



RSA500 AND RSA505 SOCKET ASSEMBLY **FITTING INSTRUCTIONS**

INTRODUCTION

To tow a caravan or trailer legally you must reproduce the obligatory lighting from the towing vehicle on to the rear of the caravan or trailer. The system used to do this via either a 7 pin or 13 pin plug and socket assembly. The plug and socket assembly allows the connection between the vehicle and the caravan or trailer to be temporary. The pins are arranged in such a way that the plug and socket can only be connected in one position ensuring that no circuits can become crossed.

The kit is designed as a replacement for an existing kit or as Fast Fit System. If it is to be fitted as a new assembly to a vehicle, extra components may be required to complete the installation.

1. A visual or audible warning that the indicators are functioning. This is a legal requirement. This can be achieved using either a RCT380 or RCT480 relay. In the RSA505 the RCT380 relay is included.
2. If towing a caravan and running the caravan fridge and/or charging the caravan battery you will need either a RCT360 or RCT460 relay to protect the vehicle battery when the engine is not running.
3. If the towing vehicle has a Canbus wiring system or bulb failure system then you should fit RCT480 7 way Smart relay. This comes complete with an audible warning buzzer.
4. If the towing vehicle has a Canbus wiring system or bulb failure system and you are running the caravan fridge and/or charging the caravan battery then you should fit RCT460 Smartcom relay.

REAR FOG CUT OUT

All vehicles manufactured after October 1979 are fitted with rear fog lights. If you tow a caravan in fog with the fog lights on it may result in a large amount of glare from the reflection of the lights from the front of the caravan. The 12N socket supplied in this kit has an extra feature which solves this problem. Correctly wired it ensures that when the caravan is connected and the rear fog lamps switched on, the fog lights on the towing vehicle do not light, thus avoiding glare. When the caravan is disconnected the fog lights operate normally.

NOTE:

The socket assembly should only be fitted after the towing bracket has been fitted. It is advisable to read these instructions carefully before beginning any fitting and to retain them for future use.

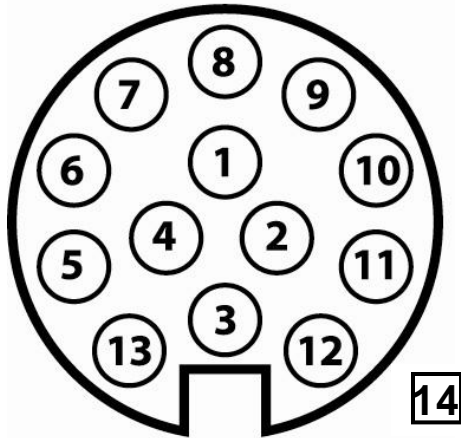
FITTING

IMPORTANT Before commencing any of the fitting operations ensure that the vehicle is parked safely off the road with the hand-brake on and check that the correct fuse or fuses are removed to isolate the circuit. If in doubt consult a qualified auto electrician.

TOOLS REQUIRED

- Pliers
- Electrical screwdriver
- 1/2" or 13mm drill
- 5mm spanner (or adjustable spanner)
- 2 x 16mm spanners (or 2 adjustable spanners)

SOCKET AND VEHICLE WIRING



<u>Pin no.</u>	<u>cable colour</u> <u>(13 core)</u>	<u>cable colour</u> <u>(2 x 7 core)</u>	<u>cable outer</u> <u>colour</u>	<u>function</u>
1	yellow	yellow	black	left hand indicator
2	blue	blue	black	rear fog lamp(s)
3	white	white	black	earth
4	green	green	black	right hand indicator
5	brown	brown	black	right hand side lights
6	red	red	black	stop lamps
7	black	black	black	left hand side lights
8	pink	yellow	grey	reversing lights
9	orange	green	grey	constant power supply
10	grey	red	grey	power supply for fridge
11	white/black	black	grey	common return for pin9
12	white/yellow	brown	grey	not used
13	white/red	white	grey	common return for pin6
14	---	purple	black	rear fog cut out

CHECKING CONNECTIONS

Before replacing the boot floor coverings and any other items removed during the fitting it is advisable to re-check all connections. If possible connect the socket to a caravan, trailer or trailer board to check all functions operate correctly.

