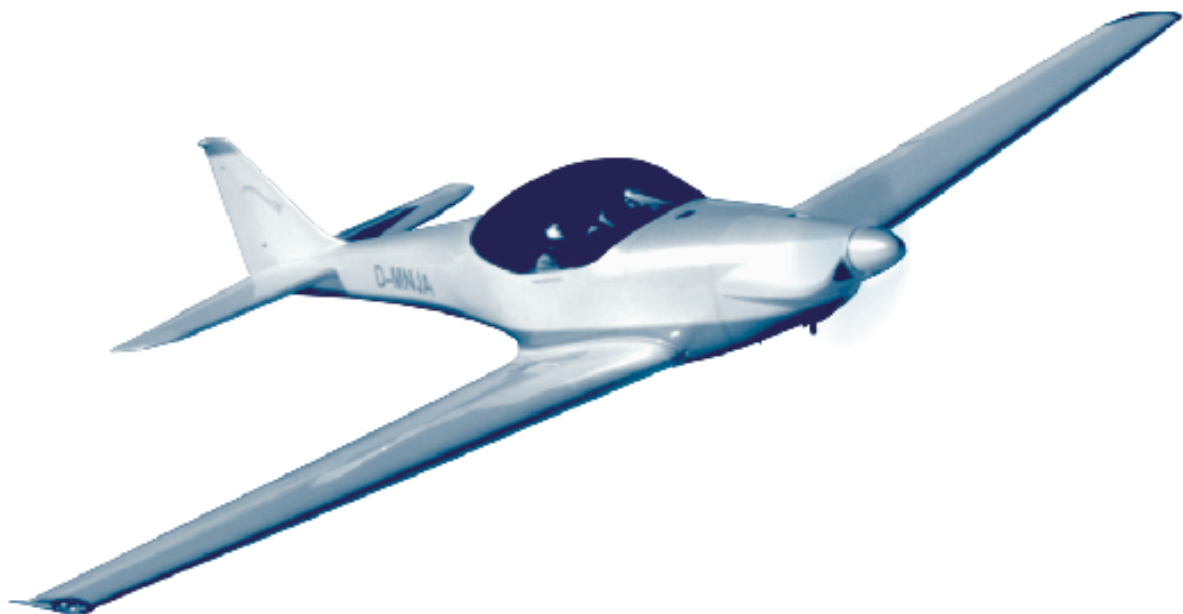


PRESENTATION

D4 FASCINATION

(VLA)



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1. General

1.1 Description and Technical Data

The D4 FASCINATION is a single-engine airplane in fiber composite construction and designed for cruising, training and aero-tow applications. It is equipped with two side-by-side seats, low wings, cruciform tail and retractable gear.

Since 1995 the D4 FASCINATION is certified as a Microlight in several countries in Europe as well as in Brazil. Up to now more than 200 D4 FASCINATIONS were produced.

W.D. AIRCRAFT GmbH applies for JAR – VLA Type Certification for the D4 FASCINATION in accordance with the JAA Joint Certification / Validation Procedures. A Joint Local Procedure is requested.

Specification

construction: low wing with slot-flaps, double-seater

method of construction: glasfiber-composite with carbonfiber mainspar

landing gear: electrical retractable gear, direct drive nose wheel, main gear with disc brakes

propeller (Mühlbauer, alternatively Rospeller): electric adjustable
two or three blade propeller with constant speed 174 cm

rescue-system: ballistic parachute system

engine (Rotax 912 S): 100 hp
cylinder capacity 1.352 ccm
reduction ratio 1:2,43
fuel consumption 17 l/h

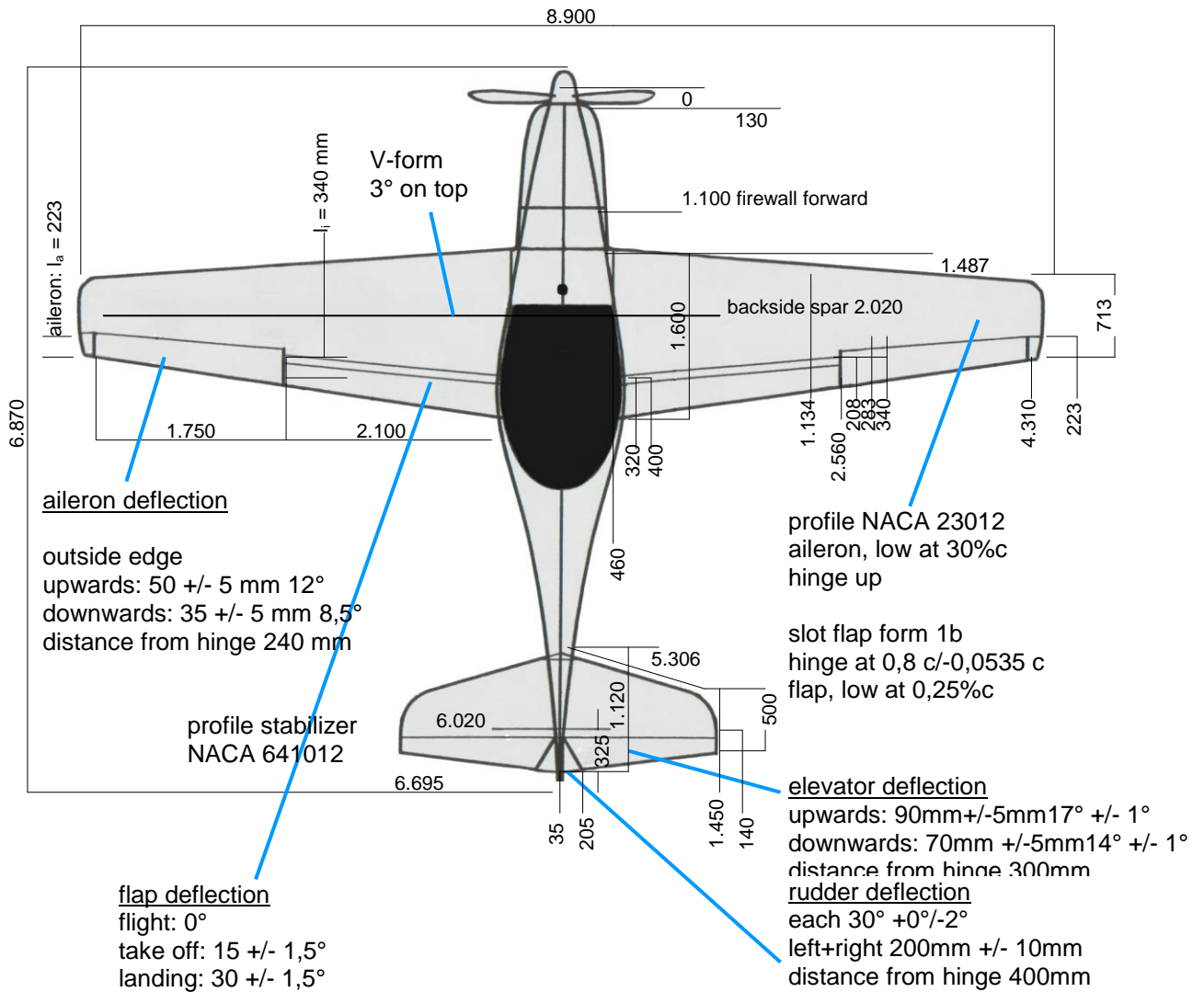
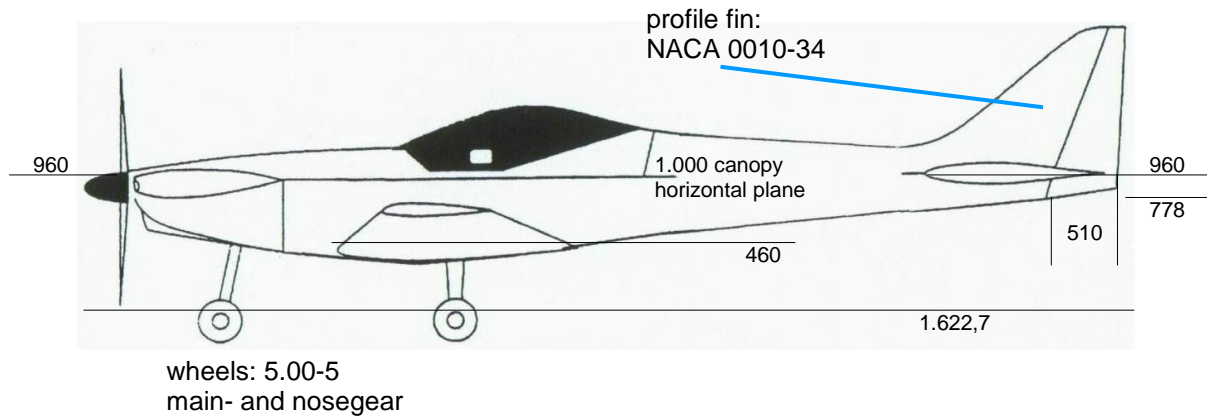
dimensions:
wing span 9,00 m
length 6,98 m
height 1,85 m
wing area 10,4 m²
aspect ratio 7,6 -

