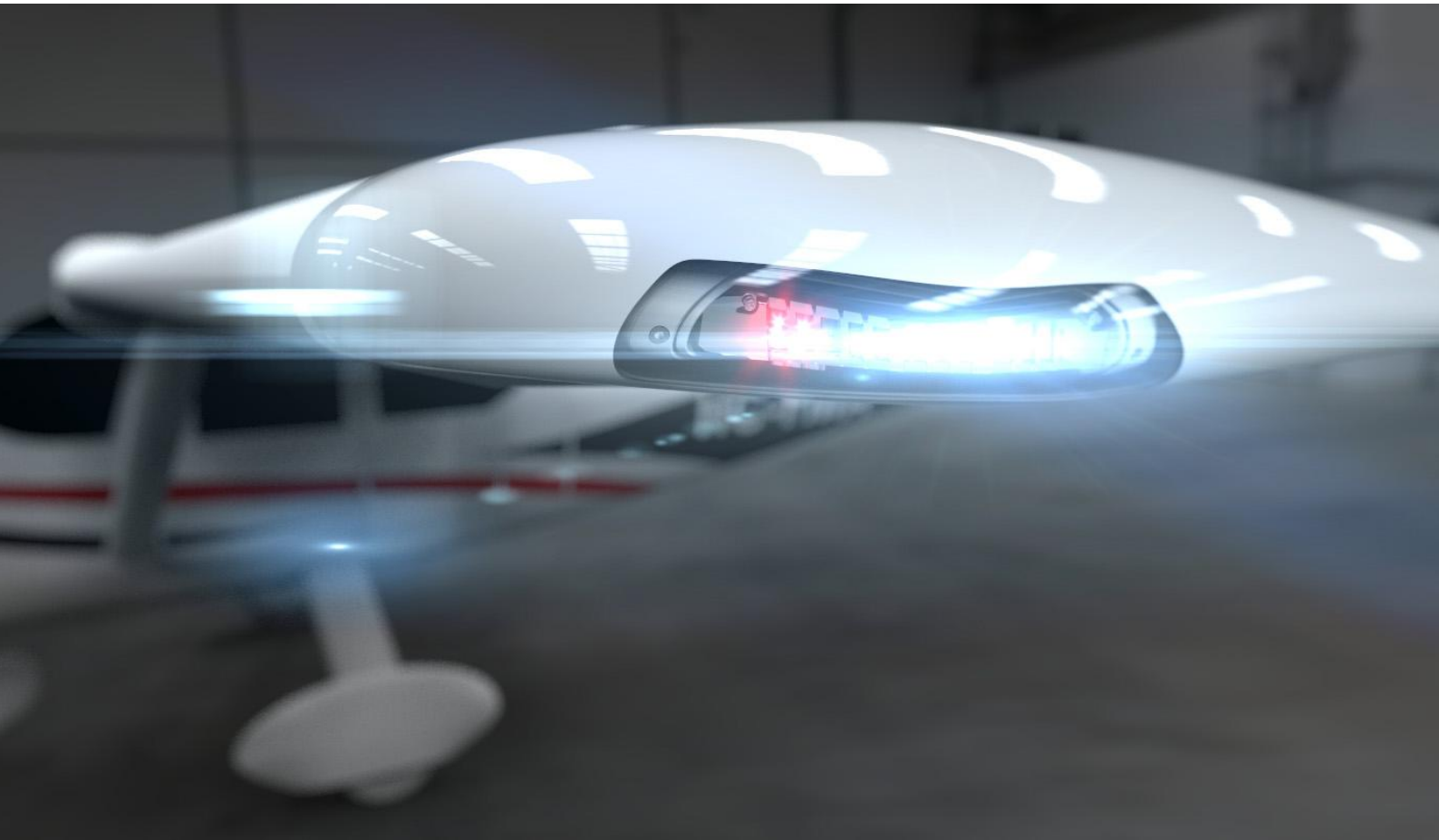




Installation Instruction
CESSNA
150 & 172 SERIES

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Part 0 Manual Administration

0.1 Document approval

This document has been established in accordance with an alternative procedure to DOA approved under EASA AP429.

This installation Instruction is applicable for all Cessna 150 and 172.



Compiled by: _____ 1 – Aug - 2023

Petr Jaros
Engineer, Aveo Engineering Group, s.r.o.



Approved by: _____ 1 – Aug - 2023

Georg Hartl
Head of DO, Aveo Engineering Group, s.r.o.

0.2 Amendment Record procedure

The master copy of this document shall be kept electronically as a read only document under the control of Aveo Engineering Group, s.r.o. as Master Copy.

ALL amendments to this manual will initiate a raise of issue.

The original issue will be identified by "**01**", and subsequent issues will be numbered sequentially from 02 to 99 in Table 01 - **Issue No.** column.

ALL issues of this document will be approved by Head of DO.

Issue No.	Details	Date	Effected Pages
01	Initial Issue	10 Nov 2016	ALL
02	Corrections as marked addition of Conformal Solution §1.4 addition of two light anticollision light solution	15 Dec 2017	ALL 11-14 17-19
03	Corrections as marked Addition of alternative Wingtip light solutions Addition PosiStrobe Titania – rear position / strobe light Addition of alternative Landing / Taxi lights (Hercules JP) Addition Kit numbers	01 Aug 2023	ALL 16-19 28-29 34-35, 39, 44-45 ALL

Table 01: Document Amendment Record Table

0.3 Affected Pages Procedure

ALL pages affected by ANY raise of issue of this document will be listed in Table 01 - **Affected Pages** Column.

Changes from the previous issue are shown as follows:

- new text is highlighted with yellow shading: **new**
- deleted text is shown with yellow shading and a strike through: ~~deleted~~

Part 1 Installation Instruction

1.1 General

This installation is to be performed in accordance to common practice as described in FAR AC 43.13-2B Chapter 4 and in FAR AC 43.13 1B Chapter 11 Section 15 (Bonding) as published by FAA.

The installer is responsible to follow the installation instructions in the latest revision of:

- FAR AC 43.13-2B Chapter 4
- FAR AC 43.13 1B Chapter 11 Section 15
- AVE-H30TATSN-IM
- AVE-WPST-54G-IM
- AVE-WPS-64G-IM
- AVE-PSPSYW-IM
- AVE-RBXP-001-IM
- AVE-CCPS-IM
- AVE-HJPDO-IM

The following appliances carry an ETSO authorization:

- AVE-PSPSYW-T01 – ETSOA 210.10068603
- AVE-WPSR-54G & AVE-WPSG-54G – ETSOA 210.10053935
- AVE-WPSR-64G & AVE-WPSG-64G – ETSOA 210.10053936
- AVE-RBXPR-001 – ETSOA 210.10055069
- AVE-CCPSR-63D & CCPSG-63D EASA Account Number: 307368

The change is to be performed using the document AVE-MOD-004-MCS in the latest issue.

The aircraft manuals remain fully valid. For maintenance of the new lights follow the Aveo Installation Manuals referenced above.

1.2 Description

This modification is the replacement of the composite wingtip segment and of position, anti-collision, taxi- and landing lights by LED type lights.

1.2.1 Position and anti-collision lights

The new position lights all also include the strobe function. Also two options for the anti-collision lights can be installed. The RedBaron XP Galactica offers the red or white anti-collision light.

As not all C150 and 172 are already equipped with the strobe function (white strobe) in addition to the red beacon, this function may be added with this modification.

Hence the following optional installations can be done with this modification:

For aircraft with strobe function already installed:

- Position lights including strobe + Beacon red or white (RedBaron XP)

For aircraft without strobe:

- Position lights without strobe + Beacon red or white (RedBaron XP)
- Additional switch and wiring change + Position lights including strobe + Beacon red or white (RedBaron XP)
- Additional switch and wiring change + Position lights including strobe + Beacon red or white (RedBaron XP)

Synchronization:

The strobe lights may be synchronized but the frequency of the strobes is so low that synchronization of the lights is not required.

For the synchronization function the blue wires of each light to be synchronized have to be connected. If for this function additional wires are to be installed then these must be installed along the wire bundle in which the lights power wires run. If the function is not used the blue wire at each light is to be capped and stowed.

1.2.2 Taxi- and landing lights

The C150 and 172 can be equipped with a taxi light (wide angle lens) and a landing light (narrow angle). This modification allows replacing all installed taxi and landing lights with the same configuration as installed before the modification. A configuration change is not allowed.

1.2.3 Energy consumption

The analysis ($I = \Delta I_B + I_L$) showed that after installation of LED lights, in case of Position/Strobe lights, the total energy consumption dropped by 39.36% when Ultra Galactica Embedded lights or by 31.06 % when Crystal Conforma lights were installed. In case of Landing/Taxi lights, the energy consumption dropped by 16.77 %. On the contrary, in case of Anti-collision lights, the energy consumption increased by 11.11% when RedBaron XP Galactica is installed. It was caused by higher power drain of our AVEO lights.

Lights	Input Current I_{BUBL} (A)	Lights	Input Current I_{LED} (A)
Position light/strobe	2.0 / 1.7	Ultra Galactica	0.8 / 2.43
Position light/strobe	2.0 / 1.7	Ultra Galactica Embedded	0.56 / 2.1
Position light/strobe	2.0 / 1.7	Crystal Conforma	0.45 / 2.6
Tail position light	2.0	PosiStrobe Titania	0.21 / 1.84
Anti-collision	4.0	RedBaron XP Galactica	2.31
GE4509	7.69	Hercules Drop-In Landing	2.13
GE4626	7.69	Hercules Drop-In Taxi	2.13
GE4509	7.69	Hercules JP Landing	2.65
GE4626	7.69	Hercules JP Taxi	2.65

Table 03: Energy consumption

Note:

GE4509, GE4626 original Cessna Landing and TAXI bulbs.

1.3 Wingtip Installation Conventional Lights

1.3.1 Wingtip Installation LEFT - Fiberglass

Kit Number: CSN-01A Ultra Galactica

Kit Number: CSN-01B Ultra Galactica Embedded

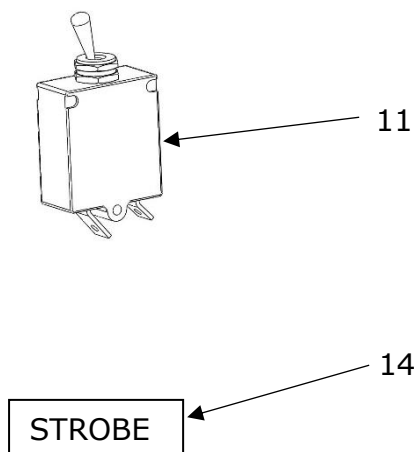
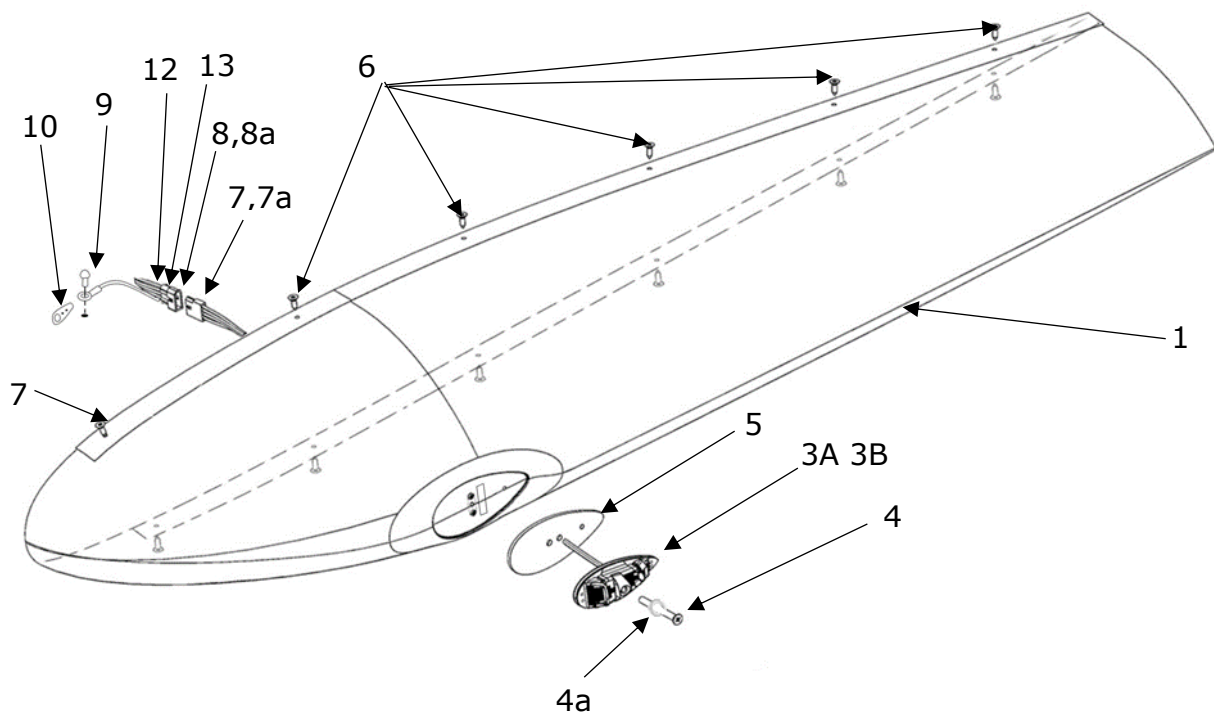


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-01A CSN-01B			
1	AVS-C220104050-A0A	Wingtip Fiberglass subassembly Left		1
3A	AVE-WPSTR-54G Mod(4)	Ultra Galactica (Red)		1
3B	AVE-WPSR-64G Mod(4)	Ultra Galactica Embedded (RED)		1
4	AVS-79840905045	Screw M5x45		1
4a	AVS-OR00480190N70-D0A	O-Ring		1
5	AVS- P001290550-A1A	Gasket		1
7	03-09-1041	4 pole Connector – Male		1
7a	02-09-2116	Pin		4
8	03-09-2041	4 pole Connector – Female		1
8a	02-09-1117	Pin		4
-----	-----	-----	-----	-----
11	CM3589-10	Breaker LDG Light		1
12		AWG20 Wire – Yellow - Strobe		1
13		AWG22 Wire – Blue - Synchro		1
14		STROBE Sticker		1
-----	-----	-----	-----	-----
6	AN526C832R9	ORIGINAL PARTS		
9	AN515-8R6	Original fasteners		12
10	S1862-1	Screw		1
		Nutplate		1

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#7) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-WPS-54G-IM or AVE-WPS-64G-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#13) and synchronization (#14) function and circuit breaker (#12) and STROBE sticker (#16) are to be installed according to §1.10.

