

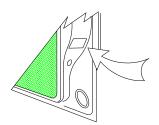
PLACE THESE INSTRUCTIONS IN THE VEHICLE'S GLOVEBOX AFTER INSTALLATION IS COMPLETED

WARNING:

- 1. Do not, drill, cut, weld or otherwise modify the tow bar.
- 2. If you are using electric welding on a motor vehicle, <u>always</u> check that the vehicle is not equipped with electronic engine or instrument management equipment. Failure to do so could <u>destroy</u> any onboard computers. If in doubt, check with the vehicle's manufacturer.
- 3. The high tensile fasteners supplied with this product were used to achieve the specified rating. If replacement is required ensure that fasteners of the same rating & quality are used. Contact an authorised **Trailboss** dealer if further information is required.
- 4. If TBM is used in inverted position tow ball may make contact with rear tailgate when lowered, which could cause damage.

General:

- 1. Ensure all hardware items have been included refer to assembly diagram.
- 2. It is recommended that the instructions are read through and completely understood before making any attempt to fit this product.
- 3. Be wary of any changes to vehicle designs or other accessories that may conflict with the installation of this product.
- 4. Before drilling ensure that the area is clear of fuel, electrical & other components.
- 5. All holes drilled into the body panels shall have all burrs & swarf removed then coated with a suitable rust preventative paint.
- 6. For vehicles that require the bumper to be cut. Ensure cut out area is in correct position on the vehicle prior to cutting the bumper.
- 7. The high tensile fasteners supplied with this product were used to achieve the specified rating. If replacement is required ensure that fasteners of the same rating & quality are used. Contact an authorized **Trailboss** dealer if further information is required.
- 8. Ensure that all hardware is fastened to torque list below check fasteners on regular basis.
- 9. Tow bar load rating sticker provided with this product shall be conspicuously located on inside rear end of the driver's door. (See diagram below).
- 10. Trailboss recommends that you check your tow ball to ensure that it complies with the Australian standards AS 4177.2.
- 11. **PLEASE NOTE**: It is advised to remove your LUG or TBM when not actually towing so as to produce a clear view of the vehicles registration plate if obscured, and to also provide maximum available departure angle



Place load rating sticker inside driver's door here

FOR TRAILER TOWING PURPOSES ONLY For towing capacity details please refer to vehicle owner's manual or to the manufacturer. Overloading can void your warranties.

RECOMMENDED ASSEMBLY TORQUE LISTING				
<u>Diameter</u>	Grade 8.8 Bolt			
M6	9.5 Nm			
M8	21.7 Nm			
M10	43.4 Nm			
M12	77.3Nm			
M14	146 Nm			
M16	189.8 Nm			

Tow bar Maintenance and Care.

Trailboss recommends that bolt torque's, as listed below, are routinely and regularly inspected and checked for correct tension. Replace any worn or defective parts.

We recommended to remove Tow Ball Mounts (TBM's, tongues or lugs) when not being used for any considerable length of time.

So as to avoid injury, when not towing it is suggested that the tongue, Pull Pin and R-clip are removed then stored in a safe, clean and dry place, away from excessive moisture.

Hitch Pull Pins and spring "R" clips are regularly checked for proper installation. Replace any worn or defective parts.

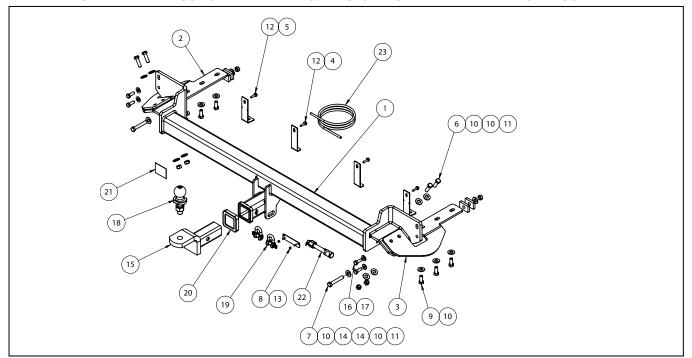
Cequent Customer Service

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PLACE THESE INSTRUCTIONS IN THE VEHICLE'S GLOVEBOX AFTER INSTALLATION IS COMPLETED