fuel capacity:
main tank 85 l
auxiliary tank 80 l

weight:
empty weight incl. rescue system ca. 330 kp
max. take off weight 600 kp

performance:
max cruise speed (Vh) 140 kts
max. speed (Vne) 146 kts
stall speed (Vs) 45 kts
max. climb rate 1.000 ft/min
endurance 1.100 nm

1.2 Dimensions



2. Design and Construction

2.1 Airframe

2.1.1 Wings

The wings are designed with a NACA 23012 airfoil with slotflaps.

The shell structure of the wing is made in GFRP/PU foam sandwich construction with CFRP reinforcements. Every 30 cm foam ribs are installed.

The top flange and the bottom flange of the mainspar are made in CFRP. The spar web is a sandwich structure with GFRP/PU.

The wing attachment is built with two mainbolts. The cross wing forces are taken by two theareted bolts.

The aileron control as well as the flap control are automatically connected.



.1.2 Fuselage and Cockpit

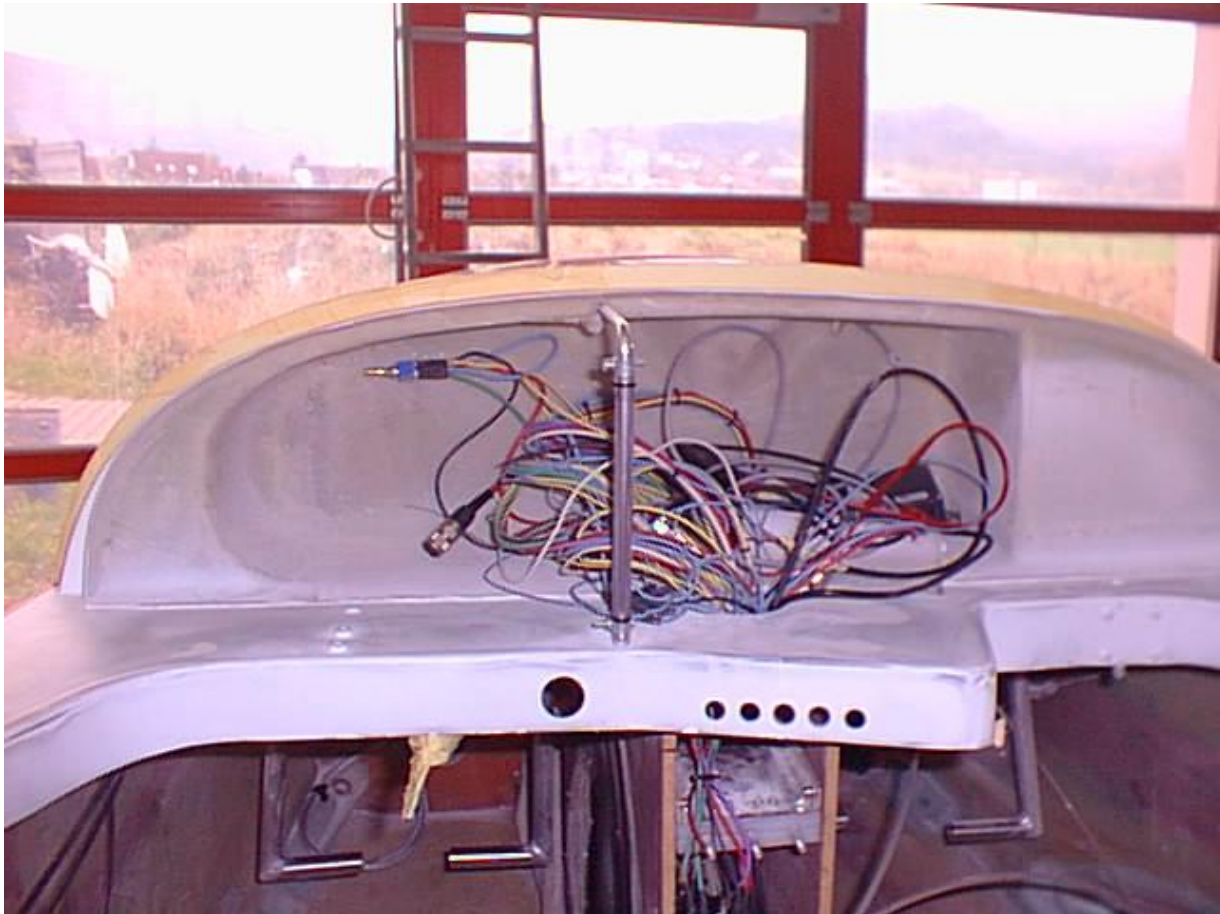
The shell structure of the fuselage is made by GFRP/PU foam sandwich construction with CFRP reinforcements.



The fuselage bulkheads are build in GFRP /PU foam sandwich construction with GFRP reinforcements,



The fuselage supplies an integral fuel tank. The tank is built out of a GFRP/PU foam sandwich construction and treated inside with chemical resistant resin.



The canopy is made in one piece and slides backwards by opening.



2.1.3 Control surfaces

The structure of the stabilizer, elevator and rudder is made of GFRP/PU foam sandwich construction with CFPR reinforcements.



The spar of the elevator is an aluminium tube.

