

GROVE TD500 SERIES



**Capacities
Up to
25 Tons**

SUPERSTRUCTURE SPECIFICATIONS

ANTI-TWO BLOCK (KRUEGER "HAP") - An audio-visual (light/buzzer) warning system to alert operator to an impending two block condition. System uses solid state circuitry and consists of following basic components: boom nose mounted switch and weight assembly, base boom mounted electric cable reel and in-cab mounted console. Hook-block or headache ball coming in contact with weight suspended from boom nose switch activates the audio-visual warning system. A spring-loaded, key-type switch is provided to permit operator to momentarily override the system for emergencies. System further incorporates electronic boom angle display with "presets". Angle indicator has audio-visual warning system to alert operator if preset boom angles are reached.

***ANTI-TWO BLOCK (KRUEGER "HLAP")** - Same as basic anti-two block, audio-visual warning system (Krueger "HAP"), but incorporates selective electronic display of boom angle in degrees and boom length in feet and meters. Angle indicator has "presets" with audio-visual warning system to alert operator should the preset boom angles be reached.

***LOAD MOMENT AND ANTI-TWO BLOCK SYSTEM (KRUEGER "LMI")** - A load moment indicating system in combination with anti-two block, audio-visual and Grove control lever lockout of: hoist up, telescope out and boom down crane functions. System uses solid state circuitry and consists of following basic components: boom nose mounted switch and weight assembly, base boom mounted electric cable reel and in-cab mounted console. Dash mounted console displays relative load moment and also provides selective electronic display of boom length in feet and meters and angle in degrees. Angle indicator has "presets" with audio-visual warning system to alert operator if preset boom angles are reached.

SUPERSTRUCTURE SPECIFICATIONS (CONTINUED)

BOOM - 28 ft.-70 ft. (8.6m-21.2m), 3 section trapezoidal-shaped full power mechanically synchronized main boom with boom length decals. Boom extension is composed of a 6-1/2 in. (165mm) bore, double-acting telescope cylinder with integral holding valve which extends the mid section. Fly section is mechanically extended by a 7/8 in. (22mm) dia. cable attached to the mid section which insures positive synchronization at all boom lengths. Extension cable is supported by two 14-7/8 in. (378mm) tread dia., metallic sheaves attached to the outer end of the mid section. A separate 3/4 in. (19mm) dia. cable is provided for boom retraction. Boom telescope sections are supported on nylatron wear pads. Adjustable side wear pads prevent metal-to-metal contact of inner boom sections and permit ease of boom side alignment.

BOOM NOSE - Reinforced hi-strength steel construction. Three metallic load bearing sheaves, 10-5/8 in. (270mm) tread dia. mounted on heavy duty tapered roller bearings. One (*two with auxiliary hoist and/or jib) metallic floating idler sheave, 10-5/8 in. (270mm) tread dia. mounted on bronze bushing. Removable pin-type rope guards for easy reeving. Rope dead ends on either side of boom nose.

***AUXILIARY BOOM NOSE** - Removable single metallic load bearing sheave, 13-3/4 in. (349mm) tread dia. mounted to main boom nose for single part line work. Equipped with removable pin-type rope guard.

BOOM ELEVATION - Two double-acting 9 in. (229mm) dia. bore, 36 in. (914mm) stroke cylinders with integral holding valves that provide elevation from 0° to 75°. Electronic boom angle indicator (Krueger HAP) mounted inside the operator's cab.

***JIBS** - 23 ft.-38 ft. (7.1-11.6m) telescopic "A" frame. Jib length can be adjusted from 23 ft. (7.1m) retracted length to 33 ft. (10.1m) and 38 ft. (11.6m) fully extended lengths.

23 ft. (7.1m) fixed length "A" frame. Both "A" frame jibs attach to the boom nose and stow beneath the main boom for travel. Jibs can be offset at 0°, 15° and 30°. Includes backstops, single rope self-equalizing suspension, removable pin-type rope guard and single 13-3/4 in. (349mm) tread dia. metallic sheave.

SWING - Ball bearing swing circle, 360° continuous rotation. Grove planetary "glide swing" with foot actuated multi-disc swing brake, spring set hydraulically released park brake and hand operated two position plunger type houselock. Combination controls provided for hand or foot operation. Maximum swing speed 3.0 RPM. *Non-free planetary swing with automatic spring applied hydraulic release disc brake.

COUNTERWEIGHT - Stationary type, pin mounted to turntable to facilitate removal. Weight varies depending on hoist configuration. (Refer to axle weight distribution chart.)

