

# GROVE

# TMS9000E

## product guide

### features

- 110 USt (90 t) capacity
- 36-142 ft (11.2 - 43.3 m) 5 section full power boom
- Patented TWIN-LOCK boom pinning system
- 33 - 56 ft (10 - 17 m) bifold lattice swingaway extension
- Optional 33 - 56 ft (10 - 17 m) hydraulically offsettable bifold swingaway
- Optional lattice insert extensions for a 237 ft (72.2 m) maximum tip height
- Tilttable superstructure cab
- Up to 48,500 lb (21 300 kg) counterweight with hydraulic removal system
- Cummins ISM 450 07, 6-cylinder turbo-charged aftercooled 450 hp (336 kW) engine



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Truck Mounted Crane

\*Product may be shown with optional equipment.

# features

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**A powerful superstructure on a powerful chassis makes this 110 USt truck crane unbeatable on the road and on the jobsite.**



The new Grove MEGAFORM™ boom shape eliminates weight and increases capacity compared to conventional shapes. The unique TWIN-LOCK™ boom pinning system automatically pins the sections in position using two horizontal large diameter pins. A single cylinder inside the boom reduces weight which has been used else-where to strengthen the machine.



Standard front and rear air ride suspension provides comfortable ride at 65 mph.



Up to 48,500 lb of counterweight can be power installed and removed from the superstructure cab, making transporting a breeze.



For improved up-and-over reach, a power luffing extension is available on the TMS9000E hydraulically offsettable from the superstructure cab from 5° to 40°.



Crane functions are controlled by ECOS (Electronic Crane Operating System) with CAN-BUS. The EKS5 load moment indicator provides detailed feedback and control of the cranes operating functions.



Two-stage inverted jack outriggers provide 3 position settings – 0%, 50% and 100%.



Electronically controlled Cummins ISM450 diesel engine (left) provides plenty of power, on highway and at the jobsite.

**TMS9000E**

# specifications

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## Superstructure



### Boom

37 ft. - 142 ft. (11.2 m - 43.2 m) five section, full power boom with TWIN-LOCK™ boom pinning system. Maximum tip height: 150 ft (45.8 m).



### Boom Nose

Five nylatron sheaves, mounted on heavy duty tapered roller bearings with removable pin-type rope guards. Quick reeve boom nose. Removable auxiliary boom nose with removable pin type rope guard.



### Boom Elevation

Single lift cylinder with safety valve provides boom angle from -3° to +82°.



### Offsettable Lattice Extension

33 ft. - 56 ft. (10 m - 17 m) bifold lattice swingaway extension manual offset at 0°, 20°, and 40°. Maximum tip height: 207 ft (63.1 m).



### \* Offsettable Lattice Extension

33 ft - 56 ft (10 m - 17 m) bifold lattice swingaway extension hydraulically offset from 5° - 40°. Controlled from the crane cab. Maximum tip height: 207 ft (63.1 m).



### \* Lattice Jib Extensions

Two 16 ft (5 m) inserts for use with lattice swingaway extension to increase length up to 72 ft (21.9 m) or 88 ft (26.8 m). Maximum tip height: 237 ft (72.2 m)



### Load Moment & Anti-Two Block System

Load moment and anti-two block system with audio/visual warning and control lever lockout provides electronic display of boom angle, length, radius, tip height, relative load moment, maximum permissible load, load indication and warning of impending two-block condition.



### Cab

All aluminum construction cab with acoustical lining is hydraulically tiltable to +20° and includes tinted safety glass, adjustable operator's seat with hydraulic suspension, sliding windows in side and cab rear, hinged front window with wiper, sun visor and window shade. Other features include diesel heater/defroster, armrest integrated crane controls, and ergonomically arranged instrumentation.



### Crane Control System

Full control of all crane movements using electrical control levers with automatic reset to zero. Controls are integrated with the LMI and engine management system by CAN-BUS. ECOS system with graphic display.



### Swing

Two planetary gear boxes with axial piston fixed displacement motors. Infinitely variable to 1.7 rpm. Holding brake and service brake.



### Counterweight

16,000 lb (7258 kg) consisting of various sections with hydraulic installation/removal system operated from the cab.

\*Optional "Heavy Lift" counterweight package consisting of (2) 10,000 lb (4636 kg) sections in addition to standard, for a total of 36,000 lb (16329 kg).

\*Optional "XL" counterweight package consisting of (2) 4,000 lb (1814 kg) and (2) 2,250 lb (1021 kg) wing sections in addition to standard and "Heavy Lift" package, for a total of 48,500 lb (21300 kg).



### Hydraulic System

2 separate circuits, 1 axial piston variable displacement pump (load sensing) with electronic power limiting control and 1 gear pump for swing.

2 thermostatically controlled oil coolers keep oil at optimum operating temperature.

Tank capacity: 134 gallons. (508 l)



### Hoist

Main and auxiliary hoists are powered by axial piston motor with planetary gear and brake. "Thumb-thumper" hoist drum rotation indicator alerts operator of hoist movement.

Hoist Line Pull:

1st Layer: 22,122 lb (10034 kg)

3rd Layer: 18,665 lb (8466 kg)

5th Layer: 16,142 lb (7322 kg)

Maximum Line Speed:

365 fpm (111 m/min)

Maximum Permissible Line Pull:

15,700 lb (7621 kg.) Casar Eurolift

Optional 17,160 lb (7784 kg.) 35X7 Flex-x

Rope Diameter:

3/4" (19 mm)

Rope Length:

738 ft (225 m) Casar Eurolift

702 ft (214 m) 35X7 Flex-x

Maximum Rope Storage:

984 ft (300 m)

*\*Denotes optional equipment*

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# specifications

## Carrier

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### Chassis

Triple box section, four-axle carrier, fabricated from high strength, low alloy steel with towing and tie-down lugs.

### Outrigger System

Four hydraulic telescoping, two-stage, double box beam outriggers with inverted jack and integral holding valves. Quick release type outrigger floats 24 in. (610 mm) diameter. Three position setting with fully extended, intermediate (50%) extended and fully retracted capacities. Maximum outrigger pad load: 109,000 lbs. (49 442 kg).

### Outrigger Controls

Located in the superstructure cab and on either side of carrier. Crane level indicators located at all stations. Auto leveling standard.

### Engine

Cummins ISM 450, 10.8 L diesel (On Highway EPA Certified) six cylinders, after cooled, 450 bhp (336 kW) @ 2,000 rpm. Maximum torque 1,550 ft. lb. (2,102 Nm) @ 1,200 rpm. Equipped with engine compression brake, block heater, cold start aid (less canister) and audio-visual engine distress system.

**Fuel Requirement** - Maximum of 15 ppm sulfur content (Ultra Low Sulfur Diesel).

### \*Engine (Required for sale outside North America)

Cummins QSM 402, 10.8 L diesel (Off Highway EPA Certified) six cylinders, after cooled, 402 bhp (300 kW) @ 1,800 rpm. Maximum torque 1,400 ft. lb. (1,898 Nm) @ 1,400 rpm. Equipped with engine compression brake, block heater, cold start aid (less canister) and audio-visual engine distress system.

**Fuel Requirement** - Maximum of 5,000 ppm sulfur content.

### Fuel Tank Capacity

100 gallons (376 L).

### Transmission

Roadranger 11 speeds forward, 3 reverse.

### Steering

Front axle, single circuit, mechanical steering with hydraulic power assist. Turning radius: 45.1 ft.

### Axles

Front: (2) beam-type steering axles, 83.4 in. (2.12 m) track.  
Rear: (2) single reduction drive axles, 74.5 in. (1.89 m) track. Inter-axle differential locks.  
Drive: 8 x 4 x 4.

### Brakes

S-cam, dual air split system operating on all wheels. Spring-applied, air released parking brake acting on rear axles. Air dryer. ABS with traction control.

### Suspension

Front: Walking beam with air bags and shock absorbers.  
Rear: Walking beam with air bags and shock absorbers.

### Tires

Front: 445/65R 22.5 tubeless, mounted on aluminum disc wheels.  
Rear: 315/80R 22.5 tubeless, mounted on aluminum disc outer wheels, inner wheels steel.

### Lights

Full lighting package including turn indicators, head, tail, brake, and hazard warning lights.  
Meets FMVSS and CMVSS standards.

### Cab

One man design, aluminum fabricated with acoustical lining and tinted safety glass throughout. Deluxe fabric covered seat with air adjustment. Complete driving controls and engine instrumentation including tilt telescope steering wheel, tachometer, speedometer, voltmeter, water temp., oil pressure, fuel level, air pressure gauge, engine high temp./low oil pressure A/V warning. Other standard items include hot heater, heater/defroster, electric windshield wash/wipe, fire extinguisher, seat belt and door lock.