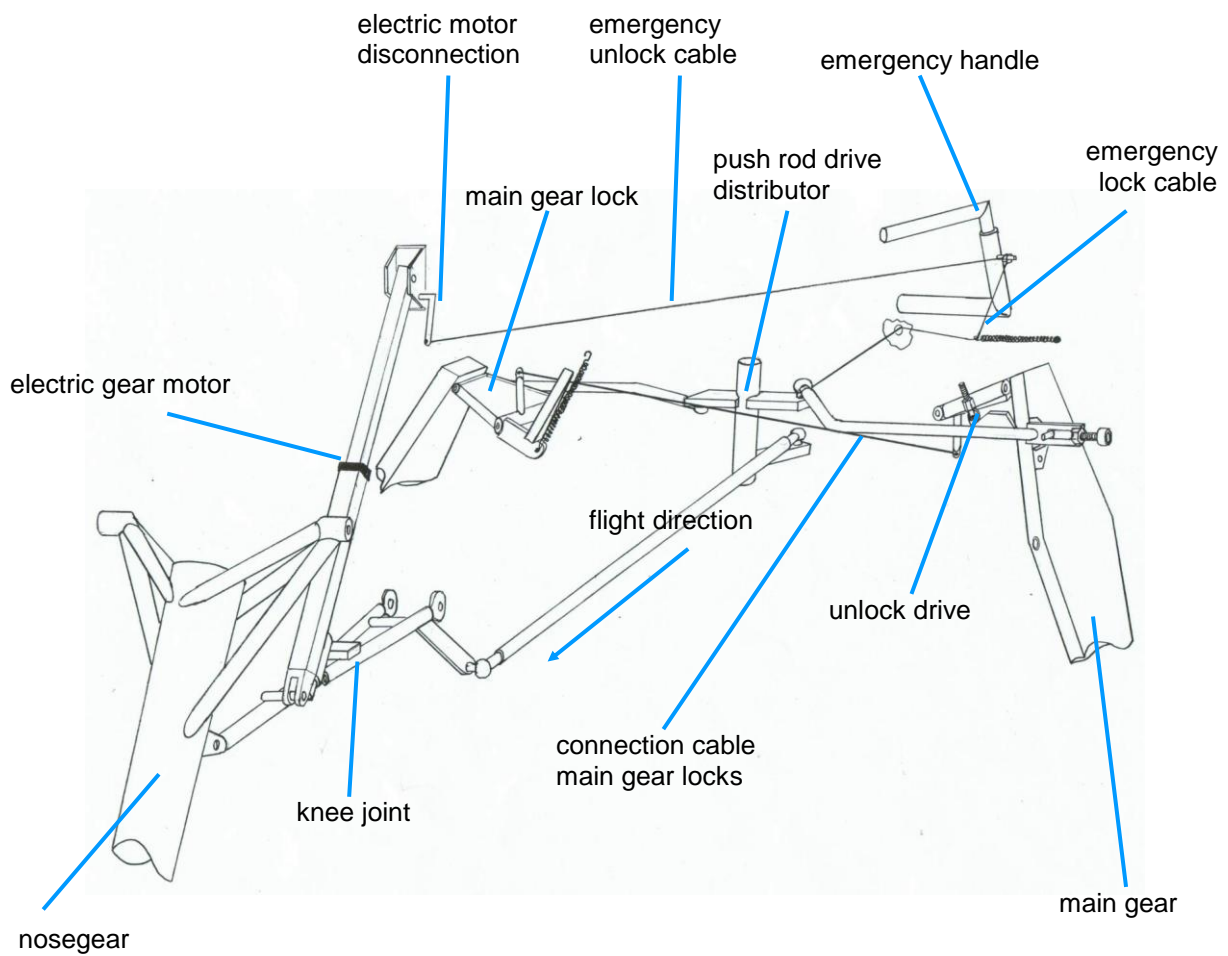


2.2 Gear

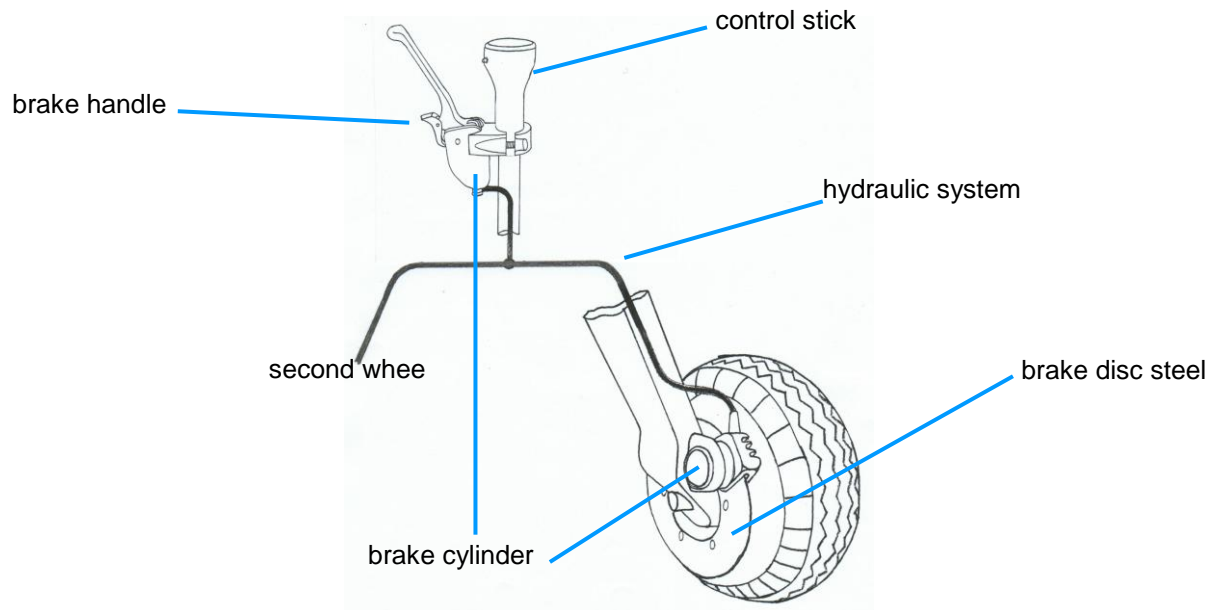
The D4 FASCINATION is equipped with a direct steering nosegear.

2.2.1 Main-and Nosegear

The gear of the D4 FASCINATION is retractable and driven by an electric motor. In case of an electric failure it would be released by an emergency handle and automatically downlocked.

