11. Valid to aircraft S/N:

P1001060, P1001062, P1001063, P1001064, P1001065, P1001066, P1001067, P1001069, P1001070, P1001071, P1001072, P1001073

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RECORD OF REVISIONS

No.	Affected pages	Revision name	Date of Issue	Signature
1	v, vii, 3-1, 3-9, 3-10, 4-6	Canopy unlatched	10/09/20	
2	v,vii,viii,1-4,1-5,1-6,2-3,2-5, 2-7,4-5,4-6,4-7,4-9,5-1,5-2, 5-3,5-4,5-5,5-6,5-7,5-8,5-9, 5-10,5-11,5-12,8-4	Performance	10/11/22	

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	iii	-		2-9	-
	iv	-		2-10	-
	v	2		2-11	-
	vi	-		2-12	-
	vii	2			
	viii	2	3	3-1	1
	ix	-		3-2	-
	x	-		3-3	-
	xi	-		3-4	-
	xii	-		3-5	-
	xiii	-		3-6	-
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	xv	-		3-8	-
				3-9	1
1	1-1	-		3-10	1
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	1-5	2		4-3	-
	1-6	2		4-4	-
				4-5	2
2	2-1	-		4-6	2
	2-2	-		4-7	2
	2-3	2		4-8	-
	2-4	-		4-9	2
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	5-7	2		7-7	-
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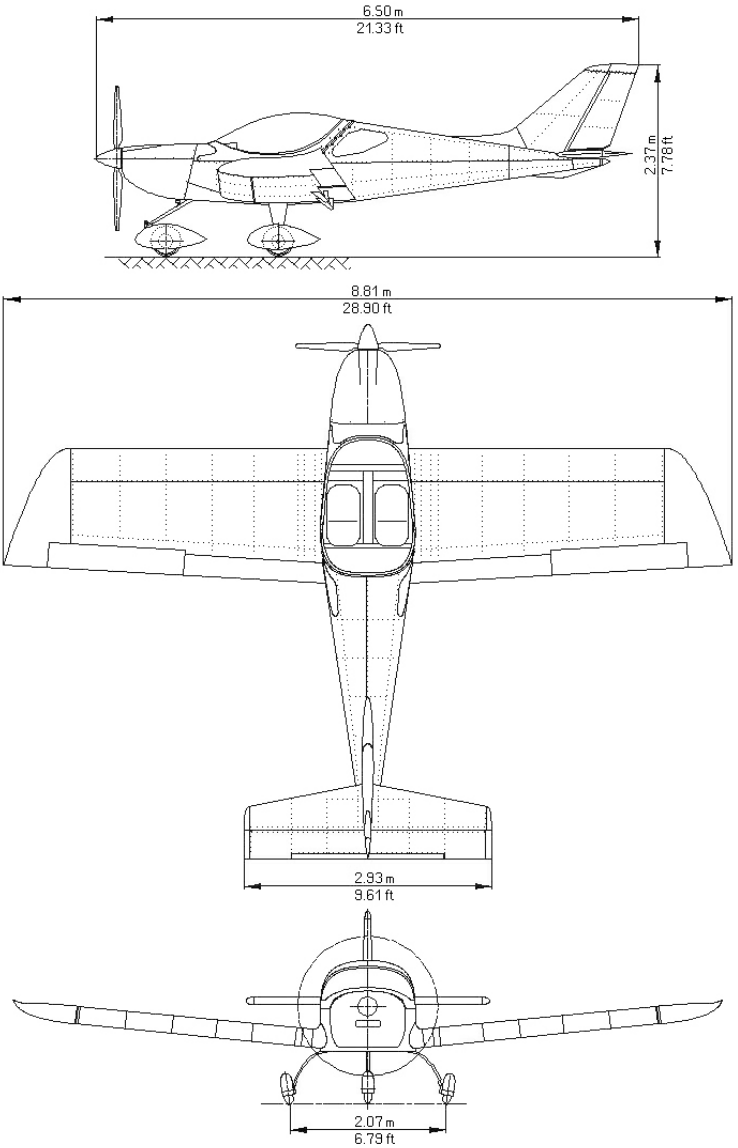
	5-10	2	8	8-1	-
	5-11	2		8-2	-
	5-12	2		8-3	-
				8-4	2
6	6-1	-		8-5	-
	6-2	-		8-6	-
	6-3	-			
	6-4	-	9	9-1	-
	6-5	-		9-2	-
	6-6	-			
	6-7	-			
	6-8	-			

Aircraft layout:



Main airplane dimensions:

Wing span	*28.90 [ft]*	*(8.81 [m])*
Length	*21.33 [ft]*	*(6.50 [m])*
Height	*7.78 [ft]*	*(2.37 [m])*
Wing area	*132.3 [sq ft]*	*(12.3 [m^2])*
Wing loading	*10 [lb/sq ft]*	*(49 [kg/m^2])*
Cockpit width	*46 [in]*	*(1.17 [m])*

Flight control surfaces travel:

Rudder	*30°* to each side
Elevator	*+ 28°/- 25°*
Aileron	*+ 20°/- 15°*
Flaps	*0° to 30°*
Aileron trim	*+ 20°/- 20°*
Elevator trim	*+ 22°/- 28°*

Engine:

