

SLEWING MOBILE CRANE (60T) SAFETY AND LICENCE GUIDE

Training support material for:

TLILIC0023

Licence to operate a slewing mobile crane
(up to 60 tonnes)



Produced by:



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Introduction to Slewing Mobile Crane (up to 60 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



Crawler crane

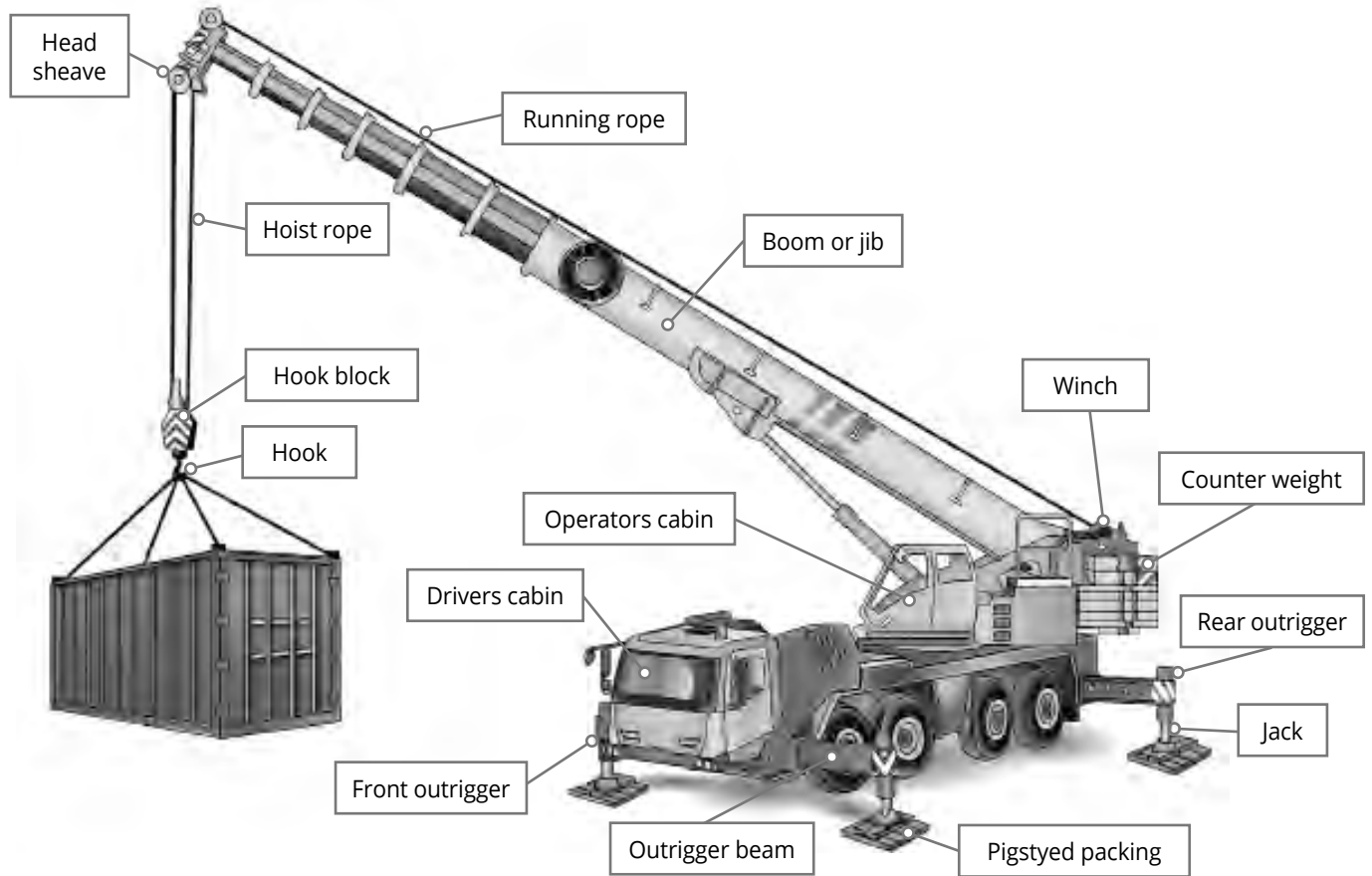


Rough terrain slewing crane



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



Element 1 – Plan work /task

Set up the crane for the task

The configuration (set up) of the crane determines how much you can lift.

