



MAINTENANCE MANUAL FOR DV-1 SKYLARK

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1.1. DESCRIPTION OF AIRCRAFT

DV-1 SKYLARK aircraft is designed for tourist, recreational or pilot-school nonaerobatic flights. These flights are permitted in VFR conditions only.

DV-1 SKYLARK is single engine, full metal, low-wing, two-seater ultra light aircraft. Seats are placed side-by-side.

Wing surface is trapezoid shaped with semi-monoque construction. As control surface the simple folding flap and aileron is installed. Each wing is attached to fuselage with three hinges.

The fuselage is semi-monoque construction created by metal skin, longitudinal beams and perpendicular walls.

Empennage is created as full-metal self-supporting T-tail construction.

Non-structural parts like engine cowlings, wing fairings and winglets are made from composite materials. The aircraft is equipped with Kaspar's propellers mostly. Two/three blades fixed or inflight adjustable propeller is available.

Lift surfaces:

Trapezoid shaped wing is semi-monoque construction. That gives main beam in $\frac{1}{4}$ of the chord and auxiliary beam in control surfaces connection. There are fuel tanks installed in the wings. Fuel tanks are full-metal riveted construction sealed with petrol resistant glue. Wings ends are equipped by pair of fiberglass winglets. Wing surface is divided into left and right half one, attached with three hinges per each.

Fuselage:

Fuselage lower cross-section is rectangular with blended corners. The upper crosssection is elliptically shaped. The vertical fin is designed as a part of fuselage construction. In the middle part of the fuselage, there is a two pilot's space covered with canopy from one single piece of organic glass. Engine compartment is separated with steel firewall from pilots. Firewall creates important construction point for the front undercarriage leg, engine bed even for the ballistic rescue system.

Empennages:

Tail surfaces are designed as T-tail. Horizontal tail surfaces are rectangular shaped and they are created by elevator connected with hinges to stabilizer. Stabilizer is attached through four bolts with fins construction. On the left side of the elevator, there is an electrical controlled hinged trim surface. Trim electrical control system is equipped with trim surface position indicator placed on instrument panel. The rudder is trapezoid shaped and it is attached to vertical fin with two hinges.

Controls:

Aircraft controls are classical doubled system. Controls system for ailerons and elevator are created by duralumin rods, angle levers and steel control levers. Rudder control is stainless ropes based one. Flaps control is provided through flap control handle in the middle panel or through electrical servo engine alternatively. Elevators trim surfaces is controlled through electrical servo engine.

Undercarriage:

Main undercarriage legs are made from composite springs. Wheels of main undercarriage are equipped with hydraulic brakes. Front undercarriage leg is sprung by rubber shock absorber. Front wheel is attached through duralumin fork to front leg and it is steering able. Tires size of front and main undercarriage wheels are the same.

Power plants:

Aircraft is powered by ROTAX 912UL and ROTAX 912ULS mostly. The engine is attached through shock absorbers to engine bed welded from steel rods. The engine bed is attached to firewall through strengthened points. The engine compartment is covered with two fiberglass cowlings (lower and upper one). Cowlings are one-side painted to match the aircraft and they are both removable. The upper one is attached with cam-locks.

Fuel system:

Two integral fuel tanks are mounted in wings, with 45L volume each. They are made from duralumin sheets riveted and sealed together. Each fuel tank is equipped with filling intake, outlet valve, sludge valve, air-bleeding valve and fuel-meter. Fuel system itself is equipped with three-ways fuel valve, fuel filters and electrical fuel pump.

Interior:

Aircraft is equipped with two upholstered seats placed side-by-side. Position of each seat is adjustable with position lock. Further equipment are four-point safety belts, baggage compartment placed behind the seats and safety net for fixing luggage.

Canopy:

Canopy is made from one single part of organic glass. This glass is riveted and glued to welded frame from duralumin tubes. Canopy opens with forward sliding movement. Canopy frame is attached to fuselage through metal pull-out system. The canopy latch is placed in the top of the canopy and it is lock-able.

Ventilate system:

Ventilation is provided through rounded valve in front of the canopy. As an option, there are side sliding windows.

Electrical installation:

Electrical system is single phase 12V system with negative pole grounded. As a source, there is a duty-free battery and engine alternator. Each electrical circuit is protected with fuse or circuit breaker placed on instrument panel.

Labels:

Ready-to-fly aircraft delivered from manufacture is equipped with given labels. In case of kit the labels are delivered, but the owner had to placed them into correct positions. Warning: owner of the aircraft is responsible for readability of the label during the aircraft lifetime.

Instruments:

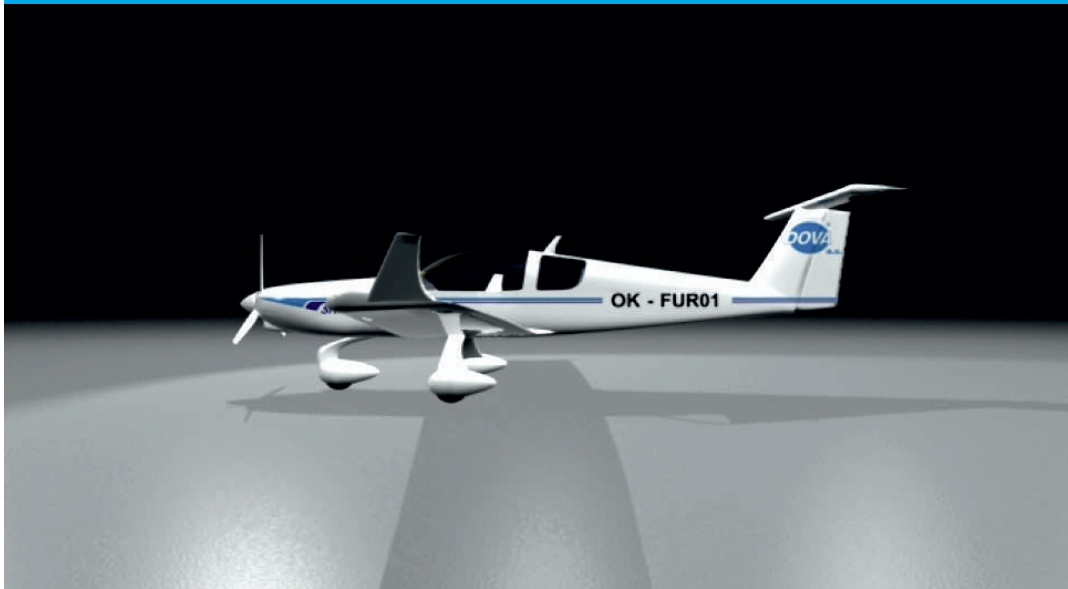
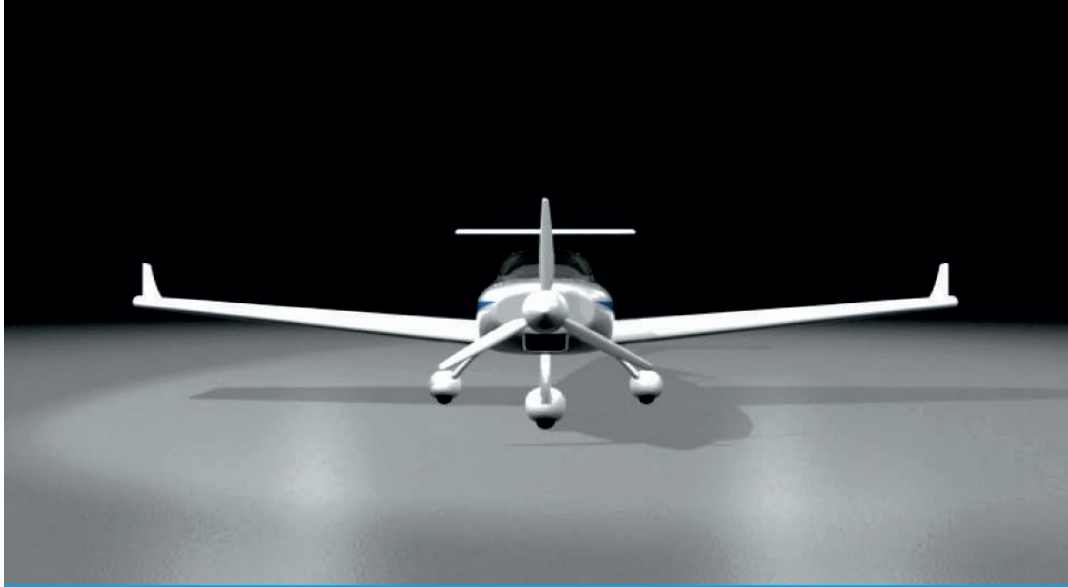
Minimal instruments equipment:

- in-flight instruments: air speed indicator, altimeter, vertical speed indicator, slide-ball indicator, compass, fuel gauges
- engine instruments: tachometer, oil temperature indicator, engine head temperature indicator, oil pressure indicator
- Radio: ICOM 200
- Servo: for elevator trim surface Ray Allen T10A
- Options: fuel pressure indicator, manifold pressure indicator, GPS AvMap EKP IV, transponder Garmin , artificial horizon, landing light 100W.
- Signal lights: position lights placed in winglets and strobe lights (2pcs in winglets and 2pcs on fuselage)

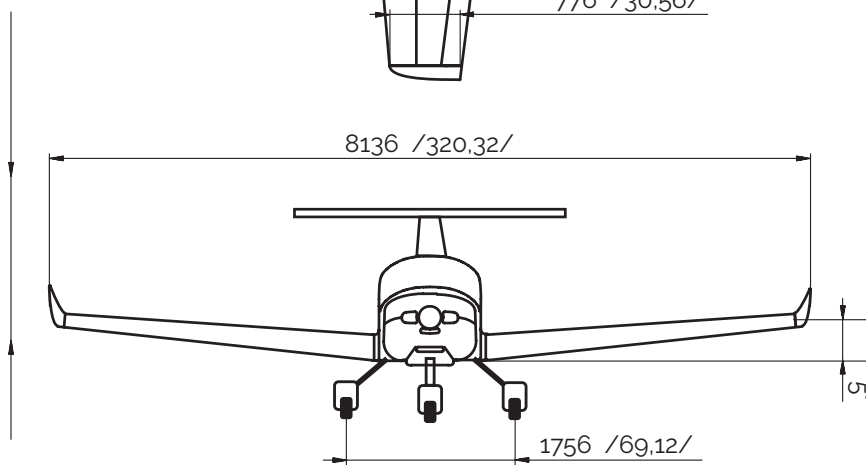
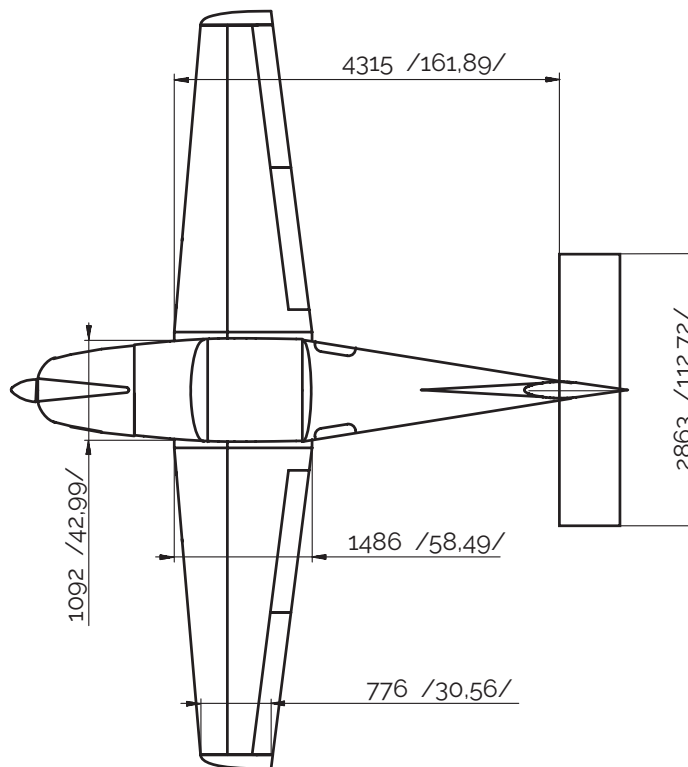
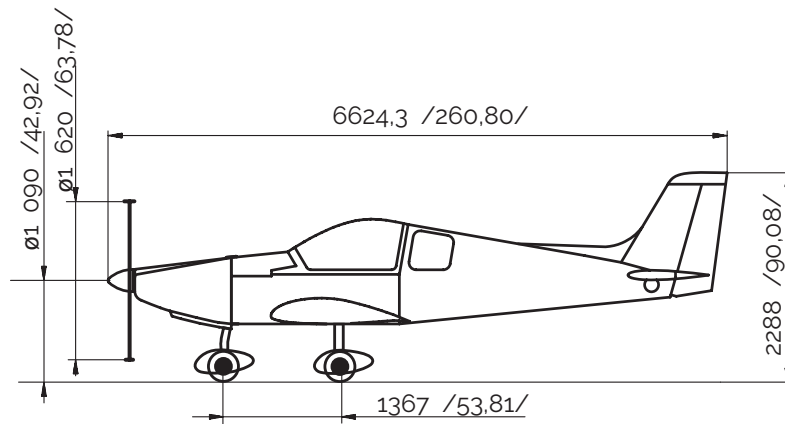
Additional equipment:

There is a preparation for installation of ballistic rescue systems already provided.

Previews DV-1 SKYLARK



1.2. BASIC DIMENSIONS AND AIRCRAFT PREVIEW



1.2. BASIC DIMENSIONS

Fuselage:

Length	6,62 m
Width	1,09 m
Height	2,28 m

Wings:

Wingspan	8,14 m
Wing surface	9,44 m ²

Empennage:

Horizontal tail surface	1,47 m ²
Vertical tail surface	1,02 m ²

Undercarriage:

Track	1,70 m
Wheelbase	1,36 m

1.3. WEIGHTS AND PERFORMANCES

Empty weightkg ± 2 %
Maximum Take-Off weight	450 kg
Useful load	170 kg
Fuel capacity	90 liters
Maximum baggage weight	20 kg
Maximum loads	+4,4 / -2
Stall speed without flaps	79 km/h
Stall speed with flaps	64 km/h
Never exceeded speed	280 km/h
Maximum horizontal speed	240 km/h
Cruise speed	210 km/h
Climb speed	8 m/s
Ceiling	3 650 m
Range (45 min. reserve)	1 200 km

1.4. ENGINE LIFETIME

Term of engine overhaul is given as 2000 flight hours or 10 years for ROTAX 912 UL/S (first reached is valuable). See Rotax Bulletins – operational condition of engine manufacturer

1.5. ENGINE PARTS WITH RESTRICTED LAIFETIME

Had to be changed every 5 years:

- air supplying hose for carburetors (AIRBOX)
- all rubber hoses of cooling circuit

- all rubber hoses of oil circuit
- carburetors flange
- rubber hoses connecting carburetors
- belt attaching alternator
- fuel pump including fuel hoses

Had to be changed every 2 years:

- cooling liquid of engine



1.6. LIST OF PARTS WITH RESTRICTED LIFETIME

- structural:

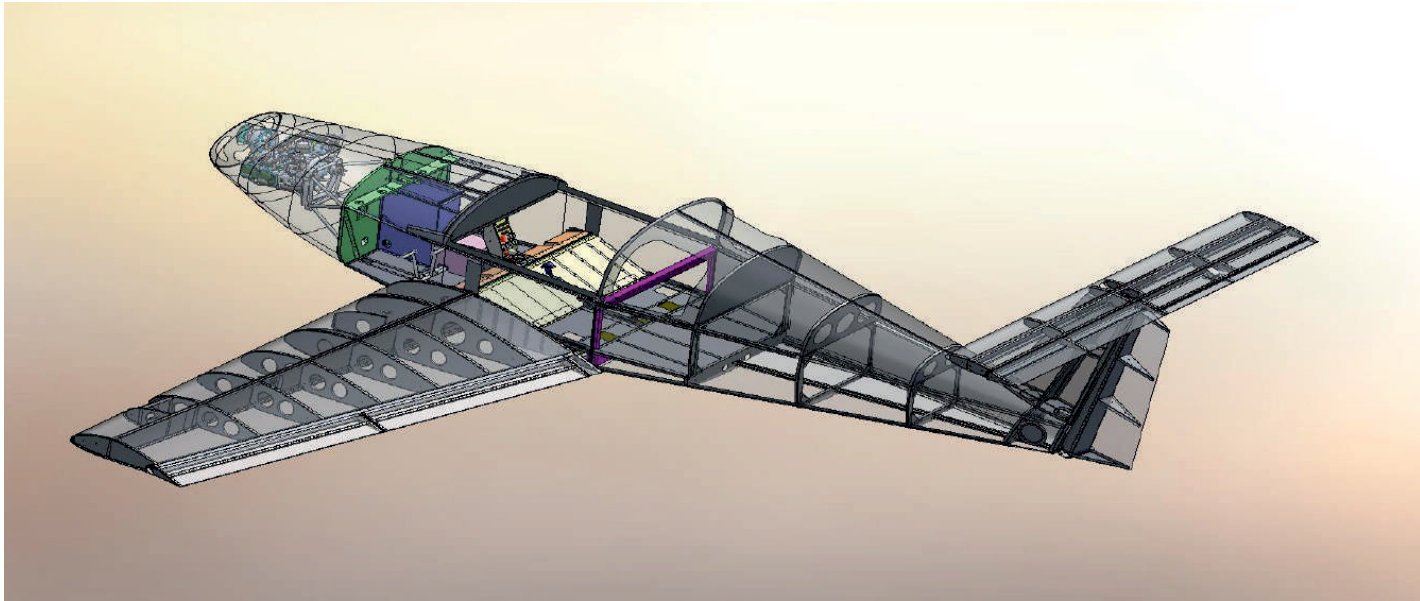
lifetime for changing parts of structural joint will be estimated by manufacturer, alternatively authorized service center during estimated inspections. In case that you will find any sign of rising wear of parts, higher friction or backlashes during your pre/after flight check, call authorized service center.