### Electrical System

Four maintenance-free batteries provide 24 V electrical system. Standard battery disconnect.

### Maximum Speed

65 MPH (105 kph).

### Gradeability (Theoretical)

70%.

## Miscellaneous Standard Equipment

Aluminum fenders with rear storage compartments; dual rear view mirrors; electronic back-up alarm; sling/tool box; tire inflation kit; air cleaner restriction indicator; headache ball stowage; aluminum wheels;

## \* Optional Equipment

- \*Flashing Light Package (Includes amber strobe for superstructure and carrier cab)
- \*Air conditioning
- \*Dual boom base mounted floodlights
- \*Aircraft warning light
- \*Hookblocks
- \*Pintle hook (rear)
- \*Trailing Boom Package
- \*Aluminum outrigger pads
- \*Air horn
- \*Counterweight packages
- \*Tow cable
- \*Wind speed indicator
- \*Winterfront radiator cover
- \*Additional storage
- \*Counterweight slings

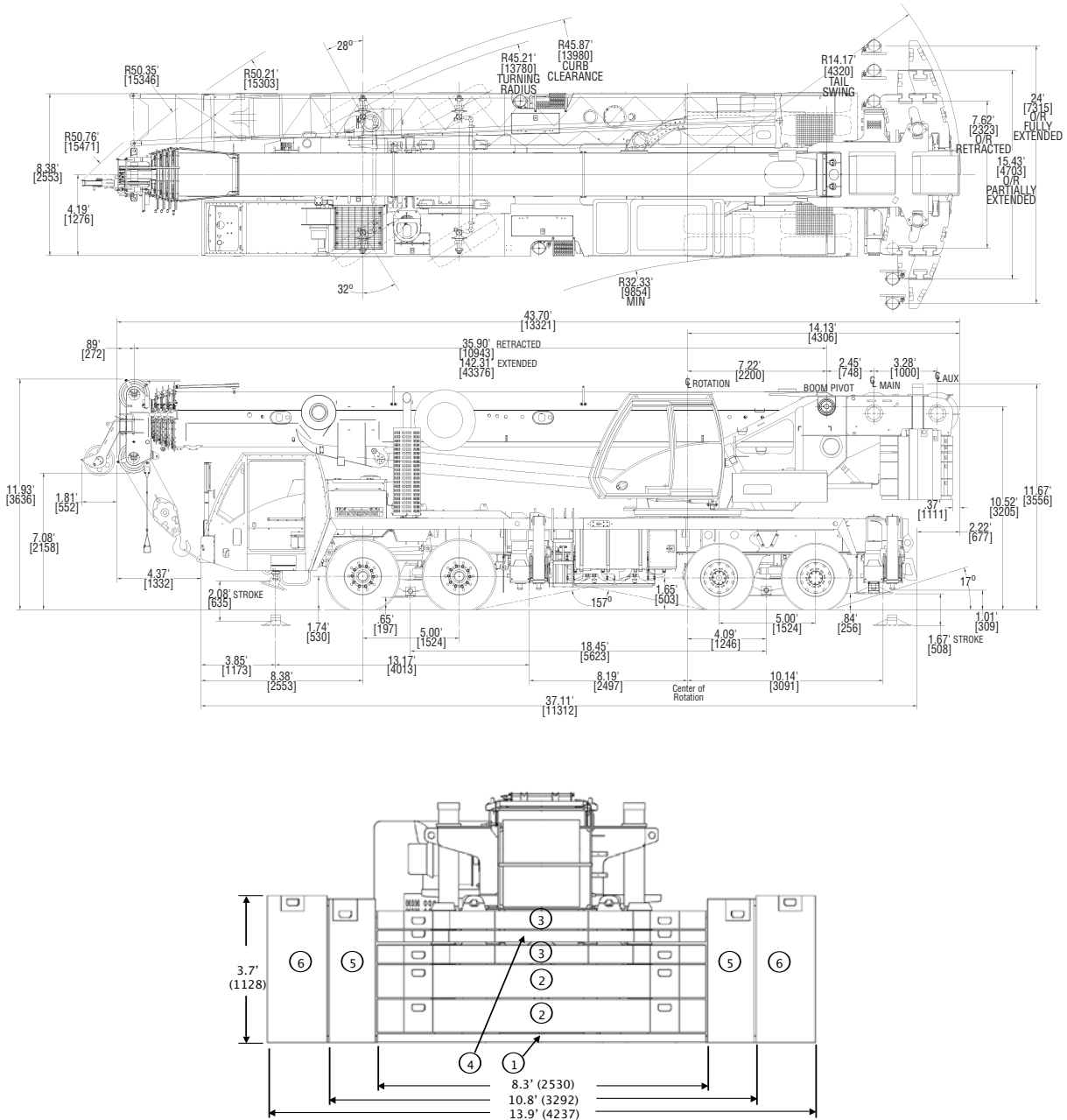
*\*Denotes optional equipment*

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# dimensions

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Load Chart Configurations

1. 3,000 lb. baseplate
2. 10,000 lb. stackable
3. 5,000 lb. pinned or stackable
4. 3,000 lb. pinned or stackable
5. 4,000 lb. wing
6. 2,250 lb. wing

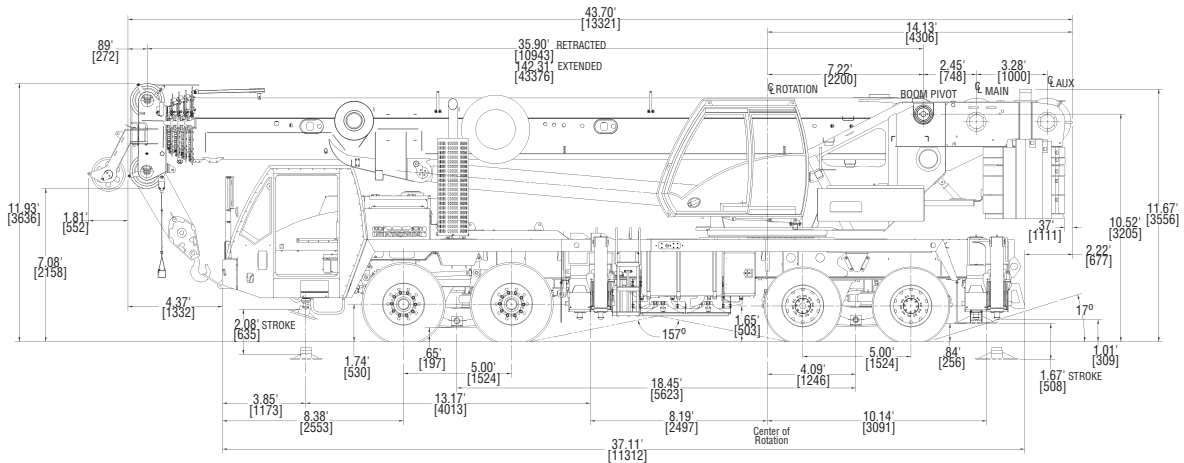
	1	2	3	4	5	6
0						
6,000 lb.	x			x		
11,000 lb.	x		x	x		
16,000 lb.	x		2x	x		
21,000 lb.	x	x	x	x		
26,000 lb.	x	x	2x	x		
36,000 lb.	x	2x	2x	x		
44,000 lb.	x	2x	2x	x	2x	
48,500 lb.	x	2x	2x	x	2x	2x

