

Date:			Inspector:		
Serial No.:			Mechanic:		
as specified	each 50 hours	each 100 hours	Inspections		
			Engine compartment		
			(Refer to latest edition of Textron Lycoming Operator's Manual and SB's, of Christen Product Manual 801 Series and SB's and of Slick Magneto Maintenance and Overhaul Manual and SB's)		
			Ground magneto primary circuit before working on engine		
DANGER					
	O	O	1	Remove engine cowling.	
	O	O	2	Inspect cowling and air inlet screen for damage, cracks, distortion, overheated areas and loose or missing blind nuts and secure attachment of oil level access plate.	
	O	O	3	After this inspection clean cowling.	
	O	O	4	Check fire protection paint. If necessary repaint the fire protection paint ("WIEDOFLUGAT" N 56582 / T508 with clear coat 4232-0303 or "HENSOTHERM 410KS" with clear coat Glasurit 923-335; refer Chapter 51-30-01).	
O ¹	O ²	O	5	Drain lubricating oil from sump in accordance with Chapter 12-10-04 "Engine Oil Replenishing"	
O ¹	O	O	6	Clean oil suction screen at oil change, check suction screen for metal particles, shavings, or flakes. Consider Lyc. SB N° 480 latest issue.	
O ¹	O	O	7	Replace oil filter on full-flow filtration system.	
O ¹	O	O	8	Remove paper element from filter, carefully unfold the paper element and examine the material trapped in the filter. Consider Lyc. SB N° 480 latest issue.	
	O		9	Inspect oil temperature sender unit for leaks and security.	
	O	O	10	Inspect flexible oil lines, oil return lines and fittings for leaks, security, chafing, dents, and cracks (ref: FAAAC 43.13-1A). Replace flexible oil lines at engine TBO per Lyc. SB 240. Check condition of fire sleeves.	
	O		11	Clean and inspect oil radiator and attachment.	
O ³			12	Remove and flush oil radiator.	

1 at 25 hours for new, remanufactured or newly overhauled engines and for engines with any newly installed cylinders.

2 a spectrographic oil analysis is recommended at every oil change.

3 each 500 hours

05-50-03

Engine Fire

After an engine fire, perform a check as described in the following:

For damage evaluation consult the manufacturer, before the aircraft is put back into service.

Date:		Inspector:	
Serial No.:		Mechanic:	
Inspections			
O	1	Check all cables and hoses, replace when necessary	
O	2	Check engine according to the Lycoming Manual	
O	3	Check fire wall and engine cowling for damage by high temperatures (e.g. signs of blister on the protective paint) If necessary repaint the fire protection paint ("WIEDOFLUGAT" N 56582 / T508 with clear coat 4232-0303 or "HENSOTHERM 410KS" with clear coat Glasurit 923-335; refer Chapter 51-30-01).	

05-50-04

Lightning Strike

In the event of a lightning strike in flight or on ground check the following:

Date:		Inspector:	
Serial No.:		Mechanic:	
Inspections			
O	1	Check engine according to Lycoming Service Bulletin 401.	
O	2	Check the skin of the strike area for burns and melting	
O	3	Inspect bolts, fasteners, bearings and ground bonding leads for burns and melting .	
O	4	Check the electrical system, with running engine, for correct operation.	
O	5	Check the avionic and antenna for correct operation.	
O	6	Check the magnetic compass for correct readings.	

Core material

a) PVC Foam:

Manufacturer: DIAB
Divincell International Gmbh
Max-von-Laue-Straße 7
D-30966 Hemmingen, Germany

Supplier: see above

Type: Divinycell HT 50

b) Honeycomb:

Manufacturer: EUROCOMPOSITESS.A:
B.P.95, Zone Industrielle,
L-6401 Echternach / Luxembourg

Type: ECA-I-R 4.8-29-R

Filler material for resin:

Manufacturer: EBERHARD Chemie GmbH
Olpener Straße 405,
D-51109 Köln 91 (Merheim), Germany

Type: - Cotton flakes
- Microballoons BJO - 0930

Paint:

Manufacturer: BASF Coatings GmbH
Glasuritstr. 1,
D-48165 Münster/Hiltrup, Germany

Supplier: WESSELSAG
Pagenstecherstraße 121,
D-49090 Osnabrück, Germany

Type:

