

# PART NUMBER AND DESCRIPTION:

3640150 - REAR STEP TOW BAR (RSTB)

SUITED TO VEHICLE/S:

#### MAZDA BT50 2011ON

# WARNING

## NOTE THE FOLLOWING:

- This product must be installed exactly as per these instructions using only the hardware supplied.
- In the event of damage to any tow bar component, contact your nearest authorised ARB stockist.
- Do not use this product for any vehicle make or model, other than those specified by ARB.
- Do not remove labels from this tow bar.
- This product or its fixing must not be modified in any way.
- The installation of this product may require the use of specialized tools and/or techniques
- It is recommended that this product is only installed by trained personnel.
- These instructions are correct as at the publication date. ARB Corporation Ltd. cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer.
- During installation, it is the duty of the installer to check correct operation/clearances of all components.
- Work safely at all times.
- Unless otherwise instructed, tighten fasteners to specified torque.
- The eyelets on the rear bar have been designed and tested for connection of trailer safety chains. They are not to be used for recovery or direct towing.
- For recovery, fit a suitable and rated tow hitch to the central tow hitch receiver.
- Position high lift jack at lift locations beneath the middle of the wings and corner of the RSTB. Do
  not lift directly from the end of the wing.
- When using the tow hitch receiver, the centre panel should be in the raised position.

# **ARB 4x4 ACCESSORIES**

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# **GENERAL CARE AND MAINTENANCE**

By choosing an ARB Bar, you have bought a product that is one of the most sought after 4WD products in the world. Your bar is a properly engineered, reliable, quality accessory that represents excellent value. To keep your bar in original condition it is important to care and maintain it following these recommendations:

- Prior to exposure to the weather your bar should be treated to a Canuba based polish on all exposed surfaces. It is recommended that this is performed on a six monthly basis or following exposure to salt, mud, sand or other contaminants.
- As part of any Pre Trip Preparation, or on an annual basis, it is recommended that a thorough visual inspection of the bar is carried out, making sure that all bolts and other components are torqued to the correct specification. Also check that all wiring sheaths, connectors, and fittings are free of damage. Replace any components as necessary. This service can be performed by your local authorized ARB Stockist.

# FITTING REQUIREMENTS

#### **REQUIRED TOOLS FOR FITMENT OF PRODUCT:**

BASIC TOOL KIT	SIDE CUTTERS
INSULATION TAPE	70MM HOLE SAW BIT
DEUTSCH CRIMPING TOOL	WIRE STRIPPER
NEEDLE NOSE PLIERS	POWER DRILL
ALLEN KEY SET	SOCKET SET
FINE ROUND FILE	TAPE MEASURE
MASKING TAPE	RUST PREVENTATIVE PAINT
HEAT SHRINK + HEAT GUN	SOLDERING IRON + SOLDER

#### HAVE AVAILABLE THESE SAFETY ITEMS WHEN FITTING PRODUCT:

**Protective eyewear** 



**Hearing protection** 



NOTE: 'WARNING' notes in the fitting procedure relate to OHS situations, where to avoid a potentially hazardous situation it is suggested that protective safety gear be worn or a safe work procedure be employed. If these notes and warnings are not heeded, injury may result.

FASTENER TORQUE SETTINGS:				
SIZE	Torque Nm	Torque lbft		
M6	9 Nm	7 lbft		
M8	22 Nm	16 lbft		
M10	44 Nm	32 lbft		
M12x1.75	77 Nm	57 lbft		
M12x1.25	95 Nm	71 lbft		