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# travel proposals

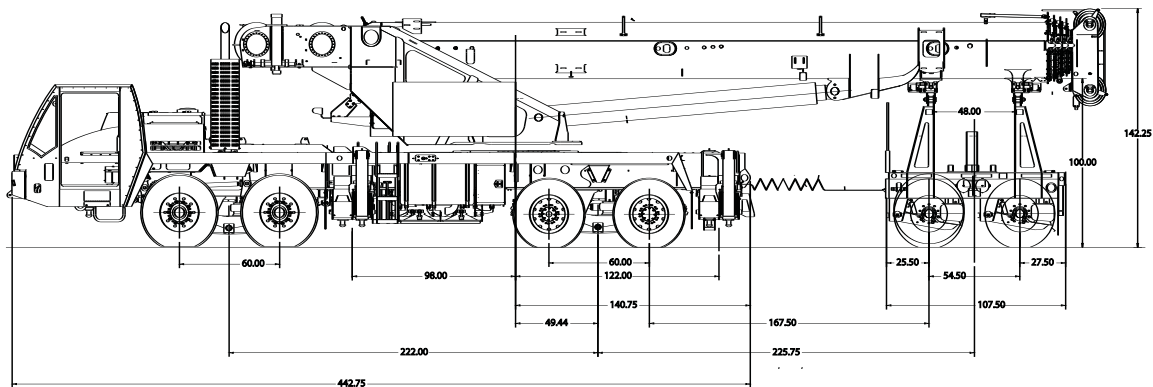
## Boom over front

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	Front (lb.)	Rear (lb.)	G.V.W. (lb.)
Basic machine: includes main and auxiliary hoists with rope, auxiliary boom nose, manual bifold swingaway, headache ball stowed, 40 ton hookblock at bumper, no counterweight and driver.	43,129	40,843	83,972
<b>ADD:</b>			
3,000 lb. cwt. on carrier deck and 3,000 lb. cwt. on superstructure. Total counterweight - 6,000 lb.	44,459	45,532	89,991
6,000 lb. cwt. on carrier deck and 3,000 lb. cwt. on superstructure. Total counterweight - 9,000 lb.	47,087	45,923	93,010
8,000 lb. cwt. on carrier deck and 8,000 lb. cwt. on superstructure. Total counterweight - 16,000 lb.	46,699	53,330	100,029
13,000 lb. cwt. on carrier deck, 13,000 lb. cwt. on superstructure. Boom telescoped 2 feet. Total counterweight 26,000 lb.	50,405	59,624	110,029
<b>Air conditioning - chassis and superstructure cabs.</b>	99	19	118
Hydraulic bi-fold swingaway in lieu of the manual swingaway (includes hose reel)	408	-13	395
Maximum Allowable	49,200	60,000	109,200
Michelin Tires	51,200	60,000	111,200

## Trailing boom dolly



	Front (lb.)	Rear (lb.)	Boom Dolly (lb.)	G.V.W. (lb.)
Basic machine: includes main and auxiliary hoists with rope, auxiliary boom nose, manual bifold swingaway, stowed headache ball, 40 ton hookblock hanging at boom nose, no counterweight, driver and 6,000 lb. boom dolly.	35,797	32,223	21,952	89,972
<b>ADD:</b>				
6,000 lb. cwt. on front chassis deck, 5,000 lb. cwt. on rear chassis counterweight carrier, 15,000 lb. on boom dolly. Total counterweight - 26,000 lb.	39,416	39,856	36,971	116,243
8,000 lb. cwt. on front chassis deck, 5,000 lb. cwt. on rear chassis counterweight carrier, 23,000 lb. on boom dolly. Total counterweight - 36,000 lb.	41,157	40,115	45,009	126,281
<b>Air conditioning - chassis and superstructure cabs.</b>	104	14	-	118
Hydraulic bi-fold swingaway in lieu of the manual swingaway (includes hose reel)	64	39	291	395

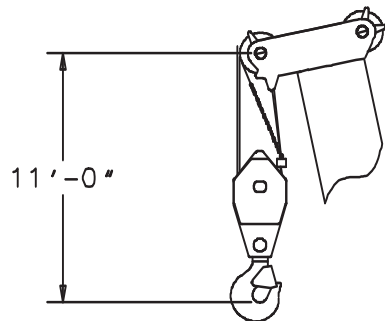
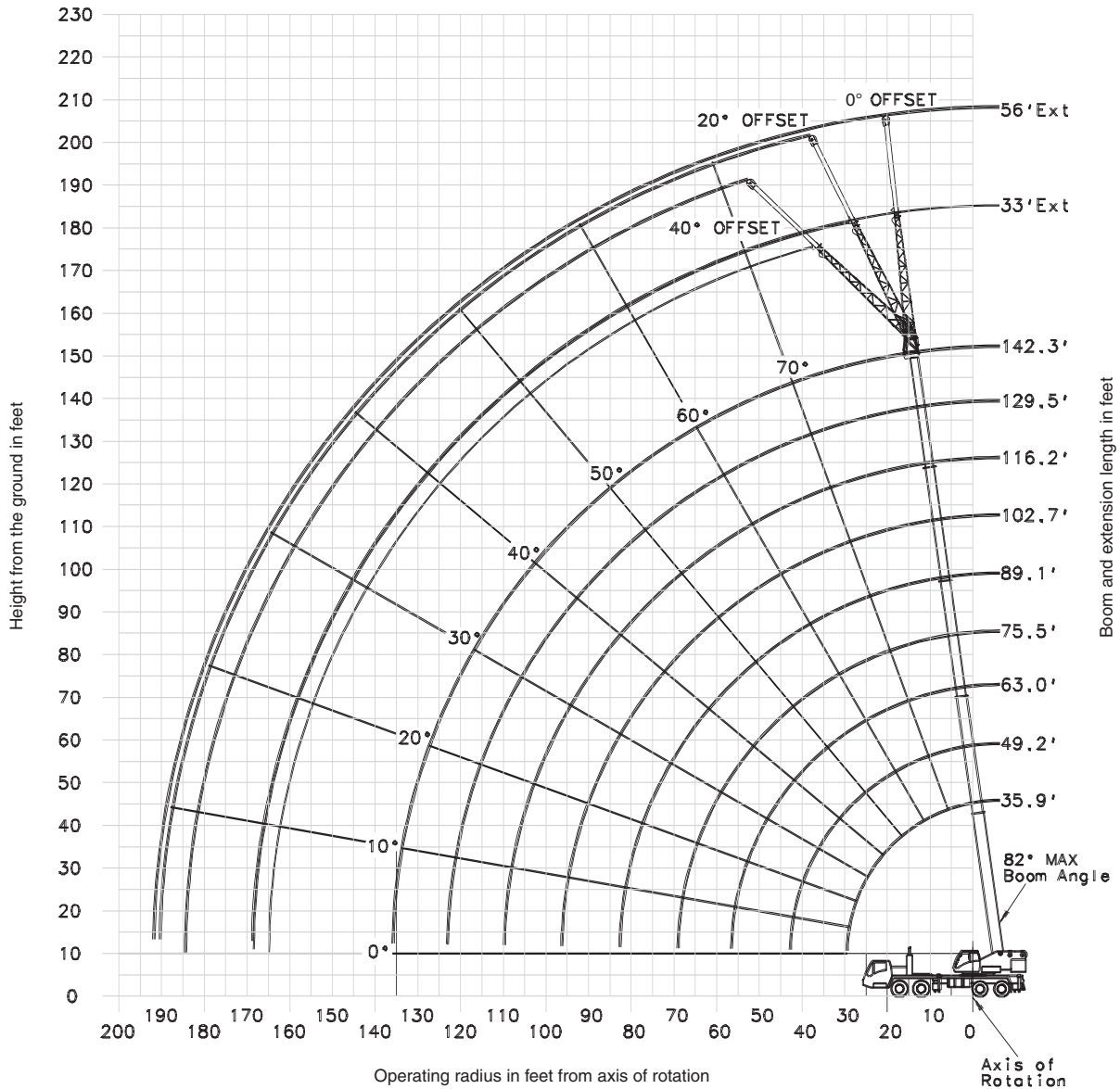
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# working range

## 36-142' main boom

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Dimensions area for largest Grove furnished hookblock and headache ball, with anti-two block activated.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

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# load charts

8

-   
36-142 ft.  
Fixed lengths
-   
48,500 lbs.
-   
100%  
24'-0"
-   
360°

Radius	Pounds (thousands)									
	35.9'	49.2'	63.0'	75.5'	89.1'	102.7'	116.2'	129.5'	142.3'	
8	* 220,000									
9	* 185,000									
10	165,000	138,000	130,500	111,000	83,000					
12	151,000	138,000	129,500	111,000	83,000					
15	131,500	127,500	122,500	111,000	83,000	60,150				
20	105,500	105,500	101,000	99,400	81,500	60,150	44,500	33,450		
25	83,600	85,750	84,300	84,550	73,500	56,750	44,500	33,450	26,700	
30		70,150	70,600	70,350	65,600	50,100	44,250	33,450	26,700	
35		58,050	58,600	57,850	59,150	44,700	40,100	33,450	26,700	
40		48,050	48,950	48,250	49,550	40,150	36,250	32,850	26,700	
45			41,600	43,050	42,250	36,350	32,400	30,050	26,700	
50			37,000	37,450	36,600	32,650	29,550	27,550	25,950	
55			27,450	32,650	31,950	30,250	27,050	25,300	24,100	
60				28,700	27,950	28,200	24,900	23,350	22,350	
65				25,350	24,700	25,400	23,000	21,550	20,750	
70					22,100	22,700	21,200	20,000	19,300	
75					20,850	20,400	19,500	18,600	18,000	
80					19,100	18,450	18,400	16,650	16,100	
85						16,700	16,750	15,550	15,100	
90							15,250	15,600	14,300	14,150
95							11,500	14,250	13,400	13,300
100								13,050	12,700	12,350
105								12,000	11,950	11,350
110									11,000	10,400
115									10,100	9,570
120									9,360	8,780
125										8,070
130										7,420
135										4,980
140										