- flight, navigate and engine instruments:

DV-1 SKYLARK is equipped with

Item	Nb.	Overhaul (flight. Hours/years)	Date of installation (Fl. hours/years)
Basic equipment			
Air Speed indicator			
Altimeter			
Vertical speed indicator			
Side slip ball			
Compass			
Fuel gauges			
Tachometer			
Oil temperature indicator			
Head temperature indicator			
Oil pressure indicator			

1.7. TECHNICAL DESCRIPTION OF AIRCRAFT ASSEMBLIES WITH DRAWINGS - ATTACHMENT Nb.1



Wings (version flap 1:1 aileron)

1-11-00-00 - left wing equipped

1-11-10-00 – wing L

1-11-20-00 – aileron L

Fuselage

1-21-00-00 - front fuselage

1-21-10-00 – firewall

1-21-20-00 – main beam

1-21-30-00 – U/C beam

1-22-00-00 - rear fuselage 1-23-10-00 – canopy frame

1-24-00-00 - controls 1-24-10-00 – steering rod

1-24-20-00 – elevator control

1-24-30-00 – rudder/front wheel control

1-24-40-00 – flap control

Empennage

1-30-00-00 - empennage

1-31-00-00 – horizontal tail surfaces

1-31-10-00 – stabilizer

1-31-20-00 – elevator

1-32-00-00 – vertical tail surfaces

1-32-00-00 - fin

1-32-20-00 – rudder

Undercarriage

1-41-00-00 - main undercarriage

1-42-00-00 - front undercarriage

Fuel tanks

1-51-00-00 - fuel tank equipped

1-51-10-00 – fuel tank

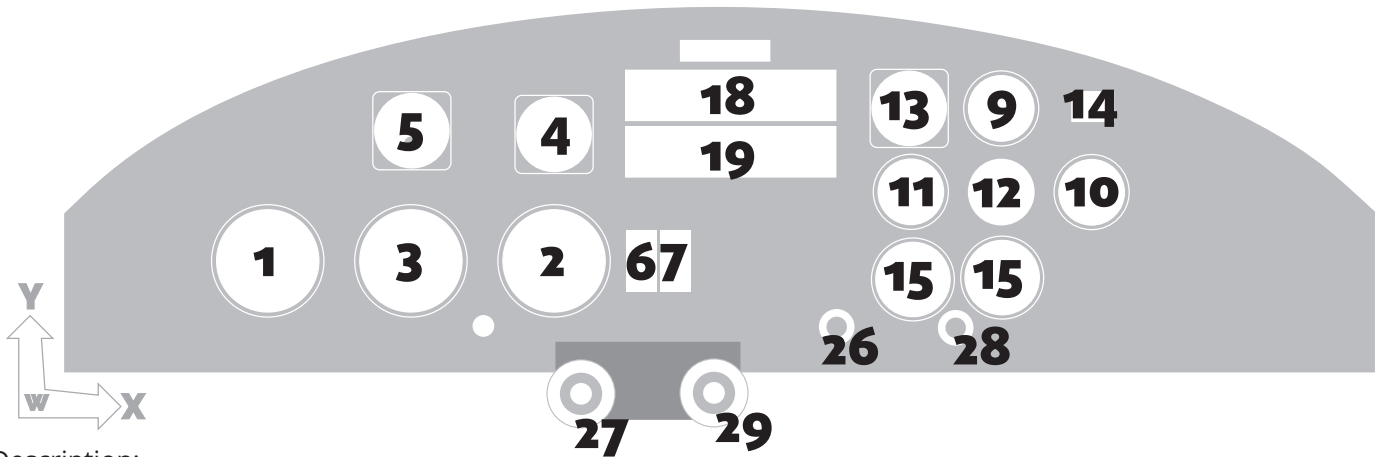
Power plant

1-60-00-00 - Power plant equipped

1-61-20-00 – engine frame for ROTAX

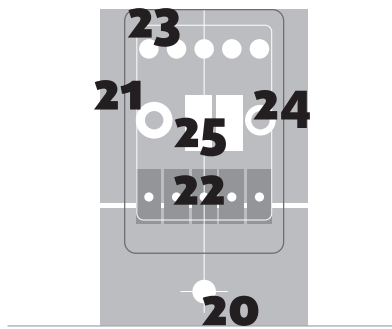
1-61-30-00 – cowlings for ROTAX

1.8. CONTROLS IN COCKPIT



Description:

1. Airspeed indicator
2. Altimeter
3. Vertical speed indicator
4. Compass
5. Side slip ball
6. Elevator trim control
7. Elevator trim position indicator
9. Fuel pressure indicator
10. Oil pressure indicator
11. Head temperature indicator
12. Oil temperature indicator
13. Tachometer
14. Engine operation hours indicator



15. Fuel gauges 2x
16. Diode for indicating failure of battery loading
18. Radio
19. Transponder
20. Fuel valve
21. Master switch
22. Switches
23. Fuses
24. Starter button
25. Magnetos
26. Choke
27. Throttle control
28. Heating control
29. Propeller pitch control



2.1 (DIS) ASSEMBLING OF WINGS

Warning:

(Dis) Assemble aircraft always on place with enough space to safely manipulate with the parts or with whole aircraft.

In case of disassembling aircraft, be sure that you have enough right pads (soft, clean, height enough) to protect the wing from damage during storage (on ground for ex.).

During handling (hold/push/pull) aircrafts parts always touch in place of structural reinforcement like ribs, wall and beams (shortly in positions of rivets lines).

There's needed to be at least two men to (dis) assemble wing safely. Always keep all disassembled parts, joining materials and others aircrafts items.

Used self-locking nuts replaced with new ones!

Disassembling of wings

- remove the covers inside the pilots cabin (flap control handle, under pilot, around the steering)
- disconnect aileron control rod from the steering joystick
- disconnect and blind fuel hoses from the wing-fuselage connection
- disconnect the pitot-static hoses in left wing connection – first mark the hoses with static pressure and then disconnect to prevent wrong re-connection . Blind disconnected hoses to prevent getting dirty inside
- after each re-assembling check proper pitot-static hoses connection and verify function
- disconnect electro-installation connectors from wing to fuselage
- remove self-locking nuts with washers from wing hinges on main and rear beam. (6+6 peaces on main, 2+2 peaces on rear one)
- remove bolts from rear hinges, remove bolts from main hinges except 1+1 in upper hinges and except 1+1 in lower hinges
- one man holds the end of the wing and second one remove upper and lower bolts (little up and down movement of wings end is required to release the bolts)
- one man holds the end and second one holds the wing root attachment. Move the wing slowly out of the fuselage. During moving out, watch carefully the rod ball-ends, hoses, connectors to avoid their damaging from edges. During moving wing out, automatic disconnection of flap control happened, so it is better to hold the flap position during that act.
- Put the wing carefully on suitable pad (watch out for the pitot-static tube under the wing – had to be lifted)
- Same procedure for opposite wing

Assembling of wings

- Assembling means reverse procedure of disassembling
- During assembling it is required to connect the flap controls properly. For that it is needed to set 0 positions on control flap handle and 0 positions on flap itself (that means trailing edge in straight line). With that the flap control will re-connect automatically.

2.2 (DIS) ASSEMBLING OF TAIL SURFACES

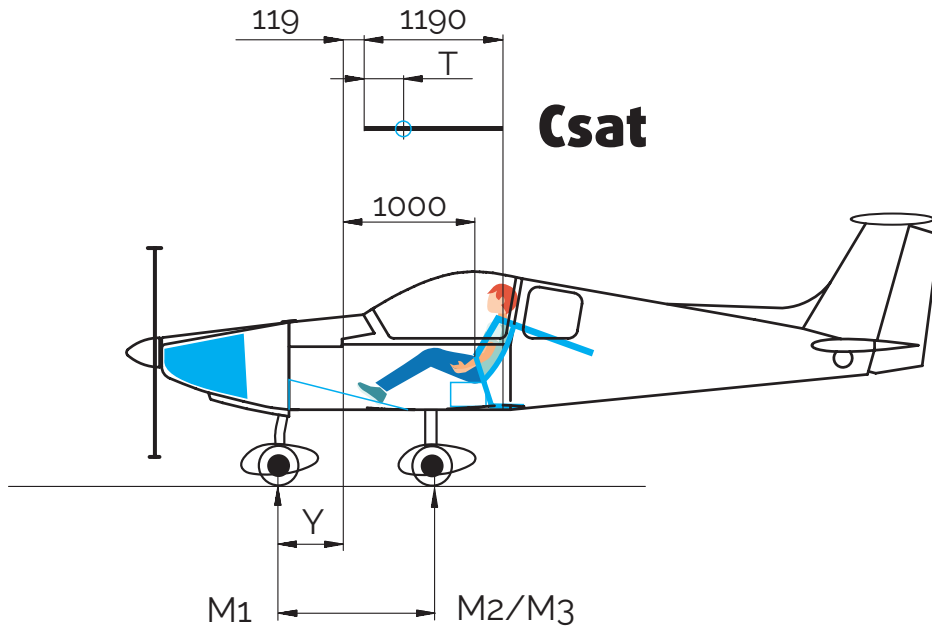
Disassembling horizontal tail surfaces

- remove fiberglass covers from stabilizer
- disconnect connectors for trim control and strobe lights in front cavity
- disconnect elevator control in rear cavity
- remove self-locking nuts, washers and 4 bolts connecting stabilizer together with fin.
- Remove horizontal tail surfaces and put it on suitable pad

Assembling of horizontal tail surfaces

- assembling means reverse operation mentioned above

2.3. ESTIMATING AIRCRAFT WEIGHT AND CENTER OF GRAVITY



Formula for counting center of gravity (c.g.) position:

$$T = (X * (M2+M3) / (M1+M2+M3) - Y - 119) / 11,9 \text{ (\% Csat = \% Cmac)}$$

Allowable range of c.g. movement is from 23 to 36% Csat.

2.4. OPERATIONAL VALUES

Operational values for engine:

Information bellow is not complete. Complete information can be found in Original ROTAX 912 engines manual.

Oil pressure	max. 7 bar, min. 0,8 bar optimum 2-5bar
Oil temperature	min. 50°C, max. 130°C optimum 90-110°C
Cylinders head temperature	max. 135°C
Exhaust gas temperature	max. 880°C – start max. 850°C – in flight optimum 800°C
Fuel pressure	max. 0,4 bar optimum 0,15-0,4 bar

Operational filling for ROTAX 912S:

Fuel	Natural 95 (Pb free)
Engine Oil	Castrol GTX 5 10W-40
Oil volume	2,5l
Cooling liquid	ARAL Antifreeze with distilled water with mix ratio 1:1
Cooling liquid volume	2,7l

Operational tire pressure:

- front wheel tire	160kPa
- main wheels tires	180kPa

Fuses and battery:

Fuses used:	30A, 20A, 16A, 2x10A, 4x5A, 1A
Duty-free Battery:	12V, 18Ahod

Control surfaces deflections:

- Ailerons:	up	$15^{\circ} \pm 1^{\circ}$
	down	$10^{\circ} \pm 1^{\circ}$
- Flaps:	position -1	$-10^{\circ} \pm 2^{\circ}$
	position 0	0
	position 1	$+10^{\circ} \pm 2^{\circ}$
	position 2	$+40^{\circ} \pm 2^{\circ}$
- Elevator:	up	$30^{\circ} \pm 2^{\circ}$
	down	$20^{\circ} \pm 2^{\circ}$
- Rudder:	right	$30^{\circ} \pm 2^{\circ}$
	left	$30^{\circ} \pm 2^{\circ}$

2.5 (DIS) ASSEMBLING OF ENGINES COWLING

- Disassembling of upper engine cowling requires just releasing cam-locks fasteners and removing two screws in front of the cowlings – close to the propeller nose. Removing of this cowling for the pre/after flight check of the engines compartment is required. Removing creates easy access to check level of engines liquids like oil and cooling liquid.
- Disassembling of lower part of the cowlings requires disconnecting vent hoses from Naca's inlets and removing of bolts connecting cowling with firewall. It is required to start removing bolts from lower one and then move up to next ones. Removing will create easy access to exhausts pipe system, coolers, temperatures and oil sensors.
- Assembling means reverse procedure.

3.1. GENERAL

Flight and operational eligibility directly depends on complying scheduled maintenance intervals and degree. For proper maintenance service even the weather, quality of hangar, surface of airfield and other factors had to be considered. This manual presents information for maintenance and operation in average standard conditions known for this category.

3.2. MAINTENANCE LIST WITH TERMS

Caution:

The intervals of engine inspections and the list of works are shown in Maintenance Manual (Line Maintenance) for installed engine.

The intervals of propeller inspections and the list of works are shown in Technical description and operation instructions for the installed propeller. If the periodical inspection is performed before reaching the specified time interval, then the following inspection must be performed at the latest within the specified time interval from this inspection (e.g. if the first 100-hour inspection is performed after 87 flight hours then the following 100-hour inspection must be performed at the latest after 187 flight hours) Maintenance system is composed of periodic inspections which must be performed at least in the following intervals:

- a) Pre-flight inspection is performed within the scope given in Flight Manual
- b) Propeller inspection after first 5, 20 and 50 flight hours (see Technical description of the propeller)
Note: To be performed with a newly installed propeller or with the propeller that was dismantled and reinstalled on the airplane.
- c) Inspection after the first 25 flight hours - engine inspection.
Caution: Inspection after the first 25 flight hours to be performed with the new engine or with the engine after overhaul.
- d) Periodical inspection after 50 flight hours - inspection of engine and propeller
- e) Periodical inspection after 100+5 flight hours - airframe and propeller inspections, engine inspection according to maintenance system which is described in Maintenance Manual (Line Maintenance) for installed engine.

3.3. MAINTENANCE

Maintenance is provided in periodically estimated terms. Pay attention to revising parts according to their function, wear and parts importance. Purpose of periodical maintenance is to avoid or find right in time any damage/wear of aircraft construction, which can cause failure of aircrafts parts.

- **Engines** maintenance provides according to maintenance manual for installed engine (for example ROTAX 912UL/S engines).
- **Propeller** maintenance provides according to propellers manufactures manual (for example Kaspar's propeller manual).
- **Aileron**, flap, rudder, elevator, trim surfaces hinges – pay attention to free noiseless movement without backlashes. Re-grease once per each 100 flight hours or once per year. In case of operation in dusty conditions, clean and grease with shorter period.

- **Front leg movement** – pay attention to sliding surface of the leg and level of its wear. Verify zero movement in X and Y-axis of leg inside lower and upper “pertinax” guides. Clean them from dust and re-grease them once per each 50 flight hours or once per year. In case of dusty, humid or other extreme operation conditions make the mentioned period shorter.,
- **Bowden cable for throttle**, choke, ventilation valve re-grease once per year. In case of dusty, humid or other extreme operation condition grease earlier.
- **Swing-bearings** of controls rod grease once per year. In case of dusty, humid or other extreme operational condition grease earlier.
- Provide consistent check of **Pitot-Static system** for seal condition, proper function, hoses connections and secure connections with instruments. Verify free and clean intake of Pitot-tube. In case of present of condensate water in the system – remove it and dry the system.
- **Check the tightening of bolts:**
 - Engine’s frame* - check the bolts between engines bed and firewall, between engine’s frame and engine’s ring, between engine and engine’s ring
 - Front undercarriage* – check the bolts on lower and upper guide, bolt of shock absorber, bolt of front wheel and bolts attaching fork to leg
 - Main undercarriage* – check bolts attaching legs to U/C beam, check the M12 bolt with plastic washer on the leg, check the main wheels nuts
 - Elevator control system* – check the bolts connections of the control rods with steering, angle lever and elevator. At same places check the secure nuts of swingbearing of the rods
 - Front leg control system* – check the bolts connections of the control rods with front leg steering arm and pedals. At same places check the secure nuts of swing-bearing of the rods
 - Ailerons control system* – check the bolts connections of the control rods with steering levers, angle levers in wings and ailerons. At same places check the secure nuts of swing-bearing of the rods
 - Flap control system* – check bolt attaching flap control handle to U/C beam, bolts connecting pushing rod to handle and to torsion tube, check the secure nuts of swingbearing of pushing rod.
 - Rudder control system* – check the bolts attaching ropes to rudder and to pedals, check the secure-wiring on turnbuckles
- **Special equipment inspections** – given by suppliers manuals (for example ballistic rescue system)

Inspection performed and information found out had to be written down to this manual.

3.4. PERIODICAL INSPECTION AFTER FIRST 25 FLIGHT HOURS

Clean aircraft before inspection.

Periodical inspection after first 25 flight hours.

S/N:		Flight hours:	
Registration mark:		Number of starts:	
Chap.	Prescribed inspections	Made by	Checked by
	Engine and propeller		
	According to engine's manual		
	According to propeller's manual		
	Remove and check engine's cowlings for any signs of thermal damage, bubbles or cracks		
	Engine frame		
	Inspection, tightening, securing (if necessary) of engine's ring and frame bolts.		
	Inspection of welded frames for any signs of cracks, inspection of rubber shock absorbers between engine's ring and frame		
	Intake system		
	Inspection of air-filters, their attachment to carburetors		
	Inspection of intake pipes		
	Inspection of carburetors – attachment, control, cleanness		
	Electrical installation		
	Inspection of wires and cables for undamaged condition, their connection and securing		
	Battery		
	Check the battery voltage (should not be less than 12,4V unplugged) and wires connections		
	Fuel installation		
	Check and replace, if need to be, fuel filter. Inspection of undamaged fuel hoses, their connections, attachment and securing Damaged hoses need to be replaced		
	Visual inspection of seal installation		

Chap.	Prescribed inspections	Made by	Checked by
	Cooling system		
	Inspection of undamaged hoses, their connections, attachment and securing		
	Check the volume of cooling liquid in system		
	Check the density of cooling liquid to prevent freezing in winter condition. Fill in non-frost liquid if needed		
	Inspection, tightening, securing (if necessary) of engine's ring and frame bolts.		
	Damaged hoses need to be replaced		
	Oil system		
	Check the oil level in oil tank according to engine's manual		
	Provide inspection of cooler for cleanness, seal and undamaged condition. Check the cooler attachment for cracks.		
	Exhaust system		
	Inspection of exhaust system for any signs of crack or damage on welds or tubes		
	Check the silencer attachment and its faultless condition		
	Check the self-locking nuts used on exhaust system		
	Front undercarriage		
	Inspect condition and attachment of front leg, check and refill if necessary pressure of front tire		
	Inspect and tight if necessary all unmovable joints with bolts, all moveable joints secure		

Chap.	Prescribed inspections	Made by	Checked by
	Main undercarriage		
	Inspect condition of composite leg for cracks, cranny or holes, even for paint damage. In case of finding mentioned fault, contact the manufacturer		
	Inspect tightening of bolts		
	Check hydraulic brake system for leak		
	Wing		
	Visual inspection for loose rivets, skin deformation, cracks or other damages		
	Visual inspection of fuel tank for leak		
	Aileron		
	Visual inspection		
	Check free noiseless movement		
	Inspection of hinges		
	Inspection of controls		
	Flap		
	Visual inspection, check free noiseless movement		
	Inspection of hinges and controls		
	Wings anchor		
	Visual inspection, cleaning, conservation		
	Tightening of joint verifying		
	Fuselage		
	Visual check for loose rivets, skin deformations, crack or other damage		
	Cockpit canopy		
	Inspection of canopy latch		
	Horizontal tail surfaces		
	Visual check for loose rivets, skin deformations, crack or other damage		
	Inspection of free noiseless rudder movement		
	Inspection of rudder hinges		
	Check securing of hinges and bolts joint		

Chap.	Prescribed inspections	Made by	Checked by
	Cockpit		
	Inspect proper function of choke control		
	Inspect proper function of throttle control		
	Inspect proper function of vent control		
	Inspect proper function of propeller control		
	Steering joystick		
	Inspect free noiseless movement		
	Inspect backlashes in the system		
	Inspect securing of bolts		
	Pedal steering		
	Inspect strength of system		
	Inspect securing of bolts		
	Inspection for hydraulic brake system leak		
	Inspection of rudder ropes condition and attachment		
	Flap control		
	Inspect free noiseless movement		
	Pitot's tube		
	Inspection for clean waterless undamaged condition		