22 Glasurit HS-2K-Decklack (top coat)
929-91/93/94 Glasurit Decklackhärter (hardener)
352-50/91/216 Glasurit Einstellzusatz (reducer)

55	Glasurit Zweischicht-Decklack Metallic/Uni/Perleffekt (base coat)
352-50/91/216	Glasurit Einstellzusatz (reducer)
923-155	Glasurit MS-Klarlack (clear coat)
929-91/93/94	Glasurit Decklackhärter (hardener)
352-50/91/216	Glasurit Einstellzusatz (reducer)
90	Glasurit Zweischicht-Decklack Metallic/Uni/Perleffekt (base coat)
93-E3	Glasurit Einstellzusatz (reducer)
923-335	Glasurit HS-Multi-Klarlack VOC
or 923-115	Glasurit HS-Klarlack (clear coat)
929-31/33/34	Glasurit HS Decklackhärter (hardener)
352-50/91/216	Glasurit Einstellzusatz (reducer)
285-100 VOC	Glasurit Rapidfüller VOC, weiß (filler)
929-55/56	Glasurit HS Füllerhärter (hardener)
352-91	Glasurit Einstellzusatz (reducer)
1006-26	Glasurit UP Spritzfüller, grau (filler)
948-22	Glasurit Härter (hardener)
839-53	Glasurit UP-Schnellspachtel
948-36	Glasurit Härterpaste
293-10	Glasurit Einstellzusatz
934-0	Glasurit 1K-Kunststoffhaftprimer
522-111	Glasurit Softface (soft face additive)
Manufacturer:	PPG Aerospace, PRC-DeSoto
Supplier:	Röder Präzision GmbH Am Flugplatz D-63329 Egelsbach, Germany
Type:	Fire protective coating N56582/T508 with clear coat: Clearcoat 4232-0303 Hardener N39/1327 Reducer N39/3091
Manufacturer and Supplier:	Rudolf Hensel GmbH, Lauenburger Landstraße 11 D-21039 Börnsen, Germany
Type:	Fire protective coating Hensotherm 410KS with clear coat (see Manufacturer above):

923-335	Glasurit HS-Multi-Klarlack VOC (clear coat)
929-31/33/34	Glasurit HS Decklackhärter (hardener)

51-30-02

Metal Components

IMPORTANT

Only approved materials have to be used for the repair of metal components.

Steel tubing:

Manufacturer:	Pacific Tube Company 5710 Smithway Street Los Angeles, California 90040, USA
Supplier:	Wicks Aircraft Supply, Co. 410 Pine Street Highland, Illinois 62249, USA
Type:	AISI 4130 N (MIL-T-6736 Normalized) 2" x 0.049", 1 1/8" x 0.058", 1" x 0.058" 7/8" x 0.058", 7/8" x 0.035", 3/4" x 0.035", 5/8" x 0.035"

Steel sheet metal :

Manufacturer:	Cold Metal Products, Inc. 2301 So. Holt Road Indianapolis, In. 46241, USA
Supplier:	Wicks Aircraft Supply, Co. 410 Pine Street Highland, Illinois 62249, USA
Type:	AISI 4130 N (MIL-S-18729 G Normal- ized) 0.04", 0.063", 0.08", 0.1", 0.125"

Paint:

Manufacturer:	BASF Coatings GmbH Glasuritstr. 1, D-48165 Münster/Hiltrup, Germany
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Supplier: WESSELSAG
Pagenstecherstraße 121,
D-49090 Osnabrück, Germany

Type:

801-1552 Glassofix Grundfüller-EP AC 01-1492

965-32/2 Glassofix Härter-EP SC 65-0322

22 Glasurit HS-2K-Decklack (top coat)

929-91/93/94 Glasurit Decklackhärter (hardener)

352-50/91/216 Glasurit Einstellzusatz (reducer)

55 Glasurit Zweischicht-Decklack
Metallic/Uni/Perleffekt (base coat)

352-50/91/216 Glasurit Einstellzusatz (reducer)

923-155 Glasurit MS-Klarlack (clear coat)

929-91/93/94 Glasurit Decklackhärter (hardener)

352-50/91/216 Glasurit Einstellzusatz (reducer)

90 Glasurit Zweischicht-Decklack
Metallic/Uni/Perleffekt (base coat)

93-E3 Glasurit Einstellzusatz (reducer)

923-335 Glasurit HS-Multi-Klarlack VOC

or 923-115 Glasurit HS-Klarlack (clear coat)

