

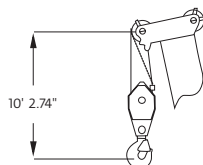
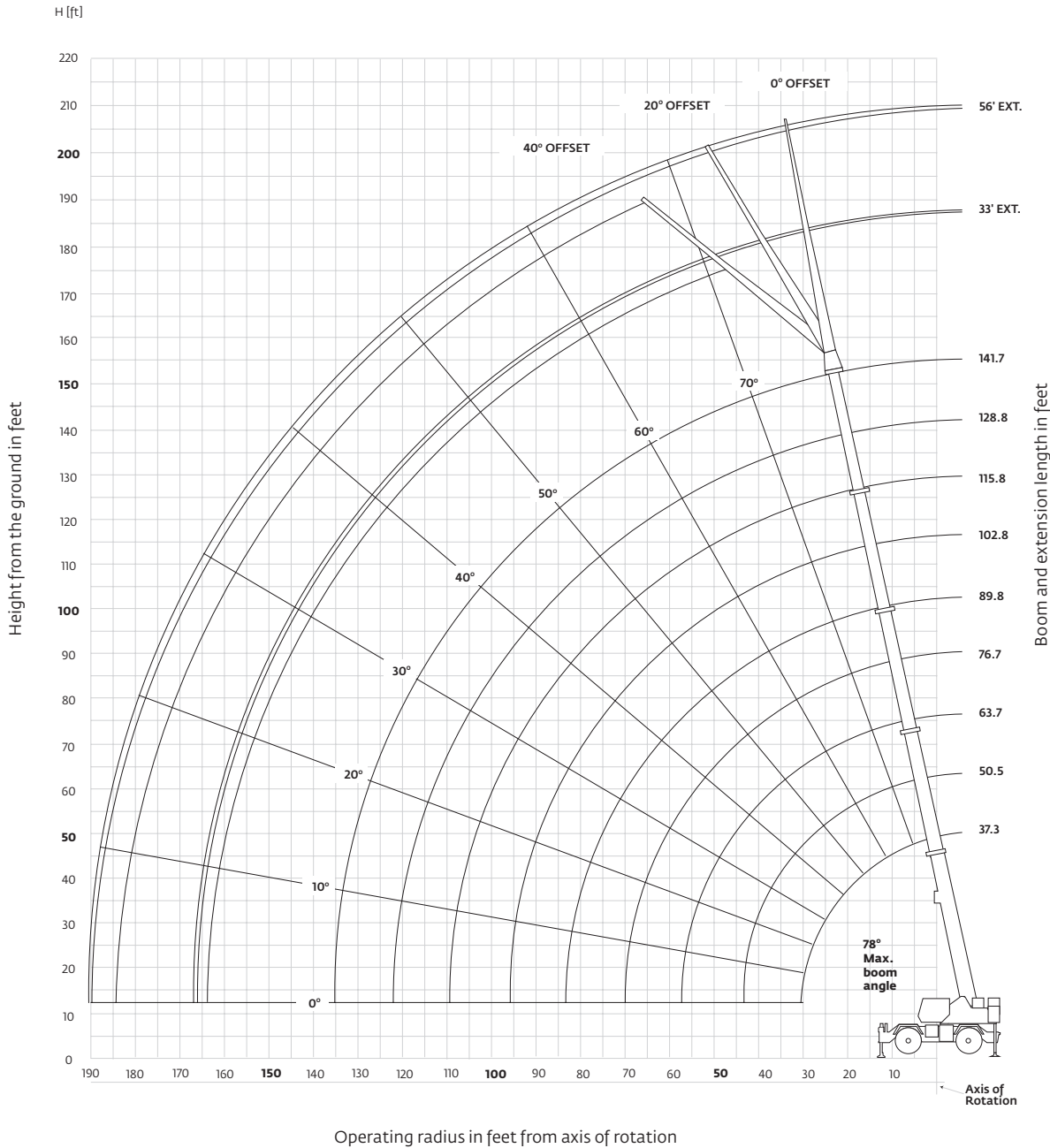


LIFTING CHARTS - Rough Terrain Cranes

GROVE MODEL RT890E - 90 TON CAPACITY

## Working range

**141.7 ft main boom 32 ft – 56 ft fixed offset swingaway**



Dimensions are for largest Grove furnished hook block 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.*



LIFTING CHARTS - Rough Terrain Cranes

GROVE MODEL RT890E - 90 TON CAPACITY

## Mode A vs. Mode B

### Mode A – inner-mid retracted

	Main boom length in feet							
	37.3	50.4	63.4	76.4	89.4	102.4	115.4	141.7
Boom sections:	Percent extension							
Inner-mid	0	0	0	0	0	0	0	100
Center-mid	0	50	100	100	100	100	100	100
Outer-mid	0	0	0	25	50	75	100	100
Fly	0	0	0	25	50	75	100	100

### Mode B – normal mode

	Main boom length in feet								
	37.3	50.5	63.7	76.7	89.8	102.8	115.8	128.8	141.7
Boom sections:	Percent extension								
Inner-mid	0	50	75	75	100	100	100	100	100
Center-mid	0	0	25	75	100	100	100	100	100
Outer-mid	0	0	0	0	0	25	50	75	100
Fly	0	0	0	0	0	25	50	75	100



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

# Load charts

(Mode B)

