

LOAD CHARTS & RIGGING CHARTS for PRACTICE QUIZ

TOWER CRANE

Liebherr 200 HC
Comedil CTT561-20
Wilbert WT200e.tronic

These are the tower crane load charts
and rigging charts you will need to
answer the Practice Quiz questions

PRACTICE CHARTS

Tower Crane PRACTICE EXERCISES
LCR.TC.LH200HC.CMCTT56120.WLWT200e.PEX1

5 May 2025



CraneSafe + Fulford Certification
Tel: 604.398.5230 | www.fulford.ca

Introduction

PRACTICE EXERCISES

These 10 questions are samples of the load chart and rigging part of your CraneSafe Certification Assessment for Tower Crane.

We have not included all of the charts for this crane - but everything you need to answer the questions is included in the load and jib charts you have here. You do not need the crane manual or full load chart package to answer the questions.

The crane industry in BC has stated that operators must get a minimum of 70% correct on the load chart and rigging part of the assessment to be competent.

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Load Charts

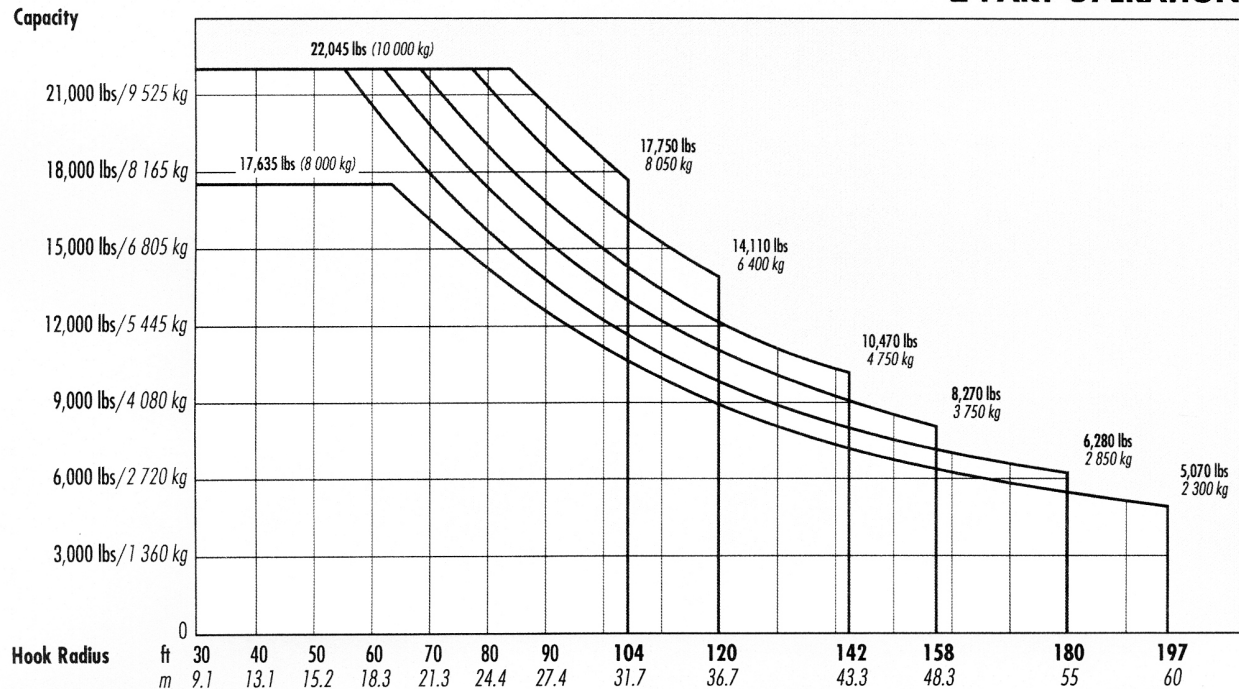
Liebherr 200 HC

Radius and Capacities

2-PART OPERATION

Hook Radius	Maximum Capacity – Radius	ft m	60 18.3	70 21.3	80 24.4	90 27.4	98 30	104 31.7	110 33.5	120 36.7	130 39.6	142 43.3	150 45.7	158 48.3	164 50	170 51.8	180 55	187 57	197 60
197 ft 60m	17,635 lbs – 63.3 ft 8 000 kg – 19.3m	lbs kg	17,635 8 000	16,525 7 495	14,795 6 710	13,120 5 950	11,355 5 150	10,715 4 860	10,140 4 600	9,125 4 140	8,445 3 830	7,560 3 430	7,130 3 235	6,660 3 020	6,370 2 890	6,140 2 785	5,665 2 570	5,425 2 460	5,070 2 300
180 ft 55m	22,045 lbs – 55.1 ft 10 000 kg – 16.8m	lbs kg	20,770 9 420	18,000 8 170	15,790 7 160	14,180 6 430	12,500 5 670	11,800 5 350	11,090 5 030	10,050 4 560	9,190 4 170	8,360 3 790	7,810 3 540	7,360 3 340	7,055 3 200	6,790 3 080	6,280 2 850		