Set up the crane so the load will **never** be more than the Safe working load (SWL) of the crane.

Setting up the crane includes:

- Positioning the boom/jib over the load correctly
– boom length and radius
- Working out the centre of gravity
- Looking at the load chart to see if the crane can support the load
- Checking the rated capacity of the crane
- Setting up the counterweights to keep the crane balanced.

Note:

A licenced dogger is responsible for selecting, inspecting and setting up the lifting gear.



Convert m^2 to find the dimensions of the packing pad

Now you know how many square metres of packing you need. If you need to calculate the measurements of the packing pad to use you simply square root the square metres.

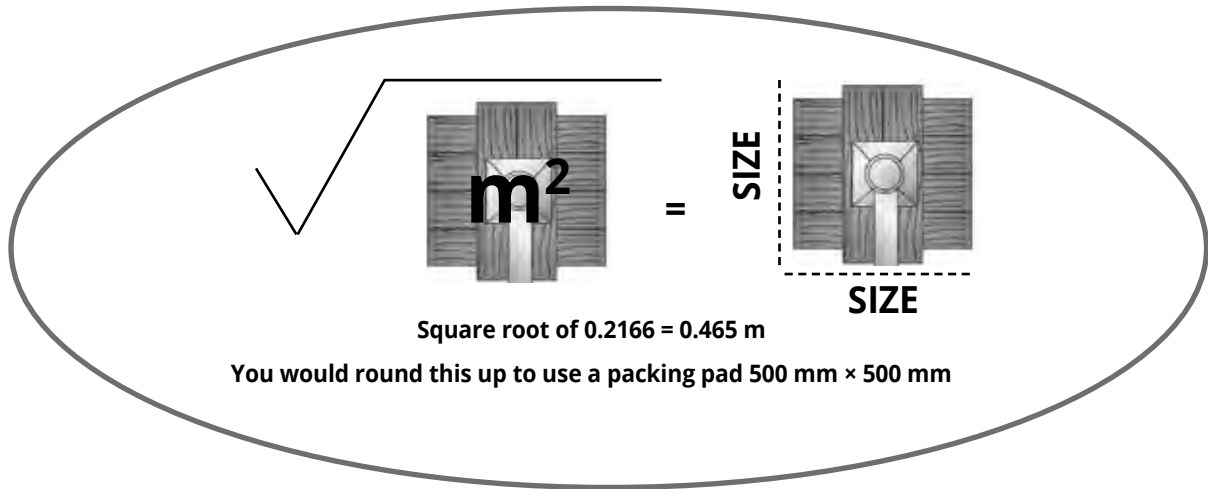
$$\sqrt{0.2166} = 0.465 \text{ metres}$$

Minimum packing size = $0.465 \text{ m} \times 0.465 \text{ m}$

Round up the size = $500 \text{ mm} \times 500 \text{ mm}$

Note:

0.465 m or 465 mm is an uncommon size so the 465 mm is rounded up to a common size of 500 mm \times 500 mm



Tiger tails

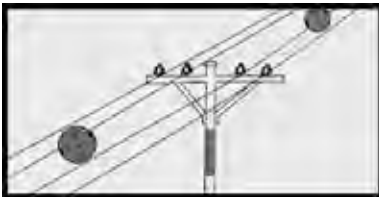
Tiger tails are **black and yellow pipes** that hang off powerlines. They are a **warning device** to make the powerlines easier to see. Be aware that tiger tails are very different to insulated powerlines.



Tiger tails:

- **DO NOT** insulate wires
- **DO NOT** protect you from the risk of electrocution or electric shock
- **DO NOT** allow you to work closer to powerlines

Power line marker



Markers

Markers of different colors such as white and orange.



