

## 7. SUPPLEMENTS

### 7.1 Introduction

### 7.2 List of inserted supplements

Date of insertion	Doc.No.	Title of inserted supplement
13.12.2017	304eS/MM SUP2 Issued 11/17	MAINTENANCE MANUAL SUPPLEMENT FOR Glasflügel 304eS - repair of battery compartment





**MAINTENANCE MANUAL SUPPLEMENT  
FOR THE SAILPLANE**

# *Glasflügel 304eS*

## **Repair of battery compartment**

## 1. REPAIR DESCRIPTION

## 1.1 Damage description

Follow procedures described in this maintenance manual supplement to repair heat caused damages in the battery compartment and related structures. The damage may be initiated by heat emitted during unusual battery state.

## 1.2 List of material and spare parts

Epoxy resin L285 (MGS)
Hardener H285 (MGS)
Carbon tape KDU1009 (300g/m <sup>2</sup> width 75mm)
Carbon fabric CCC450 (200g/m <sup>2</sup> )
Glass fabric 90070 (81g/m <sup>2</sup> )
Glass fabric 92110 (160g/m <sup>2</sup> )
Foam Divinycell H60 thickness. 6mm
Shim in the shape of the fuselage skin made of (2x92110 (glass 160g/m <sup>2</sup> ))
Battery holding ribbons (P/N 304eS-85-101)
Battery compartment cover (P/N 304eS-85-06)
Adhesive Backed Heat Barrier ThermoTEC-13590
Paint FEYCOPUR 611 (grey)
Paint PLAMOSTOP P9
Rubber plate thickness 1mm
Smoke and fire alarm JABLOTRON SD-283ST