158 ft 48.3m	22,045 lbs – 61.7 ft 10 000 kg – 18.8m	lbs kg	22,045 10 000	20,000 9 070	17,570 7 970	15,660 7 100	13,930 6 320	13,140 5 960	12,300 5 580	11,250 5 100	10,250 4 650	9,370 4 250	8,750 3 970	8,270 3 750					
142 ft 43.3m	22,045 lbs – 68.6 ft 10 000 kg – 20.9m	lbs kg	22,045 10 000	21,960 9 960	19,450 8 820	17,330 7 860	15,475 7 020	14,640 6 640	13,650 6 190	12,350 5 600	11,420 5 180	10,470 4 750							
120 ft 36.7m	22,045 lbs – 77.1 ft 10 000 kg – 23.5m	lbs kg	22,045 10 000	22,045 10 000	21,630 9 810	19,400 8 800	17,370 7 880	16,430 7 450	15,280 6 930	14,110 6 400									
104 ft 31.7m	22,045 lbs – 83.7 ft 10 000 kg – 25.5m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	20,930 9 490	18,760 8 510	17,750 8 050											

2-PART OPERATION



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PRACTICE EXERCISES

Liebherr 200 HC

Hoist Speed and Capacity

Hoist Unit	WW 281 RX 057	2-Part Line				
108 hp (80 kW) AC hoist unit 3-speed gearbox Electromagnetic gear shifting Eddy current brake	21-142	Gear	Capacity	Hook Speed	Capacity	Hook Speed
		1	up to 22,045 lbs	@ 108 fpm	up to 10 000 kg	@ 33 m/min
		2	up to 9,920 lbs	@ 292 fpm	up to 4 500 kg	@ 89 m/min
		3	up to 3,970 lbs	@ 587 fpm	up to 1 800 kg	@ 179 m/min

IMPORTANT! Capacities and line speeds indicated will vary depending on the amount of hoist wire rope installed. This crane model may be equipped with a hoist unit other than that specified in the data shown above. To verify, check serial number and refer to 200 HC Operation Manual for additional information.

Motor Information

Drive Unit	Horsepower	Kilowatts	Speed	
Trolley	6.4 hp	4.8 kW	40 - 131 - 262 fpm	12 - 40 - 80 m/min
Swing (fluid coupling)	2 x 6.7 hp	2 x 5 kW	0.8 rpm	
Travelling	Information available upon request			

Power Requirements

- 480 V phase-phase, 277 V each phase to ground with 120° phase shift between phases. Do not use an Open-Delta supply.
- 3-phase, 60 Hz power supply plus ground wire.
- Static: 200 Amperes
- Travelling: (Information available upon request.)