PLEASE NOTE For vehicles with either a Bulb Failure indicator or Dimmer Relay, the connections for the Left and Right Hand Tail, Flasher, Stop and Fog Lamps should be made to the input side of the Failure Indicator or Dimmer Relay. For vehicles equipped with Bulb Failure or Dimmer Relay systems, use of an RCT480 7 way smart relay is recommended.

PIN NOS. 1 TO 7 (Black 7 core cable)

1. Attach the mounting plate (with the socket fitted) to the towing bracket in between the tow ball and the tow bar itself using the existing bolts and ensuring that the hinge of the socket cap is uppermost. If a stabiliser is fitted ensure that the mounting plate is fitted on the opposite side of the tow bar. You may have to re—position the sockets on the mounting plate to ensure the socket hinges remain uppermost.
2. Pass the cable into the boot compartment through an existing hole if available. Otherwise using a ½” or 13mm drill carefully, make two holes in the rear of the vehicle in a suitable position close to the tow bar. Ensure that as you drill you do not damage any other cables or fittings. You may find it useful to remove the spare wheel prior to fitting. It is advisable to clean the hole with a suitable file and to treat with an appropriate rust inhibitor. Seal the hole with the grommet supplied.
3. Locate the vehicle wiring harness in the boot compartment which supplies the rear lamp clusters. In most cars this will usually be to one side of the vehicle, i.e. Cables supplying the left hand side (near side) lamp cluster will pass via the right hand (off side) of the vehicle before crossing the back of the vehicle. Therefore it should be possible to make all the connections to one side of the vehicle.
4. Strip back approx 1” or 250mm of the outer sheath of the 8 core black cable. Bare the end (approx ½” or 13mm) of the White (Earth) cable only.
5. Identify each cable in the wiring harness for its function by tracing back to the bulb holder, or by using a circuit tester (if you use a circuit tester you will have to temporarily replace any fuses). Connect the appropriate 7 core cable to the relevant vehicle cable in accordance with the diagram above (fig1) using the connections provided.
6. Locate the wire in the wiring harness that supplies the vehicle rear fog lights. Cut this wire.
7. Connect the end of the blue wire that goes back to the switch to Pin No. 2 on the socket. Connect the end of the purple wire that goes to the vehicle rear for lamps to Pin No 14 on the socket.
8. Connect the Earth cable to a suitable point on the vehicle chassis. Ensure that it is bare metal free of paint and rust.
9. Replace any fuses removed whilst fitting.

PIN NOS. 8 TO 13 (Grey 7 core cable)

INTRODUCTION

These pins are used to provide a 12V supply for the internal power in the caravan. It is used to power the auxiliary battery, refrigerator, internal accessories and the caravan’s reversing lamps (where fitted).

The external lighting functions are all serviced through the black cable and the internal caravan connections plus reversing lights where fitted are made through the grey cable.

There are “free” connections that have no specific allocation and can be used to connect additional circuits should your make of caravan require them. Your caravan handbook will advise you of any.

FITTING

The tools and method of making the connections are the same as for the black cable. The wiring of the grey cable should be undertaken after that of the black cable.

IMPORTANT Before commencing any of the fitting operations ensure that the vehicle is parked safely off the road with the hand-brake on and check that the correct fuse or fuses are removed to isolate the circuit. If in doubt consult a qualified auto electrician.

1. Pass the cable into the boot compartment through an existing hole if available or the second hole drilled earlier. Make all the connections in accordance with the diagram above.

N.B. Most modern caravans require a high amount of power for their internal accessories, refrigerator, battery etc, and therefore to avoid the vehicle battery being discharged it is advised that a Split Charge Relay (Ring RCT360 or RTC450 not supplied), is fitted between the vehicle battery and the auxiliary battery.

2. Replace any fuses removed whilst fitting.

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