



**WORLD'S BEST
ALLOY BULLBARS**

**Strongest Built
Australian Made
Lifetime Warranty**

PN: BM231SY

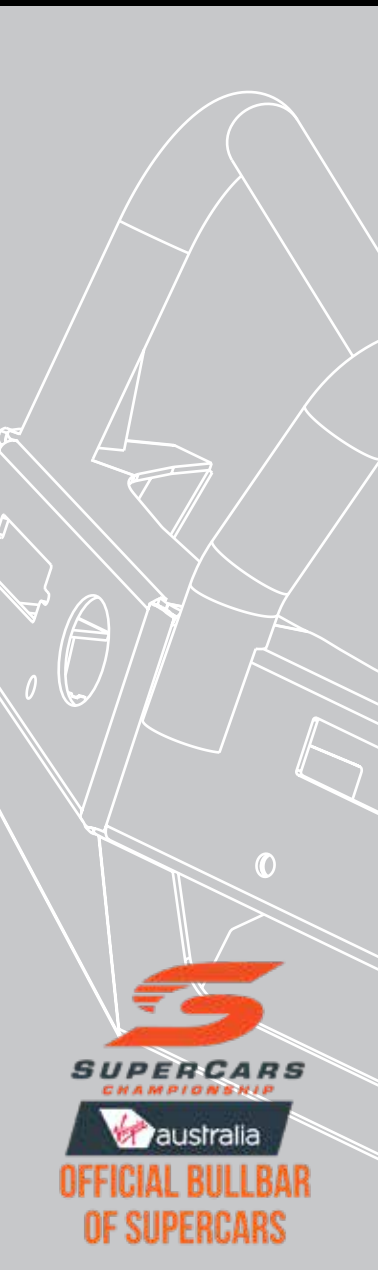


Fitting Guide & Owners Manual

Mitsubishi Outlander PHEV

05/2018 on

Big Tube Bar with Bumper Lights
VEHICLE FRONTAL PROTECTION SYSTEM (VFPS)
FOR AIR BAG & ADR COMPLIANT VEHICLES



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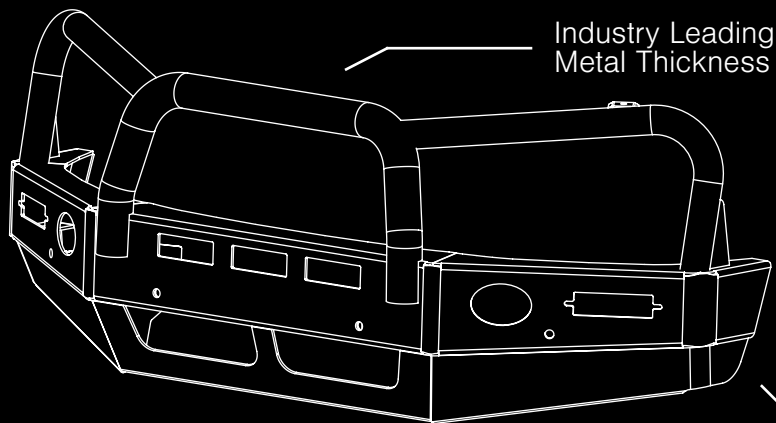
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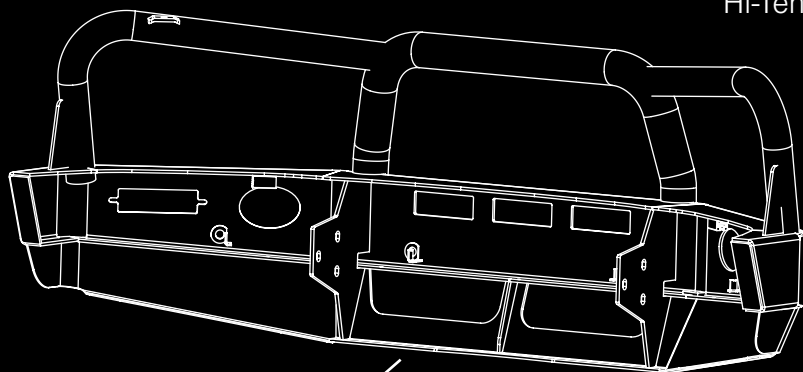
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Notes

