SLEWING MOBILE CRANE
SAFETY AND LICENCE GUIDE

e-book

Training support material for:

TLILIC0020
Licence to operate a slewing mobile crane
(Over 100 tonnes)

Produced by:

EASY GUIDES
Australia Pty Ltd

PICTURE BASED. PLAIN ENGLISH. LEARNING MADE EASY.

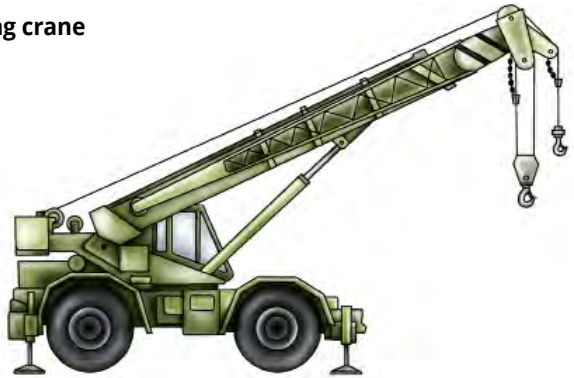
Introduction to Slewing Mobile Crane (over 100 tonnes)

What is a slewing mobile crane

A slewing mobile crane is a powered crane which features a boom or jib that can slew from front to back.
The crane is mounted on a vehicle.

