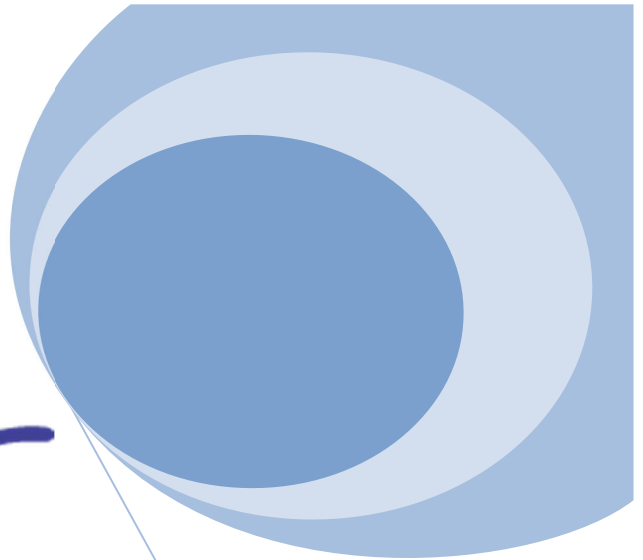




MAINTENANCE MANUAL

Type: **WT-9 Dynamic**

Model: **All models**

Aircraft Serial Number:

Issue No.: **Initial**

Date of Issue: **06.05.2014**

This aircraft has to be maintained in compliance with information and limitations contained herein.



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The aircraft manufacturer will highly appreciate all suggestive proposals concerning this Maintenance Manual as well as an announcement of knowledge and experience found during operation of WT9 Dynamic LSA and WT-9 Dynamic

Translation of this Manual has been done by best knowledge and judgement. In any case the original in Slovak language is authoritative.

0. GENERAL

CONTENT

Chapter		Page
0.	GENERAL	0-1
1.	TECHNICAL DESCRIPTION	1-1
2.	OPERATION	2-1
3.	MAINTENANCE	3-1
4.	REPAIRS	4-1
5.	ANNEXES	5-1

0.1 RECORD OF REVISION

Any revisions or amendments to the present manual shall be issued in the form of bulletins with attached new pages. It is in the interests of every user to enter such revision into the table of revisions and to replace the existing page by the new one. The revised or corrected text shall be indicated by a vertical line on page fore-edge and the page shall bear revision number and date of its issue.

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0.2 LIST OF EFFECTIVE PAGES

Page	Revision	Date	Chapter	Page	Date
0-1	00	06.05.2014	1-32	00	06.05.2014
0-2	00	06.05.2014	1-33	00	06.05.2014
0-3	00	06.05.2014	1-34	00	06.05.2014
0-4	00	06.05.2014	1-35	00	06.05.2014
0-5	00	06.05.2014	1-36	00	06.05.2014
0-6	00	06.05.2014	1-37	00	06.05.2014
			1-38	00	06.05.2014
1-1	00	06.05.2014	1-39	00	06.05.2014
1-2	00	06.05.2014	1-41	00	06.05.2014
1-3	00	06.05.2014	1-42	00	06.05.2014
1-4	00	06.05.2014	1-43	00	06.05.2014
1-5	00	06.05.2014	1-44	00	06.05.2014
1-6	00	06.05.2014	1-45	00	06.05.2014
1-7	00	06.05.2014	1-46	00	06.05.2014
1-8	00	06.05.2014	1-47	00	06.05.2014
1-9	00	06.05.2014	1-48	00	06.05.2014
1-10	00	06.05.2014	1-49	00	06.05.2014
1-11	00	06.05.2014	1-51	00	06.05.2014
1-12	00	06.05.2014	1-52	00	06.05.2014
1-13	00	06.05.2014	1-53	00	06.05.2014
1-14	00	06.05.2014	1-54	00	06.05.2014
1-15	00	06.05.2014	1-55	00	06.05.2014
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1-17	00	06.05.2014	1-57	00	06.05.2014
1-18	00	06.05.2014	1-58	00	06.05.2014
1-19	00	06.05.2014	1-59	00	06.05.2014
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1-21	00	06.05.2014	1-61	00	06.05.2014
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1-26	00	06.05.2014	1-66	00	06.05.2014
1-27	00	06.05.2014			
1-28	00	06.05.2014	2-1	00	06.05.2014
1-29	00	06.05.2014	2-2	00	06.05.2014
1-30	00	06.05.2014	2-3	00	06.05.2014
1-31	00	06.05.2014	2-4	00	06.05.2014

Page	Revision	Date	Chapter	Page	Date
2-5	00	06.05.2014	3-1	00	06.05.2014
2-6	00	06.05.2014	3-2	00	06.05.2014
2-7	00	06.05.2014	3-3	00	06.05.2014
2-8	00	06.05.2014	3-4	00	06.05.2014
2-9	00	06.05.2014	3-5	00	06.05.2014
2-10	00	06.05.2014	3-6	00	06.05.2014
2-11	00	06.05.2014	3-7	00	06.05.2014
2-12	00	06.05.2014	3-8	00	06.05.2014
2-13	00	06.05.2014	3-9	00	06.05.2014
2-14	00	06.05.2014	3-10	00	06.05.2014
2-15	00	06.05.2014	3-11	00	06.05.2014
2-16	00	06.05.2014	3-12	00	06.05.2014
2-17	00	06.05.2014	3-13	00	06.05.2014
2-18	00	06.05.2014	3-14	00	06.05.2014
2-19	00	06.05.2014	3-15	00	06.05.2014
2-20	00	06.05.2014	3-16	00	06.05.2014
2-21	00	06.05.2014	3-17	00	06.05.2014
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2-28	00	06.05.2014	4-2	00	06.05.2014
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2-30	00	06.05.2014	4-4	00	06.05.2014
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2-36	00	06.05.2014	5-2	00	06.05.2014
2-37	00	06.05.2014	5-3	00	06.05.2014
2-38	00	06.05.2014	5-4	00	06.05.2014
2-39	00	06.05.2014	5-5	00	06.05.2014
2-40	00	06.05.2014	5-6	00	06.05.2014
2-41	00	06.05.2014	5-7	00	06.05.2014
2-42	00	06.05.2014	5-8	00	06.05.2014
2-43	00	06.05.2014	5-9	00	06.05.2014

Page	Revision	Date	Chapter	Page	Date
5-10	00	06.05.2014			
5-11	00	06.05.2014			
5-12	00	06.05.2014			
5-13	00	06.05.2014			
5-14	00	06.05.2014			
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5-25	00	06.05.2014			
5-26	00	06.05.2014			
5-27	00	06.05.2014			
5-28	00	06.05.2014			
5-29	00	06.05.2014			
5-30	00	06.05.2014			
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5-34	00	06.05.2014			
5-35	00	06.05.2014			
5-36	00	06.05.2014			
5-37	00	06.05.2014			
5-38	00	06.05.2014			
5-39	00	06.05.2014			
5-40	00	06.05.2014			
5-41	00	06.05.2014			
5-42	00	06.05.2014			

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1. TECHNICAL DESCRIPTION

CONTENT

Chapter		Page
0.	GENERAL	0-1
1.	TECHNICAL DESCRIPTION	1-1
1.1.	INTRODUCTION	1-4
1.2.	CERTIFICATION BASIS	1-4
1.3.	WARNINGS, CAUTIONS AND NOTES	1-4
1.4.	BASIC AND GENERAL INFORMATION	1-5
1.4.1.	AIRCRAFT DESCRIPTION	1-5
1.4.2.	DESIGNATION	1-5
1.5.	BASIC TECHNICAL DATA	1-6
1.5.1.	THREE-VIEW DRAWING	1-6
1.5.1.1.	MODEL CLUB "FG912 CONFIGURATION"	1-6
1.5.1.2.	MODEL CLUB "FG912T CONFIGURATION"	1-7
1.5.1.3.	MODEL SPEED "RG914 CONFIGURATION"	1-8
1.5.2.	BASIC DIMENSIONS	1-9
1.5.3.	WEIGHTS	1-9
1.5.4.	CENTRE OF GRAVITY	1-9
1.6.	TECHNICAL DESCRIPTION OF THE AIRCRAFT	1-10
1.6.1.	FUSELAGE	1-10
1.6.2.	WING	1-11
1.6.2.1.	AILERON	1-11
1.6.2.2.	WING FLAP	1-11
1.6.3.	TAIL UNITS	1-12
1.6.3.1.	HORIZONTAL TAIL UNIT	1-12
1.6.3.2.	VERTICAL TAIL UNIT	1-12
1.6.4.	LANDING GEAR	1-13
1.6.4.1.	LANDING GEAR - MODEL CLUB	1-13
1.6.4.2.	LANDING GEAR - MODEL SPEED	1-15
1.6.4.3.	BRAKE SYSTEM	1-18
1.6.4.4.	HYDRAULIC SYSTEM (ONLY MODEL SPEED)	1-20
1.6.5.	CONTROL SYSTEMS	1-21
1.6.5.1.	ELEVATOR CONTROL SYSTEM	1-21
1.6.5.2.	AILERON CONTROL SYSTEM	1-22
1.6.5.3.	RUDDER CONTROL SYSTEM	1-23
1.6.5.4.	WING FLAP CONTROL SYSTEM	1-25
1.6.6.	POWERPLANT	1-27
1.6.6.1.	MODEL CLUB "FG912 CONFIGURATION"	1-27
1.6.6.1.1.	ENGINE ROTAX 912 ULS	1-27
1.6.6.1.2.	ENGINE SYSTEMS	1-29
1.6.6.1.3.	PROPELLER EVRA PERFORMANCE LINE 175/XXX/805.5	1-34
1.6.6.2.	MODEL CLUB "FG912T CONFIGURATION"	1-35
1.6.6.2.1.	ENGINE ROTAX 912 ULS	1-35
1.6.6.2.2.	ENGINE SYSTEMS	1-36

1.6.6.2.3.	PROPELLER WOODCOMP SR2000DN	1-38
1.6.6.3.	MODEL SPEED "RG914 CONFIGURATION"	1-39
1.6.6.3.1.	ENGINE ROTAX 914 UL	1-39
1.6.6.3.2.	ENGINE SYSTEMS	1-41
1.6.6.3.3.	PROPELLER WOODCOMP SR3000/2N	1-45
1.6.7.	COCKPIT	1-46
1.6.7.1.	INSTRUMENT PANELS	1-50
1.6.7.1.1.	MODEL CLUB "FG912 CONFIGURATION"	1-51
1.6.7.1.2.	MODEL CLUB "FG912T CONFIGURATION"	1-53
1.6.7.1.3.	MODEL SPEED "RG914 CONFIGURATION"	1-55
1.6.7.2.	BAGGAGE COMPARTMENT	1-57
1.6.7.3.	COCKPIT HEATING AND VENTING	1-58
1.6.8.	EMERGENCY PARACHUTE SYSTEM	1-60
1.6.9.	ELECTRIC SYSTEM	1-61
1.6.9.1.	MODEL CLUB "FG912 CONFIGURATION"	1-61
1.6.9.2.	MODEL CLUB "FG912T CONFIGURATION"	1-62
1.6.9.3.	MODEL SPEED "RG914 CONFIGURATION"	1-63
1.6.10.	PITOT-STATIC SYSTEM	1-64
1.6.11.	TOW RELEASE MECHANISM	1-66
1.6.12.	PLACARDS	1-66

1.1. Introduction

The Maintenance Manual for aircraft WT9 Dynamic LSA and WT-9 Dynamic has been prepared to provide the information for the safe and efficient operation of this aircraft.

This manual contains supplemental data supplied by the aircraft manufacturer.

1.2. Certification basis

WT9 Dynamic LSA (MTOW 600,0 kg):

CS-LSA – Certification Specifications for Light Sport Aeroplanes

WT-9 Dynamic (MTOW 472,5 kg):

German Certification Regulations and Airworthiness Requirements for ultra light aircraft of the DaeC (BFU des DaeC, Ausgabe 10/95). Type Certificate No. 61179 has been issued on 23.10.2001.

The Civil Aviation Authorities of Slovak Republic following regulation

MDPT SR L 8/A and LU č. P- ULL-1 SR. Type Certificate of Airworthiness No. V-80/2004 dated April 25th 2005 for Type WT-9 Dynamic. Category of Airworthiness : Normal

1.3. Warnings, cautions and notes

The following definitions apply to warnings, cautions and notes used in the Maintenance Manual for aircraft WT9 Dynamic LSA and WT-9 Dynamic

WARNING

Means that the non-observation of the corresponding procedure leads to an immediate or important degradation of the flight safety!

CAUTION

Means that the non-observation of the corresponding procedure leads to a minor or to a more or less long term degradation of the flight safety!

NOTE

Draw the attention to any special item, not directly related to safety but that is important or unusual!

1.4. Basic and general information

1.4.1. Aircraft description

WT9 Dynamic LSA and WT-9 Dynamic are a single engine, low-wing monoplanes with two side-by-side seats and dual control. An airframe consists of a sandwich shells from advanced composite material.

Models of WT9 Dynamic LSA (MTOW 600,0 kg)

Model Club “FG912 configuration”:

The aircraft is equipped with a fixed tricycle landing gear with a nose wheel. As a powerplant is used 4 cylinder, 4 stroke engines Rotax 912 ULS in combination with 3-blade ground adjustable propeller EVRA PERFORMANCE LINE 175/xxx/805.5.

Model Club “FG912T configuration”:

The aircraft is equipped with a fixed tricycle landing gear with a nose wheel. As a powerplant is used 4 cylinders, 4 stroke engines Rotax 912 ULS in combination with 3-blade in-flight electrically adjustable propeller WOODCOMP SR2000DN.

Model Speed “RG914 configuration”:

The aircraft is equipped with a retractable tricycle landing gear with a nose wheel. As a powerplant is used 4 cylinders, 4 stroke engines Rotax 914 UL in combination with 2-blade in-flight electrically adjustable propeller WOODCOMP SR3000/2N.

Models of WT-9 Dynamic (MTOW 472,5 kg)

Models of WT-9 Dynamic (MTOW 472,5 kg) are based on two basic models Club and Speed enabling a wide range of combinations of the above engines and propellers.

1.4.2. Designation

WT9 Dynamic LSA and WT-9 Dynamic are intended for sporting, recreation, tourist flying and glider towing in accordance with VFR day. Aerobatic manoeuvres and intentional spins are prohibited!

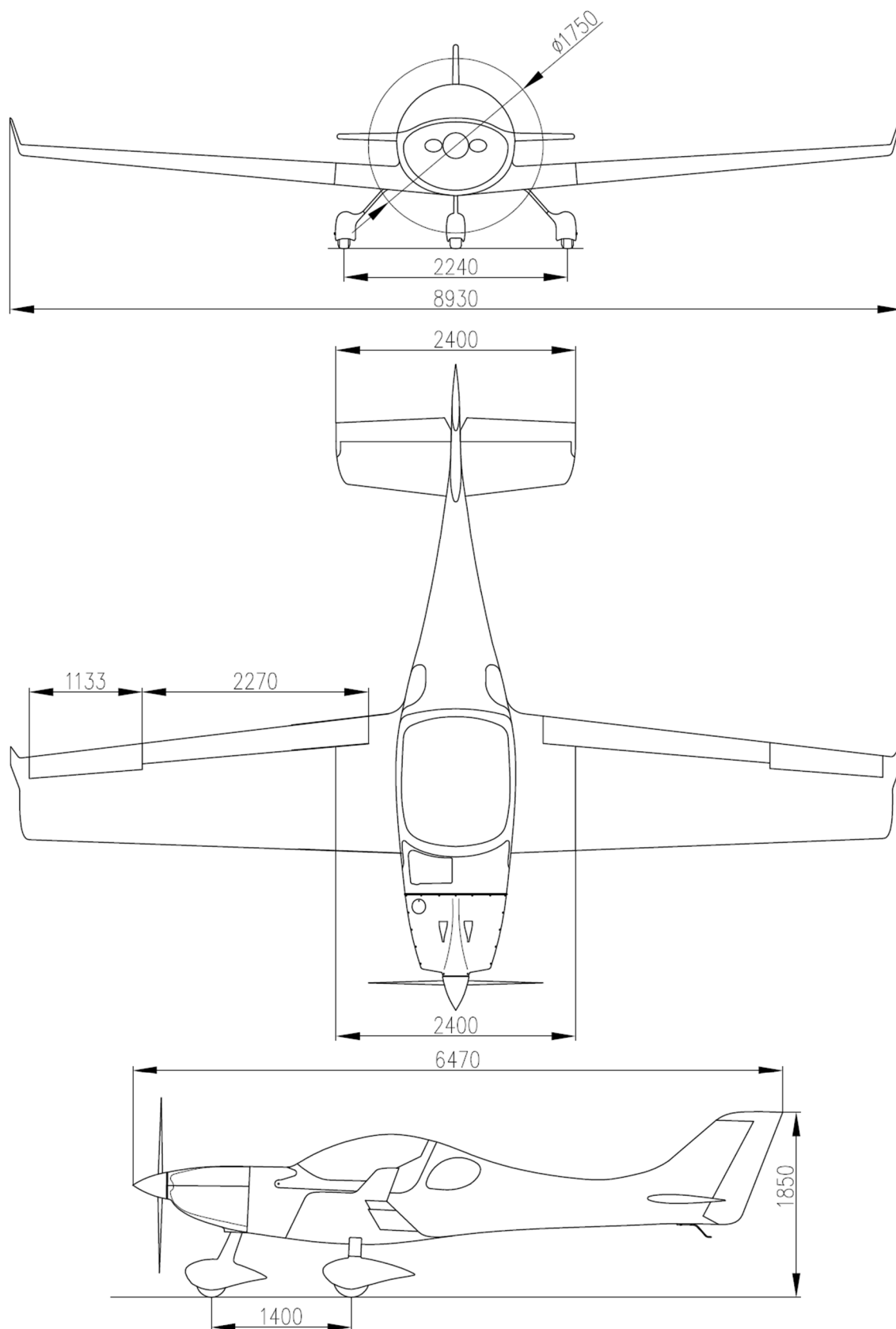
1.5. Basic technical data**1.5.1. Three-view drawing****1.5.1.1. Model Club "FG912 configuration"**

Fig. 1.5.1.1-1 WT9 Dynamic LSA, model Club "FG912 configuration"

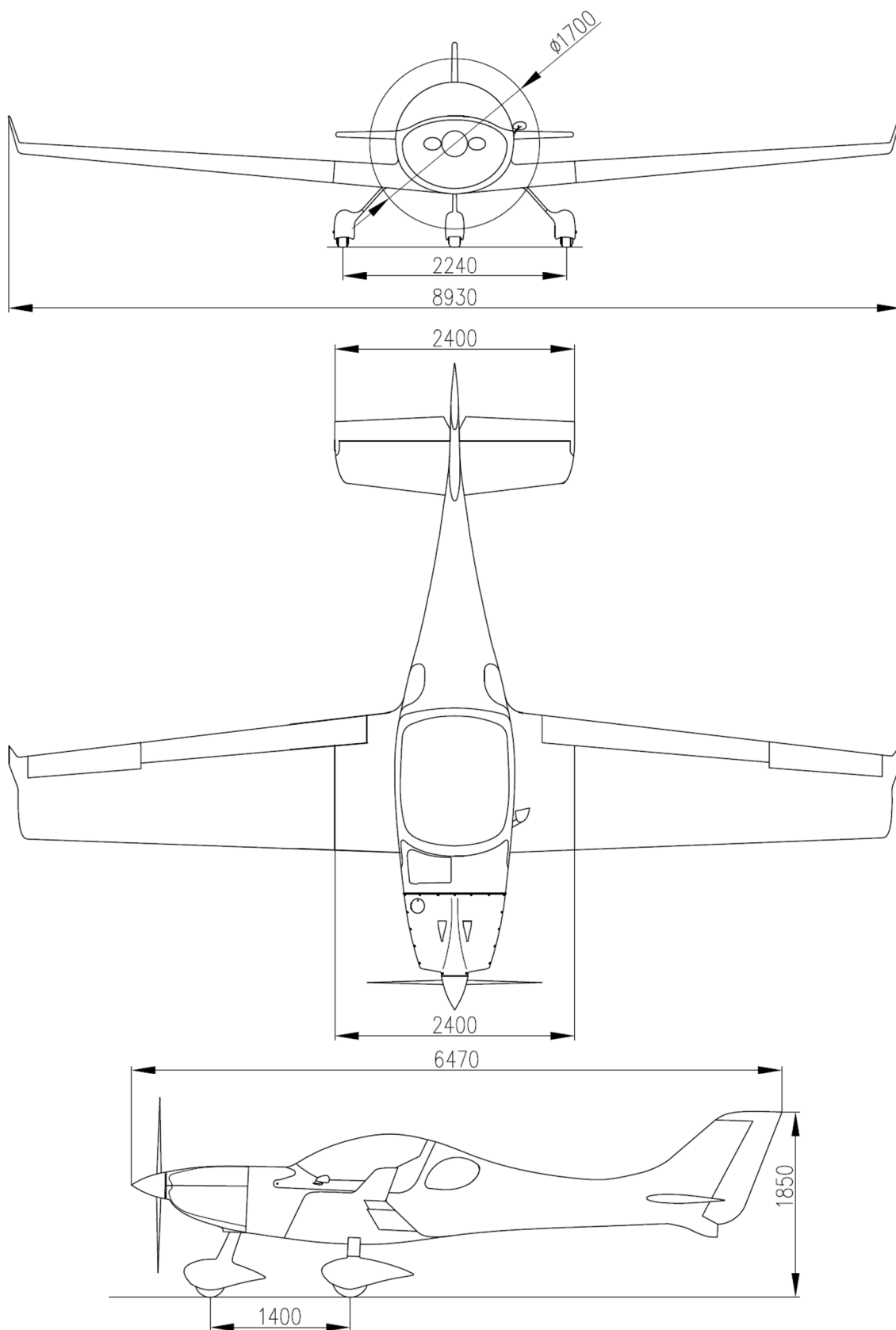
1.5.1.2. Model Club "FG912T configuration"

Fig. 1.5.1.2-1 WT9 Dynamic LSA, model Club "FG912T configuration"

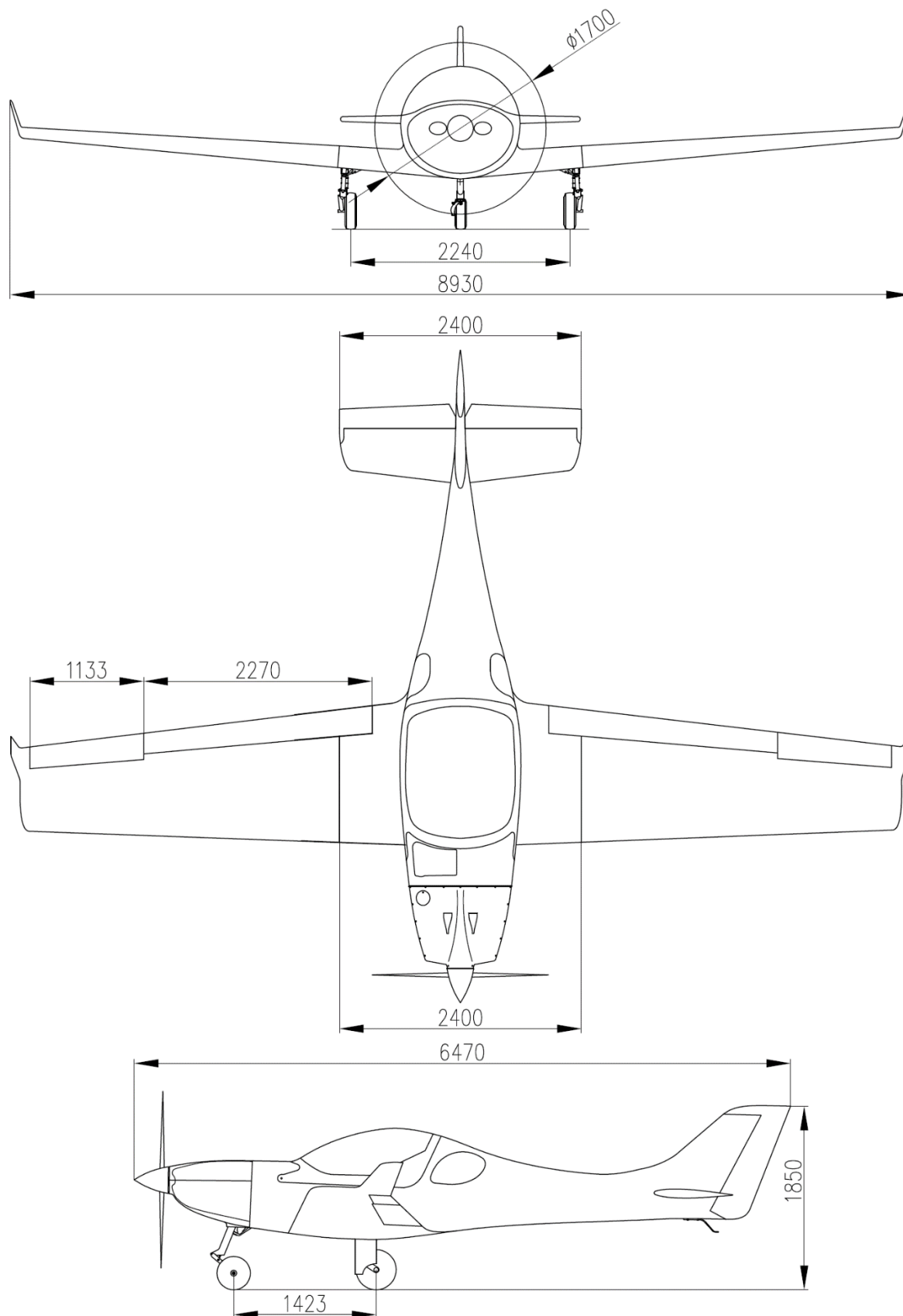
1.5.1.3. Model Speed “RG914 configuration”

Fig. 1.5.1.3-1 WT9 Dynamic LSA, model Speed “RG914 configuration”

1.5.2. Basic dimensions

Aircraft	
Wing area	10,31 m ²
Wing span	8,93 m
Length	6,47 m
Height	1,85 m
Wing aspect ratio	8,12
Aerodynamic mean chord (MAC)	1,185 m

Control surfaces	
Aileron area	0,27 m ²
Aileron span	1,13 m
Flap area	0,75 m ²
Flap span	2,27 m
Horizontal tail area	1,68 m ²
Horizontal tail span	2,40 m
Vertical tail area	0,89 m ²
Vertical tail span	1,18 m

Landing gear	Club	Speed
Wheel base	1,400 m	1,423 m
Wheel track	2,24 m	
Nose wheel size	13x5,00-6	
Main wheel size	15x6,00-6	

1.5.3. Weights

Weights	Club	Speed
Average empty weight	335 kg	350 kg
Maximum take-off weight (LSA/UL)	600,0 kg / 472,5 kg	
Maximum landing weight (LSA/UL)	600,0 kg / 472,5 kg	
Maximum fuel weight (126,0 litres)	90,7 kg	
Maximum baggage weight	40 kg	

1.5.4. Centre of gravity

CG positions	
Empty aircraft	12 ± 2% MAC
Operating	20 ÷ 30% MAC

1.6. Technical description of the aircraft

1.6.1. Fuselage

Fuselage is monocoque glass/carbon composite construction consisting of three parts that are glued together: right side, left side and lower section. Sandwich shells are made of external and internal shell layers from glass/carbon fibre fabrics and hard foam panel.

In the right side of fuselage is glued steel rope for ballistic recovery system that is attached to the auxiliary spar. Fin and horizontal stabilizers are fixed parts of fuselage. There are two windows in baggage compartment.

Main and auxiliary spar are glued in the central section of fuselage. Central section is divided in longitudinal direction with a central tunnel that creates the space for two persons – pilot co-pilot. Pilot and co-pilot's seats are arranged side-by-side and consist of removable laminate seats and backrest that is glued with central tunnel and fuselage. Baggage compartment is situated between backrest and baggage bulkhead. Central tunnel passes through the baggage compartment and divides it in two sections. Each section of baggage compartment has 4 attaching point to which is baggage fixed by fastening straps and baggage net. Baggage bulkhead is sloped in the upper section and fitted with covered opening allowing access to the rear section of fuselage. Rear section of fuselage is stiffened with the elliptical bulkheads.

There are integral fuel tanks each on the both sides of wing central section situated in front of main spar. There is a drain valve in the lowest point of each fuel tank.

Model Club:

Plywood firewall in the front section of fuselage is glued to the fuselage and stiffened from the interior side with carbon stiffener, interior floor and rescue system board. Firewall has stiffened areas for engine mount and nose landing gear leg attaching. From the engine compartment is covered with a fire-proof protection.

In the wing central section are glued ribs to which the main landing gear legs are attached.

In addition model Club "FG912T configuration" has adapted rear part of fuselage due to installation of tow release mechanism (see figures in chapter 1.5.1).

Model Speed:

Plywood firewall in the front section of fuselage is glued to the fuselage and stiffened from the interior side by central tunnel, interior floor and rescue system board. Firewall has cut-out due to nose landing gear leg and stiffened areas for engine mount attaching. From the engine compartment is covered with fire-proof protection.

In the wing central section are situated boxes into which the main landing gear legs are retracted. Main landing gear legs are attached to the main and auxiliary spar. In the central tunnel of front fuselage section is situated box into which the for nose landing gear leg is retracted.

1.6.2. Wing

The wing is trapezoidal shape and made of glass/carbon composite sandwich construction. Upper and lower skin is glued together with one main spar and auxiliary web. Tie-down point is attached to the main spar of each half of wing. Wing tips are fitted with winglets. There is a Pitot probe with angle of attack sensing installed on the lower skin of right half of wing.

Main spar of each half of wing is attached to the central section main spar using two main pins. Auxiliary web of each half of wing is attached to the auxiliary spar of central section with an auxiliary pin. The outer pin is inserted from the main landing gear box (model Speed) or through the access hole of the lower wing surface (model Club). Inner pin is inserted from interior.

There is an integral fuel tank in the each half of wing. Fuel tank is located in the wing root section in front of main spar. Wing tanks have aluminium filler necks with locking caps. There is a drain valve in the lowest point of each wing tank. Wing fuel tanks are connected with fuselage fuel tanks using simple hose connection.

1.6.2.1. Aileron

Ailerons are made of glass/carbon composite sandwich construction. Aileron consists of upper and lower skin, ribs and web. Each aileron is attached to the wing's upper skin by means of three carbon hinges.

Ailerons have controlled weight and balance to be kept in verified range given by flutter investigation. The aileron of model Club is fitted with a balance weight. The aileron of model Speed has no balance weight installed.

1.6.2.2. Wing flap

Installed are slotted wing flaps that are made of glass/carbon composite sandwich construction. Wing flap consists of upper and lower skin, ribs and a web inside of flap. Each wing flap is attached to the wing by means of three carbon hinges and one carbon/metal root hinge.

1.6.3. Tail units

1.6.3.1. Horizontal tail unit

Horizontal stabilizer:

Horizontal stabilizer is made of glass/carbon composite sandwich construction. It consists of upper and lower skin, auxiliary web and a web inside of stabilizer up to $\frac{1}{4}$ of stabilizer span from the plane of symmetry. No outboard fins or winglets are installed on the stabilizer.

Elevator:

Elevator consists of two parts made of glass/carbon composite sandwich construction. It consists of upper and lower skin, ribs and front web. Each half of elevator is attached to the horizontal stabilizer by means of two carbon hinges. Both halves of elevator are joined together with metal hinge in a plane of symmetry.

The elevator of model Club is fitted with a balance weight in the exposed horn. The elevator of model Speed has no balance weight installed.

1.6.3.2. Vertical tail unit

Vertical stabilizer:

Vertical stabilizer is integral part of fuselage.

Rudder:

Rudder is made of glass composite sandwich construction. Rudder is attached to the fin by means of three plywood hinges.

Rudder is fitted with balance weight in the exposed horn. Rudder has controlled weight and balance to be kept in verified range given by flutter investigation.

The rudder of model Club "FG912T configuration" has adapted trailing edge at root section due to safe distance from the towing rope.

1.6.4. Landing gear

The model Club is equipped with a fixed tricycle landing gear with steerable nose wheel. The model Speed is equipped with a retractable tricycle landing gear.

1.6.4.1. Landing gear - model Club

Main landing gear

The main landing gear consists of two composite landing gear legs (1). The main gear legs are fixed in the inner (2) and outer ribs (3) inside of fuselage in the wing central section.

Main landing gear is equipped with aluminium wheel discs (4) with tubeless tyres 15x6.00-6 (5). Wheel discs consist of split rim with two ball bearings. The main wheels are equipped with hydraulic brakes (fig. 1.6.4.1-1).

Main wheels are fitted with aerodynamic fairings (6).

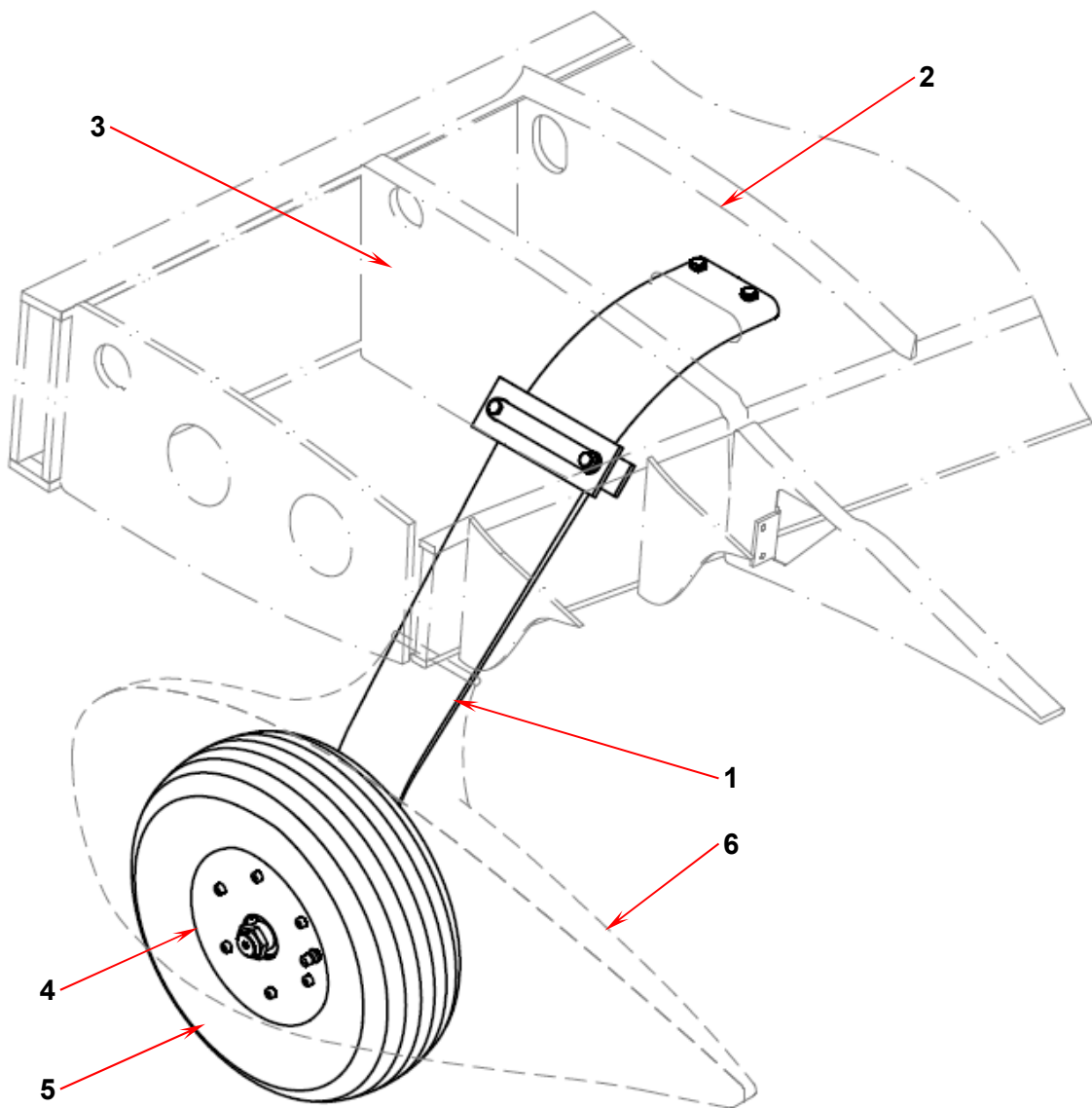


Fig. 1.6.4.1-1 Main landing gear, model Club

Nose landing gear

The nose landing gear leg (1) is metal with a carbon fork (2) and attached to firewall in the lower (3) and upper (4) supports. The nose landing gear incorporates bungees (5) (nose leg - lower support) and rubber damper (nose leg - upper support). Nose leg is steerable and controlled by foot control pedals by means of pull-push rods.

The nose landing gear is equipped with an aluminium wheel disc (6) with tubeless tyre 13x5.00-6 (7). The wheel disc consists of split rim with two ball bearings (fig. 1.6.4.1-2).

The nose wheel is fitted with aerodynamic fairing (8).

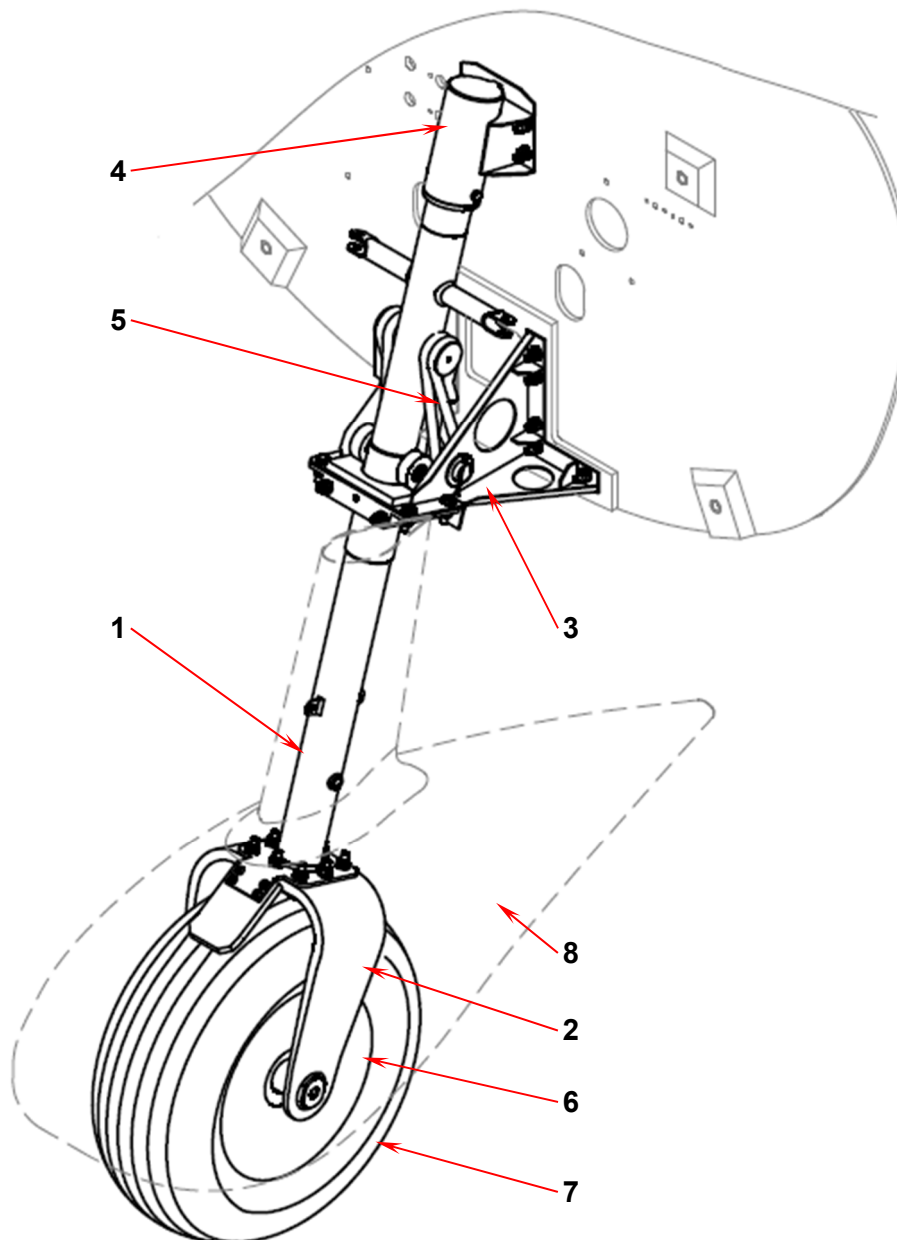


Fig. 1.6.4.1-2 Nose landing gear, model Club

1.6.4.2. Landing gear - model Speed

Main landing gear

The main landing gear consists of two metal landing gear legs. The main gear legs are fixed to the central section spar (1) and auxiliary spar (2) through the bearings (3).

Landing gear leg is fitted with a damper (4) between the main gear leg (5) and trailing link (6). Retracting is operated by a hydraulic cylinder (7) attached to the drag strut (8). Drag struts lock the landing gear legs in extended position. There are also gas strut (9) and spring (10) which is secondary system for locking of drag strut. Correct geometry of drag struts must be adjusted to lock the landing gear in extended position (fig. 1.6.4.2-1).

The main landing gear is retracted into the boxes between main and auxiliary central section spars. There are included also doors partially covering the boxes for main gear legs during the flight with landing gear in retracted position.

The main landing gear is equipped with the aluminium wheel discs (11) with tubeless tyres 15x6.00-6 (12). Wheel discs consist of split rim with two ball bearings. The main wheels are equipped with hydraulic brakes (fig. 1.6.4.2-1).

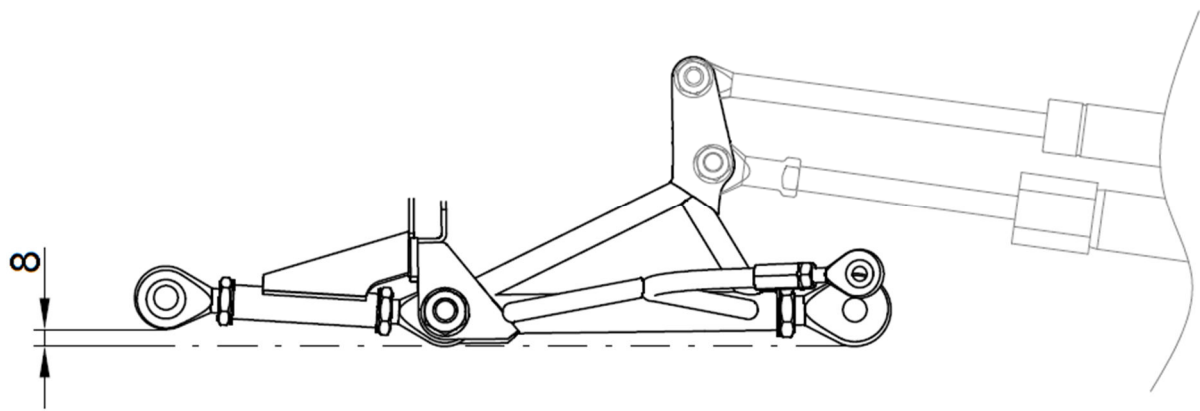


Fig. 1.6.4.2-1 Drag strut geometry, main landing gear

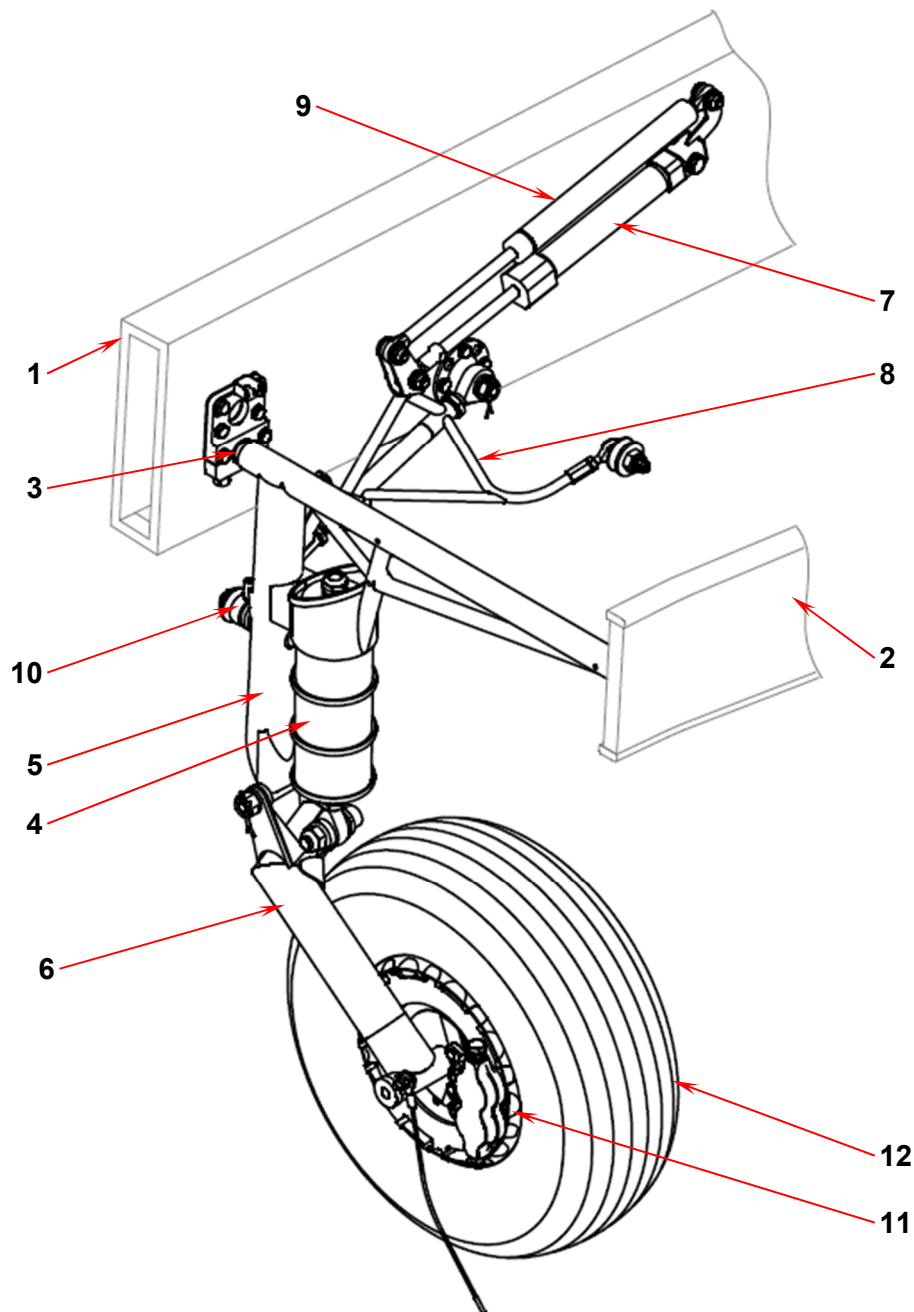


Fig. 1.6.4.2-2 Main landing gear, model Speed

Nose landing gear

The nose landing gear is metal and is attached to the engine mount. Landing gear is equipped with a damper (1) between nose gear leg (2) and trailing link (3). It is operated by hydraulic cylinder (4) attached to the drag strut (5). Drag strut locks the landing gear leg in extended position. There is also gas strut (6) that is secondary system for locking of drag strut. Correct geometry of drag struts must be adjusted to lock the landing gear in extended position (fig. 1.6.4.2-3). The nose landing gear is retracted backward into the box in the central tunnel.

Nose leg is steerable and controlled by foot control pedals by means of control cables.

The nose landing gear is equipped with an aluminium wheel disc (7) with tubeless tyre 13x5.00-6 (8). The wheel disc consists of split rim with two ball bearings (fig. 1.6.4.2-4).

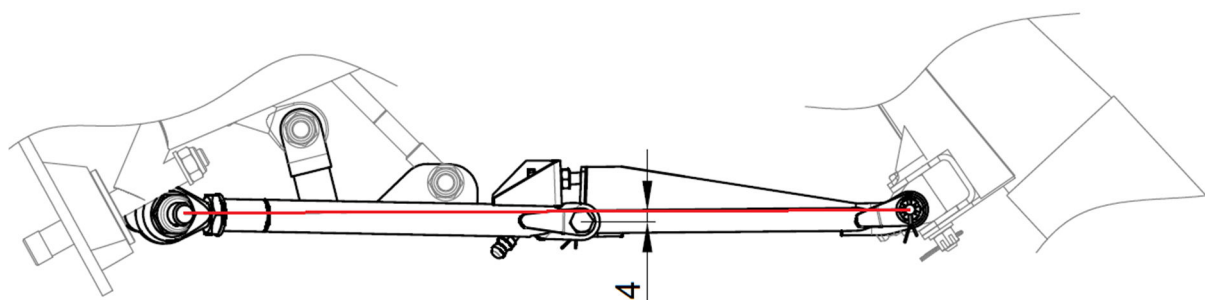


Fig. 1.6.4.2-3 Drag strut geometry, nose landing gear

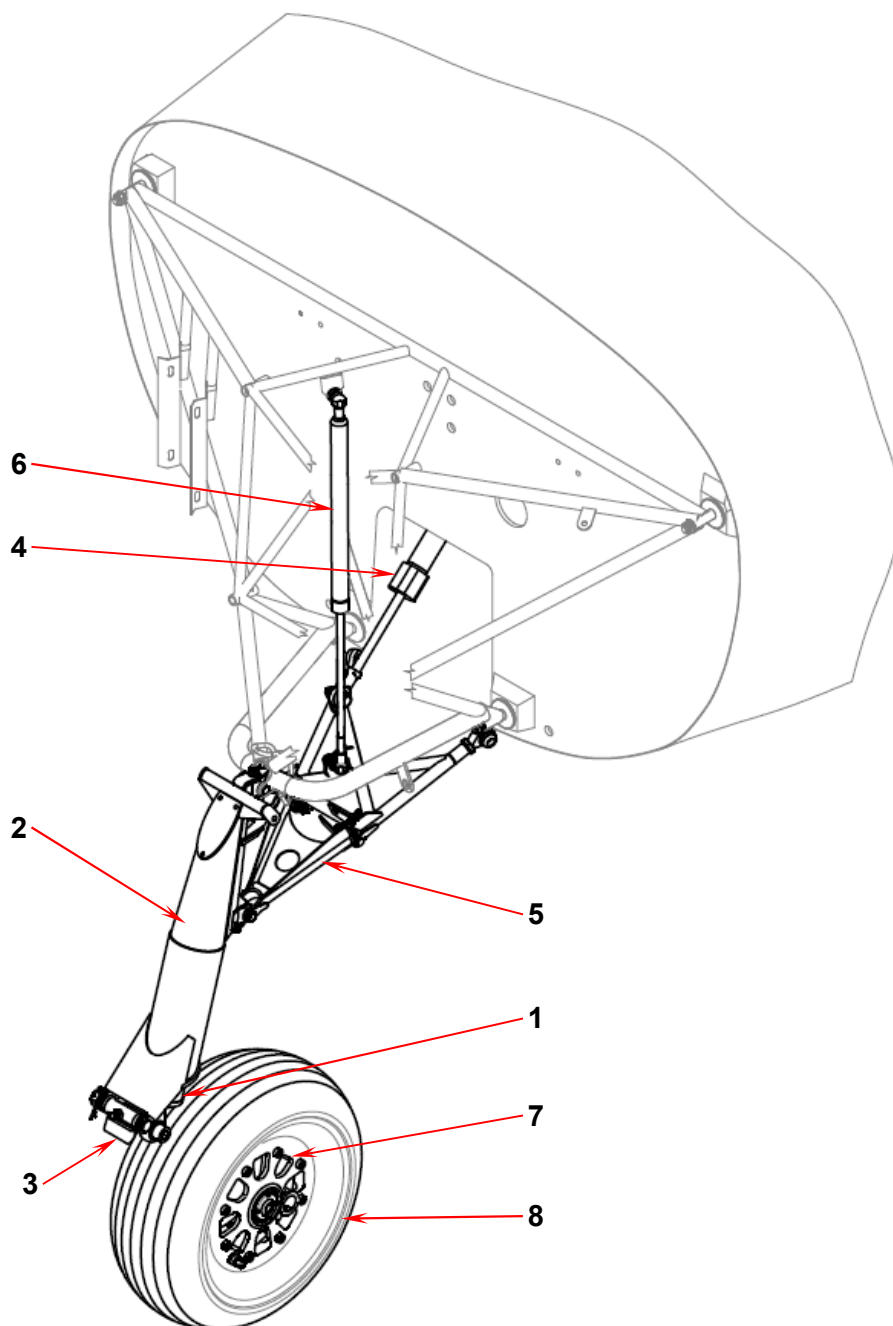


Fig. 1.6.4.2-4 Nose landing gear, model Speed

1.6.4.3. Brake system

Main gear wheels are equipped with hydraulic brakes Beringer that are controlled by a brake lever (1) located on the top of central tunnel. In the central tunnel is also located the brake fluid reservoir (2). Brake lever acts directly on master cylinder (3) located inside of central tunnel. Master cylinder is connected with a pressure limiter (4) (located under the pilot seat) and both callipers (5) by hydraulic hoses (6).

Brake discs (7) are inserted into to the shaped wheel rim and locked by a wire. Callipers are attached to the wheel axes for model Club (fig. 1.6.4.3-1) or to the trailing link for model Speed (fig. 1.6.4.3-2). It is possible to lock the brake lever in its aft position to works as a parking brake using groves at slotted link (fig. 14).

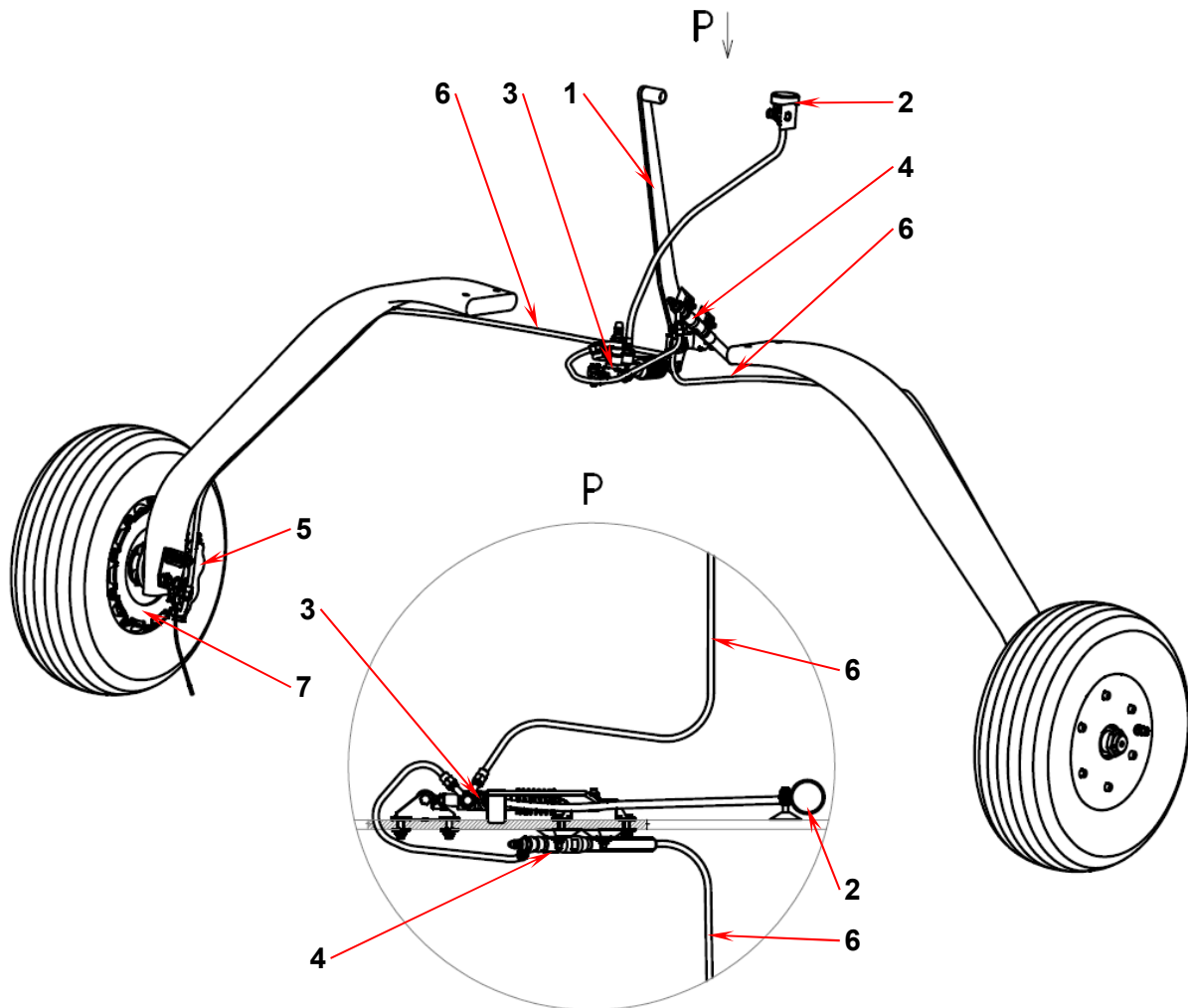


Fig. 1.6.4.3-1 Brake system, model Club

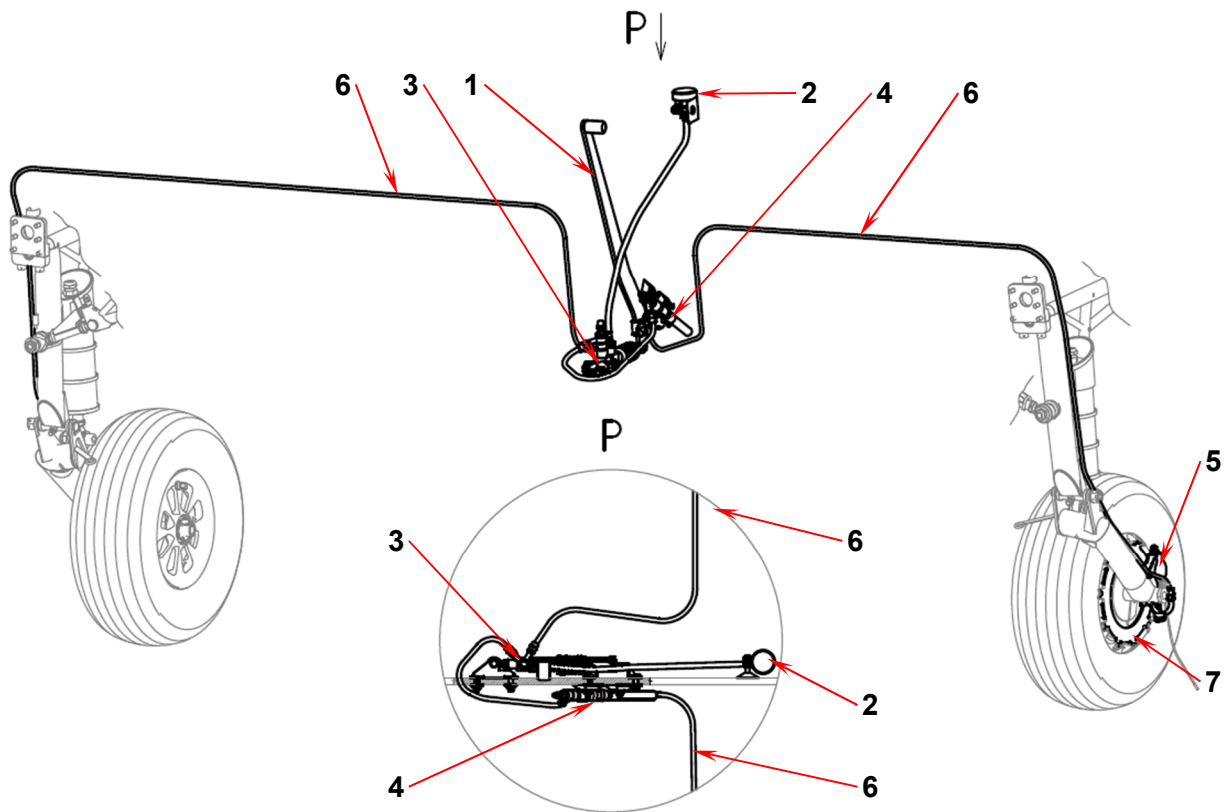


Fig. 1.6.4.3-2 Brake system, model Speed

1.6.4.4. Hydraulic system (only model Speed)

Hydraulic system consists of hydraulic unit installed under the co-pilot seat and hydraulic cylinders operated the retracting and extending of landing gear legs (fig. 1.6.4.4-1).

