

# ASH 25 E Flight Manual

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## 2.4 Power-Plant

Engine Manufacturer: Bombardier-Rotax GmbH  
Engine Model: Rotax Type 275  
Max. take-off power: 17.6 KW/24 hp 7000 rpm  
Max. continuous power: 17.6 KW/24 hp 7000 rpm  
Max. take-off revs: 7000 rpm  
Max. continuous revs: 7000 rpm  
Max. short-time revs: 7200 rpm

Max. cylinder head temp.: 250 °C (480 °F)  
Lubricant: fuel/oil mixture lubrication at ratio  
1:50 with Super 2-stroke oil  
Transmission: Gear wheel transmission with 1 : 3 re-  
duction ratio.

The installation of the following propellers from the manufacturer mt-Propeller has been type-approved:

MT 130 L 95 - 1B  
MT 130 L108 - 1B.

## 2.5 Power-Plant Instrument Markings

The following table shows the markings of the engine instruments and the meaning of the colours employed.

### 1. Conventional VDO analogue display instruments:

Instrument	Red Line: minimum limit	Green Arc: normal operating	Yellow Arc: caution range	Red Line: maximum limit
Tachometer RPM	---	3000-7000	7000-7200	7200
Cyl. Head Temp. Gauge	---	---	---	250 °C (480 °F)

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Fuel Gauge	unusable*		

\* Also valid if an ILEC TAZ-25 display instrument is installed.

## 2. Digital ILEC TAZ-25 (power-plant display instrument)

### Permanent Display:

Tachometer (4 digits) [ rpm ]	Green Diode Normal Operating 0 to 7000	Yellow Diode Caution Range 7000 to 7200	Red Diode Max.Limit blinking at 7200 plus
Fuel quantity ( three digits )	0/0,1/4,2/4,3/4 and 4/4		

### Optional Display, pressing the right Button:

Engine Battery Voltage (4 digits)	XX,X [Volts]
-----------------------------------	--------------

### CAUTION:

If the usable fuel quantity in the fuselage tank gets down to 1.5 l, the ILEC unit produces a shrill acoustic alarm. By pushing the left button the alarm tone is "extinguished" but is activated again after two minutes.

## 2.6 Masses (Weights)

### Max. Take-Off Mass:

-with water ballast 750 kg (1654 lb)

-without water ballast but with fuel in the wing tank 735 kg (1620 lb)

Max. Landing Mass: 750 kg (1654 lb)

Max. mass of all non-lifting parts 425 kg ( 937 lb)

Max. mass in baggage compartment: 15 kg ( 33 lb)



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Max. fuel quantity usable in flight:

with plastic fuselage tank	38.1	10.06
with aluminium fuselage tank	35.1	9.27

Non-usable fuel: 0.4 0.11

Approved Octane Rating: not less than 95 ROZ  
(research o.r.)

Approved grades of fuel: Super (motor spirit)  
AVGAS 100LL

Fuel grades like Euro-Super and Super-plus  
are permissible.

Two-Stroke oil: Super 2-Stroke Oil as per TSC 3.  
A wholly synthetic, self-mixing  
2-stroke engine oil as per TSC 3  
is recommended.

## 2.13 Minimum Equipment

Minimum Equipment consists of:

- 1 x ASI indicating up to 300 km/h = 162 kts in  
the front instrument panel
- 1 x Altimeter in the front instrument panel
- 2 x sets 4-part seat harness (symmetrical)
- 1 x Magnetic Compass in the front instrument  
panel
- \* 1 x Tachometer indicating up to 8000 rpm at the  
side of the front seat
- \* 1 x Cylinder Head Temp. Gauge indicating up to  
300 °C at the side of the front seat
- 1 x Fuel Gauge (within pilot's field of view)
- \*  
Instead of these instruments the digital ILEC-  
TAZ-25 display instrument may be installed.

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Additionally required for instruction:

- 1 x ASI indicating up to 300 km/h = 162 kts in the rear instrument panel
- 1 x Altimeter in the rear instrument panel

For cloud flying the following additional equipment must be fitted:

- 1 x Turn-and-Slip indicator .
- 1 x Variometer.

For flights beyond the environs of the airfield at which the flight originates an aircraft radio is mandatory (for Germany). In addition, headphones must be worn when the engine is running.

Approved equipment is listed in the Maintenance Manual in Section 12.1.

## 2.14 Aerotow, Winch and Autotow Launching

The maximum launch speeds are:

- for Aerotow 160 km/h (86 kts)
- for Winch Launch 130 km/h (70 kts)
- for Autotow Launch 130 km/h (70 kts)

For all the above launching methods, a weak link of 750 to 900 daN must be used in the launch cable or tow rope.

For Aerotow, the tow rope must be not less than 40 m (135 feet) in length.

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## 2.15 Operating Limitations Placard

This placard is fixed in the front cockpit and contains the most important Mass and Speed Limitations.

