AIRPLANE FLIGHT MANUAL

Z 242 L

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THIS DOCUMENT MUST BE CARRIED IN THE AIRPLANE AT ALL OPERATION TIMES!

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The English version has been translated with care and is accurate to the best of editor's knowledge. However in all official matters the original Czech version is the authoritative document.

THIS AIRPLANE FLIGHT MANUAL SUPERSEDES ALL "AIRPLANE FLIGHT MANUALS OF THE Z 242 L AIRCRAFT" ISSUED IN ENGLISH VERSION, WHICH ARE NOT MARKED ON THE TITTLE PAGE WITH DOCUMENT NUMBER 003.012.1

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1	Implementation of new load spectrum	0-5, 0-7, 2-9	1. 6. 2013	
2	Formal corrections in FM *(correction of values for weight and C/G position calculation, correction of inner dimensions of cockpit and correction of english translation)*	0-5, 0-7, 0-8, 1-12, 4-24, 6-9, 6-10, 6-11, 6-12	8. 6. 2016	
3	Formal corrections in FM *(correction of typical versions of instrument panel and pilot cockpit pictures, correction of designation of circuit switches for aircraft valid from S/N 0814 incl.*	0-5, 0-7, 0-9, 7-1 to 7-36	25. 2. 2017	

0.4 LIST OF EFFECTIVE PAGES

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SECTION 7 - DESCRIPTION OF THE AIRCRAFT AND ITS SYSTEMS

CONTENTS

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7.1 GENERAL

This Chapter provides basic technical description of Z 242L aircraft systems and other information necessary to the operation of the aircraft.

The optional equipment and the navigation/communication equipment is described in the Chapter 9 - SUPPLEMENTS.

7.3 AIRFRAME

a) Fuselage:
is of mixed structure. The central supporting part is a latticework, being welded of steel tubes and covered by a body made of hard light alloy sheets and of glassfibre composite. The rear part is a semimonocoque construction. The front and the rear part of the fuselage are connected by means of four bolts. The sliding canopy is opened by sliding forward.

b) Wing:
is of all-metal structure provided with a main and an auxiliary spar. Two wing halves are attached to the fuselage. The main spar of the wing is connected with the centre-section in the fuselage by means of two expandable bolts/bushings provided with conical pins. The upper bolt is oriented vertically, the lower one horizontally. The rear auxiliary spar is connected with the fuselage by means of a horizontally oriented cylindrical bolt. The wing skin is made of hard light-alloy aluminium clad sheets. The wing flaps and ailerons are slotted, all-metal, and identical in construction and dimensions. The ailerons are provided with fixed balance tabs. The wing ends are terminated with composite wing tips to reduce the induced drag.

c) Empennage:
are of all-metal cantilever structure - covered with hard aluminium sheet. Both the rudder and the elevator are partially mass-balanced. The elevator is provided with one balance tabs and one being controllable for longitudinal trim. The rudder is provided with a fixed balance tab.

7.5 FLIGHT CONTROLS

The aircraft is provided with a dual control for training purposes. Manual control is levers steering, pedal control is pedals steering.

a) Longitudinal control:
The elevator is controlleed by means of the control stick vie levers, rocker levers and control rods. Diagram of longitudinal control is illustrated on Fig. 7-1.

b) Lateral control:
The ailerons are controlled by means of the control stick via levers and control rods. The aileron deflections are differentiated. Diagram of lateral control is illustrated on Fig. 7-1.

c) Directional control:
The rudder is controlled by means of pedals of the directional control via control rods, a gate and cable system. The control of the rudder is combined with the steering of nose landing gear. Diagram of directional control is illustatrated on Fig. 7-1.

The Rudder pedals R.H. and L.H. of rudder control are lengthways adjustable in the range 75 mm. Rudder pedals adjustment is executed by control handle situated under control panel before every seat.

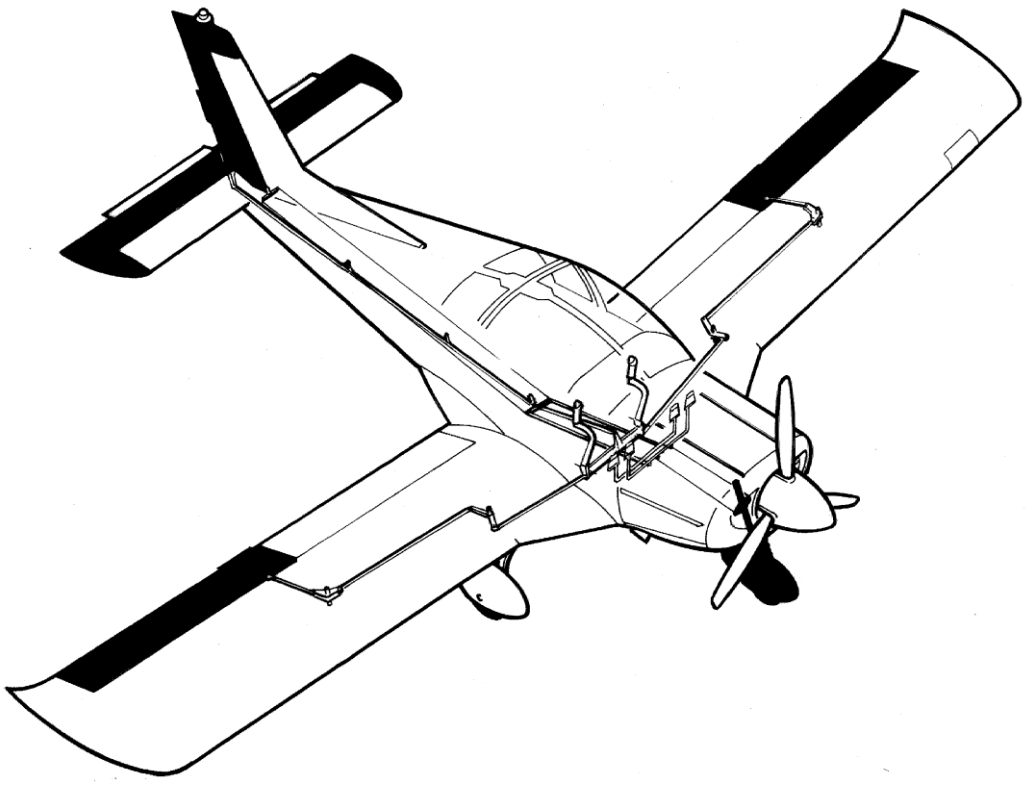


Fig. 7-1 Diagram of aircraft control

d) Trim:

1) Longitudinal Trim:
is mechanical type. Consist of the control wheel of longitudinal trim (located on the central panel between the front seats), cable system, with controls a self-locking screw mechanism, from which the motion is transferred onto the trim tab of the elevator via a doubled control rod.

The longitudinal trim is illustrated in Fig. 7-2.

Sense of control:
(i) turning the control wheel forwards - makes the aircraft nose heavy
(ii) Turning the control wheel backwards - makes the aircraft tail heavy

NOTE:

The trim tab is in neutral position when the mark on the longitudinal trim indicator is set to “TAKE-OFF”.

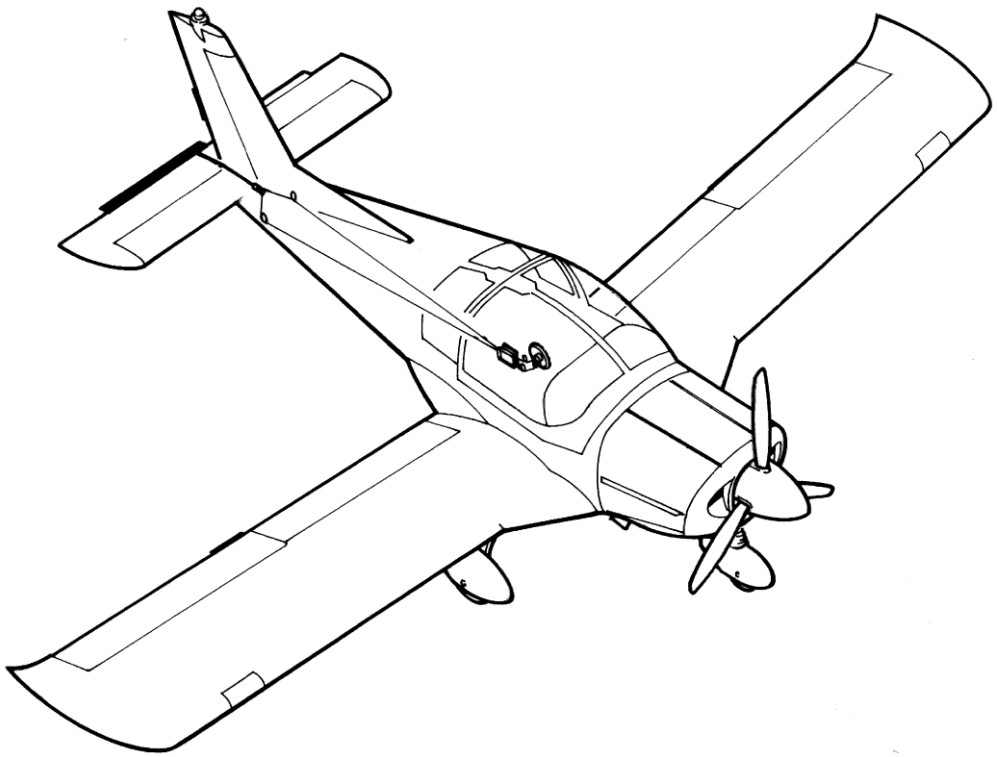
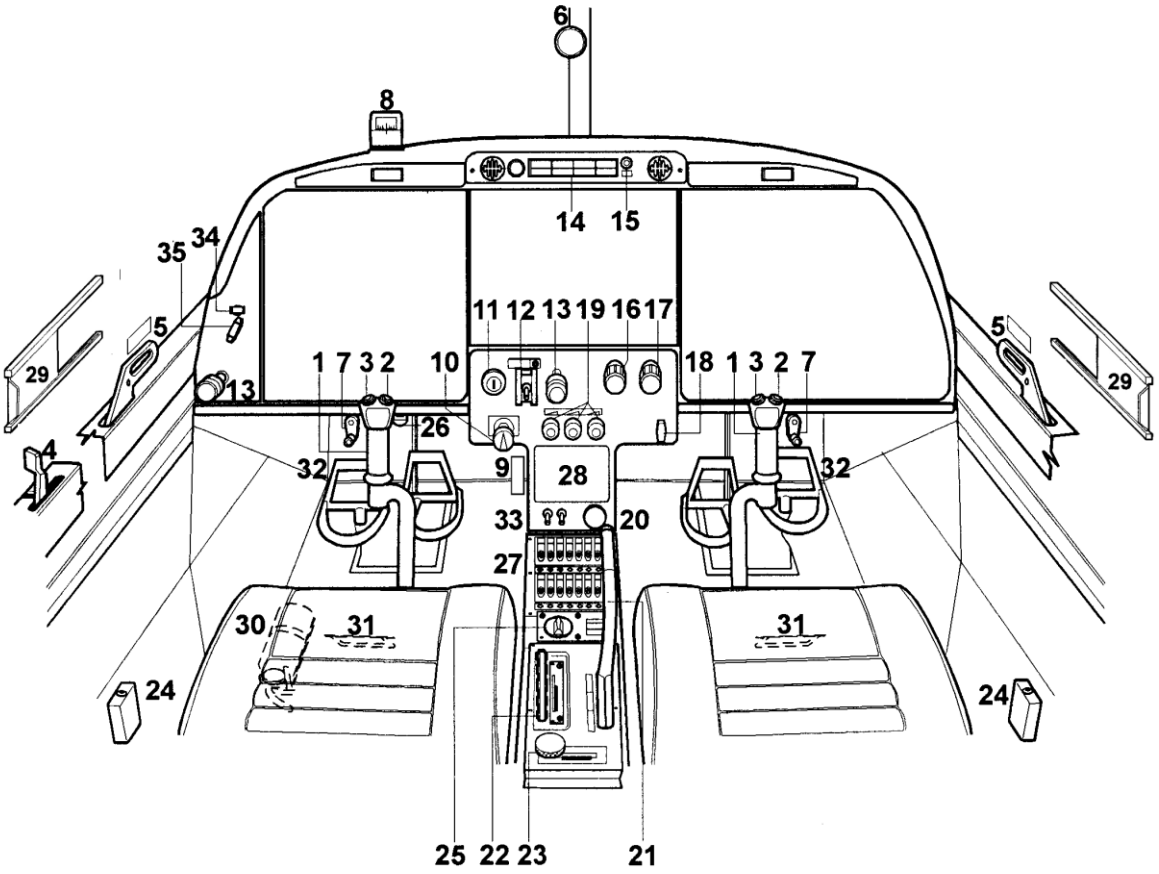


Fig. 7-2 Diagram of longitudinal trim

2) Directional Trim:
is of mechanical type, controlled by means of a small wheel for directional trim (located on the central panel between the front seats); this controls the spring prestress, which induces the balance forces in the pedals control system.