929-31/33/34 Glasurit HS Decklackhärter (hardener)

352-50/91/216 Glasurit Einstellzusatz (reducer)

51-30-03

Aluminium Components

Aluminium sheet metal:

Manufacturer: Kaiser Aluminium & Chem. Corp.
Spokane, Washington

Supplier: Westdeutscher Metallhandel
Postfach 104245
45141 Essen

Type: WLB 3.1364. T3511 or 2024 T3
0.6mm; 0.8mm; 1.2mm

Control rod tubings:

Manufacturer: AluminiumAG
CH-5737 Menziken

Supplier: Karstens & Knauer GmbH&Co
D-28865 Lilienthal

Type: WLB 3.1354. T3
ø 25x1mm

Paint:

Manufacturer: BASF Coatings GmbH
Glasuritstr. 1,
D-48165 Münster/Hiltrup, Germany

Supplier: WESSELSAG
Pagenstecherstraße 121,
D-49090 Osnabrück, Germany

Type:

Primer:

283-150 Glassofix-Grundfüller AB83-1150

352-228 Glassofix-Zusatzlösung SC12-0228

Lacquer:

22 Glasurit HS-2K-Decklack (top coat)

929-91/93/94 Glasurit HS Decklackhärter (hardener)

352-50/91/216 Glasurit Einstellzusatz (reducer)

Aluminium hardware metal (brackets, pedestals, castings, etc.):

Paint:

Manufacturer: Parker & Anchem, Ambler, PA 19002

Supplier: Aircraft Spruce

Chem. coating: Alodine No. 1201 (MIL-C-5541)

Lacquer: see above

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53-00-00

GENERAL

The fuselage structure of the EXTRA 200 consists of a TIG-welded steel tube construction integrating the wing and empennage connections (refer to Figure 1).

The firewall consisting of stainless steel separates the fuselage from the engine compartment. All firewall penetrations (bowden cables, fuel lines etc.) are sealed with PRC-PR 812 firewall sealant.

The particular areas of the fuselage are covered with different materials (also refer to Chapter 51-00-01 "Access Panel Identification"): Both halves of the engine cowling consist of glass fibre laminate and honeycomb. The inner surface of the cowling is coated with a fire protection paint.

The main fuselage cover consists of glass fibre, carbon fibre and aramid laminate. The bottom fuselage cover is made of carbon fibre and aramid fibre laminate, the cuffs of carbon fibre laminate. The lower rear part of the fuselage is covered with fabric. The window portion is of acrylic glass. The tail fairing consists of glass fibre laminate and the tail side skins are made of aluminium sheet metal. The layer sequences of the composite parts are shown in Figures 2-6.

All composite parts, as protection against moisture and UV radiation, are coated with an unsaturated polyester gel-coat, an acrylic filler and finally with an acrylic paint.

For repair of composite parts and steel components refer to Chapter 51. The repair of fabric has to be executed in accordance to the FAAAC 43.13-1A.

53-01-00

MAINTENANCE PRACTICES

53-01-01

Canopy

Removal/Installation

- 1 Open canopy.

CAUTION

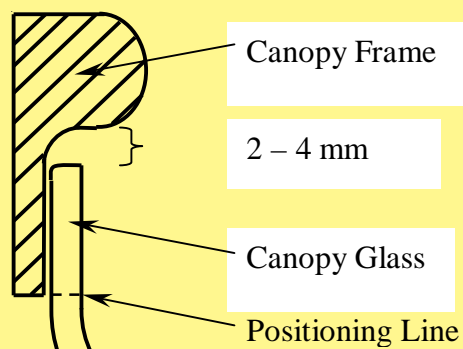
Support the canopy by hand before disconnecting the opening limiter strap.

- 2 Remove the attachment bolt of the opening limiter strap.
- 3 Push canopy to front and remove.
- 4 Install in reverse sequence of removal.