1.3.2 Wingtip Installation LEFT - Carbon

Kit Number: CSN-02A Ultra Galactica

Kit Number: CSN-02B Ultra Galactica Embedded

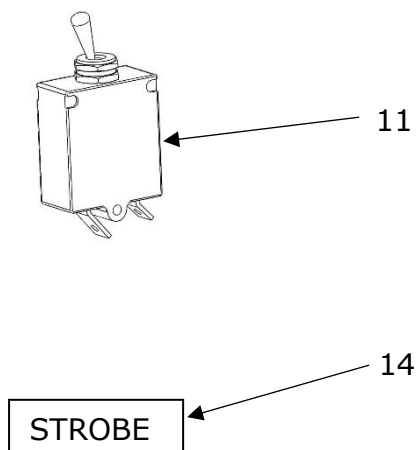
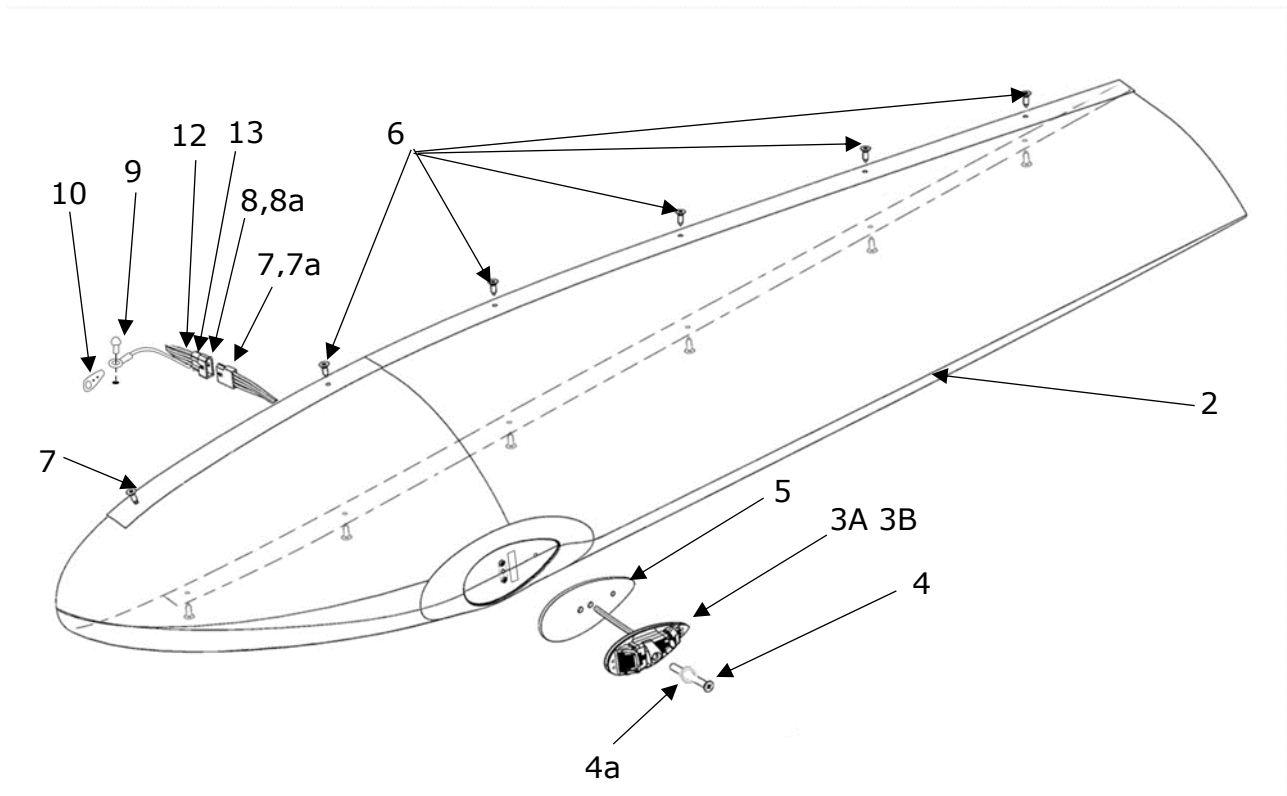


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-02A CSN-02B			
2	AVS-C120104060-A0A	Wingtip Carbon subassembly Left		1
3A	AVE-WPSTR-54G Mod(4)	Ultra Galactica (Red)		1
3B	AVE-WPSR-64G Mod(4)	Ultra Galactica Embedded (RED)		1
4	AVS-79840905045	Screw M5x45		1
4a	AVS-OR00480190N70-D0A	O-Ring		1
5	AVS- P001290550-A1A	Gasket		1
7	03-09-1041	4 pole Connector – Male		1
7a	02-09-2116	Pin		4
8	03-09-2041	4 pole Connector – Female		1
8a	02-09-1117	Pin		4
-----	-----	-----	-----	-----
11	CM3589-10	Breaker LDG Light		1
12		AWG20 Wire – Yellow - Strobe		1
13		AWG22 Wire – Blue - Synchro		1
14		STROBE Sticker		1
-----	-----	-----	-----	-----
6	AN526C832R9	ORIGINAL PARTS		
9	AN515-8R6	Original fasteners		12
10	S1862-1	Screw		1
		Nutplate		1

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#7) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-WPS-54G-IM or AVE-WPS-64G-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#13) and synchronization (#14) function and circuit breaker (#12) and STROBE sticker (#16) are to be installed according to §1.10.

1.3.3 Wingtip Installation RIGHT - Fiberglass

Kit Number: CSN-01A Ultra Galactica

Kit Number: CSN-01B Ultra Galactica Embedded

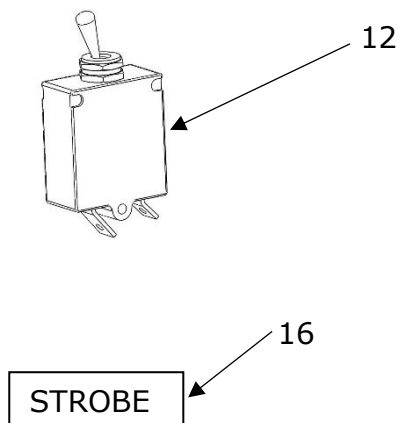
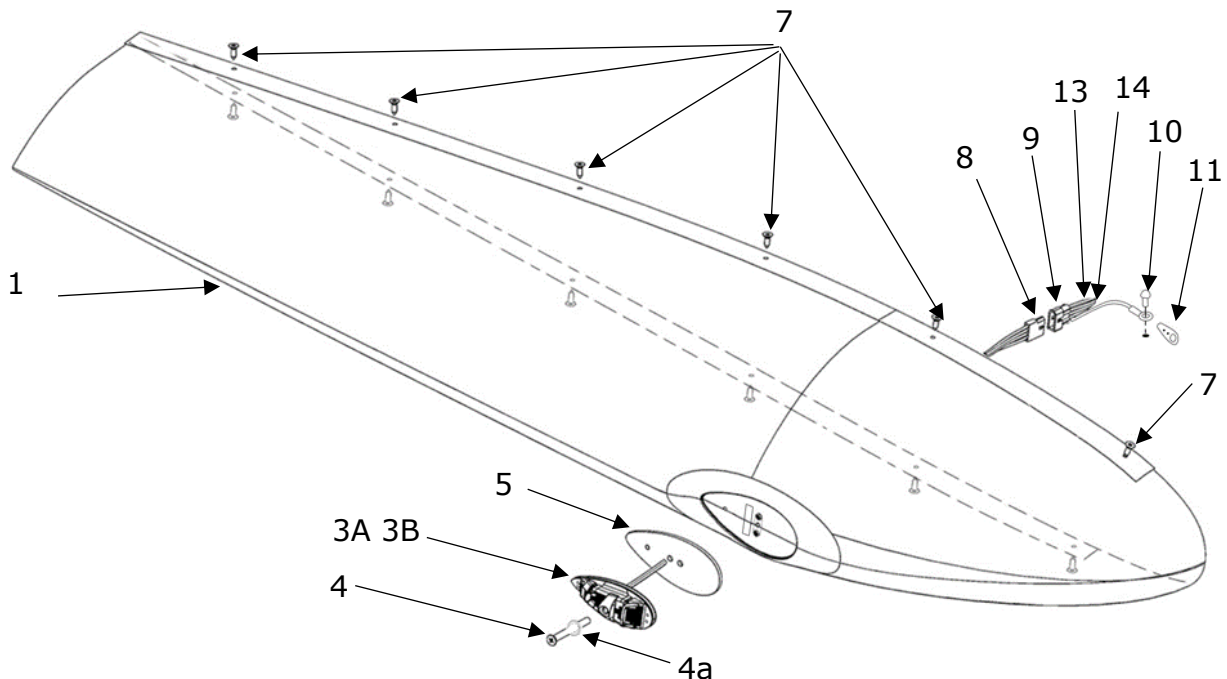


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-01A CSN-01B			
1	AVS-C220104051-A0A	Wingtip Fiberglass subassembly Right		1
3A	AVE-WPSTG-54G Mod(4)	Ultra Galactica Green		1
3B	AVE-WPSG-64G Mod(4)	Ultra Galactica Embedded (GREEN)		1
4	AVS-79840905045	Screw M5x45		1
4a	AVS-OR00480190N70-D0A	O-Ring		1
5	AVS- P001290550-A1A	Gasket		1
9	03-09-1041	4 pole Connector – Male		1
9a	02-09-2116	Pin		4
8	03-09-2041	4 pole Connector – Female		1
8a	02-09-1117	Pin		4
-----	-----	-----	-----	-----
12	CM3589-10	Breaker LDG Light		1
13		AWG20 Wire – Yellow - Strobe		1
14		AWG22 Wire – Blue – Synchro		1
16		STROBE Sticker		1
-----	-----	-----	-----	-----
7	AN526C832R9	ORIGINAL PARTS		
11	S1862-1	Original fasteners		12
		Nutplat		

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#7) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-WPS-54G-IM or AVE-WPS-64G-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#14) and synchronization (#15) function and circuit breaker (#13) and STROBE sticker (#16) are to be installed according to §1.10.

