

Subject: Installing or replacing the elastic fairing tapes at the control surface gaps of aileron, elevator and rudder.

Affected: All ASK 21, Data Sheet no. L-339, as of serial no.21001, optional.

Reason: Performance measurements with various gliders have shown that drag can be considerably reduced by a continuous transition between wing and aileron and between stabilizer and elevator respectively.

The continuous transition is created with an elastic lip, which is attached to the wing, the horizontal stabilizer and the vertical stabilizer and whose curvature bridges the natural slot between wing - aileron, horizontal stabilizer - horizontal stabilizer or vertical stabilizer - rudder and rests on the control surfaces with pre-tension.

It is important that the seal under this transition is absolutely tight. The control surface gaps are sealed with a sealing/slip tape, which also reduces the friction of the elastic fairing tape on the aileron and elevator.

A damaged or missing sealing may cause flutter!

The additional friction generated in the aileron, elevator and rudder control is minimal and acceptable.

Action:

If the elastic fairing tape needs to be removed only for maintenance or repair of the control surfaces, please observe the following:

When dismantling the elevator or ailerons:

The elastic fairing tape and the sealing/slip tape need to be removed only on the upper side (where the control surface hinges are located).

When dismantling the rudder:

It is not necessary to remove the elastic fairing tape!

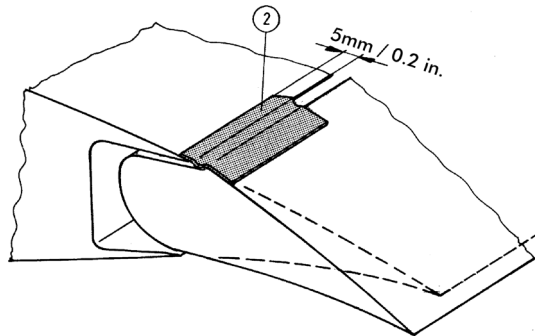
Carefully remove the old elastic fairing tape in order to avoid any delamination of the layers in this area. Remove any adhesive residue from the recessed step by means of synthetic resin thinners.

Accomplish any required inspection, maintenance or repair work at the control surfaces themselves and / or their hinges.

When applying or replacing elastic fairing tapes, all surfaces must be completely clean, dry and free from dust and grease! The best way to test the cleanliness is to stick a transparent tape strip on the cleaned surface, remove it again and check that no dust particles remain on the transparent tape.

Cut the new elastic fairing tapes and the sealing/slip tapes into appropriate lengths (refer to the table under point "Material").

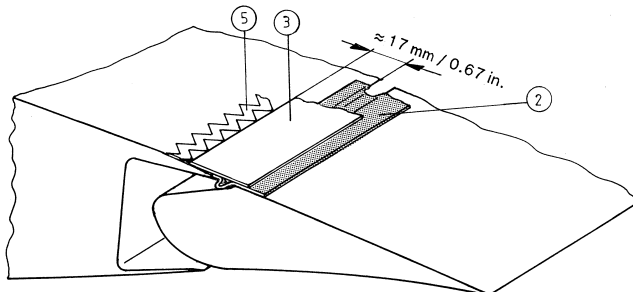
Wing and horizontal tail upper side



The sealing/slip tape (2) [3M Scotch Teflon Tape 30 mm wide] is stuck on over the gap with an overlap of 5 mm (0.2 in.) on the trailing edge of the wing respectively the stabilizer. Be careful that the sealing/slip tape lies slack over the gap. Set the aileron / elevator to maximum positive deflection, so that later the sealing/slip tape is not stretched during normal full control deflections!

The sealing/slip tape (2) must be firmly rubbed down on to the surface! Apply full deflections several times so that the sealing/slip tape (2) fits well into the gap.

