0 General

0.1 Manual amendments

No.	Page	Description	Date
1	0.3, 0.6, 0.10, 1.22, 1.23, diagram 15a	TN1000/09	October 2006
2	0.5, 0.6, 8.2, diagram 15a	ÄM 1000-1-07	December 2006
3	0.0, 0.3-0.6, 0.12, 1.1, 3.3, 4.2, 4.16, 4.17, 4.21, 4.28, 8.1, 8.4 diagrams 5, 6, 8 - 10, 12, 15, 15a, 5EP50, 5V18, 10FW2, encl. 2 page 1	TN1000/10 Manual revision	January 2007
4	0.1, 0.6, diagram 14	TN1000/11 Manual revision	October 2007
5	0.3, 0.4, 0.6, 0.10, 1.9, 1.10, 4.7-4.9, diagrams 17, 18	landing gear positive locking device TN1000/13	February 2008
6	0.3, 0.4, 0.6, 0.10, 1.19, 2.1, diagram 19, enclosure 3	TN1000/15 Throttle handle in rear Cockpit Option	March 2008
7	0.3, 0.6, 0.10, 1.14 diagram 6a	ÄM 1000-02 Fin ballast tank valve and handle	March 2008
8	0.4, 0.5, 0.6, 1.31, 2.6, 4.18, 6.2, 8.3, diagram 16, enclosure 2 pages 2 and 3	Manual revision TM1000/16	May 2008

0.2 List of effective pages (continued)

Section	page	issued	replaced/	replaced/	replaced/
	1.26	"			
	1.27	"			
	1.28	"			
	1.26	"			
	1.30	"			
	1.31	"	May 2008		
	1.32	"			
	1.33	"			
2	2.1	June 2005	March 2008		
	2.2	"			
	2.3	"			
	2.4	"			
	2.5	"			
	2.6	"	May 2008		
3	3.1	June 2005			
	3.2	"			
	3.3	"			
	3.4	"			
	3.5				
	3.6				
	3.7				
	3.8				
	3.9				
4	4.1	June 2005			
	4.2	"	January 2007		
	4.3	"			
	4.4	"			
	4.5	"			
	4.6	"			
	4.7	"	Febr. 2008		
	4.8	"			
	4.9	"	Febr. 2008		
	4.10	"			
	4.11	"			
	4.12	"			
	4.13	"			

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Section	page	issued	replaced/	replaced/	replaced/
	4.14	"			
	4.15	"			
	4.16	"	January 2007		
	4.17	"	January 2007		
	4.18	"	May 2008		
	4.19	"			
	4.20	"			
	2.21	"	January 2007		
	4.22	"			
	4.23	"			
	4.24	"			
	4.25	"			
	4.26	"			
	4.27	"			
	4.28	"	January 2007		
	4.29	"			
	4.30	"			
	4.31	"			
5	5.1	June 2005			
	5.2	"			
6	6.1	June 2005			
	6.2	"	May 2008		
	6.3	"			
	6.4	"			
7	7.1	June 2005			
8	8.1	June 2005	January 2007		
	8.2	"	Dec. 2006	January 2007	
	8.3	"	May 2008		
	8.4	"	January 2007		
9	9.1	June 2005			
	9.2	"			

0.2 List of effective pages (continued)

diagram	issued	replaced/	replaced/	replaced/
1	May 2004			
2	Nov. 2001			
3	June 2005			
4	Nov. 2001			
5	Nov. 2001	January 2007		
6	Nov. 2001	January 2007	March 2008 Not valid for 10-101, and from 10-128 on	
6a	March 2008			
7	Nov. 2004			
8	Nov. 2001	January 2007		
9	June 2005	January 2007		
10	May. 2005	January 2007		
11	June 2005			
12	Sept. 2003	January 2007		
13	June 2005			
14	June 2005	October 2007		
15	June 2005	January 2007		
15a	Oct. 2006	Dec. 2006	January 2007	
16	June 2005	May 2008		
17	Febr. 2008			
18	Febr. 2008			
19	March 2008			
5EP34	25.01.90			
5EP50	17.12.98			
5V18	14.10.94			
10FW2	05.10.99			
10E102	14.09.05			
10E103	24.06.05			
Encl. 1	June 2005			
Encl. 2	June 2005	Page 1 January 2007	Pages 2, 3 May 2008	
Encl. 3	March 2008			

