

# Victoria's 6-to-9-axle crane network

## Information Sheet

July 2022

### Introduction

Victoria's 6-to-9-axle all-terrain mobile crane networks provide pre-approved permit access for a range of crane configurations up to 108 tonnes gross combination mass (GCM) on key corridors and depot locations in Victoria.

The networks and configurations have been developed in consultation with the Crane Industry Council of Australia (CICA).

### Operating conditions

To operate on the crane network, vehicles described in this information sheet must comply with the following:

- The relevant conditions set out in Schedule 8 to the Heavy Vehicle (Mass, Dimension and Loading) National Regulation.
  - A minimum section width per tyre of at least 445mm (385mm for reference vehicle 8 in Appendix 1).
  - Axle group mass limits as described in Appendix 2<sup>1</sup>.
  - A suspension system that shares mass evenly (within a range of +/-10 per cent) across each axle.
  - For left-hand drive vehicles, a 'left-hand drive' sign that complies with Section 31 of Schedule 2 to the Heavy Vehicle (Vehicle Standards) National Regulation; and either:
    - a closed-circuit television system that provides the driver with an adequate view to the right rear quarter of the vehicle; or
    - a pilot vehicle.
  - Participation in the intelligent access program or telematics monitoring application.
1. Axle limits in Appendix 2 must be adhered to. For on-road enforcement, a +/- 300kg tolerance per axle is allowed provided the vehicle's GVM/GCM is compliant.
  2. The vehicle must be operated with the smallest practicable dimensions.
  3. Crane mass is determined by the initial weigh conducted by CICA/NHVR. If this determines the 12.0 tonne per axle limit has been exceeded, a structural assessment is required.

### Dimension limits

Maximum dimension limits are contained in Table 1.

Table 1 Dimension limits

Width	Height <sup>2</sup>	Rear overhang	Projection in front of the centre of the steering wheel	Length
3.5m	4.6m	Lesser of 4.0m or 90 per cent of the wheelbase	3.5m	27.5m

### What if my crane exceeds dimension limits?

Crane combinations that exceed the dimension limits in Table 1 must seek road manager consent through an NHVR permit.



### What if my crane doesn't match one of the reference vehicles?

As per Appendix 1 and 2, if your combination falls within the mass limit of one of the published networks, you may operate on that network provided you do not exceed the mass of the assessed vehicle or internal spacings described in this document. A structural assessment will be required before access can be granted if your vehicle:

- exceeds mass limits (for example, operates at more than 12.0 tonnes per axle)<sup>3</sup>; or
- exceeds 108 tonnes GVM/GCM.

An assessment may incur costs, particularly if the crane exceeds more than 12.0t per axle.

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## Gaining access

Permits for the pre-approved network will be issued for 12 months under a period permit arrangement via the NHVR Portal. Cranes may only travel once per day. Multiple trips per day are not permitted.



### Requirement for permits for non-approved roads

For access to a non-approved network (whether an arterial or local road), the operator must obtain a permit indicating only the road(s) not covered by the pre-approved maps.

### Requirement for third-party permissions

Where access to road networks or part of the road network is owned or controlled by a third party, operators must secure approval prior to travel.

Third parties are those agencies that own or operate the assets your vehicle travels on, over or under. Third parties include toll-road operators, rail-asset managers and utility companies.

A guide to crossing rail assets is at <https://transport.vic.gov.au/getting-around/roads/over-dimensional-load-permits-for-travel-across-railways-and-tramways>

### Requirement for pilots

Pilots must comply with the requirements set out in Schedule 8 of the Heavy Vehicle (Mass, Dimension and Loading) National Regulations.

A pilot may be required on certain bridges on the network. Additional pilots may be required as per the Pilot and Escort Requirement Guide (see Appendix 3)

## General responsibilities

DoT crane maps do not absolve a driver or a transport company of their responsibilities.

Before the driver operates on the approved routes they must:

- show the details of their permit to any pilot escorting the load;
- ensure there is sufficient clearance under wires, structures and trees, and sufficient ground clearance at rail level crossings;
- check the VicTraffic map on the VicRoads' website to determine any road closures or additional road condition and the Victoria's Big Build website <https://bigbuild.vic.gov.au/disruptions>

## How to apply for a permit

To obtain a 12-month Class 1 period permit for a 6-to-9-axle crane, apply on the NHVR portal.