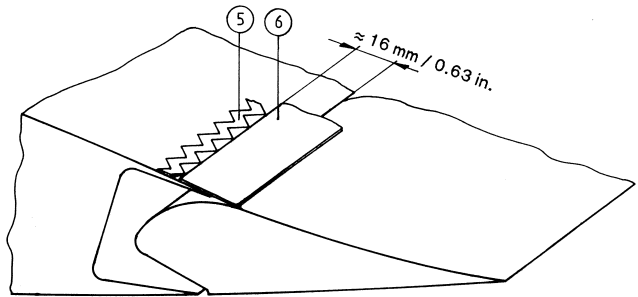
Remove the protective backing from the elastic fairing tape (3) [Mylar foil, 30-12 mm wide] and firmly stick it on at a distance of 17 mm (0.67 in.) to the trailing edge.



Press the adhesive zones of the elastic fairing tape (3) firmly down on the surface using a soft wooden block (e.g.: Balsa) or a hard rubber roller!

Along the leading edge of the elastic fairing tape (3), a zig-zag-tape [5] is stuck.

Wing and horizontal tail lower side

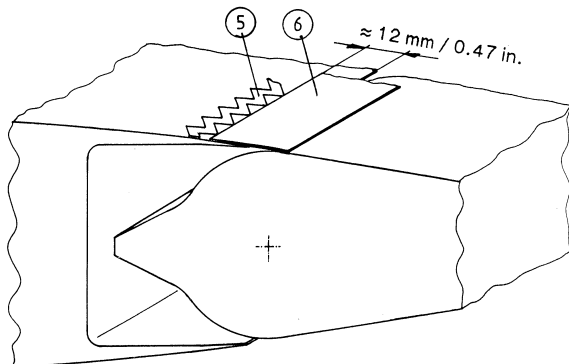


Remove the protective backing from the elastic fairing tape (6) [Mylar foil, 22-15 mm wide] and firmly stick it on at a distance of 16 mm (0.63 in.) to the trailing edge.

Press the adhesive zones of the elastic fairing tape (6) firmly down on the surface using a soft wooden block (e.g.: Balsa) or a hard rubber roller!

Along the leading edge of the elastic fairing tape (6), a zig-zag-tape [5] is stuck.

Vertical tail



Remove the protective backing from the elastic fairing tape (6) [Mylar foil, 22-15 mm wide] and firmly stick it on at a distance of 12 mm (0.47 in.) to the trailing edge.

Press the adhesive zones of the elastic fairing tape (6) firmly down on the surface using a soft wooden block (e.g.: Balsa) or a hard rubber roller!

Along the leading edge of the elastic fairing tape (6), a zig-zag-tape [5] is stuck.

Material:

	Wing		Horizontal tail		Vertical tail
	upper	lower	upper	lower	left / right
(2) Sealing/slip tape 3M Scotch Teflon tape, 30 mm / 1.2" wide	2 x 2.85 m 9.35 ft		1 x 3.1 m 10.2 ft		
(3) Elastic fairing tape Mylar foil, 30-12	2 x 2.85 m 9.35 ft		1 x 3.1 m 10.2 ft		
(5) Zig-zag-tape Mylar foil, 0.5 mm thickness, 12 mm wide	2 x 2.85 m 9.35 ft	2 x 2.85 m 9.35 ft	1 x 3.1 m 10.2 ft	2x 1.5m 5.0 ft	2 x 1.25 m 4.1 ft
(6) Elastic fairing tape Mylar foil, 22-15		2 x 2.85 m 9.35 ft		2x 1.5m 5.0 ft	2 x 1.25 m 4.1 ft
Optionally for (5) and (6): (7) Combined zig-zag elastic fairing tape 38-20	2 x 2.85 m 9.35 ft	2 x 2.85 m 9.35 ft		2x 1.5m 5.0 ft	2 x 1.25 m 4.1 ft

The material can be ordered from Alexander Schleicher.

Notes:

1. This action can be accomplished by a competent person.
2. Instead of the elastic fairing tape (6) and the zig-zag-tape (5), a combined zig-zag elastic fairing tape (7) can be fitted as an option.
3. Ensure that the elastic fairing tape is in tight contact with the surfaces of the controls even when they are fully deflected. Protruding elastic fairing tapes increase the drag significantly!
Check the secure and firm adhesion of the elastic fairing tapes and zig-zag-tapes.