ITEM	DESCRIPTION	QTY
1	KIA CARNIVAL YP CL4	1
2	SIDE ARM – LHS	1
3	SIDE ARM – RHS	1
4	INNER BUMPER TAB	2
5	OUTER BUMPER TAB	2
6	BOLT M12-1.25x40MM Z/P	4
7	BOLT M12-1.25x75	2
8	NUT NYLOC M4-0.7 Z/P	2
9	SET SCREW M12x30x1.25P	6
10	WASHER FLAT M12	18
11	NUT HEX HD M12x1.25P	6
12	TEK SCREW 14-20 HEX HD 22MM	3

ITEM	DESCRIPTION	QTY
13	PLUG BRACKET	1
14	LOOSE PLATE 50x32x10	4
15	TRAILER BALL MOUNT	1
16	SET SCREW M10-1.25x30GR 8.8Z/P	4
17	WASHER FLAT M10x23x2 Z/P	4
18	TOWBALL 50MM	1
19	"D" SHACKLE 10MM	2
20	HITCH BOX COLLAR COVER	1
21	ACRYLIC CP LABEL	1
22	ANTI-RATTLE PULL PIN ASSY SILVER	1
23	WIRING LOOM	1

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1. Carefully remove cover surrounding tail light. Repeat for opposite side of vehicle.



2. Remove 2 x screws that were concealed under tail-light covers.

Repeat for opposite side of vehicle.



3. Carefully remove and disconnect tail light from vehicle.

Repeat for opposite side.



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4. Remove 1 x scrivets on top of the bumper near light.

Repeat for opposite side of vehicle.



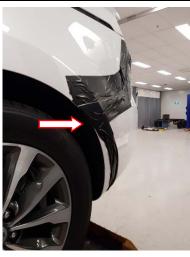
5. Remove 3 x screws from around wheel arch and 1 x scrivets from underneath mud flap. Remove mud flap.

Repeat for opposite side.



6. Remove 1 x screw at the top of the wheel base.

Repeat for opposite side.



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7. Remove 9 x scrivets located on the underside of the bumper.



8. Carefully unclip and remove rear bumper, peeling bumper from edge of wheel.

Disconnect parking sensor loom where applicable.



9. Remove 6 x hex head bolts (3 per side) securing the rear impact beam to the rear panel of the vehicle; carefully remove and discard rear impact beam and bolts.



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10. Remove guard on side of vehicle by unscrewing 2 x M10 screws.

Repeat for opposite side of vehicle.



11. Supporting the rear end of exhaust, disconnect exhaust mount bracket from rubber exhaust mounts on RHS of vehicle.

This enables access to the chassis rail.



12. Remove cover from forward hole in chassis rail under vehicle and discard.

Repeat for opposite side of vehicle.



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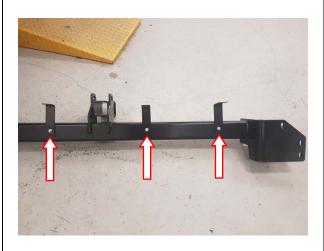


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13. Loosely secure one side arm of towbar to the underside of the chassis rail using 3 x M12 x 30 bolts complete with 1 x M12 flat washer per bolt



14. Loosely secure bumper tabs onto towbar welded assembly using 4 x tek screws provided.



15. Loosely secure welded towbar assembly to rear panel of vehicle using 4 x M10 x 30 hex head bolts (2 per side) complete with 1 x M10 flat washer per bolt.



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PLACE THESE INSTRUCTIONS IN THE VEHICLE'S GLOVEBOX AFTER INSTALLATION IS COMPLETED

16. Loosely secure other side arm of towbar to the underside of the chassis rail using 3 x M12 x 30 bolts complete with 1 x M12 flat washer per bolt



17. Loosely secure both side arms to towbar welded assembly using 4 x M12 x 40 bolts (2 per side arm), complete with 2 x M12 flat washers and 1 x M12 nut per bolt.



