

Aircraft Operating Instructions

BRISTELL S-LSA

Airplane Registration Number: **23-2271**

Airplane Serial Number: **917/2026**



This airplane must be operated in compliance with information and limitations contained in herein. This AOI must be available on board of the airplane.

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SECTION 0

0 NUMBERING

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Revision: -

Document No.: SLSA-AOI-2-7-0-AU

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Aircraft Operating Instructions

SECTION 1

1 GENERAL INFORMATION

1.1 *Introduction*

1.1.1 Certification basis

1.2 *Warnings, cautions and notes*

1.3 *Descriptive data*

1.3.1 Aircraft description

1.3.2 Power plant

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Aircraft Operating Instructions

1.1 Introduction

This Aircraft Operating Instructions have been prepared to provide the pilots, instructors, owners and operators with information for safe and efficient operation of BRISTELL aircraft. It also contains supplemental data supplied by the Aircraft Flight Training Supplement.

It is the pilot's responsibility to be familiar with this handbook, the special characteristics of this aircraft, and all other information and legal requirements relevant for the operation in his country. The pilot is responsible to determine the aircraft is safe for flight, and to operate the aircraft with respect to the procedures and limitations provided in this manual.

It is the owner's/operator's responsibility to have the airplane registered and insured, according to country-specific regulations. The aircraft owner/operator is also responsible for maintaining the aircraft in airworthy condition.

1.1.1 Certification basis

BRISTELL S-LSA is a light sport category airplane made by BRM AERO s.r.o., Letecká 255, 686 04 Kunovice, Czech Republic, phone: +420 773 984 338, e-mail: info@brmaero.com based on the following airworthiness requirements:

- ASTM Consensus Standards:
 - F2245
 - F2279
 - F2295and other to LSA category applicable ASTM Consensus Standards.
- Czech LAA UL-2 Standards
- EASA CS-VLA Standards

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1.2 Warnings, cautions and notes

The following definitions apply to warnings, cautions and notes in the Pilot Operating Handbook.

WARNING

Means that the non-observation of the corresponding procedure leads to an immediate or important degradation of the flight safety i.e. to injury or death of persons.

CAUTION

Means that the non-observation of the corresponding procedure leads to a minor or possible long-term degradation of the flight safety.

NOTE

Draws attention to any special item not directly related to safety, but which is important or unusual.

1.3 Descriptive data

1.3.1 Aircraft description

BRISTELL S-LSA is airplane intended especially for recreational and cross-country flying, basic training, and non-aerobatics operation.

BRISTELL S-LSA is a single-engine, all metal, low-wing monoplane of semi-monocoque construction with two side-by-side seats. The airplane is equipped with a fixed tricycle undercarriage with steerable nose wheel.

1.3.2 Power plant

The standard power plant is composed of ROTAX 912 ULS (98.6 hp), 4-cylinder, 4-stroke engine and FITI three blade ground adjustable propeller.

BRISTELL S-LSA, S/N 917/2026 is fitted with:

- Rotax 912 ULS 3
- DUC Inconel FLASH propeller, composite, 3-bladed, on-ground adjustable.

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1.3.3 Aircraft dimensions

Wing span (middle).....	26.65 ft	8.13 m
Wing span (wingtip to wingtip)	26.92 ft	8.205 m
Length.....	21.10 ft	6.45 m
Height	7.48 ft	2.28 m
Wing area	113.02 sq ft	10.5 m ²
Wing loading (MTOW 600 kg).....	11.70 lb/sq ft	57.14 kg/m ²
Cockpit width	51.17 in	1.3 m

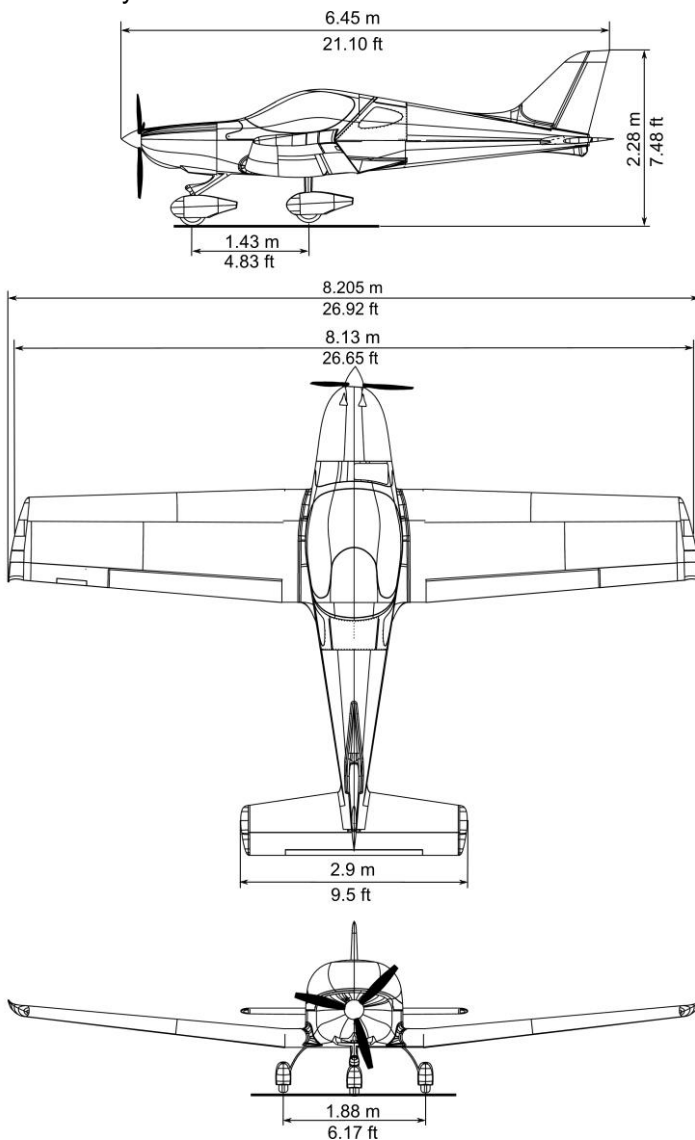
Deflections:

The following figures shows the deflections of the control surfaces in accordance with the Mandatory Service Bulletin ALL-SB-0-0-0-EN-0002-2024, 1st Issue, 19.07.2024.

Rudder deflections.....	30°±2°	to each side
Elevator deflection up	+30°±1°	
Elevator deflection down.....	-15°±1°	
Left Aileron deflection up	+23°±2°	
Left Aileron deflection down.....	-19°±2°	
Right Aileron deflection up.....	+22°±2°	
Right Aileron deflection down	-16°±2°	
Flap deflections.....	0°±2°; 10°±2°; 20°±3° and 30°+0°/-2°	
Aileron trim deflection up	+15°±2°	
Aileron trim deflection down.....	- 20°±2°	
Elevator trim deflection up	+10°±2°	
Elevator trim deflection down.....	- 20°±2°	

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1.3.4 Aircraft layout



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1.4 **Definitions and abbreviations**

°F	temperature in degree of Fahrenheit
AOI	Aircraft Operating Instructions
ASI	Airspeed Indicator
ATC	Air Traffic Control
BEACON	anti-collision beacon
CAS	Calibrated Airspeed
CG	Centre of Gravity
COMM	communication transmitter
EFIS	Electronic Flight Instrument System
ELT	Emergency Locator Transmitter
EMS	Engine Monitoring System
ft	foot / feet
ft/min	feet per minute
GPS	Global Positioning System
hp	power unit
IAS	Indicated Airspeed
IC	Intercom
IFR	Instrument Flight Rules
in	inch
ISA	International Standard Atmosphere
knot	NM per hour
LAA	Light Aircraft Association of the Czech Republic
lb	pound
MAC	Mean Aerodynamic Chord
max.	maximum
min.	minimum or minute
mph	statute miles per hour

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NM	Nautical Mile
OAT	Outside Air Temperature
OFF	system is switched off or control element is in off-position
ON	system is switched on or control element is in on-position
POH	Pilot Operating Handbook
psi	pound per square inch - pressure unit
ROC	Rate-of-climb
rpm	revolutions per minute
sec.	second
US gal	volume unit
V _A	maneuvering airspeed
V _{FE}	maximum flap extended speed
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
V _{NE}	never exceed speed
V _{NO}	maximum designed cruising speed
V _{S1}	stall speed with wing flaps in retracted position
V _{S0}	stall speed with wing flaps in extended position
V _X	best angle of climb speed
V _Y	best rate of climb speed

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1.5 Summary of performance specifications

Performance	Metric units	US units
Gross weight (Maximum take-off weight)	600 kg	1320 lb
Top speed at sea level MCP: 5500 rpm	222 km/h CAS	120 KCAS
Cruise speed at sea level 75%: 5000 rpm	196 km/h CAS	106 KCAS
Cruise speed at sea level 65%: 4800 rpm	185 km/h CAS	100 KCAS
Full fuel range at 4000 ft pressure altitude, at 75 % MCP (5000 rpm), No fuel reserve	1170 km	630 NM
Rate of climb at sea level..... V_x	860 fpm at 111 km/h IAS	860 fpm at 60 KIAS
Rate of climb at sea level..... V_Y	910 fpm at 125 km/h IAS	910 fpm at 67 KIAS
Stall speed V_{S1} (flaps retracted)	83 km/h CAS	45 KCAS
Stall speed V_{S0} (flaps fully extended)	75 km/h CAS	41 KCAS
Total fuel capacity	120 litres	31.7 US gal
Total usable fuel	119 liters	31.4 US gal
Approved types of fuel ATTENTION: Obey the latest edition of Service Instruction SI-912-016, for the selection of the correct fuel.	Min. RON 95 (min. AKI4 91) Mogas: EN 228 super Mogas: EN 228 super plus AVGAS 100LL	
Engine Maximum take-off power	73.5 kW (100 HP) at 5800 rpm	
Engine Maximum continuous power	69 kW (90 HP) at 5500 rpm	
Engine Cruising power 75 % of MCP	51 kW (68 HP) at 5000 rpm	
Engine Cruising power 65 % of MCP	44.6 kW (60 HP) at 4800 rpm	
Engine Cruising power 55 % of MCP	38 kW (50 HP) at 4300 rpm	

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SECTION 2

- 2 OPERATING LIMITATION**
- 2.1 *Introduction***
- 2.2 *Airspeed***
- 2.3 *Airspeed indicator markings***
- 2.4 *Power plant***
 - 2.4.1 Engine operating speeds and limits**
 - 2.4.2 Fuel**
 - 2.4.3 Oil**
 - 2.4.4 Coolant**
- 2.5 *Power plant instrument markings***
- 2.6 *Miscellaneous Instrument Marking***
- 2.7 *Weight***
- 2.8 *Centre of gravity***
- 2.9 *Approved maneuvers***
- 2.10 *Maneuvering load factors***
- 2.11 *Crew***
- 2.12 *Kinds of operation***
- 2.13 *Other limitations***

Aircraft Operating Instructions

2.1 Introduction

Section 2 includes operating limitations, instrument markings and basic placards necessary for the safe operation of the aircraft, its engine, standard systems and standard equipment.

2.2 Airspeed

Airspeed limitations and their operational significance are shown below:

Speed		KIAS	IAS (km/h)	Remarks
V _{NE}	Never exceed speed	157	290	Do not exceed this speed in any operation.
V _{NO}	Max. structural cruising speed	129	240	Do not exceed this speed except in smooth air, and then only with caution.
V _A	Manoeuvring speed	96	180	Do not make full or abrupt control movement above this speed, because under certain conditions full control movement may overstress the aircraft.
V _{FE}	Maximum Flap Extended Speed	75	139	Do not exceed this speed with flaps extended.
V _{S1}	Stall speed (flaps retracted)	45	83	Don't slow down below this speed with flaps retracted.
V _{S0}	Stall speed (flaps fully extended)	40	74	Don't slow down below this speed with flaps fully extended.

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2.3 Airspeed indicator markings

Airspeed indicator markings and their color-codes significance are shown below:

Marking	IAS value or range		Significance
	knots	km/h	
White arc	40-75	74-139	Flap Operating Range.
Green arc	45-129	83-240	Normal Operating Range.
Yellow arc	129-157	240-290	Maneuvers must be conducted with caution and only in smooth air.
Red line	157	290	Maximum speed for all operations.