Hydraulic pump (1) creates the pressure that is distributed to the hydraulic accumulator (2), return valve (3), pressure sensors (4) and 4-way 3-position distributor (5). Pressure sensors control the pressure of hydraulic oil in the system and control turning the hydraulic pump ON or OFF. 4-way 3-position distributor directs the hydraulic oil to the distribution boxes (6, 7) from which leads the hydraulic hoses to the hydraulic cylinders in dependence on landing gear controller switch position. In the case of electric power loss the return valve (3) releases the pressure and emergency landing gear extending is ensured by landing gear legs mass and acting of gas struts.

For wiring diagram see Annex A.4.2.15.

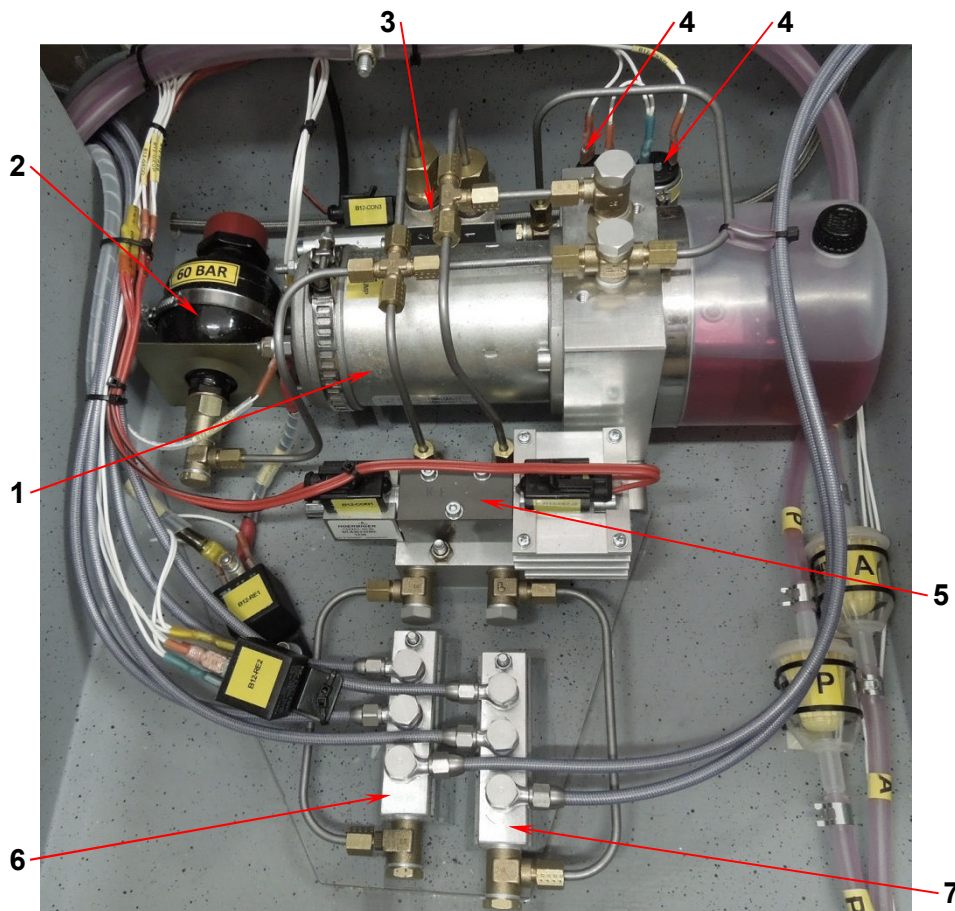


Fig. 1.6.4.4-1 Hydraulic unit

CAUTION

In case that the Hydraulic pump indication light is shining for more than 20 seconds switch OFF the hydraulic pump circuit breaker (see Chapter 1.6.7.1). The continuing running of hydraulic pump will cause damage of hydraulic system. This can be caused of loose of hydraulic pressure because of hose leaking or other reason. Fly with extended landing gear and after landing contact authorised technician to find and solve the problem.

1.6.5. Control systems

Aircraft is equipped with dual control systems for elevator, ailerons and rudder.

1.6.5.1. Elevator control system

Both control sticks (1) are fitted with bearings, attached to the control stick's torsion tube (2) and linked inside of torsion tube with connecting pull-push rod (3). Torsion tube turns in sliding bearings (4) which are attached to the central section main spar.

Elevator is controlled through 3 pull-push rods that are equipped with adjustable bearing eyes. Pull-push rods are situated in the central tunnel. Movement from control sticks is transferred to the elevator through the pull-push rod 1 (5), two-armed lever (6), pull-push rod 2 (7), support lever (8) and pull-push rod 3 (9) to the elevator lever (10). Elevator lever is fixed to the both halves of elevator and hinged through the bearing to the elevator root hinge (11). Elevator root hinge is attached to the horizontal stabilizer aft web.

Range of elevator control movement is limited by front stop (12) (installed on the central section main spar) and aft stop (13) (tube with a bolt installed inside of the central tunnel).

Control stick's torsion tube is connected with a trim spring (14) (attached in holder in front of central section main spar) and trim lever (15) (attached to the central tunnel) by means of adjustable pull-push rod (16) and connecting pull-push rod (17). For adjusting of required trim effect of the spring are used slots in the slotted link on the top of central tunnel (fig. 1.6.5.1-1).

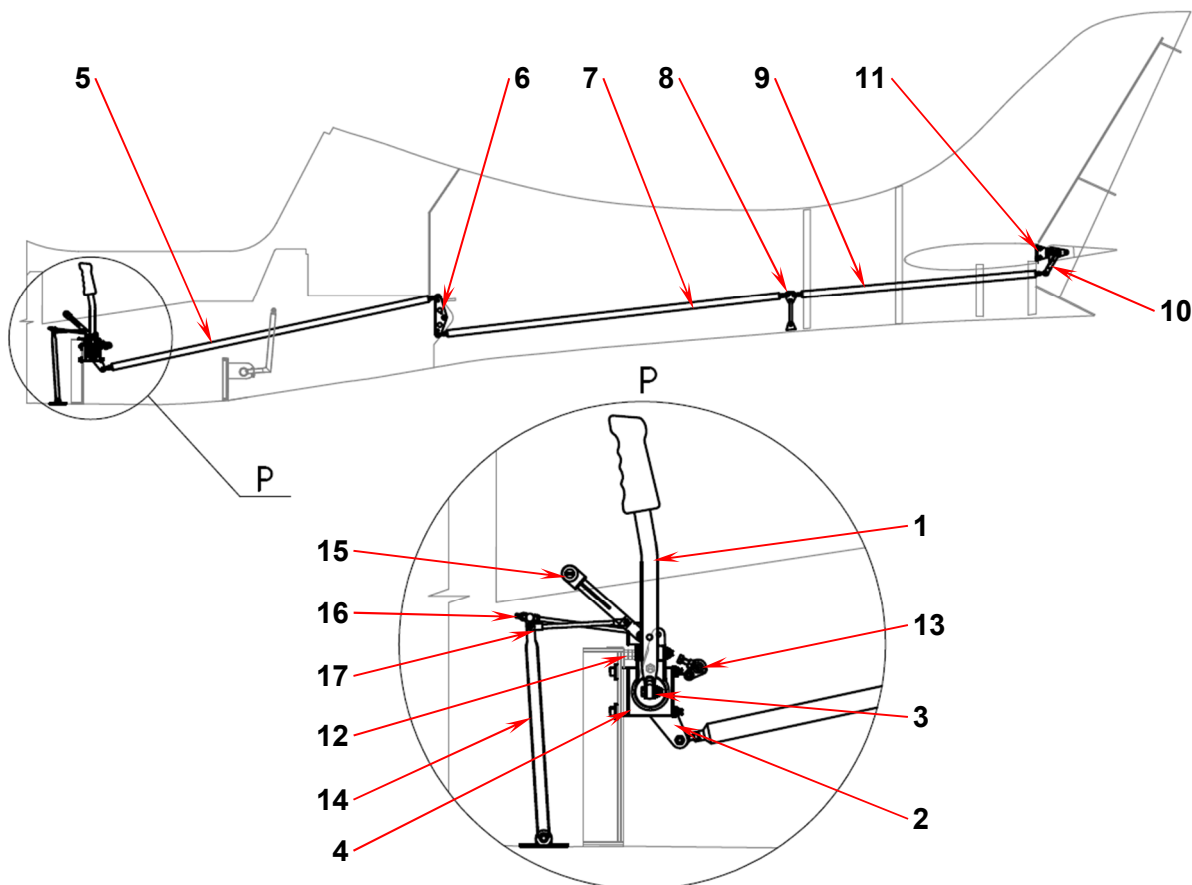


Fig. 1.6.5.1-1 Elevator control system

1.6.5.2. Aileron control system

Ailerons are controlled through the control sticks, attached to the control stick's torsion tube.

Movement from control sticks is transferred to the ailerons through the pull-push rod 1 (1), pull-push rod 2 (2), bellcrank (3) and pull-push rod 3 (4) to the ailerons (5).

Pull-push rods 1 are equipped with adjustable bearing eye at one and revolving fork at the other.

Pull-push rods 2 are equipped with adjustable bearing eyes on both ends and are guided in two sliding bearings (6) in the wing (in the root rib and support rib).

Bellcranks are fitted with bearings and fixed in the consoles (7) that are attached to the wing spar (8). Bellcranks provide necessary differentiation of the ailerons deflections. The deflections of the ailerons are differentiated 1:1,6.

Pull-push rods 3 are equipped with adjustable bearing eyes on both ends and are connected to the aileron root ribs.

Range of aileron control movement is limited by stops (9) on the control stick's torsion tube (10) (fig. 1.6.5.2-1).

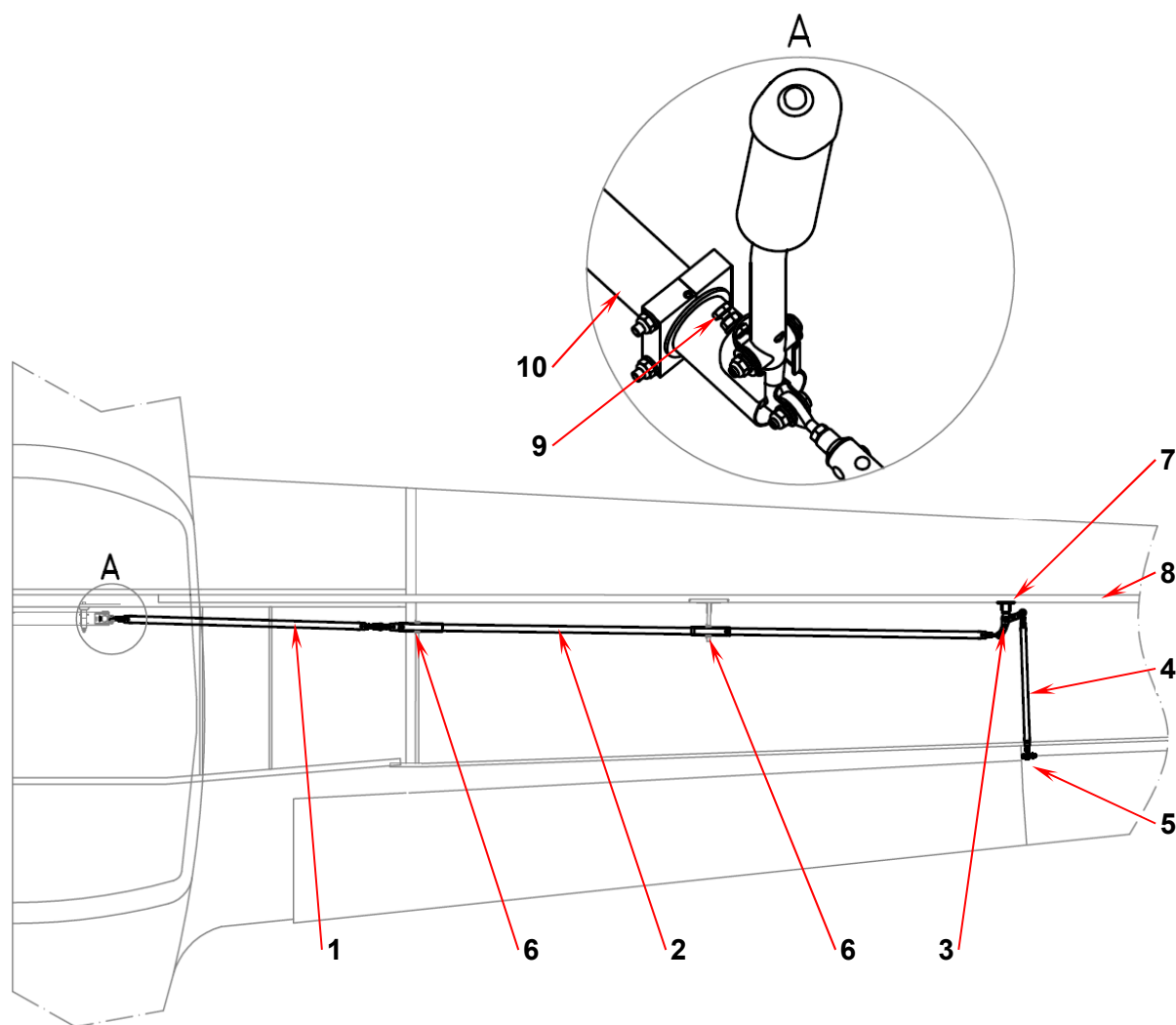


Fig. 1.6.5.2-1. Aileron control (only right side is shown)

1.6.5.3. Rudder control system

Model Club:

The rudder pedal's torsion tubes (1) are attached to the floor in four holders (2). The motion of pedals (3) transfers through the torsion tubes arms and control cables (4) to the rudder root levers (5). The polyurethane casings are attached to the fuselage structure to guide the control cables. There are turnbuckles (6) for adjusting of control cables tension.

The rudder control pedals are connected to the nose landing gear leg (7) by means of push-pull rods (8) fitted with bearing eyes. Hole in the firewall for push-pull rod is protected with a flange with fireproof sleeve (9).

There are control handles (10) that release the locking pins for adjusting of pedals position. Pedals are fitted with springs for return to the rearward position during adjusting. There are 3 possible positions for pedals (fig. 1.6.5.3-1).

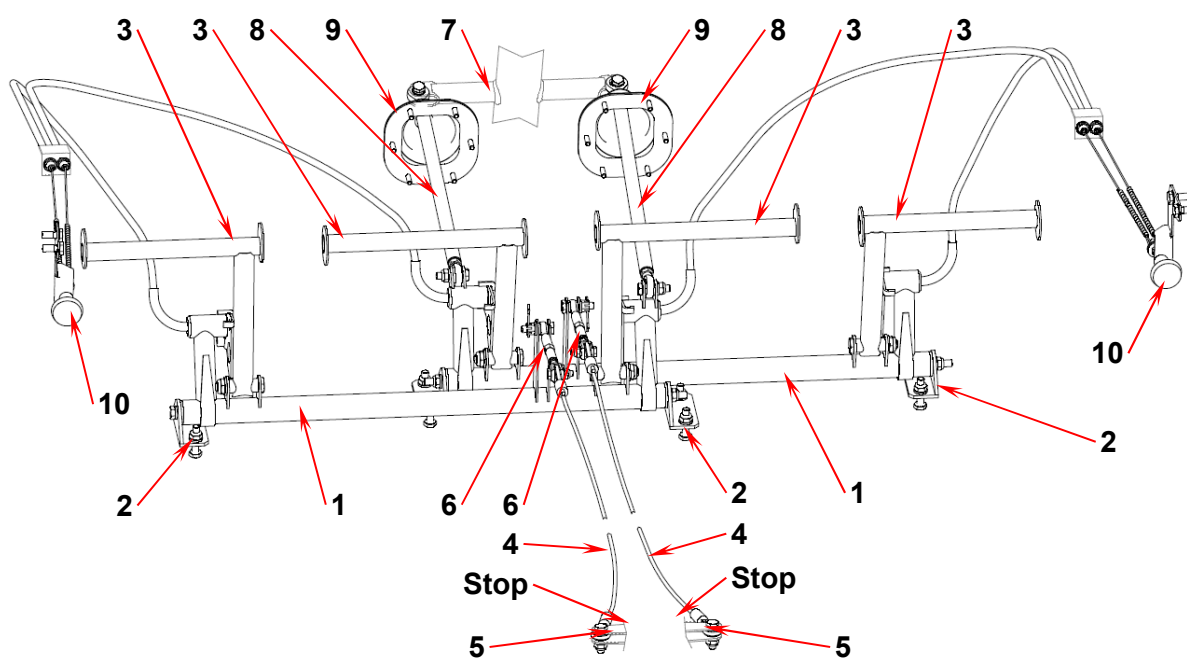


Fig. 1.6.5.3-1 Rudder pedals, model Club

Model Speed:

The rudder pedal's torsion tubes (1) are attached to the rescue system board in four holders (2). The motion of pedals (3) transfers through the torsion tubes arms and control cables (4) to the rudder root levers (5). The polyurethane casings are attached to the fuselage structure to guide the control cables. There are springs (6) attached to the rescue system board and rudder pedals that stretch the control cables.

The rudder control pedals are connected to the nose landing gear leg by means of control cables (7) fitted with bearing eyes. Control cable Bowdens are fixed in the holders (8) at the top of nose wheel box and continue under the cockpit floor to the nose leg. Control cables Bowdens are attached to the engine mount (9) and control cables are attached to the nose leg by means of adjustable eyes (10).

There are control handles (11) that release the locking pins for adjusting of pedals position. Pedals are fitted with springs for return to the rearward position. There are 3 possible positions for pedals (fig. 1.6.5.3-2 and fig. 1.6.5.3-3).

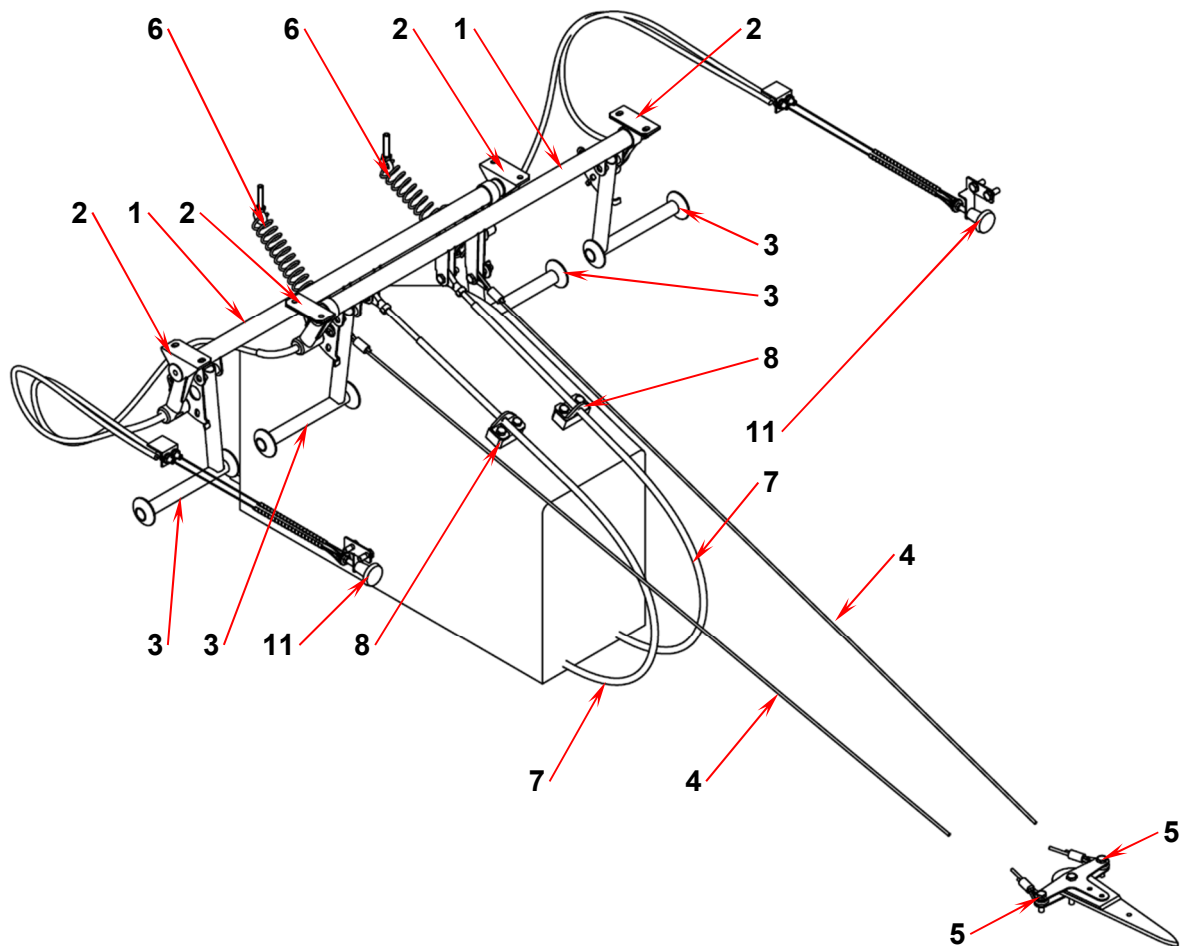


Fig. 1.6.5.3-2 Rudder control 1, model Speed

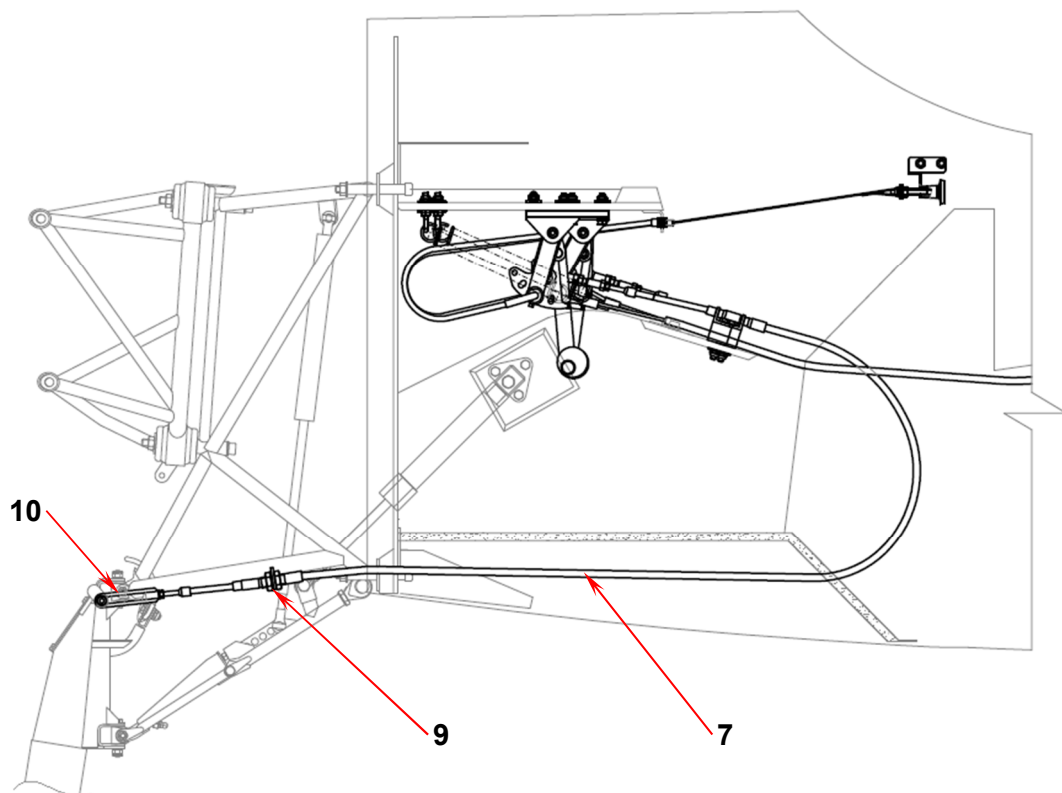


Fig. 1.6.5.3-3 Rudder control 2, model Speed

1.6.5.4. Wing flap control system

The wing flaps are operated manually by a lever (1) on the top of central tunnel between pilot and co-pilot. Wing flaps lever moves in the slotted link (2) that determinates four positions:

1. Retracted,
2. Take-off position (15°),
3. Mid-position (24°),
4. Fully extended position (35°)

Movements from wing flap lever are transferred through the pull-push rod 1 (3) and bell crank (4) to the flap's torsion tube (5). Flap's torsion tube is fixed in three sliding bearings (6) which are attached to the central section auxiliary spar (middle bearing) and outer ribs (left and right bearing). It makes mechanical interconnection between left and right wing flap. Torsion tube is connected with the wing flap lever (7) by means of pull-push rods (8) with fork at the one and adjustable bearing eye at the other one. Wing flap lever is fixed at the wing flap (9) and attached to the flap root hinge (10).

There is a booster (11) (gas spring) installed in the flap control system which modify pilot's operating force during extending/retracting of wing flaps. Booster is situated in the baggage compartment and attached to the central tunnel and flap's torsion tube. It is protected by laminate cover (fig. 1.6.5.4-1).

For model Speed there is in addition attached console for wing flaps buzzer sensor (12) (attached to the bellcrank) and holder for wing flaps position sensor (13) (attached to the sliding bearing) (fig. 1.6.5.4-2).

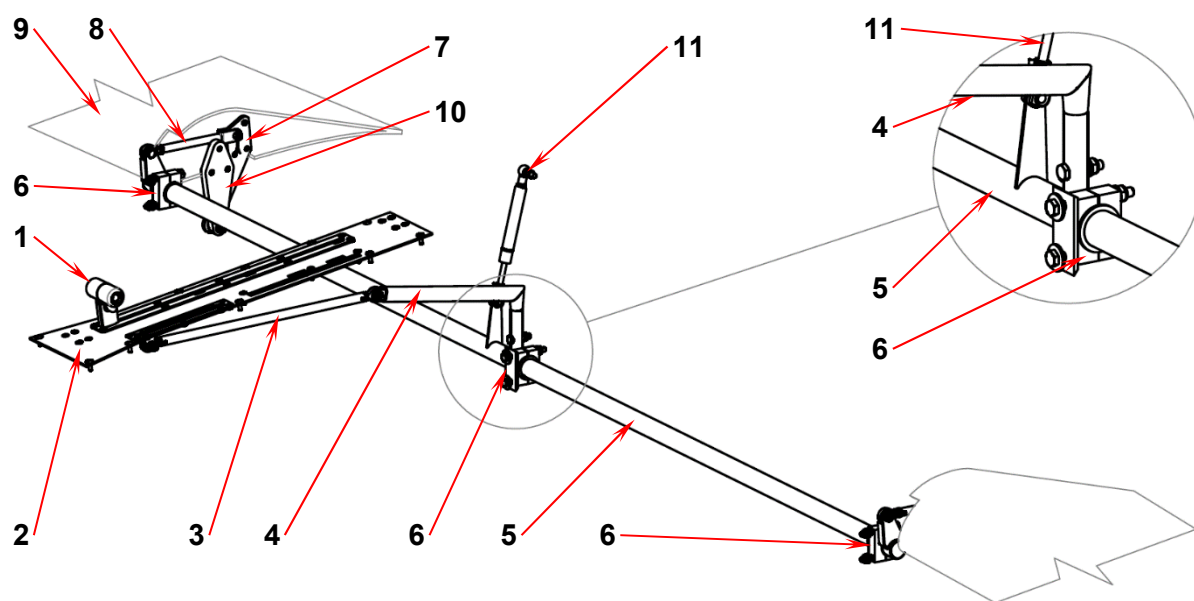


Fig. 1.6.5.4-1 Wing flap control system, model Club

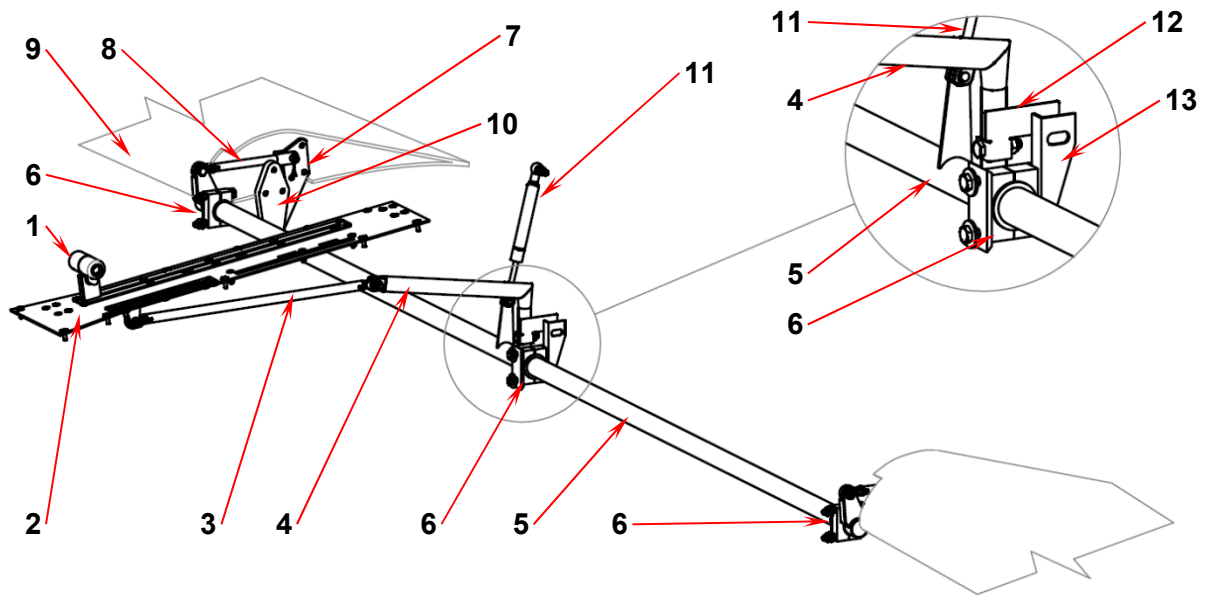


Fig. 1.6.5.4.-2 Wing flap control system, model Speed

1.6.6. Powerplant

1.6.6.1. Model Club “FG912 configuration”

Powerplant of model Club “FG912 configuration” consists of engine Rotax 912 ULS and propeller EVRA PERFORMANCE LINE 175/xxx/805.5.

1.6.6.1.1. Engine Rotax 912 ULS

Rotax 912 ULS is 4-stroke, 4-cylinder horizontally opposed, spark ignition engine, one central camshaft-push-rods-OHV. Liquid cooled cylinder heads, ram air cooled cylinders. Dry sump forced lubrication. The engine is fitted with electric starter, AC generator, mechanical fuel pump. Propeller is driven via integrated gearbox with mechanical shock absorber and overload clutch.

For more details see the Maintenance Manual for Rotax Engine Type 912 Series, Ref. No.: MML-912.

Engine power (ISA)	
Max. take-off power	73,5 kW / 100 hp (at 5800 min ⁻¹)
Max. continuous power	69,0 kW / 94 hp (at 5500 min ⁻¹)
Engine limitations	
Engine speed	
Maximum take-off	5800 min ⁻¹ (max. 5 min)
Maximum continuous	5500 min ⁻¹
Idling	≈1400 min ⁻¹
Cylinder head temperature	
Max.	135 °C
Coolant temperature	
Max.	120 °C
Oil temperature	
Min.	50 °C
Normal	90-110 °C
Max.	130 °C
Oil pressure	
Min.	0,8 bar / 12 psi (below 3500 min ⁻¹)
Normal	2-5 bar / 29-73 psi (above 3500 min ⁻¹)
Max.	7 bar / 102 psi (for short period admissible at cold start)
Fuel pressure	
Min.	0,15 bar / 2,20 psi
Max.	0,50 bar / 7,26 psi
Engine start, operating temperature	
Min.	-25 °C
Max.	+50 °C

The engine is fixed to the airframe by means of engine mounts (1). Engine mounts are attached to the engine by four bolts and to the firewall by means of four rubber silentblocks (2) (fig. 1.6.6.1.1-1).

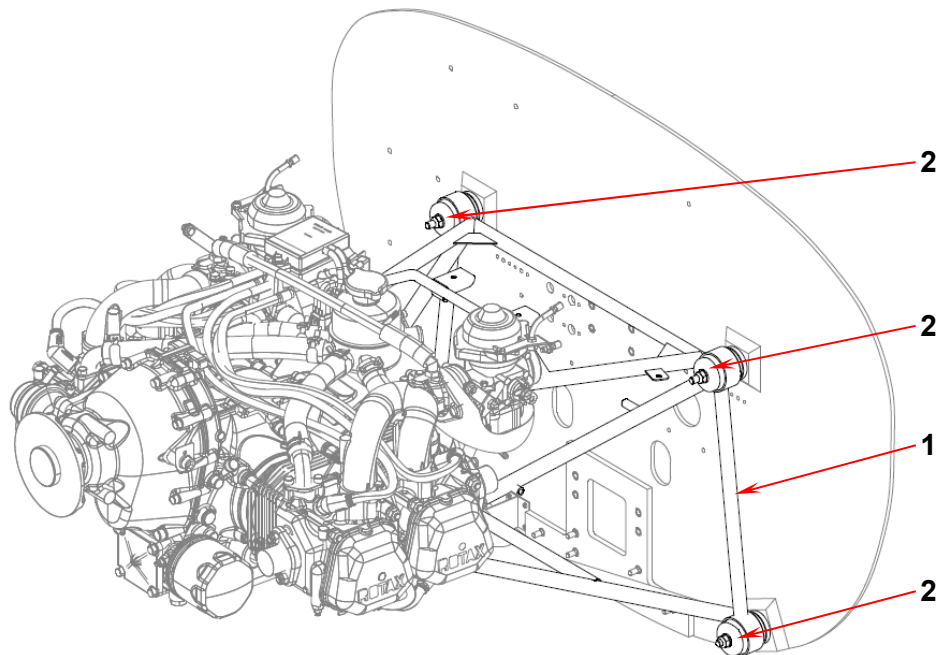


Fig. 1.6.6.1.1-1 Engine attachment, model Club

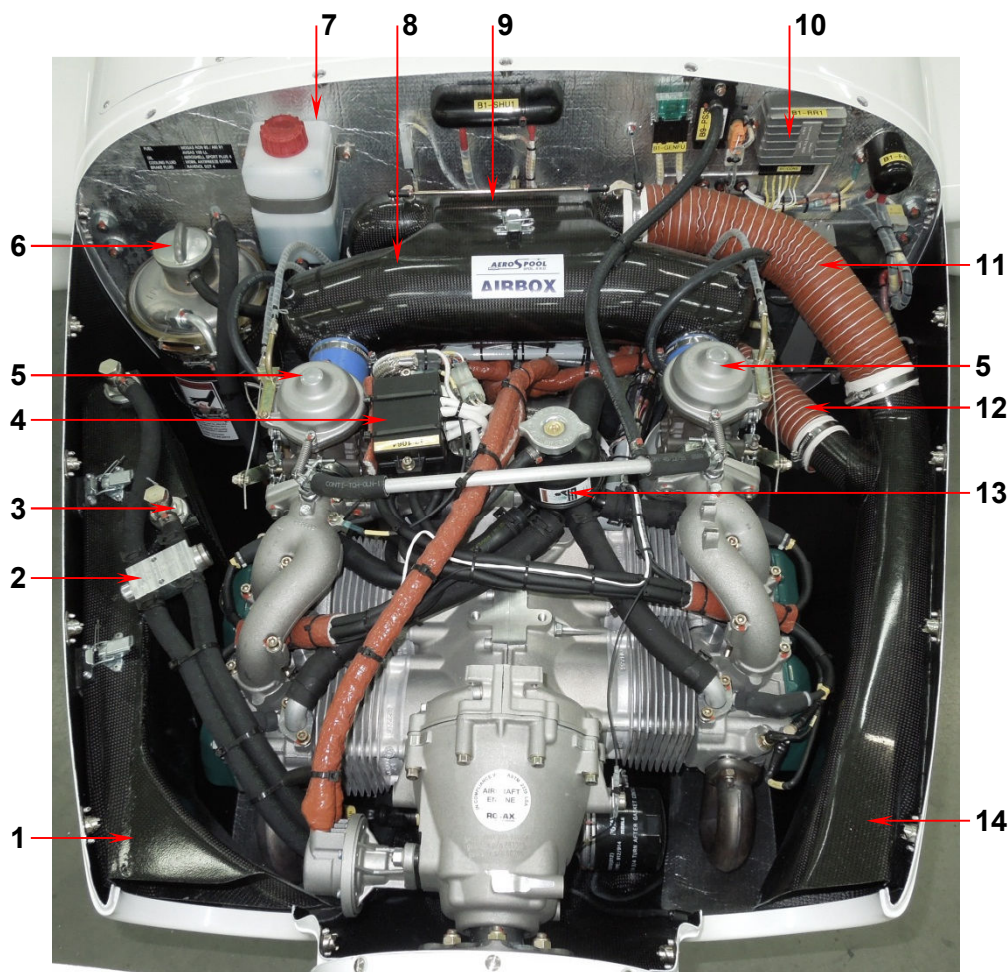
Engine compartment is covered by upper and lower laminate cowlings. Upper cowling is fitted with the oil door for easy check of oil level. There are landing lights installed in the lower engine cowling.

The disassembly of an upper cowling is easy, just release the quick-closing locks. The quick-closing locks releases by means of a suitable screwdriver with a 90° counter clockwise slewing. The releasing starts at a rear corner with the simultaneous raising of the cowling. The quick-closing locks releases have to remain over a cowling until the disassembly of all cowling.

The lower cowling can be removed after disconnecting of the water radiator and oil cooler holders (the water radiator and oil cooler remain connected with the inlet hoses), landing lights wires and air hoses for airbox intake and venting flap intake from the ram air tunnel. To remove the lower cowling, unscrew the attachment screws at the fuselage rim.

1.6.6.1.2. Engine systems

Engine compartment and location of engine systems components is displayed at fig. 1.6.6.1.2-1.



1. Oil cooler holder	8. Airbox
2. Oil thermostat	9. Air filter holder with preheating
3. Oil cooler	10. Regulator
4. Ignition	11. Air hose for airbox
5. Carburettor	12. Air hose for venting flap
6. Oil tank	13. Expansion tank
7. Coolant overflow bottle	14. Ram air tunnel

Fig. 1.6.6.1.2-1 Engine systems, model Club "FG912 configuration"

Fuel system:

The integral fuel tanks are located in the forward box of the wing central section and both halves of wing. The wing and central section tanks are connected by a simple hose connection with clamps. There is one large diameter hose between tanks, which serves the fuel from the wing tanks to central section tanks. There are two small diameter hoses, one of them is venting line of wing tank and second one is connects the both tanks (air connection). The integral fuel tanks are covered by a special paint resistive to fuel with a less electrical resistance. There is a rib in the each tank for preclusion of a rapid fuel flowage during the flight manoeuvres. The fuel tank filler caps are located on a wing upper surface.

There is a drain valve in the lowest point of each tank (fig. 1.6.6.1.2-2).

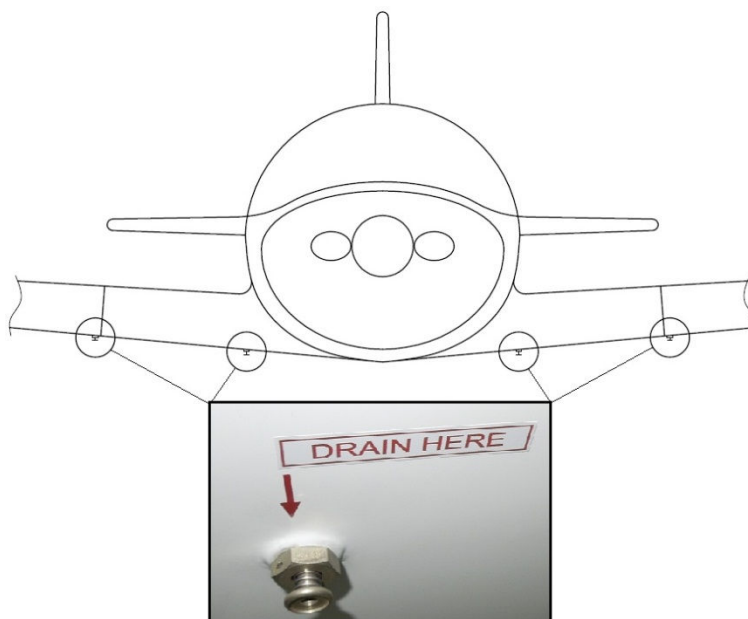


Fig. 1.6.6.1.2-2 Drain valves

The fuel is fed to engine driven fuel pump through the fuel filters and fuel selector located inside the cockpit below the instrument panel from the left or right fuel tank (in dependence of fuel selector position). Fuel line between left fuel tank and fuel selector is equipped with an electric fuel pump. Engine driven fuel pump supplies the fuel into the carburettors through the fuel flow meter. Unconsumed fuel flows back through the return line into the left fuel tank. In the fuel system is installed also fuel pressure sensor (in the engine compartment) and analogue fuel pressure gauge (at the instrument panel).

Fuel tank venting is outgoing from the upper part of each wing fuel tank (close to the filling cap), proceeds through central section tank and along the rescue system board, inside of central tunnel and discharge through the lower surface of fuselage in front of main spar (fig. 1.6.6.1.2-3).

Amount of fuel in the left and right fuel tanks indicates Dynon SkyView SV-D1000. Red light annunciator illuminates when 7 litres of fuel remain in the corresponding fuel tank.

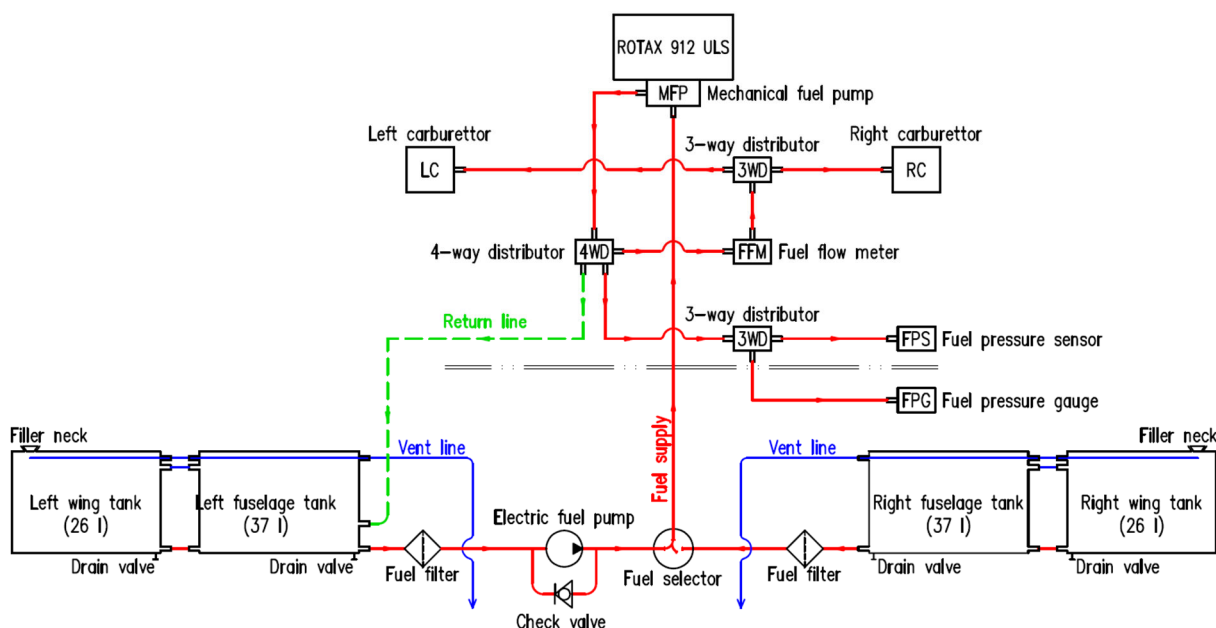


Fig. 1.6.6.1.2-3 Fuel system, model Club

	Left tank (l)	Right tank (l)
The total quantity of fuel in the tank	63,0	63,0
Unusable fuel in the tank	2,9	2,9
The total usable quantity of fuel in the tank	60,2	60,2

Oil system:

The engine Rotax 912 ULS has a dry sump forced lubrication system. The oil pump is driven by means of camshaft. The oil accumulates at the bottom of crankcase and it is forced back to the oil tank by energy of gassed in the crankcase. The oil pump sucks the engine oil from the oil tank, through the oil thermostat and oil filter and ensures the engine lubrication. In dependence of temperature, the oil thermostat opens the circuit of oil cooler. The oil tank is equipped with a venting hose.

The oil temperature sensor for reading of the oil inlet temperature is screwed into the oil pump housing (fig. 1.6.6.1.2-4).

The oil pressure sensor is screwed into the crankcase on the right side of engine.

Use only oil with API classification „SG“ or higher! Due to the high stresses in the reduction gears, oils with gear additives such as good quality 4 stroke motorcycle oils are highly recommended. Heavy duty semi- or fully synthetic (depending on fuel type used) brand name oils are recommended.

Oil system capacity: Approx. 3,5 litres

Oil consumption: Max. 0,06 l/h

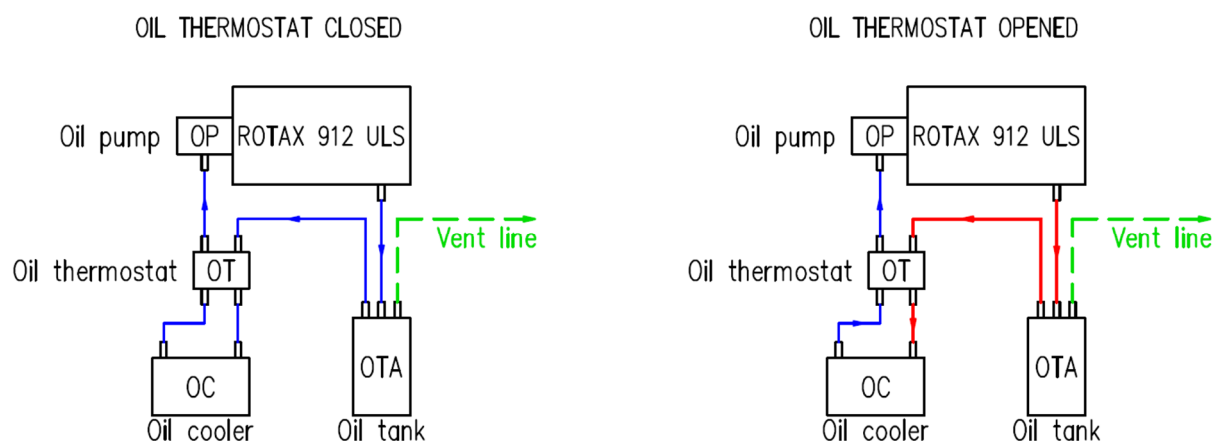


Fig. 1.6.6.1.2-4 Oil system, model Club

Refer to the Maintenance Manual for Engine Type 912 Series, Ref. No.: MML-912 for additional information.

WARNING

Do not use AVGAS 100 LL with fully synthetic engine oils!

Air and water-cooling system:

Engine has combined air and water cooling system.

Water cooling system consists of water thermostat and water radiator through which the coolant flows to a water pump and then is distributed to the water-cooled engine parts inside of engine. Water radiator is attached in the holder fixed in the middle of lower engine cowling. Overflow bottle is attached at firewall and connected by a hose with the expansion tank. Expansion tank located on top of the engine allows coolant expansion.

Cooling air is received through the two upper engine cowling intakes and is baffled to the engine compartment.

The coolant temperature sensor is located in the tube between expansion tank and water thermostat.

The cylinder head temperature sensor is installed at the cylinder head of right rear cylinder (in flight direction). This system allows for accurate measurement of engine temperature, even in event of fluid loss (fig. 1.6.6.1.2-5).

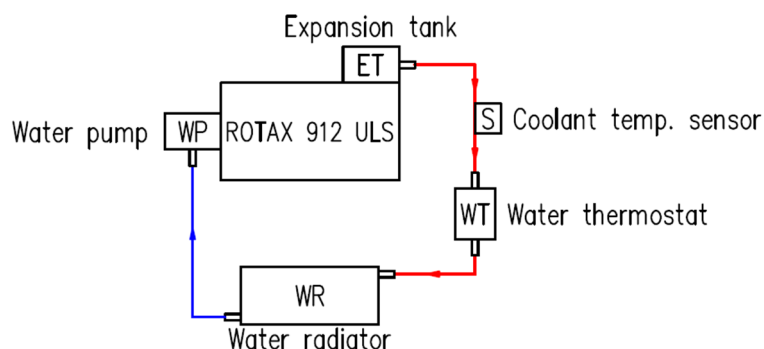


Fig. 1.6.6.1.2-5 Engine water cooling system, model Club

Induction system:

Air intake is located on the left side from spinner. The cold air flows through the ram air tunnel (glued at the lower engine cowling) and air hose to the air filter holder with preheating. From the shroud installed on the muffler is taken the hot air for the air filter holder with preheating. Air filter holder with preheating is fitted with two flaps operated by controller in the central tunnel (see Chapter 1.6.7.1.1) for adjusting of intake air temperature. From the air filter holder with preheating follows the air through the air filter to the airbox and then to the carburetors.

Exhaust system:

Exhaust gases from each cylinder pass through the exhaust pipes (1, 2) to a muffler (3) that is attached to the engine mount by means of holders (4) and clamps (5). Exhaust pipes inputs into the muffler inlets and are fixed by means of clamps (6). Exhaust gasses discharge through an exhaust tube (7) on the left side (fig. 1.6.6.1.2-6).

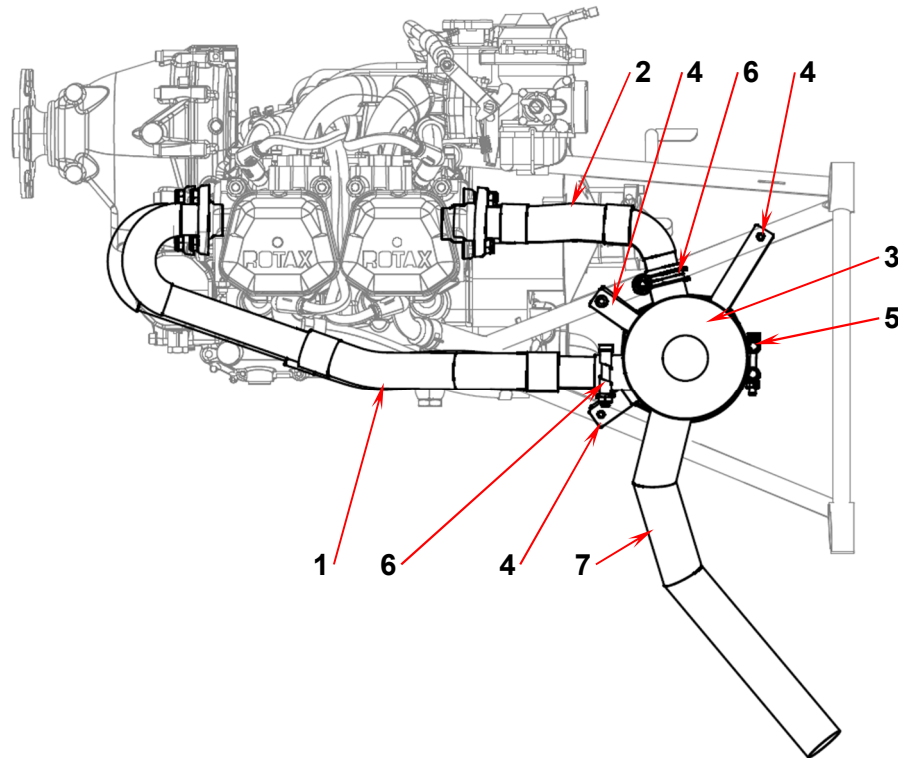


Fig. 1.6.6.1.2-6 Exhaust system, model Club

1.6.6.1.3. Propeller EVRA PERFORMANCE LINE 175/xxx/805.5

EVRA PERFORMANCE LINE 175/xxx/805.5 is 3-bladed ground adjustable propeller. Propeller blades are made of glued wood lamellae covered by carbon composite skin. Leading edges of blades are protected with an aluminium shield. Propeller hub consists of two parts and is made from aluminium alloy.

For more information, refer to the Tips, Practices, Mounting and Maintenance for Propeller EVRA, actual valid revision.

Propeller EVRA PERFORMANCE LINE 175/xxx/805.5	
Diameter	1750 mm
Maximum RPM	2386 min ⁻¹
Weight	4,3 kg

WARNING

Never run the engine without propeller, this inevitably causes engine damage and is an explosion hazard!

1.6.6.2. Model Club “FG912T configuration”

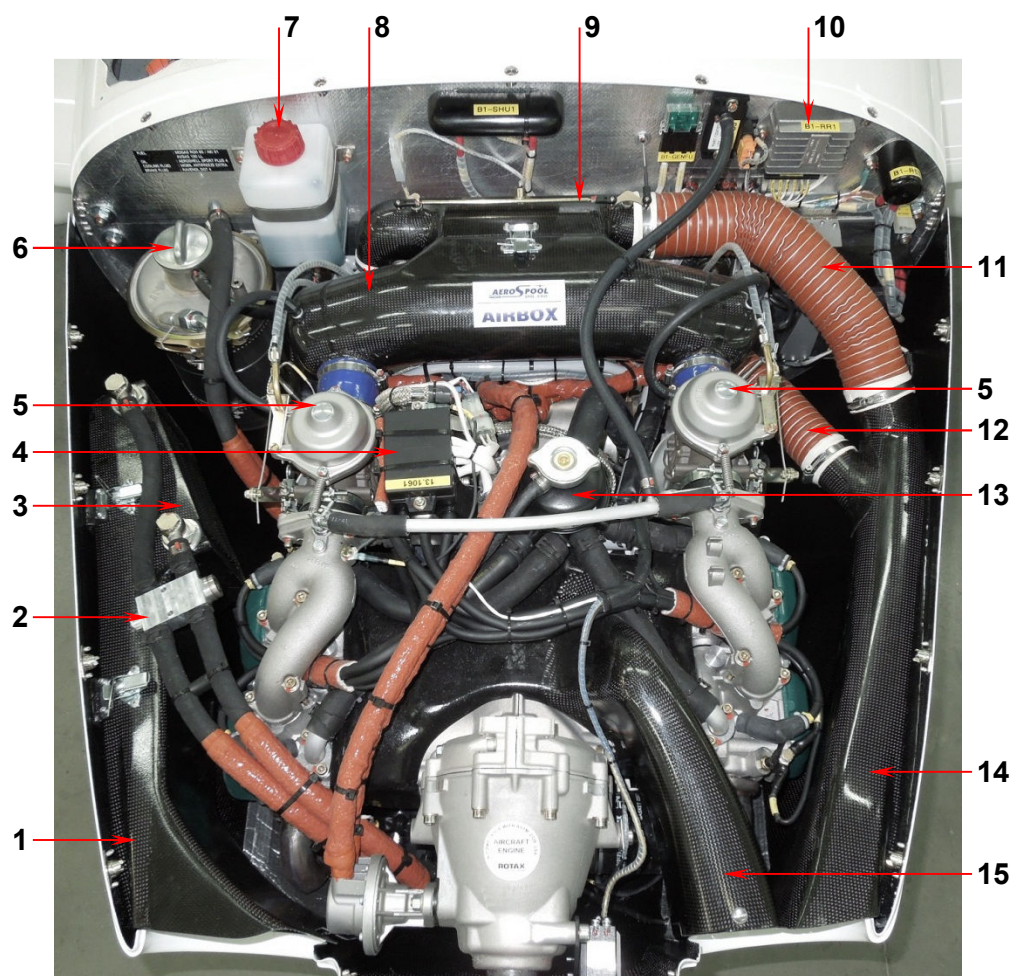
Powerplant of model Club “FG912T configuration” consists of engine Rotax 912 ULS and propeller WOODCOMP SR2000DN.

1.6.6.2.1. Engine Rotax 912 ULS

Engine is identical with model Club “FG912 configuration”. For more information refer to the Chapter 1.6.6.1.1.

1.6.6.2.2. Engine systems

Engine compartment and location of engine systems components is displayed at fig. 1.6.6.2.2-1.



1. Oil cooler holder	9. Air filter holder with preheating
2. Oil thermostat	10. Regulator
3. Oil cooler	11. Air hose for airbox
4. Ignition	12. Air hose for venting flap
5. Carburettor	13. Expansion tank
6. Oil tank	14. Ram air tunnel
7. Coolant overflow bottle	15. Cooling air distributor
8. Airbox	-

Fig. 1.6.6.2.2-1 Engine systems, model Club "FG912T configuration"

Fuel system:

Fuel system is identical with the model Club "FG912 configuration". For more information refer to the Chapter 1.6.6.1.2.

Oil system:

Oil system is identical with the model Club "FG912 configuration". For more information refer to the Chapter 1.6.6.1.2.

Air and water-cooling system:

The engine has combined air and water cooling system.

Water cooling system consists of water thermostat and water radiator with increased efficiency through which the coolant flows to a water pump and then is distributed to the water-cooled engine parts inside of engine. Water radiator is attached in the holder fixed in the middle of lower engine cowling. Overflow bottle is attached at firewall and connected by a hose with the expansion tank. Expansion tank located on top of the engine allows coolant expansion.

Cooling air is received from the left side of spinner and distributes to the cylinders by means of cooling air distributor. There are also two upper engine cowling's intakes through which the cooling air intakes to the engine compartment.

The coolant temperature sensor is located in the tube between expansion tank and water thermostat.

The cylinder head temperature sensor is installed at the cylinder head of right rear cylinder (in flight direction). This system allows for accurate measurement of engine temperature, even in event of fluid loss (fig. 1.6.6.1.2-5).

Induction system:

Induction system is identical with the model Club "FG912 configuration". For more information refer to the Chapter 1.6.6.1.2.

Exhaust system:

Exhaust system is identical with the model Club "FG912 configuration". For more information refer to the Chapter 1.6.6.1.2.

1.6.6.2.3. Propeller WOODCOMP SR2000DN

WOODCOMP SR2000DN is 3-bladed in-flight electrically adjustable propeller. The propeller blades are made of a wood-composite and the leading edges are made of a wear resistant material.

The angle of blades setting is adjusted by servomotor controlled from the cockpit and it can be adjusted smoothly in range from the minimum angle intended for take-off up to maximum angle. A speed of displace is approximately 0,5 °/sec. Propeller control on the instrument panel consists of panel, in which there is placed the signalisation of the direction of propeller blades adjusting, together with control diodes of small and large angle and also the switch of control. The meaning of the control diodes signals is:

- Yellow control diode of adjusting the fine angle:
 - Shines after reaching the min. angle.
 - Blinks when adjusting the finer angle.
- Red control diode of adjusting the rough angle:
 - Shines after reaching the stop at max. angle.
 - Blinks when adjusting the rougher angle.

For more information, refer to the Operator's Manual, Electrical Adjustable Aircraft Propeller SR2000DN, actual valid revision.

Propeller WOODCOMP SR2000DN	
Diameter	1700 mm
Maximum RPM	2600 min ⁻¹
Weight	10,8 kg

WARNING

Never run the engine without propeller, this inevitably causes engine damage and is an explosion hazard!

1.6.6.3. Model Speed "RG914 configuration"

Powerplant of model Speed "RG914 configuration" consists of engine Rotax 914 UL and propeller WOODCOMP SR3000/2N.

1.6.6.3.1. Engine Rotax 914 UL

Rotax 914 UL is 4-stroke, 4-cylinder horizontally opposed, spark ignition engine, one central camshaft-push-rods-OHV. Liquid cooled cylinder heads, ram air cooled cylinders. Dry sump forced lubrication. The engine is fitted with electric starter, AC generator. Propeller is driven via integrated gearbox with mechanical shock absorber and overload clutch. Engine is fitted with turbo charger.

For more detail see the Maintenance Manual for Rotax Engine Type 914 Series, Ref. No.: MML-914.

