windshield wiper, electric swing horn, door and window locks, domelight, dashlight, 3¾ lbs. (1.7kg) dry type fire extinguisher, cab mounted worklights. (\*20,000 BTU/hr. diesel fuel heater, defroster fan and manual skylight wiper-optional.)

**CONTROLS** – Left of steering wheel are dash-mounted hand-operated control levers for swing, boom-telescope, and rear axle steering; at right are control levers for boom elevation, \*auxiliary hoist (optional) and main hoist. Foot-operated controls include dynamic swing brake, boom-elevation, service brakes, and engine throttle. Operator’s right hand console includes transmission gear selection, high-low range, hand-operated engine throttle, outrigger sequence control, emergency parking brake, swing parking brake, outrigger sight leveling bubble, \*heater controls, console panel lights, engine start/stop. Additional dash-mounted controls include \*electric manual oscillation override, electric horn, worklights, master ignition and \*rear steer indicator.

**CAB INSTRUMENTATION** – Engine oil pressure, engine water temperature, voltmeter, transmission oil temperature, transmission oil pressure, fuel gauge, low air system pressure with A/V warning, low boom angle/swing A/V warning, parking brake indicator, and \*anti-two block with A/V warning.

**COUNTERWEIGHT** – Removable, bolted to turntable mast, stationary. Weight varies with hoist configuration. (Refer to axle weight distribution chart).

\***LOAD MOMENT & ANTI-TWO BLOCK SYSTEM (KRUGER)** – Audio-visual warning in combination with Grove control lever lockout of: hoist-up, telescope out and boom-down crane functions. Kruger LMI control console provides operator with selective display of boom length, radius and angle. \*A separate Grove anti-two block system can be obtained independent of the complete Kruger LMI, and is available with audio-visual warning only or audio-visual warning in combination with Grove control lever lockout of hoist-up, telescope out and boom-down crane functions.

\*Denotes optional equipment

## HOIST SPECIFICATIONS

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

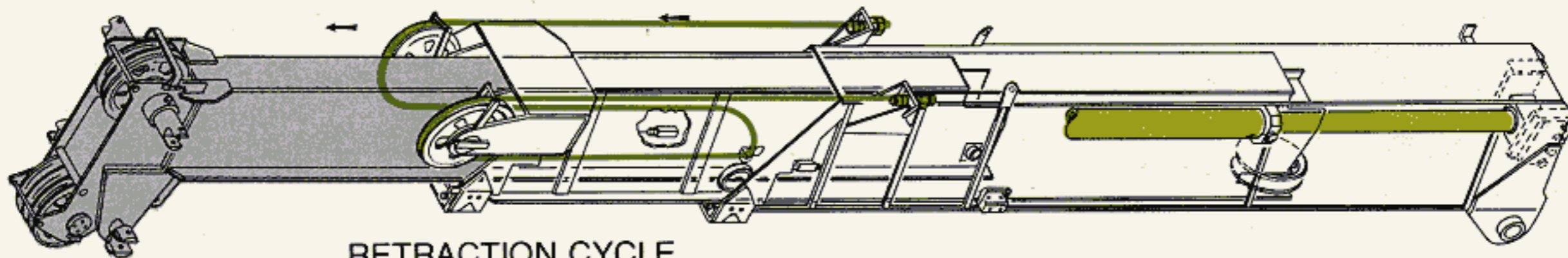
HOIST DATA	MAIN HOIST Grove Model 15H-16B	*MAIN HOIST Grove Model 25H-16	*AUXILIARY HOIST Grove Model 15S-16B	*AUXILIARY HOIST Gearmatic Model 11 SGEGR (Controlled Free Fall)
Drum Dimensions	12 in. dia. (305mm) 16 in. length (406mm) 17.5 in. flange dia. (445mm)	16 in. dia. (406mm) 16 in. length (406mm) 24 in. flange dia. (610mm)	12 in. dia. (305mm) 16 in. length (406mm) 17.5 in. flange dia. (445mm)	9 in. dia. (229mm) 13 in. length (330mm) 17.5 in. flange dia. (445mm)
Performance: Max. Single Line Speed Max. Single Line Pull	379 FPM (115.5m/min)  9,165 lbs. (4157kg)	470 FPM (143.3m/min)  8,800 lbs. (3992kg)	204 FPM (62.2m/min)  9,165 lbs. (4157kg)	290 FPM (88.4m/min)  9,145 lbs. (4148kg)
Drum Rope Storage Capacity	**480 ft. of 5/8 in. dia. rope (146.3m of 16mm)	**890 ft. of 5/8 in. dia. rope (271.3m of 16mm)	**480 ft. of 5/8 in. dia. rope (146.3m of 16mm)	675 ft. of 1/2 in. dia. rope (205.7m of 13mm)
Permissible Single Line Rope Pull	5/8 in. (16mm) 18x19 class – 7,926 lbs. (3595kg)	5/8 in. (16mm) 18x19 class – 8,418 lbs. (3818kg)	5/8 in. (16mm) 18x19 class – 7,926 lbs. (3595kg)	1/2 in. (13mm) 18x19 class – 7,714 lbs. (3499kg)

\*Denotes optional equipment. Auxiliary hoist control valve arrangement is standard equipment.

