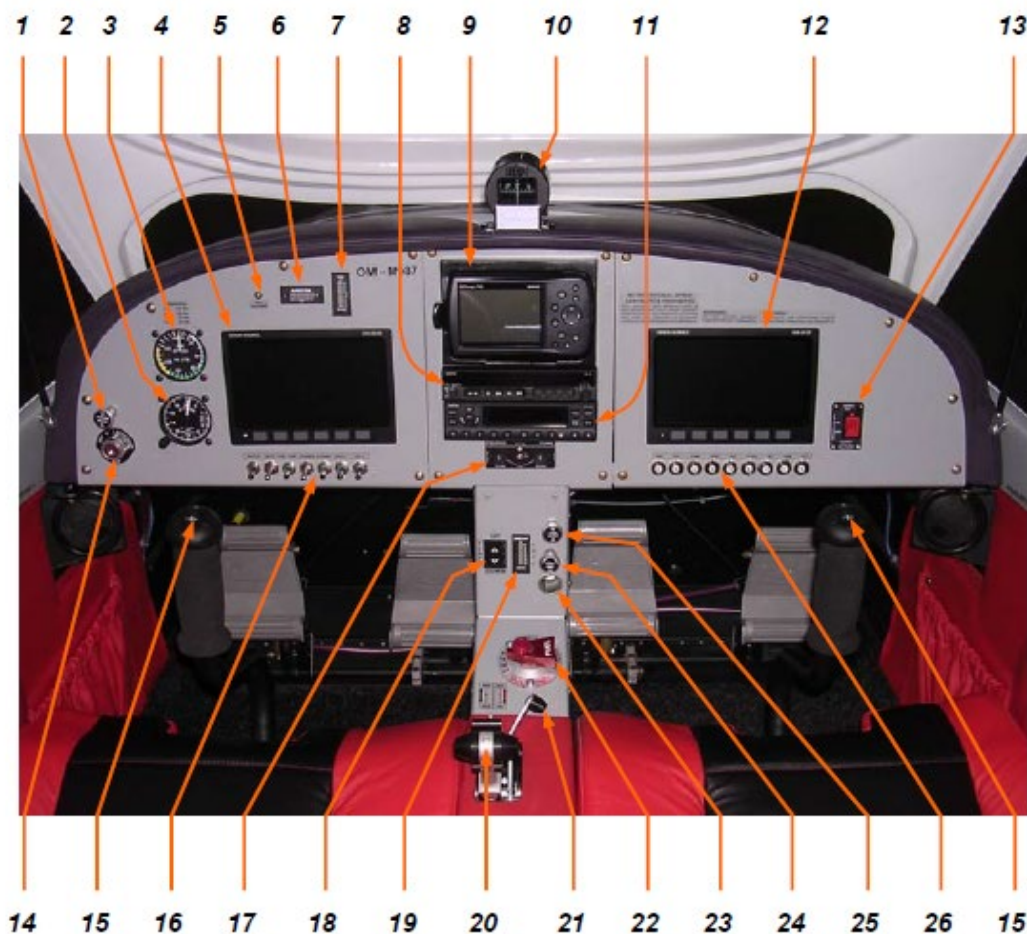


SportCruiser Pilot Operating Handbook



Cockpit

Instrument panel layout



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Description of instrumentation and controls in the cockpit

1	<i>Parking brake</i>	14	<i>Ignition switch</i>
2	<i>Backup Altimeter</i>	15	<i>PTT / elevator trim / aileron trim buttons</i>
3	<i>Backup Airspeed indicator</i>	16	<i>Switches</i>
4	<i>EFIS</i>	17	<i>PS Intercom</i>
5	<i>EMS warning light</i>	18	<i>Flaps control switch</i>
6	<i>Aileron trim indicator</i>	19	<i>Flaps position indicator</i>
7	<i>Elevator trim indicator</i>	20	<i>Throttle</i>
8	<i>Transceiver</i>	21	<i>Choke</i>
9	<i>GPS</i>	22	<i>Fuel selector valve</i>
10	<i>Compass</i>	23	<i>Socket 12V</i>
11	<i>Transponder</i>	24	<i>Carburetors preheating</i>
12	<i>EMS</i>	25	<i>Cabin heating</i>
13	<i>ELT control unit</i>	26	<i>Circuit breakers</i>

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WARNING

Physically check the fuel level before each takeoff to make sure you have sufficient fuel for the planned flight.

CAUTION

In case of long-term parking it is recommended to turn the engine several times (Ignition OFF!) by turning the propeller. Always handle by palm the blade area i.e. do not grasp only the blade edge. It will facilitate engine starting.

7.2 Engine starting

7.2.1 Before engine starting

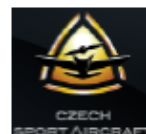
- | | |
|-------------------|---------------------------|
| 1. Control system | - free & correct movement |
| 2. Canopy | - clean |
| 3. Safety harness | - tighten |
| 4. Brakes | - fully applied |

7.2.2 Engine starting

- | | |
|---|---|
| 1. Start the engine according to its manual procedure | |
| 2. Master switch | - switch on |
| 3. Fuel Selector | - turn on (<i>left or right fuel tank</i>) |
| 4. Choke (cold engine) | - pull to open and gradually release after engine start |
| 5. Electrical pump | - switch on |
| 6. Ignition switch | - hold activated to start the engine |
| 7. After engine starting | - instrument - switch on |
| | - el. pump - switch off |
| | - avionics - switch on |
| | - other switches - switch on as necessary |

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CAUTION

The starter should be activated for a maximum of 10 [sec], followed by 2 [min] pause for engine cooling.