## 1.3 Repair procedure

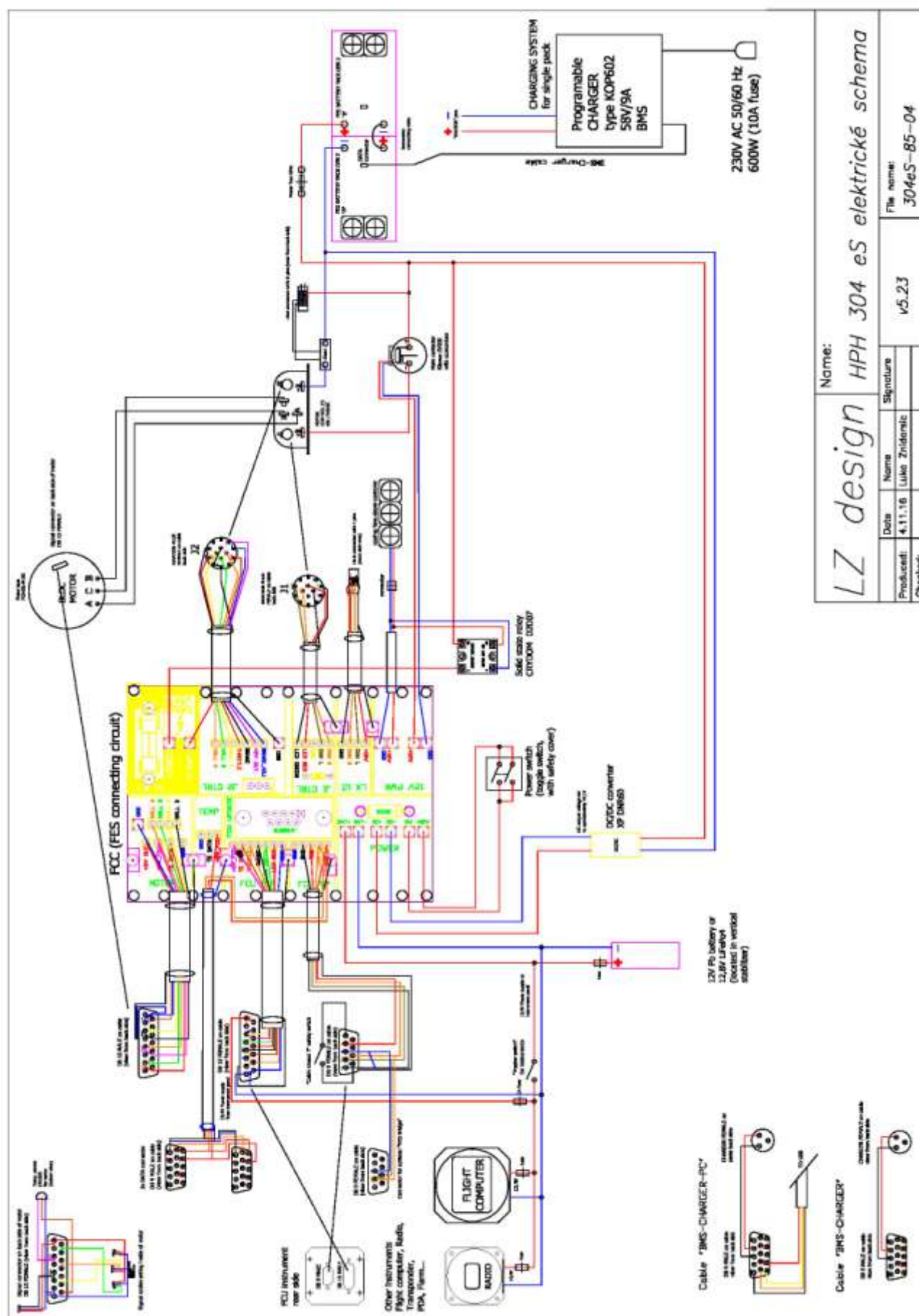
1	Open battery compartment lid, remove foam padding from the compartment, clean the compartment floor and walls and remove all debris.
2	Unscrew front bulkhead, disconnect wires and remove all equipment attached to the bulkhead. Take the bulkhead and all equipment including motor controller out of the sailplane.
3	Send the following accessories to manufacture for check, repair or replacement: Drawing 304eS-85-03 Position 3, 4, 5, 6, 7, 8, 9, 10 (Motor controller, Connecting box, Main contactor, LX-UI unit, Fuse 325A, Measuring resistor, semiconductor relay, DC/DC convertor)
4	Check condition of battery compartment cover and frond bulkhead cover. If damaged order new from manufacturer. If the battery compartment cover was not damaged perform changes shown on drawing 304eS-85-06.
5	Remove all low voltage wires in the area of battery compartment. Also remove High voltage wires installed in battery compartment (wires between motor controller and battery packs).
6	Check condition of other high voltage wires (resistance, possible damage of insulation. Wires must be replaced in case of any detected damages.
7	Check composite structural members shown on 304eS-85-112 drawing for high temperature damages.
8	After preliminary check start to remove damaged structures in the following order: <ol style="list-style-type: none"> <li>1) Battery compartment side rails</li> <li>2) Fuselage skin (start gradually from compartment opening until undamaged composite is reached)</li> <li>3) Compartment side walls (start gradually from the top of the compartment until undamaged composite is reached)</li> <li>4) If other structures were damaged remove them too (start from most damaged areas and gradually proceed until undamaged composite is reached)</li> </ol>
9	Prepare undamaged fuselage structures for gluing according methods described in Technical Description, Operating, Maintenance and Repair Manual Glasflugel 304S (304S Maintenance Manual) chapter 6. Pay special attention in area where reinforcement carbon tapes are situated (see drawing 304eS-85-112). Fuselage skin in this area must be tapered in ratio 1:100 in tapes direction.
10	Using methods described in 304S Maintenance Manual chapter 6 replace damaged parts of inner compartment structures (Side walls). Do not repair side wall cover in this step.
11	Use the plate in the shape of fuselage skin. Trim the plate according the shape of missing parts of fuselage skin with overlap at least 30mm and glue it together with inner side of the skin to cover all missing skin parts.
12	Repair outer fuselage skin according material composition listed in drawing 304eS-85-112 and methods described in 304S Maintenance Manual chapter 6.
13	Reinforce the corner between fuselage skin and side wall by three layers of ✕ CCC450 (carbon 200g/m <sup>2</sup> ) tapes with 70, 65 and 60 mm

