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Guidelines

Measuring the Dimensions of an Oversize Vehicle

D20#926442
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Contents

Document Control

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Amendments

Revision Number	Revision Date	Description of Key Changes	Reviewed	Section / Page No.
1	20/05/2024	Clarified measurement adjustment for width, length and axle spacings, in line with Compliance Section procedures.		4.2, 5.2 & 12.2
2	28/05/2024	Document reviewed – no changes	MH	All
3	05/02/2026	Removed reference to section 1.2.1 Single Trip Oversize Vehicle – Standard Operating Conditions	PM	Appendix 3

DEFINITIONS

Term	Definition
OSV	Oversize Vehicle means a vehicle that exceeds a statutory dimension limit, including its load.
Permit	A permit issued under Part 4 of the Road Traffic (Vehicles) Act 2012.
Projection	The distance an object extends beyond the normal confines or body of the vehicle to the front, side or rear.
Rear Overhang Line	The centre of a single axle, single axle group, tandem axle group, tri axle group or quad axle group nearest to the rear of the vehicle.
Rear Overhang	Of a vehicle, means the distance between the rear overhang line and the rearmost part of the vehicle or the load.

Term	Definition
Statutory Dimension Limit	A dimension limit prescribed in Part 8 of the *Road Traffic (Vehicles) Regulations 2014*.
TEW	A Main Roads Traffic Escort Warden.

REFERENCES AND RELATED DOCUMENTS

Document Number	Description
D19#696602	Single Trip Oversize Vehicle – Standard Operating Conditions.
D13#399261	Low Loader Overmass Period Permit Operating Conditions.
D19#752785	Platform Trailer Relocation Period Permit Operating Conditions.
D20#835117	Traffic Escort Warden Job Paperwork.
Legislation WA	Road Traffic (Vehicles) Regulations 2014.

1 PURPOSE

This document outlines the process that should be followed when measuring the dimensions of an OSV.

2 WHAT ARE DIMENSION REQUIREMENTS

Dimension requirements include the ***maximum*** dimension limits, ***minimum*** dimension limits, ***actual*** dimensions and an allowable dimension ***range*** that apply to a vehicle and its load. The dimension requirements are specified in the particular permit applying to the OSV and where a dimension requirement is not specified on the permit, the vehicle must comply with the requirements in Part 8 of the *Road Traffic (Vehicles) Regulations 2014*.

With reference to an OSV permit, the maximum dimension limits include:

- Height
- Length
- Width
- Rear overhang
- Rear projection
- Forward projection
- Raised Height

Minimum Dimension limits include:

- Ground contact width
- Ground clearance

Actual Dimensions include:

- Axle spacings (applicable to Single Trip Permit and Bridge Crossing Permit)

A dimension range includes:

- An axle spacing range approved under a Period Permit, such as the Low Loader Overmass Period Permit or Platform Trailer Relocation Period Permit. The axle spacing range sets both the minimum and maximum dimension limit.

Note: *A blank field or "VSR" in a field on the permit means the vehicle must comply with the requirements in Part 8 of the Road Traffic (Vehicles) Regulations 2014 for the particular dimension.*

3 WHAT IS A MEASUREMENT ADJUSTMENT

A measurement adjustment is applied when a vehicle is measured for compliance purposes to take into account any inaccuracies or inconsistencies in the measurements due to:

- The measuring equipment used;
- The inspection site characteristics;
- Measuring methods; and
- The conditions under which the measurements are taken.

Wherever possible, measurements should be taken in a single step. However, if a one-step measurement cannot be achieved, it is acceptable to take the measurement of an OSV using

multiple steps. Regardless of the number of steps taken to establish the measurement, only one measurement adjustment shall be applied, except in the case of a width measurement.

4 WIDTH

The width of an OSV is the measurement taken between the widest points on each side of the OSV.

4.1 Assessment Method

When measuring the overall width of an OSV, a TEW will use their issued tape measure (60.0m or 8.0m) to measure the load at its widest points. Care must be taken to ensure that all extremities of the load are taken into account. Wherever possible, the end of the tape measure should be attached to one side of the OSV, at the widest point and then extend the tape measure out to the widest point on the opposite side of the OSV and record the measurement, this is known as a one-step measurement.

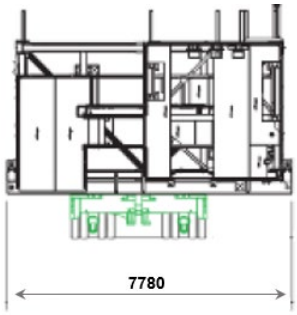
Where the tape measure cannot be attached to one side of the OSV, assistance will be required from another person to hold the end of the tape measure. Where the widest point is at a height that is out of reach, a third person may be required to assist with sighting when the tape measure aligns with the widest points.