\* Requires special equipment

-   
36-142 ft.  
Fixed lengths
-   
44,000 lbs.
-   
100%  
24'-0"
-   
360°

Radius	Pounds (thousands)									
	35.9'	49.2'	63.0'	75.5'	89.1'	102.7'	116.2'	129.5'	142.3'	
10	165,000	138,000	130,500	111,000	83,000					
12	151,000	138,000	129,500	111,000	83,000					
15	131,500	127,500	122,500	111,000	83,000	60,150				
20	105,500	105,500	101,000	99,400	81,500	60,150	44,500	33,450		
25	82,900	84,900	83,600	84,550	73,500	56,750	44,500	33,450	26,700	
30		68,050	68,650	68,200	65,600	50,100	44,250	33,450	26,700	
35		56,000	56,450	55,700	57,050	44,700	40,100	33,450	26,700	
40		46,500	47,100	47,450	47,700	40,150	36,250	32,850	26,700	
45			40,300	41,500	40,650	36,350	32,400	30,050	26,700	
50			35,600	35,550	34,700	32,650	29,550	27,550	25,950	
55			27,450	30,800	30,050	30,250	27,050	25,300	24,100	
60				27,000	26,250	27,000	24,900	23,350	22,350	
65				23,850	23,550	23,850	22,350	21,550	20,750	
70					22,050	21,300	20,700	20,000	19,300	
75					19,800	19,100	19,400	18,050	18,000	
80					17,900	17,250	17,500	16,150	16,100	
85						15,650	15,950	15,050	15,100	
90						14,250	14,550	14,200	13,800	
95						11,500	13,250	13,150	12,550	
100							12,150	12,050	11,450	
105							11,100	11,050	10,450	
110								10,150	9,570	
115								9,330	8,760	
120								8,590	8,010	
125									7,330	
130									6,720	
135									4,980	
140										

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# load charts

9

 36-142 ft.  
Fixed lengths  
 26,000 lbs.  
 100%  
24'-0"  
 360°

Radius	Pounds (thousands)									
	35.9'	49.2'	63.0'	75.5'	89.1'	102.7'	116.2'	129.5'	142.3'	
10	165,000	138,000	130,500	111,000	83,000					
12	151,000	138,000	129,500	111,000	83,000					
15	128,500	127,500	122,500	111,000	83,000	60,150				
20	95,750	97,750	96,300	97,600	81,500	60,150	44,500	33,450		
25	72,700	74,650	75,250	74,750	73,500	56,750	44,500	33,450	26,700	
30		58,850	59,100	59,700	59,750	50,100	44,250	33,450	26,700	
35		46,850	47,850	47,700	46,800	44,700	40,100	33,450	26,700	
40		37,500	38,650	38,500	37,650	38,350	36,250	32,850	26,700	
45			32,100	31,950	31,900	32,000	30,300	30,050	26,700	
50			27,150	27,100	27,850	27,050	27,350	25,900	25,950	
55			21,850	24,250	24,050	23,250	23,550	23,350	22,700	
60				21,300	20,950	21,250	20,500	20,350	19,700	
65				18,750	18,450	18,700	18,300	17,850	17,200	
70					16,400	16,600	16,200	15,900	15,250	
75					14,750	14,950	14,550	14,150	13,500	
80					13,350	13,400	13,000	12,600	11,950	
85						12,050	11,650	11,250	10,600	
90						10,900	10,500	10,100	9,470	
95							7,430	9,480	9,070	8,450
100								8,580	8,170	7,550
105								7,770	7,360	6,740
110									6,640	6,020
115									6,000	5,380
120									5,400	4,790
125										4,260
130										3,770
135										3,330
140										

 36-142 ft.  
Fixed lengths  
 11,000 lbs.  
 100%  
24'-0"  
 360°

Radius	Pounds (thousands)										
	35.9'	49.2'	63.0'	75.5'	89.1'	102.7'	116.2'	129.5'	142.3'		
10	164,000	138,000	130,500	111,000	83,000						
12	147,000	138,000	129,500	111,000	83,000						
15	120,500	123,000	121,000	111,000	83,000	60,150					
20	84,900	86,900	87,500	86,750	81,500	60,150	44,500	33,450			
25	61,950	63,550	63,850	65,650	64,500	56,750	44,500	33,450	26,700		
30		46,400	47,550	47,400	46,400	45,400	44,250	33,450	26,700		
35		35,500	36,500	36,350	37,300	36,350	35,850	33,450	26,700		
40			29,250	30,400	30,000	30,000	29,500	29,350	26,700		
45			28,100	24,100	25,000	24,650	24,950	24,500	23,950	23,200	
50				20,000	20,900	20,850	20,800	20,350	19,900	19,150	
55				15,200	17,750	17,650	17,650	17,200	16,750	16,000	
60					15,300	15,250	15,250	14,800	14,350	13,700	
65					13,250	13,200	13,200	12,800	12,350	11,700	
70						11,500	11,500	11,100	10,700	10,050	
75						10,100	10,100	9,730	9,310	8,660	
80						8,920	8,930	8,530	8,110	7,470	
85							7,890	7,500	7,080	6,450	
90							7,000	6,600	6,190	5,560	
95								3,750	5,810	5,400	4,770
100									5,120	4,700	4,080
105									4,490	4,090	3,470
110										3,530	2,910
115										3,040	2,420
120										2,580	1,970
125											1,560
130											1,190
135											
140											

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**GROVE**

# load charts

10



Radius	Pounds (thousands)									
	35.9'	49.2'	63.0'	75.5'	89.1'	102.7'	116.2'	129.5'	142.3'	
10	158,500	138,000	130,500	111,000	83,000					
12	141,500	138,000	129,500	111,000	83,000					
15	110,000	112,000	111,500	111,000	83,000	60,150				
20	75,800	77,850	78,200	78,900	79,000	60,150	44,500	33,450		
25	48,000	50,650	51,950	51,750	50,650	49,800	44,500	33,450	26,700	
30		35,900	37,100	38,400	37,950	37,550	37,350	33,450	26,700	
35		26,450	27,850	28,900	28,850	28,850	28,300	27,750	26,700	
40			21,600	22,600	22,550	22,550	22,050	21,500	20,700	
45			17,300	18,200	18,150	18,150	17,700	17,150	16,400	
50			14,150	15,050	15,000	15,000	14,550	14,100	13,350	
55			10,000	12,550	12,500	12,500	12,100	11,650	10,950	
60				10,600	10,550	10,550	10,150	9,710	9,030	
65				9,040	8,980	8,980	8,570	8,140	7,470	
70					7,670	7,670	7,260	6,840	6,180	
75					6,570	6,560	6,160	5,740	5,090	
80					5,620	5,620	5,230	4,810	4,170	
85						4,820	4,420	4,010	3,370	
90						4,120	3,720	3,310	2,680	
95						1,050	3,100	2,690	2,070	
100							2,560	2,150	1,530	
105							2,070	1,670	1,050	
110								1,240		
115										
120										