The Features of ECB



Industry Leading
Metal Thickness



6mm Thick
Hi-Tensile Alloy

Fully Welded
Construction

Unmatched
Strength

ECB's Benefits

Built to Perform - Not to a Price

ECB are proud to claim that their channels are not jigsaw puzzles that are bolted together, or even multiple sections welded together. Where any welding is required, it is done to the highest standards by qualified welders, not machines.

Anti-Corrosive Nature of Alloy

The composition of ECB's alloy has a very high resistance to corrosion. Rust not only looks unappealing but greatly reduces the strength of the metal. Rust can and will weaken the structural integrity of a steel bullbar effectively rendering it useless over time.

Australian Made

Established in 1971, we utilise over 46 years of experience designing, engineering and building products in Australia to suit Australian conditions. We can ensure the best quality controls and help support the local economy and employ over 90 proud Australians.

Weight Saving Benefits

An ECB alloy bullbar is typically half the weight of a steel bullbar. Unnecessary suspension upgrades are not required. The reduced weight also contributes to increased fuel economy and less wear and tear on tyres, suspension and braking components.

Welds That Work

ECB uses only the strongest welds and welding techniques to ensure every product is as structurally sound as possible. MIG (Metal Inert Gas) welding techniques are employed ensuring the welds are as thick as the thickest section of alloy's being joined together.

Lifetime Warranty

ECB provide a lifetime warranty and consumer guarantee on all of our manufactured products. This guarantee highlights the confidence in our ability and provides complete peace of mind for your purchase for the lifetime you own your vehicle.

Product Care

Polished Products

Being a premium mirror polished finish, regular maintenance will be required to keep that iconic ECB shine. We recommend using our own brand of Aluminium Polish. This formula has been tried and tested and in our opinion is the world's best standard.

Directions: Apply a small quantity of Aluminium Polish to a clean soft cloth and rub the metal surface. The longer the rubbing the brighter the surface becomes. Wipe off Aluminium Polish with clean soft cloth. Also suitable for motorised buffing machines. **Note: There are more specific details on the polish bottle. Please read before use.**

Powdercoated Products

Our powdercoated finishes are very low maintenance. Infact there is actually very little you will ever need to do for this product. Just clean it as you would your car and it will stay looking good as new.

ECB Aluminium Polish

When you're looking for that showroom finish look for your polished automotive products, you can depend on the no compromise quality of East Coast Bullbars Aluminium Polish. This specifically designed product is the best polish available and we guarantee that this \$#!+ works. With over 40 years of manufacturing polished alloy products we have trialled a large range of different polishes on the market and believe without a doubt that nothing beats the finish quality of East Coast Bullbars Aluminium Polish.

East Coast Bullbars Aluminium Polish is excellent for use by hand and is ideal for polished bullbars, nudge bar and stainless steel products. This polish will clean, polish and protect your product from the elements whilst bringing your products back to that showroom finish look.



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Stage 1

- Test drive vehicle to ensure all driver assists are correctly working and to gauge effectiveness. Park on a flat level surface.
- Apply parking brake and lift bonnet.
- Unwrap ECB Protection bar and disconnect mounts. Discard bolts.
- Ensure these instructions are left with the owner/operator of the vehicle.



Stage 2

- Remove trim from top of radiator support twelve (12) push pull clips



Stage 3

- From outer edge of grille remove two (2) plastic push pull clips, pull firmly on grille to release three (3) lower clips. Remove grille.



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Stage 4.

- Remove three push/pull clips from wheel arch (per side) and one push/pull clip from rear wing to guard (per side).
- From top of bumper between headlights remove five (5) plastic clips and three (3) 10mm head bolts.



Stage 5.

- Remove eight (8) clips and four (4) scrivenets from underside of bumper.
- Unplug washer line and wiring harness and remove bumper.