Manufacturer	BRP-Rotax GmbH&Co.KG
Model number	912ULS
Maximum horsepower rating	*98.6 hp (73.5 kW) at 5800 RPM*
Cooling	liquid and air
Type	4-stroke, 4 cylinder, horizontally opposed, spark ignition engine with one central camshaft-push-rod-OHV

Propeller:

Manufacturer	WOODCOMP s.r.o.	
Model number	KLASSIC 170/3/R	
Number of blades	*3*	
Diameter	*68 [in]*	*(1720 [mm])*
Pitch setting	*17.5 ± 0.5°*	
Type	three composite blades, ground adjustable	

1.2 Summary of performances

Weights:

Max. takeoff and landing weight	*1,320 [lb]*	*(600 [kg])*
Max. weight of fuel	*180 [lb]*	*(82 [kg])*
Max. baggage weight in rear fuselage	*40 [lb]*	*(18 [kg])*
Max. baggage weight in each wing locker	*44 [lb]*	*(20 [kg])*
Empty weight (minimum equipment)	*760 [lb]*	*(345 [kg])*

NOTE

Actual empty weight is shown in Section 9, Supplement No. 02

Wing loading	*10 [lb/sq ft]*	*(49 [kg/m^2])*
Power loading	*13.39 [lb/hp]*	*(8.15 [kg/kW])*

Speeds:

Maximum at sea level	*119 [knot]*	*(137 [mph])*
Cruise, 75% power at 3,000 ft	*93 [knot]*	*(107 [mph])*

Range and endurance:

Range	*516 [NM]*	*(594 [SM])*
Endurance	*5:25 [h:mm]*	

Conditions:

Usable fuel	*29.85 [US gal]*	*(113 [liter])*
75% power of engine	*5,000 RPM*	
Altitude	*3,000 [ft]*	
Reserve	*30 minutes*	

Rate of climb:

At sea level	*825 [fpm]*	
Best angle of climb speed (v_x)	*56 [knot]*	*(64 [mph])*
Best rate of climb speed (v_y)	*62 [knot]*	*(71 [mph])*

Stall speeds:

V_{S0} – flaps down, power - idle	*32 [knot]*	*(37 [mph])*
V_{S1} – flaps up, power - idle	*39 [knot]*	*(45 [mph])*

Fuel:

Total fuel capacity	*30.12 [US gal]*	*(114 [liter])*
Total usable fuel	*29.85 [US gal]*	*(113 [liter])*
Approved types of fuel	see chapter 2.11	

Engine power:

Maximum power at *5,800 RPM*	*98.6 [hp]*	*(73.5 [kW])*
Max. continuous power at *5,500 RPM*	*92.5 [hp]*	*(69 [kW])*

2.3 Flap extended speed range - V_{S0} to V_{FE}

Flap operating range *(IAS)*:

32 - 75 [knot] (37 - 86 [mph])

2.4 Maneuvering speed - V_A

Maneuvering speed *(IAS) at 1,320 [lb]*:

88 [knot] (101 [mph])

Maneuvering speed *(IAS) at 900 [lb]*:

70 [knot] (80 [mph])

2.5 Maximum structural cruising speed – V_{NO}

Maximum structural cruising speed *(IAS)*:

108 [knot] (124 [mph])

2.6 Never exceed speed - V_{NE}

Never exceed speed *(IAS)*:

138 [knot] (158 [mph])

2.7 Service ceiling

Service ceiling ..... *14,378 [ft]*

2.8 Load factors

Maximum positive limit load factor..... *+ 4 g*
Maximum negative limit load factor..... *- 2 g*

2.9 Approved maneuvers

The *PiperSport* is approved for normal and below listed maneuvers:

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

2.10 Operating weights and loading

Max. takeoff weight	*1,320 [lb]*	*(600 [kg])*
Max landing weight	*1,320 [lb]*	*(600 [kg])*
Max. weight of fuel	*180 [lb]*	*(82 [kg])*
Max. baggage weight in rear fuselage	*40 [lb]*	*(18 [kg])*
Max. baggage weight in each wing locker	*44 [lb]*	*(20 [kg])*
Empty weight (minimum equipment)	*760 [lb]*	*(345 [kg])*

NOTE

Actual empty weight is shown in Section 9, Supplement No. 02

WARNING

Do not exceed maximum takeoff weight *1,320 [lb] (600 [kg])* !

Number of seats	*2*	
Minimum crew	*1* pilot on the left seat	
Minimum crew weight	*95 [lb]*	*(43 [kg])*
Maximum crew weight on each seat	*253 [lb]*	*(115 [kg])*

2.11 Fuel

Fuel volume:

Wing fuel tanks capacity	*2x15.06 [US gal]*	*(2x57 [liter])*
Total fuel capacity	*30.12 [US gal]*	*(114 [liter])*
Unusable fuel	*2x0.13 [US gal]*	*(2x0.5 [liter])*
Total usable fuel	*29.85 [US gal]*	*(113 [liter])*

Recommended fuel type:

(Refer to the ROTAX Operator's manual section 10.2.2 Fuel, Rotax Service Instruction SI-912-016)

MOGAS

European standard	- min. RON 95, EN 228 Super, EN 228 Super plus
US standard	- ASTM D4814
Canadian standard	- min. AKI 91, CAN/CGSB-3.5 Quality 3

CAUTION

Fuels that contain more than 5% ethanol blend have not been tested and are not permitted for use.