3.5.PERIODICAL INSPECTION AFTER FIRST 50 FLIGHT HOURS

Annual periodical inspection after 50 flight hours

S/N:		Flight hours:	
Registration mark:		Number of starts:	
Chap.	Prescribed inspections	Made by	Checked by
	Construction		
	Fuselage		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction including fiberglass parts.		
	Inspection of fiberglass fairing between wing and fuselage for faultless condition		
	Inspection of fiberglass fairing between fin and fuselage for faultless condition		
	Inspection of spur for faultless condition		
	Inspection of side windows of fuselage for faultless condition		
	Inspection of ventilation system for proper function and condition		
	Inspection of proper function and condition of canopy latch		
	Inspection of condition and completeness of safety equipment, if it is installed		
	Inspection of tires condition, inspection of rubber sealing of canopy.		
	Inspection of canopy attachment		
	Inspection of rivet lines of undercarriage beams		
	Inspection of condition and attachment of accessories like antenna, strobe...		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Wing		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction including fiberglass parts.		
	Inspection of wing hinges backlashes in fuselage attachment		
	Inspection of condition and attachment of winglets		
	Inspection of condition of position lights		
	Inspection of condition of strobe lights		
	Inspection of condition of landing light		
	Ailerons		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction		
	Inspection of free noiseless movement		
	Inspection of hinge		
	Flaps		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction		
	Inspect free noiseless movement		
	Inspect the hinge		
	Inspect controls rods		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Empennage		
	Horizontal tail surfaces		
	Inspection of attaching and securing of horizontal tail surfaces		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction		
	Inspection of fiberglass ends of stabilizer and its attachment		
	Inspect free noiseless movement of the elevator		
	Visual inspection of trim surface		
	Visual inspection of trim surface's and elevator's control and their securing		
	Vertical tail surfaces		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction including fiberglass parts.		
	Inspection of rudder condition and attachment		
	Inspection of lower rudder bushing and securing of lower hinge		
	Inspection of upper rudder bushing and securing of upper hinge		
	Inspect free noiseless rudder movement		
	Inspect condition and rudder control ropes securing		
	Controls		
	Steering joystick		
	Inspect free noiseless movement		
	Check backlashes		
	Inspect securing of bolts		
	Inspect steering limits condition		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Steering pedals		
	Inspect free noiseless movement		
	Inspect backlashes in system		
	Inspect securing of bolts		
	Check the system limits conditions		
	Inspect condition, pre-stress and securing of controlling ropes		
	Inspect hydraulic brake system for leak		
	Flap control		
	Inspect free noiseless movement		
	Inspect securing of bolts		
	Inspect flap control handle and its position lock function		
	Elevator's trim surface control		
	Serve-control inspection		
	Inspect system backlashes		
	Inspect securing of trim surface hinge pin		
	Verify neutral position of trim surface		
	Inspect trim surface position indicator		
	Equipment		
	Verify its completeness and its validity of documentation		
	Inspect Instrument panel condition and electrical connectors securing		
	Inspect instruments connections and functionality		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Check condition and function of switches and fuses		
	Inspect free noiseless movement		
	Inspect condition and function of throttle, choke controls, fuel valve, heating and ventilation controls		
	Check the readability and completeness of labels		
	Inspect conditions of safety and rescue equipments		
	Inspect cleanness and conditions of upholstery		
	Inspect seats condition		
	Inspect safety belts attachments and belt's faultless condition		
	Undercarriage		
	Main undercarriage		
	Main legs condition and attachment inspection		
	Inspect level of lubrication and securing of moveable parts of the wheels.		
	Inspect wheel's condition and its attachment		
	Check tires wear, conditions and pressure		
	Inspect wheel's disc for any signs of cracks or damage		
	Inspection of undercarriage bolts tightening		
	Inspect the wheel's free and noiseless rotation		
	Verify brake system function		
	Inspect brake system hoses for undamaged condition and its attachment		
	Inspect brake's pad's level of wear and of the brake disc		
	Inspect hydraulic brake system for leak from valves, connectors, cylinders. Exchange of brake liquid can be done.		
	Inspect wheel's covers conditions and its attachment		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Front undercarriage		
	Inspection of leg and its attachment point		
	Inspect the shock absorbers condition and level of wear		
	Inspect the front wheel disc for any sign of cracks or damages		
	Inspect the bolts securing		
	Inspect free noiseless rotation of the wheel		
	Inspect the front wheel control system and its free movement		
	Inspect the condition of control pushing rods and its securing		
	Check the tire pressure and its faultless condition		
	Fuel system		
	Empty the fuel from wings		
	Fuel filter exchange		
	Inspect condition of fuel pump (seek for any signs of cracks) and of fuel hoses in engine's compartment		
	Inspect fuel system for leak of fuel		
	Fuel hoses connections inspection		
	Propeller and engine		
	Inspect according to Engine's and Propeller's manufacturer		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Disassembling of engine's cowlings and inspect their condition for sign of thermal damage, cracks, or other defects		
	Inspection of tightening and securing of engine's frame bolts		
	Inspect the engine's frame for any sign of cracks		
	Inspection of exhaust system for any signs of cracks on tubes or welds		
	Electrical system		
	Inspection of battery's condition and its attachment		
	Inspection of battery's voltage		
	Check the connectors conditions and their securing		
	Verify zero electrical resistance of connectors		
	Pitot-Static systems		
	Inspect the pitot-static system condition		
	Inspect inlets of pitot-static tube for its cleanness and waterless condition		
	Inspect pitot-static system for presence of condensate water – if so, remove it		
	Inspection of pitot-static system connections with instruments and their securing		
	Inspection of proper function of pitot-static tube		
	Inspect the seal status of the system		

Annual periodical inspection after 50 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Heating and vents		
	Inspection of cleanness of intakes		
	Check the faultless condition of distribution's hoses		
	Inspection of thermal exchanger condition and its attachment to exhaust system		
	Navigate and communicative instruments		
	Inspection of status		
	Inspection of functionality		
	Re-calibrate compensation of compass declination		

NOTES:

Date:

Sign:

3.5.PERIODICAL INSPECTION AFTER FIRST 100 FLIGHT HOURS

Annual periodical inspection after 100 flight hours

S/N:		Flight hours:	
Registration mark:		Number of starts:	
Chap.	Prescribed inspections	Made by	Checked by
	Construction		
	Fuselage		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction including fiberglass parts.		
	Inspection of fiberglass fairing between wing and fuselage for faultless condition		
	Inspection of fiberglass fairing between fin and fuselage for faultless condition		
	Inspection of spur for faultless condition		
	Inspection of side windows of fuselage for faultless condition		
	Inspection of ventilation system for proper function and condition		
	Inspection of proper function and condition of canopy latch		
	Inspection of condition and completeness of safety equipment, if it is installed		
	Inspection of tires condition, inspection of rubber sealing of canopy.		
	Inspection of canopy attachment		
	Inspection of rivet lines of undercarriage beams		
	Inspection of condition and attachment of accessories like antenna, strobe...		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Wing		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction including fiberglass parts.		
	Inspection of wing hinges backlashes in fuselage attachment		
	Inspection of condition and attachment of winglets		
	Inspection of condition of position lights		
	Inspection of condition of strobe lights		
	Inspection of condition of landing light		
	Ailerons		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction		
	Inspection of free noiseless movement		
	Inspection of hinge		
	Flaps		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction		
	Inspect free noiseless movement		
	Inspect the hinge		
	Inspect controls rods		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Empennage		
	Horizontal tail surfaces		
	Inspection of attaching and securing of horizontal tail surfaces		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction		
	Inspection of fiberglass ends of stabilizer and its attachment		
	Inspect free noiseless movement of the elevator		
	Visual inspection of trim surface		
	Visual inspection of trim surface's and elevator's control and their securing		
	Vertical tail surfaces		
	Visual inspection for loose rivets, deformations, cracks and other damages of construction including fiberglass parts.		
	Inspection of rudder condition and attachment		
	Inspection of lower rudder bushing and securing of lower hinge		
	Inspection of upper rudder bushing and securing of upper hinge		
	Inspect free noiseless rudder movement		
	Inspect condition and rudder control ropes securing		
	Controls		
	Steering joystick		
	Inspect free noiseless movement		
	Check backlashes		
	Inspect securing of bolts		
	Inspect steering limits condition		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Steering pedals		
	Inspect free noiseless movement		
	Inspect backlashes in system		
	Inspect securing of bolts		
	Check the system limits conditions		
	Inspect condition, pre-stress and securing of controlling ropes		
	Inspect hydraulic brake system for leak		
	Flap control		
	Inspect free noiseless movement		
	Inspect securing of bolts		
	Inspect flap control handle and its position lock function		
	Elevator's trim surface control		
	Serve-control inspection		
	Inspect system backlashes		
	Inspect securing of trim surface hinge pin		
	Verify neutral position of trim surface		
	Inspect trim surface position indicator		
	Equipment		
	Verify its completeness and its validity of documentation		
	Inspect Instrument panel condition and electrical connectors securing		
	Inspect instruments connections and functionality		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Check condition and function of switches and fuses		
	Inspect free noiseless movement		
	Inspect condition and function of throttle, choke controls, fuel valve, heating and ventilation controls		
	Check the readability and completeness of labels		
	Inspect conditions of safety and rescue equipments		
	Inspect cleanness and conditions of upholstery		
	Inspect seats condition		
	Inspect safety belts attachments and belt's faultless condition		
	Undercarriage		
	Main undercarriage		
	Main legs condition and attachment inspection		
	Inspect level of lubrication and securing of moveable parts of the wheels.		
	Inspect wheel's condition and its attachment		
	Check tires wear, conditions and pressure		
	Inspect wheel's disc for any signs of cracks or damage		
	Inspection of undercarriage bolts tightening		
	Inspect the wheel's free and noiseless rotation		
	Verify brake system function		
	Inspect brake system hoses for undamaged condition and its attachment		
	Inspect brake's pad's level of wear and of the brake disc		
	Inspect hydraulic brake system for leak from valves, connectors, cylinders. Exchange of brake liquid can be done.		
	Inspect wheel's covers conditions and its attachment		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Front undercarriage		
	Inspection of leg and its attachment point		
	Inspect the shock absorbers condition and level of wear		
	Inspect the front wheel disc for any sign of cracks or damages		
	Inspect the bolts securing		
	Inspect free noiseless rotation of the wheel		
	Inspect the front wheel control system and its free movement		
	Inspect the condition of control pushing rods and its securing		
	Check the tire pressure and its faultless condition		
	Fuel system		
	Empty the fuel from wings		
	Fuel filter exchange		
	Inspect condition of fuel pump (seek for any signs of cracks) and of fuel hoses in engine's compartment		
	Inspect fuel system for leak of fuel		
	Fuel hoses connections inspection		
	Propeller and engine		
	Inspect according to Engine's and Propeller's manufacturer		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Disassembling of engine's cowlings and inspect their condition for sign of thermal damage, cracks, or other defects		
	Inspection of tightening and securing of engine's frame bolts		
	Inspect the engine's frame for any sign of cracks		
	Inspection of exhaust system for any signs of cracks on tubes or welds		
	Electrical system		
	Inspection of battery's condition and its attachment		
	Inspection of battery's voltage		
	Check the connectors conditions and their securing		
	Verify zero electrical resistance of connectors		
	Pitot-Static systems		
	Inspect the pitot-static system condition		
	Inspect inlets of pitot-static tube for its cleanness and waterless condition		
	Inspect pitot-static system for presence of condensate water – if so, remove it		
	Inspection of pitot-static system connections with instruments and their securing		
	Inspection of proper function of pitot-static tube		
	Inspect the seal status of the system		

Annual periodical inspection after 100 flight hours

Chap.	Prescribed inspections	Made by	Checked by
	Heating and vents		
	Inspection of cleanness of intakes		
	Check the faultless condition of distribution's hoses		
	Inspection of thermal exchanger condition and its attachment to exhaust system		
	Navigate and communicative instruments		
	Inspection of status		
	Inspection of functionality		
	Re-calibrate compensation of compass declination		

NOTES:

Date:

Sign:

3.7. LUBRICATION PLAN

Unit	Area of lubrication	After first 25 hours	Every 100 hours	Lubricant
Propeller	According to propeller's manual	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Engine	Throttle control cable on the inlet into terminal (in the engine compartment).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Engine oil
	Choke control cable on the inlet into terminal (in the engine compartment).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Engine oil
Nose landing gear	Landing gear leg in the area of mounting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
Main landing gear	Landing gear leg in the area of mounting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
Ailerons	Hinges.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
	Rod end bearings of the control tubes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
	Two-arm control lever in the wings.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
	Torque tube bearings in center console in fuselage and wings.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
Flaps	Hinges.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
	Rod end bearings on actuators.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
HTU	Elevator hinges.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
	Rod end bearing of the elevator control tubes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
VTU	Rudder hinges.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
	Cable shackles on the rudder control cables.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
Trim tab	Tab hinges.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
Manual control	All movable links in the cockpit.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease
Foot control	All movable links in the cockpit.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pro-Long Grease

3.8. GROUND HANDLING

During handling (hold/push/pull) aircrafts parts always touch in place of structural reinforcement like ribs, wall and beams (shortly in positions of rivets lines). Do not touch fiberglass parts, neither controls surfaces. The aircraft can be pushed/pulled only through:

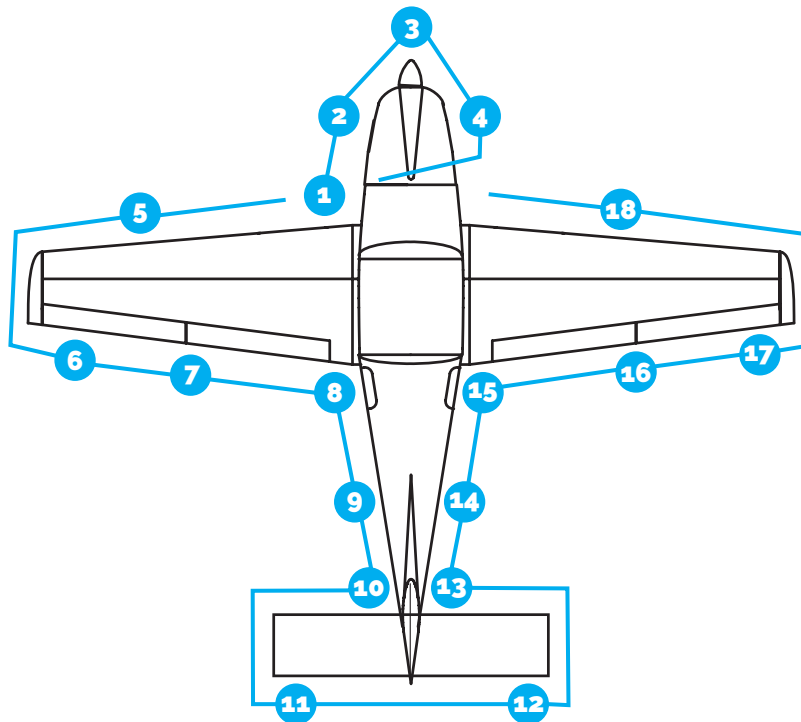
- Propeller and only in case of holding it as close to its cone as possible
- Step-on surface on wings
- Eventually though fuselage in place of its walls

In case of parking outside the hangar, use wing's anchors and fuselage strut to fix aircraft movement

For easy movement on the ground, the aircraft is equipped by hangers on sides of fork of front undercarriage leg. So you can pull/push aircraft through towing rod.

PRE-FLIGHT INSPECTION - MAINTENANCE

Remove all covers, disconnect anchors (in case of parking aircraft outside of hangar) and block the wheels.



On figure above, there are checkpoints marked and each point is described in text bellow. For providing proper inspection, some of the cowlings and covers, had to be removed. Aircraft should be inspecting as follows:

1) Canopy

- Master ON, check sufficient volume of fuel
- Master, Magnetos and other switches OFF!
- Fuel stopped
- Visual check of interior, remove all free-moving things
- check free-movement of steering and controller

2) Engine space

- remove upper canopy, visual check of engine and accessories
- check status and fixation of units, tightening and locking of screws, status of tubes (look for cracks), status and fixation of electric-installation.
- check volume of oil and cooling liquid
- check propeller blades, fixation of propellers cone
- put the cover and lock it

3) Landing gear

- checking the pressure, status and fixation of each gear

4) Wings

- Visual check of leading and trailing edge
- Visual check of fuel tanks, check the volume of fuel
- check Pitot tube on left wing (status, fixation, direction)

5) Ailerons

- Visual check of construction
- check easy and free movement
- check hinge-line of ailerons

6) Flaps

- Visual check of construction
- checking of free movement, locking of each flaps position
- check hinge-line of flaps

7) Main landing gear

- check pressure of tires
- check fixation

8) Fuselage

- Visual check for any damage of construction
- check antenna (status, fixation)

9) Horizontal Tail surfaces

- Visual check of construction
- check the connection to vertical tail surfaces
- check hinge of elevator and trim surfaces
- check free movement, easy to control

10) Vertical Tail surfaces

- Visual check of construction
- check hinge of rudder- check ropes status (strain, secure, free-movement)

11)– 18) are just for another half of a plane

Result of inspection had to be written down into Aircraft's book. In case of discovering rising backlashes or any other defects – contact the manufacturer.

Tools needed:

- Hexagonal socket keys from 3 to 10 mm
- "Flat" keys from 6 to 22 mm and 32mm
- screwdrivers with flat and cross head
- ROTAX's key supplied with engine

3.10. AFTER-FLIGHT INSPECTION - MAINTENANCE

Maintenance of aircraft after each flight

Wash the aircraft and propeller with clean water without any cleaning additions. According to degree of staining, you can use cleaning additions for places like exhaust pipe, main undercarriage or wheel's covers. As cleaning additions you can use automotive one. Organic glass of the canopy had to be washed very carefully with plenty of water used forward to soften the rests of insect. Wash with soft and clean sponge without using strength. Drying drops of water can be removed by using wet deerskin. During washing procedure you can watch for condition of rivet lines, screwed joints, leading and trailing edges of aero-dynamical surfaces. For cockpit cleaning use vacuum cleaner. We suggest to provide visual check of intake's holes in engine's cowling providing air to engine's coolers. Founded obstacles remove carefully. After finishing cleaning of the aircraft, check fuel, oil and cooling liquid volumes. Re-fill if needed.

3.11. MAINTENANCE'S ENTRIES

There are 7 installed maintenance entries on the aircraft. Two are placed on lower side of each wing, one at the end of the fuselage and last two on horizontal stabilizer.

3.12. BRAKES

Installation guide for hydraulic brake system with closed brake circuit for 6" eco power brake wheels:

Type of brakes:

Single-disc with disc placed in the wheel, with single-piston brake valve, closed hydraulic circuit, one main brake cylinder with a 16 mm diameter on the control lever or two 14 mm cylinders on pedals.

Brake wheel installation:

Installation - the assembly of brake wheels is usually simple and trouble-free, providing the output diameter and length of the wheel shaft output, fastened to the aircraft leg, is predetermined. The wheels are supplied as a set and during assembly the wheel shafts including wheel and brake set are usually only inserted into pre-made (original) wholes. If dimensions are not arranged beforehand, it is necessary to adjust the aircraft leg to the dimensions according to the supplied shaft (usually the brake valves have a horizontal orientation with the piston in the backward direction).

Prior to inserting the wheel shaft into the aircraft leg, the brake disc must be placed in carrier pins inside the wheel and the brake valve needs to be turned so the output for the brake hose is facing in the upward direction. The wheel set with brake and shaft prepared this way can be assembled to the aircraft leg and tighten the shaft nut by means of torque, according to leg type. The nut requires a securing pin, providing it is not self-securing. The same method is applied for the assembly of the second wheel.

Note:

Disassembling the entire wheel set with brake is not necessary for changing a tire.

All that is required is to unscrew the front M14x1.5 nut and remove the wheel itself along with tire.

Installing the main brake cylinder:

The main brake cylinder is clamped to the control lever using a socket. It is tightened on the control lever in the forward direction in order to ensure a trouble-free grip - pressing the lever when braking as well as preventing the lever from interfering during flight and aircraft control. The main brake cylinders are assembled to pedals via designated holders found on the pedals, always in the upward direction. The holders shall be made individually, according to the type of plane and pedal area. Cylinders supplied for pedals are not modified any further.

Brake hose connection:

All brake hoses can be connected upon installing the wheels with brakes and the main brake cylinder(s). The supplied hose shall be connected to the main brake cylinder on the control lever. A "T" connector is screwed on the other end. Brake hoses are then stretched from this connector to the wheels. The 4x2 PA6 hose is fastened to the screw joint via a caulking ring. The hose is shortened perpendicularly and cleanly. The supplied brass hose insertion is inserted into the pipe. We then insert this hose into the follower nut of the screw joint and firmly tighten the nut. The tightening torque cannot be selected due to it being made of plastic, which can deform. Check the tightening after 10 hours of flight.

Venting - filling the brake system:

The filling of the system starts with the wheels, or brake valves. A pressure filling container is used for the filling process. If a pressure container is not available, the system can be filled using a physician's syringe, though this filling method is not easy and quality venting of the brake system is not ensured and could lead to impaired brake functionality.

ATTENTION!

**DOT 3 or DOT 4 automobile brake fluid is the only
brake system filling permitted for use.
Using other fillings will damage sealing elements!!**

Filling:

Place the pressure container hose on the filling screw of the brake valve (pos. 1) and verify all other filling and venting screws are closed. Place the overflow hose on the venting screw of the main brake cylinder. The entire main brake cylinder needs to be removed from the control lever and the venting screw turned upward (pos. 2) in order to remove all air bubbles from the system. As soon as the main brake cylinder is turned, the venting screw can be released and the pressure container tap can be opened. The liquid begins to flow. The venting screw of the main brake cylinder shall be closed after air bubbles no longer appear and clean brake fluid begins to flow. The filling screw is also closed at the wheel as well as the filling container tap. The same method is applied to fill the second wheel, or the brake of the second wheel. The functionality and parking brake efficiency are checked and a visual control of the hoses and their tightness and proper filling (air bubbles) is executed upon filling the entire system.

The above described filling method concerns the main brake cylinder on the control lever. The same filling method is applied for the main brake cylinders on the pedals, the only difference being that the procedure is executed independently with each individual cylinder. The lever of the main cylinder for middle tunnel is filled in the same manner with the outputs also in the upward direction. The venting screws of all brake cylinders must be facing perpendicularly upward during the filling process.

Brake and brake system control and maintenance:

The closed brake system operates reliably and with minimum need of up keeping. A visual control of the brake system, leaking or other damage shall be executed prior to every start. Check the brake function when preparing for start. Do not start if you have any doubts. Perform the inspection again! In comparison with passenger cars, the wearing of brake pads does affect brake efficiency. Therefore it is necessary to check and set the clearance between brake pad and brake disc if you find the main brake cylinder step has excessively increased.

Setting the clearance of brake pads:

The clearance is adjusted by tightening the setting screw located on the opposite side of the piston (pos. 3). The adjustment is performed using an adjustment spanner supplied along with the brakes (a large screwdriver may also be used). The smallest clearance possible is set. The wheel should be able to rotate freely. The clearance decreases in the clockwise direction and increases in the counter clockwise direction.