Engine power (ISA)	
Max. take-off power	84,5 kW / 115 hp (at 5800 min ⁻¹)
Max. continuous power	73,5 kW / 100 hp (at 5500 min ⁻¹)
Engine limitations	
Engine speed	
Maximum take-off	5800 min ⁻¹ (max. 5 min)
Maximum continuous	5500 min ⁻¹
Idling	≈1400 min ⁻¹
Manifold pressure	
At take-off power	Max. 1350 hPa
At continuous power	Max. 1200 hPa
Cylinder head temperature	
Max.	135 °C
Coolant temperature	
Max.	120 °C
Oil temperature	
Min.	50 °C
Normal	90-110 °C
Max.	130 °C
Oil pressure	
Min.	0,8 bar / 12 psi (below 3500 min ⁻¹)
Normal	2-5 bar / 29-73 psi (above 3500 min ⁻¹)
Max.	7 bar / 102 psi (for short period admissible at cold start)
Fuel pressure	
Min.	0,15 bar / 2,18 psi
Normal	0,25 - 0,75 bar / 3,63 -10,88 psi
Max.	0,85 bar / 12,33 psi
Critical flying altitude	
At take-off power	Max. 2450 m (8000 ft) ASL
At continuous power	Max. 4875 m (16000 ft) ASL
Airbox temperature	
Intervention temperature	72 / 88* °C
Engine start, operating temperature	
Min.	-25 °C
Max.	+50 °C

* 914 UL starting with S/N 4,417.598 (TCU TNr. 966471)

The engine is fixed to the airframe by means of engine mounts. There are primary engine mounts (1) attached to the engine by four bolts and secondary engine mounts (2) attached to the firewall. Primary and secondary engine mounts are assembled by means of four rubber silentblocks (3) (fig. 1.6.6.3.1-1).

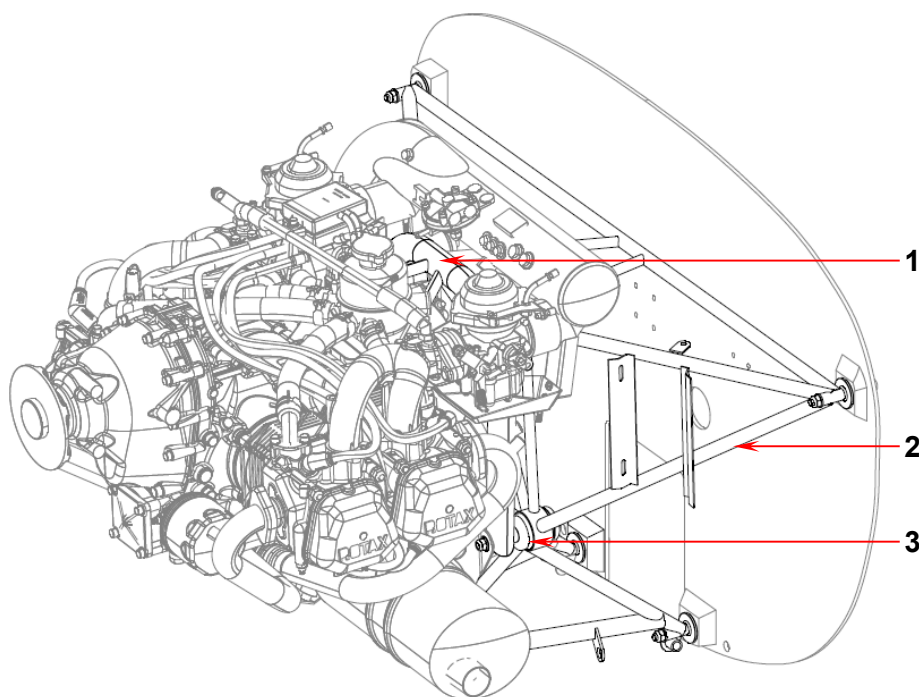


Fig. 1.6.6.3.1-1 Engine attachments, model Speed "RG914 configuration"

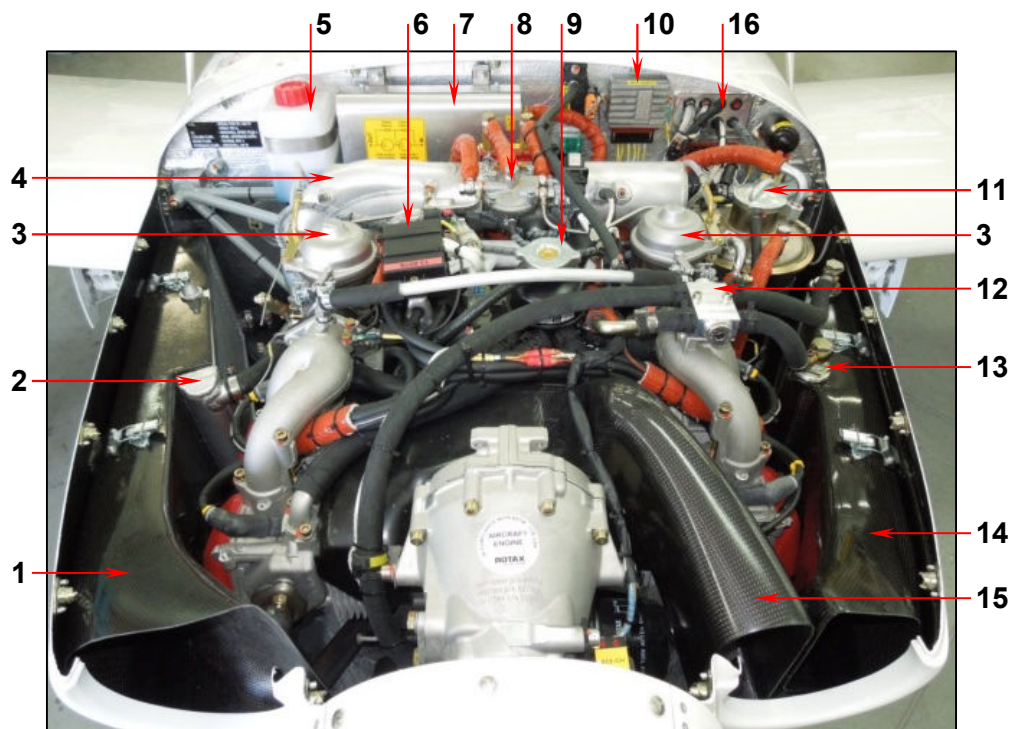
Engine compartment is covered by upper and lower laminate cowlings. Upper cowling is fitted with the oil door for easy check of oil level. There are landing lights installed in the lower engine cowling.

The disassembly of an upper cowling is easy, just release the quick-closing locks. The quick-closing locks releases by means of a suitable screwdriver with a 90° counter clockwise slewing. The releasing starts at a rear corner with the simultaneous raising of the cowling. The quick-closing locks releases have to remain over a cowling until the disassembly of all cowling.

The lower cowling can be removed after disconnecting of the water radiator and oil cooler holders (the water radiator and oil cooler remain connected with the inlet hoses), landing lights connector. The air intake hose of for heating is not locked at cowling socket. To remove the lower cowling, unscrew the attachment screws at the fuselage rim.

1.6.6.3.2. Engine systems

Engine compartment and location of engine systems components is displayed at fig. 1.6.6.3.2-1.



1. Water radiator holder	9. Expansion tank
2. Water radiator	10. Regulator
3. Carburettor	11. Oil tank
4. Airbox	12. Oil thermostat
5. Coolant overflow bottle	13. Oil cooler
6. Ignition	14. Oil cooler holder
7. Fuel pumps assembly	15. Cooling air distributor
8. Fuel pressure regulator	16. Turbo TCU (behind firewall)

Fig. 1.6.6.3.2-1 Engine systems, model Speed "RG914 configuration"

Fuel system:

The integral fuel tanks are located in the forward box of the wing central section and both halves of wing. The wing and central section tanks are connected by a simple hose connection with clamps. There is one large diameter hose between tanks, which serves the fuel from the wing tanks to central section tanks. There are two small diameter hoses, one of them is venting line of wing tank and second one is connects the both tanks (air connection). The integral fuel tanks are covered by a special paint resistive to fuel with a less electrical resistance. There is a rib in the each tank for preclusion of a rapid fuel flowage during the flight manoeuvres. The fuel tank filler caps are located on a wing upper surface.

There is a drain valve in the lowest point of each tank (fig. 1.6.6.1.2-2).

The fuel flows to the fuel selector through the fuel filters from the left or right fuel tank (in dependence on position of fuel selector). Fuel from the fuel selector flows through the gascolator, main and auxiliary electric fuel pumps (each fuel pump is by-passed and fitted with check valve), fuel flow sensor to the fuel pressure regulator. Unconsumed fuel returns from the fuel pressure regulator through the fuel selector to the same fuel tank from which is supplied to the engine. Fuel pressure sensor (in the engine compartment) and analogue fuel pressure gauge (at instrument panel) are connected with the fuel pressure regulator.

Fuel tank venting is outgoing from the upper part of each wing fuel tank (close to the filling cap), proceeds through central section tank and along the rescue system board, inside of central tunnel and discharge through the lower surface of fuselage in front of main spar (fig. 1.6.6.3.2-2).

Amount of fuel in the left and right fuel tanks indicates Dynon SkyView SV-D1000. Red light annunciator illuminates when 15 litres of fuel remain in corresponding fuel tank.

Main electric fuel pump starts to run when the magnetos (ignition) are switched in position "ON". Auxiliary electric fuel pump is actuated during take-off and landing using a switch "FUEL PUMP". Running of auxiliary fuel pump signalizes the check light.

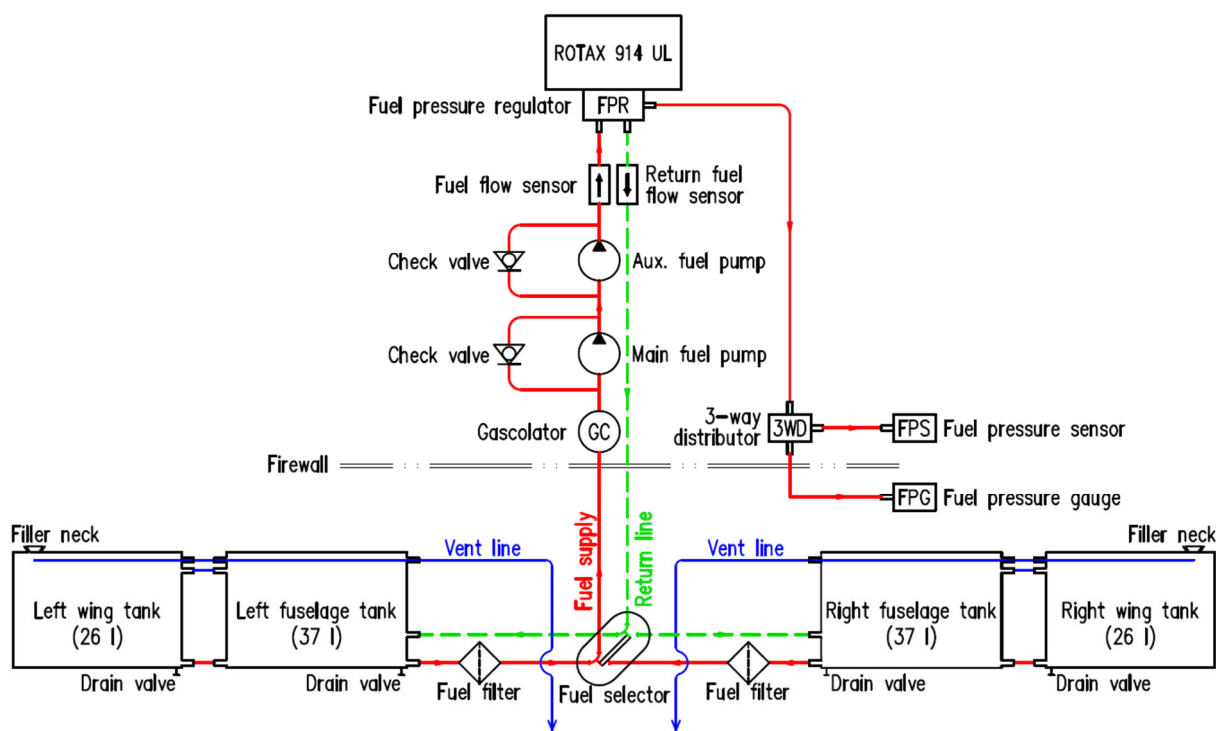


Fig. 1.6.6.3.2-2 Fuel system, model Speed "RG914 configuration"

	Left tanks (l)	Right tanks (l)
The total quantity of fuel in the tank	63,0	63,0
Unusable fuel in the tank	2,9	2,9
The total usable quantity of fuel in the tank	60,2	60,2

Oil system:

The engine Rotax 914 UL has a dry sump forced lubrication system. The oil pump is driven by means of camshaft. The oil accumulates at the bottom of crankcase and it is forced back to the oil tank by energy of gassed in the crankcase. The oil pump sucks the engine oil from the oil tank, through the oil thermostat and oil filter and ensures the engine lubrication. In dependence of temperature, the oil thermostat opens the circuit of oil cooler. The oil tank is equipped with a venting hose (fig. 1.6.6.3.2-3).

The oil temperature sensor for reading of the oil inlet temperature is screwed into the oil pump housing.

The oil pressure sensor is screwed into the crankcase on the right side of engine.

Use only oil with API classification „SG“ or higher! Due to the high stresses in the reduction gears, oils with gear additives such as good quality 4 stroke motorcycle oils are highly recommended. Heavy duty semi- or fully synthetic (depending on fuel type used) brand name oils are recommended.

Oil system capacity: Approx. 3,5 litres

Oil consumption: Max. 0,06 l/h

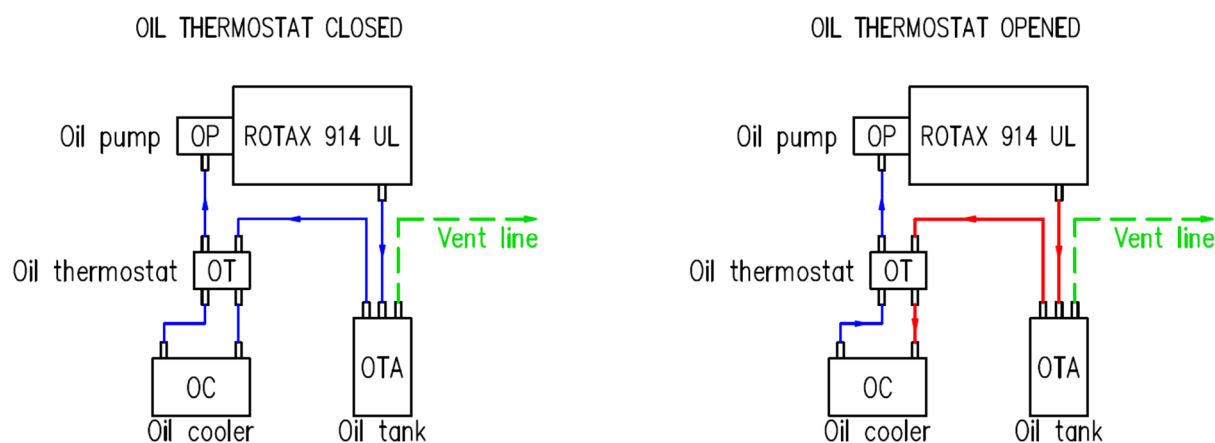


Fig. 1.6.6.3.2-3 Oil system, model Speed "RG914 configuration"

Refer to the Maintenance Manual for Rotax Engine Type 914 Series, Ref. No.: MML-914 for additional information.

WARNING

Do not use AVGAS 100 LL with fully synthetic engine oils!

Air and water-cooling system:

Engine has combined air and water cooling system.

Water cooling system consists of water thermostat and water radiator through which the coolant flows to a water pump and then is distributed to the water-cooled engine parts inside of engine. Water radiator is attached in the holder fixed on the right side of lower engine cowling. Overflow bottle is attached at firewall and connected by a hose with the expansion tank. Expansion tank located on top of the engine allows coolant expansion.

Cooling air is received through the two upper engine cowling intakes and is baffled to the engine compartment. There is also cooling air distributor installed on the engine that distributes the cooling air to the cylinders.

The coolant temperature sensor is located in the tube between expansion tank and water thermostat.

The cylinder head temperature sensor is installed at the cylinder head of right rear cylinder (in flight direction). This system allows for accurate measurement of engine temperature, even in event of fluid loss (fig. 1.6.6.3.2-4).

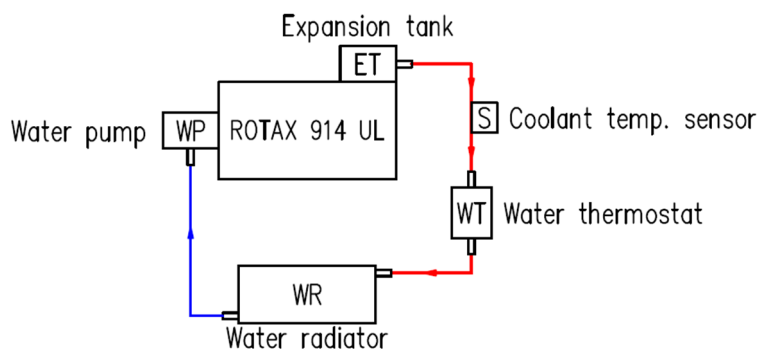


Fig. 1.6.6.3.2-4 Engine water cooling system, model Speed "RG914 configuration"

Induction system:

Air intake is located on the right side of lower engine cowling as a NACA duct. From the NACA duct the air flows through the air filter to the turbocharger and then to the airbox.

Exhaust system:

Exhaust gases from each cylinder pass through the exhaust pipes to a turbocharger. There is a waste gate operated by servo installed at firewall that regulates the amount of exhaust gasses passing through the turbocharger. The turbocharger is connected with a muffler that is attached to the engine. Exhaust system from exhaust pipes up to muffler is part of engine. Exhaust gasses from muffler discharge through an exhaust tube (1). Exhaust tube is fixed to the muffler by means of clamp and passes out through the lower engine cowling on the left side (fig. 1.6.6.3.2-5).

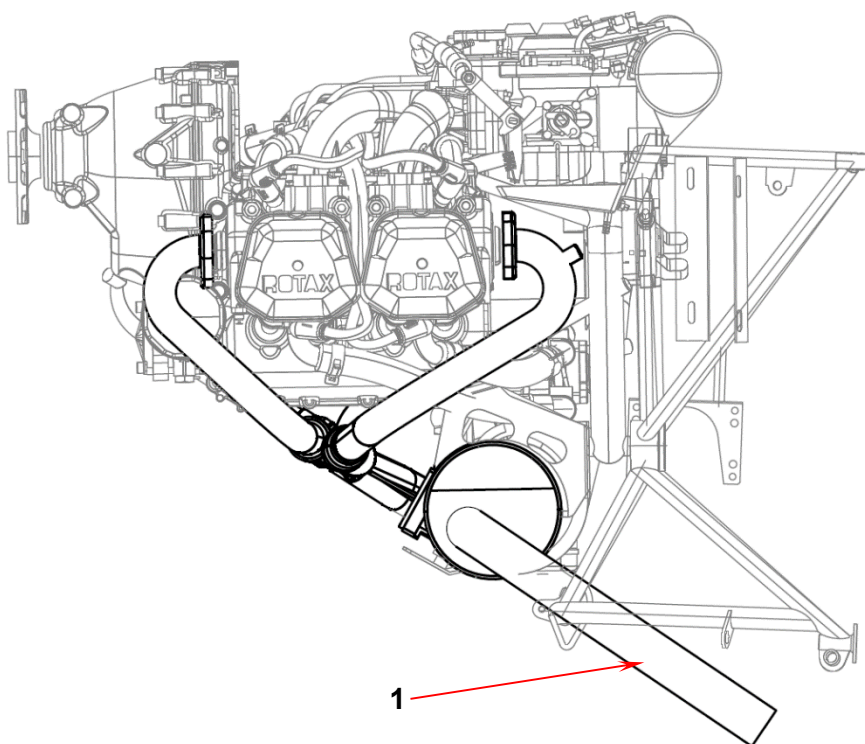


Fig. 1.6.6.3.2-5 Exhaust system, model Speed "RG914 configuration"

1.6.6.3.3. Propeller WOODCOMP SR3000/2N

WOODCOMP SR3000/2N is 2-bladed in-flight electrically adjustable propeller. The propeller blades are made of a wood-composite and the leading edges are made of a wear resistant material.

The angle of blades setting is adjusted by servomotor controlled from the cockpit and it can be adjusted smoothly in range from the minimum angle intended for take-off up to maximum angle. A speed of displace is approximately 0,5 °/sec. Propeller control on the instrument panel consists of panel, in which there is placed the signalisation of the direction of propeller blades adjusting, together with control diodes of small and large angle and also the switch of control. The meaning of the control diodes signals is:

- Yellow control diode of adjusting the fine angle:
 - Shines after reaching the min. angle.
 - Blinks when adjusting the finer angle.
- Red control diode of adjusting the rough angle:
 - Shines after reaching the stop at max. angle.
 - Blinks when adjusting the rougher angle.

For more information, refer to the Operator's Manual, Electrical Adjustable Aircraft Propeller SR3000/2N, actual valid revision.

Propeller WOODCOMP SR3000/2N	
Diameter	1700 mm
Maximum RPM	2650 min ⁻¹
Weight	8,5 kg

WARNING

Never run the engine without propeller, this inevitably causes engine damage and is an explosion hazard!

1.6.7. Cockpit

Pilot and co-pilot's seats are integral part of interior and are equipped with removable laminate seats and upholstery. Control sticks go through the front section of seats. Each seat is equipped with 4-point safety harness. Waist belts are attached to the central tunnel and interior sidewalls and shoulder belts are attached to the top of backrest.

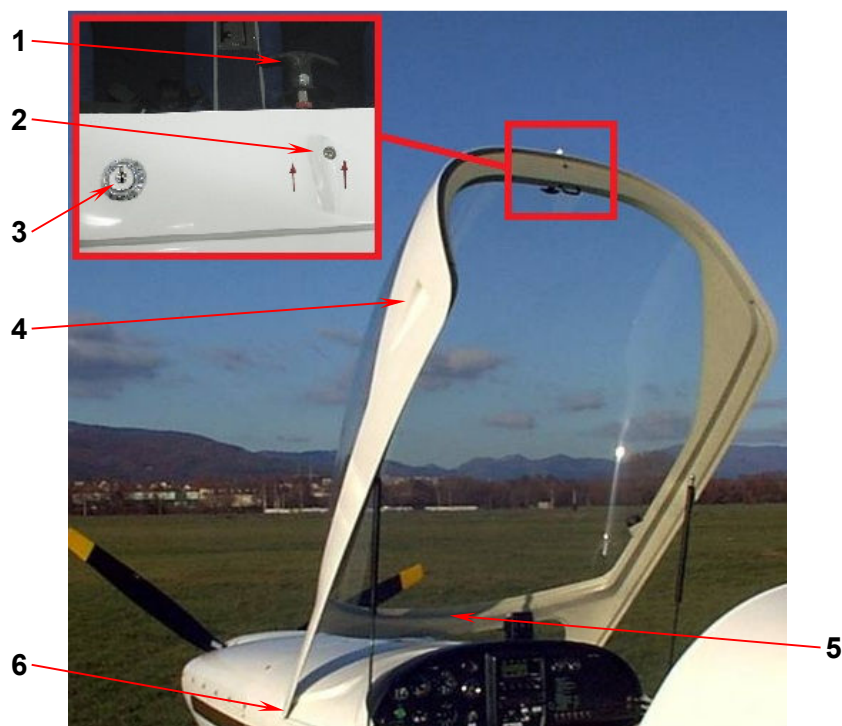
Remote controls for adjusting of pilot and co-pilot's foot control pedals position are located under the instrument panel on both sides. Right and left fuselage interior sides are upholstered with storage pockets. On the top of central tunnel are located controllers for wing flaps, trim and brake lever. In the central console (under instrument panel) are located controllers for throttle, choke, carburettor preheating, cabin heating and venting, fuel selector and emergency parachute system actuator.

Instrument panel is laminate construction attached to the central tunnel in the middle and both sides to the fuselage. In the middle of top edge is supported with a strut. Glare shields overlaps the instrument panel to limits undesirable reflections on instrument's displays.

Socket for headphones jacks are located behind the backrest on the top of central tunnel. Behind the pilot and co-pilot's heads at the top of fuselage are installed holders for headphones.

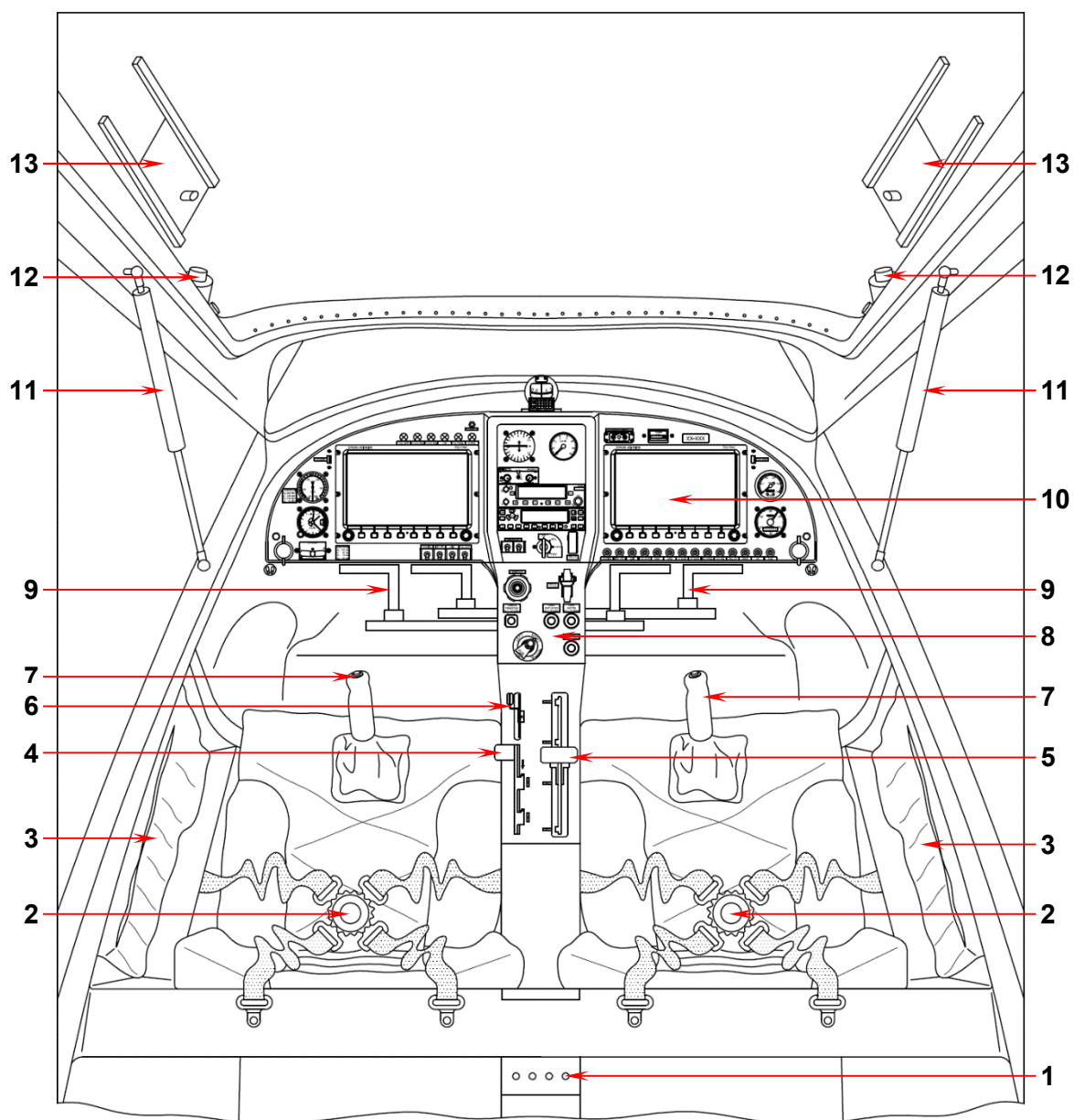
Canopy is hinged in front section of fuselage using two hinges and supported by two gas struts. It is opened upside-forward direction. Cabin is non-pressurised. Canopy is equipped with Plexiglas windshield 3 mm thick and sliding windows on both sides. The frame is made of hollow laminate structure through which the venting air flows. Canopy is fitted with blowers on both sides and holes for blowing of windshield. Closing mechanism of canopy is situated on the top in the fuselage plane of symmetry and is accessible for both pilot and co-pilot. Canopy is also fitted with a canopy lock (fig. 1.6.7-1). The model Club "FG912T configuration" is in addition fitted with rear mirror on the left side (fig. 1.6.7-4)

Arrangement of cockpit for model Club "FG912 configuration" is at the fig. 1.6.7-2. Arrangement of cockpit for model Club "FG912T configuration" is at the fig. 1.6.7-3. Arrangement of cockpit for model Speed "RG914 configuration" is at the fig. 1.6.7-5.



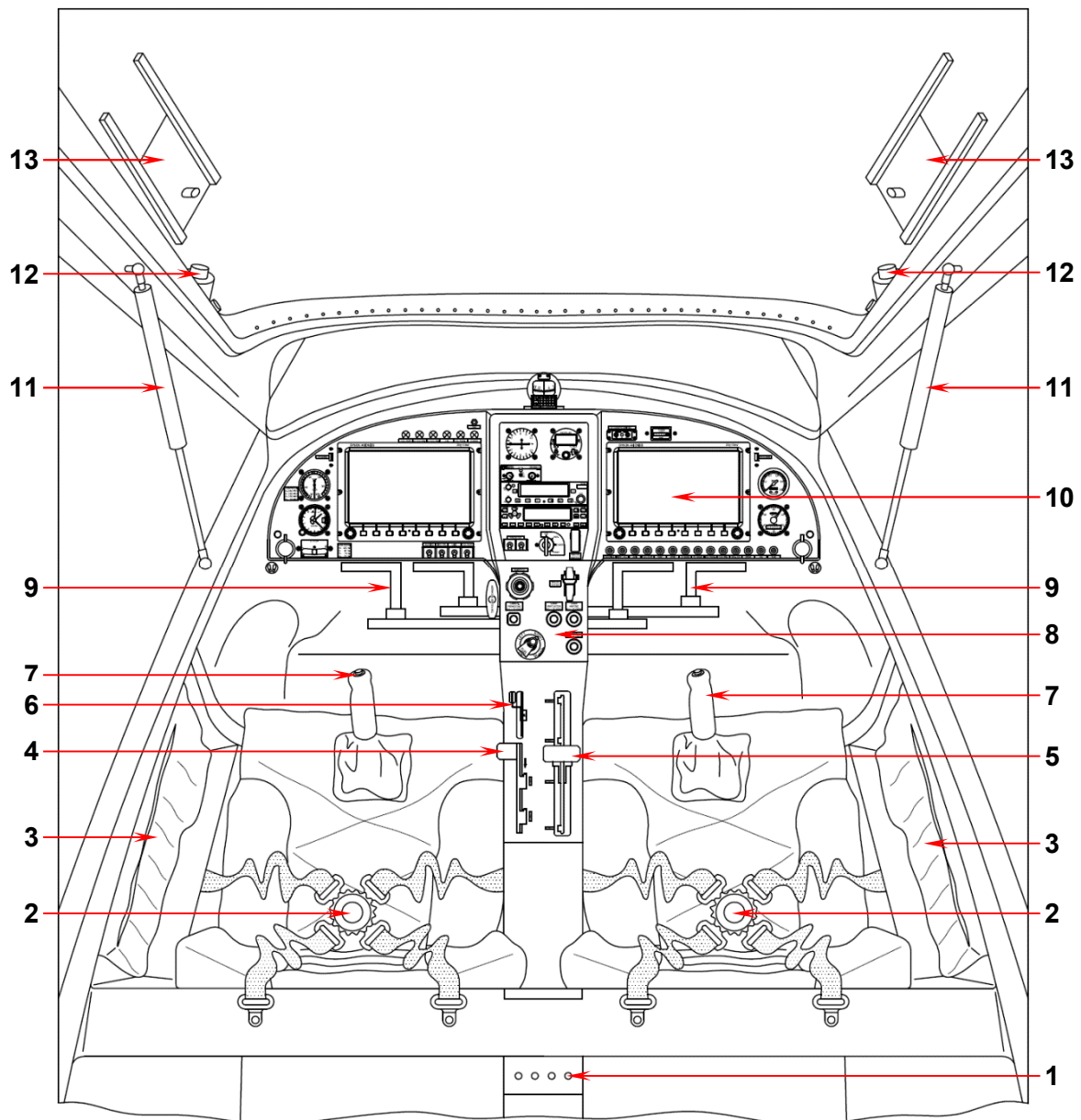
1. Canopy closing mechanism handle (interior)	4. Air intake
2. Canopy closing mechanism handle (exterior)	5. Holes for blowing of windshield
3. Canopy lock	6. Canopy hinge

Fig. 1.6.7-1 Canopy



1. Headset socket/jack	8. Central console (see Chapter 1.6.7.1.1)
2. Seat and safety belt	9. Rudder pedals
3. Pocket	10. Instrument panel (see Chapter 1.6.7.1.1)
4. Brake lever	11. Gas strut
5. Wing flap lever	12. Ventilation flow baffle
6. Trim lever	13. Ventilation sliding window
7. Control stick	-

Fig. 1.6.7-2. Cockpit of model Club "FG912 configuration"



1. Headset socket/jack	8. Central console (see Chapter 1.6.7.1.2)
2. Seat and safety belt	9. Rudder pedals
3. Pocket	10. Instrument panel (see Chapter 1.6.7.1.2)
4. Brake lever	11. Gas strut
5. Wing flap lever	12. Ventilation flow baffle
6. Trim lever	13. Ventilation sliding window
7. Control stick	-

Fig. 1.6.7-3. Cockpit of model Club "FG912T configuration"



Fig. 1.6.7-4 Rear mirror, model Club "FG912T configuration"

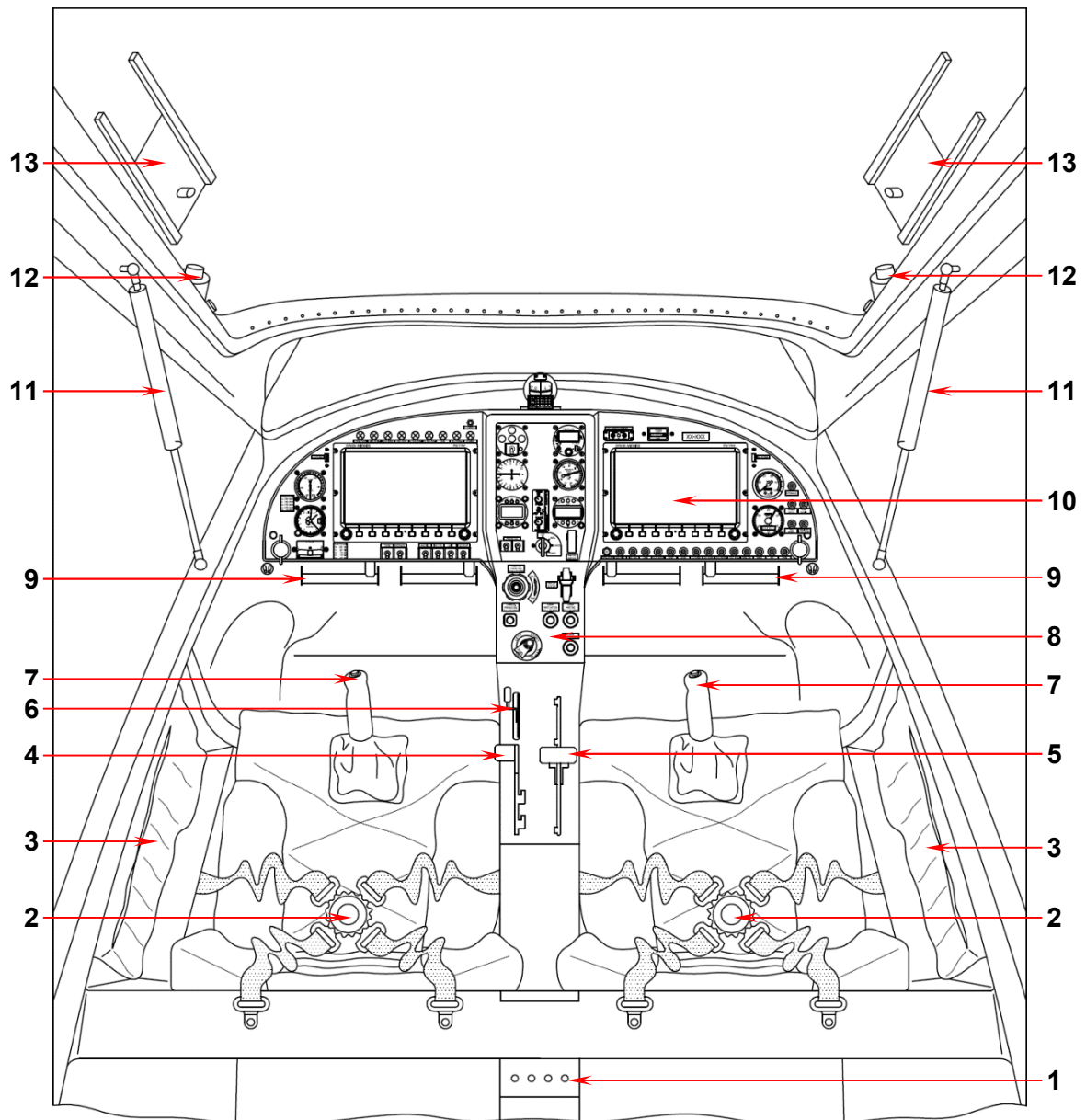


Fig. 1.6.7-5. Cockpit of model Speed "RG914 configuration"

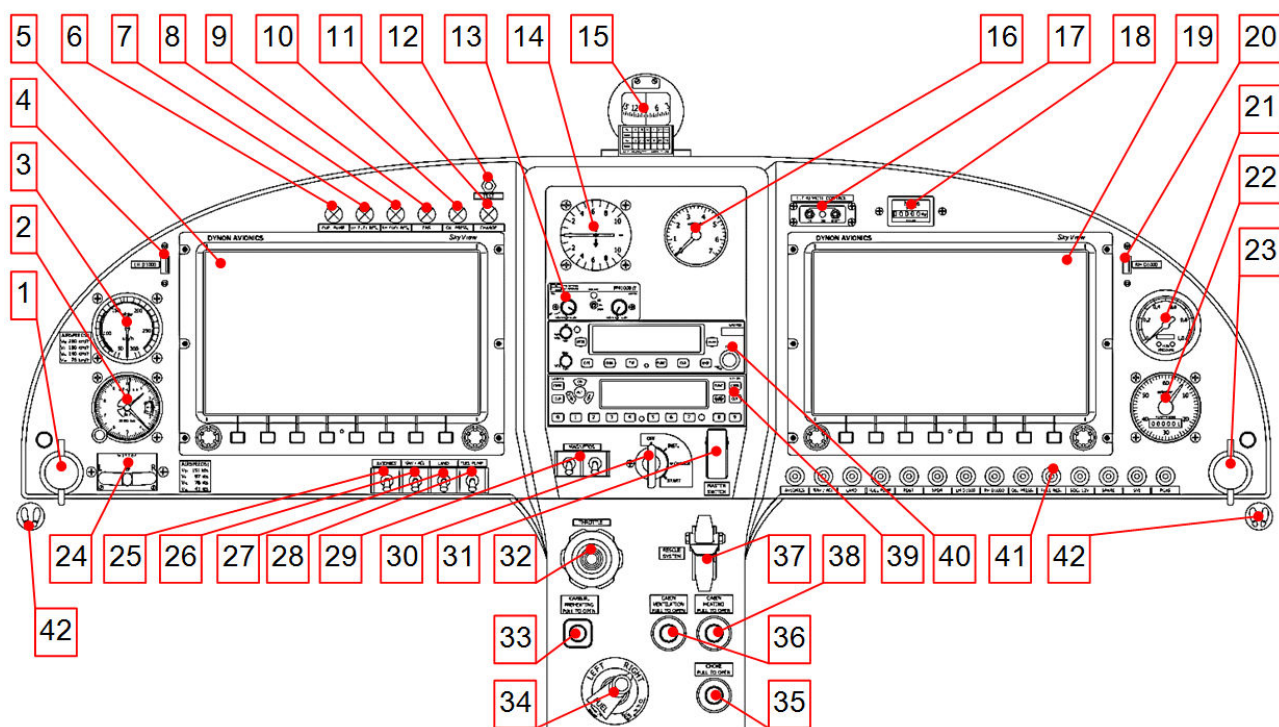
1. Headset socket/jack	8. Central console (see Chapter 1.6.7.1.3)
2. Seat and safety belt	9. Rudder pedals
3. Pocket	10. Instrument panel (see Chapter 1.6.7.1.3)
4. Brake lever	11. Gas strut
5. Wing flap lever	12. Ventilation flow baffle
6. Trim lever	13. Ventilation sliding window
7. Control stick	-

1.6.7.1. Instrument panels

The instrument panel and controllers depend on the model and configuration of aircraft.

1.6.7.1.1. Model Club “FG912 configuration”

Instrument panel and controllers for model Club “FG912 configuration” are displayed at fig. 1.6.7.1.1-1. If the aircraft is not equipped with emergency parachute system, position 37 is not installed.



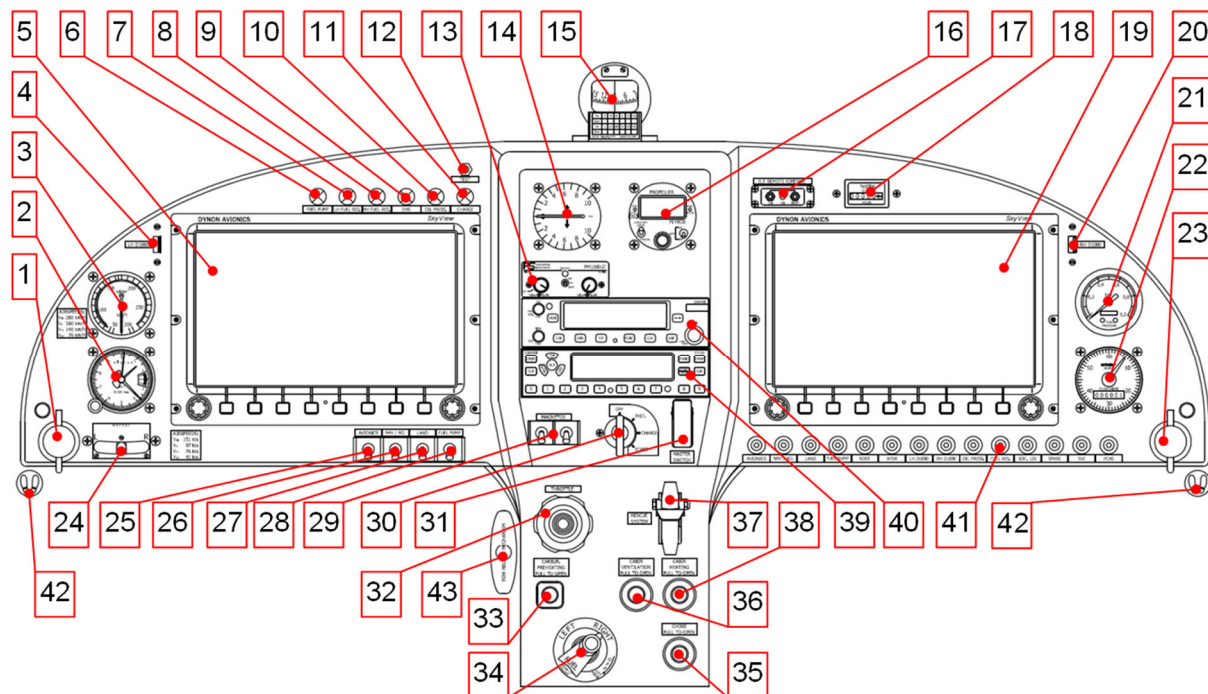
1.	12V Power outlet	23.	12V Power Outlet
2.	Altimeter Winter 4FGH40	24.	Bank Indicator Winter QMII
3.	Airspeed indicator Winter 7FMS511	25.	Avionic Switch
4.	USB Connector (LH-D1000)	26.	NAV/POS/Strobe lights
5.	Dynon SkyView D-1000 (EFIS)	27.	Landing Lights Switch
6.	Fuel Pump Control Lamp	28.	Fuel Pump Switch
7.	LH Fuel Reserve Warning Lamp	29.	Magnetos
8.	RH Fuel Reserve Warning Lamp	30.	Starter Key
9.	EMS Warning Lamp	31.	Master Switch
10.	Oil Press Warning Lamp	32.	Throttle Controller
11.	Charge Warning Lamp	33.	Carburettor Pre-heating Controller
12.	Lamps Test Button	34.	Fuel Selector Andair FS15x2
13.	Intercom PS-Engineering PM-1000 II	35.	Choke Controller
14.	Vertical Speed Indicator Winter 5STWM10	36.	Cabin Ventilation Controller
15.	Magnetic Compass Airpath C-2400-P	37.	Ballistic Recovery System Actuator
16.	RPM Indicator ROAD IF61.2B35.2301	38.	Cabin Heating Controller
17.	ELT Remote Control AK-451	39.	Transponder Garmin GTX 328
18.	Engine Hours Counter Honeywell	40.	Radio Garmin GNC 255A
19.	Dynon SkyView D-1000 (EMS)	41.	Circuit Breakers (see next page)
20.	USB Connector (RH-D1000)	42.	Pedals Remote Controller
21.	Fuel Pressure Indicator Skydrive FP-912/10	-	Traffic Sensor Garrecht TRX-1500 (fitted behind panel)
22.	Flight Hours Counter Winter FSZM	-	Altitude Encoder ACK A-30 (fitted behind panel)

Fig. 1.6.7.1.1-1 Instrument panel of model Club “FG912 configuration”

Circuit breakers model Club "FG912 configuration"		
No.	Protected circuit	Circuit breaker value (A)
1.	Avionics	1
2.	NAV/ACL	5
3.	Landing Lights	1
4.	Fuel Pump	2
5.	Radio	10
6.	Transponder	5
7.	LH-D1000	8
8.	RH-D1000	8
9.	Oil Pressure	1
10.	Fuel Pressure	1
11.	Socket 12V	10
12.	Spare	5
13.	Single Value Instruments (SVI)	1
14.	PCAS	1

1.6.7.1.2. Model Club “FG912T configuration”

Instrument panel and controllers for model Club “FG912T configuration” are displayed at fig. 1.6.7.1.2-1. If the aircraft is not equipped with emergency parachute system, position 37 is not installed.



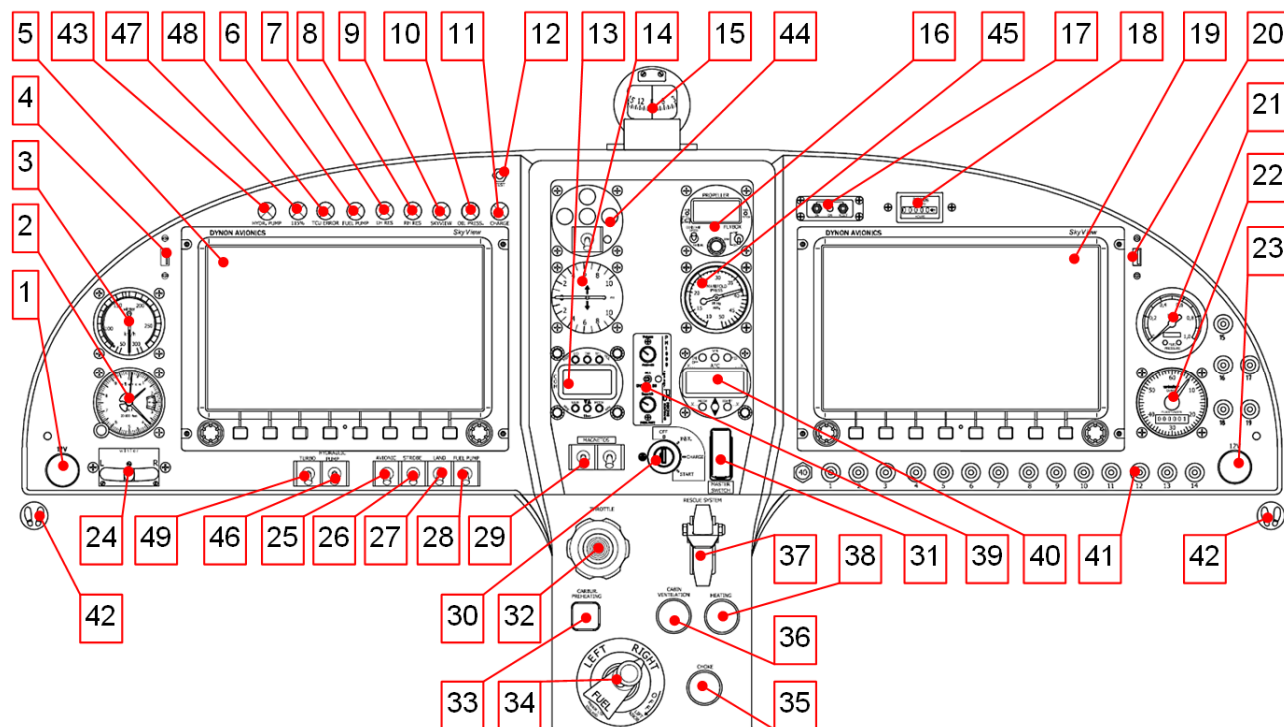
1.	12V Power outlet	24.	Bank Indicator Winter QMII
2.	Altimeter Winter 4FGH40	25.	Avionic Switch
3.	Airspeed indicator Winter 7FMS511	26.	NAV/POS/Strobe lights
4.	USB Connector (LH-D1000)	27.	Landing Lights Switch
5.	Dynon SkyView D-1000 (EFIS)	28.	Fuel Pump Switch
6.	Fuel Pump Control Lamp	29.	Magnetos
7.	LH Fuel Reserve Warning Lamp	30.	Starter Key
8.	RH Fuel Reserve Warning Lamp	31.	Master Switch
9.	EMS Warning Lamp	32.	Throttle Controller
10.	Oil Press Warning Lamp	33.	Carburettor Pre-heating Controller
11.	Charge Warning Lamp	34.	Fuel Selector Andair FS15x2
12.	Lamps Test Button	35.	Choke Controller
13.	Intercom PS-Engineering PM-1000 II	36.	Cabin Ventilation Controller
14.	Vertical Speed Indicator Winter 5STWM10	37.	Ballistic Recovery System Actuator
15.	Magnetic Compass Airpath C-2400-P	38.	Cabin Heating Controller
16.	Propeller Regulator Flybox PR1-P	39.	Transponder Garmin GTX 328
17.	ELT Remote Control AK-451	40.	Radio Garmin GNC 255A
18.	Engine Hours Counter Honeywell	41.	Circuit Breakers (see next page)
19.	Dynon SkyView D-1000 (EMS)	42.	Pedals Remote Controller
20.	USB Connector (RH-D1000)	43.	Tow Release Lever
21.	Fuel Pressure Indicator Skydrive FP-912/10	-	Traffic Sensor Garrecht TRX-1500 (fitted behind panel)
22.	Flight Hours Counter Winter FSZM	-	Altitude Encoder ACK A-30 (fitted behind panel)
23.	12V Power Outlet	-	-

Fig. 1.6.7.1.2-1 Instrument panel of model Club “FG912T configuration”

Circuit breakers model Club "FG912T configuration"		
No.	Protected circuit	Circuit breaker value (A)
1.	Avionics	1
2.	NAV/ACL	5
3.	Landing Lights	1
4.	Fuel Pump	2
5.	Radio	10
6.	Transponder	5
7.	LH-D1000	8
8.	RH-D1000	8
9.	Oil Pressure	1
10.	Fuel Pressure	1
11.	Socket 12V	10
12.	Spare	5
13.	Single Value Instruments (SVI)	1
14.	PCAS	1
15.	Propeller	10

1.6.7.1.3. Model Speed “RG914 configuration”

The instrument panel and controllers for model Speed “RG914 configuration” are displayed at fig. 1.6.7.1.3-1. If the aircraft is not equipped with emergency parachute system, position 37 is not installed.



1.	12V Power outlet	26.	NAV/POS/Strobe lights
2.	Altimeter Winter 4FGH40	27.	Landing Lights Switch
3.	Airspeed indicator Winter 7FMS511	28.	Fuel Pump Switch
4.	USB Connector (LH-D1000)	29.	Magnetos
5.	Dynon SkyView D-1000 (EFIS)	30.	Starter Key
6.	Fuel Pump Control Lamp	31.	Master Switch
7.	LH Fuel Reserve Warning Lamp	32.	Throttle Controller
8.	RH Fuel Reserve Warning Lamp	33.	Carburettor Pre-heating Controller
9.	EMS Warning Lamp	34.	Fuel Selector Andair FS2020
10.	Oil Press Warning Lamp	35.	Choke Controller
11.	Charge Warning Lamp	36.	Cabin Ventilation Controller
12.	Lamps Test Button	37.	Ballistic Recovery System Actuator
13.	Radio Funkwerk ATR833	38.	Cabin Heating Controller
14.	Vertical Speed Indicator Winter 5STWM10	39.	Intercom PS-Engineering PM-1000 II
15.	Magnetic Compass Airpath C-2400-P	40.	Transponder Funkwerk TRT800H
16.	Propeller Regulator Flybox PR1-P	41.	Circuit Breakers (see next page)
17.	ELT Remote Control AK-451	42.	Pedals Remote Controller
18.	Engine Hours Counter Honeywell	43.	Hydraulic Pump Control Lamp
19.	Dynon SkyView D-1000 (EMS)	44.	Landing Gear Controller
20.	USB Connector (RH-D1000)	45.	Manifold pressure gauge UMA 7-100-10
21.	Fuel Pressure Indicator Skydrive FP-912/10	46.	Hydraulic Pump Switch
22.	Flight Hours Counter Winter FSZM	47.	115% 5 minute Control Lamp
23.	12V Power Outlet	48.	TCU Error Control Lamp
24.	Bank Indicator Winter QMII	49.	Turbo Switch
25.	Avionic Switch	-	Traffic Sensor Garrecht TRX-1500 (fitted behind panel)

Fig. 1.6.7.1.3-1 Instrument panel of model Speed “RG914 configuration”

Circuit breakers model Speed "RFG914 configuration"		
No.	Protected circuit	Circuit breaker value (A)
1.	Hydraulic pump	40
2.	Avionic	1
3.	ACL/NAV	5
4.	Land	1
5.	Fuel pump	2
6.	RDST	4
7.	XPDR	2
8.	LH D1000	8
9.	RH D1000	8
10.	Oil pressure	1
11.	Fuel reserve	1
12.	Socket 12V	10
13.	Spare	5
14.	Single Value Instruments (SVI)	1
15.	PCAS	1
16.	Hydraulic	5
17.	Constant speed	10
18.	Gear signalisation	1
19.	TCU Power	5
20.	Magneto fuel pump	2

1.6.7.2. Baggage compartment

Baggage compartment is situated between backrest and baggage bulkhead. Central tunnel passes through the baggage compartment and divides it in two sections. Each section of baggage compartment has 2 front (1) and 2 aft attaching points (3) to which is baggage fixed by fastening straps and baggage net.

In the front section of baggage compartment is located flap torsion tube equipped with a laminate cover (2) (fig. 1.6.7.2-1).

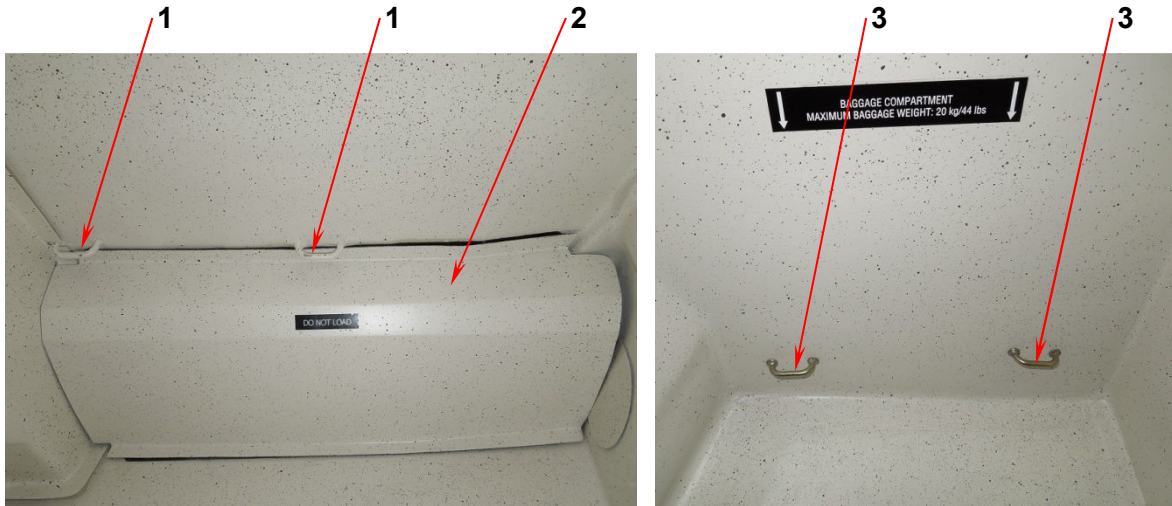


Fig. 1.6.7.2-1 Baggage compartment attaching points

1.6.7.3. Cockpit heating and venting

Cockpit heating and venting is ensured by heating and venting flap installed at the firewall. Heating and venting flaps operate controllers installed at the central console. Amount of heating or venting air depends on controller setting.

Additional venting air supply the ball blowers and venting windows (see fig. 1.6.7-2 and fig. 1.6.7-3). The ball blowers receive the venting air from the NACA intakes located the both sides of canopy. Venting air from NACA intakes is also distributed through the canopy frame to the small holes blowing the windshield.

Model Club:

The cold air is received from an intake baffle (1) installed behind the water radiator (2) and directs through the air hose 1 (3) to a shroud (4) on the muffler (5) to be heated. Hot air from the shroud directs through the air hose 2 (6) to the heating flap (7). Amount of warm air entering the cockpit is controlled by a heating flap controller (8).

Venting air comes from a ram air tunnel (9) installed on the left side of lower engine cowl and directs through the air hose (10) to the venting flap (11). Amount of venting air entering the cockpit is controlled by a venting flap controller (12) (fig. 1.6.7.3-1).

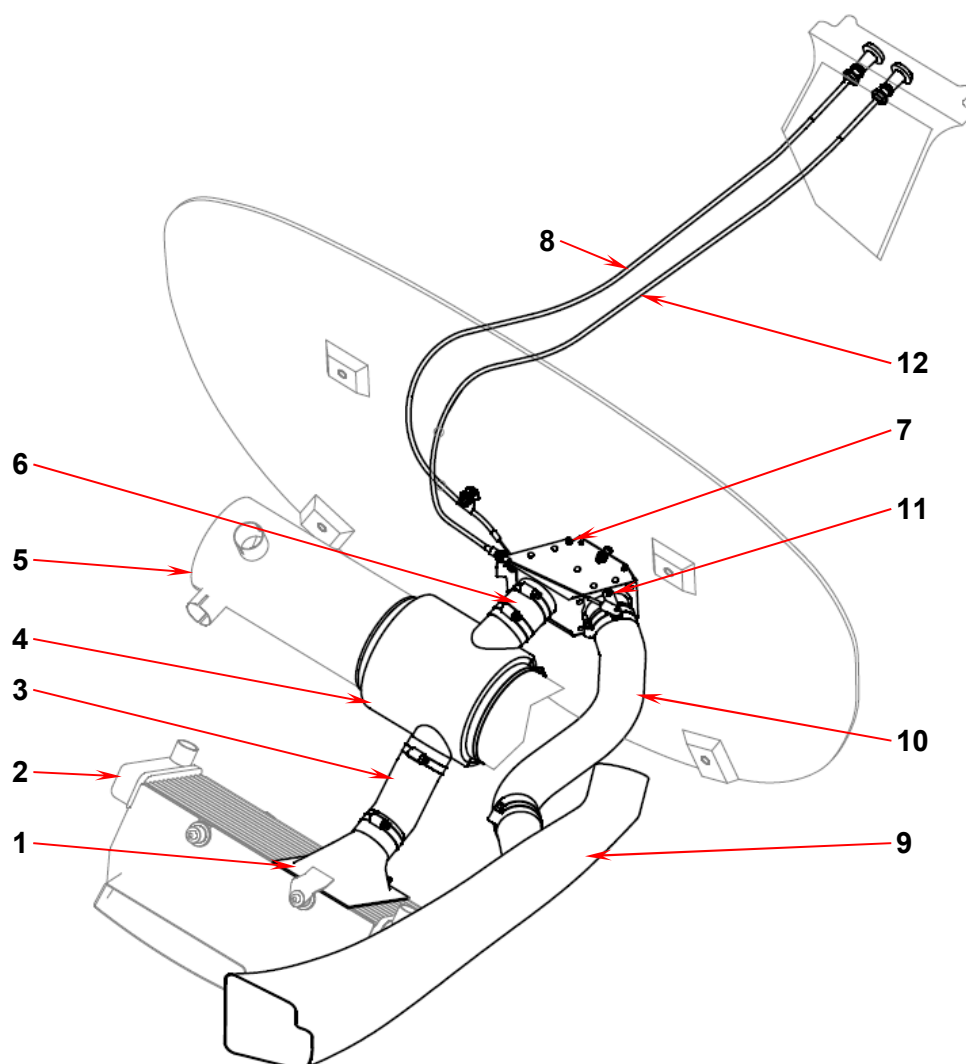


Fig. 1.6.7.3-1 Cockpit heating and venting, model Club

Model Speed “RG914 configuration”:

The cold air received from an intake hole at the lower engine cowling and directs through the air hose 1 (1) to a shroud (2) on muffler (3) to be heated. Warm air from the shroud directs through the air hose 2 (4) to the heating flap (5). The amount of warm air entering the cockpit is controlled by a heating flap controller (6).