AVGAS

US standard - AVGAS 100 LL (ASTM D910)

AVGAS 100 LL 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. Thus it should only be used in case of problems with vapor lock or when other types of gasoline are unavailable.

2.12 Engine operating speeds and limits

Engine Model:		**ROTAX 912 ULS**
Engine Manufacturer:		**Bombardier-Rotax GMBH**
Power	***Max. Takeoff:***	**98.6 hp** *(73.5 kW)* ***at 5,800 rpm (max. 5 min.)***
	Max. Continuous:	**92.5 hp** *(69 kW)* ***at 5,500 rpm***
	Cruising (75%):	**68.4 hp** *(51 kW)* ***at 5,000 rpm***
Engine RPM	***Max. Takeoff:***	**5,800 rpm** ***(max. 5 min)***
	Max. Continuous:	**5,500 rpm**
	Cruising (75%):	**5,000 rpm**
	Idling:	**1,400 rpm** ***(minimum)***
Oil pressure	***Minimum:***	**12 psi** *(0.8 bar)* ***below 3,500 rpm***
	Maximum:	**102 psi** *(7 bar)* ***cold engine starting***
	Optimum:	**29 - 73 psi** *(2 - 5 bar)* ***above 3,500 rpm***
Oil temperature	***Minimum:***	**122° F** *(50° C)*
	Maximum:	**266° F** *(130° C)*
	Optimum:	**194 - 230° F** *(90 - 110° C)*
Cylinder head temper. (CHT)	***Minimum:***	**122° F** *(50° C)*
	Maximum:	**275° F** *(135° C)* *****
Exhaust gas temperature (EGT)	***Nominal:***	**1,472° F** *(800° C)*
	Maximum:	**1,562° F** *(850° C)*
	Max. Takeoff:	**1,616° F** *(880° C)*
Fuel press.	***Minimum:***	**2.2 psi** *(0.15 bar)*
	Maximum:	**5.8 psi** *(0.4 bar)*

***** See the Rotax Operator's manual section 10.1.2 Operating speeds and limits and section 10.2.1 Coolant, Rotax Installation manual section 12 Cooling system, Rotax Service Instruction SI-912-016, POH Section 8, paragraph 8.5.3 Coolant and Section 9, Supplement No. 02. Type of coolant used in engine.

2.13 Engine instruments markings

Rotax 912ULS 73.5 [kW] (*98.6 [hp]*)	Minimum Limit *(red line)*	Caution Range (yellow arc)	Normal Operating Range (green arc)	Caution Range (yellow arc)	Maximum Range (red line)
Engine speed [RPM]	-	0-1,400	1,400-5,500	5,500-5,800	5,800
Oil Pressure	12 psi *(0.8 bar)*	12-29 psi *(0.8-2 bar)*	29-73 psi *(2-5 bar)*	73-102 psi *(5-7 bar)*	102 psi *(7 bar)*
Oil Temperature	122°F *(50°C)*	122-194°F *(50-90°C)*	194-230°F *(90-110°C)*	230-266°F *(110-130°C)*	266°F *(130°C)*
Cylinder head Temperature (CHT)	-	-	122-275°F *(50-135°C)*	-	275°F *(135°C)*
Exhaust Gas Temp. (EGT)	-	752-932°F *(400-500°C)*	932-1,562°F *(500-850°C)*	1,562-1,616°F *(850-880°C)*	1,616°F (880°C)
Fuel Pressure	2.2 psi *(0.15 bar)*	-	2.2-5.8 psi *(0.15-0.4 bar)*	-	5.8 psi *(0.4 bar)*
Manifold Pressure	-	-	10-29 inHg	-	29 inHg

2.14 Other limitations

- ***No smoking on board of the aircraft!***
- ***Approved for Day VFR flights only.***
- ***Flight in rain***

  When flying in the rain, no additional steps are required. Aircraft qualities and performance are not substantially changed. However **VMC must be maintained !**

- ***Minimum instruments and equipment list for Day VFR flights:***
  - Airspeed indicator
  - Altimeter
  - Compass (is not required by ASTM F 2245)
  - Fuel quantity indicator
  - Tachometer (RPM)
  - Engine instruments as required by the engine manufacturer :
    - *Oil temperature indicator*
    - *Oil pressure indicator*
    - *Cylinder head temperature indicator*
  - Safety harness for every used seat

WARNING

IFR FLIGHTS AND INTENTIONAL FLIGHTS UNDER ICING CONDITIONS ARE PROHIBITED!

WARNING

EMERGENCY PARACHUTE APPROVED FOR UP TO MTOW 1,350 LBS (612 KG) AND MAX. VELOCITY 120 KNOTS !

WARNING

MINIMUM 1.58 US GAL (6 LITRES) OF FUEL QUANTITY ALLOWS APPROXIMATELY 15 MINUTES OF SAFE OPERATION!

CAUTION

Install air intake shields in front of water and oil cooler, if ambient air temperature is 32°F (0°C) or lower.

CAUTION

- *The starter should be activated for a maximum of 10 [sec], followed by 2 [min] pause for starter cooling.*
- *As soon as engine runs, adjust throttle to achieve smooth running at approx. 2,500 [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.*

4.2.3 Engine warm up, Engine check

Prior to engine check block the main wheels using chocks. Initially warm up the engine to *2,000 [rpm]* for approximately *2 [min]*, then continue to *2,500 [rpm]* till oil temperature reaches *122 [°F] (50 [°C])*. The warm up period depends on ambient air temperature.