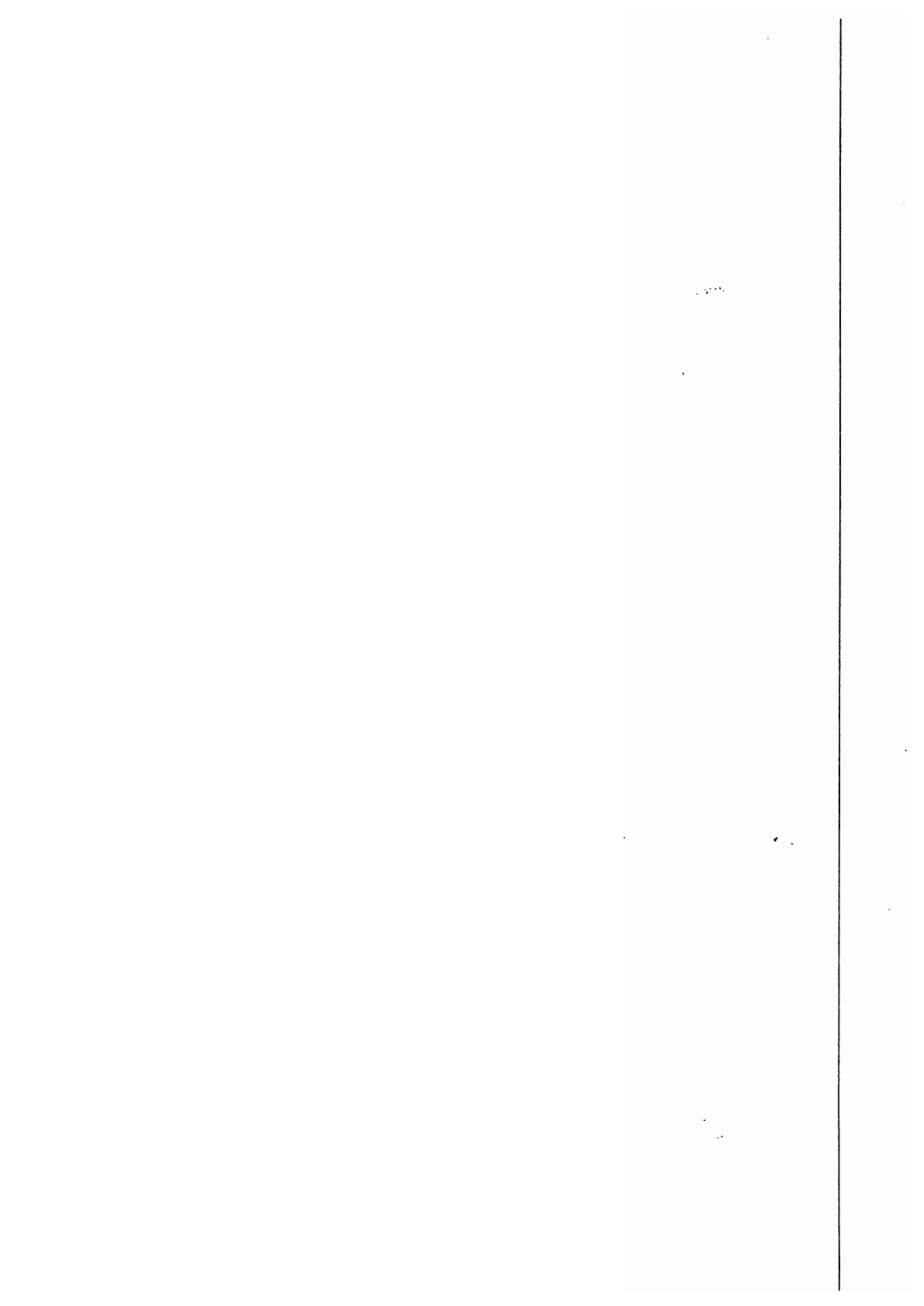
Segelflugzeugbau A. Schleicher GmbH & Co. Poppenhausen		
Model:	ASH 25 E	
Serial-No.:		
<b>DATA and LOADING PLACARD</b>		
Empty Mass:	kg	lbs
Max. Flight Mass:	750 kg	1654 lbs
Min. Front Seat Load Solo	kg	lbs
Max. Front Seat Load	kg	lbs
Max. Rear Seat Load	kg	lbs
Max. Total Combined Seat Load	kg	lbs
<b>MAXIMUM PERMISSIBLE SPEEDS:</b>		
Calm Air:	280 km/h	151 kts
Maneuvering Speed:	185 km/h	100 kts
Winch Launch W/L and Auto Tow Launch:	130 km/h	70 kts
Aerotow A/T:	160 km/h	86 kts
<b>Engine Unit in Operation:</b>		
Extending/Retracting the Engine Unit:	90 km/h	49 kts
Engine Extended:	160 km/h	86 kts
Max. Continuous Power:	130 km/h	70 kts
Weak Link for A/T and W/L	750 to 900 daN	
Tire Pressure	Main Wheel	3,4 to 3,6 bar (49 to 52 psi)
	Tail Wheel	2,4 to 2,6 bar (35 to 38 psi)

**REDUCED MINIMUM COCKPIT LOAD  
WITHOUT TRIM BALLAST IN THE FIN:  
SEE FLIGHT MANUAL - PAGE 6.4 !**

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reach. The seating position, especially when using cushions, must preclude the possibility of sliding backwards during initial acceleration or steep climb.

**WARNING:** We expressly warn against attempting any launch by an under-powered winch in a tail wind!

## 4.5.3 Auto Tow Launch

### (1) Engine Assisted

For Auto Launching, the same instructions as those given under 4.5.2 Winch Launch apply.

The engine is started and checked-over in accordance with 4.5.1 after the launch cable is attached. Until the ground run starts, leave the engine idling. When the launch vehicle has taken up the slack and the sailplane is no longer likely to overrun the cable, promptly apply full power.

The launch cable should be at least 130 m = 430 ft long. The same arrangement of cable parachute, shock rope and strop, and weak links (750 to 900 daN) as for winch launching should be used.

**CAUTION:** The annotations "NOTE, CAUTION, and WARNING" for winch launching (Section 4.5.2) apply also for this launching method.

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**CAUTION:** Ensure adequate length of airfield. Also: the longest possible launch cable should be used to reduce the noise nuisance.

## (2) With Power-Plant retracted

This launching method is practicable only if both airfield and launching cable are of adequate length to ensure a minimum release height of about 200 m = 660 ft.

Proceed as set out under 4.5.2 Winch Launch.

## 4.5.4 Aero Tow

### (1) With Power-Plant retracted

Preferably, an aerotow release coupling should be used, if fitted.

The recommended flap setting for aero towing is Flap 3.