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2.4 Power plant

2.4.1 Engine operating speeds and limits

Engine Model:		ROTAX 912 ULS
Engine Manufacturer:		Bombardier-Rotax GMBH
Power	Max Take-off:	100 hp at 5800 rpm, max.5 min.
	Max. Continuous:	92.5 hp at 5500 rpm
	Cruising:	68.4 hp at 5000 rpm
Engine RPM	Max. Take-off:	5800 rpm, max. 5 min.
	Max. Continuous:	5500 rpm
	Cruising:	5000 rpm
	Idling:	~1400 rpm
Coolant temperature (CT)	Minimum:	50 °C (122 °F)
	Maximum:	120 °C (248 °F) only conventional coolant allowed
	Optimum:	80 – 110 °C (176-230 °F)
Oil temperature	Minimum:	50 °C (122 °F)
	Maximum:	130 °C (266 °F)
	Optimum:	90 – 110 °C (190-230 °F)
Oil pressure:	Minimum:	0.8 bar (12 psi) - below 3500 rpm
	Maximum:	7 bar (102 psi) - cold engine start
	Optimum:	2 - 5 bar (29 – 73 psi) - above 3500 rpm
Exhaust gases temp.	Maximum:	880 ° C (1616 °F)

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2.4.2 Fuel

General note

NOTICE

Obey the local codes and the latest edition of Service Instruction SI-912-016 for the selection of the correct fuel.

NOTICE

Use only fuel suitable for the respective climatic zone.

NOTE: Risk of vapour formation if using winter fuel for summer operation.

Knock resistance

The fuels with following specifications can be used:

Fuel specificationen		
	Usage/Description	
Knock resistance	912 A/F/UL	912 S/ULS
	Min. RON 90 (min. AKI* 87)	Min. RON 95 (min. AKI* 91)

* Anti Knock Index (RON+MON)/2

MOGAS

	Usage/Description	
Mogas	912 A/F/UL	912 S/ULS
European standard	EN 228 Normal	
	EN 228 Super	EN 228 Super
	EN 228 Super plus	EN 228 Super plus

AVGAS

AVGAS 100LL places greater stress on the valve seats due to its high lead content and forms increased deposits in the combustion chamber and lead sediments in the oil system.

	Usage/Description	
AVGAS	912 A/F/UL	912 S/ULS
Aviation Standard	AVGAS 100 LL (ASTM D910)	AVGAS 100 LL (ASTM D910)

Wing fuel tank volume 2x 16 US gal 2x 60 l
 Unusable fuel quantity 2x 0.13 US gal 2x 0.5 l

NOTE

Fuel quantity of more than approx. 11.9 US gal (45 liters) in the tank is indicated as a full tank.

WARNING

Always check that you have enough fuel for intended flight!

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2.4.3 Oil

<p>General note</p>	<p>NOTICE Obey the manufacturers instructions about the lubricants. If the engine is mainly run on AVGAS more frequent oil changes will be required. See Service Information SI-912-016, latest edition.</p>
<p>Oil type</p>	<p>For the selection of suitable lubricants refer to the Service Information SI-912-016, latest edition.</p>
<p>Oil consumption</p>	<p>Max. 0.06 l/h (0.13 liq pt/h).</p>
<p>Oil specification</p>	<ul style="list-style-type: none"> - Use only oil with API classification "SG" or higher! - Due to the high stresses in the reduction gears, oils with gear additives such as high performance motor cycle oils are required. - Because of the incorporated overload clutch, oils with friction modifier additives are unsuitable as this could result in a slipping clutch during normal operation. - Heavy duty 4-stroke motor cycle oils meet all the requirements. These oils are normally not mineral oils but semi- or full synthetic oils. - Oils primarily for Diesel engines have insufficient high temperature properties and additives which favour clutch slipping, and are generally unsuitable.
<p>Oil viscosity</p>	<p>Use of multi-grade oils is recommended.</p> <p>NOTE: Multi-viscosity grade oils are less sensitive to temperature variations than single grade oils. They are suitable for use throughout the seasons, ensure rapid lubrication of all engine components at cold start and get less fluid at higher temperatures.</p>

NOTE

Type of oil used by aircraft manufacturer is shown in Section 10 Supplement No.2.

Oil volume:

Minimum	3.2 l	0.856 US gal
Maximum	3.6 l	0.951 US gal

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2.5 Power plant instrument markings

Analogue engine instruments markings and their color-code significance are shown below.

Rotax 912 ULS	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	50 °C (122 °F)	50-110 °C (122-230 °F)	110-130 °C (230-266 °F)	130 °C (266 °F)
Exhaust Gases Temp. (EGT)		< 880°C (<1616 °F)		880°C (1616 °F)
Coolant Temperature (CT) Only conventional coolant allowed		< 120 °C (<248 °F)		120 °C (248 °F)
Oil Pressure	0.8 bar (12 psi) Below 3500 rpm	2-5 bar (29-73 psi)	5-7 bar (73-102 psi)	7 bar (102 psi) cold engine starting
Fuel pressure	0.15 bar (2.2 psi)			0.5 bar (7.3 psi) (fuel pumps since S/N 11.0036)

2.6 Miscellaneous Instrument Marking

There is not any miscellaneous instrument marking.

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2.7 Weight

Empty weight (standard equipment) . 325 kg 715 lb

NOTE

Actual empty weight is shown in SECTION 6

Max. take-off weight..... 600 kg 1320 lb

Max landing weight..... 600 kg 1320 lb

Weight of fuel (120 l, 16 US gal)..... 87 kg 209 lb

Maximum baggage weight:

Baggage compartment behind seats... 15 kg 33 lb

Wing lockers (optional) 20 kg 44 lb each

Front locker (optional)..... 10 kg 22 lb

2.8 Centre of gravity

Forward CG Limit 25%MAC..... 749.7 mm 29.517 in

Aft CG Limit 35%MAC 887.2 mm 34.928 in

MAC..... 1374.5 mm 54.114 in

MAC_LE 406.1 mm 15.988 in

MAC_LE: Distance of MAC origin to Datum; Datum: Firewall.

2.9 Approved manoeuvres

Airplane Category: LSA

The BRISTELL S-LSA is approved for normal and below listed manoeuvres:

- Steep turns not exceeding 60° bank
- Lazy eights
- Chandelles
- Stalls (except whip stalls)

WARNING

Aerobatics and intentional spins are prohibited!

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2.10 Manoeuvring load factors

Maximum positive limit load factor.....+4 g

Maximum negative limit load factor.....-2 g

2.11 Crew

Number of seats 2

Minimum crew..... 1 pilot in the left seat

Minimum crew weight55 kg 121 lb

Maximum crew weight see SECTION 6

WARNING

Do not exceed maximum take-off weight 600 kg (1320 lb)!

2.12 Kinds of operation

There are permitted Day VFR flights. Night VFR flights and IFR flights under VMC are permitted if the airplane is appropriately equipped (e.g. FAR 91.205) and when the pilot has appropriate rating.

WARNING

IFR flights and intentional flights under icing conditions are
PROHIBITED!

Minimum instruments and equipment list for VFR flights:

- Airspeed indicator
- Altimeter
- Compass (is not required by ASTM F 2245)
- Fuel quantity indicator
- Tachometer (RPM)
- Oil temperature indicator
- Oil pressure indicator
- Cylinder head temperature indicator (Coolant temp indicator)

2.13 Other limitations

WARNING

No smoking on board of the aircraft!

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SECTION 3

3 EMERGENCY PROCEDURES

3.1 *Introduction*

3.2 *Engine Failure*

3.2.1 Engine failure during take-off run

3.2.2 Engine failure during take-off

3.2.3 Engine failure in flight

3.3 *In-flight Engine Starting*

3.4 *Smoke and Fire*

3.4.1 Fire on ground at engine starting

3.4.2 Fire on ground with engine running

3.4.3 Fire during take-off

3.4.4 Fire in flight

3.4.5 Fire in the cockpit

3.5 *Glide*

3.5.1 Emergency descent

3.6 *Landing Emergencies*

3.6.1 Emergency landing

3.6.2 Precautionary landing

3.6.3 Landing with a flat tire

3.6.4 Landing with a defective landing gear.

3.7 *Recovery from Unintentional Spin*

3.8 *Other Emergencies*

3.8.1 Vibration

3.8.2 Carburetor icing

3.8.3 Autopilot malfunction

3.8.4 Loss of oil pressure

3.8.5 High oil pressure

3.8.5.1 Oil pressure above permitted range at low ambient temperatures

3.8.5.2 High oil pressure

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- 3.8.6 Alternator failure
- 3.8.7 Overvoltage
- 3.8.8 Inadvertent icing encounter
- 3.8.9 Loss of primary instruments
- 3.8.10 Loss of flight controls

Aircraft Operating Instructions

3.1 Introduction

Section 3 provides checklists and amplified procedures for coping with various emergencies that may occur. Emergencies caused by aircraft or engine malfunction are extremely rare if proper pre-flight inspections and maintenance are practiced.

However, should an emergency arise, the basic guidelines described in this section should be considered and applied as necessary to correct the problem.

3.2 Engine Failure

3.2.1 Engine failure during take-off run

1. Throttle - reduce to idle
2. Ignition - switch off
3. Apply brakes

3.2.2 Engine failure during take-off

1. Speed - gliding at 120 km/h (65 KIAS)
2. Altitude - below 150 ft: land in take-off direction
- over 150 ft: choose a landing area
3. Wind - find direction and velocity
4. Landing area - choose free area without obstacles
5. Flaps - extend as needed
6. Fuel Selector - shut off
7. Ignition - switch off
8. Safety harness - tighten
9. Master switch - switch off before landing
10. Land

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3.2.3 Engine failure in flight

1. Push control stick forward
2. Speed - gliding at 120 km/h (65 KIAS)
3. Altitude - below 150 ft: land in take-off direction
- over 150 ft: choose a landing area
4. Wind - find direction and velocity
5. Landing area - choose free area without obstacles
6. Flaps - extend as needed
7. Fuel Selector - shut off
8. Ignition - switch off
9. Safety harness - tighten
10. Master switch - switch off before landing
11. Land

3.3 *In-flight Engine Starting*

1. Electric pump - ON
2. Fuel Selector - switch to second fuel tank
3. Starter - switch on

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3.4 Smoke and Fire

3.4.1 Fire on ground at engine starting

1. Starter - keep in starting position
2. Fuel Selector - close
3. Throttle - full power
4. Ignition - switch off
5. Leave the airplane
6. Extinguish fire by a fire extinguisher (if available) or call for a fire-brigade if you cannot do it.

3.4.2 Fire on ground with engine running

1. Heating - close
2. Fuel selector - close
3. Throttle - full power
4. Ignition - switch off
5. Leave the airplane
6. Extinguish fire by a fire extinguisher (if available) or call for a fire-brigade if you cannot do it.

3.4.3 Fire during take-off

1. Speed - 120 km/h (65 KIAS)
2. Heating - close
3. Fuel Selector - close
4. Throttle - full power
5. Ignition - switch off
6. Land and stop the airplane
7. Leave the airplane
8. Extinguish fire by a fire extinguisher (if available) or call for a fire-brigade if you cannot do it.

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3.4.4 Fire in flight

1. Heating - close
2. Fuel Selector - close
3. Throttle - full power
4. Master switch - switch off
5. Ignition - switch off after the fuel in carburetors is consumed and engine shut down
6. Choose of area - heading to the nearest airport or choose emergency landing area
7. Emergency landing - perform according to 3.6
8. Leave the airplane
9. Extinguish fire by a fire extinguisher (if available) or call for a fire-brigade if you cannot do it.

NOTE

Estimated time to pump fuel out of carburetors is 30 seconds.

WARNING

Do not attempt to re-start the engine!

3.4.5 Fire in the cockpit

1. Master switch - switch off
2. Heating - close
3. Use a fire extinguisher (if available)

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3.5 *Glide*

An example of the use of gliding is in the case of engine failure

1. Speed - recommended gliding speed
120 km/h (65 KIAS)

3.5.1 Emergency descent

Emergency descent means to get on the ground as quickly as possible. It is used in case of a big problem encountered in flight like engine fire, smoke in the cockpit, or any other serious problem.