1.3.4 Wingtip Installation RIGHT - Carbon

Kit Number: CSN-02A Ultra Galactica

Kit Number: CSN-02B Ultra Galactica Embedded

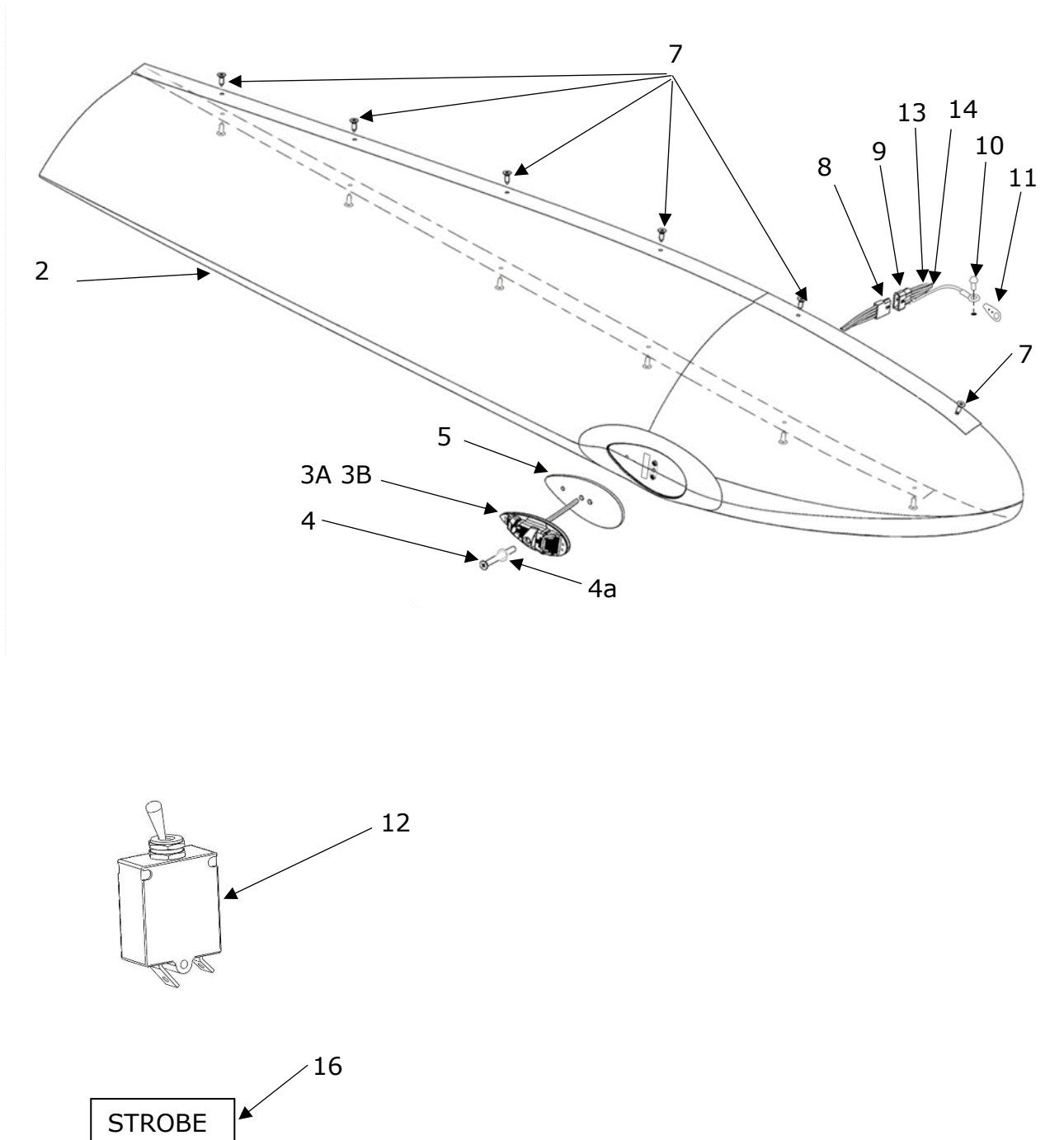


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-02A CSN-02B			
2	AVS-C120104061-A0A	Wingtip Carbon subassembly Right		1
3A	AVE-WPSTG-54G Mod(4)	Ultra Galactica Green		1
3B	AVE-WPSG-64G Mod(4)	Ultra Galactica Embedded (GREEN)		1
4	AVS-79840905045	Screw M5x45		1
4a	AVS-OR00480190N70-D0A	O-Ring		1
5	AVS- P001290550-A1A	Gasket		1
9	03-09-1041	4 pole Connector – Male		1
9a	02-09-2116	Pin		4
8	03-09-2041	4 pole Connector – Female		1
8a	02-09-1117	Pin		4
-----	-----	-----	-----	-----
12	CM3589-10	Breaker LDG Light		1
13		AWG20 Wire – Yellow - Strobe		1
14		AWG22 Wire – Blue – Synchro		1
16		STROBE Sticker		1
-----	-----	-----	-----	-----
7	AN526C832R9	ORIGINAL PARTS		
11	S1862-1	Original fasteners		12
		Nutplat		

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#7) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-WPS-54G-IM or AVE-WPS-64G-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#14) and synchronization (#15) function and circuit breaker (#13) and STROBE sticker (#16) are to be installed according to §1.10.

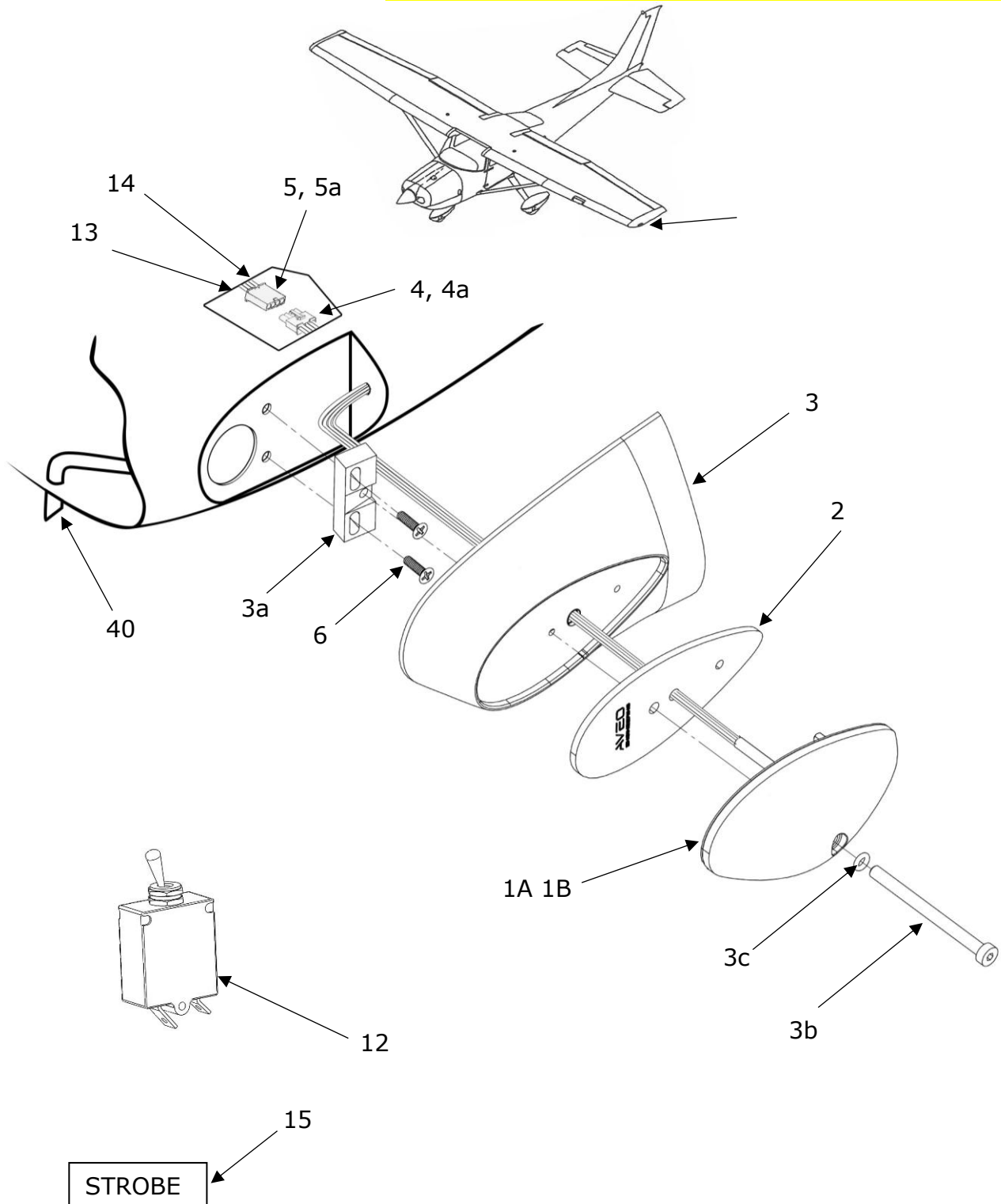
1.3.5 Wing Position / Strobe Light Installation LEFT**Kit Number : CSN-07A Ultra Galactica****Kit Number: CSN-07B Ultra Galactica Embedded**

Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-07A CSN-07B			
1A	AVE-WPSTR-54G Mod(4)	Ultra Galactica Red		1
1B	AVE-WPSR-64G Mod(4)	Ultra Galactica Embedded Red		1
2	AVS-P001290550-A1A	Gasket		1
3	AVS-C220105979-A40	Cessna Fairing w AL Adapter L		1
3a	AVS-P000105978-A2C	AL Adapter		1
3b	AVS-A7984565	Screw M5x65		1
3c	AVS-OR00480190N70-D0A	O-Ring		1
4	03-09-1041	4-Pole Connector – Male		1
4a	02-09-2116	Pin		4
5	03-09-2041	4-Pole Connector - Female		1
5a	02-09-1117	Socket		4
6	AVS-92200A150	Screw 6-32 x 5/8		2
12	CM3589-10	Breaker Light		1
13		AWG20 Wire – Yellow - Strobe		1
14		AWG22 Wire – Blue - Synchro		1
15		STROBE Sticker		1
-----	-----	-----	-----	-----
40	1221201-3 1221201-4	ORIGINAL PARTS Detector – Wing Position Light LH Detector – Wing Position Light RH		1 1

NOTES

Remove installed wingtip lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

The lights have to be connected as described in manual AVE-WPS-54G-IM or AVE-WPS-64G-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.9. Additional cables for strobe (#13) and synchronization (#14) function and circuit breaker (#12) and STROBE sticker (#15) have to be installed according to §1.9.

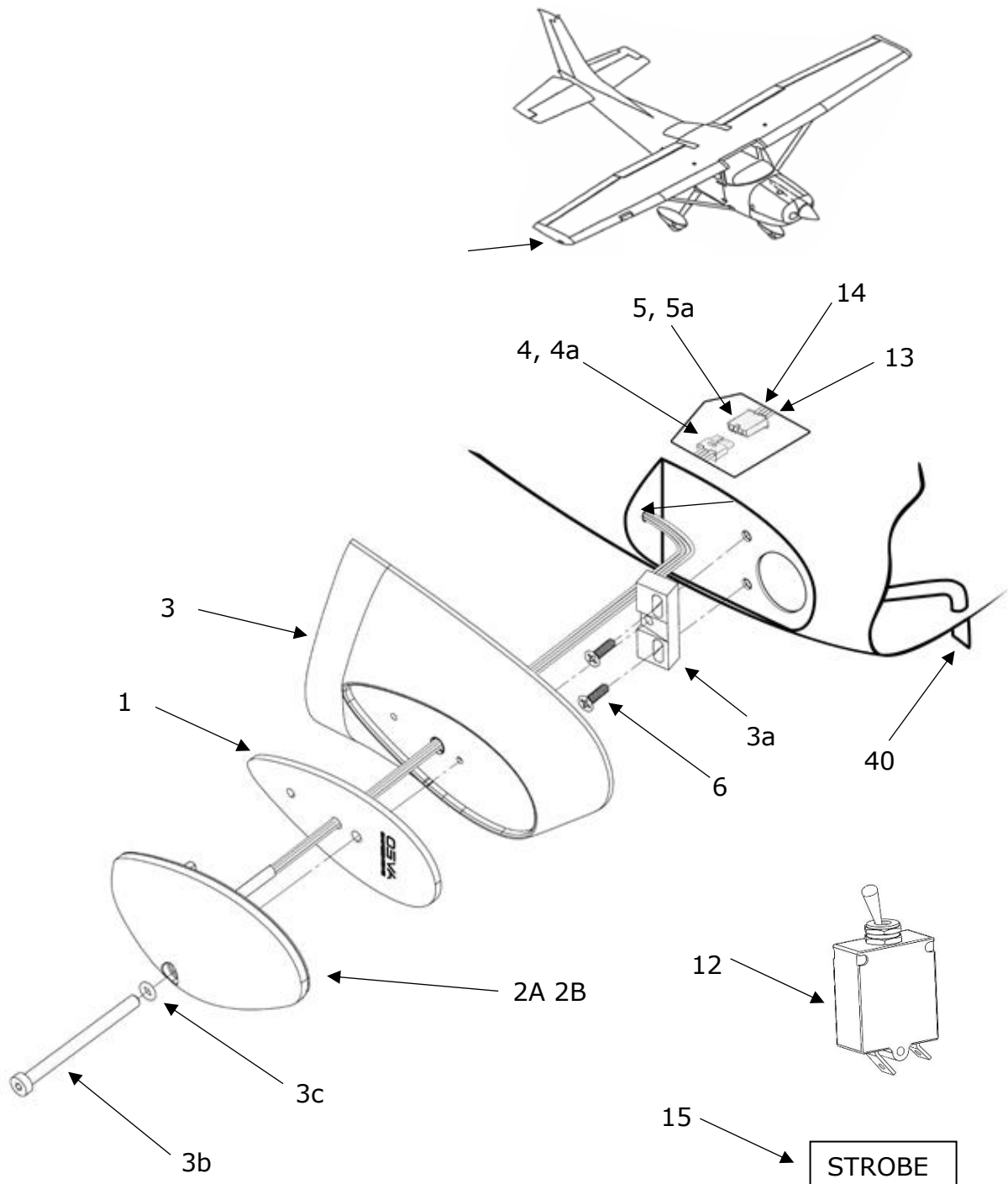
1.3.6 Wing Position / Strobe Light Installation RIGHT**Kit Number : CSN-07A Ultra Galactica****Kit Number: CSN-07B Ultra Galactica Embedded**

Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-07A CSN-07B			
2A	AVE-WPSTG-54G Mod(4)	Ultra Galactica Green		1
2B	AVE-WPSG-64G Mod(4)	Ultra Galactica Embedded Green		1
1	AVS-P001290550-A1A	Gasket		1
3	AVS-C220105972-A40	Cessna Fairing w. AL Adapter R		1
3a	AVS-P000105978-A2C	AL Adapter		1
3b	AVS-A7984565	Screw M5x65		1
3c	AVS-OR00480190N70-D0A	O-Ring		1
4	03-09-1041	4-Pole Connector – Male		1
4a	02-09-2116	Pin		4
5	03-09-2041	4-Pole Connector - Female		1
5a	02-09-1117	Socket		4
6	AVS-92200A150	Screw 6-32 x 5/8		2
12	CM3589-10	Breaker Light		1
13		AWG20 Wire – Yellow - Strobe		1
14		AWG22 Wire – Blue - Synchro		1
15		STROBE Sticker		1
-----	-----	-----	-----	-----
40	1221201-3 1221201-4	ORIGINAL PARTS Detector – Wing Position Light LH Detector – Wing Position Light RH		1 1
NOTES Remove installed wingtip lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation. The lights have to be connected as described in manual AVE-WPS-54G-IM or AVE-WPS-64G-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed. If the aircraft is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.9. Additional cables for strobe (#13) and synchronization (#14) function and circuit breaker (#12) and STROBE sticker (#15) have to be installed according to §1.9.				