18. Loosely secure towbar welded assembly to side arm through rear panel of vehicle with 2 x M12 x 75 bolts (1 per side), complete with 2 x M12 flat washer, 1 x M12 nut and 2 x 10mm spacer plates (placed between rear panel of vehicle and side arm) per bolt.

Tighten all fasteners to the torques listed below:

M12- 89N.m M10- 48N.m



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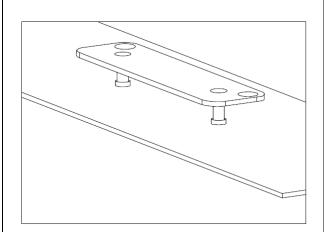


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19. Identify the centre of the bumper and cut out a 200mm tall x 85mm wide rectangle, starting from the bottom edge of the bumper, as measured following the outer edge of the bumper.



20. Mark out and drill 2 x Ø5mm holes 69mm apart on bumper skin to support plug bracket. Feed bracket through drilled holes prior to reinstalling bumper.



- 21. Reinstall exhaust mount, bumper, mud flap and fasteners following steps 1 to 11 in reverse (excluding step 9).
- 22. Align holes below bumper with bumper tabs on towbar. Once aligned tighten tek screws and replace scrivets.

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Wiring Loom Fitting Instructions To Suit Kia Carnival Part Number 101357-WL

Wiring Loom Installation Instructions

Kia Carnival Part No: 101357-WL

Tail Harness Length Required: 1800mm ECU Required: 04826 Power Harness Required Part No: 04825 (supplied)

Wiring Loom Installation Time: Approx 45 Mins

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Issue Date 17-06-15

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Wiring Loom Fitting Instructions To Suit Kia Carnival Part Number 101357-WL

- 1. Disconnect the negative battery terminal and wait for 90 seconds before commencing.
- 2. Remove 3x screws from the wheel arch mud guard.
- 3. Remove 1x scrivet securing lower section of mud guard.
- 4. Remove passenger side panel by disconnecting 6 scrivets (this panel is removed in towbar install).
- Remove 4x scrivets from centre bumper assembly.
- 6. Remove 2x screws on driver side rear quarter exterior.
- 7. Remove tail lights by removing cover and 2x screws. Remove newly exposed scrivet in cavity.
- 8. Peel away bumper assembly.
- 9. Inside the luggage compartment, remove the floor carpet and then remove the rear trim by removing two fasteners.
- 10. Remove the LHS upper 'D' pillar trim bolt from underneath the cap and then dislodge the trim. Repeat for the RHS.
- 11. Underneath the 'D' pillar trim area, remove the exposed fastener from the RHS luggage compartment trim and then dislodge enough of the trim to gain access to the vehicle wiring. Repeat for the LHS.
- 12. At the exterior RHS rear guarter of the vehicle, remove the vehicle grommet and confirm grommet hole diameter is Ø30mm. If not, drill out grommet hole to Ø30mm. Ensure the interior area behind the drilling location is clear of any obstructions before drilling.
- 13. From the vehicle interior, retrieve the vehicle RHS tail light connector.
- 14. Route the trailer patch (P/No: 101357-WL) connectors to the retrieved RHS tail light connector and connect to the mating trailer patch connector inside the vehicle.
- 15. Route the remaining trailer patch connector and 1 way connector out through the vehicle grommet hole until the trailer patch grommet is seated correctly.
- 16. In the RHS interior rear quarter, locate an area on the vehicle sheet metal suitable to mount the ECU (P/No: 04826). Using an alcohol wipe (not supplied), clean the sheet metal area where the ECU will be mounted.
- 17. Connect the trailer patch ECU connector to the ECU.
- 18. Adhere the supplied double sided tape to the ECU and mount to the cleaned area on the vehicle sheet metal.
- 19. Route the trailer patch harness across to the LHS tail light area.