1. Throttle lever - fully pulled to set idle
2. Flaps - retracted
3. Control stick - push forward to bring airplane into descent
4. Speed - V_{NO} 129 KIAS (240 km/h)
Do not exceed this speed except in smooth air, and then only with caution.
- V_{NE} 157 KIAS (290 km/h)
Do not exceed this speed in any operation.

Steep spiral dive with max. 60° bank may be used however be careful to not exceed limit load factor during spiral. You can monitor area below you during a spiral.

3.6 *Landing Emergencies*

3.6.1 Emergency landing

Emergency landings are generally carried out in the case of engine failure and the engine cannot be re-started.

1. Speed - adjust for optimum gliding 120 km/h
(65 KIAS)
2. Trim - adjust
3. Safety harness - tighten
4. Flaps - extend as needed
5. COMM - if installed then report your location if possible
6. Fuel Selector - close
7. Ignition - switch off
8. Master switch - switch off
9. Perform approach without steep turns and land on chosen landing area.

Aircraft Operating Instructions

3.6.2 Precautionary landing

A precautionary landing is generally carried out in the cases where the pilot may be disorientated, the aircraft has no fuel reserve or possibly in bad weather conditions.

1. Choose landing area, determine wind direction
2. Report your intention to land and land area location.
3. Perform low-altitude passage into wind over the right-hand side of the chosen area with flaps extended as needed and thoroughly inspect the landing area.
4. Perform circuit pattern.
5. Perform approach at increased idling with flaps fully extended.
6. Reduce power to idle when flying over the runway threshold and touch-down at the very beginning of the chosen area.
7. After stopping the airplane switch off all switches, shut off the fuel selector, lock the airplane and seek for assistance.

NOTE

Watch the chosen area steadily during precautionary landing.

3.6.3 Landing with a flat tire

1. During landing keep the damaged wheel above ground as long as possible using the ailerons control
2. Maintain the direction on the landing roll out, applying rudder control.

3.6.4 Landing with a defective landing gear.

1. If the main landing gear is damaged, perform touch-down at the lowest practicable speed and if possible, maintain direction during landing run.
2. If the nose wheel is damaged perform touch-down at the lowest practicable speed and hold the nose wheel above the ground by means of the elevator control as long as possible.

Aircraft Operating Instructions

3.7 Recovery from Unintentional Spin

WARNING

Intentional spins are prohibited!

There is no uncontrollable tendency of the airplane to enter into a spin provided the normal piloting techniques are used.

Unintentional spin recovery technique:

1. Throttle - idle
2. Lateral control - ailerons neutralized
3. Rudder pedals - full opposite rudder
4. Rudder pedals - neutralize rudder immediately when rotation stops
5. Longitudinal control - neutralize or push forward and recover dive.

Aircraft Operating Instructions

3.8 Other Emergencies

3.8.1 Vibration

If any forced aircraft vibrations appear, it is necessary:

1. To set engine speed to such power rating where the vibrations are lowest.
2. To land on the nearest airfield or to perform a precautionary landing according to 3.6

3.8.2 Carburetor icing

The carburetor icing shows itself through a decrease in engine power and an increase of engine temperatures.

To recover the engine power, the following procedure is recommended:

1. Speed - 140 km/h (75 KIAS)
2. Throttle - set to 1/3 of power
3. If possible, leave icing area
4. Increase the engine power gradually up to cruise conditions after 1-2 minutes

If you fail to recover the engine power, land on the nearest airfield (if possible) or depending on the circumstances, perform a precautionary landing according to 3.6.

NOTE

*If your engine is equipped with carburetor heating, use it for extended period of descent and also in area of possible carburetor icing.
Remember: Aircraft is approved to operate in VMC condition only!*

3.8.3 Autopilot malfunction

In the case, that autopilot (if installed) starts to not work properly, press immediately red button "AP OFF" on the instrument panel.

WARNING

Take-Off, climb, Approach and landing with AP "ON" or with malfunction AP are PROHIBITED.

Aircraft Operating Instructions

3.8.4 Loss of oil pressure

1. Reduce engine power setting to the minimum necessary
2. Carry out Precautionary landing 3.6.2.
3. Check oil system
Possible causes are:
Not enough oil in oil tank - Refill oil
Too hot oil - Cool down oil.
4. Carry out an unscheduled maintenance check according to Rotax 912 Maintenance Manual Line Chapt. 05-50-00

3.8.5 High oil pressure

3.8.5.1 Oil pressure above permitted range at low ambient temperatures

1. Reduce engine power setting to the minimum necessary
1. Carry out precautionary landing 3.6.2.

3.8.5.2 High oil pressure

1. Reduce engine speed and check the oil pressure again once it has reached a higher oil temperature.
2. A maintenance inspection should be carried out.

3.8.6 Alternator failure

The Rotax 912 ULS engine has an integrated AC generator. Voltage drop below 11 volts is indicated by “Low Volt” warning lamp on the instrument panel or on EFIS display. If the alternator fails, then the instruments are supplied by onboard battery for a limited period of time (around 30 minutes). Some instruments, like Garmin G3X, may have installed an internal backup battery which will power them for given time (refer to the device manual).

In any case switch off all electrical equipment which is not essential for your current flight conditions and land as soon as practicable. Then, before next flight, investigate cause of alternator failure and remedy it.

Aircraft Operating Instructions

3.8.7 Overvoltage

Overvoltage more than 15 Volts

1. Reduce engine speed
2. Check voltage meter for change

If voltage still out of limits:

3. Select AVIONICS OFF
4. MASTER SWITCH OFF

CAUTION

Turning OFF the AVIONICS/MASTER switch will eliminate the possibility of communications or use of GPS/AHRS, flaps, etc.

5. Carry out Precautionary landing 3.6.2.

3.8.8 Inadvertent icing encounter

WARNING

Intentional flights under icing conditions are PROHIBITED!

If icing is inadvertently encountered then:

1. Pitot heat (if installed) - ON
2. Exit icing conditions - change altitude or turn back.
3. Carb heat - pull knob to ON
4. Cockpit heating - pull knob to ON
5. Up/Down knob - pushed forward (UP) to defrost windshield

3.8.9 Loss of primary instruments

If primary instruments are lost and the aircraft is fitted with the backup instruments then use these to safely complete the flight.

If no backup instruments are installed then visually check the aircraft altitude and attitude and land as soon as practicable.

Aircraft Operating Instructions

3.8.10 Loss of flight controls

Loss of control may have several reasons like a failure of the control system, jamming, disconnection, strong turbulence, unrecoverable spin, pilot disorientation, etc.

If loss of a control appears e.g. due to jamming or disconnection, then some control might be still possible:

Lost control	Action
Ailerons	Some degree of roll control is available by using the secondary effect of rudder. Effectiveness of rudder may be increased by rapid bursts of power. Aircraft with a jammed aileron can be landed in a slip, preferably against a crosswind.
Elevator	Try to use elevator trim to control airplane longitudinally. Keep in mind that trim control works considerably slower than elevator control. Engine power may be used to pitch up. Before landing, when the airplane will enter ground effect, will be needed to apply a slight nose-up pitch as the airplane enters ground effect. Small shot of power in addition to the trim up may be needed. Wing flap control may be used to pitch down.
Rudder	Some degree of yaw control is available by using the secondary effect of ailerons.
Wing flaps	The flaps are mechanically interconnected and have the electrical control. If the electrical control would fail or if the flaps would jam in any position, then adjust elevator trim to trim flaps pitching moment. If (in spite of flaps mechanical interconnection) one flap would extend and the aircraft rolls then immediately use the opposite ailerons and rudder to eliminate pitching and rolling moment.

WARNING

If the control cannot be regained and the aircraft is fitted with a ballistic rescue system, then activate the system according to appropriate procedure.

Aircraft Operating Instructions

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Aircraft Operating Instructions

SECTION 4

4 NORMAL PROCEDURES

4.1 *Introduction*

4.2 *Assembly and Disassembly*

4.3 *Pre-flight Inspection*

4.4 *Normal procedures*

4.4.1 Before engine starting

4.4.2 Engine starting

4.4.3 Engine warm up, Engine check

4.4.4 Taxiing

4.4.5 Before take-off

4.4.6 Take-off

4.4.7 Short field take-off

4.4.8 Soft field take-off

4.4.9 Climb

4.4.10 Cruise

4.4.11 Descent

4.4.12 Before landing

4.4.13 Balked Landing (Go around)

4.4.14 Landing

4.4.15 Short field landing

4.4.16 Soft field landing

4.4.17 After landing

4.4.18 Engine shutdown

4.4.19 Aircraft parking and tie-down

4.4.20 Flight in rain

Aircraft Operating Instructions

4.1 Introduction

Section 4 provides checklists and recommended procedures for normal operation of the aircraft.

4.2 Assembly and Disassembly

Refer to the BRISTELL S-LSA Maintenance and inspection procedures manual.

Aircraft Operating Instructions

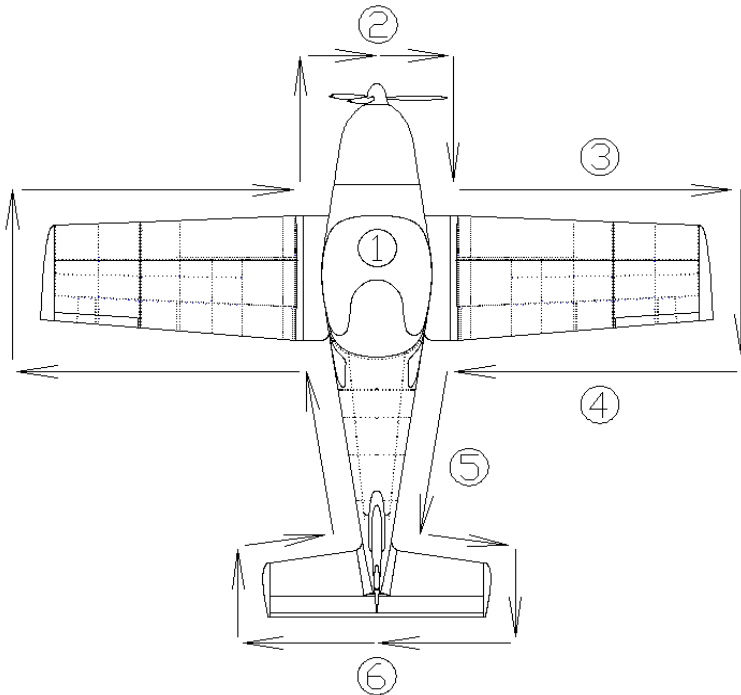
4.3 Pre-flight Inspection

Carry out the pre-flight inspection every day prior to the first flight or after airplane assembly. Incomplete or careless inspection can cause an accident. Carry out the inspection following the instructions in the Inspection Check List.

NOTE

The word "condition" in the instructions means a visual inspection of surface for damage deformations, scratching, chafing, corrosion or other damages, which may lead to flight safety degradation.

The manufacturer recommends carrying out the pre-flight inspection as follows:



Aircraft Operating Instructions

Inspection Check List

①	<ul style="list-style-type: none"> - Ignition - OFF - Master switch - ON - Fuel gauge ind. - check fuel quantity - Master switch - OFF - Avionics - check condition - Control system - visual inspection, function, clearance, free movement up to stops - check wing flaps operation - Canopy - condition of attachment, cleanness - Check cockpit for loose objects
②	<ul style="list-style-type: none"> - Engine cowling condition - Propeller inspection - propeller and spinner condition - Engine mount and exhaust manifold condition - Oil and coolant quantity check - Visual inspection of the fuel and electrical system - Fuel system draining - Other actions according to the engine manual
③	<ul style="list-style-type: none"> - Wing surface condition - Leading edge condition - Pitot tube condition
④	<ul style="list-style-type: none"> - Wing tip - surface condition, attachment - Aileron - surface condition, attachment, clearance, free movement - Flap - surface condition, attachment, clearance
⑤	<ul style="list-style-type: none"> - Landing gear - wheel attachment, brakes, condition and pressure of tires - Wing lower surface and fuselage bottom surface condition
⑥	<ul style="list-style-type: none"> - Vertical tail unit - condition of surface, attachment, free movement, rudder stops - Horizontal tail unit - condition of surface, attachment, free movement, elevator stops
	<ul style="list-style-type: none"> - The check on left side of the fuselage and wing is the same as on right side

Aircraft Operating Instructions

WARNING

Physically check the fuel level before each take-off 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 LANE A, B OFF!) by turning the propeller. Always handle the blade area by the palm i.e. do not grasp only the blade edge. It will facilitate engine starting.