Check the purity of the brakes if you experience improper functionality, though the adjustment and venting processes were executed properly. The brakes shall not come into contact with substances such as lubricants or other greasy substances. Remove all other impurities.

CAUTION!

The closed brake system is subject to small thermal expansivity during extensive temperature differences. This expansivity is significant primarily during the summer-winter, winter-spring transitions. Therefore we recommend inspecting the system or venting the system twice per year in order to maintain 100% brake functionality and eliminate undesired deceleration or a small brake effect.

The system shall also be checked for wearing as well as damaged tires which are an important part of the landing gear. A damaged tire shall be replaced with a new tire!

3.13. Installation with main brake cylinder on steering rod in Attachment Nb. 2

3.13. Installation with main brake cylinders on pedals in Attachment Nb. 2



3.13. INSTALLATION WITH MAIN BRAKE CYLINDER ON STEERING ROD IN ATTACHMENT NB. 2

3.13. INSTALLATION WITH MAIN BRAKE CYLINDER ON PEDALS ROD IN ATTACHMENT NB. 2

4.1. GENERAL

Due to operating of aircraft, damage can easily happened. Seriousness of damage is given by concerned parts, sort of damage, its size and frequency of incidence. Small repair can be done by owner, other only by authorized service. All kind of damages and its repairs had to be written down to aircraft operational documentation – see chapter 5

4.2. METAL SKIN REPAIRS

Materials used - duralumin 2024-T3

Thickness used: 2mm, 1,2mm, 1 mm, 0,6 mm, 0,5 mm, 0,4 mm

Small cracks shorter than 5mm had to be stopped by drilling 1,5mm diameter hole placed at the tip-end of the crack.

Small holes smaller diameter of 4mm can be blinded by rivet.

Small non-structural damage can be repaired by using a small frame and patch.

Frame and patch had to have same thickness as repaired skin. Patches smaller area then 50mm² can be fixed by single perimeter line of rivets. Greater on needs to have double perimeter line of rivets. Before riveting the patch, all inner mating surfaces had to be painted. After riveting final paint can be used..

4.3. RIVETING

We suggest providing such repair in authorized service center.

4.4. FIBERGLASS PARTS

Only small cracks and cranny of non-structural parts can be repaired by you According to type of the defect – the damaged area is cut-out or just re-brushed. Paint in close area of repair had to be removed. In case of using fiberglass patch – use 40-50mm oversized one. During overlying the patches, apply bonding material at the same time. Two layers should be enough. For faster drying procedure, you can use warm air from some air-heater. In case of greater surfaces, you need to underlay repaired area by shaped pad covered with foil to avoid gluing. After drying, brush the surface, use filler if needed, and paint it.

4.5. PAINT RENOVATION

Small repairs can be done by you.

4.6. ASSEMBLING AND ADJUSTMENT OF AIRCRAFT AFTER REPAIR

In case of larger repair, following things had to be done:

- Weight of aircraft before and after repair
- leveling of aircraft geometry, re-setting deflections of control surfaces
- Inspection of tightening bolts, their securing, backlashes in controls system or in control surfaces movement and inspection of electrical installation
- Engine's test
- Flight test and solving of imperfection founded

4.7. AFTER-REPAIR FIRST FLIGHT

Test flight can be made by qualified licensed pilots with permission only. Information here given is only for owner's image.

Flight test had to be done in following cases:

- After repair, or exchange aero-dynamical surfaces like wing, aileron, flap, horizontal stabilizer, elevator, rudder.
- In case of repair or exchange of undercarriage, engine, propeller

After such changes, the flight performances of the aircraft can be different. That's why flight test had to be done again. It will be rechecked handling and control during start, climb cruise, stall, descend and landing. After finishing flight tests, the Test Flight Report had to be made.

4.8. SPARE PARTS ORDERS

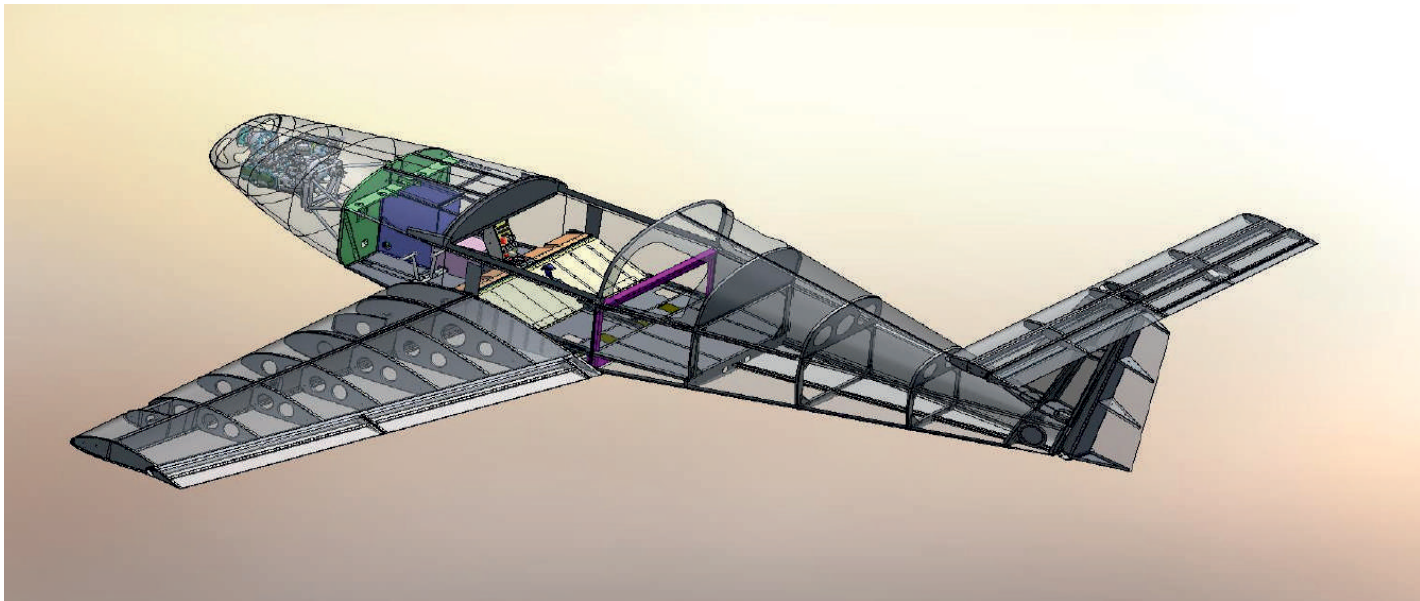
Contact local authorized service center or manufacturer.

Repairs records

All kinds of repairs, which were done on the aircraft, had to be written down (+ archive documentation from repair).

Repair Nb.	Date of repair	Repaired by (Authorized service, technician)	Aircraft's part repaired (1.7. Technical description)	Recorded by (Signature)
1				

→ **Technical description of aircraft's assemblies with drawings**



Wings (version flap 1:1 aileron)

1-11-00-00 - left wing equipped

1-11-10-00 – wing L

1-11-20-00 – aileron L

Fuselage

1-21-00-00 - front fuselage

1-21-10-00 – firewall

1-21-20-00 – main beam

1-21-30-00 – U/C beam

1-22-00-00 - rear fuselage

1-23-10-00 – canopy frame

1-24-00-00 - controls

1-24-10-00 – steering rod

1-24-20-00 – elevator control

1-24-30-00 – rudder/front wheel control

1-24-40-00 – flap control

Empennage

1-30-00-00 - empennage

1-31-00-00 – horizontal tail surfaces

1-31-10-00 – stabilizer

1-31-20-00 – elevator

1-32-00-00 – vertical tail surfaces

1-32-00-00 - fin

1-32-20-00 – rudder

Undercarriage

1-41-00-00 - main undercarriage

1-42-00-00 - front undercarriage

Fuel tanks

1-51-00-00 - fuel tank equipped

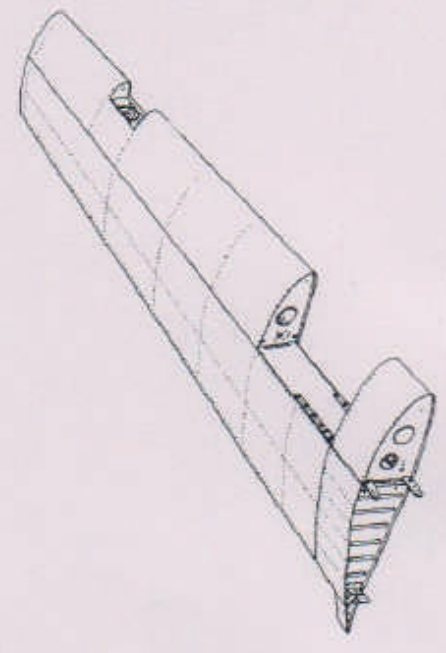
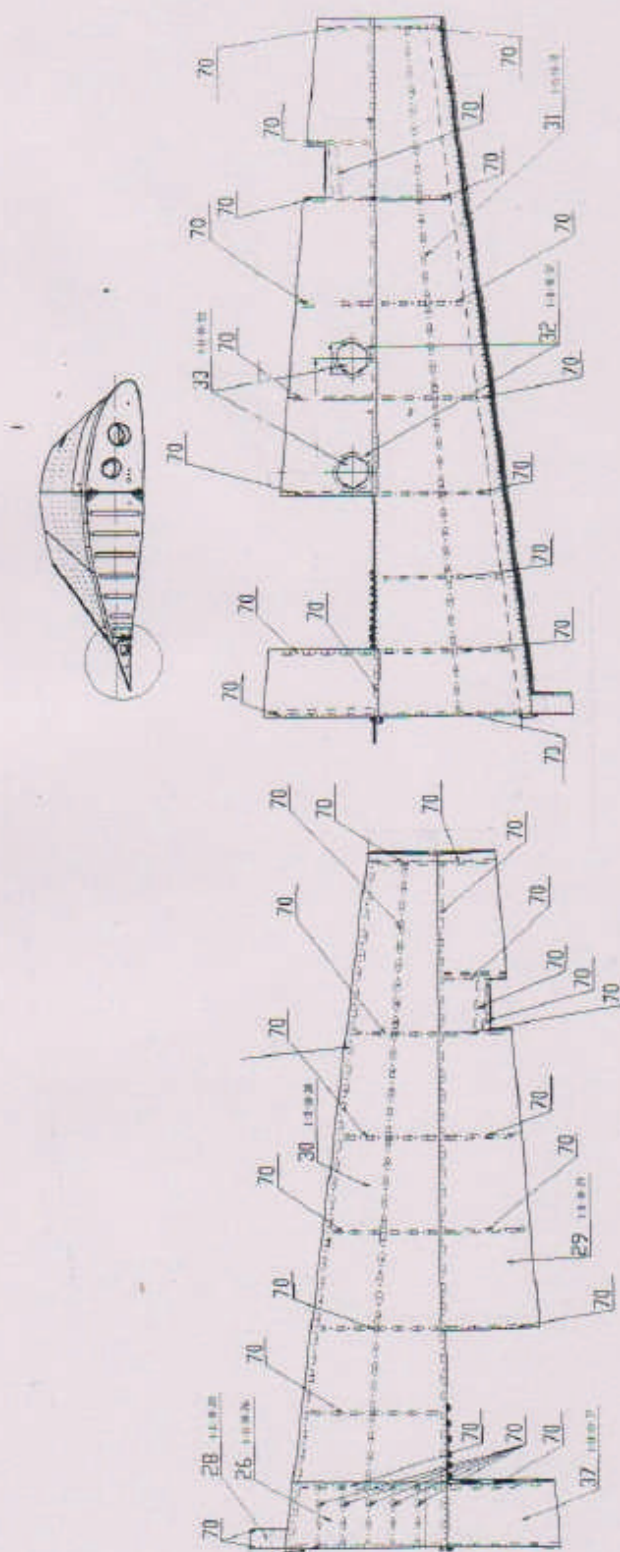
1-51-10-00 – fuel tank

