

Moisture Vapour Prevention (MVP) Covers / Bags Fitting Guide

Part No: A340-500/600 4-engine Ship Set 2x 414-711-01 Port + 2x 414-712-01 Stbd

To ensure proper performance Cambrai Covers MVP Bags must be fitted in accordance with MVP BAGS DATA SHEET AND WITH THIS DOCUMENT.

Safe working and working at height practices MUST be observed at all times!

Please Note: The use of Cambrai MVP Covers has been approved under a Rolls Royce Technical Variance (TV) for outside storage of Trent 500, 600 and 700 engines.

Confirmation of this TV should be obtained from the relevant organization to ensure compliance is observed.

1. REQUIREMENTS:

- 1.1 A minimum of 2 operatives are required to fit MVP Covers. The operatives will require authority to use access equipment and to remove and re-fit pylon screw fasteners as these are used to support the cover
- 1.2 Access equipment able to reach the engine pylon.
- 1.3 Tools to remove and re-fit standard screw fasteners.
- 1.4 Tools to create holes in the cover fabric + aluminium support panels.
- 1.5 12m (approximately) x 50mm Aluminium Speed Tape.
- 1.6 OPTIONAL: additional 12m x 50mm Speed tape to seal the edge of the centre Velcro closure after fitting.

2 FITTING METHOD – First Fitting of New Cover:

- 2.1 **All existing covers must be removed.**
- 2.2 The outside of the shipping bags are marked PORT and STBD. Unpack the cover alongside the appropriate engine and locate the FRONT - this has our Cambrai label and a yellow placard denoting PORT or Starboard.
- 2.3 Maneuver the cover so that it is correctly orientated with the engine nacelle.
- 2.4 Locate and open the centre-line Velcro closure – **NOTE: detach the Velcro from the BACK (pointed) end of the cover going FORWARDS. It is necessary only to detach the Velcro as far as the base of the front panel adjacent to the Yellow Placard. Do not lose the aft under-ptyon 'boot' panel!**
- 2.5 With one operative on each side of the nacelle, lift the cover onto the nacelle ensuring that the placards remain at bottom centre.
- 2.6 It will be necessary to carefully fit the cover over the aerodynamic blade on the inboard side of each engine. An allowance is built into the cover.
- 2.7 The top open edge of the cover fits around the pylon. This edge has a yellow placard marking the position of a pylon panel join **462AR|462BR**. Pull the cover aft onto the nacelle until this placard is in line with the indicated panel join.
- 2.8 With the cover in the correct position it will be possible to fit the aft end of the cover over the conical exhaust outlet; locate this area now and re-close the centre Velcro under the pylon to the tip of the exhaust cone. Do not re-fit the boot yet!

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3 POSITION CHECK: It is important to now check the position of the cover. Failure to do so may have a negative impact on the performance of the cover! **Do this before closing the underside Velcro, as with all the Velcro closed it will not be possible to adjust the position of the cover.**

- 3.1 The open edge of the cover around the pylon has been reinforced for the application of speed tape. Locate the aluminium support panels bonded into the cover at four (4) points along each of the inboard and outboard pylon edges.
- 3.2 It is important to ensure that these edges are equal on both sides of the cover, and that the aluminium support panels cover the aircraft panel fasteners by an equal amount. Adjust the position of the cover as required.
- 3.3 Once the top position has been checked and verified the underside Velcro can be closed. The cover is designed to be a close fit, therefore it may be necessary to apply moderate tension to the cover and Velcro bands order to align the Velcro. This is perfectly acceptable, and will not result in damage to the cover. There should be no gaps or unevenness in the Velcro.
- 3.4 With the underside Velcro closed to a satisfactory standard it is important to finally check that the pylon edges have not moved and that the pylon screws can still be fixed through the aluminium support panels.
- 3.5 Use the method described above to adjust the position of the cover until a satisfactory position has been achieved. This can take a small amount of time, but this is only necessary on the first fitting!

4 Securing the cover.

- 4.1 The aluminium support panels are designed to support the weight of the cover and retain it in place so that the final edge seal is only required to ensure that water cannot enter the cover. **The edge seal is NOT intended to be the only fixing to the aircraft! If the aircraft fasteners are not fitted as described the performance of the cover will be greatly degraded.**
- 4.2 At least one (1) fastener should be placed through each support panel. Two (2) fasteners in each panel is better.
- 4.3 Identify the one or two fasteners that are evenly spaced in the area of a support panel and remove these from the aircraft. Mark these positions on the cover.
- 4.4 Using a drill, punch or similar tool, form a hole in the cover and support panel to align with the fastener holes in the aircraft. Loosely re-fit the screws.
- 4.5 Repeat step (d) above for all the fasteners in both sides of the pylon.
- 4.6 Finally tighten all the fasteners in both sides of the pylon. Ensure that the screws are tight enough to press the washers into the cover to form a water-tight seal.
The cover is now secure on the aircraft.

5 Sealing the cover.

- 5.1 Re-fit the under-pylon 'boot' between the top of the exhaust outlet and the aft underside of the pylon. Ensure that the Velcro is well pressed together.
- 5.2 Using 50mm wide aluminium Speed Tape, seal the edge of the MVP cover to the pylon. This tape will not damage the cover in any way, and will be safely removed when required.
- 5.3 Ensure that the tape is applied to a dry, oil free surface. Ensure that the tape is well rubbed down. Apply additional tape if necessary.

- 5.4 Apply speed tape to the edges of the under-pylon 'boot'.
- 5.5 Apply speed tape to the pylon vents, ensuring that the vents are completely covered.
- 5.6 To provide optional additional sealing of the Velcro closures it is permissible to apply speed tape across the joining edge. This will not damage the cover.
- 5.7 Apply short sections of speed tape over the pylon panel fasteners. (Optional)

6 Notes:

- 6.1 **Operation of front access panel.** The access panel is in two parts; an opaque red cover panel and a clear window panel, both sealed with Velcro. The outer red panel can be opened to inspect the desiccant without allowing ambient air to enter the cover. The access is designed such that the inner clear panel will not be opened in error when inspecting the desiccant.
- 6.2 **Removal and storage.** The covers should be removed by a reversal of the above process. This is best done when the covers are dry, however it is permissible to remove and temporarily pack the covers when wet. **The covers must NOT be stored in a wet state: they must be dried and re-packed as soon as possible!**
- 6.3 **Re-Fitting / Re-Use.** Cambrai MVP Covers can be re-used. It is not necessary to repeat the whole of the fitting process described above, as this is to ensure that the holes for mounting the cover are made in the correct locations. To re-fit the cover, follow sections 1 and 2. The existing fixing holes can then be used to mount the cover, and this will ensure correct positioning. Section 3 provides adjustment guidance and Section 5 will provide the correct sealing procedure.
- 6.4 When removing the covers, ensure that they are returned to the correct holdalls marked PORT and STARBOARD as this will greatly ease subsequent fittings.