		37.3 ft – 141.7 ft		22,000 lb		100% 24 ft spread		360°	
		Pounds							
Feet	Main boom length in feet								
	37.3	50.5	63.7	76.7	89.8	102.8	115.8	128.8	141.7
10	180,000 (68.5)	134,000 (75)	*97,500 (78)						
12	156,000 (65)	134,000 (72.5)	97,500 (76.5)						
15	128,500 (59.5)	127,500 (69)	97,500 (74)	69,950 (77)	*46,600 (78)				
20	98,650 (49.5)	97,600 (62.5)	86,200 (69)	63,600 (73)	46,600 (76.5)	*38,700 (78)			
25	78,800 (36.5)	77,800 (55.5)	74,850 (64)	55,100 (69)	41,950 (73)	38,700 (75.5)	*37,900 (78)	*30,850 (78)	
30	51,550 (12.5)	58,700 (47.5)	59,300 (58.5)	48,150 (65)	37,350 (69.5)	37,900 (72.5)	35,000 (75)	30,850 (77.5)	*24,400 (78)
35		43,250 (38.5)	43,200 (52.5)	42,450 (60.5)	33,300 (66)	33,200 (69.5)	30,950 (72.5)	28,900 (75)	24,400 (77)
40		33,250 (26)	32,850 (46.5)	33,050 (56)	29,850 (62.5)	29,300 (66.5)	27,450 (70)	25,850 (72.5)	24,250 (75)
45			25,650 (39)	26,000 (51)	25,900 (58.5)	25,950 (63.5)	24,450 (67)	23,150 (70)	21,900 (73)
50			20,350 (30.5)	20,750 (45.5)	20,550 (54.5)	21,950 (60)	21,800 (64.5)	20,750 (67.5)	19,800 (70.5)
55			16,200 (16.5)	16,800 (39.5)	16,450 (50)	17,800 (56.5)	19,150 (61.5)	18,650 (65)	17,900 (68.5)
60				13,600 (33)	13,200 (45.5)	14,550 (53)	15,900 (58.5)	16,800 (62.5)	16,150 (66)
65				11,000 (23.5)	10,600 (40.5)	11,900 (49)	13,250 (55.5)	14,200 (60)	14,650 (64)
70					8420 (34.5)	9750 (45)	11,050 (52)	11,950 (57)	12,850 (61.5)
75					6570 (28)	7910 (40.5)	9250 (48.5)	10,100 (54.5)	10,950 (59)
80					4960 (18)	6340 (36)	7670 (45)	8530 (51.5)	9380 (56.5)
85						4990 (30)	6320 (41)	7150 (48.5)	7980 (54)
90						3780 (23)	5140 (37)	5950 (45)	6770 (51)
95						2710 (10)	4100 (32)	4900 (41.5)	5700 (48.5)
100							3160 (26)	3960 (37.5)	4750 (45.5)
105							2310 (18.5)	3130 (33.5)	3910 (42)
110								2370 (28.5)	3150 (38.5)
115								1680 (22.5)	2460 (35)
120								1050 (13)	1840 (30.5)
125									1250 (25.5)

Minimum boom angle (deg) for indicated length (no load) 0 24  
 Maximum boom length (ft) at 0 deg boom angle (no load) 128.8  
 #LMI operating code. Refer to LMI manual for instructions.  
 \*This capacity is based upon maximum obtainable boom angle.  
 Note: ( ) Boom angles are in degrees.

Lifting capacities at zero degree boom angle								
Boom angle	Main boom length in feet							
	37.3	50.5	63.7	76.7	89.8	102.8	115.8	
0°	27,500 (30.1)	15,950 (43.3)	9560 (56.4)	5840 (69.5)	2730 (82.6)	1910 (95.6)	1200 (108.5)	

Note: ( ) Reference radii in feet. A6-829-103321A

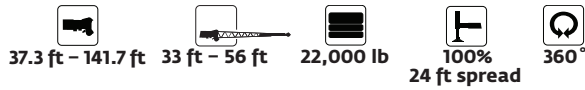


## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

# Load charts

## Bi-fold swingaway (fixed offsettable angles)



Pounds						
Feet	33 ft LENGTH			56 ft LENGTH		
	0° OFFSET #0021	20° OFFSET #0022	40° OFFSET #0023	0° OFFSET #0041	20° OFFSET #0042	40° OFFSET #0043
40	13,700 (78)					
45	13,700 (76.5)	13,000 (78)		7160 (78)		
50	13,700 (75)	12,950 (77.5)		7160 (77.5)		
55	13,700 (73)	12,600 (76)	10,250 (78)	7160 (76)		
60	13,700 (71.5)	12,200 (74)	10,050 (77)	7160 (74.5)	6400 (78)	
65	13,700 (69.5)	11,900 (72.5)	9900 (75)	7160 (73)	6250 (77.5)	
70	13,500 (68)	11,550 (70.5)	9750 (73)	7160 (71.5)	6110 (76)	
75	12,400 (66)	11,250 (68.5)	9610 (71)	7160 (70)	5980 (74.5)	5110 (78)
80	10,800 (64)	11,000 (67)	9480 (69)	7160 (68.5)	5850 (73)	5020 (77)
85	9330 (62)	10,250 (65)	9370 (67)	7150 (66.5)	5730 (71.5)	4930 (75)
90	8050 (60)	8900 (63)	8980 (65)	6960 (65)	5620 (69.5)	4850 (73.5)
95	6920 (58)	7700 (61)	8530 (63)	6770 (63.5)	5510 (68)	4780 (71.5)
100	5920 (56)	6630 (59)	7360 (61)	6590 (61.5)	5410 (66)	4710 (69.5)
105	5030 (54)	5690 (56.5)	6310 (58.5)	6030 (60)	5310 (64.5)	4650 (68)
110	4230 (52)	4830 (54.5)	5370 (56.5)	5200 (58)	5220 (62.5)	4600 (66)
115	3510 (49.5)	4060 (52)	4520 (54)	4450 (56.5)	5110 (60.5)	4550 (64)
120	2850 (47.5)	3360 (50)	3750 (51.5)	3770 (54.5)	4780 (59)	4500 (62)
125	2250 (45)	2730 (47.5)	3040 (49)	3150 (52.5)	4080 (57)	4460 (60)
130	1700 (42)	2150 (44.5)	2400 (46)	2580 (50.5)	3450 (55)	3970 (58)
135	1200 (39.5)	1610 (42)		2060 (48.5)	2870 (53)	3330 (55.5)
140		1120 (39)		1570 (46.5)	2330 (50.5)	2730 (53)
145				1130 (44)	1830 (48.5)	2180 (50.5)
150					1370 (46)	1670 (48)
155						1200 (45)
Minimum boom angle (°) for indicated length (no load)	38	38	40	43	44	44
Maximum boom length (ft) at 0° boom angle (no load)		102.8			89.8	

NOTE: ( ) Boom angles are in degrees.