1. Go to <https://www.service.nhvr.gov.au> and if not registered, follow the prompts to set up an account.
  2. Once registered, from the home screen, click on the 'Application Tracker' tab.
  3. Select the 'New Application' button and enter a reference for your application.
  4. At step 1 in the 'Vehicle Tab' on the 'New Permit Application' page, click on the green 'Select Configuration' button. Select either 'All Terrain Crane or All Terrain Crane with Dolly' from the 'Special Purpose Vehicle' menu.
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5. Add all axles/dolly components as required to match your crane configuration.

6. Complete all fields in the 'Vehicle' step of the application and then select the 'Next' button.

7. At step 2 in the 'Travel details tab' under 'Travel requirements' select 'period permit'.

8. At step 3 in the 'Route' section of the application, select the 'Single Route' option and plot a start and finish address that includes roads on the pre-approved 6-to-9-axle crane network appropriate for your crane configuration.

9. At step 4, attach any relevant information as required in support of your application.

10. At step 5 in the comments field, add the following note into 'Route Notes' area: 'Requesting access to 'Victoria's 6 to 9 Axle Crane Network'. Add the pre-approved network reference if known.

11. In step 6 'Confirmation Tab', review your application and ensure all information is accurate.

12. Check the declaration box prior to selecting 'Submit new permit application'.

Note: A period permit allowing single trip per day for Victoria's 6-to-9 Axle Crane Network will be issued where a vehicle meets the pre-approval criteria.

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# Appendix 1

## Reference vehicles



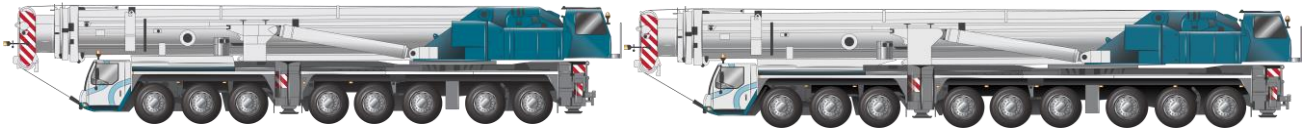
### Reference vehicle 1 6-axle all-terrain mobile crane without dolly

Reference vehicle	Axle spacing					Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	
Tadano Demag AC250-1 Tadano AC 6.300 Tadano Demag AC300-6 Tadano Demag AC350-1 Tadano Demag AC350-6 Tadano Demag AC350/6	1.63m	3.01m	1.65m	2.44m	1.65m	2.92m
Liebherr LTM 1300-6.2 Liebherr LTM 1350-6.1	1.65m	3.1m	1.65m	2.44m	1.65m	2.93m
Liebherr LTM 1250/1 Liebherr LTM 1250-6.1 Liebherr LTM 1300/1 Liebherr LTM 1300-6.1	1.85m	2.85m	1.65m	2.58m	1.65m	2.93m
Tadano ATF 400G-6	1.8m	3.15m	1.7m	2.44m	1.7m	2.94m
Grove GMK6220-L Grove GMK6300 Grove GMK6300L	1.7m	3.2m	1.65m	2.4 - 2.45m	1.65m	2.87m
Grove GMK6400	1.7m	3.5m	1.65m	2.45m	1.65m	2.87m



### Reference vehicle 2 7-axle all-terrain mobile crane crane without dolly

Reference vehicle	Axle spacing						Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	
Tadano AC 7.450 Tadano Demag AC450-7	1.65m	1.65m	2.66m	1.65m	2.2m	1.65m	2.94m
Grove GMK7450	1.65m	1.65m	3.0m	1.65m	2.45m	1.65m	2.87m
Liebherr LTM 1400-7.1	1.65m	3.2m	1.65m	2.22m	1.65m	1.65m	2.92m



### Reference vehicle 3 8-axle all-terrain mobile crane 96t

Reference vehicle	Axle spacing								Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	
Tadano Demag AC500-2 Tadano Demag AC500-8	1.5m	1.55m	2.0m	1.5m	2.39m	1.5m	2.49m	N/A	3.04m
Liebherr LTM 1450-8.1 Liebherr LTM 1500 Liebherr LTM 1500-8.1	1.65m	1.65m	2.8m	1.65m	1.65m	2.25 - 2.45m	1.65m	N/A	2.9m
Liebherr LTM 1650-8.1	1.65m	1.65m	3.8m	1.65m	1.65m	2.45m	1.65m	N/A	2.93m
Liebherr LG 1750	1.75m	1.75m	2.1m	1.99m	1.8m	2.04m	1.8m	N/A	2.9m
Terex Demag TC2800-1	1.5m	1.5m	1.5m	1.5m	5.64m	1.5m	1.5m	N/A	3.0m
Liebherr LTM1750	1.61m	1.59m	2.15m	1.6m	1.65m	3.37m	3.4m	1.6m	2.93m