Power plant

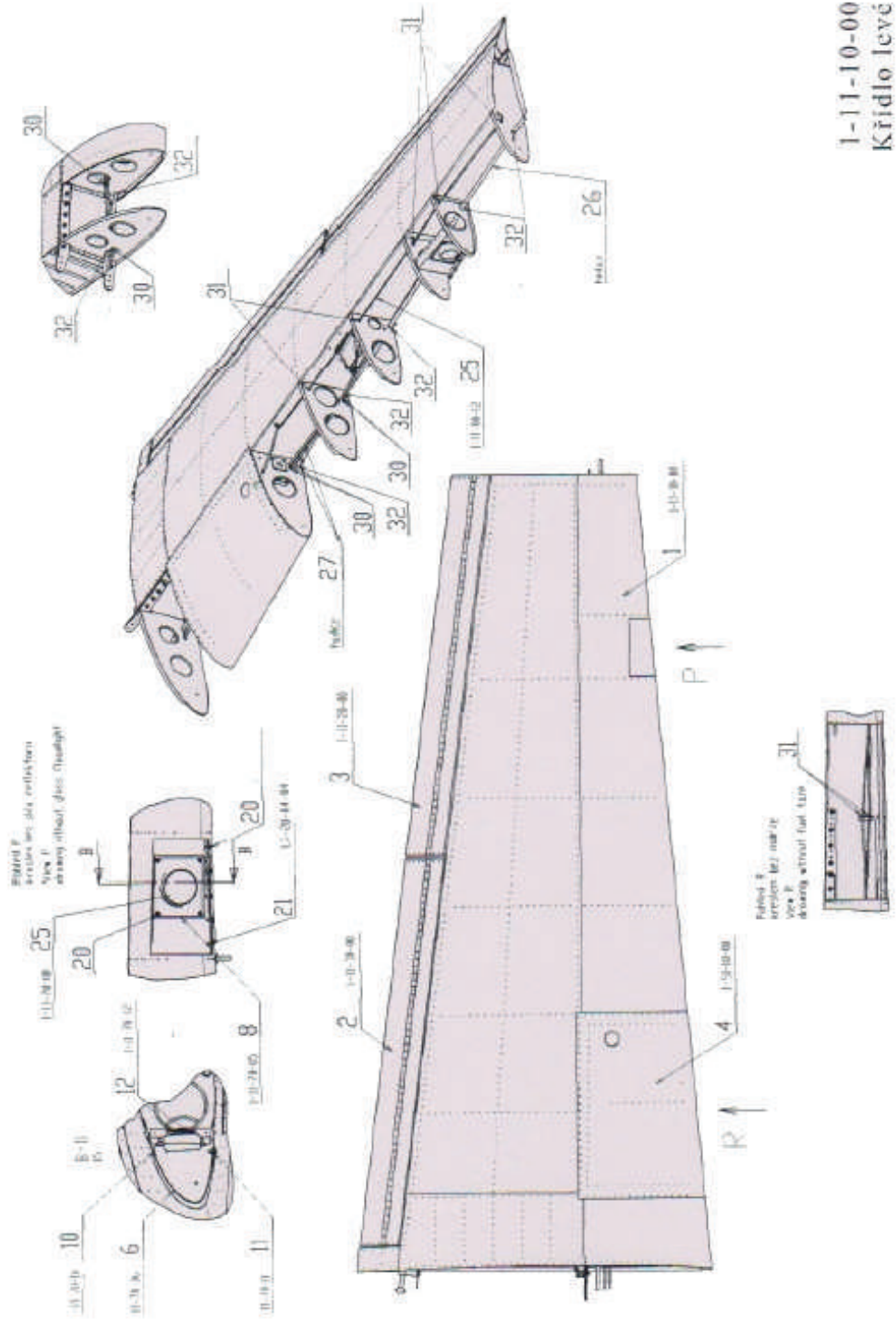
1-60-00-00 - Power plant equipped

1-61-20-00 – engine frame for ROTAX

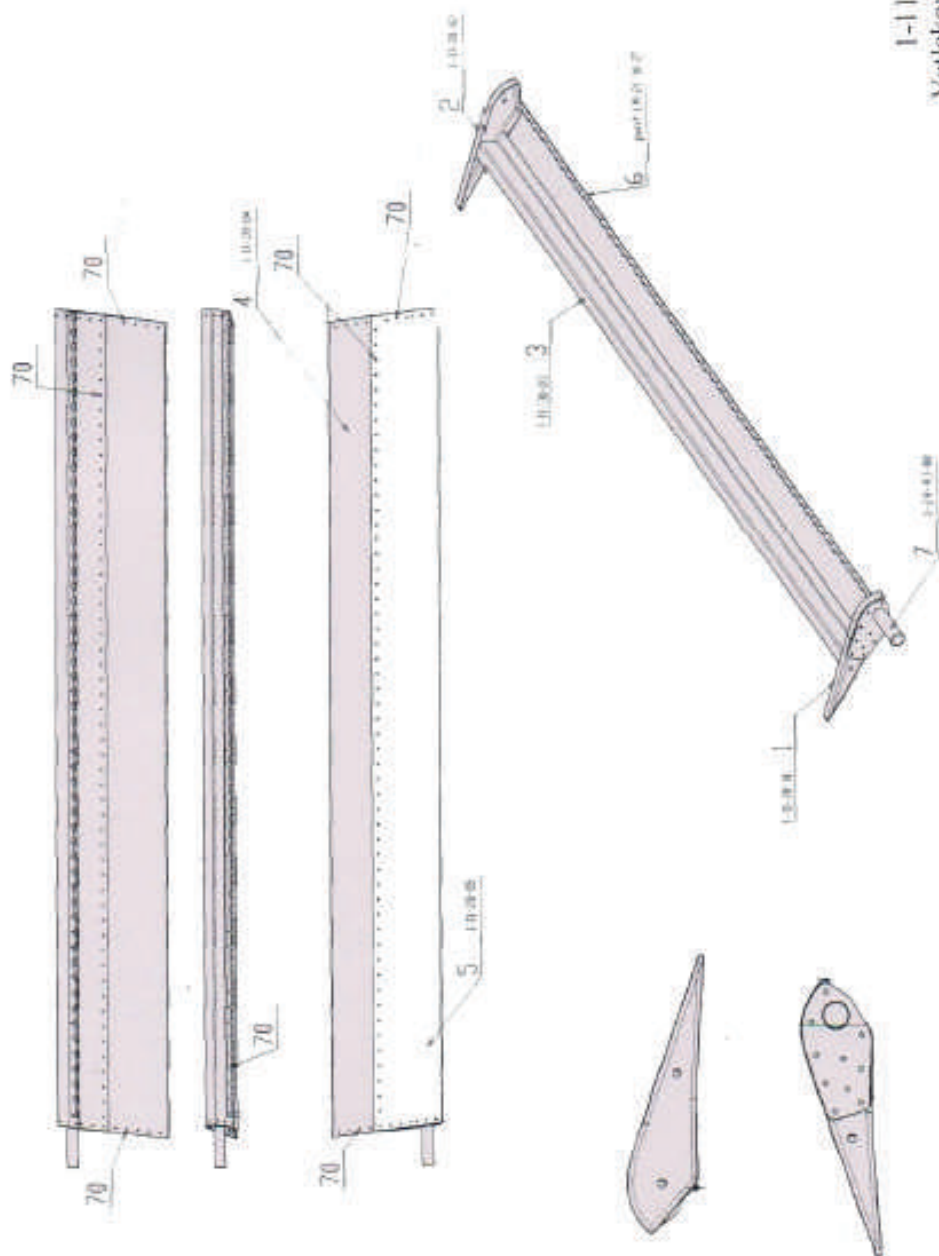
1-61-30-00 – cowlings for ROTAX



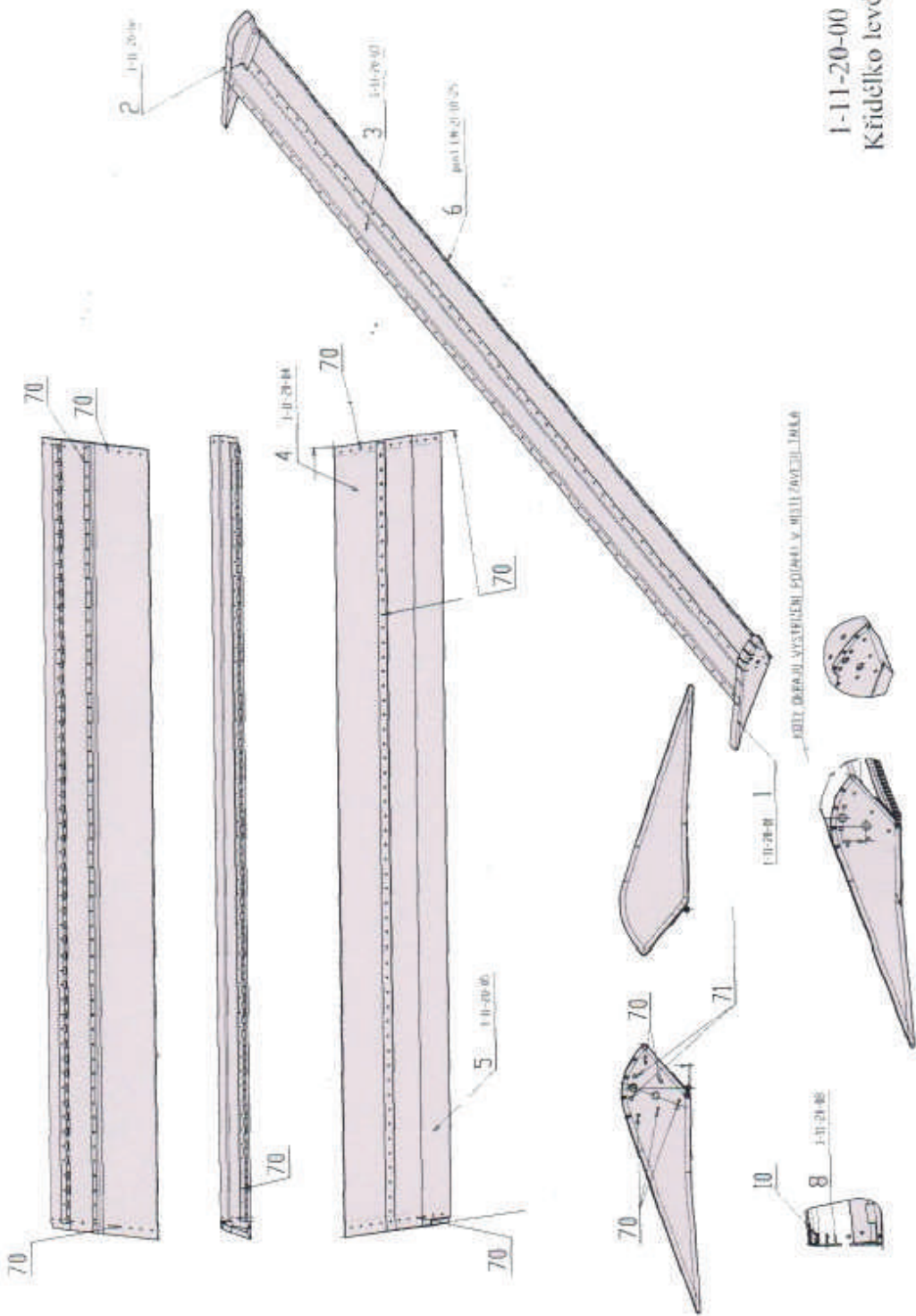
1-11-10-00
Křídlo levé

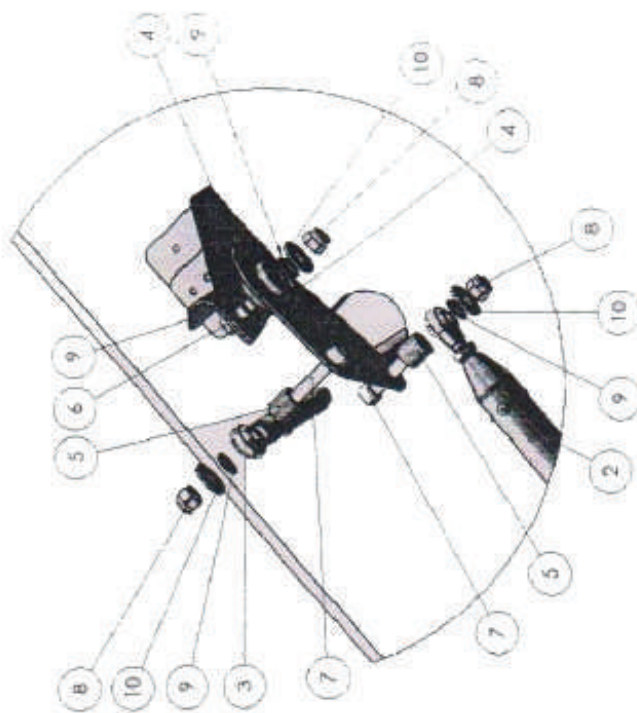
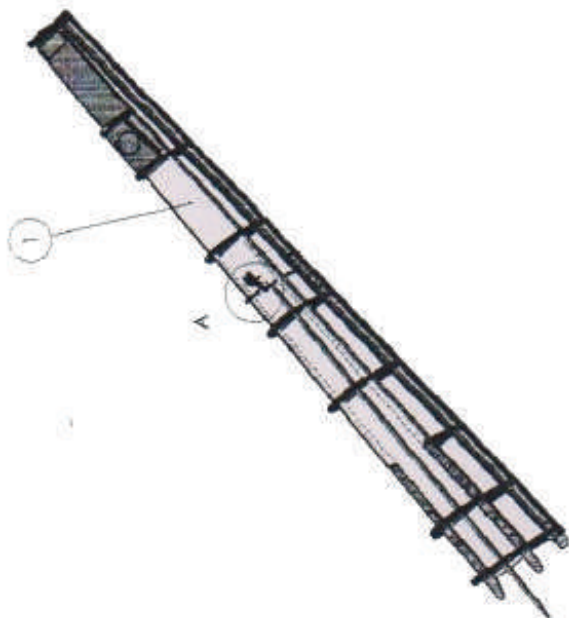


1-11-10-00
Křídlo levé

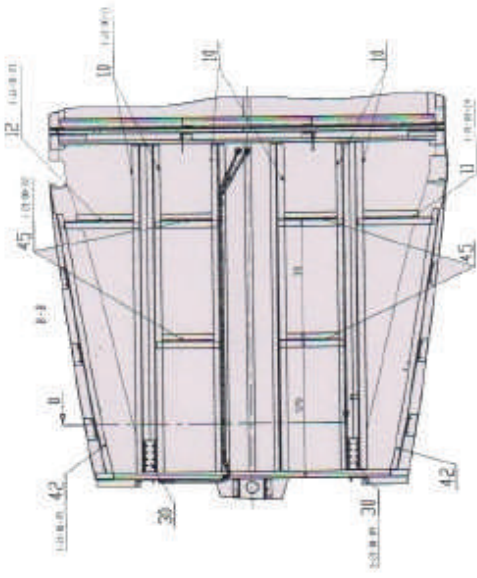


1-11-30-00
Vztlaková klapka I.

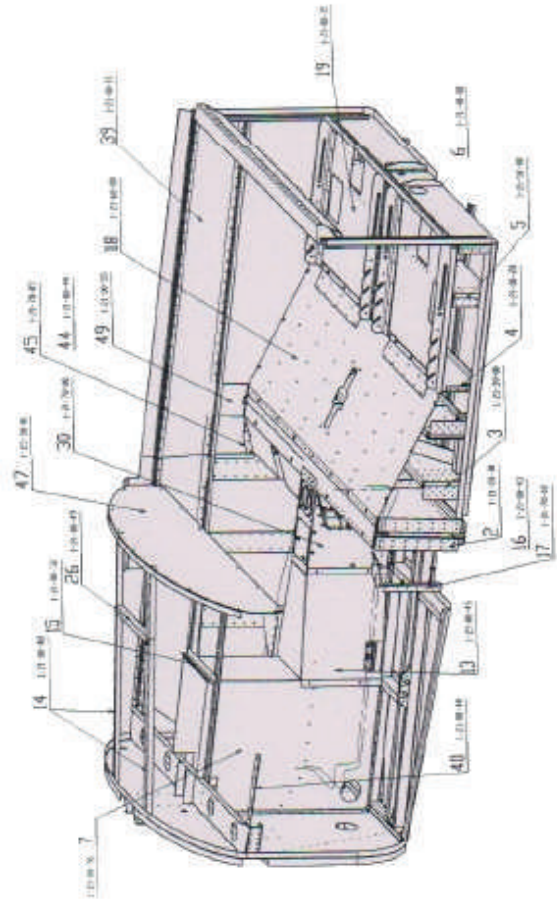
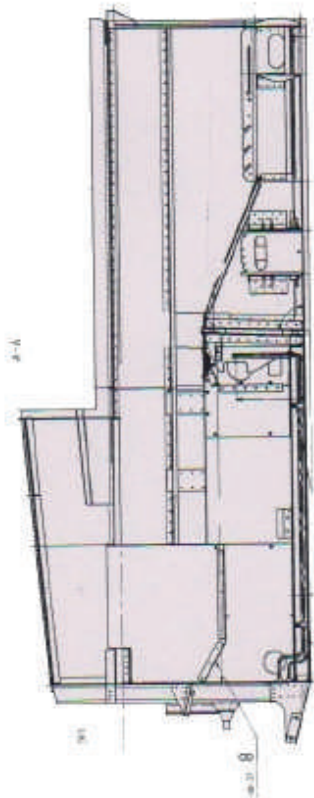


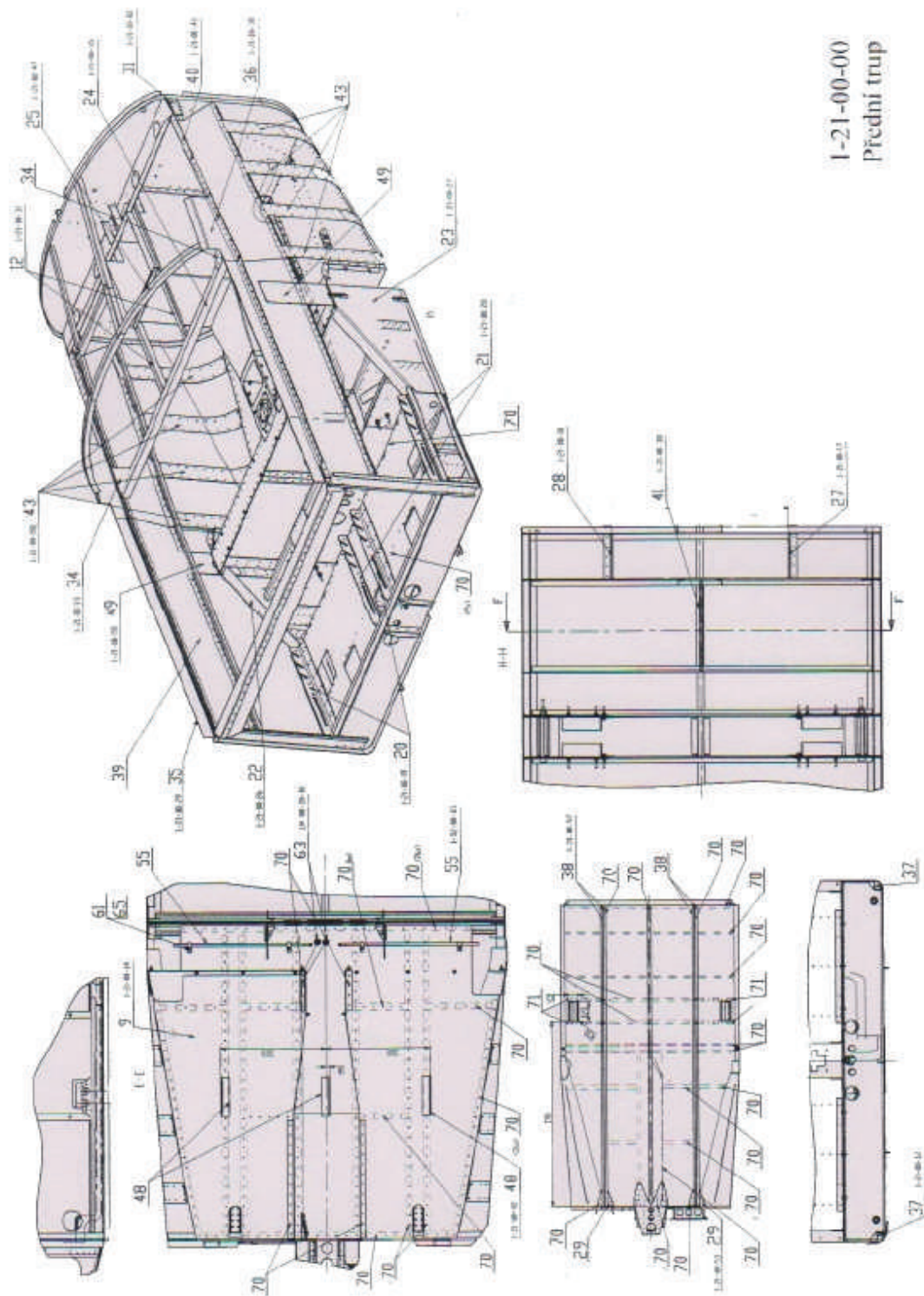


1-11-40-00
Ovládání křídlekl.