A6-829-103447

#LMI operating code. Refer to LMI manual for operating instructions.

\*This capacity is based upon maximum boom angle.

#### NOTES:

- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
- The 33 ft extension length may be used with single or double part line lifting service. The 56 ft extension length may be used for single line lifting service only.
- For main boom lengths less than 141.7 ft with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use rating of the next lower boom angle.
- WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set only.
- When lifting over the main boom nose with 33 ft or 56 ft extension erected, the outriggers must be fully extended or 50% extended (17.3 ft spread).

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.

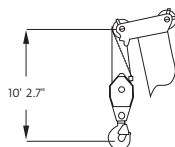
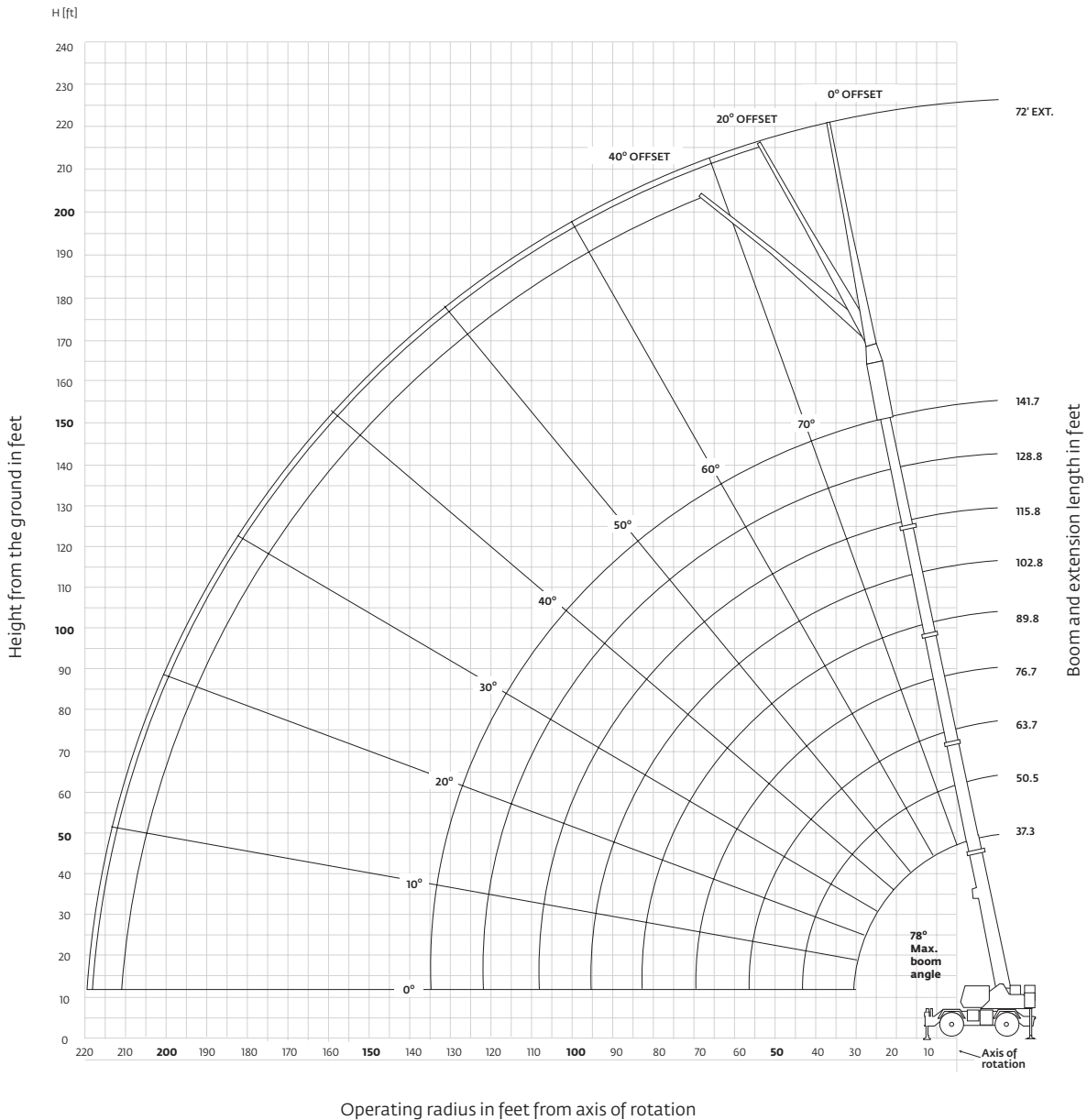


LIFTING CHARTS - Rough Terrain Cranes

GROVE MODEL RT890E - 90 TON CAPACITY

## Working range

141.7 ft main boom and one 16 ft insert



Dimensions are for largest Grove furnished hook block 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.*