As soon as engine runs, adjust throttle to achieve smooth running at approx. 2500 [rpm]. Check the oil pressure, which should increase within 10 [sec]. Increase the engine speed after the oil pressure has reached 29 [psi] (2 [bar]) and is steady.

To avoid shock loading, start the engine with the throttle lever set for idling or 10 % open at maximum, then wait 3 [sec] to reach constant engine speed before new acceleration.

Only one magneto should be switched on (off) during ignition magneto check.

7.2.3 Engine warm up, Engine check

Prior to engine check block the main wheels using chocks. Initially warm up the engine to 2000 [rpm] for approximately 2 [min], then continue to 2500 [rpm] till oil temperature reaches 122 [°F] (50 [°C]). The warm up period depends on ambient air temperature.

Check both ignition circuits at 4000 [rpm] for Rotax 912 ULS. The engine speed drop during the time either magneto switched off should not over 300 [rpm]. The Max. engine speed drop difference between circuits L and R should be 120 [rpm].

NOTE

Only one magneto should be switched on (off) during ignition magneto check.

Set max. power for verification of max. speed with given propeller and engine parameters (*temperatures and pressures*).

Check acceleration from idling to max. power. If necessary, cool the engine at *idle [rpm]* before shutdown.

CAUTION

The engine check should be performed with the aircraft heading upwind and not on a loose terrain (the propeller may suck grit which can damage the leading edges of blades).

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7.3 Taxiing

Apply power and brakes as needed. Apply brakes to control movement on ground. Taxi carefully when wind velocity exceeds 20 [knot]. Hold the control stick in neutral position.

7.4 Normal Take-off

7.4.1 Before take-off

- | | |
|--------------------|--|
| 1. Altimeter | - set |
| 2. Trim | - set neutral position |
| 3. Control system | - check free movement |
| 4. Cockpit canopy | - closed |
| 5. Safety harness | - tighten |
| 6. Fuel Selector | - turn on (<i>left or right fuel tank</i>) |
| 7. Ignition switch | - switched on (<i>both magnetos</i>) |
| 8. Wing flaps | - extend as necessary |

7.4.2 Take-off

- | | |
|------------------------------|---|
| 1. Brakes | - apply to stop wheel rotation |
| 2. Take-off power | - throttle fully forward
(<i>max. 5800 [rpm] for max. 5 [min]</i>) |
| 3. Engine speed | - check rpm |
| 4. Instruments within limits | - check |
| 5. Brakes | - release |
| 6. Nose wheel unstuck | - 32 [knot] (37 [mph]) |
| 7. Airplane lift-off | - 42 [knot] (48 [mph]) |
| 8. Passing to climb | - after reaching airspeed
65 [knot] (75 [mph]) |
| 9. Wing flaps | - retract at safe altitude
(<i>max. airspeed for flaps using is
75 [knot], 86 [mph]</i>) |

WARNING

The Take-off is prohibited if:

- *The engine is running unsteadily*
- *The engine instruments values are beyond operational limits*
- *The crosswind velocity exceeds permitted limits (see section 3.6)*

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7.5 Climb

- | | |
|----------------|--|
| 1. Throttle | - max. take-off power
(max. 5800 [rpm] for max. 5 [min]) |
| 2. Airspeed | - max. continue power (5500 [rpm])
- $v_x = 60$ [knot] (70 [mph])
- $v_y = 65$ [knot] (75 [mph]) |
| 3. Trim | - trim the airplane |
| 4. Instruments | - oil temperature, oil pressure and
CHT within limits |

CAUTION

If the cylinder head temperature or oil temperature and/or coolant temperature approaches or exceeds limits, reduce the climb angle to increase airspeed and possibly return within limits. If readings do not improve, troubleshoot causes other than high power setting at low airspeed.

7.5.1 Best angle of climb speed(v_x): 60 [knot] (70 [mph])

7.5.2 Best rate of climb speed(v_y): 65 [knot] (75 [mph])

7.6 Cruise

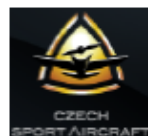
Refer to Section 5, for recommended cruising figures

7.7 Descend

Optimum glide speed - 60 [knot] (70 [mph])

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9.1 Airspeed indicator range markings

Marking	IAS value or range		Significance
	<i>knot</i>	<i>mph</i>	
White arc	32-75	37-86	Flap Operating Range.
Green arc	39-108	45-124	Normal Operating Range.
Yellow arc	108-138	124-158	Maneuvers must be conducted with caution and only in smooth air.
Red line	138	158	Maximum speed for all operations.

9.2 Engine instruments markings

Rotax 912ULS 98.6 [hp] (73.5 [kW])	Minimum Limit (red line)	Normal Operating Range (green arc)	Caution Range (yellow arc)	Maximum Range (red line)
Engine speed [RPM]	1400	1400-5500	5500-5800	5800
Oil Temperature	122 °F (50 °C)	194-230 °F (90-110 °C)	230-266 °F (110-130 °C)	266 °F (130 °C)
Exhaust Gas Temp. (EGT)	-	1472-1562 °F (800-850 °C)	1562-1616 °F (850-880 °C)	1616 °F (880 °C)
Cylinder head Temperature (CHT)	122 °F (50 °C)	167-230 °F (75-110 °C)	230-275 °F (110-135 °C)	275 °F (135 °C)
Oil Pressure	12 psi (0.8 bar)	29-73 psi (2-5 bar)	73-102 psi (5-7 bar)	102 psi (7 bar) <i>cold engine starting</i>
Fuel Pressure	2.2 psi (0.15 bar)	2.2-5.8 psi (0.15-0.4 bar)	-	5.8 psi (0.4 bar)