ASG 32
Maintenance Instruction A
Issue 4

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Subject: **Replacing the elastic fairing tapes at the control surface gaps and on the engine compartment doors and main wheel doors.**

Fixing and replacing the turbulators on wing, winglets, horizontal and vertical tail.

Affected: ASG 32 (all variants)

Reason: The gaps at the control surfaces of the ASG 32 are covered as standard with elastic fairing tapes. At the ailerons, flaps and the elevator, the gaps are sealed in addition by means of a Teflon sealing/slip tape on the hinges side. At the engine compartment doors and the main wheel doors are also elastic fairing tapes.

For the removal of control surfaces, e.g. for any maintenance or repair work, it is necessary to remove the relevant elastic fairing tape and the Teflon sealing/slip tape on the control surface hinges side.

On the wing, the winglets, the wing-winglet-junction and on the horizontal stabilizer, turbulator tapes (Zig-Zag) are affixed. On the vertical stabilizer, there is a combined tape (Zig-Zag and elastic fairing tape). Damages or deformation (protruding or compressed jags at the front edge) can make replacing necessary.

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

For the purpose of disassembly of flap or aileron:
The elastic fairing tape and the Teflon sealing/slip tape need to be removed only on the lower side (where the control surface hinges are located).

For the purpose of disassembly of elevator:
The elastic fairing tape and the Teflon sealing/slip tape need to be removed only on the upper side (where the control surface hinges are located).

Disassembly of the rudder, the engine compartment doors and the main wheel doors:
It is not necessary to remove the elastic fairing tape!

1. Carefully remove the old elastic fairing tape in order to avoid any delaminations of the layers in this area. Remove any adhesive residue from the recessed step by means of synthetic resin thinners. With careful handling a Rubber Eraser Pad can be very helpful.

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

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

Note: All surfaces must be completely clean, dry and free from dust and grease!

For cleaning of the glue areas Acetone (min. 99%) proved to be best.

Wing lower side and horizontal tail upper side:

See Fig. 1 and 2

Apply the Teflon sealing/slip tape [1] with a clearance of 13 mm / 0.51" (wing) resp. 16 mm / 0.63" (horizontal tail) to the front edge of the recessed step. Ensure that the Teflon sealing/slip tape lies slack over the gap and that flap and aileron are set to maximum negative deflection, elevator to maximum positive deflection. During normal full control deflections the Teflon sealing/slip tape must not be stretched, so that that full deflections would be hindered.

Apply full deflections several times so that the Teflon sealing/slip tape [1] fits well into the gap; it must be firmly rubbed down on to the surface!

Remove the protective backing from the elastic fairing tape and firmly stick it into the recessed step of the wing lower side resp. horizontal stabilizer upper side, leaving no gap at the front edge. For the wing use elastic fairing tape 30/12 [2] (in the area of the flap up to y = 4000 mm) resp. elastic fairing tape 35/12 [4] (in the area of the aileron from y = 4000 mm) and the elastic fairing tape 38/15 [5] for the horizontal stabilizer upper side. The elastic fairing tapes for the wings are scarfed on their trailing edge.

Finally, press the adhesive zones of the elastic fairing tape [2/5] firmly down on the surface by means of a soft wooden block (e.g: Balsa) or a hard rubber roller!

Fig. 1
Wing,
lower side

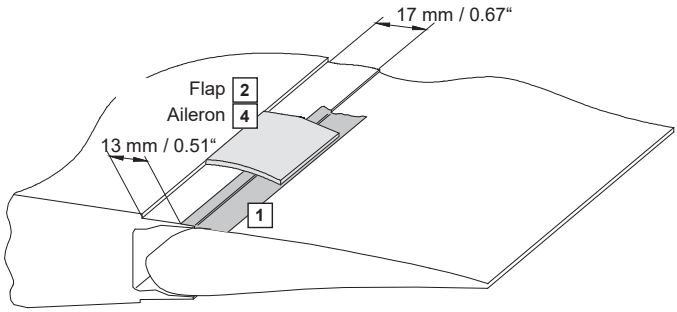
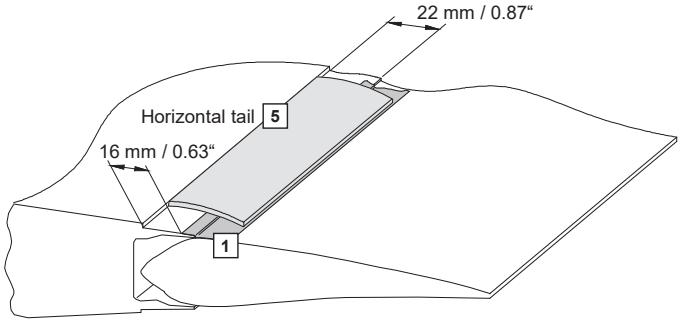