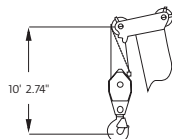
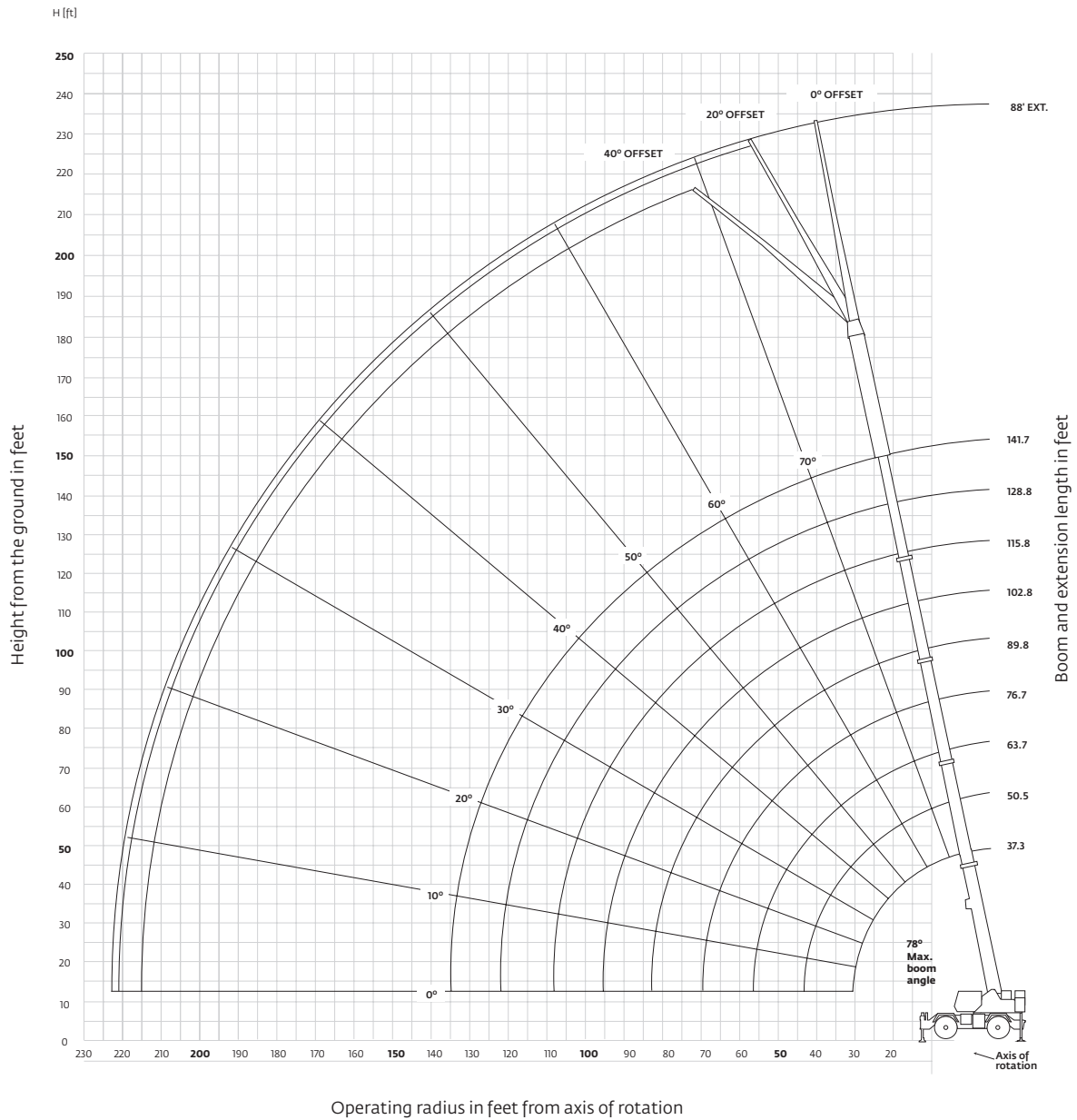


LIFTING CHARTS - Rough Terrain Cranes

GROVE MODEL RT890E - 90 TON CAPACITY

## Working range

141.7 ft main boom and two 16 ft inserts



Dimensions are for largest Grove furnished hook block 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.*



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

## Load charts

### Bi-fold swingaway with inserts (fixed angles)



Pounds						
Feet	72 ft (56 ft LENGTH + 1 INSERT)			88 ft (56 ft LENGTH + 2 INSERTS)		
	0°	20°	40°	0°	20°	40°
	OFFSET	OFFSET	OFFSET	OFFSET	OFFSET	OFFSET
	#0064	#0065	#0066	#0084	#0085	#0086
50	6300 (78)					
55	6300 (77.5)					
60	6300 (76.5)			5000 (78)		
65	6300 (75)			5000 (77.5)		
70	6300 (73.5)	*6100 (78)		5000 (76)		
75	6,00 (72)	5860 (77.5)		5000 (74.5)	*4900 (78)	
80	6300 (70.5)	5750 (76)	*5000 (78)	5000 (73.5)	4900 (77.5)	
85	6300 (69)	5650 (74.5)	4890 (77.5)	5000 (72)	4900 (76)	
90	6300 (67.5)	5550 (73)	4820 (76)	4900 (70.5)	4900 (73.5)	*4800 (78)
95	6300 (66)	5450 (71.5)	4760 (74.5)	4850 (69.5)	4900 (73.5)	4640 (76.5)
100	6300 (64.5)	5360 (70)	4690 (73)	4800 (68)	4710 (72)	4370 (75)
105	5810 (63)	5120 (68)	4580 (71.5)	4670 (66.5)	4420 (70.5)	4120 (73.5)
110	5030 (61.5)	4880 (66.5)	4480 (69.5)	4550 (65)	4130 (69)	3870 (72)
115	4320 (59.5)	4620 (65)	4270 (68)	4240 (63.5)	3880 (67.5)	3650 (70.5)
120	3680 (58)	4370 (63.5)	4060 (66)	3850 (62)	3630 (66)	3440 (69)
125	3100 (56.5)	4110 (61.5)	3870 (64.5)	3260 (60.5)	3410 (64.5)	3240 (67.5)
130	2560 (54.5)	3500 (60)	3680 (62.5)	2720 (59)	3190 (63)	3050 (65.5)
135	2070 (53)	2940 (58)	3510 (60.5)	2220 (57.5)	3000 (61.5)	2880 (64)
140	1610 (51)	2420 (56)	2980 (58.5)	1760 (56)	2630 (60)	2710 (62.5)
145	1190 (49)	1950 (54.5)	2440 (56.5)	1340 (54.5)	2,150 (58)	2560 (60.5)
150		1500 (52.5)	1930 (54.5)		1700 (56.5)	2210 (58.5)
155		1090 (50.5)	1470 (52)		1290 (54.5)	1750 (57)
160			1030 (50)			1310 (55)
Minimum boom angle (°) for indicated length (no load)	48	49	49	52		53
Maximum boom length (ft) at 0° boom angle (no load)		76.7			76.7	