Venting air comes from oil cooler holder (7) installed on the left side of lower engine cowling and is directed through the air hose (8) to the venting flap (9). The amount of venting air entering the cockpit is controlled by a venting flap controller (10) (fig. 1.6.7.3-2).

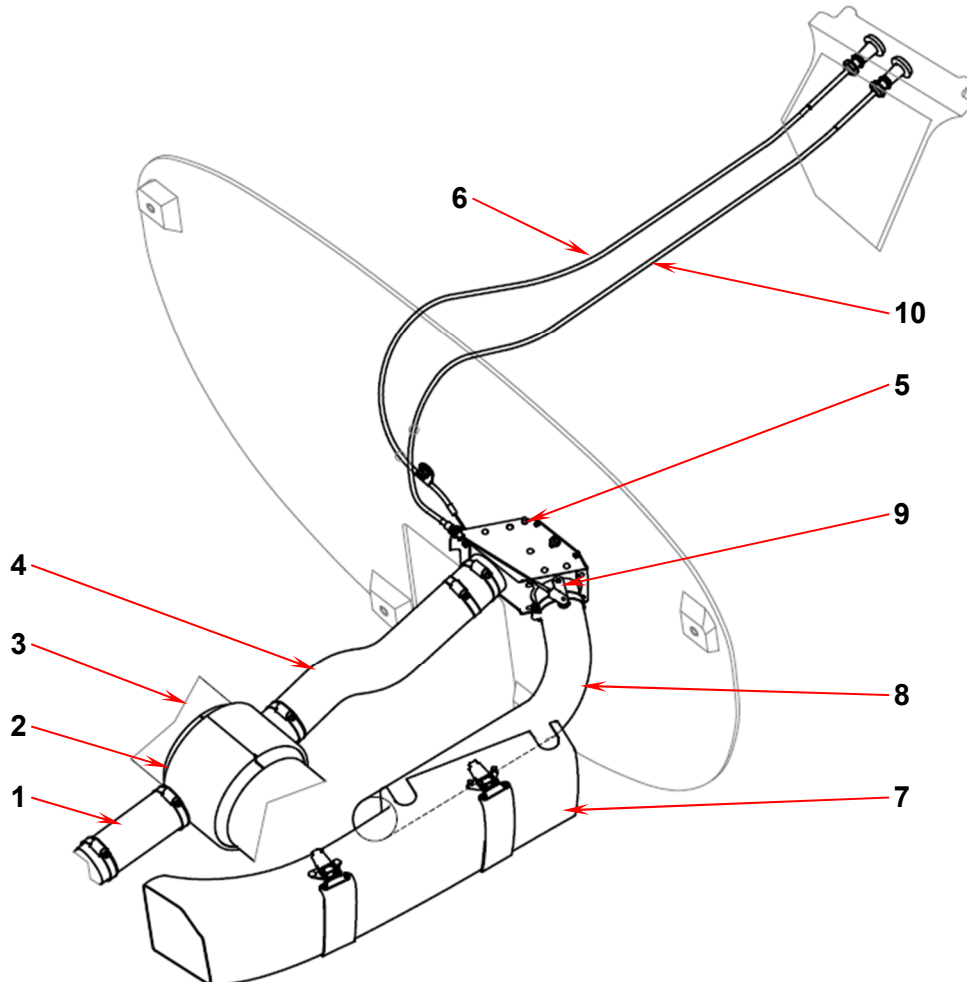


Fig. 1.6.7.3-2 Cockpit heating and venting, model Speed “RG914 configuration”

1.6.8. Emergency Parachute System

The aircraft can be equipped with parachute emergency parachute system (EPS) MAGNUM 601 S-LSA from the company STRATOS 07 spol. s r. o. as optional equipment (fig. 1.6.8-1).

This EPS is designed for the aircraft with maximum weight up to 620 kg and with maximum speed of using 290 km/h (157 kts). The area of parachute is 130 m². The descent rate with opened parachute is 7,0 m/sec. The container dimension is 430x210x250 mm and the total weight is 12,9 kg. Rocket motor is Magnum 600 A with total thrust pulse 0,539 kNs.

The life time of the rescue system is 18 years with the repacking interval is 6 years.

Parachute container is located behind instrument panel and is attached to the board. Two main straps are attached to the stiffened areas at firewall and stabilizing strap is attached to the steel cable (glued in the structure of right fuselage shell). Main and stabilizing straps are through a carabine attached to the parachute strap.

Extraction device (rocket) is attached in the laminate holders that are glued to the firewall. It is connected with the parachute extraction cable. Rocket is connected to an actuator installed at the central console by a Bowden cable. Actuator is secured by protector of EPS actuator from unintentional activation of rocket.



1. Parachute strap	7. Main strap attaching point (right)
2. Parachute extraction cable	8. Actuator
3. Extraction device	9. Left main and stabilizing strap
4. Parachute container	10. Carabine
5. Left main strap	11. Rocket actuating Bowden
6. Extraction device holder	12. Protector of EPS actuator

Fig. 1.6.8-1 Emergency parachute system MAGNUM 601 S-LSA

1.6.9. Electric system

1.6.9.1. Model Club “FG912 configuration”

Aircraft has 12V DC system. Installation is single-wire type with negative terminal connection to earth. Board network is supplied by maintenance free accumulator 12V/17Ah that is installed on firewall in the engine compartment. Network is supplied with AC generator with external rectifier regulator (12V DC). Pop-up circuit breakers are installed at the lower edge of instrument panel's right side. Dual contactless ignition of the engine is a separate part of electrical installation. Each ignition circuit can be switched off independently using corresponding switch labelled as “MAGNETOS”.

Ignition box is connected to the accumulator through a master switch. Dynon SkyView SV-D1000 is connected through a circuit breaker directly to the master switch. Avionics (RDST, XPDR, intercom, and traffic sensor) are activated by separate switch labelled as “AVIONICS” and are connected through a circuit breaker to the master switch. Fuel pump is activated by separate switch labelled as “FUEL PUMP” and is connected through a circuit breaker to the 1st position of ignition box. Landing lights in the lower engine cowling are activated by switch labelled as “LAND” and are connected through a circuit breaker to the master switch. Navigation and anti-collision lights are activated by switch labelled as “NAV/ACL” and are connected through a circuit breaker to the master switch. Control lights function can be verified by pressing of test button labelled as “TEST”.

12V sockets of an automotive type are installed at the both lower corners of instrument panel and are connected through a circuit breaker to the accumulator.

Engine hours and flight hours are power supplied through a circuit breaker from the starter ignition box.

ELT has its own battery for power supply.

Aircraft has prepared wirings for future installation of autopilot.

See Annexes A.4.1 and A.4.2 for wiring diagrams.

1.6.9.2. Model Club “FG912T configuration”

Aircraft has 12V DC system. Installation is single-wire type with negative terminal connection to earth. Board network is supplied by maintenance free accumulator 12V/17Ah that is installed on firewall in the engine compartment. Network is supplied with AC generator with external rectifier regulator (12V DC). Pop-up circuit breakers are installed at the lower edge of instrument panel's right side. Dual contactless ignition of the engine is a separate part of electrical installation. Each ignition circuit can be switched off independently using corresponding switch labelled as “MAGNETOS”.

Ignition box is connected to the accumulator through a master switch. Dynon SkyView SV-D1000 is connected through a circuit breaker directly to the master switch. Avionics (RDST, XPDR, intercom, and traffic sensor) are activated by separate switch labelled as “AVIONICS” and are connected through a circuit breaker to the master switch. Fuel pump is activated by separate switch labelled as “FUEL PUMP” and is connected through a circuit breaker to the 1st position of ignition box. Landing lights in the lower engine cowling are activated by switch labelled as “LAND” and are connected through a circuit breaker to the master switch. Navigation and anti-collision lights are activated by switch labelled as “NAV/ACL” and are connected through a circuit breaker to the master switch. Control lights function can be verified by pressing of test button labelled as “TEST”.

Electric actuator mechanism of propeller SR3000/2N is connected to the propeller regulator that is connected through a circuit breaker to the master switch.

12V sockets of an automotive type are installed at the both lower corners of instrument panel and are connected through a circuit breaker to the accumulator.

Engine hours and flight hours are power supplied through a circuit breaker from the starter ignition box.

ELT has its own battery for power supply.

Aircraft has prepared wirings for future installation of autopilot.

See Annexes A.4.1 and A.4.3 for wiring diagrams.

1.6.9.3. Model Speed “RG914 configuration”

Aircraft has 12V DC system. Installation is single-wire type with negative terminal connection to earth. Board network is supplied by maintenance free accumulator 12V/17Ah that is installed on firewall in the engine compartment. Network is supplied with AC generator with external rectifier regulator (12V DC). Pop-up circuit breakers are installed at the lower edge of instrument panel's right side. Dual contactless ignition of the engine is a separate part of electric installation. Each ignition circuit can be switched off independently using corresponding switch labelled as “MAGNETOS”.

Ignition box is connected to the accumulator through a master switch. Dynon SkyView SV-D1000 is connected through a circuit breaker directly to the master switch. Avionics (RDST, XPDR, intercom and traffic sensor) are activated by separate switch labelled as “AVIONICS” and are connected through a circuit breaker to the master switch. Fuel pump is activated by separate switch labelled as “FUEL PUMP” and is connected through a circuit breaker to the 1st position of ignition box. Landing lights in the lower engine cowling are activated by switch labelled as “LAND” and are connected through a circuit breaker to the master switch. Navigation and anti-collision lights are activated by switch labelled as “NAV/ACL” and are connected through a circuit breaker to the master switch. Control lights function can be verified by pressing of test button labelled as “TEST”.

Electric actuator mechanism of propeller SR3000/2N is connected to the propeller regulator that is connected through a circuit breaker to the master switch.

Landing gear controller is connected through the circuit breaker to the master switch. Gear legs sensors are connected directly to landing gear controller and legs position is indicated by check lamps. Hydraulic switch is connected through the circuit breaker to the starter and supply power to by-pass valve in “OFF” position or to pressure switches and landing gear controller circuit regulating check valve in “ON” position. Pressure switches regulate the relay through which is supply hydraulic pump through the circuit breaker directly from the accumulator.

12V sockets of an automotive type are installed at the both lower corners of instrument panel and are connected through a circuit breaker to the accumulator.

Turbocharger of engine Rotax 914 UL is controlled by TCU unit. TCU unit is connected through a circuit breaker to the starter ignition box. Servo motor operating the wastegate is power supplied from TCU through a circuit breaker and switch labelled as “TURBO”.

Engine hours and flight hours are power supplied through a circuit breaker from the starter ignition box.

ELT has its own battery for power supply.

Aircraft has prepared wirings for future installation of autopilot.

See Annexes A.4.1 and A.4.4 for wiring diagrams.

1.6.10. Pitot-static system

The Pitot probe (1) is installed under the right wing (fig. 1.6.10-1). It receives total pressure (hoses marked "P") and is equipped with AOA sensing (hoses marked "A"). Static pressure (hoses marked "S") is received from the static pressure receivers (2) (on the both sides of fuselage).

Pressure distribution to individual instruments on the altimeter (3), airspeed indicator (4), vertical speed indicator (5) expansion bottle (6), flight hours counter (7), altitude encoder (8) and ADAHRS module (9) in the cockpit is performed through the flexible plastic hoses. There are also filters (10) included in the pitot-static system. Pitot-static system for model Club is at fig. 1.6.10-2 and for model Speed is at fig. 1.6.10-3.

Take care of the hoses from the Pitot probe during rigging of the wings. They must not be twisted and the hose coupling must be properly inserted. Keep the system clear and without leakage to assure its right function.

Take care of receivers holes (2) at fuselage and Pitot probe (1) during aircraft washing, they must be without water and clean.

WARNING

Avoid of impurities and water infiltration into the pitot static system. It may cause wrong function or damage of the instruments!

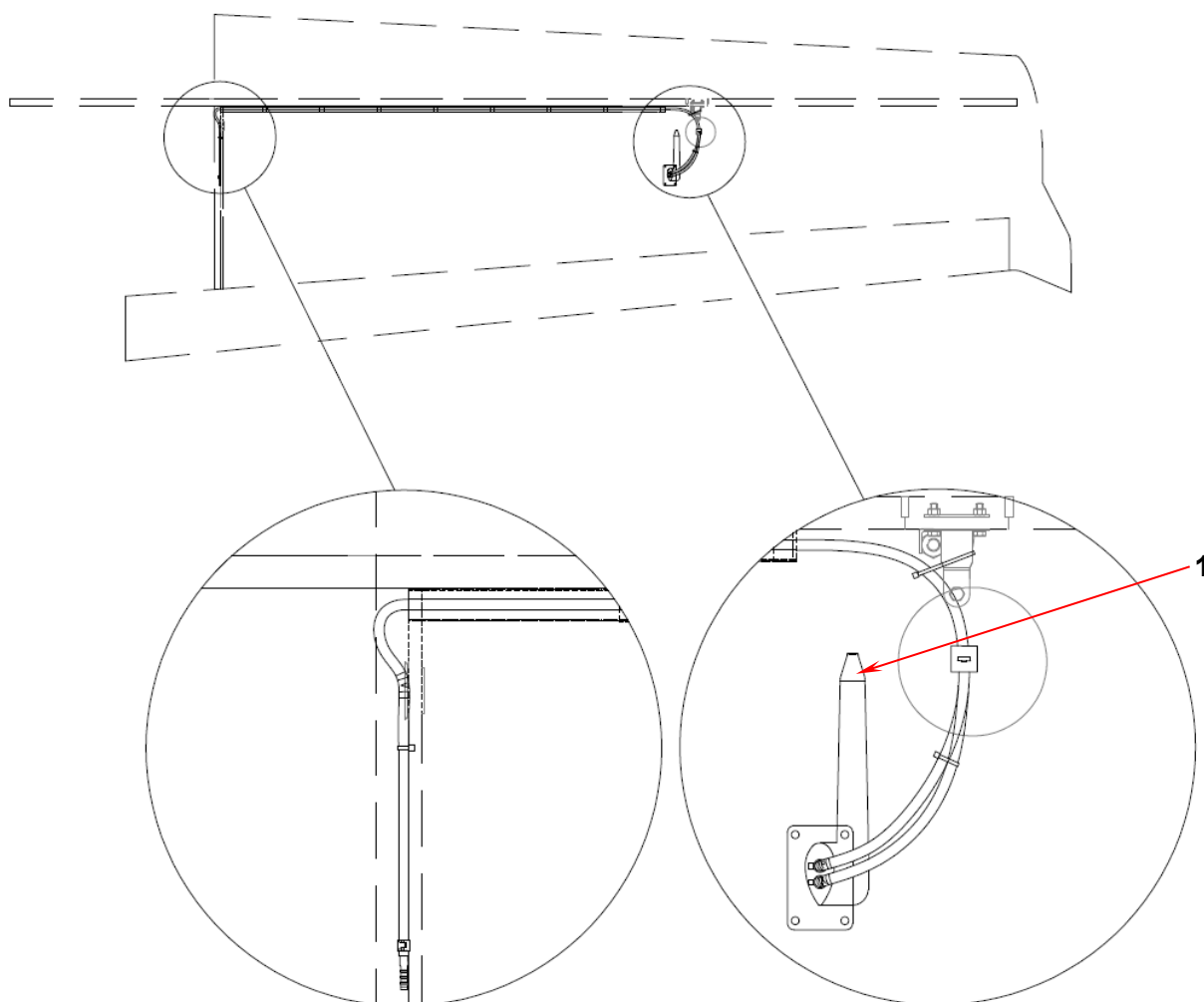


Fig. 1.6.10-1 Pitot-static system in the right wing

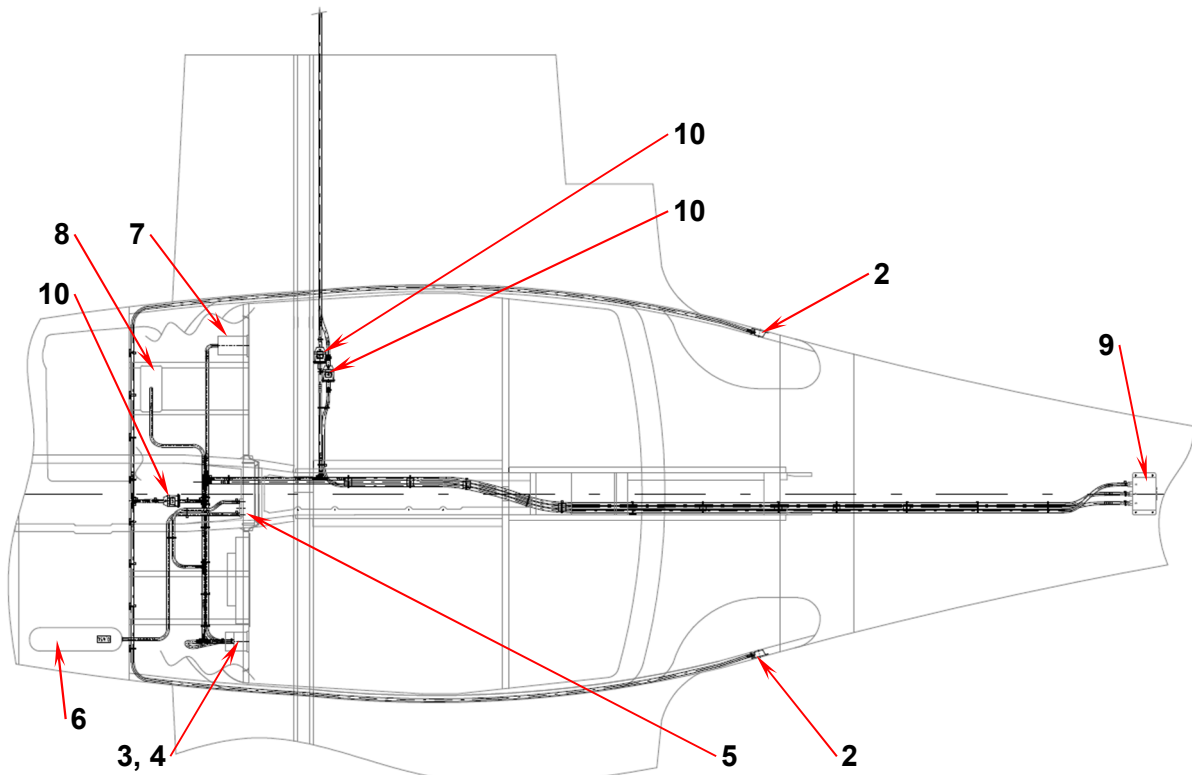


Fig. 1.6.10-2 Pitot-static system, model Club

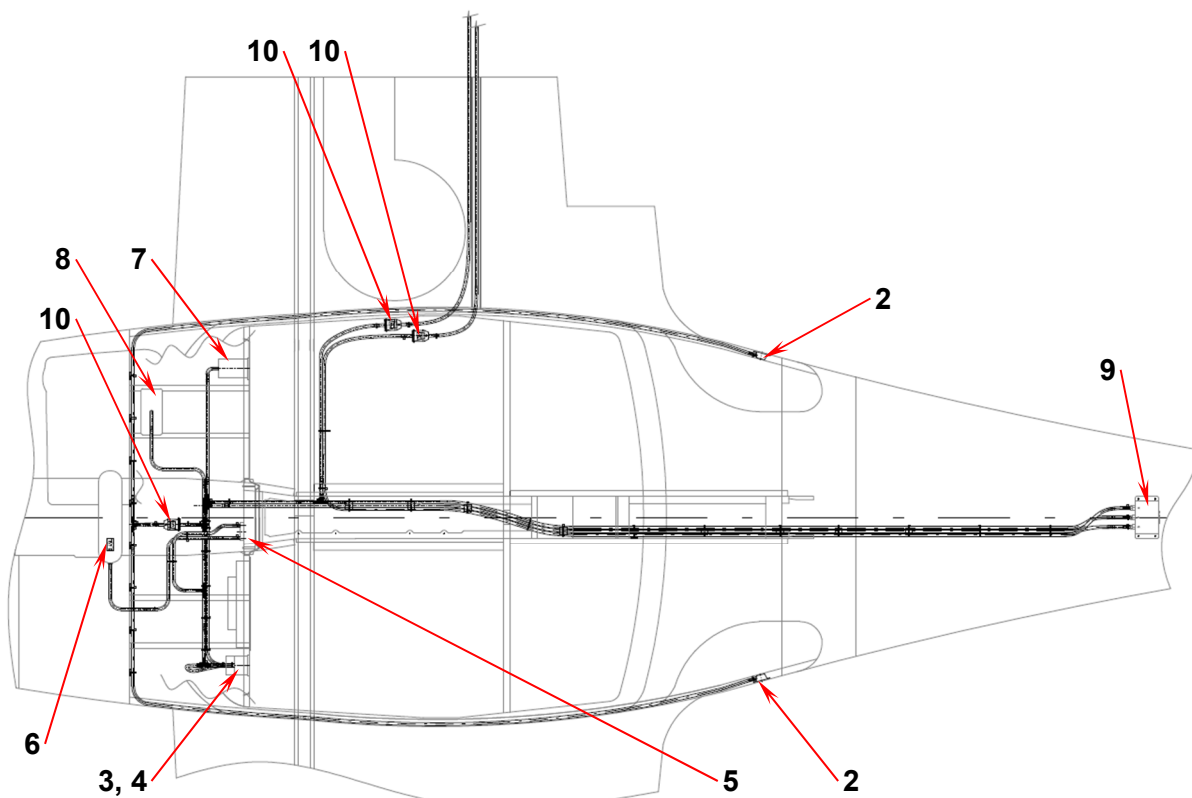


Fig. 1.6.10-3 Pitot-static system, model Speed

1.6.11. Tow release mechanism

Aircraft is fitted with tow release mechanism TOST E85 (1) installed in the aft section of fuselage under the rudder. It is operated by tow release lever (2) installed on the left side of central tunnel. Tow release lever is connected with the tow release mechanism by means of steel ropes (3, 4) that are connected by turnbuckle (5) (fig. 1.6.11-1).

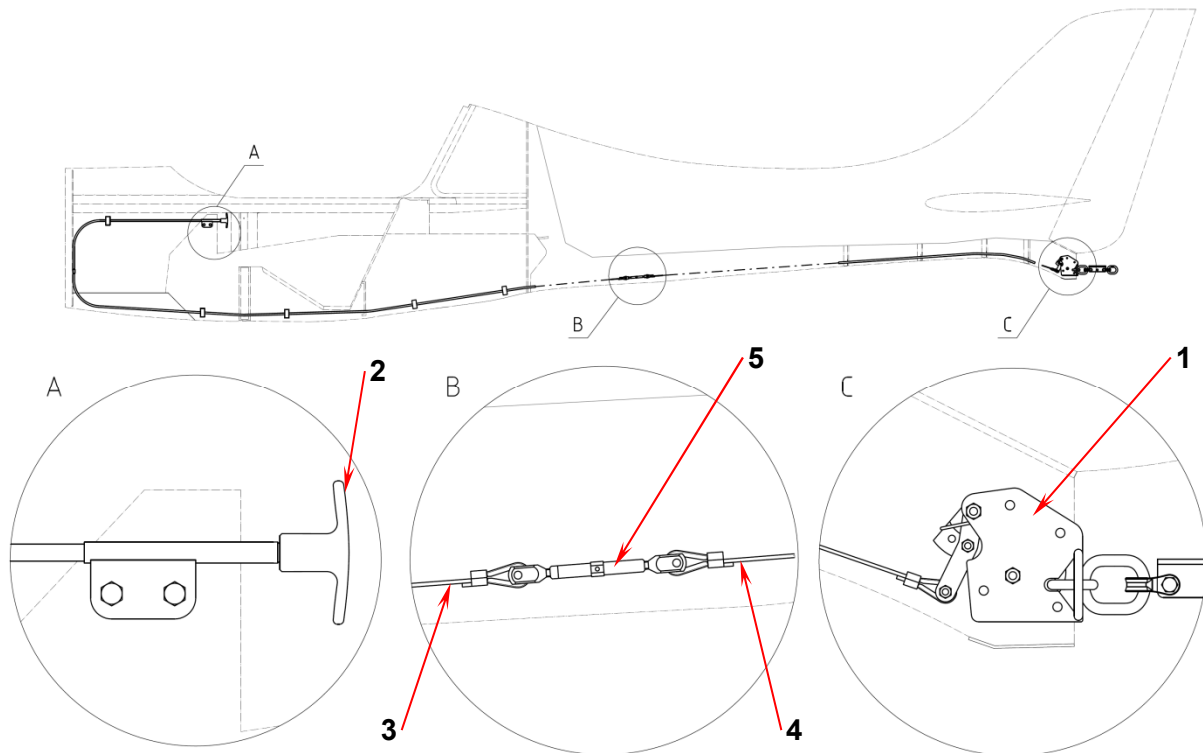


Fig. 1.6.11-1 Installation of tow release mechanism

1.6.12. Placards

There are generally the placards explaining the purpose and sense of controls, instruments, airspeeds limits placard, weight limits placard etc. and placards with additional information. The placards are stuck close to the appropriate instruments and controls, limitation placards are stuck on the instrument panel, external placard on appropriate aircraft parts. For corresponding placards, see the Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic

2. OPERATION

CONTENT

Chapter		Page
2.1.	OPERATION OUTLINES	2-4
2.2.	AIRCRAFT ASSEMBLY	2-5
2.2.1.	WING	2-5
2.2.2.	CONTROL SYSTEMS ADJUSTMENT	2-8
2.2.2.1.	ELEVATOR CONTROL	2-8
2.2.2.2.	AILERON CONTROL	2-9
2.2.2.3.	RUDDER CONTROL	2-10
2.2.2.4.	WING FLAPS CONTROL	2-10
2.2.2.5.	ELEVATOR TRIM	2-11
2.2.3.	LANDING GEAR	2-12
2.2.3.1.	NOSE WHEEL FAIRING (ONLY MODEL CLUB)	2-12
2.2.3.2.	MAIN WHEEL FAIRING (ONLY MODEL CLUB)	2-13
2.2.3.3.	MAIN LANDING GEAR BOX DOOR (ONLY MODEL SPEED)	2-14
2.2.3.4.	MAIN WHEEL	2-15
2.2.3.4.1.	MAIN WHEEL - MODEL CLUB	2-15
2.2.3.4.2.	MAIN WHEEL - MODEL SPEED	2-16
2.2.3.5.	NOSE WHEEL	2-17
2.2.3.5.1.	NOSE WHEEL – MODEL CLUB	2-17
2.2.3.5.2.	NOSE WHEEL – MODEL SPEED	2-18
2.2.3.6.	TYRE REPLACEMENT	2-19
2.2.3.7.	TYRES INFLATING	2-20
2.2.3.8.	DAMPING ELEMENTS REPLACEMENT	2-21
2.2.3.8.1.	NOSE GEAR LEG (MODEL CLUB)	2-21
2.2.4.	BRAKE SYSTEM	2-25
2.2.4.1.	BRAKE PADS AND BRAKE DISC REPLACEMENT	2-25
2.2.4.2.	BRAKE SYSTEM BLEEDING	2-27
2.2.4.3.	BRAKE SYSTEM ADJUSTMENT	2-28
2.2.5.	CANOPY	2-29
2.2.6.	INSTRUMENT PANEL	2-30
2.2.7.	TOW RELEASE MECHANISM	2-31
2.2.8.	OPERATING FLUIDS	2-32
2.2.8.1.	ENGINE OIL	2-34
2.2.8.2.	COOLANT	2-34
2.2.8.3.	BRAKE FLUID	2-34
2.2.8.4.	FUEL	2-35
2.2.9.	WINTER OPERATION	2-36
2.2.9.1.	GENERAL	2-36
2.2.9.2.	PREPARING THE AIRCRAFT FOR WINTER OPERATION	2-36

2.3.	PERMISSIBLE PLAYS	2-38
2.4.	WEIGHTING THE AIRCRAFT AND CG CALCULATION	2-39
2.4.1.	EMPTY WEIGHT DETERMINATION	2-39
2.4.2.	OPERATING CG RANGE CALCULATION	2-39
2.5.	GROUND HANDLING	2-41
2.5.1.	AIRCRAFT TOWING	2-41
2.5.2.	PARKING THE AIRCRAFT	2-41
2.5.3.	AIRCRAFT TIE-DOWN	2-42
2.5.4.	LIFTING THE AIRCRAFT	2-43
2.5.5.	ROAD TRANSPORT	2-43

2.1. Operation outlines

During operation and maintenance of WT9 Dynamic LSA and WT-9 Dynamic aircraft it is very important to keep the instructions stated in the aircraft accompanying documentation:

- Maintenance Manual for WT9 Dynamic LSA and WT-9 Dynamic
- Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic
- Operators Manual for Rotax Engine Type 912/914 Series, Ref. No.: OM-912/914.
- Propeller Operator's Manual
- Maintenance Manual for Rotax Engine Type 912/914 Series, Ref. No.: MML-912/914.
- Manual for Mounting and Use - Rescue Ballistic Parachute Systems Series Magnum.
- Additional documents supplied with an aircraft instruments or equipment.

The airworthiness and operational condition of the aircraft depend upon careful performance of the recommended procedures and regulations. An aircraft operator should consider climate, aerodrome conditions, dustiness, manner of parking and other factors, such as corrosive effects in industrial or seaside areas.

The procedures given in this Manual suit covering operational conditions, and unfavourable environments may require frequently scheduled maintenance.

2.2. Aircraft assembly

2.2.1. Wing

There are described derigging and rigging procedures for the right wing. The procedures for the left wing is analogous (except of Pitot probe connection).

Necessary tools and material:

- Screwdriver
- Adhesive tape
- Lubricant

Procedure for right wing derigging (from fig. 2.2.1-1 up to fig. 2.2.1-5):

1. Drain the fuel tanks.
2. Remove the adhesive tape covering the gap between wing and the wing central section.
3. Remove the Fokker needle (4) and disconnect the aileron pull-push rod 2 (13) from the aileron pull-push rod 1 (12). Release the fuel hoses clamps (15).
4. Put the flap control handle to the flaps fully extended position and disconnect the flap control rod (9) from wing flap lever (5). Disconnect the wing flap lever (5) from the wing flap hinge (6).
5. Remove the Fokker needles (4) auxiliary pin (3), inner pin (2) and outer pin (1).
6. Pull out the wing so that there is an approx. 100 mm distance between the wing central section and the wing root. Disconnect the pitot-static hoses (only right wing), the wing fuel tank hoses, conductive connection wiring and position lights connector.
7. Carefully remove the wing.

Procedure for right wing rigging (from fig. 2.2.1-1 up to fig. 2.2.1-5):

1. Thoroughly clean and lubricate all the wing suspensions before wing assembly.
2. All pins easily lubricate (1, 2, 3).
3. Fit the wing spar of the central section spar and push the wing so that there will be distance approx. 100 mm between wing and wing central section.
4. Connect the Pitot probe hoses (only right wing), conductive connection wiring and connect the position lights connectors. Avoid of pitot-static hoses twisting. Put on the hose clamps on the fuel hoses.
5. Push the wing closer, pull on the wing fuel tank hoses on the central section tanks sockets and pull the wing flap lever (5) on the central section flap hinge (6).
6. Fully push the wing into the wing central section. Insert the outer pin (1), inner pin (2) (slightly lift and lower the wing tip to make easy the pin insertion). Secure both pins with the Fokker needles (4). Insert the auxiliary pin (3) and secure it with the Fokker needle (4).
7. Tighten the fuel hoses clamps.
8. Lock the central section flap hinge using washer $\varnothing 6$ (7) and self-locking nut M6 LN (8).
9. Connect the flap rod (9) to the wing flap lever bearing using a pin (10) and lock with the split pin (11). During this procedure, put the flap control lever to the flaps fully extended position.
10. Connect the aileron pull-push rods (12, 13) and secure the connection with a split pin (14).
11. Check the securing of all the connections.
12. Cover the gap between wing and wing central section using an adhesive tape.

NOTE

Take care of Pitot probe when handling with the right wing!

WARNING

After rigging of the wings check for correct operation and security of the aileron control pins and the flap control pins as well as the connection of the hoses from the Pitot probe and fuel hoses!

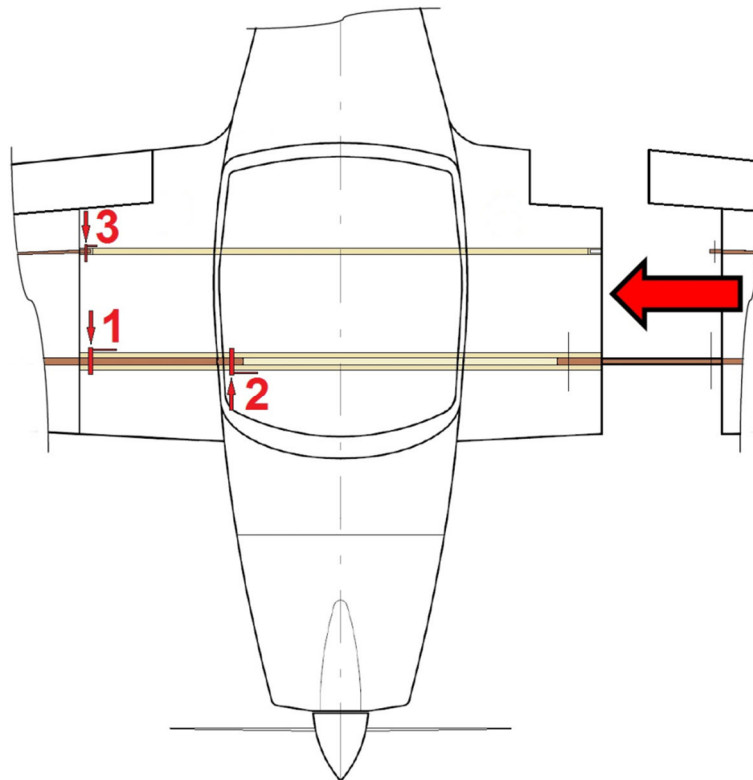
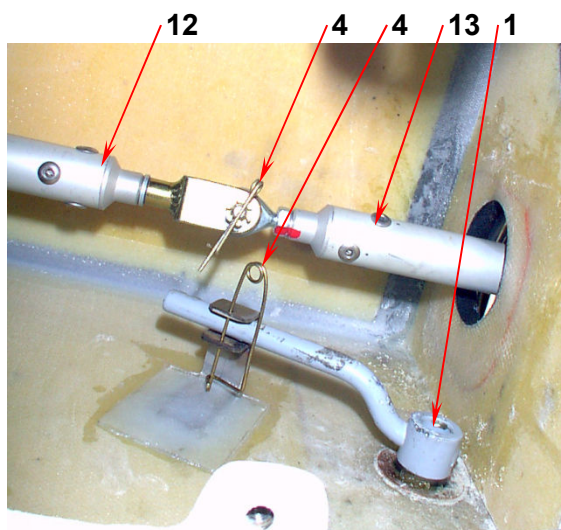
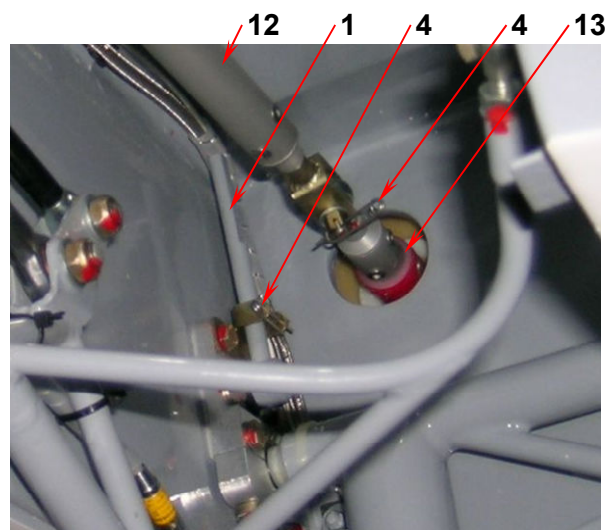


Fig. 2.2.1-1 Wing rigging



Model Club



Model Speed

Fig. 2.2.1-2 Outer pin (1)

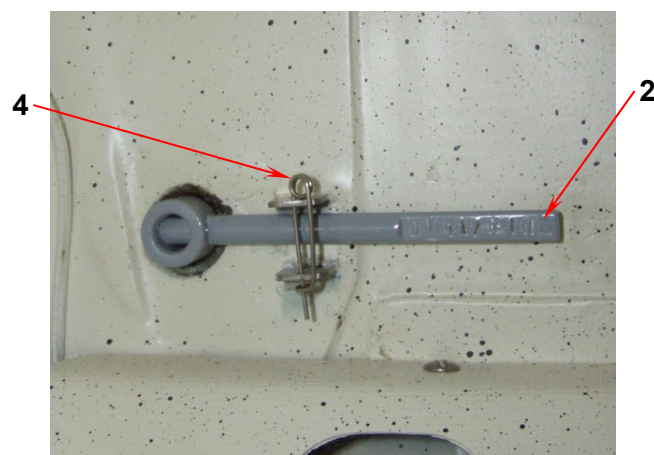


Fig. 2.2.1-3 Inner pin (2)

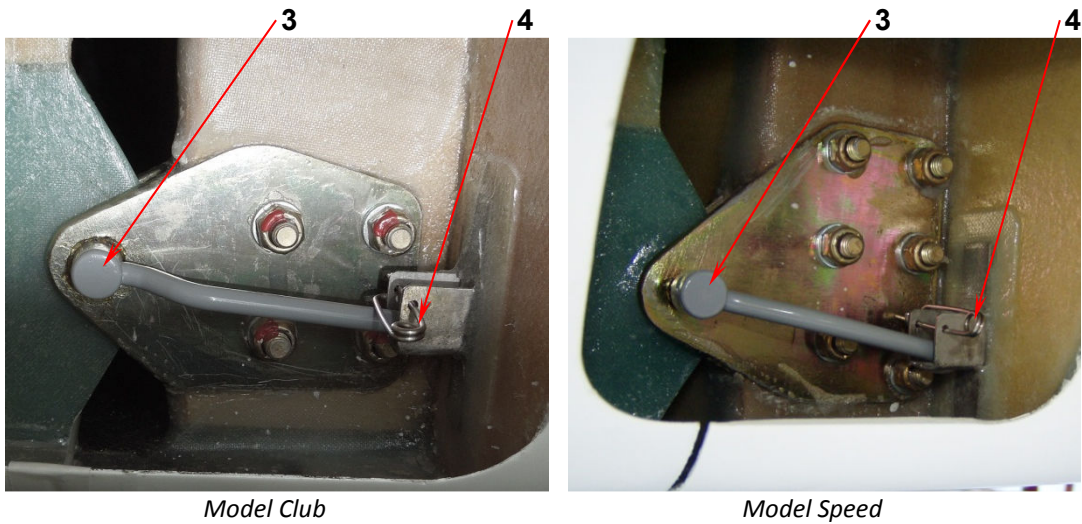


Fig. 2.2.1-4 Auxiliary pin (3)

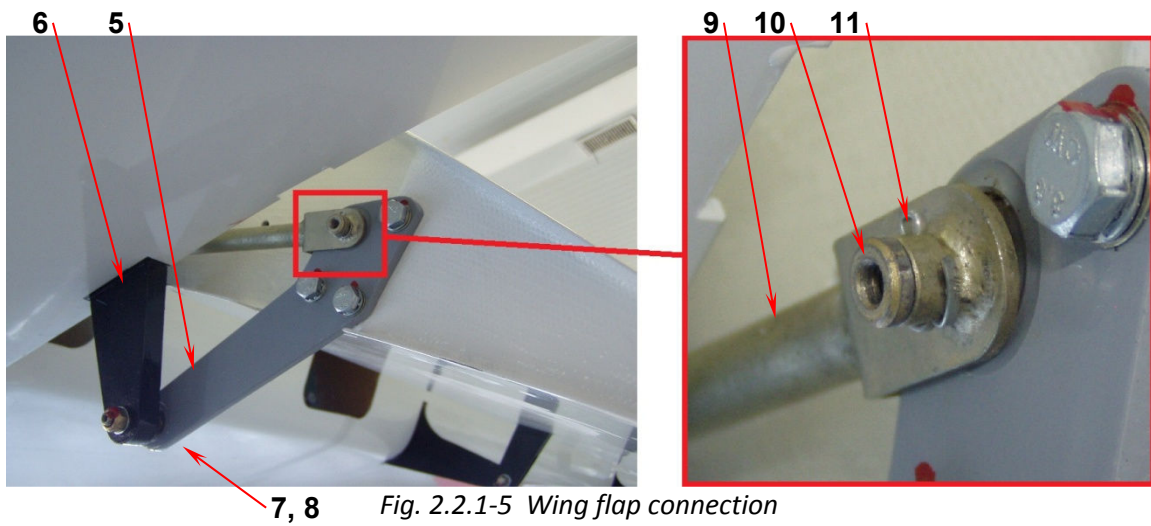


Fig. 2.2.1-5 Wing flap connection

2.2.2. Control systems adjustment

The manufacturer sets control surfaces deflections of a new aircraft. Deflections are adjusted according to the values specified in Control Surfaces Deflections Record enclosed in this Manual (see Annex A.1). A neutral position of control surfaces and controls is a base for adjustment of deflections.

A protractor with deflecting hand is used by aircraft manufacturer to measure deflections, the protractor is attached to the control surface. If there is no protractor available, there are also described alternative procedure (a measurement of the distance of the deflected control surface trailing edges from a neutral position).

2.2.2.1. Elevator control

The range of the control stick deflection is adjusted by front stop (12) at the main spar and aft stop (13) in the central tunnel (see Chapter 1.6.5.1.). Stops are designed as bolts with locking nuts.

Elevator deflections can also be adjusted by screwing of bearing eyes of pull-push rods 1 (5). These are accessible after removing of slotted ling at the top of central tunnel, removing of central tunnel cover in the baggage compartment and removing of baggage bulkhead cover.

Elevator deflections measurement:

1. Attach a protractor at elevator root.
2. Adjust the elevator in neutral position.
3. Set the protractor to zero (starting position for measurement).
4. Deflect the elevator fully down/up and read the deflections.
5. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.
6. If not, adjust elevator deflections by means as stated above.

If there is not a protractor at disposal, can be applied a measurement procedure of the distance of the deflected control surface trailing edges from a neutral position according to the fig. 2.2.2.1-1.

1. Attach the drawing papers to the rudder side surfaces by means of the adhesive tape.
2. Mark the neutral position of the elevator trailing edge.
3. Deflect the elevator fully down/up and mark the positions of deflected elevator trailing edge.
4. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.
5. If not, adjust elevator deflections by means as stated above.

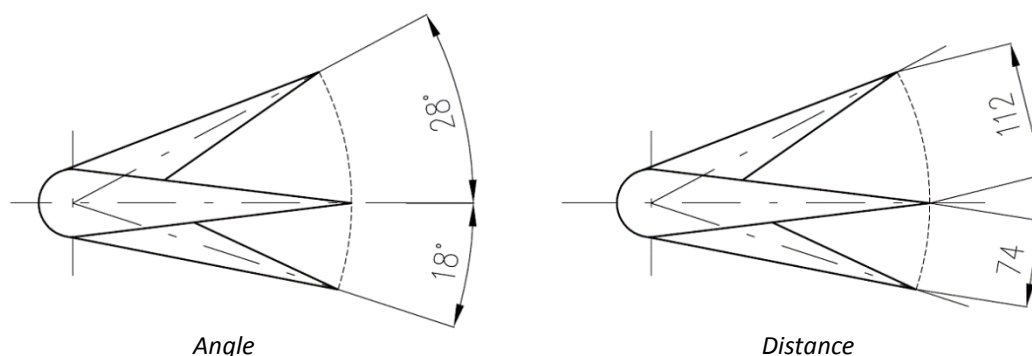


Fig. 2.2.2.1-1 Elevator deflections

2.2.2.2. Aileron control

The range of the control stick deflection is adjusted by stops (9) on the control stick's torsion tube (10) (see Chapter 1.6.5.2.). Stops are designed as bolts with locking nuts.

Aileron deflections can also be adjusted by screwing of bearing eyes of pull-push rods 3 (4). These are accessible through the maintenance hole in the wing lower skin.

Further adjustable points are bearing eyes of pull-push rods 2 (2). These are accessible through the maintenance hole in central section lower skin for model Club or through the landing gear boxes for model Speed.

Aileron deflections measurement:

1. Attach a protractor at aileron root.
2. Adjust the aileron in neutral position.
3. Set the protractor to zero (starting position for measurement).
4. Deflect the aileron fully down/up and read the deflections.
5. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.
6. If not, adjust aileron deflections by means as stated above.

If there is not a protractor at disposal, can be applied a measurement procedure of the distance of the deflected control surface trailing edges from a neutral position according to the fig. 2.2.2.2-1.

1. Attach the drawing papers to the wing flap by means of the adhesive tape.
2. Mark the neutral position of the aileron trailing edge.
3. Deflect the aileron fully down/up and mark the positions of deflected elevator trailing edge.
4. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.
5. If not, adjust aileron deflections by means as stated above.

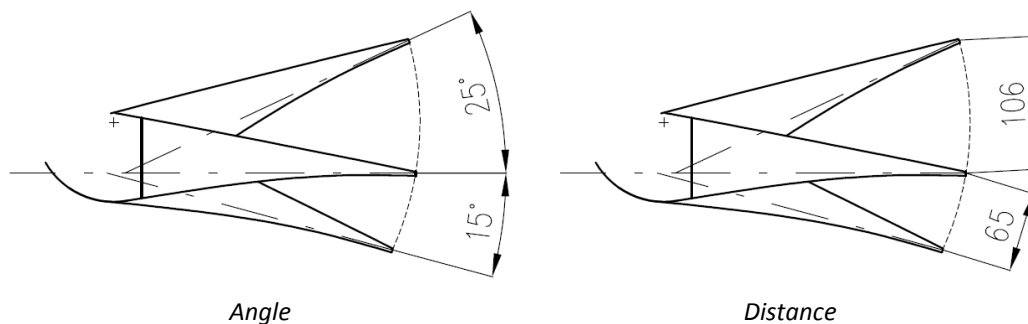


Fig. 2.2.2.2-1 Aileron deflections

2.2.2.3. Rudder control

The rudder deflections are set by the aircraft manufacturer by means of carbon stops glued in the fin that limits the rudder range and therefore cannot be adjusted in operation (see Chapter 1.6.5.3.).

Rudder deflections measurement:

1. Insert a hard drawing paper in a space between a rudder and a fuselage aft part and fix to the horizontal tail by means of the adhesive tape.
2. Mark the neutral position of the lower rudder trailing edge (at rudder root) (fig. 2.2.2.3-1).
3. Deflect the rudder fully left/right and mark the position of a deflected lower rudder trailing edge (at rudder root).
4. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.

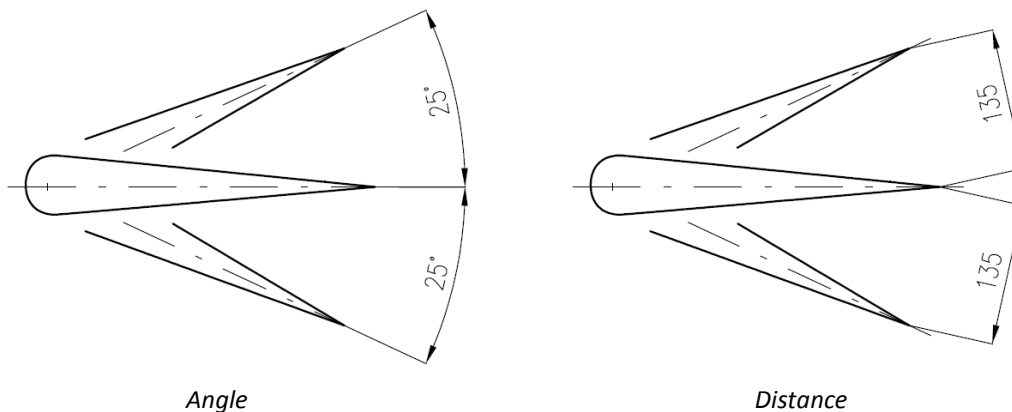


Fig. 2.2.2.3-1 Rudder deflections

2.2.2.4. Wing flaps control

Wing flap deflections are given by slots at slotted link attached at the top of central tunnel therefore cannot be adjusted in operation.

Only adjusting of wing flap retracted position is possible by means of bearing eyes pull-push rod 1 (3) and pull-push rods (8) (see Chapter 1.6.5.4.). For access to the bearing eyes of pull-push rod 1 it is necessary to remove the slotted link from the central tunnel.

Wing flaps deflection have to be synchronized and differences is possible to eliminate by adjustment of bearing eyes of pull-push rods (8).

Wing flap deflections measurement

The wing flaps can be set in 4 positions:

- Retracted (deflection 0°)
- Take-off (deflection 15°)
- Intermediate (deflection 24°)
- Landing (maximum deflection 35°)

1. Adjust the wing flaps retracted position by means as stated above.
2. Attach a protractor at wing flap root.
3. Adjust the wing flap in retracted position.
4. Set the protractor to zero (starting position for measurement).
5. Deflect the wing flaps to the take-off, intermediate and landing position and read the deflections.
6. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.

If there is not a protractor at disposal, can be applied a measurement procedure of the distance of the deflected control surface trailing edges from a neutral position according to the fig. 2.2.2.4-1.

1. Attach the drawing papers to the fuselage (in a gap between the fuselage and wing flap root) by means of the adhesive tape.
2. Mark the retracted position of the wing flap trailing edge.
3. Deflect the wing flaps to the take-off, intermediate and landing position and mark the positions of deflected wing flap trailing edge.
4. Compare, if measured deflections correspond with those ones specified in Control Surfaces Deflections Record.

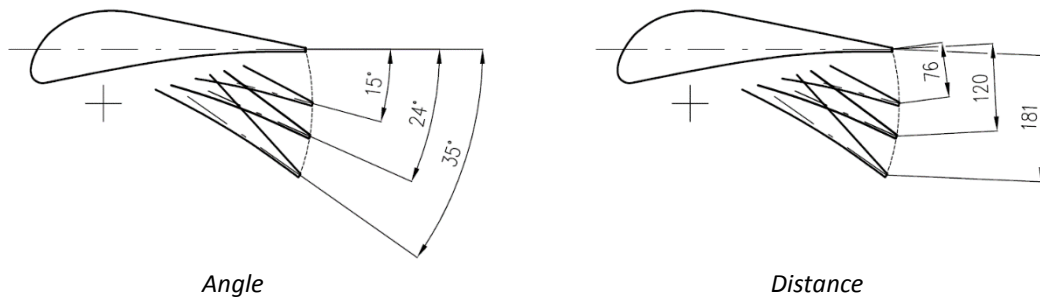


Fig. 2.2.2.4-1 Wing flaps deflections

2.2.2.5. Elevator trim

A neutral position of a trim control lever can be adjusted by means of an adjustment of a length of the rod (R) by means of nuts (N). Trim spring is accessible after removing of slotted link from the top of central tunnel (fig. 2.2.2.5-1).

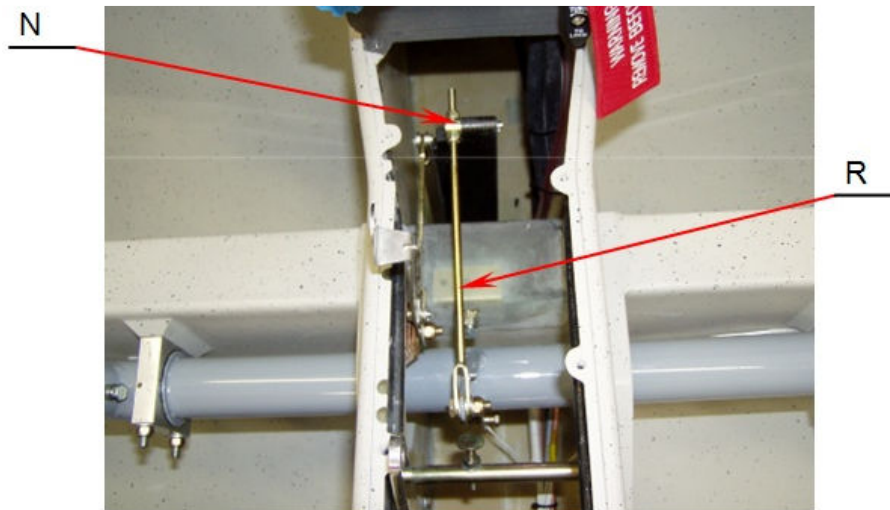


Fig. 2.2.2.5-1 Trim spring adjustment

2.2.3. Landing gear

2.2.3.1. Nose wheel fairing (only model Club)

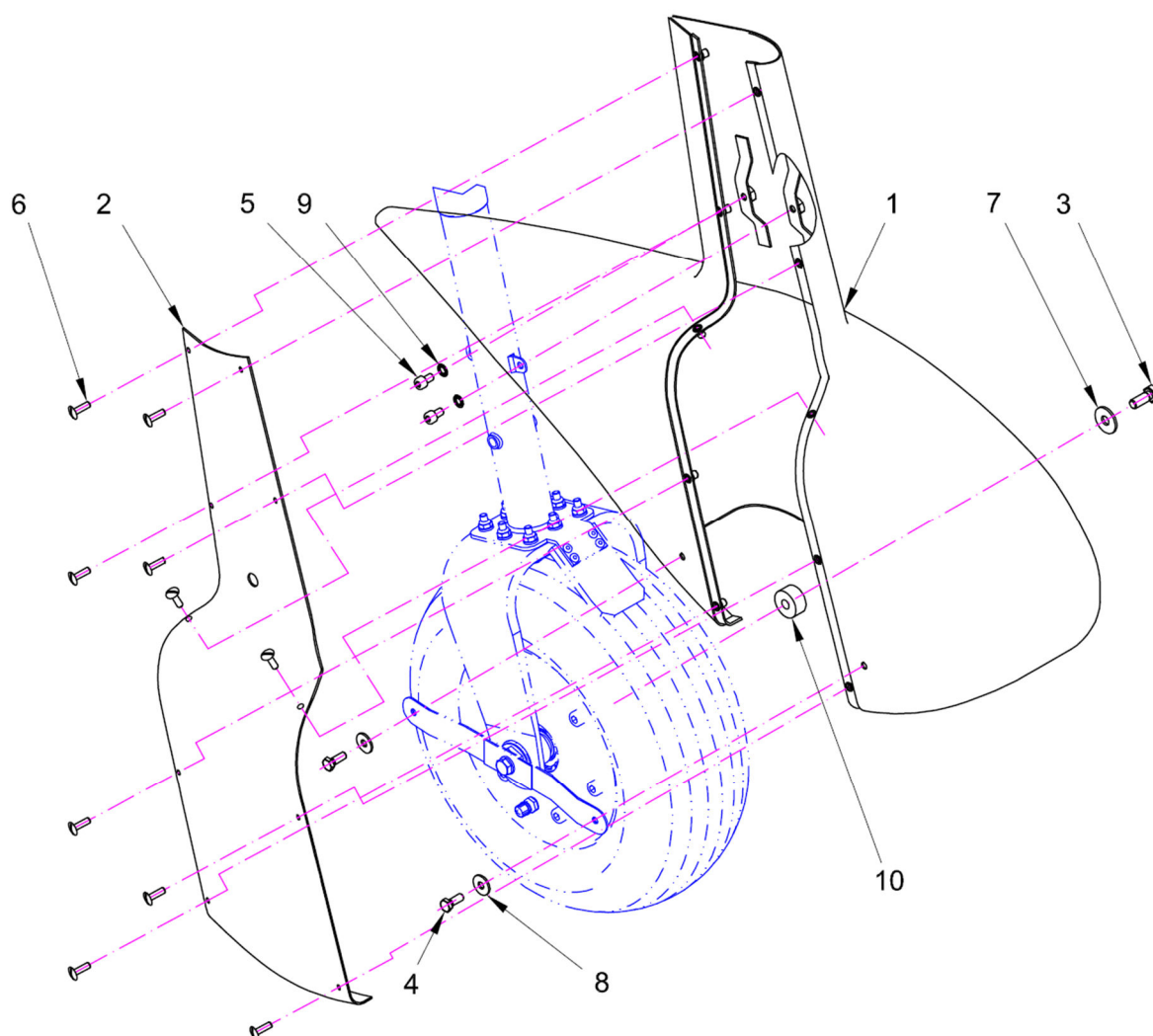
Described is procedure for disassembling of nose wheel fairing. For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Screwdriver 10
- Pliers
- Hex key 6
- Wrench 10
- Wrench 13

Procedure for nose wheel fairing disassembly (fig. 2.2.3.1-1)

1. Unscrew the screws (6) and remove side cover (2).
2. Unscrew the bolts (3; 4; 5) and remove washers (7; 8; 9). Remove the wheel fairing (1) with distance tube (10).



1. Nose wheel fairing	5. Allen bolt M6x10	9. Locking washer Ø6,4x
2. Side cover	6. Screw M5x16	10. Distance tube
3. Bolt M8x20	7. Washer Ø8,4x24x2	-
4. Bolt M6x16	8. Washer Ø6,4x18x1,6	-

Fig. 2.2.3.1-1 Main wheel fairing disassembly

2.2.3.2. Main wheel fairing (only model Club)

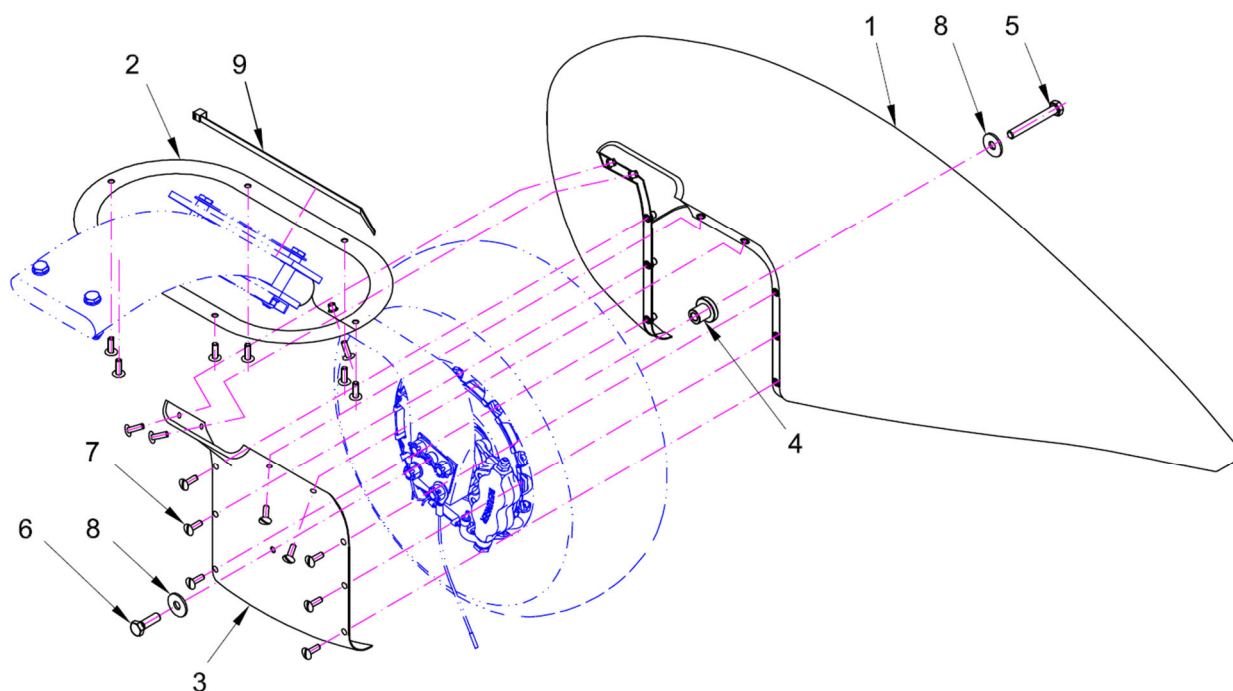
Described is procedure for disassembling of the right main wheel fairing. Left one is analogous. For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Screwdriver 10
- Pliers
- Hex key 6
- Wrench 10
- Wrench 13

Procedure for main wheel fairing disassembly (fig. 2.2.3.2-1)

1. Unscrew the screws (7) and remove upper cover (2).
2. Cut the cable tie (9).
3. On inner side of main landing gear, unscrew the screws (7), bolt (6) and remove the washer (8). Remove inner cover (3).
4. On outer side of main landing gear, unscrew the bolt (5), remove the washer (8) and distance tube (4). Remove main wheel fairing (1).