Trim should be set nose-heavy. A tow rope of between 40 m and 60 m = 135 ft and 197 ft long, but not less than 40 m = 135 ft in length should be used.

Experienced pilots should start their take-off run at the most negative flap setting 1. This flap setting affords excellent lateral control. At an indicated air speed of about 50 km/h = 27 kts the flap should be increased to Flap 3 (0°) or, on short take-off runs or when carrying water ballast, to Flap 4 (+6°). For the remainder of the tow, Flap 3 should be selected for reasons of trim loads.

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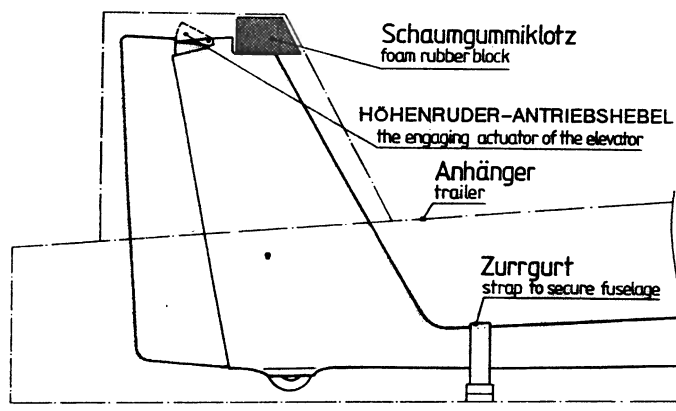
the wing tanks is not permissible!

**CAUTION:** When transported in a sailplane trailer, care must be taken that the elevator engaging actuator of the sailplane (on top of the fin) is not being restricted in its required free moving by any foam blocks inside the trailer.

If for example such a foam rubber block is restricting the free moving of the elevator engaging actuator, with rather long road transports this may lead to a fatigue crack on this part. (See also the Drawing in Section 7 of the Maintenance Manual).

This cause must immediately be removed.

The drawing below shows how to cut and locate a foam rubber block. We think it is also useful to have a strap anchored in the trailer floor in order to secure the tail boom in front of the fuselage-fin-transition. In any case be sure that the elevator engaging actuator is free moving. Even with the stick full back, full upwards deflection of the elevator engaging actuator must be possible.



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## 8.5 Cleaning and Care

Contrary to the false assumption that plastic materials are impervious to moisture and ultra-violet light we would state emphatically that even modern sailplanes need care and maintenance.

### Moisture

In the long run, moisture will also damage fiber composite materials, as it will penetrate into the epoxy resin base and cause it to swell, which will partially burst the tight cohesion of the plastic molecules.

In particular, a combination of high temperature and high humidity must be avoided! (As eg: poorly ventilated trailer becoming damp inside, which is then heated by the sun).

Neither the best quality of paint protection on the surfaces, nor the plastic or rubber skins of the water ballast tanks can fundamentally prevent water vapour diffusion; they can only retard the process. If water has entered the airframe and cannot be removed by means of sponge or chamois leather, the aircraft should be de-rigged and dried out, while periodically turning the affected part, in a room which should be as dry as possible, but not too hot.



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## Sunlight

- especially its UV component - embrittles the white polyester gelcoat and also the perspex canopy. The wax layer on the gelcoat will also oxidize and discolour more quickly if the aircraft is unnecessarily exposed to strong sunlight. There is no paint finish on the market as yet which is unrestrictedly suitable for plastic sailplanes, and would approximate the life span of the plastic structure of the airframe without maintenance.

As the white polyester gelcoat is protected by a fairly durable wax layer, it will tolerate being washed down from time to time with cold water, with a little cleaning medium added. In normal use, the wax coating need only be renewed annually with a rotary mop. In moderate European conditions it will suffice if on two occasions a paint preservative is used in addition. In areas subject to long and stronger sun exposure this should be done more often.

For the care of the paint finish, only silicone-free preparations may be used (eg: 1 Z-Special Cleaner-D 2 by Messrs. W. Sauer & Co., D-5060 BENSBERG, or Cleaner Polish by Lesonal).

Traces of Adhesive from Self Adhesive Tapes are best removed by means of benzene (petrol is toxic!) or paint thinners. After cleaning, renew the wax coating.

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**NOTE:** The signal and decorative markings are built up from nitric or acrylic paint; therefore no thinners must be used and even benzene should not be allowed to act on them for prolonged periods.

The Acrylic Canopy (Plexiglass or Perspex) should only be cleaned by means of a special cleaner (eg: Plexiklar) or with lots of clean water. On no account should a dry cloth be used for dusting or cleaning.

The Seat Straps should be regularly inspected for tears, mould stains or wear, and corrosion of metal parts and buckles. The reliable operation of the release mechanism - even under simulated load - should be tested occasionally.

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## Fuselage

Length	9.00 m	(29.5 ft)
Height at T-tail with tail wheel	1.70 m	( 5.5 ft)
Cockpit width	0.705 m	( 2.3 ft)
Cockpit height	0.980 m	( 3.2 ft)

## Fin

Height over tail boom top edge	1.38 m <sub>2</sub>	( 4.5 ft)
Surface area	1.705m <sup>2</sup>	(18.35 sqft)
Airfoil Section FX 71-L-150/30 with 12 % thickness.		