Fig. 2
Horizontal tail,
upper side



Wing upper side and horizontal tail lower side:

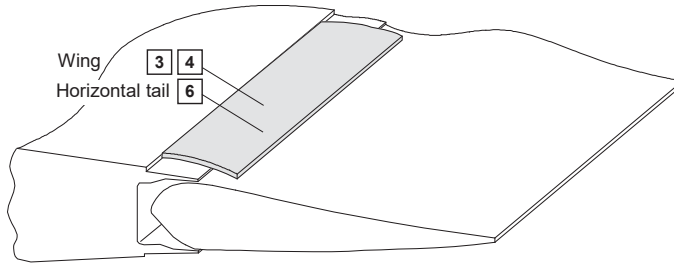
Remove the protective backing from the elastic fairing tape and firmly stick it into the recessed step of the wing upper side resp. stabilizer lower side, leaving no gap at the front edge. Following fairing tapes are used:

Wing upper side, inner wing:	Elastic fairing tape 35/12 [4] scarfed
Wing upper side, outer wing up to 0.7 m before the end:	Elastic fairing tape 35/12 [4] scarfed
Wing upper side, outer wing 0.7 m at the end:	Elastic fairing tape 38/12 [3] scarfed
Horizontal tail lower side:	Elastic fairing tape 30/12 [6]

Finally, press the adhesive zones of the elastic fairing tape [3/4/6] firmly down on the surface by means of a soft wooden block (e.g: Balsa) or a hard rubber roller!

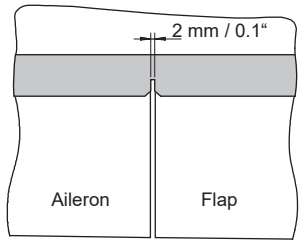
On the upper side of the **inner wing**, the recessed step at the junction between aileron and flap has an offset. Here the elastic fairing tape must be splitted.

Fig. 3



On the lower side of the **inner wing,** the elastic fairing tape must be cut in up to the wing at the junction between flap and aileron *(Fig. 4)*.

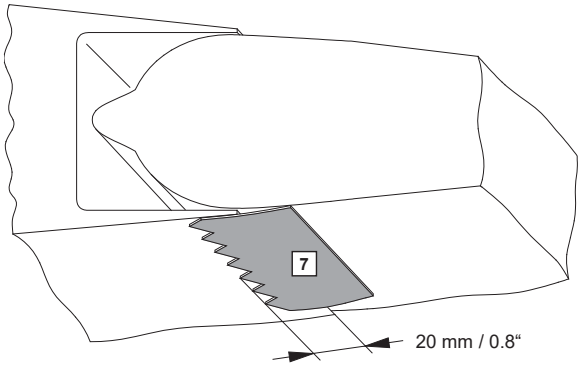
Fig. 4



Vertical tail:

There are no recessed steps at the fin. On both sides a combined tape (Zig-Zag and elastic fairing tape) 38/19/0.8 [7] is affixed. Press or roll it firmly down.