HYDRAULIC SYSTEM

RESERVOIR - 88 gallon (333 liter) capacity, all-steel welded construction with internal baffles, cleanout access, exterior oil sight level and magnet.

FILTER - Return line type, full flow with by-pass protection and filter by-pass indicator, replaceable 25 micron rated cartridge.

PUMPS - One, three section gear pump driven off transmission PTO with manual pump disconnect. Combined capacity 112.5 GPM (426 LPM) at 2400 RPM.

CONTROL VALVES - Precision four-way, double-acting with integral load holding main and circuit relief valves with hydraulic pressure test panel. Three individual valve banks permit simultaneous independent control of three crane functions. Standard "low effort" control valves provide for reduced operator effort and smoothness of operation. Maximum system operating pressure 2500 PSI (175 kg/cm²).

OIL COOLER - Carrier mounted, oil to air with thermostatically controlled electric motor driven fan.

POWER DISTRIBUTION - Main hoist, 39.5 GPM (150 liters) at 2250 PSI (158.1 kg/cm²). Main hoist boost, auxiliary hoist, lift and boom telescope, 46.5 GPM (171 liters) at 2500 PSI (175.8 kg/cm²). Swing, outriggers, 26.5 GPM (100 liters) at 2250 PSI (158.1 kg/cm²).

***MISCELLANEOUS OPTIONAL EQUIPMENT** - 22 ton (20MT) 3 sheave hookblock, 12 ton (10.9MT) 1 sheave hookblock, 5 ton (4.5MT) headache ball, hoist drum cable follower, spare tire bracket, boom mounted floodlights.

TD522

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		**MAIN HOIST		**AUXILIARY HOIST	
	GROVE MODEL NO 15H-16B	GROVE MODEL NO 15H-11B	GROVE MODEL NO 15H-11B	GROVE MODEL NO 15H-11B	GROVE MODEL NO 15S-11B	GROVE MODEL NO 15S-11B
DRUM DIMENSIONS	12 in. dia. (305 mm) 16 in. length (406 mm) 17.5 in. flange dia. (445 mm)	12 in. dia. (305 mm) 11 in. length (279 mm) 17.5 in. flange dia. (445 mm)	12 in. dia. (305 mm) 11 in. length (279 mm) 17.5 in. flange dia. (445 mm)	12 in. dia. (305 mm) 11 in. length (279 mm) 17.5 in. flange dia. (445 mm)	12 in. dia. (305 mm) 11 in. length (279 mm) 17.5 in. flange dia. (445 mm)	12 in. dia. (305 mm) 11 in. length (279 mm) 17.5 in. flange dia. (445 mm)
PERFORMANCE:						
MAX. SINGLE LINE SPEED:						
BARE DRUM	287 FPM (87.5 m/min)	287 FPM (87.5 m/min)	287 FPM (87.5 m/min)	287 FPM (87.5 m/min)	154 FPM (46.9 m/min)	154 FPM (46.9 m/min)
MEAN DRUM	340 FPM (103.6 m/min)	340 FPM (103.6 m/min)	340 FPM (103.6 m/min)	340 FPM (103.6 m/min)	183 FPM (55.8 m/min)	183 FPM (55.8 m/min)
FULL DRUM	383 FPM (116.7 m/min)	383 FPM (116.7 m/min)	383 FPM (116.7 m/min)	383 FPM (116.7 m/min)	206 FPM (62.3 m/min)	206 FPM (62.3 m/min)
MAX. SINGLE LINE PULL						
BARE DRUM	9,165 lbs. (4157 kg)	9,165 lbs. (4157 kg)	9,165 lbs. (4157 kg)	9,165 lbs. (4157 kg)	9,165 lbs. (4157 kg)	9,165 lbs. (4157 kg)
MEAN DRUM	7,730 lbs. (3506 kg)	7,730 lbs. (3506 kg)	7,730 lbs. (3506 kg)	7,730 lbs. (3506 kg)	7,730 lbs. (3506 kg)	7,730 lbs. (3506 kg)
FULL DRUM	6,890 lbs. (3125 kg)	6,890 lbs. (3125 kg)	6,890 lbs. (3125 kg)	6,890 lbs. (3125 kg)	6,890 lbs. (3125 kg)	6,890 lbs. (3125 kg)
DRUM ROPE CAPACITY						
+MAX. STORAGE	720 ft. of 1/2 in. dia. rope (219.3 m of 13 mm)	468 ft. of 1/2 in. dia. rope (142.7 m of 13 mm)	468 ft. of 1/2 in. dia. rope (142.7 m of 13 mm)	468 ft. of 1/2 in. dia. rope (142.7 m of 13 mm)	405 ft. of 1/2 in. dia. rope (123.5 m of 13 mm)	405 ft. of 1/2 in. dia. rope (123.5 m of 13 mm)
+MAX. USABLE	605 ft. of 1/2 in. dia. rope (184.3 m of 13 mm)	395 ft. of 1/2 in. dia. rope (120.4 m of 13 mm)	395 ft. of 1/2 in. dia. rope (120.4 m of 13 mm)	395 ft. of 1/2 in. dia. rope (120.4 m of 13 mm)	395 ft. of 1/2 in. dia. rope (120.4 m of 13 mm)	395 ft. of 1/2 in. dia. rope (120.4 m of 13 mm)
PERMISSIBLE SINGLE LINE ROPE PULL W/ 3.5:1 SAFETY FACTOR	1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg) 1/2 in. (13mm) 19x7 Class 6,150 lbs. (2790 kg)	1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg) 1/2 in. (13mm) 19x7 class 6,150 lbs. (2790 kg)	1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg) 1/2 in. (13mm) 19x7 class 6,150 lbs. (2790 kg)	1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg) 1/2 in. (13mm) 19x7 class 6,150 lbs. (2790 kg)	1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg) 1/2 in. (13mm) 19x7 class 6,150 lbs. (2790 kg)	1/2 in. (13mm) 6x37 class 7,600 lbs. (3447 kg) 1/2 in. (13mm) 19x7 class 6,150 lbs. (2790 kg)