### Reference vehicle 4 9-axle all-terrain mobile crane 108t

Reference vehicle	Axle spacing								Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	
Liebherr LTM 11200-9.1	1.48m	2.08m	1.5m	1.48m	3.07m	1.5m	3.3m	1.48m	2.93m
Liebherr LTM 1750-9.1	1.61m	1.59m	2.15m	1.6m	1.65m	3.37m	3.4m	1.6m	2.93m
Tadano Demag AC700-9	1.65m	1.65m	2.0m	1.5m	2.49m	1.5m	2.61m	1.5m	2.94m
Tadano Demag AC1000-9	1.6m	2.1m	1.58m	1.58m	1.6m	3.37m	3.43m	1.6m	2.88m



### Reference vehicle 5 8+ axle all-terrain mobile crane with reduced axle mass

Reference vehicle	Axle spacing								Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	
Liebherr LTM 1450-8.1	1.65m	1.65m	2.8m	1.65m	1.65m	2.45m	1.65m	N/A	2.95m
Liebherr LTM 11200-9.1	1.48m	2.08m	1.5m	1.48m	3.07m	1.5m	3.3m	1.48m	2.93m
Tadano Demag AC1000-9	1.6m	2.1m	1.58m	1.58m	1.6m	3.37m	3.43m	1.6m	2.88m



### Reference vehicle 6 6+ axle all-terrain mobile crane with reduced axle mass

Reference vehicle	Axle spacing								Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	
Tadano AC 6.300 Tadano Demag AC300-6	1.65m	3.01m	1.65m	2.44m	1.65m	4.73m	1.2m	3.44m	2.92m
Tadano Demag AC350-1 Tadano Demag AC350-6 Tadano Demag AC350/6	1.63m	3.01m	1.65m	2.44m	1.65m	5.55m	1.26m	2.35m	2.92m
Tadano ATF 400G-6	1.8m	3.15m	1.7m	2.44m	1.7m	6.82m	1.6m	1.6m	2.94m
Grove GMK6220-L Grove GMK6300 Grove GMK6300L	1.7m	3.2m	1.65m	2.4 - 2.45m	1.65m	5.0m	1.52m	1.52m	2.87m
Grove GMK6400	1.7m	3.5m	1.65m	2.45m	1.65m	5.97m	1.5m	1.5m	2.87m
Tadano Demag AC500-2 Tadano Demag AC500-8	1.5m	1.55m	2.0m	1.5m	2.39m	1.5m	2.49m	N/A	3.04m
Liebherr LTM 1500 Liebherr LTM 1500-8.1	1.65m	1.65m	2.8m	1.65m	1.65m	2.25m	1.65m	N/A	2.9m
Liebherr LTM 1650-8.1	1.65m	1.65m	3.8m	1.65m	1.65m	2.45m	1.65m	N/A	2.93m
Liebherr LG 1750	1.75m	1.75m	2.1m	1.99m	1.8m	2.04m	1.8m	N/A	2.9m
Liebherr LTM 1750-9.1	1.61m	1.59m	2.15m	1.6m	1.65m	3.37m	3.4m	1.6m	2.93m



**Reference vehicle 7 6+ axle all-terrain mobile crane with reduced axle mass**

Reference vehicle	Axle spacing										Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	
Liebherr LTM 1300-6.2 Liebherr LTM 1350-6.1	1.65m	3.1m	1.65m	2.44m	1.65m	5.74 - 6.02m	1.35-1.6m	1.35-1.6m	N/A	N/A	2.93m
Liebherr LTM 1250/1 Liebherr LTM 1250-6.1 Liebherr LTM 1300/1 Liebherr LTM 1300-6.1	1.85m	2.85m	1.65m	2.58m	1.65m	5.30 - 5.90m	1.23 - 1.35m	1.23-1.35m	N/A	N/A	2.93m
Tadano AC 7.450 Tadano Demag AC450-7	1.65m	1.65m	2.66m	1.65m	2.2m	1.65m	4.84m	1.22m	2.5m	1.22m	2.94m
Grove GMK7450	1.65m	1.65m	3.0m	1.65m	2.45m	1.65m	3.66 - 3.7m	1.65m	1.65m	3.85m	2.87m
Liebherr LTM 1400-7.1	1.65m	3.2m	1.65m	2.22m	1.65m	1.65m	6.99m	1.6m	1.6m	N/A	2.92m
Tadano Demag AC700-9	1.65m	1.65m	2.0m	1.5m	2.49m	1.5m	2.61m	1.5m	N/A	N/A	2.94m