Poles

Poles with the lower section painted up to 3m above ground.

Warning / danger signs



QUESTION 54*...CONTINUED FROM PREVIOUS PAGE*

You are setting up a crane in a small, tight area.

What do you need to think about and plan for?

Check the path of movement of the crane. Do you need a workmate to help guide you?



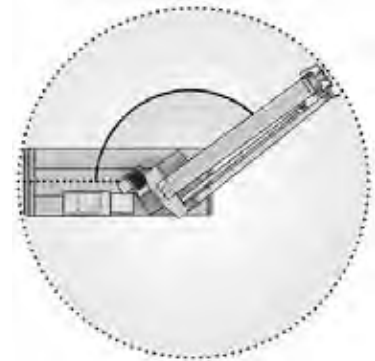
Can you set up the crane properly, as it says in the instructions? For example, fully deploying the outriggers.



Can the boom slew without hitting anything? Is the crane in a good position?



Is there a safe working radius?



READING LOAD CHARTS

FOR CRANES UP TO 60 TONNES

Load Chart - Up to 60 Tonne (A)

Maximum Jib Load Ratings

Deductions

Deductions apply when lifting from beam point with jib erected use ratings for 36 metre boom and apply appropriate deductions for lengths less than 36 metres use boom angle to determine load rating in 36 metre column for angles not shown using rating of next lower boom angle.

Minimum Boom Angle		Maximum Jib load ratings in kilograms (KGs)											
		Jib Length in metres (M)											
		9		12		15		18		21			
Radius (M)		KGs		Radius (M)		KGs		Radius (M)		KGs			
10 Offset	80.00	7.6	8,700	8.4	7,395	9.8	4,437	10.9	2,884	12.0	2,019		
	75.00	11.1	7,800	11.9	6,630	12.9	3,621	17.3	2,354	15.5	1,810		
	70.00	14.0	7,100	14.8	6,035	16.2	3,621	20.7	1,525	18.4	1,648		
	65.00	17.4	4,600	18.2	3,910	19.6	2,346	23.5	1,127	21.8	1,067		
	60.00	20.2	3,400	21.0	2,890	22.4	1,734	26.8	1,020	24.6	1,014		
55.00	23.5	2,500	24.3	2,125	25.7	1,275	26.8	1,020	27.9	918			
20 Offset	80.00	8.8	8,200	9.6	6,970	11.0	4,182	12.1	2,718	13.2	2,175		
	75.00	12.3	7,300	13.1	6,205	14.5	3,723	14.0	2,420	16.7	1,936		
	70.00	15.2	6,600	16.0	5,610	17.4	3,366	18.5	2,188	19.6	1,750		
	65.00	18.6	4,100	19.4	3,485	20.8	2,091	21.9	1,359	23.0	1,087		
	60.00	21.4	2,900	22.2	2,465	23.6	1,479	24.7	1,183	25.8	947		
55.00	24.7	2,000	25.5	1,700	26.9	1,020	28.0	918	29.1	734			
30 Offset	80.00	10.0	7,700	10.8	6,545	12.6	5,236	13.7	3,403	14.8	2,382		
	75.00	13.5	6,800	14.3	5,780	16.1	4,624	17.2	3,006	18.3	2,104		
	70.00	16.4	6,100	17.2	5,185	19.0	4,148	20.1	2,696	21.2	1,887		
	65.00	19.8	3,600	20.6	3,060	22.4	2,448	23.5	1,591	24.6	1,114		
	60.00	22.6	2,400	23.4	2,040	25.2	1,632	28.2	1,061				
55.00	25.9	1,500	26.7	1,275	30.7	1,020							

Hook block weight - (KGs)	
Single Line Weighted Hook	200 kg
1 Sheave Hook Block	360 kg
3 Sheave Hook block	450 kg
5 Sheave Hook Block	500 kg

NOTE:
Please read the 'Reading Load Charts for all crane classes' before reading this section.