NOTES:
 *Denotes Optional Equipment.
 + 6th layer of rope not recommended for hoisting operations.
 **With wire rope minimum 1/2" (13mm) below top of drum flange.
 NOTE: 19x7 and other rotation resistant wire ropes are best suited for single line lifting operations. Use of rotation resistant wire ropes for multiple part reeving or with swivels requires special consideration - Consult the wire rope manufacturer for specific recommendations.

CARRIER SPECIFICATIONS MODEL 6422G - 6x4 Drive

OUTRIGGERS - Hydraulic, double-box, telescoping beam outriggers, integral welded boxes, removable beams, vertical 5-1/2 in. (140mm) bore x 17 in. (432mm) stroke jack cylinders with integral holding valves and 24 in. (610mm) diameter removable stowable steel floats. Beams extend to 17 ft. (5.2m) centerline to centerline and retract to within 8 ft. (2.4m) overall width by 2-1/2 in. (64mm) bore x 78-1/4 in. (1988mm) double-acting cylinders. Outriggers are independently controlled in, out, up and down with controls and sight-leveling bubble located inside operator's cab. Required sequence control arrangement eliminates unintentional outrigger actuation. *To insure proper outrigger retraction sequence, the optional front jack cylinder retracts first when outrigger control master switch is activated. In addition to the standard integral holding valve and for added security, the exclusive Grove *spin-lock is offered, which permits the outrigger vertical jack to be mechanically locked in any position throughout its stroke.

***FRONT END STABILIZER** - A fifth hydraulic vertical jack cylinder with integral holding valve is mounted to the front frame section of the chassis to permit 360° lifting capabilities. The 24 in. (610mm) diameter steel float is easily removed for high-way travel. Individual controls for fifth outrigger cylinder conveniently located in cab.

FRAME - High strength steel, all-welded construction with triple-box type design and integral welded outrigger boxes.

STEERING GEAR - Sheppard rack and pinion design with hydraulic power assist.

CLUTCH - 14 in. (356mm) two plate, dry disc (with Roadranger transmission only).

TRANSMISSION - Fuller Roadranger RT661s, 13 speeds forward, 3 reverse. *Allison MT653DR, 5 speeds forward, 1 reverse fully automatic transmission.

UNIVERSAL JOINTS - Needle bearing type.

AXLES - Front: (1) Rockwell tubular type steer axle model FL-931, 18,000 lbs. (8 165 kg) capacity.
Rear: Rockwell SLHD drive tandem, 34,000 lbs. (15 422 kg) capacity with inter-axle differential and dash mounted control.

SUSPENSION - Front: Dana multi-leaf spring type with shock absorbers 18,000 lbs. (8 165 kg) capacity.
Rear: Hendrickson R-340 tandem-axle equalizing beam with solid steel saddles, 34,000 lbs. (15 422 kg) capacity.

FUEL TANK - Single 60 gallon (227 liter) capacity mounted on left side of frame.

TIRES - Front: 15.00x22.5-16PR duplex highway tread tubeless singles. *Optional are 16.5x22.5-16PR duplex highway tread tubeless and Michelin 14/80Rx20-18PR tube type.
Rear: 10.00x20-12PR highway tread tube-type duals. *Optional is Michelin 9.00x20R-12PR.