Check both ignition circuits at *4,000 [rpm]* for Rotax 912 ULS. The engine speed drop during the time either magneto switched OFF should not exceed *300 [rpm]*. The max. engine speed drop difference between circuits L and R should be *115 [rpm]*.

NOTE

Only one magneto should be switched ON (OFF) during ignition magneto check.

Set max. power for verification of max. static engine speed *(5,000 ±100 [rpm])* 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).

4.3 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.

4.4 Normal Takeoff

4.4.1 Before takeoff

1. Altimeter - set
2. Trim - set neutral position
3. Control system - check free movement
4. Cockpit canopy - closed and locked

Recommendation: - Before takeoff, manually check the canopy is locked by pushing the canopy upwards.

5. Safety harness - fastened
6. Fuel selector - turn ON *(left or right fuel tank)*
7. Ignition switch - switched ON *(both magnetos)*
8. Wing flaps - extend as necessary

4.4.2 Takeoff

1. Brakes - apply to stop wheel rotation
2. Throttle - fully forward
3. Engine speed - check *(5,000 ±100 [rpm])*
4. Engine gauges - within limits
5. Brakes - release
6. Elevator - control stick pull
7. Nose wheel unstick - *32 [knot] (37 [mph])*
8. Airplane lift-off - *42 [knot] (48 [mph])*
9. Climb - after reaching airspeed *65 [knot] (75 [mph])*
10. Wing flaps - retract at safe altitude *(max. airspeed for flaps using is 75 [knot], 86 [mph])*

WARNING

Takeoff is prohibited if:

- *Engine is running unsteadily*
- *Engine instrument values are beyond operational limits*
- *Aircraft systems (e.g. brakes or controls) work incorrectly*
- *Crosswind velocity exceeds permitted limits (see Section 5 Performance, 5.7 Demonstrated wind performance)*

4.5 Climb

1.	Throttle	- fully forward *(max. 5,800 [rpm] for max. 5 [min],* max. continuous power *(5,500 [rpm])*
2.	Airspeed	- V_x *= 56 [knot] (64 [mph])* - V_y *= 62 [knot] (71 [mph])*
3.	Trim	- trim the airplane
4.	Engine gauges	- 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.

4.6 Best angle of climb speed (V_x): *56 [knot] (64 [mph])*

4.7 Best rate of climb speed (V_y): *62 [knot] (71 [mph])*

4.8 Cruise

Refer to Section 5, for recommended cruising figures

4.9 Descend

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

4.10 Approach

1. Approach speed - *60 [knot] (70 [mph])*
2. Throttle - as necessary
3. Wing flaps - extend as necessary
4. Trim - as necessary
5. Safety harness - tighten

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 (approximately 3,000 [rpm]), speed between 60-75 [knot] (70-86 [mph]) and check that the engine instruments indicate values within permitted limits.

4.11 Normal landing

4.11.1 Before landing

1. Throttle - as necessary
2. Airspeed - *60 [knot] (70 [mph])*
3. Wing flaps - extend as necessary
4. Trim - as necessary

4.11.2 Landing

1. Throttle - idle
2. Touch-down on main wheels
3. Apply brakes - as necessary
   (after the nose wheel touch-down)

4.11.3 After landing

1. Throttle - engine rpm set as required for taxiing
2. Wing flaps - retract
3. Trim - set neutral position

4.11.4 Engine shut down

1.	Throttle	- idle
2.	Instruments	- engine instruments within limits
3.	Switches	- switch OFF - except ***Instrument*** and ***Master***
4.	Ignition switch	- turn key to switch OFF
5.	Instrument switch	- switch OFF
6.	Master switch	- switch OFF
7.	Fuel Selector	- close

CAUTION

Rapid engine cooling should be avoided during operation. This happens above all during aircraft descent, taxiing and 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 *idle [rpm]* to stabilize the temperatures prior to engine shut down.

4.12 Short field takeoff and landing procedures

None

4.13 Balked landing procedures

1.	Throttle	- fully forward *(max. 5,800 [rpm] for max. 5 [min],* max. continuous power *(5,500 [rpm])*
2.	Climb	- after reaching *65 [knot] (75 [mph])*
3.	Trim	- adjust as necessary
4.	Wing flaps	- retract at safe altitude *(max. airspeed for flaps using is* *75 [knot], 86 [mph])*
5.	Trim	- adjust as necessary
6.	Repeat circle pattern	

4.14 Aircraft parking and tie-down

1. Ignition switch - OFF
2. Master switch - OFF
3. Fuel selector - close
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.

SECTION 5

TABLE OF CONTENTS

5. PERFORMANCE

5. PERFORMANCE

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 *(1,320 [lb] / 600 [kg])* and under ISA conditions.

The performance shown in this section is valid for aircraft equipped with ***ROTAX 912 ULS*** engine with maximum power *98.6 [hp] (73.5 [kW])* and ***WOODCOMP KLASSIC 170/3/R*** three composite blades ground adjustable propeller with pitch setting *17.5°*.