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Wiring Loom Fitting Instructions To Suit Kia Carnival Part Number 101357-WL

- 20. At the LHS exterior, locate the tail light harness GREY wire. Trace this wire back to the interior LHS luggage compartment area.
- 21. Secure the supplied scotch lock onto the vehicle harness GREY left indicator wire and connect the trailer patch BLACK wire terminal to the scotch lock.
- 22. At the rear exterior of the vehicle, mount the tail harness socket to the towbar mounting bracket using M4 fasteners (not supplied).
- 23. Route the tail harness (tail length: 1800mm) across the LHS and up into the drilled out (or existing) grommet hole. Adjust the trailer patch harness grommet so that it is seated correctly and cable tie (not supplied) in place.
- 24. In the vehicle RHS rear quarter interior, connect the tail harness 8-way connector to the trailer patch 8-way mating connector.
- 25. At the vehicle RHS exterior tail light connector area, connect the trailer patch ORANGE wire 1-way connector to the power harness (P/No: 04825) 1-way connector.
- 26. Locate a suitable location on the vehicle sheet metal that will not obstruct any refitment of parts and secure the trailer patch ORANGE wire to the vehicle using a suitable foam tape (not supplied). Clean the area with alcohol wipe (not supplied) if required prior to adhering tape.
- 27. Route the power harness underneath the RHS of the vehicle following the chassis rail all the way to the engine bay battery. Secure the harness to the vehicle using cable ties (not supplied) at 200mm intervals. Ensure to keep harness clear of any areas of extreme heat, moving parts or sharp surfaces.
- 28. In the engine bay, secure the power harness ring terminal to the battery positive terminal mounting point.
- 29. Reconnect the battery negative terminal.
- 30. Reconnect the rear tail lights.
- 31. Test the Trailer socket using a light board or multi-meter.
- 32. Secure the all harnesses using cables ties (not supplied).
- 33. Refit all removed parts and secure all fasteners.
- 34. Place instructions in glove box after fitment.

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FITTING INSTRUCTIONS Silent Anti-Rattle Hitch Pin (PRO001)

- These fitting instructions are supplied to ensure understanding of how the HITCH PIN should be fitted and used correctly.
- Once installed, we recommend **ALL** instructions are kept and placed in the vehicle glove box.

NOTE: Routine maintenance and inspection of the towbar & HITCH PIN is required. Regularly inspect for wear and check the tightness of the Hitch Pin. Follow instructions below to retighten the nut when necessary.

*Do not tow with your vehicle if the R CLIP or the HITCH PIN is loose or missing. Replacement parts are available from your Pro Series Distributor.

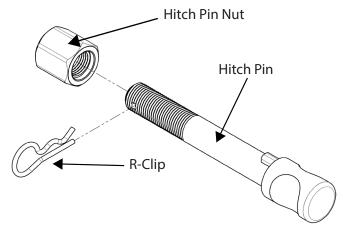
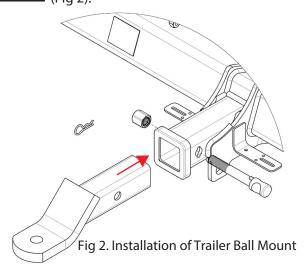


Fig 1. Silent Anti-Rattle Hitch Pin assembly

STEP 1

Insert Trailer Ball Mount (TBM) into towbar HITCHBOX, aligning hole in TBM SHANK with hole in HITCHBOX (Fig 2).



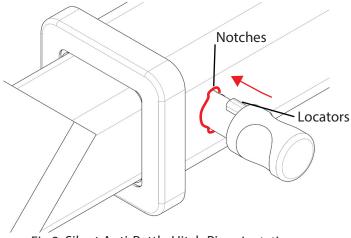


Fig 3. Silent Anti-Rattle Hitch Pin orientation

STEP 2

Insert HITCH PIN through hole in HITCHBOX and hole in TBM SHANK; ensure the LOCATORS are inserted into the NOTCHES in the HITCHBOX (Fig. 3).

STEP 3

Screw HITCH PIN NUT onto HITCH PIN; tighten HITCH PIN NUT until finger tight, ensuring TBM is restrained from movement.

STEP 4

Tighten HITCH PIN NUT by turning nut a further 1/8th of a turn in the clockwise direction using a 24mm spanner (Fig. 4).

STEP 5

Install HITCH PIN R CLIP through the hole on the HITCH PIN (Fig. 1).

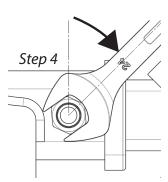


Fig 4. Tightening of Silent Anti-Rattle Hitch Pin Nut