RIMS - Front: Demountable 22.5 in. x 12.25 in. (572mm x 311mm) with 15.00/16.5x22.5 tires. *20.00 in. 13.0 in. (508mm x 330mm) with 14/80Rx20 tires.
Rear: Demountable 20.00 in. x 8.0 in. (508mm x 203mm) with 10.00 x 20 tires. *20.00 in. x 7.0 in. (508mm x 178mm) with 9.00 x 20 tires.

WHEELS - Steel spoke; 6 spoke front and 5 spoke rear.

***TIRE INFLATION KIT** - Quick connect air outlet located at midpoint on left side of carrier. Includes dual foot air chuck and 25 ft. (7.6m) coiled nylon tubing.

BRAKES - Full air on all wheels. Separate independent front and rear circuits.
Front: 15 in. x 6 in. (381mm x 152mm)
Rear: 15 in. x 7 in. (381mm x 178mm)
Total lining area: 1,256 in.² (8 103 cm²)
Air dryer provided to preclude system-damaging moisture accumulation.

PARKING BRAKES - Spring-set, air-released chambers on both rear axles with manual emergency release feature.

ELECTRICAL SYSTEM - 12 volt lighting, 24 volt starting. Federal safety standard lights and reflection.

CAB - One-man, left-hand drive, all steel construction, acoustically treated, tinted safety glass throughout, Bostrum "T" bar deluxe fabric seat with seat belt swivels 180° to either crane operating or driving position, electric wiper and washer on front/rear windshields, door and window locks, hot water heater, forced hot air defroster, 2 circulating air fans (front/rear), dual rearview mirrors, dome light, instrument lights, electric horn, traffic hazard warning switch (4-way flashers) complete engine instrumentation and driving controls, 2-3/4 lb. (1.3 kg) dry type fire extinguisher. Crane operating cab section has hinged skylight, full length control levers, swing horn, combination hand and foot controls for swing, engine throttle, outrigger control panel and sight leveling bubble, Krueger electronic boom angle indicator (HAP) with high/low angle presets and audio-visual warning.

CAB INSTRUMENTATION - (International type) - Engine oil pressure gauge, speedometer, dual air pressure gauge, fuel level gauge, engine water temperature gauge, voltmeter, tachometer, low air pressure audio-visual warning system, high beam indicator, hourmeter (10,000 hr.) and ignition on indicator light.

MISCELLANEOUS STANDARD EQUIPMENT - Wheel nut wrench and handle, channel-type front bumper, two front and rear towing loops, fenders, sling box, full width decking, mud flaps, maintenance free batteries, back-up light, air cleaner service indicator, combination lifting/tie-down lugs, electronic back-up alarm, fuel/water separator and ether cold start aid. Also, all provisions for future auxiliary hoist installation, but less hoist/rope, are included.

***MISCELLANEOUS OPTIONAL EQUIPMENT** - Engine block heater, spare tire and wheel carrier (located on superstructure), automatic transmission oil heater and engine low oil pressure/high water temperature audio-visual warning system, cab mounted spot-light and amber rotating beacon.

SPEED AND GRADEABILITY WITH CUMMINS VT225 ENGINE ENGINE SPECIFICATIONS

TRANS.	SPEED RANGES @ MAX. GOV'D RPM	% OF GRADE @ MAX. TORQUE
Fuller RT6613	3.1-56.1 MPH (4.98-90.3 KPH)	52.47 to 1.51 %
Allison MT653DR Auto.	1.91-56 MPH (3.07-90.1 KPH)	41.86 to .72%

NOTE: Performance based on 46,400 lb. (21 047 kg) GVW and standard SAE engine rating conditions using standard tires, transmission and axles. Performance data may vary plus or minus 10% due to variations in engine performance and vehicle weights. Machines should be operated within the limits of crane case design (15°).

Make & Model	Cummins VT225
Type	8 cylinder OHV diesel
Bore	4-5/8 in. (117 mm)
Stroke	4-1/8 in. (105 mm)
Displacement	555 cu. in. (9 095 cm ³)
Horsepower (Gross)	225 @ 3000 RPM
Horsepower (Net Flywheel)	182.5 @ 3000 RPM
Governed RPM	3000
Torque (Net Flywheel)	361 ft/lb (50 kg-m) @ 1900 RPM
Electrical System	12 volt neg. ground
Starting System	24 volt
Combustion System	4 cycle, turbo-charged
Cooling System Cap.	10 gal. (38 liter)
Fuel Tank Cap.	60 gal. (227 liter)
Alternator	90 AMP
*Battery	(4) 475 CCA @ 0°F
Air Compressor	13.2 CFM (374 liter/min.)
Air Cleaner	Single stage dry type
Hourmeter	Standard
*CCA = Cold Cranking Amperage per battery.	