53-01-02

Canopy Glass Replacement

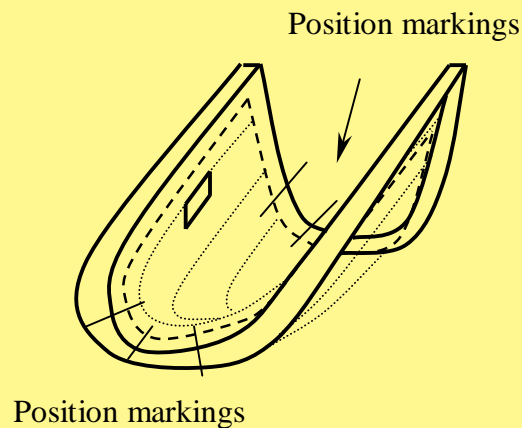
- 1 Remove canopy per Chapter 53-01-01.
- 2 Remove the old canopy glass.
- 3 Gently remove remaining glue with a chisel.
- 4 Sand down the bonding area on the canopy frame completely (sandpaper grit/P120). Check that there are no reflecting areas left.



Typical cross section of canopy bonding area

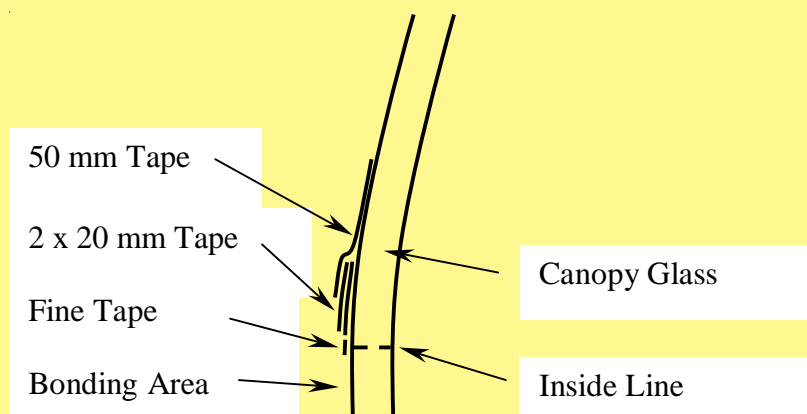
Figure 7

- 5 Fit the new canopy glass in the canopy frame. Opening between canopy glass and canopy frame about 2-4mm.

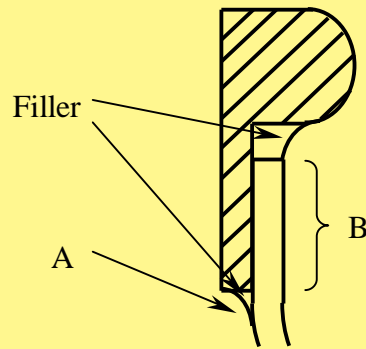


Canopy position markings
Figure 8

- 6 Secure the canopy glass in the frame. Draw a positioning line (see figure 7) and position markings on the inside (see figure 8).
- 7 Prepare canopy glass for bonding.
- 8 Remove a strip (width approx. 50mm) from the protective layer from the outside along the canopy glass bonding area.
- 9 Place fine tape (width 3mm) on the outside opposing the positioning line on the inside.
- 10 For protection purposes, place 3 layers of tape as depicted in figure 9.
- 11 Sand down the canopy glass up to the fine tape line (use Scotch Brite Handpad Medium). Check that there are no reflecting areas left.



Canopy tape markings
Figure 9



*Canopy adhesive remainders
Figure 10*

- 12 Remove the fine tape.
- 13 Prepare adhesive (3M Scotch-Weld Urethane Adhesives 3549 B/A): Thoroughly mix approx. 300 g (approx. 10.6 oz.) adhesive (weight ratio white base : brown accelerator - 100 : 109, 40-70 minutes application time at RT). Mix approximately 15 seconds after a uniform color is obtained.
- 14 Put adhesive on the bonding area. For maximum bonding strength, apply product to both canopy glass and canopy frame.
- 15 Place canopy glass in canopy frame. Observe correct position using position markings.
- 16 Apply pressure on canopy glass using tightener to hold it in place.
- 17 Remove adhesive remainders with wooden spatula.
- 18 Curing time: min. 75 °F 8h
 68 °F 15h
- 19 The next day: Remove tightener and remove canopy from form.
- 20 Sand down (using Scotch Brite Handpad Fine) a small area around the outside edge between canopy frame and canopy glass (area A in figure 10).

CAUTION

21 Apply primer (EP801-1552, curing time: 24h) before applying filler (Glasurit 839-53) and refinish the area.

Make sure, the filler does not get in contact with untreated canopy glass.

22 Sand down (using Scotch Brite Handpad Fine) the overlapping part between canopy glass and canopy frame on the inside (Area B in figure 10).