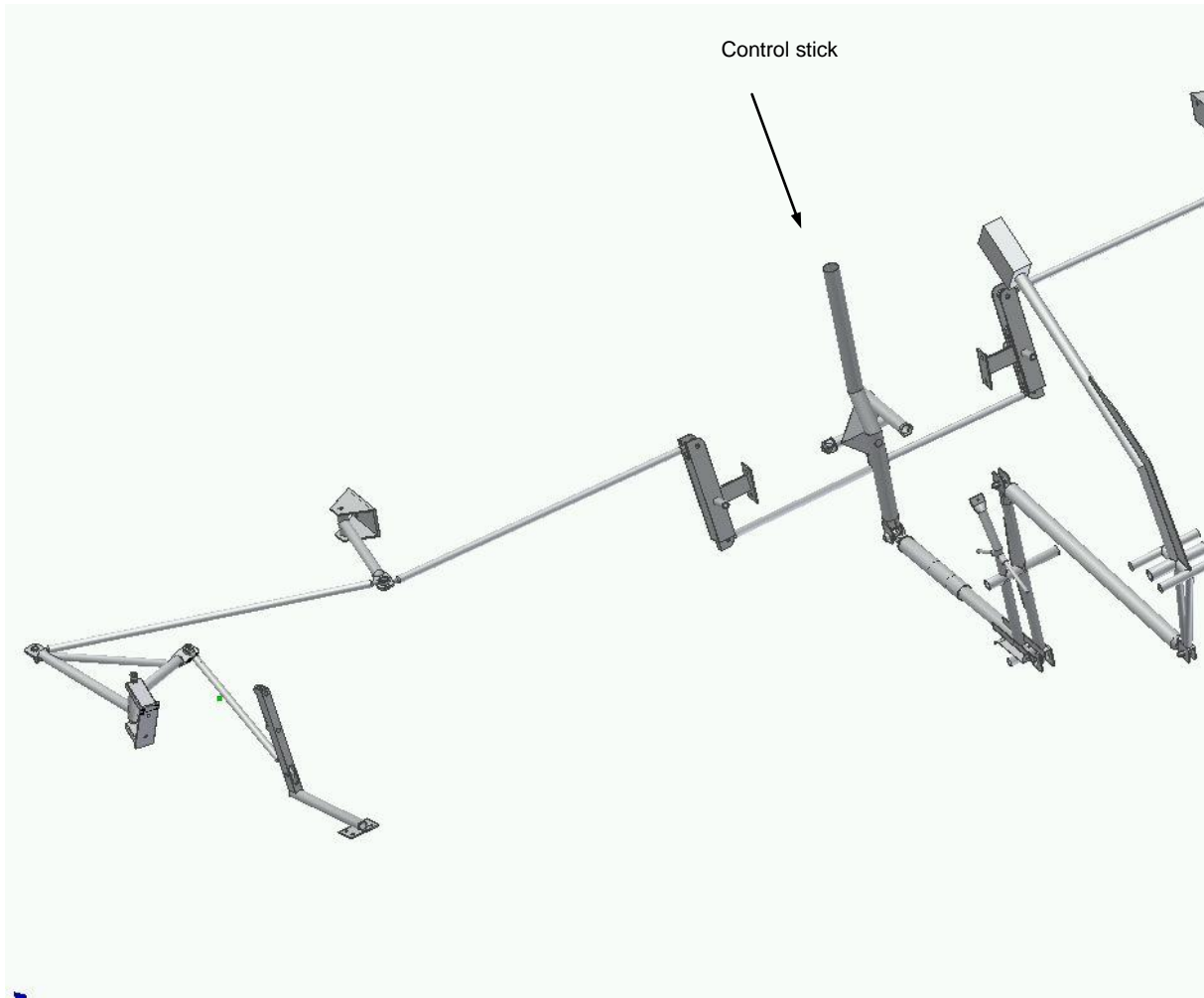


2.2.2 Brake system



2.3 Control systems

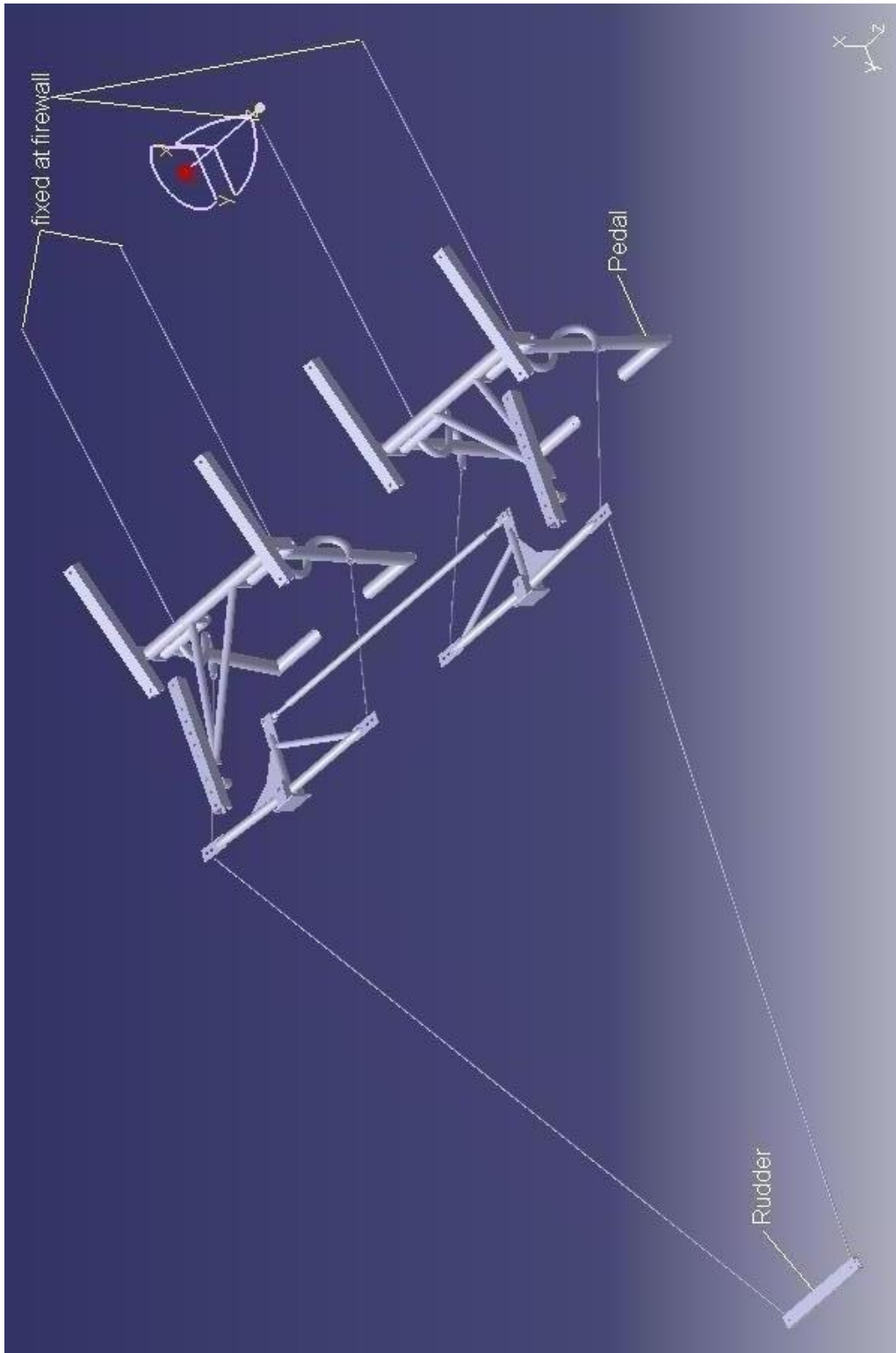
2.3.1 Longitudinal control and Lateral control



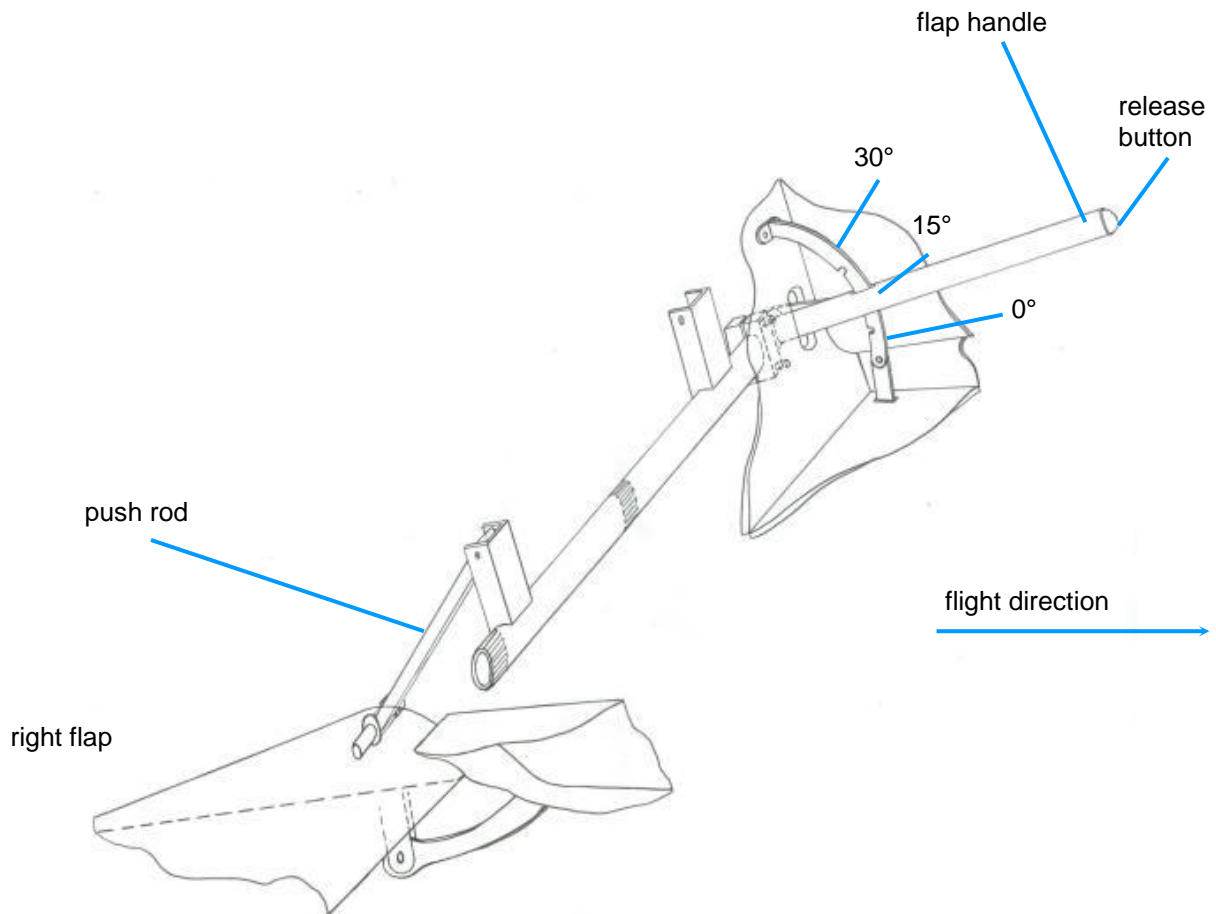
2.3.1 Longitudinal control and Lateral control