## Rudder

Chord ratio	31 %	
Surface area	0.512 m <sup>2</sup>	( 5.51 sqft)

## Tailplane

Span	3.125m <sub>2</sub>	(10.25 ft)
Surface area	1.27 m <sup>2</sup>	(13.67 sqft)
Aspect ratio	7.69	
Airfoil Section	Wortmann FX 71-L150/30 with 12 % thickness	

## Elevator

Chord ratio	30 %	
Surface area	0.381 m <sup>2</sup>	( 4.10 sqft)

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## Airbrake Paddles (Schempp-Hirth - top sfce.only)

Length	1.20 m	( 3.94 ft)
Surface area (both together)	0.336m <sup>2</sup>	( 3.62 sqft)
Height	0.15 m	( 0.49 ft)

## Power-plant

Engine Manufacturer:	Bombardier-Rotax GmbH
Engine:	Rotax Type 275
Max. Take-Off Power:	17.6 kW/24 hp 7000 rpm
Continuous Power:	17.6 kW/24 hp 7000 rpm
Max. Take-Off Revs:	7000 rpm
Max. Continuous Revs:	7000 rpm
Max. Revs, short-term:	7200 rpm
Max. Cylinder Head Temp:	250 °C
Lubricant:	Mixture lubrication. Use clean burning oil with minimum residue, as provided by synthetic oils.
Mixture Ratio:	1:50 with 2-stroke oil (TSC 3)
Transmission:	Geared transmission of 1:3 reduction
Gear Lubricant:	SAE 140, API GL 5, approx.330 ccm The following gear oil complying with above specification should be used: <b>Mobil Gear SHC 460</b>
Propeller Manufacturer:	MT Propeller
Designation:	MT 130 L 95 - 1 B or MT 130 L 108 - 1 B

# ASH 25 E Maintenance Manual

arm rest of the front cockpit.

If the ASH 25 E is fitted with an ILEC-TAZ-25 engine control unit, the main switch, ignition switch, and control light are mounted in the instrument panel, while the rocker switch for extending and retracting the power-plant is mounted at the control stick.

A propeller reduction gear is flange-mounted to the front of the engine, which reduces the rate of engine revolutions by a factor of 1:3. The advantages of this reduction gearing consist of the increased propeller effectiveness and reduced noise emission.

The gearbox is connected with the propeller flange by a shaft/hub mounting.

The engine is supplied with fuel by an electric fuel pump accommodated in the fuselage.

## 2.3.2 Propeller Type and Mounting

The following propellers may be used in the ASH 25 E:

made by Messrs.'MT Propeller'

MT 130 L 95 - 1B or

MT 130 L 108 - 1B.

Both are rigid 2-bladed wooden propellers.

Its flange hub is assembled on the conical propeller shaft of the gearbox to which it is secured by an axial center bolt with left-hand thread.

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## Dismantling the Propeller

Unscrew propeller bolt (2) by means of socket spanner A/F 19 - Left-hand thread - and remove propeller with extractor tool M36 \* 1.5.

Before extracting propeller, please note: the vertical positioning of the propeller, required for retracting the power-plant, will be made easier if the compression in the stopped engine is made to help in maintaining the vertical prop position (propeller blade with red dot pointing down). This makes it necessary to find the correct propeller attitude when re-fitting. The following opportunities for position markings are provided:

- a) on the magneto visible through the window (A) (on the right or the underside of the engine housing) there are red marker points (P). If the propeller is in its vertical position, (blade with red dot pointing down) one of the marker dots should be positioned against the mark (M) (the ignition timing mark). Should there not be any markings provided on the magneto, red dots must be marked on it (see Fig.2.3-2).
- b) if no window has been provided, marking lines will have to be applied on the propeller hub (3) and on the gearbox propeller shaft (4) after bolt (2) and its washer have been removed (see Fig.2.3-3).

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## 2.3.3 Maintenance and Inspections

**NOTE:** If the ASH 25 E is not equipped with an elapsed-time meter, engine hours must be entered in the aircraft log book after every flight.

### a) Once-only Maintenance Tasks

**After 1 hour, and after 1 hour's engine time following each propeller re-fitting:**

- Re-tighten central propeller mounting bolt A/F 19 - left-hand thread - (observe tightening torque moments listed in Sect.5.3!)
- Re-tighten the six propeller flange mounting bolts (observe tightening torque moments listed in Sect.5.3!)

**After 25 hours:**

- Re-tighten cylinder head nuts (observe tightening torque moments listed in the Engine Manual)
- Change gearbox oil. For oil specification see Sect.1.4 of this manual.

### b) Periodic Maintenance Tasks

**Daily (Pre-Flight):**

Listed in the Flight Manual under Section 4.3!

# ASH 25 E Maintenance Manual

## Every 5 hours:

- Re-tighten the six propeller flange mounting bolts (observe prescribed tightening torque!)
- Re-tighten the mounting bolt A/F 19 in the propeller shaft (observe prescribed tightening torque!)
- Examine the elastic tensioning cords of the engine well doors and of the power-plant stays. Replace if damaged. (For tightening torque moments table, see Sect.5.3 of this manual).

## Every 12 1/2 hours:

- Replace spark plug.
- Check gearbox oil level.

## Every 25 hours:

- Check condition of cables and electrical connections, watch for possible abrasions.
- Test ignition damping box (see Engine Manual).
- Renew spark plug connector (use only original connectors: NGK No.LB05EZ, and secure brass core with Loctite 242 or 648.)
- Check ignition timing adjustment (see Engine Manual).
- Check control cables and their actuators for stiffness and abrasions.
- If required, adjust idling speed (see Sect. 2.3.6)
- Clean magnetic screw (gear oil drain).
- Check secure seating of engine mounting screws

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and re-tighten if necessary (observe tightening torque moments listed in Sect.5.3!) Check locking wires securing the bolts of the upper engine suspension and of the power-plant mountings in the fuselage.

- Inspect the extending drive spindle gas strut. If extending takes significantly more time than retracting, replace the gas strut.
- Examine the rubber elements of the power-plant suspension for cracks or other changes.
- Check the steel cable and Nylon cord of the manual starter for condition and abrasions.
- Check the engine well door hinges for secure seating and cracks.
- Check propeller brake for correct functioning and renew brake lining if necessary.
- Examine power-plant stays for kinks and abrasions. Are all deflector shields still in good condition to prevent any possibility of stays catching?