Aircraft Operating Instructions

4.4 Normal procedures

4.4.1 Before engine starting

1. Control system - free & correct movement
2. Canopy - clean
3. Brakes - fully applied
4. Safety harness - tighten
5. Rudder pedal position - set

WARNING

Adjusting of rudder pedals position during flight is PROHIBITED.

4.4.2 Engine starting

1. Start the engine according to its manual procedure
2. Throttle lever - set to idle
3. Master switch - ON
4. Fuel Selector - set to LEFT fuel tank

NOTE

Aircraft fitted with Rotax 912 ULS engine is equipped with the fuel return line going only into the left tank. Do not start or take-off with the fuel selector set to the right tank if the left one is full, because returning fuel will overpressure left tank and fuel will leak from fuel tank air vent tube at the wing tip.

5. Electric fuel pump - ON – only for cold engine
6. Choke (cold engine) - pull to open and gradually release after engine start
7. Starter - hold activated to start the engine.

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. 2000 rpm. Check the oil pressure, which should increase within 10 sec. Increase the engine speed after the oil pressure has reached 29 psi 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 ignition should be switched on (off) during ignition circuit check.

Aircraft Operating Instructions

4.4.3 Engine warm up, Engine check

4.4.3.1 Engine warm up

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).

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

4.4.3.2 Engine check

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 A and B should be 115 rpm.

NOTE

Only one ignition should be switched on (off) during ignition circuit 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 3000 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).

4.4.4 Taxiing

Apply power and brakes as needed. Apply brakes to control movement on ground. Taxi carefully when wind velocity exceeds 20 knots (10 m/s). Hold the control stick in neutral position, or in a position that properly deflects a crosswind

Aircraft Operating Instructions

4.4.5 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 - set to LEFT fuel tank

NOTE

Aircraft fitted with Rotax 912 ULS engine is equipped with the fuel return line going only into the left tank. Do not start or take-off with the fuel selector set to the right tank if the left one is full, because returning fuel will overpressure left tank and fuel will leak from fuel tank air vent tube at the wing tip.

7. Ignition A, B - ON
8. Electric fuel pump - ON

CAUTION

Do not set up more than 5600-5700 rpm for the takeoff to avoid possible engine overspeed.

9. Wing flaps - set for takeoff
10. Autopilot (if installed) - OFF

4.4.6 Take-off

1. Brakes - apply to stop wheel rotation
2. Take-off power - Move throttle lever slowly fully forward to avoid overspeed
3. Engine speed - check rpm
4. Instruments - check within limits
5. Nose wheel unstick - 80 km/h (43 KIAS)
6. Airplane lift-off - 90 km/h (49 KIAS)
7. Wing flaps - retract when speed of 120 km/h (65 KIAS) is reached, at altitude of 150 ft
8. Make transition to climb

Aircraft Operating Instructions

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 5.2.8)
- Autopilot (if installed) is "ON"

4.4.7 Short field take-off

1. Use all available runway
2. Heading - set
3. Flaps - 30°
4. Trim - as required
5. Hold brakes
6. Throttle - fully forward (5800 rpm, max. 5min.)
7. Engine instruments - check within limits
8. Release brakes after rpm increase
9. Accelerate and pull control stick aft to lift off the nose wheel as soon as possible.
10. As aircraft becomes airborne, level off in ground effect to accelerate to:
 - No obstacle: V_Y (best rate of climb) 67 KIAS (125 km/h)
 - Obstacle: V_X (best angle of climb) 60 KIAS (111 km/h)
11. Flaps - set to 10°
12. Climb at:
 - No obstacle: V_Y (best rate of climb) 67 KIAS (125 km/h)
 - Obstacle: V_X (best angle of climb) 60 KIAS (111 km/h)
13. Trim - adjust
14. Flaps
 - retract at V_Y 67 KIAS (125 km/h)
 - or at 150 ft
 - do not exceed V_{FE} 75 KIAS (139 km/h)
 - with flaps extended

Aircraft Operating Instructions

4.4.8 Soft field take-off

1. Inspect field condition checking for grass height, bumps, holes, debris, wetness.
2. Taxiing - control stick fully aft
3. Heading - set
4. Flaps - 30°
5. Trim - as required
6. Throttle - fully forward (5800 rpm, max. 5min.)
7. Control stick - full aft pressure during T/O run to lift off nose wheel as soon as possible.
8. As aircraft becomes airborne, level off in ground effect to accelerate to:
No obstacle: V_Y (best rate of climb) 67 KIAS (125 km/h)
Obstacle: V_X (best angle of climb) 60 KIAS (111 km/h)
9. Flaps - set to 10°
10. Climb
No obstacle: V_Y (best rate of climb) 67 KIAS (125 km/h)
Obstacle: V_X (best angle of climb) 60 KIAS (111 km/h)
11. Trim - adjust
12. Flaps - retract at V_Y 67 KIAS (125 km/h) or at 150 ft

4.4.9 Climb

1. Speed - Best rate of climb speed (V_Y):
67 KIAS (125 km/h)
- Best angle of climb speed (V_X):
60 KIAS (111 km/h)
2. Throttle - Max. take-off power
(max. 5800 rpm for 5 minutes)
- Max. cont. power 5500 rpm
3. Trim - trim the airplane
4. Instruments - oil temperature and pressure,
cylinder head/coolant temperature within
limits

CAUTION

If the cylinder head temperature/coolant temperature or oil temperature approach their limits, reduce the climb angle to increase airspeed and thus fulfill the limits.

Aircraft Operating Instructions

4.4.10 Cruise

1. El. pump - OFF
2. Throttle lever - set required manifold
3. Fuel selector - LEFT or RIGHT

Refer to Section 5, for recommended cruising regimes.

NOTE

It is recommended to switch between tanks from time to time during flight to consume fuel equally from both tanks.

4.4.11 Descent

1. Optimum glide speed - 120 km/h (65 KIAS)

CAUTION

It is not advisable to reduce the engine throttle control lever to minimum on final approach and when descending from very high altitude. In such cases the engine becomes under-cooled and a loss of power may occur. Descent at increased idle (approx. 3000 rpm), speed between 120-130 km/h IAS (65-70 KIAS) and check that the engine instruments indicate values within permitted limits.

4.4.12 Before landing

1. Approach speed - 120 km/h (65 KIAS)
2. Throttle - as needed
3. Electric fuel pump(s) - ON
4. Wing flaps - extend as needed
5. Trim - as needed
6. Autopilot (if installed) - OFF

4.4.13 Balked Landing (Go around)

1. Throttle - full power (max.5800 rpm)
2. Wing flaps - extend as needed
3. Trim - adjust as needed
4. Wing flaps - retract at height of 150 ft after reaching 120 km/h (65 KIAS)
5. Trim - adjust
6. Repeat circuit pattern and landing

Aircraft Operating Instructions

4.4.14 Landing

1. Touch-down on main wheels
2. Apply brakes as needed after the nose wheel touch-down

4.4.15 Short field landing

1. Fuel selector - select proper tank
2. Safety harness - check that tightened
3. Approach speed - 55 KIAS (100 km/h)
4. Glide path – just enough to clear obstacle at approach end of runway
5. Throttle - as required
6. Electric fuel pump - ON
7. Flaps - 30°
8. Trim - as required
9. Landing light(s) - ON
10. Flare - minimum float
11. After touchdown - stick forward
- Retract flaps
- Maximum braking

4.4.16 Soft field landing

1. Fuel selector - select proper tank
2. Safety harness - check that tightened
3. Approach speed - 59 KIAS (110 km/h)
4. Throttle - as required
5. Electric fuel pump - ON
6. Flaps - 20 °
7. Trim - as required
8. Landing light(s) - on
9. Flare - add power before touchdown to keep elevator effective to help keep weight off nose wheel
10. After touchdown - throttle to idle
gradually increase back elevator to keep weight of nosewheel
No braking during roll out

Aircraft Operating Instructions

4.4.17 After landing

1. Engine speed - set as required for taxiing
2. Wing flaps - retract

4.4.18 Engine shutdown

1. Engine speed - idle
2. Instruments - engine instruments within limits
3. Avionics - switch off
4. Ignition - switch off
5. Circuit breakers - switch off
6. Master switch - switch off
7. Switch box - turn key to switch off
8. El. pump - off
9. Fuel Selector - off

CAUTION

Rapid engine cooling should be avoided during operation. This happens above all during aircraft descent, taxiing, low engine rpm or at engine shutdown immediately after landing.

Under normal conditions the engine temperatures stabilize during descent, taxiing and at values suitable to stop engine by switching the ignition off. If necessary, cool the engine at 2500 - 2750 rpm to stabilize the temperatures prior to engine shut down.

Aircraft Operating Instructions

4.4.19 Aircraft parking and tie-down

1. Ignition check - OFF
2. Master switch check - OFF
3. Fuel selector - OFF
4. Parking brake - use it as necessary (if installed)
5. Canopy - close, lock as necessary
6. Secure the airplane

NOTE

It is recommended to use parking brake (if installed) for short-time parking only, between flights during a flight day. After ending the flight day or at low temperatures of ambient air, do not use parking brake, but use the wheel chocks instead.

NOTE

Use anchor eyes on the wings and fuselage rear section to fix the airplane. Move control stick forward and fix it together with the rudder pedals. Make sure that the cockpit canopy is properly closed and locked. The anchoring before leaving the airplane is important if the airplane is not equipped with a parking brake.

WARNING

Caution when parking the aircraft in direct sunlight with the cockpit canopy open. An open cockpit canopy can act as an optical lens and cause damage to the cockpit interior, including possible fire ignition!

4.4.20 Flight in rain

When flying in the rain, no additional steps are required. Aircraft qualities and performance are not substantially changed. However Visual Meteorological Condition (VMC) must be maintained.

Aircraft Operating Instructions

SECTION 5

5 PERFORMANCE

5.1 Introduction

5.2 Performance

5.2.1 Airspeed indicator system calibration

5.2.2 Stall speeds

5.2.3 Take-off performance

5.2.4 Landing distances

5.2.5 Climb performance

5.2.6 Cruise

5.2.7 Endurance and Range

5.2.8 Demonstrated crosswind performance

5.2.9 Optimum glide speed

5.2.10 Ceiling

Aircraft Operating Instructions

5.1 Introduction

Section 5 provides data for airspeed calibration, stall speeds, take-off performance and additional information.

The presented data has been computed from actual flight tests with the aircraft and engine in good conditions and using average piloting techniques.

If not stated otherwise, the performance stated in this section is valid for maximum take-off weight and under ISA conditions.

The performance shown in this Section is valid for aircraft fitted with similar power plant based on ROTAX 912 ULS engine and DUC family propeller, performance of BRISTELL S-LSA S/N 917/2026 may be slightly different.