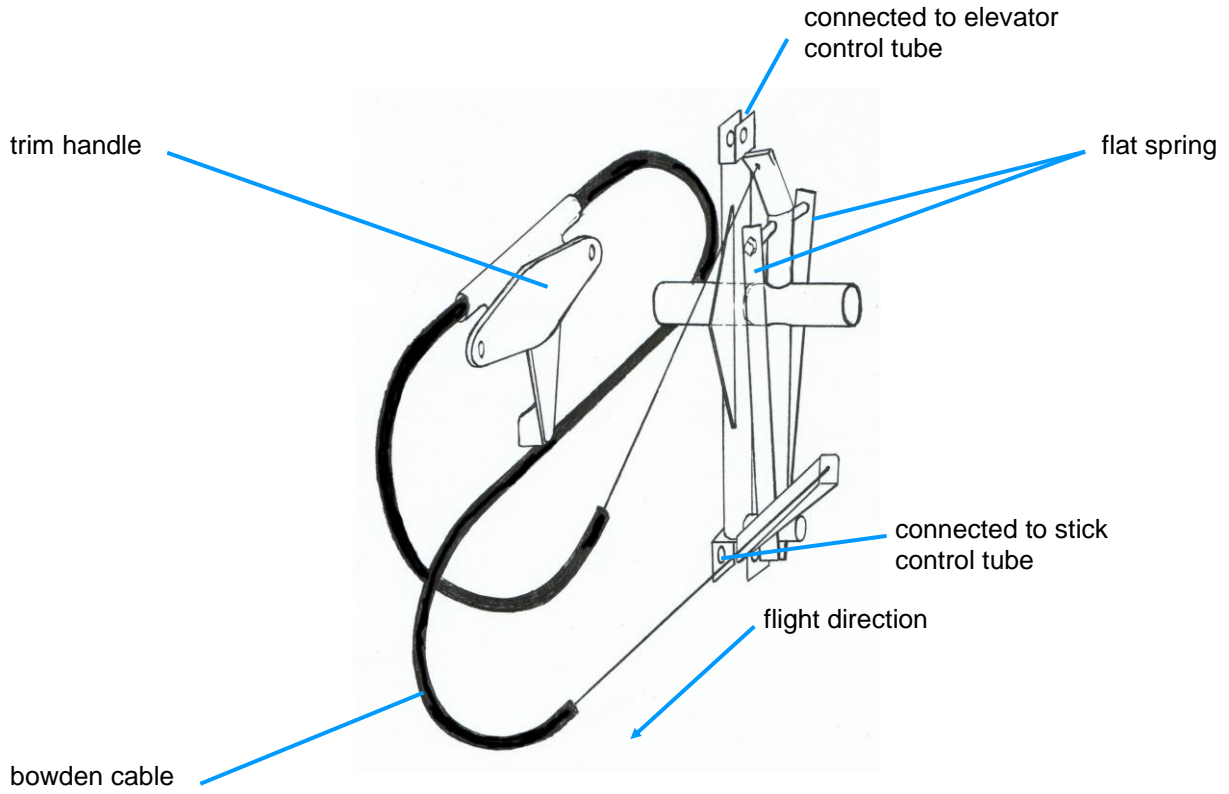
2.3.3 Directional control



2.3.4 Flaps control



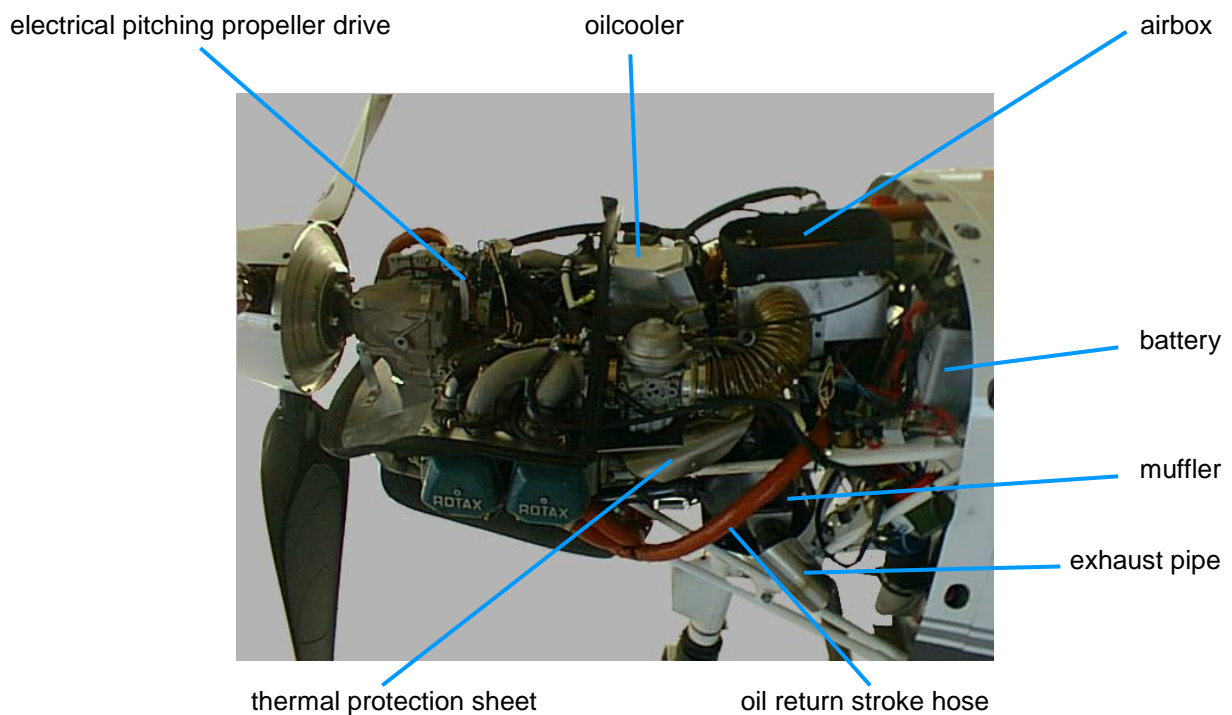
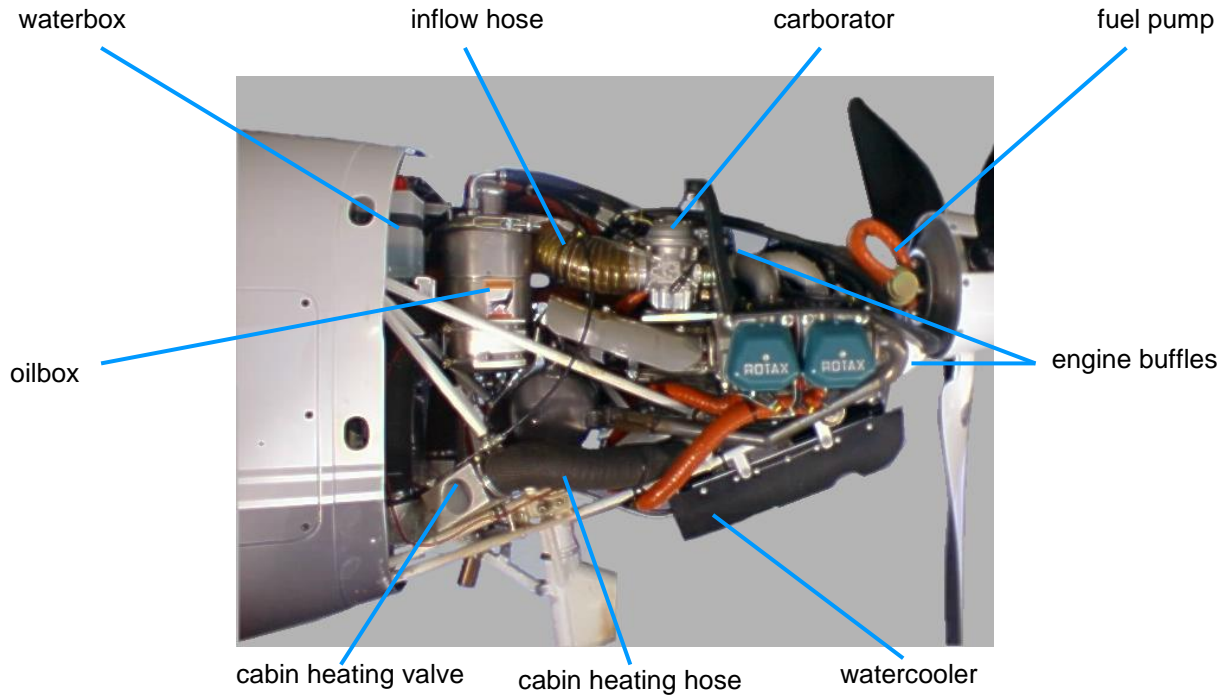
2.3.5 Elevator trim