Counterweights

Counterjib type	67-ft (20.5m)	56-ft (17.2m)				
Jib length	197-ft (60m)	180-ft (55m)	158-ft (48.3m)	142-ft (43.3m)	120-ft (36.7m)	104-ft (31.7m)
No. of blocks	5A + 1B	7A	6A	5A + 1B	5A	4A
Weight in lbs	23,920 lbs	29,790 lbs	25,530 lbs	23,920 lbs	21,270 lbs	17,020 lbs
Weight in kg	10,850 kg	13,510 kg	11,580 kg	10,850 kg	9,650 kg	7,720 kg

NOTE! Weight of the A Block is 4,255 lbs (1,930 kg); the B Block is 2,045 lbs (1,200 kg). Counterweights must be installed from rear to front, i.e. towards the tower. It is recommended that the weight of each counterweight be verified before installation. Counterweight figures displayed in the chart above are for crane with hoist unit WW 281 RX 057. If another hoist unit is installed, refer to the Liebherr 200 HC Operation Manual or contact Mariner Equipment for additional information.

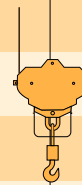
These charts are for assessment purposes only and should not be used to operate a crane. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Comedil CTT561-20 Flat Top Tower Crane

Radius and Capacities

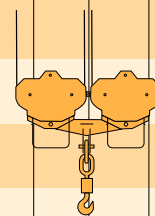
2-part line

Hook Radius	Maximum Radius with Maximum Load	ft m	16 5	33 10	49 15	66 20	82 25	98 30	115 35	131 40	148 45	164 50	180 55	197 60	213 65	230 70	246 75	262 80	279 85
279 ft 85m	22,045 lbs – 91 ft 10 000 kg – 27.6m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	20,020 9 080	17,655 7 600	14,330 6 500	12,455 5 650	10,980 4 980	9,765 4 430	8,750 3 970	7,890 3 580	7,165 3 250	6,550 2 970	5,995 2 720	5,510 2 500
262 ft 80m	22,045 lbs – 110 ft 10 000 kg – 33.5m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	20,990 9 520	18,035 8 180	15,785 7 160	13,975 6 340	12,500 5 670	11,290 5 120	10,520 4 650	9,370 4 250	8,600 3 900	7,935 3 600		
246 ft 75m	22,045 lbs – 130 ft 10 000 kg – 39.6m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	21,805 9 890	19,115 8 670	16,955 7 690	15,210 6 900	13,755 6 240	12,545 5 690	11,485 5 210	10,580 4 800		
230 ft 70m	22,045 lbs – 150 ft 10 000 kg – 45.7m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	19,930 9 040	17,945 8 140	16,270 7 380	14,860 6 740	13,670 6 200			
213 ft 65m	22,045 lbs – 161 ft 10 000 kg – 49m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	21,540 9 770	19,380 8 790	17,590 7 980	16,095 7 300				
197 ft 60m	22,045 lbs – 174 ft 10 000 kg – 52.9m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	21,120 9 580	19,180 8 700					
180 ft 55m	22,045 lbs – 180 ft 10 000 kg – 55m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000						
164 ft 50m	22,045 lbs – 164 ft 10 000 kg – 50m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000							
131 ft 40m	22,045 lbs – 131 ft 10 000 kg – 40m	lbs kg	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000	22,045 10 000										