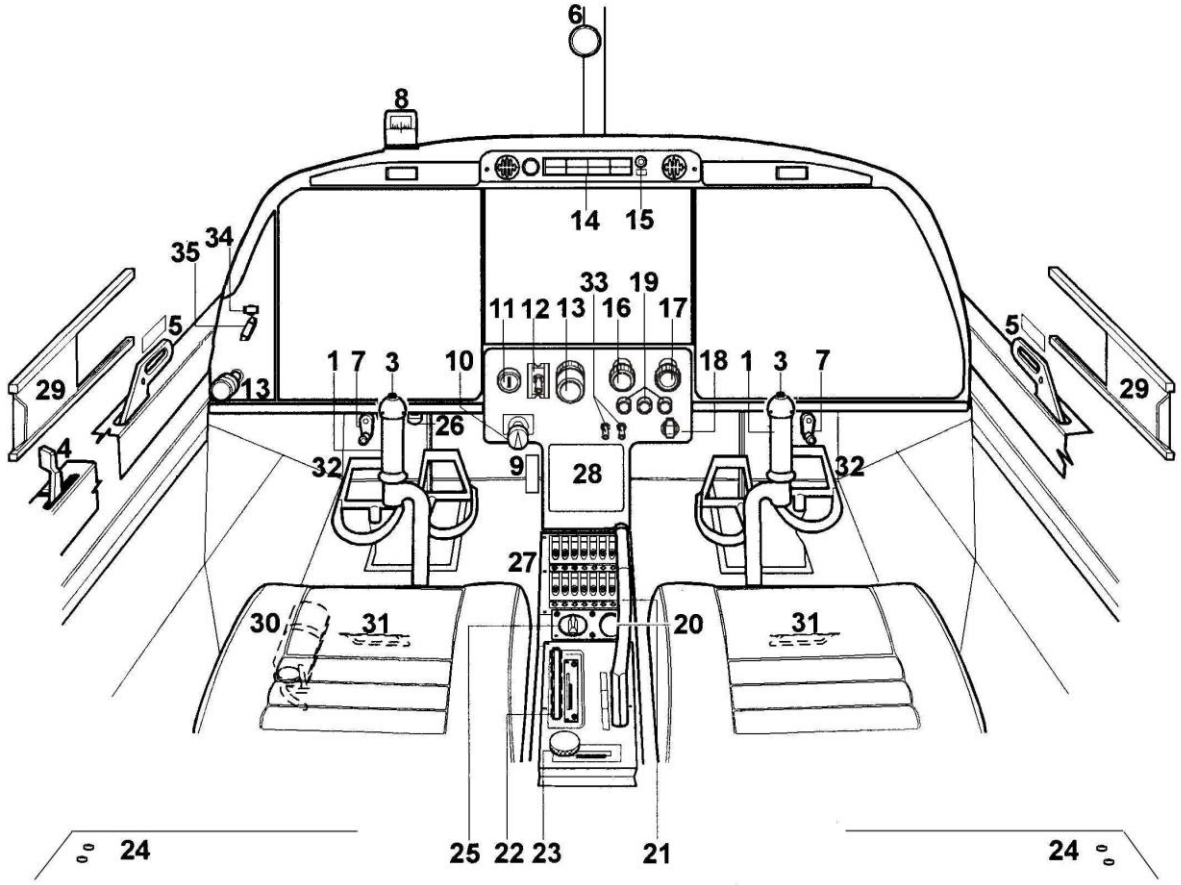
7.7 INSTRUMENT PANEL

7.7.1 Pilot's compartment



1 - Control stick
2 - Intercom pushbutton (IC)
3 - Transmitter pushbutton (VHF)
4 - Canopy arrestment in open position
5 - Lever for canopy emergency jettisoning
6 - *Outside air thermometer*
7 - *Adjustable pedals set handle*
8 - Magnetic compass I
9 - Towing gear control
10 - Ventilation and heating control
11 - Ignition switch
12 - Master switch
13 - Throttle control
14 - Annunciator lights
15 - Signalisation check pushbutton
16 - Propeller control
17 - Mixture control
18 - Parking brake control
19 - Instrument lighting dimmers
20 - Main spar flange nitrogen pressure indicator
21 - Wing flap lever
22 - Longitudinal trim
23 - Directional trim
24 - Headphone connection socket
25 - Fuel selector valve
26 - Control stick lock
27 - Switches
28 - Fuses
29 - *Ventilation windows*
30 - Portable fire extinguisher
31 - Seat position adjustment lever
32 - Brake pedal
33 - COM/NAV 1, COM/NAV 2 switches
34 - *Alternative static pressure source (ASPS) regulation screw*
35 - *Alternative static pressure source (ASPS) switch-valve*

Fig. 7-3A Typical arrangement of pilot's compartment up to S/N 0791 incl.



1 -	Control stick	19 -	Instrument lighting dimmers
2 -	-	20 -	Main spar flange nitrogen pressure indicator
3 -	Transmitter pushbutton (VHF)	21 -	Wing flap lever
4 -	Canopy arrestment in open position	22 -	Longitudinal trim
5 -	Lever for canopy emergency jettisoning	23 -	Directional trim
6 -	*Outside air thermometer*	24 -	Headphone connection socket
7 -	*Adjustable pedals set handle*	25 -	Fuel selector valve
8 -	Magnetic compass I	26 -	Control stick lock
9 -	*Towing gear control*	27 -	Switches
10 -	Ventilation and heating control	28 -	Fuses
11 -	Ignition switch	29 -	*Ventilation windows*
12 -	Master switch	30 -	Portable fire extinguisher
13 -	Throttle control	31 -	Seat position adjustment lever
14 -	Annunciator lights	32 -	Brake pedal
15 -	Signalisation check pushbutton	33 -	COM/NAV 1, COM/NAV 2 switches
16 -	Propeller control	34 -	*Alternative static pressure source (ASPS) regulation screw*
17 -	Mixture control	35 -	*Alternative static pressure source (ASPS) switch-valve*
18 -	Parking brake control		

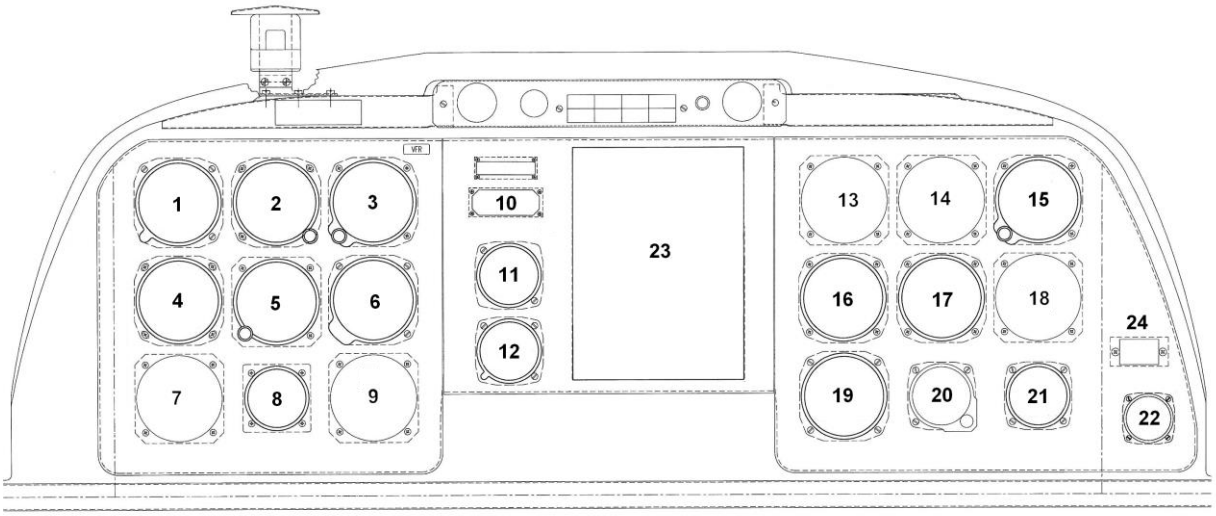
Fig. 7-3B Typical arrangement of pilot's compartment from S/N 0792 incl.

NOTES:

1) Items written by *italic* are delivered as optional equipment only.

7.7.2 Instrument panel

This subsection provides a typical instrument equipment illustration.



1	*- **Airspeed indicator I***	*14*	*- Attitude gyro II (Turn and Bank ind. II)*
2	*- Attitude gyro I*	*15*	*- Altimeter II*
3	*- **Altimeter I***	*16*	***- Four-pointer engine indicator***
4	*- **Turn and Bank indicator I***	*17*	***- Four-pointer fuel gauge indicator***
5	*- Directional gyro (HSI indicator)*	*18*	*- Vertical speed indicator II*
6	*- **Vertical speed indicator I***	*19*	***- CHT/EGT indicator***
7	*- ADF indicator*	*20*	***- Accelerometer***
8	*- **Clock***	*21*	***- V-A meter***
9	*- VOR/ILS indicator*	*22*	***- V-A meter (alternative location)***
10	*- DME indicator*	*23*	***- Avionics block***
11	*- **R.P.M. indicator***	*24*	*- Engine hours counteri*
12	*- **Manifold pressure gauge***		
13	*- Airspeed indicator II*		

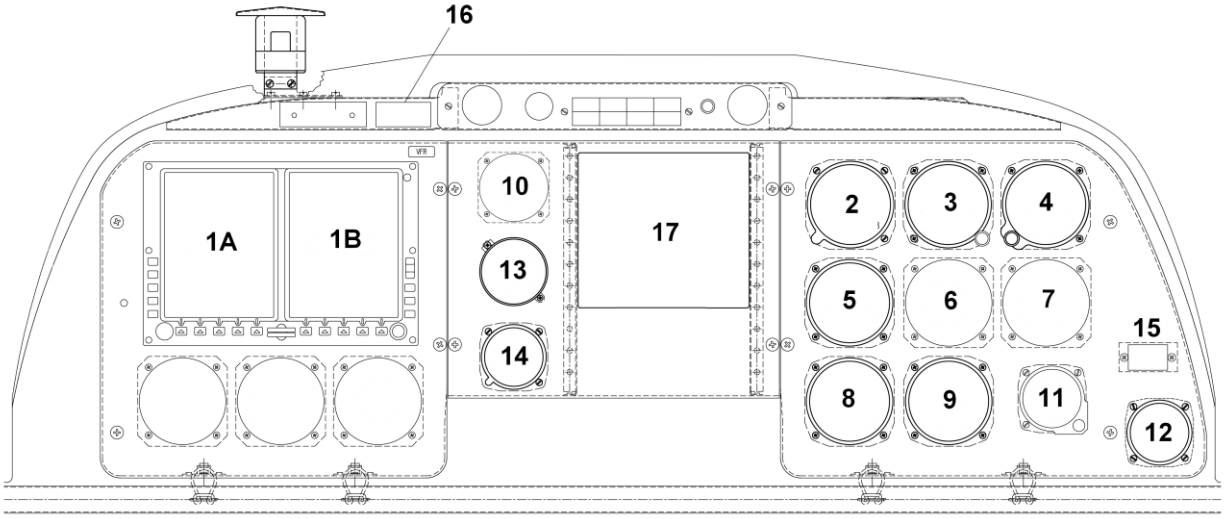
Fig. 7-4A Example of instrument panels up to S/N 0791 incl.