Fig. 5



Material:

		Inner wing		Outer wing		Horizontal tail		Vertical tail
	Side	upper	lower	upper	lower	upper	lower	both
[1]	Teflon sealing/slip tape, 30 mm / 1.2” wide		2 x 6.2 m 20.3 ft		2 x 3.4 m 11.1 ft	1 x 3.2 m 10.5 ft		
[2]	Elastic fairing tape 30/12 * convex, scarfed		2 x 4.1 m 13.5 ft		2 x 3.4 m 11.1 ft			
[3]	Elastic fairing tape 38/12 * convex, scarfed			2 x 0.7 m 2.3 ft				
[4]	Elastic fairing tape 35/12 * convex	2 x 6.2 m 20.3 ft	2 x 2.2 m 7.2 ft	2 x 2.7 m 8.9 ft	2 x 3.4 m 11.2 ft			
[5]	Elastic fairing tape 38/15 * convex					1 x 3.2 m 10.5 ft		
[6]	Elastic fairing tape 30/12 * convex						2 x 1.6 m 5.2 ft	
[7]	Combined tape 38/19/0.8 *							2 x 1.6 m 5.2 ft

* The elastic fairing tapes are described with their width and the width of the adhesive film attached to it (e.g. 38mm / 15mm). **But it is also possible that the elastic fairing tape and the adhesive film are delivered as separate items.**

Engine compartment doors and main wheel doors

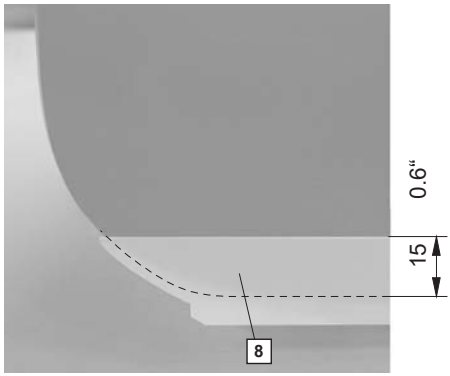


Fig. 6 Engine compartment door, front end

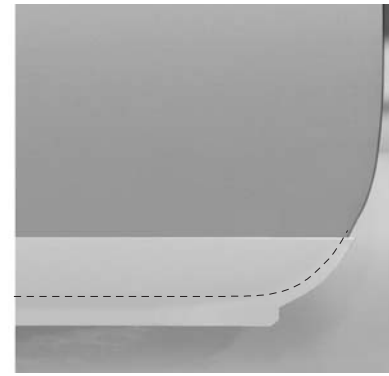


Fig. 7 Engine compartment door, rear end

The elastic fairing tape 22/15 [8] is affixed along the lower edge of the engine compartment door with an overhang of 7 mm / 0.3” (only the 15 mm / 0.6” wide adhesive film of the elastic fairing tape is on the engine compartment door). The ends of the elastic fairing tapes will be cut as shown in Fig. 6 and 7. If no engine is installed, the elastic fairing tapes can be omitted. The gaps are sealed with a flexible plastic tape.

