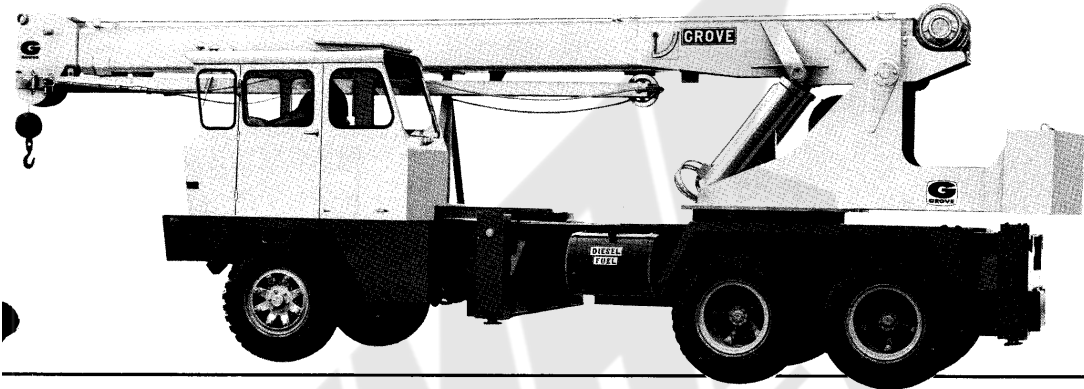


GROVE®

FULL HYDRAULIC TRUCK-DRIVEN CRANE

MODEL
TD180
18 TON CAPACITY

PCSA CLASS NO. 10-64 (28-70 ft. [8.53-21.34m] BOOM)
PCSA CLASS NO. 10-68 (24-60 ft. [7.32-18.29m] BOOM)
PCSA CLASS NO. 10-60 (24-78 ft. [7.32-23.77m] BOOM)



SUPERSTRUCTURE SPECIFICATIONS

BOOM - 28 ft. - 70 ft., (8.5 - 21.3m) 3 section, full power telescoping.
*24 ft. - 60 ft. (7.3 - 18.3m), 3 section, full power telescoping.
*24 ft. - 78 ft. (7.3 - 23.8m), 4 section, power telescoping; 2 full power sections to 60 ft. (18.3m); fly section power extended and retracted from pinned position. Boom telescope sections are individually controlled and supported on graphite impregnated nylatron wear pads. Side adjusting wear pads eliminate metal to metal contact between sections. Boom angle indicators on both sides of boom. Integral holding valves on each telescope cylinder.

BOOM NOSE - Three sheaves mounted on heavy duty needle bearings. Removable pin type rope guards allow easy reeving. Rope dead end on one side on boom nose.

BOOM ELEVATION - Dual double acting hydraulic cylinders with integral holding valves; elevation from 0° to 75°. Combination controls provided for hand or foot operation.

***JIBS** - 24 ft. (7.3m) "Stowaway" for 28 ft. - 70 ft. (8.5 - 21.3m) boom. 20 ft. (6.1m), "Stowaway" for 24 ft. - 78 ft. (7.3 - 23.8m) and 24 ft. - 60 ft. (7.3 - 18.3m) booms. All jibs have single rope self-equalizing suspension and jib backstops, sheave mounted on heavy duty needle bearings.

SWING - Ball bearing swing circle, 360° continuous rotation. Grove planetary "Glide Swing" with foot actuated disc swing brake, and hand operated turntable brake. Combination controls provided for hand or foot operation. Swing speed 3.0 RPM.

OUTRIGGER CONTROLS - Independently controlled in-out-up-and-down from cab. Sequence control arrangement eliminates accidental outrigger actuation.

HYDRAULIC SYSTEM:
RESERVOIR - 73 gallon (276 liter), all steel welded construction with integral baffles, clean out access and dipstick.

FILTER - Return line type, replaceable cartridge with by-pass protection; 10 micron rating.

PUMPS - 3 section, gear type, PTO drive off transmission with pump disconnect operated from carrier cab. Combined capacity 106.5 GPM (403 LPM).

CONTROL VALVES - Precision four-way, double-acting with integral load check, 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/cm²).