NOTES:

Instruments written by ***bold*** are delivered as basic equipment.

Holes for not installed instruments are covered by blind sheets.

The actual representation of the instrument panel with real equipment of a particular aircraft is presented in the Chapter 9 - SUPPLEMENTS.



1A	***- Primary Flight Display (PFD)***	*11*	***- Accelerometer***
1B	***- Multifunction Flight Display (MFD)***	*12*	***- V-A meter***
2	*- **Airspeed indicator I***	*13*	*- **R.P.M. indicator***
3	*- **Altimeter I***	*14*	*- **Manifold pressure gauge***
4	*- **Turn and Bank indicator I***	*15*	*- Engine hours counter*
5	***- Four-pointer engine indicator***	*16*	***- ELT remote switch***
6	*- Directional Gyro (HIS indicator)*	*17*	***- Avionics block***
7	*- Vertical speed indicator I*		
8	***- Four-pointer fuel gauge indicator***		
9	***- CHT/EGT indicator***		
10	***- Clock***		

Fig. 7-4B Example of instrument panels from S/N 0792 incl.

NOTES:

Instruments written by ***bold*** are delivered as basic equipment.

Holes for not installed instruments are covered by blind sheets.

The actual representation of the instrument panel with real equipment of a particular aircraft is presented in the Chapter 9 - SUPPLEMENTS.

7.7.3 Annunciator lights

The annunciator lights panel is located in the upper part of the instrument panel. The inclinate lampshade is located above the panel to decrease the intensity of panel lights (at night operation).

(1) (yellow) **L FUEL LOW LEVEL**	(2) (yellow) **R FUEL LOW LEVEL**	(3) (yellow) **GENERATOR**	(4) (yellow) **EXT. POWER SOURCE**
(5) (red) **OIL PRESS LOSS**	(6) (yellow) **STALL. WARN. FAILURE**	(7) (green) **PITOT HEATING**	(8) (green) **STATIC HEATING**

(6) (white) **STALL. WARN. INACTIVE**	(7) (white) **PITOT TEST**	(8) (white) **STATIC TEST**

NOTES:

No. (1) - **L FUEL LOW LEVEL** - fuel rest in the left tank.

No. (2) - **R FUEL LOW LEWEL** - fuel rest in the right tank.

No. (3) - **GENERATOR** - generator (voltage drop below 26,2 V in the electric system).

No. (4) - **EXT. POWER SOURCE** - external source of electric connected.

No. (5) - **OIL PRESS LOSS** - oil pressure drop below 170 kPa (25 p.s.i.).

No. (6) - **STALL. WARN. FAILURE** (from S/N 0651 to S/N 0740) or
STALL. WARN. INACTIVE (from S/N 0741 and up) - stall warning circuit is opened with the microswitch controlled by depresion of the main landing gear leg.

No. (7) - **PITOT TEST** (from S/N 0651 to S/N 0689) or
PITOT HEATING (from S/N 0691 and up) - Pitot tube and stall speed probe heating.

No. (8) - **STATIC TEST** (from S/N 0651 to S/N 0689) or
STATIC HEATING (from S/N 0691 and up) - static pressure probes heating

Fig. 7-5 Annunciator lights

7.7.4 Description of the Switches

a) In the middle instrument panel is the “MASTER SWITCH”, which turns off all circuits including the emergency source of electrical power, except of the cockpit light and engine ignition.

b) In the middle instrument panel between the seats is located of Circuit switches:

"LANDING LIGHT" -	turns “ON” and “OFF” the landing light
"TAXI LIGHT" -	turns “ON” and “OFF” the taxi light
"BEACON" -	turns “ON” and “OFF” the anti-collision beacon and the supplementary lighting *(applicable for aircrafts up to S/N 0813 incl. and from S/N 0814 only optional)*
“MAP LIGHT” -	turns “ON” and “OFF” the supplementary lighting *(applicable from S/N 0814 incl.)*
"POSITION LIGHTS" -	turns “ON” and “OFF” the position lights
"LIGHTING" -	turns “ON and “OFF” the lighting of instruments and placards
"STROBE LIGHTS" -	turns “ON” and “OFF” the strobe lights (if installed)
"EXT.POW.SOURCE" -	connects or disconnets the electrical system to or from the external source
"BATTERY" -	connects or disconnects the battery to or from the network
"GENER." -	connects the alternator to or from the network
"FUEL PUMP" -	turns “ON” and “OFF” the electrical fuel pump
“ENGINE INSTR." -	turns “ON” and “OFF” the fuel meters, the four pointer indicator (fuel pressure, oil temperature, oil pressure, fuel consumption gauge) and the engine hour counter (if installed)
"FLIGHT INSTR." -	turns “ON” and “OFF” the attitude gyro(s), turn and bank indicator(s), directional gyro, annunciator check, stall warning, annunciator check of the stall warning circuit opening, fuel low level signalling and minimum oil pressure signalling.
"PITOT HEATING" -	turns “ON” and “OFF” the heating of the probe of total pressure and of the stall speed warning probe
"STATIC HEATING" -	turns “ON” and “OFF” the heating of static pressure probes

c) In the middle instrument panel are located switches "COM/NAV 1" and "COM/NAV 2" (if installed), which turn on and off the radiocommunication and navigation equipment.

d) In the right instrument panel are located switches “EMERGENCY SWITCH COM1” and “EMERGENCY SWITCH ADF/NAV” (if installed), which enable to turn on the transmitter 1 and the signal monitoring for ADF and NAV1 in case of the audio control console failure.

NOTE:

The sense of the switches function:
TURNED “ON” - forward or upward position of the lever,
TURNED “OFF” - backward or downward position of the lever

CAUTION:

DO NOT OPERATE ANY SWITCH UNLESS YOU ARE EXACTLY FAMILIAR WITH ITS FUNCTION.

7.11 GROUND CONTROL

When moving on the ground with the ground crew, use the control shaft mounted on the front wheel axis. Maximum front wheel angle is 38 grades on either side of the axis of the aircraft.

7.13 WING FLAPS

Wing flaps are slot type, all-metal, mechanical controlled by means of a lever located between the seats. Wing flaps have 3 arrested positions: RETRACTED (0º), TAKE-OFF (14º), LANDING (37º). The arrestment is controlled by a pushbutton located on a lever. The wing flaps are extended by moving the lever upward.

CAUTION:

NEVER STEP ON THE WING FLAPS - THESE MIGHT BE SERIOUSLY DAMAGED. EXTEND THE FLAPS INTO THE POSITION “TAKE-OF” DURING EMBARKING OF THE OCCUPANTS OR PILOT´S - THE RISK OF DAMAGE BY UNINTENTIONAL STEPPING IS REDUCED WITH FLAPS IN THIS POSITION.
(flaps are arrested only in position “TAKE-OFF” and “LANDING”).

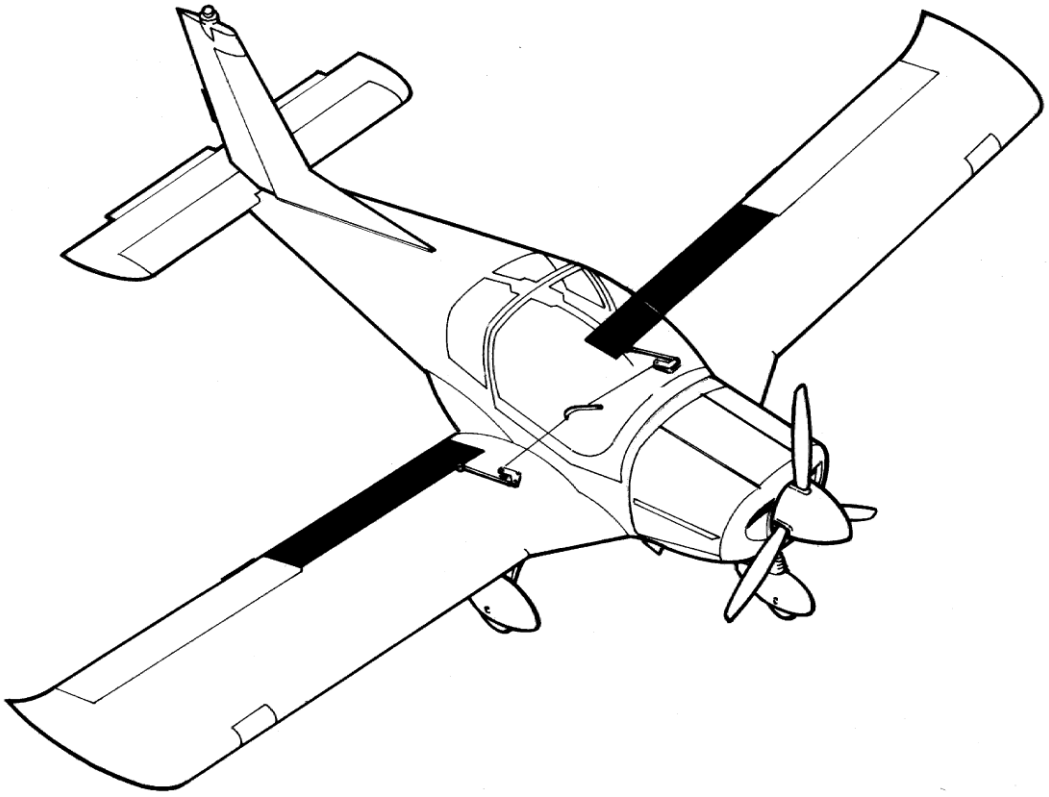


Fig. 7-6 Diagram of wing flaps control

7.15 LANDING GEAR

Fixed tricycle landing gear consists of themain landing gear and nose landing gear.

The main landing gear is comprised of flat-steel springs, which are attached to the fuselage main spar.

The nose landing gear is attached by means of struts to the first bulkhead of airframe fuselage. The nose landing gear is provided with a hydropneumatic shock absorber and with a shimmy damper.

The landing gear wheels are made of a light alloy with hydraulic disc brakes.

The nose wheel is not brakes.

7.17 BAGGAGE COMPARTMENT

The baggage compartment (rear shelf in cockpit) is located behind headrests of the pilot´s seat and it is accessible from the cockpit. The floors of the baggage compartment are provided with fastening straps and elastic for baggage put.

CAUTION:

THE BAGGAGE MUST ALLWAYS BE PROTECTED AGAINST MOVEMENT BY MEANS OF STRAPS.

7.19 SEATS, SEAT BELTS AND SHOULDER HARNESSES

a) Seats
Pilot seats are adjustable in the longitudinal direction into 5 automatically arrested positions. The position adjustment lever is located to the bottom of the seat front part. After moving the lever upwards the seat is released for adjustment.

b) Safety belts
Both seats are provided with 5-point safety belts, which consists of ventral belts, two shoulder straps, crotch belts and the lock **"A"**.
The safety belts lock **"A"** is controlled by turning the lock-gate on the front part, adjustable in three positions:

1) Position „LOCKED", green point
   - fastening straps are locked
2) Position „DON", yellow point
   - position for inserting pawls into the lock
3) Position „RELEASE"
   - position for releasing the pawls

Procedure for using the safety belts:

1) Sit down comfortably on the seat, arrange the safety belts to prevent their twisting.
2) Turn the lock-gate **"A"** into the position „DON".
3) Slide the pawls of the straps free ends into the lock body.
4) Turn the lock-gate **"A"** into the position „LOCKED".
5) To shorten the straps lenght, pull the free ends of the straps.
6) To release the belts, turn the lock-gate **"A"** into the position „RELEASE"; in this position all three pawls are released. After being released, the lock-gate turns to the position „DON" automatically.

c) Headrests
The pilot seats are equpped with headrests, which are vertically adjustable into 5 positions. Individually positions are arrested by springs. To readjust the headrests position, push or pull in the desired direction of rest adjustment.