**Reference vehicle 8 8-axle all-terrain mobile crane carrier TC2800-1**

Reference vehicle	Axle spacing							Minimum ground contact width
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	
Terex Demag TC2800-1	1.5m	1.5m	1.5m	1.5m	5.64m	1.5m	1.5m	3.0m

## Appendix 2

### Axle group mass by configuration<sup>4</sup>

6-axle crane without dolly



Tadano Demag AC250-1  
 Tadano AC 6.300  
 Tadano Demag AC300-6  
 Tadano Demag AC350-1  
 Tadano Demag AC350-6  
 Tadano Demag AC350/6

Liebherr LTM 1300-6.2  
 Liebherr LTM 1350-6.1

Liebherr LTM 1250/1  
 Liebherr LTM 1250-6.1  
 Liebherr LTM 1300/1  
 Liebherr LTM 1300-6.1

Axle	Axle group mass	GVM
1	24t	72t
2		
3	48t	
4		
5		
6		

Axle	Axle group mass	GVM
1	24t	72t
2		
3	48t	
4		
5		
6		

Axle	Axle group mass	GVM
1	24t	72t
2		
3	48t	
4		
5		
6		

Tadano ATF 400G-6

Grove GMK6220-L  
 Grove GMK6300  
 Grove GMK6300L

Grove GMK6400

Axle	Axle group mass	GVM
1	24t	72
2		
3	48t	
4		
5		
6		

Axle	Axle group mass	GVM
1	24t	72
2		
3	24t	
4		
5	24t	
6		

Axle	Axle group mass	GVM
1	24t	72t
2		
3	24t	
4		
5	24t	
6		

4. In some cases, the GVM/GCM is less than the sum of axle groups. Unless advised by DoT, the published network maps do not apply to cranes that exceed 12.0t per axle.



## 6-axle crane with dolly



Tadano AC 6.300  
Tadano Demag AC300-6

Axle	Axle group mass	GCM
1	14.2t	78.7t
2		
3	38.2t	
4		
5		
6		
7	19.7t	
8	8.3t	
9		

Liebherr LTM 1300-6.2  
Liebherr LTM 1350-6.1

Axle	Axle group mass	GCM
1	18.15t	81.25t
2		
3	39.65t	
4		
5		
6		
7	26.7t	
8		
9		

Liebherr LTM 1250/1  
Liebherr LTM 1250-6.1  
Liebherr LTM 1300/1  
Liebherr LTM 1300-6.1

Axle	Axle group mass	GCM
1	16.8t	82.75t
2		
3	41.25t	
4		
5		
6		
7	25.95t	
8		
9		

Tadano ATF 400G-6

Axle	Axle group mass	GCM
1	17.5t	77.5t
2		
3	35t	
4		
5		
6		
7	25t	
8		
9		

Grove GMK6220-L  
Grove GMK6300  
Grove GMK6300L

Axle	Axle group mass	GCM
1	15.6t	76.6t
2		
3	17.45t	
4	17.45t	
5		
6		
7	26.5t	
8		
9		

Grove GMK6400

Axle	Axle group mass	GCM
1	15.6t	79.7t
2		
3	20.55t	
4	19.4t	
5		
6		
7	26.5t	
8		
9		

Tadano Demag AC350-1  
Tadano Demag AC350-6  
Tadano Demag AC350/6

Axle	Axle group mass	GCM
1	16.5t	79.5t
2		
3	37.5t	
4		
5		
6		
7	26.5t	
8		
9		

## 7-axle crane without dolly



Tadano AC 7.450  
Tadano Demag AC450-7

Grove GMK7450

Liebherr LTM 1400-7.1

Axle	Axle group mass	GVM
1	36t	84t
2		
3		
4	48t	
5		
6		
7		

Axle	Axle group mass	GVM
1	36t	84t
2		
3		
4	24t	
5		
6	24t	
7		

Axle	Axle group mass	GVM
1	36t	84t
2		
3		
4	48t	
5		
6		
7		

## 7-axle crane with dolly



Tadano AC 7.450  
Tadano Demag AC450-7

Grove GMK7450

Liebherr LTM 1400-7.1

Axle	Axle group mass	GCM
1	17.65t	90.1t
2		
3		
4	39.7t	
5		
6		
7		
8	18.15t	
9		
10	14.6t	
11		