NOTE: ( ) Boom angles are in degrees. A6-829-103478  
 #LMI operating code. Refer to LMI manual for operating instructions.  
 \*This capacity is based upon maximum boom angle.

#### NOTES:

- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
- The 56 ft extension length may be used for single line lifting service only.
- For main boom lengths less than 141.7 ft with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use rating of the next lower boom angle.
- WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- When lifting over the main boom nose with 56 ft extension erected and inserts, the outriggers must be fully extended and vertical jacks set.

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.



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

## Load charts (Mode A)

 37.3 ft - 141.7 ft   
  22,000 lb   
  100%   
  360°  
 24 ft spread

Feet	Pounds							
	37.3	50.4	63.4	76.4	89.4	102.4	115.4	141.7
10	180,000 (68.5)	134,000 (75)	*80,800 (78)					
12	156,000 (65)	134,000 (72.5)	80,800 (76.5)	*38,700 (78)				
15	128,500 (59.5)	129,000 (68.5)	80,800 (73.5)	38,700 (77)	*38,500 (78)			
20	98,650 (49.5)	98,950 (62)	70,950 (68.5)	38,700 (73)	38,500 (76.5)	*38,400 (78)		
25	78,800 (36.5)	79,150 (55)	62,300 (63.5)	38,700 (69)	38,500 (73)	38,400 (76)	24,400 (78)	
30	51,550 (25.5)	60,500 (47)	55,250 (58)	38,700 (65)	38,500 (69.5)	37,500 (73)	24,400 (76)	*24,400 (78)
35		45,150 (38)	44,900 (52.5)	38,700 (60.5)	36,750 (66)	33,150 (70)	24,400 (73.5)	24,400 (77)
40		35,250 (25.5)	34,700 (46)	36,750 (56)	32,750 (62)	29,550 (67)	24,400 (70.5)	24,250 (75)
45			27,600 (39)	29,450 (51)	29,400 (58.5)	26,500 (63.5)	24,400 (68)	21,900 (73)
50			22,400 (30)	24,000 (45.5)	25,650 (54.5)	23,950 (60.5)	22,050 (65)	19,800 (70.5)
55			18,250 (15.5)	19,850 (39.5)	21,350 (50)	21,750 (57)	20,000 (62)	17,900 (68.5)
60				16,600 (32.5)	17,950 (45.5)	18,900 (53.5)	18,250 (59)	16,150 (66)
65				13,850 (23)	15,200 (40)	16,150 (49.5)	16,700 (56)	14,650 (64)
70					12,950 (34.5)	13,850 (45.5)	14,800 (53)	12,850 (61.5)
75					11,000 (27.5)	11,950 (41)	12,900 (49.5)	10,950 (59)
80					9340 (17)	10,300 (36)	11,250 (45.5)	9380 (56.5)
85						8900 (30)	9830 (42)	7980 (54)
90						7640 (22.5)	8590 (37.5)	6770 (51)
95						6520 (8)	7510 (32.5)	5700 (48.5)
100							6520 (26.5)	4750 (45.5)
105							5640 (18.5)	3910 (42)
110								3150 (38.5)
115								2460 (35)
120								1840 (30.5)
125								1250 (25.5)

Minimum boom angle (deg) for indicated length (no load) 24  
 Maximum boom length (ft) at 0 deg boom angle (no load) 115.4  
 #LMI operating code. Refer to LMI manual for instructions.  
 \*This capacity is based upon maximum obtainable boom angle.  
 Note: ( ) Boom angles are in degrees.

Lifting capacities at zero degree boom angle							
Boom angle	Main boom length in feet						
	37.3	50.4	63.4	76.4	89.4	102.4	115.4
0°	27,500 (30.1)	17,300 (43.2)	11,050 (56.2)	8580 (69.2)	6700 (82.2)	5380 (95.2)	4280 (108.2)

Note: ( ) Reference radii in feet.

6-829-103320A





## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

## Load charts (Mode A)

Pounds				
Main boom				
Main boom length in feet				
Feet	37.3	50.4	63.4	76.4
12	39,500 (65)	41,650 (72.5)		
15	37,750 (59.5)	38,950 (68.5)	18,900 (73.5)	15,650 (77)
20	24,850 (49.5)	24,850 (62)	18,900 (68.5)	15,650 (73)
25	16,300 (36.5)	16,650 (55)	17,450 (63.5)	15,650 (69)
30	10,200 (12.5)	11,350 (47)	11,450 (58)	13,200 (65)
35		7650 (38)	7630 (52.5)	9280 (60.5)
40		4920 (25.5)	5020 (46)	6510 (56)
45				4490 (51)
Minimum boom angle (°) for indicated length (no load)			39	46
Maximum boom length (ft) at 0° boom angle (no load)			50.4	
Lifting capacities at zero degree boom angle				
Boom angle	Main boom length in feet			
	37.3	50.4		
0°	10,050 (30.1)	3150 (43.2)		

NOTE: ( ) Reference radii in feet. A6-829-103452A  
#LMI operating code. Refer to LMI manual for instructions.