TMS9000E

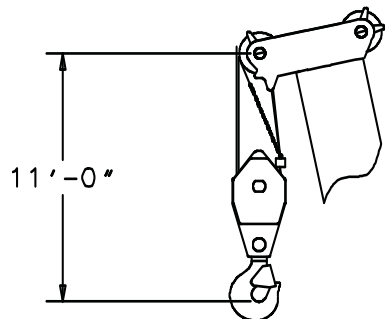
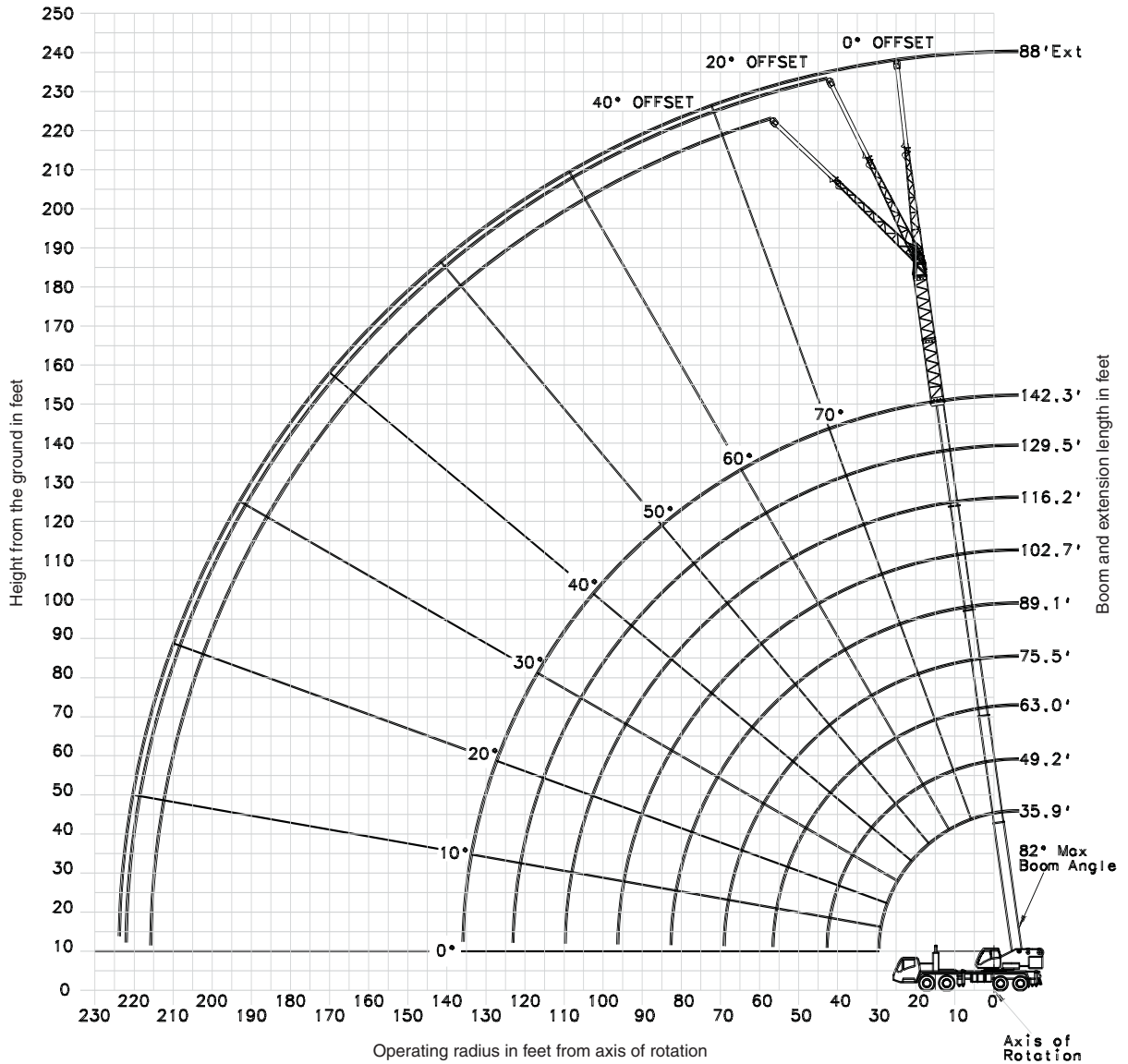
GROVE

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

# working range

## 34-142' manual lattice extension and two 16' inserts

11



Dimensions area for largest Grove furnished hookblock and headache ball, with anti-two block activated.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

TMS9000E

GROVE

# load charts

12

 142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Manual Offsettable Swingaway  
 48,500 lbs.  
 100% 24'-0"  
 360°

Radius	142.3' + 33'			142.3' + 56'			142.3' + 72'			142.3' + 88'		
	0°	20°	40°	0°	20°	40°	0°	20°	40°	0°	20°	40°
30	13,650											
35	13,650			8,470								
40	13,650			8,470								
45	13,650	14,200		8,470			6,920					
50	13,650	14,200	12,200	8,470			6,920			5,520		
55	13,650	14,200	12,200	8,470	8,700		6,920			5,520		
60	13,650	14,200	12,200	8,470	8,670		6,920	7,440		5,520		
65	13,650	14,200	12,200	8,470	8,620		6,920	7,440		5,520		
70	13,650	14,100	12,200	8,470	8,380		6,920	7,440		5,520	5,680	
75	13,650	13,500	12,200	8,470	8,160	6,750	6,920	7,440	6,370	5,520	5,610	
80	12,950	12,900	12,200	8,470	7,940	6,640	6,920	7,440	6,370	5,520	5,550	5,330
85	12,250	12,250	12,200	8,470	7,720	6,530	6,920	7,430	6,370	5,520	5,480	5,330
90	11,600	11,600	11,850	8,470	7,530	6,440	6,920	7,330	6,370	5,520	5,420	5,330
95	11,000	11,050	11,250	8,470	7,340	6,350	6,920	7,240	6,350	5,520	5,350	5,330
100	10,450	10,500	10,700	8,470	7,170	6,280	6,920	7,140	6,270	5,520	5,290	5,290
105	9,860	9,990	10,200	8,470	7,020	6,210	6,920	7,040	6,200	5,440	5,230	5,240
110	9,290	9,510	9,720	8,340	6,870	6,140	6,920	6,840	6,140	5,350	5,160	5,200
115	8,750	8,980	9,260	8,100	6,730	6,090	6,920	6,630	6,090	5,270	5,100	5,150
120	8,250	8,470	8,720	7,770	6,610	6,050	6,710	6,430	6,040	5,180	5,040	5,110
125	7,790	7,990	8,210	7,420	6,490	6,010	6,490	6,240	6,000	5,100	4,990	5,050
130	7,260	7,520	7,610	7,090	6,390	5,990	6,270	6,050	5,970	5,010	4,920	4,990
135	6,670	6,890		6,770	6,290	5,970	6,020	5,880	5,950	4,930	4,850	4,920
140	6,130	6,320		6,460	6,200	5,970	5,740	5,710	5,800	4,840	4,760	4,860
145	5,630	5,780		6,070	6,130	5,970	5,470	5,560	5,660	4,670	4,600	4,720
150	5,160	5,280		5,600	6,000	5,970	5,220	5,410	5,530	4,520	4,460	4,580
155	4,740	4,820		5,160	5,520	5,660	4,980	5,180	5,410	4,360	4,320	4,450
160	4,340			4,750	5,070		4,590	4,950	5,180	4,220	4,190	4,320
165	3,990			4,370	4,640		4,200	4,560	4,720	4,020	4,060	4,200
170				4,020	4,240		3,840	4,160		3,760	3,950	4,090
175				3,690	3,860		3,500	3,790		3,420	3,770	3,930
180				3,380	3,500		3,190	3,430		3,100	3,420	3,550
185				3,080			2,890	3,100		2,800	3,090	
190				1,830			2,620	2,780		2,510	2,770	
195							2,360	2,480		2,250	2,470	
200							2,120			2,000	2,190	
205							1,910			1,770	1,920	
210										1,550	1,660	
215										1,340		
220										1,160		

 142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Manual Offsettable Swingaway  
 44,000 lbs.  
 100% 24'-0"  
 360°

Radius	142.3' + 33'			142.3' + 56'			142.3' + 72'			142.3' + 88'		
	0°	20°	40°	0°	20°	40°	0°	20°	40°	0°	20°	40°
30	13,650											
35	13,650			8,470								
40	13,650			8,470								
45	13,650	14,200		8,470			6,920					
50	13,650	14,200	12,200	8,470			6,920			5,520		
55	13,650	14,200	12,200	8,470	8,700		6,920			5,520		
60	13,650	14,200	12,200	8,470	8,670		6,920	7,440		5,520		
65	13,650	14,200	12,200	8,470	8,620		6,920	7,440		5,520		
70	13,650	14,100	12,200	8,470	8,380		6,920	7,440		5,520	5,680	
75	13,650	13,500	12,200	8,470	8,160	6,750	6,920	7,440	6,370	5,520	5,610	
80	12,950	12,900	12,200	8,470	7,940	6,640	6,920	7,440	6,370	5,520	5,550	5,330
85	12,250	12,250	12,200	8,470	7,720	6,530	6,920	7,430	6,370	5,520	5,480	5,330
90	11,600	11,600	11,850	8,470	7,530	6,440	6,920	7,330	6,370	5,520	5,420	5,330
95	11,000	11,050	11,250	8,470	7,340	6,350	6,920	7,240	6,350	5,520	5,350	5,330
100	10,450	10,500	10,700	8,470	7,170	6,280	6,920	7,140	6,270	5,520	5,290	5,290
105	9,860	9,990	10,200	8,470	7,020	6,210	6,920	7,040	6,200	5,440	5,230	5,240
110	9,290	9,510	9,720	8,340	6,870	6,140	6,920	6,840	6,140	5,350	5,160	5,200
115	8,580	8,940	9,140	8,100	6,730	6,090	6,920	6,630	6,090	5,270	5,100	5,150
120	7,850	8,170	8,330	7,770	6,610	6,050	6,710	6,430	6,040	5,180	5,040	5,110
125	7,170	7,460	7,590	7,420	6,490	6,010	6,490	6,240	6,000	5,100	4,990	5,050
130	6,560	6,810	6,910	7,040	6,390	5,990	6,270	6,050	5,970	5,010	4,920	4,990
135	5,990	6,220		6,460	6,290	5,970	6,020	5,880	5,950	4,930	4,850	4,920
140	5,480	5,660		5,940	6,200	5,970	5,740	5,710	5,800	4,840	4,760	4,860
145	5,000	5,150		5,450	5,890	5,970	5,300	5,560	5,660	4,670	4,600	4,720
150	4,560	4,680		5,000	5,400	5,590	4,840	5,320	5,530	4,520	4,460	4,580
155	4,150	4,240		4,580	4,930	5,080	4,420	4,860	5,090	4,340	4,320	4,450
160	3,780			4,190	4,500		4,020	4,420	4,620	3,950	4,190	4,320
165	3,440			3,830	4,090		3,660	4,020	4,170	3,580	4,000	4,200
170				3,490	3,710		3,310	3,630		3,230	3,620	3,810
175				3,170	3,350		2,990	3,280		2,900	3,260	3,420
180				2,880	3,000		2,690	2,940		2,600	2,920	3,050
185				2,620			2,410	2,620		2,310	2,600	
190				1,830			2,150	2,310		2,040	2,300	
195							1,900	2,020		1,790	2,010	
200							1,680			1,560	1,740	
205							1,480			1,330	1,480	
210										1,120	1,230	

TMS9000E

GROVE

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# load charts

 142 ft.  
 Fixed lengths

 33-56 ft.  
 72-88 ft.  
 Manual Offsettable  
 Swingaway

 26,000 lbs.