## Every 100 hours:

- Replace Nylon cord of the manual starter.

## Every 300 hours, but at the latest after 6 years:

- Complete overhaul of the power-plant by the makers or by a licensed aircraft repair establishment authorised by the makers and the appropriate aviation authority.

## Once annually:

- The transparent hose of the fuel gauge must be renewed every twelve months.

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- Clean any dirt caused by oil, exhaust gases or fuel from power-plant and engine well.
- Renew fuel filter in fuselage (e.g: with Type Pierburg PE 1569; on no account use paper filters!).
- Examine fuel hoses for condition, leaks and abrasions.

## 2.3.4 Dismantling and Re-Assembling the Power-Plant

The following two Sections describe how to dismantle and re-fit the power-plant. This may become necessary for maintenance, repair or weight reduction or compliance with competition rules. The only component groups left in the fuselage are the fuel system, swivel mounting arms, extending spindle and all cockpit engine controls.

### Dismantling the Power Unit

1. Before starting to remove the power-plant, check on the Notes on Engine Preservation and Storage (see Engine Manual).
2. Pull off spark plug connector (1).
3. Unplug connector (5) of the pyrometer ring at the spark plug (only applicable if no ILEC is fitted).
4. Disconnect connection for AC supply and ignition coil at the terminal block (6) (triple plug-and-socket connection). If this connection is still done by three single plug&socket con-



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the fuel pump does not dry out causing premature failure.

In addition, the ASH 25 E can be equipped with **Wing Fuel Tanks** in the form of plastic bags. One tank of 15 liters capacity can be accommodated in the leading edge of each inboard wing. Solenoid valves operated from the cockpit control fuel flow into and out of the tanks. From these valves the fuel hoses run through the root ribs into the fuselage. In the baggage compartment, both wing tanks are coupled-up to the fuselage tank by means of quick-release connectors.

For filling the wing tanks, the external filling equipment is coupled up to these same quick-release connectors. At the outer end of the plastic bags the venting hose is connected to a high pressure relief valve. This venting hose is ducted downwards out of the wing at the end rib.

It is also possible to equip the ASH 25 E with only one wing tank (asymmetrically).

## 2.4.2 Dismantling and re-fitting of the Wing Fuel Tanks

The two following paragraphs describe how to remove and re-fit the wing fuel tanks. This may be necessary to facilitate maintenance, repairs or the fitting of water ballast tanks in the inboard wings.

The relevant installation drawing is included under Fig.2.4-2 in the first part of this Section.

# ASH 25 E Maintenance Manual

## Dismantling the Wing Fuel Tanks:

- Refer to Fig.2.4-2.
- Remove terminal connector strip at the root rib of the inboard wing and unplug connections '7', '14' and '9/10' for the solenoid valve and the Earth connection of the wing fuel tank (mark leads before disconnecting).

**NOTE:** Any washers found under the mounting bracket must be replaced in the same order when re-assembling, as otherwise the rigging of the wing may be made difficult or even impossible.

- Pull vent hose off the elbow (No.15, Fig. 2.4-2) at junction II (inboard/outboard wing junction) and untie the cords (Nos.1 and 16 Fig.2.4-2).
- Both cords remain in the wing after dismantling the tank and will be needed for pulling the fuel tank and vent hose back into place.
- Cut the cable ties holding the hose (at root rib and junction II) and untie the cord (No.17 Fig.2.4-2) from the terminal strip mounting bracket (No.13 Fig.2.4-2).
- Pull fuel tank out through the root rib by means of the cord (No.17) (slightly folding the tank in the process).

**NOTE:** Cords (Nos.1 and 16) must not be pulled out; they must be fixed in the wing.

- Re-assemble terminal connector strip (take care to replace washers!)

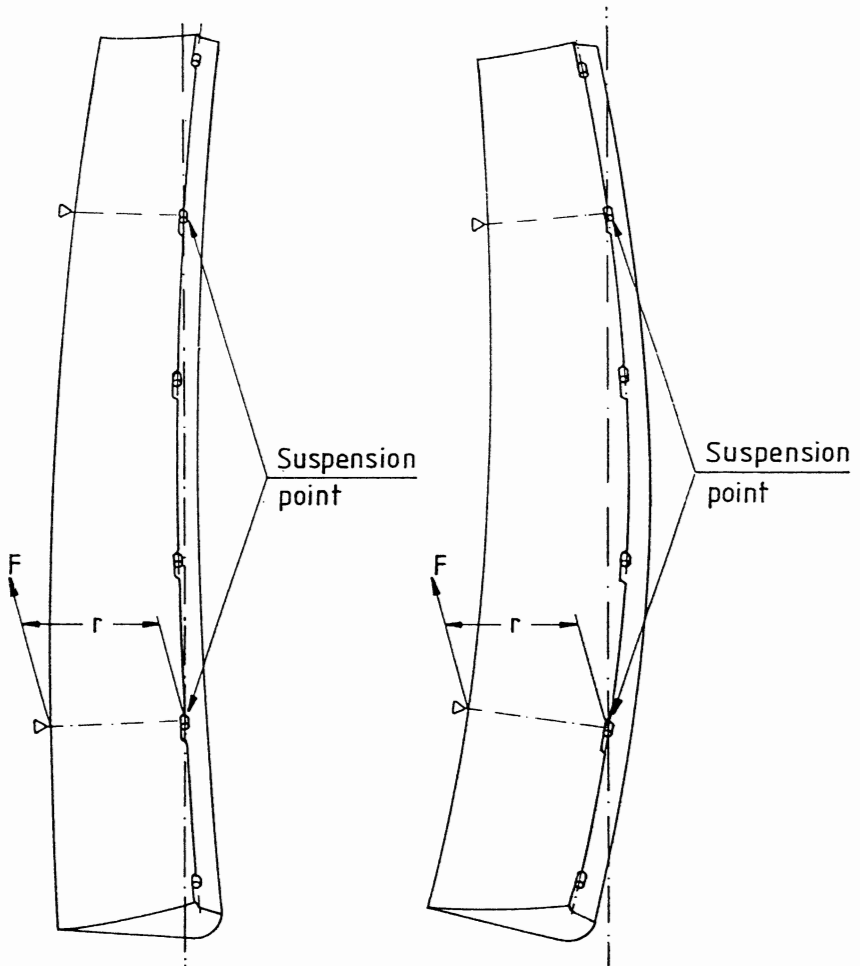
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**Fig. 5.2-2** Warped Control Surfaces



By sighting along the pivot axes, determine which two bearings are suitable for support points.  
(The degree of warp illustrated in the sketch is greatly exaggerated !).