CAUTION

*Airspeeds values are valid for standard **AVIATIK WA037383 pitot-static probe**.*

5.1 Takeoff distances

Conditions: - Altitude: *0 ft* ISA
- Engine power: *full throttle*
- Flaps: *15°*

RUNWAY SURFACE	Take-off run distance	Take-off distance over *50 ft* obstacle
	ft	*ft*
CONCRETE	*463*	*1,270*
GRASS	*702*	*1,499*

5.2 Landing distances

Conditions: - Altitude: *0 ft* ISA
- Engine power: *idle*
- Flaps: *30°*
- Brakes fully depressed immediately after touch-down

RUNWAY SURFACE	Landing distance over *50 ft* obstacle	Landing run distance (braked)
	ft	*ft*
CONCRETE	*1,188*	*479*
GRASS	*1,109*	*364*

5.3 Rate of climb

Conditions: Engine: *full throttle* Flaps: *0°*	Best rate of climb speed Vy (IAS)		Rate of climb Vz
Altitude	*knot*	*mph*	*fpm*
0 ft	*62*	*71*	*825*
3000 ft	*62*	*71*	*685*
6000 ft	*62*	*71*	*540*
9000 ft	*62*	*71*	*355*

5.4 Cruise speeds

Altitude	Engine speed	IAS		CAS		TAS		MAP	Fuel consumption
ft	*rpm*	*knot*	*mph*	*knot*	*mph*	*knot*	*mph*	*in Hg*	*US gal/h*
1,000	4,200	*72*	*83*	*72*	*83*	*73*	*84*	*23.7*	*3.59*
	4,500	*81*	*93*	*80*	*92*	*81*	*93*	*24.6*	*4.15*
	4,800	*91*	*105*	*89*	*102*	*89*	*102*	*25.5*	*4.76*
	5,000	*96*	*110*	*94*	*108*	*95*	*109*	*26.1*	*5.15*
	5,300	*105*	*121*	*102*	*117*	*103*	*118*	*27.0*	*5.79*
	5,500	*112*	*129*	*108*	*124*	*109*	*125*	*27.7*	*6.26*
	5,700	*118*	*136*	*113*	*130*	*114*	*131*	*28.3*	*6.82*
3,000	4,200	*68*	*78*	*69*	*79*	*72*	*83*	*22.2*	*3.49*
	4,500	*78*	*90*	*77*	*89*	*80*	*92*	*23.0*	*4.04*
	4,800	*86*	*99*	*85*	*98*	*88*	*101*	*23.8*	*4.62*
	5,000	*93*	*107*	*91*	*105*	*94*	*108*	*24.3*	*5.02*
	5,300	*102*	*117*	*99*	*114*	*102*	*117*	*25.1*	*5.65*
	5,500	*108*	*124*	*104*	*120*	*108*	*124*	*25.5*	*6.16*
5,000	4,200	*65*	*75*	*66*	*76*	*71*	*82*	*20.5*	*3.41*
	4,500	*74*	*85*	*74*	*85*	*79*	*91*	*21.3*	*3.94*
	4,800	*83*	*95*	*82*	*94*	*87*	*100*	*22.1*	*4.54*
	5,000	*89*	*102*	*87*	*100*	*93*	*107*	*22.7*	*4.94*
	5,300	*97*	*112*	*95*	*109*	*101*	*116*	*23.5*	*5.57*
	5,500	*103*	*118*	*100*	*115*	*107*	*123*	*24.1*	*6.02*
7,000	4,200	*62*	*71*	*63*	*72*	*69*	*79*	*19.3*	*3.30*
	4,500	*69*	*79*	*70*	*81*	*77*	*89*	*20.0*	*3.86*
	4,800	*79*	*91*	*78*	*90*	*85*	*98*	*20.6*	*4.44*
	5,000	*84*	*97*	*83*	*95*	*91*	*105*	*21.2*	*4.86*
	5,300	*92*	*106*	*90*	*104*	*99*	*114*	*22.0*	*5.49*
	5,500	*98*	*113*	*95*	*109*	*105*	*121*	*22.5*	*5.89*
9,000	4,200	*57*	*66*	*59*	*68*	*67*	*77*	*18.4*	*3.22*
	4,500	*64*	*74*	*65*	*75*	*74*	*85*	*19.0*	*3.78*
	4,800	*73*	*84*	*73*	*84*	*83*	*95*	*19.6*	*4.33*
	5,000	*79*	*91*	*78*	*90*	*89*	*102*	*20.0*	*4.76*
	5,300	*86*	*99*	*85*	*98*	*97*	*112*	*20.5*	*5.39*
	5,500	*92*	*106*	*90*	*104*	*103*	*118*	*20.8*	*5.76*