RSTB PARTS LISTING				
APPLICATION	PART NO.	QTY	DESCRIPTION	
	6522998	2	STONE GUARD PANEL	
	6151300	4	NUT CAGED M6 2.6-3.5	
	6151560	2	BOLT HXHD M6 x 1.0 x 16 GR8.8 BTZP480	
	6151550	2	BOLT HXHD M6 x 1.0 x 25 GR8.8 BTZP480	
PREPARE REAR STEP TOW BAR	4581287	4	WASHER SPRING M6 x 2.5 x 1.6 BLK ZN	
	4584295	8	WASHER FLAT M6 x 12 x 1.3 BLK ZN	
(RSTB)	6523002	1	LIFT UP PANEL	
	5670026	2	SPRING EXT 11.25 OD x 43	
	6602011	2	CANOE CLIP	
	6151256	2	SCREW BTN HD M6 x 16 SS	
	6151549	2	NUT NYLOC M6 x 1.0 GR8.8 BTZP480	
		•		
	3759002R	1	CHASSIS DOUBLE NUT PLATE RH	
	3759002L	1	CHASSIS DOUBLE NUT PLATE LH	
	3194397	2	CHASSIS SINGLE NUT PLATE	
<b>RSTB TO VEHICLE</b>	6151255	4	BOLT M12 x 1.75 x 40 Gd 8.8 ZP	
	4581049	10	WASHER FLAT 1/2 x 1.1/8 x 3MM ZP	
	4581050	10	WASHER SPRING 1/2 x 3/16 x 3/16 ZP	
	6151096	6	BOLT HXHD M12 x 1.25 x 40 CL8.8 ZP	
	3789541	1	TEMPLATE RSTB L/PLATE	
	3194833	1	PLATE 10MM SPANNER	
	3759696	1	BRKT NUMBER PLATE FRAME	
	6151384	4	SCREW ST PHDCOL PH 5.2 x 16 TBZP480	
	3759829R	1	BRKT NUMBER PLATE MOUNT RH	
	3759829L	1	BRKT NUMBER PLATE MOUNT LH	
LICENSE PLATE TO VEHICLE	6821189	4	PLASTIC SNAP-IN LARGE GROMMET	
	5848302	2	PACKER RB NYLON	
	4581082	2	WASHER FLAT M6 x 19 x 1.6 BLK ZN	
	6151549	6	NUT NYLOC M6 x 1.0 GR8.8 BTZP480	
	6151213 4581287	8	BOLT M6 x 1.0 x 20 Gd8.8 BZ WASHER SPRING M6 x 2.5 x 1.6 BLK ZN	
	4584295	14	WASHER SPRING No x 2.5 x 1.6 BLK ZN WASHER FLAT M6 x 12 x 1.3 BLK ZN	
	4304293	14	WASHERT LAT MOX 12 X 1.3 DER ZN	
	3194725	1	STEP PLATE EXTRUSION	
	3163125	1	LIGHT BEZEL MOULDING	
	3750395	1	LED MOUNT BRKT	
STEP PLATE TO RSTB	6151256	8	SCREW BTN HD M6 x 16 SS	
	6151715	16	NUT M6 CAGED 3.6-4.5MM 836-D	
	6821270	1	NARVA 90810 KIT W/ GASKET & SCREWS	
	6821116	2	PLASTIC SNAP-IN SMALL GROMMET	
	3759547R	1	WING MOUNT STRUT RH	
	3759547L	1	WING MOUNT STRUT LH	
	3759545R	1	WING MOUNT BRKT RH	
	3759545L	1	WING MOUNT BRKT LH	
	3194724	2	WING TRIPLE NUT PLATE	
PREPARE RSTB/VEHICLE FOR	3194723	2	WING DOUBLE NUT PLATE	
PANELS	3789394	1	TEMPLATE BT50 WING HOLE CUT	
	6151255	2	BOLT M12 x 1.75 x 40 Gd 8.8 ZP	
	4581049	2	WASHER FLAT 1/2 x 1.1/8 x 3MM ZP	
	4581050	2	WASHER SPRING <sup>1</sup> / <sub>2</sub> x 3/16 x 3/16 ZP	
	6151234	6	BOLT M8 x 1.25 x 25 Gd 8.8 BP	
	4581063	6	WASHER FLAT M8 x 25 x 3 ZN	
	4581046	6	WASHER SPRING M8 x 3/32 x 3/32	

RSTB PARTS LISTING				
	6151234	12	BOLT M8 x 1.25 x 25 Gd 8.8 BP	
	4581063	20	WASHER FLAT M8 x 25 x 3 ZN	
	6151032	8	NUT NYLOC M8 x 1.25	
	4581046	4	WASHER SPRING M8 x 3/32 x 3/32	
	6151256	10	SCREW BTN HD M6 x 16 SS	
PANELS TO RSTB/VEHICLE	6151549	2	NUT NYLOC M6 x 1.0 GR8.8 BTZP480	
PANELS TO KSTB/VEHICLE	4581304	10	WASHER FLAT M6 S/S	
	4584295	2	WASHER FLAT M6 x 12 x 1.3 BLK ZN	
	6522999	1	DIFFUSER PANEL RH	
	6523000	1	DIFFUSER PANEL LH	
	3131497R	1	MAZDA BT50 WING RH	
	3131497L	1	MAZDA BT50 WING LH	
	4761170	1	TOW TONGUE 45 DEG	
TOW TONGUE	55010	1	TOW BAR PULL PIN	
	55020	1	SPRING CLIP	
	180302	10	CABLE TIE 200MM	