2.4 Power-plant

2.4.1 Engine and Auxiliary systems

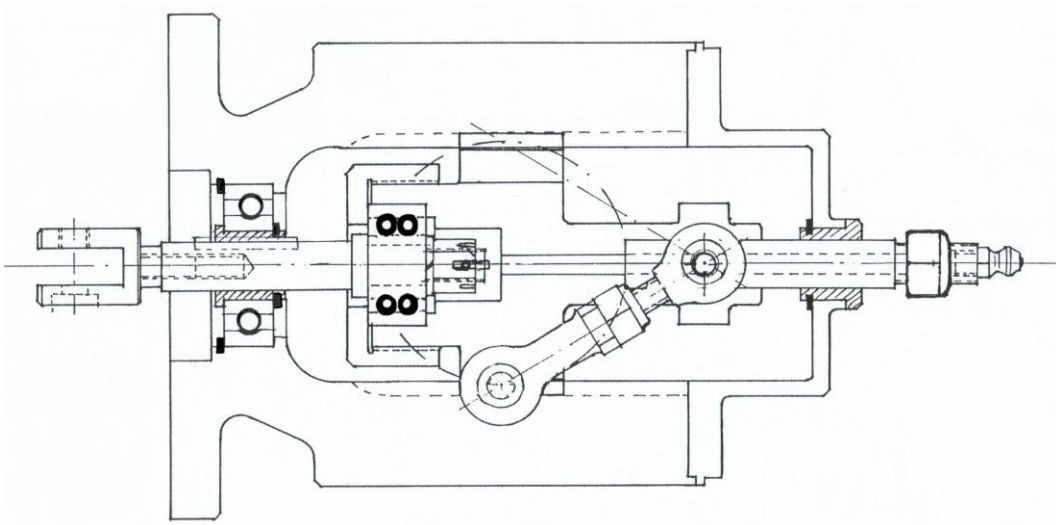
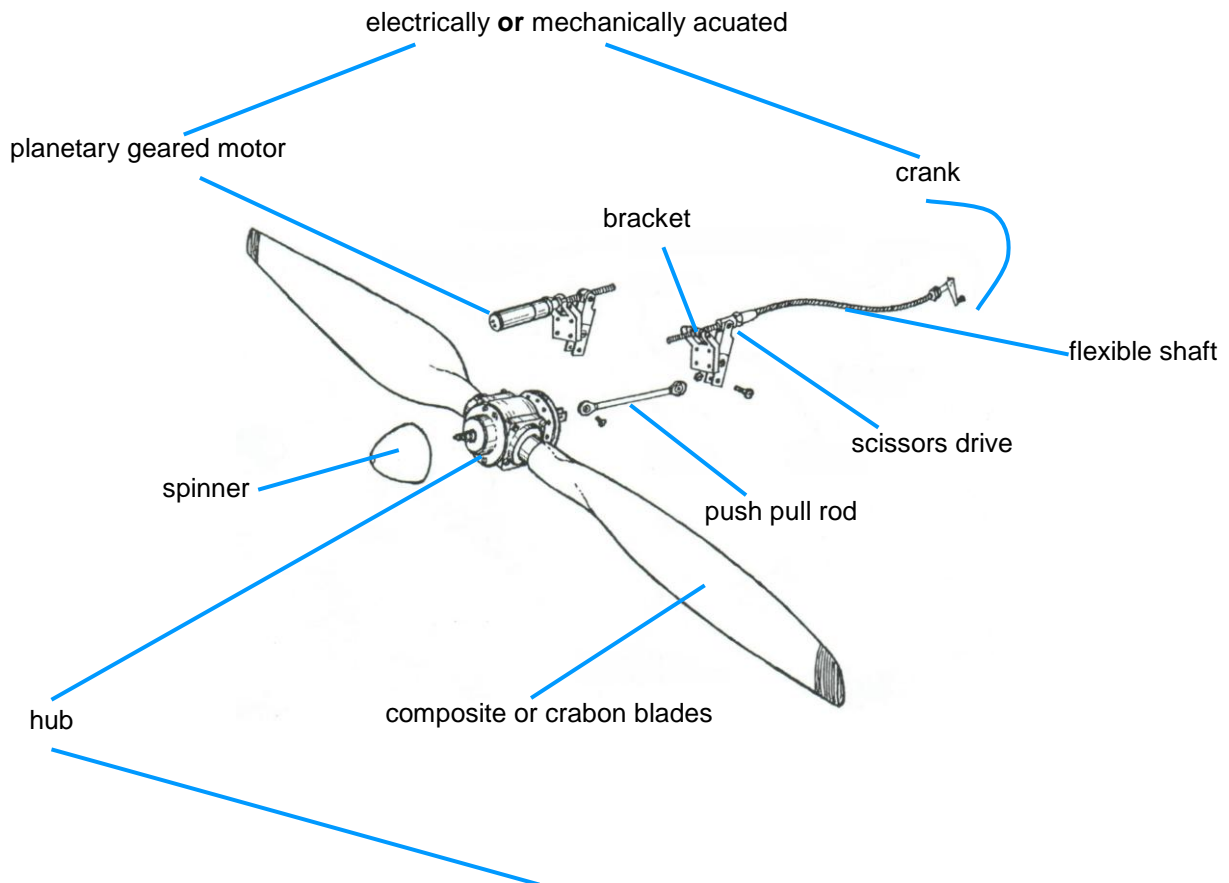
The D4 FASCINATION is powered by a Rotax 912 S four stroke engine.