Stage 6

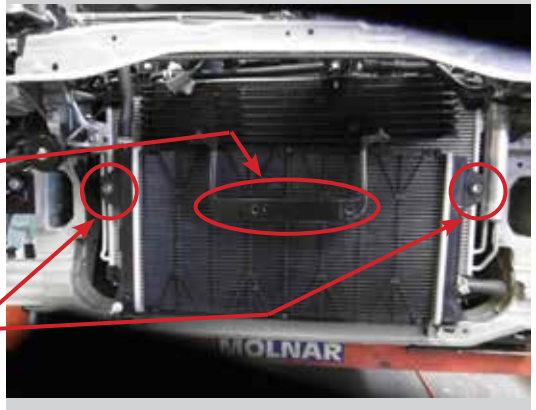
- Remove four (4) 10mm head bolts and five (5) push/pull clips from under body guard and remove guard.



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Stage 7.

- Disconnect temperature sensor from bumper support.
- Remove transmission cooler from bumper support, two (2) 12mm head bolts at base. Remove two (2) 12mm nuts from transmission cooler bracket. Remove transmission cooler bracket.
- Remove two (2) 12mm head bolts from lower cooler bracket to radiator support and remove bracket from cooler one (1) 12mm head bolt (per side).



Stage 8.

- Disconnect sonar from harness. Remove two (2) 12mm head bolts from bumper support and one (1) 12mm nut top of sonar carefully remove unit.



Stage 9.

- Remove top and lower air dams, from drivers side and remove headlight washer hose from air dam.
- Remove plastic cover under bonnet latch, release two (2) push pull clips.



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Stage 10.

- Remove bumper support four (4) 12mm head bolts per/side.



Stage 11.

- On Drivers side, remove neck assembly from water bottle. Place clean rag into opening of the bottle to keep inside of the bottle clean.
- On passenger side remove 10 mm head bolt and earth lead. Retain bolt for refitment



Stage 12.

- Install ECB steel mounting brackets to vehicle, place two (2) M8 x 1.5 x 30mm bolts, flat washer and spring washer (supplied) into two lower holes each side to support mount (supplied).
- Attach steel support brackets to front of steel mounting bracket two (2) M8 x 1.5 x 35mm bolts, flat washer and spring washer (supplied).
- Align mounting brackets and **TIGHTEN ALL BOLTS.**



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Stage 13.

- On drivers side place M8 x 1.25 x 30mm bolt, flat washer and spring washer (supplied) into captive nut on side rail.
- Passengers side, replace 10mm head bolt and earth wire.



Stage 14.

- Using steel support bracket as a guide drill two (2) 10mm holes into side wall of chassis.
- NOTE: Blow all filings clear and treat all exposed metal with a rust inhibitor.
- Install two (2) M10 x 1.5 x 35mm bolts, flat washers, spring washers and nuts (per side).
Tighten All bolts.



Stage 15.

- Secure transmission cooler to ECB steel mounting bracket using lower mounting brackets (supplied) and two (2) M8 x 1.5 x 30mm bolts, flat washers, spring washers (supplied).



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Stage 16.

- Refit cooler to bumper support using ECB mounts (supplied), fix with two (2) M8 x 1.25 x 30mm bolts, spring washers and flat washers (supplied) into nutsert in bumper support and two (2) M10 x 1.5 40mm bolts, flat washers and nyloc nuts (supplied) into cooler mount.



Stage 17.

- Remove parking sensors and harness from bumper.
- Unclip headlight washer hoses and move to top of bumper.

Stage 18.

- Mask area of bumper to be trimmed.
- Measure templates to ensure correct sizing, as printers and printer settings vary, templates may be out of scale.
- Using template provided mark bumper. Re-check marking to ensure correct. Cut bumper using jigsaw or similar.



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Stage 19.