Aircraft Operating Instructions

5.2 Performance

5.2.1 Airspeed indicator system calibration

	KIAS	KCAS
VSO	40	41
VS1	45	45
	50	51
	55	55
	60	60
	65	65
	70	70
VFE	75	75
	80	80
	85	85
	90	90
VA	96	96
	100	100
	105	105
	110	109
	115	114
	120	119
	125	124
VNO	129	128
	135	134
	140	139
	145	144
	150	149
VNE	157	156

	IAS (km/h)	CAS (km/h)
VSO	74	75
	75	76
VS1	83	83
	90	91
	100	101
	110	111
	120	120
	130	130
VFE	139	139
	150	150
	160	160
	170	170
VA	180	179
	190	189
	200	199
	210	209
	220	219
	230	229
VNO	240	238
	250	248
	260	258
	270	268
	280	278
VNE	290	287

Aircraft Operating Instructions

5.2.2 Stall speeds

Conditions: Max. take-off weight 1320 lb Engine idle run	Wing flaps position	KIAS	KCAS	IAS [km/h]	CAS [km/h]	Altitude loss at recovery [ft]
Wing level stall	0°	45	45	83	83	100
	10°	43	44	80	81	110
	20°	42	42	77	78	120
	30°	40	41	74	75	160
Co-ordinated turn 30° bank	0°	48	49	89	90	120
	10°	46	47	86	87	140
	20°	45	45	83	84	160
	30°	43	44	80	81	200

Aircraft Operating Instructions

5.2.3 Take-off performance

ISA Conditions				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Takeoff Run [m]	Distance over 50 ft obstacle [m]	Takeoff Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	15,0	101324,7	1,0000	200	460	280	540
2000 ft ISA	11,0	94209,8	0,9428	230	520	320	610
4000 ft ISA	7,1	87505,0	0,8880	250	580	360	680
6000 ft ISA	3,1	81191,9	0,8358	290	660	400	770
8000 ft ISA	-0,8	75252,8	0,7859	320	740	450	870
10000 ft ISA	-4,8	69670,4	0,7384	370	840	510	990

ISA + 10 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Takeoff Run [m]	Distance over 50 ft obstacle [m]	Takeoff Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	25,0	101324,7	0,9664	210	490	300	580
2000 ft ISA	21,0	94209,8	0,9107	240	550	340	650
4000 ft ISA	17,1	87505,0	0,8574	270	630	380	730
6000 ft ISA	13,1	81191,9	0,8066	310	710	430	830
8000 ft ISA	9,2	75252,8	0,7581	350	800	490	940
10000 ft ISA	5,2	69670,4	0,7118	390	910	550	1070

ISA + 20 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Takeoff Run [m]	Distance over 50 ft obstacle [m]	Takeoff Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	35,0	101324,7	0,9351	230	530	320	620
2000 ft ISA	31,0	94209,8	0,8807	260	590	360	700
4000 ft ISA	27,1	87505,0	0,8289	290	670	410	790
6000 ft ISA	23,1	81191,9	0,7794	330	760	460	890
8000 ft ISA	19,2	75252,8	0,7321	370	860	520	1010
10000 ft ISA	15,2	69670,4	0,6871	420	970	590	1140

ISA -10 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Takeoff Run [m]	Distance over 50 ft obstacle [m]	Takeoff Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	5,0	101324,7	1,0360	190	430	260	500
2000 ft ISA	1,0	94209,8	0,9772	210	480	290	570
4000 ft ISA	-2,9	87505,0	0,9209	240	540	330	640
6000 ft ISA	-6,9	81191,9	0,8672	270	610	370	720
8000 ft ISA	-10,8	75252,8	0,8159	300	690	420	810
10000 ft ISA	-14,8	69670,4	0,7670	340	780	480	920

ISA -20 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Takeoff Run [m]	Distance over 50 ft obstacle [m]	Takeoff Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	-5,0	101324,7	1,0746	170	400	240	470
2000 ft ISA	-9,0	94209,8	1,0142	190	450	270	530
4000 ft ISA	-12,9	87505,0	0,9563	220	500	310	590
6000 ft ISA	-16,9	81191,9	0,9011	250	570	340	670
8000 ft ISA	-20,8	75252,8	0,8483	280	640	390	750
10000 ft ISA	-24,8	69670,4	0,7979	310	720	440	850

Aircraft Operating Instructions

5.2.4 Landing distances

ISA Conditions				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Landing Run [m]	Distance over 50 ft obstacle [m]	Landing Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	15,0	101324,7	1,0000	90	290	110	310
2000 ft ISA	11,0	94209,8	0,9428	100	310	120	330
4000 ft ISA	7,1	87505,0	0,8880	100	330	120	350
6000 ft ISA	3,1	81191,9	0,8358	110	350	130	370
8000 ft ISA	-0,8	75252,8	0,7859	110	370	140	390
10000 ft ISA	-4,8	69670,4	0,7384	120	390	150	420

ISA + 10 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Landing Run [m]	Distance over 50 ft obstacle [m]	Landing Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	25,0	101324,7	0,9664	90	300	110	320
2000 ft ISA	21,0	94209,8	0,9107	100	320	120	340
4000 ft ISA	17,1	87505,0	0,8574	100	340	130	360
6000 ft ISA	13,1	81191,9	0,8066	110	360	140	380
8000 ft ISA	9,2	75252,8	0,7581	120	380	150	410
10000 ft ISA	5,2	69670,4	0,7118	130	410	150	440

ISA + 20 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Landing Run [m]	Distance over 50 ft obstacle [m]	Landing Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	35,0	101324,7	0,9351	100	310	120	330
2000 ft ISA	31,0	94209,8	0,8807	100	330	120	350
4000 ft ISA	27,1	87505,0	0,8289	110	350	130	370
6000 ft ISA	23,1	81191,9	0,7794	120	370	140	400
8000 ft ISA	19,2	75252,8	0,7321	120	400	150	420
10000 ft ISA	15,2	69670,4	0,6871	130	420	160	450

ISA -10 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Landing Run [m]	Distance over 50 ft obstacle [m]	Landing Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	5,0	101324,7	1,0360	90	280	110	300
2000 ft ISA	1,0	94209,8	0,9772	90	300	110	320
4000 ft ISA	-2,9	87505,0	0,9209	100	310	120	340
6000 ft ISA	-6,9	81191,9	0,8672	100	330	130	360
8000 ft ISA	-10,8	75252,8	0,8159	110	360	130	380
10000 ft ISA	-14,8	69670,4	0,7670	120	380	140	400

ISA -20 °C				CONCRETE		GRASS	
Airport altitude H [ft]	Temperature tH [°C]	ISA pressure pH [Pa]	Relative density Δ [-]	Landing Run [m]	Distance over 50 ft obstacle [m]	Landing Run [m]	Distance over 50 ft obstacle [m]
0 ft ISA	-5,0	101324,7	1,0746	80	270	100	290
2000 ft ISA	-9,0	94209,8	1,0142	90	290	110	310
4000 ft ISA	-12,9	87505,0	0,9563	90	300	120	320
6000 ft ISA	-16,9	81191,9	0,9011	100	320	120	340
8000 ft ISA	-20,8	75252,8	0,8483	110	340	130	370
10000 ft ISA	-24,8	69670,4	0,7979	110	360	140	390

Aircraft Operating Instructions

5.2.5 Climb performance

Conditions: <i>Maximum takeoff power MTOW 600 kg</i>	Climbing speed V_Y for best Rate of climb		Rate of climb	Climbing speed V_X for best Angle of climb		Rate of climb
	<i>IAS [km/h]</i>	<i>KIAS</i>	<i>[fpm]</i>	<i>IAS [km/h]</i>	<i>KIAS</i>	<i>[fpm]</i>
0 ft ISA	125	67	910	111	60	860
2000 ft ISA	124	67	790	111	60	745
4000 ft ISA	123	66	670	111	60	630
6000 ft ISA	122	66	550	111	60	510
8000 ft ISA	121	65	430	111	60	400
10000 ft ISA	120	65	300	111	60	285

Aircraft Operating Instructions

5.2.6 Cruise

		55%	65%	75%	MCP
		4300 rpm	4800 rpm	5000 rpm	5500 rpm
0 ft	KIAS	86 knots	101 knots	107 knots	122 knots
	KCAS	85 knots	100 knots	106 knots	120 knots
	KTAS	85 knots	100 knots	106 knots	120 knots
2000 ft	KIAS	84 knots	98 knots	103 knots	117 knots
	KCAS	83 knots	97 knots	102 knots	116 knots
	KTAS	86 knots	100 knots	105 knots	119 knots
4000 ft	KIAS	81 knots	94 knots	100 knots	112 knots
	KCAS	81 knots	93 knots	99 knots	111 knots
	KTAS	86 knots	99 knots	105 knots	118 knots
6000 ft	KIAS	79 knots	91 knots	96 knots	108 knots
	KCAS	78 knots	90 knots	95 knots	107 knots
	KTAS	86 knots	99 knots	104 knots	117 knots
8000 ft	KIAS	77 knots	88 knots	92 knots	103 knots
	KCAS	76 knots	87 knots	91 knots	102 knots
	KTAS	86 knots	98 knots	103 knots	115 knots
10000 ft	KIAS	74 knots	84 knots	88 knots	98 knots
	KCAS	74 knots	84 knots	87 knots	97 knots
	KTAS	86 knots	97 knots	102 knots	113 knots

Aircraft Operating Instructions

5.2.7 Endurance and Range

The table below shows fuel consumption, endurance and range.

Fuel qty. =	120 l	31,7 US gal
Unusable fuel =	1 l	0,3 US gal

NO FUEL RESERVE CONSIDERED !

		4000 rpm	4300 rpm	4800 rpm	5000 rpm	5500 rpm
0 ft	CIAS	77 knots	86 knots	101 knots	107 knots	122 knots
	KCAS	77 knots	85 knots	100 knots	106 knots	120 knots
	KTAS	77 knots	85 knots	100 knots	106 knots	120 knots
	Fuel consumption	10,5 l/h 2,8 USgal/h	13,0 l/h 3,4 USgal/h	17,6 l/h 4,7 USgal/h	19,6 l/h 5,2 USgal/h	25,2 l/h 6,6 USgal/h
	Endurance	11:18	9:09	6:45	6:03	4:43
	Range	1600 km 870 NM	1450 km 780 NM	1250 km 680 NM	1190 km 640 NM	1060 km 570 NM
	2000 ft	CIAS	75 knots	84 knots	98 knots	103 knots
KCAS		75 knots	83 knots	97 knots	102 knots	116 knots
KTAS		77 knots	86 knots	100 knots	105 knots	119 knots
Fuel consumption		10,8 l/h 2,9 USgal/h	13,2 l/h 3,5 USgal/h	17,7 l/h 4,7 USgal/h	19,6 l/h 5,2 USgal/h	25,0 l/h 6,6 USgal/h
Endurance		11:00	9:00	6:44	6:03	4:46
Range		1570 km 850 NM	1430 km 770 NM	1240 km 670 NM	1180 km 640 NM	1050 km 570 NM
4000 ft		CIAS	74 knots	81 knots	94 knots	100 knots
	KCAS	73 knots	81 knots	93 knots	99 knots	111 knots
	KTAS	78 knots	86 knots	99 knots	105 knots	118 knots
	Fuel consumption	11,1 l/h 2,9 USgal/h	13,4 l/h 3,5 USgal/h	17,7 l/h 4,7 USgal/h	19,6 l/h 5,2 USgal/h	24,8 l/h 6,5 USgal/h
	Endurance	10:43	8:52	6:42	6:03	4:48
	Range	1540 km 830 NM	1410 km 760 NM	1230 km 670 NM	1170 km 630 NM	1050 km 570 NM
	6000 ft	CIAS	72 knots	79 knots	91 knots	96 knots
KCAS		71 knots	78 knots	90 knots	95 knots	107 knots
KTAS		78 knots	86 knots	99 knots	104 knots	117 knots
Fuel consumption		11,4 l/h 3,0 USgal/h	13,6 l/h 3,6 USgal/h	17,8 l/h 4,7 USgal/h	19,6 l/h 5,2 USgal/h	24,6 l/h 6,5 USgal/h
Endurance		10:26	8:43	6:40	6:03	4:50
Range		1510 km 820 NM	1390 km 750 NM	1220 km 660 NM	1160 km 630 NM	1050 km 560 NM
8000 ft		CIAS	70 knots	77 knots	88 knots	92 knots
	KCAS	71 knots	77 knots	88 knots	93 knots	104 knots
	KTAS	79 knots	86 knots	98 knots	103 knots	115 knots
	Fuel consumption	11,7 l/h 3,1 USgal/h	13,9 l/h 3,7 USgal/h	17,9 l/h 4,7 USgal/h	19,6 l/h 5,2 USgal/h	24,4 l/h 6,4 USgal/h
	Endurance	10:11	8:35	6:39	6:03	4:53
	Range	1480 km 800 NM	1370 km 740 NM	1210 km 650 NM	1150 km 620 NM	1040 km 560 NM
	10000 ft	CIAS	68 knots	74 knots	84 knots	88 knots
KCAS		68 knots	74 knots	84 knots	87 knots	
KTAS		79 knots	86 knots	97 knots	102 knots	
Fuel consumption		12,0 l/h 3,2 USgal/h	14,1 l/h 3,7 USgal/h	17,9 l/h 4,7 USgal/h	19,6 l/h 5,2 USgal/h	
Endurance		9:56	8:27	6:37	6:03	
Range		1460 km 790 NM	1350 km 730 NM	1190 km 640 NM	1140 km 620 NM	

Aircraft Operating Instructions

5.2.8 Demonstrated crosswind performance

Max. permitted head wind velocity for take-off and landing	20 m/s	40 knots
Max. permitted cross wind velocity for take-off and landing		
Average pilots	8 m/s	15 knots
Skilled pilots	11 m/s	22 knots

5.2.9 Optimum glide speed

Optimum glide speed	120 km/h	65 KIAS
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5.2.10 Ceiling

Service ceiling	4300 m	14.000 ft
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Aircraft Operating Instructions

SECTION 6

6 WEIGHT AND BALANCE

6.1 *Introduction*

6.2 *Weight & Balance Limits*

6.3 *Empty Weight & Balance Data*

6.4 *Calculation of Weight & CG Position for Flight*

6.4.1 Fuel Weight Table

6.4.2 Sample Pilot Calculations

6.4.3 Pilot calculations

Aircraft Operating Instructions

6.1 Introduction

This section provides the pilot with the information required to safely load the aircraft so that it remains inside the allowable weight and center of gravity limits for flight.