23 Apply primer (Glasurit 934-0) and refinish the area.

53-01-03

Main Fuselage Cover

- 1 Remove engine cowling
- 2 Remove the canopy per Chapter 53-01-01.
- 3 Disconnect pitot hoses from the instruments within the front instrument panel.
- 4 Remove the instrument cover per Chapter 31.
- 5 Remove the fuel filler neck attachment screws.
- 6 Remove the main fuselage cover attachment screws.
- 7 Remove the main fuselage cover.
- 8 Install in reverse sequence of removal. Perform pitot static system test.

53-01-04

Bottom Fuselage Cover

Removal

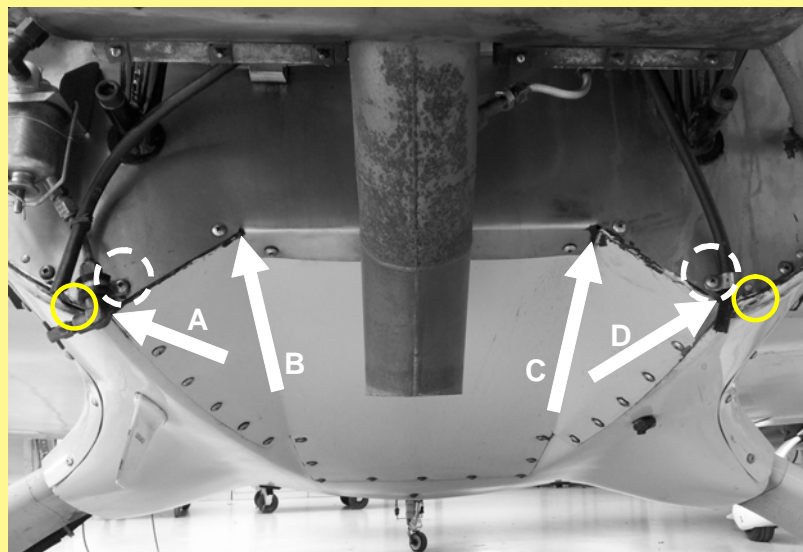
- 1 Remove engine cowling, the landing gear cuffs and main fuselage cover in accordance with this chapter.
- 2 Remove optional OAT probe, if installed.
- 3 Disconnect electrical connector of the XPDR and COM antenna as well as battery charge receptacle, if installed.
- 4 Remove bottom fuselage cover by removing the attachment screws.

Installation

IMPORTANT

The cockpit area must be thoroughly sealed and thus separated from the engine compartment. Gases or fluids could get into the cockpit area.

Critical areas to be observed are the following:
Position A and D of figure 11, where different parts converge (firewall, aluminium profile, bottom fuselage cover and exhaust area covering sheet) and Position B and C, where a bent corner ends in a bore hole.



*Forward View on Bottom Side Firewall
Figure 11*

- 1 Position bottom fuselage cover in its original position.

- 2 Reinstall optional OAT probe.
- 3 Reconnect electrical connector of the XPDR and COM antenna as well as battery charge receptacle.
- 4 Install bottom fuselage cover attachment screws.
- 5 Install 2 bottom cowling attachment screws (one on either side) without cowling present (see two outer circles in figure 11).
- 6 Loosen clamp screws on gascolator drain and fuel pump seal drain line for easy access (see inner dotted circles).
- 7 Prepare PR-812 firewall sealant by mixing brown part A with black part B with weight ratio 2.5:100. Proper mixing and correct proportions are extremely important to obtain required results.
- 8 Clean areas (from inside and outside) with solvents at four positions (A, B, C, D) pointed out by the arrows in figure 11. Immediately thereafter, dry these areas with a new dry cloth.
- 9 At the gascolator drain (position A) seal the remaining gap between firewall and bottom fuselage cover from inside and outside with PR-812 firewall sealant. Minimum sealant thickness approximately 1/8 inch (= 3 mm).
- 10 Repeat step 9 at positions B, C and D.
- 11 Cure time @77°F (25°C), 50%RH for a fillet 1/8 inch thick:

-tack free	approx. 24 hours
-to tough rubber	approx. 72 hours
-to performance properties	approx. 14 days
- 12 Fasten clamp screws on gascolator drain and fuel pump vent lines.
- 13 Remove the two bottom cowling attachment screws.
- 14 Reinstall main fuselage cover, landing gear cuffs and engine cowling.