1. Main wheel fairing	4. Distance tube	7. Screw M5x16
2. Upper cover	5. Bolt M8x60	8. Washer Ø8,4x24x2
3. Inner cover	6. Bolt M8x25	9. Cable tie 4,8

Fig. 2.2.3.2-1 Main wheel fairing disassembly

2.2.3.3. Main landing gear box door (only model Speed)

Described is procedure for disassembling of the left main landing gear box door. Right one is analogous.

For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Hex wrench 8

Procedure for main landing gear box door disassembly (fig. 2.2.3.3-1)

1. Remove the wing (see Chapter 2.2.1).
2. Disconnect the spring (5) from the main landing gear leg (6).
3. Unscrew the nuts (1) and remove washers (2).
4. Remove bolts (3) and washers (2).
5. Remove the main landing gear box door (4).

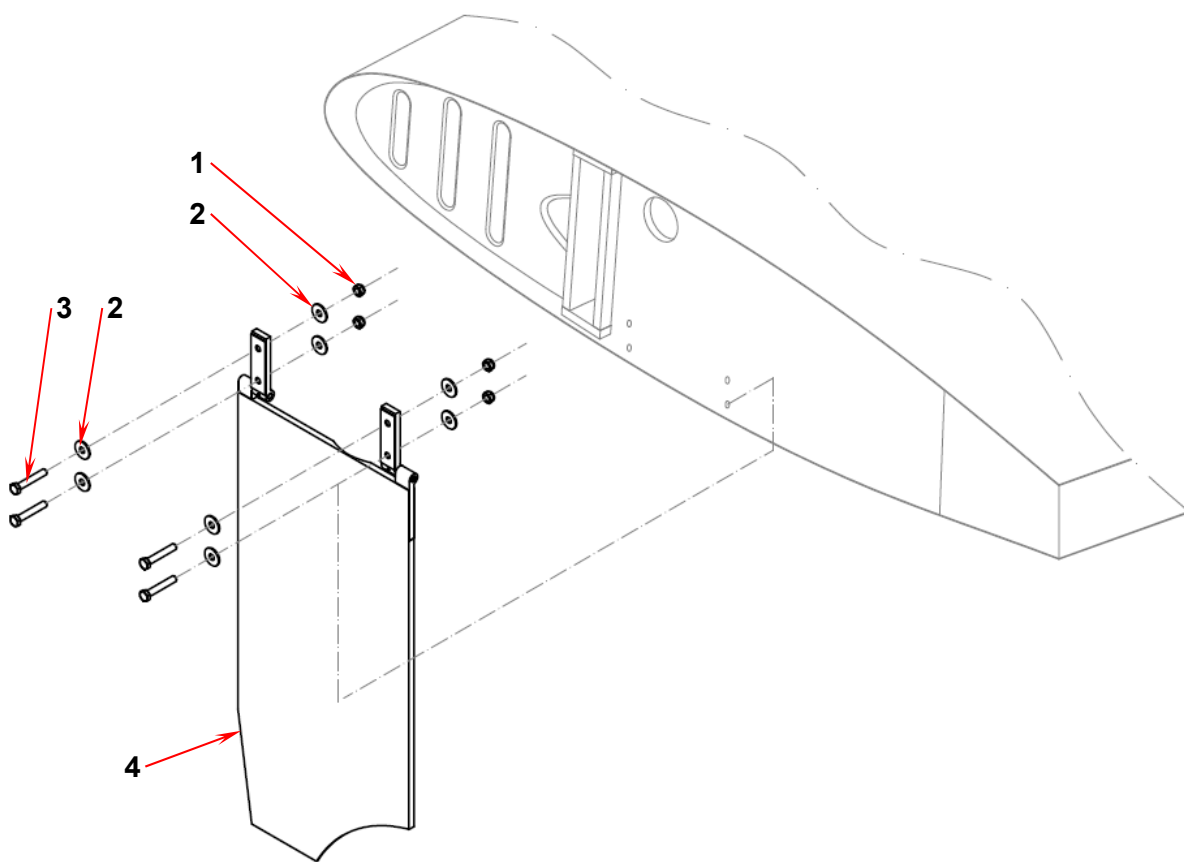


Fig. 2.2.3.3-1 Main landing gear box door

2.2.3.4. Main wheel

2.2.3.4.1. Main wheel - model Club

Described is procedure for disassembling of the right main wheel. Left one is analogous. For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Screwdriver
- Pliers
- Wrench 32

Main wheel disassembling procedure (fig. 2.2.3.4.1-1)

1. Remove the main wheel fairings (see Chapter 2.2.3.2)
2. Remove the locking wire (1), unscrew the nut (2) and remove distance tube (3).
3. Remove the locking wire (4) (to release the brake disc) and remove the main wheel (5).

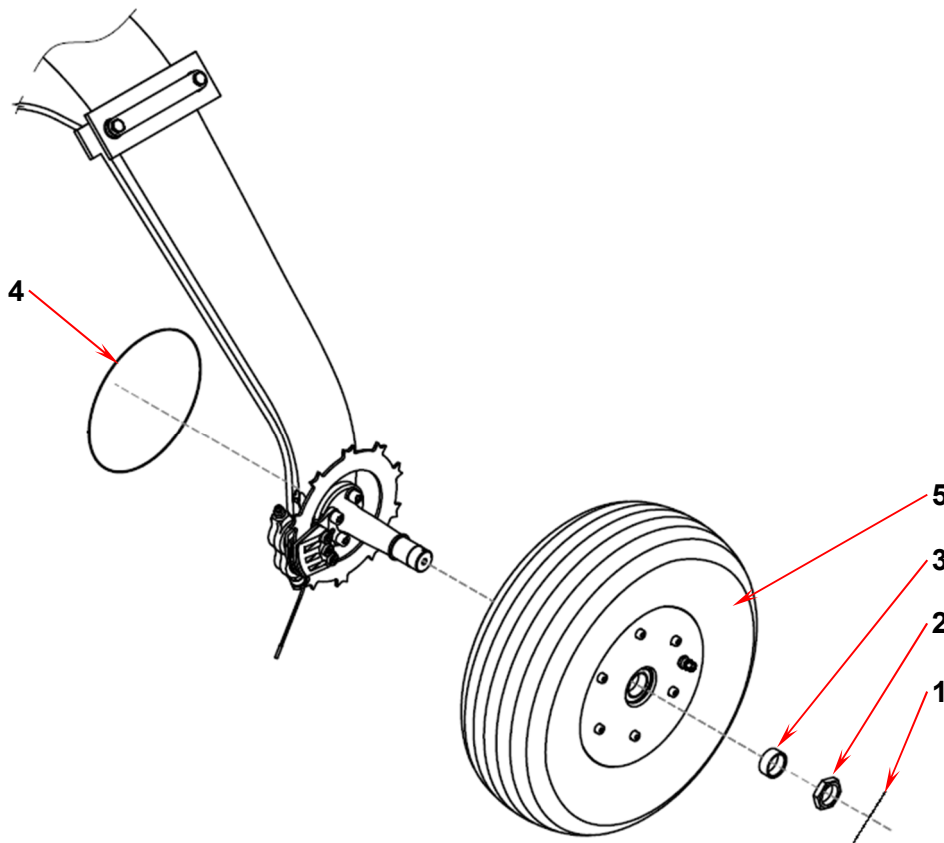


Fig. 2.2.3.4.1-1 Main wheel, model Club

2.2.3.4.2. Main wheel - model Speed

Described is procedure for disassembling of the right main wheel. Left one is analogous. For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Screwdriver
- Hammer
- Pliers
- Wrench 22

Main wheel disassembling procedure (fig. 2.2.3.4.2-1)

1. Release the tab of locking washer (1), unscrew nut (2) and remove washer (3).
2. Remove the locking wire (4) (to release the brake disc) and remove the main wheel (5).

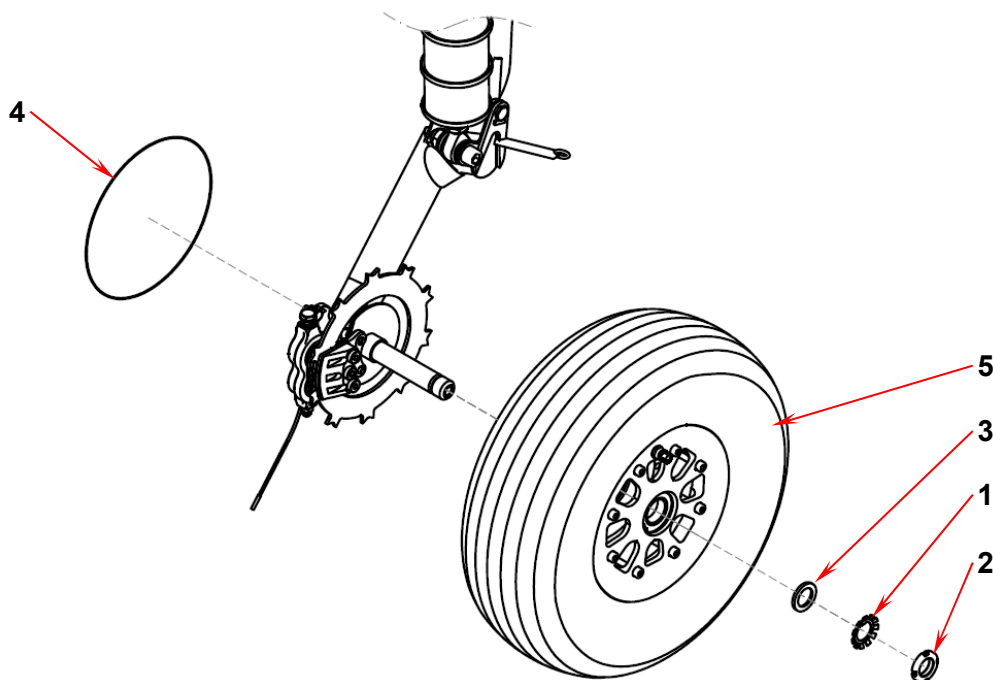


Fig. 2.2.3.4.2-1 Main wheel, model Speed

2.2.3.5. Nose wheel

2.2.3.5.1. Nose wheel – model Club

For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Wrench 13
- Wrench 24
- Screwdriver
- Hammer

Procedure for main landing gear wheel (fig. 2.2.3.5.1-1)

1. Remove the nose wheel fairing (see Chapter 2.2.3.1).
2. Remove bolt (9), washer (12) and holder (6).
3. Unlock washer (11), unscrew nut (8) and remove washer (11).
4. Remove wheel axle (5). Remove distance tube (4) and nose wheel (18) from carbon fork (1).
5. Remove the adaptor (3) from the nose wheel (18).

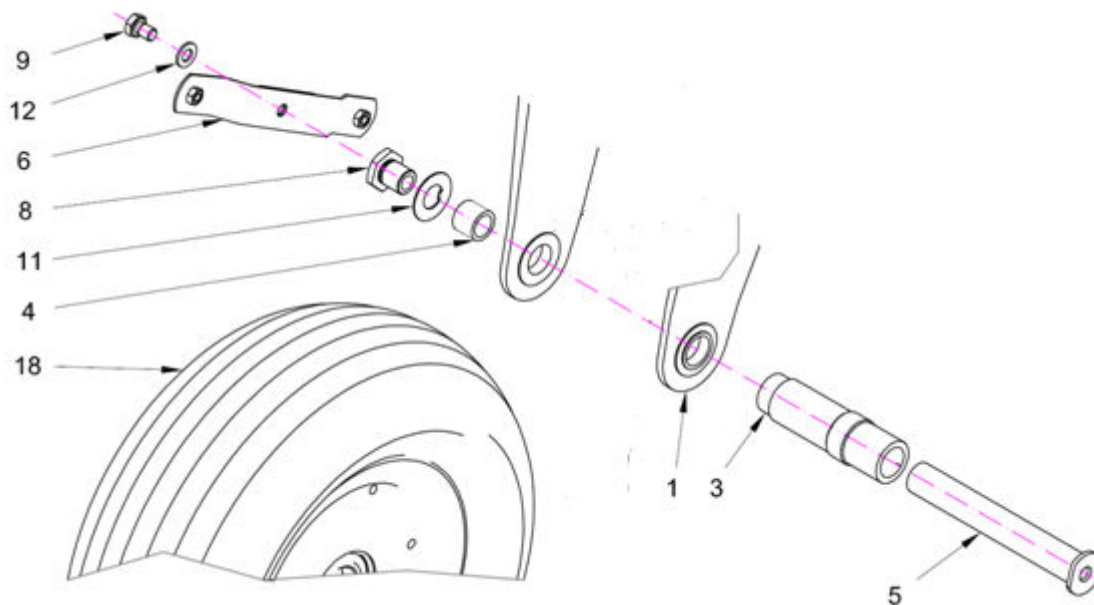


Fig. 2.2.3.5.1-1 Nose wheel, model Club

2.2.3.5.2. Nose wheel – model Speed

For assembly, perform the below procedure in opposite sequence.

Necessary tools and material:

- Wrench 22
- Screwdriver
- Hammer

Procedure for main landing gear wheel (fig. 2.2.3.5.2-1)

1. Release the tab of locking washer (28), unscrew nut (22) and remove washer (2).
2. Remove the wheel (34) and distance tube (8) from the wheel axle (3).
3. Remove the adaptor (4) from the nose wheel (34).

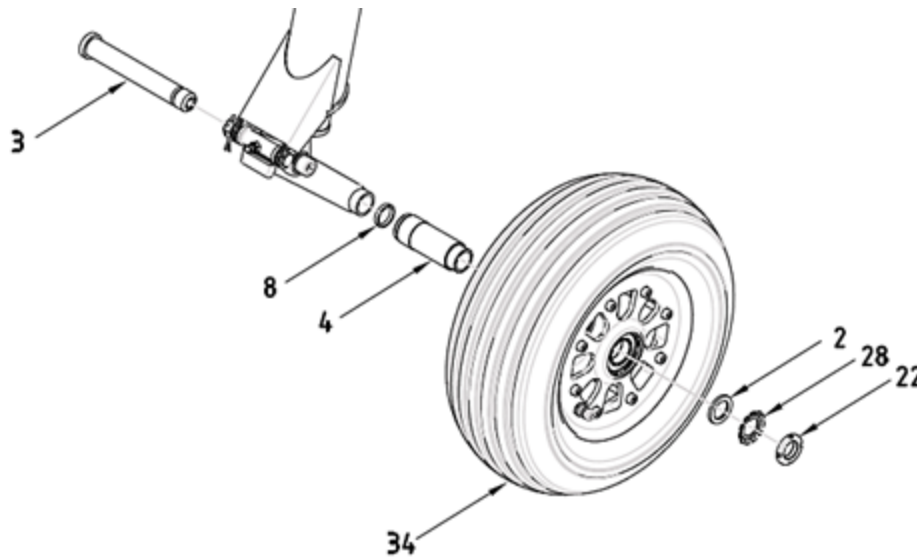


Fig. 2.2.3.5.2-1 Nose wheel, model Speed

2.2.3.6. Tyre replacement

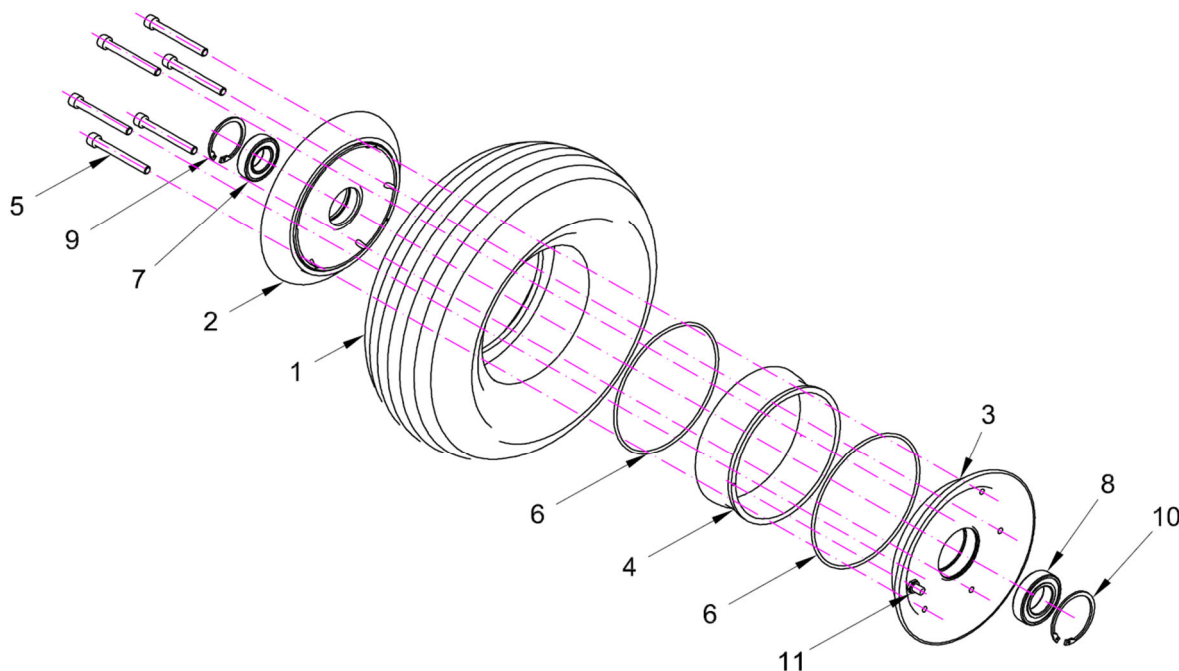
Described is tyre replacement for nose wheel of model Club. Procedure for nose wheel of model Speed and main wheels is analogous.

Necessary tools and material:

- Hex wrench 5
- Beringer jig
- Rubber hammer
- Locking pliers
- ring
- Loctite 243

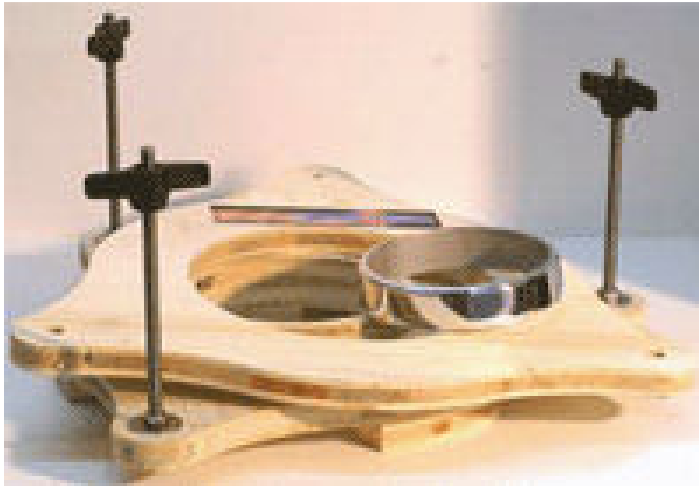
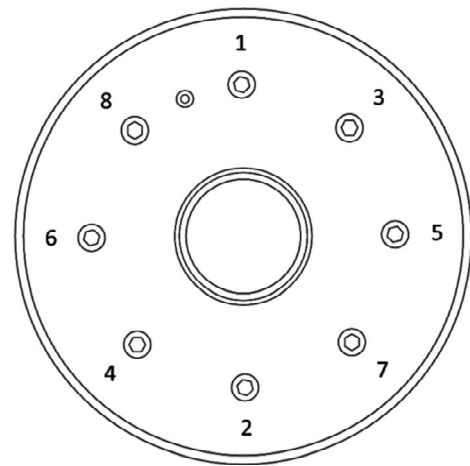
Procedure for tyre replacement (fig. 2.2.3.6-1)

1. Remove the wheel from nose leg. For model Club see Chapter 2.2.3.4.1 and 2.2.3.5.1. For model Speed see Chapter 2.2.3.4.1 and 2.2.3.5.2.
2. Deflate tyre to zero pressure.
3. Separate the tyre (1) from wheel discs (2; 3).
4. Unscrew the bolts (5) and disassemble discs (2; 3).
5. Remove O rings (6).
6. Before assembling wheel, clean the contact surfaces of discs and tyres.
7. Press tyre (1) using by Beringer jig (fig 2.2.3.6-2).
8. Put middle ring (4) to new tyre (1).
9. Put NEW O rings (6) and discs (2; 3). Beware that pin on disc (11) must be aligned with the hole in middle ring (4).
10. Tighten the bolts (5) and secure by Loctite 243 at torque moment 10 Nm, in order according to fig. 2.2.3.6-3. Make sure that the assembled parts are sealed well.
11. Inflate the tyre to appropriate pressure 250 kPa.
12. After 24 hours check that the air leakage is not more than 10%.
13. Inflate tyre to the appropriate air pressure.



1. Tire	5. Allen bolt M8x70	9. Circlip Ø55
2. Disc 1	6. O ring	10. Circlip Ø47
3. Disc 2	7. Bearing Ø25X47	11. Vent
4. Middle ring	8. Bearing Ø30X55	-

Fig. 2.2.3.6-1 Nose wheel tyre replacement

*Fig. 2.2.3.6-2 Beringer jig**Fig. 2.2.3.6-3 Bolts tightening order*

2.2.3.7. Tyres inflating

Pressures for tyres are stated on the placards and are located as follows:

For model Club: Nose wheel fairing and main landing gear legs.

For model Speed: Nose leg and main landing gear box doors.

Pressurize the wheel tyres as follows:

Wheel:	Pressure
Nose wheel	200 kPa
Main wheel	250 kPa

2.2.3.8. Damping elements replacement

2.2.3.8.1. Nose gear leg (model Club)

The springing is carried out by means of the rubber damper located in the upper support (1) and by means of the rubber ropes (2) twisted around a nose leg (3) and tube (4) in the lower support (5).

Necessary tools and material:

- Screwdriver
- Pliers
- Wrench 10
- Socket 10
- Hex key 5
- Hammer
- Vaseline
- Knife

Procedure for nose leg damping elements replacement:

1. Lift the aircraft.
2. Remove the engine cowlings.
3. Remove the nose wheel fairing (see Chapter 2.2.3.1).
4. Disconnect the control pull-push rods (6) from the nose leg (3).
5. Remove the worn rubber ropes (2), split pin (7) and tube (4).
6. Release the adjustable screw (8). Remove the nuts (9), screws (10), and washers (11). Remove the nuts (12), washers (13) and front part of lower bushing bracket (14) together with bronze bushing (15).
7. Release the all nuts (16) of upper support (1) attachment and remove the nose leg (3).
8. Remove the worn rubber damper (17) and replace with the new one daub with Vaseline. Remove worn rubber plate (18) and replace with the new one (fig. 2.2.3.8.1-1 and fig. 2.2.3.8.1-2).
9. Install the nose leg in opposite sequence according to the procedure above. For installation of rubber ropes (2) follow this procedure:
 - a. Make a loop at the end of each new rubber rope (2) using a locking wire (19) (fig. 2.2.3.8.1-3).
 - b. Install the new rubber ropes (2) and tube (4) into the lower support (5) and lock using split pin (8).
 - c. Make a mark on the rubber rope according to the fig. 2.2.3.8.1-4. Wrap the rubber ropes around nose leg and tube and stretch to get the mark in position according to fig. 2.2.3.8.1-5.
 - d. Make a loop at rubber rope (2) using a locking wire (19) around the nose leg (3). Shorten the overlapping rubber rope (fig. X6).

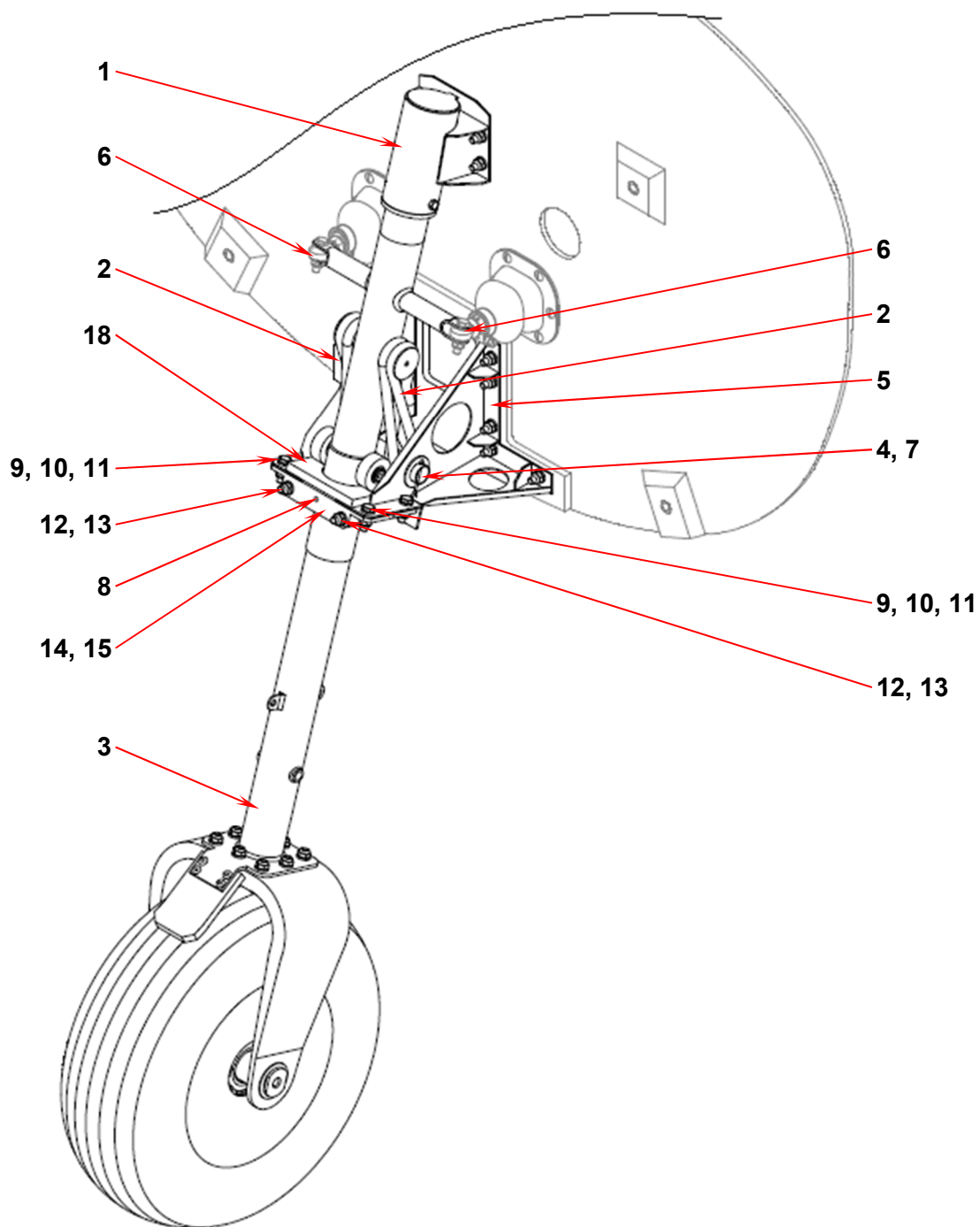


Fig. 2.2.3.8.1-1 Replacement of damping elements

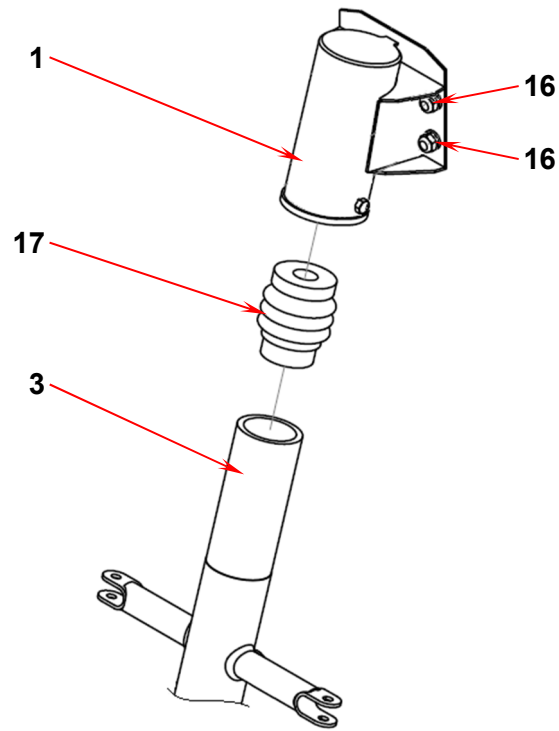


Fig. 2.2.3.8.1-2 Rubber damper in upper support

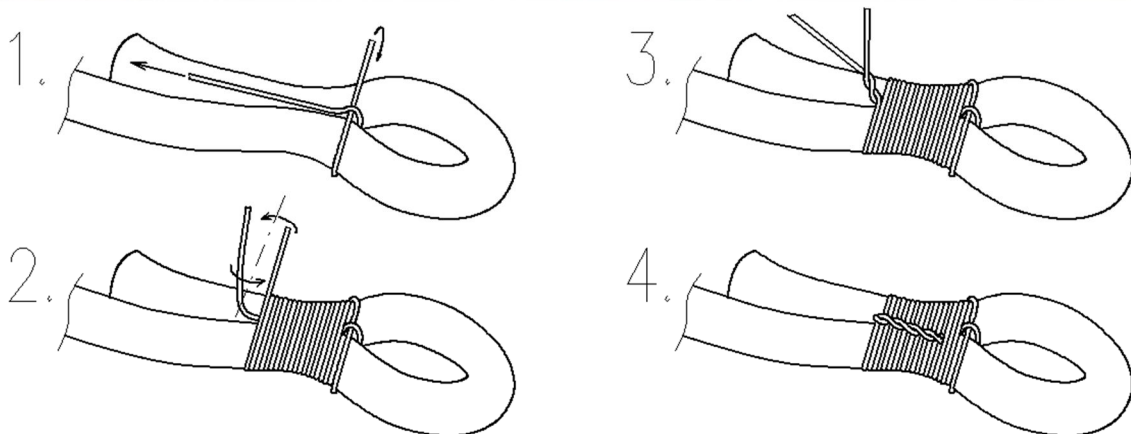
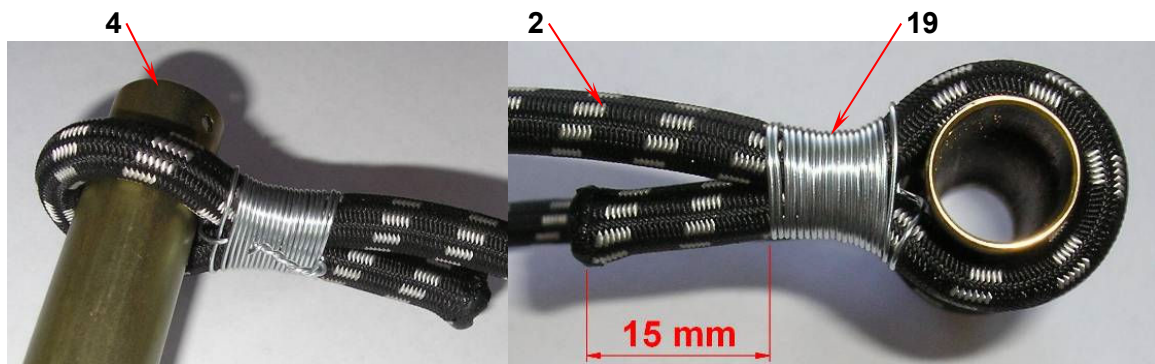


Fig. 2.2.3.8.1-3 Rubber rope loop

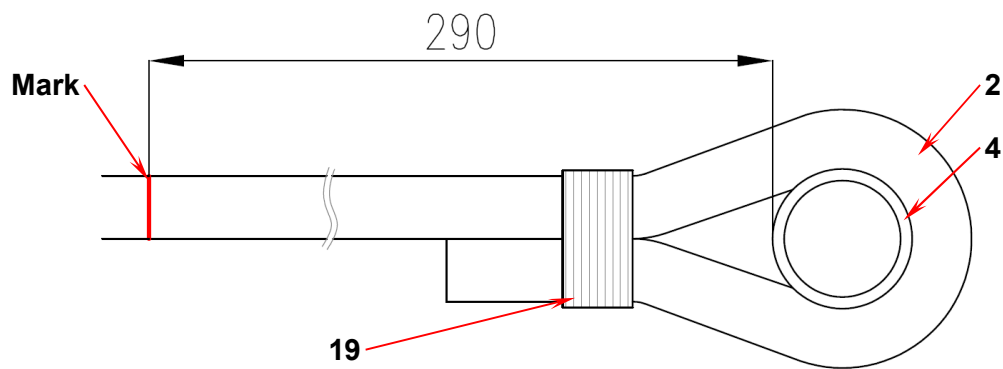


Fig. 2.2.3.8.1-4 Rubber rope length

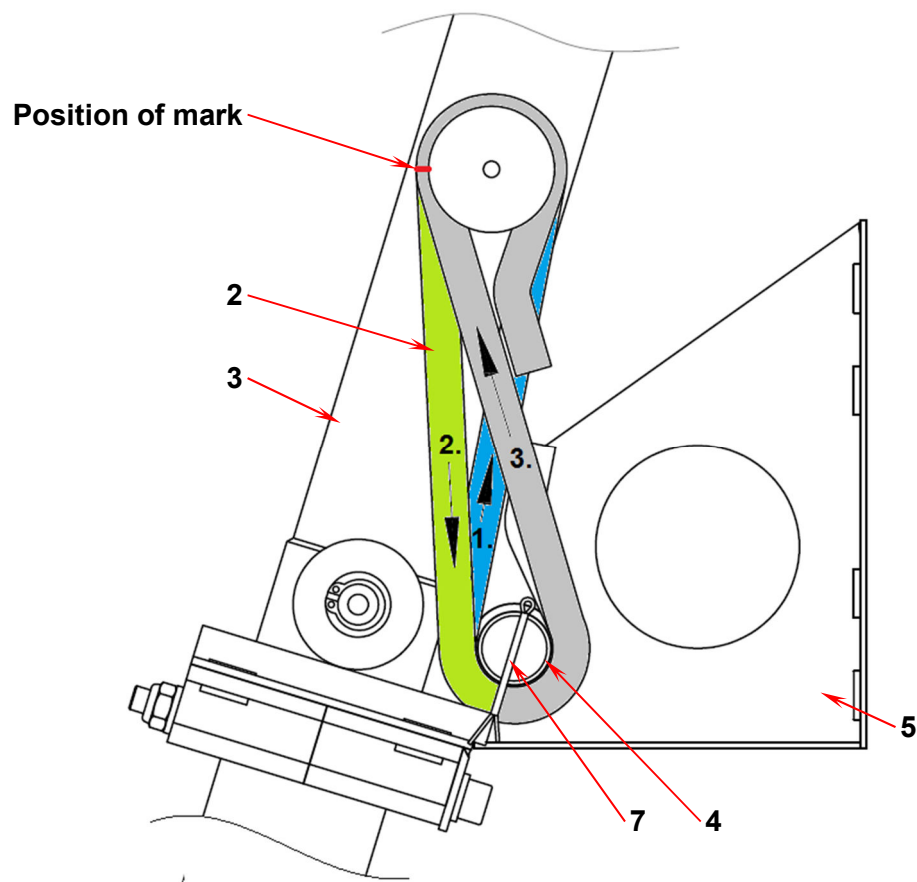


Fig. 2.2.3.8.1-5 Rubber rope winch

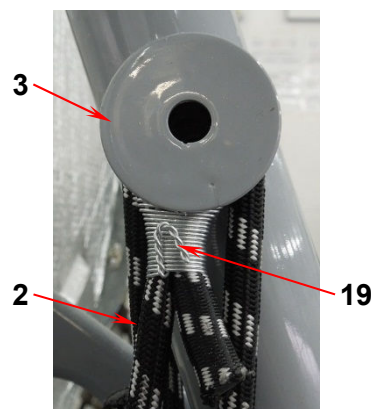


Fig. 2.2.3.8.1-6 Rubber rope attachment

2.2.4. Brake system

2.2.4.1. Brake pads and brake disc replacement

Described is procedure of brake pads and brake disc replacement for the right side. The left side is analogous.

Model Club:

1. Lift the aircraft.
2. Remove main wheel fairing (see Chapter 2.2.3.2).
3. Remove the main wheel (see Chapter 2.2.3.4.1).
4. Remove worn brake disc (1).
5. Unscrew bolts (2) and remove support (3) worn brake pads (4) (fig. 2.2.4.1-1).
6. Install new brake pads (4), put on support (3) and tighten the bolts (2). Lock the bolts using Loctite 243.
7. Put on new brake disc (1).
8. Install the main wheel (see Chapter 2.2.3.4.1).
9. Install main wheel fairing (see Chapter 2.2.3.2).

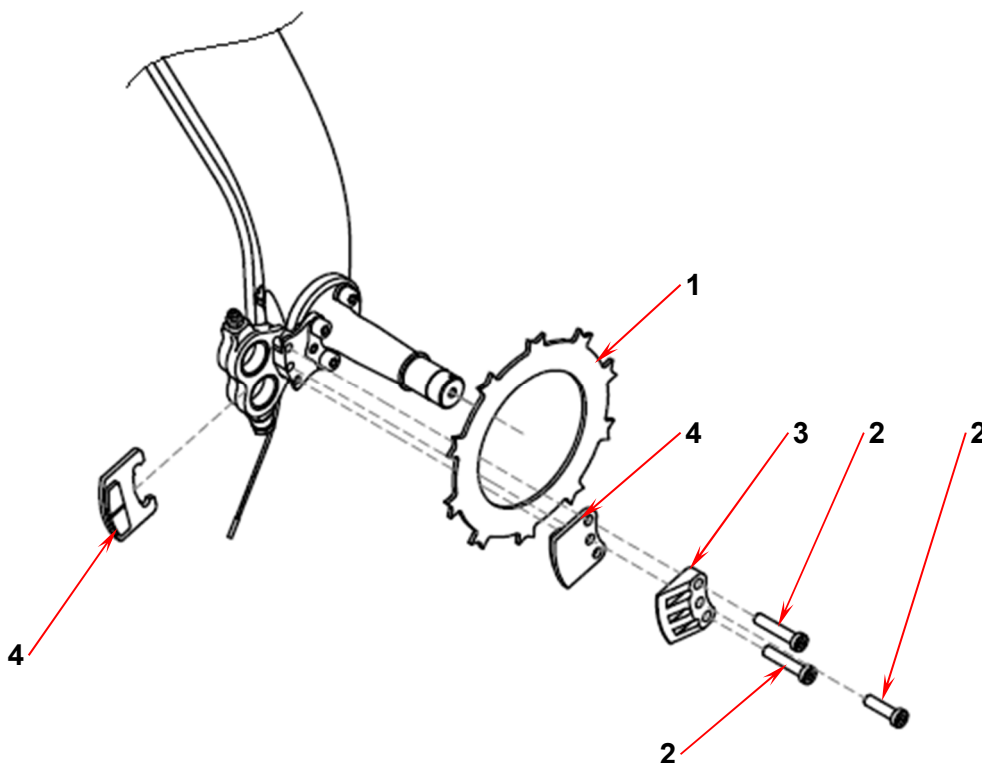


Fig. 2.2.4.1-1 Brake pads and brake disc replacement, model Club

Model Speed:

1. Lift the aircraft.
2. Remove the main wheel (see Chapter 2.2.3.4.2).
3. Remove worn brake disc (1).
4. Unscrew bolts (2) and remove support (3) worn brake pads (4) (fig. 2.2.4.1-2).
5. Install new brake pads (4), put on support (3) and tighten the bolts (2). Lock the bolts using Loctite 243.
6. Put on new brake disc (1).
7. Install the main wheel (see Chapter 2.2.3.4.2).

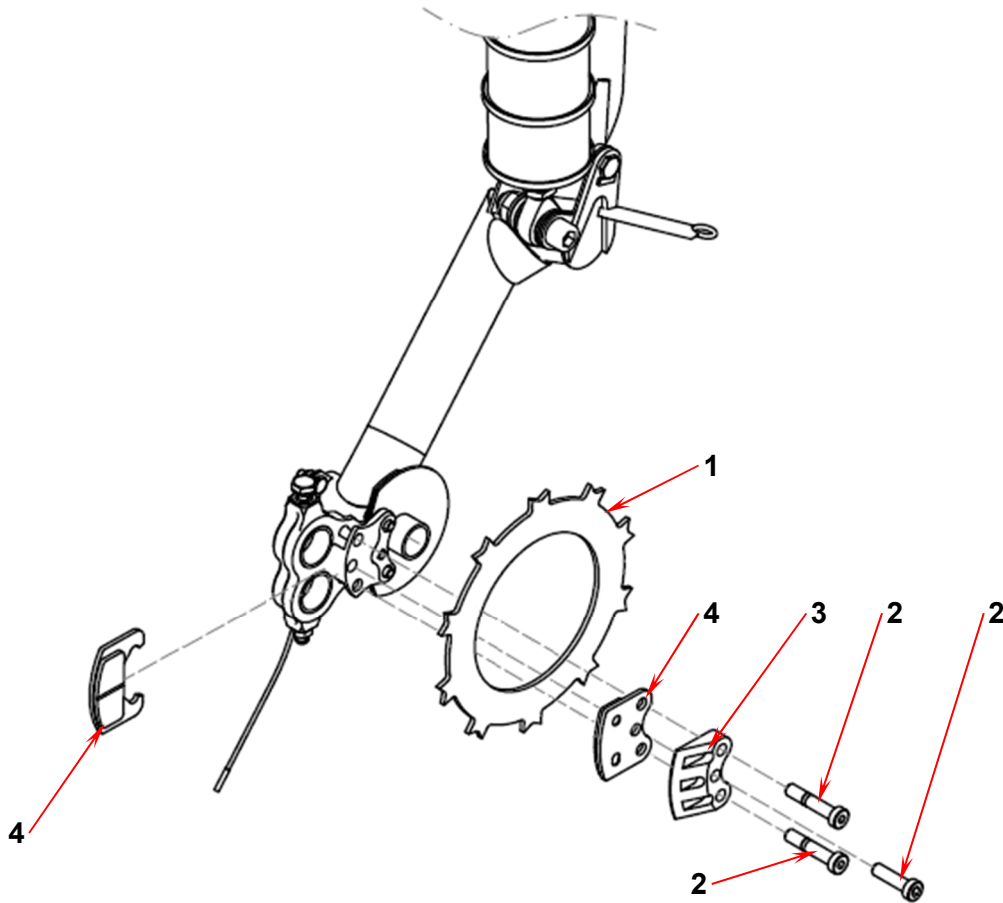


Fig. 2.2.4.1-2 Brake pads and brake disc replacement, model Speed

2.2.4.2. Brake system bleeding

It is most important thoroughly vent the brake system, otherwise the system function may be unreliable and the brakes may fail. There are two main reasons of air entry into the brake system:

- Disconnected or released brake hoses.
- Insufficient quantity of brake fluid.

Procedure:

1. Connect the suitable bleeding hose to the vent screw and loose the vent screw in appropriate brake calliper (OS).
2. Pull and keep the brake lever in the rear position.
3. Tighten the vent screw (fig. 2.2.4.2-1).
4. Release the brake lever to the front position.
5. Repeat several times steps 1-4 until the brake control lever offers resistance and there are no bubbles in the flowing out brake fluid. Keep sufficient level of brake fluid in the reservoir.
6. Tighten the vent screw and disconnect bleeding hose.



Fig. 2.2.4.2-1 Brakes venting (illustrative figure from model Speed)

CAUTION

If brake efficiency remains unsatisfactory after venting, there is necessary to fill brake fluid and vent the system again!

2.2.4.3. Brake system adjustment

The brakes adjustment carries out after master cylinder replacement.

Screw the fork (1) of the master cylinder (2) to that position, to reach the brake lever (3) the front position in the slot of slotted link (4). There must be minimum gap between the brake lever and front of slot (master cylinder is unloaded) (fig. 2.2.4.3-1). Lock the fork (1) using LOCTITE 243.

If the fork is not adjusted properly, it can result in lesser brake effect (there is space between brake lever and start of slot) or braking effect despite of release brake lever (brake lever is in touch with the start of slot and press the master cylinder)

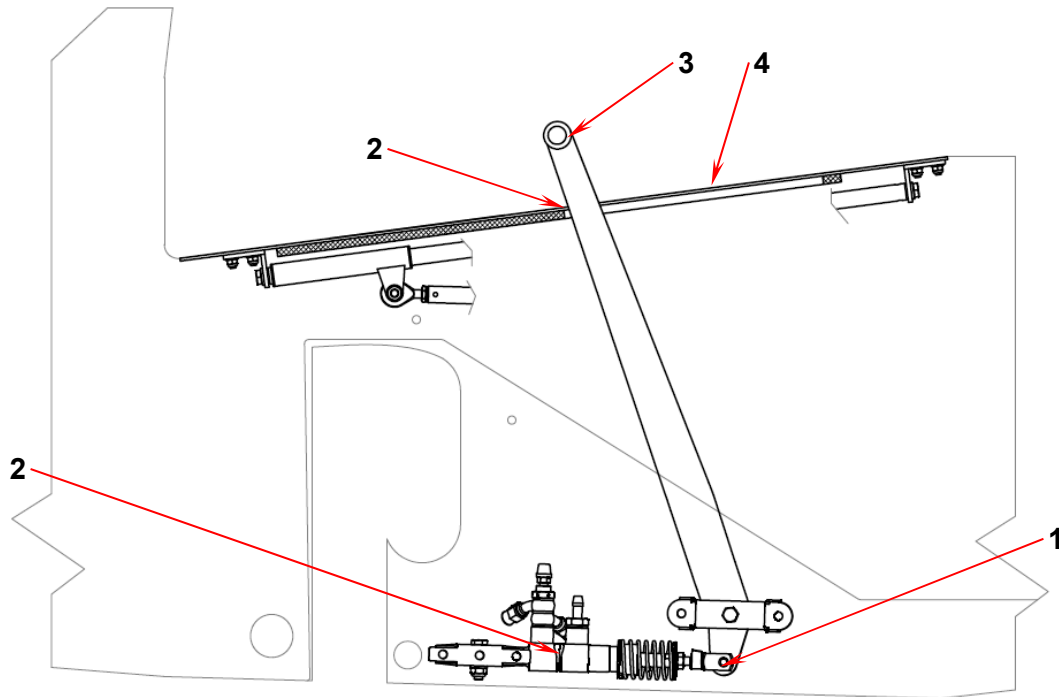


Fig. 2.2.4.3-1 Brake system adjustment

2.2.5. Canopy

Described is procedure for disassembly of canopy. For assembly, perform the below procedure in opposite sequence.

1. Open the canopy.
2. Remove locking wires (1) of ball joints (2) and remove the gas struts (3). Canopy should be properly supported.
3. Remove the Fokker needles (4), unscrew nuts (5) and, remove washers (6).
4. Remove the canopy hinge bolts (7).
5. Carefully remove the canopy (fig. 2.2.5-1).

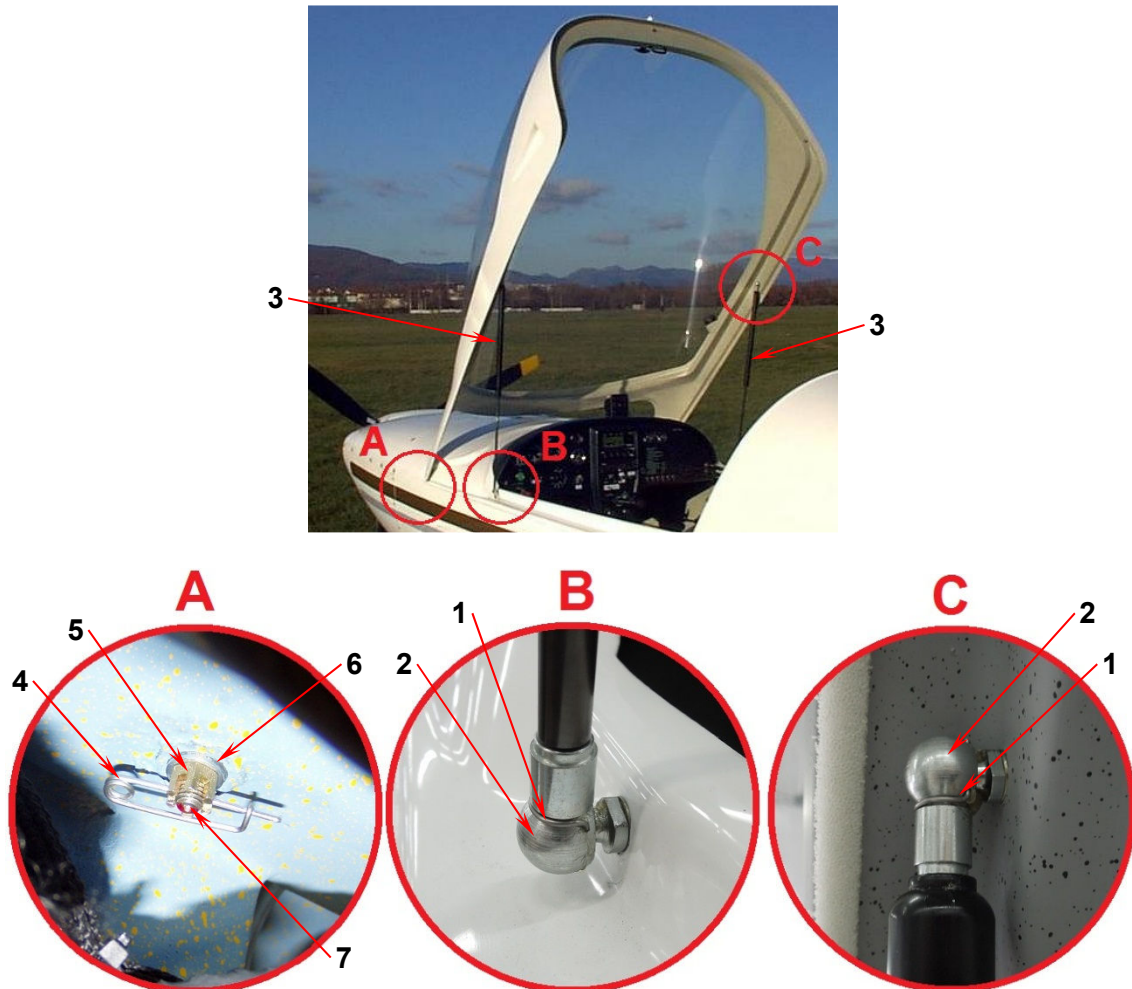


Fig. 2.2.5-1 Canopy disassembly

WARNING

Be carefully during canopy handling on the ground due to possibility a damage of the Perspex canopy!

2.2.6. Instrument panel

Described is procedure for disassembly of instrument panel. For assembly, perform the below procedure in opposite sequence (fig. 2.2.6-1).

1. Remove the instrument panel cover.
2. Disconnect the wires and connectors from instruments.
3. Disconnect the pitot-static hoses.
4. Remove the caps (1) and unscrew the nuts (2) attaching the instrument panel (3) to the silentblocks.
5. Remove the nut (4), screw (5), washer (6) and disassembly the instrument panel (3) from support bar (7).
6. Remove the nuts (8), bolts (9), washers (10) and disassembly the instrument panel (3) from the central tunnel (11).

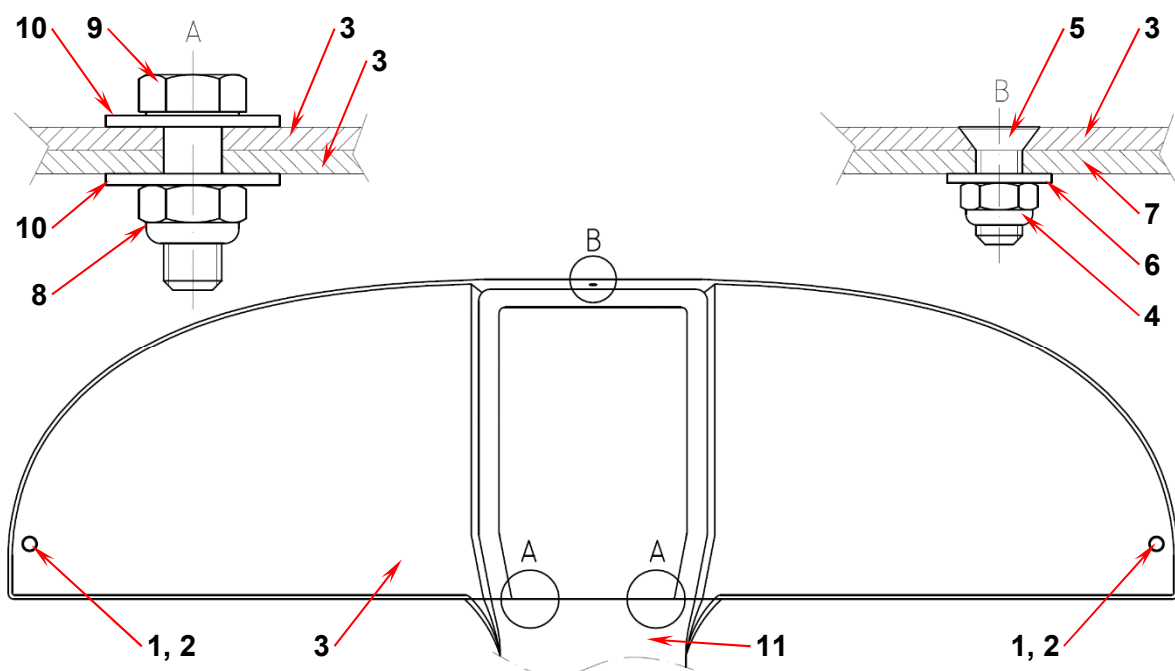


Fig. 2.2.6-1 Instrument panel disassembly

2.2.7. Tow release mechanism

Described is disassembly and assembly of tow release mechanism (fig. 2.2.7-1 and fig. 2.2.7-2).

Necessary tools and material:

- Pliers
- Wrench 8
- Socket 10

Procedure for tow release mechanism disassembly:

1. Remove the locking wire (1) from turnbuckle (2) and release the turnbuckle.
2. Remove the nut (3), washer (4) and bolt (5) from turnbuckle (2) to release the control cable (6).
3. Remove the covering sticker (7).
4. Remove the nut (8), washer (9), bolt (10) and remove the tow release mechanism (11) from the fuselage.

Procedure for tow release mechanism assembly:

1. Put the tow release mechanism (11) into the fuselage and attach it using bolt (10), washer (9) and nut (8).
2. Connect the control cable (6) to the turnbuckle (2) using bolt (5), washer (4) and nut (3).
3. Stretch the control cable by turnbuckle (2) to eliminate dead travel, but the tow release mechanism should not starts to open the tow hook.
4. Lock the turnbuckle (2) by locking wire (1).
5. Apply covering sticker (6).

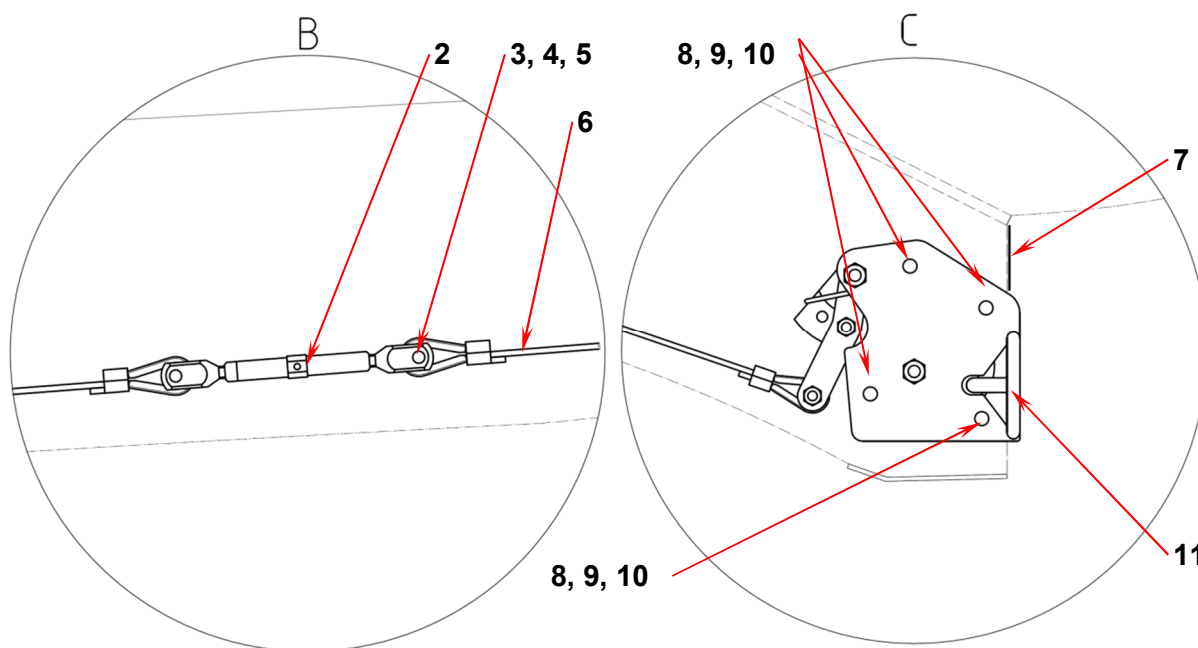


Fig. 2.2.7-1 Tow release mechanism



Fig. 2.2.7-2 Turnbuckle locking

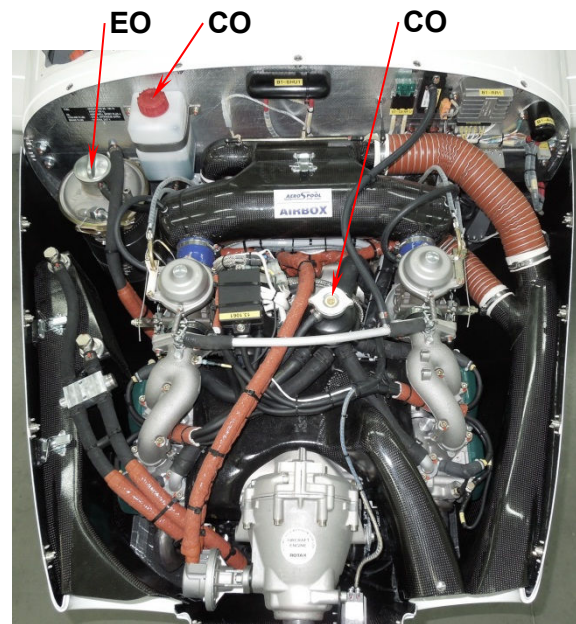
2.2.8. Operating fluids

Operating media listed below and filling openings can be seen on following figure (from fig. 2.2.8-1 to fig. 2.2.8-4):

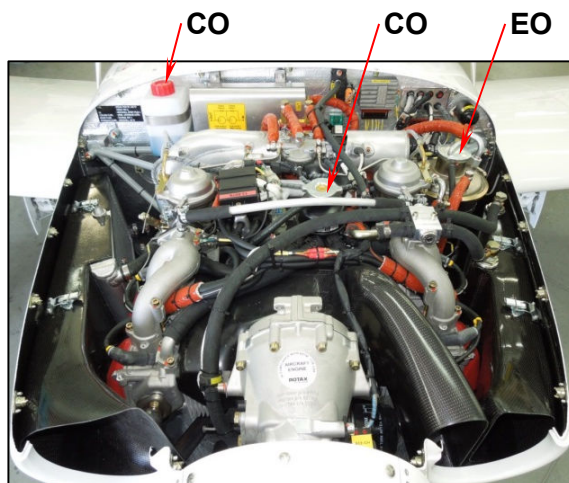
- Fuel (F)
- Engine oil (EO)
- Coolant (CO)
- Brake fluid (BF)
- Hydraulic oil (HO) (only model Speed)



Model Club "FG912 configuration"



Model Club "FG912T configuration"



Model Speed "RG914 configuration"

Fig. 2.2.8-1 Operating fluids – engine oil and coolant



Fig. 2.2.8-2 Operating fluids - brake fluid



Fig. 2.2.8-3 Operating fluids - hydraulic oil (only model Speed)

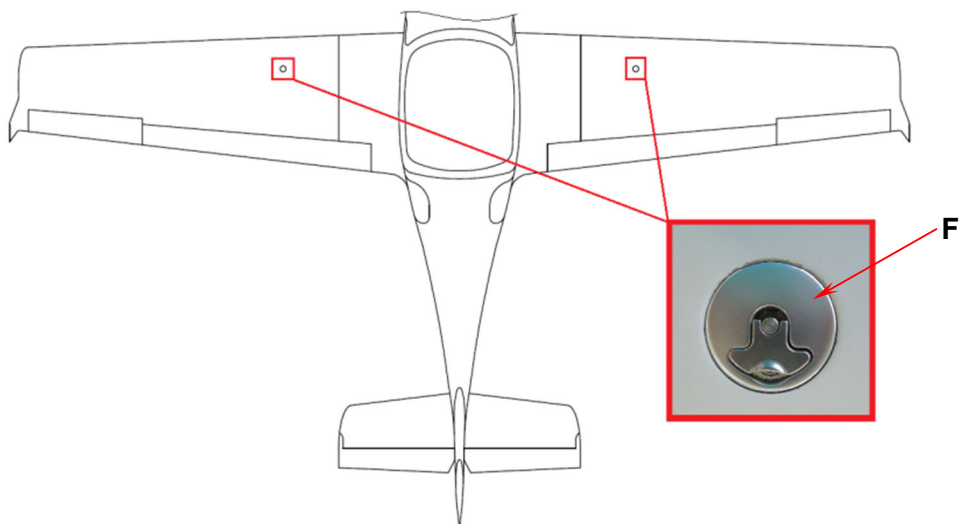


Fig. 2.2.8-4 Operating fluids - fuel

2.2.8.1. Engine oil

Use only oil with API classification „SG“ or higher! Due to the high stresses in the reduction gears, oils with gear additives such as good quality 4 stroke motorcycle oils are highly recommended. Heavy duty semi- or fully synthetic (depending on fuel type used) brand name oils are recommended.