4.2 Measurement Adjustment

If the width measurement exceeds the width limit specified on the permit, a **20 mm measurement adjustment** shall be applied and recorded for each step taken when measuring the width of an OSV.

Example - Step 1. Measure the total width of the deck of the OSV. Step 2. Measure the width of the OSV from the deck to the widest point on the left hand side of the OSV. Step 3. Measure the width of the OSV from the deck to the right hand side of the OSV.

This is known as a 3-step measurement, add the 3 measurements together to calculate the total width of the OSV and a **60 mm** measurement adjustment shall be applied and recorded.

One Step Measurement	Three Step Measurement
	

Note: *If the tape measure cannot be attached at the exact point required for the measurement, however can be attached to a point nearby, the measurement between these two points to determine the final measurement does not need to be counted as a measurement step.*

5 LENGTH

When measuring the overall length of an OSV, the measurement must be taken from the forward most point of the OSV to the most rear point of the OSV, including any rear projection or loading ramps.

5.1 Assessment Method

Attach the issued 60.0m tape measure to the front or rear of the OSV and extend the tape measure the full length of the OSV. A measuring wheel may be used, however if the measurement taken varies from the length specified on the Permit by more than 1 metre, a measurement must be taken using the issued 60.0 metre tape measure. (Note - measuring wheels are to be used for length measurements only).

Request assistance from another person if there is difficulty in taking the overall length measurement. Alternatively, place the 60.0 metre tape measure on the ground alongside the OSV (use a counter weight to hold the tape measure in place) and record the measurement.

5.2 Measurement Adjustment

If the length measurement exceeds the length limit specified on the permit, the following measurement adjustments are applicable dependant on the permitted overall length of the OSV:

- Permitted length **up to 27.5 metres** in length, a measurement adjustment of **100 mm** shall be applied and recorded.
- Permitted length **greater than 27.5 metres** in length, a measurement adjustment of **300 mm** shall be applied and recorded.

6 HEIGHT

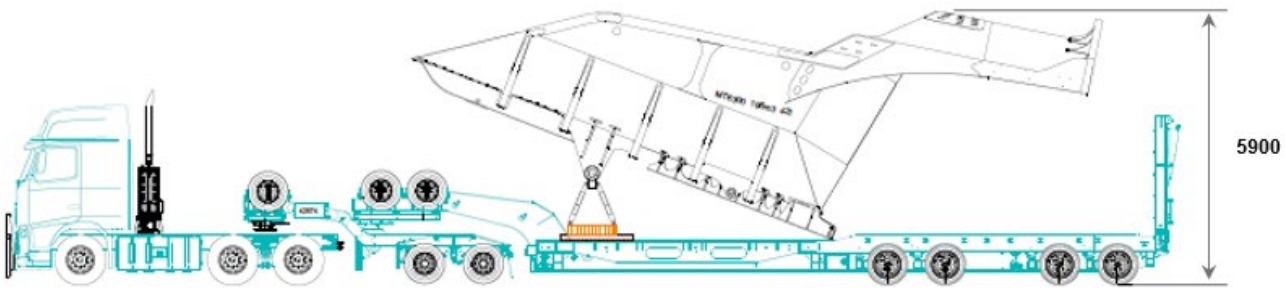
The height of an OSV is the measurement taken from the ground to the highest point of the OSV including ancillary items such as rotating beacons and whip aerials.

Where a raised height and a lowered height are specified on the permit, the height measurement should be taken when the vehicle is in both the raised height and lowered height positions.

6.1 Assessment Method

When measuring the overall height of an OSV, a TEW will use their issued height stick to measure the load at its highest point. Care must be taken to ensure that the highest part of load is taken into account, which may not be in an obvious position. Wherever possible, the end of the height stick should be attached to the top of the highest point of the load.

Where the height stick cannot be attached to the highest point of the load, assistance will be required from another person to assist with sighting when the height stick aligns with the highest point.



6.2 Measurement Adjustment

If the height measurement exceeds the height limits specified on the permit, **no measurement adjustment** shall be applied. Due to a minimal safety clearance of 300 mm being applied to overhead structure assessments, there is considerable risk of damage to overhead structures if a measurement adjustment is applied. As such, a permit amendment will be required.

Note: Where the OSV is being escorted under the supervision of a cable operator, the measurement taken by the cable operator will be deemed to be the overall height of the OSV.

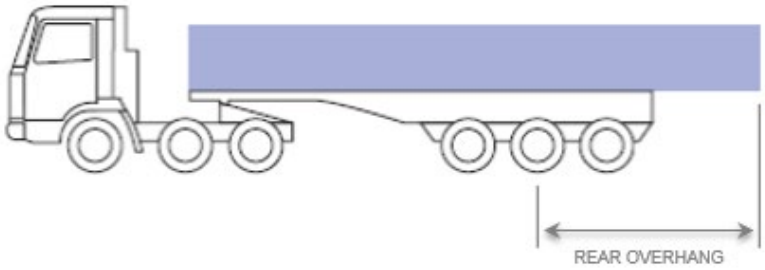
7 REAR OVERHANG

The rear overhang of an OSV is the measurement taken from the rear overhang line to the rear most part of the OSV, such as the ramps or the rear projecting load. Rear overhang does not apply to a platform trailer.