1.15.12 Circuit breakers and fuses

1. In the console of the instrument panel:
   a) circuit breaker 2 A for electric variometers etc.
   b) circuit breaker 3 A for the radio
   c) circuit breaker 3 A spare eg. for turn and bank or artificial horizon
   d) circuit breaker 3 A spare eg. for the transponder
2. The battery main fuse is located in an inline fuse holder above the battery in the engine bay, 80 A.
3. Resettable fuses are installed in the DEI-NT unit for the following circuits:
   Alarm outlet 2 fuses 0,2A
   Change over switch when extending the powerplant 0,2A e.g. for a Headset.
4. In the control unit:
   Resettable fuses are protecting the following circuits:
   a) DEI-NT 0.4A
   b) Proximity switch 0.2A,
   c) Engine extension-retraction motor 9 A
   d) full tank sensor 0,05A
   e) 12 V socket 4 A
   The following circuits are protected by their semiconductor switches:
   a) Fuel pump 1
   b) Refuelling pump

1.15.13 Position switches for the powerplant

see sect. 1.3.4 and 1.13.5.

2.4 Inspection procedure for increase of service time

1. **General**
   The results of fatigue tests of wingspan sections have demonstrated that the service time of GFRP/CFRP gliders and motorgliders may be limited to 12000 hours, if for each individual glider (in addition to the obligatory annual inspections) the airworthiness is demonstrated according to a special multi-step inspection program particularly with regard to the service life.

2. **Dates**

When the glider has reached a service time of 3000 hours, an inspection must be done in accordance with the inspection program mentioned under point 3. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended by another 3000 hours to a total of 6000 hours (first step).

The above inspection program must be repeated when the glider has reached a service time of 6000 hours. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended to 9000 hours (second step).

When the glider has reached a service time of 9000 h the above inspection program must be repeated. If the results of the inspection are still positive, or if any defects found have been duly repaired, the service time may be extended to a total of 10000 hours (third step).

Proceed analogous when reaching 10000 and 11000 hours (4. + 5. step).

3. Ask the manufacturer for the necessary inspection document.
   When you request the inspection document, the following data should be submitted: Model/Type, Registration, Serial Number and the operating hours at which the inspection will be performed. A charge will be made for the inspection document.

4. The inspection must only be done by the manufacturer or by a licensed repair station or inspector.

5. The results of the inspections have to be recorded in an inspection test report wherein comments are required for each inspection instruction. If the inspections are done outside the manufacturer's facilities, a copy of the records must be sent to the manufacturer for his evaluation and information

4.8 Working instructions for heat-shrink tubing

To insulate various parts of the electrical system heat-shrink tubing is used. For repair and maintenance the heat-shrink tubing often has to be removed. For removal use a sharp knife. To insulate again slip a new piece of heat-shrink tubing over the part which is to be insulated.
Use a hot air gun (min. 200°C, 390°F) to heat the tubing until it shrinks and gives a tight fit.

4.9 Securing with Loctite

All bolts on the engine except for the propeller mounting bolts (lockwire) which are not secured with locking nuts have to be secured with Loctite 243 (Loctite 72 b (672) may be used as an alternative).

If a bolt can't be unscrewed you must heat this section with a hot air gun to reduce the locking force of the Loctite.

Before reinstallation you have to clean the thread of the bolt and the inside thread from any remains of Loctite. For this procedure use Acetone.
If necessary recut the inside thread. Before you apply the Loctite bolt and inside thread have to be degreased with spray cleaner Loctite 7063.
Wipe off the bolt and clean the inside thread with compressed air. Repeat two times for inside threads.
Apply only a small amount of Loctite on the thread. Too much Loctite may cause damage when you try to loosen the bolt again.
With blind holes the Loctite must be applied to the thread in the hole and not to the bolt.