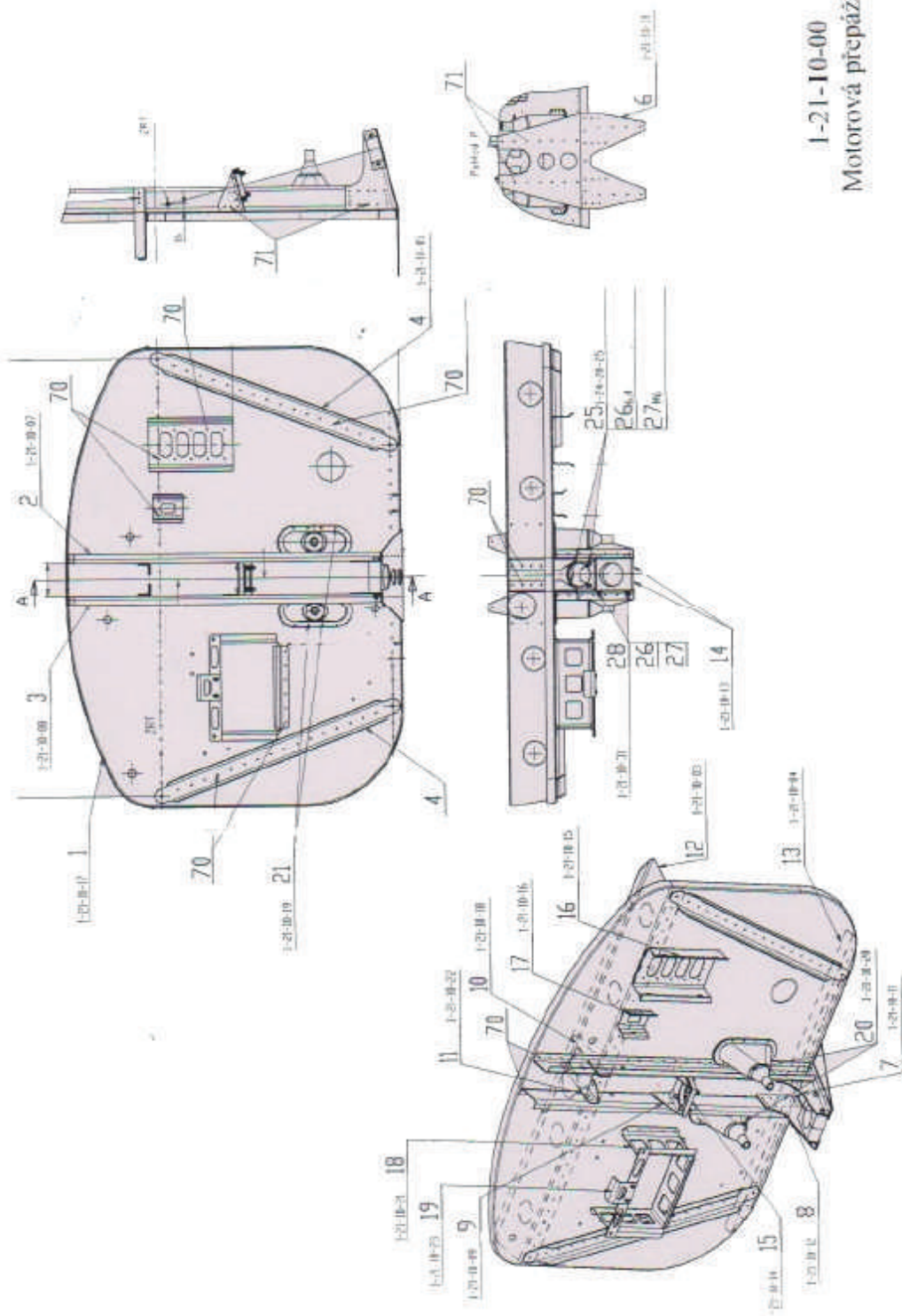


1-21-00-00
Predni trup

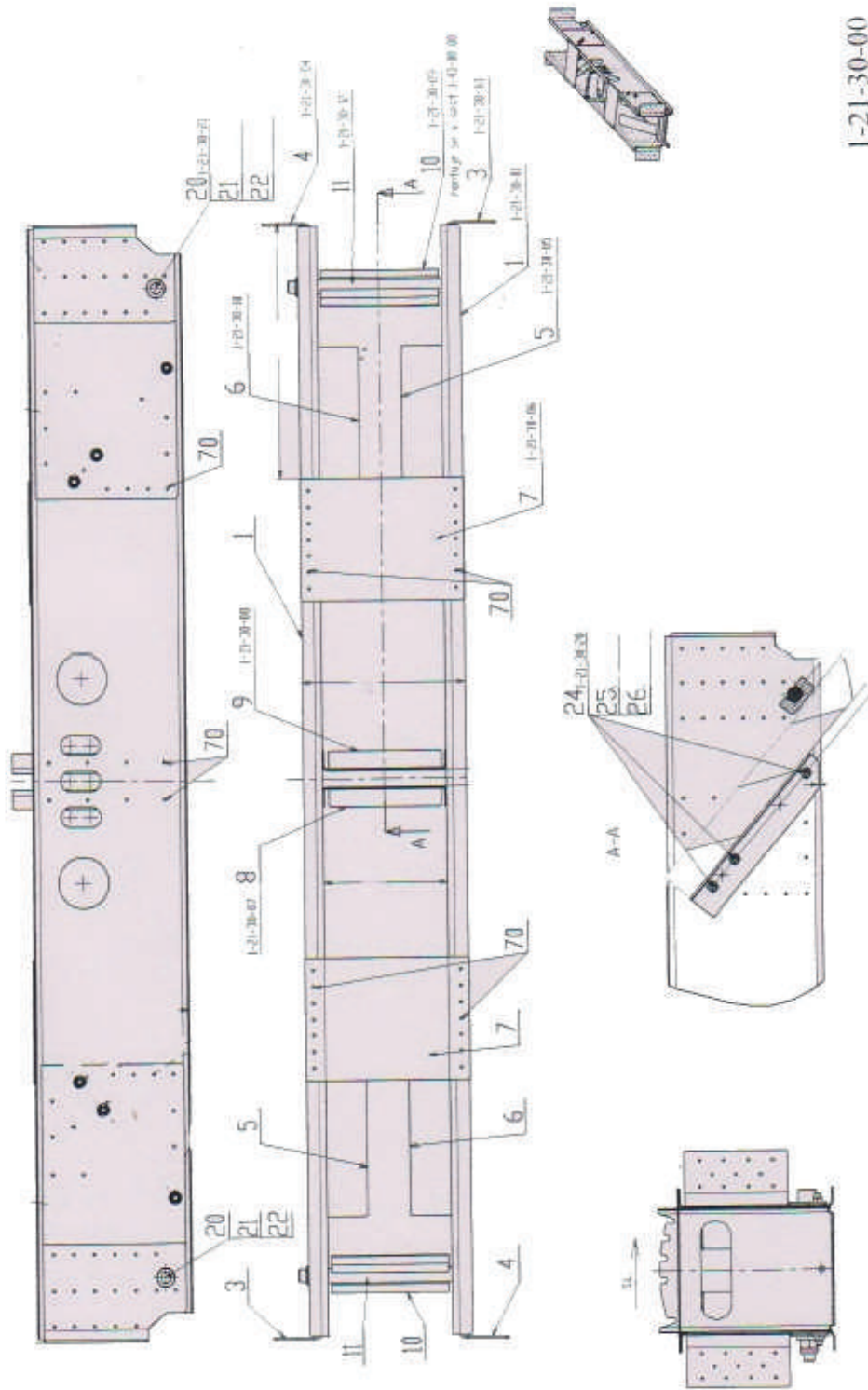




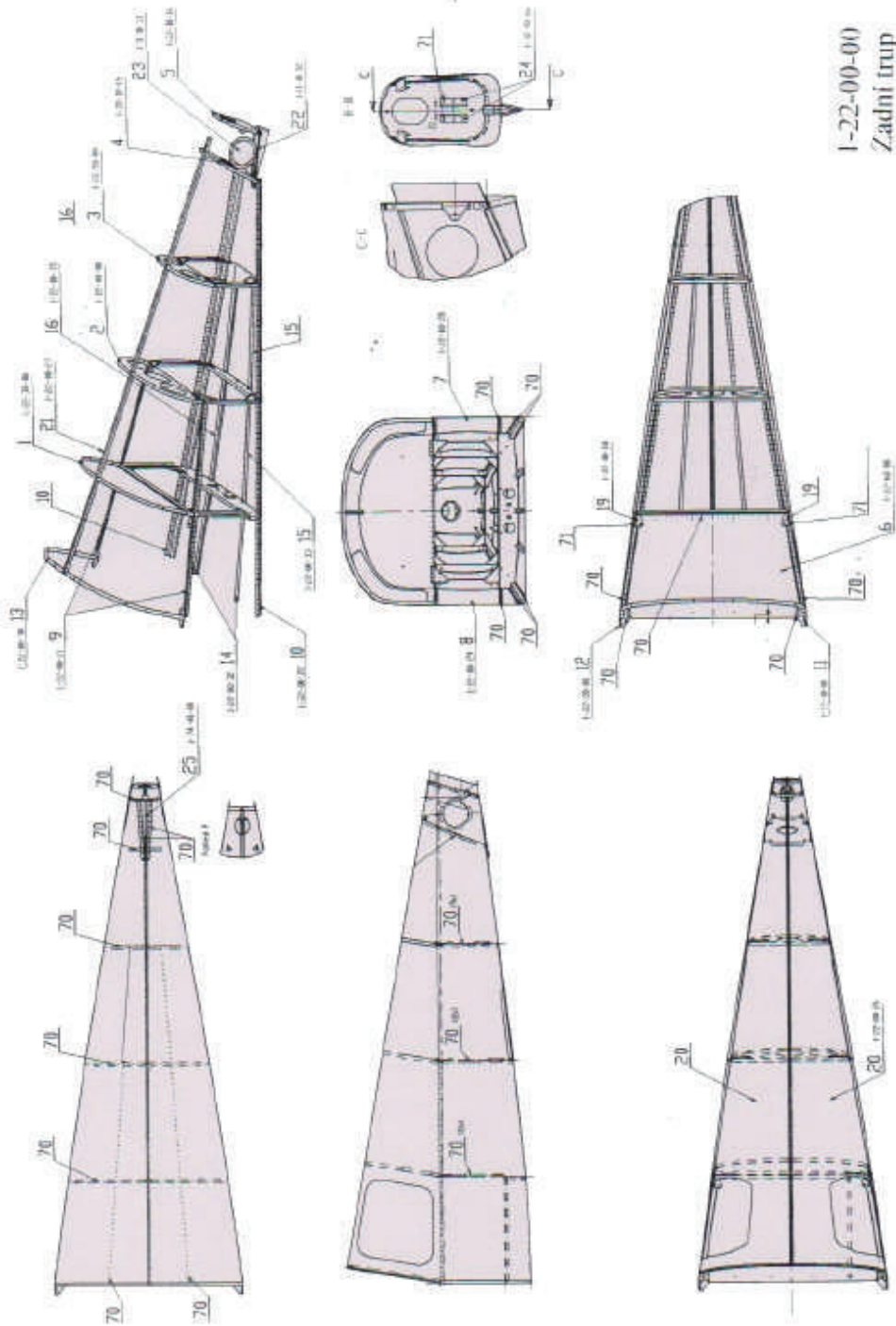
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Přední trup



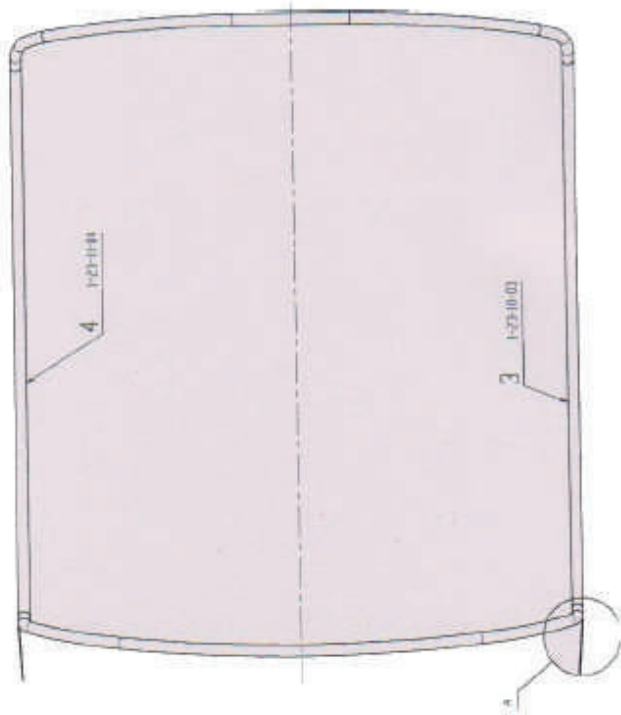
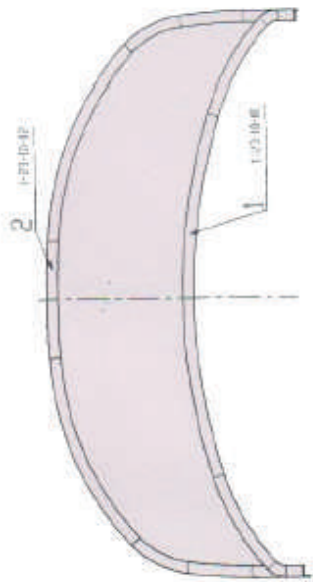
1-21-10-00
Motorová přepážka



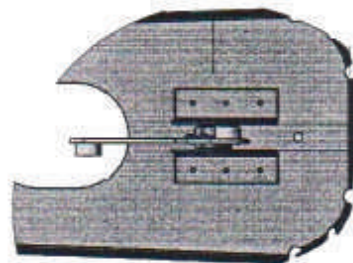
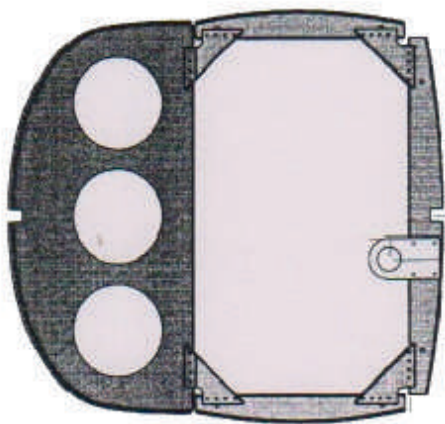
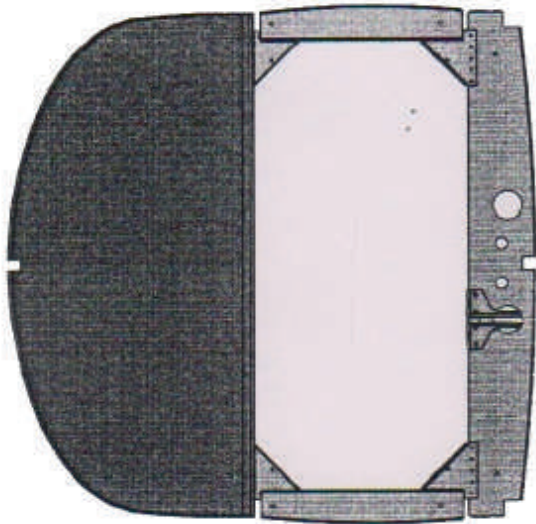
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Nosník podvozku



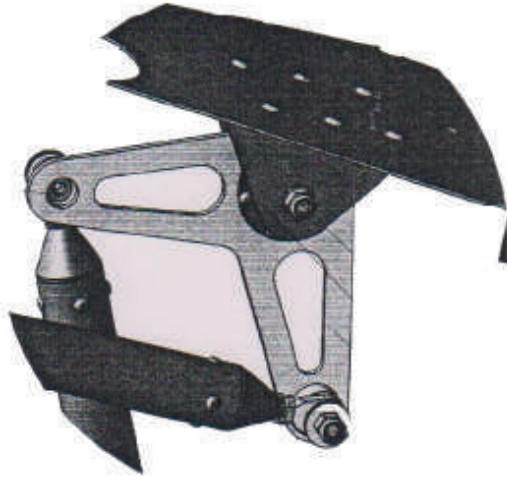
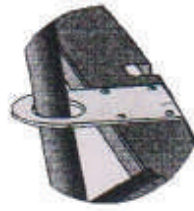
I-22-00-00
Zadni trup



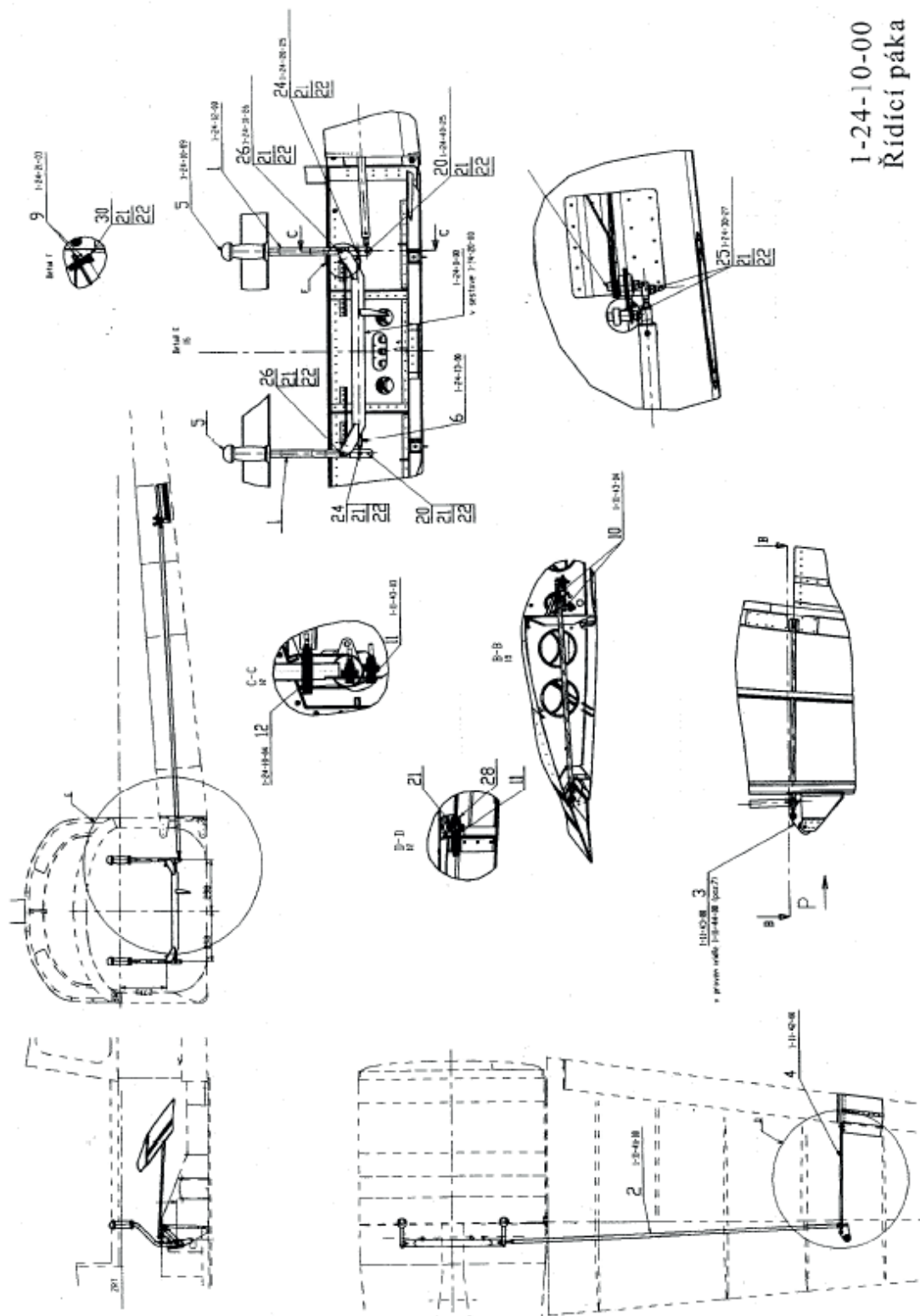
1-23-10-00
Rám kabiny



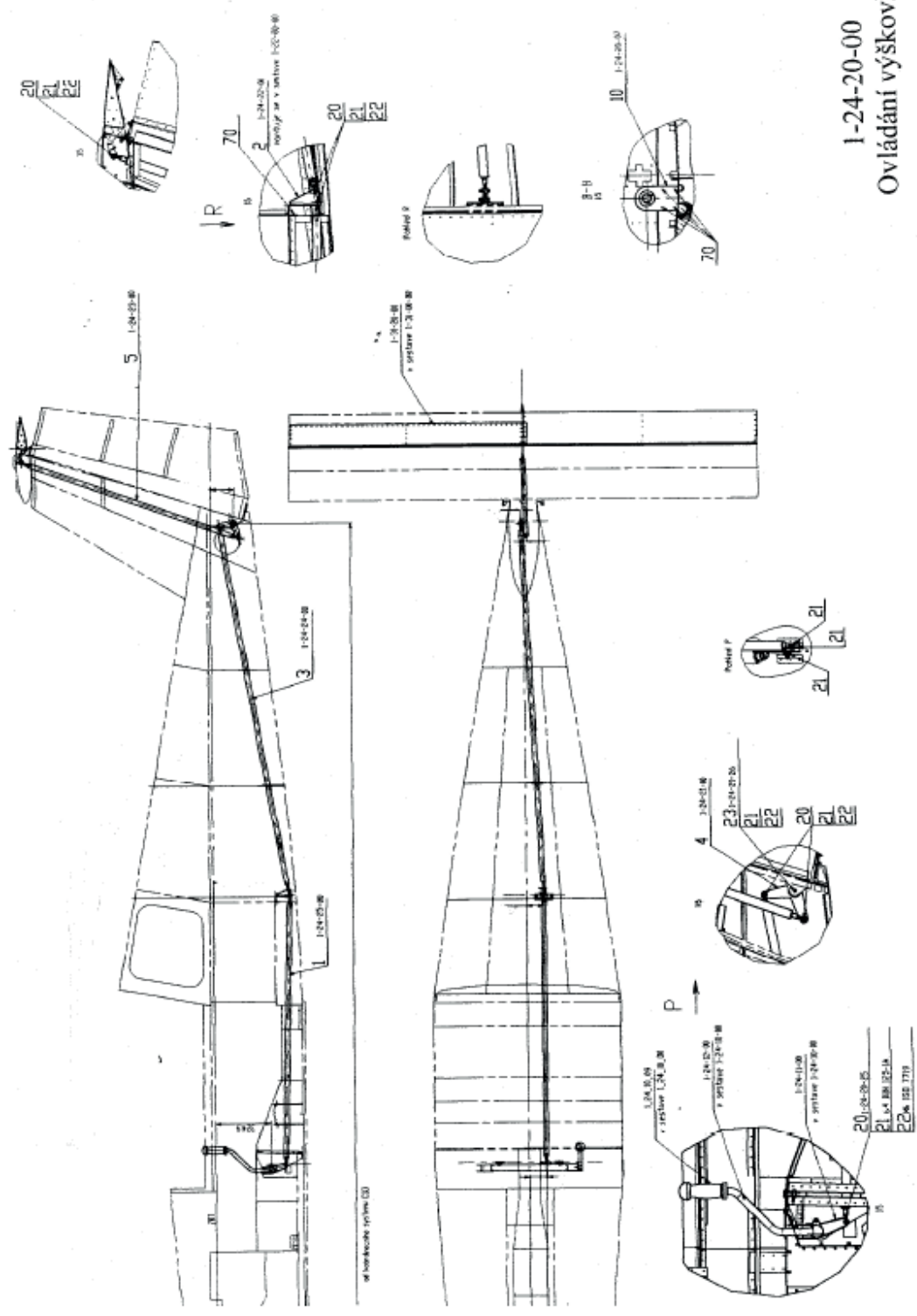
1-24-00-00
Řídící páka



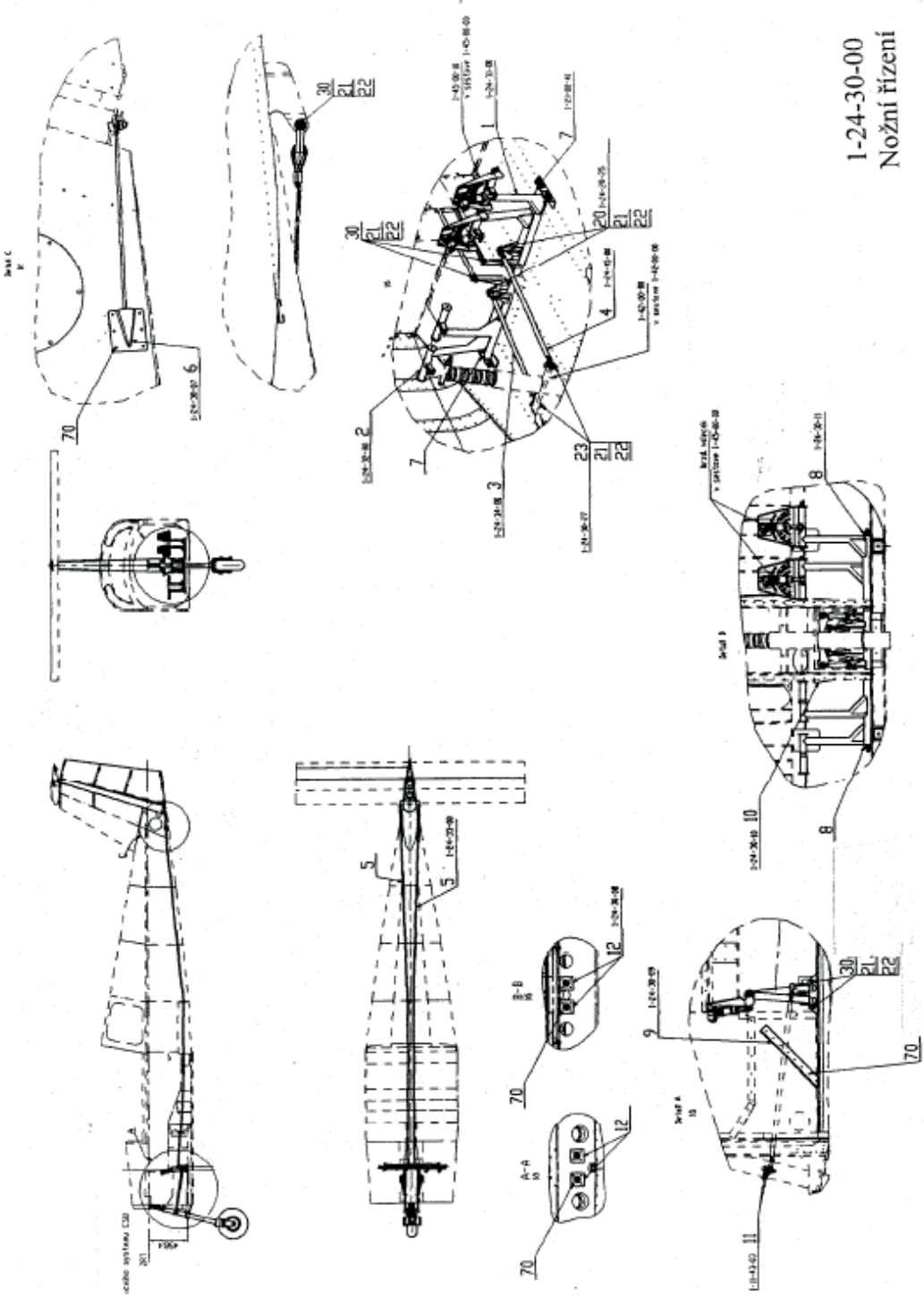
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Řídicí páka