7.1 Assessment Method

When measuring the rear overhang of an OSV, a TEW will use their issued tape measure (60.0m or 8.0m). Wherever possible, the end of the tape measure should be attached to the trailer adjacent to the rear overhang line and then extend the tape measure out to the rearmost part of the OSV, or conversely, attach the tape measure to the rearmost part of the load and extend the tape measure out to the rear overhang line.

Where the tape measure cannot be attached to the trailer or load, assistance will be required from another person to hold the end of the tape measure in the correct position.



7.2 Measurement Adjustment

If the rear overhang measurement exceeds the rear overhang specified on the permit, a **50mm measurement adjustment** shall be applied and recorded.

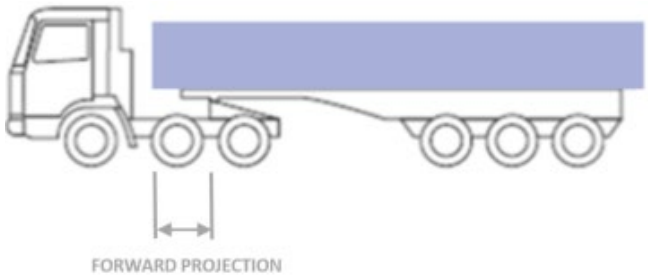
8 FORWARD PROJECTION

The forward projection of an OSV is the measurement from the point of articulation (kingpin) of the trailer to the forward most part of the load.

8.1 Assessment Method

When measuring the forward projection of an OSV, a TEW will use their issued tape measure (60.0m or 8.0m). Wherever possible, the end of the tape measure should be attached to the trailer adjacent to point of articulation and then extend the tape measure out to the forward most part of the load, or conversely, attach the tape measure to the forward most part of the load and extend the tape measure out to the point of articulation.

Where the tape measure cannot be attached to the trailer or load, assistance will be required from another person to hold the end of the tape measure in the correct position.



8.2 Measurement Adjustment

If the forward projection measurement exceeds the forward projection limit specified on the permit, a **50 mm measurement adjustment** shall be applied and recorded.

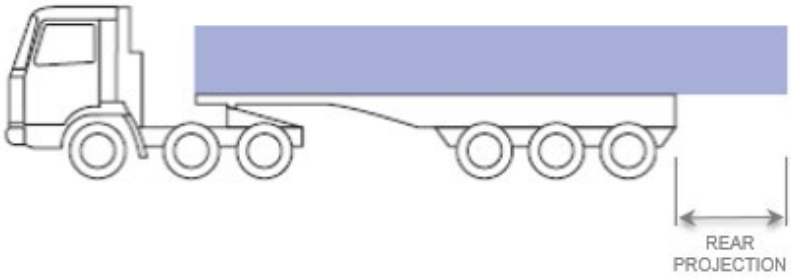
9 REAR PROJECTION

The rear projection of an OSV is the measurement from the rear of the trailer to the rear of the load.

9.1 Assessment Method

When measuring the rear projection of an OSV, a TEW will use their issued tape measure (60.0m or 8.0m). Wherever possible, the end of the tape measure should be attached to the rear of the trailer and then extend the tape measure out to the rearmost part of the load, or conversely, attach the tape measure to the rearmost part of the load and extend the tape measure out to the rear of the trailer.

Where the tape measure cannot be attached to the trailer or load, assistance will be required from another person to hold the end of the tape measure in the correct position.



9.2 Measurement Adjustment

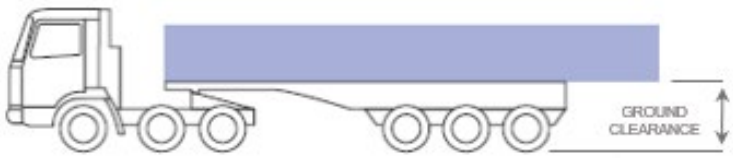
If the rear projection measurement exceeds the rear projection limit specified on the permit, a **50mm measurement adjustment** shall be applied and recorded.

10 GROUND CLEARANCE

The ground clearance of an OSV is the measurement from the lowest point of the load to the ground. Where a raised ground clearance requirement is also specified on the permit the height measurement should be taken when the vehicle is in both the raised and lowered positions.

10.1 Assessment Method

When measuring the ground clearance of an OSV, a TEW will use their issued 8.0 metre tape measure. Care must be taken to ensure that the measurement is taken between the lowest point of the load and the ground.