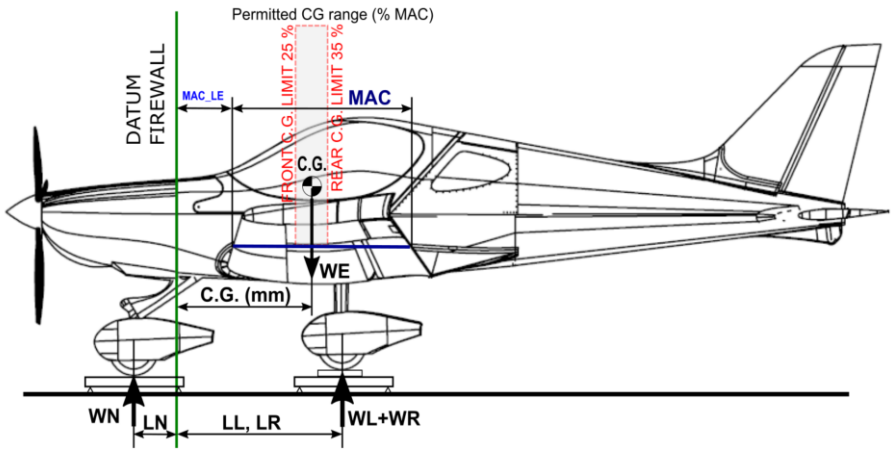
NOTES:

1. *The procedures involved in weighing the aircraft to establish the empty weight and empty centre of gravity position can be found in the last revision of FAA Aviation Advisory Circular AC.43.13-1B, Chapter 10.*
2. *The equipment fitted to the aircraft at the time of manufacture is supplied in the form of an 'Equipment List' and is included with the aircraft's maintenance records.*

Aircraft Operating Instructions

6.2 Weight & Balance Limits

Max. take-off weight.....	600 kg	1320 lb
Forward CG Limit 25%MAC.....	749.7 mm	29.517 in
Aft CG Limit 35%MAC	887.2 mm	34.928 in
MAC.....	1374.5 mm	54.114 in
MAC_LE	406.1 mm	15.988 in
MAC_LE: Distance of MAC origin to Datum		
Datum: Firewall.		



Aircraft Operating Instructions

6.3 Empty Weight & Balance Data

Date	Empty Weight (kg)	Empty CG (mm)	Empty Moment (kg.mm)	%MAC	Authorized Person
09.04.2026	357,5	719,24	257129,00	23,3	BRM Aero

NOTES:

1. Empty weight includes unusable fuel (1 liter), full oil & coolant.
2. If the aircraft weight is altered this empty weight and empty center of gravity position must be updated by an authorized person.
3. **The pilot must always use the latest data in the above table.**

6.4 Calculation of Weight & CG Position for Flight

6.4.1 Fuel Weight Table

The following fuel weights are based on a fuel specific gravity of 0.72 kg/l.

Useable Fuel (Liters)	Weight (kg)	Useable Fuel (Liters)	Weight (kg)
10	7,2	70	50,4
20	14,4	80	57,6
30	21,6	90	64,8
40	28,8	100	72,0
50	36,0	110	79,2
60	43,2	120	86,4

Aircraft Operating Instructions

6.4.2 Sample Pilot Calculations

- Obtain the Empty Weight data for the aircraft from the paragraph 6.3 and enter it in the table below.
Example - Empty Weight 366 kg, Arm to the firewall 762,56 mm, Moment 279098,1 kg mm
- Enter weights of occupants, fuel and baggage in the table.

NOTE:

Fuel weight for a given quantity can be determined using the data in para 6.4.1 above.

- Multiply weights by the corresponding arms to give the moments.
- Total up the weights and moments. Divide total moment by total weight to give arm.
i.e. $\text{Arm} = \frac{\text{Total Moment}}{\text{Total Weight}}$
- Provided the take-off weight does not exceed 600 kg, and the moment arm is within the range of 750 mm to 887.5 mm, the aircraft is within limits.

--- SAMPLE ONLY ---

Item	Weight (kg)	Arm (mm)	Moment (kg mm)
Empty (para Chyba! Nenalezen zdroj odkazů.)	366	762,56	279096,96
Pilot	90	1156	104040
RH seat	90	1156	104040
Fuel (Max 85.7 kg)	24	606	14544
Baggage – behind seats (Max 15 kg)	0	1806	0
Baggage – wing lockers (Max 20 kg each)	28	1036	29008
Baggage – Front (optional) (Max 10 kg)	0	106	0
TOTALS	598	887,5	530728,96

--- Sample Aircraft Is Within Limits ---

Aircraft Operating Instructions

6.4.3 Pilot calculations

(Copy this page and do your calculations using this table).

Item	Weight (kg)	Arm (mm)	Moment (kg mm)
Empty (para 6.3)	357,5	725,93	257129,00
Pilot		1156	
RH seat		1156	
Fuel (Max 89 kg)		606	
Baggage – behind seats (Max 15 kg)		1806	
Baggage – wing lockers (Max 20 kg each)		1036	
Baggage – Front (optional) (Max 10 kg)		106	
TOTALS			

NOTE

Provided the calculated take-off weight does not exceed 600 kg (1320 lb), and the arm is within the range of 749.7 mm (29.517 in) to 887.2 mm (34.928 in), the aircraft is within limits.

WARNING

Exceeding MTOW or operating outside the CG limits may lead to deterioration of flight safety.

Aircraft Operating Instructions

SECTION 7

7 AIRPLANE AND SYSTEMS DESCRIPTION

7.1 *Introduction*

7.2 *Airframe*

7.3 *Control system*

7.4 *Landing gear*

7.5 *Seats and safety harness*

7.6 *Baggage compartment*

7.7 *Canopy*

7.8 *Power plant*

7.8.1 Throttle

7.8.2 Heating

7.9 *Fuel system*

7.10 *Electrical system*

7.10.1 Battery

7.10.2 Master switch

7.10.3 Ignition Switch

7.11 *Pitot and static pressure system*

7.12 *Miscellaneous equipment*

7.13 *Instruments and Avionics*

7.14 *Cockpit*

7.14.1 Cockpit layout

7.14.2 Instrument panel

Aircraft Operating Instructions

7.1 Introduction

This section provides description and operation of the aircraft and its systems.

7.2 Airframe

All-metal construction, single curvature metal skins riveted to stiffeners. Construction is of 6061-T6 aluminium sheet metal riveted to aluminium angles with Avex rivets. This high strength aluminium alloy construction provides long life and low maintenance costs thanks to its durability and corrosion resistance characteristics.

The wing has a high lift aerofoil equipped by fowler flaps controlled by the electric servo operated by the pilot.

7.3 Control system

The plane is equipped with a dual stick control and classic rudder pedals, with pedal hydraulic brakes for easy ground control.

The elevator and aileron trim control, as well as wing flaps are electrically operated from the rocker switches located on the instrument panel or on the control stick.

7.4 Landing gear

Tricycle landing gear with the steerable nose wheel. Main landing gear uses two fiberglass spring elements.

Aircraft Operating Instructions

7.5 **Seats and safety harness**

Side-by-side seating. Seat cushions are removable to make easier cleaning and drying. Four-point safety belts provided to each seat. Optional, is additional seat upholstery to raise the small pilot or move him forward.

NOTE

Prior to each flight, ensure that the seat belts are firmly secured to the airframe, and that the belts are not damaged. Adjust the buckle so that it is centred on the body.

7.6 **Baggage compartment**

The rear baggage compartment is located behind the seats. It may accommodate up to 15 kg (33 lb). This space is divided on two sections – baggage compartment A and B. Is not recommended give too heavy things into baggage compartment B.

The baggage may also be loaded into the baggage compartment inside each wing (optional equipment) up to 20 kg (44 lb), in each wing locker.

Optionally also a front locker in a space between the instrument panel and firewall may be installed. Maximum baggage is 10 kg (22 lb).

Make sure that baggage does not exceed maximum allowable weight, and that the aircraft CG is within limits with loaded baggage.

All baggage must be properly secured.

7.7 **Canopy**

Access to the cabin is from both sides. Make sure that the canopy is latched and mechanism is securely locked into position on both sides before operating the aircraft.

Aircraft Operating Instructions

7.8 Power plant

Engine:

ROTAX 912 ULS 3 engine 98.6 hp is installed. Rotax 912 ULS is 4-stroke, 4 cylinders, horizontally opposed, spark ignition engine with one central camshaft-push-rod-OHV. Liquid cooled cylinder heads, ram air cooled cylinders.

Dry sump forced lubrication. Dual contactless capacitor discharge ignition. The engine is fitted with an electric starter, AC generator and mechanical fuel pump. Prop drive via reduction gear with integrated shock absorber.

Propeller:

DUC Inconel FLASH, composite, 3-bladed, on-ground adjustable propeller.

NOTE

For technical data refer to documentation supplied by the propeller manufacturer

7.8.1 Throttle

Engine power is controlled by means of the THROTTLE lever. THROTTLE lever is positioned in the middle channel between the seats. Lever is mechanically connected (by cables) to the flaps on the carburettors. Spring is added to the throttle push rod to ensure that the engine will go to full power if the linkages fail.

7.8.2 Heating

Heating consists of a heat exchanger on the exhaust manifold and control mechanism located on the right-hand side of instrument panel.

CAUTION

Incidents involving exhaust gases entering the heating or ventilation system may result in fatal accidents due to carbon monoxide poisoning of the aircraft occupants. A carbon monoxide detector is recommended.

Aircraft Operating Instructions

7.9 Fuel system

Wing tanks volume: 2x 60 l 2x 16 US gallons

Each tank is equipped with a vent outlet and screen filter.

Drain valve located in the lowest point of each tank and on the bottom edge of the firewall, on the gascolator.

Main fuel selector valve is on the central console in the cockpit.

The electric fuel pump is located on firewall.

CAUTION

Do not overfill the tanks to avoid fuel overflow through venting tubes.

NOTE

Fuel quantity of more than approx. 11.9 US gal (45 liters) in the tank is indicated as a full tank.

Aircraft Operating Instructions

7.10 Electrical system

7.10.1 Battery

The battery is mounted on the forward side of the firewall.

7.10.2 Master switch

Master switch connects the electrical system to the 12 Volt battery and charger/coils, controlled by the regulator. See Engine Manual for electrical system details.

NOTE

Ignition system is independent on the power source and will operate even with Master switch and/or breaker off.

7.10.3 Ignition Switch

Ignition must be on BOTH to operate the engine: For safety, remove key when engine is not running.

NOTE

All switches and or engine controls are "up" or "push forward" for operation, except the choke, cabin heat and carburetor pre-heat, which is "Pull" for "on". Optional equipment, switches and/or fuses are subject to change or installed as requested. See Aircraft Equipment List and Photo and Description of equipment and controls in the cockpit.

7.11 Pitot and static pressure system

Pitot tube (optionally heated) is located below the left wing. Pressure distribution to the instruments is through flexible plastic hoses.

Static ports are located on both sides of the fuselage at the tail.