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

POWER DISTRIBUTION - (Main & *Aux. Hoists) (Boom Elevation, Mid Telescope & Main Hoist Boost) (Swing, Fly Telescope, Outriggers).

HOIST SPECIFICATIONS

DESCRIPTION: Power up and down, equal speed, planetary reduction, with integral automatic brake.		
HOIST DATA	MAIN HOIST Grove Model 15H-16A	AUXILIARY HOIST Grove Model 15S-11A
Drum Dimensions	12 in. dia. (305mm) 16 in. length (406mm) 17.5 in. flange dia. (445mm)	12 in. dia. (305mm) 11 in. length (279mm) 17.5 in. flange dia. (445mm)
PERFORMANCE: Max. Single Line Spd. Max. Single Line Pull	330 FPM (100.6m/min.) 9165 lb. (4157 kgs.)	200 FPM (61.0m/min.) 9165 lb. (4157 kgs.)
Drum Rope Storage Capacity	**720 ft. of ½ dia. rope (219.5m of 13mm)	489 ft. of ½ dia. rope (149.1m of 13mm)
Permissible Single Line Rope Pull	½ in. (13mm) 6x37 Class 7200 lb. (3266 kgs.) ½ in. (13mm) 19x7 Class 6150 lb. (2790 kgs.)	½ in. (13mm) 6x37 Class 7200 lb. (3266 kgs.) ½ in. (13mm) 19x7 Class 6150 lb. (2790 kgs.)

**6th layer of rope not recommended for hoisting operations.



RATED LIFTING CAPACITIES (In Pounds)
16 Ft. Outriggers Fully Extended
85% OF TIPPING

OVER SIDE - 28-70 ft. BOOM

Radius in Feet	Boom Length in Feet							
	28	34	40	46	52	58	64	70
10	36,000	34,000	31,900	29,800	27,800			
12	32,000	31,000	30,000	29,800	27,800			
15	27,000	27,000	27,000	27,000	25,750	23,700		
20	21,250	21,250	21,000	21,000	20,750	20,500	20,400	20,250
25		15,500	15,500	15,500	15,500	15,500	15,300	15,000
30		10,900	10,900	10,900	10,900	10,900	10,900	10,900
35			8,350	8,350	8,350	8,350	8,350	8,350
40				6,350	6,350	6,350	6,350	6,350
45					4,800	4,800	4,800	4,800
50						3,900	3,900	3,900
55							3,150	3,150
60								2,500
65								
66.5								2,000

OVER REAR - 28-70 ft. BOOM

Radius in Feet	Boom Length in Feet							
	28	34	40	46	52	58	64	70
10	36,000	34,000	31,900	29,800	27,800			
12	32,000	31,000	30,000	29,800	27,800			
15	27,000	27,000	27,000	27,000	27,000	25,750	23,700	
20	21,250	21,250	21,000	21,000	20,750	20,500	20,400	20,250
25		16,500	16,500	16,200	15,900	15,600	15,300	15,000
30		12,800	12,800	12,500	12,300	12,100	11,900	11,700
35			9,500	9,500	9,500	9,500	9,500	9,500
40				7,750	7,750	7,750	7,750	7,750
45					6,000	6,000	6,000	6,000
50						4,900	4,900	4,900
55							4,100	4,100
60								3,200
65								
66.5								2,350

OVER SIDE - 24-78 ft. BOOM

Radius in Feet	Manual Fly Section Retracted Boom Length in Feet						Manual Fly Ext. *78
	24	30	36	42	48	54	
10	36,000	34,500	32,700	30,800			
12	32,000	32,000	31,000	29,900	28,000		
15	26,000	26,000	26,000	25,500	24,000	22,000	20,000
20	20,000	20,000	20,000	20,000	20,000	19,000	17,500
25		14,000	14,000	14,000	14,000	14,000	13,000
30			10,500	10,500	10,500	10,500	11,000
35				7,600	7,600	7,600	8,500
40					6,000	6,000	7,000
45						4,500	5,400
50							3,250
55							
60							2,300
65							1,700
70							1,200
74.8							800