All locked and secured bolts have to be marked with red securing paint which also marks the respective component at that particular point.
Remove the old red securing paint before reinstallation of the bolt.

Caution: Loctite must be used within 2 years of production date. The production date is printed on the bottom of the bottle. 96A means January 1996, 96B means February 1996 and so on.

Compass

Manufacturer	Type	**Certification No.**
PZL	B - 13	FD 19/77
Ludolph	FK 16	10.410/3
Airpath	C 2300	
Hamilton	H I 400	TSO C 7c Type1
	46 MFK 1	(only as additional equipment.)

The compass should be compensated in the A/C. A deviation table must be installed if deviation is more than 5°.

VHF transceiver

Manufacturer	Type	**Certification No.**
Dittel	FSG-40 S	10.911/45
	FSG-50	10.911/71
	FSG-60 M	10.911/72
	FSG-70,71 M	10.911/81
	FSG-90	10.911/98JTSO
	FSG 2T	LBA.0.10.911/103JTSO
Becker	AR 3201-(1)	10.911/76
	AR 2008/25 (A)	10.911/48
	AR 4201	JTSO-2C37 D, ED-23A
Filser	ATR 720 A	10.911/74
	ATR 720 C	10.911/83
	ATR 600	LBA.0.10.911/106JTSO
	ATR 500	LBA.0.10.911/113JTSO
	ATR 833	EASA.210.0193

or other instruments certified for aircraft use according to TSO or JTSO or ETSO standards may be installed.

Note: Only radios with diameter 58mm (2 ¼ in.) can be installed at the assigned place in the console below the instrument panel.

8.3 Parts for the electrical system

60510898 Battery 12V 17Ah
41076000 DEI-NT-DG1000T
41076010 Control unit-NT 10E601

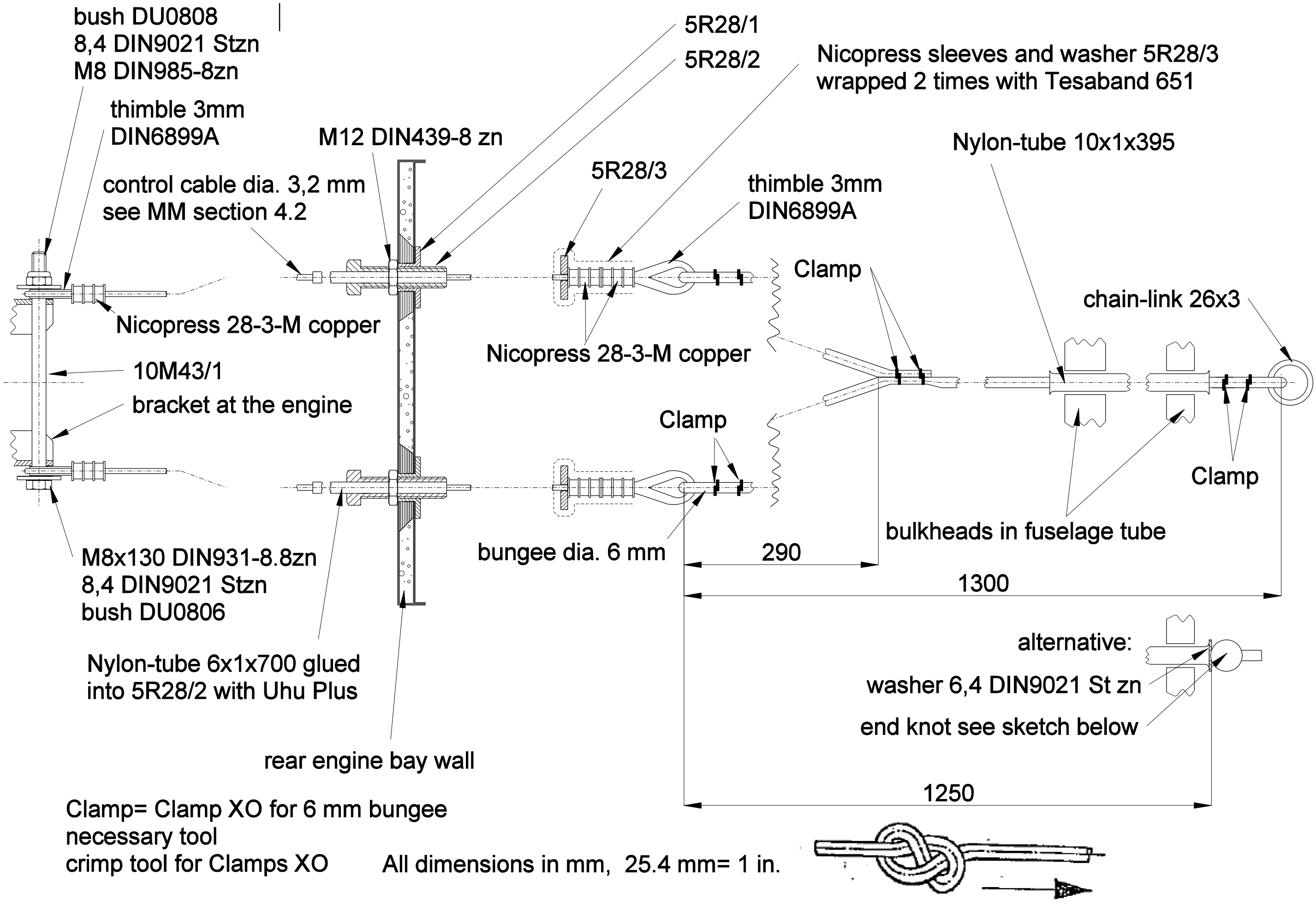
60510815 Limit switch 164-025 05 for positions engine extended and for stopping the engine
60510463 Limit switch for propeller-stopper 164-564
60510464 Limit-switch engine retracted and engine extended 164-574
60510484 Manual extension-retraction switch MTG 206 S
60510854 Key switch 3 Pos, 2 Pol KL09-1908KA (Master switch)
60510372 Press-button DJET 07.17502.21 for starter
60510375 Press-button 12G2904 for refuelling pump