TRAILER WIRING				
The following trailer wiring solutions can be purchased from ARB. Purchase the main wiring harness with ECU (Part no. 3600010) in conjunction with the appropriate socket and tail listed below. Alternatively, this product is compatible with the factory trailer wiring solution.				
To install this loom, a crimping tool suitable for crimping contact type size 16 Deutsch pins is required. Suitable crimping tools can be purchased from auto electrical wholesalers as shown.				
APPLICATION PART NO. QTY		DESCRIPTION		
3600010 1		RSTB WIRING INCLUDING ECU		
TRAILER WIRING         3600020         1           3600030         1           3600040         1			RSTB SOCKET & TAIL   7 PIN FLAT	
			RSTB SOCKET & TAIL   12 PIN FLAT	
			RSTB SOCKET & TAIL   7 PIN ROUND LRG	
	RSTB SOCKET & TAIL   7 PIN ROUND SML			

OPTIONAL ACCESSORIES					
The following ARB accessories can be fitted to this product:					
APPLICATION PART NO. QTY DESCRIPTION				SCRIPTION	
		171403	1	ARB AIR LINE FITTING	
OPTIONAL ACCESSORIE	OPTIONAL ACCESSORIES		1	ARB TRA	ILER CAMERA KIT
			1	RECOVERY HITCH AND SHACKLE	
		6594050	1	50 AMP ANDERSON PLUG	
			• >	AUSTIAN ALE OPETIT	
AIR LINE FITTING TR	AILER C	AMERA KIT	REC	OVERY HITCH	ANDERSON PLUG

# **GENUINE ACCESSORIES REMOVAL** For vehicles fitted with trailer plug: Disconnect tow wiring and license plate lamp 1. looms from the vehicle at the locations shown. Tow wiring loom plug License plate lamp loom plug 2. Disconnect loom for license plate lamp from vehicle by removing the 3 loom fasteners as shown. 3. Cut the license plate lamp loom at the point indicated in the photo and set loom aside for later use. Loom fasteners Warning: Ensure vehicle lights are turned off before cutting wires. Cut wires here For vehicles fitted with a bumper/tow bar: 4. Disassemble the factory bumper bar and tow bar from the vehicle together by removing 6 M12 bolts from each chassis rail as shown. **Bolts into** chassis rails



## **VEHICLE/RSTB WIRING**

A trailer wiring solution that incorporates a smart ECU is available for this vehicle. To fit this solution, the rear vehicle wiring harness must be cut and high quality, waterproof Deutsch connectors installed to provide signal pickup points for the ECU.

To install this loom, a suitable crimp tool is required. Refer to Page 4 for more details about the crimp tool.

Follow the steps below to install the trailer wiring solution:



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## **VEHICLE/RSTB WIRING**



Insert one set of wires into a male 6-pin connector from the back in the following order:

Pin position	Wire colour	
1	Green w/ blue trace	
2	Green w/ brown trace	
3	Blue w/ brown trace	
4	Purple w/ brown trace	
5	Purple w/ green trace	

# *Note: Pin positions are shown on the back of the connector.*

On 2018 on vehicles wire colour may change to the following order:

Pin position	Wire colour	
1	Green /Blue	
2	Green/Brown	
3	Blue/orange	
4	Purple/Brown x 2	
5	Purple/Green	

- 15. Insert the white blank pin into position 6 as shown in the previous step.
- 16. Insert the plastic cover to the front of the connector as shown.
- 17. Repeat steps 17-19 for the other connector.



- 9. Connect the ECU unit to the RSTB wiring harness using the large 12 pin connector.
- Connect the ground wire of the RSTB harness to the bolt on the left chassis rail towards the centre of the vehicle as shown.