4-part line

Hook Radius	Maximum Radius with Maximum Load	ft m	16 5	33 10	49 15	66 20	82 25	98 30	115 35	131 40	148 45	164 50	180 55	197 60	213 65	230 70	246 75	262 80	279 85
279 ft 85m	44,090 lbs – 47 ft 20 000 kg – 14.3m	lbs kg	44,090 20 000	44,090 20 000	41,565 18 850	29,520 13 390	22,490 10 200	17,900 8 120	14,640 6 640	12,240 5 550	10,360 4 700	8,890 4 030	7,670 3 480	6,660 3 020	5,820 2 640	5,090 2 310	4,480 2 030	3,920 1 780	3,530 1 600
262 ft 80m	44,090 lbs – 56 ft 20 000 kg – 17.2m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	36,970 16 770	28,510 12 930	22,930 10 400	19,000 8 620	16,090 7 300	13,850 6 280	12,040 5 460	10,580 4 800	9,370 4 250	8,330 3 780	7,470 3 390	6,700 3 040	6,170 2 800	
246 ft 75m	44,090 lbs – 67 ft 20 000 kg – 20.5m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	35,140 15 940	28,440 12 900	23,700 10 750	20,190 9 160	17,460 7 920	15,300 6 940	13,540 6 140	12,080 5 480	10,850 4 920	9,790 4 440	9,040 4 100		
230 ft 70m	44,090 lbs – 77 ft 20 000 kg – 23.5m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	41,050 18 620	33,400 15 150	28,000 12 700	23,990 10 880	20,880 9 470	18,410 8 350	16,400 7 440	14,730 6 680	13,320 6 040	12,350 5 600			
213 ft 65m	44,090 lbs – 82 ft 20 000 kg – 25m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	35,960 16 310	30,180 13 690	25,900 11 750	22,580 10 240	19,930 9 040	17,790 8 070	16,010 7 260	14,770 6 700				
197 ft 60m	44,090 lbs – 88 ft 20 000 kg – 26.9m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	39,020 17 700	32,870 14 910	28,290 12 830	24,740 11 220	21,910 9 940	19,620 8 900	18,080 8 200					
180 ft 55m	44,090 lbs – 99 ft 20 000 kg – 30.1m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	37,350 16 940	32,190 14 600	28,200 12 790	25,040 11 360	22,930 10 400						
164 ft 50m	44,090 lbs – 102 ft 20 000 kg – 31m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	38,540 17 480	33,220 15 070	29,120 13 210	26,460 12 000							
131 ft 40m	44,090 lbs – 105 ft 20 000 kg – 31.9m	lbs kg	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	44,090 20 000	39,770 18 040	35,270 16 000									



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Comedil CTT561-20 Flat Top Tower Crane

Specifications

Hoist Speed and Capacity

Hoist Unit	110 AWL 100 LLC					2 - Part Line	
147 hp (110 kW) DC hoist unit 5-speed gearbox Ward - Leonard control LEBUS™ drum SVENDBORG™ drum brake	Gear	Capacity	Line Speed	Capacity	Line Speed		
	1	up to 22,045 lbs	@ 150 fpm	up to 10 000 kg	@ 46 m/min		
	2	up to 15,740 lbs	@ 206 fpm	up to 7 140 kg	@ 63 m/min		
	3	up to 11,025 lbs	@ 282 fpm	up to 5 000 kg	@ 86 m/min		
	4	up to 7,630 lbs	@ 384 fpm	up to 3 460 kg	@ 117 m/min		
	5	up to 1,320 lbs	@ 430 fpm	up to 600 kg	@ 131 m/min		
	4 - Part Line						
	1	up to 44,090 lbs	@ 75 fpm	up to 20 000 kg	@ 23 m/min		
	2	up to 31,480 lbs	@ 103 fpm	up to 14 280 kg	@ 31.5 m/min		
	3	up to 22,045 lbs	@ 141 fpm	up to 10 000 kg	@ 43 m/min		
	4	up to 15,260 lbs	@ 192 fpm	up to 6 920 kg	@ 58.5 m/min		
	5	up to 2,640 lbs	@ 215 fpm	up to 1 200 kg	@ 65.5 m/min		

NOTE! Capacities and line speeds indicated will vary depending on the amount of hoist rope installed. This crane model may be equipped with a hoist unit other than that specified in the data above. To verify, check the serial number of the crane and refer to the Comedil CTT 561-20 Operation Manual for additional information.

