

SERVICE BULLETIN

Title: MAST SUPPORT WIRE X 1250 INSPECTION

Identification	SB-011
Status	Active
Issue	1
Issue Date	30 October 2010
Applicability	X Series trike bases, all serial numbers unless previously accomplished.
Compliance	Mandatory

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Approved by: The technical content of this service bulletin has been approved by CASA.

Summary of Changes: First issue

Introduction

The principle action of this service bulletin is to describe the inspection of the mast to rear drag link support wire, part description "Mast Support Wire X 1250", Part # 103070 as fitted to all Airborne Windsports Edge X series trike bases.

The secondary action of this service bulletin is to describe removal of the bottom heat shrink, and the replacement of the mast support wire.

It has come to our attention that the gap between heat shrink and wire at the bottom swages of the Mast Support wire may collect moisture, which can then lead to corrosion.

The heat shrink is a cosmetic fitting only, provides no structural support and will not affect the operation of the aircraft if removed and not replaced.

If corrosion, damaged wire, broken strands or incorrect crimping is observed the mast support wire needs to be replaced.

The third action is to describe the inspection for proper crimping of the swages to the wires.

While there are no reports of improper crimping, while inspecting for corrosion is an ideal time to inspect the crimping.

This Service Bulletin describes:

- removal of the heat shrink from the bottom of the mast support wires,
- inspection for corrosion of the wires,
- inspection of the wires for correct crimping,
- replacement if corrosion or incorrect crimping is found.

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Action

- Inspect the two Mast Support wires as described in this Service Bulletin.
- Maintain the wires as described in this Service Bulletin, and as described in the aircraft’s Maintenance Manual, 5.20.00 Scheduled Maintenance Checks – General Care (pages 19-20).
- Remove the heat shrink at the bottom of the Mast Support wires.
- Replace page 27 of X Series Maintenance Manual Issue 2.0, September 2007 with Issue 2.1, November 2010.
- Replace any wires if they fail the inspection.

Skills

The pilot and maintainer are expected to incorporate this service bulletin as standard practice.

Tools & Parts

- Sharp knife such as a Stanley blade
- 2 x 1/2” open spanners
- 2 x 7/16” open spanners or sockets
- 1 x pair of pliers
- 1 x Mast Support Wire X 1250, Airborne Part # 103070
- 1 x M2x20mm split pin, Airborne Part # 100308

Weight and Balance

No change.

Documentation

No checklist or compliance notes are provided with this service bulletin.

Inspection and Replacement

The wires are easy to inspect and can be examined in place. There is no requirement to remove the wires prior to inspection, and no special tools or skills are required for inspection or replacement.



Figure 1 – Mast Support Wire X 1250, Part # 103070 as fitted to an Edge X Series Outback.

Remove the Heat Shrink

The heat shrink can be removed by using a sharp knife or similar to slice down the side of the heat shrink, and then pull away the plastic by hand. Care must be taken to limit contact with the swages and clear PVC coating of the wire when cutting so as to avoid any accidental nicking/cutting of the coating or wire strands.



Figure 2 – Remove this heat shrink.

Inspect for Corrosion

Thoroughly inspect the wire and swages for any changes in colour, in particular look for any blue-green discolouration, i.e. verdigris, any brown discolouration, i.e. rust, and broken strands. When looking for broken strands, use a cloth to aid detection by passing it over the wire. It will clean the wire and detect broken strands by snagging. Broken strands may also lie within in the wire, so close visual inspection must also be made.



Figure 3 – Inspecting wire and swages for corrosion with heat shrink off.

Inspect for correct crimping

When the wire is crimped correctly the wire will pass completely through both crimps, will sit securely in the thimble, and the end of the wire will be visible at the top of the second crimp. Correctly swaged wires will be crimped so that all metal parts are compressed evenly, there are no large gaps on the inside of each swage, and there is no free play of the wire in the swage and no broken strands.

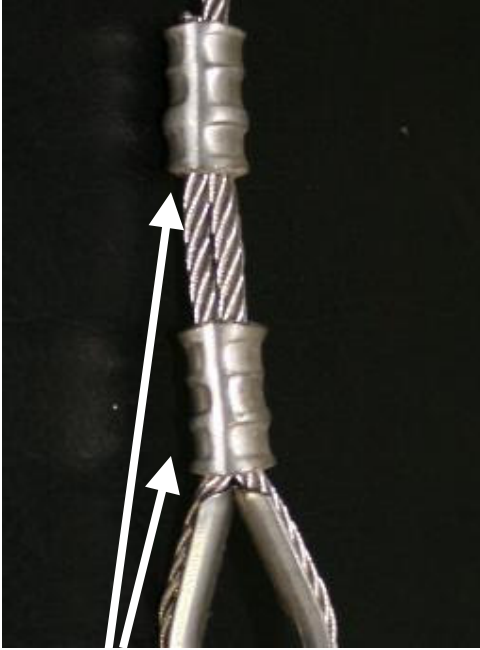


Figure 4 – Correct crimping.

Note: Refer to Figure 3 for an example of wire correctly protruding through both crimps.

If corrosion, damaged wire, broken strands or incorrect crimping is observed the mast support wire needs to be replaced.

Replace the wire

It is an easy job to replace a wire. The tools required are two open-ended 1/2" spanners for the bottom, two open-ended 7/16" spanners for the top right hand side, and pliers for the split pin at the top left hand side.

Instructions:

1. Apply the park brake.
2. Remove the wing from the base.
3. Lower the mast until the mast support wires go slack.
4. Use the two 1/2" spanners to undo the nut and release the wire tang at the bottom.