1.4 Wingtip Installation Conforma Solution

1.4.1 Wingtip Installation LEFT - Fiberglass

Kit Number: CSN-03

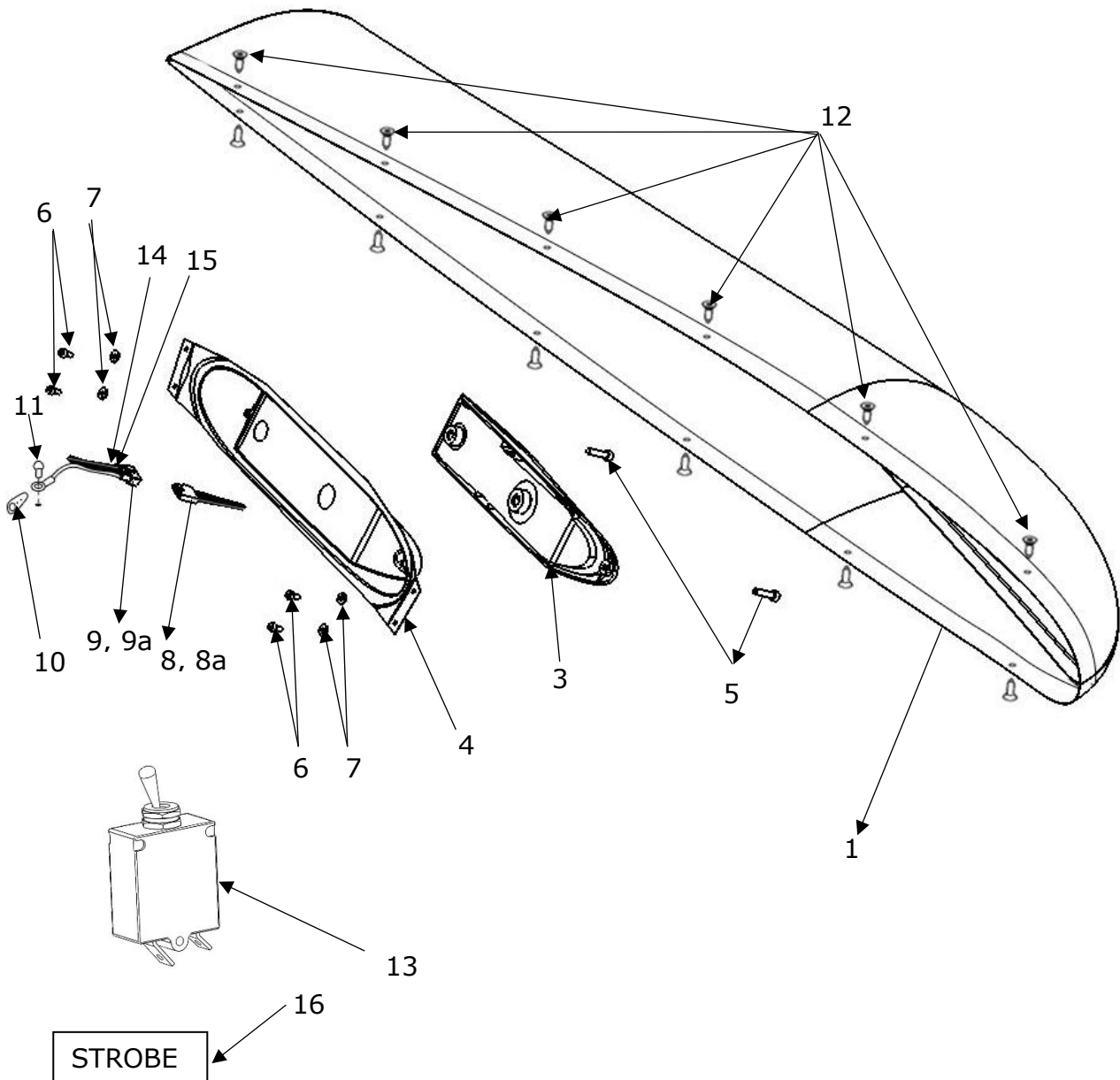


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-03			
1	AVS-C220104652-A40	Wingtip Fiberglass subassembly Left		1
3	AVE-CCPSR-D01	Drooped Crystal Conforma Red		1
4	AVS-C210104665-A40	Cessna Conforma Light Module Holder L		1
5	AVS- SCM05040LHS-D0A	Screw		2
6	AVS- SCM04008HAS-D0A	Screw		4
7	AVS- WAM0432DFS-D0A	Washer		4
8	03-09-1031	3 pole Connector – Male		1
8a	02-09-2116	Pin		4
9	03-09-2031	3 pole Connector – Female		1
9a	02-09-1117	Pin		4

13	CM3589-10	Breaker LDG Light		1
14		AWG20 Wire – Yellow - Strobe		1
15		AWG22 Wire – Blue - Synchro		1
16		STROBE Sticker		1

12	AN526C832R9	ORIGINAL PARTS		12
10	S1862-1	Original fasteners		
11	AN515-8R6	Nutplate Screw		

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#12) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-CCPS-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#14) and synchronization (#15) function and circuit breaker (#13) and STROBE sticker (#16) are to be installed according to §1.10.

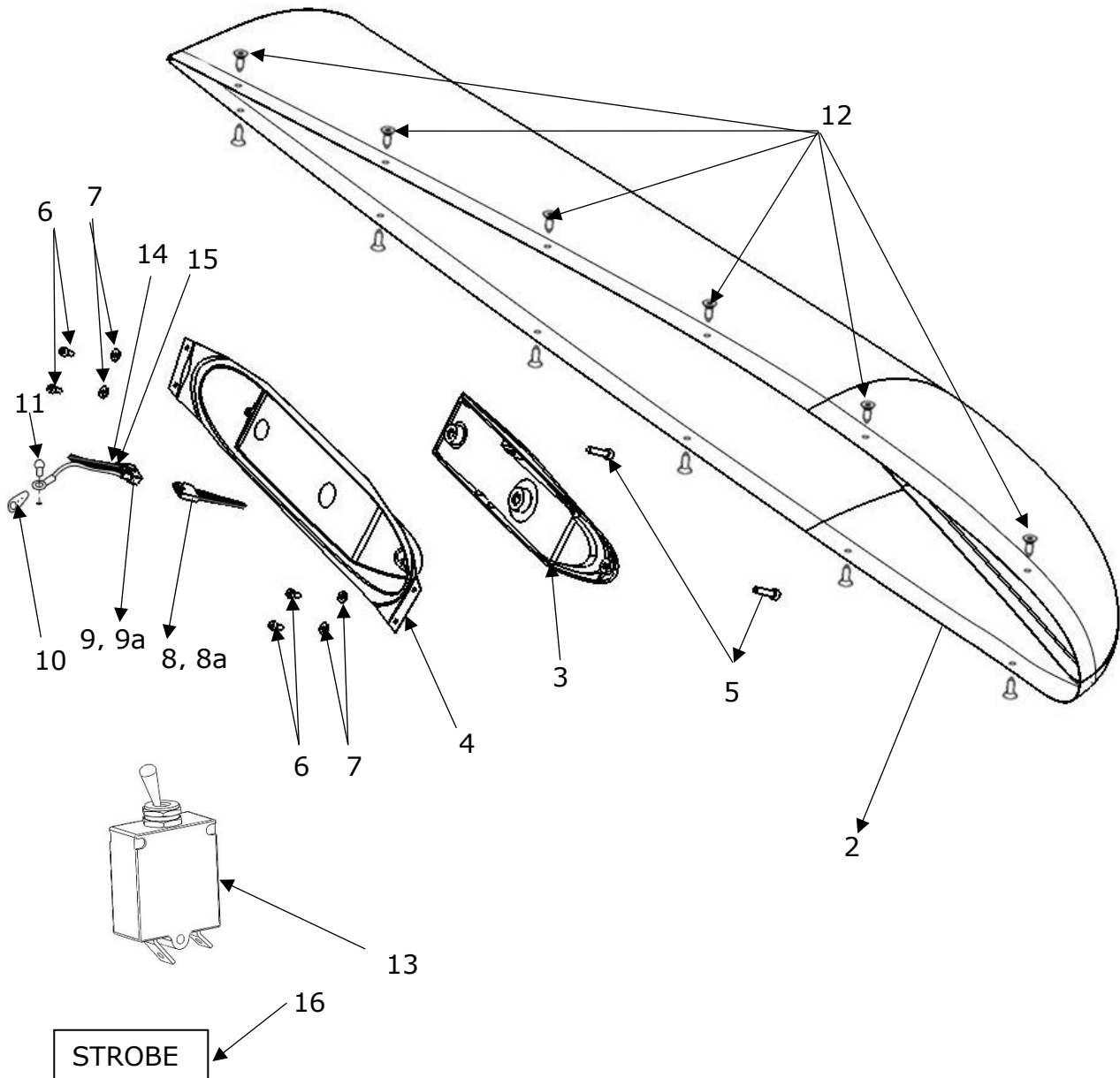
1.4.2 Wingtip Installation LEFT - Carbon**Kit Number: CSN-04**

Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-04			
2	AVS-C120104654-A40	Wingtip Carbon subassembly Left		1
3	AVE-CCPSR-D01	Drooped Crystal Conforma Red		1
4	AVS-C210104665-A40	Cessna Conforma Light Module Holder L		2
5	AVS- SCM05040LHS-D0A	Screw		4
6	AVS- SCM04008HAS-D0A	Screw		4
7	AVS- WAM0432DFS-D0A	Washer		1
8	03-09-1031	3 pole Connector – Male		4
8a	02-09-2116	Pin		1
9	03-09-2031	3 pole Connector – Female		4
9a	02-09-1117	Pin		
-----	-----	-----	-----	-----
13	CM3589-10	Breaker LDG Light		1
14		AWG20 Wire – Yellow - Strobe		1
15		AWG22 Wire – Blue - Synchro		1
16		STROBE Sticker		1
-----	-----	-----	-----	-----
12	AN526C832R9	ORIGINAL PARTS		12
10	S1862-1	Original fasteners		
11	AN515-8R6	Nutplate		
		Screw		

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#12) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-CCPS-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#14) and synchronization (#15) function and circuit breaker (#13) and STROBE sticker (#16) are to be installed according to §1.10.

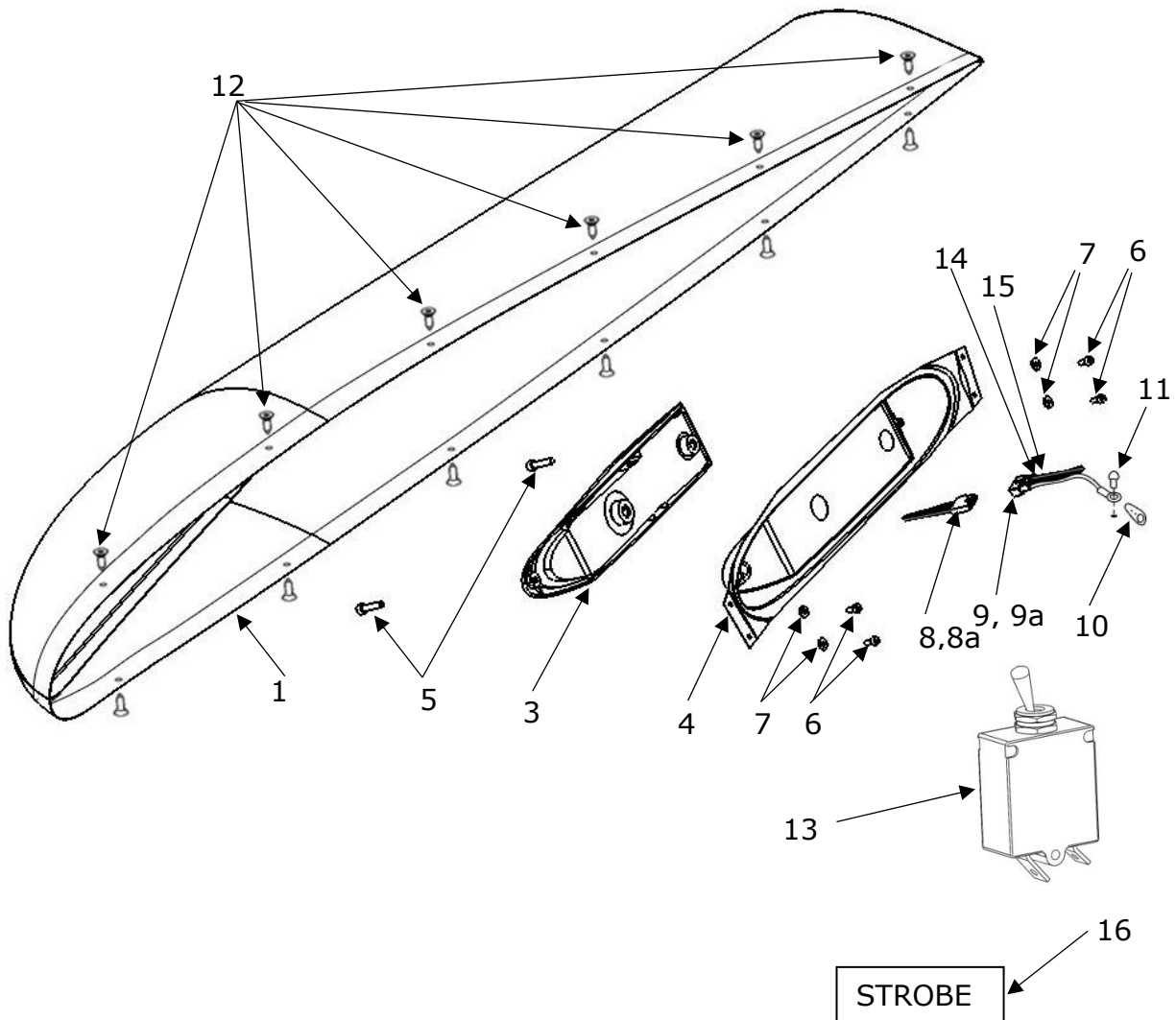
1.4.3 Wingtip Installation RIGHT - Fiberglass**Kit Number: CSN-03**

Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-03			
1	AVS-C220104653-A00	Wingtip Fiberglass subassembly Right		1
3	AVE-CCPSG-D01	Drooped Crystal Conforma - Green		1
4	AVS-C210104664-A00	Cessna Conforma Light Module Holder R		1
5	AVS- SCM05040LHS-D0A	Screw		2
6	AVS- SCM04008HAS-D0A	Screw		4
7	AVS- WAM0432DFS-D0A	Washer		4
8	03-09-1031	3 pole Connector – Male		1
8a	02-09-2116	Pin		4
9	03-09-2031	3 pole Connector – Female		1
9a	02-09-1117	Pin		4
				1
-----	-----	-----	-----	-----
13	CM3589-10	Breaker LDG Light		1
14		AWG20 Wire – Yellow - Strobe		1
15		AWG22 Wire – Blue - Synchro		1
16		STROBE Sticker		1
-----	-----	-----	-----	-----
12	AN526C832R9	ORIGINAL PARTS		12
10	S1862-1	Original fasteners		
11	AN515-8R6	Nutplate		
		Screw		

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#12) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-CCPS-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#14) and synchronization (#15) function and circuit breaker (#13) and STROBE sticker (#16) are to be installed according to §1.10.

Kit Number: CSN-04

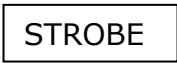


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-04			
2	AVS-C120104655-A00	Wingtip Carbon subassembly Right		1
3	AVE-CCPSG-D01	Drooped Crystal Conforma - Green		1
4	AVS-C210104664-A00	Cessna Conforma Light Module Holder R		1
5	AVS- SCM05040LHS-D0A	Screw		2
6	AVS- SCM04008HAS-D0A	Screw		4
7	AVS- WAM0432DFS-D0A	Washer		4
8	03-09-1031	3 pole Connector – Male		1
8a	02-09-2116	Pin		4
9	03-09-2031	3 pole Connector – Female		1
9a	02-09-1117	Pin		4
				1
-----	-----	-----	-----	-----
13	CM3589-10	Breaker LDG Light		1
14		AWG20 Wire – Yellow - Strobe		1
15		AWG22 Wire – Blue - Synchro		1
16		STROBE Sticker		1
-----	-----	-----	-----	-----
12	AN526C832R9	ORIGINAL PARTS		12
10	S1862-1	Original fasteners		
11	AN515-8R6	Nutplate		
		Screw		

NOTES

Remove installed wing tip and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

(#12) Use original fasteners to mount wingtips to the wing.

The lights are to be connected as described in manual AVE-CCPS-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10. Additional cables for strobe (#14) and synchronization (#15) function and circuit breaker (#13) and STROBE sticker (#16) are to be installed according to §1.10.

1.5 Navigation Lights Installation – Tail Position

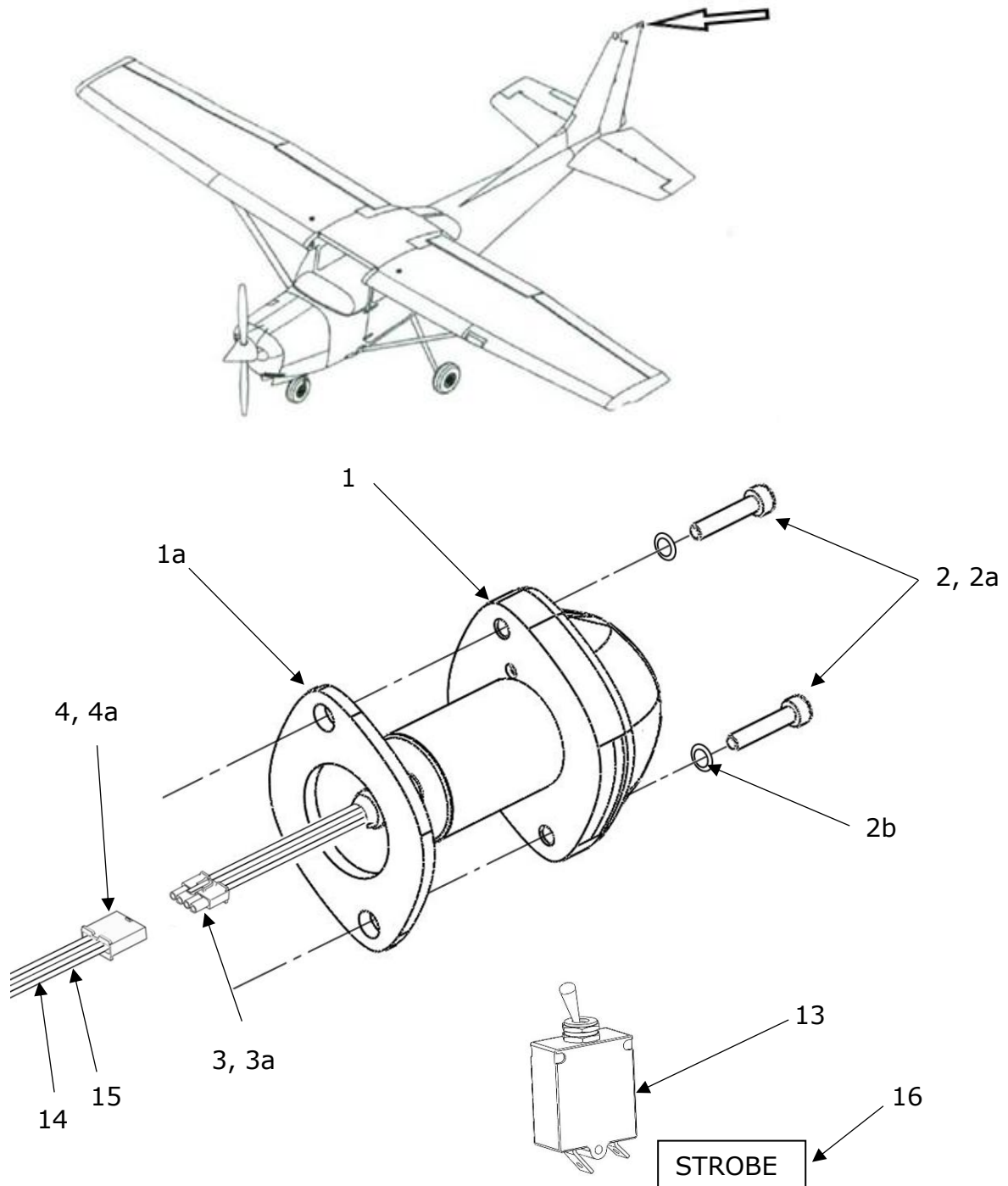
Kit Number: CSN-05

Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-05			
1	AVE-PSPSYW-T01	PosiStrobe Titania		1
1a	AVS-P000105638-A10	Gasket		1
2	AVS-92196A150	Screw #6-32 Thread, 5/8" SHCS		2
2a	AVS-92200A111	Screw #4-40 Thread, 5/8" SHCS		2
2b	AVS-90295A359	Flat Washer – Nylon		2
3	03-09-1041	4-Pole Connector – Male		1
3a	02-09-2116	Pin		4
4	03-09-2041	4-Pole Connector - Female		1
4a	02-09-1117	Socket		4
13	CM3589-10	Breaker Light		1
14		AWG20 Wire – Yellow - Strobe		2
15		AWG22 Wire – Blue - Synchro		2
16		STROBE Sticker		1

NOTES

Remove installed wingtip lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

The lights have to be connected as described in manual AVE-PSPSYW-IM. If the strobe function is not used the blue and the yellow wires described in the component installation manual are not used and therefore have to be capped and stowed.

If the aircraft is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.9. Additional cables for strobe (#13) and synchronization (#14) function and circuit breaker (#12) and STROBE sticker (#15) have to be installed according to §1.9.

1.6 Anti-collision Light Installation

Kit Number: CSN-06

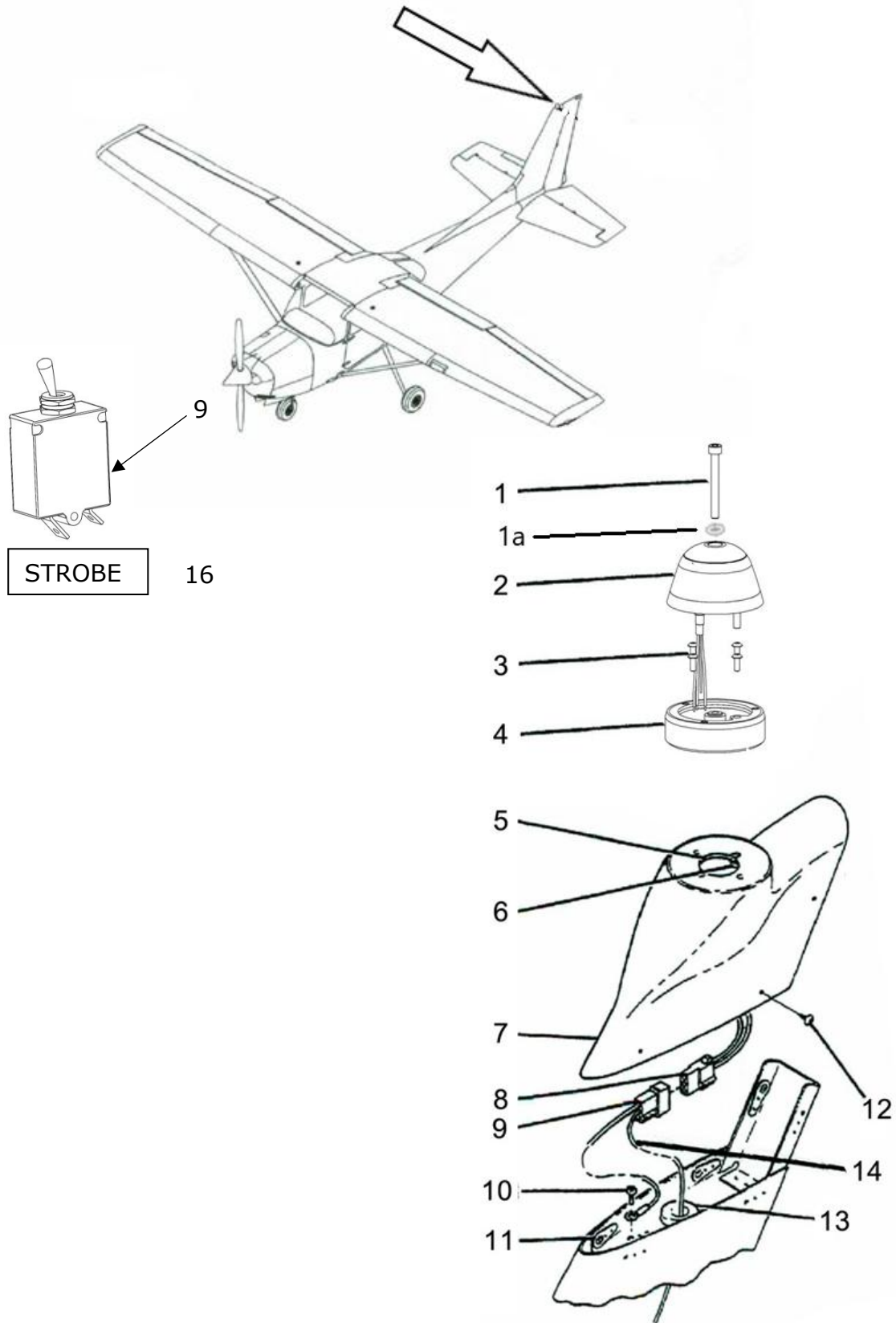


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-06			
1	AVS-79840905050	Screw 5x50		1
1a	AVS-170299005	Flat Washer – Nylon		1
2	AVE-RBXPR-001	RedBaron XP Galactica		1
3	AN515-8R8 (MS35206-245)	Original Fasteners		4
4	AVE-LARBUHS-01B	RedBaron Legacy Light Replacement Adapter		1
8	03-09-1031	3 pole Connector – Male		1
	02-09-2116	Pin		3
9	03-09-2031	3 pole Connector – Female		1
	02-09-1117	Pin		3
-----	-----	-----	-----	-----
		ORIGINAL PARTS		
5	0431017-2	Plate assembly mounting		1
6	NAS680A08	Nutplate		1
7	0431017-1	Tip Assembly- flashing beacon		1
	0431017-3	Tip Assembly- flashing beacon		1
10	AN515-8R6	Screw		1
11	S1862-1	Nutplate		6
12	S1021Z6-4	Screw		6
13	MS35489-13	Gromet		1
	MS35489-4	Gromet		1
-----	-----	-----	-----	-----
14		AWG22 Wire – Blue – Synchro		1
-----	-----	-----	-----	-----

NOTES

Remove installed anticollision light and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

The lights are to be connected as described in manuals AVE-RBXP-001-IM depending on which option is to be installed.

