

SLEWING MOBILE CRANE (60T) SAFETY AND LICENCE GUIDE



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

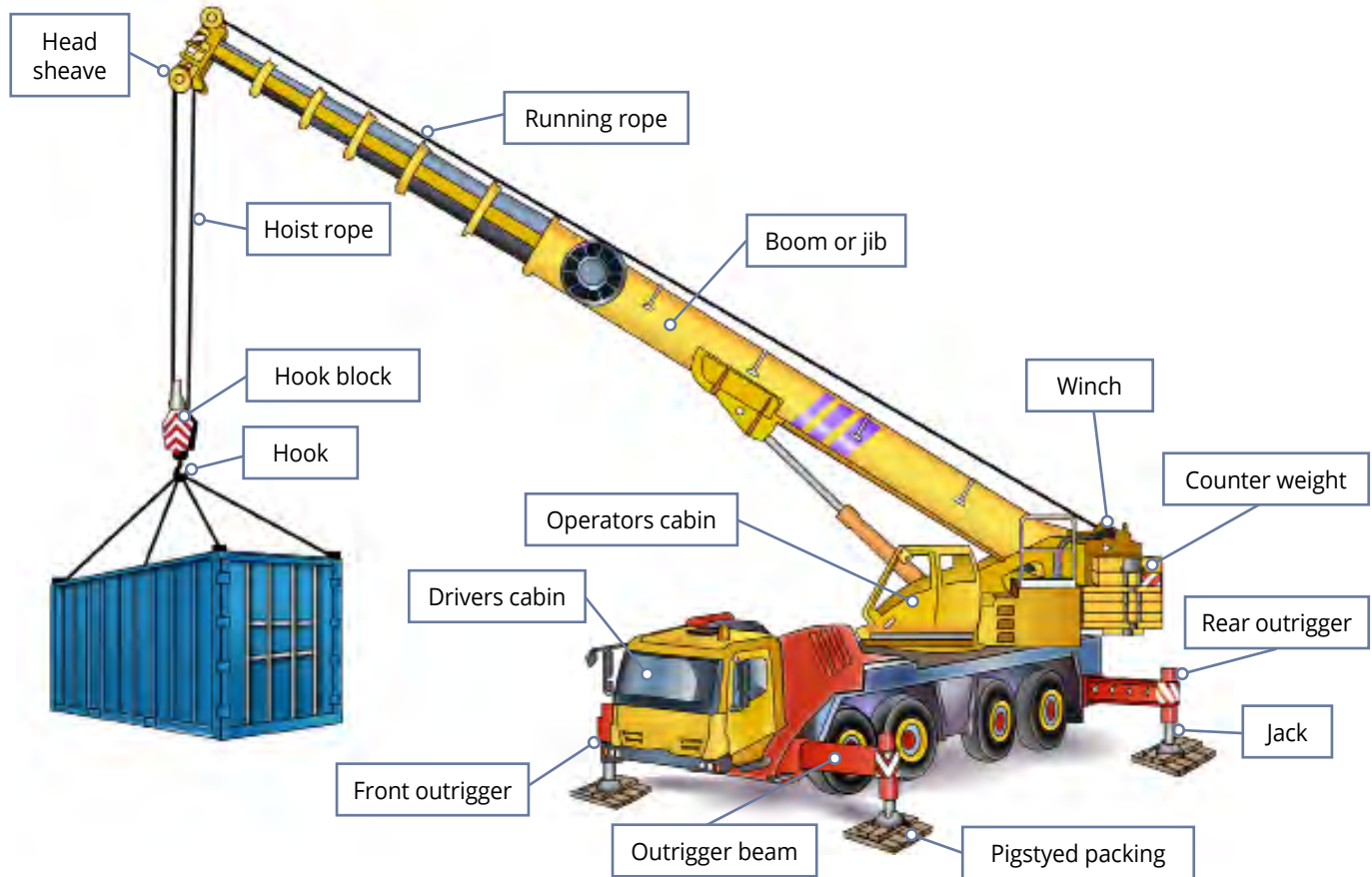


Rough terrain slewing crane



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.



Element 2 – Prepare for work / task

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%	$1.2 \times 30 \text{ tonnes} = 36 \text{ tonnes}$
3	20 tonnes	33%	$1.33 \times 20 \text{ tonnes} = 26.6 \text{ tonnes}$
4 or more	15 tonnes	50%	$1.5 \times 15 \text{ tonnes} = 22.5 \text{ tonnes}$

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.

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

Minimum Boom Angle		Maximum Jib load ratings in kilograms (KGs)											
		Jib Length in metres (M)											
		9		12		15		18		21			
Jib Offset	Radius (M)	KGs	Radius (M)	KGs	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	3,246	20.7	1,525	21.8	1,067		
65.00		17.4	4,600	18.2	3,910	19.6	2,346	23.5	1,127	24.6	1,014		
60.00		20.2	3,400	21.0	2,890	22.4	1,734	23.5	1,020	27.9	918		
55.00	23.5	2,500	24.3	2,125	25.7	1,275	26.8						
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							

NOTE:

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

EXAMPLES OF READING CRANE CHARTS

Note: The following crane chart exercises us the C6 LOAD CHART_LIEBHERR LTM1055-3.2 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.



LIEBHERR

General Questions

a) What counterweight is fitted to the crane to allow it to have on-road axle weights of 12t?

Answer = 7t counterweight

b) What is the rated capacity of the 7-sheave hook block?

Answer = 55t

c) What is the tare weight of the 30.2t rated capacity hook block?

Answer = 260kg

d) The working radii on the LTM 1055 3.2 is measured from where on crane?

Answer = From centre of slew