FITTING INSTRUCTIONS

614065 70mm COUPLING

The Trojan 70mm Coupling has been designed for on road towing of larger trailers in conjunction with an AS3819.1 (or equivalent) 70mm towball. It has been tested to, and exceeds, the requirements of ADR62 12.3.3.2. A park brake is included as an optional accessory for use with electric braking systems.

The coupling has been rated to

- D-Value – 50.0kN
- V-Value – 14.4kN
- S-Value – 1,200kg (Maximum permissible vertical mass imposed on the towball – commonly referred to as ball weight)

These ratings must never be exceeded. Refer page 2 of this instruction for guidelines on D and V-Value calculation.

It is recommended that non-lubricated zinc plated M16 x 2.0P Class 8.8 bolts, M16 flat washers and M16 Class 8 Nyloc nuts torqued to 197Nm (145 ft.lbf) are used to fasten the coupling to the trailer through all four provided mounting holes – Refer Figures 1 and 2 for more detail on bolting requirements. Ensure that bolt length is sufficient for a minimum of two full threads to protrude past the Nyloc nuts when assembled. The coupling must not be welded to the trailer.

Periodically ensure the anti-rattle system is adjusted correctly as follows :

1. Fit the coupling over a 70mm towball, making sure the handle latch is engaged when coupled
2. Adjust the anti-rattle nut until tight, then back off ½ turn – Refer Figure 1

<u>WARNING</u> - Removal of the anti-rattle system could cause the trailer to decouple from the towing vehicle. This could result in property damage, serious bodily injury or death.

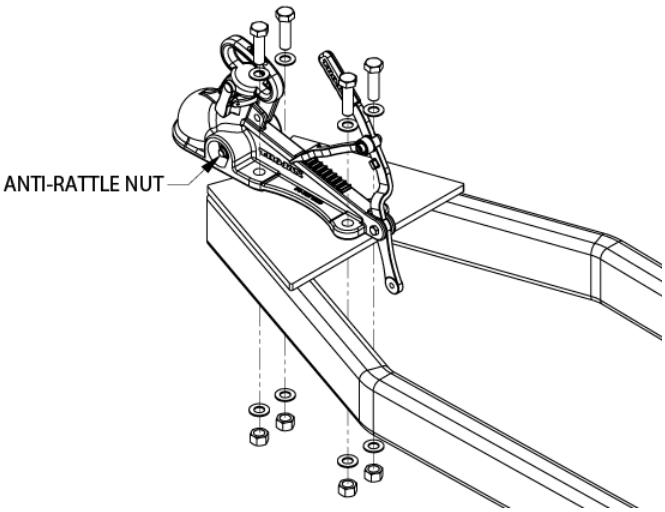

Figure 1: Bolting configuration and location of Anti-Rattle Nut

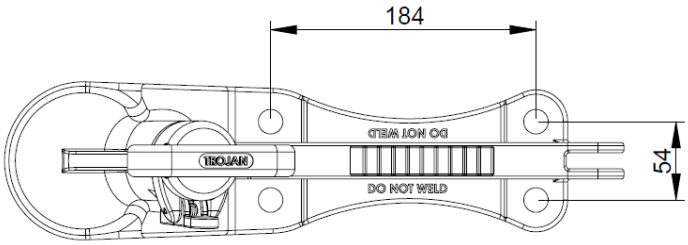

Figure 2: Mounting bolt pattern

COMPONENT RATING: D-Value = 50.0kN V-Value = 14.4kN S-Value = 1,200kg

49 Pacific Drive
Keysborough, VIC 3173
Australia
1800 059 899

trojanparts.com

78B Tidal Road
Mangere, Auckland 2002
New Zealand
0800 876 526

trojan.co.nz

FITTING INSTRUCTIONS

The information below is intended as a guide only. Local legislation and/or regulatory requirements override any advice given in this document and should be consulted in regards to your specific circumstances. Correct use of this product, and compliance of your vehicle and trailer combination with local legislation and/or regulatory requirements remains the responsibility of the end user.

D-Value Calculation

To establish the D-Value of your vehicle and trailer combination, you will need to know the following :

- GVM - Maximum total mass of the towing vehicle as specified by the vehicle manufacturer (in kg or tonnes)
- ATM - Maximum towed mass as specified by the trailer manufacturer (in kg or tonnes)

Use the appropriate equation below to calculate the D-Value :

When mass is measured in kg :

$$D\text{-}Value\ (kN) = 0.009806 \times \left(\frac{GVM \times ATM}{GVM + ATM}\right)$$

When mass is measured in tonnes :

$$D\text{-}Value\ (kN) = 9.806 \times \left(\frac{GVM \times ATM}{GVM + ATM}\right)$$

For example, a vehicle with GVM of 10,000kg towing a trailer with ATM of 6,000kg will have a D-Value of 36.8kN :

$$D\text{-}Value = 0.009806 \times \left(\frac{10{,}000 \times 6{,}000}{10{,}000 + 6{,}000}\right) = 36.8\ kN$$

V-Value Calculation

To establish the V-Value of your vehicle and trailer combination, you will need to know the following :

- ATM - Maximum towed mass as specified by the trailer manufacturer (in kg or tonnes)
- X – Length of the loading area of the trailer (in metres) – Refer Figure 3
- L – Distance from the towball centre to the centre of the axle or axle group (in metres) – Refer Figure 3

Use the appropriate equation below to calculate the V-Value :

When mass is measured in kg :

$$V\text{-}Value\ (kN) = \frac{0.0024 \times ATM \times X^2}{L^2}$$

When mass is measured in tonnes :

$$V\text{-}Value\ (kN) = \frac{2.4 \times ATM \times X^2}{L^2}$$

For example, a trailer with ATM of 4,000kg, X of 6m, and L of 5m, will have a V-Value of 13.8kN :

$$V\text{-}Value = \frac{0.0024 \times 4{,}000 \times 6^2}{5^2} = 13.8\ kN$$

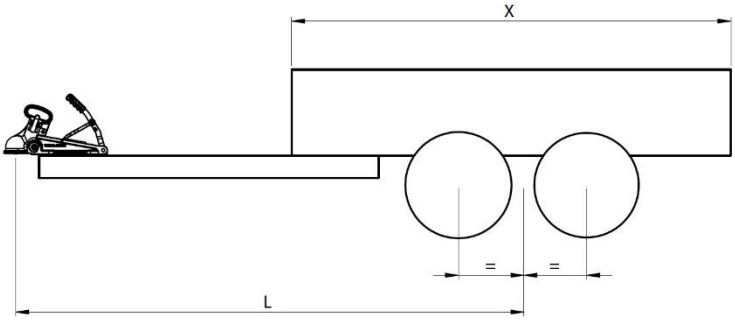

Figure 3: Illustration of X and L in V-Value calculations

For further information please contact Trojan Customer Support.

49 Pacific Drive
Keysborough, VIC 3173
Australia
1800 059 899

trojanparts.com

78B Tidal Road
Mangere, Auckland 2002
New Zealand
0800 876 526

trojan.co.nz