Motor Information

Drive Unit	Horsepower	Kilowatts	Speed	
Swing (SSR 4 4 80)	4 x 8 hp	4 x 6 kW	0.73 rpm	
Trolley (DCC 5 112)	14.7 hp	11 kW	0 - 312 fpm	0 - 95 m/min
Travelling	Information available upon request			

Power Requirements

480 Volts — 3-phase — 60-cycle — 300 Amperes service with 147 hp (110 kW) DC hoist unit — 216 kVA

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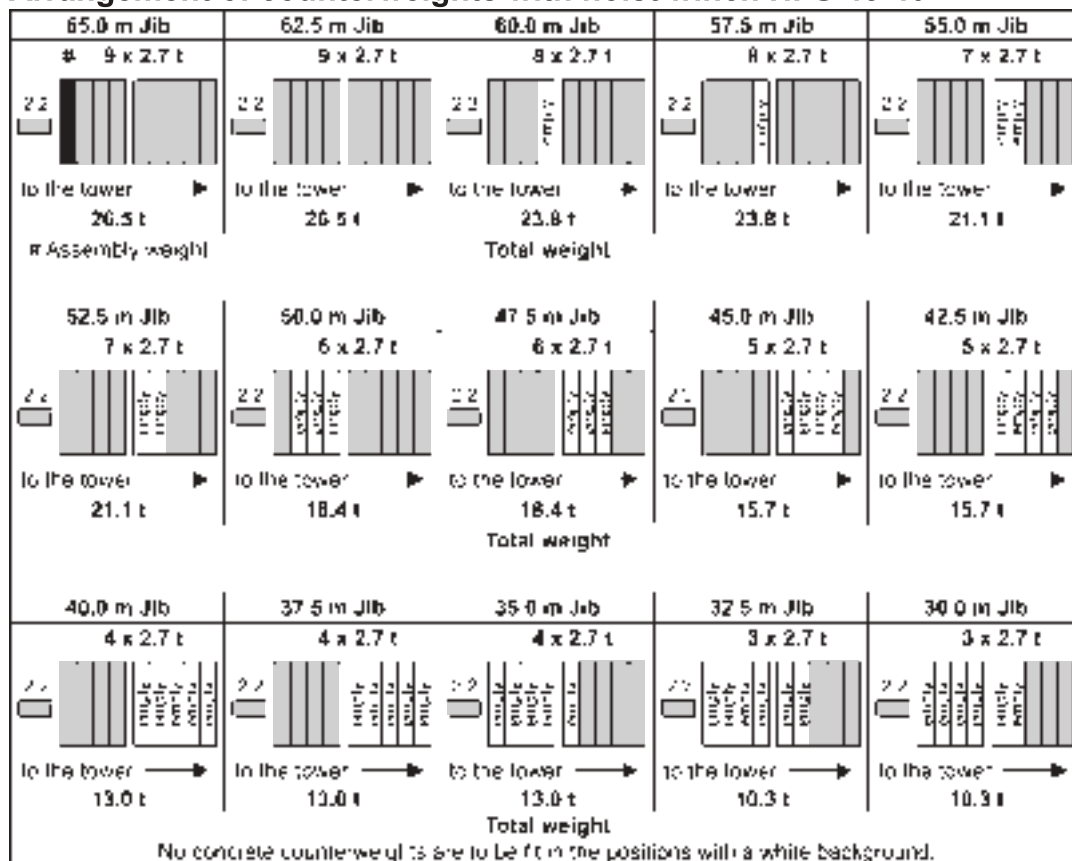
Wilbert WT 200 e.ronic