60510385 Circuit breaker ETA 2A
60510386 Circuit breaker ETA 3A

60510437 Fuse 80 A for main battery
60510434 Fuse socket for main battery fuse 80 A

60510550 Proximity switch Insor INCT 1212
40871350 Proximity switch ready assembled with wiring and plug

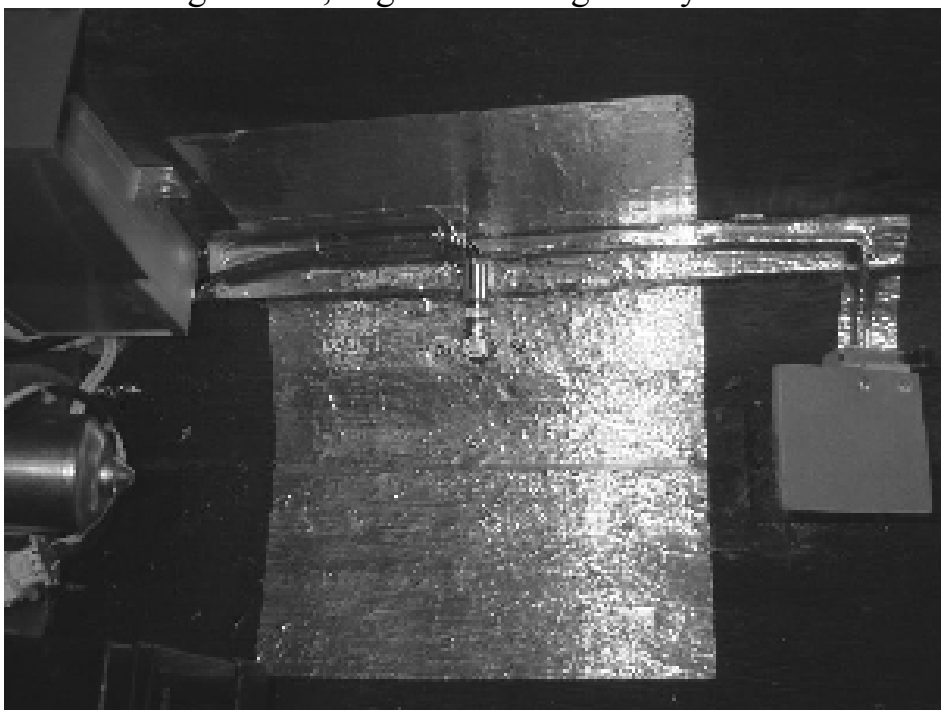
10002317 Preh plug for 12V sockets



Clamp= Clamp XO for 6 mm bungee
necessary tool
crimp tool for Clamps XO

All dimensions in mm, 25.4 mm= 1 in.

In the engine bay, as a counterbalance to the aerial, the adhesive aluminium foil 400mm x 250mm has to be fitted according to the drawing and to picture 1). Before fitting the foil, degrease the engine bay surfaces with acetone.



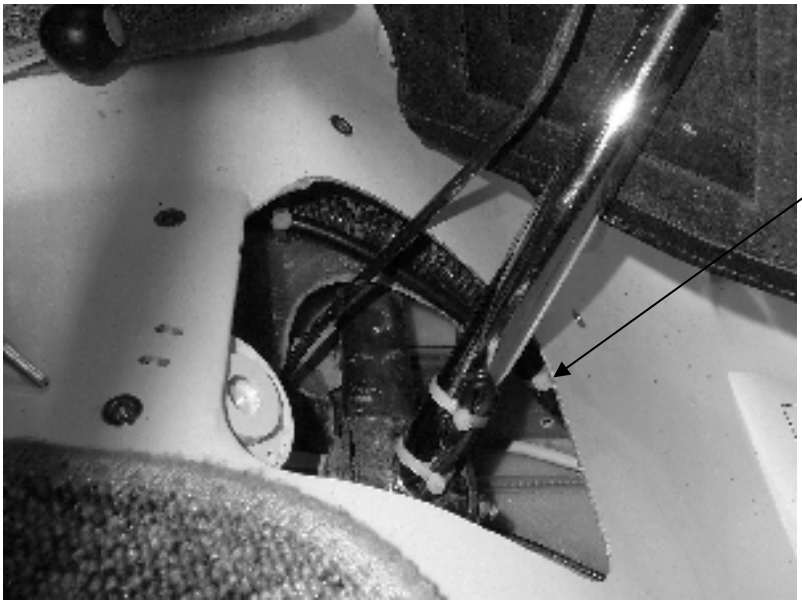
picture 1

2. Feeding the aerial cable through

In order to feed the aerial cable through, the following parts need to be removed:

- front instrument panel cover
- front control column boot
- access cover at the left hand side of the front control stick
- instrument panel bottom part in rear cockpit needs to be removed completely, not just folded open, this means that the hinges at the bottom must be disconnected from the fuselage
- baggage compartment covers (bottom and rear part)

The aerial cable is delivered over length without terminals.
To make feeding though easier, it is recommended to wrap the cable ends with insulating tape in order to “round” the ends.
The cable is fed through from the opening in the rear cockpit floor to both the front and the engine bay.
First feed through to the front. Push the aerial cable parallel to the empty cable pipes, on the right hand side of the fuselage until it comes out near the front control stick.



Front control column: Aerial cable fixed to wiring harness

picture 2

Now, follow the empty pipes on the right-hand side of the control column, leading into the instrument panel. Fix aerial cable every 200 mm to the wiring harness wherever possible with TY-raps, see picture 2.
Now, the HF-Connector TNC (threaded) can be attached to the front end of the aerial cable.
Insert the other end of the aerial cable into the empty pipe leading to the engine compartment. It is recommended to use a "pull-through" aid, since the empty pipe has tight radii.



The aerial cable has to be fixed to the bottom of the opening in the rear cockpit with cable ties every 50mm; otherwise the function of the towing hook mechanism can be affected.

picture 3

insert aerial cable into empty pipe

At the end of the empty pipe (approximately 100 mm behind the undercarriage box), install the aerial cable together with the wiring harness on the right hand side towards the engine bay.