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## 5.3 Tightening Torque Moments Table

Table of maximum permissible torques for bolts in standard bolted connections (not for engine or propeller!):

Thread Size	daNm (mkp)
M4	0.18
M5	0.36
M6	0.64
M8	1.60
M10	3.20
M12	5.70
M14	9.20

Table of bolt tightening torques of the engine:  
See ROTAX Engine Manual!

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## Table of bolt tightening torques of the propeller:

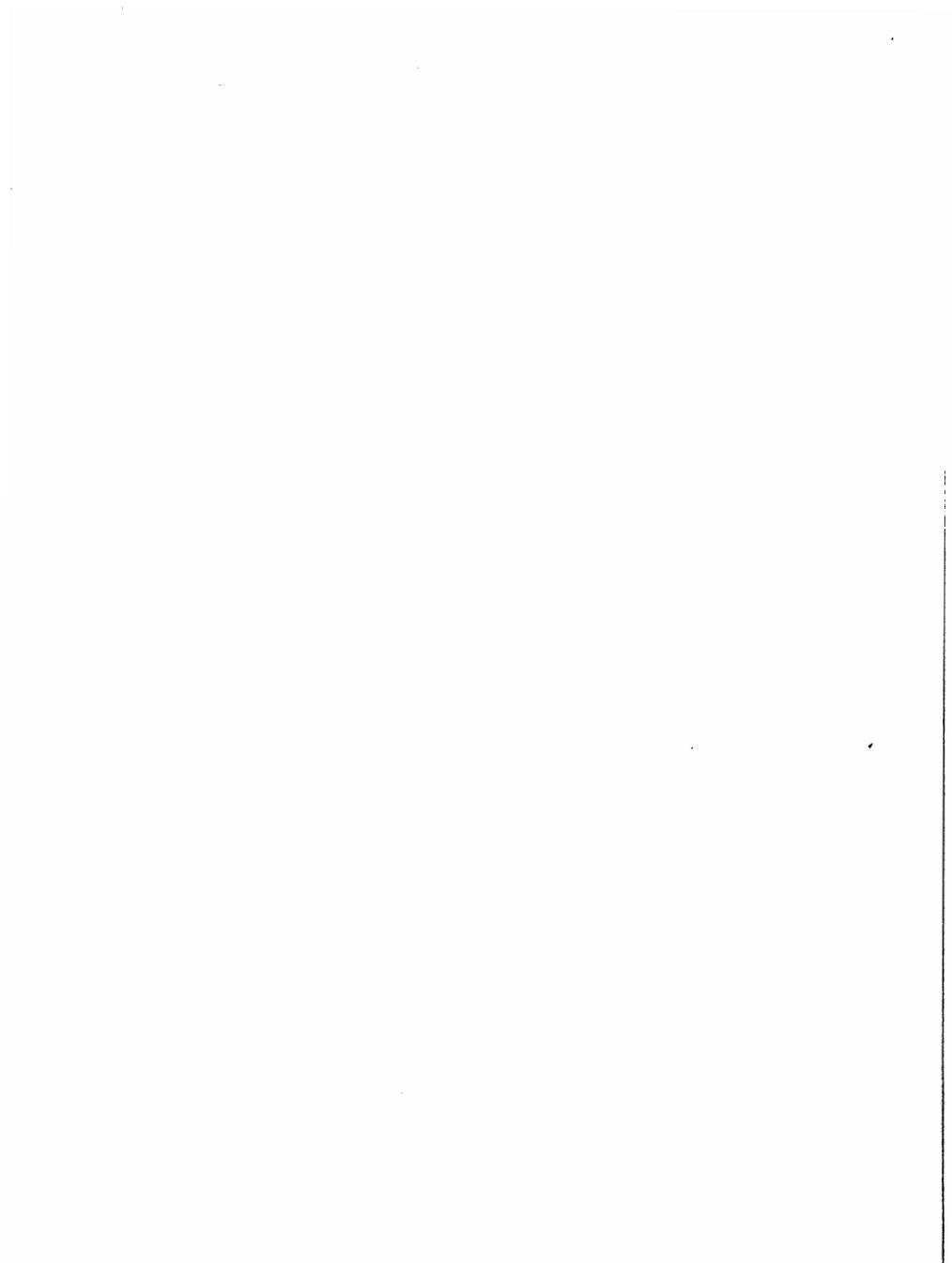
Central propeller bolt M 12x1.5:  
**See ROTAX Engine Manual!**

For the M 6 bolts which fix the propeller to the hub flange the values to be used are shown in the propeller maker's operation and installation manual. As the locking nuts add an additional torque moment, a value of 0.3 Nm should be added to the stated specification.