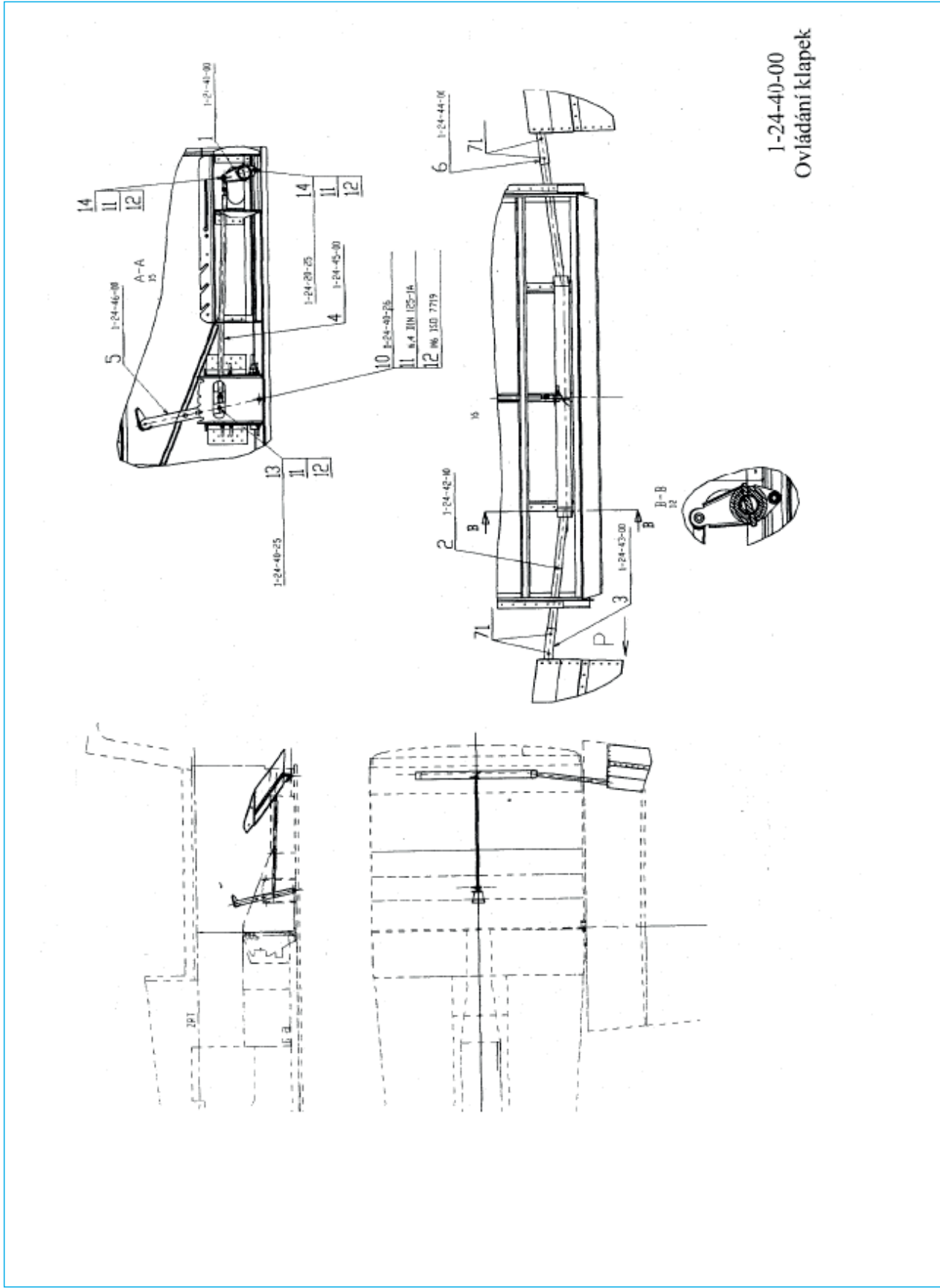
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Řídící páka