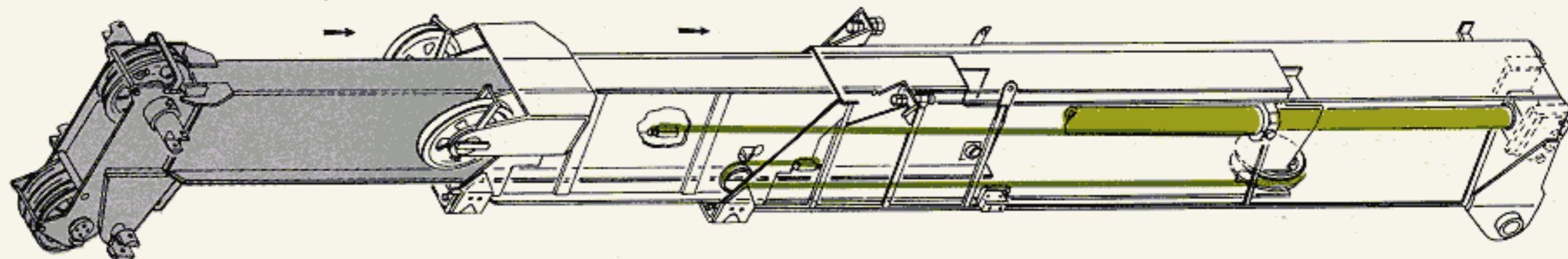
\*\*5th layer of rope not recommended for hoisting operations. (7th layer for Model 25H-16 Main Hoist).

## SMOOTH, POSITIVE SYNCHRONIZATION

### EXTENSION CYCLE



### RETRACTION CYCLE



■ HYDRAULIC CYLINDER

■ CABLE

**EXTENSION CYCLE** – As the mid-section is extended by the telescope cylinder, the fly section is pulled out of the mid-section in direct proportion by a 1 1/8 in. cable. The extension cable has a safety factor of better than 5 to 1 and is attached with threaded connections at base section and retained on either side of the sheave segment by swagged collars. This prevents the boom from retracting should one of the cables break.

**RETRACTION CYCLE** – As the telescope cylinder retracts the mid-section, the fly section is retracted proportionally by a 5/8 in. cable attached to the inside of the fly section, threaded around a sheave attached to the base of the mid-section and anchored to the base section.