10.2 Measurement Adjustment

If the ground clearance measurement is less than the ground clearance requirement specified on the permit, a **50mm measurement adjustment** shall be applied and recorded.

11 GROUND CONTACT WIDTH

The Ground Contact Width (GCW) is the measurement between the outermost point of ground contact of the outside tyres on each end of the axle. GCW must not be confused with the spread of the deck of the low loader or pin hole measurements marked on the low loader. The GCW specified on the permit is the minimum requirement and should be consistent across all axles on the trailer.

GCW may be applicable to a low loader and/or a low loader dolly where specified.

11.1 Assessment Method

When measuring the GCW of an OSV, a TEW will use their issued tape measure (60.0m or 8.0m). Attach the end of the tape measure onto the outermost edge of the outer tyre, in contact with the ground, at the end of one axle. Extend the tape measure out to the outermost edge of the outer tyre, in contact with the ground, at the opposite end of the axle and record the measurement.

11.2 Measurement Adjustment

If the GCW measurement is less than the GCW requirement specified on the permit, a **50 mm measurement adjustment** shall be applied and recorded.

12 AXLE SPACINGS

Axle spacing measurements are critical measurements, which are used as part of the assessment process to determine if an OSV is able to access the road network without causing damage to road infrastructure, in particular drive over structures.

Axle spacing's are measured between adjacent axles. The axle spacing measurement of the OSV must comply with the ***actual*** axle spacing requirements or be within the axle spacing ***range*** specified within the permit or permit operating conditions.

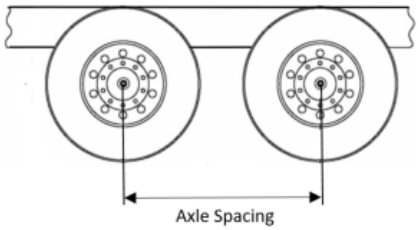
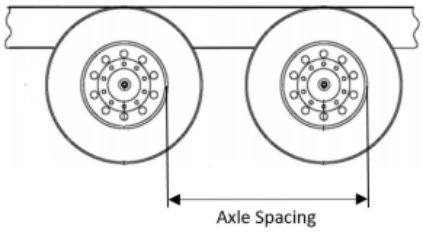
The different axle spacing ***ranges*** are shown in Appendix 1 to 4.

12.1 Assessment Method

When measuring the axle spacing's of an OSV, a TEW will use their issued tape measure (60.0m or 8.0m). It is best practice to commence the measurements from the steer axle of the prime mover and methodically measure the axle spacing's from the front of the combination to the rear.

Axle spacing measurements are to be taken from the centre of the axle to the centre of the adjacent axle. Alternatively, axle spacing measurements can be taken from the outside of the rim to the same position on the outside of the rim on the adjacent axle, provided the rims are the same diameter.

Refer below diagrams illustrating the two acceptable methods of measuring axle spacing's.

Centre to Centre of axle	Outside of rim to Outside of adjacent rim
	 (Only where rims have the same diameter)

12.2 Measurement Adjustment

If the axle spacing measurement is not the same as the ***actual*** axle spacing requirement specified on the permit or within the axle spacing ***range*** applicable to the permit, **a 50 mm measurement adjustment** shall be applied and recorded. Where the axle spacing measurement exceeds the specified axle spacing, the 50 mm measurement adjustment shall be deducted from the measurement. Where the axle spacing measurement is less than the specified axle spacing, the 50 mm measurement adjustment shall be added to the measurement.

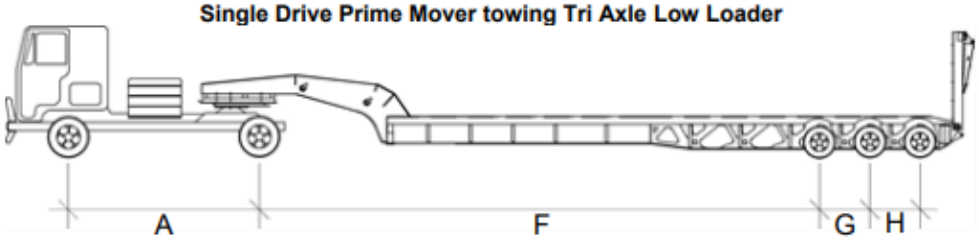
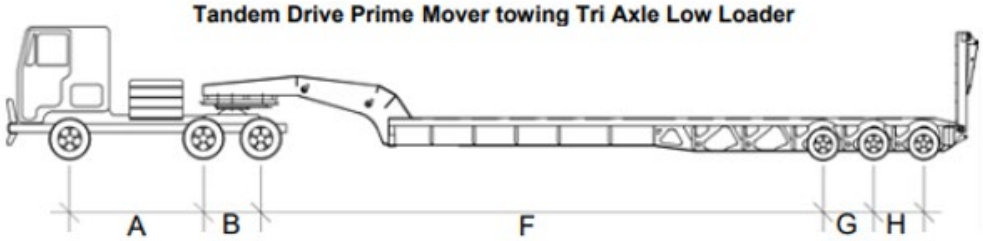
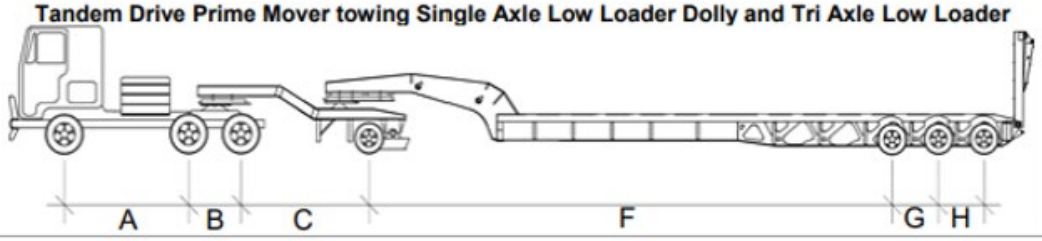
13 APPENDICES