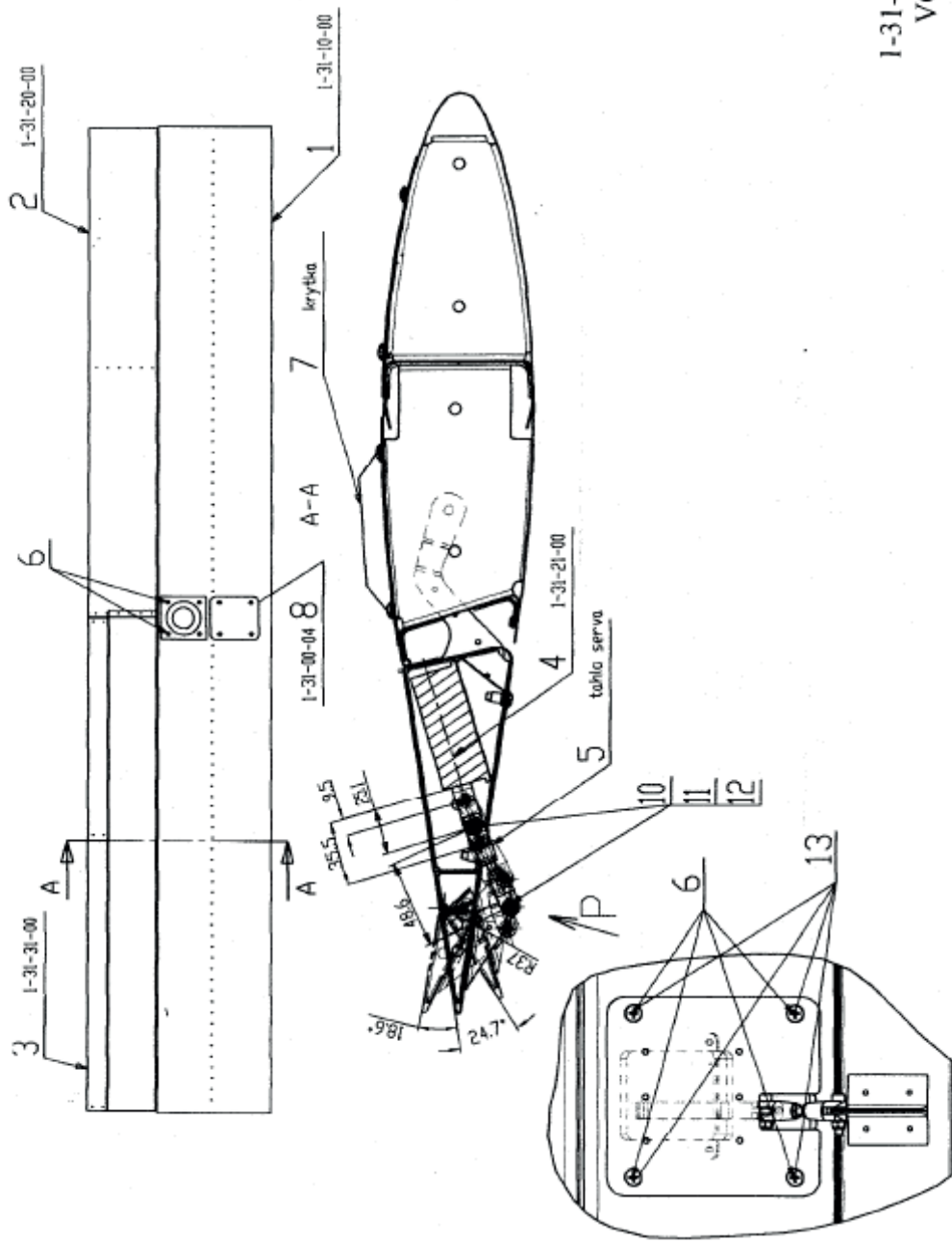
1-24-20-00
Ovládání výškovky



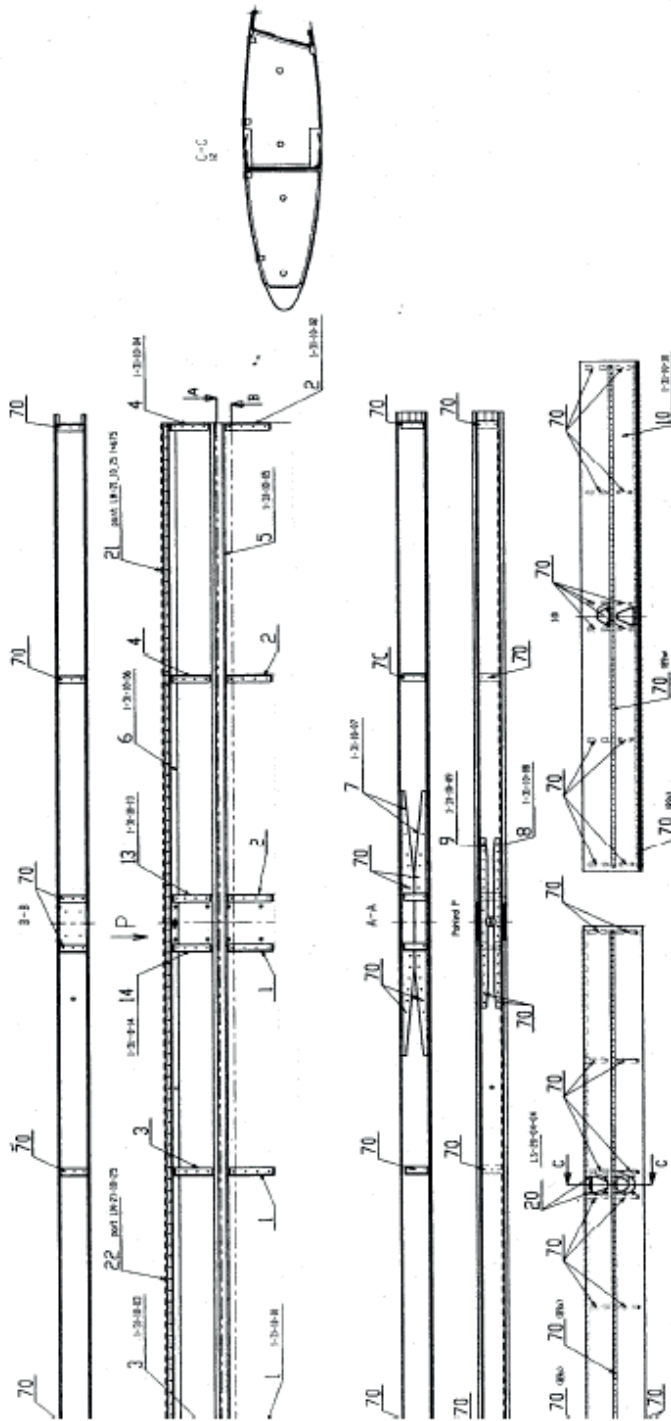
1-24-30-00
 Nožní řízení



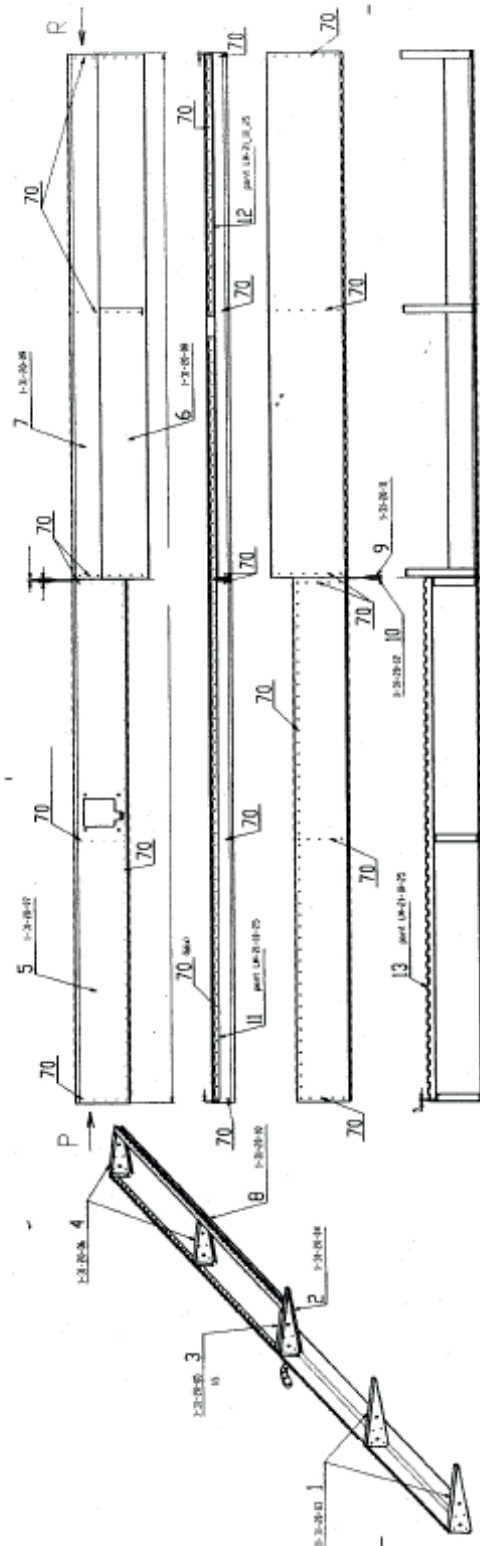
1-24-40-00
Ovládání klapky



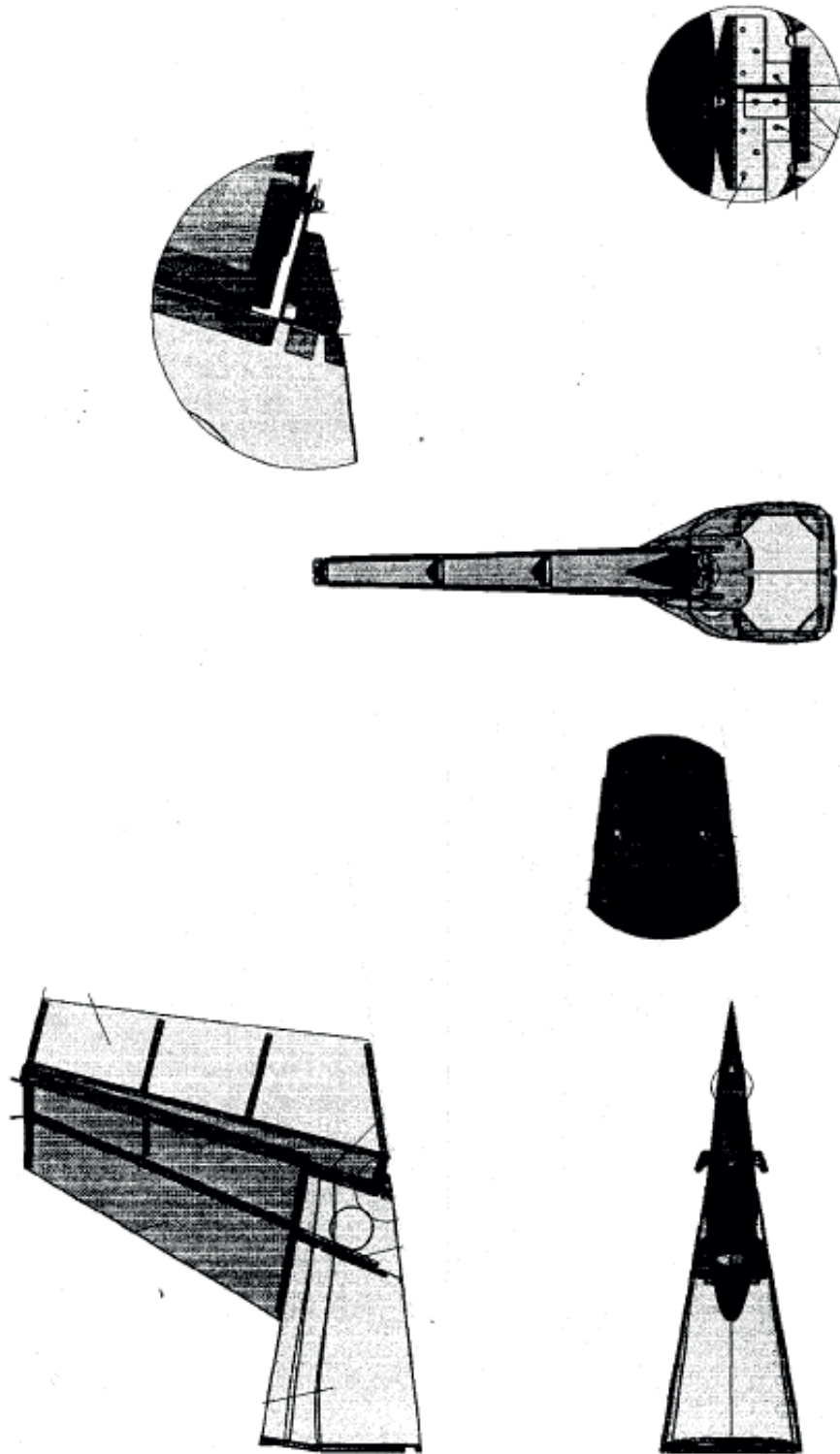
1-31-00-00
VOP



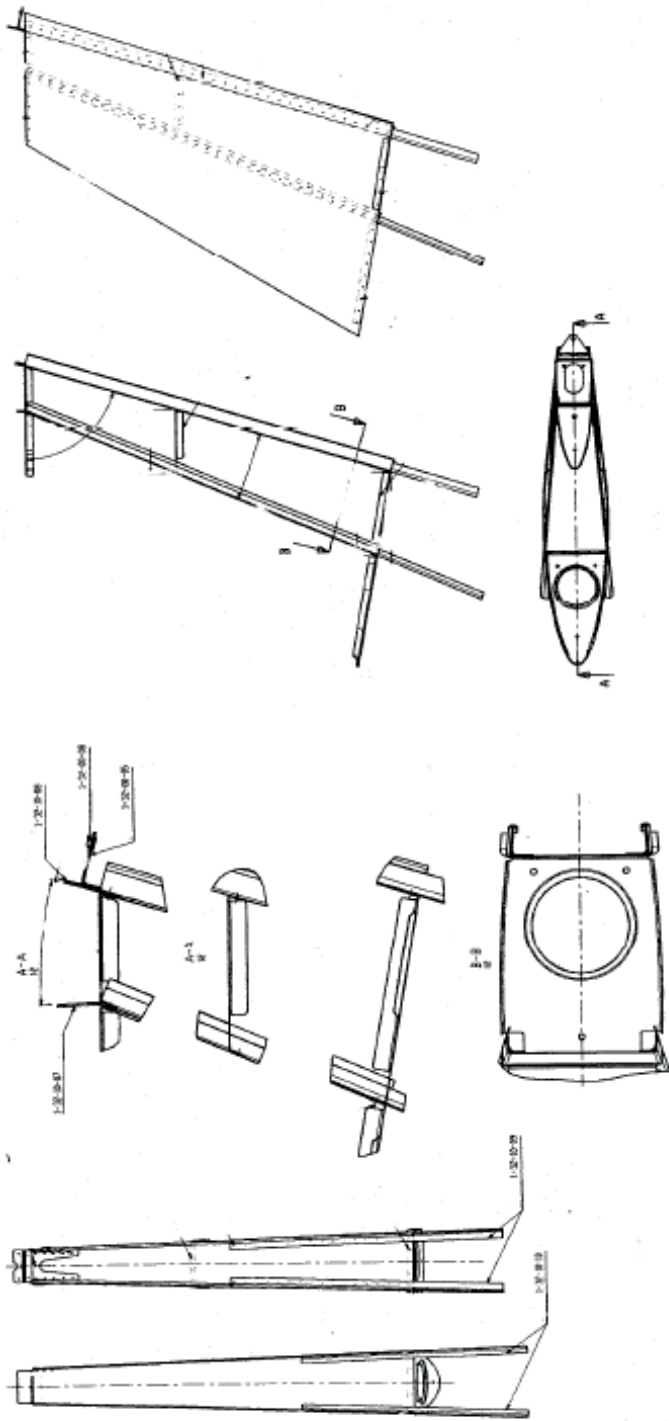
1-31-10-00
Stabilizer



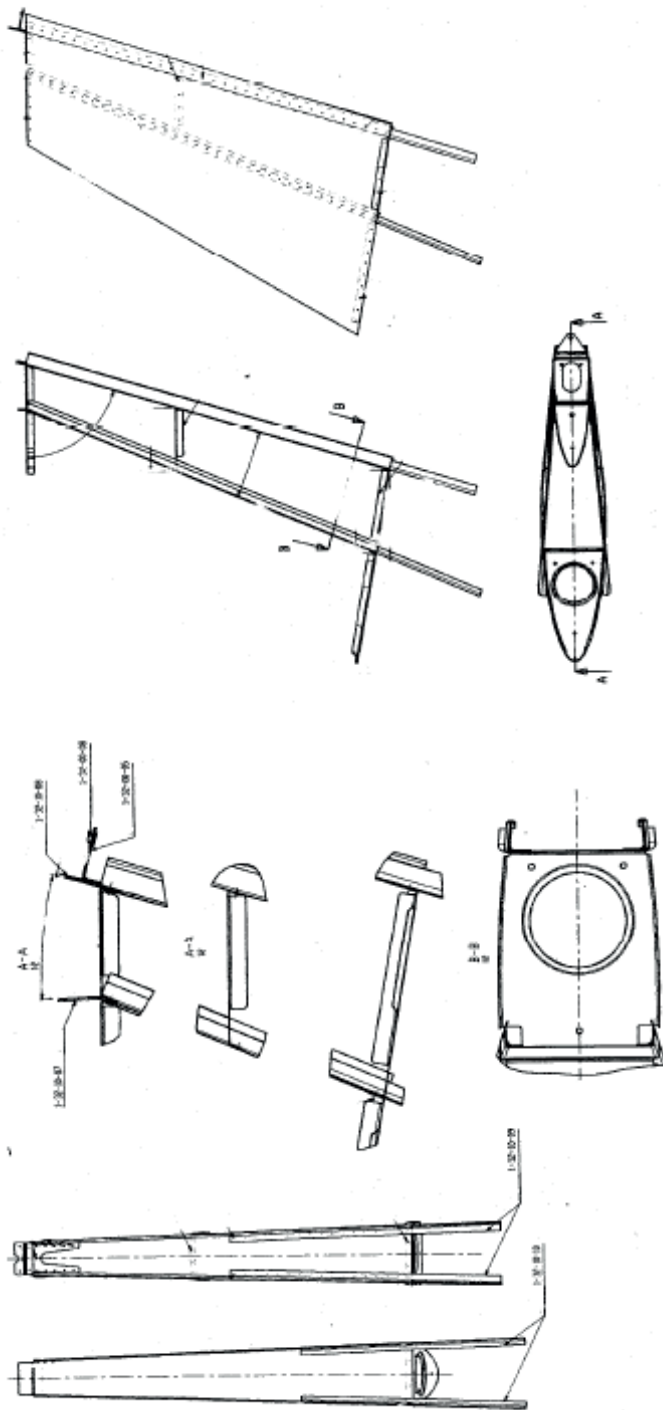
1-31-20-00
Výškovka



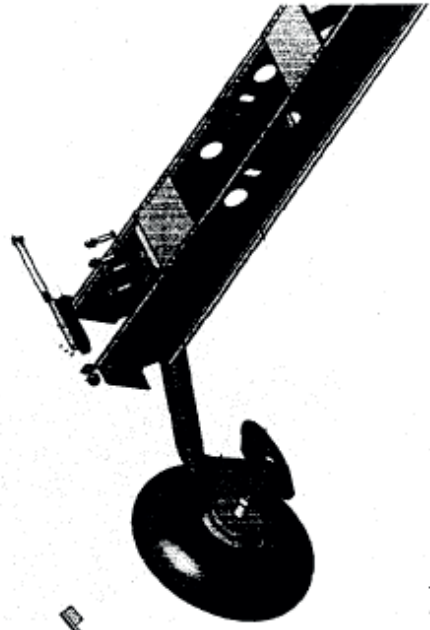
1-32-00-00
SOP



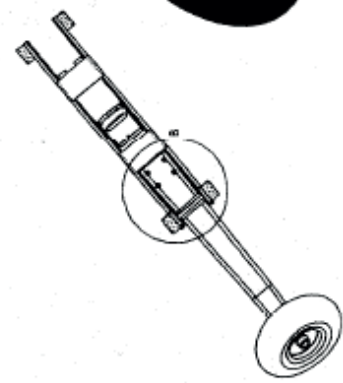
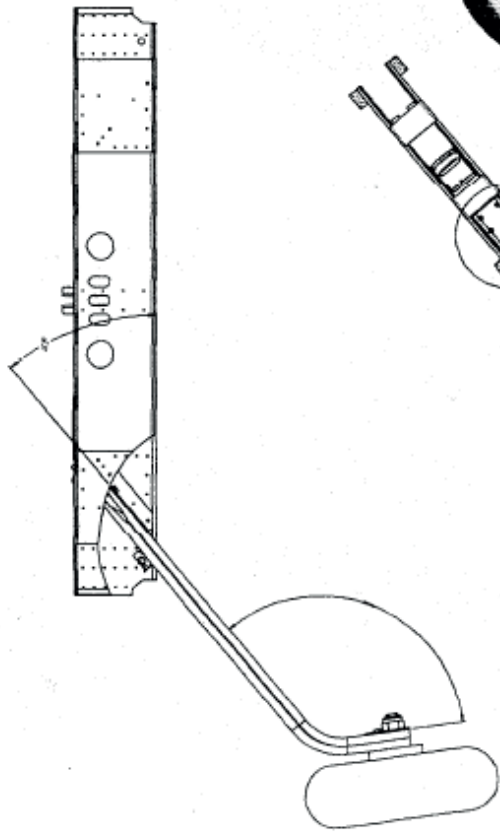
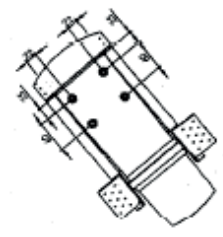
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KyI

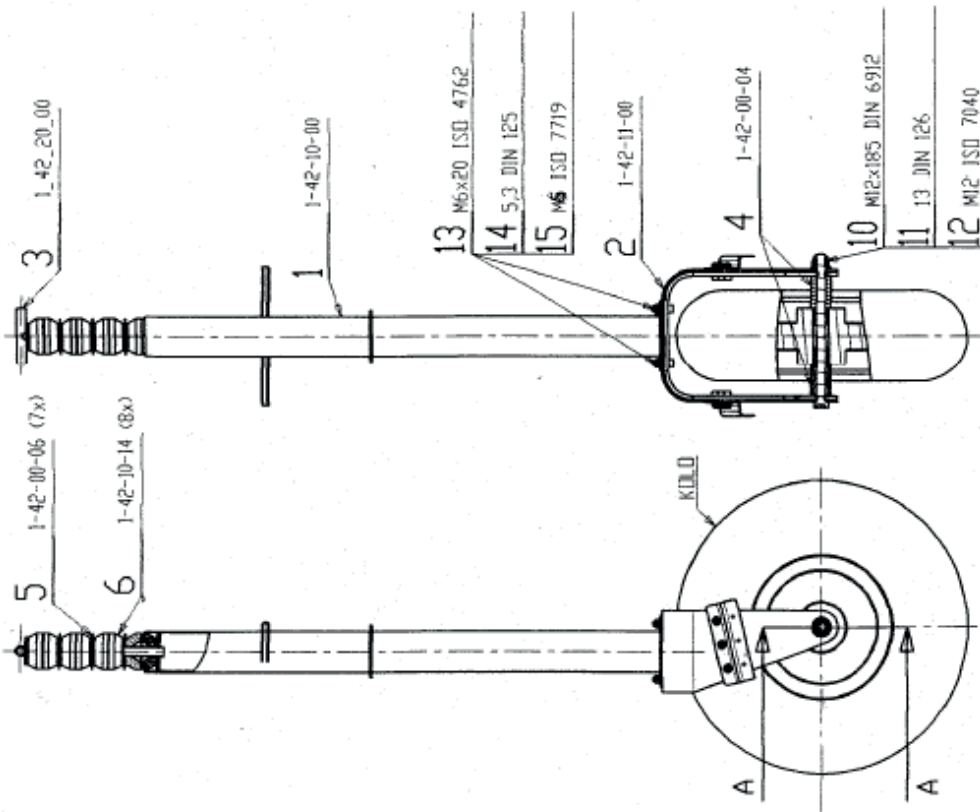


1-32-10-00
Ky1

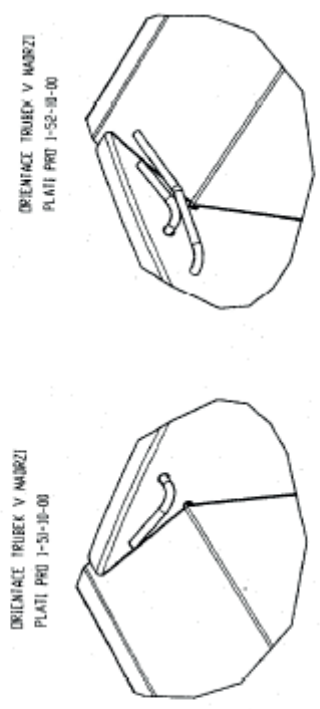
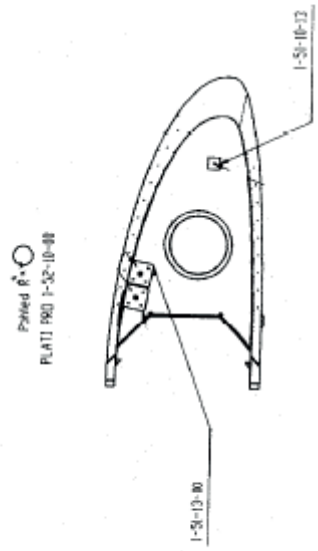
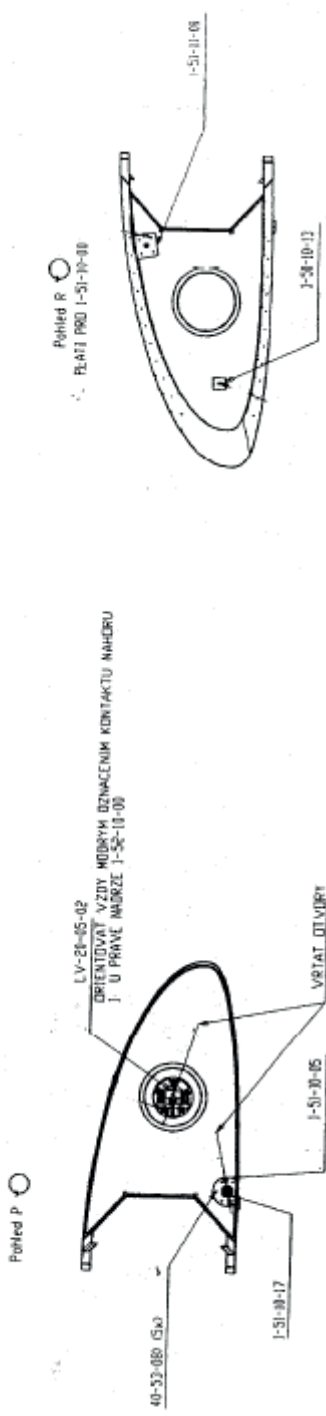


1-41-00-00
Hlavní podvozek

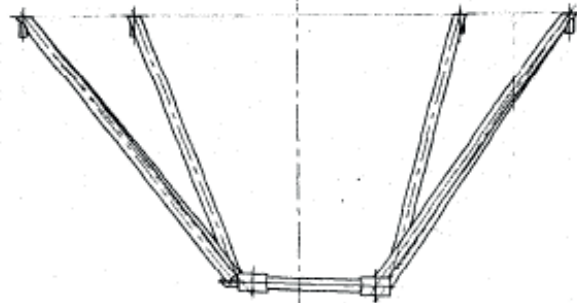
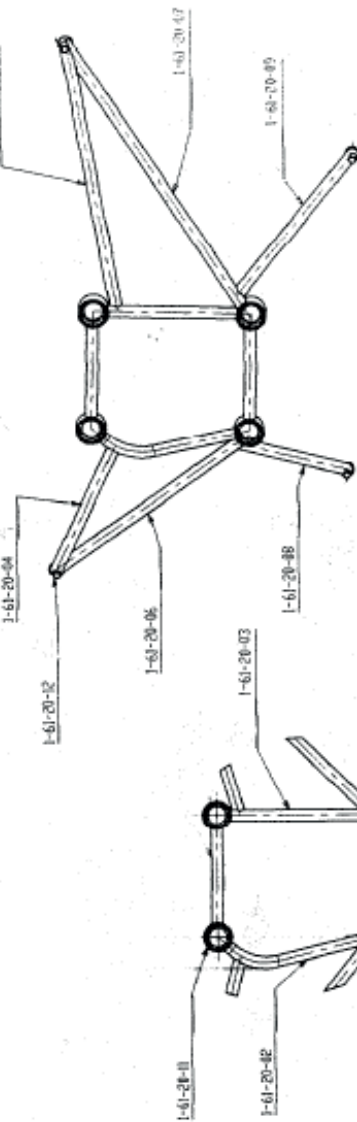
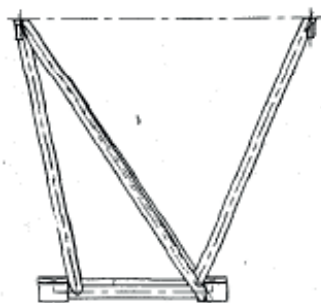
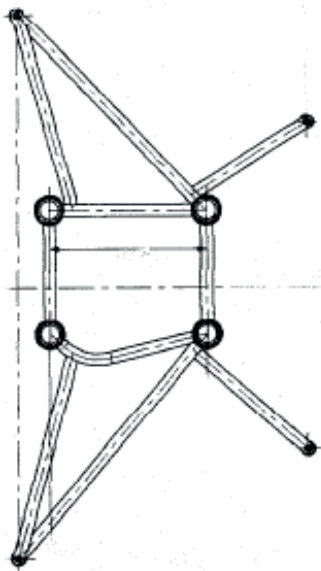




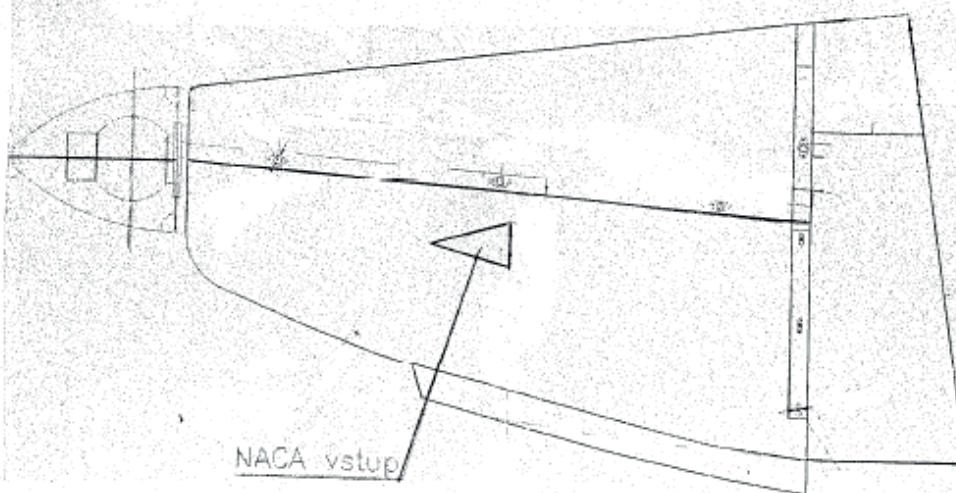
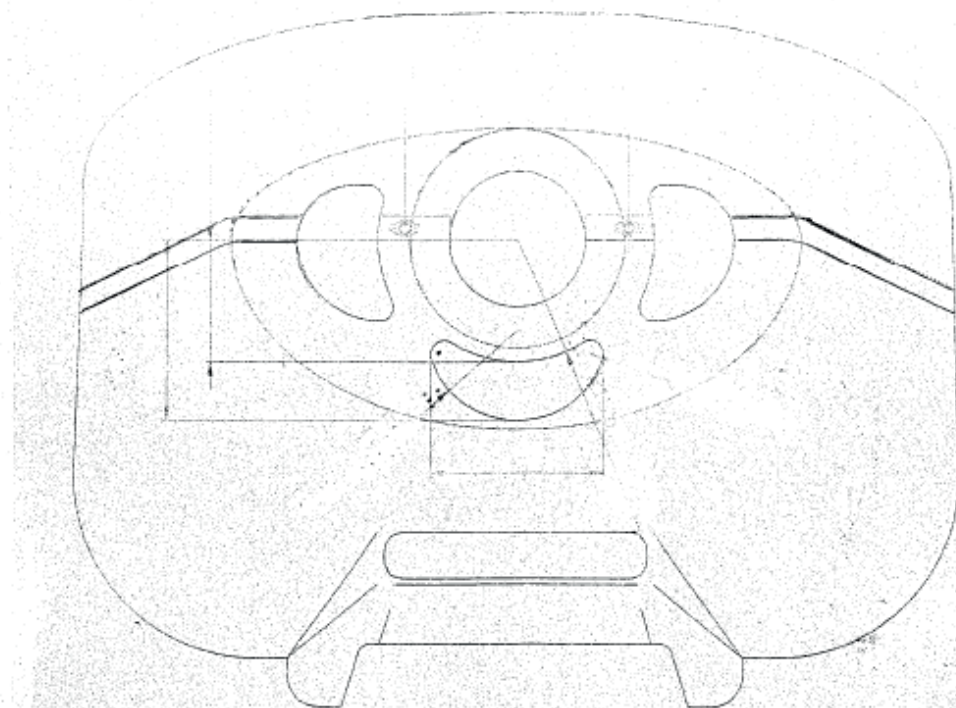
1-42-00-00
Příd'ový podvozek



1-51-10-00
Palivová nádrž L



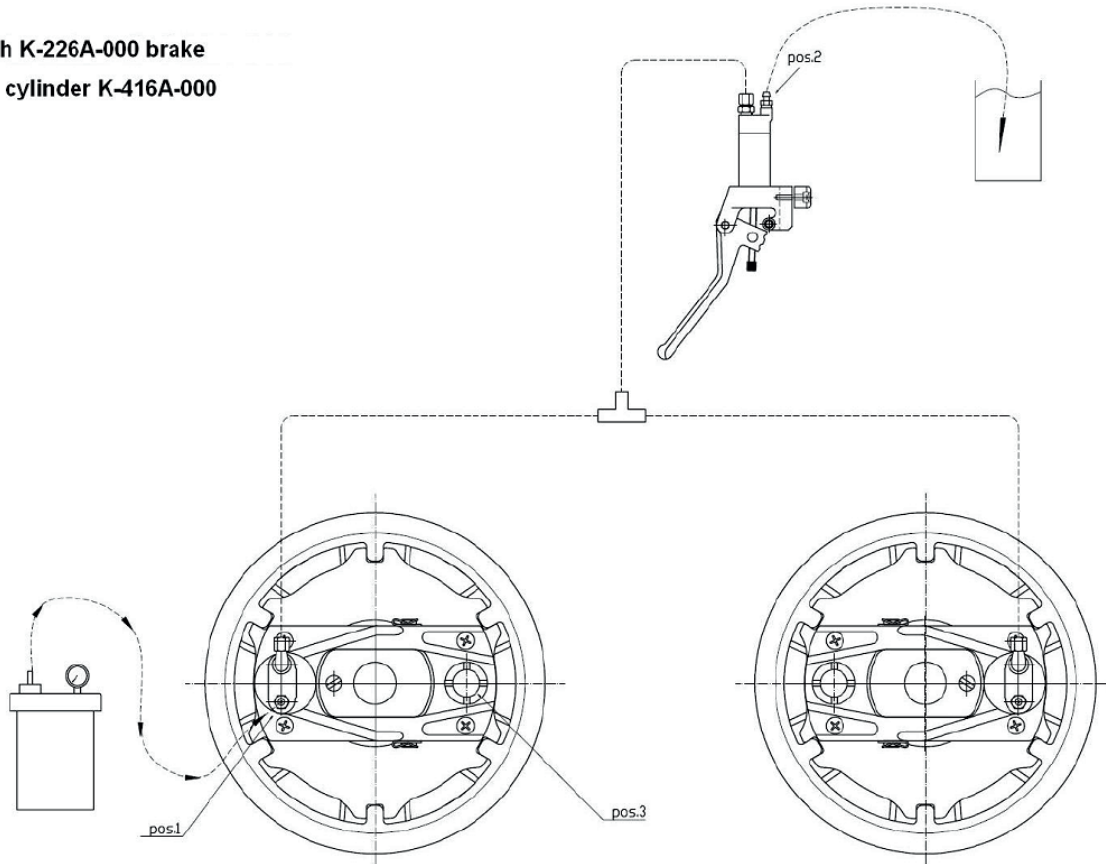
1-61-20-00
Motorové lože



1-61-30-00
Motorové kryty

Installation with main brake cylinder on steering rod / joystick

Wheels with K-226A-000 brake
Main brake cylinder K-416A-000



Installation with main brake cylinder on pedals

Wheels with K-226A-000 brake
Main brake cylinder K-404A-000