5.5 RPM setting and fuel consumption

Altitude		*ft*	***1,000***					
Engine speed		*rpm*	***4,200***	***4,500***	***4,800***	***5,000***	***5,300***	***5,500***
Fuel consumption		*US gal/h*	*3.59*	*4.15*	*4.76*	*5.15*	*5.79*	*6.26*
		l/h	*13.6*	*15.7*	*18.0*	*19.5*	*21.9*	*23.7*
Airspeed	IAS	*knot*	*72*	*81*	*91*	*96*	*105*	*112*
		mph	*83*	*93*	*105*	*110*	*121*	*129*
	CAS	*knot*	*72*	*80*	*89*	*94*	*102*	*108*
		mph	*83*	*92*	*102*	*108*	*117*	*124*
	TAS	*knot*	*73*	*81*	*89*	*95*	*103*	*109*
		mph	*84*	*93*	*102*	*109*	*118*	*125*
Endurance and Range at 29.85 US gal (113 liters)								
Endurance		*hh:mm*	*8:18*	*7:11*	*6:16*	*5:47*	*5:09*	*4:46*
Range		*NM*	*607*	*583*	*558*	*551*	*531*	*520*
		SM	*698*	*670*	*642*	*633*	*611*	*598*
Endurance and Range at 23.78US gal (90 liters)								
Endurance		*hh:mm*	*6:37*	*5:43*	*4:59*	*4:36*	*4:06*	*3:47*
Range		*NM*	*483*	*464*	*445*	*439*	*423*	*414*
		SM	*556*	*534*	*511*	*504*	*486*	*476*
Endurance and Range at 15.85 US gal (60 liters)								
Endurance		*hh:mm*	*4:24*	*3:49*	*3:19*	*3:04*	*2:44*	*2:31*
Range		*NM*	*322*	*309*	*296*	*292*	*282*	*276*
		SM	*371*	*356*	*341*	*336*	*324*	*317*
Endurance and Range at 7.93US gal (30 liters)								
Endurance		*hh:mm*	*2:12*	*1:54*	*1:39*	*1:32*	*1:22*	*1:15*
Range		*NM*	*161*	*155*	*148*	*146*	*141*	*138*
		SM	*185*	*178*	*170*	*168*	*162*	*159*
Endurance and Range at 3.96 US gal (15 liters)								
Endurance		*hh:mm*	*1:06*	*0:57*	*0:49*	*0:46*	*0:41*	*0:37*
Range		*NM*	*81*	*77*	*74*	*73*	*70*	*69*
		SM	*93*	*89*	*85*	*84*	*81*	*79*

Altitude		*ft*	***3,000***					
Engine speed		*rpm*	***4,200***	***4,500***	***4,800***	***5,000***	***5,300***	***5,500***
Fuel consumption		*US gal/h*	*3.49*	*4.04*	*4.62*	*5.02*	*5.65*	*6.16*
		l/h	*13.2*	*15.3*	*17.5*	*19.0*	*21.4*	*23.3*
Airspeed	IAS	*knot*	*68*	*78*	*86*	*93*	*102*	*108*
		mph	*78*	*90*	*99*	*107*	*117*	*124*
	CAS	*knot*	*69*	*77*	*85*	*91*	*99*	*104*
		mph	*79*	*89*	*98*	*105*	*114*	*120*
	TAS	*knot*	*72*	*80*	*89*	*95*	*103*	*109*
		mph	*83*	*92*	*101*	*108*	*117*	*124*
Endurance and Range at 29.85 US gal (113 liters)								
Endurance		*hh:mm*	*8:33*	*7:23*	*6:27*	*5:56*	*5:17*	*4:50*
Range		*NM*	*616*	*591*	*569*	*559*	*539*	*523*
		SM	*708*	*680*	*654*	*643*	*620*	*602*
Endurance and Range at 23.78 US gal (90 liters)								
Endurance		*hh:mm*	*6:48*	*5:53*	*5:08*	*4:44*	*4:12*	*3:51*
Range		*NM*	*490*	*471*	*453*	*445*	*429*	*417*
		SM	*564*	*541*	*521*	*512*	*494*	*479*
Endurance and Range at 15.85 US gal (60 liters)								
Endurance		*hh:mm*	*4:32*	*3:55*	*3:25*	*3:09*	*2:48*	*2:34*
Range		*NM*	*327*	*314*	*302*	*297*	*286*	*278*
		SM	*376*	*361*	*347*	*341*	*329*	*320*
Endurance and Range at 7.93 US gal (30 liters)								
Endurance		*hh:mm*	*2:16*	*1:57*	*1:42*	*1:34*	*1:24*	*1:17*
Range		*NM*	*163*	*157*	*151*	*148*	*143*	*139*
		SM	*188*	*180*	*174*	*171*	*165*	*160*
Endurance and Range at 3.96 US gal (15 liters)								
Endurance		*hh:mm*	*1:08*	*0:58*	*0:51*	*0:47*	*0:42*	*0:38*
Range		*NM*	*82*	*78*	*75*	*74*	*72*	*69*
		SM	*94*	*90*	*87*	*85*	*82*	*80*