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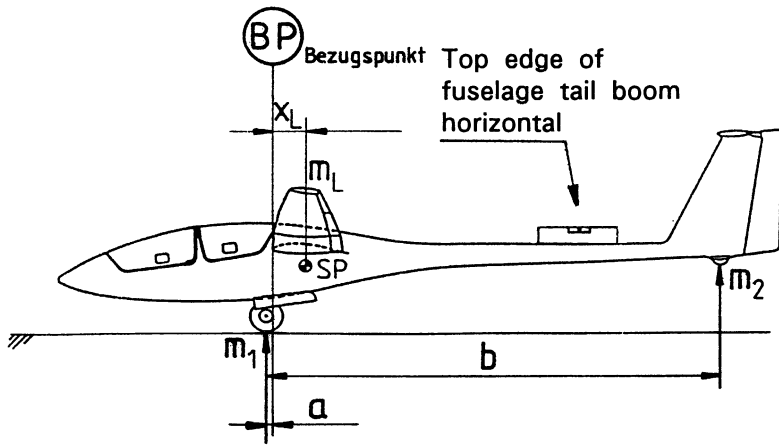
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BP = Datum Point



$$\text{Formula: } X_E = \frac{m_2 * b}{m_E} - a \quad \text{aft of Datum}$$

$$m_E = m_1 + m_2$$

The aircraft must be prepared for weighing as follows:

1. Landing gear extended and flaps in flap setting 3
2. Flight instruments fitted and canopies closed
3. Seat cushions or equivalent in place
4. Aircraft log book and Flight Manual in place
5. Without trim ballast (battery) in fin, if supplied
6. Without removable trim weights in cockpit, if supplied
7. Without parachutes
8. Power-plant retracted
9. Only unusable fuel residue in tank
10. Engine supply battery in baggage compartment
11. Oxygen bottle removed

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## 6.3 Weighing Report

The weighing results must be stated in a weighing report which includes a list of equipment fitted at the time, and which must be filed in the aircraft service record map.

## 6.4 Empty Mass and Empty Mass Moment

The empty mass and the empty mass moment can be established by weighing as described under 6.2, or may be taken from the currently valid inspection report.

The maximum and minimum permissible cockpit loads in the two pilot seats can now be determined by means of the diagram Fig.6.4-1 overleaf.

In case of removable trim ballast fitted in the fin the values given in Example 2b under Sect.6.6 must be taken into account.

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to weigh 238 kg) :-

$$425 \text{ kg} - 238 \text{ kg} - 180 \text{ kg} = 7 \text{ kg}$$

$$(937 \text{ lbs} - 525 \text{ lbs} - 397 \text{ lbs} = 15 \text{ lbs})$$

(Fuel in fuselage  
tank, or baggage)

(2b) For the case that removable trim ballast is fitted in the fin, a minimum cockpit load of 85 kg (187.42 lb) will be entered into the DATA and LOADING PLACARD in the cockpit. Below this placard, the following Notice must be affixed:

**REDUCED MINIMUM COCKPIT LOAD  
WITHOUT TRIM BALLAST IN THE FIN:  
SEE FLIGHT MANUAL - PAGE 6.4 !**

In the Flight Manual the weights limitations list (Mass and Balance Form) on page 6.4 should be completed in accordance with the following example:

Weigh Date	Empty Mass (kg)	Empty Mass CG mm aft of Dtm	Front Seat load incl. parachute solo (kg)		Rear Seat load incl. parachute max. at 110 kg in front seat	Bagge. load (kg)	Insp. Sign. & stamp
??..??..89	535	635 <u>with out</u> trim ballast in fin	74	110	70	7	xxxxxx
	539	670 <u>with</u> 4kg trim ballast in fin	85	110	70	7	

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## 6.7 Useful Loads

The useful cockpit load is influenced and limited by various factors:

- (1) Total mass of non-lifting parts  
(must not exceed 425 kg [937 lbs])
- (2) In-flight C.G. position  
(must remain within 0.21 m and 0.40 m [0.69 ft and 1.31 ft] aft of Datum whatever the cockpit load)
- (3) Maximum Take-Off Mass  
(must not exceed 750 kg [1654 lbs] and mainly affects water ballast load).

### Load in the baggage compartment

The mass of the baggage may be calculated as follows:

max. mass of non-lifting parts	=	425 kg	(937 lbs)
- actual mass of non-lifting parts *	=	xxx kg	(xxx lbs)
- max.total seat loads	=	xxx kg	(xxx lbs)
- fuel in fuselage tank	=	xxx kg	(xxx lbs)
		<hr/>	<hr/>
= permissible load in baggage compartment		xx kg	( xx lbs)
		=====	=====

**BUT never to exceed 15 kg (33 lbs) !!**

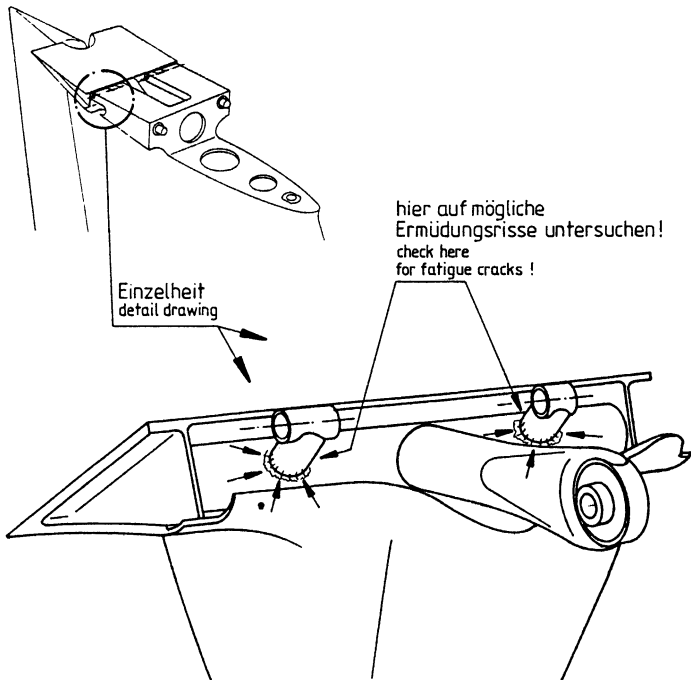
1 liter of fuel equals  $\approx$  0.7 kg (1,54 lbs).