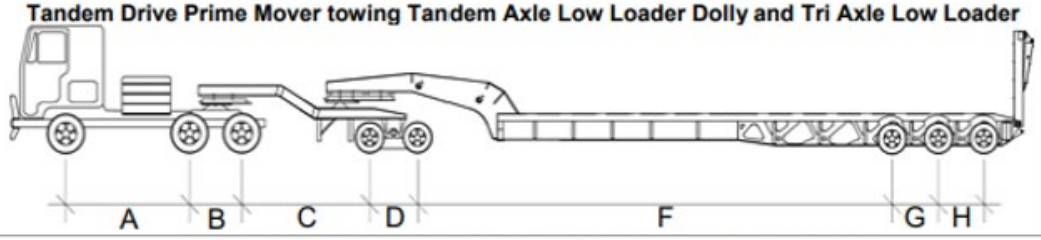
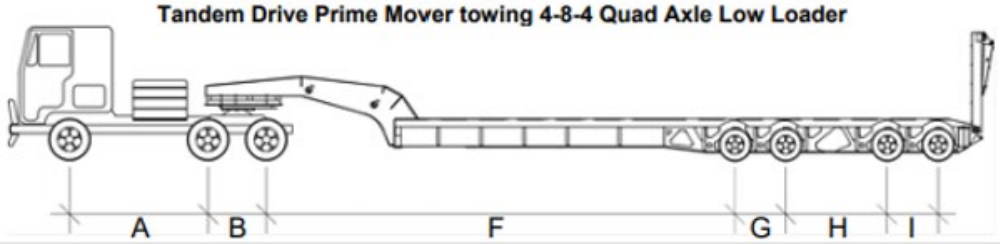
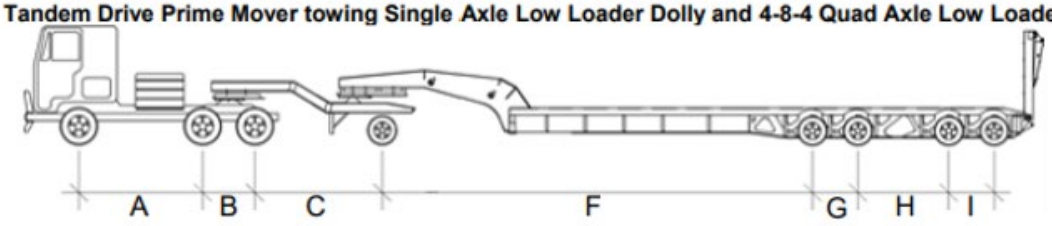
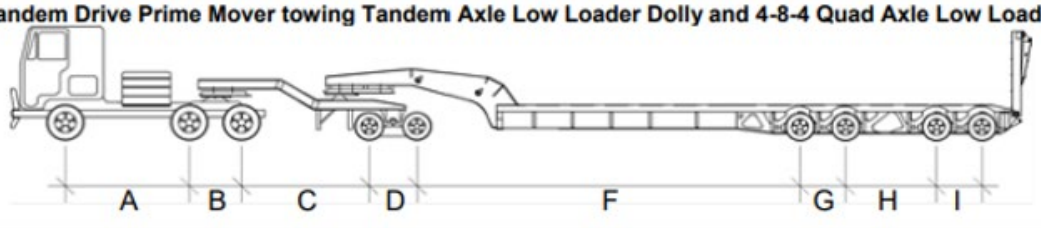
Appendix	Title
Appendix 1	Low Loader Overmass Period Permit Axle Spacing Ranges
Appendix 2	Platform Trailer Relocation Period Permit Axle Spacing Ranges
Appendix 3	Single Trip Permit Prime Mover / Block Truck Axle Spacing Range
Appendix 4	Single Trip Trailer Axle Spacing Ranges