 100%  
 24'-0"

 360°

13

Radius	Pounds (thousands)											
	142.3' + 33'			142.3' + 56'			142.3' + 72'			142.3' + 88'		
	0°	20°	40°	0°	20°	40°	0°	20°	40°	0°	20°	40°
30	13,650											
35	13,650			8,470								
40	13,650			8,470								
45	13,650	14,200		6,920			6,920					
50	13,650	14,200	12,200	8,470			6,920			5,520		
55	13,650	14,200	12,200	8,470	8,700		6,920			5,520		
60	13,650	14,200	12,200	8,470	8,670		6,920	7,440		5,520		
65	13,650	14,200	12,200	8,470	8,620		6,920	7,440		5,520		
70	13,650	14,100	12,200	8,470	8,380		6,920	7,440		5,520	5,680	
75	13,400	13,500	12,200	8,470	8,160	6,750	6,920	7,440	6,370	5,520	5,610	
80	11,900	12,600	12,200	8,470	7,940	6,640	6,920	7,440	6,370	5,520	5,550	5,330
85	10,550	11,200	11,650	8,470	7,720	6,530	6,920	7,430	6,370	5,520	5,480	5,330
90	9,380	9,990	10,400	8,470	7,530	6,440	6,920	7,330	6,370	5,520	5,420	5,330
95	8,350	8,900	9,260	8,470	7,340	6,350	6,920	7,240	6,350	5,520	5,350	5,330
100	7,440	7,940	8,250	8,000	7,170	6,280	6,920	7,140	6,270	5,520	5,290	5,290
105	6,620	7,070	7,350	7,180	7,020	6,210	6,920	7,040	6,200	5,440	5,230	5,240
110	5,890	6,300	6,540	6,430	6,870	6,140	6,330	6,840	6,140	5,350	5,160	5,200
115	5,240	5,600	5,800	5,760	6,540	6,090	5,650	6,490	6,090	5,270	5,100	5,150
120	4,640	4,970	5,130	5,160	5,870	6,050	5,040	5,820	6,040	5,000	5,040	5,110
125	4,100	4,390	4,520	4,600	5,260	5,700	4,480	5,200	5,720	4,440	4,990	5,050
130	3,600	3,860	3,960	4,100	4,700	5,090	3,970	4,640	5,100	3,930	4,650	4,990
135	3,150	3,380		3,640	4,190	4,520	3,510	4,120	4,540	3,450	4,130	4,590
140	2,740	2,930		3,210	3,710	4,000	3,070	3,650	4,010	3,020	3,650	4,070
145	2,350	2,510		2,820	3,270	3,510	2,680	3,210	3,530	2,620	3,200	3,590
150	2,000	2,130		2,460	2,860	3,060	2,310	2,800	3,080	2,250	2,790	3,130
155	1,680	1,770		2,120	2,480	2,630	1,970	2,410	2,650	1,900	2,410	2,710
160	1,390			1,810	2,130		1,650	2,060	2,260	1,580	2,050	2,320
165	1,120			1,520	1,790		1,360	1,720	1,880	1,290	1,710	1,950
170				1,250	1,480		1,080	1,410		1,010	1,400	1,600
175				1,000	1,180			1,110			1,110	1,270

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

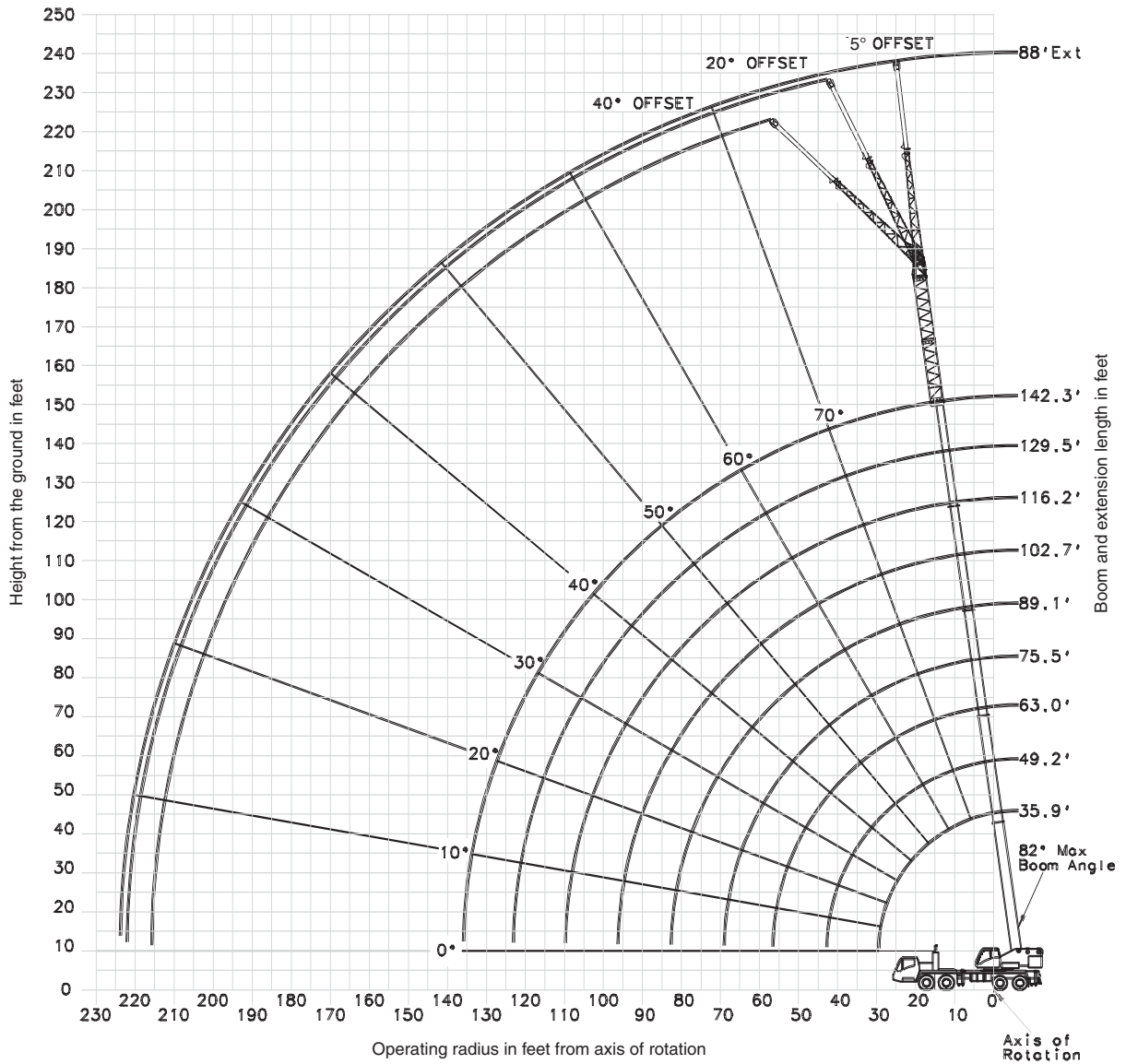
GROVE

TMS9000E

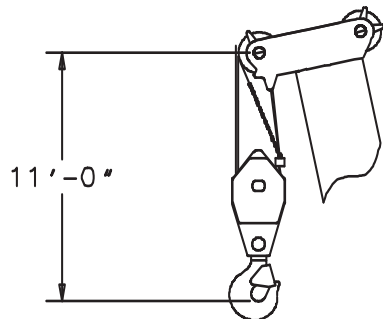
# working range

14

## 33-56' hydraulic lattice extension with two 16' inserts



TMS9000E






Dimensions area for largest Grove furnished hookblock and headache ball, with anti-two block activated.