\* without seat loads

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Further notes on para. 20 and 21 will be found in the Appendix in Maintenance Instruction A.

22. See the drawing below for checking the elevator engaging actuator for fatigue cracks at the marked locations. If it is guaranteed - e.g. by means of a small angular mirror - that the welding joint around the tube can be checked all around meticulously, then the engaging actuator need not be dismantled. The trailer used with this aircraft must be checked according to the criteria described in the Flight Manual Section 8 and where necessary must be modified.



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# ASH 25 E Maintenance Manual

## 7.1. Special Inspection Procedures

### After Hard Landings

1. Check landing gear mountings at front main bulkhead !
2. Check landing gear trailing arm, as well as drag strut, H and Z struts for distortion !
3. Are the rubber buffers in the L/G springing still serviceable ?
4. Examine spar fork and tongue for white areas !
5. Inspect wing mounting drag pins on fuselage !
6. Check drag spar tubes and bulkheads in the fuselage !
7. Re-establish wing bending frequency and compare with the value shown in the last inspection report ! If they differ by more than 5 %, contact Messrs. Schleicher ! For correct fuselage support positions see Fig.3.0-1.

### After Groundloops

1. Inspect fuselage-to-fin junction and tailplane mountings !
2. Check wing mounting drag pins on fuselage !
3. Inspect drag spar tubes and bulkheads in fuselage !
4. Examine horizontal partition in fuselage (between front and rear main bulkhead) !

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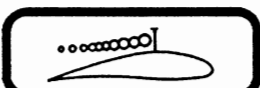










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2		11
3		11a
4		12
5		12a
6		13
7		13a
8		14
9		15
		
		
		
		
		
		
		

# ASH 25 E Maintenance Manual

Segelflugzeugbau A.Schleicher GmbH & Co. Poppenhausen

Model: **ASH 25 E**

Serial-No.:

## DATA and LOADING PLACARD

Empty Mass:	kg	lbs
Max. Flight Mass:	<b>750 kg</b>	<b>1653 lbs</b>
Min. Front Seat Load Solo:	kg	lbs
Max. Front Seat Load:	kg	lbs
Max. Rear Seat Load:	kg	lbs
Max. Total Combined Seat Load:	kg	lbs

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### MAXIMUM PERMISSIBLE SPEEDS:

#### *Engine Unit Retracted*

Calm Air:	<b>280 km/h</b>	<b>151 kts</b>
Maneuvering Speed:	<b>185 km/h</b>	<b>100 kts</b>
Winch Launch W/L and Auto-tow Launching:	<b>130 km/h</b>	<b>70 kts</b>
Aerotow A/T:	<b>160 km/h</b>	<b>86 kts</b>

#### *Engine Unit in Operation*

Extending/Retracting the Engine Unit:	<b>90 km/h</b>	<b>49 kts</b>
Engine Extended:	<b>160 km/h</b>	<b>86 kts</b>
Power Flight (Full Throttle):	<b>130 km/h</b>	<b>70 kts</b>

Weak Link for all approved launch  
or tow types:

**750 to 900 daN**

Tire Pressure Main Wheel:	<b>3,4 to 3,6 bar (48 to 51 psi)</b>
Tail Wheel:	<b>2,4 to 2,6 bar (34 to 37 psi)</b>

17

*Loading of baggage compartment  
max. 15 kg [33 lb.]*

**FILL OUTBOARD TANKS FIRST!**

18

These two placards are located on the inboard  
wing panels behind the water ballast filler openings.

**FILL OUTBOARD TANKS FIRST!**

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POWER PLANT MAINTENANCE INTERVALS

Once-only Maintenance	after hours:	01	25
- retighten propeller flange bolts (6 off)		<input type="radio"/>	
- retighten propeller bolt A/F 19		<input type="radio"/>	
- retighten cylinder head nuts			<input type="radio"/>
- change gearbox oil			<input type="radio"/>

Maintenance Task	after hours:	Engine Hours Period:																							
		05	10	12½	15	20	25	30	35	37½	40	45	50	55	60	62½	65	70	75	80	85	87½	90	95	100
- tighten prop.hub flange bolts (6 off)		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- tighten prop. retaining bolt A/F 19		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- check elastic tensioning cords		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- replace plug				<input type="radio"/>			<input type="radio"/>			<input type="radio"/>			<input type="radio"/>			<input type="radio"/>			<input type="radio"/>			<input type="radio"/>			<input type="radio"/>
- clean magnetic screw (gear oil drain)						<input type="radio"/>						<input type="radio"/>				<input type="radio"/>				<input type="radio"/>				<input type="radio"/>	
- check gearbox oil level			<input type="radio"/>			<input type="radio"/>				<input type="radio"/>					<input type="radio"/>					<input type="radio"/>				<input type="radio"/>	
- check electr.cable lead connections						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check ignition damping box						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- replace spark plug connector						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check ignition timing						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- inspect control cables & check operation						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check idling speed						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check firm seating of engine mounting screws						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check gas strut/extending spindle						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- inspect rubber suspension buffers of engine mounting						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- inspect pull starter cable and cord						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check engine compartment door hinges						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- check propeller brake						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- inspect power-plant cable stays and deflector plates						<input type="radio"/>						<input type="radio"/>								<input type="radio"/>				<input type="radio"/>	
- replace pull starter Nylon cord																									<input type="radio"/>

Once annually Maintenance Task	1. year	2. year	3. year	4. year	5. year	6. year
- clean power-plant & engine compartment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- replace fuel filter in fuselage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- examine fuel hose for condition, leaks and abrasions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- replace fuel gauge hose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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