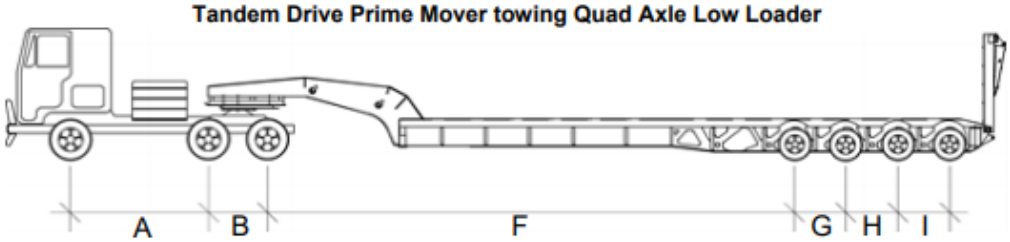
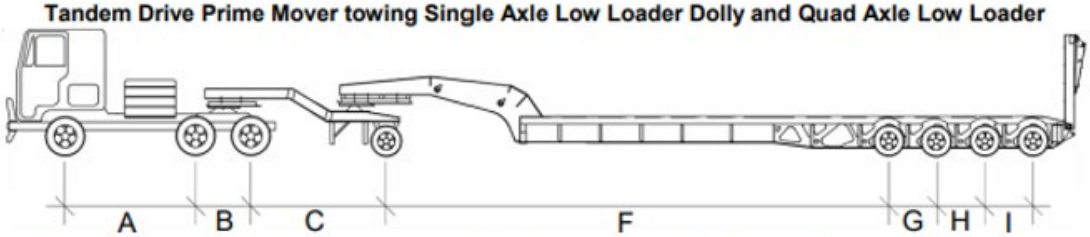
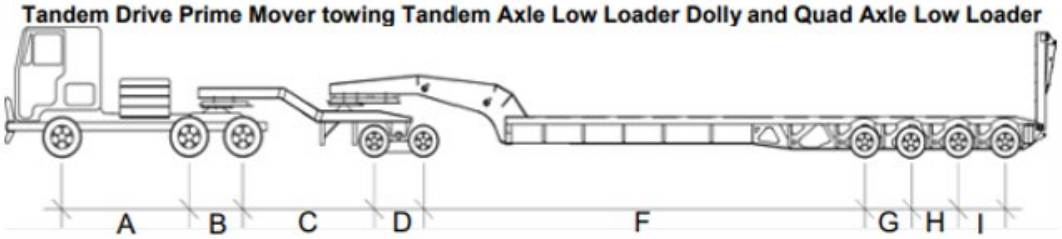
Appendix 1 – Low Loader Overmass Period Permit Axle Spacing Ranges

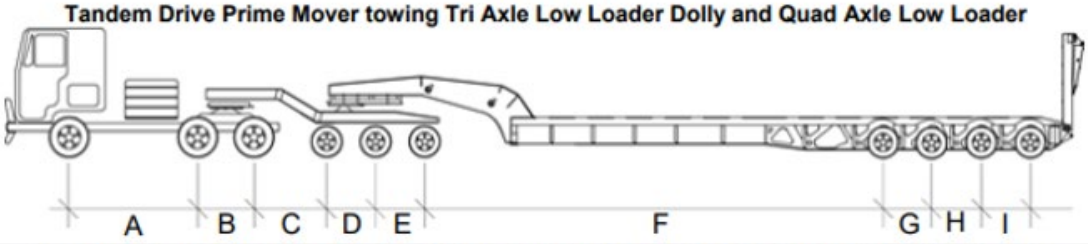
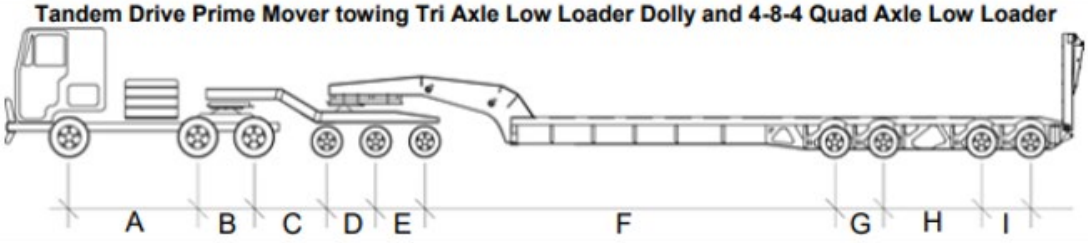
An OSV operating under the Low Loader Overmass Period Permit must comply with the minimum and maximum axle spacing requirements specified below:

Axle Spacing	RAV Category											
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	2.1	2.2	2.3	3.1	3.2
A	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m	2.9 – 5.8m
B	-	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m	1.2 – 1.8m
C	-	-	1.5 – 4.3m	1.8 – 4.3m	-	1.5 – 4.3m	1.8 – 4.3m	-	1.5 – 4.3m	1.8 – 4.3m	1.7 – 4.3m	1.7 – 4.3m
D	-	-	-	1.2 – 1.8m	-	-	1.2 – 1.8m	-	-	1.2 – 1.8m	1.1 – 1.8m	1.1 – 1.8m
E	-	-	-	-	-	-	-	-	-	-	1.1 – 1.8m	1.1 – 1.8m
F	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m	6.0 – 17.8m
G	1.2 – 1.85m	1.2 – 1.85m	1.2 – 1.85m	1.2 – 1.85m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m
H	1.2 – 1.85m	1.2 – 1.85m	1.2 – 1.85m	1.2 – 1.85m	2.3 – 2.8m	2.3 – 2.8m	2.3 – 2.8m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	2.3 – 2.8m
I	-	-	-	-	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m	1.2 – 1.81m

Category 1 RAVs	
Category	**Description**
1.1	**Single Drive Prime Mover towing Tri Axle Low Loader** 
1.2	**Tandem Drive Prime Mover towing Tri Axle Low Loader** 
1.3	**Tandem Drive Prime Mover towing Single Axle Low Loader Dolly and Tri Axle Low Loader** 

1.4	Tandem Drive Prime Mover towing Tandem Axle Low Loader Dolly and Tri Axle Low Loader 
1.5	Tandem Drive Prime Mover towing 4-8-4 Quad Axle Low Loader 
1.6	Tandem Drive Prime Mover towing Single Axle Low Loader Dolly and 4-8-4 Quad Axle Low Loader 
1.7	Tandem Drive Prime Mover towing Tandem Axle Low Loader Dolly and 4-8-4 Quad Axle Low Loader 

Category 2 RAVs	
Category	**Description**
2.1	Tandem Drive Prime Mover towing Quad Axle Low Loader 
2.2	Tandem Drive Prime Mover towing Single Axle Low Loader Dolly and Quad Axle Low Loader 
2.3	Tandem Drive Prime Mover towing Tandem Axle Low Loader Dolly and Quad Axle Low Loader 

Category 3 RAVs	
Category	**Description**
3.1	**Tandem Drive Prime Mover towing Tri Axle Low Loader Dolly and Quad Axle Low Loader** 
3.2	**Tandem Drive Prime Mover towing Tri Axle Low Loader Dolly and 4-8-4 Quad Axle Low Low Loader** 

Appendix 2 – Platform Trailer Relocation Period Permit Axle Spacing Ranges

An OSV operating under the Platform Trailer Relocation Period Permit must comply with the minimum and maximum axle spacing requirements specified below:

Single steer Tandem drive Prime Mover + 6 to 13 Axle Platform Trailer

	②	④	④		⑧	⑧	.....	⑧	⑧
Min.	2.9m	1.2m	5.0m		1.80m		.....	1.80m	
Max.	5.8m	1.8m	12.0m		1.85m		.....	1.85m	

Single steer Tandem drive Prime Mover with Dolly + 6 to 13 Axle Platform Trailer

	②	④	④	④	④		⑧	⑧	.....	⑧	⑧
Min.	2.9m	1.2m	2.5m	1.2m	5.0m		1.80m		.....	1.80m	
Max.	5.8m	1.8m	4.0m	1.8m	12.0m		1.85m		.....	1.85m	

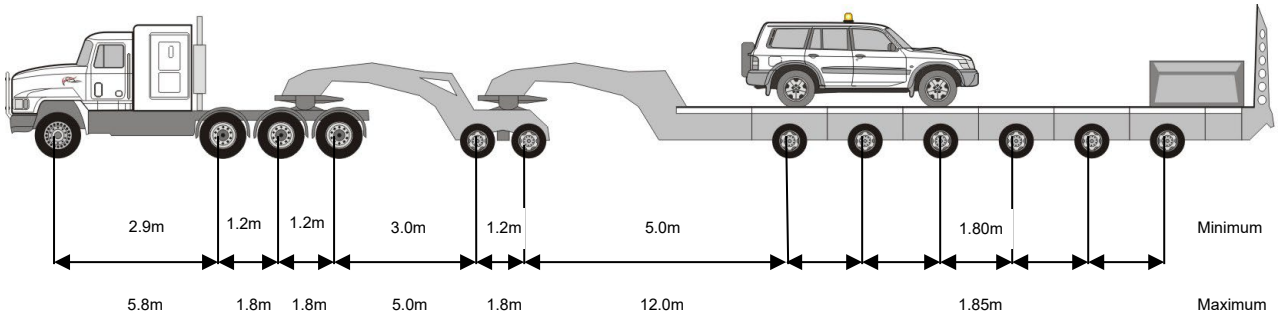
Single steer Tri drive Prime Mover + 6 to 13 Axle Platform Trailer