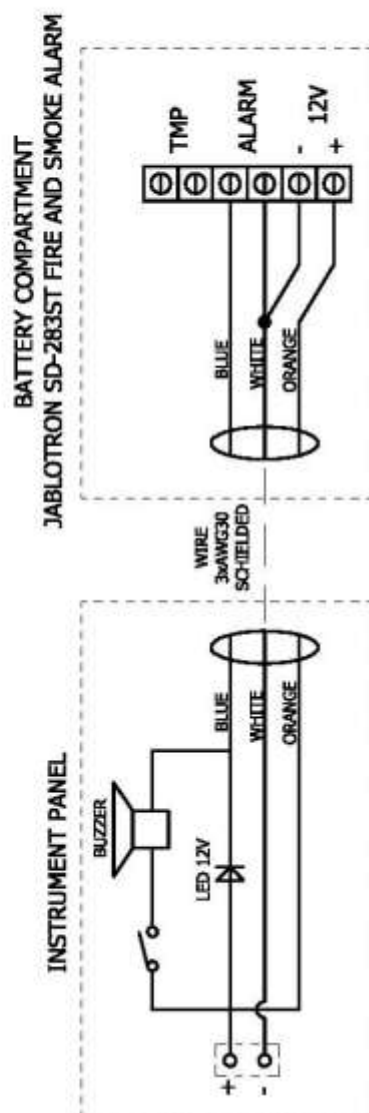
14	Repair side wall cover according material composition listed in drawing 304eS-85-112 and methods described in 304S Maintenance Manual chapter 6 and reinforce its joint with side wall, fuselage skin and front bulkhead cover by three layers of ※ CCC450 (carbon 200g/m <sup>2</sup> ) tapes width 70, 65 and 60 mm.
15	Glue new battery side rails in to the compartment. Set its position according drawing 304eS-85-112.
16	Made new supporting hem for compartment lid (along the opening for this lid). Use composite tape with the same composition as fuselage skin.
17	Let the repaired area to cure for at least 24 hours / 20°C, and then cure 50°-55°C for at least 15 hours.
18	Repair paint of the fuselage skin according procedure described in 304S Maintenance Manual chapter 6.
19	Cover front bulkhead cover with Adhesive Backed Heat Barrier COO-13590 from battery compartment side. Drill again covered holes.
20	Paint all inner surfaces of battery compartment paint with two layers of PLAMOSTOP P9 paint. Then paint all inner surfaces with grey FEYCOPUR 611 paint (let each layer dry before application of next layer).
21	Cover top surfaces of battery compartment (next to the opening) with Adhesive Backed Heat Barrier ThermoTEC-13590.
22	Install all electrical equipment and wires according wiring scheme 304eS-85-04 and drawing 304eS-85-03. Install the front bulkhead cover (304eS-85-05) in to the compartment again.
23	Glue rubber plate 1 mm thick to the bottom of battery compartment (in the area of battery packs - rectangular plate 440x154mm).
24	Install Smoke and fire alarm JABLOTRON SD-283ST according 304eS-85-07 drawing.
25	Glue new padding in to the battery compartment using adhesive tape. Do not cover venting hole.
26	Weight the sailplane, check position of CG and limited masses and issue new weighting protocol.
27	Record the repair in to the sailplane Log book and documentation.