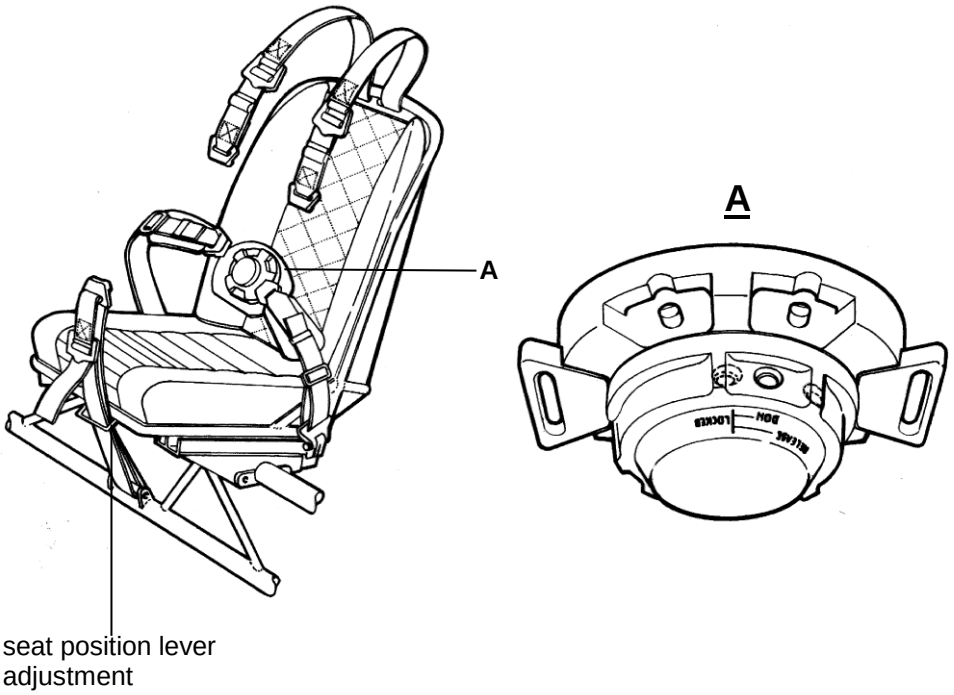


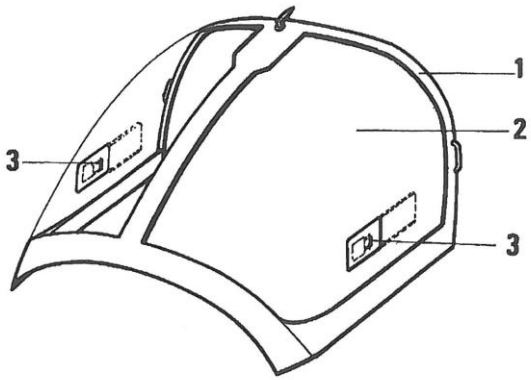
Fig. 7-7 - Seat and Safety Belt installation with detail of safety belt lock

7.21 DOORS, WINDOWS AND EXITS

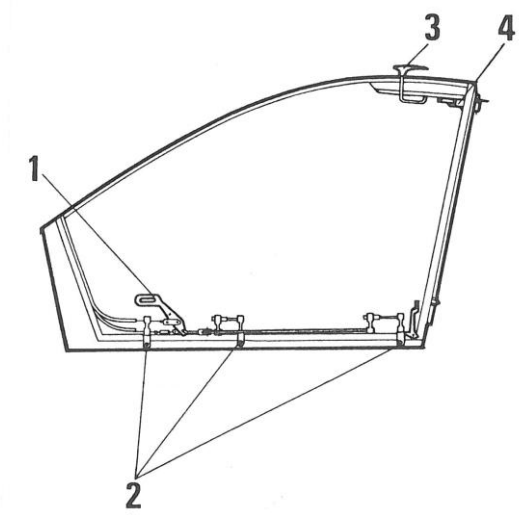
The aircraft is equipped with cockpit canopy. The canopy is opened by sliding forward and it is provided with an emergency jettisoning mechanism. Securing the cockpit canopy in its open position on ground enables the arrestment lever, located on the canopy frame left side. Canopy lock is controlled by a door handle located on the top of the canopy frame. In closed position the handle points backward. To open the canopy, rotate the lever through 180° forward and slide the canopy forward. The canopy can be locked from outside by key during airplane parking.

Canopy emergency jettisoning:

The lever for emergency release is located both on the left and on the right sides of the cockpit, it is painted red and provided with a seal. The lever is controlled a sliding mechanism to the airframe, which unlocked the pins connecting canopy frame with airframe sleight bell in strip guide. The emergency jettisoning handles do not control canopy lock opening!



1 - sliding canopy
2 - cockpit glass
3 - cooling windows



1 - canopy emergency jettisoning lever
2 - cockpit canopy hinges
3 - door handle with lock for cockpit opened
4 - installation of emergency hammer (see 7.65)

Fig. 7-8 Diagram of cockpit sliding canopy with emergency jettisoning mechanism

7.23 CONTROL LOCK

During the airplane parking, the control stick can be locked by meams of a red latch, which is located beneath the left instrument panel closer to central panel. The pilot gets the information about the manual control being locked by means of:

a) the abnormal position of the stick (control sticks are push and right position)

b) the warning placard "WARNING - CONTROL LOCKED", appears after the control has been engaged

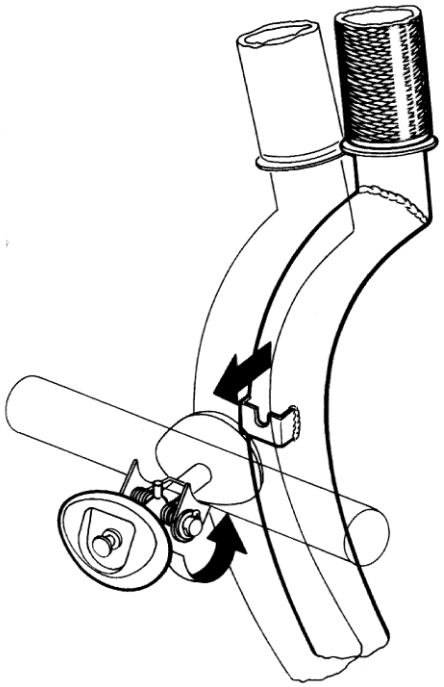


Fig. 7-9 Control lock system

7.25 ENGINE

The engine type TEXTRON LYCOMING AEIO-360-A1B6, piston type, four-stroke, air cooled, flat, right-handed four cylinder engine, with maximum continuous power 200 HP (149 kW) and 2700 R.P.M. The engine has not reducer and is not supercharging (not compressor).

7.25.1 Engine and propeller control

Individual engine control handles are located on the central panel under the instrument panel. The flexible rods provide the necessary transmission from the cockpit to the engine control levers.

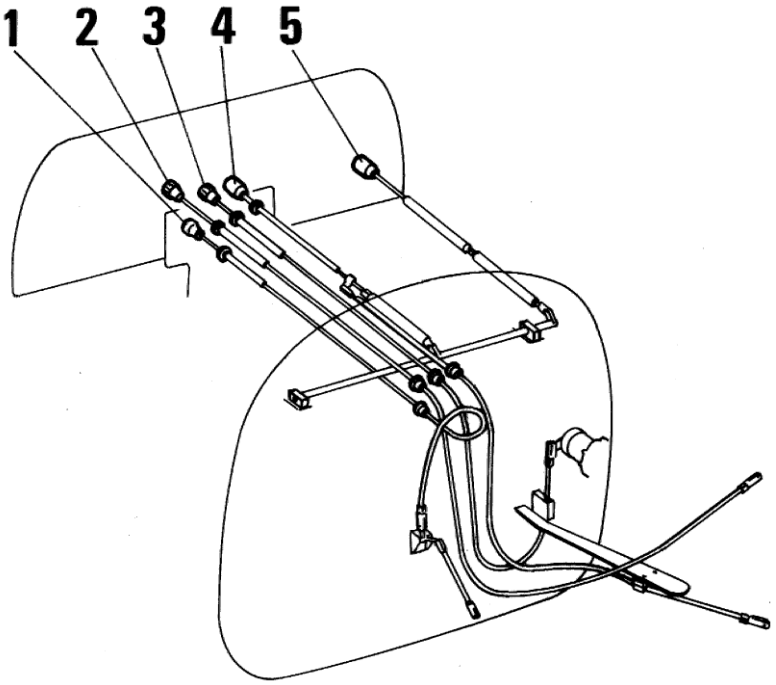
a) Engine power - by **black handle** of throttle is controlled the engine power. Increased by pushing, decreased by pulling. The friction arrestment of the throttle control can be adjusted by tightening or releasing the nut located on the rod sleeve.
For acrobatics maneuvers is use the left handle of throttle.

b) Engine speed - by **blue handle** is controlled the engine speed. Pushing the handle increased the R.P.M. (low angle), pulling the handle decrease the R.P.M. (high angle). The handle is arrested, when the white mark on the control handle points to the right. When the propeller speed should be readjusted, release the arrestment by turning the handle through 90° anticlockwise and adjust the required speed by pushing or pulling. The handle returns automatically to arrested position after being released.
To recess with appropriate spring arrestment is provided in the propeller control rod to facilitate the cruising power speed (2450 R.P.M.). This provision enables the pilot to choose quickly the frequently used power speed.

c) The mixture - by **red handle** is controlled the mixture control. By pushing the handle the mixture is enriched, by pulling the mixture is weak. In the last phase of weaking motion the **fuel supply into the engine is cut-off**.

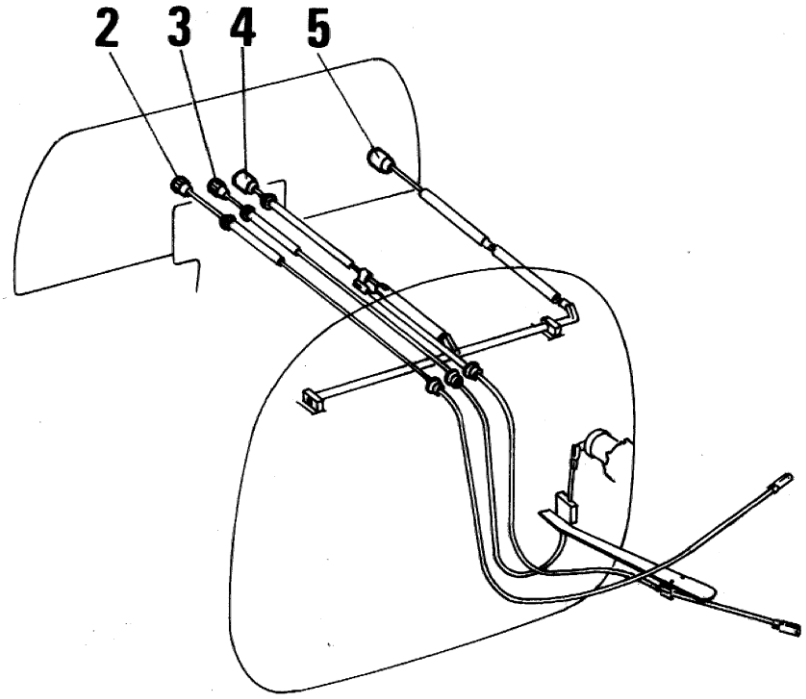
d) Engine cooling - aircraft´s up to S/N. 0689 incl. equipped with the engine cooling flap.

by **black handle**. Pushing the handle the flap is closed, by pulling the flap is opened.



1 - engine cooling flap control
2 - mixture control
3 - propeller control
4 - throttle control
5 - left throttle control

Fig. 7-10a Diagram of engine controls - applicable for aircraft´s up to S/N 0689 incl.