Load table

Radius [m]		25.0	30.0	32.5	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
65.0 2.5 - 18.5		5.7	4.6	4.2	3.8	3.5	3.3	3.0	2.8	2.6	2.5	2.3	2.2	2.0	1.9	1.8	1.7
62.5 2.5 - 20.7		7.2	5.9	5.4	4.8	4.5	4.2	3.9	3.6	3.4	3.2	3.0	2.8	2.7	2.5	2.4	
60.0 2.5 - 23.9		7.8	6.2	5.7	5.2	4.8	4.5	4.1	3.9	3.6	3.4	3.2	3.0	2.9	2.7		
57.5 2.5 - 24.8		7.9	6.3	5.8	5.4	5.0	4.7	4.3	4.1	3.8	3.6	3.4	3.2	3.0			
55.0 2.5 - 25.6		9.0	7.3	6.8	6.2	5.7	5.3	4.9	4.7	4.3	4.1	3.7	3.5	3.3			
52.5 2.5 - 26.8		9.0	7.1	6.6	6.0	5.5	5.1	4.8	4.5	4.2	3.9	3.7					
50.0 2.5 - 27.3		9.0	7.2	6.6	6.1	5.6	5.2	4.8	4.5	4.3	4.0						
47.5 2.5 - 27.7		9.0	7.3	6.7	6.2	5.7	5.3	4.9	4.6	4.3							
45.0 2.5 - 28.5		9.0	7.6	6.9	6.4	5.9	5.5	5.1	4.8								
42.5 2.5 - 28.8		9.0	7.6	6.9	6.4	5.9	5.5	5.1									
40.0 2.5 - 28.9		9.0	7.7	7.0	6.5	6.0	5.6										
37.5 2.5 - 29.0		9.0	7.7	7.0	6.5	6.0											
35.0 2.5 - 29.1		9.0	7.7	7.1	6.5												
32.5 2.5 - 29.2		9.0	7.8	7.1													
30.0 2.5 - 29.3		9.0	7.8														
25.0 2.5 - 29.0		8.0															

The loads relate to 40 m hook travel. At larger hook travels, the loads reduce by the additional weight of the hoist rope (with double rope = 2.15 kg/m hook travel).

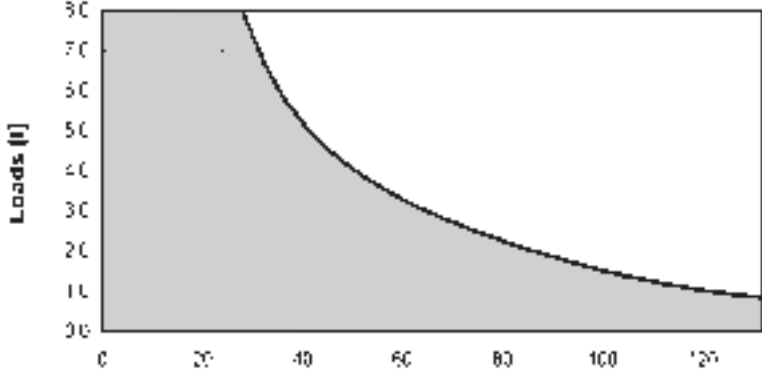
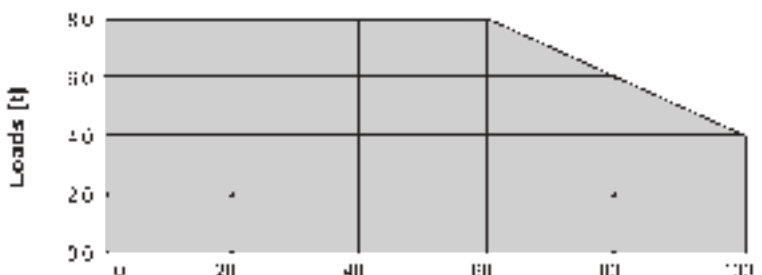
Arrangement of counterweights with hoist winch HFU 45-40