Keep the Pitot tube and static ports clean to ensure proper function of the system

Aircraft Operating Instructions

7.12 Miscellaneous equipment

BRISTELL S-LSA, S/N 917/2026 is fitted with:

1. Additional 12V/5V socket on instrument panel
2. Adjustable 3-pos. rudder pedals on both sides
3. AMSAFE 4-point safety belts
4. Arm rest box
5. Automotive net in baggage compartment (P/N 42084)
6. AVEO eye ball vents black
7. BERINGER 5" landing gear wheels assembly
8. BERINGER hand brake on central console, ABS
9. Canopy glass set - dark grey with side windows without flap
10. Cockpit floor and baggage compartment floor carpets
11. External connection to power for jump start - Anderson plug
12. Glareshield, central console cover, side panels and handle behind seats padded leather
13. Grey interior RAL 7021
14. Instrument panel NG5
15. Instrument panel storage box on the right
16. LAMBERT + LINAK electric flaps actuator
17. LAMBERT ARROW FLASH 2 - wing tip pos. lights and fin beacon
18. LEMO Connector with power supply
19. Lockable canopy NEW system
20. Lockable fuel tank caps
21. Map pockets 2 Pcs
22. Noise insulation on firewall
23. Nose gear doubled flexible rod (TELEFLEX)
24. PIERBURG auxiliary fuel pump
25. Set of seats padded textile
26. Tail skid with wheel
27. TOSTEN CS-6 grip on the left and right side
28. USB port between seats
29. VARTA battery YTX20L
30. Wing lockers with drainage

Aircraft Operating Instructions

7.13 Instruments and Avionics

BRISTELL S-LSA, S/N 917/2026 is fitted with:

Flight instruments:

1. KANARDIA INDU Airspeed indicator 80 mm (kts)
2. KANARDIA Altimeter 80 mm (ft/mBar)
3. KANARDIA Variometer 57 mm (fpm)
4. WINTER QM 2 Art. 1120 bank indicator
5. AIRPATH C2400 L4P Compass
6. GARMIN G3X flight display system including:
7. GARMIN GAP 26 angle of attack unheated probe
8. GARMIN GDU 460, 10,6" display
9. GARMIN GMU 11 Magnetometer
10. GARMIN GPS BNC antenna(s) for G3X
11. GARMIN GSU 25C Air Data Attitude Heading Reference System
12. GARMIN GTP 59 Temperature Probe
13. GARMIN GMC 507 Autopilot Control Module without Yaw damper
14. GARMIN GSA 28 autopilot servos (roll + pitch)
15. GARMIN G3X backup battery TCW IBBS-12V-3AH

Engine instruments:

1. GARMIN GEA 24 Engine Interface Module – shows engine data on the GDU 460 screens

COM/NAV and other instruments:

1. GARMIN GTR 205 COM radio + RAMI AV-10 antenna
2. GARMIN GTX 45R mode S transponder + RAMI AV-74 Antenna
3. GARMIN GA 35 External active GPS antenna
4. CO GUARDIAN carbon monoxide detector Aero-452
5. Horn (klaxon) 4-cars

NOTE

For operating instructions refer to the documentation supplied with the instruments as listed in Supplement No 03.

Aircraft Operating Instructions

7.14 Cockpit

7.14.1 Cockpit layout

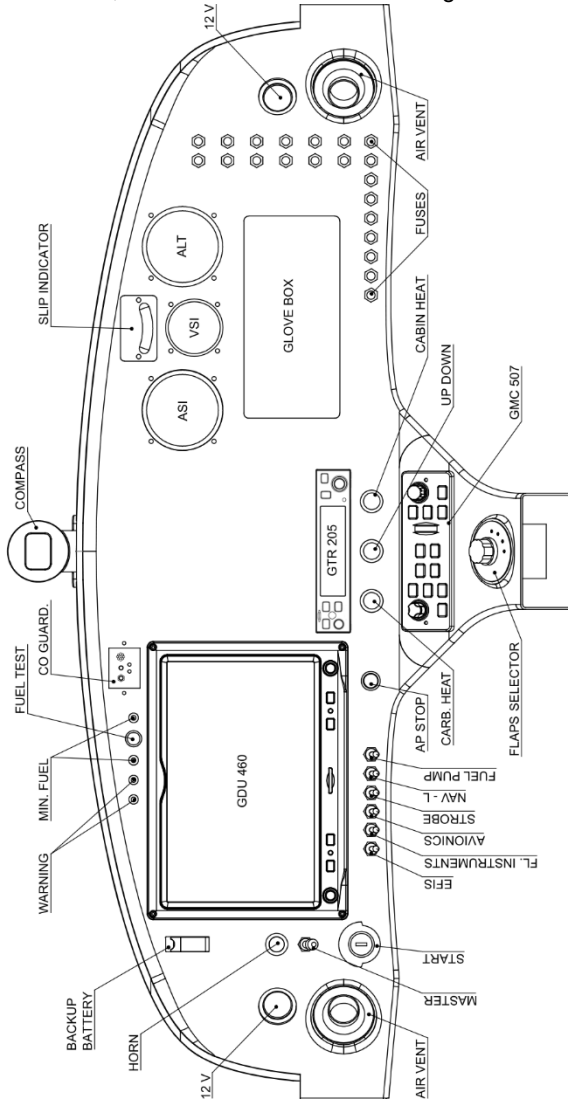
BRISTELL S-LSA, S/N 917/2026 has the following cockpit layout:



Aircraft Operating Instructions

7.14.2 Instrument panel

BRISTELL S-LSA, S/N 917/2026 has the following instrument panel layout:



Aircraft Operating Instructions

SECTION 8

8 AIRPLANE HANDLING, SERVICING AND MAINTENANCE

8.1 *Introduction*

8.2 *Aircraft inspection periods*

8.3 *Aircraft alterations or repairs*

8.4 *Ground handling*

8.4.1 Towing

8.4.2 Parking

8.4.3 Mooring

8.4.4 Jacking

8.4.5 Road transport

8.5 *Cleaning and care*

Aircraft Operating Instructions

8.1 Introduction

This section contains factory-recommended procedures for proper ground handling and servicing of the airplane. It also identifies certain inspection and maintenance requirements, which must be followed if the airplane is to retain that new-plane performance and dependability.

8.2 Aircraft inspection periods

Periods of overall checks and contingent maintenance depends on the condition of the operation and on overall condition of the airplane.

Inspections and revisions should be carried out in the following periods, at least:

- a) after the first 25 flight hours
- b) after the first 50 flight hours
- c) after every 100 flight hours or at least annual inspection

Refer to the Engine Operator's Manual for engine maintenance.

Maintain the prop according to its manual.

All repairs and maintenance should be made in accordance with AC 43.13-1B.

8.3 Aircraft alterations or repairs

It is recommended to contact the airplane manufacturer prior to any alternations to the aircraft to ensure that the airworthiness of the aircraft is not violated. Always use only the original spare parts produced by the airplane (engine, prop) manufacturer.

If the aircraft weight is affected by that alternation, a new weighing is necessary, then record the new empty weight into the Weight and Balance record / Permitted payload range in SECTION 6 and up-date the placard showing weights in the cockpit.

Aircraft Operating Instructions

8.4 Ground handling

8.4.1 Towing

To handle the airplane on the ground, use the Tow Bar, or the fuselage rear pushed down in the place of a bulkhead.

CAUTION

Avoid excessive pressure at the airplane airframe-especially at control surfaces. Keep all safety precautions, especially in the propeller area.

8.4.2 Parking

It is advisable to park the airplane inside a hangar or alternatively inside any other suitable space (garage) with stable temperature, good ventilation, low humidity and dust-free environment.

It is necessary to moor the airplane when it is parked outside a hangar. Also when parking for a long time, cover the cockpit canopy, possibly the whole airplane by means of a suitable tarpaulin.

WARNING

Caution when parking the aircraft in direct sunlight with the cockpit canopy open. An open cockpit canopy can act as an optical lens and cause damage to the cockpit interior, including possible fire ignition!

Aircraft Operating Instructions

8.4.3 Mooring

The airplane should be moored when parked outside a hangar after the flight day. The mooring is necessary to protect the airplane against possible damage caused by wind and gusts.

For this reason the aircraft is equipped with mooring eyes located on the lower surfaces of the wings.

Mooring procedure:

1. Check: Fuel Selector shut off, Circuit breakers and Master switch switched off, Switch box switched off.
2. Fix the hand control using e.g. safety harness
3. Close air vent
4. Close and lock canopy
5. Moor the aircraft to the ground by means of a mooring rope passed through the mooring eyes located on the lower surfaces of the wings and below rear fuselage

NOTE

In the case of long-term parking, especially during winter, it is recommended to cover the cockpit canopy or possibly the whole aircraft by means of a suitable tarpaulin attached to the airframe.

8.4.4 Jacking

Since the empty weight of this aircraft is relatively low, two people can lift the aircraft easily.

First of all prepare two suitable supports to support the aircraft.

It is possible to lift the aircraft by handling the following parts:

- By pushing the fuselage rear section down in the place of a bulkhead the fuselage front section may be raised and then supported under the firewall.
- By holding the fuselage rear section under a bulkhead the fuselage rear may be raised and then supported under that bulkhead.
- To lift up a wing, push from underneath that wing only at the main spar area. Do not lift up a wing by handling the wing tip.

Aircraft Operating Instructions

8.4.5 Road transport

The aircraft may be transported after loading on a suitable car trailer. It is necessary to dismantle the wings before road transport. The aircraft and dismantled wings should be attached securely to protect these parts against possible damage.

8.5 *Cleaning and care*

Use efficient cleaning detergents to clean the aircraft surface. Oil spots on the aircraft surface (except the canopy!) may be cleaned with gasoline.

The canopy may only be cleaned by washing it with a sufficient quantity of lukewarm water and an adequate quantity of detergents. Use either a soft, clean cloth sponge or deerskin. Then use suitable polishers to clean the canopy.

CAUTION

Never clean the canopy under “dry” conditions and never use gas or chemical solvents!

Upholstery and covers may be removed from the cockpit, brushed and eventually washed in lukewarm water with an adequate quantity of detergents. Dry the upholstery thoroughly before insertion into the cockpit.

CAUTION

In the case of long-term parking, cover the canopy to protect the cockpit interior from direct sunshine.

Aircraft Operating Instructions

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Aircraft Operating Instructions

SECTION 9

9 REQUIRED PLACARDS AND MARKINGS

9.1 *Limitation placards*

9.2 *Miscellaneous placards and markings*

Aircraft Operating Instructions

9.1 Limitation placards

The airplane must be placarded with:

- All fuses
- Ignition switches
- Choke
- Starter
- Trim: Nose heavy, Tail heavy
- Flaps: 0°, 10°, 20°, 30°
- Maximum rear baggage weight 15 kg (33 lb)
- Maximum weight in each wing locker 20 kg (44 lb), if installed
- Maximum weight in front locker 10 kg (22 lb), if installed
- Instruments
- Canopy: Open - Close
- Fuel capacity: 60 l (15.87 U.S. gallons) / min. 95 Octane - at filler neck
- Fireproof Identification plate attached to the fuselage port side, in front of the horizontal tail unit.