AXLE-WEIGHT DISTRIBUTION CHART

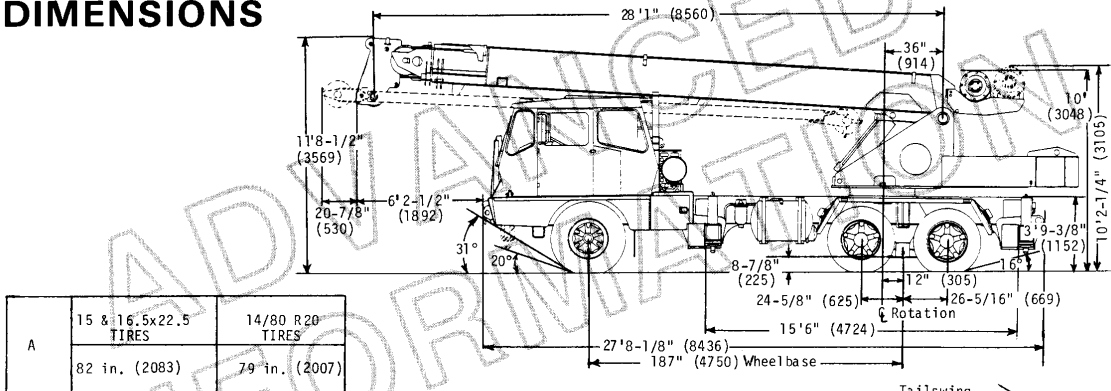
NOTE: Appropriate counterweight substitutions must be made depending on main and auxiliary hoist configuration specified.

•Use 6,500 lb. (2 948 kg) counterweight with main hoist only.

••Use 5,900 lb. (2 676 kg) counterweight with auxiliary hoist only.

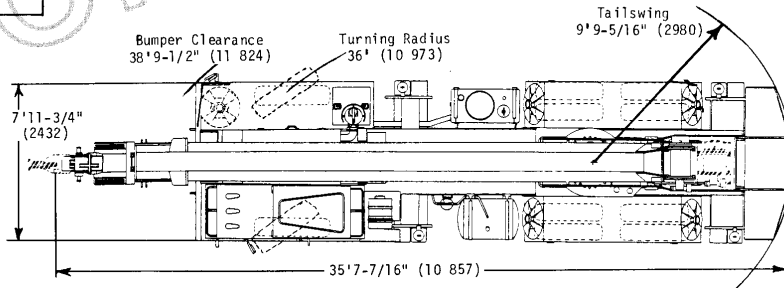
	POUNDS			KILOGRAMS		
	GROSS	FRONT	REAR	GROSS	FRONT	REAR
Basic standard machine to include: 6x4 carrier 28-70 ft. (8.6-21.2 m) trapezoidal boom, Grove model H015H-16B main hoist with 400 ft. of 1/2 in. (13mm) rope, 6,500 lb. (2 948 kg) counterweight.	46,879	14,638	32,241	21 264	6 639	14 625
REMOVE						
•Standard 6,500 lb. (2 948 kg) counterweight	-6,500	3,144	-9,644	-2 948	1 426	4 374
ADD						
23 ft. (7.1 m) A-frame jib	997	965	32	452	437	15
23-38 ft. (7.1-11.6 m) telescopic jib	1,686	1,498	188	764	679	85
Auxiliary boom nose	100	175	-75	45	79	-34
Front outrigger jack	269	321	-52	122	145	-23
22 ton (20 MT) hookblock	455	762	-307	206	345	-139
12 ton (10.9 MT) hookblock	360	603	-243	163	273	-110
5 ton (4.5 MT) headache ball	150	251	-101	68	113	-45
•Grove model H015S-11B auxiliary hoist with 350 ft. (107m) of 1/2 in. (13 mm) dia. rope	1,021	-334	1,355	463	-151	614
SUBSTITUTE						
•5,900 lb. (2 676 kg) counterweight	-600	290	-890	-272	131	-403
•Grove model H015H-11B main hoist with 400 ft. (122 m) of 1/2 in. (13 mm) dia. rope	-58	13	-71	-26	6	-32
Spin lock jack cylinders	172	23	149	78	10	68
Allison automatic transmission	-260	-223	-37	-117	-101	-16


DIMENSIONS



A	15 & 16.5x22.5 TIRES	14/80 R20 TIRES
	82 in. (2083)	79 in. (2007)

NOTE: Dimensions shown in parentheses are in millimeters (mm).





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