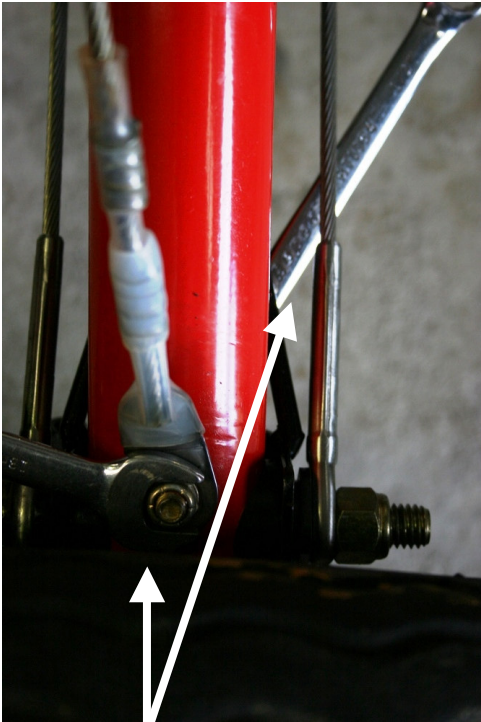


Figure 5 – Undo nut to remove wire at bottom.

Right hand side top:

6. Use the 7/16" spanners to remove the top nut and bolt to release the top of the wire.
7. Replace the wire, the thimble end goes to the top and the tang goes to the bottom. If the Nylock is worn it should be replaced. The nut goes on the outside.



Figure 6 – Remove wire at right hand side top.

Left hand side top:

5. Use the pliers to close and remove the split pin, and remove the clevis pin to release the top of the mast support wire.
6. Replace the wire, the thimble end goes to the top. Use a new split pin when securing at the top. The split pin goes on the outside.

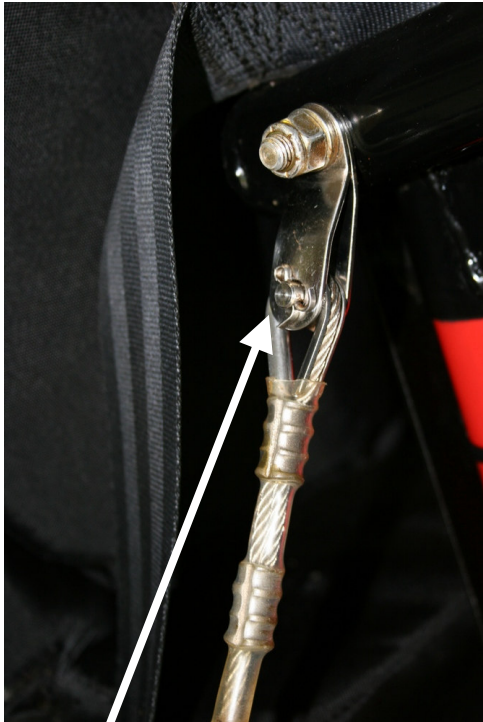


Figure 7 – Remove wire at left hand side top.

Both sides bottom:

8. Replace the wire at the bottom, the tang end goes to the bottom, and the nut goes on the top. If the Nylock is worn it should be replaced.
9. Raise and secure the mast and front mast brace. Inspect that the replaced wire(s) is properly secured, and that all nuts, bolts, clevis pins and split pins are properly fastened. Test the wire(s) for fit, the wire should not be over-tensioned, and should be able to be moved fore and aft about 1.5cm (2/3”) at the centre, when the mast brace is secured in place for flight.

Taxi the base and confirm there is no change in the handling of the trike base, conduct a test flight, inspect and re-confirm there is no change to the handling characteristics of the trike.

End of Safety Bulletin

Time Limit for Coolant and Oil

See section 12.10.30 for Coolant details and section 12.10.20 for Oil details.
 See Rotax Maintenance Manual Section 10.

NOTE

There are special instructions when using Avgas, consult the Rotax Service Information 18 UL 97 D/E.

Time limit for maintenance Intervals

See Rotax Maintenance Manual Section 10

5.60.20 Trike Base and Landing Gear Maintenance Schedule

The procedure should be repeated from 500 to 1000 hours.

TRIKE BASE FRAME MAINTENANCE SCHEDULE	Manual Section Reference	AIRCRAFT OR ITEM HOURS OF OPERATION						
		25	100	200	300	400	500	600
Trike base tube for bend or cracking (see 4.20.00 for time limits)	As directed	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]
Trike mast for bends or cracking (see 4.20.00 for time limits)	As directed	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	6 [R]	3 [R]
Drag links and rear struts for bends or hole elongation (see 4.20.00 for time limits)	As directed	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]
Brake system inspect dimensions & wear limits.	32.40 table 18/19	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]
Mast brace for bend, cracking or bearing elongation. Outer brace should slide freely (see 4.20.00 for time limits)	As directed	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]
Rubber cushion, front suspension	As directed	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]	3 [R]
Heart bolt (see 4.20.00 for time limits)	As directed	4 [O]	6 [O]	6 [O]	6 [O]	6 [O]	6 [O]	6 [O]

Table 11 Trike Base frame Maintenance Schedule

Special Instructions

5.70.00 Fatigue

Operational experience with the X Series aircraft has shown safe operation of attachments to the wing and base tube structure of 1000 hours, mast life is 500 hours before mandatory replacement. These figures are applicable for normal operation; abnormal loading such as crash loads or operation outside of the flying envelope will require additional consideration.