If the aircraft (Cessna 150 only) is not already equipped with the strobe function this function can be installed through this change by following the instructions in §1.10.

Option A: Additional cable for synchronization function (#14) is to be installed according to §1.10.

Option B: Additional cable for synchronization function (#14) is to be installed according to §1.10. Used drawing number 0104069 Fitting Modification for bottom light installation.

1.7 Landing / Taxi Light Installation 150, 172

Kit Number: CSN-09 Option A

Kit Number: CSN-10 Option B

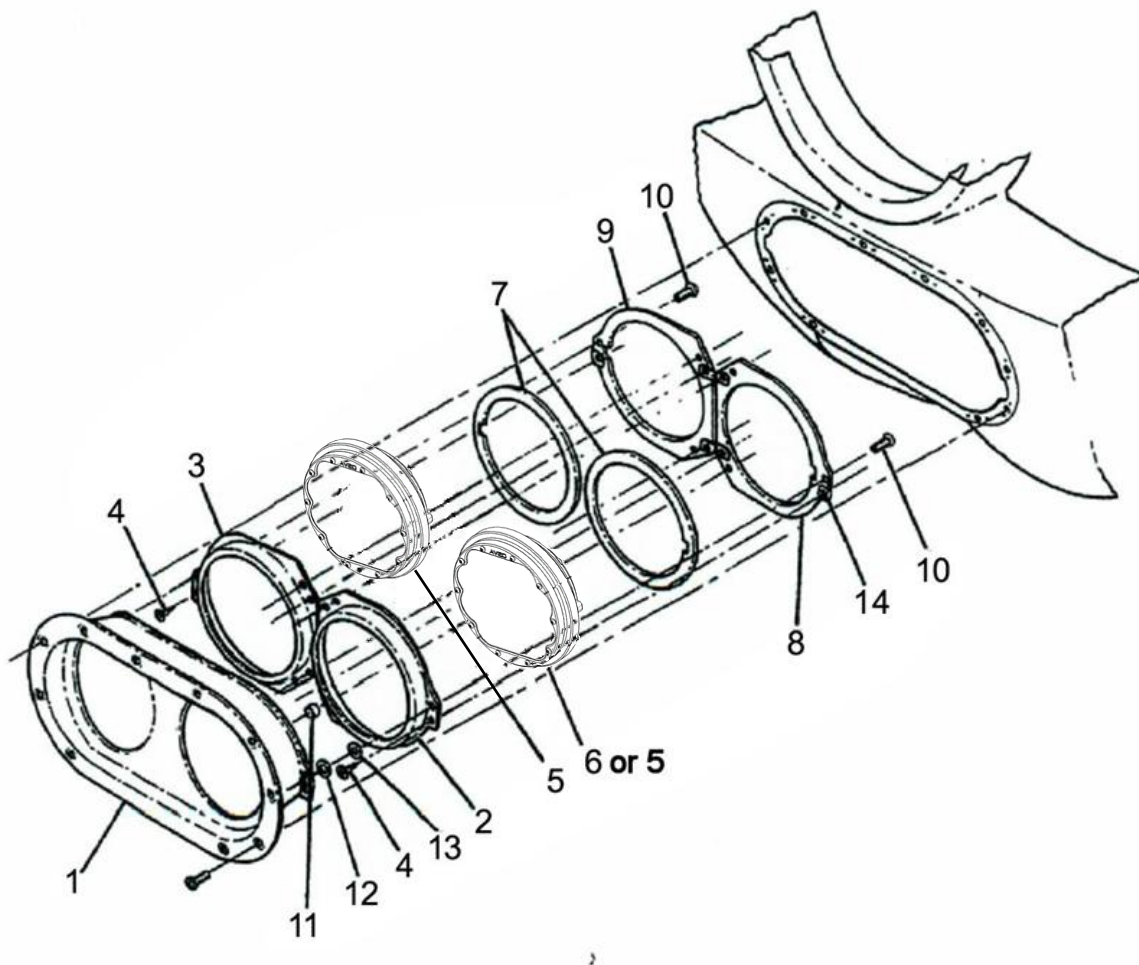


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
CSN-09 Option A				
5	AVE-H30TATSNT-T0A Mod(1)	Hercules Drop-In Landing		2

1		ORIGINAL PARTS		
2	1752118-1	Support assembly – landing light		1
3	1752118-2	Bracket LH		1
4	S1021Z6-8	Bracket RH		1
7	0752646-1	Screw		3
8	0752646-1	Gasket		AR
9	1752118-3	Plate assembly LH		1
10	1752118-4	Plate assembly RH		1
11	AN515 8R6	Screw		3
12	NAS43DD3-12	Spacer -----LH only		1
13	AN960 -10	Washer-----LH only		AR
14	AN960-10L	Washer-----LH only		AR
	NAS448-1-3	NUT		3

CSN-10 Option B				
5	AVE-H30TATSNT-T0A Mod(1)	Hercules Drop-In Landing		1
6	AVE-H30TATSNT-T0A Mod(1)	Hercules Drop-In Taxi		1

1		ORIGINAL PARTS		
2	1752118-1	Support assembly – landing light		1
3	1752118-2	Bracket LH		1
4	S1021Z6-8	Bracket RH		1
7	0752646-1	Screw		3
8	0752646-1	Gasket		AR
9	1752118-3	Plate assembly LH		1
10	1752118-4	Plate assembly RH		1
11	AN515 8R6	Screw		3
12	NAS43DD3-12	Spacer -----LH only		1
13	AN960 -10	Washer-----LH only		AR
14	AN960-10L	Washer-----LH only		AR
	NAS448-1-3	NUT		3

NOTES

It is to be checked by the installer before the modification whether Option A or B is installed on the aircraft. For a change in configuration e.g. 2 landing lights into 1 landing and 1 taxi light requires an additional EASA change.

Remove installed landing / taxi lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

Remove existing connector and replace as indicated. Verify polarity of wires before connection (ref. to AVE-H30-001-IM).

Kit Number: CSN-12 option C

Kit Number: CSN-13 option D

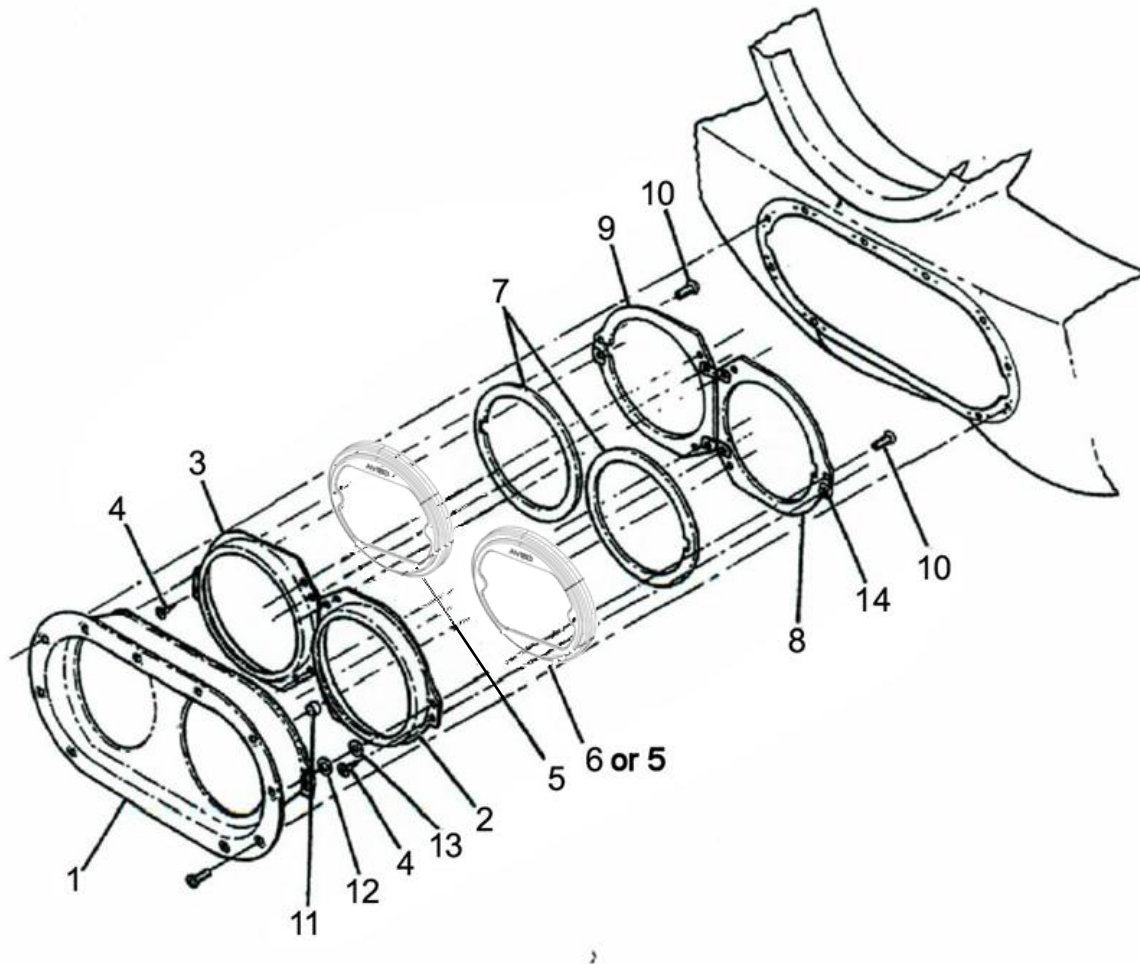


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-12 Option A			
5	AVE-HJPDOLW-DS3	Hercules JP Landing		2

1		ORIGINAL PARTS		
2	1752118-1	Support assembly – landing light		1
3	1752118-2	Bracket LH		1
4	S1021Z6-8	Bracket RH		1
7	0752646-1	Screw		3
8	0752646-1	Gasket		AR
9	1752118-3	Plate assembly LH		1
10	1752118-4	Plate assembly RH		1
11	AN515 8R6	Screw		3
12	NAS43DD3-12	Spacer -----LH only		1
13	AN960 -10	Washer-----LH only		AR
14	AN960-10L	Washer-----LH only		AR
	NAS448-1-3	NUT		3

	CSN-13 Option B			
5	AVE-HJPDOLW-DS3	Hercules JP Landing		1
6	AVE-HJPDOTW-DS3	Hercules JP Taxi		1

1		ORIGINAL PARTS		
2	1752118-1	Support assembly – landing light		1
3	1752118-2	Bracket LH		1
4	1752118-2	Bracket RH		1
7	S1021Z6-8	Screw		3
8	0752646-1	Gasket		AR
9	1752118-3	Plate assembly LH		1
10	1752118-4	Plate assembly RH		1
11	AN515 8R6	Screw		3
12	NAS43DD3-12	Spacer -----LH only		1
13	AN960 -10	Washer-----LH only		AR
14	AN960-10L	Washer-----LH only		AR
	NAS448-1-3	NUT		3

NOTES

It is to be checked by the installer before the modification whether Option A or B is installed on the aircraft. For a change in configuration e.g. 2 landing lights into 1 landing and 1 taxi light requires an additional EASA change.

Remove installed landing / taxi lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

Remove existing connector and replace as indicated. Verify polarity of wires before connection (ref. to AVE-HJPDO-IM).

1.8 Landing Light Installation 150, 172

Kit Number: CSN-08 option A

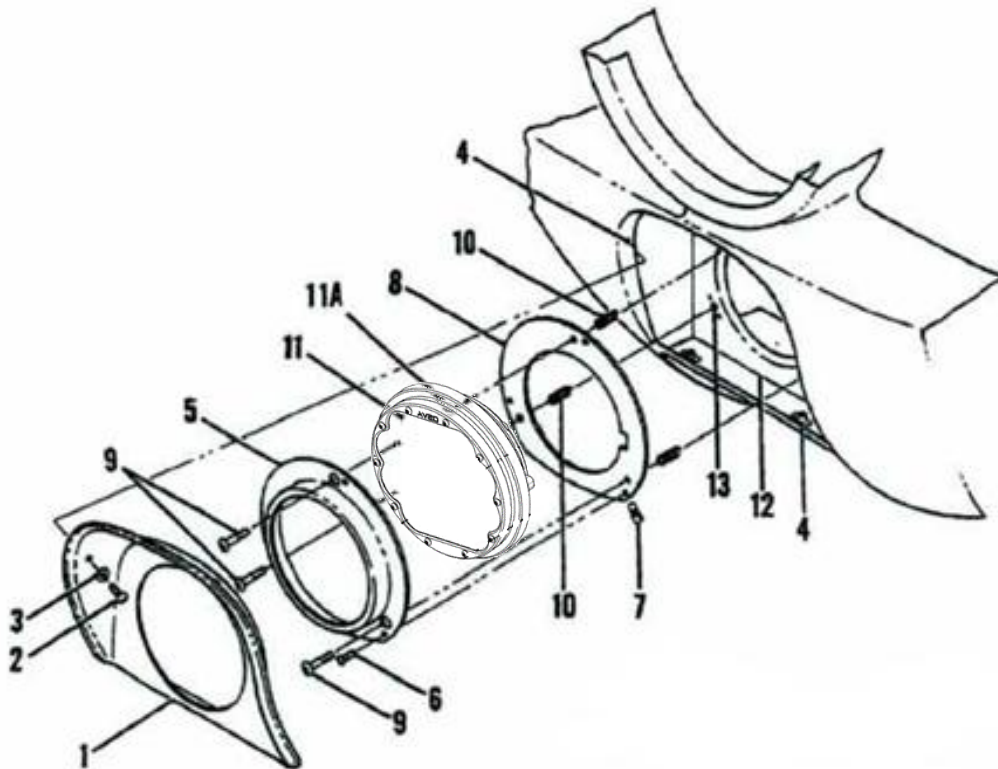


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-08	150&150A, 172 Landing light		
11	AVE-H30TATSNL-T0A Mod(1)	Hercules Drop-In Landing		1
-----	-----	-----	-----	-----
1	04252013-2	ORIGINAL PARTS Cower –Cowl Light		1
2	AN515-8R6	Screw		6
3	AN960-8L	Washer		6
4	NAS680A08	Nutplate		6
5	0452015-2	Bracket		1
6	S1021Z6-8	Screw		3
7	NAS488-1-3	NUT		3
8	0452015-7	Plate		1
9	AN515-8R18	Screw		3
10	0450277-11	Spring		3
12	0452014-1	Bracket assembly – landing light support		1
13	NAS680A08	Nutplate		3
NOTES Remove installed landing lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation. Remove existing connector and replace as indicated. Verify polarity of wires before connection (ref. to AVE-H30-001-IM).				