OVER REAR - 24-78 ft. BOOM

Radius in Feet	Manual Fly Section Retracted Boom Length in Feet						Manual Fly Ext. *78
	24	30	36	42	48	54	
10	36,000	34,500	32,700	30,800			
12	32,000	32,000	31,000	29,900	28,000		
15	26,000	26,000	26,000	25,500	24,000	22,000	20,000
20	20,000	20,000	20,000	20,000	20,000	19,000	17,500
25		15,000	15,000	15,000	15,000	14,500	14,000
30			11,500	11,500	11,500	11,500	11,500
35				8,600	8,600	8,600	8,600
40					6,500	6,500	7,700
45						5,000	6,200
50							3,800
55							
60							3,000
65							
70							3,100
74.8							2,500

Capacities appearing in shaded area are based on machinery strength and tipping should not be relied upon as a capacity limitation. *Indicates maximum capacity of Extended Fly Section regardless of boom length.

ON RUBBER

28-70 ft. BOOM			24-78 ft. BOOM		
Radius in Feet	Over Rear	Over Side	Radius in Feet	Over Rear	Over Side
10	20,000	17,500	10	20,000	14,250
12	17,700	12,750	12	17,700	11,900
15	14,200	9,750	15	14,200	8,000
20	9,100	5,100	20	9,100	3,500
25	6,500	3,100	25	6,500	2,200
30	4,600	1,750	30	4,250	1,100
35	3,400	750	35	2,650	
40	2,400	390	40	1,300	
45	1,650		45	800	
			50	400	

JIB CAPACITIES

20 ft. JIB			24 ft. JIB		
MIN. BOOM ANGLE	NO OFFSET	MAX. OFFSET 30°	MIN. BOOM ANGLE	NO OFFSET	MAX. OFFSET 26°
75	6,200	2,600	75	6,400	3,100
70	5,000	2,400	70	5,150	2,850
65	4,300	2,300	65	4,300	2,650
60	3,700	2,150	60	3,750	2,450
55	3,300	2,100	55	3,300	2,275
50	2,600	1,650	50	2,950	2,170
45	2,400	1,500	45	2,650	2,125
40	2,200	1,460	40	2,550	2,085
30	1,900	1,200	35	2,475	2,040
			30	2,400	2,000
			26	2,300	1,950

NOTES TO LIFTING CAPACITIES

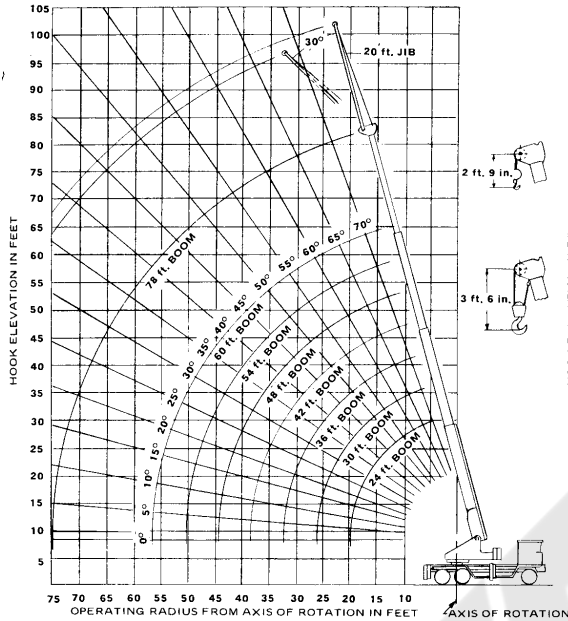
- Rated lifting capacities are based on freely suspended loads. They are the maximum covered by the manufacturer's warranty with the machine leveled and standing on a firm supporting surface. Ratings with outriggers are based on outriggers being extended to their maximum positions.
- Practical working loads for each particular job shall be established by the user depending on operating conditions; including the supporting surface, wind and other factors affecting stability, hazardous surroundings, experience of personnel, handling of load, etc.
- Operating radius is the horizontal distance from the axis of rotation to the centerline of the hoist line or tackle with loads applied.
- "On Rubber" lifting (if permitted) depends on proper tire inflation, capacity, and condition. "On Rubber" loads may be transported at a maximum vehicle speed of 2.5 mi./hr. (4 km./hr.) on a smooth and level surface only.
- Jibs may be used for single line lifting crane service only. Jib capacities are based on structural strength of jib or main boom. Jib loads must not exceed main boom lifting capacities for the actual operating radius.
- Operation is not intended or approved for any conditions outside of those shown hereon. Handling of personnel from the boom is not authorized except with equipment furnished and installed by Grove Manufacturing Company.
- For clamshell or concrete bucket operation, weight of bucket and load must not exceed 90% of rated lifting capacities.
- Power-telescoping boom sections must be extended equally at all times. Long cantilever booms can create a tipping condition when in extended and lowered position.
- The maximum load which may be telescoped is limited by hydraulic pressure, boom angle, boom lubrication, etc. It is safe to attempt to telescope any load within the limits of rated lifting capacity chart.
- With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard rope lengths.
- With certain boom and load combinations, raising of load with boom lift cylinders may not be possible. Operational safety is not affected by this condition.
- Keep load handling devices a minimum of 12 inches (30 CM) below boom head when lowering or extending boom.
- For multiple part reeving, use one part of line for each 6,000 lbs. of load.
- All load handling devices and/or boom attachments are considered part of the load and suitable allowances must be made.