Pounds				
Main boom				
Main boom length in feet				
Feet	37.3	50.4	63.4	76.4
12	41,600 (65)	41,700 (72.5)		
15	41,600 (59.5)	41,700 (68.5)	22,400 (73.5)	15,650 (77)
20	36,250 (49.5)	36,450 (62)	22,400 (68.5)	15,650 (73)
25	27,600 (36.5)	28,250 (55)	22,400 (63.5)	15,650 (69)
30	21,300 (12.5)	22,200 (47)	22,400 (58)	15,650 (65)
35		17,500 (38)	17,950 (52.5)	15,650 (60.5)
40		13,800 (25.5)	14,350 (46)	15,650 (56)
45			11,000 (39)	12,500 (51)
50			8360 (30)	9820 (45.5)
55			6240 (15.5)	7690 (39.5)
Minimum boom angle (°) for indicated length (no load)			36	
Maximum boom length (ft) at 0° boom angle (no load)			63.4	
Lifting capacities at zero degree boom angle				
Boom angle	Main boom length in feet			
	37.3	50.4	63.4	
0°	21,150 (30.1)	11,600 (43.2)	5790 (56.2)	

A6-829-103453  
#LMI operating code. Refer to LMI manual for instructions.

#### NOTES:

- Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
- Capacities are applicable to machines equipped with 29.5x25 (34 ply) General tires at 76 psi cold inflation pressure.
- Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
- Capacities are applicable only with machine on firm level surface.
- On rubber lifting with boom extensions not permitted.
- For pick and carry operation, boom must be centered over front of machine, mechanical swing lock engaged and load restrained from swinging. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speeds.
- Axle lockouts must be functioning when lifting on rubber.
- All lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. See lifting capacity chart for tire used. Damaged tires are hazardous to safe operation of crane.
- Creep – not over 200 ft of movement in any 30 minute period and not exceeding 1 mph.

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.



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

# 33 ft – 56 ft luffing bi-fold boom extension (Mode B) (fixed offsettable angles)



Pounds						
Feet	33 ft LENGTH			56 ft LENGTH		
	5° OFFSET #0091	20° OFFSET #0091	40° OFFSET #0091	5° OFFSET #0092	20° OFFSET #0092	40° OFFSET #0092
40	<sup>o</sup> 13,700 (78)					
45	13,700 (77)					
50	13,700 (75)	13,700 (77.5)		<sup>o</sup> 8200 (78)		
55	13,700 (73.5)	13,700 (75.5)	<sup>o</sup> 11,000 (78)	8200 (77.5)		
60	13,700 (71.5)	13,700 (74)	11,000 (76)	8200 (76)		
65	13,700 (70)	12,850 (72)	10,950 (74.5)	8200 (74.5)	8200 (77.5)	
70	12,500 (68)	12,000 (70)	10,350 (72.5)	8200 (73)	8200 (76)	
75	11,350 (66)	11,200 (68)	9830 (70.5)	8200 (71.5)	8100 (74)	6400 (77.5)
80	9730 (64.5)	10,450 (66.5)	9330 (68.5)	8200 (69.5)	7600 (72.5)	6400 (76)
85	8300 (62.5)	8980 (64.5)	8860 (66.5)	8200 (68)	7150 (71)	6230 (74)
90	7060 (60.5)	7660 (62.5)	8210 (64.5)	7740 (66.5)	6730 (69)	5920 (72.5)
95	5960 (58.5)	6500 (60.5)	6980 (62)	7130 (64.5)	6350 (67.5)	5640 (70.5)
100	4990 (56.5)	5470 (58)	5880 (60)	6130 (63)	6000 (65.5)	5380 (68.5)
105	4120 (54)	4560 (56)	4900 (58)	5230 (61)	5690 (64)	5140 (67)
110	3340 (52)	3730 (54)	4020 (55.5)	4430 (59.5)	5290 (62)	4900 (65)
115	2640 (49.5)	2990 (51.5)	3230 (53)	3700 (57.5)	4490 (60)	4690 (63)
120	2000 (47.5)	2320 (49)	2510 (50.5)	3040 (55.5)	3760 (58.5)	4470 (61)
125	1420 (45)	1700 (46.5)	1850 (47.5)	2440 (53.5)	3100 (56.5)	3710 (58.5)
130		1140 (44)	1250 (45)	1900 (51.5)	2500 (54.5)	3030 (56.5)
135				1390 (49.5)	1940 (52)	2390 (54)
140					1420 (50)	1810 (52)
145						1270 (49)

Minimum boom angle (°) for indicated length (no load)	42	43	43	48	48	47
Maximum boom length (ft) at 0° boom angle (no load)		89.8			76.7	

NOTE: ( ) Boom angles are in degrees. A6-829-103522  
 #LMI operating code. Refer to LMI manual for operating instructions.  
<sup>o</sup>This capacity is based upon maximum boom angle.

- NOTES:**
- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
  - The 33 ft luffing folding boom extension may be used for single or double line lifting service. The 56 ft luffing folding boom extension may be used for single line lifting service only.  
 WARNING: Lifting with the 33 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
  - WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
  - Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
  - Capacities listed are with outriggers properly extended and vertical jacks set only.
  - For main boom lengths less than 141.7 ft with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use rating of the next lower boom angle.
  - When lifting over the main boom nose with 33 ft or 56 ft extension erected, the outriggers must be fully extended or 50% extended (17.3 ft spread).