The recommended oil brands are listed in the Operators Manual for Rotax Engine Type 912/914 Series, Ref. No.: OM-912/914.

Prior to oil level check, turn the propeller by hand several times to pump oil from the engine into the oil tank, or let the engine idle for a 1 minute. The oil level in the oil tank should be between min. and max. marks and should not be below min. mark (see the Operators Manual for Rotax Engine Type 912/914 Series, Ref. No.: OM-912/914).

Information about used engine oil by manufacturer is recorded on a placard at firewall in the engine compartment.

2.2.8.2. Coolant

Recommended coolant sorts are defined in the Operators Manual for Rotax Engine Type 912/914 Series, Ref. No.: OM-912/914. Manufacturer recommends 50% antifreeze concentrate with additives against corrosion and 50% pure water, or use of an equivalent premixed coolant.

Total coolant volume is about 1,5 litres. The coolant level is checked in the expansion tank (the highest point of the cooling system) located in the engine compartment (see the Operators Manual for Rotax Engine Type 912/914 Series, Ref. No.: OM-912/914). In addition an overflow bottle is attached on the firewall to accumulate the coolant in the case of engine overheating. The coolant level in the overflow bottle should be kept between min. and max. mark.

Run the engine to operating temperature and let the engine to cool down before checking of coolant level. Refill as necessary. Check the coolant level during the first 10 operation hours more frequently to ensure that last pneumatic blebs are vented.

Information about used coolant by manufacturer is recorded on a placard at firewall in the engine compartment.

WARNING

Before coolant level check let the engine to cool down!

2.2.8.3. Brake fluid

Only brake fluid of D.O.T.4 (meets classification J1703c) should be used for brake system (type for middle hard or hard operation). In general, the certified automobile brake fluid meet needed requirements. Brake fluid refilling is necessary when low brake system efficiency occurs due to fluid leak. The brake system is filled with the brake fluid from the reservoir that is located in the central tunnel.

Brake fluid gets thick during aircraft operation and absorbs air humidity. This is the most important condition, which causes brake system failures. There is not possible to determine time when it occurs.

Information about used brake fluid by manufacturer is recorded on a placard at firewall in the engine compartment.

2.2.8.4. Fuel

Following fuel types are approved (min. RON 95):

- EN 228 Super
- EN 228 Super Plus
- AVGAS 100 LL
- E10 Unleaded gasoline blended with 10% ethanol

If the engine is operated primarily on AVGAS 100 LL, there are shortened the periodical intervals between the oil changes. For more information refer to the Maintenance Manual for Rotax Engine Type 912/914 Series, Ref. No.: MML-912/914, actual valid revision.

Due to ethanol presence in E10 fuel and its specific features it is recommended in case of expected long period aircraft grounding to drain the E10 fuel out of tanks, and refuel with non- ethanol blended fuel and run the engine for enough period to burn off all E10 fuel remaining in the fuel system. Inspect also the fuel filters (see Service instruction SI-912-016 and SI-914-019 actual valid revision issued by Rotax engine producer).

2.2.9. Winter operation

2.2.9.1. General

As a winter operation can be considered the conditions if outside temperature falls below +5 °C. The aircraft must be prepared for winter operation.

2.2.9.2. Preparing the aircraft for winter operation

Airframe:

- Lubricate the aircraft per Lubricating Chart, if from the last 100 hrs. inspection passed more than 6 months.
- Check fuel tanks venting.
- Check attachment of wing, ailerons, flaps and tail units; lubricate per Lubricating Chart.

Powerplant:

- Check the condition of coolant in the water cooling system to avoid of water freezing in the system and engine.
- Check electrodes of the spark plugs and adjust as necessary.

Pre-flight inspection:

In addition during the pre-flight inspection in winter operation must be done:

- Remove the ice from the aircraft surfaces.
- Check control surfaces free movement and cleanness of slots of control surfaces and flaps.
- Check cleanness of the fuel tank venting.
- Check the fuel for water presence prior filling the tanks.
- For model Club during winter operation on the frozen or harden surface of the runway is recommended to remove the wheel fairings to avoid of their damages by accumulated snow and ice.

Engine and oil pre-heating:

There is possible to start an engine without need of pre-heating if outside temperature is not below +5 °C. It is recommended to pre-heat the engine and oil if temperature falls below +5 °C. Use suitable air heater or a dryer.

Blow the hot air from the front into the hole around the propeller hub. Temperature of hot air should not exceed 100 °C. Pre-heat until cylinder head temperature and oil temperature exceed +20 °C.

WARNING

Never use open fire to pre-heat an engine!

CAUTION

If cylinder heads and oil temperatures fall during parking among flights than is recommended to start and warm up engine from time to time. Do not open choke when starting hot engine!

Parking and taxiing:

Check wheel brakes for freezing when parking outside and temperature is below 0 °C. Check wheels free rotation prior to taxiing (hold a propeller and tow the aircraft). Heat the brakes with the hot air to remove ice. Do not remove the ice by braking during taxiing!

After winter operation:

- Clean the aircraft thoroughly
- Lubricate the aircraft per Lubrication Chart
- Check the control system and adjust if necessary

2.3. Permissible plays

In the following table are shown the permissible plays for most important parts of the aircraft. These values should be not exceeded in operation.

It is expected that an operator will take steps if finds excessive plays of any other part not listed below.

System	Procedure to find a play	Procedure to remedy a play	Max. product play	Max. operation play
Ailerons control system	Fix ailerons in neutral position. Move the control stick to the left and right to find possible plays. Move the control stick to the end stops. Move the ailerons to find possible plays.	Check condition of bearings and replace if necessary.	2 mm	5 mm
Elevator control system	Fix elevator in neutral position. Move the control stick forward and backward to find possible plays. Move the control stick to the end stops. Move the elevator to find possible plays	Check condition of bearings and replace if necessary.	2 mm	5 mm
Flaps control system	Extend the flaps and move the flap trailing edge in the root section up and down to find possible plays. Perform for each position of flaps.	Check condition of slots at the top of central tunnel. Check the condition of bearings and replace if necessary.	2 mm	5 mm
Ruder control system (model Club)	Fix the nose wheel and move the pedals. Fix the pedals and move with rudder left/right) and forward/backward.	Check the conditions of bearing eyes of pull-push rods. Check the tension of control cables. Check the rudder hinges play.	1 mm	2 mm
Wing – Wing central section attachment	Move the wing tip up and down to find possible plays.	Check the wing pins. Replace if necessary.	0 mm (at the wing tip)	2 mm (at the wing tip)
Nose landing gear (model Club)	Lift the aircraft. Move the nose wheel forward and backward to find possible plays.	Replace the bushings of upper and lower holder.	1 mm	3 mm
Main landing gear (model Club)	Lift the aircraft. Move the main wheel forward/backward and inboard/outboard to find possible plays.	Check the legs attachment, wheels attachment, replace the bearings, if necessary.	1 mm	3 mm

2.4. Weighting the aircraft and CG calculation

- There is necessary to keep with permitted maximum take-off weight, CG range and limitations for any configuration of crew, fuel and baggage according to the Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic. For limitations refer to the Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic

2.4.1. Empty weight determination

To define the aircraft CG it is necessary to weight the empty aircraft with operating fluids (oil, coolant, brake fluid...) but without the fuel in the fuel tanks (for empty weight and empty moment see Weight and Balance Record delivered to the aircraft).

The aircraft is weighted using three weighting-machines located under the left and right main wheels and under the nose wheel. The aircraft position for weighting has to be adjusted to be levelled the side edge of the cockpit. The datum reference point (RP) is leading edge of wing root section where wing-fuselage radius starts.

1. Measure the distance of nose wheel "a" and main wheels "b" from the datum point (RP) to centre of main landing wheel axle and nose wheel axle. For model Club see Annex A.2.1. For model Speed see Annex A.2.2.
2. Read the weight acting on the each wheel and record in the Weight and balance record.
3. Calculate the partial moments, total moment and the total empty weight.
4. Calculate the CG position on MAC in mm (X_T) and the CG position on MAC in %MAC (X_{CT}) according to the expressions in the Weight and balance record.
5. Verify if the empty CG is in the allowed range.

Allowed CG position range of empty aircraft is from 10,0-14,0 %MAC (see the Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic).

2.4.2. Operating CG range calculation

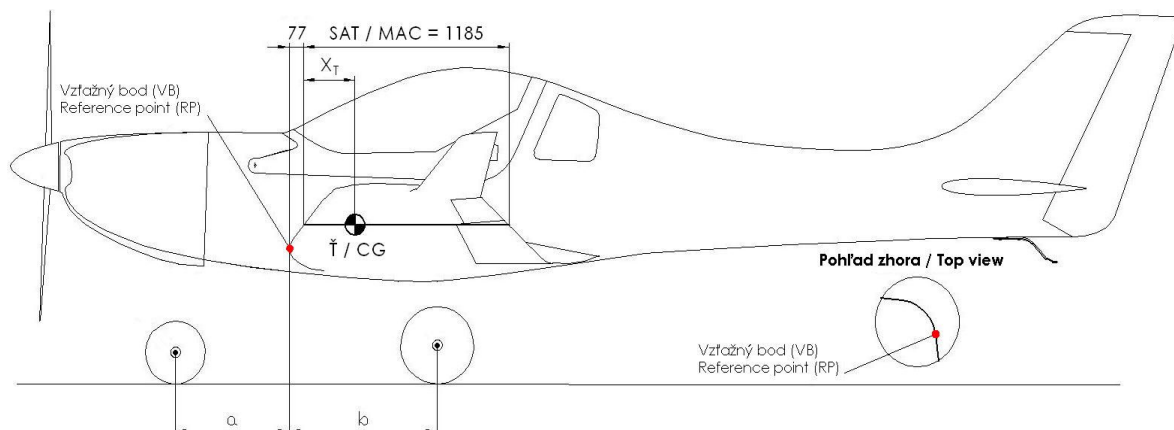
Operating CG can be measured according to the procedure above or calculated as follows:

CG position after loading of aircraft (crew, fuel and baggage or additional equipment) can be calculated as follows (see the form on the next page):

1. Enter the empty weight (G_E) and empty moment (M_E) to get form.
2. Enter the weights of crew (G_C), fuel (G_F)*, baggage (G_B) and calculate the partial moments of crew (M_C), fuel (M_F)*, baggage (M_B)
3. Calculate the total take-off weight (G_T) and total moment (M_T).
4. Calculate the CG position on MAC in mm (X_T) and the CG position on MAC in %MAC (X_{CT}) according to the expressions.
5. Verify if the flight CG and take-off weight are in the allowed ranges.

Allowed flight CG position range is from 20,0-30,0 %MAC (see the Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic).

CALCULATION OF FLIGHT CG POSITION



Empty aircraft (G_E)* (See Weight and balance record)	kg	Empty moment (M_E)* (See Weight and balance record)	kg.mm
	Weight (G_i) (kg)	Distance from RP (l_i) (mm)	Moment ($M_i = G_i \cdot l_i$) (kg.mm)
Crew (G_C)	kg	720 mm	kg.mm
Fuel** (G_F)	kg	240 mm	kg.mm
Baggage (G_B)	kg	1100 mm	kg.mm
Total weight (G_T) $G_T = G_E + G_C + G_F + G_B$	kg	Total moment (M_T) $M_T = M_E + M_C + M_F + M_B$	kg.mm

Calculation of CG position X_T on MAC (in mm):

$$X_T(\text{mm}) = \frac{M_T}{G_T} - 77 = \text{---} - 77 = \text{---} \text{ mm}$$

Calculation of CG position X_{CT} on MAC (in %MAC), (MAC = 1185 mm):

$$X_{CT}(\%MAC) = \frac{X_T}{MAC} \cdot 100 = \frac{\text{---}}{1185} \cdot 100 = \text{---} \%MAC$$

Permitted flight CG position is in range 20,00-30,00 %MAC!

Calculated flight CG position is within permitted range:

☐ YES

☐ NO

Date, place

Signature

* Empty weight includes operating fluids of engine and standard equipment.

** Attention, make sure that weight of fuel (in kg) was used in calculation!

2.5. Ground handling

2.5.1. Aircraft towing

The aircraft can be moved for a short distance by means of towing by holding the blade roots. Handle the propeller by holding the blade root – never blade tip. For a direction motion control push the rear part of a fuselage close before a fin down to lift the nose wheel, than turn the aircraft into a required direction.

There is also possibility of using tow bar that attaches to the nose landing gear.

CAUTION

Avoid excessive pressure at the aircraft control surfaces and the wing tips. The perpendicular pressure on the surface of the airframe sandwich shell thin skin layers can produce a creation of prints. These prints can weaken a sandwich shell. During the aircraft towing hold the propeller blade root, never the blade tip!

2.5.2. Parking the aircraft

It is recommended to park the aircraft inside a hangar or eventually inside other protected area. During the aircraft parking use a parking brake.

CAUTION

In the case of a parking outside a hangar for a long time, cover the cockpit canopy by means of a suitable cloth cover, due to preclusion of the sun effect. The sunbeams together with the optical action of the cockpit canopy may be the source of the spot heating, which can damage the cockpit area and the upholstery!

2.5.3. Aircraft tie-down

The aircraft is usually tied-down in the case of parking outside a hangar or if necessary. The aircraft is equipped with tie-down points located at the wing lower surface. Tie-down points are attached to the main spar.

To tie-down the aircraft screw the mooring eyes (1) into the tie-down points and fix the aircraft to the ground (fig. 2.5.3-1). It is also necessary to tie-down the nose wheel, protect the holes of pitot-static probe (2) and static pressure receivers, protect the fuel tank caps, all venting holes including sliding windows. Block the control stick e. g. by means of safety harness and to cover the cockpit canopy.

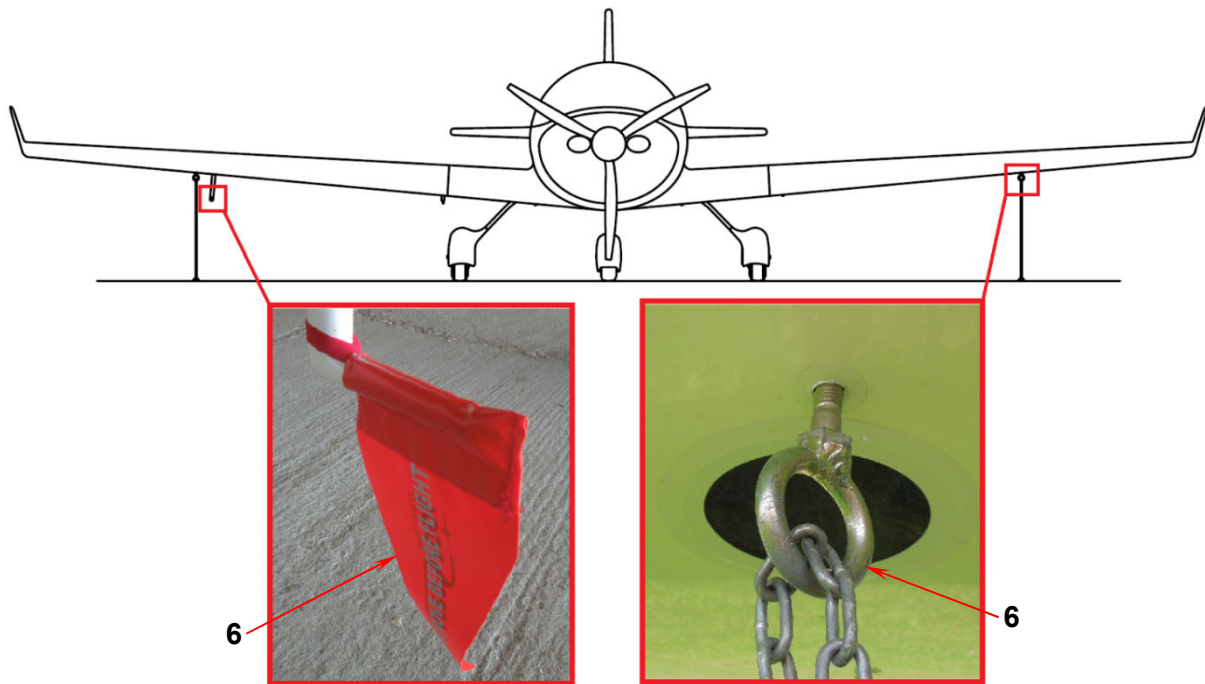


Fig. 2.5.3-1 Tied-down aircraft (illustrative figure of model Club)

2.5.4. Lifting the aircraft

The aircraft is equipped with three lifting point. Place the main lifters (5) under front lift point (1) (under the firewall) and aft lift points (2, 3) (located under auxiliary spar 3). Lift the aircraft.

It is recommended to support the aircraft at point under the tail skid (4) for safety getting in/out of aircraft with the aft lifter (fig. 2.5.4-1 and fig. 2.5.4-2).

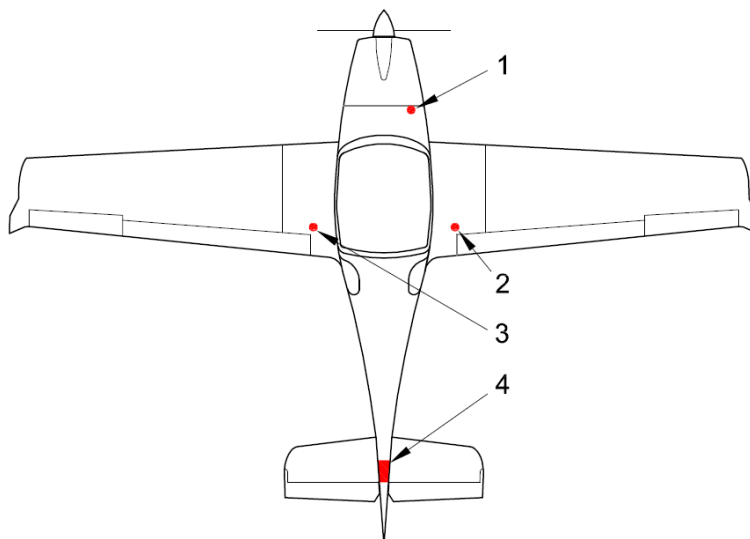


Fig. 2.5.4-1 Lift and support points

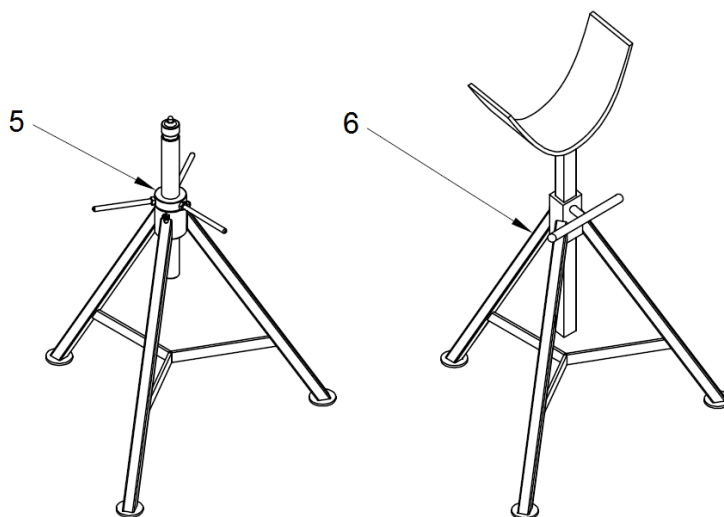


Fig. 2.5.4-2 Main and aft lifters

2.5.5. Road transport

The aircraft may be transported in a suitable car trailer or a lorry after disassembling of wings (see Chapter 2.2.1).

The airframe surfaces should be protected by means of a light plastic foil or cloth cover against the dust. The check holes of the engine, the fuel tanks and the pitot static system should be enclosed before the transportation, due to ability of the penetration of the foreign objects (insect, birds) by means of an adhesive tape. Close the windows and cover the windshield.

Lock the control systems and control surfaces with the adhesive tape.

The landing gear wheels have to be fixed by means of suitable blocks. There is also necessary to fix the nose wheel. Apply the parking brake.

Protect the all disassembled parts with suitable covering and fixation to avoid of their damage during transport.

Cover the propeller blades by protective cover.

3. MAINTENANCE

CONTENT

Chapter		Page
3.1.	OVERALL MAINTENANCE SURVEY	3-3
3.2.	DAILY INSPECTION	3-3
3.3.	PRE-FLIGHT INSPECTION	3-3
3.4.	INTER-FLIGHT INSPECTION	3-3
3.5.	POST FLIGHT INSPECTION	3-3
3.6.	PERIODICAL INSPECTIONS	3-4
3.6.1.	PERIODICAL INSPECTIONS INTERVALS	3-4
3.6.2.	PERIODICAL INSPECTIONS - EVENTS	3-5
3.6.3.	LIST OF PERIODICAL INSPECTIONS OF ROTAX 912 AND ROTAX 914	3-15
3.6.4.	PERIODICAL INSPECTION OF PROPELLER	3-15
3.7.	LUBRICATION	3-16
3.7.1.	LUBRICATION FUNDAMENTALS	3-16
3.7.2.	RECOMMENDED LUBRICANTS	3-16
3.7.3.	LUBRICATING POINTS	3-17
3.8.	MECHANISM ADJUSTMENT	3-19
3.8.1.	TORQUE MOMENTS	3-19
3.8.2.	NECESSARY MAINTENANCE TOOLS	3-20
3.8.3.	INSPECTION HOLES	3-20
3.9.	PARTS WITH LIFE LIMITS	3-21

3.1. Overall maintenance survey

The aircraft maintenance is a care and repairs of an aircraft to save its airworthiness. There are performed periodical events (periodical and pre-flight inspections) and irregular events e.g. a repair of a damage.

If any service difficulty is observed, use a form in Annex A.5 for notification to the manufacturer about this issue.

3.2. Daily inspection

The daily inspection has to be performed before every flight day of the aircraft. A method of the daily inspection execution is the object of a pilot training. The scope of this inspection is specified in the Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic

and in the additional documents supplied with an aircraft instruments or equipment. Special attention must be devoted to the parts, which are affected by the high vibrations and high temperatures from a powerplant.

Especially these following parts:

- Aircraft log-book and airworthiness certificate.
- Aircraft technical log-book.
- Cockpit.
- Landing gear.
- All control surfaces for full and free movement.
- All surfaces of the aircraft for cracks, nicks or any visible damage.
- Powerplant and propeller.
- Service fluids.

3.3. Pre-flight inspection

This inspection is shorter than a daily inspection whereupon the pre-flight inspection has to be performed before each flight. The Pilot's Operating Handbook for WT9 Dynamic LSA and WT-9 Dynamic presents more information about a pre-flight inspection. If any problems are found they must be corrected before flying.

3.4. Inter-flight inspection

Inter-flight inspection is a visual check of aircraft between the flights. Check the deformations, surface damages, fuel and oil system leaks, propeller damages, released locks, covers and cowlings etc. The found damages and failures have to be repaired immediately if aircraft airworthiness is affected or when impossible the aircraft should be put out of operation.

3.5. Post flight inspection

Post-flight inspection is performed in the end of each flight day. The post-flight inspection events are the same as the pre-flight ones. Failures, damages and malfunctions have to be recorded in documentation and repaired by a qualified staff before next flying.

Check also fuel and oil consumption if are in normal range. Record the hours flown and other data in appropriate documentation of an aircraft (engine, propeller).

3.6. Periodical inspections

3.6.1. Periodical inspections intervals

The periods of overall checks and continued maintenance depends on the condition of the operation and on the overall condition of the aircraft. The producer recommends accomplishing of maintenance checks and periodic inspections in the following periods, at least:

1. After the first 25 ± 2 flight hours
2. After the first 50 ± 3 flight hours
3. After every 100 ± 5 flight hours or once a year

For periodical inspection intervals of engine refer to:

- Maintenance Manual for Rotax Engine Type 912/914 Series, Ref. No.: MML-912/914, actual valid revision.

For periodical inspection intervals of propeller EVRA PERFORMANCE LINE 175/xxx/805.5 refer to:

- The Tips, Practices, Mounting and Maintenance for Propeller EVRA, actual valid revision.

For periodical inspection intervals of propeller WOODCOMP SR2000DN refer to:

- The Operator's Manual, Electrical Adjustable Aircraft Propeller SR2000DN, actual valid revision.

For periodical inspection intervals of propeller WOODCOMP SR3000/2N refer to:

- The Operator's Manual, Electrical Adjustable Aircraft Propeller SR3000/2N, actual valid revision.

The following periodical inspections sheets are intended for copying and serve as the Maintenance Record. There is also recommended to register small repairs, damages and their remedy or replacement of parts. Some parts of the aircraft (engine, landing gear and propeller etc.) may have special time limits – refer to appropriate manuals.

3.6.2. Periodical inspections - events

Type: WT9 Dynamic LSA WT-9 Dynamic	Registration:	Hours flown:	Date of inspection:
		No. of take-offs:	

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
1	Prior to the inspection clean and wash the aircraft surfaces.	*	*	*		
2	ENGINE	See Maintenance Manual for Rotax Engine Type 912/914 Series, Ref. No.: MML-912/914				
2.1	Laminated engine cowlings					
2.1.1	Check condition of cowlings and quick closing locks-repair found damages.			*		
2.1.2	Remove engine cowling.	*	*	*		
2.1.3	Visually check the condition of cowlings.		*	*		
2.2	Engine mount					
2.2.1	Visually check condition, attachment, security of attachment bolts: engine-engine bed, engine bed-firewall.	*	*	*		
2.2.2	Visually check condition of rubber silentblocks-replace those cracked and excessively deformed.			*		
2.2.3	Check the engine mount screws for cracks and damage.	After 600 flight hours of operation				
2.3	Suction system					
2.3.1	Visually check condition, integrity, attachment and security of air filter at carburettor inlet - clean impure filter.	*	*	*		
2.3.2	Visually check condition of suction piping.	*	*	*		
2.3.3	Check carburettors – condition, control cables attachment and lubricate cables at inlet to the Bowdens.	*	*	*		
2.4	Battery					
2.4.1	Visually check attachment and locking.		*	*		
2.4.2	Check charging – charge battery if necessary.			*		
2.4.3	Visually check condition and attachment of wire leads-replace those damaged.	*	*	*		
2.5	Wiring					
2.5.1	Visually check condition and integrity of wires, connections, security of wires	*	*	*		
2.6	Fuel system					
2.6.1	Visually check condition, integrity, attachment and security of hoses – replace those damaged.	*	*	*		
2.6.2	Visually check fuel filter condition-replace impure filter.	*	*	*		
2.6.3	Visually check system for leakage.	*	*	*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
2.7	Cooling system					
2.7.1	Check cooler for condition and leakage.			*		
2.7.2	Visually check condition, attachment of hoses, check system for leakage.	*	*	*		
2.7.3	Check the hose clamps. Tighten if necessary.		*	*		
2.7.4	Check coolant level in the expansion tank. Add or change coolant according to the engine manual if necessary.	*	*	*		
2.7.5	Visually check condition and attachment of overflow bottle.			*		
2.8	Lubrication system					
2.8.1	Visually check condition and attachment of oil tank.			*		
2.8.2	Check oil cooler for condition, attachment and leakage.	*	*	*		
2.8.3	Visually check hoses for condition, leakage, attachment and security-replace damaged hoses.	*	*	*		
2.8.4	Check oil level. Add or change oil according to the engine manual if necessary.	*	*	*		
2.9	Exhaust system					
2.9.1	Visually check exhaust system condition, cracks, deformations or damages – repair (weld).	*	*	*		
2.9.2	Visually check condition and attachment of the muffler.	*	*	*		
2.9.3	Check joints locking.	*	*	*		
2.10	Heating and venting					
2.10.1	Visually check the hot and cold air hoses leading to the heating/venting flaps for condition, integrity, attachment and security.	*	*	*		
2.10.2	Check condition, function and control of the heating and venting flaps.		*	*		
2.11	Engine cowling					
2.11.1	Reinstall lower engine cowling. Upper engine cowling reinstall when the inspection is completed and engine test run performed	*	*	*		
2.12	Lubrication					
2.12.1	Lubricate according to the Lubrication Chart.	*	*	*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
3	PROPELLER	See also Operator's Manual				
3.1	Propeller blades					
3.1.1	Inspect blades for abrasions, cracks, paint damage, condition of blades leading edges and tips. Repair according to the Operator's Manual.	*	*	*		
3.1.2	Remove spinner.		*	*		
3.2	Propeller hub					
3.2.1	Check propeller attachment, locking of bolts.		*	*		
3.2.2	Check the run-out.			*		
3.2.3	Pitch change mechanism (only in flight adjustable propellers) Check condition and function according to the Operator's Manual.	See also Operator's Manual				
3.2.4	Install spinner.		*	*		
4	LANDING GEAR – Model Speed					
4.1	Nose landing gear					
4.1.1	Check the condition and attachment of the nose leg, trailing link, drag strut, pin's play, deformations, pins locking.	*	*	*		
4.1.2	Check of the PU-shock absorber elements for cracks and permanent deformation. Replace if necessary.	*	*	*		
4.1.3	Check of the drag strut for damages, deformations, pins locking and play.	*	*	*		
4.1.4	Check tyre condition, cuts, uneven or excessive wear and slippage. Replace if necessary. Check pressure – inflate as required (see Chapter 2.2.3.7)	*	*	*		
4.1.5	Lubricate the pins.			*		
4.1.6	Check the condition of bearings, wheel free rotation, play. Replace if necessary.			*		
4.1.7	Check the trailing link free of rotation inside the nose leg. Rotation should not be too free to prevent of shimmy.		*	*		
4.1.8	Check the control cables condition, cables ends locking.		*	*		
4.1.9	Check the retraction of nose landing gear. Check the hydraulic system for leakage. Replace if necessary.		*	*		
4.1.10	Operation test of the landing gear retraction together with the main landing gear (see main landing gear).			*		
4.1.11	Lubricate according to the Lubrication Chart.			*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
4.2	Main landing gear					
4.2.1	Visually check of the main landing gear condition, damages, deformations, paint damage, pins locking. Inspect the legs attachment in the wing spar's attachment points (no play).	*	*	*		
4.2.2	Check the attachment of brake system hoses to the main gear legs.	*	*	*		
4.2.3	Check hydraulic fluid condition. Add or change the hydraulic fluid on condition.			*		
4.2.4	Check tyres condition, cuts, uneven or excessive wear and slippage. Replace if necessary. Check pressure – inflate as required (see Chapter 2.2.3.7).	*	*	*		
4.2.5	Check of the drag strut for damages, deformations, pins locking and play.	*	*	*		
4.2.6	Check the condition of the brake disc and brake pads- steady and symmetry abrasion. Replace as necessary.		*	*		
4.2.7	Check the wheel rims for cracks, deformations. Replace if necessary. Check the condition of bearings, wheel free rotation, plays.		*	*		
4.2.8	Check of the PU-shock absorber elements for cracks and permanent deformation. Replace if necessary.		*	*		
4.2.9	Perform operation test of the landing gear: Lift the aircraft. Retract the landing gear, measure the time of landing gear retraction. Repeat this procedure three times. Check wheel position in the main gear boxes during retraction.			*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
5	LANDING GEAR – Model Club					
5.1	Nose landing gear					
5.1.1	Check of the nose leg for damages, attachment, and deformation. Check torque and locking of joints, nose wheel control pull-push rods attachment condition.	*	*	*		
5.1.2	Check the rubber damper for permanent deformation, cracks, excessive wear. Replace if necessary.	*	*	*		
5.1.3	Check the carbon fork for delamination and damages. Check the attachment to the nose leg.	*	*	*		
5.1.4	Check tyre condition, cuts, uneven or excessive wear and slippage. Replace if necessary. Check pressure – inflate as required (Chapter 2.2.3.7).	*	*	*		
5.1.5	Lubricate the pins			*		
5.1.6	Check condition of bearings, wheel free rotation, play – wrong bearings replace if need be			*		
5.1.7	Check nose wheel fork free rotation inside the leg- rotation should not be too free to prevent shimmy		*	*		
5.1.8	Visually check laminated fairing (mudguard) condition – repair found damages and cracks.	*	*	*		
5.1.9	Lubricate according to the Lubrication Chart			*		
5.2	Main landing gear					
5.2.1	Visually check of the main legs for delamination, damages, attachment, bolts locking.	*	*	*		
5.2.2	Visually check laminated wheel fairings condition. Clean, repair found damages and cracks.	*	*	*		
5.2.3	Check tyres condition, cuts, uneven or excessive wear and slippage. Replace if necessary. Check the pressure – inflate as required (See Chapter 2.2.3.7).	*	*	*		
5.2.4	Check the condition of the brake disc and brake pads- steady and symmetry abrasion. Replace as necessary.		*	*		
5.2.5	Check the wheel rims for cracks, deformations. Replace if necessary. Check the condition of bearings, wheel free rotation, plays.		*	*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
6	LIFTING SURFACE					
6.1	Wing					
6.1.1	Disassembly the wing. Check the condition of the bushings and root rib.	After 200 flight hours or once a year				
6.1.2	Visually check the wing surface for damages, delamination, recesses.	*	*	*		
6.1.3	Check of the surface for finding out of the delamination of the sandwich. Contact aircraft manufacturer if larger areas of the delamination were found.			*		
6.1.4	Check the plays in wing suspensions. Move the wing tip upward-downward, frontward-rearward. Contact aircraft manufacturer if greater than permissible play is observed (see Chapter 2.3).		*	*		
6.1.5	Check Pitot probe attachment at the right wing. Check the clearness of Pitot-probe holes.	*	*	*		
6.2	Ailerons					
6.2.1	Visually check of the aileron surface for damages, delamination and paint damages.	*	*	*		
6.2.2	Check free movement, aileron hinge and plays.	*	*	*		
6.2.3	Check locking of control rod ends.	*	*	*		
6.2.4	Lubricate the bearings.			*		
6.2.5	Only model Club: Check the control surface weight balance attachment.	*	*	*		
6.3	Wing flaps					
6.3.1	Visually check of the flap surface for damages, delamination.	*	*	*		
6.3.2	Check free movement, flap hinge and plays.	*	*	*		
6.3.3	Check locking of control rod ends.	*	*	*		
6.3.4	Check of the flaps stops for condition at the flaps up position. Increase a tension of the flap shaft, in case of the plays appearance.			*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
7	FUSELAGE					
7.1	Fuselage					
7.1.1	Visually check fuselage surfaces for delamination and damages. Pay special attention to condition of the bottom part of the wing central panel and of the get on into cockpit zone.	*	*	*		
7.1.2	Only model Speed: Visually check the condition of boxes for landing gear legs.	*	*	*		
7.1.3	Visually check the attachment of tail skid. Replace the tail skid in the case of delamination.	*	*	*		
7.1.4	Visually check of the static pressure receivers for stoppage. (The small opening must be clean).	*	*	*		
7.2	Cockpit canopy					
7.2.1	Visually check the canopy condition for cracks, scratches, any other damages – drill the hole at the crack tip. Check the venting windows for condition and operation.	*	*	*		
7.2.2	Check canopy lock for condition and operation.	*	*	*		
7.2.3	Operation test of the venting nozzles.	*	*	*		
7.2.4	Check the gas struts operation. Replace if necessary		*	*		
7.2.5	Check condition of canopy hinges and locking.			*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
8	TAIL UNIT					
8.1	Horizontal tail unit					
8.1.1	Visually check horizontal tail unit surfaces for delamination and damages. Pay special attention to condition of the connection with the fuselage.	*	*	*		
8.1.2	Check elevator free movement, elevator hinges and plays.	*	*	*		
8.1.3	Only model Club: Check the control surface weight balance condition.	*	*	*		
8.2	Rudder					
8.2.1	Visually check the surface for delamination, damages.	*	*	*		
8.2.2	Check plays in the and in the hinges.	*	*	*		
8.2.3	Check control cables condition.			*		
8.2.4	Check locking of the control rod ends.	*	*	*		
8.2.5	Check the control surface weight balance condition in the rudder tip.	*	*	*		
9	COCKPIT					
9.1	Instrument panel					
9.1.1	Visually check condition and attachment of the instrument panel.		*	*		
9.1.2	Check functions of instruments (see manufacturer's instructions).		*	*		
9.1.3	Check throttle and choke levers free movement and locking.	*	*	*		
9.1.4	Inspect completeness and readability of placards.			*		
9.2	Seats					
9.2.1	Visually check of the safety belts for condition, attachment and locking.			*		
9.2.2	Visually check seat upholstery condition			*		
9.2.3	Visually check the surface of laminate seats for delamination and damages.					
9.3	Aileron and elevator control					
9.3.1	Remove control stick covers above a seat.		*	*		
9.3.2	Check control stick free movement. Remove foreign objects and contamination.	*	*	*		
9.3.3	Check control surface deflections and control system plays.	*	*	*		
9.3.4	Check locking of control rod ends.			*		
9.3.5	Lubricate the control rod ends.			*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
9.4	Foot control					
9.4.1	Check stiffness of movement.	*	*	*		
9.4.2	Check joints locking.	*	*	*		
9.4.3	Check condition and locking of cables.	*	*	*		
9.4.4	Only model Club: Check the nose wheel control pull-push rods conditions. Check the fireproof sleeve condition.	*	*	*		
9.4.5	Only model Speed: Check the nose wheel control cables conditions.	*	*	*		
9.4.6	Lubricate according to the Lubrication Chart			*		
9.5	Flap control					
9.5.1	Remove slotted ling from the top of the central tunnel.		*	*		
9.5.2	Check pin joints for locking and plays in the flaps bellcrank.		*	*		
9.5.3	Check free movements of levers.	*	*	*		
9.5.4	Lubricate guide tube of the flaps control lever		*	*		
9.5.5	Check operation of flap control lever.	*	*	*		
9.5.6	Check of the play in the flap control. Find out the plays in the flap control at fixed flap control lever by the moving of the flap.	*	*	*		
9.5.7	Check the condition of booster (gas strut).			*		
9.6	Trim control system					
9.6.1	Check the locking of pin joints of the trim control system.	*	*	*		
9.6.2	Check of the trim control lever locking in the slots. If the control stick is moved fully forward/rearward, the trim control lever must be without motion.	*	*	*		
9.6.3	Check of the carbon spring for delamination and attachment (lower hinge).	*	*	*		
9.6.4	Check free movements of trim control system (foreign objects).	*	*	*		
9.7	Brake system					
9.7.1	Check the condition of brake disc, brake pads and locking.	*	*	*		
9.7.2	Check of the brake lever in the parking position. The aircraft must be braked (check by towing of the aircraft). Adjust if necessary.		*	*		
9.7.3	Check brake fluid condition, level in reservoir and leakage. Add or change if necessary.		*	*		
9.7.4	Install slotted link at the top of central tunnel.	*	*	*		

Event	Event description	Inspection after			Carried out by:	Inspected by:
		First 25 hr.	First 50 hr.	100 hr. or once a year		
10	EMERGENCY PARACHUTE SYSTEM					
10.1	Emergency parachute system	See Manual for Mounting and Use - Rescue Ballistic Parachute Systems Series Magnum				
10.2	Check the locking of the EPS actuator.			*		
10.3	Remove rescue system cover.			*		
10.4	Check the attachment of the rocket holder and the actuator.			*		
10.5	Check the attachment of the parachute container.			*		
10.6	Check the attachment of straps to the firewall and attachment of steel rope at the auxiliary spar.			*		
10.7	Check the condition and arrangement of parachute straps.			*		
10.8	Install rescue system cover.			*		
11	TOW RELEASE MECHANISM					
11.1	Tow release mechanism TOST E85.	See tow release mechanism TOST E85 manufacturer's instructions				
11.2	Remove the tow release mechanism.			*		
11.3	Check the tow release mechanism.			*		
11.4	Install back the tow release mechanism.			*		
11.5	Check the tow release lever for free movement, tension of control cable, bolt joints, lubrication of control cable.			*		
11.6	Check the attachment of tow release mechanism in the fuselage for delamination, bolt joints.			*		

3.6.3. List of periodical inspections of Rotax 912 and Rotax 914

Inspection of engine has to be performed according to the Maintenance Manual of engine producer. List of scheduled maintenance checks with intervals for Rotax 912 is available in Chapter 05-20-00 of MAINTENANCE MANUAL for Rotax ENGINE TYPE 912 SERIES.

List of scheduled maintenance checks with intervals for Rotax 914 is available in Chapter 05-20-00 of MAINTENANCE MANUAL for Rotax ENGINE TYPE 914 SERIES.

3.6.4. Periodical inspection of propeller

Inspection of propeller has to be performed according to the manufacturer Operator's Manual.

For periodical inspection intervals of propeller EVRA PERFORMANCE LINE 175/xxx/805.5 refer to:

- The Tips, Practices, Mounting and Maintenance for Propeller EVRA, actual valid revision.

For periodical inspection intervals of propeller WOODCOMP SR3000/2N refer to:

- The Operator's Manual, Electrical Adjustable Aircraft Propeller SR3000/2N, actual valid revision.

For periodical inspection intervals of propeller WOODCOMP SR2000DN refer to:

- The Operator's Manual, Electrical Adjustable Aircraft Propeller SR2000DN, actual valid revision.

3.7. Lubrication

3.7.1. Lubrication fundamentals

There are some inaccessible joints and control system parts inside a wing and fuselage, that have been cleaned and lubricated during aircraft assembly and next lubrication will be performed during a periodic inspection.

On the other side, there are some parts, e. g. landing gear, which are exposed to external conditions and to varying loads. Those parts are inspected during pre-flight and periodical inspections and should be lubricated on condition, but at least at intervals specified below.

3.7.2. Recommended lubricants

Thoroughly clean lubricated points before lubrication.

Use the manufacturer's recommended greases or equivalent greases that meet the following properties:



Vaseline: Lithium grease, suitable for bearing applications in mobile technology and industry. Temperature range of use from -30 °C to +120 °C. Consistency NLGI 3 (NLGI classification). The manufacturer recommends MOL Liton LTA 3EP.



Lubrication oil: Semi-synthetic oil, resistant to high pressure. Suitable for lubrication of points with high pressure loads, e. g. push rods, Bowden cables, joint connections. Temperature range of use from -35 °C to +180 °C. The manufacturer recommends the use of HHS 2000.

3.7.3. Lubricating points

	Lubrication point	Every 100 h or annually	Lubricant
Engine	Oil change according Maintenance Manual for Rotax Engine Type 912/914 Series, Ref. No.: MML-912/914	-	-
Propeller	See Operator's Manual.	-	-
Engine installation	Throttle control cables at the entry to the Bowdens.	*	
	Attachment of the throttle control cables at carburettors.	*	
	Throttle controller.	*	
	Choke control cables at the entry to the Bowdens.	*	
	Attachment of the choke control cables at carburettors.	*	
	Choke shaft components at carburettors.	*	
Heating and venting system	Axles of heating and venting flap.	*	
	Pull-push control cables of heating and venting flap at the entrance to the Bowdens.	*	
Air induction system	Axles of the air filter holder with pre-heating (only if installed).	*	
	Pull-push control cable of carburettor pre-heating flap at the entrance to the Bowden (only if installed).	*	
Brake system	Revolving points of brake lever.	*	
Canopy	Canopy hinges.	*	 
	Canopy closing mechanism latch.	*	 
	Ball joints of gas struts.	*	
Nose landing gear (model Club)	Bushings of nose landing gear upper and lower supports.	*	
	Guide wheels axle.	*	 
	Connecting points of control system pull-push rods.	*	
Nose landing gear (model Speed)	Trailing link joint.	*	
	Drag strut joints.	*	
	Gas strut's ball joints. Hydraulic cylinder joints.	*	
	Nose leg attachments to the engine mount and drag strut.	*	 
	Control cables attachments to the nose leg.	*	
Main landing gear (model Speed)	Trailing link joint.	*	 
	Drag strut joints.	*	 
	Gas struts and hydraulic cylinders joints.	*	 

	Lubrication point	Every 100 h or annually	Lubricant
Elevator control system	Movable connecting points of elevator control system.	*	
	Sliding bearings on the control stick's torsion tube.	*	
	Movable connecting points of trim system.	*	
Rudder control system	Movable connecting points of control pull-push rods of nose landing gear (only model Club).	*	
	Sliding bearings of foot control torsion tubes.	*	
	Bayonet sockets.	*	
	Movable joints of rudder pedals.		
	Movable connecting points from foot control up to the rudder attachment.	*	
Aileron control system	Movable connecting points of aileron control system.	*	
	Sliding casings of pull-push rods in wing root ribs.	Every 200 h or annually	
Wing flaps control system	Movable connecting points of wing flaps control system and guide tube (central console).	*	
	Ball joints of gas struts.	*	
	Sliding bearings of the torsion tube.	*	
Wing	Wing bushings and pins.	Every 200 h or annually	
Elevator	Hinges.	*	
Rudder	Hinges.	*	
Ailerons	Hinges.	*	
Wing flaps	Hinges.	*	
Tow release mechanism	Control cable. Tow release mechanism.	*	

3.8. Mechanism adjustment

3.8.1. Torque moments

		Strength class									
Metric thread		4D	5D	4S	6E	5S	5R	6S	8G	10K	12K
M4	N.m kg.m					1,67 0,17					
M5	N.m kg.m					3,45 0,35					
M6	N.m kg.m	4,31 0,44	4,90 0,50	5,39 0,55	5,88 0,60	6,86 0,70	7,84 0,80	8,33 0,85	9,80 1,00	13,72 1,40	16,67 1,70
M7	N.m kg.m	5,88 0,60	7,84 0,30	8,82 0,90	9,80 1,00	10,78 1,10	11,76 1,20	12,74 1,30	14,70 1,50	20,59 2,10	25,49 2,60
M8	N.m kg.m	8,33 0,85	10,78 1,10	12,74 1,30	13,72 1,40	15,69 1,60	17,65 1,80	19,61 2,00	22,55 2,30	32,36 3,30	38,24 3,90
M10	N.m kg.m	16,18 1,65	21,57 2,20	24,51 2,50	27,45 2,80	31,38 3,20	34,32 3,50	37,26 3,80	44,12 4,50	61,78 6,30	73,54 7,50
M12	N.m kg.m	27,45 2,80	36,28 3,70	42,16 4,30	47,07 4,80	52,95 5,40	58,83 6,00	63,74 6,50	74,53 7,60	104,93 10,70	125,52 12,80
M14	N.m kg.m	43,14 4,4	58,83 6,00	66,68 6,80	73,54 7,50	78,54 8,00	93,16 9,50	98,06 10,00	117,67 12,00	164,75 16,80	196,13 20,00
M16	N.m kg.m	60,80 6,20	78,45 8,00	93,13 9,5	98,06 10,00	107,87 11,50	127,48 13,00	131,29 14,00	164,75 16,80	225,55 23,00	274,58 28,00
M18	N.m kg.m	88,25 9,00	117,67 12,0	137,29 14,00	156,90 16,00	171,61 17,50	196,13 20,00	205,93 21,00	245,16 25,00	343,23 35,00	411,87 42,00
M20	N.m kg.m	117,67 12,00	156,90 16,00	176,51 18,00	196,13 20,00	225,55 23,00	245,16 25,00	274,58 28,00	313,81 32,00	441,29 45,00	539,36 55,00
M22	N.m kg.m	147,09 15,00	196,13 20,00	225,55 23,00	245,16 25,00	284,39 29,00	313,81 32,00	33,42 34,00	392,26 40,00	558,97 57,00	676,65 69,00
M24	N.m kg.m	205,93 21,00	274,58 28,00	313,81 32,00	353,03 36,00	392,26 40,00	441,29 45,00	470,71 48,00	549,17 56,00	755,11 77,00	970,85 99,00
Ultimate strength		37	50	37	-	50	-	60	80	100	120
σ in %		25	22	14	-	7	-	8	12	8	8
Yield point		21	28	32	36	40	45	48	64	90	108

3.8.2. Necessary maintenance tools

No special tools are need for WT9 Dynamic LSA and WT-9 Dynamic maintenance except of Beringer jig for the replacement of tyres.

3.8.3. Inspection holes

There are inspection holes in the wing lower skin below the aileron control bellcrank. Transparent acryl glass cover glued by silicone closes the hole.

There are not additional special inspection holes for an access into the airframe.

3.9. Parts with life limits

There are items listed below that have to be replaced with the new items after their lifetime expired. Other parts are replaced on condition or on the base of elongation of operation limit after TBO.

Item	Interval	Action	Note
Airframe	3000 hours	Ext. inspection	Initial life limit
Engine Rotax 912 ULS	2000 hours or 15 years	TBO	Whichever comes first
Rotax 914 UL	2000 hours or 15 years	TBO	Whichever comes first
Propeller EVRA PERFORMANCE LINE 175/xxx/805.5	-	-	No overhaul time
Propeller SR2000DN	1200 hours or 60 months	TBO	Whichever comes first
Propeller SR3000/2N	1200 hours or 60 months	TBO	Whichever comes first
Tow release mechanism TOST E85	2000 cycles	TBO	-
Rubber parts: Engine rubber seals, silentblocks, rubber hoses of engine systems.	5 years	Replace	-
Safety belts	12 years	Replace	-
Emergency Parachute System Magnum 601 S-LSA	18 years	Replace	Every 6 years repack
Battery	5 years or capacity drop below 80%	Replace	Whichever comes first
ELT main unit battery	5 years	Replace	-
ELT remote unit battery	5 years	Replace	-
EFIS / EMS D-1000 unit battery	At capacity drop	Replace	-

4. REPAIRS

CONTENT

Chapter		Page
4.1.	REPAIR OUTLINES	4-3
4.2.	REPAIR CLASSIFICATION	4-3
4.3.	CONSTRUCTION	4-3
4.4.	MATERIALS	4-3
4.5.	REPAIR PREPARATION	4-4
4.6.	REPAIR CLASS 4	4-5
4.7.	REPAIR CLASS 3	4-5
4.8.	REPAIR CLASS 2	4-5
4.9.	REPAIR CLASS 1	4-7
4.10.	REPAIRS OF A METAL PARTS	4-7
4.11.	TEST FLIGHT AFTER A REPAIR	4-7

4.1. Repair outlines

Describe procedures apply to minor damages only. Major repairs can be carried out by the aircraft manufacturer or a repair workshop approved by Civil Aviation Authority (CAA). Repair of the sandwich shells, from which the aircraft is made, are very difficult.

4.2. Repair classification

The repairs are divided according to the influence to the airworthiness of all aircrafts into following classes:

Repair class 1:

Large damages required a partial replacement of the airframe important or large repairs can be carried out by the aircraft manufacturer or a repair workshop approved by local Civil Aviation Authority.

Repair class 2:

Destruction of the whole shell (also the inner glass fibre laminate destroyed), however small size only.

Repair class 3:

Simple surface damage (only the outer glass fibre laminate damaged) and small damage of the foam filling.

Repair class 4:

The damages caused by the scores and the scrapes without the outer glass fibre laminate damage and without the breakage of the element.

4.3. Construction

WT9 Dynamic LSA and WT-9 Dynamic airframe consists of a sandwich shells from advanced composite material. The shell is of three-layer construction. The external and internal shell layers are made of a glass and carbon fibre fabrics, which are saturated with a resin. Between them there is a filling from a hard foam panels (Polyurethane foam HEREX 3–8 mm thick).

4.4. Materials

The following materials apply to all advanced composite material parts:

Resin:	L 285 type	Manufacturer Scheufler Firm
Hardener:	L 286 type	Manufacturer Scheufler Firm
Weight mixing rate:	100:38	(Resin:Hardener)
Volume mixing rate:	2:1	(Resin:Hardener)

The given mixing proportion of components must be observed as exactly as possible. Mixture of a resin and a hardener must be stirred thoroughly until there are no cloudiness and no bubbles in a vessel. The thickeners and the resin-fillers are added after stirring.

The hardening of the mixture is 15 hours at a temperature 55 °C. The mixture reaches final properties after this time.

Reinforcements:

GLASS FABRICS			
Marking	Weave	Weight (g/m ²)	Application
91110	Cross twill	110	Inner skins
92110	Cross twill	163	Fuselage, wing, control surfaces
92125	Cross twill	285	Fuselage, wing
92145	Unidirectional	216	Fuselage, wing
EC9-756 K43	Roving		
CARBON FABRICS			
Marking	Weave	Weight (g/m ²)	Application
CF200	Cross twill	200	Fuselage
CF140	Unidirectional	140	Fuselage, stabilizer
TENAX HTA 5131	Roving		

Other material:

Core material:	HEREX C70.55
Resin fillers:	Aerosil, Chopped cotton wool, white Microballoons
Lacquer:	Acryl
Steel:	L-CM3.6 (AISI 4130, DIN 1.7214.4)
Light metals:	Duralumin Z 424203.61 (ASM 2024)

4.5. Repair preparation

You should first inspect the damaged area to determine exactly the extent of damage, type of construction and type and density of weave concerning to main dimensions of the part. The aircraft WT9 Dynamic LSA and WT-9 Dynamic has the first layer of the sandwich outer layers from the 92110 cloth with 45° diagonal weave direction to the fuselage centre line or to the wing centre line. The first step is removing all damage parts and all portion of the shell that has become delaminated from a damage area. A repair area should be washed with soap and dried up. Then clean a repair area with carbon tetrachloride or acetone. Prepare clean vessels for stirring the mixtures of a resin and a hardener

4.6. Repair class 4

The erosion damages caused by the rain, the scores, the scrapes without the outer glass fibre laminate damage require the lacquer works only. Suitable is PE – Lackvorgelat, white No. 3-69469 and PE – Hardener No. 07-20500. Mixing proportions by weight 100 parts Lackvorgelat to 10 parts hardener. The lacquer remains to gel (app. 30 minutes) for filling more deep scrapes. In case of first cloth layer damage, then whole repair area cleans well and sands smooth with an abrasive paper. Lay on the cloth layer and, if the resin is dry, the repair area can be puttied and repainted with lacquer.

4.7. Repair class 3

If the outer shell receives a puncture or a fracture, tap to determine the extent of delamination from the foam. Follow by removing the lacquer with a sanding disc or block and remove from the foam the portion of the shell that has become delaminated. Around the edge of the damaged area where the shell is still firmly bonded, scarf with an abrasive block or a plane blade at least 4 cm (for each cloth layer about 15 mm is necessary). After scarfing the shell, blow out thoroughly the whole repair area including the pores of the foam and wash the scarf with carbon tetrachloride or acetone. Now fill the hole in the foam with microballoons and simultaneously fill the pores of the exposed foam. Then lay two patches of the 92110 cloth with diagonal weave direction (stepwise largest patch first) over the damaged area. The applied cloth must be dry and dust free. After hardening (app. 8 hours at 20 °C) the damaged area should be smoothed, filled and painted. In smoothing take care that only the edges of the patches are sanded (fig. 4.7-1).

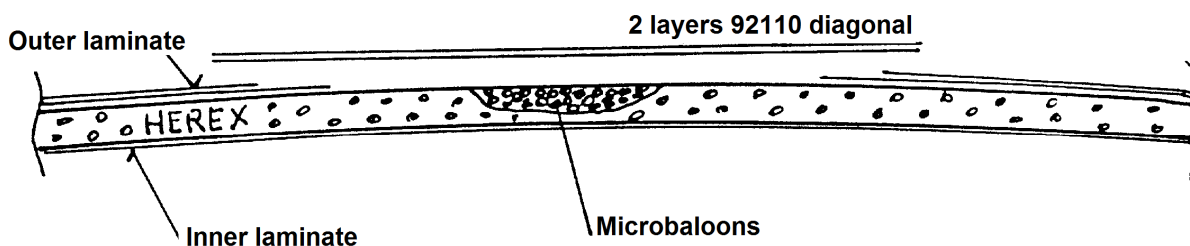


Fig. 4.7-1 Repair class 3

4.8. Repair class 2

If there is a through hole in the sandwich shell then the inner laminate must be repaired. Remove the outer laminate in the region of the region of the damage that is no longer bonded to the foam and enlarge the hole in the foam and inner laminate until good bonding to the foam is evidenced. Then the foam is further removed 20 mm around the hole in the inner laminate and the outer laminate scarfed as under Repair class 3 (fig. 4.8-1).

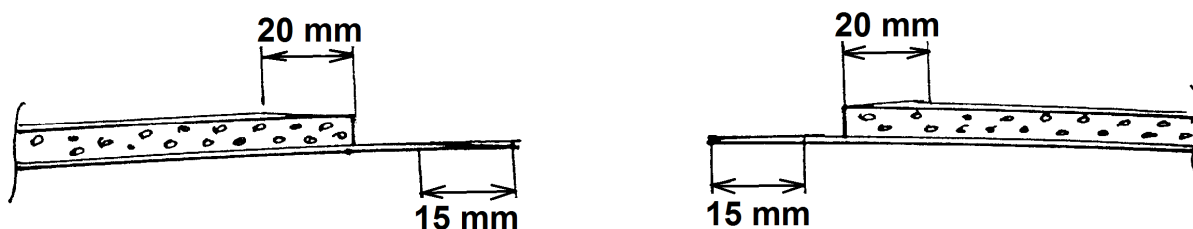


Fig. 4.8-1 Repair class 2-1

Now the projecting inner laminate is cleaned of any foam and feathered. If the hole in the foam is smaller than a fist then glue with Patex a thin plywood or polyester plate from the inside to the laminate, lay on the inner laminate (2 layers 92110 diagonal) and fill the hole in the foam with microballoons mixed with Styropor kernels or crumbled Styropor. After hardening (app. 8 hours at 20 °C) the damaged area should be smoothed, sanded and apply the outer patches (2 layers 92110 diagonal) (fig. 4.8-2).