RANGE DIAGRAMS



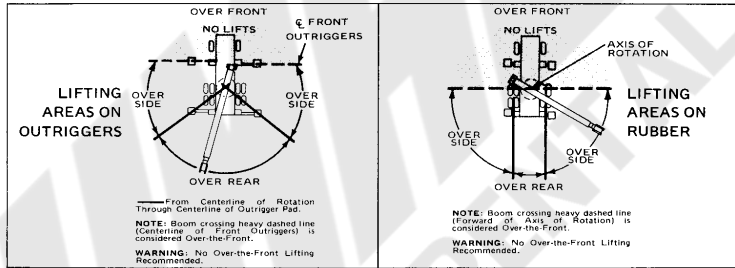
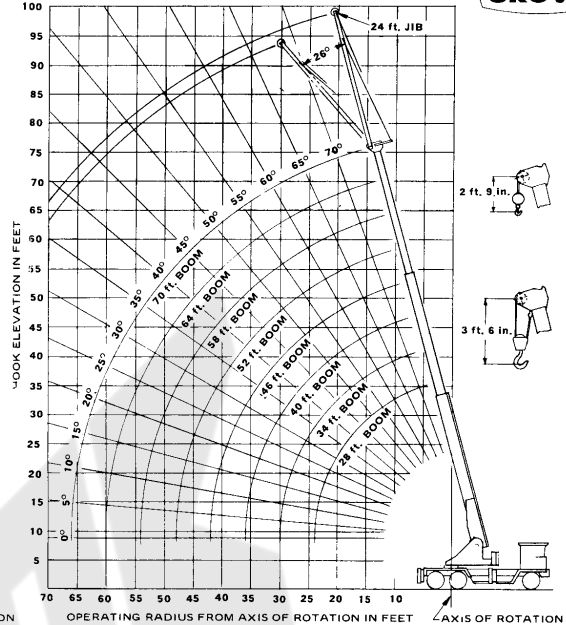
24 ft. - 78 ft. BOOM

HOOK ELEVATION CHART



28 ft. - 70 ft. BOOM

HOOK ELEVATION CHART



SPEED AND GRADEABILITY

ENGINE	CONFIG.	SPEED RANGES		% OF GRADEABILITY @ MAX. TORQUE
		@ MAX. GOVERNED RPM mph	km/h	
GM6V-53N	6 x 4	2.74 to 49	4 to 80	40.12 to 1.81%
	6 x 6	1.65 to 45	3 to 80	62.53 to 1.31%
CUMMINS V-555	6 x 4	2.75 to 49	4 to 80	41.36 to 1.77%
	6 x 6	1.61 to 45	3 to 78	61.87 to 1.86%

NOTE: Performance based on 49,000 lb. (22,226Kg) GVW and standard SAE engine rating conditions using standard tires, transmissions and axles. Performance data may vary plus or minus 10% due to variations in engine performance and vehicle weights.