Axle	Axle group mass	GCM
1	23.9t	94.05t
2		
3		
4	18.55t	
5		
6	17.65t	
7		
8	35.45t	
9		
10		
11		

Axle	Axle group mass	GCM
1	27.9t	92.6t
2		
3		
4	39.2t	
5		
6		
7		
8	27.0t	
9		
10		

## 8-axle crane 96t



Tadano Demag AC500-2  
Tadano Demag AC500-8

Axle	Axle group mass	GVM
1	60t	96t
2		
3		
4		
5		
6	36t	
7		
8		

Liebherr LTM 1450-8.1  
Liebherr LTM 1500  
Liebherr LTM 1500-8.1

Axle	Axle group mass	GVM
1	48t	96t
2		
3		
4		
5	48t	
6		
7		
8		

Liebherr LTM 1650-8.1

Axle	Axle group mass	GVM
1	48t	96t
2		
3		
4		
5	48t	
6		
7		
8		

Liebherr LG 1750

Axle	Axle group mass	GVM
1	48t	96t
2		
3		
4		
5	48t	
6		
7		
8		

Terex Demag TC2800-1

Axle	Axle group mass	GVM
1	60t	96t
2		
3		
4		
5		
6	36t	
7		
8		

## 8-axle crane without boom



Tadano Demag AC500-2  
Tadano Demag AC500-8

Axle	Axle group mass	GVM
1	32.7t	58.8t
2		
3		
4		
5		
6	28.5t	
7		
8		

Liebherr LTM 1450-8.1

Axle	Axle group mass	GVM
1	29.95t	75t
2		
3		
4		
5		
6	45.05t	
7		
8		

Liebherr LTM 1650-8.1

Axle	Axle group mass	GVM
1	24.1t	64.3t
2		
3		
4		
5	40.2t	
6		
7		
8		

Liebherr LG 1750

Axle	Axle group mass	GVM
1	29.5t	49.7t
2		
3		
4		
5		
6	21.15t	
7		
8		

Terex Demag TC2800-1

Axle	Axle group mass	GVM
1	23t	35.7t
2		
3		
4		
5		
6		
7	12.7t	
8		

Liebherr LTM 1500  
Liebherr LTM 1500-8.1

Axle	Axle group mass	GVM
1	28.15t	60.95t
2		
3		
4		
5		
6	32.8t	
7		
8		

## 9-axle crane with boom



Liebherr LTM 11200-9.1

Axle	Axle group mass	GVM
1	24t	108t
2		
3	84t	
4		
5		
6		
7		
8		
9		

Liebherr LTM 1750-9.1

Axle	Axle group mass	GVM
1	66.35t	100t
2		
3		
4		
5		
6		
7	33.65t	
8		
9		

Tadano Demag AC700-9

Axle	Axle group mass	GVM
1	60t	108t
2		
3		
4		
5		
6	48t	
7		
8		
9		

Tadano Demag AC1000-9

Axle	Axle group mass	GVM
1	60t	108t
2		
3		
4		
5		
6	48t	
7		
8		
9		

## 9-axle crane without boom



Liebherr LTM 11200-9.1

Axle	Axle group mass	GVM
1	19.6t	78.2t
2		
3	61.55t	
4		
5		
6		
7		
8		
9		

Liebherr LTM 1750-9.1

Axle	Axle group mass	GVM
1	41t	71t
2		
3		
4		
5	31.3t	
6		
7		
8		
9		

Tadano Demag AC700-9

Axle	Axle group mass	GVM
1	42.5t	63t
2		
3		
4		
5		
6	34t	
7		
8		
9		

Tadano Demag AC1000-9

Axle	Axle group mass	GVM
1	45.5t	73t
2		
3		
4		
5		
6	36.7t	
7		
8		
9		

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## Appendix 3

### Pilot and escort requirement guide

This is a guide only. May be amended to accommodate specific traffic or road conditions. The number of pilot/escort vehicles required will be determined on a case-by-case basis.



\*Reduces to 1 certified pilot on a freeway outside the Melbourne and Geelong urban areas

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