# DIMENSIONS

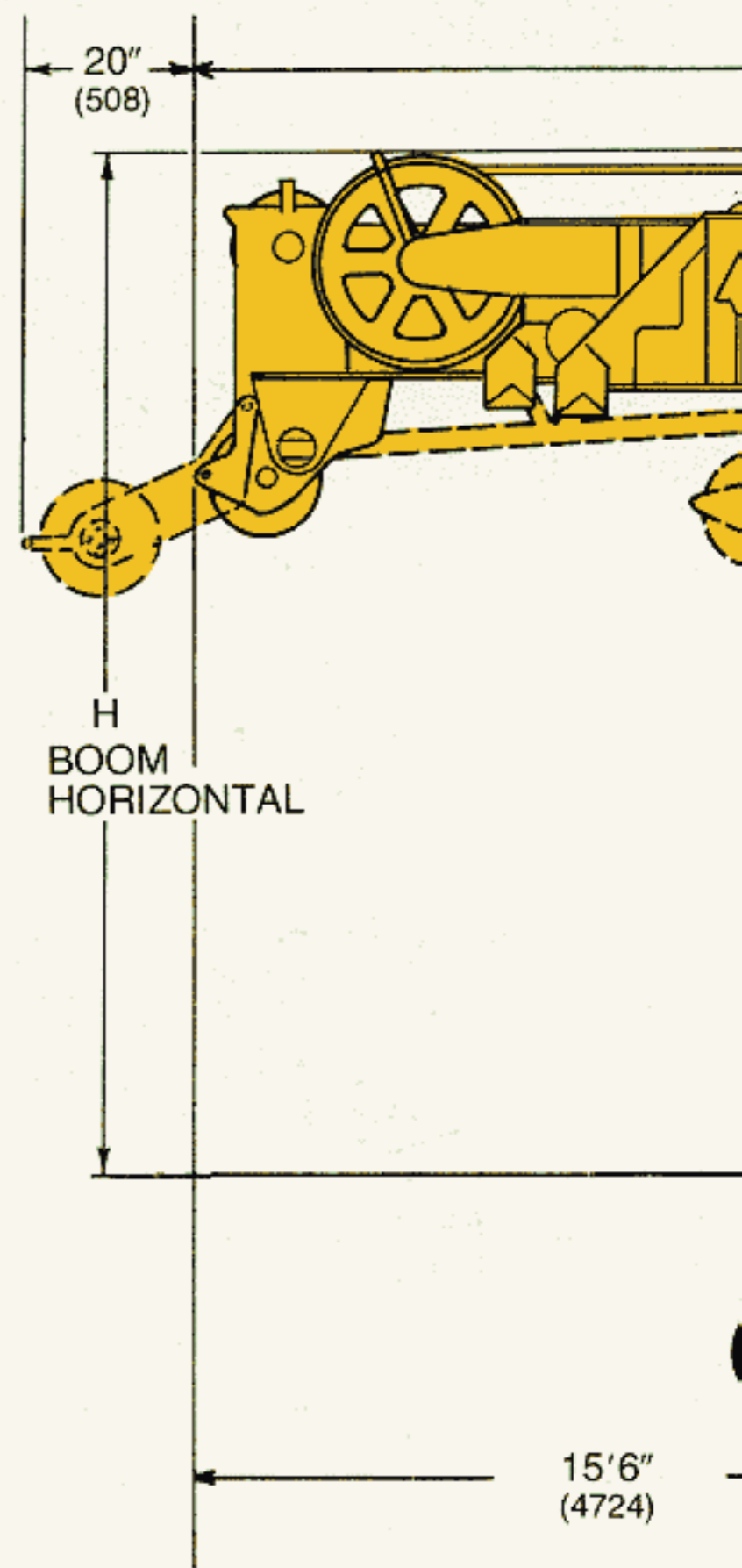
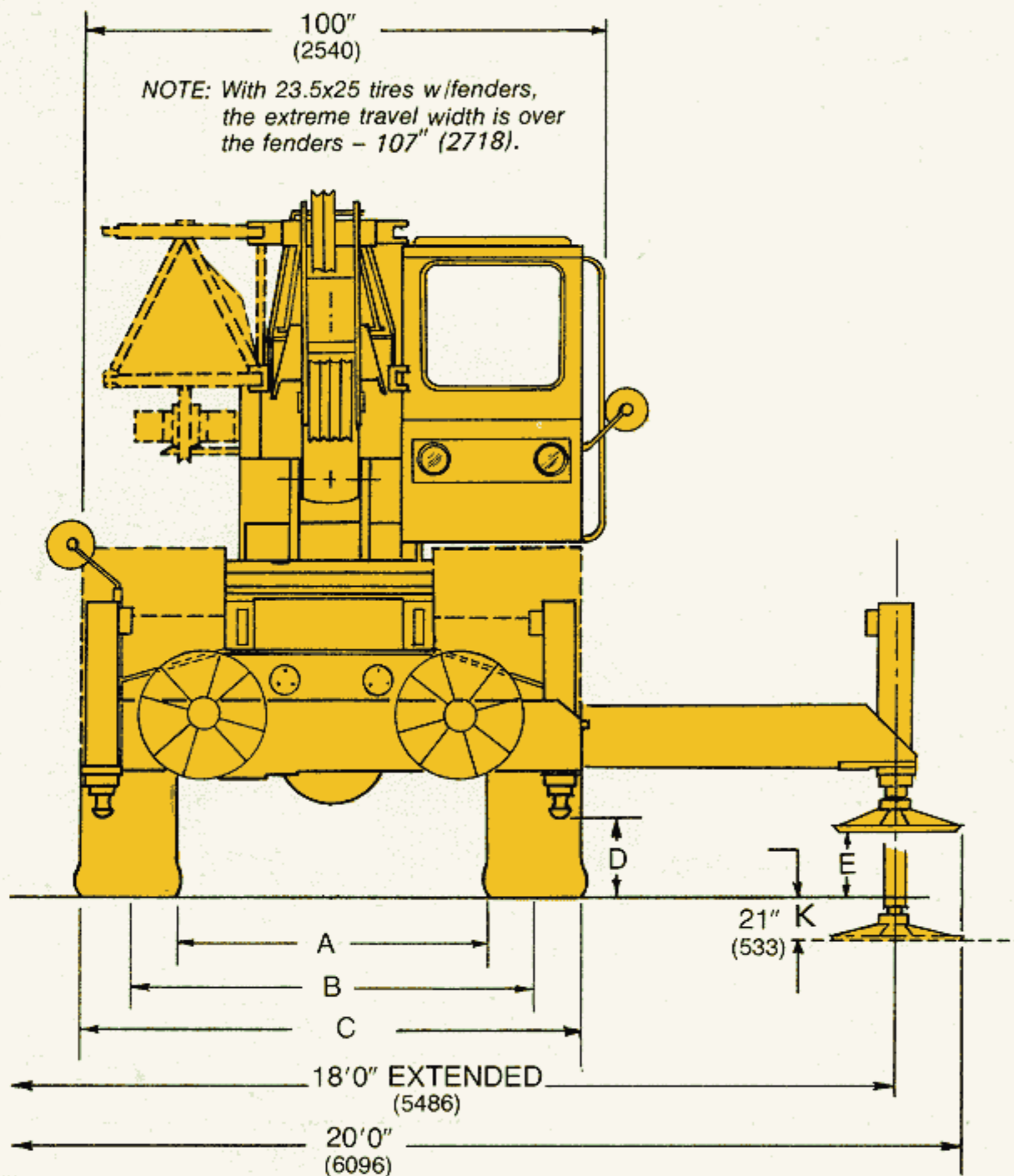
TAIL SWING 11' 5-7/8" (3502)