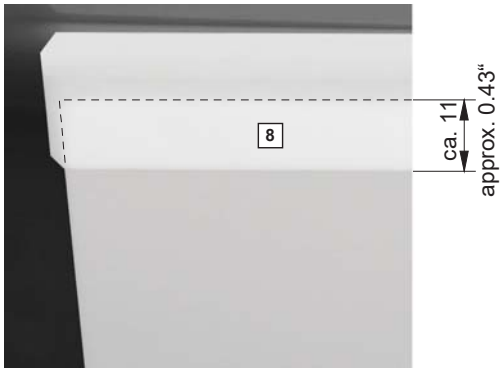


Fig. 8 Main wheel door, front end

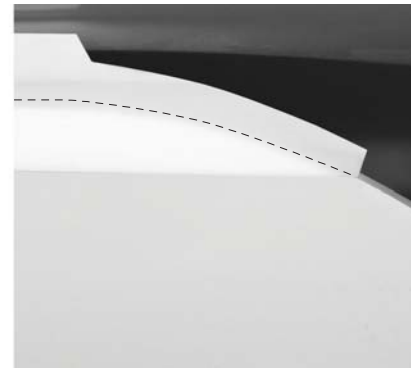


Fig. 9 Main wheel door, rear end

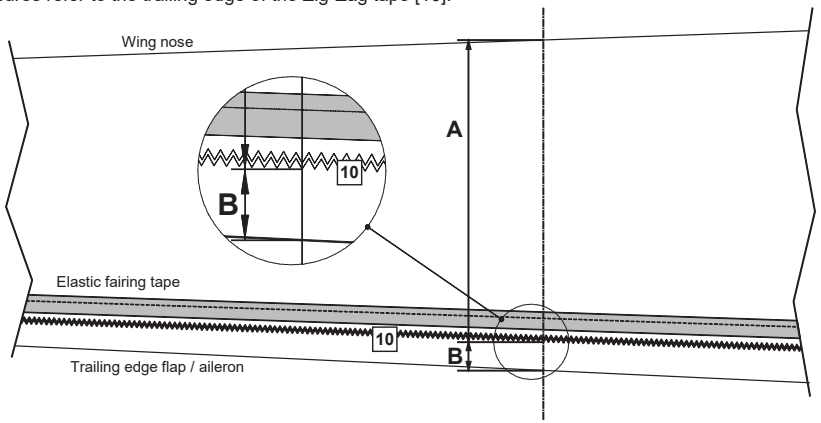
The elastic fairing tape 22/15 [8] is affixed along the upper edge of the main wheel door. The dimension 11 mm / 0.43” can vary, so that the gap is completely covered. The ends of the elastic fairing tapes will be cut as shown in Fig. 8 and 9.

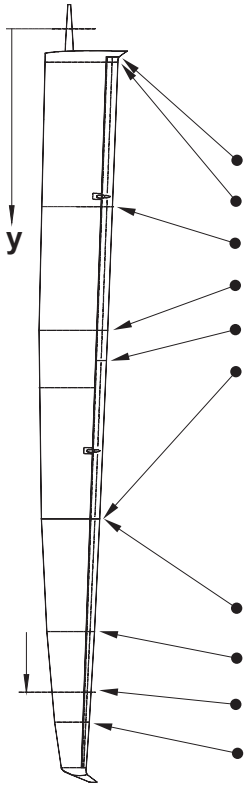
Material:

		Engine comp. doors	Main wheel doors	
[8]	Elastic fairing tape 22/15 * convex	2 x 1.9 m / 6.2 ft	2 x 0.9 m / 3 ft	* The elastic fairing tapes are described with their width and the width of the adhesive film attached to it (e.g. 22 mm / 15 mm.

Turbulator tape (Zig-Zag) on the wing lower side

All measures refer to the trailing edge of the Zig-Zag tape [10]:





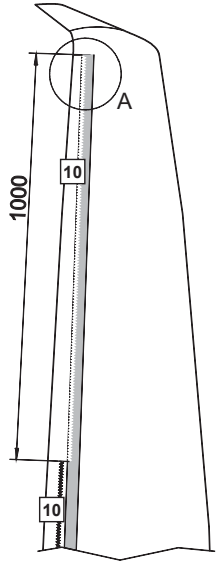
Inner wing:

Position	y [mm / inch] from fuselage center line	Dimension **A** from wing nose	Dimension **B** from trailing edge
Beginning of flap	370 / 14.57“	888.0 / 34.96“	91.0 / 3.58“
Reference dimension	440 / 17.32“	886.5 / 34.90“	77.0 / 3.03“
Measuring point	2000 / 78.74“	862.0 / 33.94“	75.0 / 2.95“
Trapezoid kink	4000 / 157.48“	837.0 / 32.95“	73.0 / 2.87“
Beginning of aileron	4400 / 173.23“	816.5 / 32.15“	71.0 / 2.80“
Wing-wing connection	6500 / 255.91“	708.5 / 27.89“	61.5 / 2.42“

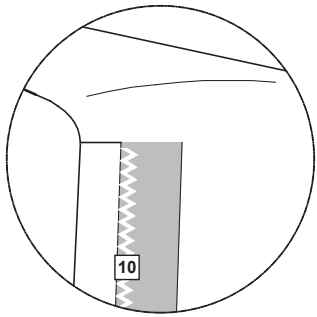
Outer wing:

Position	y [mm / inch] from fuselage center line (from wing-wing connection)	Dimension **A** from wing nose	Dimension **B** from trailing edge
Wing-wing connection	6500 / 255.91“ (0 / 0“)	708.5 / 27.89“	61.5 / 2.42“
Trapezoid kink	8000 / 314.96“ (1500 / 59.06“)	570.0 / 22.44“	60.0 / 2.36“
Zig-Zag tape on aileron ends	8805 / 346.65“ (2305 / 90.75“)		
Projection point	9200 / 362.20“ (2700 / 106.30“)	416.0 / 16.38“	44.0 / 1.73“

At the wingtip over a length of 1000 mm (39.4") from the outer end of the aileron, Zig-Zag tape [10] is stuck at the trailing edge of the elastic fairing tape:

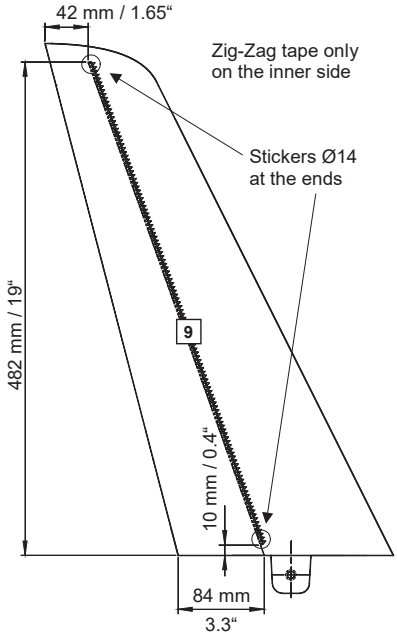


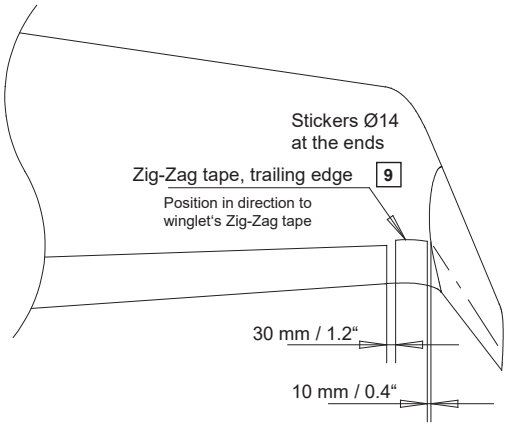
Detail A:



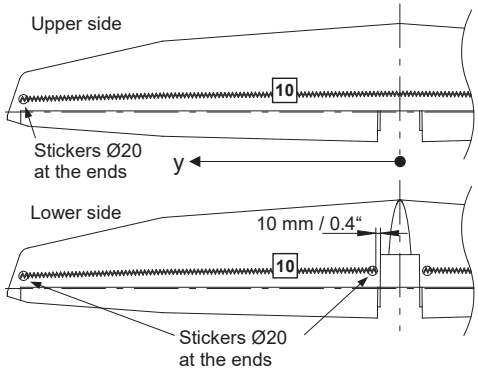
Turbulator tape (Zig-Zag) on winglets and horizontal tail

Winglet





Horizontal tail



Distance to the center of the horizontal tail y [mm / inch]	Distance to the leading edge of the elastic fairing tape	
	Upper side	Lower side
0	44 mm 1.73“	- -
93 mm 3.66“	- -	48 mm 1.89“
981 mm 38.62“	36 mm 1.42“	42 mm 1.65“
1568 mm 61.73“	23 mm 0.9“	18 mm 0.71“
	This dimensions refer to the trailing edge of the Zig-Zag tape	

Material:

		Wing lower side	Winglet and winglet morphing section	Horizontal tail
[9]	Zig-Zag tape 60° 3.5 mm distance between tips 0.5 mm thickness	- -	2 x 0.6 m / 1.96 ft	- -
[10]	Zig-Zag tape 60° 7 mm distance between tips 0.5 mm thickness	2 x 6.20 m / 20.34 ft 2 x 2.60 m / 8.53 ft 2 x 0.74 m / 2.43 ft	- -	Upper side: 1 x 3.5 m / 11.5 ft Lower side: 2 x 1.7 m / 5.6 ft

The material can be ordered from Alexander Schleicher:
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i.A. (M. Münch)