# Glasflügel 304 eS

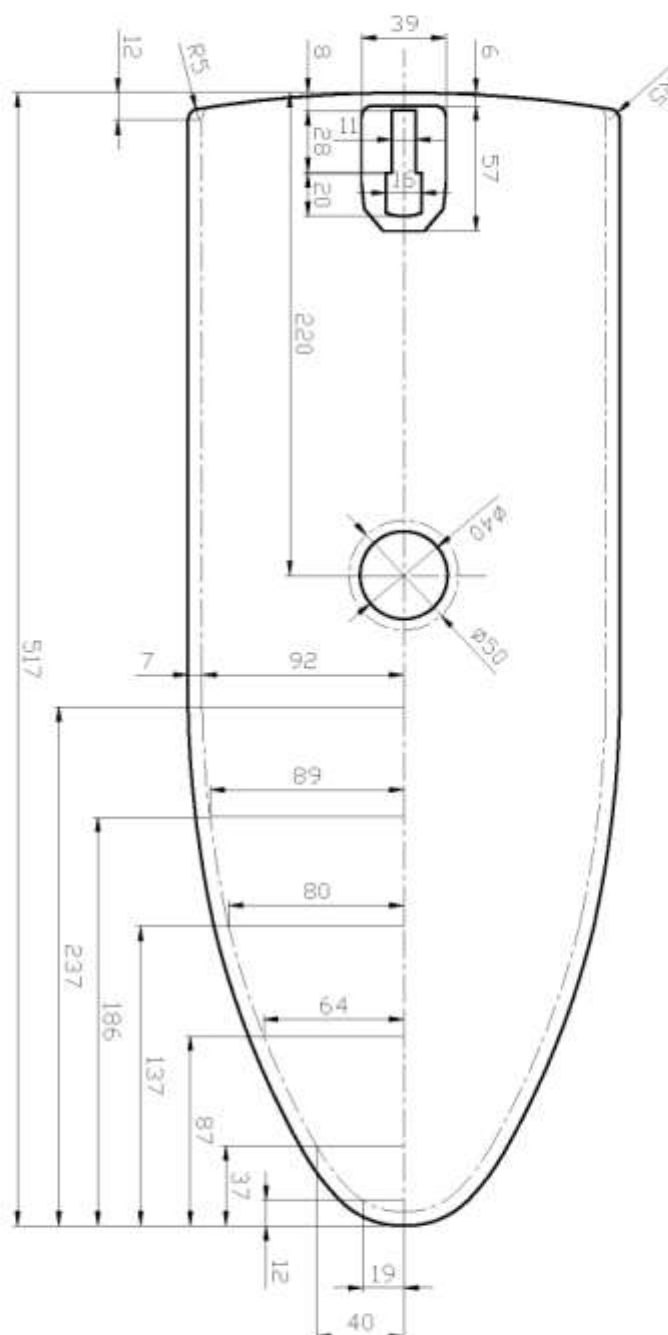
[illegible]






USE STAINLESS STEEL JACKET  $\phi 10\text{mm}$  (010/000-FX000-16649) FOR COVERING OF WIRES INSIDE BATTERY COMPARTMENT  
 ALARM SETTING (JABLOTRON SD-283ST ALARM)  
 CONNECT SIR (4) AND NO (6) TERMINALS

IND.	ZMĚNA		DAT.	PODPIS	HPH, spol. s r.o. Čáslavská 234 Kutná Hora		
0	NOVÝ		9.10.2017	VAVRIN			
VYPRACOVAL		VAVRIN	MAT.		FORMÁT		MÉR.
PREZKOUSEL				ROZM.MAT.	A4		1:1
SCHVÁLIL		JENSEN	DATUM 9.10.2017		POZN.		
NÁZEV		FIRE AND SMOKE WIRING DIAGRAM			ČÍSLO VÝKRESU		
					304ES-85-07		



INO.	ZMENA	DATA	PODPIS
0	NOVÝ	21.11.2017	JENSEN
VÝRAČOVAN	VARIN	MA	
PREŽKOUSEL		PREŽKOUSEL	
SCHWALL	JENSEN	SCHWALL	
MAZEY			

BATTERY COMPARTMENT COVER



HPH spol. s r.o.  
Československá 234  
Kaučův Hora

FORMAT

A3

1:2

WIER.

POZN. 1ks / L

ČÍSLO VÝKRESU 304ES-85-06