TURNING RADIUS 19'2" (5842) 4 wheel steer

FENDER WIDTH 96" (2438) 16:00 tires

107" (2718) 18:00 or 23.5 x 25 ti

NOTE: Figures in parentheses ( ) are metric equivalents expressed in millimeters.



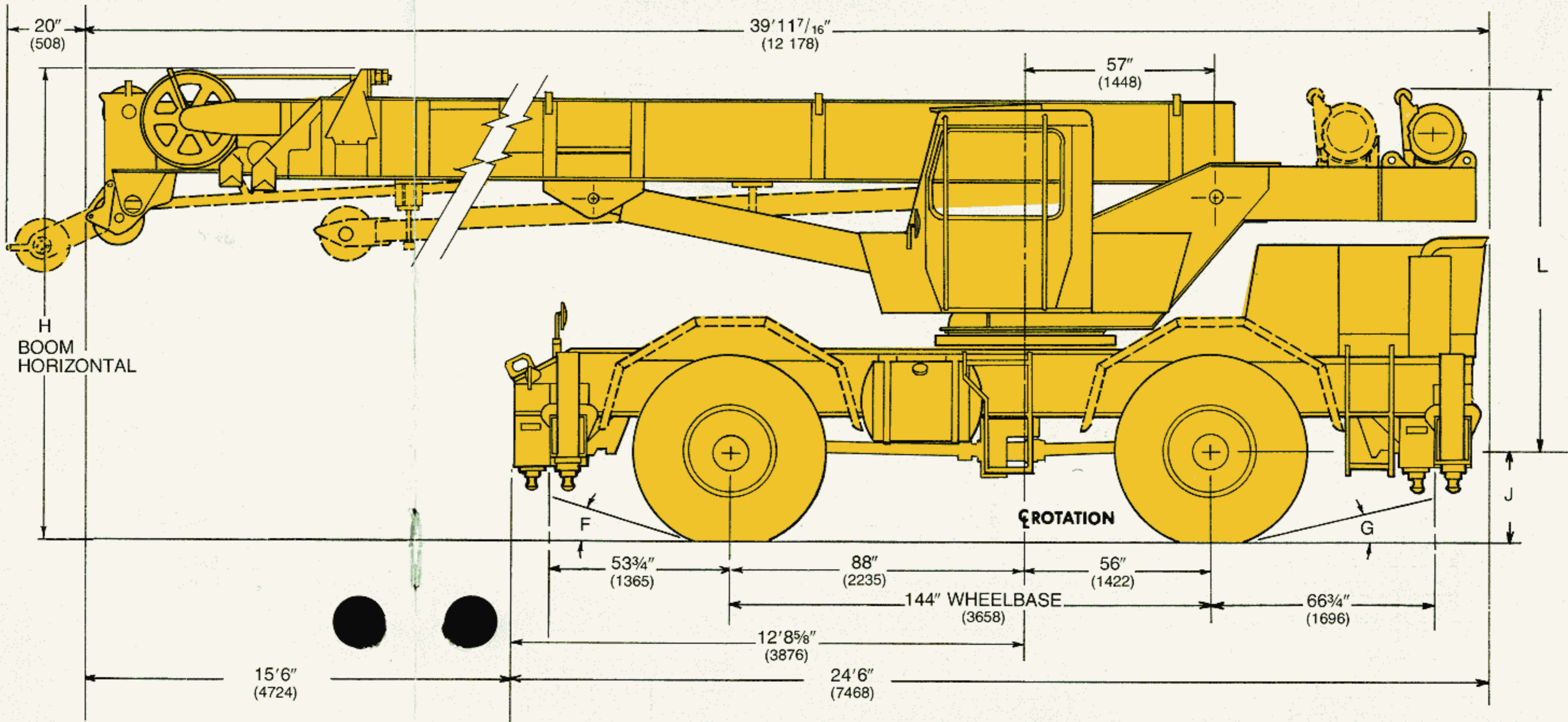


7/8" (3502)  
 19'2" (5842) 4 wheel steer  
 16" (2438) 16:00 tires  
 17'7" (2718) 18:00 or 23.5 x 25 tires

are metric equivalents

### DIMENSIONAL DRAWING

Tire Size	A	B	C	D	E	F	G	H	J	K	Main Hoist	L
16:00x25	58 <sup>3</sup> / <sub>4</sub> " (1492)	77 <sup>1</sup> / <sub>2</sub> " (1969)	8'2" (2443)	16" (406)	13 <sup>1</sup> / <sub>2</sub> " (343)	18°	15°	11' 7 <sup>1</sup> / <sub>2</sub> " (3543)	27" (686)	6 <sup>7</sup> / <sub>8</sub> " (175)	15H-16B	9' 0" (2743)
18:00x25	55 <sup>3</sup> / <sub>4</sub> " (1416)	77 <sup>1</sup> / <sub>2</sub> " (1969)	8' 3 <sup>3</sup> / <sub>8</sub> " (2522)	18" (457)	13 <sup>3</sup> / <sub>8</sub> " (340)	21°	17°	11' 9 <sup>1</sup> / <sub>2</sub> " (3594)	29" (737)	7" (178)	25H-16	9' 4" (2845)
23.5x25	55 <sup>1</sup> / <sub>2</sub> " (1410)	81 <sup>5</sup> / <sub>8</sub> " (2073)	8' 11 <sup>3</sup> / <sub>4</sub> " (2736)	18" (457)	13 <sup>3</sup> / <sub>8</sub> " (340)	21°	17°	11' 9 <sup>1</sup> / <sub>2</sub> " (3594)	29" (737)	7" (178)		





# CHASSIS SPECIFICATIONS

**MAIN FRAME** – All welded box-type construction braced with cross-members. High-strength steel frame is reinforced at critical points to insure a rigid turntable mounting. Front and rear combination lifting/towing and tie down lugs are integral with the main frame.