Slewing mobile crane

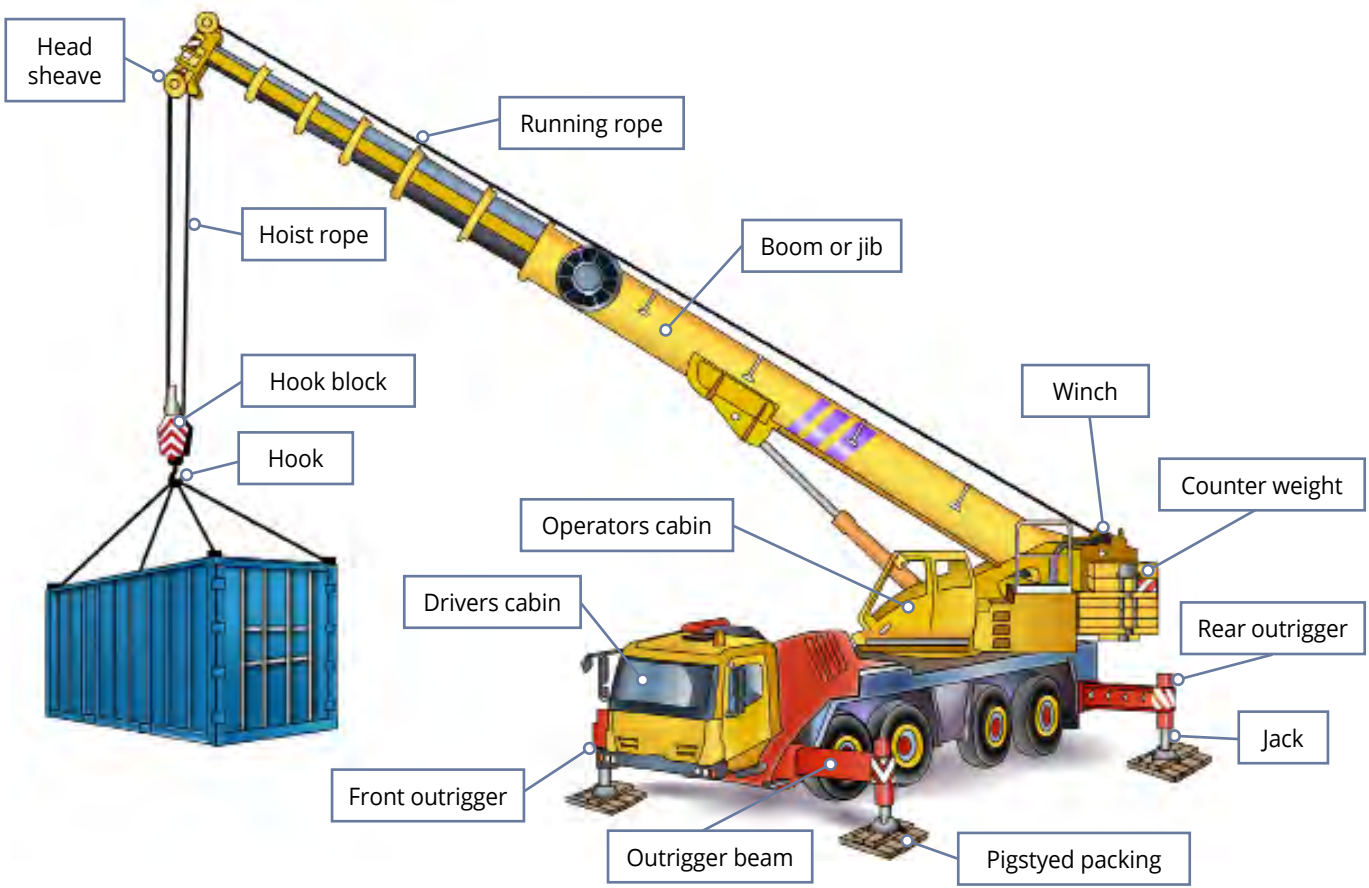
Rough terrain slewing crane



Crawler crane

This learner resource does not cover front-end loader, backhoe, excavator or similar equipment when configured (arranged or set up) for crane operations.

Parts of a slewing mobile crane



QUESTION 14

What does uneven ground do to the capacity of a crawler crane?

Uneven ground **reduces** the capacity of a crawler crane.

10 tonnes

8 tonnes

Multiple crane lifts

Sometimes you will need to lift a load which is too long or wide for one crane to lift. In these cases you will need to do a multiple crane lift.

For example, if you are lifting a 60 tonne load with two cranes, you need to add a safety margin on top of the load share of both cranes.

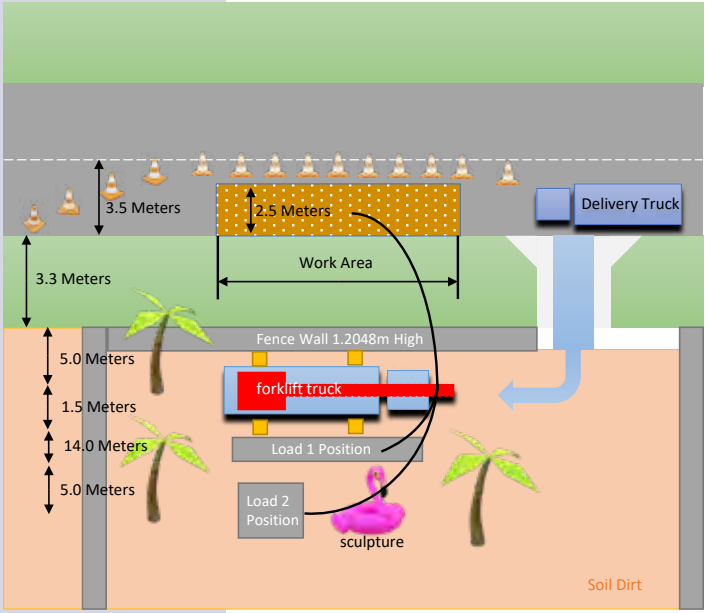
See the table below, which shows the safety margins with a 60 tonne load.

Check the load chart to make sure the cranes have the capacity to lift their share of the load. This is shown in the **Capacity each crane needs** column. See AS 2550.1 for more information.

Number of cranes	Load share of each crane (Total load ÷ number of cranes)	Safety margin	Capacity each crane needs (Safety margin × load share)
2	30 tonnes	20%	1.2 × 30 tonnes = 36 tonnes
3	20 tonnes	33%	1.33 × 20 tonnes = 26.6 tonnes
4 or more	15 tonnes	50%	1.5 × 15 tonnes = 22.5 tonnes

QUESTION 112.34

From the lift plan sketch after consulting with the relevant personnel, write down the sequence of hand signals you might use to help the vehicle crane operator to pick up load 1 from a delivery truck to its destination as shown in the sample lift plan sketch.



Lift Boom up

Slew left /Travel left

Jib out /Trolley out

Hoisting lower/down

Stop

Hoisting raise

Stop

Jib in /Trolley in

Slew right /Travel right

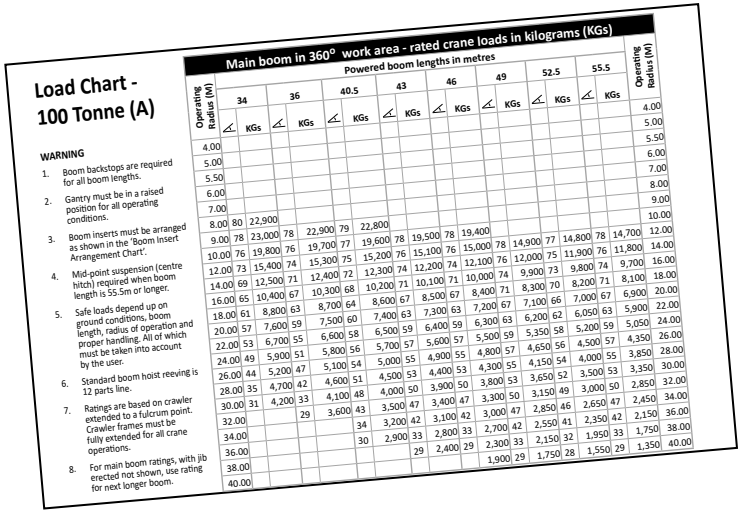
Stop

Hoisting lower/down

Stop

READING LOAD CHARTS

FOR CRANES OVER 100 TONNES



Load Chart - 100 Tonne (A)