2 - mixture control
3 - propeller control
4 - throttle control
5 - left throttle control

Fig. 7-10b Diagram of engine controls - applicable for aircraft´s from S/N 0691 incl. and up

7.25.2 Engine oil system

The oil tank is contained engine crankcase (1). The oil quantity in the engine crankcase is checked of an oil gauge (16) - the maximum filling is 7,6 litres (8 quart).

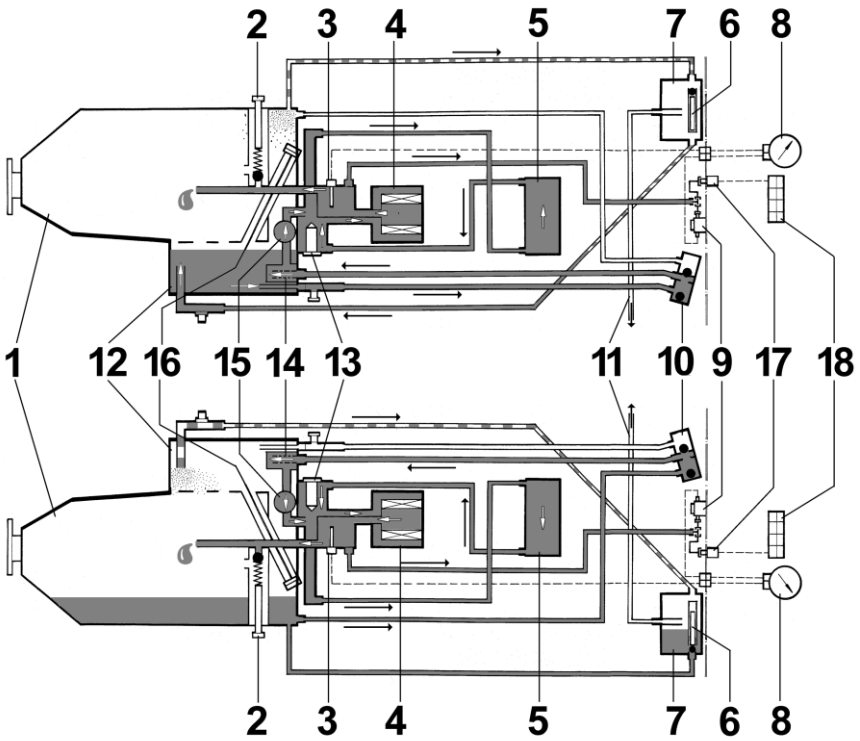
Oil is transported by the pump (15) to the lubricated parts of the engine via full-flow oil filter (4). When the oil temperature indicates cca. 85°C, the thermostatic valve (13) closes the direct oil flow through the filter, whereupon oil starts to flow through the oil cooler (5) and is returned back into the engine through the filter. The oil pressure is controlled by pressure reduction valve (2). The crankcase is vented into the atmosphere via an oil separator (7), the separator oil is returned into the engine through the hose. The diagram of the oil system is illustrated in Fig. 7-10.

On the figure are also shows the system of measuring the oil pressure by means of oil pressure transducer (9), signalling the oil minimum pressure by means of the minimum pressure switch (17) and oil temperature by means of the oil temperature transducer (3).

The oil is drained by the drain valve.

Normal flight

Inverted flight



1 - engine crankcase
2 - reduction valve of oil pressure
3 - oil temperature transducer
4 - full-flow oil filter
5 - oil cooler
6 - single-direction flap valve
7 - oil separator
8 - oil pressure indicator (4-pointer engine indicator)
9 - oil pressure transducer
10 - gravitional valve
11 - venting piping
12 - oil sump
13 - thermostatic valve
14 - filter strainer
15 - oil pump
16 - filling neck cap with oil quantity gauge
17 - pressure switch
18 - annunciator lights panel

Fig. 7-11 Diagram of oil system

7.25.3 Engine instruments

The engine run is monitored by the following:

The oil pressure: is draw from engine back wall (above the right magneto) and is divided in two branches. The first one is terminated with an oil pressure transducer, in which the pressure is converted into an electrical signal. The second branch is terminated with the minimum oil pressure switch (when the oil pressure drop under the minimum value, the "OIL PRESS. LOSS" light on the annunciator panel is “ON”).

The oil temperature: is measured by means of a resistance gauge located into the oil filter adaptor.

The fuel pressure: is draw from the injector body (engine priming pumpe) and across pressure transducer is converted into an electrical signal.

The actual fuel consumption: is measured indirectly, sensing is pressure in engine injector installation.

The thermoelectric sensor of the cylinder heads temperature: is located in the head of the right rear of cylinder.

Thermoelectric sensor of the exhaust gas temperature (EGT): is located in the exhaust manifold of the right rear of cylinder.

The engine speed indicator: is of the mechanical type and is driven by a flexible shaft connected to the drive on engine back wall.

The manifold pressure: is draw from the first right cylinder manifold

NOTE:

The indication of the oil temperature, oil pressure, fuel pressure and actual fuel consumption are combined into four pointer indicator.

7.25.4 Engine starting and engine ignition

The ignition system consists of two magnetos, bunched hi-voltage cables and ignition fuses. The magnetos are located on the engine back wall. The ignition sequence follows the pattern is 1-3-4-2.

To facilitate engine starting is left magneto is provided an impulse coupling.

The engine is equipped with an electrical starter.

Use of the ignition switch:

The individual position of the ignition switch :
“OFF“ - ignition is switched OFF
"L" - only left magneto is switched ON
"R“ - only right magneto is switched ON
“BOTH“ - both magnetos is switched ON
"START" - both magnetos is switched ON and starter is activated
After releasing the spring returns the switch into the position “BOTH“.

7.25.5 Engine suction and cooling

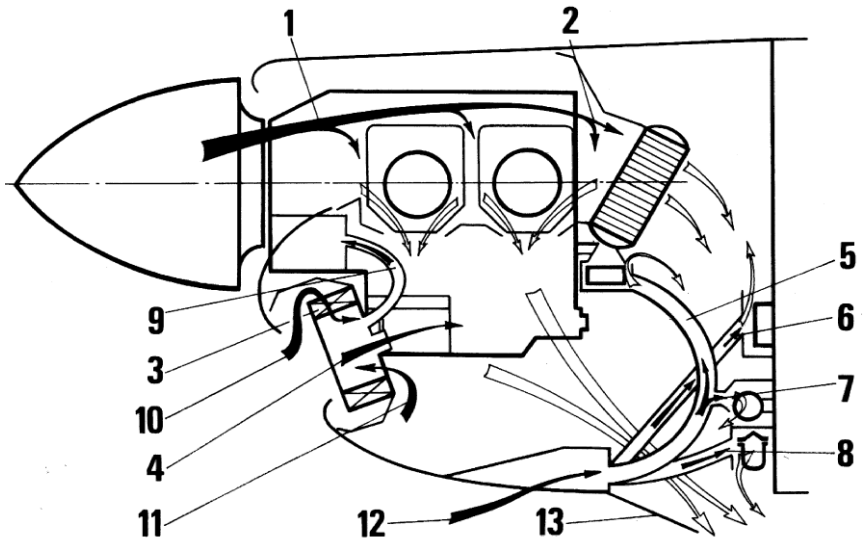
Engine cooling air is supplied from the of engine front parts covers to the engine cylinders, oil cooler (is located on the right rear sides of inner engine covers) and aggregates.

The cooling air for the engine fuel pump (5), voltage regulator (6) and the electrical feel pump (7) is supplied from the rear parts of the inner engine covers.

The diagram of the engine cooling and suction system is illustrated in Fig. 7-11.

Winterization plates are inserted into the front engine cover to reduce low oil temperatures or cylinder head temperatures at low ambient temperatures.

In the lower front parts of engine cover is intake hole, which is supplied cooling air into the engine via a suction filter.
To the alternator cooling (9) is supplied cooling air from filter body.



1 - air for cooling the engine cylinders
2 - air to the oil cooler
3 - air filter
4 - air suction in engine
5 - cooling of engine fuel pump
6 - cooling of voltage regulator
7 - cooling of electrical feel pump
8 - cooling of fuel filter
9 - cooling of alternator
10 - air for filter cooling
11 - secondary air supply
12 - cooling of engine aggregates
13 - engine cooling flap - up to S/N 0689 incl.

Fig. 7-12 Diagram of engine suction and cooling

7.25.6 Fuel injection system

The engine is equipped with a BENDIX RSA - 5AD1 fuel injection system with manual mixture control and with a stop function for engine shut-off. From the injector (priming pump) (22) is fuel supplied into the fuel distributor (21), from where is fuel supplied to the individual cylinders of injector nozzle (20). Here is fuel inject in the engine suction valve.

The diagram of the fuel injection system is illustrated on Fig. 7-13.

7.25.7 Exhaust system

The exhaust gases are supplied from the cylinders by fire resistant piping into the noise silencer, whereof outer jacket is heat exchanger. Here the air is heated for the cockpit heating. The exhaust gases from the noise silencer flow out beneath the airplane into the free atmosphere.

Exhaust installation is illustrated on Fig. 7-16.

7.25.8 Operating a new engine – manufacturer recommendation

Whenever the airplane with a new engine, engine after a general repair or engine in which one or more cylinders were replaced it should be operated in flight at the cruising power in the range of 65% to 75% for the period from 50 operation hours or until the oil consumption is stabilized. In the case of all new or newly repaired engines is neccessary after the first 25 operation hours performed the 50 hours engine inspection, including the oil drain-off and oil replacement.

For the first 50 operation hours only mineral oil must be used.

NOTE:

More detailed information is contained in the “LYCOMING Operator´s Manual” in validity issue.

7.27 PROPELLER

The propeller MTV-9-B-C/C-188-18 or HARTZELL HC-C3YR-4BF/FC 6890 is three blade, hydraulically controlled variable pitch propeller.

Changing the pitch of the propeller blade is performed by a speed governor, which maintains the propeller speed independently on the airplane speed and engine power.

The range of the pitch change is limited by mechanical stops of high/low pitch respectively. In case of oil pressure loss, the propeller blades are set on low pitch automatically. The oil pressure in the regulator is single acting in sense (on the small leading angle), on the high leading angle is counter-weight pitch propeller.

The propeller control by means of handle is mentioned in subsection 7.25.1(b).

7.29 FUEL SYSTEM

The fuel tanks are located in the wings - the main tanks (2) containing 2x60 l (2x16 U.S.gal) of usable fuel are attached to the main spar in the central nose part of each wing, the auxiliary tanks (19) containing 2x55 l (2x14,5 U.S.gal) of usable fuel are attached at the wing ends before the composite wing tips.

Each tank is provided with the sump and draining valve in the bottom point to enable separate fuel draining with the individual tanks. The master fuel drain valve (13) on the bottom of the fuselage is used for central fuel draining and fuel sludge in fuel installation.

The piping interconnecting with the upper space of auxiliary tanks is provided with the venting ball valves (18). Venting of fuel installation in the left and right wing is interconnected by piping, two venting outlets (14) are located on the bottom of the fuselage.

The fuel flows from the main tanks through the acrobatic chambers (17), located in the inside of the main tanks and through the fuel valve (10) and from here is suction of fuel through the filter (9) by the engine fuel pump (7) into the injector. In case of the electric pump (5) is engaged, the bypass valve (4) behind the strainer closes the direct flow from the strainer to the engine fuel pump (7) and opens the way from the strainer via the electric pump (5) in the engine fuel pump (7).

Electric fuel pump (5) is attached to the central fuselage beneath the floor and is used either for flooding the fuel system at starting the engine. At the failure of engine fuel pump (7) is possible emergency used electric fuel pump (5) to the ending of flight.

The master fuel draining valve (13) is designed to fuel sludge and fuel draining from the fuel system. The fuel cock (10) is designed to switches of fuel consumption. The control handle for fuel consumption switching is located on the panel between pilot´s seats.