**OUTRIGGERS** – Front and rear hydraulic double-box integral with main frame; telescoping beams extend to 18 ft. (5.5m) center-to-center and retract to 8 ft. (2.4m) by 65-1/8 in. (1654mm) stroke, 3 in. (76mm) bore double-acting cylinders and 21 in. (533mm) stroke, 6 in. (152mm) bore vertical jacks with integral check valves for quick leveling on uneven terrain. Vertical jacks equipped with removable, lightweight, high strength 24 in. (610mm) diameter steel floats. All outrigger controls mounted in operator's cab. Required sequence control arrangement eliminates unintentional activation. In addition to the standard integral holding valves and, for added security, the exclusive Grove \*Spin-lock, which permits the outrigger vertical jack to be mechanically locked in any position throughout its stroke is offered.

**TRANSMISSION AND TORQUE CONVERTER** – Remote-mounted full powershift transmission with rear axle disconnect. Engine-mounted converter, 2.78:1 stall ratio with PTO for hydraulic pumps.

**SPEEDS** – 6 forward and 6 reverse.  
(3 speeds – high range – 2-wheel drive)  
(3 speeds – low range – 4-wheel drive)

**AXLES** – Front: Planetary drive/steer type mounted rigid to the frame. Total reduction ratio 16.65:1.  
Rear: Planetary drive/steer type mounted to allow 0 in. to 10 in. (254mm) oscillation. Total reduction ratio 16.65:1. Equipped with no-spin differential.

**HYDRAULIC OSCILLATION LOCKOUT** – Automatic, full hydraulic on rear axle. Allows rear axle oscillation only with boom over front. Rear axle lockout assures a rigid lifting platform when lifting on-rubber over-the-side. (\*Electric override control optional.)

**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 "on the move" maneuverability. Four steering modes available are: independent front wheel steer, independent rear wheel steer, 4-wheel coordinated steer and 4-wheel crab steer. (\*Optional electric emergency steering system available.)