GROVE

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# load charts

15

 142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Hydraulic Luffing Swingaway/Stationary  
 48,500 lbs.  
 100% 24'-0"  
 360°

Radius	142.3' + 33'			142.3' + 56'			142.3' + 72'			142.3' + 88'		
	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°
35	13,800											
40	13,800			8,600								
45	13,800	13,800		8,600								
50	13,800	13,800	12,200	8,600			7,000			5,520		
55	13,800	13,800	12,000	8,600	8,600		7,000			5,520		
60	13,800	13,800	12,200	8,600	8,600		7,000	7,000		5,520		
65	13,800	13,800	12,200	8,600	8,600		7,000	7,000		5,520		
70	13,800	13,800	12,200	8,600	8,380		7,000	7,000		5,520	5,520	
75	13,600	13,450	12,200	8,600	8,160	6,750	7,000	7,000	6,360	5,520	5,520	
80	12,900	12,850	12,200	8,600	7,930	6,640	7,000	7,000	6,360	5,520	5,520	5,300
85	12,200	12,200	12,200	8,600	7,720	6,530	7,000	7,000	6,360	5,520	5,460	5,300
90	11,550	11,550	11,550	8,600	7,530	6,440	7,000	7,000	6,360	5,520	5,400	5,300
95	10,950	10,950	11,000	8,600	7,340	6,350	7,000	7,000	6,350	5,520	5,330	5,300
100	10,400	10,400	10,450	8,370	7,170	6,270	7,000	7,000	6,270	5,440	5,270	5,270
105	9,870	9,870	9,940	8,130	7,010	6,200	7,000	7,000	6,200	5,350	5,210	5,210
110	9,290	9,290	9,460	7,890	6,870	6,140	7,000	6,810	6,140	5,270	5,140	5,140
115	8,750	8,750	8,930	7,670	6,730	6,090	6,800	6,600	6,090	5,180	5,080	5,080
120	8,250	8,250	8,420	7,460	6,610	6,050	6,580	6,400	6,040	5,100	5,020	5,020
125	7,780	7,780	7,940	7,260	6,490	6,010	6,360	6,200	6,000	5,020	4,970	4,970
130	7,280	7,280	7,460	7,080	6,390	5,990	6,160	6,020	5,970	4,940	4,890	4,890
135	6,680	6,680		6,760	6,260	5,970	5,960	5,840	5,840	4,860	4,820	4,820
140	6,130	6,130		6,470	6,200	5,970	5,730	5,680	5,680	4,760	4,720	4,720
145	5,620	5,620		6,150	6,130	5,970	5,460	5,460	5,520	4,600	4,570	4,570
150	5,150	5,150		5,660	5,660	5,950	5,210	5,210	5,370	4,450	4,420	4,420
155	4,710	4,710		5,210	5,210	5,470	4,970	4,970	5,130	4,300	4,280	4,280
160	4,310			4,790	4,790		4,630	4,630	4,890	4,160	4,150	4,150
165	3,940			4,400	4,400		4,240	4,240	4,500	4,020	4,020	4,020
170				4,040	4,040		3,870	3,870		3,800	3,800	3,910
175				3,690	3,690		3,520	3,520		3,450	3,450	3,710
180				3,370	3,370		3,200	3,200		3,120	3,120	3,350
185				3,040			2,860	2,860		2,790	2,790	
190							2,540	2,540		2,460	2,460	
195							2,230	2,230		2,160	2,160	
200							1,940			1,870	1,870	
205							1,660			1,590	1,590	
210										1,330	1,330	
215										1,080		

 142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Hydraulic Luffing Swingaway/Loads Luffing  
 48,500 lbs.  
 100% 24'-0"  
 360°

Radius	142.3' + 33'		142.3' + 56'		142.3' + 72'		142.3' + 88'	
	5°-20°	20°-40°	5°-20°	20°-40°	5°-20°	20°-40°	5°-20°	20°-40°
35								
40								
45	13,800							
50	13,800	12,200						
55	13,800	12,200	8,130					
60	13,800	11,950	7,790		7,000			
65	13,350	11,700	7,490		7,000			
70	12,900	11,500	7,210		6,810		5,520	
75	12,450	11,350	6,940	6,000	6,600	5,470	5,520	
80	12,100	11,150	6,690	5,880	6,410	5,380	5,520	4,960
85	11,750	11,000	6,460	5,760	6,230	5,290	5,460	4,890
90	11,400	10,850	6,260	5,660	6,050	5,210	5,400	4,820
95	10,950	10,750	6,060	5,550	5,880	5,140	5,330	4,760
100	10,400	10,450	5,880	5,460	5,730	5,070	5,270	4,700
105	9,870	9,940	5,700	5,380	5,580	5,000	5,210	4,640
110	9,290	9,460	5,550	5,300	5,450	4,940	5,140	4,590
115	8,750	8,930	5,400	5,230	5,320	4,880	5,080	4,540
120	8,250	8,420	5,260	5,170	5,200	4,830	5,020	4,500
125	7,780	7,940	5,130	5,110	5,080	4,780	4,970	4,450
130	7,280	7,460	5,010	5,010	4,970	4,730	4,890	4,410
135	6,680		4,900	4,900	4,870	4,690	4,810	4,380
140	6,130		4,780	4,790	4,780	4,660	4,720	4,340
145	5,620		4,630	4,690	4,690	4,620	4,570	4,310
150	5,150		4,480	4,610	4,540	4,600	4,420	4,290
155	4,710		4,340	4,520	4,410	4,520	4,280	4,260
160			4,220		4,290	4,450	4,150	4,150
165			4,090		4,170	4,380	4,020	4,020
170			3,980		3,870		3,800	3,910
175			3,690		3,520		3,450	3,710
180			3,370		3,200		3,120	3,350
185					2,860		2,790	
190					2,540		2,460	
195					2,230		2,160	
200							1,870	
205							1,590	
210							1,330	
215								




THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

TMS9000E

**GROVE**

# load charts

16

 142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Hydraulic Luffing Swingaway/Stationary  
 44,000 lbs.  
 100% 24'-0"  
 360°

Radius	142.3' + 33'			142.3' + 56'			142.3' + 72'			142.3' + 88'		
	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°
35	13,800											
40	13,800			8,600								
45	13,800	13,800		8,600								
50	13,800	13,800	12,200	8,600						5,520		
55	13,800	13,800	12,200	8,600	8,600			7,000		5,520		
60	13,800	13,800	12,200	8,600	8,600			7,000	7,000	5,520		
65	13,800	13,800	12,200	8,600	8,600			7,000	7,000	5,520		
70	13,800	13,800	12,200	8,600	8,380			7,000	7,000	5,520	5,520	
75	13,600	13,450	12,200	8,600	8,160	6,750		7,000	7,000	6,360	5,520	5,520
80	12,900	12,850	12,200	8,600	7,930	6,640		7,000	7,000	6,360	5,520	5,300
85	12,200	12,200	12,200	8,600	7,720	6,530		7,000	7,000	6,360	5,520	5,460
90	11,550	11,550	11,550	8,600	7,530	6,440		7,000	7,000	6,360	5,520	5,400
95	10,950	10,950	11,000	8,600	7,340	6,350		7,000	7,000	6,350	5,520	5,300
100	10,400	10,400	10,450	8,370	7,170	6,270		7,000	7,000	6,270	5,440	5,270
105	9,870	9,870	9,940	8,130	7,010	6,200		7,000	7,000	6,200	5,350	5,210
110	9,290	9,290	9,460	7,890	6,870	6,140		7,000	6,810	6,140	5,270	5,140
115	8,630	8,630	8,890	7,670	6,730	6,090		6,800	6,600	6,090	5,180	5,080
120	7,880	7,880	8,110	7,460	6,610	6,050		6,580	6,400	6,040	5,100	5,020
125	7,200	7,200	7,400	7,260	6,490	6,010		6,360	6,200	6,000	5,020	4,970
130	6,580	6,580	6,750	7,080	6,390	5,990		6,160	6,020	5,970	4,940	4,890
135	6,000	6,000		6,560	6,290	5,970		5,960	5,840	5,840	4,860	4,820
140	5,480	5,480		6,020	6,020	5,970		5,730	5,680	5,680	4,760	4,720
145	4,990	4,990		5,520	5,520	5,850		5,370	5,370	5,520	4,600	4,570
150	4,540	4,540		5,060	5,060	5,350		4,910	4,910	5,260	4,450	4,420
155	4,130	4,130		4,630	4,630	4,890		4,470	4,470	4,790	4,300	4,280
160	3,740			4,230	4,230			4,070	4,070	4,360	4,010	4,010
165	3,390			3,860	3,860			3,690	3,690	3,950	3,630	3,630
170				3,510	3,510			3,340	3,340		3,270	3,550
175				3,180	3,280			3,010	3,010		2,940	3,190
180				2,880	2,880			2,700	2,700		2,620	2,860
185				2,590				2,410	2,410		2,330	2,330
190								2,130	2,130		2,050	2,050
195								1,880	1,880		1,790	1,790
200								1,600			1,530	1,530
205								1,330			1,260	1,260
210											1,010	1,010