WARNING

1. Boom backstops are required for all boom lengths.
2. Gantry must be in a raised position for all operating conditions.
3. Boom inserts must be arranged as shown in the 'Boom Insert Arrangement Chart'.
4. Mid-point suspension (centre hitch) required when boom length is 55.5m or longer.
5. Safe loads depend up on ground conditions, boom length, radius of operation and proper handling. All of which must be taken into account by the user.
6. Standard boom hoist reeving is 12 parts line.
7. Ratings are based on crawler extended to a fulcrum point. Crawler frames must be fully extended for all crane operations.
8. For main boom ratings, with jib erected not shown, use rating for next longer boom.

Main boom in 360° work area - rated crane loads in kilograms (KGs)

Operating Radius (M)	Powered boom lengths in metres																				Operating Radius (M)
	34		36		40.5		43		46		49		52.5		55.5						
	∠	KGs	∠	KGs	∠	KGs	∠	KGs	∠	KGs	∠	KGs	∠	KGs	∠	KGs					
4.00																					4.00
5.00																					5.00
5.50																					5.50
6.00																					6.00
7.00																					7.00
8.00	80	22,900																			8.00
9.00	78	23,000	78	22,900	79	22,800															9.00
10.00	76	19,800	76	19,700	77	19,600	78	19,500	78	19,400											10.00
12.00	73	15,400	74	15,300	75	15,200	76	15,100	76	15,000	78	14,900	77	14,800	78	14,700					12.00
14.00	69	12,500	71	12,400	72	12,300	74	12,200	74	12,100	76	12,000	75	11,900	76	11,800					14.00
16.00	65	10,400	67	10,300	68	10,200	71	10,100	71	10,000	74	9,900	73	9,800	74	9,700					16.00
18.00	61	8,800	63	8,700	64	8,600	67	8,500	67	8,400	71	8,300	70	8,200	71	8,100					18.00
20.00	57	7,600	59	7,500	60	7,400	63	7,300	63	7,200	67	7,100	66	7,000	67	6,900					20.00
22.00	53	6,700	55	6,600	58	6,500	59	6,400	59	6,300	63	6,200	62	6,050	63	5,900					22.00
24.00	49	5,900	51	5,800	56	5,700	57	5,600	57	5,500	59	5,350	58	5,200	59	5,050					24.00
26.00	44	5,200	47	5,100	54	5,000	55	4,900	55	4,800	57	4,650	56	4,500	57	4,350					26.00
28.00	35	4,700	42	4,600	51	4,500	53	4,400	53	4,300	55	4,150	54	4,000	55	3,850					28.00
30.00	31	4,200	33	4,100	48	4,000	50	3,900	50	3,800	53	3,650	52	3,500	53	3,350					30.00
32.00			29	3,600	43	3,500	47	3,400	47	3,300	50	3,150	49	3,000	50	2,850					32.00
34.00					34	3,200	42	3,100	42	3,000	47	2,850	46	2,650	47	2,450					34.00
36.00					30	2,900	33	2,800	33	2,700	42	2,550	41	2,350	42	2,150					36.00
38.00							29	2,400	29	2,300	33	2,150	32	1,950	33	1,750					38.00
40.00										1,900	29	1,750	28	1,550	29	1,350					40.00

NOTE: Please read the other 'Reading Load Charts' section before reading this section.

EXAMPLES OF READING CRANE CHARTS

Note: The following crane chart exercises us the CO LOAD CHART_KOBELCO CKE2500-2 load chart. This is located in the 'Trainer's Resource' of the Easy Guides training material. Your trainer will provide you with this crane chart.

Scenario 4

You have been asked to operate a Kobelco CKE2500 Crawler Crane in luffing jib configuration. You have been told that the crane has the following

45.7m boom inserted

51.8m of jib

You have been asked to pick up a 4tonne load (including rigging) at a 24m radius and place it at a 70m radius. Refer to the load charts and

Question 1: What main boom angle is required to pick up the load vertically?

Answer = 88 degrees