	②	④	④	④		⑧	⑧	.....	⑧	⑧
Min.	2.9m	1.2m	1.2m	5.0m		1.80m		.....	1.80m	
Max.	5.8m	1.8m	1.8m	12.0m		1.85m		.....	1.85m	

Single steer Tri drive Prime Mover with Dolly + 6 to 13 Axle Platform Trailer

	②	④	④	④	④	④		⑧	⑧	.....	⑧	⑧
Min.	2.9m	1.2m	1.2m	3.0m	1.2m	5.0m		1.80m		.....	1.80m	
Max.	5.8m	1.8m	1.8m	5.0m	1.8m	12.0m		1.85m		.....	1.85m	

Example of how to measure axle spacing's:



Appendix 3 – Single Trip Permit Prime Mover Axle Spacing Range

Where a prime mover or block truck is being used under a Single Trip Permit, the prime mover or block truck may have an axle spacing between:

1. 2.9 and 5.8 metres, measured from the centre of the front most axle to the centre of the front most drive axle; and

2. 1.8 metres, measured from the centre of adjacent drive axles.

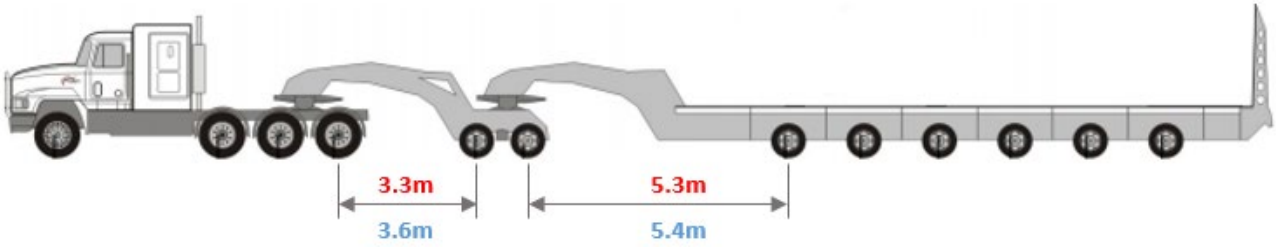
Appendix 4 – Single Trip Trailer Axle Spacing Ranges

Where the vehicle combination consists of a Prime Mover and trailer only (no dolly), the axle spacing specified on the permit may vary by up to 300 mm.

Where the vehicle combination consists of a prime mover, dolly and trailer, the axle spacing specified on the permit between the prime mover and dolly or dolly and trailer may vary by up to 300mm for each axle spacing, provided the overall variance between the two axle spacings does not exceed 450 mm.

Example of compliant axle spacing

Red - Single Trip Permit specified axle spacing.
Blue - Actual recorded axle spacing using a tape measure.



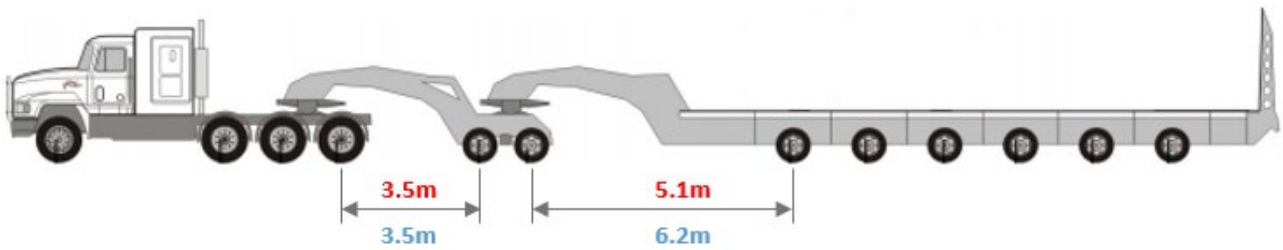
Prime mover to dolly axle spacing is compliant as the variance between the specified axle spacing of 3.3m and the measured axle spacing of 3.6m is 300mm (not more than 300mm).

Dolly to trailer axle spacing is compliant as the variance between the specified axle spacing of 5.3m and the measured axle spacing of 5.4m is 100mm (not more than 300mm).

The **overall variance** of the axle spacing is 400mm (not more than 450mm), therefore the axles spacings are compliant.

Example of non-compliant axle spacing range

Red - Single Trip Permit specified axle spacing.
Blue - Actual measured axle spacing using a tape measure.



Prime mover to dolly axle spacing is compliant as it is equal to the axle spacing specified on the permit.

Dolly to trailer axle spacing is non-compliant as the variance between the specified axle spacing of 5.1m and the measured axle spacing of 6.2m is 1100mm (exceeding the allowable 300mm).