The four-pointer fuel indicator (12) on the instrument panel is interconnected with float gauges (3, 3) in each fuel tank. The fuel rest in the left and right main tanks is signalled on the annunciator light panel (25).

The diagram of the fuel system is illustrated in Fig. 7-13.

Fuel valve function:

Turning the valve knob following positions is selected fuel consumption from the individual tanks.

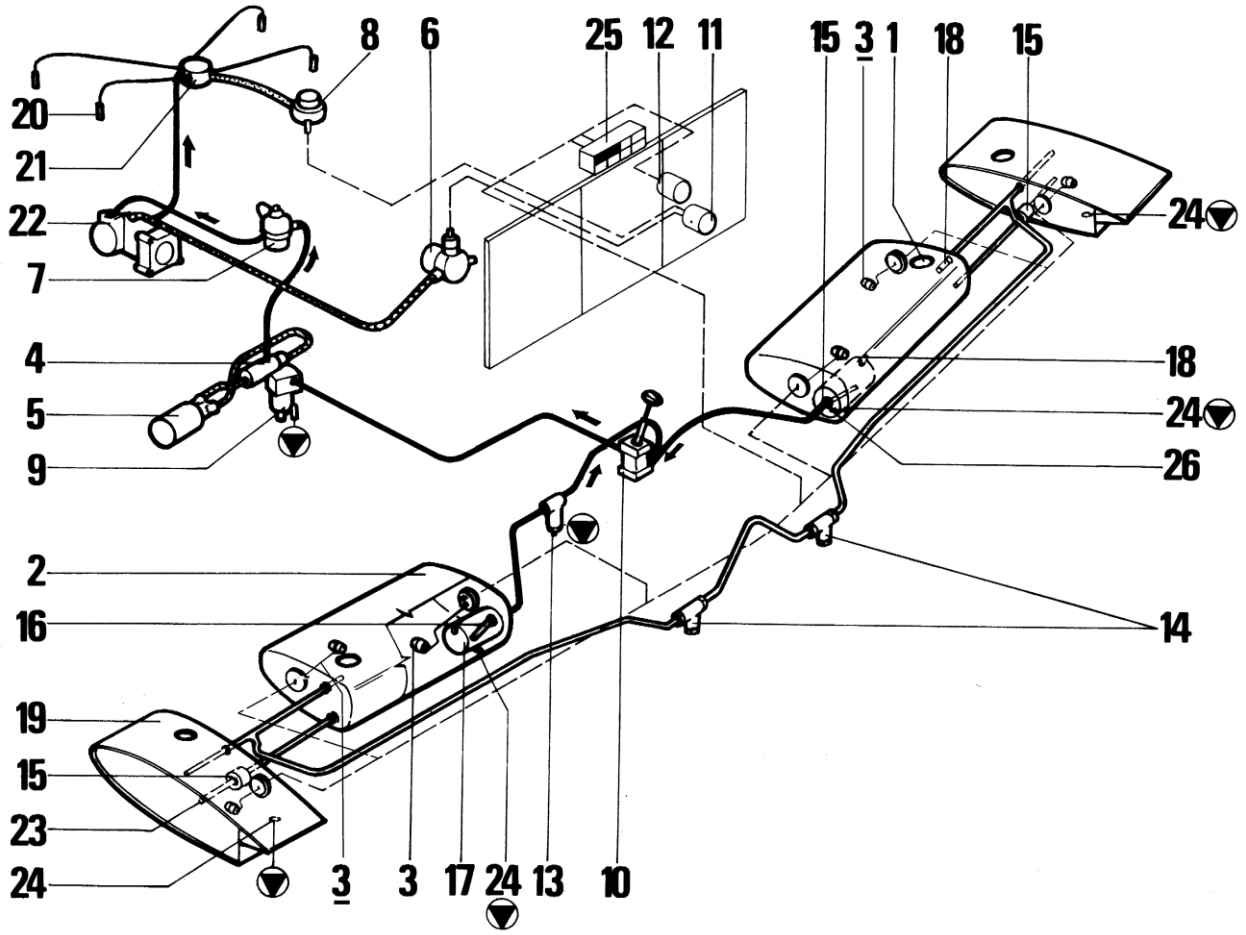
L	- tanks in the left wing
L+R	- tanks in the both wings
R	- tanks in the right wing
OFF	- fuel closed

NOTE:

The valve can be switched into the “OFF” position only after pulling the knob slightly up before turning.

NOTE:

Fuel system is permissible for performed acrobatic maneuvers and inverted flights (only for category ACROBATIC (A) and UTILITY (U).



1 - fuel tank cap
2 - main fuel tank
3.- float gauge
3.- float gauge (aircraft´s up to S/N 074 incl.)
4 - bypass valve
5 - electric fuel pump
6 - fuel pressure transducer
7 - engine fuel pump
8 - consumption transducer
9 - fuel filter
10 - fuel cock
11 - four-pointer indicator (oil pressure, oil temperature, fuel pressure, fuel consumption)
12 - four-pointer fuel indicator
13 - fuel draining valve
14 - venting outlet
15 - single-way flap valve
16 - flexible hose
17 - acrobatic chamber
18 - venting ball valve
19 - auxiliary fuel tank
20 - nozzle
21 - fuel distributor
22 - priming pump
23 - fuel consumption strainer
24 - draining valve
25 - annunciator light panel:
L FUEL LOW LEVEL,
R FUEL LOW LEVEL
26 - acrobatic chamber inlet

- draining valves

Fig. 7-13 Diagram of fuel system

7.33 BRAKE SYSTEM

The aircraft is equipped with hydraulic disc brakes provided with matalceramic lining and are fitted with automatic clearance adjustment.

The brakes are controlled individually by means of brake toe pedals, attached to the pedals of the directional control.

For short period parking the airplane may be braked by means of the parking brake, which controls both brakes simultaneously.

NOTE:

DIRECTIONS FOR OPERATING THE PARKING BRAKE:

a) BRAKING

(1)	Brake pedals simultaneously	-TREAD DOWN FULLY
(2)	Parking brake control	-PULL TO SET
(3)	Brake pedals simultaneously	-CHECK : TREAD DOWN

b) BRAKE RELEASE

(1)	Parking brake control	-TURN OFF BY LEFT ROTATING THROUGH 90° AND PUSHING
(2)	Brake pedals simultaneously	-2x TREAD DOWN FULLY

NOTE:

The parking brake cannot be controlled by means of brake pedals from the right pilot seat.

CAUTION:

DO NOT STEP BRAKE PEDALS FROM RIGHT PILOT SEAT ON WHEN PARKING BRAKE USED. A DAMAGE OF ARREST MECHANISM OF PARKING BRAKE MAY OCCUR.

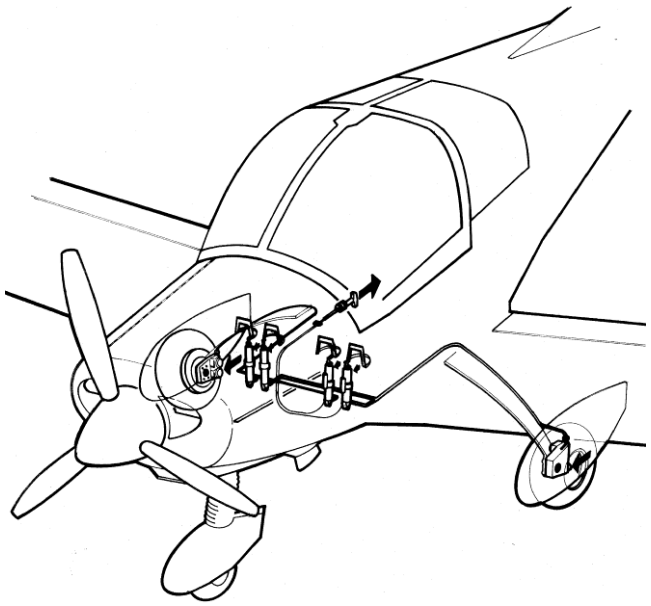


Fig. 7-14 Diagram of brake system

7.35 POWER STEERING

The aircraft is controlled during taxiing by means of the rudder control pedals. The rudder control pedals movement steers the nose landing gear via a cable system; the maximum controlled wheel deflectin is 15°.

For turns of a small diameter, the directional control is used in combination with braking the inner wheel. In this case, the springs incorporated into the cable system between the pedals and the nose landing gear, enable the maximum wheel deflection be increased to 38°.

7.37 ELECTRICAL SYSTEM

Electric system is single wire (+ pole), earth wire is airplane fuselage (- pole). DC supply network provides 28 V and primary electric power source is an alternator driven by the engine. It supplies the current of 60 A.

An auxiliary power source is the battery, attached to the battery area. The battery is accessible after opening the door on the right side of airplane fuselage.

The emergency power supply, consists from the two batteries is located in baggage compartment. Supply to the **turn-an-bank indicator** and the **auxiliary lighting** in case of either the both primary and auxiliary power source failure or the intentional switching-off the “FLIGHT INSTRUMENT” circuit. In these cases the emergency power supply turns “ON” automatically, so that turn-and-bank indicator and auxiliary lighting getting “ON” without function interrupted. The emergency power source activation is signalled by the green signal light (placard “EMERGENCY SOURCE”) close to the turn-and-bank indicator, which signalling the emergency power supply “ON” and correct function of turn-and-bank indicator. The emergency power supply batteries are recharging during normal operation of airplane.

The electrical system consists of individual circuits, connected to main bus bar through sectional switches, which simultaneously functions as the circuit breakers.

The appropriate circuit diagrams of these circuits are detailed illustrated in the Maintenance Manual Z 242 L, Volume I.

The main switch opens all circuit except of the ignition and the cockpit lighting. The ignition circuit (magnetos) is controlled by the magneto switch.

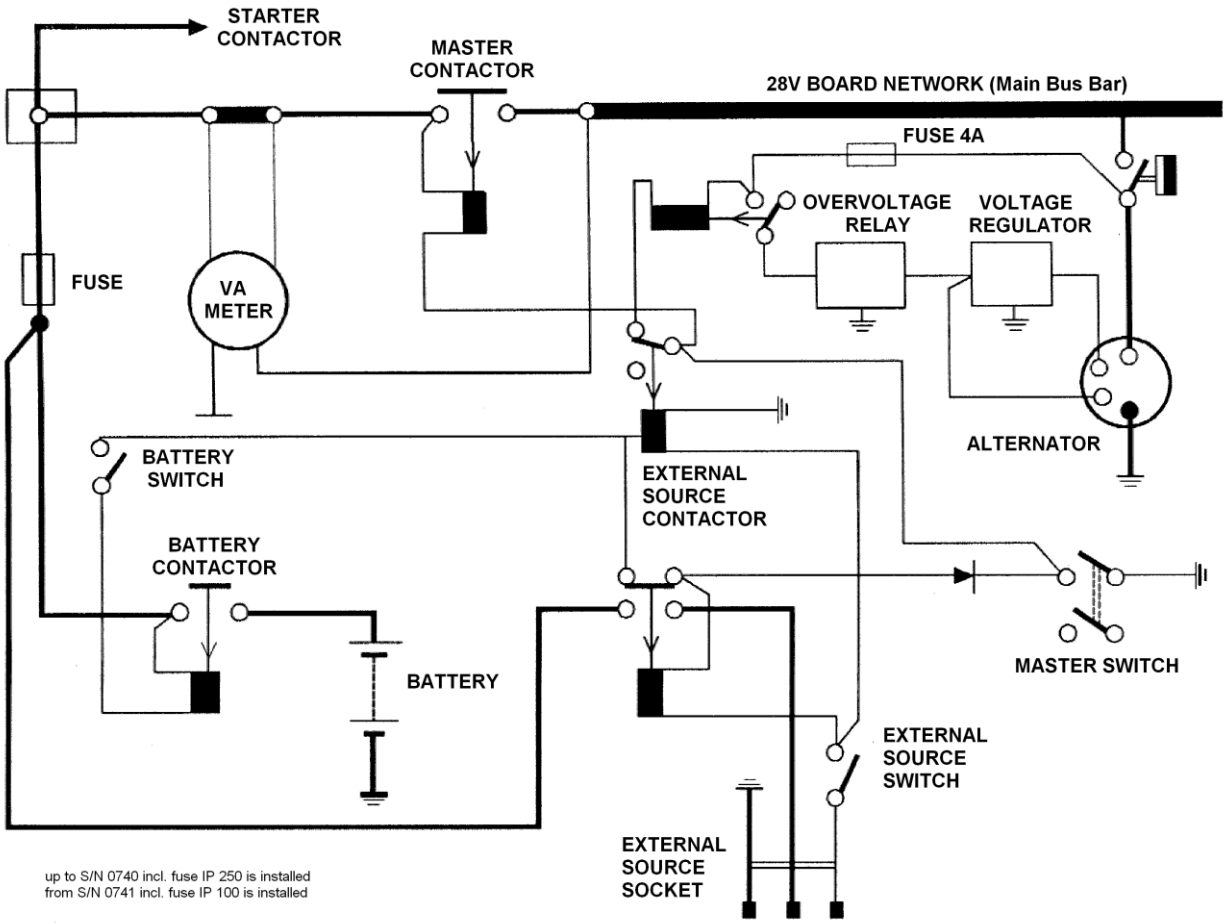


Fig. 7-15 Simplified diagram of the electrical system

7.37.1 V-A meter

The V-A meter is a combined instrument, which indicates the voltage and the current in the airplane electric network.