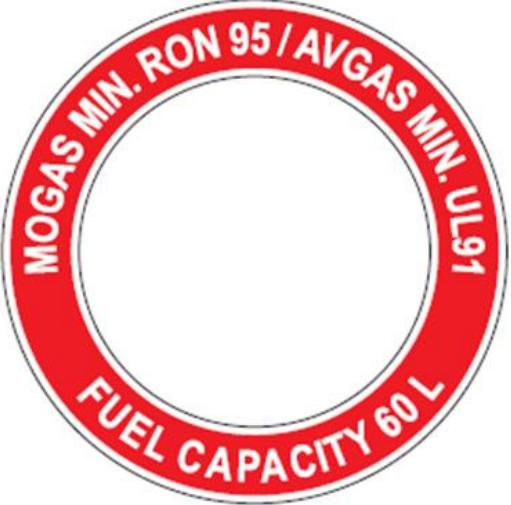


<p style="text-align: center;">IDENTIFICATION PLATE</p> <p>Produced by: BRM AERO, s.r.o. Czech Rep.</p> <p>Type: BRISTELL S-LSA</p> <p>Production No./year: 917/2026</p>	<p>Identification plate attached to the fuselage port side, in front of the horizontal tail unit</p>
<p style="text-align: center;">PASSENGER WARNING!</p> <p style="text-align: center;">THIS AIRCRAFT WAS MANUFACTURED IN ACCORDANCE WITH LIGHT SPORT AIRCRAFT AIRWORTHINESS STANDARDS AND DOES NOT CONFORM TO STANDARD CATEGORY AIRWORTHINESS REQUIREMENTS.</p>	<p>Passenger warning for LSA category airplanes. Located on the instrument panel.</p>
<p style="text-align: center;">PASSENGER NOTICE</p> <p style="text-align: center;">THIS AIRCRAFT CONFORMS TO ASTM CONSENSUS STANDARDS OF AIRWORTHINESS DEVELOPED AND MAINTAINED BY THE AVIATION COMMUNITY UNDER ASTM TECHNICAL COMMITTEE F 37.</p>	<p>Passenger notice for LSA category airplanes. Located on the instrument panel.</p>
<p style="text-align: center;">ALL AEROBATIC MANEUVERS, INCLUDING SPINS ARE PROHIBITED</p>	<p>Operation limitation. Located on the instrument panel.</p>
<p style="text-align: center;">WARNING</p> <p style="text-align: center;">IFR FLIGHTS AND INTENTIONAL FLIGHTS UNDER ICING CONDITIONS ARE PROHIBITED!</p>	<p>Operation limitation. Located on the instrument panel.</p>

Aircraft Operating Instructions




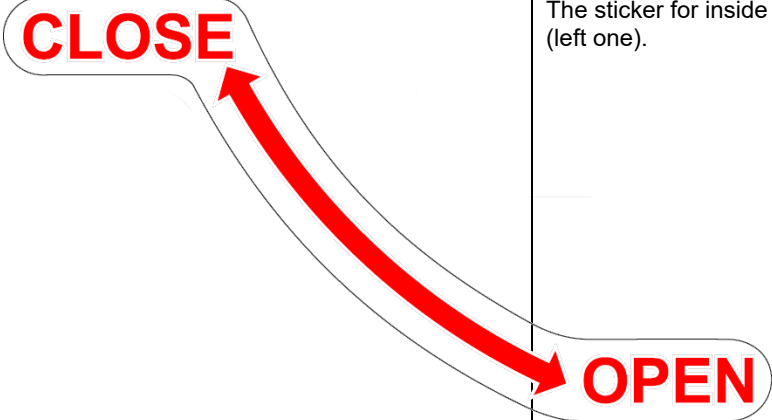
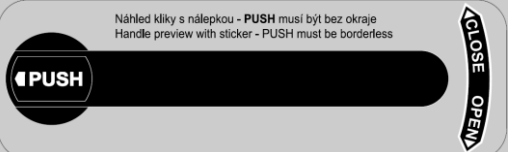
<p>BAGGAGE COMPARTMENT - A</p> <p>MAX .15 KG</p>	<p>Main baggage compartment behind the seats.</p>
<p>BAGGAGE COMPARTMENT - B</p> <p>MAX .1 KG</p>	<p>Additional baggage compartment behind the Baggage compartment A. NOT TO BE USED FOR HEAVY ITEMS!</p>
	<p>Maximum weight of baggage in each wing locker, if installed.</p>
<p>MAX. 10 KG</p>	<p>Maximum weight of baggage in fuselage front locker, if installed.</p>
	<p>Airspeed limitations. Located on the instrument panel or fuselage side.</p>
<p>ENGINE RPM:</p> <p>Max. take-off (max. 5 min.) 5800 rpm</p> <p>Max. continuous 5500 rpm</p> <p>Idle 1400 rpm</p>	<p>Engine speed limitations. Located on the instrument panel or fuselage side.</p>
<p>WARNING</p> <p>DO NOT EXCEED MAXIMUM TAKE-OFF WEIGHT 600 KG</p>	<p>Maximum Takeoff Weight Limitation. 600 kg (1320 lb) limit for Light sport airplanes. Located on the instrument panel or fuselage side.</p>
<p>IN THE EVENT OF ELECTRONIC DISPLAY FAILURE LAND AS SOON AS PRACTICABLE</p>	<p>Installed only if a single EFIS is installed without backup flight/engine instruments</p>
	<p>No smoking placard located on the side of instrument board</p>

Aircraft Operating Instructions

9.2 Miscellaneous placards and markings

	<p>Wing flap root area</p>
	<p>Areas to avoid pushing on them. Wing trailing edge, control surfaces trailing edges, etc.</p>
	<p>Located on wing upper skin around the fuel tank filler neck.</p>
	<p>Located on both sides of the fuselage tail where are located static ports.</p>
	<p>Throttle and Choke placard located on the Throttle-choke quadrant.</p>

Aircraft Operating Instructions

 	<p>Located on the fuselage right/left side under the instrument panel. Placard point to the lever to adjust pedals position.</p>
	<p>Located between the seat backs, at the headphone sockets.</p>
	<p>The sticker for inside lever (left one).</p>
 <p>Náhled kliky s nálepkou - PUSH musí být bez okraje Handle preview with sticker - PUSH must be borderless</p>	<p>The stickers for canopy external lever.</p>

Aircraft Operating Instructions

If BRS rescue system is installed:

	<p>Placard located on the both sides of fuselage between canopy and rear window</p>
	<p>Placard located in place rocket egress</p>

CAUTION

The owner (operator) of this airplane is responsible for the readability of placards during the aircraft service life.

Aircraft Operating Instructions

SECTION 10

10 SUPPLEMENTS

10.1 *Introduction*

10.2 *List of inserted supplements*

10.3 *Inserted Supplements*

Aircraft Operating Instructions

10.1 Introduction

This section contains the appropriate supplements necessary to safely and efficiently operate the aircraft when equipped with various optional systems and equipment not provided with the standard airplane.

Aircraft Operating Instructions

10.2 List of inserted supplements

Date	Suppl. No.	Title of inserted supplement
07/2011	01	Aircraft Flight Training Supplement
04/2026	02	Description of the aircraft S/N 917/2026

Aircraft Operating Instructions

10.3 *Inserted Supplements*

Aircraft Operating Instructions

SUPPLEMENT No. 01/2011

Aircraft Flight Training Supplement

The BRISTELL S-LSA flying characteristics and behaviour are similar to single engine aircraft.

Following training procedure is applicable if the pilot is holder of UL, PPL or LSA Pilot License. The training flight hours are recommended minimum and depends on the Flight Instructor if student pilot is ready to continue on in next training step. Training can be performed by Flight Instructor or by the experienced pilot who has minimum 20 hours on the BRISTELL S-LSA.

Type Rating Training Procedure:

Ground Training - *before practical Flight Training the pilot has to get familiar with following procedures and documentation*

- *Aircraft Operating Instructions (AOI)*
- *Aircraft Maintenance and Inspection Procedures*
- *Aircraft pre-flight inspection procedure*
- *Control Checklists*
- *Radio, avionics, aircraft and engine controls procedures*
- *Differences in control and aircraft handling*
- *Emergency procedures*

Aircraft Operating Instructions

Flight training program - *recommended*

Flight Training Procedure		Dual		Solo	
		Flights	hr/min	Flights	hr/min
1.	<i>Check flight</i>	1	30'		
2.	<i>Pattern training flights up to 1000 ft AGL</i>	4	20'	3	15'
3.	<i>Pattern training flights up to 500 ft AGL</i>	4	20'	3	15'
4.	<i>Stall speed, 45°turns, side slips</i>	1	30'	1	20'
5.	<i>Emergency landing training</i>	4	20'	3	10'
Total		14	2 hr	10	1 hr

Aircraft Operating Instructions

Flight Training Procedure - *description*

1. **Check flight** – Student Pilot will fly the airplane in local flight, instructor is giving advice as necessary.
2. **Pattern training flights up to 1000 feet AGL** - high pattern procedures, instructor is giving advice as necessary.
3. **Pattern training flights up to 500 feet AGL** - high pattern procedures, instructor is giving advice as necessary.
4. **Stall speed, 45°turns, sideslips** – stall speed flaps retracted and extended (landing configuration), sideslips at landing configuration.
5. **Emergency landing training** – emergency procedures and landing to 1/3 of runway.

NOTE

During solo flights instructor is observing the student pilot on pattern and can advise by radio as necessary.

Endorsement:

Instructor will endorse the Type Rating to the Pilots Logbook, if required.

BRISTELL S-LSA



Aircraft Operating Instructions

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Aircraft Operating Instructions

SUPPLEMENT No. 02

AIRCRAFT DESCRIPTION

Registration: **23-2271**

Serial number: **917/2026**

This Supplement must be contained in the Aircraft Operating Instructions during operation of the airplane.

Information contained in this Supplement add or replace information from the basic Aircraft Operating Instructions in the further mentioned parts only. Limitations, procedures and information not mentioned in this Supplement are contained in the basic Aircraft Operating Instructions.

Aircraft Operating Instructions

0 NUMBERING

This Supplement adds information necessary for airplane operation with equipment installed in the airplane BRISTELL S-LSA of S/N 917/2026.

1 GENERAL INFORMATION

No changes.

2 OPERATING LIMITATION

2.3 *Airspeed indicator markings*

Updated white and green arc bottom

2.4.3 Oil

Type of oil used by aircraft manufacturer :
Aeroshell OIL SPORT PLUS 4

2.4.4 Coolant

Type of coolant used by aircraft manufacturer:
GLYSANTIN G48
Mixture ratio coolant / water: follow the manufacturer's instructions
Max. Coolant temperature: 120 °C (248 °F)

2.4.5 Brake fluid

Type of used brake fluid:
Castrol brake fluid DOT 4
Protector series
SAE J1703 & J1704;
FMVSS 116 DOT4;
JIS K2233 Class 4;
ISO 4925 Class 4

Aircraft Operating Instructions

3 EMERGENCY PROCEDURES

No changes.

4 NORMAL PROCEDURES

No changes.

5 PERFORMANCE

No changes.

6 WEIGHT AND BALANCE

No changes.

7 AIRPLANE AND SYSTEMS DESCRIPTION

7.2 Airframe

BRISTELL S-LSA, S/N: 917/2026 paint color codes:

Exterior: design #030 - modified: BMW 354 silver; RAL 1023 traffic yellow.

Aircraft Operating Instructions

7.7 Canopy

BRISTELL S-LSA, S/N: 917/2026 has got a new design of the canopy lock mechanism. There is an outer lever on the pilot (left side) – Fig.1. To open the canopy from outside push on lever tip to open the lever – Fig. 2. Then turn the lever down to release the lock hooks on both sides. Then move the canopy frame up (there is a canopy grab handle on both sides) to open the canopy.

Once seated you can close the canopy from inside by moving the inside lever on the cockpit side (there are 2 levers – left and right, mechanically interconnected).



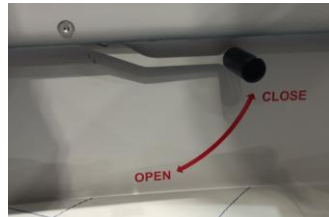
1. External canopy handle



2. Push lever tip and turn lever down



3. Lift canopy up



4. Move inside lever forward to lock

Aircraft Operating Instructions

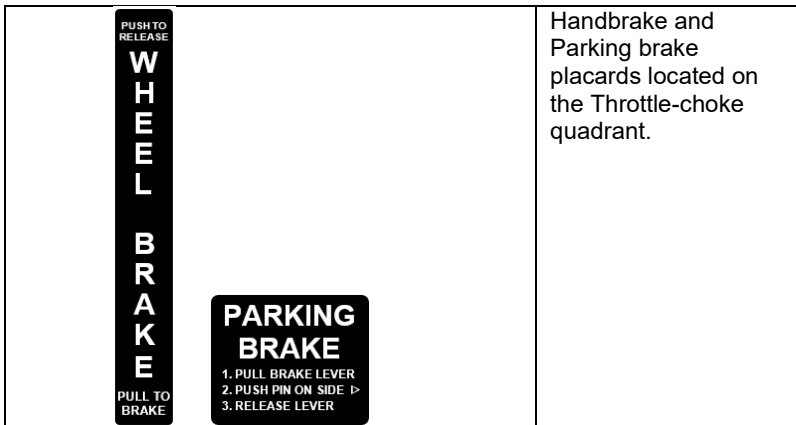
8 AIRPLANE HANDLING, SERVICING AND MAINTENANCE

BRISTELL S-LSA, S/N: 917/2026 has got a new design of the canopy lock mechanism.

Maintenance: It is recommended to use a suitable spray lubricant to lubricate all movable joints of the hook system during each 100 h periodical inspection and a vaseline to grease the hook contact surface with the pin on tip-up canopy

9 REQUIRED PLACARDS AND MARKINGS

BRISTELL S-LSA, S/N 917/2026 is equipped with a handbrake that includes the following placards:



Aircraft Operating Instructions

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