Altitude		*ft*	***5,000***					
Engine speed		*rpm*	***4,200***	***4,500***	***4,800***	***5,000***	***5,300***	***5,500***
Fuel consumption		*US gal/h*	*3.41*	*3.94*	*4.54*	*4.94*	*5.57*	*6.02*
		l/h	*12.9*	*14.9*	*17.2*	*18.7*	*21.1*	*22.8*
Airspeed	IAS	*knot*	*65*	*74*	*83*	*89*	*97*	*103*
		mph	*75*	*85*	*95*	*102*	*112*	*118*
	CAS	*knot*	*66*	*74*	*82*	*87*	*95*	*100*
		mph	*76*	*85*	*94*	*100*	*109*	*115*
	TAS	*knot*	*71*	*79*	*87*	*93*	*101*	*107*
		mph	*82*	*91*	*100*	*107*	*116*	*123*
Endurance and Range at 29.85 US gal (113 liters)								
Endurance		*hh:mm*	*8:45*	*7:34*	*6:34*	*6:02*	*5:21*	*4:57*
Range		*NM*	*622*	*599*	*572*	*562*	*541*	*531*
		SM	*715*	*688*	*658*	*646*	*622*	*610*
Endurance and Range at 23.78 US gal (90 liters)								
Endurance		*hh:mm*	*6:58*	*6:02*	*5:14*	*4:48*	*4:16*	*3:56*
Range		*NM*	*495*	*477*	*456*	*448*	*431*	*423*
		SM	*569*	*548*	*524*	*515*	*496*	*486*
Endurance and Range at 15.85 US gal (60 liters)								
Endurance		*hh:mm*	*4:38*	*4:01*	*3:29*	*3:12*	*2:50*	*2:37*
Range		*NM*	*330*	*318*	*304*	*298*	*287*	*282*
		SM	*380*	*365*	*349*	*343*	*331*	*324*
Endurance and Range at 7.93 US gal (30 liters)								
Endurance		*hh:mm*	*2:19*	*2:00*	*1:44*	*1:36*	*1:25*	*1:18*
Range		*NM*	*165*	*159*	*152*	*149*	*144*	*141*
		SM	*190*	*183*	*175*	*172*	*165*	*162*
Endurance and Range at 3.96 US gal (15 liters)								
Endurance		*hh:mm*	*1:09*	*1:00*	*0:52*	*0:48*	*0:42*	*0:39*
Range		*NM*	*83*	*79*	*76*	*75*	*72*	*70*
		SM	*95*	*91*	*87*	*86*	*83*	*81*

Altitude		*ft*	***7,000***					
Engine speed		*rpm*	***4,200***	***4,500***	***4,800***	***5,000***	***5,300***	***5,500***
Fuel consumption		*US gal/h*	*3.30*	*3.86*	*4.44*	*4.86*	*5.49*	*5.89*
		l/h	*12.5*	*14.6*	*16.8*	*18.4*	*20.8*	*22.3*
Airspeed	IAS	*knot*	*62*	*69*	*79*	*84*	*92*	*98*
		mph	*71*	*79*	*91*	*97*	*106*	*113*
	CAS	*knot*	*63*	*70*	*78*	*83*	*90*	*95*
		mph	*72*	*81*	*90*	*95*	*104*	*109*
	TAS	*knot*	*69*	*77*	*85*	*91*	*99*	*105*
		mph	*79*	*89*	*98*	*105*	*114*	*121*
Endurance and Range at 29.85 US gal (113 liters)								
Endurance		*hh:mm*	*9:02*	*7:44*	*6:43*	*6:08*	*5:26*	*5:04*
Range		*NM*	*624*	*595*	*571*	*559*	*538*	*532*
		SM	*718*	*685*	*657*	*643*	*619*	*612*
Endurance and Range at 23.78 US gal (90 liters)								
Endurance		*hh:mm*	*7:12*	*6:09*	*5:21*	*4:53*	*4:19*	*4:02*
Range		*NM*	*497*	*474*	*455*	*445*	*429*	*424*
		SM	*572*	*545*	*523*	*512*	*493*	*487*
Endurance and Range at 15.85 US gal (60 liters)								
Endurance		*hh:mm*	*4:48*	*4:06*	*3:34*	*3:15*	*2:53*	*2:41*
Range		*NM*	*331*	*316*	*303*	*297*	*286*	*283*
		SM	*381*	*364*	*349*	*341*	*329*	*325*
Endurance and Range at 7.93 US gal (30 liters)								
Endurance		*hh:mm*	*2:24*	*2:03*	*1:47*	*1:37*	*1:26*	*1:20*
Range		*NM*	*166*	*158*	*152*	*148*	*143*	*141*
		SM	*191*	*182*	*174*	*171*	*164*	*162*
Endurance and Range at 3.96 US gal (15 liters)								
Endurance		*hh:mm*	*1:12*	*1:01*	*0:53*	*0:48*	*0:43*	*0:40*
Range		*NM*	*83*	*79*	*76*	*74*	*71*	*71*
		SM	*95*	*91*	*87*	*85*	*82*	*81*