1) the left indicator indicates the voltage (range 0 to 40 V).

2) the right indicator indicates the current:
   a) (+) battery charging - range 0 to 20 A (indicating clockwise from 0)
   b) (-) battery consumption - range 0 to 60 A (indicating anticlockwise from 0).

7.37.2 Circuit protection

The circuit switches located on the panel between the pilot´s seats and the switches COM/NAV 1 and COM/NAV 2 function as automatic circuit breakers. In case of the circuit overload this switch turns off automatically - turning off is indicated by the switch lever position “OFF”. Each switch/circuit breaker is designated with a placard identifying the appropriate circuit. Individual electric appliances are supplied from here either directly or through independent protection elements.

This circuit elements, fuses or circuit breakers is located on the panel beneath the instrument panel. Each circuit breaker is designated by a placard with the name of the circuit protected. Each cap with fuses is designated by a placard with the value and name of the circuit protected.

Circuit breaker switch-on procedure (if installed)

Disconnection of the appliance by the circuit breakers is indicated by white strip on the push button of the circuit breaker. White strip is visible only in cesa that circuit breaker is switched-off. Power supply is renewed by pushing the button to the condition switched-on.

Fuse replacement (if installed):

Press the fuse cap and turn slightly anticlockwise remove the cap. Provided the fuse is blown, replace it by the new fuse of the same rating. Insert the cap containing the new fuse into the fuse holder body, then press an turning slightly anticlockwise, fix the cap.

CAUTION:

BE SURE TO USE THE CORRECT RATING OF THE FUSE AT FUSE REPLACEMENT. CURRENT NOMINAL VALUE IS STAMPED ON THE MATAL CAP OF EACH FUSE.

NOTE:

Spare fuses are located in the bag on the side panel of the inside covers in cockpit.

Designation of placards in fuses:

COM 1, COM 2	(6,3 A)	- transceivers 1 and 2
NAV	(3,15 A)	- navigation equipment
ADF	(1 A)	- ADF (automatic direction finder)
XPDR	(3,15 A)	- transponder
MKR	(1 A)	- marker
DME	(3,15 A)	- DME (distance measuring equipment)
GPS	(3,15 A)	- GPS (global position system)
FUEL IND. L	(1 A)	- fuel indicator left
FUEL IND. R	(1 A)	- fuel indicator right
GIC	(4 A)	- gyro compass
ELT	(1 A)	- ELT (emergency locator transmitter)
AUDIO	(2 A)	- audio control console
STARTER	(2 A)	- starter
ANN. PAN.	(2 A)	- annunciator light panel
VA METER	(2x1 A)	- V-A meter
CHECK	(1 A)	- annunciator check
TURN C.	(1 A)	- turn-and-bank indicator
ATT. GYR.	(1 A)	- attitude gyro
DIR. GYR.	(1 A)	- directional gyro
INT. LIGHT	(1 A)	- interior lighting
ENG. IND	(2 A)	- engine instruments
STALL. W.	(2 A)	- stall warning failure/inactive
INST. LGT.	(3,15 A)	- instrument lighting
PLACARDS	(1 A)	- placards lighting
BATTERY	(3,15 A)	- battery recharging
EXCIT	(4 A)	- generator excitation
C.U. LIGHT	(1 A)	- cockpit lighting
EXT.GPS	(3,15 A)	- external GPS power socket
CLOCK	(1 A)	- clock

7.37.3 Use of the external electric power source

The socket for connecting the external electric power source is located on the fuselage left side. The socket construction prevents reversing of polarity.

CAUTION:

USE EXTERNAL SOURCE WITH MAXIMUM RATING 28 V/150 A DC ONLY.

Procedure of connecting the external source:

(1)	External source plug	- CONNECT
(2)	"EXT. POW. SOURCE" switch	- ON
(3)	"EXT. POW. SOURCE" signal light on the annunciator light panel	- CHECK - ON

Procedure of disconnect the external source:

(4)	"EXT. POW. SOURCE" switch	- OFF
(5)	"EXT. POW. SOURCE" signal light on the annunciator light panel	- CHECK - OFF
(6)	External source plug	- DISCONNECT

7.37.4 Radiocommunication and navigation equipment

The COM and NAV equipment have their respective panels fitted with independent OFF - ON switches. However, the complete radiocommunication and navigation equipment can be turned OFF simultaneously by two avionics master switches "COM/NAV 1" and "COM/NAV 2" (if installed).

CAUTION:

PRIOR TO ENGINE STARTING, STOPPING AND DURING THE CONNECTION OF THE AIRPLANE EXTERNAL ELECTRIC POWER SOURCE, THE „COM/NAV 1", „COM/NAV 2" (IF INSTALLED), „FLIGHT INSTR.", „LIGHTING“ SWITCHES SHOULD BE TURNED “OFF” – THERE IS A RISK OF DAMAGE OF THE AVIONICS AND INSTRUMENTS RESULTING FROM VOLTAGE TRANSIENT PEAKS.

7.39 LIGHTING SYSTEM

7.39.1 External lighting

a) Position lights
- green position light (on the right wing tip)
- red (on the left wing tip)
- white (on the elevator).

To turn the position lights “ON”, use the switch "POSITION LIGHTS".

b) Landing and taxiing lights

are located in the leading edge of the left wing, if appropriate of the right wing near the auxiliary fuel tank.

To turn the landing light “ON”, use the switch “LANDING LIGHT”.

To turn the taxiing light “ON”, use the switch “TAXI LIGHT”.

c) Anticollision beacon (optional equipment)

The anticollision beacon is located on the rudder top.

To turn the anticollision beacon “ON”, use the switch “BEACON”.

d) Strobe lights (optional equipment)

The strobe lights are delivered as the optional equipment. These are located on the wing tips.

To turn the strobe lights “ON”, use the switch “STROBE LIGHT”

CAUTION:

THE STROBE LIGHTS SHOULD NOT BE OPERATING WHEN FLYING THROUGH CLOUD, FOG OR HAZE. THE REFLECTED LIGHT CAN PRODUCE SPATIAL DISORIENTATION. THEY ALSO SHOULD NOT BE USED IN CLOSE PROXIMITY TO THE GROUNG, SUCH AS DURING TAXIING, TAKE-OFF AND LANDING.

7.39.2 Internal lighting

a) Cockpit lighting
Lighting of the cockpit is provided by interior light (if installed), which is attached on the fixed frame of canopy. To turn the light “ON”, use the switch on the light body. The interior light is connected directly to the battery. “MASTER SWICH” and “BATTERY” switch need not be “ON”, when using the interior light.

b) Illumination of the placards and the instruments
To illuminate the placards and the instruments, turn “ON” the switch “LIGHTING”. The lighting intensity of the three instrument sections/groups may be controlled individually by means of three dimmers located on the central panel.

c) Auxiliary lighting
The auxiliary lighting is located on the sliding canopy frame. To turn the light “ON” and to regulate its lighting intensity, use the switch - dimmer on the light body, adjacent this lamp switch a push button is located, pressing of which causes the light to light at maximum lighting intensity. Prior turning the auxiliary light “ON”, the circuit switch “MAP LIGHT” must be turned “ON”. In case of electric power supply failure the auxiliary light is supplied from the emergency power source.

NOTE:

The light can be turned “ON” only when the cockpit canopy is closed.

7.43 HEATING, VENTILATING, DEFROSTING AND AIR CONDITIONING

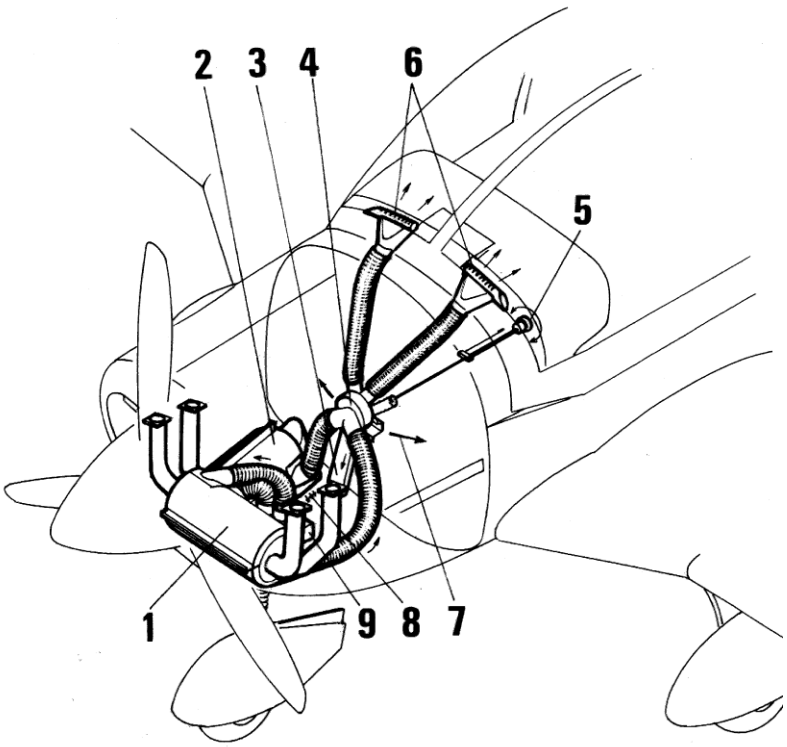
7.43.1 Heating

The outside air flows through the sump in the front part of the engine bottom covers in two heat exchangers (1), (2) on the exhaust manifold. Here the air is heated and depending on adjustment of the rotary slide valve in the regulation chamber (4) the air flows into the cockpit or is bleeded through a channel of the firewall beneath the airplane. The rotary slide valve is controlled by means of chain from the heating control handle (5) located on panel beneath the instrument panel.

The heating functions acc. to the heating control handle adjustment:

1. Adjusting the heating control arrow pointing to the left to the zero mark on the placard is hot air inlet into the cockpit space is closed. Hot air flows out beneath the airplane fuselage.
2. Turning the heating handle arrow upwards, the outlet of hot air into the outer atmosphere is closed and open the inlet of hot air on the windshield.
3. Turning the heating handle arrow pointing to the right, the hot air is distributed partially to the windshield and to the space under the feet of occupants.
4. Adjusting the heating control handle arrow downwards, the hot air flows to the space under the feet of occupants, the air inlet to the windshield is closed.

The heating control handle (5) can be rotated as necessary through out without any stops. In turning and partially pulling the handle any desirable cmbination of heating and ventilation intensity can be selected.