Kit Number: CSN-11 option B

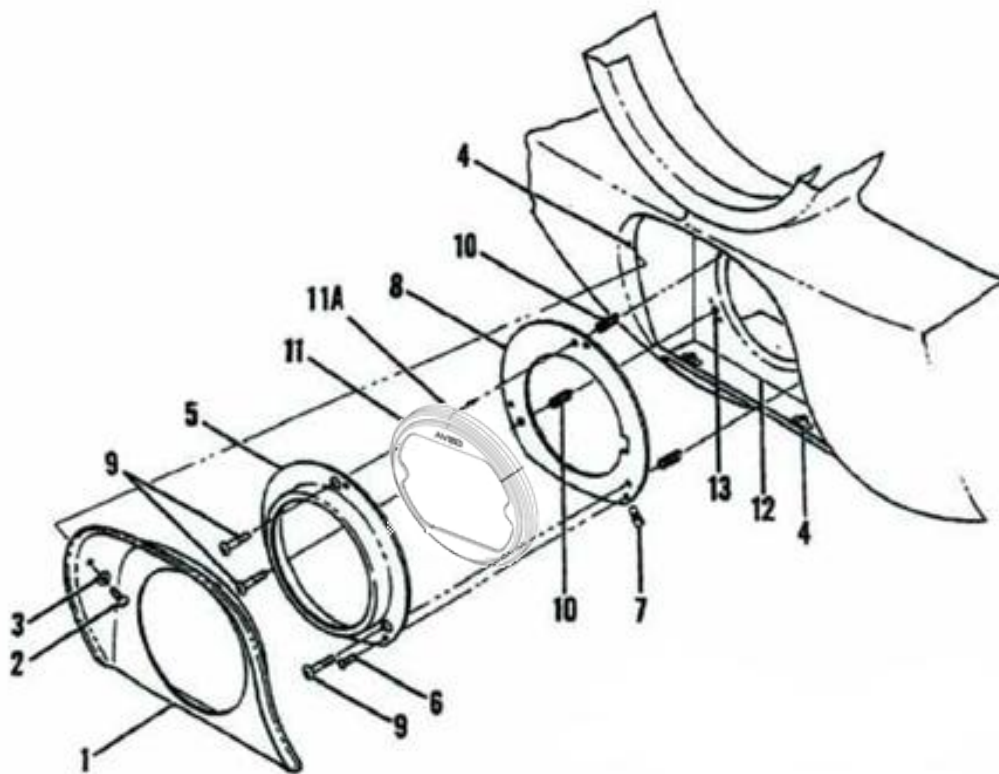
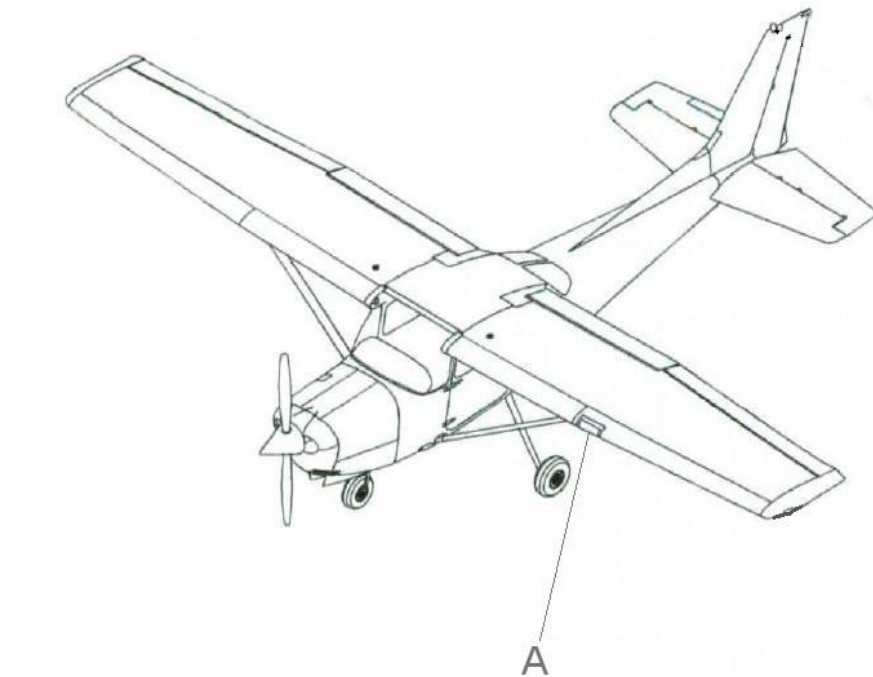


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
	CSN-11	150&150A, 172 Landing light		
11	AVE-HJPDOLW-DS3	Hercules JP Landing		1
-----	-----	-----	-----	-----
1	04252013-2	ORIGINAL PARTS Cower –Cowl Light		1
2	AN515-8R6	Screw		6
3	AN960-8L	Washer		6
4	NAS680A08	Nutplate		6
5	0452015-2	Bracket		1
6	S1021Z6-8	Screw		3
7	NAS488-1-3	NUT		3
8	0452015-7	Plate		1
9	AN515-8R18	Screw		3
10	0450277-11	Spring		3
12	0452014-1	Bracket assembly – landing light support		1
13	NAS680A08	Nutplate		3
NOTES Remove installed landing lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation. Remove existing connector and replace as indicated. Verify polarity of wires before connection (ref. to AVE-HJPDO-IM).				

1.9 Landing / Taxi Light Installation 150, 172

Kit Number: CSN-14 option A

Kit Number: CSN-15 option B



Detail A

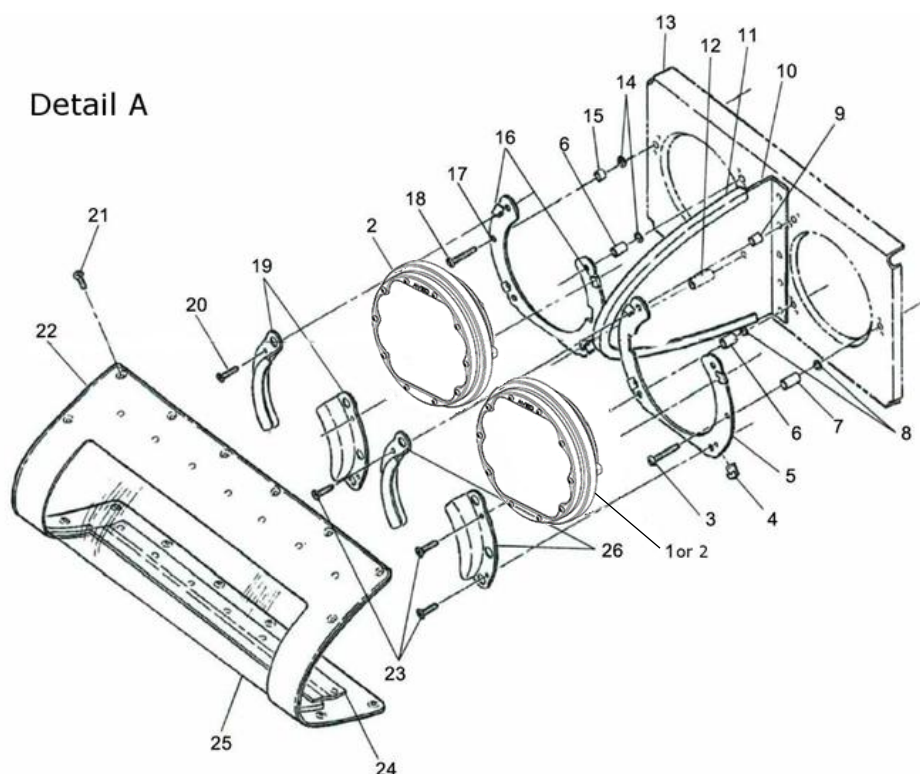


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
1,2	CSN-14 AVE-H30TATSNL-T0A Mod(1)	Option A Hercules Drop-In Landing		2
3	AN520 -10R18	ORIGINAL PARTS Screw		6
4	S4216-1	Nut		4
5	1221059	Plate		1
6	NAS43DD3-36FC	Spacer		2
7	NAS43DD3-44FC	Spacer		1
8	NAS1149F0363P	Washer		AR
9	NAS43dd3-24FC	Spacer		1
10		Baffle assembly refer to 57-40-00fig.02		RF
11	0522116-1	Finish Channel		1
12	NAS43DD3-48FC	Spacer		1
13		Bracket assembly refer to 57-40-00 fig.02		RF
14	NAS1149F0363P	Washer		AR
15	NAS42DD3-14FC	Spacer		1
16	S4216-1	Nut		4
17	1221059-6	Plate		1
18	AN520-10R18	Screw		6
19	1221059-5	Bracket		1
20	S1021Z6-6	Screw		1
21	MS24693-S48	Screw		16
22	AN520-10R18	Screw		6
23	S1021Z6-8	Screw		4

24	NAS1149F0363P	Washer	AR
25	0522113-2	Lens assembly	01
26	C7358-014	Ring alt C7358-014-27	NP
	CSN-15	Option B	
1	AVE-H30TATSNT-T0A Mod(1)	Hercules Drop-In Taxi	1
2	AVE-H30TATSNT-T0A Mod(1)	Hercules Drop-In Landing	1
		ORIGINAL PARTS	
3	AN520 -10R18	Screw	6
4	S4216-1	Nut	4
5	1221059	Plate	1
6	NAS43DD3-36FC	Spacer	2
7	NAS43DD3-44FC	Spacer	1
8	NAS1149F0363P	Washer	AR
9	NAS43dd3-24FC	Spacer	1
10		Baffle assembly refer to 57-40-00fig.02	RF
11	0522116-1	Finish Channel	1
12	NAS43DD3-48FC	Spacer	1
13		Bracket assembly refer to 57-40-00 fig.02	RF
14	NAS1149F0363P	Washer	AR
15	NAS42DD3-14FC	Spacer	1
16	S4216-1	Nut	4
17	1221059-6	Plate	1
18	AN520-10R18	Screw	6
19	1221059-5	Bracket	1
20	S1021Z6-6	Screw	1
21	MS24693-S48	Screw	16
22	AN520-10R18	Screw	6
23	S1021Z6-8	Screw	4
24	NAS1149F0363P	Washer	AR
25	0522113-2	Lens assembly	01
26	C7358-014	Ring alt C7358-014-27	NP

NOTES

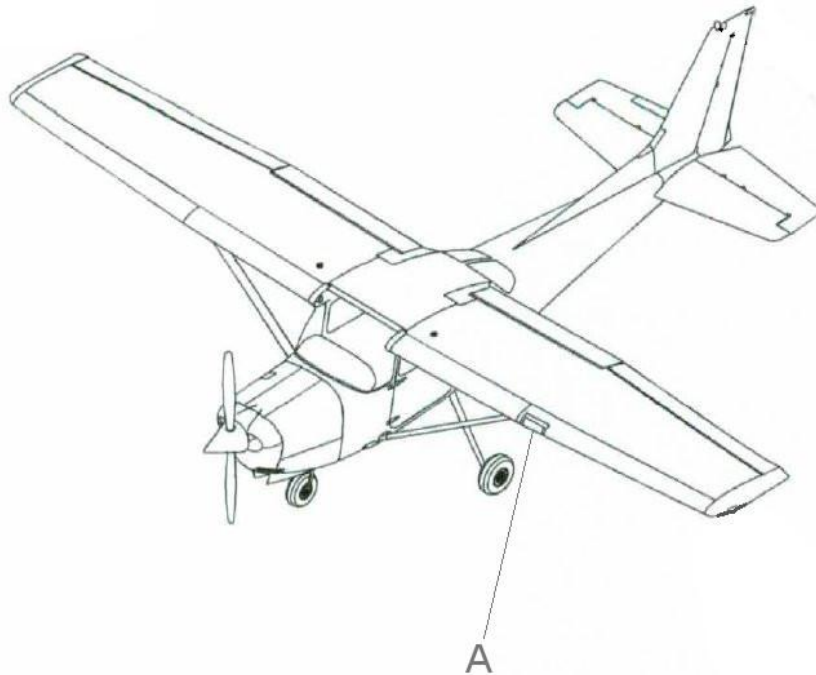
It is to be checked by the installer before the modification whether Option A or B is installed on the aircraft. For a change in configuration e.g. 2 landing lights into 1 landing and 1 taxi light requires an additional EASA change.