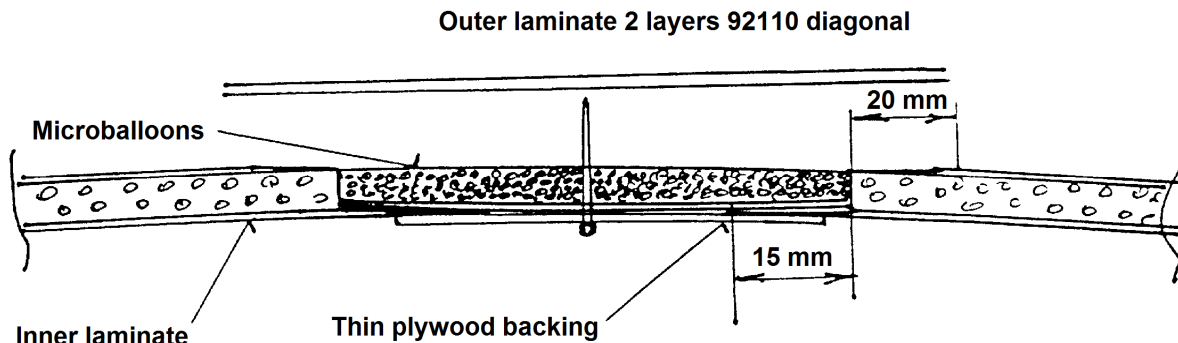


Fig. 4.8-2 Repair class 2-2

A tip on gluing the plywood plate – the hole in the inner laminate should always be a bit oblong so as to insert the plywood backing plate. Before inserting the plywood drive through the middle of the ply a pin or nail by which it can be drawn against the inner shell. With additional nails or pins it is in this manner possible to close very large holes to the proper contour to lay the cloth patch on. Basically it is possible to repair also larger shell parts in the foregoing manner. Because of weight you should use a plug of foam in place of the microballoons and Styropor kernels. In this case you cut or sand a plug of foam to fit the hole, spread the inner laminate. The inner laminate must harden before doing further work. If the hardening is completed at least progressed so that the laminate does not separate from the foam, then glue the plug in the hole with thickened resin (chopped cotton wool, microballoons). The foam with laminate on one side is flexible so that it can be fitted to the repair place contour (if necessary warm the foam with hairdryer and bend). Once the foam is glued it can be smoothed, puttied with microballoons and the outer laminate applied (2 layers 92110 diagonal) (fig. 4.8-3).

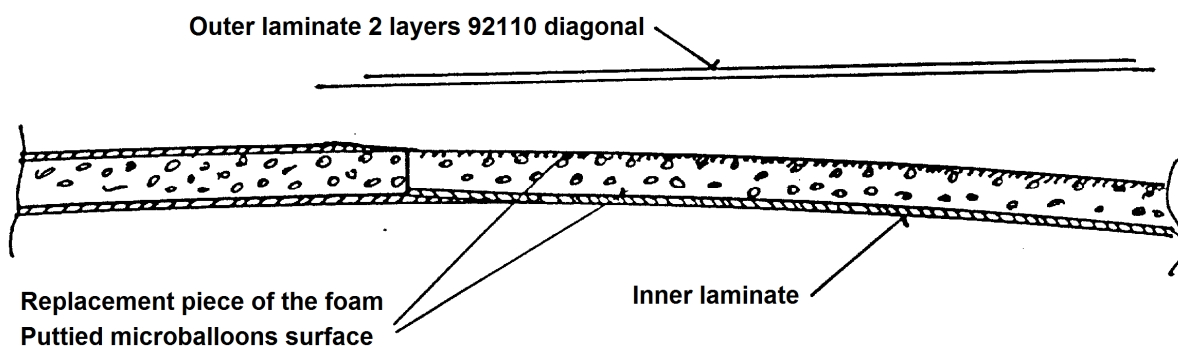


Fig. 4.8-3 Repair class 2-3

4.9. Repair class 1

These repairs have serious character and can be carried out by the aircraft manufacturer or a repair workshop approved by local Civil Aviation Authority (CAA). In any case contact the aircraft manufacturer.

4.10. Repairs of a metal parts

In case of a damage of any fittings, if a damage reason was not designate immediately, contact the aircraft manufacturer. It is necessary take account to an element function, a material composition, a processing technology and etc. The aircraft manufacturer can evaluate all these factors only.

Welding should be carried out only by an approved aircraft welder. All welds made by the aircraft manufacturer are by the Argon-arc welding method.

4.11. Test flight after a repair

The test flight should be performed above all in following cases:

After repair or replace of fixed surfaces – wing, fin, stabilizer, or control surfaces – elevator, aileron or flap. Flight characteristics and aircraft stability can be affected when above mentioned part is replaced or adjusted. Therefore a test flight should be performed to check aircraft flight characteristics, control surfaces setting, manoeuvrability, stability and stall characteristics. The characteristics are check during taxiing, take-off, climbing, cruise, descent, approach and landing.

Test flight flying time:

Test flight flying time takes about 40 minutes if the test flight is performed according to the Flight Test Record.

Aircraft inspection before a Test flight:

Prior to the test flight the aircraft should be thoroughly inspected, weighed, found faults debugged and the aircraft should be prepared for the flight (tank etc.).

Test crew:

Only qualified persons (test pilots) are permitted to perform a test flight. In-flight found faults should be debugged forthwith the test flight.

CAUTION

Only qualified pilot may perform a test flight!

5. ANNEXES

CONTENT

Chapter		Page
A.1	Control Surfaces Deflection	5-4
A.2	Weight and Balance Record – empty aircraft	5-5
A.2.1	Model Club	5-5
A.2.2	Model Speed	5-6
A.3	Control Surfaces Weights and Balance	5-7
A.3.1	Model Club	5-7
A.3.2	Model Speed	5-8
A.4	Wiring diagrams	5-9
A.4.1	Common wiring diagrams for models Club and Speed	5-9
A.4.1.1	PCAS	5-9
A.4.1.2	Autopilot (preparation for future installation)	5-10
A.4.1.3	Lights	5-11
A.4.1.4	ELT	5-12
A.4.1.5	Dynon Skyview D-1000	5-13
A.4.1.6	Low value warning	5-14
A.4.2	Model Club “FG912 configuration”	5-15
A.4.2.1	Block Diagram	5-15
A.4.2.2	12V BUS	5-16
A.4.2.3	Engine Rotax 912 ULS	5-17
A.4.2.4	EMS Module	5-18
A.4.2.5	Fuel system	5-19
A.4.2.6	Radio, intercom	5-20
A.4.2.7	Transponder	5-21
A.4.2.8	Single Value Instruments	5-22
A.4.3	Model Club “FG912T configuration”	5-23
A.4.3.1	Block Diagram	5-23
A.4.3.2	12V BUS	5-24
A.4.3.3	Engine Rotax 912 ULS	5-25
A.4.3.4	EMS Module	5-26
A.4.3.5	Fuel system	5-27
A.4.3.6	Radio, intercom	5-28
A.4.3.7	Transponder	5-29
A.4.3.8	Single Value Instruments	5-30
A.4.3.9	Propeller WOODCOMP SR2000 ND	5-31
A.4.4	Model Speed “RG914 configuration”	5-32
A.4.4.1	Block Diagram	5-32
A.4.4.2	12V BUS	5-33
A.4.4.3	Engine Rotax 914 UL	5-34
A.4.4.4	EMS Module	5-35
A.4.4.5	Fuel system	5-36
A.4.4.6	Radio, intercom	5-37

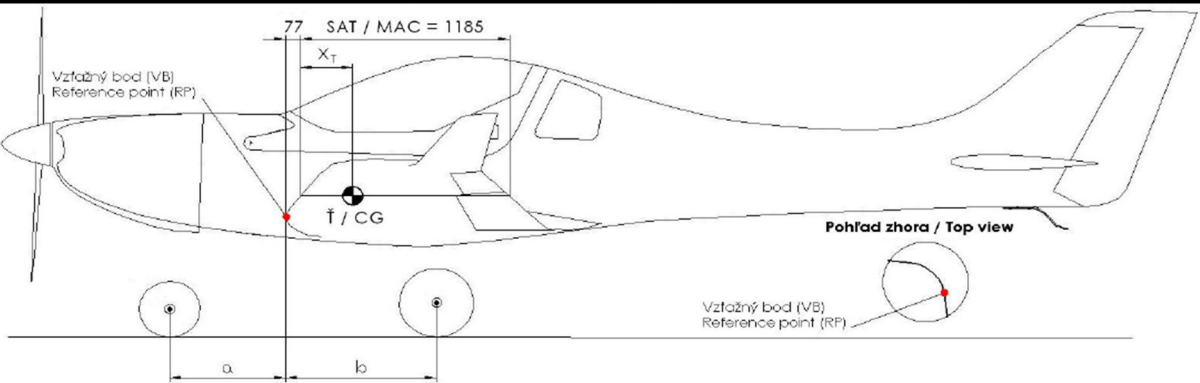
A.4.4.7	Transponder	5-38
A.4.4.8	Single Value Instruments	5-39
A.4.4.9	Propeller WOODCOMP SR3000/2N	5-40
A.4.4.10	Hydraulic and landing gear control	5-41
A.5	Safety of Flight and Service Difficulty Report	5-42

A.1 Control Surfaces Deflection

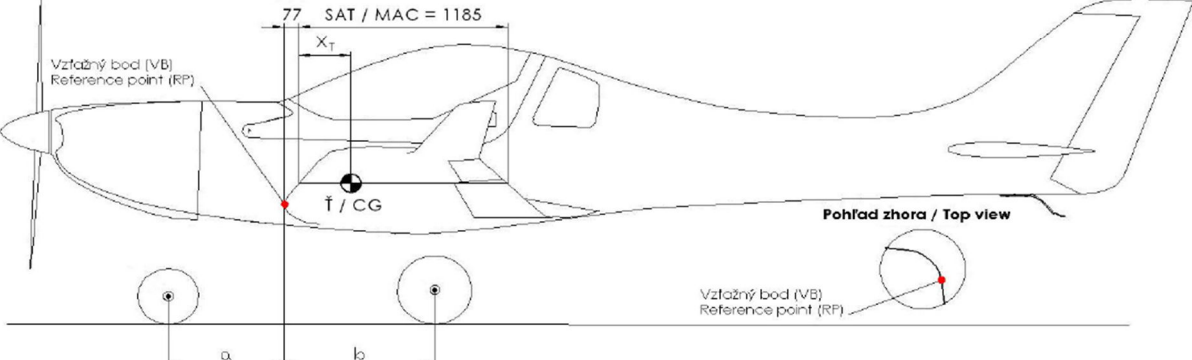
Control Surfaces Deflection Record					
Type: WT9 DYNAMIC LSA	Registration:		S/N:		Date:
Control surface deflection	Upward		Downward		Distance between the measurement point and the turning point
	Specified	Real	Specified	Real	
Left aileron	25°/106 mm		15°/65 mm		252 mm
	Tolerance ±5 mm		Tolerance ±5 mm		
Right aileron	25°/106 mm		15°/65 mm		252 mm
	Tolerance ±5 mm		Tolerance ±5 mm		
Elevator	28°/112 mm		18°/74 mm		240 mm
	Tolerance ±6 mm		Tolerance ±6 mm		
Rudder	Right		Left		320 mm
	25°/135 mm		25°/135 mm		
	Tolerance ±20 mm		Tolerance ±20 mm		
Wing flap deflection		Specified	Real		
			Right	Left	
1. Intermediate		15°/76 mm			295 mm (root rib of the outer wing)
2. Centre		24°/120 mm			295 mm (root rib of the outer wing)
3. Maximum		35°/181 mm			295 mm (root rib of the outer wing)
Deflections tolerance ±6 mm, maximum difference between both flaps deflection ±6 mm					
References and notes:					
Place, Date : Supervisor / Signature					

A.2 Weight and Balance Record – empty aircraft

A.2.1 Model Club

 WEIGHT AND BALANCE RECORD WT9 DYNAMIC LSA			
TYPE / MODEL	SERIAL NUMBER	REGISTRATION MARK	DATE OF ISSUE
WT9 DYNAMIC LSA / Club			
			
Scale position	Weight (kg)	Distance from RP (mm)	Static moment (kg.mm)
Nose wheel		a = -722	
Right main wheel		b = 678	
Left main wheel		b = 678	
Total empty weight (G)*		Total moment (M)	
* Total weight including oil, coolant and ballast (if installed)			
CG position on MAC in mm $X_T \text{ (mm)} = \frac{M}{G} - 77 = \text{_____} - 77 = \text{_____} \text{ mm}$			
CG position on MAC in %MAC (MAC = 1185 mm) $X_{CT} \text{ (% MAC)} = \frac{X_T}{MAC} \cdot 100 = \frac{\text{_____}}{1185} \cdot 100 = \text{_____} \text{ % MAC}$			
Allowed CG position range of empty airplane is from 10% to 14% MAC			
..... Place Date Supervisor stamp and signature			

A.2.2 Model Speed

 WEIGHT AND BALANCE RECORD WT9 DYNAMIC LSA			
TYPE / MODEL	SERIAL NUMBER	REGISTRATION MARK	DATE OF ISSUE
WT9 DYNAMIC LSA / Speed			
			
Scale position	Weight (kg)	Distance from RP (mm)	Static moment (kg.mm)
Nose wheel		a = -748	
Right main wheel		b = 675	
Left main wheel		b = 675	
Total empty weight (G)*		Total moment (M)	
* Total weight including oil, coolant and ballast (if installed)			
CG position on MAC in mm			
$X_T \text{ (mm)} = \frac{M}{G} - 77 = \text{_____} - 77 = \text{_____} \text{ mm}$			
CG position on MAC in %MAC (MAC = 1185 mm)			
$X_{CT} \text{ (% MAC)} = \frac{X_T}{MAC} \cdot 100 = \frac{\text{_____}}{1185} \cdot 100 = \text{_____} \text{ % MAC}$			
Allowed CG position range of empty airplane is from 10% to 14% MAC			
Place _____ Date _____		Supervisor stamp and signature _____	

A.3 Control Surfaces Weights and Balance**A.3.1 Model Club**

 HMOTNOSTI A VYVÁŽENIE KORMIDIEL – LSA CLUB CONTROL SURFACES WEIGHTS AND BALANCE RECORD – LSA CLUB		
Formulár /Form:	Typ / Model/ Type / Model:	V. č. lietadla/ Airplane S/N:
AS-FORM0-001A	WT9 DYNAMIC LSA / Club	
Použitá metodika merania / Used methodics: AS-MET-0007		

Riadiaca plocha Control surface	Predpísané hodnoty Specific values		Skutočné hodnoty Real values			Vyhovuje Complied
	Hmotnosť Weight	St. moment Static moment	Hmotnosť Weight	Sila Force	St. moment Static moment	
Ľavé krídelko Left aileron	1,556 – 1,714 kg	17,298 – 30,298 Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Pravé krídelko Right aileron	1,556 – 1,714 kg	17,298 – 30,298 Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Rameno pre krídelko / Aileronarm: $l_a = 25,2$ cm						
Ľavé výšk. kormidlo Left elevator	1,282 – 1,488 kg	9,198 – 20,398 Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Pravé výšk. kormidlo Right elevator	1,282 – 1,488 kg	9,198 – 20,398 Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Rameno pre výškové kormidlo / Elevator arm: $l_e = 24,0$ cm						
Ľavá vztlak. klapka Left wing flap	2,250 – 2,750 kg	178,2 – 217,8 Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Pravá vztlak. klapka Right wing flap	2,250 – 2,750 kg	178,2 – 217,8 Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Rameno pre vztlakovú klapku / Wing flap arm: $l_f = 32,0$ cm						
Smerové kormidlo Rudder	1,611 – 1,969 kg	(-38,5) – (-31,5) Ncm	kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:						
Rameno pre smerové kormidlo / Rudder arm: $l_r = 31,0$ cm						
Hmotnosti a statické momenty riadiacich plôch sú v rozsahu dovolených tolerancií definovaných v dokumente: Weights and static moments of control surfaces are within tolerances defined in document: CR-AESDY01-0700-002, Ground Vibration Test and Flutter Analysis with additional balance masses, Rev. A.05 dated 25.02.2013						
Vykonat: Performed by:			Kontroloval: Inspected by:			
Meno, dátum, podpis Name, date, signature			Meno, dátum, podpis Name, date, signature			

A.3.2 Model Speed

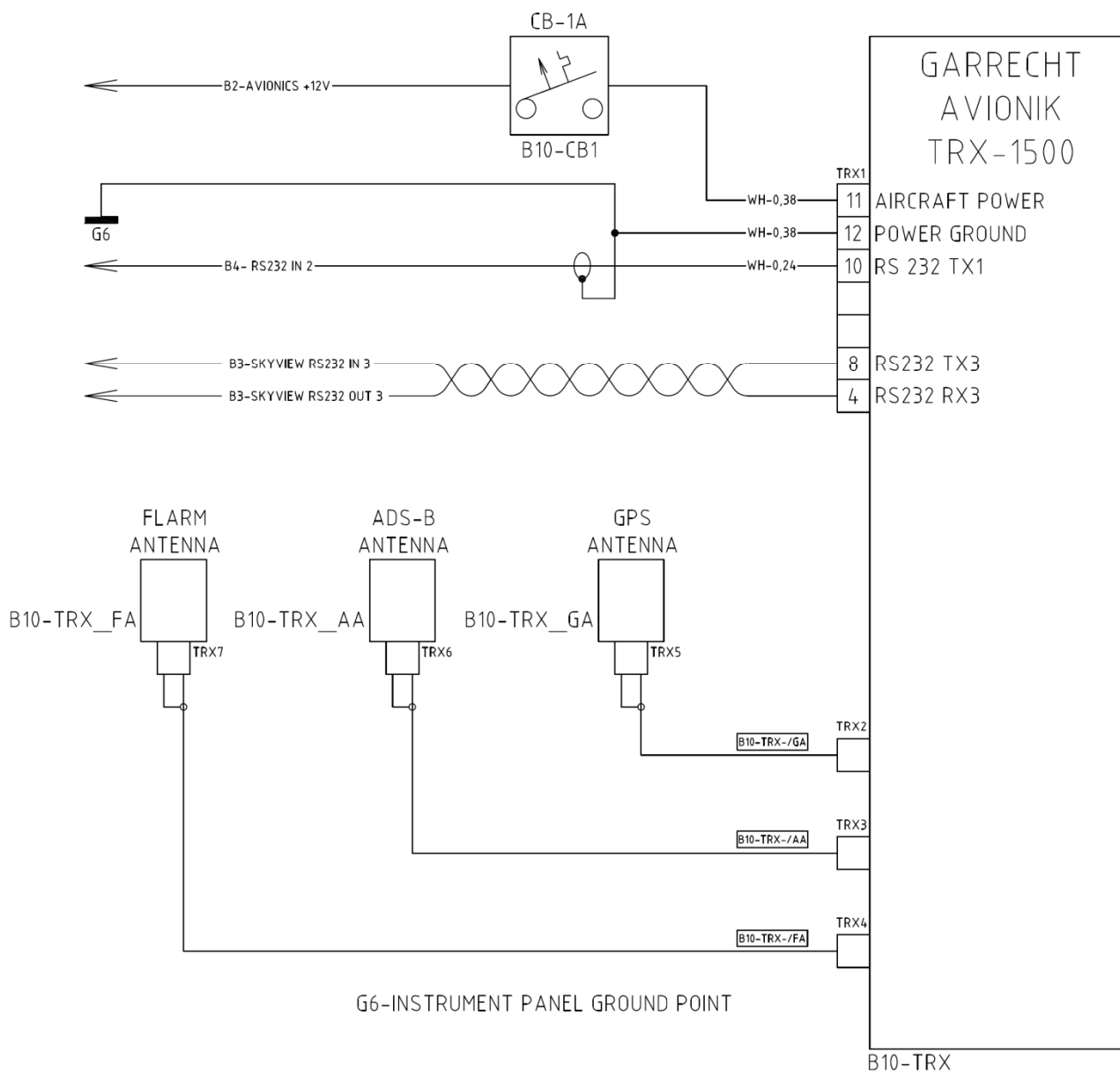
 EASA AP-DOA, Approval No. AP356		HMOTNOSTI A VYVÁŽENIE KORMIDIEL - SKLO CONTROL SURFACES WEIGHTS AND BALANCE RECORD - GLASS			
Formulár / Form:		Typ / Model / Type / Model:		V. č. lietadla / Airplane S/N:	
AS-FORM0-001B		WT9 Dynamic LSA / Speed			
Použitá metodika merania / Used methodics: AS-MET-0007					

Riadiaca plocha Control surface	Predpísané hodnoty Specific values		Skutočné hodnoty Real values			Vyhovuje Complied
	Hmotnosť Weight	St. moment Static moment	Hmotnosť Weight	Sila Force	St. moment Static moment	
Ľavé krídelko Left aileron	☒ Bez vyváženia Without balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	0,75 – 0,95 kg	70,0 – 100,0 Ncm				
Pravé krídelko Right aileron	☐ S vyvážení With balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	1,00 – 1,25 kg	20,0 – 60,0 Ncm				
Rameno pre krídelko / Aileron arm: $l_a = 25,2$ cm						
Ľavé výšk. kormidlo Left elevator	☒ Bez vyváženia Without balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	1,00 – 1,20 kg	60,0 – 85,0 Ncm				
Pravé výšk. kormidlo Right elevator	☐ S vyvážení With balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	1,15 – 1,40 kg	30,0 – 68,0 Ncm				
Rameno pre výškové kormidlo / Elevator arm: $l_e = 24,0$ cm						
Ľavá vztlak. klapka Left wing flap	☒ Bez vyváženia Without balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	2,50 – 3,30 kg	180,0 – 220,0 Ncm				
Pravá vztlak. klapka Right wing flap	☐ S vyvážení With balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	3,50 – 4,70 kg	(-20,0) – 25,0 Ncm				
Rameno pre vztakovú klapku / Wing flap arm: $l_f = 32,0$ cm						
Smerové kormidlo Rudder	☐ Bez vyváženia Without balance mass		kg	N	Ncm	☐ Áno Yes ☐ Nie No
V. č. / S/N:	1,50 – 1,90 kg	40,0 – 90,0 Ncm				
	☒ S vyvážení With balance mass					
	1,75 – 2,25 kg	(-40,0) – (-20,0) Ncm				
Rameno pre smerové kormidlo / Rudder arm: $l_r = 31,0$ cm						
Hmotnosti a statické momenty riadiacich plôch sú v rozsahu dovolených tolerancií definovaných v správe: Weights and static moments of control surfaces are within tolerances defined in report: 1/15, Aeroelastic Investigation of the Ultralight DYNAMIC, dated 06.10.2001						
Vykonat: Performed by:			Kontroloval: Inspected by:			
Meno, dátum, podpis Name, date, signature			Meno, dátum, podpis Name, date, signature			

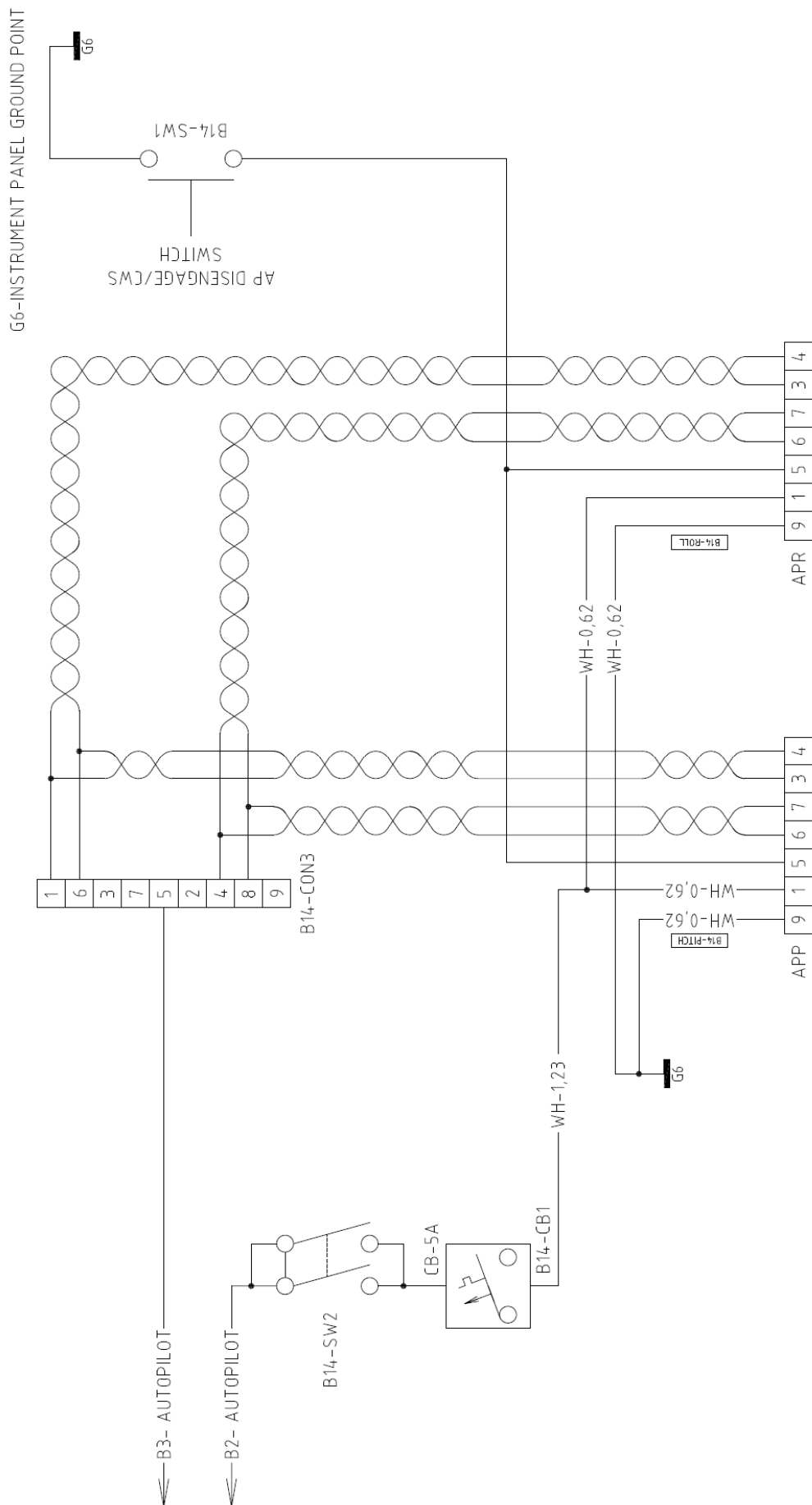
A.4 Wiring diagrams

A.4.1 Common wiring diagrams for models Club and Speed

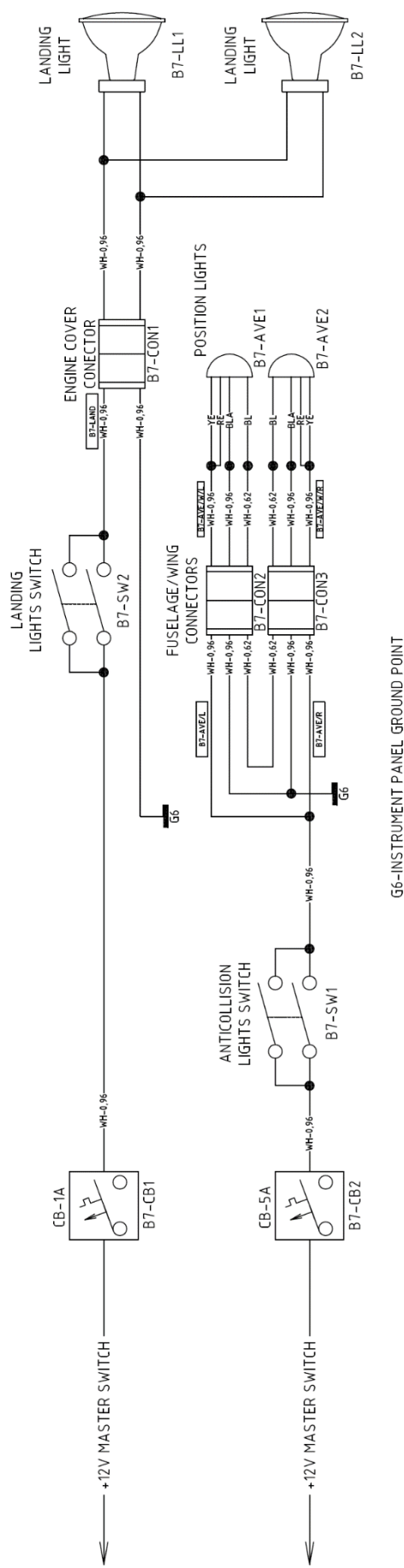
A.4.1.1 PCAS



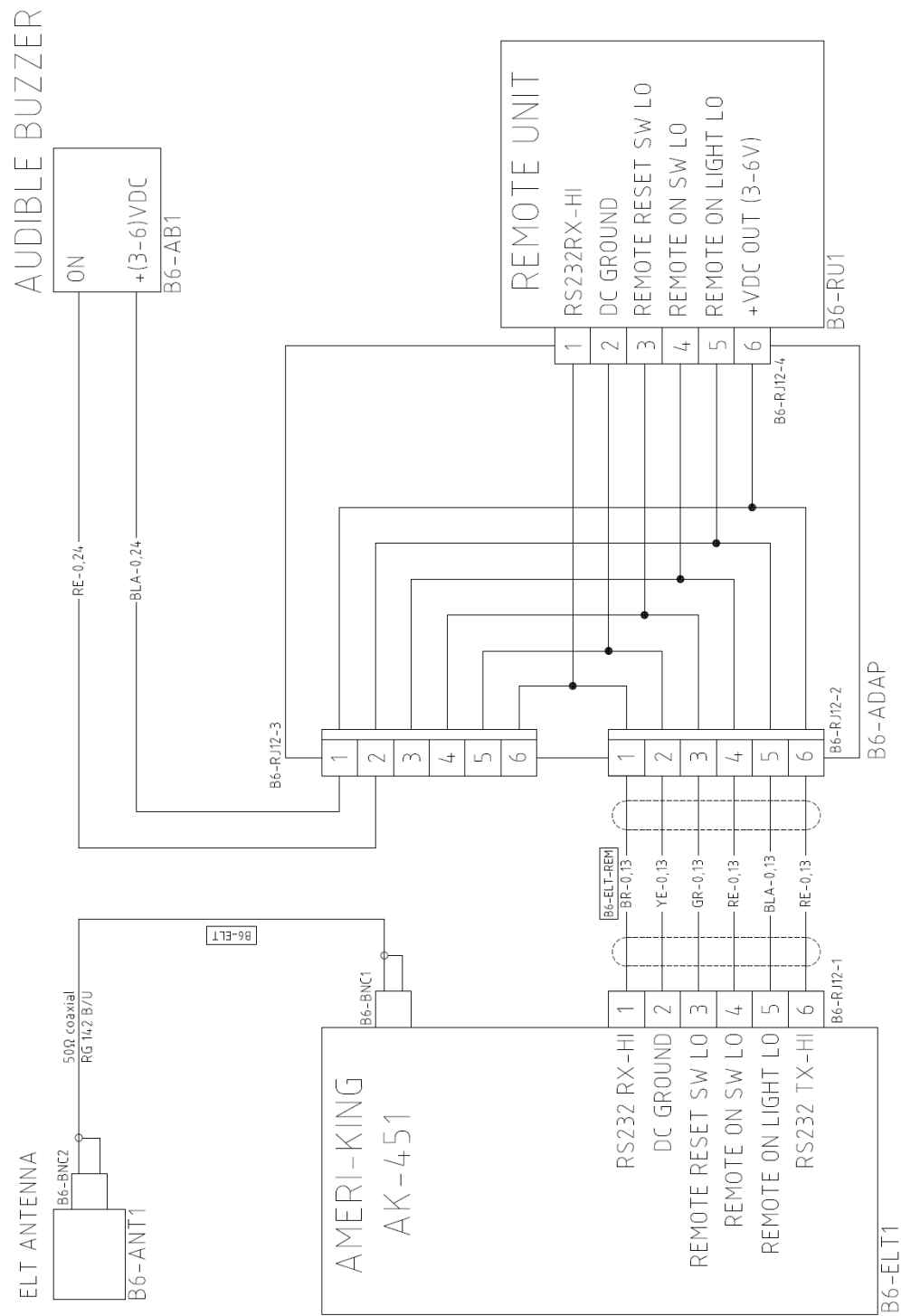
A.4.1.2 Autopilot (preparation for future installation)



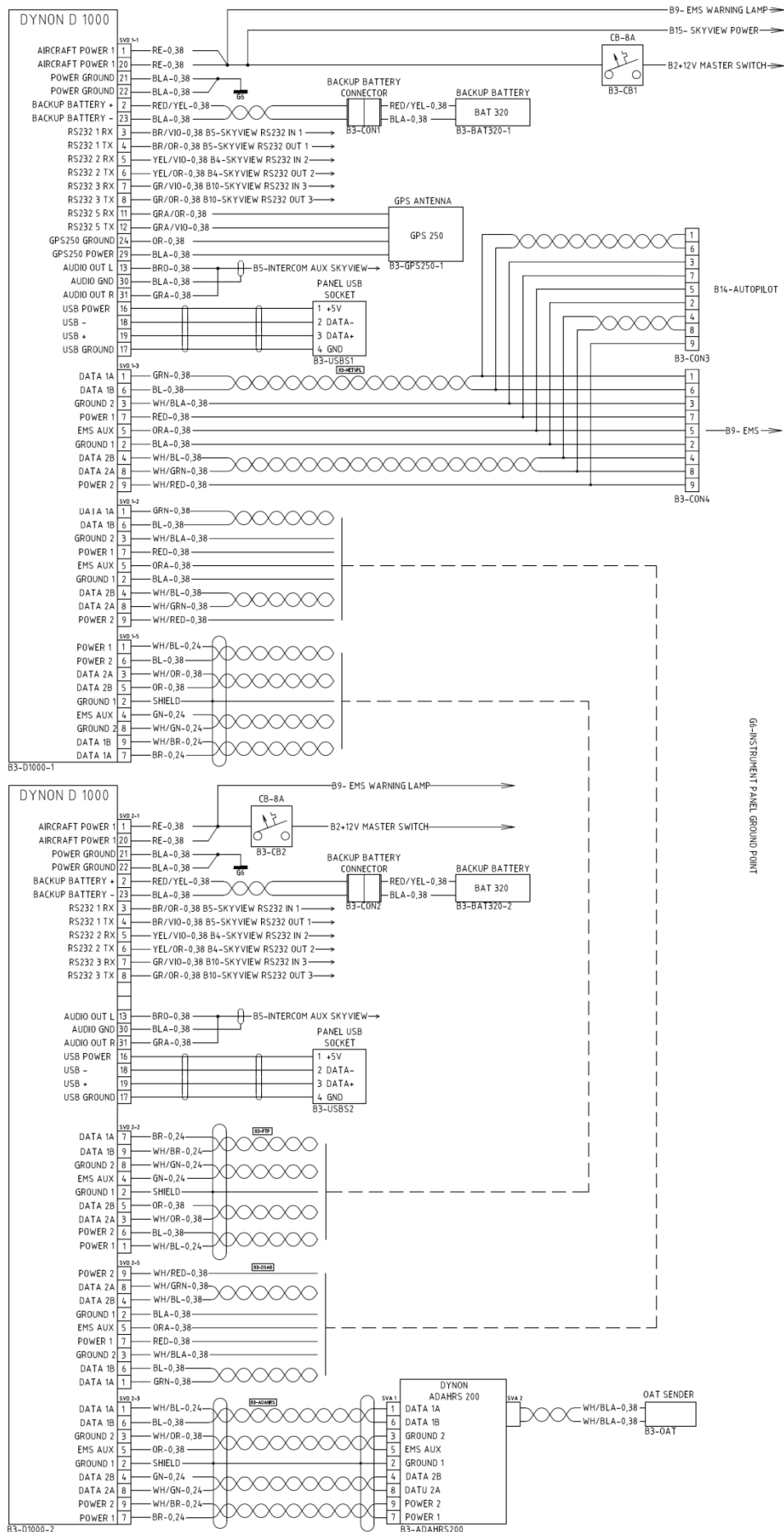
A.4.1.3 Lights



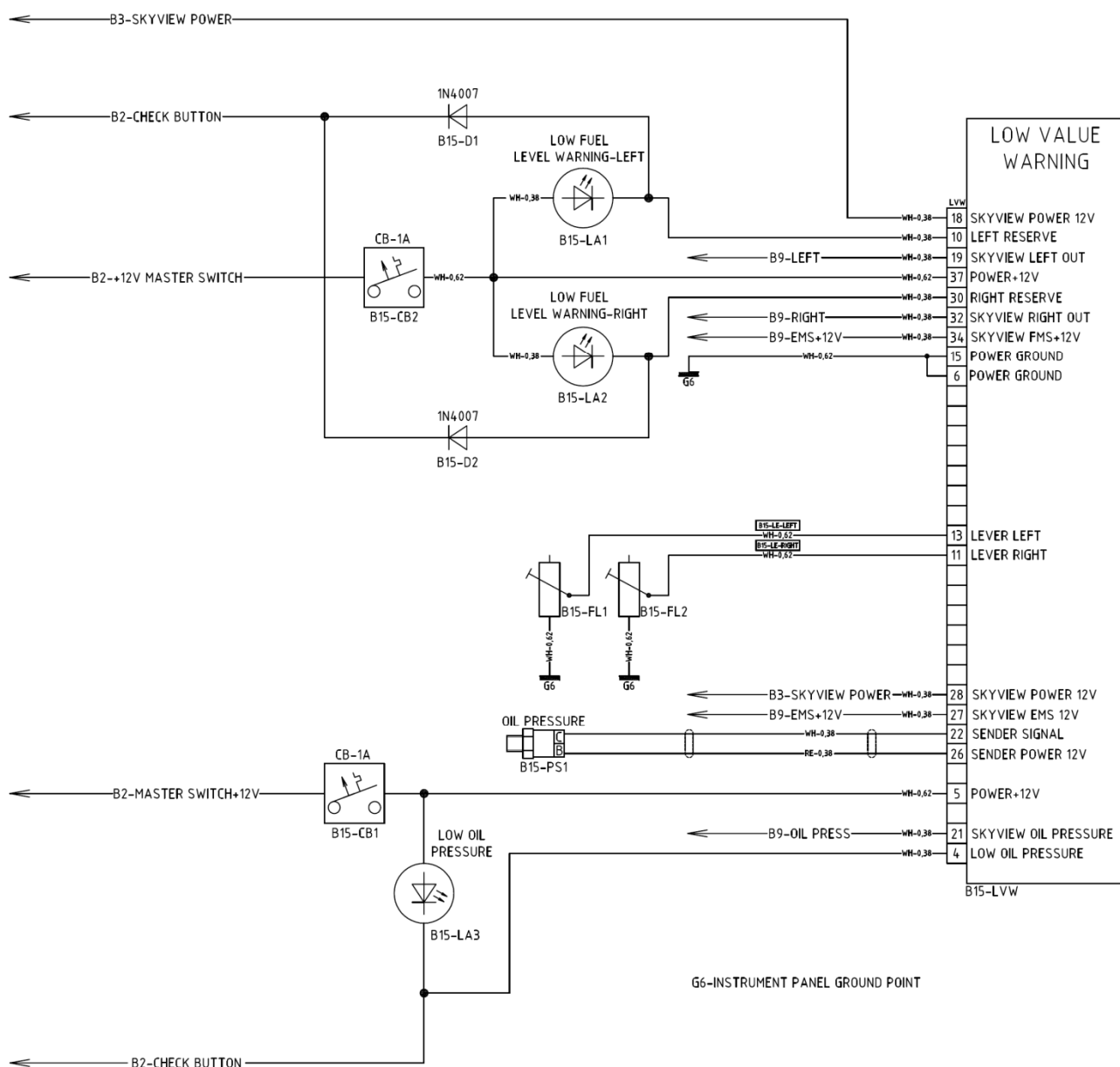
A.4.1.4 ELT



A.4.1.5 Dynon SkyView D-1000

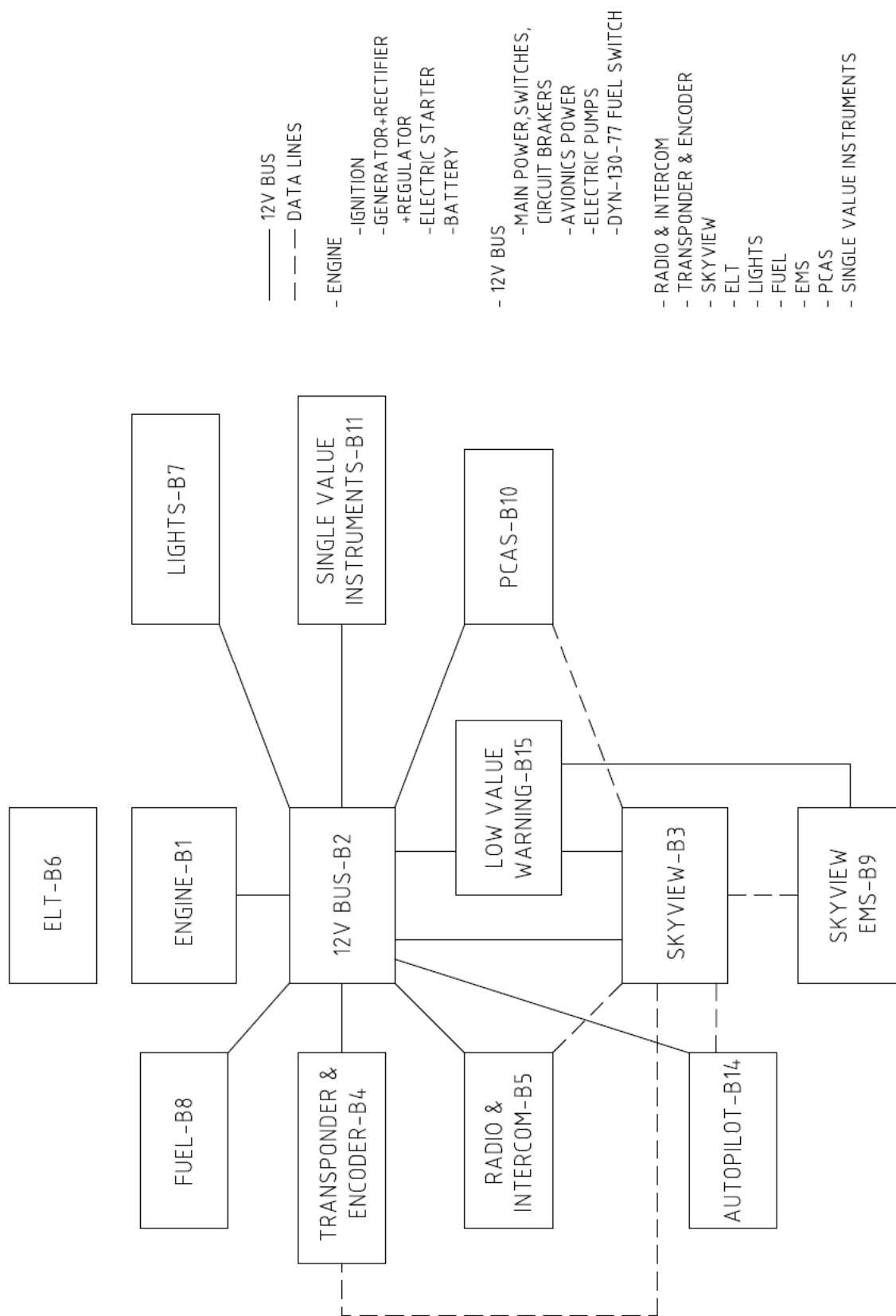


A.4.1.6 Low value warning

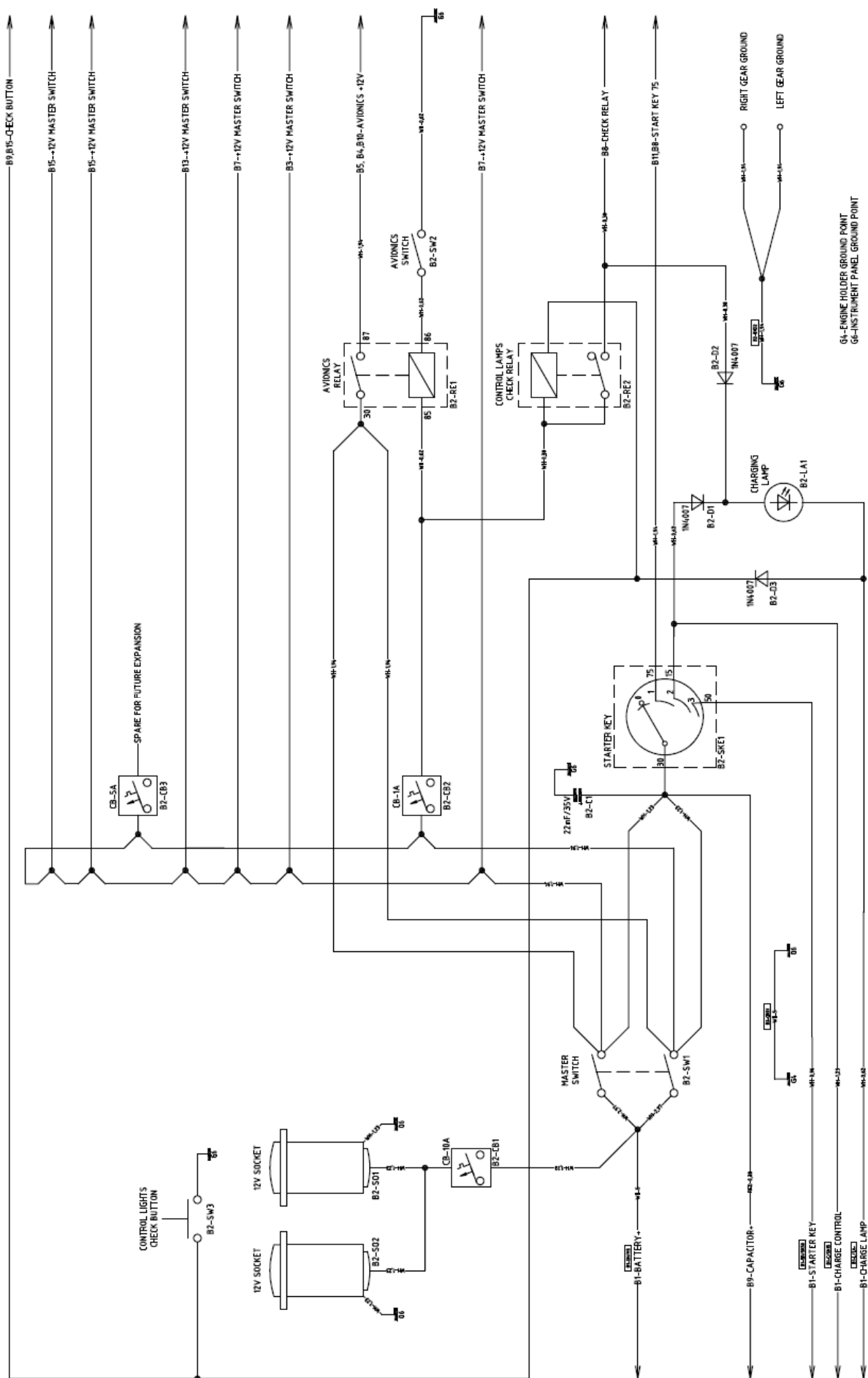


A.4.2 Model Club "FG912 configuration"