2.4.2 Propeller

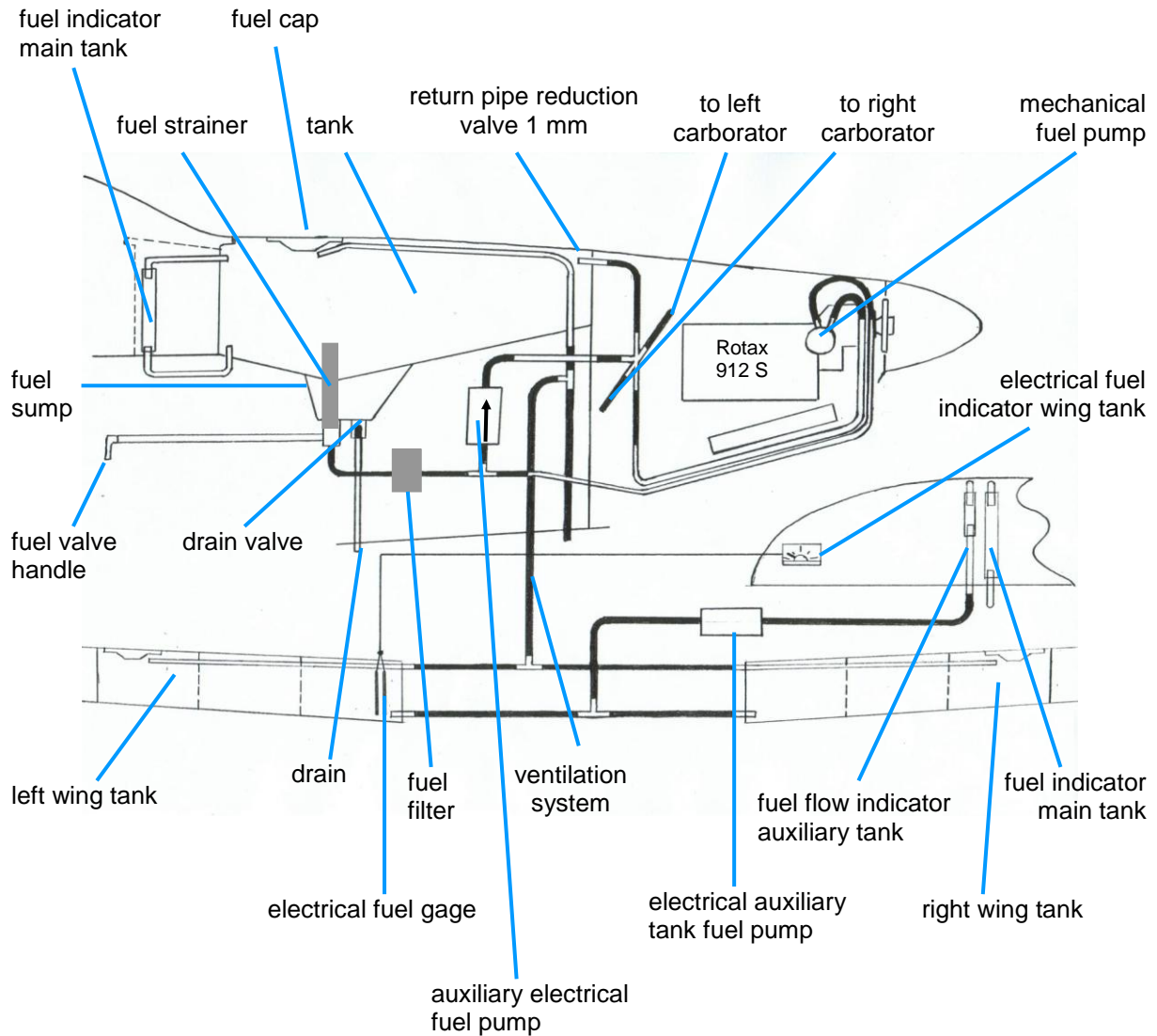
Available are two propeller systems:

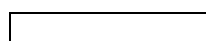
- a Mühlbauer
- b Rospeller (see example below)




2.4.3 Fuel flow

The fuel tank is an integral tank made out of a GFRP/PU foam sandwich construction. Inside it is treated with chemical resistant resin.

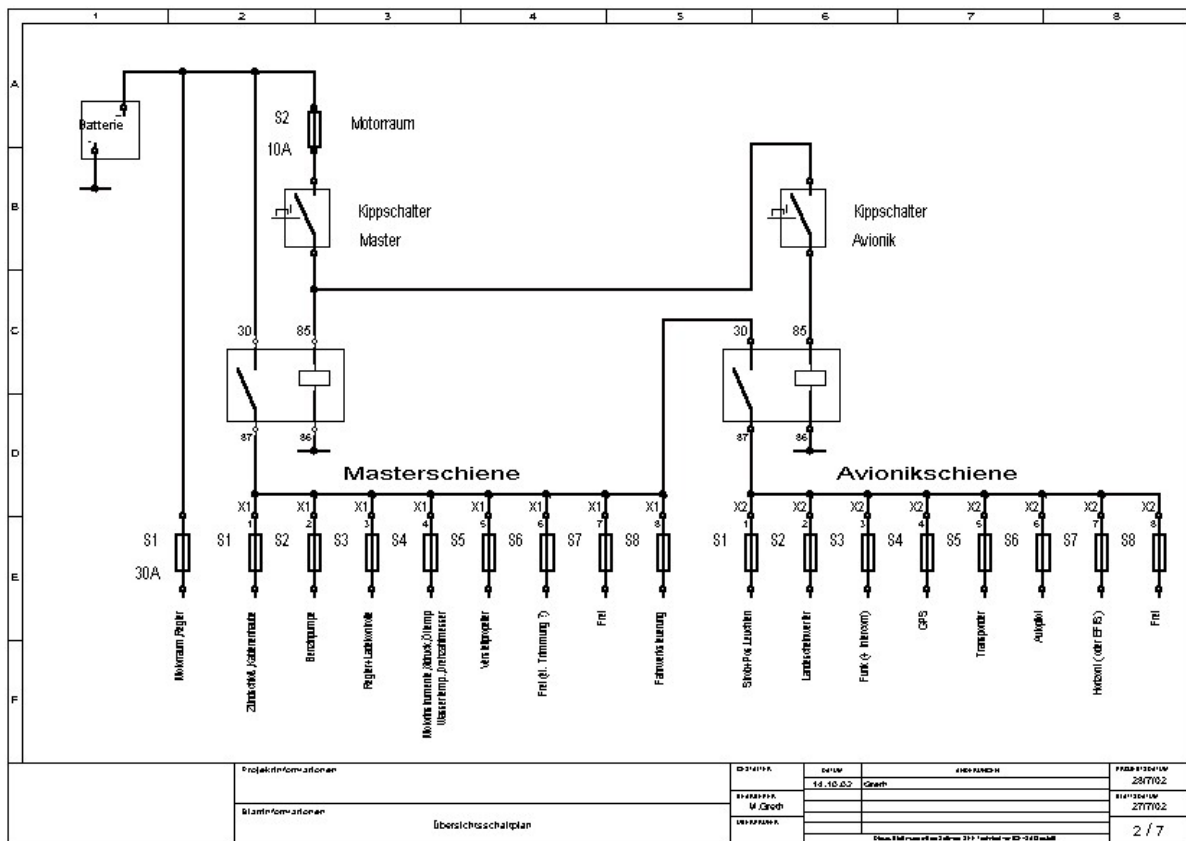


 = stainless steel pipe

 = fuel pipe + fire sleeves
(only firewall forward)