AXLE WEIGHT DISTRIBUTION

CONFIGURATION		FRONT	REAR	GROSS
		LBS.	LBS.	LBS.
6 x 4	LBS.	16,900	31,000	47,500
	KGS.	7,484	14,061	21,546
6 x 6	LBS.	17,500	31,000	48,500
	KGS.	7,938	14,061	22,000

Includes GM6V-53N engine, 28 ft. - 70 ft. (8.5-21.3m) boom, 24 ft. (7.3m) jib, main hoist, and standard counterweight.

NOTE: Weights may vary plus or minus 3% due to manufacturing tolerances.

ENGINE SPECIFICATIONS

MAKE & MODEL	GM6V-53N	Cummins V-555
TYPE	6 Cyl. Diesel O.H.V.	8 cyl. Diesel O.H.V.
BORE & STROKE	3.875 in.x4.50 in. (98mmx114mm)	4.625 in.x4.125 in. (117mmx105mm)
DISPLACEMENT	318 cu. in. 5211 CM ³	555 cu. in. 9095 CM ³
HORSEPOWER (Net)	178 @ 2600 RPM	203 @ 3300 RPM
GOVERNED RPM	2600	3300
TORQUE (Net)	440 lbs. ft. @ 1400RPM	425 lbs. ft. @ 1800RPM
ELECTRICAL SYSTEM	12 volt neg. ground	12 volt neg. ground
COMBUSTION SYSTEM	2 cycle with blower	4 cycle naturally aspirated
COOLING SYSTEM	Liquid	Liquid
FUEL CAPACITY	40 gal. (151 Liters)	40 gal. (151 Liters)
ALTERNATOR	60 amp. 12 volt	58 amp. 12 volt
BATTERY	(1) 200 A.H. 12 volt	(1) 200 A.H. 12 volt
AIR CLEANER	Dry Type	Dry Type
AIR COMPRESSOR	12 CFM	12 CFM
HOURMETER	Yes	Yes

spec p4 (2336x3235x2 bmp)