Remove installed landing / taxi lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

Remove existing connector and replace as indicated. Verify polarity of wires before connection (ref. to AVE-H30-001-IM).

Kit Number: CSN-16 option C

Kit Number: CSN-17 option D



Detail A

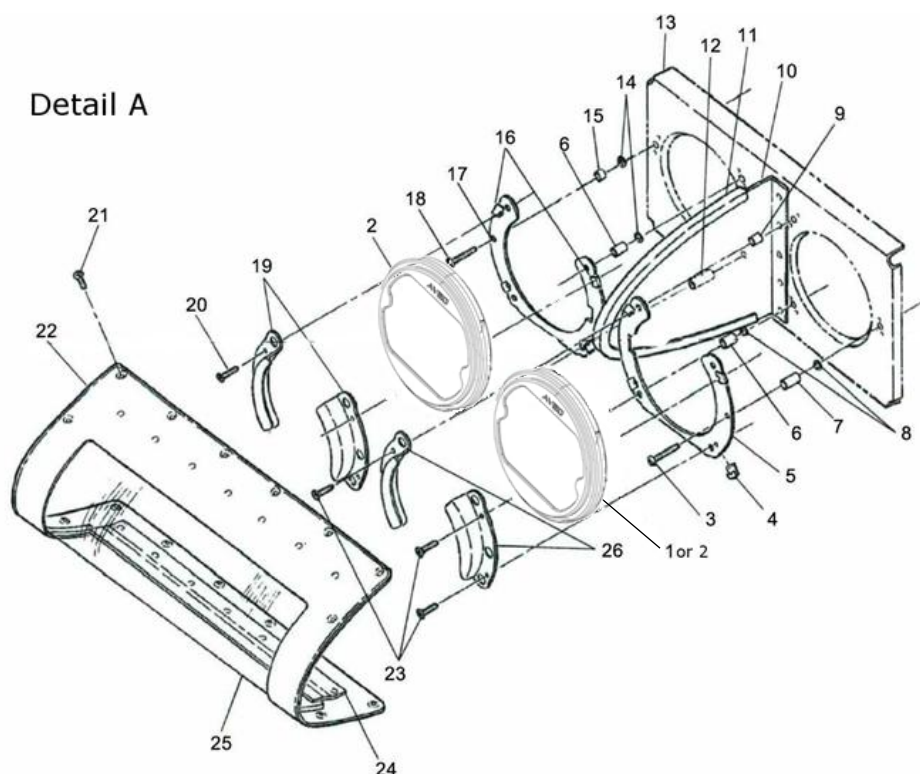


Figure and Index Number	Part Number	Description	Parts Avail.	QTY. Per assy.
1,2	CSN-16 AVE-HJPDOLW-DS3	Option A Hercules JP Landing		2
3	AN520 -10R18	ORIGINAL PARTS Screw		6
4	S4216-1	Nut		4
5	1221059	Plate		1
6	NAS43DD3-36FC	Spacer		2
7	NAS43DD3-44FC	Spacer		1
8	NAS1149F0363P	Washer		AR
9	NAS43dd3-24FC	Spacer		1
10		Baffle assembly refer to 57-40-00fig.02		RF
11	0522116-1	Finish Channel		1
12	NAS43DD3-48FC	Spacer		1
13		Bracket assembly refer to 57-40-00 fig.02		RF
14	NAS1149F0363P	Washer		AR
15	NAS42DD3-14FC	Spacer		1
16	S4216-1	Nut		4
17	1221059-6	Plate		1
18	AN520-10R18	Screw		6
19	1221059-5	Bracket		1
20	S1021Z6-6	Screw		1
21	MS24693-S48	Screw		16
22	AN520-10R18	Screw		6
23	S1021Z6-8	Screw		4

24	NAS1149F0363P	Washer	AR
25	0522113-2	Lens assembly	01
26	C7358-014	Ring alt C7358-014-27	NP
	CSN-17	Option B	
1	AVE-HJPDOTW-DS3	Hercules JP Taxi	1
2	AVE-HJPDOLW-DS3	Hercules JP Landing	1
3	AN520 -10R18	ORIGINAL PARTS	6
4	S4216-1	Screw	4
5	1221059	Nut	1
6	NAS43DD3-36FC	Plate	2
7	NAS43DD3-44FC	Spacer	1
8	NAS1149F0363P	Spacer	AR
9	NAS43dd3-24FC	Washer	1
10		Spacer	RF
11	0522116-1	Baffle assembly refer to 57-40-00fig.02	1
12	NAS43DD3-48FC	Finish Channel	1
13		Spacer	RF
14	NAS1149F0363P	Bracket assembly refer to 57-40-00 fig.02	AR
15	NAS42DD3-14FC	Washer	1
16	S4216-1	Spacer	4
17	1221059-6	Nut	1
18	AN520-10R18	Plate	6
19	1221059-5	Screw	1
20	S1021Z6-6	Bracket	1
21	MS24693-S48	Screw	16
22	AN520-10R18	Screw	6
23	S1021Z6-8	Screw	4
24	NAS1149F0363P	Washer	AR
25	0522113-2	Lens assembly	01
26	C7358-014	Ring alt C7358-014-27	NP

NOTES

It is to be checked by the installer before the modification whether Option A or B is installed on the aircraft. For a change in configuration e.g. 2 landing lights into 1 landing and 1 taxi light requires an additional EASA change.

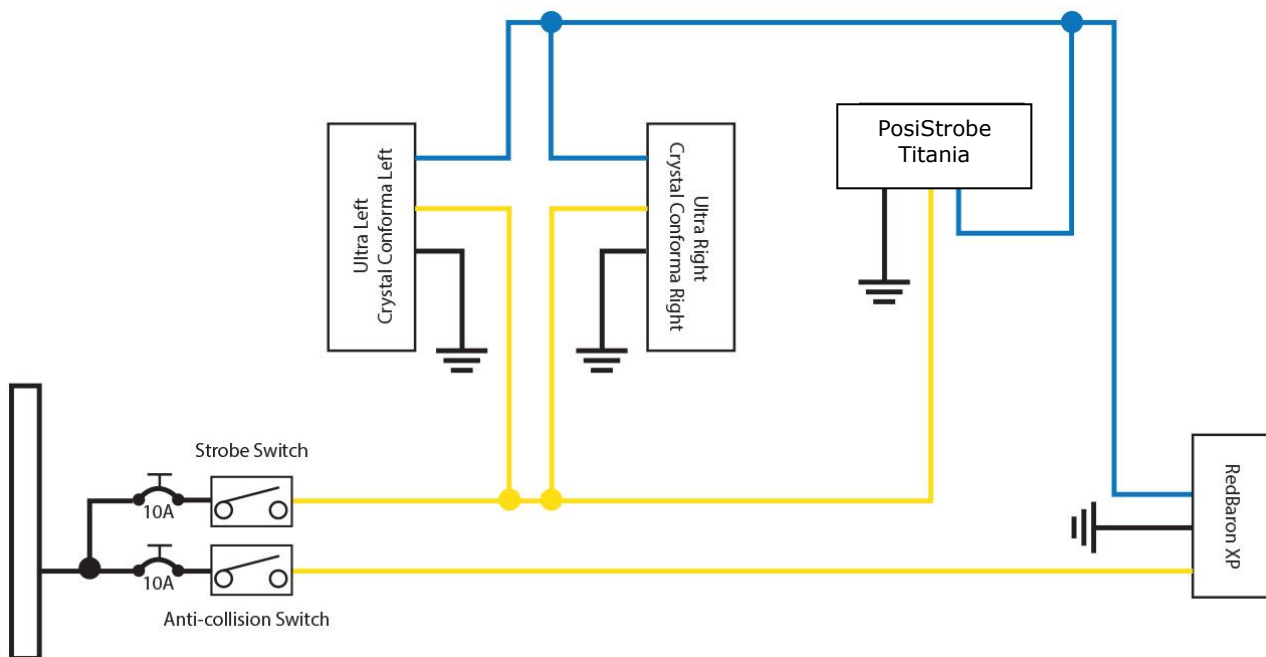
Remove installed landing / taxi lights and verify that aircraft structure is not subject to substantial corrosion. In case of detected corrosion apply relevant AMM section or consult OEM before continuing with this installation.

Remove existing connector and replace as indicated. Verify polarity of wires before connection (ref. to AVE-HJPDO-IM).

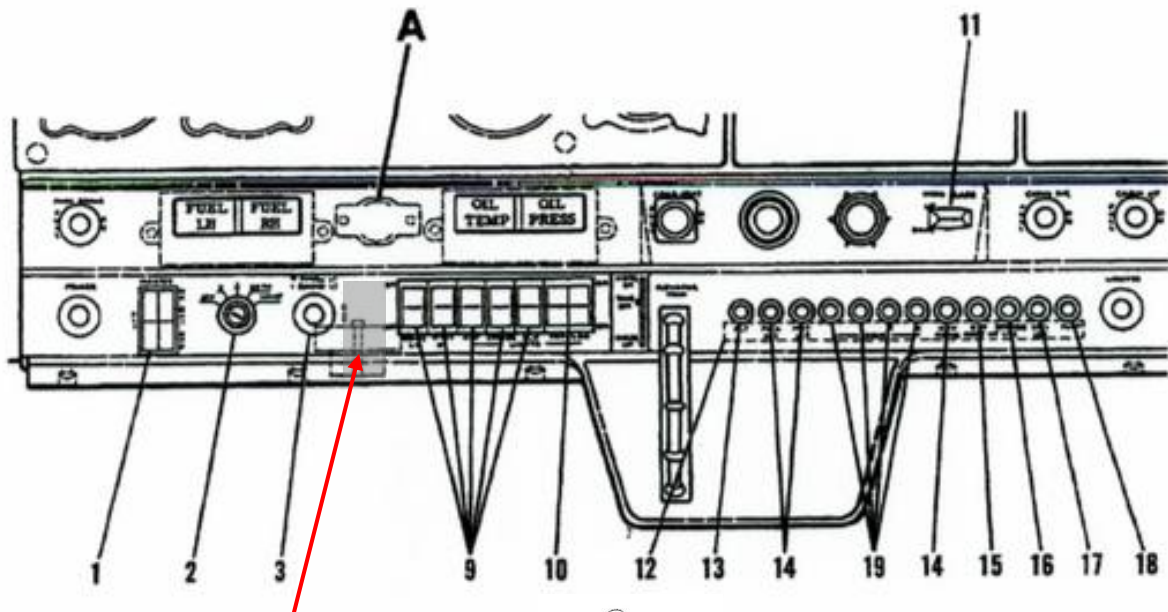
1.10 Addition of strobe function

For aircraft C150 which are not already equipped with the strobe function this function can be integrated using the following modification instruction.

Wiring Diagram



Instrument panel C150 (actual instrument panel to be taken from AMM)



Use free location for
strobe switch – only is not
already equipped with
the strobe function.
Label with STROBE
sticker

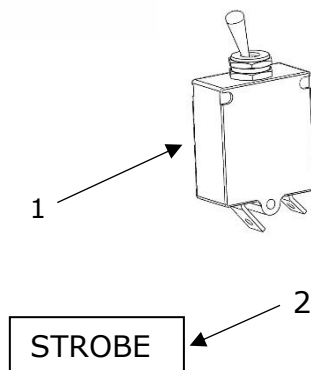


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		STROBE FUNCTION INSTALLATION		
1	CM3589-10	Breaker LDG Light		1
2		STROBE Sticker		1

NOTES

To install the strobe light function (Cessna 150 only):
Install switches (item 1) into a free location off the instrument panel according Aircraft Maintenance Manual. The switches are labeled "Strobe" and "Anti-collision".

Wiring is to be performed according the wiring diagram. If the strobes are to be synchronized then the blue wires of the position lights and the anti-collision light must be connected. If the lights shall not be synchronized the blue wires of the different lights are to be capped and stowed.

The additional wires are to be installed along the wire bundle with the wires for the position and anti-collision lights.

Part 2 Compliance demonstration

This document is in relation to the certification program AVE-MOD-004-PFC.
The compliance is demonstrated for the following certification specification:

Requirements	MoC	Statement of Compliance
CS 23.609 Protection of structure	MoC 0	(a) All parts installed are verified to be suitable. The installation instruction requests the aircraft structure to be inspected for probable corrosion before installing the new lights. (b) Not applicable
CS 23.1301 Function and installation	MoC 0	(a) All navigation and anti-collision lights are ETSO certified. All landing lights are qualified according to RTCA DO160 as per AVE-H30-001-CCL. (b) Only one optional switch may be installed an label is defined herein. (c) All equipment is installed within their limits.
CS 23.1365 Electric cables and equipment	MoC 0	The installation instruction § 1.1 requests to follow the FAR AC 43.13-2B Chapter 4 and in FAR AC 43.13 1B Chapter 11 Section 15 which implies that only aviation specified wiring is to be used
CS 23.1367 Switches	MoC 0	(a) The only switch specified is the OEM type switch used for the same power rating. (b) Switch is next to the control column and evaluated to be accessible by the flight crew. (c) The switch is labelled for the appropriate function.
CS 23.1383 Taxi and landing lights	MoC 0	(a) The configuration of the original installation is not changed. (b) is not affected as the installation is not changed. (c) is improved as the new lights are brighter than the originally installed. (d) The landing light surface temperature is significantly lowered by this modification.
CS 23.1529 Instructions for Continued Airworthiness	MoC 0	The modification does not require any changes to the aircraft maintenance procedure which is clearly stated in §1.1 General.