- Using four (4) 350mm lengths of single core wire and solder joiners (supplied) extend wiring harness for sonar. Tape and fit wiring inside split loom tubing to give protection.
- NOTE: Overheating of connectors will cause the plastic sheathe to melt, while under heating will not melt the solder enough to create a strong connection. Hold joint still until solid for good join.



Stage 20.

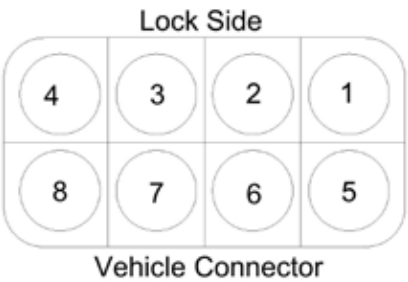
- Remove sonar mount from mounting bracket retain four (4) 10mm nuts for refitment .



Stage 21.

- Splice ECB wiring harness into wiring harness behind headlight using cable locks (supplied). Ensure harness is clear of sharp edges and moving parts.

NOTE: Wire colour has been taken from vehicle side connector of drivers side headlight on development vehicle. This may be different on your vehicle. Check all lights for correct operation before proceeding.



Pin Number	Colour	Use
3	Black / White	Indicator
4	Light Green	Parking light
7	Black	Ground
8	Brown	Daylight Running light

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Stage 22.

- Reinstall bumper onto vehicle in reverse of stages 2 to 6.



Stage 23.

- Install parking sensors into protection bar. Place 26mm clear sensor spacer (supplied) on sensor head, place sensor into housing and secure with zip tie.
- Attach parking sensor harness into rear of protection bar using cable ties (supplied).



Stage 24.

- Mount sonar onto steel bracket (supplied), with plastic protection cover using two (2) M6 x 20 mm bolts, flat washers and nyloc nuts (supplied). Fasten sonar to inside of protection bar on left hand side using two (2) M6 x 20 mm bolts, flat washers and nyloc nuts (supplied).



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Stage 25.

- Carefully remove two (2) small phillips screws from rear of camera. Fit camera to mounting bracket (supplied) using original screws and mount to bracket inside protection bar using tow (2) M5 x 12mm bolts, flat washers and nyloc nuts (supplied).



Stage 26.

- Disconnect wiring harness for camera and sensors from bonnet latch support, feed wiring harness through centre grill.
- Run wiring harness for sonar through bumper beside ECB steel mounting bracket. Ensure all wiring is clear of any sharp edges or moving parts.



Stage 27.

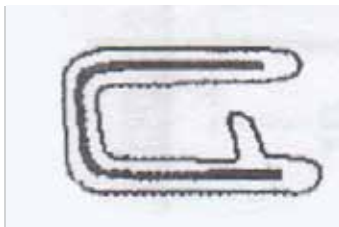
- Fit ECB LED indicator / park lights into protection bar as per instructions supplied with the LED indicator kit.
- NOTE: Ensure park light is to top.



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Stage 28.

- Attach 6mm clip lock trim (supplied) to top of ECB protection bar. NOTE: Trim off lower edge on an angle so trim will sit flush with end of protection bar.



Stage 29.

- Fit protection bar onto steel mount using three (3) M12 x 1.5 x 40mm bolts, spring washers, flat washers and nuts (per side).
- Align protection bar to vehicle, ensuring bottom of tube is above light reflectors. Tighten all bolts.



Stage 30.

- Attach ECB bumper lights to protection bar. Place M6 x 20 bolts, spring washers (supplied) through light mount from inside and attach nut to top. Slide assembly into light mount in Protection bar and centralize light to hole. **TIGHTEN FIRM ONLY.**
- Install fog light surrounds (supplied) to fog light openings. Large side of surround to inside of opening
- Connect indicator and fog lights, camera, sonar and parking sensors. Check for correct operation.



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Stage 31.

- Connect indicator and fog lights, camera, sonar and parking sensors. Check for correct operation.
- Test drive vehicle to ensure parking sensors and driver aids are working correctly.

Final Checks

Ensure Number Plate is Clearly Visable

Note: When fitting/refitting the licence plate to the vehicle, ensure there is no obstruction to licence plate vision in accordance with local authorities. If required relocate licence plate to an alternate location.