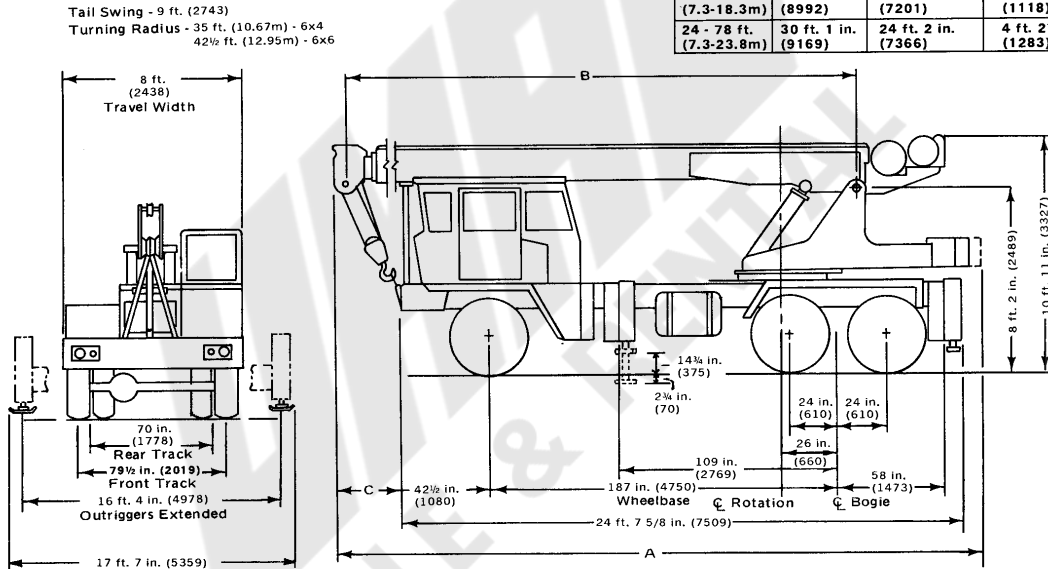
CARRIER SPECIFICATIONS

CARRIER - Model GF18
WHEELBASE - (6x4 and 6x6) 187 in. (4.8m)
OUTRIGGERS - Hydraulic, double box, integral with carrier frame; beams extend to 16 ft. 4 in. (5.0m) centerline to centerline. Vertical jacks with integral check valves, steel covers and mechanical pin locks.
FRAME - 12 in. x 12 in. (305mm x 305mm) 65 lbs. (29 kgs) Man Ten steel. "H" beam with Man Ten reinforcing plates, box type cross-members. All welded construction.
STEERING GEAR - Ross TE-71 cam and lever type with hydraulic power assist.
CLUTCH - 14 in. (356mm) single plate, dry disc. Lining Area 218 sq. in. (1407 cm²).
TRANSMISSION - (6x4) Main: Fuller, 5 speeds forward and 1 reverse. Auxiliary: 3 speed with PTO. (6x6) Main: Fuller 5 speeds forward and 1 reverse. FWD dual range transfer case with PTO and front axle declutch.
UNIVERSAL JOINTS - Needle bearing type.
AXLES - (6x4) Front: (1) FWD ND18 non-driving "I" beam, 18,000 lbs. (8165 kgs) capacity. (6x6) front: (1) FWD 2SC 18,000 lbs. (8165 kgs.) capacity. (6x6 and 6x4) Rear: (2) Timken SHHD with full floating shafts and interaxle differential 32,000 lbs. (14,515 kgs) capacity.
SUSPENSION - Front: Spring mounted with shock absorbers. Rear: Solid mounted bogie with tandem axle walking beams.
TIRES - (6x4) Front: 15x22.5 14 ply Duplex Hiway Tread, tubeless. (6x6) Front: 15x22.5 16 ply Duplex M&S tread, tubeless. (6x4 and 6x6) Rear: 10:00x20 12 ply duals, NDM&S tread, tube type.

DRIVE - 6x4 or 6x6
WHEELS - Front 22.5 in. (572mm) cast spoke, 12.25 in. (311mm) rim width. Rear: 20 in. (508mm) cast spoke, 7.5 in. (191mm) rim width.
BRAKES - Full air on all wheels with 12 CFM compressor and alcohol evaporator kit. Total lining area - 804 sq. in. (5187 CM²). Front: 17 1/4 in. x 4 in. (438mm x 102mm) Rear: 16 1/2 in. (419mm x 102mm).
PARKING BRAKE - Maxi-brake on one rear axle with emergency release kit.
ELECTRICAL SYSTEM - 12 volt starting and lighting. Federal Safety Standard lights and reflectors.
CAB - All steel, one man, laminated safety glass windshield and windows; windshield washer and electric wiper, heater, fan type, defroster, domelight, dashlight, electric horn, door & window locks. Heavy duty torsion spring swivel seat with seat belt, traffic hazard warning switch (4 way flasher), dual rear view mirrors. Complete engine instrumentation and driving controls. Fully adjustable seat swivels 180° for crane operation. Crane operating cab section has hinged skylight, removable windshield, sliding side glass and full length control levers with combination hand/foot controls for swing and boom elevation, 3-3/4 lb. (1.7 kg) fire extinguisher.
CAB INSTRUMENTATION - Engine oil pressure gauge, engine water temperature gauge, voltmeter, speedometer, air pressure gauge, electric fuel gauge, hourmeter, high beam indicator, low air pressure warning system, tachometer.

DIMENSIONS

BOOM	A	B	C
28 - 70 ft. (8.5-21.3m)	33 ft. 6 in. (10211)	27 ft. 7 1/2 in. (8420)	7 ft. 8 in. (2337)
24 - 60 ft. (7.3-18.3m)	29 ft. 6 in. (8992)	23 ft. 7 1/2 in. (7201)	3 ft. 8 in. (1118)
24 - 78 ft. (7.3-23.8m)	30 ft. 1 in. (9169)	24 ft. 2 in. (7366)	4 ft. 2 1/2 in. (1283)



NOTE: dimensions shown in parenthesis () are millimeters. (mm)

*DENOTES OPTIONAL EQUIPMENT

Constant improvement and engineering progress make it necessary that we reserve the right to make specification, equipment and price changes without notice.



HYDRAULIC CRANES

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