*\*Denotes optional equipment*

**SERVICE BRAKES** – Full air on all four wheels. Size 20¼ in. x 4 in. (514mm x 102mm) with 24 sq. in. (155 cm<sup>2</sup>) chambers. Air-dryer prevents moisture in the system for maximum braking efficiency. Equipped with a dual brake system for emergency backup air.

**PARKING BRAKES** – Front and rear axles equipped with spring-set, air-released emergency/parking chambers.

**TIRES** – 16:00 x 25 – (28 P.R.) Earthmover type, tubeless.

\*18:00 x 25 – (24 P.R.) Earthmover type, tubeless.

\*23.5 x 25 – (24 P.R.) Earthmover type, tubeless.

**\*TOW WINCH** – Funk 66000 series, cab controlled, (less rope and hook), front mounted. Single line pull – 15,000 lbs. (6804 kg); single line speed - 149 FPM (45.4m/min). Drum capacity of 340 ft. (103.6m) 5/8 in. dia. (16mm) rope.

## HYDRAULIC SYSTEM:

**RESERVOIR** – 137 gallon (518 liters) capacity, steel fabricated with internal baffles, clean out access, exterior oil sight level gauge, magnetic dipstick. Strap mounted to frame . . . to reduce high stress levels at corner welds.

**FILTER** – Full flow, return line replaceable cartridge with bypass protection and filter bypass indicator. 25 micron rating.

**PUMPS** – 3 main gear pumps, 112.5 GPM combined capacity (425.8 LPM). Power steering pump 18.7 GPM capacity (71 LPM). (\*Optional pump disconnect lever, with engine jogging switch operated from carrier deck.)

**CONTROL VALVES** – Precision four-way double-acting with integral load holding, main and circuit relief valves. Three individual valve banks permitting simultaneous independent control of three crane functions. Maximum operating pressure 2500 PSI (175.8 kg/cm<sup>2</sup>.)

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

**POWER DISTRIBUTION** – Main hoist – 39.5 GPM (149.5 LPM) @ 2250 PSI (158.1 kg/cm<sup>2</sup>) Main hoist boost, \*Auxiliary hoist, lift, telescope – 46.5 GPM (176 LPM) 2500 PSI (175.8 kg/cm<sup>2</sup>).

Rear Steer, swing, outriggers – 26.5 (100.3 LPM) @ 2250 PSI (158.1 kg/cm<sup>2</sup>).

**MISCELLANEOUS STANDARD EQUIPMENT** – Complete light package, front storage well, engine air cleaner filter restriction indicator, hydraulic pressure test panel, electronic hoist drum rotation indicator. Dual rear view mirrors.

**\*MISCELLANEOUS OPTIONAL EQUIPMENT** – Fenders, cab spotlight, 360° rotating beacon, pintle hooks, backup alarm, hoist drum cable followers.

## SPEED AND GRADEABILITY

Forward Drive	Transmission Range	Gear Shift	Maximum Speed		Gradeability @ Stall (%)	Tractive Effort at Stall	
			MPH	KM/H		LBS.	KG
4 Wheel Drive	Low	1st	2.7	4.4	91.8	39,146	17 757
4 Wheel Drive	Low	2nd	5.0	8.0	37.1	20,678	9379
4 Wheel Drive	Low	3rd	12.7	20.4	11.5	7,575	3436
2 Wheel Drive	High	1st	6.2	10.0	28.3	16,461	7467
2 Wheel Drive	High	2nd	11.2	18.0	13.6	8,681	3938
2 Wheel Drive	High	3rd	23.2	37.3	3.7	3,194	1449

**NOTE:** All performance data is based on standard machine and may vary plus or minus 10% due to variations in engine performance.

Gradeability values above 45% are theoretical. Machines should be operated within the limits of engine crankcase design (30° – CAT & GM, 40° – Cummins).