 142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Hydraulic Luffing Swingaway/Loads Luffing  
 44,000 lbs.  
 100% 24'-0"  
 360°

Radius	142.3' + 33'		142.3' + 56'		142.3' + 72'		142.3' + 88'	
	5°-20°	20°-40°	5°-20°	20°-40°	5°-20°	20°-40°	5°-20°	20°-40°
35								
40								
45	13,800							
50	13,800	12,200						
55	13,800	12,200	8,130					
60	13,800	11,950	7,790		7,000			
65	13,350	11,700	7,490		7,000			
70	12,900	11,500	7,210		6,810		5,520	
75	12,450	11,350	6,940	6,000	6,600	5,470	5,520	
80	12,100	11,150	6,690	5,880	6,410	5,380	5,520	4,960
85	11,750	11,000	6,460	5,760	6,230	5,290	5,460	4,890
90	11,400	10,850	6,260	5,660	6,050	5,210	5,400	4,820
95	10,950	10,750	6,060	5,550	5,880	5,140	5,330	4,760
100	10,400	10,450	5,880	5,460	5,730	5,070	5,270	4,700
105	9,870	9,940	5,700	5,380	5,580	5,000	5,210	4,640
110	9,290	9,460	5,550	5,300	5,450	4,940	5,140	4,590
115	8,630	8,890	5,400	5,230	5,320	4,880	5,080	4,540
120	7,880	8,110	5,260	5,170	5,200	4,830	5,020	4,500
125	7,200	7,400	5,130	5,110	5,080	4,780	4,970	4,450
130	6,580	6,750	5,010	5,010	4,970	4,730	4,890	4,410
135	6,000		4,900	4,900	4,870	4,690	4,810	4,380
140	5,480		4,780	4,790	4,780	4,660	4,720	4,340
145	4,990		4,630	4,690	4,690	4,620	4,570	4,310
150	4,540		4,480	4,610	4,540	4,600	4,420	4,290
155	4,130		4,340	4,520	4,410	4,520	4,280	4,260
160			4,220	4,420	4,070	4,360	4,010	4,150
165			3,860	4,220	3,690	3,950	3,630	3,930
170			3,510	4,070	3,340	3,690	3,270	3,550
175			3,180	3,910	3,010	3,500	2,940	3,190
180			2,880	3,750	2,700	3,340	2,620	2,860
185				3,590	2,410	3,180	2,330	
190				3,240	2,130	2,920	2,050	
195				2,890	1,880	2,660	1,790	
200				2,540		2,400	1,530	
205				2,190		2,140	1,260	
210				1,840		1,790	1,010	

TMS9000E

GROVE

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

# load charts

17

142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Hydraulic Luffing Swingaway/Stationary  
 26,000 lbs.  
 100% 24'-0"  
 360°

**Pounds (thousands)**

Radius	142.3' + 33'			142.3' + 56'			142.3' + 72'			142.3' + 88'		
	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°	5°	5°-20°	20°-40°
35	13,800											
40	13,800			8,600								
45	13,800	13,800		8,600								
50	13,800	13,800	12,200	8,600			7,000			5,520		
55	13,800	13,800	12,200	8,600	8,600		7,000			5,520		
60	13,800	13,800	12,200	8,600	8,600		7,000	7,000		5,520		
65	13,800	13,800	12,200	8,600	8,600		7,000	7,000		5,520		
70	13,800	13,800	12,200	8,600	8,380		7,000	7,000		5,520	5,520	
75	13,550	13,450	12,200	8,600	8,160	6,750	7,000	7,000	6,360	5,520	5,520	
80	12,000	12,000	12,200	8,600	7,930	6,640	7,000	7,000	6,360	5,520	5,520	5,300
85	10,650	10,650	11,150	8,600	7,720	6,530	7,000	7,000	6,360	5,520	5,460	5,300
90	9,490	9,490	9,930	8,600	7,530	6,440	7,000	7,000	6,360	5,520	5,400	5,300
95	8,450	8,450	8,850	8,600	7,340	6,350	7,000	7,000	6,350	5,520	5,330	5,300
100	7,520	7,520	7,880	8,220	7,170	6,270	7,000	7,000	6,270	5,440	5,270	5,270
105	6,690	6,690	7,020	7,370	7,010	6,200	7,000	7,000	6,200	5,350	5,210	5,210
110	5,950	5,950	6,250	6,610	6,610	6,140	6,510	6,510	6,140	5,270	5,140	5,140
115	5,280	5,280	5,550	5,920	5,920	6,090	5,810	5,810	6,090	5,180	5,080	5,080
120	4,680	4,680	4,910	5,300	5,300	5,820	5,180	5,180	5,760	5,100	5,020	5,020
125	4,130	4,130	4,330	4,730	4,730	5,210	4,610	4,610	5,140	4,580	4,580	4,970
130	3,620	3,620	3,810	4,210	4,210	4,650	4,090	4,090	4,580	4,050	4,050	4,580
135	3,160	3,160		3,740	3,740	4,140	3,610	3,610	4,060	3,570	3,570	4,060
140	2,740	2,740		3,300	3,300	3,670	3,170	3,170	3,590	3,120	3,120	3,580
145	2,350	2,350		2,900	2,900	3,230	2,760	2,760	3,140	2,710	2,710	3,140
150	1,990	1,990		2,520	2,520	2,820	2,380	2,380	2,730	2,330	2,330	2,730
155	1,660	1,660		2,180	2,180	2,440	2,030	2,030	2,350	1,980	1,980	2,340
160	1,350			1,850	1,850		1,700	1,700	1,990	1,650	1,650	1,990
165	1,070			1,550	1,550		1,400	1,400	1,660	1,340	1,340	1,650
170				1,270	1,270		1,110	1,110		1,050	1,050	1,340
175				1,010	1,010							1,040

142 ft. Fixed lengths  
 33-56 ft. 72-88 ft. Hydraulic Luffing Swingaway/Loads Luffing  
 26,000 lbs.  
 100% 24'-0"  
 360°

**Pounds (thousands)**

Radius	142.3' + 33'		142.3' + 56'		142.3' + 72'		142.3' + 88'	
	5°-20°	20°-40°	5°-20°	20°-40°	5°-20°	20°-40°	5°-20°	20°-40°
35								
40								
45	13,800							
50	13,800	12,200						
55	13,800	12,200	8,130					
60	13,800	11,950	7,790		7,000			
65	13,350	11,700	7,490		7,000			
70	12,900	11,500	7,210		6,810		5,520	
75	12,450	11,350	6,940	6,000	6,600	5,470	5,520	
80	12,000	11,150	6,690	5,880	6,410	5,380	5,520	4,960
85	10,650	11,000	6,460	5,760	6,230	5,290	5,460	4,890
90	9,490	9,930	6,260	5,660	6,050	5,210	5,400	4,820
95	8,450	8,850	6,060	5,550	5,880	5,140	5,330	4,760
100	7,520	7,880	5,880	5,460	5,730	5,070	5,270	4,700
105	6,690	7,020	5,700	5,380	5,580	5,000	5,210	4,640
110	5,950	6,250	5,550	5,300	5,450	4,940	5,140	4,590
115	5,280	5,550	5,400	5,230	5,320	4,880	5,080	4,540
120	4,680	4,910	5,260	5,170	5,180	4,830	5,020	4,500
125	4,130	4,330	4,730	5,110	4,610	4,780	4,580	4,450
130	3,620	3,810	4,210	4,650	4,090	4,580	4,050	4,410
135	3,160		3,740	4,140	3,610	4,060	3,570	4,060
140	2,740		3,300	3,670	3,170	3,590	3,120	3,580
145	2,350		2,900	3,230	2,760	3,140	2,710	3,140
150	1,990		2,520	2,820	2,380	2,730	2,330	2,730
155	1,660		2,180	2,440	2,030	2,350	1,980	2,340
160			1,850		1,700	1,990	1,650	1,990
165			1,550		1,400	1,660	1,340	1,650
170			1,270		1,110		1,050	1,340
175			1,010					1,040

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**GROVE**

**TMS9000E**





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Baltar

Fânzeres

Slovakia

Saris

U.S.A.

Manitowoc

Port Washington

Shady Grove



Constant improvement and engineering progress make 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.