2.5 Electrical systems

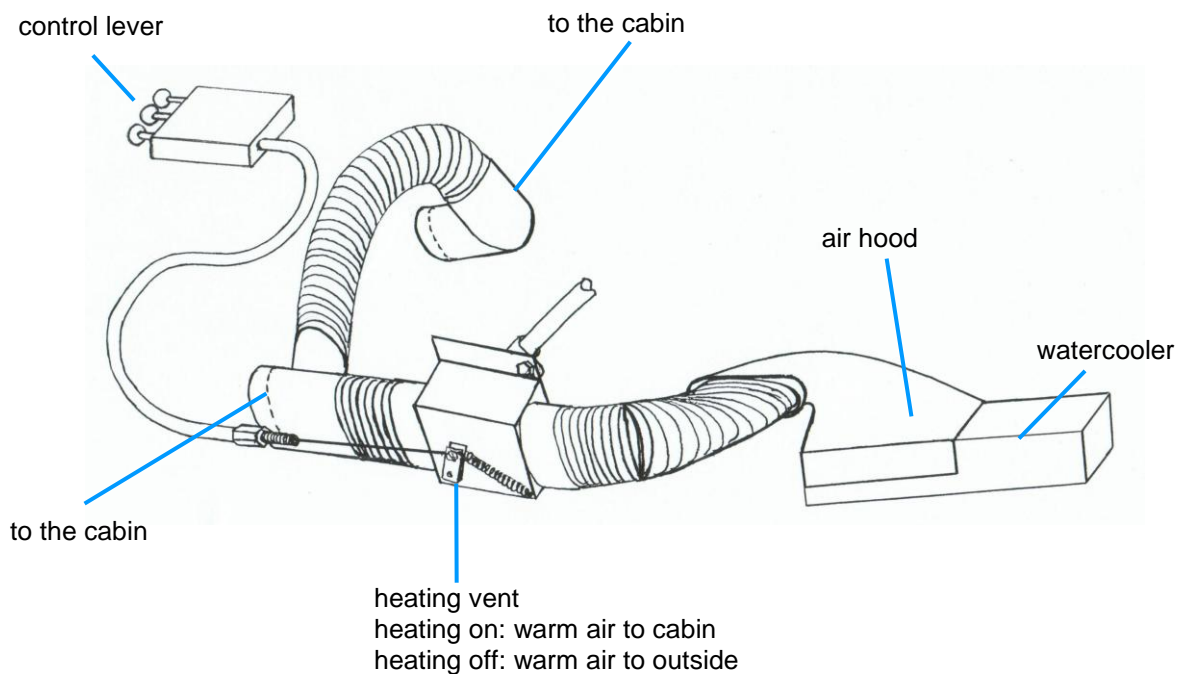
The electrical system is designed for a 14 volt supply including alternator and battery. All electrical loads are controlled by individual circuits and connected to the supply system by means of rocker-type switches or circuit breakers respectively.



2.6 Cockpit and Equipment

2.6.1 Cabin heating

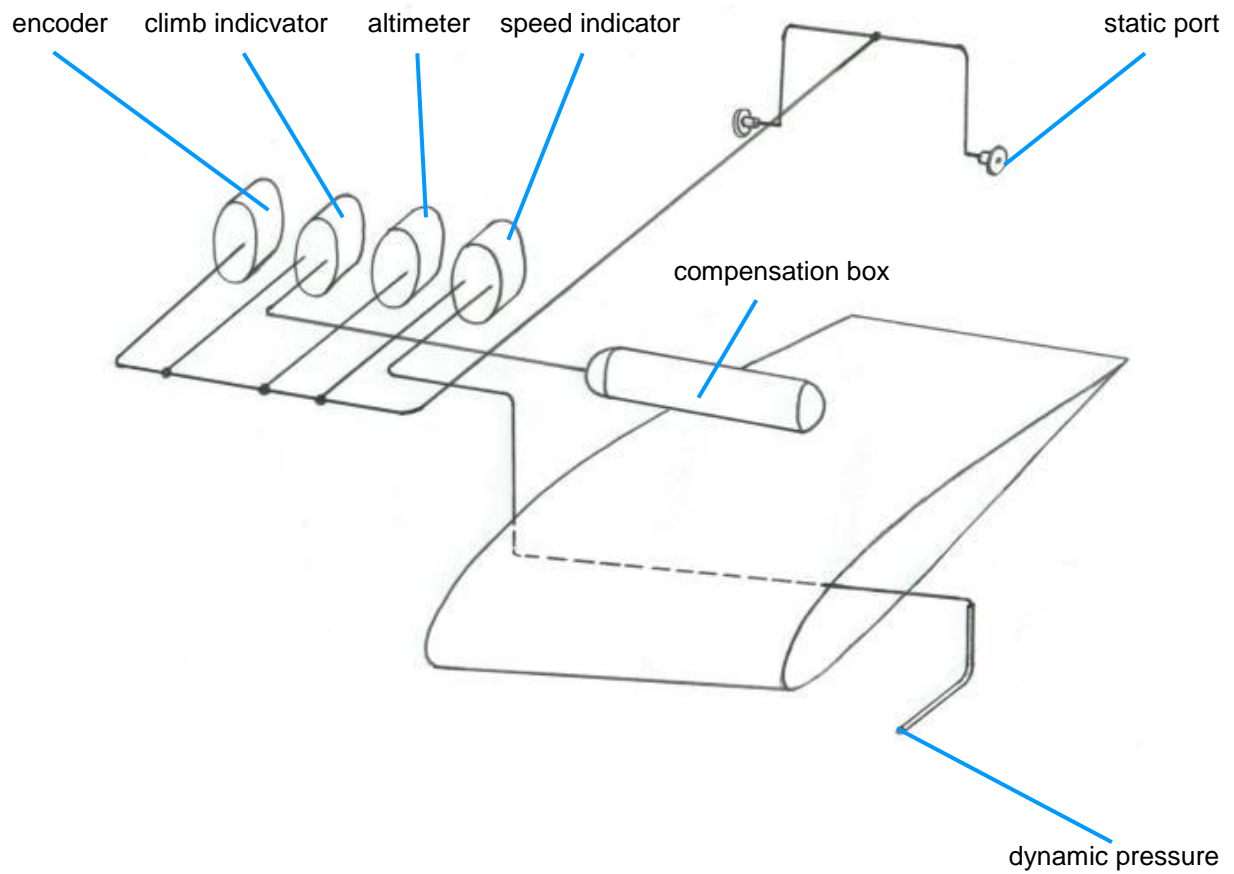
The cabin heating gets the warm air from the watercooler of the Rotax engine.



2.6.2 Instruments / Panel



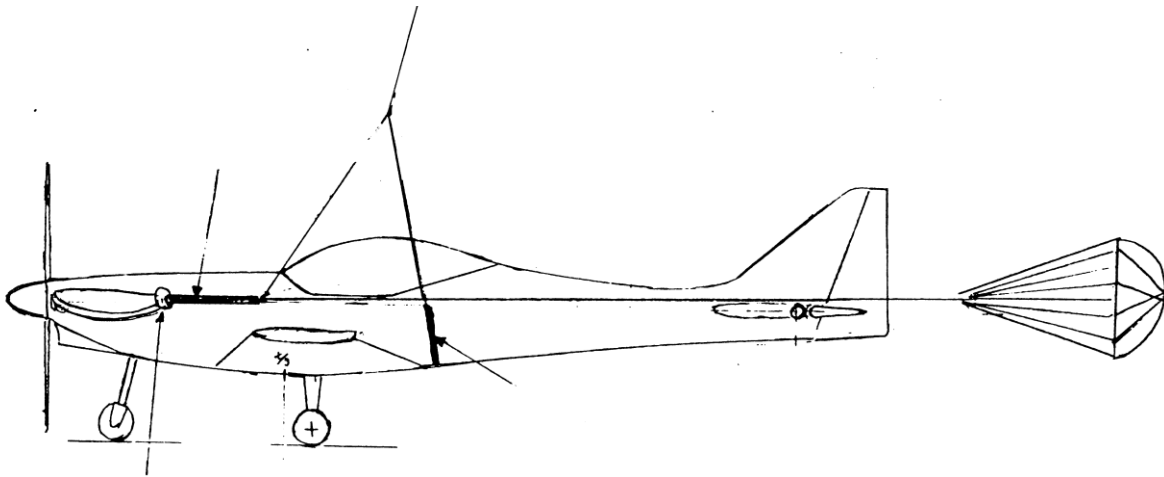
2.7 Static pressure system



2.8 Rescue system

The D4 Fascination is equipped with an ballistic parachute system

The parachute cords are integrated in the sandwich construction of the fuselage



he ejection door is right side of the fuselage behind the firewall



parachute is fixed on three points at the fuselage.

Load test