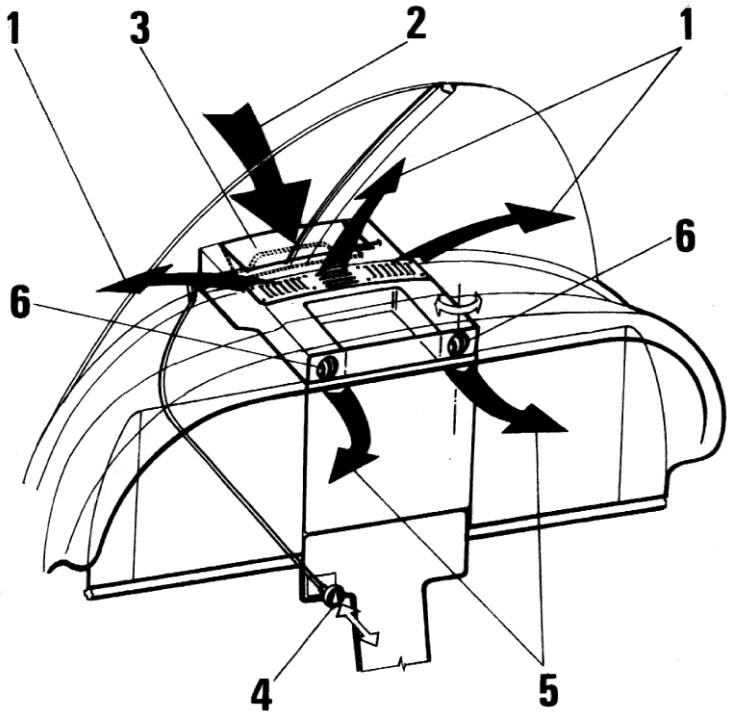
1 - heat exchanger I
2 - heat exchanger II
3 - hot air outlet beneath the airplane (heating is closed)
4 - regulation chamber (distributor)
5 - heating control handle
6 - hot air inlet on the windshield
7 - hot air inlet for the space under the feet of occupants
8 - exhaust gases outlet into the atmosphere
9 - air intake into the heat exchanger

Fig. 7-16 Diagram of exhaust system and cockpit heating

7.43.2 Ventilating

Fresh air enters the regulating chamber through the air-intake in front of the sliding canopy frame. The flap valve (3) in the regulation chamber controls and distributes the airflow, the valve is controlled by the string mechanism connected to the push/pull handle (4) on the cockpit central panel. The air-flow is closed by pushing the handle fully forward. Pulling the handle backwards opens the airflow to the venting ducts from which it is directed to the front part of sliding canopy. The adjustable ventilators (6) is possible regulating the air-intake for both pilot´s.

The two sides ventilation windows on the sliding canopy is possible install on the wish.



1 - air outlet to the windshield
2 - air inlet into the regulating chamber
3 - flap valve
4 - ventilation control handle
5 - fresh air flow to the occupants
6 - adjustable ventilators (air shoover)

Fig. 7-17 Diagram of ventilation of the cockpit

7.49 PITOT PRESSURE SYSTEM

Total pitot pressure for the airspeed indicator is supplied from the Pitot tube (10), located on the bottom of the left wing. The line is provided by transparent drainage sumps (5), located on the left side of the bottom fuselage cover.

Pitot tube is provided with electrical heating elements.

7.51 STATIC PRESSURE SYSTEM

Static pressure for barometric indicators is supplied from the static pressure probes (11), located on both sides of the rear fuselage in front of the airplane tail.

The line is provided by transparent drainage sumps (5), located on the left side of the bottom fuselage cover.

The static pressure line is provided with the two-way valve (12), which enables to select the alternate static pressure source in case of primary source failure (if installed system with **B**, **C**, **D**). The alternate static pressure is supplied from the engine compartment (on the firewall) and from the cockpit. The regulation screw of alternate static pressure source control it is possible compensation value of alternate static pressure, relevant to the static pressure in main line. The value of alternate static pressure source can be compensation, so that comply with static pressure in main line (if installed system **D**) by means of regulation screw of the alternate static pressure (16) - this adjustment is perform by the manufacturer at the airplane test flight and is locked by cover after adjustment.

NOTE:

Switching the from main static pressure system to the alternate static pressure system un-indicate important deviation in altitude and airspeed indicator.

7.57 STALL WARNING OR ANGLE OF ATTACK SYSTEM

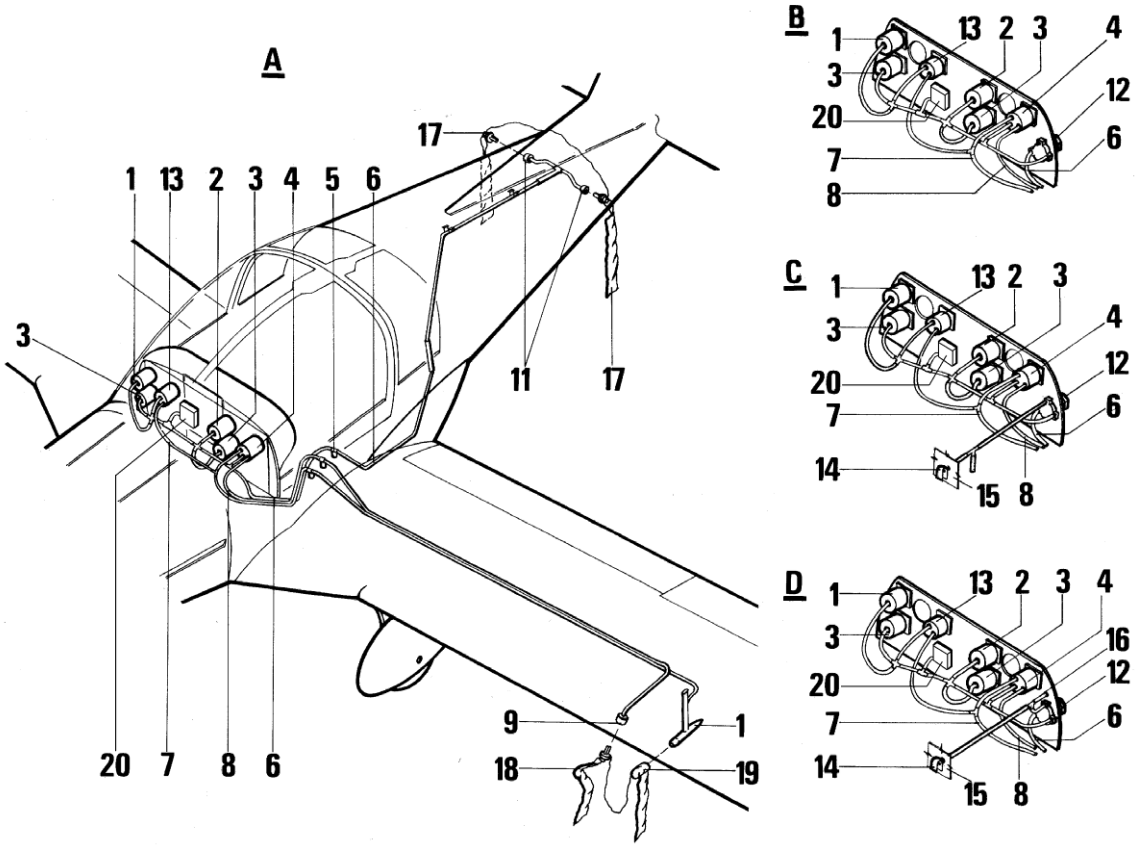
The installed airspeed indicator is provided with stall speed signalling unit. The unit functions as the switch operated by differential mamometer, comparing the total pressure from the Pitot tube with the pressure from the stall warning probe (9), located on the bottom side of the left wing, slightly bellow the leading edge. At the speed 5 - 10 knots (9 - 18 km/h) above the stall speed after obtain critical ratio of this pressures, the make ring warning horn acoustic signal

This warning acoustic signal being no activated on ground. The microswitch attached to the right main landing gear spring is position “ON” or “OFF” controlled by the control rod. If airplane is on the ground (main landin gear spring is deflected) is circuit no activated and on the annunciator light panel “STALL. WARN. FAILURE”/”INACTIVE” becomes “ON”. After the airplane take-off, main landing gear is released and microswitch is activated stall warning circuit - light “STALL. WARN. FAILURE”/”INACTIVE” becomes “OFF”.

The line is provided by transparent drainage sumps (5), located on the left side of the bottom fuselage cover

CAUTION:

THE STALL WARNING CIRCUIT IS “OFF” OF OPERATION WHENEVER THE “**STALL. WARN. FAILURE**” or “**STALL: WARN. INACTIVE**” LIGHTS IS “ON” DURING FLIGHT.



A – system without alternate static pressure source - only VFR operation
B – system with alternate static pressure source (airplanes up to S/N 0659 including)
C – system with alternate static pressure source (airplanes from S/N 0660 to S/N 0689 including)
D – system with alternate static pressure source (airplanes from S/N 0691 including and up)

1 - altimeter II
2 - altimeter I (enconding altimeter)
3 - vertical speed indicator
4 - airspeed indicator I with stall warning signalling
5 - drainage sump
6 - static pressure pipe
7 - total pressure pipe
8 - stall warning signalling pipe
9 - stall warning probe - heating
10 - Pitot tube - heating
11 - static pressure probe - heating
12 - alternate static pressure source switch
13 - airspeed indicator II
14 - alternate static pressure source probe
15 - firewall
16 - alternate static pressure source regulation screw
17 - blinding plugs for static pressure probes
18 - blinding plugs for stall warning probe
19 - Pitot tube cover
20 - enconding altimeter

Fig. 7-18 Diagram of Pitot static and stall warning system

7.59 ICING PROTECTION

All probes of pitot-static, Pitot tube, stall warning system are provided with electrical heating elements, that prevents the probes against icing.

The static pressure probes heating is activated by the circuit switch “STATIC HEATING". After the circuit switch is “ON”, the green or white signalling light on the annunciator light panel “STATIC HEATING” or “STATIC TEST” must be “ON”.

The Pitot tube and stall warning probe is activated by the circuit switch “PITOT HEATING”. After the circuit switch is “ON”, the green or white signalling light on the annunciator light panel “PITOT HEATING” or “PITOT TEST” must be “ON”.

CAUTION:

THE FAILURE OF THE PARTICULAR PROBE HEATING IS SIGNALLED WHEN THE SIGNAL LIGHT “STATIC HEATING” OR “STATIC TEST” OR”PITOT HEATING” OR “PITOT TEST” REMAINS “OFF” AFTER SWITCHING THE PARTICULAR CIRCUIT SWITCH “ON”.

7.61 AVIONICS

The aircraft is equipped with standard approved aircraft instruments (see Section 7.7.2) or according to customer's request. The description of their function and importance are given in Chapter 9 - SUPPLEMENTS.

7.65 CABIN FEATURES

The following emergency devices are available in the cockpit:

a) Emergency Locator Transmitter (on request)
The ELT is designed to identify the position after an emergency landing or crash of an aircraft. The ELT is activated automatically after an accident; it can also be activated through a remote control from the aircraft cockpit.
The main unit is located in the fuselage and the control panel is located on the instrument panel. For more information about using an ELT - see the Chapter 9 - SUPPLEMENTS.

b) Emergency release of the aircraft canopy
Emergency release of the sliding canopy is designed for leaving the aircraft with a parachute, after an emergency landing or in other emergency situations when the aircraft canopy can not be moved due to a high degree of deformation.
Description of the function and method of emergency release of the canopy is provided in the Section 7.21 and in Chapter 3 - EMERGENCY PROCEDURES, Section 3.19.3.

c) Crash Axe
Crash axe is designed to break the glass of the canopy in the event when the emergency release of the canopy is not possible to apply. Crash axe is mounted in a holder on the top of the frame of the sliding canopy. It is covered with a cover, secured by a thread with strength of 85 N up to 95 N and equipped with a seal.

d) First Aid Kit
The first aid kit is located in the frame behind the pilots seats.

e) On-board fire extinguisher
The on-board fire extinguisher is designed to extinguish a fire in the cockpit. It is placed in a holder under the left pilot seat.