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

# 33 ft – 56 ft luffing bi-fold boom extension (Mode B) (intermediate offsettable angles)

 37.3 ft – 141.7 ft   
  33 ft – 56 ft   
  22,000 lb   
  100%  
24 ft spread   
  360°

Pounds				
Feet	33 ft LENGTH		56 ft LENGTH	
	5° - 20° OFFSET #0091	20° - 40° OFFSET	5° - 20° OFFSET #0092	20° - 40° OFFSET
50	11,850			
55	11,550	10,750		
60	11,200	10,600		
65	10,900	10,450	6150	
70	10,650	10,350	5960	
75	10,350	9830	5780	5370
80	9730	9330	5610	5280
85	8300	8860	5450	5200
90	7060	7660	5310	5130
95	5960	6500	5170	5070
100	4990	5470	5040	5010
105	4120	4560	4920	4910
110	3340	3730	4430	4810
115	2640	2990	3700	4490
120	2000	2320	3040	3760
125	1420	1700	2440	3100
130		1140	1900	2500
135			1390	1940
140				1420
Min. boom angle for indicated length (no load)	43°	43°	48°	48°
Max. boom length at 5° boom angle (no load)	89.8'		76.7'	

#LMI operating code. Refer to LMI manual for operating instructions.

A6-829-103525A

#### NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. The 33 ft luffing folding boom extension may be used for single or double line lifting service. The 56 ft luffing folding boom extension may be used for single line lifting service only.  
WARNING: Lifting with the 33 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. The loads for luffing depend on the angle of the main boom, angle of the boom extension and dynamic working pressure of the luffing cylinder for the boom extension.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.
6. When lifting over the main boom nose with 33 ft or 56 ft extension erected, the outriggers must be fully extended or 50% extended (17.3 ft spread).

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

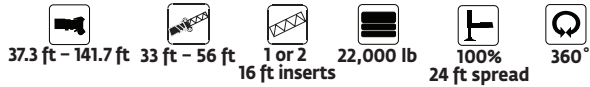
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

## 33 ft – 56 ft luffing bifold boom extension with inserts (Mode B) (intermediate offsettable angles)



Pounds						
Feet	72 ft (56 ft LENGTH + 1 INSERT)			88 ft (56 ft LENGTH + 2 INSERTS)		
	5° OFFSET #0095	20° OFFSET #0095	40° OFFSET #0095	5° OFFSET #1095	20° OFFSET #1095	40° OFFSET #1095
55	*6400 (78)					
60	6400 (77.5)					
65	6400 (76)			*5000 (78)		
70	6400 (74.5)	*6400 (78)		5000 (77)		
75	6400 (73.5)	6400 (76.5)		5000 (75.5)	*5000 (78)	
80	6400 (72)	6400 (75)	*5500 (78)	5000 (74.5)	5000 (76)	
85	6400 (70.5)	6040 (73.5)	5420 (76)	5000 (73)	5000 (74.5)	*4460 (78)
90	6250 (69)	5630 (72)	5100 (74.5)	5000 (71.5)	4790 (73)	4460 (76.5)
95	5800 (67.5)	5260 (70.5)	4800 (73)	4740 (70)	4420 (71.5)	4150 (75)
100	5380 (66)	4910 (69)	4520 (71.5)	4350 (69)	4090 (70.5)	3860 (73.5)
105	5010 (64)	4610 (67.5)	4270 (69.5)	4010 (67.5)	3790 (69)	3600 (72)
110	4570 (62.5)	4310 (65.5)	4020 (68)	3680 (66)	3490 (67.5)	3340 (70.5)
115	3840 (61)	4040 (64)	3790 (66)	3390 (64.5)	3230 (66)	3110 (69)
120	3180 (59.5)	3780 (62.5)	3570 (64.5)	3110 (63)	2980 (64.5)	2890 (67.5)
125	2570 (57.5)	3290 (60.5)	3370 (62.5)	2720 (61.5)	2760 (63)	2680 (66)
130	2020 (56)	2680 (59)	3180 (60.5)	2160 (60)	2540 (61.5)	2480 (64.5)
135	1510 (54)	2120 (57)	2680 (59)	1640 (58.5)	2300 (59.5)	2300 (62.5)
140	1040 (52.5)	1600 (55)	2100 (57)	1170 (57)	1780 (58)	2120 (61)
145		1130 (53)	1560 (54.5)		1300 (56.5)	1820 (59)
150			1060 (52.5)			1320 (57)
Minimum boom angle (°) for indicated length (no load)	51	52	51	56	55	56
Maximum boom length (ft) at 0° boom angle (no load)		76.7			63.7	

NOTE: ( ) Boom angles are in degrees. A6-829-103523  
 #LMI operating code. Refer to LMI manual for operating instructions.  
 \*This capacity is based upon maximum boom angle.

#### NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. The 56 ft luffing folding boom extension may be used for single line lifting service only.
3. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. WARNING: Lifting with the 33 ft extension fly either erected or folded along side of extension base, or with either one or two 16 ft insert sections installed, is strictly prohibited.
5. For main boom lengths less than 141.7 ft with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use rating of the next lower boom angle.
6. When lifting over the main boom nose with the 56 ft extension erected and inserts, the outriggers must be fully extended and vertical jacks set.

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.