## ENGINE SPECIFICATIONS

MAKE & MODEL	Cummins Diesel V504C	*Detroit Diesel 4-53T	*Caterpillar 3208 Diesel
TYPE	8 Cylinder O.H.V.	4 Cylinder O.H.V.	8 Cylinder O.H.V.
BORE	4.625 in. (117mm)	3.875 in. (98.4mm)	4.5 in. (114.3mm)
STROKE	3.75 in. (95.2mm)	4.50 in. (114.3mm)	5.0 in. (127mm)
DISPLACEMENT	504 cu. in. (8261cm <sup>3</sup> )	212 cu. in. (3475cm <sup>3</sup> )	636 cu. in. (10 424cm <sup>3</sup> )
HORSEPOWER (NET)	156 @ 2500	157 @ 2500	122 @ 2500
GOVERNED RPM	2500	2500	2500
TORQUE (NET)	339 ft.-lbs. (46.8kg.m) @ 1900	384 ft.-lbs. (53.1kg.m) @ 1800	344 ft.-lbs. (47.5kg.m) @ 1100
ELECTRICAL SYSTEM	12 Volt, Negative Ground	12 Volt, Negative Ground	12 Volt, Negative Ground
STARTING SYSTEM	24 Volt	24 Volt	24 Volt
COMBUSTION SYSTEM	4 cycle, Naturally Aspirated	2 cycle with blower and turbo charger	4 cycle, Naturally Aspirated
COOLING SYSTEM (CAP.)	Liquid – 10.6 gallons (40.1 liters)	Liquid – 9.4 gallons (35.6 liters)	Liquid – 13.4 gallons (50.7 liters)
FUEL CAPACITY	60 gallons (227 liters)	60 gallons (227 liters)	60 gallons (227 liters)
ALTERNATOR	90 AMP	90 AMP	90 AMP
BATTERY	(4) 475 CCA @ 0°F	(4) 475 CCA @ 0°F	(4) 475 CCA @ 0°F
AIR CLEANER	Dry Type	Dry Type	Dry Type
AIR COMPRESSOR	13.2 CFM	13.2 CFM	12 CFM
HOURMETER	Yes	Yes	Yes