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## **VEHICLE/RSTB WIRING**



1. Route the positive supply wire to the front of the vehicle following the existing vehicle harness along the left chassis rail.

- 2. Continue routing the positive supply wire through the engine bay to the battery.
- 3. Connect the positive supply wire to the positive terminal of the battery using the existing bolt as shown.

24. Connect the RSTB wiring harness to the 2 male 6-pin connectors.

Note: The RSTB wiring harness is not polarity sensitive in this region so the male 6-pin connectors can be connected to either female connector.

- 25. Ensure vehicle tail lights function correctly.
- 6. Fasten the connectors to the vehicle loom using the cable ties provided.
- 7. Re-wrap the un-cut wires with the existing split corrugated tubing and new tape.
- 8. Tidy and fasten all wiring using the cable ties provided.

*Warning: Make sure all wires are securely fastened away from any hot, sharp or moving surfaces. Do not fasten wiring harness to fuel or brake lines.* 

9. Ensure vehicle tail lights function correctly.

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## **RSTB TO VEHICLE**



and bracket shown

Notch

inserted inside chassis rail

41. With the assistance of other people or a lifting device, lift the RSTB up beneath the chassis rails aligning the threaded holes in the side of the chassis with those in the vertical surfaces of the RSTB.

Note: Take care to ensure the trailer plug wiring is not damaged during this step.

42. Fix the vertical plates of the RSTB over the threaded holes in each chassis rail using 2 M12x1.75x40 (coarse pitch) hex head bolts, 2 M12 spring washers and 2 M12 flat washers per chassis rail. Leave finger tight at this stage.



43. Insert one chassis double nut plate inside each chassis rail as shown. Position over existing holes.

Note: The notch in the chassis double nut plate should face the outer rear corner of the vehicle.

44. Place 2 M12x1.25x40 (fine pitch) hex head bolts, 2 M12 spring washers and 2 M12 flat washers per chassis rail through the RSTB plate as shown. Attach using the chassis double nut plates placed inside the chassis rails in the previous step. Leave finger tight at this stage.



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Left hand chassis rail and bracket shown





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## LICENSE PLATE TO VEHICLE



MOL

37-50

57. Attach the license plate to the license plate bracket using 4 5.2x16 screws into the plastic snap-in large grommets.

- 58. Route the trailer plug loom through the RSTB and attach to the appropriate connector on the RSTB wiring harness as shown.
- 59. Ensure all trailer tail lights function normally.

Note: Test that the trailer park, brake and reverse lights function normally. Also test the left and right indicators along with the hazard setting.

60. Tidy and fasten all wiring using cable ties and the slots in the RSTB brackets, as well as existing fastening locations.

> Warning: Make sure all wires are securely fastened away from any hot, sharp or moving surfaces. Do not fasten wiring harness to fuel or brake lines.

61. Ensure trailer tail lights function normally as per step 57.



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- 69. Identify the positive and negative wires from the license plate lamp loom using this photo as a reference.
- 70. Use a multimeter to help identify the wires at the cut ends as they may be hard to trace from the connector under the tape.

Note: The LED lamp is polarity sensitive so it is important to identify and solder the correct wires together.

71. Using a soldering iron and solder, join the LED lamp wires to the license plate lamp loom using the colours in the table below:

LED Lamp wire	License plate loom
Red	Positive
Black	Negative

- 72. Place the heat shrink over the soldered wires and use a heat gun to shrink in place.
- 73. Further protect each join with corrugated tubing and insulation tape.



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PANELS TO RST	B/V	EHICLE
	99.	Position each diffuser panel so there is an even gap between the panel and the RSTB tube. Tighten fasteners to the specified torque.
Even gap along these edges		M6 X 1 -9 Nm.
	100.	Tidy and fasten all wiring using the cable ties provided.
		Warning: Make sure all wires are securely fastened away from any hot, sharp or moving surfaces. Do not fasten wiring harness to fuel or brake lines.



# FITTED PRODUCT



TRAILER CAMERA PLUG, ANDERSON PLUG AND AIR-LINE FITTING



HIGH LIFT JACK LOCATION - CORNER OF RSTB





TRAILER PLUG



HIGH LIFT JACK LOCATION - SIDE OF WING/ABOVE TUBE



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