Further VFPS Notes

1. Do not attach VFPS to the vehicle using anchorages not intended for this purpose (e.g. engine mounting bolts).
2. Do not use this product for any vehicle make or model, other than those specified by the VFPS manufacturer.
3. Do not remove the plaque or label from the VFPS.
4. Do not modify the structure of the VFPS in any way.
5. No accessory or fitment should project forward of the VFPS forward profile.
6. **Ensure these instructions are left with the vehicle owner and/or operator.**

Important Information

Periodically check bolts and nuts for correct tightness, especially if traveling on rough roads.

Installation Kit

Installation Kit

1 - Steel mounting bracket	13 - M8 spring washers
1 - Pair support brackets	6 - M6 x 20mm bolts
1 - Sonar mount	8 - M6 flat washers
2 - Transmission mounts	2 - M6 spring washers
2 - Lower cooler mounts	4 - M6 nyloc nuts
1 - Camera mount	2 - M6 nuts
1 - Perspex cover	2 - M5 x 12mm bolts
6 - M12 x 1.75 x 40mm bolts	4 - M5 flat washers
12 - M12 flat washers	2 - M5 nyloc nuts
6 - M12 spring washers	1 - ECB indicator/ park/ DRL light kit
6 - M12 x 1.75 nuts	8 - Cable locks
4 - M10 x 1.5 x 35mm bolts	1 - ECB Bumper light kit
2 - M10 x 1.5 x 40mm bolts	1 - Quick click kit (IC10D40S1004ECBH)
10 - M10 Flat washers	2 - Bumper light surrounds
4 - M10 spring washers	4 - Plastic sensor spacers (EAMB100_S3P)
4 - M10 x 1.5 nuts	4 - 350mm lengths single core wire
2 - M10 x 1.5 nyloc nuts	8 - Solder joiners
9 - M8 x 1.25 x 30mm bolts	1 - 400mm length, 10mm convoluted tube
4 - M8 x 1.25 x 35mm bolts	1 - 2300mm length 6mm clip lock trim
13 - M8 flat washers	10 - 150mm zip ties

Finished Product



Warranty Registration

Contact Details

Name: _____

Address: _____

Product: **BM231SY** _____

Email: _____

Phone: _____

Work Order Number: _____

You can find this on the silver label
of your ECB product.

By submitting this registration you automatically subscribe to ECB's mail outs. You
can unsubscribe at any time.

Please Post To:

PO Box 122, Margate QLD 4019

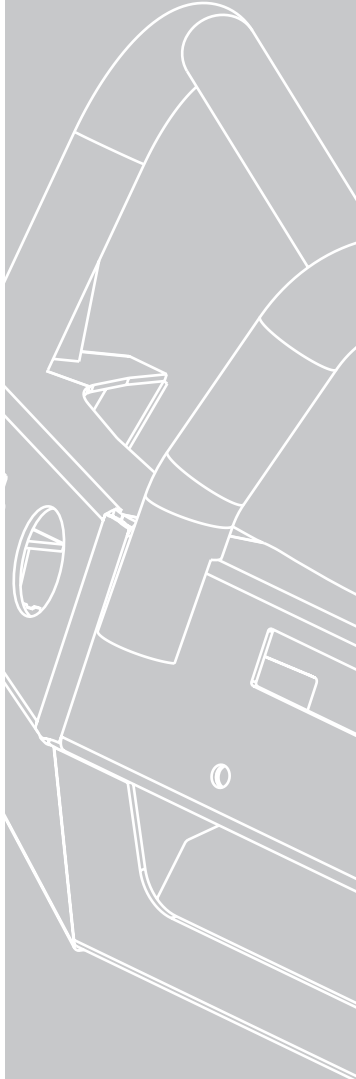
Or Register Online

For online registration please go online to www.ecb.com.au/TBC. If you have any
questions please contact our national office on 1800 069 145 or www.ecb.com.au.



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