\*Denotes optional equipment

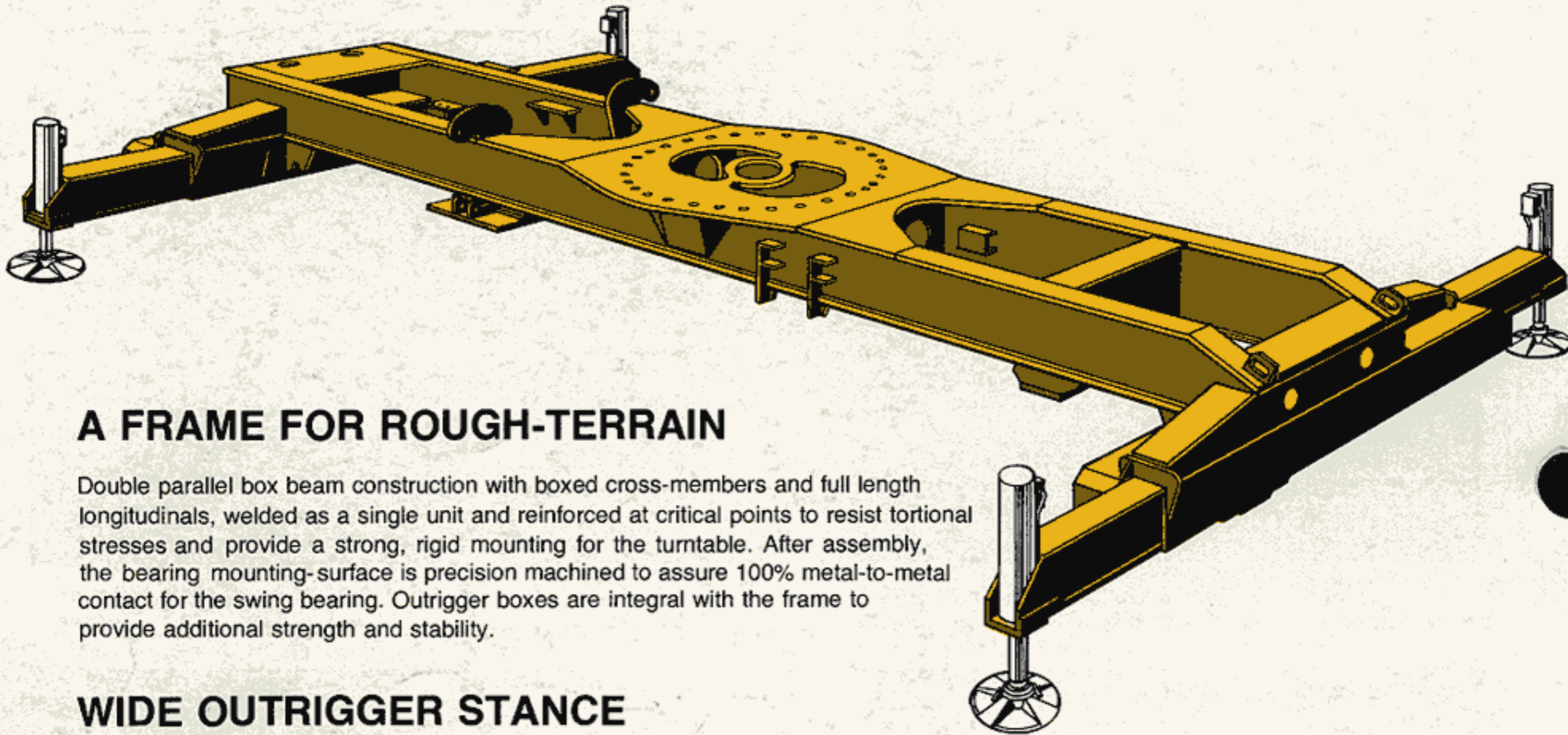
## AXLE WEIGHT DISTRIBUTION CHART

ITEM	POUNDS			KILOGRAMS		
	GROSS	FRONT	REAR	GROSS	FRONT	REAR
Basic standard machine to include: 32 ft. – 80 ft. (9.8m – 24.4m) 3 section trapezoidal boom, Grove model 15H-16B main hoist, Cummins V504C engine, 6,600 lbs. (2994kg) counterweight, 16:00x25 tires.	54,120	24,302	29,818	24 549	11 023	13 526
ADD:						
26 ft. (7.9m) Swingaway extension	+1,381	+2,225	-844	+626	+1009	-383
22 ft. (6.7m) A-frame jib	+1,000	+1,319	-319	+453	+598	-145
Fenders (16:00x25 tires)	+464	+232	+232	+210	+105	+105
Fenders (18:00x25 tires, 23.5x25 tires)	+542	+271	+271	+246	+123	+123
25 ton hook block	+593	+1,598	-1,005	+269	+725	-456
7½ ton headache ball	+300	+825	-525	+136	+374	-238
5 ton headache ball	+150	+413	-263	+68	+187	-119
Auxiliary boom nose	+106	+300	-194	+48	+136	-88
Kruger load moment & anti-two block system	+376	+287	+89	+170	+130	+40
●Grove 15S-16B auxiliary hoist with 350 ft. (106.7m) of 5/8 in. (16mm) dia. rope	+972	-271	+1,243	+441	-123	+564
●Gearmatic 11 SGEGR auxiliary hoist with 350 ft. (106.7m) of 1/2 in. (13mm) dia. rope	+992	-277	+1,269	+450	-126	+576
SUBSTITUTE:						
Caterpillar 3208 engine	-48	+10	-58	-22	+4	-26
GM4-53T engine	-276	+58	-334	-125	+26	-151
18:00x25 tires	+536	+268	+268	+243	+122	+122
23.5x25 tires	+872	+436	+436	+396	+198	+198
●Grove 25H-16 main hoist	+1,003	-461	+1,464	+455	-209	+664
●5,700 lbs. (2585kg) counterweight	-900	+400	-1,300	-408	+181	-589
●4,700 lbs. (2132kg) counterweight	-1,900	+844	-2,744	-862	+383	-1245

●NOTE: Appropriate superstructure counterweight substitutions must be made depending on hoist configurations selected:

15H-16B main hoist, no auxiliary hoist – 6,600 lbs. (2994kg) Cwg't.  
25H-16 main hoist, no auxiliary hoist – 5,700 lbs. (2585kg) Cwg't.

15H-16B main and 15S-16B or 11 SGEGR auxiliary hoist 5,700 lbs. (2585kg) Cwg't.  
25H-16 main and 15S-16B or 11 SGEGR auxiliary hoist 4,700 lbs. (2132kg) Cwg't.



## A FRAME FOR ROUGH-TERRAIN

Double parallel box beam construction with boxed cross-members and full length longitudinals, welded as a single unit and reinforced at critical points to resist torsional stresses and provide a strong, rigid mounting for the turntable. After assembly, the bearing mounting-surface is precision machined to assure 100% metal-to-metal contact for the swing bearing. Outrigger boxes are integral with the frame to provide additional strength and stability.

## WIDE OUTRIGGER STANCE

Telescoping beam and jack outriggers have a spread of 18 ft. (5.5m) and are independently controlled from the operator's cab. Jacks have a vertical stroke of 21 in. (533mm) and are equipped with integral holding valves. The exclusive Grove Spin-lock†, which permits the jack to be locked mechanically in any position, is available as optional equipment.

## EASY MANEUVERABILITY

Full-power hydraulic steering with 4-steering modes permits 4-wheel coordinated, 4-wheel crabbing, 2-wheel (front or rear) steering for easier maneuvering in tight quarters. Grove's system of independent control for each axle permits a greater degree of maneuverability with greater ease for the operator.