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Wilbert WT 200 e.tronic

Operating speeds 400 V, 50/60 Hz

Drive Type	Operating speeds Load capacity	Hook travel max. [m]	Power rating [kW]
HPU 45-40	Hoisting	160	45
	continuous acceleration  Loads [t] Operating speeds [min] (referred to the 3rd rope layer on the drum)		
TW	Moving trolley		7.5
	continuous acceleration  Loads [t] Operating speeds [min]		
DW	Swinging		2 x 5.5
	continuous acceleration  Operating speeds [min]		
Total power requirements			
59.0 kVA at utilization factor 0.0			

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Wire Rope Slings

WIRE ROPE SLINGS 6x19 Improved Plow Steel, IWRC						
Wire Rope Diameter (inches)	Working Load Limit (in pounds)					
	Single Vertical Hitch	Single Choker Hitch	Basket Hitch (vertical legs)	2-Leg Bridle Hitch & Basket Hitch with Legs Inclined		
						
				60°	45°	30°
3/16	650	480	1,300	1,100	900	650
1/4	1,150	860	2,300	2,000	1,600	1,150
5/16	1,750	1,300	3,500	3,000	2,500	1,750
3/8	2,550	1,900	5,100	4,400	3,600	2,550
7/16	3,450	2,600	6,900	6,000	4,900	3,450
1/2	4,700	3,500	9,400	8,150	6,650	4,700
9/16	5,700	4,200	11,400	9,900	8,050	5,700
5/8	7,100	5,300	14,200	12,300	10,000	7,100
3/4	10,200	7,650	20,400	17,700	14,400	10,200
7/8	13,750	10,300	27,500	23,800	19,400	13,750
1	17,950	13,450	35,900	31,100	25,400	17,950
1 1/8	22,750	17,000	45,500	39,400	32,200	22,750
1 1/4	28,200	21,200	56,400	48,800	39,900	28,200
1 3/8	34,800	26,100	69,600	60,300	49,200	34,800
1 1/2	41,300	31,000	82,600	71,500	58,400	41,300
				When using 2-leg bridle with choker hitch, multiply above values by .75 When using a double basket hitch, multiply the above values by 2.		

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Chain Slings

PRACTICE EXERCISES

CHAIN SLINGS		Grade 80 (8) Alloy Steel				
Chain Size (inches)	Working Load Limit (in pounds)					
	Vertical Hitch 	Choker Hitch 	Basket Hitch (vertical legs) 	2-Leg Bridle Hitch & Basket Hitch with Legs Inclined		
						
				60°	45°	30°
9/32	3,500	2,800	7,000	6,100	4,900	3,500
3/8	7,100	5,680	14,200	12,300	10,000	7,100
1/2	12,000	9,600	24,000	20,800	17,000	12,000
5/8	18,100	14,480	36,200	31,300	25,600	18,100
3/4	28,300	22,640	56,600	49,000	40,000	28,300
7/8	34,200	27,360	68,400	59,200	48,400	34,200
1	47,700	38,160	95,400	82,600	67,400	47,700
1 1/4	72,300	57,840	144,600	125,200	102,200	72,300
				When using 2-leg bridle with choker hitch , multiply above values by .75 When using a double basket hitch , multiply the above values by 2.		

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Nylon Web Slings

NYLON WEB SLINGS single ply						
Web	Working Load Limit (in pounds)					
	Single	Single Choker Hitch	Basket Hitch (vertical legs)	2-Leg Bridle Hitch & Single Basket Hitch with Legs Inclined		
						
				60°	45°	30°
1	1,200	960	2,400	2,000	1,700	1,200
2	2,400	1,900	4,800	4,100	3,400	2,400
3	3,600	2,900	7,200	6,200	5,100	3,600
4	4,800	3,800	9,600	8,300	6,800	4,800
5	6,000	4,800	12,000	10,400	8,500	6,000
6	7,200	5,700	14,400	12,500	10,200	7,200
				When using 2-leg bridle with choker hitch, multiply above values by .75 When using a double basket hitch, multiply the above values by 2.		

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