## LIFTING CHARTS - Rough Terrain Cranes

### GROVE MODEL RT890E - 90 TON CAPACITY

## 33 ft – 56 ft luffing bi-fold boom extension with inserts (Mode B) (intermediate offsettable angles)

 37.3 ft – 141.7 ft   
  33 ft – 56 ft   
  1 or 2 16 ft inserts   
  22,000 lb   
  100% 24 ft spread   
  360°

Pounds				
Feet	72 ft LENGTH (56 ft + 1 INSERT)		88 ft LENGTH (56 ft + 2 INSERTS)	
	5° - 20° OFFSET	20° - 40° OFFSET	5° - 20°	20° - 40° OFFSET
	#0095		#1095	
70	6090			
75	5920		5000	
80	5750	5340	5000	
85	5600	5260	5000	4460
90	5460	5100	4790	4460
95	5260	4800	4420	4150
100	4910	4520	4090	3860
105	4610	4270	3790	3600
110	4310	4020	3490	3340
115	3840	3790	3230	3110
120	3180	3570	2980	2890
125	2570	3290	2720	2680
130	2020	2680	2160	2480
135	1510	2120	1640	2300
140	1040	1600	1170	1780
145		1130		1300
Min. boom angle for indicated length (no load)	52°	52°	56°	56°
Max. boom length at 5° boom angle (no load)	76.7		63.7	

A6-829-103526

#LMI operating code. Refer to LMI manual for operating instructions.

#### NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. The 56 ft luffing folding boom extension may be used for single line lifting service only  
WARNING: Lifting with the 33 ft extension fly either erected or folded along side of extension base, or with either one or two 16 ft insert sections installed, is strictly prohibited.
3. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. The loads for luffing depend on the angle of the main boom, angle of the boom extension and dynamic working pressure of the luffing cylinder for the boom extension.
5. When lifting over the main boom nose with 56 ft extension erected and inserts, the outriggers must be fully extended and vertical jacks set only.



## LIFTING CHARTS - Rough Terrain Cranes GROVE MODEL RT890E - 90 TON CAPACITY

### Load handling

#### Weight reductions for load handling devices

**33 ft - 56 ft  
Folding boom extension**

*33 ft extension (erected)	3750 lb
*56 ft extension (erected)	8000 lb
*72 ft (1 insert erected)	10,450 lb
*88 ft (2 inserts erected)	13,000 lb

\*Reduction of main boom capacities  
(no deduct required for stowed boom extension)

Auxiliary boom nose	133 lb
Hookblocks and headache balls:	
80 USt, 5 sheave	1600 lb +
90 USt, 5 sheave	1300 lb +
10 USt overhaul ball	568 lb +

+ Refer to rating plate for actual weight.

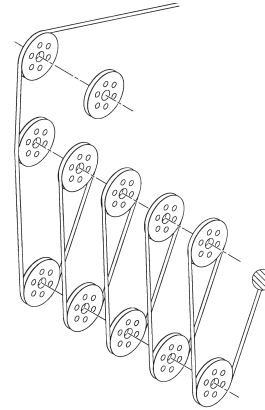
When lifting over swingaway and/or jib combinations, deduct total weight of all load handling devices reeved over main boom nose directly from swingaway or jib capacity.

**NOTE:** All load handling devices and boom attachments are considered part of the load and suitable allowances **MUST BE MADE** for their combined weights. Weights are for Grove furnished equipment.

#### Line pulls and reeving information

Hoists	Cable specs	Permissible line pulls	Nominal cable length
Main	19 mm (3/4 in) 6x37 class, EIPS, IWRC special flexible min. breaking str. 58,800 lb	16,800 lb	600 ft
Main and Aux.	19 mm (3/4 in) Flex-X 35 rotation resistant (non-rotating) min. breaking strength 85,800 lb	16,800 lb	600 ft

The approximate weight of 3/4 in wire rope is 1.5 lb/ft



#### Installation and removal of counterweight and auxiliary hoist

Rated lifting capacities in pounds on outriggers fully extended -

Radius in feet	LMI Code #0801 Main boom length
	37.3 ft*
10	24,000
12	24,000
15	24,000
20	24,000
25	24,000
30	24,000

\*The boom must be fully retracted.

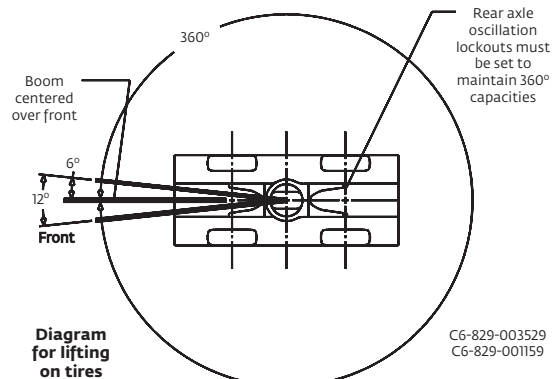
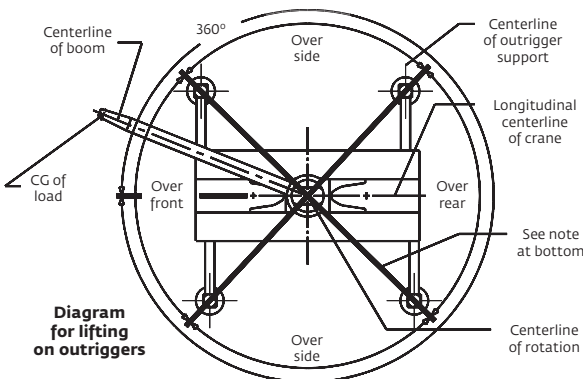
A6-829-103450

#### Hoist performance

Wire rope layer	Hoist line pulls two speed hoist		Drum rope capacity (ft) 15 in drum	
	Low Available lb*	High Available lb*	Layer	Total
1	20,250	9610	101	101
2	18,490	8770	110	211
3	17,010	8070	120	331
4	15,750	7470	129	460
5	14,660	6960	139	599

\*Max. lifting capacity: 6x37 or 35x7 class = 16,800 lb

#### Working area diagram



C6-829-003529  
C6-829-001159

**Bold lines determine the limiting position of any load for operation within working areas indicated.**

*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.*