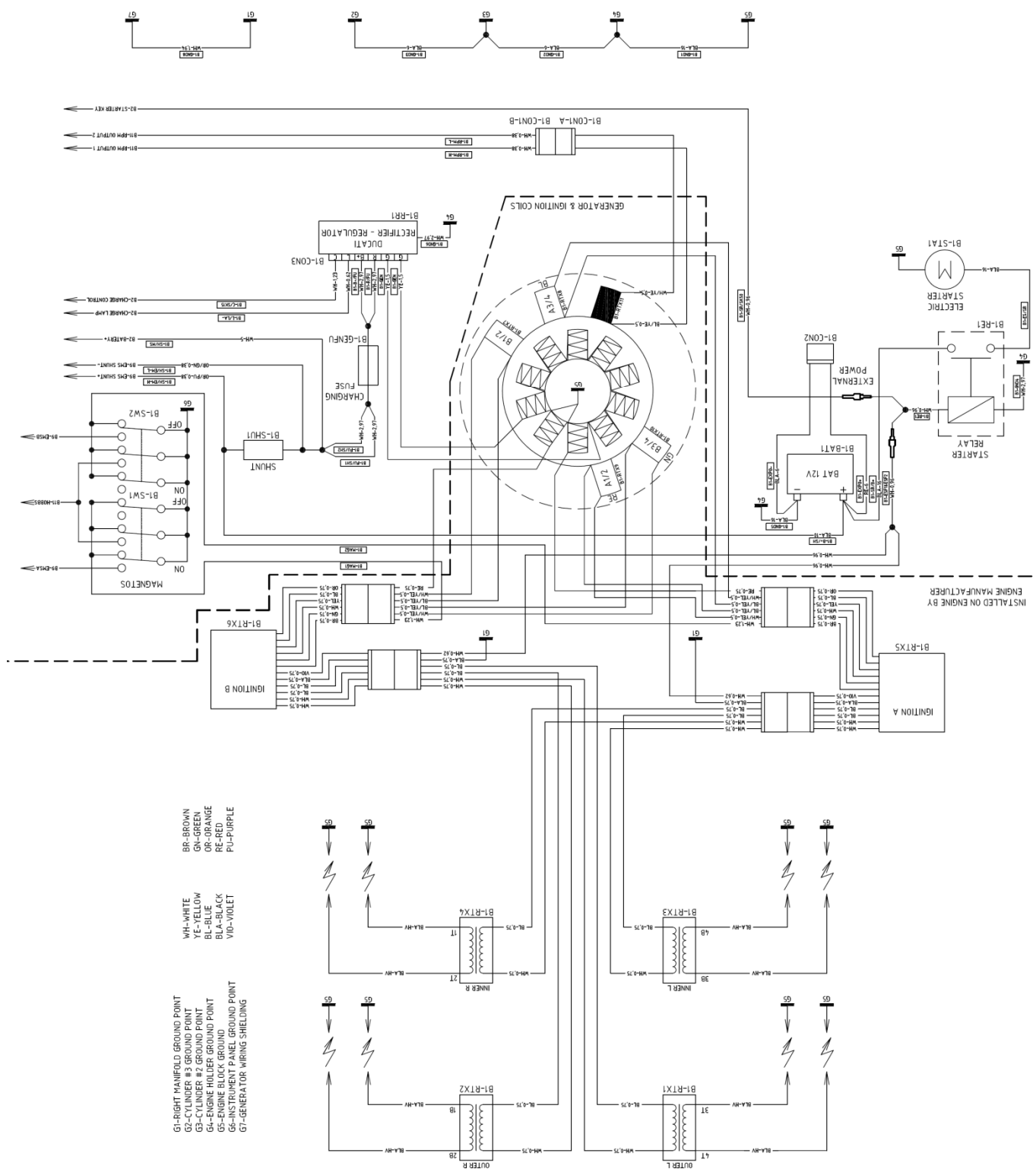
A.4.2.1 Block Diagram



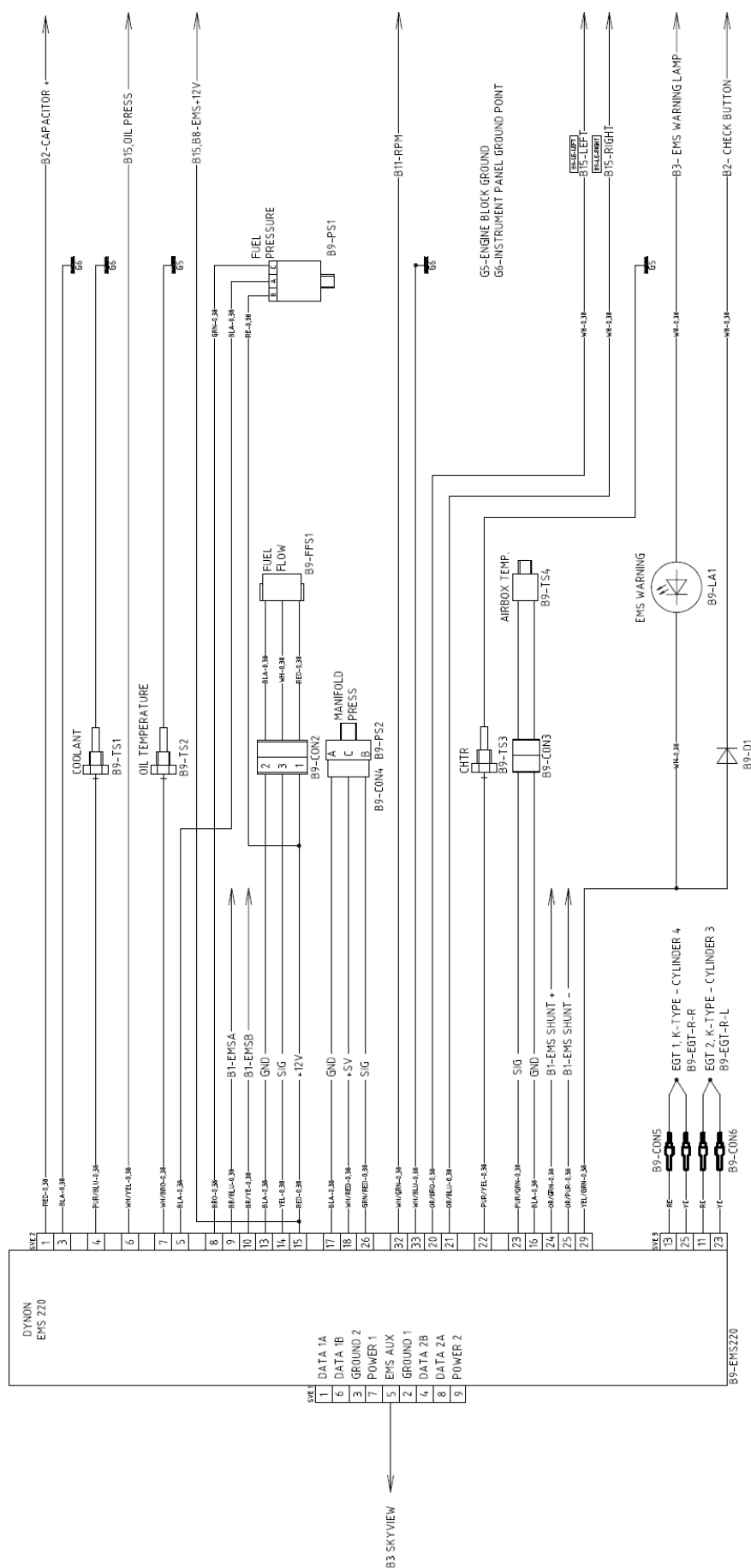
A.4.2.2 12V BUS

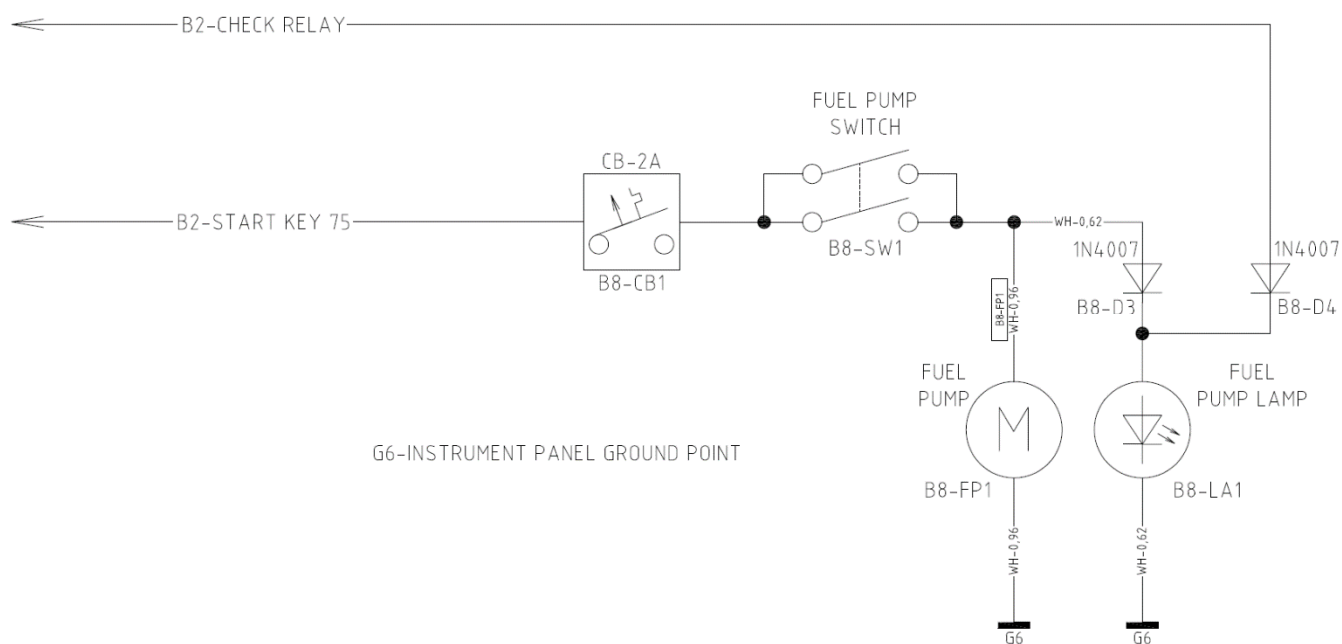


A.4.2.3 Engine Rotax 912 ULS



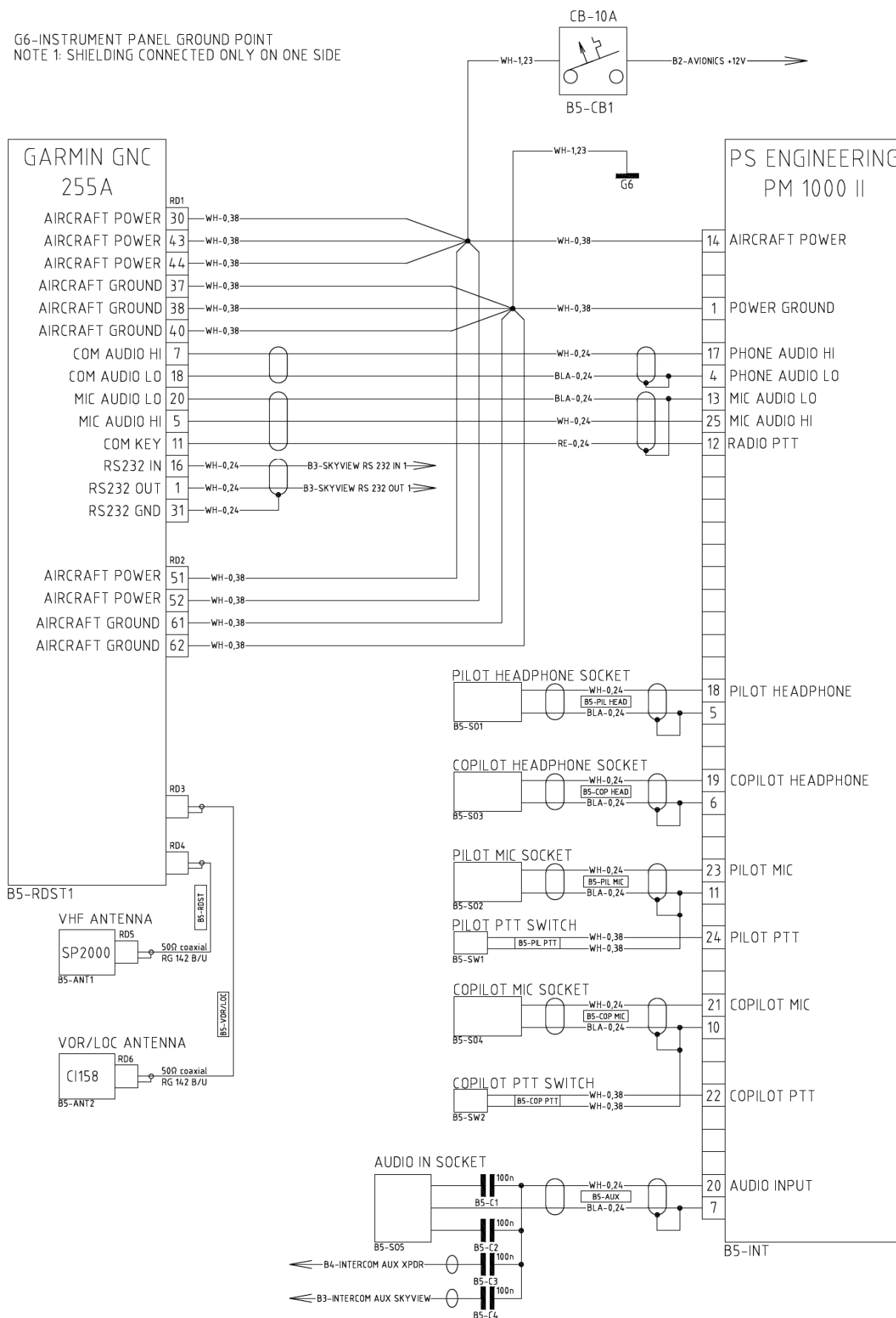
A.4.2.4 EMS Module



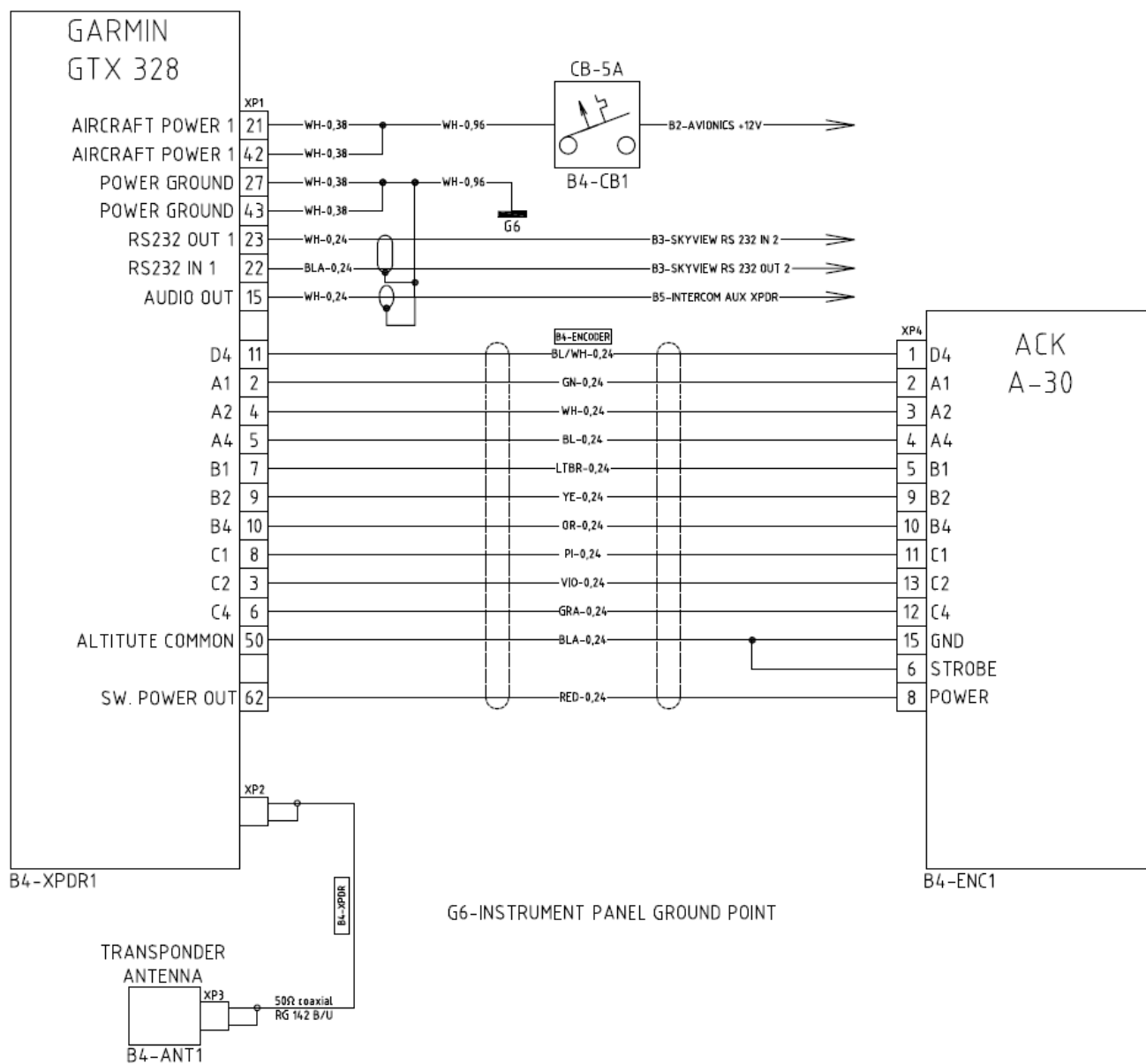
A.4.2.5 Fuel system

A.4.2.6 Radio, intercom

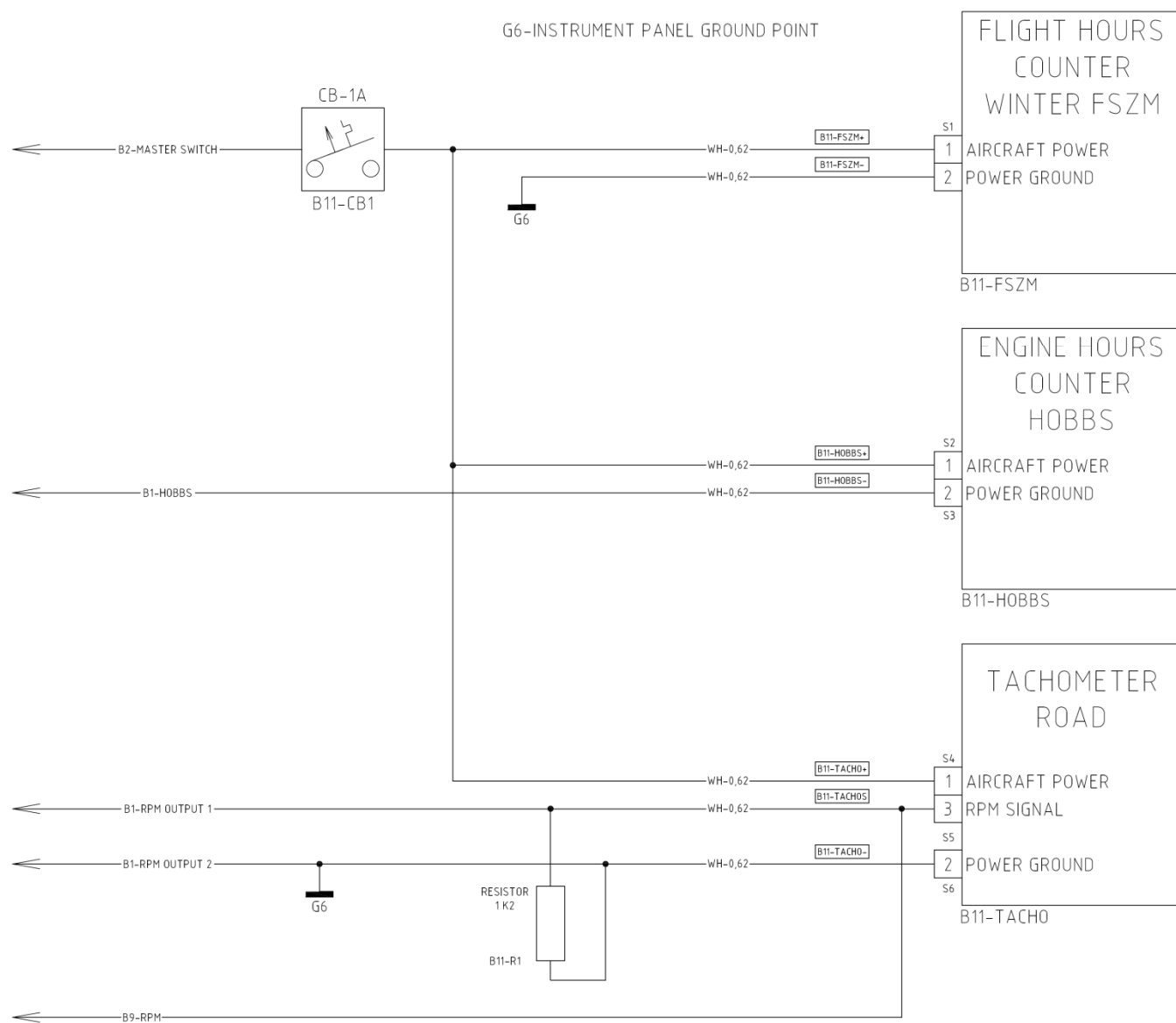
G6-INSTRUMENT PANEL GROUND POINT
NOTE 1: SHIELDING CONNECTED ONLY ON ONE SIDE



A.4.2.7 Transponder

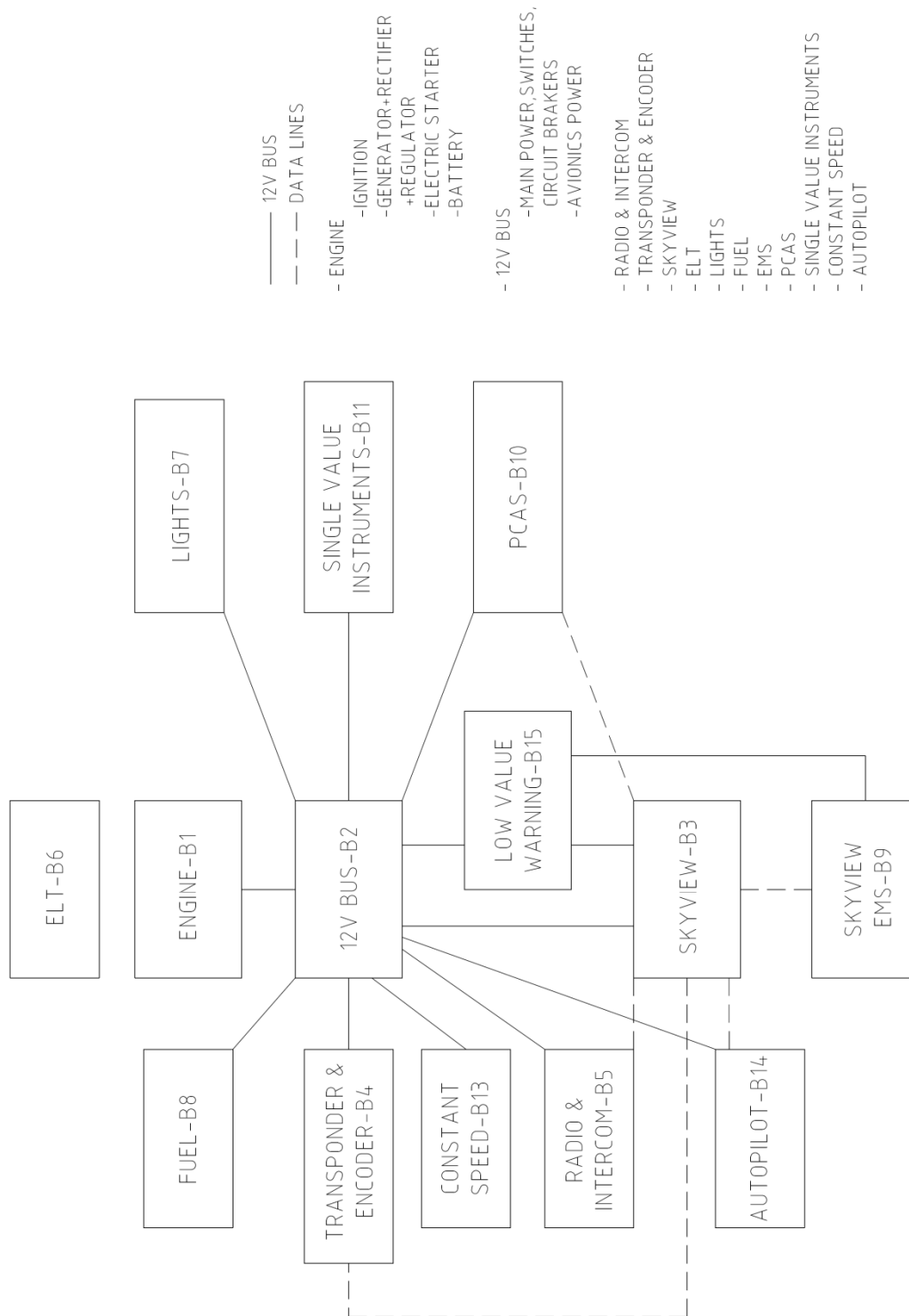


A.4.2.8 Single Value Instruments

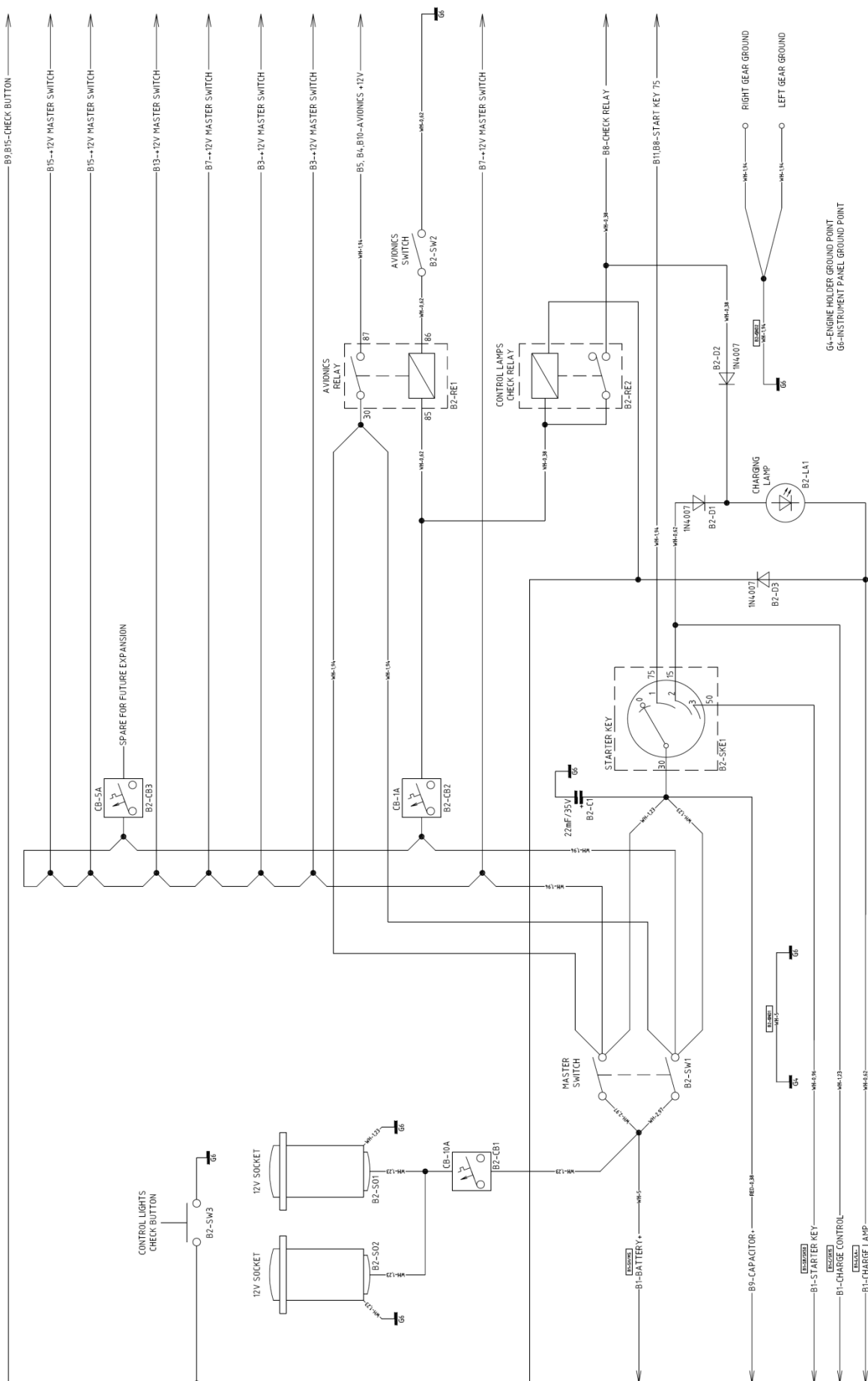


A.4.3 Model Club “FG912T configuration”

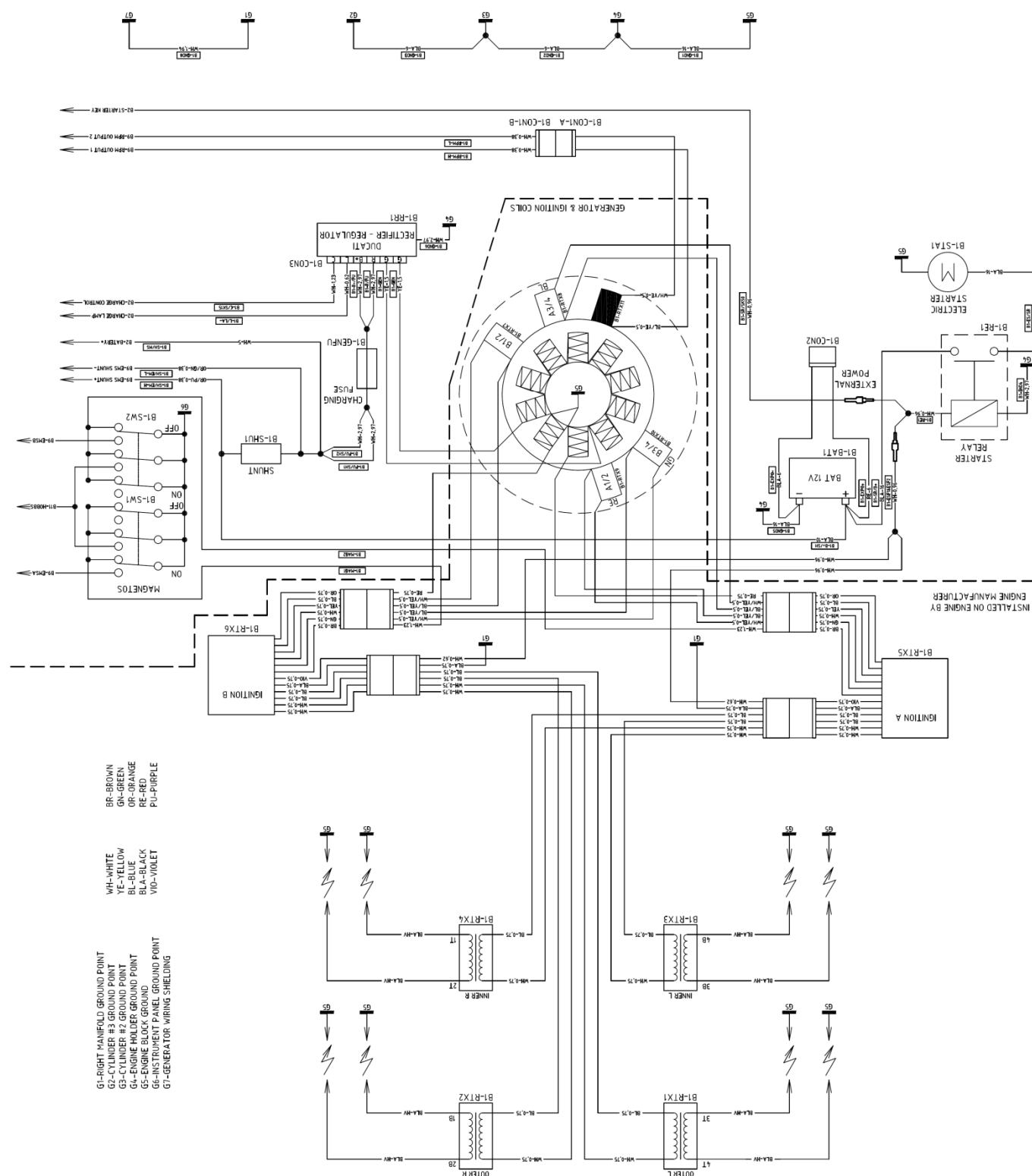
A.4.3.1 Block Diagram



A.4.3.2 12V BUS



A.4.3.3 Engine Rotax 912 ULS



A.4.3.4 EMS Module

Same as model Club “FG912 configuration”. See Annex A.4.2.4.

A.4.3.5 Fuel system

Same as model Club “FG912 configuration”. See Annex A.4.2.5.

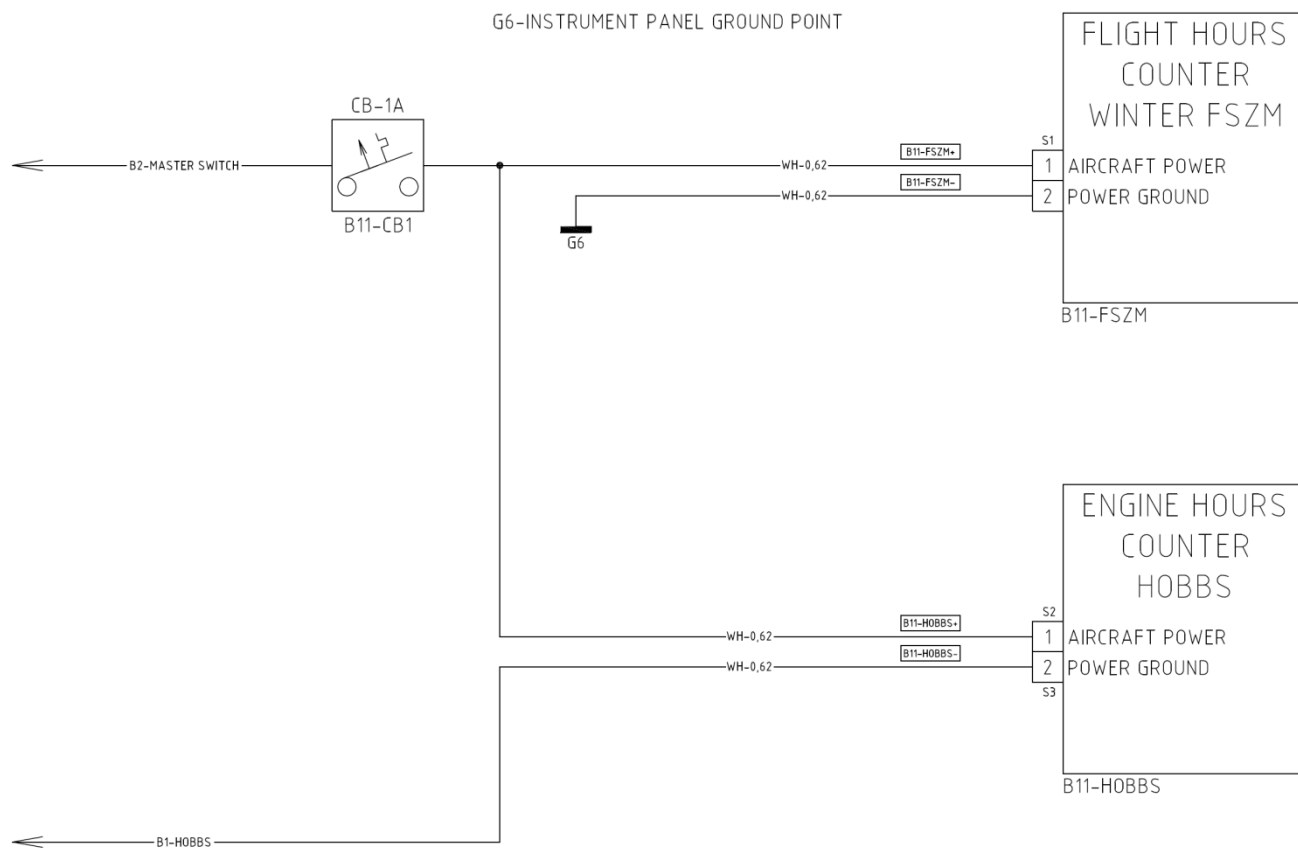
A.4.3.6 Radio, intercom

Same as model Club “FG912 configuration”. See Annex A.4.2.6.

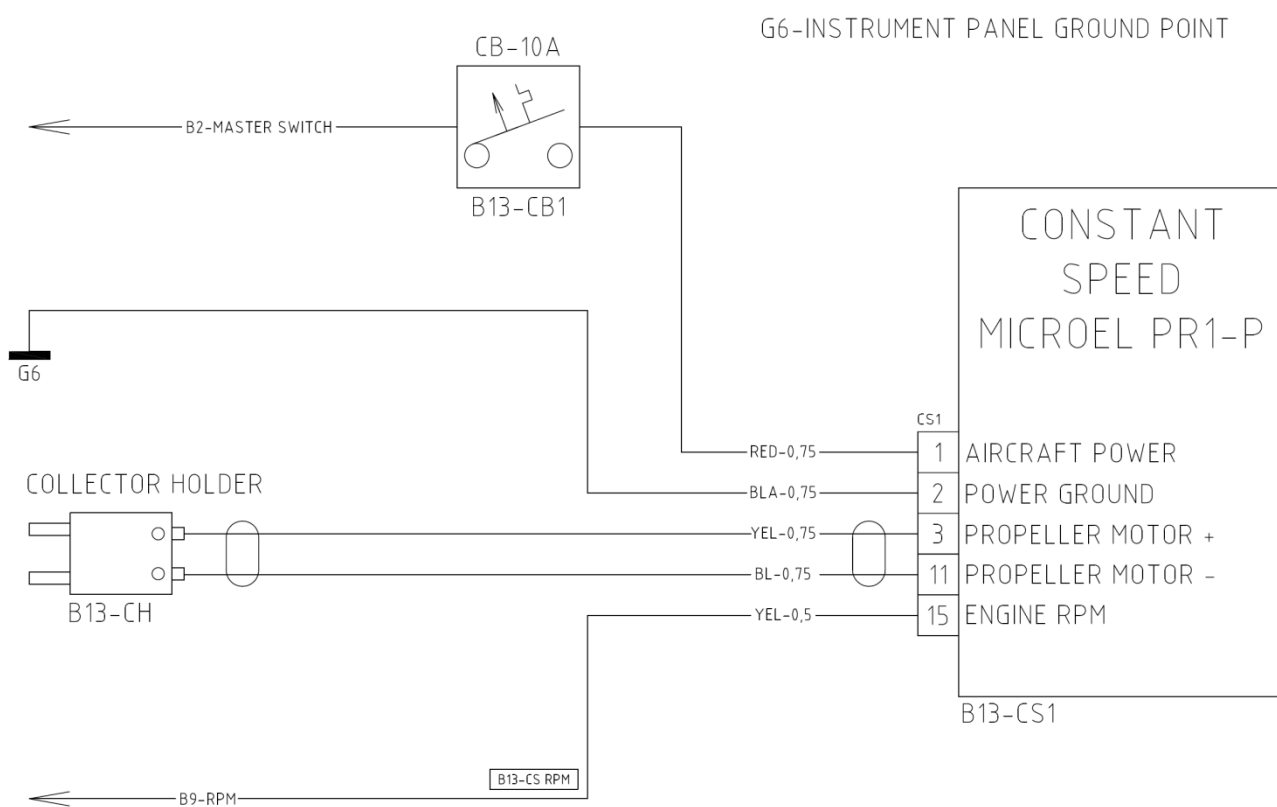
A.4.3.7 Transponder

Same as model Club “FG912 configuration”. See Annex A.4.2.7.

A.4.3.8 Single Value Instruments

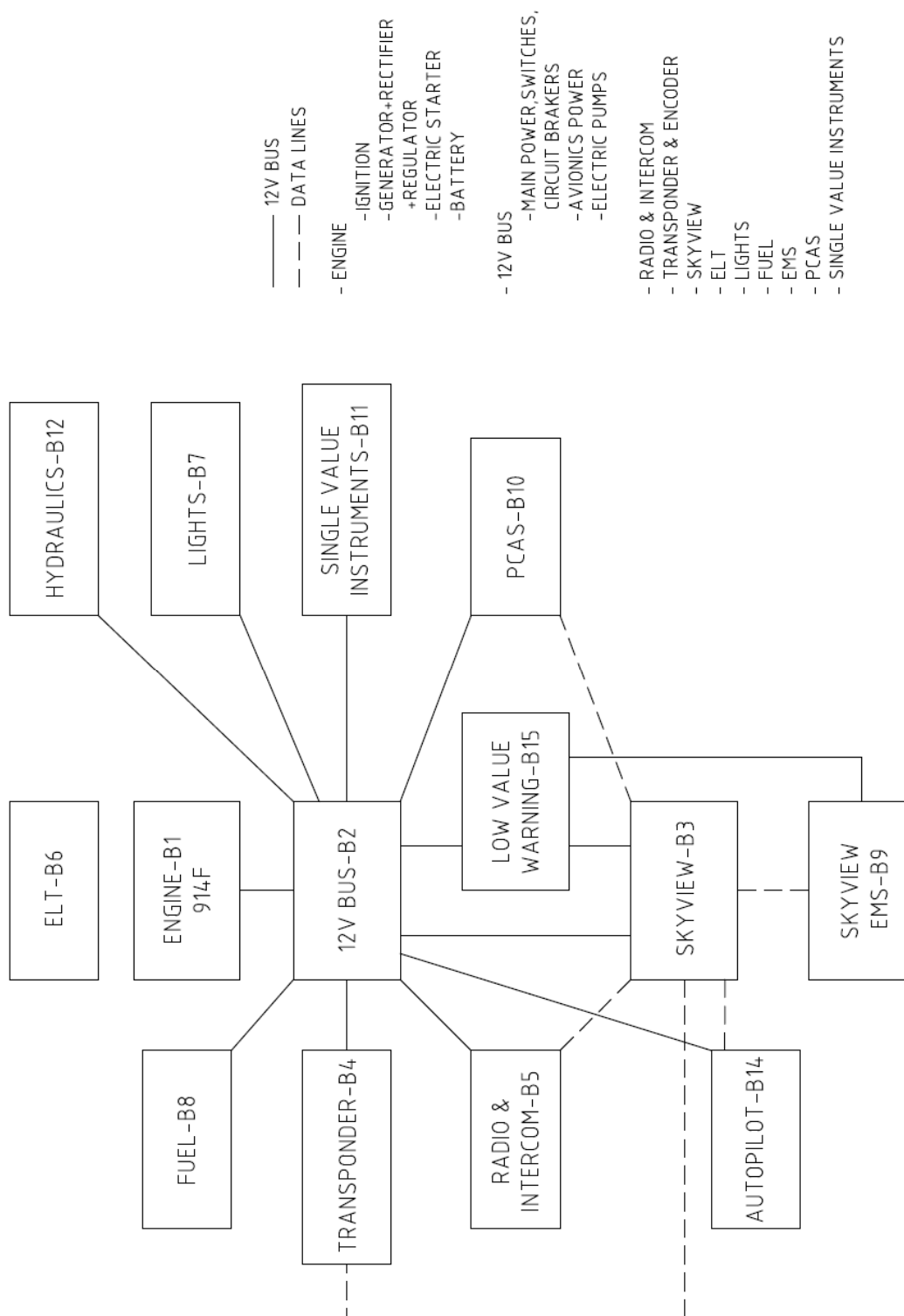


A.4.3.9 Propeller WOODCOMP SR2000 ND

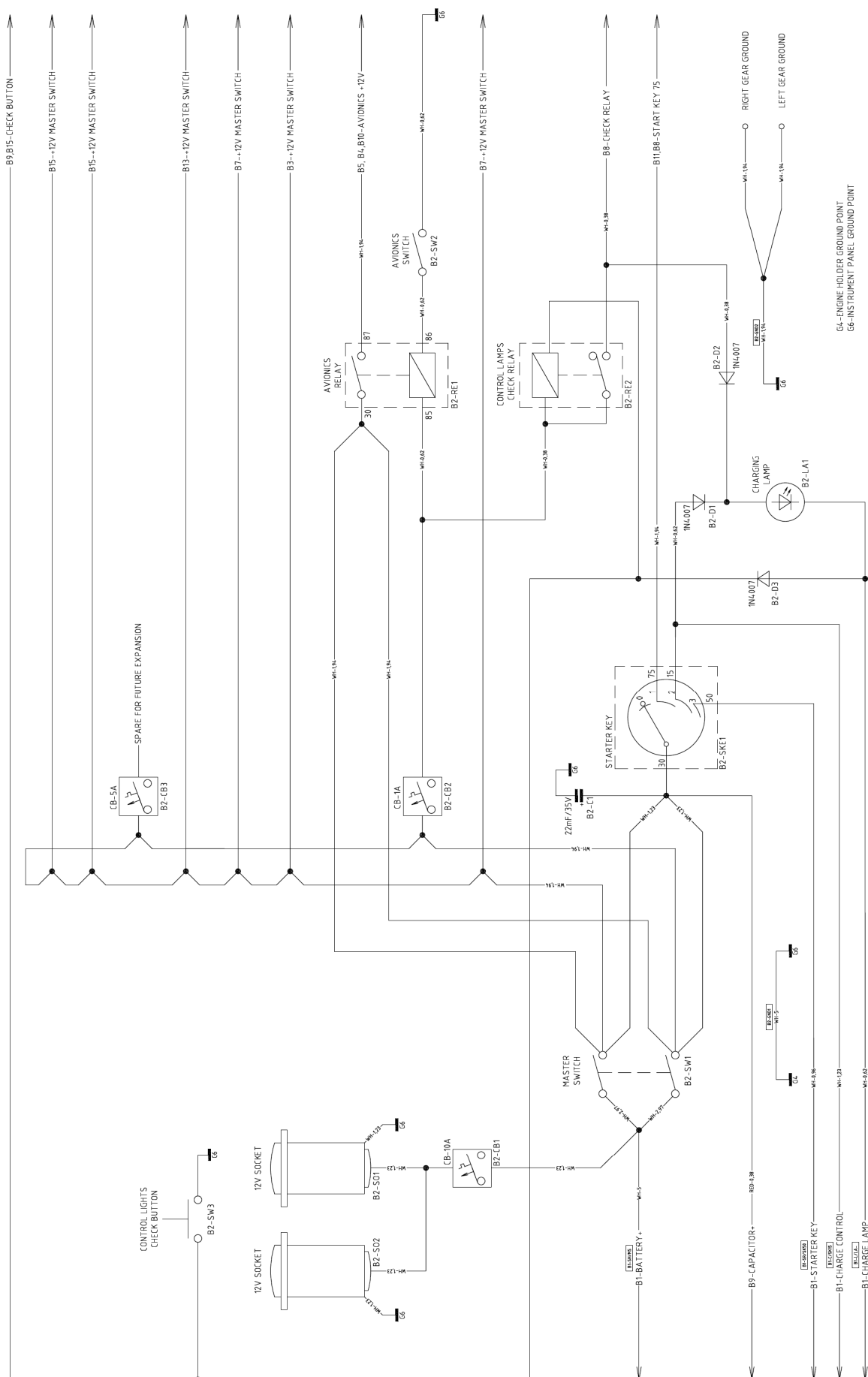


A.4.4 Model Speed “RG914 configuration”

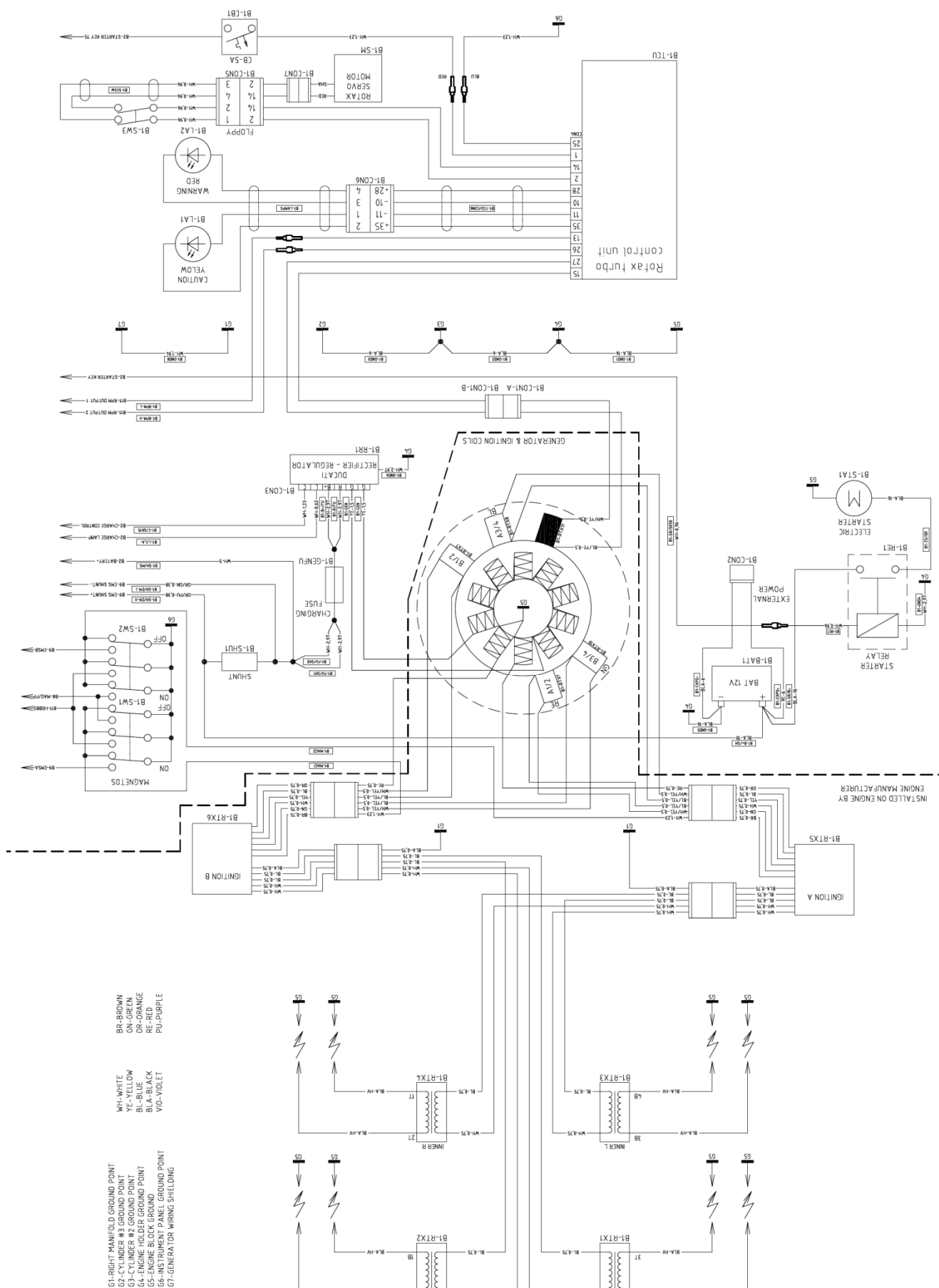
A.4.4.1 Block Diagram



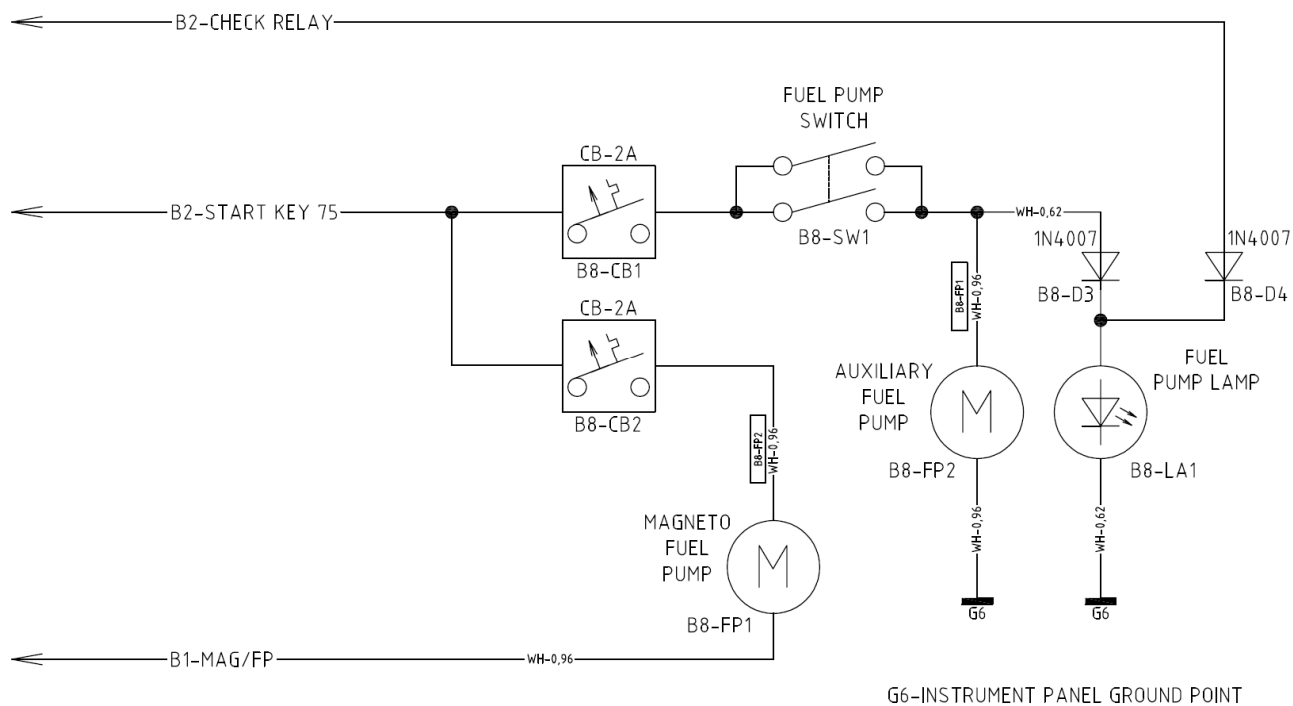
A.4.4.2 12V BUS



A.4.4.3 Engine Rotax 914 UL

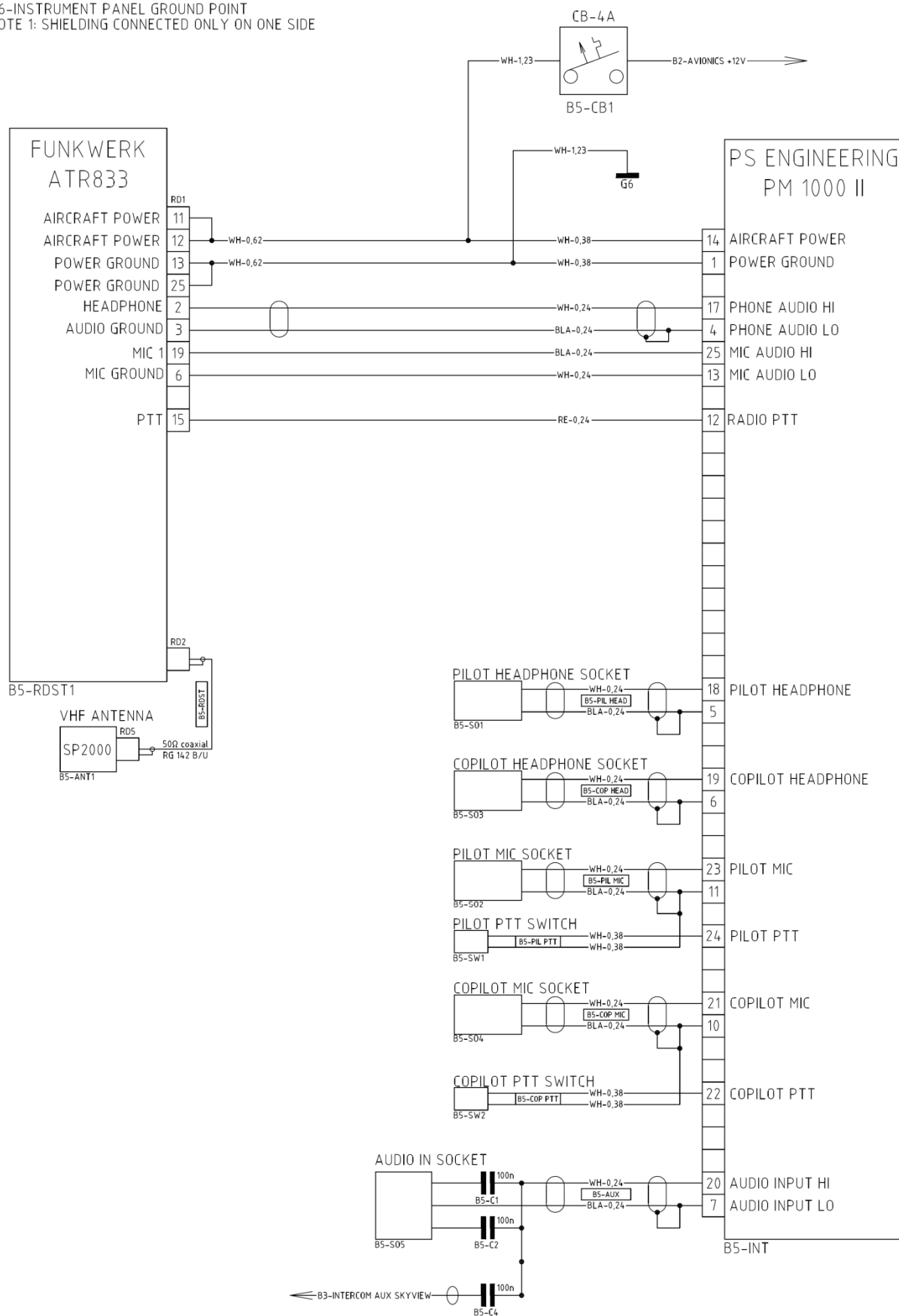


A.4.4.5 Fuel system

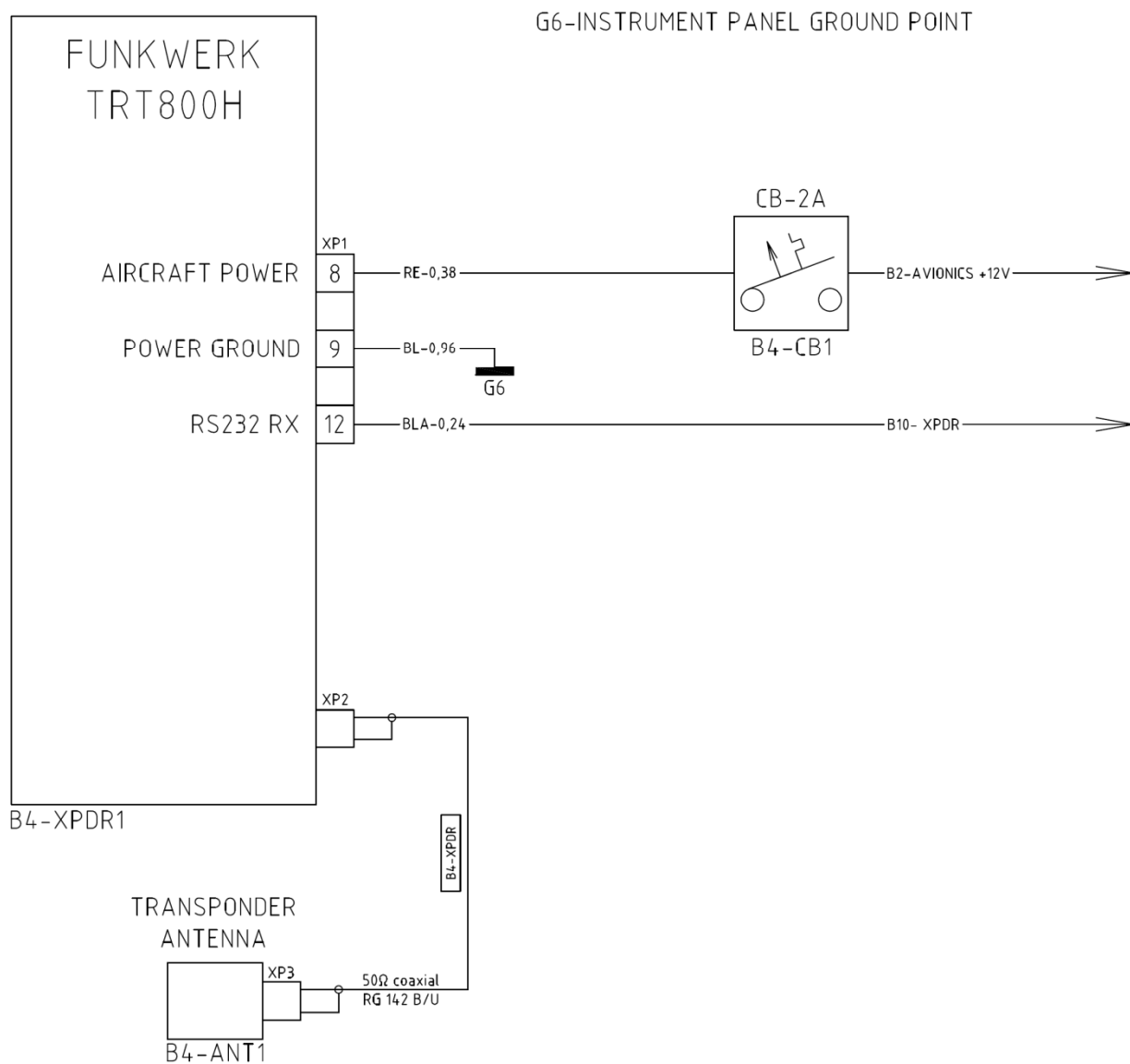


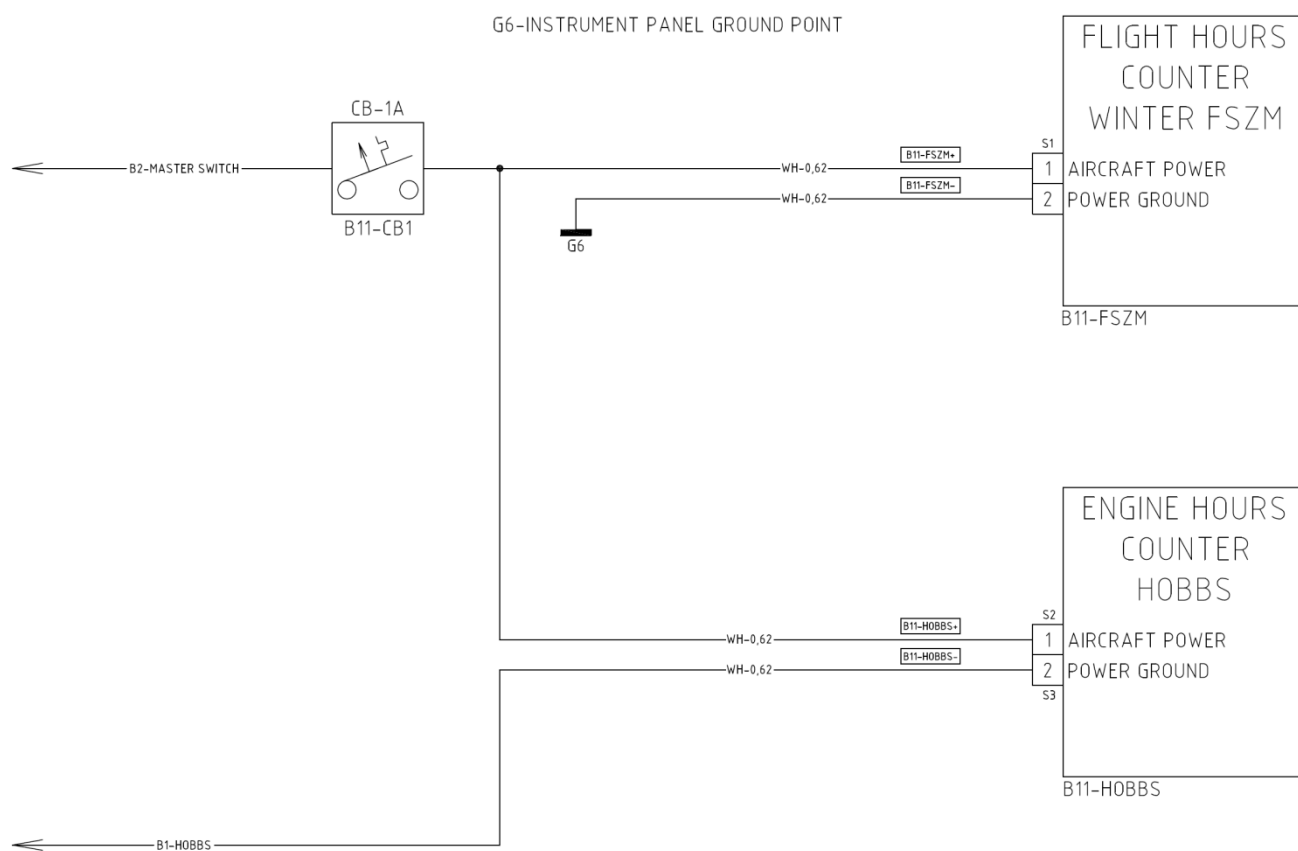
A.4.4.6 Radio, intercom

G6-INSTRUMENT PANEL GROUND POINT
NOTE 1: SHIELDING CONNECTED ONLY ON ONE SIDE

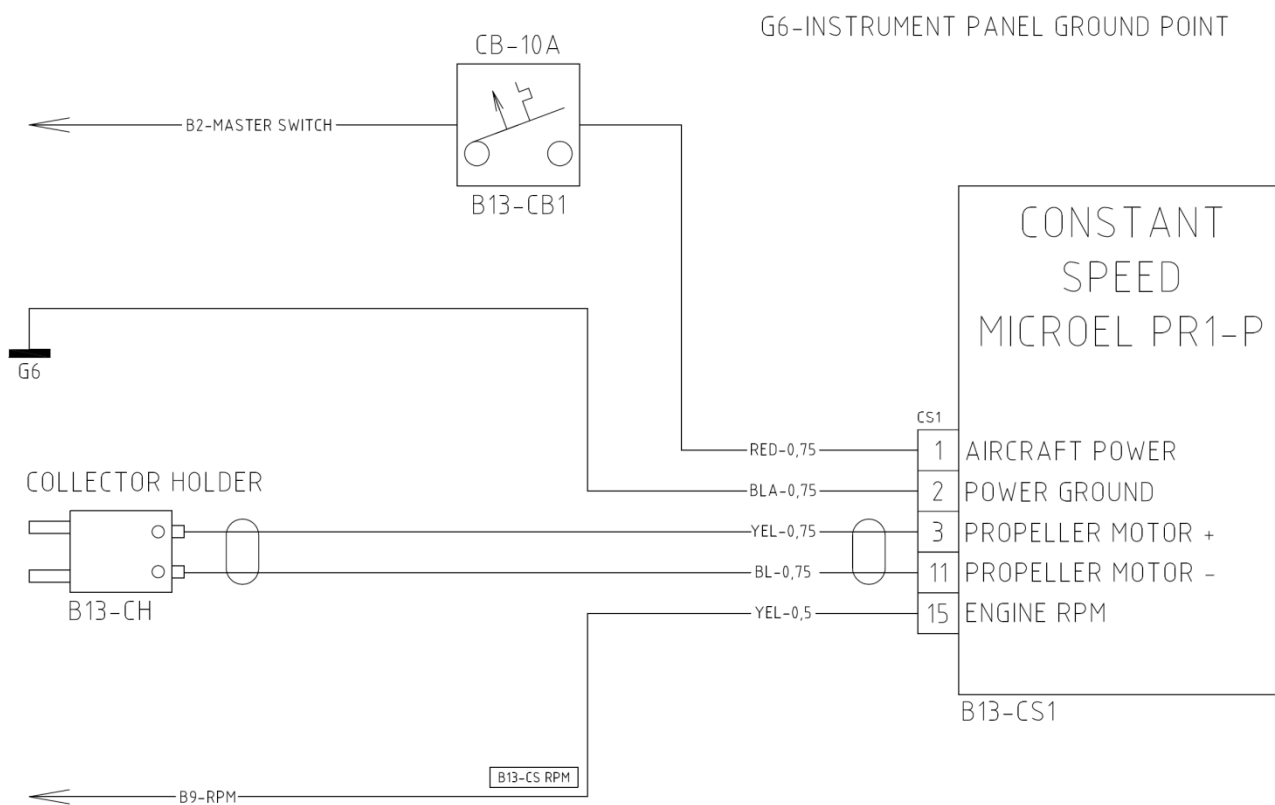


A.4.4.7 Transponder

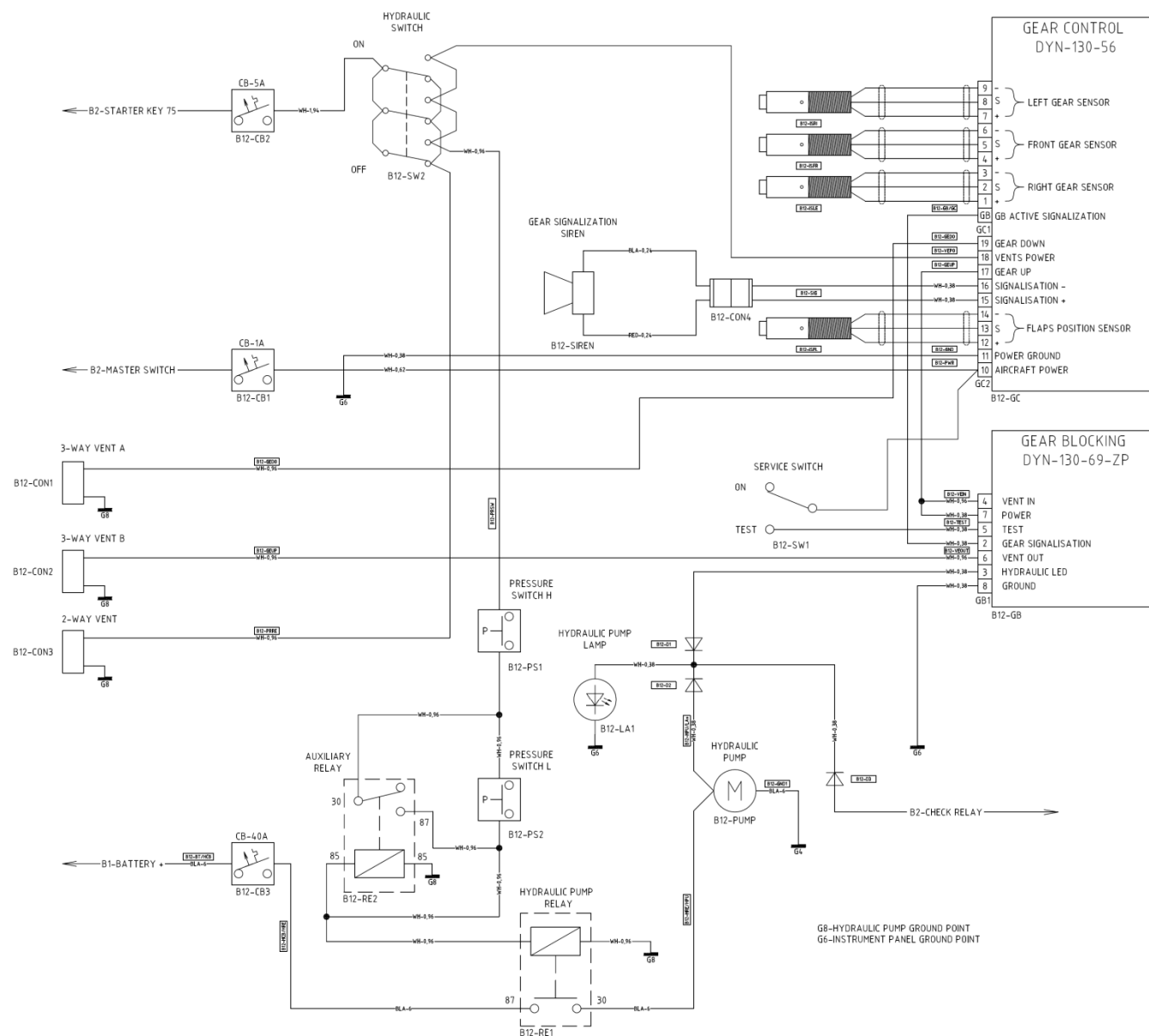


A.4.4.8 Single Value Instruments

A.4.4.9 Propeller WOODCOMP SR3000/2N



A.4.4.10 Hydraulic and landing gear control



A.5 Safety of Flight and Service Difficulty Report

[illegible]

**Do not fill in any data. This field is for manufacturer purposes.*