Altitude		*ft*	***9,000***					
Engine speed		*rpm*	***4,200***	***4,500***	***4,800***	***5,000***	***5,300***	***5,500***
Fuel consumption		*US gal/h*	*3.22*	*3.78*	*4.33*	*4.76*	*5.39*	*5.76*
		l/h	*12.2*	*14.3*	*16.4*	*18.0*	*20.4*	*21.8*
Airspeed	IAS	*knot*	*57*	*64*	*73*	*79*	*86*	*92*
		mph	*66*	*74*	*84*	*91*	*99*	*106*
	CAS	*knot*	*59*	*65*	*73*	*78*	*85*	*90*
		mph	*68*	*75*	*84*	*90*	*98*	*104*
	TAS	*knot*	*67*	*74*	*83*	*89*	*97*	*103*
		mph	*77*	*85*	*95*	*102*	*112*	*118*
Endurance and Range at 29.85 US gal (113 liters)								
Endurance		*hh:mm*	*9:16*	*7:53*	*6:53*	*6:16*	*5:32*	*5:10*
Range		*NM*	*621*	*584*	*572*	*558*	*537*	*534*
		SM	*714*	*672*	*658*	*642*	*618*	*614*
Endurance and Range at 23.78 US gal (90 liters)								
Endurance		*hh:mm*	*7:23*	*6:17*	*5:29*	*4:59*	*4:24*	*4:07*
Range		*NM*	*495*	*465*	*456*	*445*	*428*	*425*
		SM	*569*	*535*	*524*	*511*	*492*	*489*
Endurance and Range at 15.85 US gal (60 liters)								
Endurance		*hh:mm*	*4:55*	*4:11*	*3:39*	*3:19*	*2:56*	*2:45*
Range		*NM*	*330*	*310*	*304*	*296*	*285*	*283*
		SM	*379*	*357*	*349*	*341*	*328*	*326*
Endurance and Range at 7.93 US gal (30 liters)								
Endurance		*hh:mm*	*2:27*	*2:05*	*1:49*	*1:39*	*1:28*	*1:22*
Range		*NM*	*165*	*155*	*152*	*148*	*143*	*142*
		SM	*190*	*178*	*175*	*170*	*164*	*163*
Endurance and Range at 3.96 US gal (15 liters)								
Endurance		*hh:mm*	*1:13*	*1:02*	*0:54*	*0:49*	*0:44*	*0:41*
Range		*NM*	*82*	*78*	*76*	*74*	*71*	*71*
		SM	*95*	*89*	*87*	*85*	*82*	*81*

5.6 Airspeed indicator system calibration

IAS	CAS
knot	
30	*35*
35	*39*
40	*44*
45	*48*
50	*53*
55	*57*
60	*62*
65	*66*
70	*71*
75	*75*
80	*79*
85	*84*
90	*88*
95	*93*
100	*97*
105	*102*
110	*106*
115	*111*
120	*115*
125	*120*
130	*124*
135	*129*
140	*133*

IAS	CAS
mph	
35	*41*
40	*45*
45	*49*
50	*54*
55	*58*
60	*63*
65	*67*
70	*72*
75	*76*
80	*81*
85	*85*
90	*89*
95	*94*
100	*98*
105	*103*
110	*107*
115	*112*
120	*116*
125	*121*
130	*125*
135	*130*
140	*134*
145	*139*
150	*143*
155	*148*
160	*152*

5.7 Demonstrated wind performance

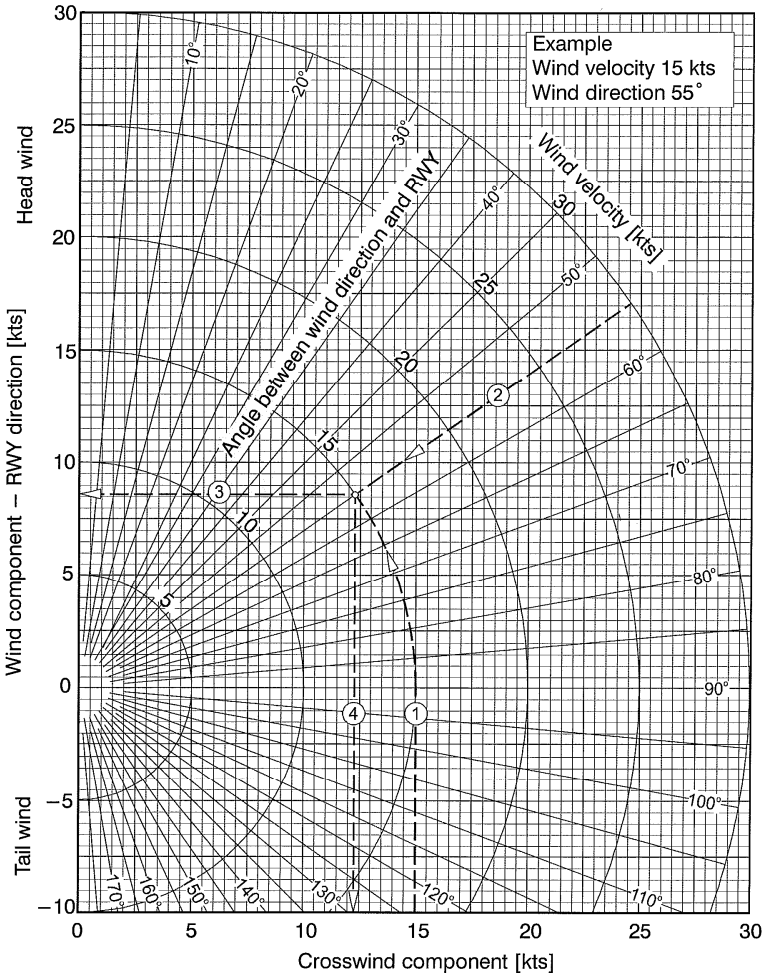
Max. demonstrated headwind velocity for take-off and landing:

24 [knot]

Max. demonstrated crosswind velocity for take-off and landing:

12 [knot]

Wind components figure



Example: *1. Wind velocity .....15 knots*
2. Wind direction.....55°
3. Headwind component..... 8.6 knots
4. Crosswind component..... 12.3 knots

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8.3 Towing instructions

To handle the airplane on ground use the *Tow Bar*, or if pushing the airplane by hand, push on the aft fuselage, placing your hands over an area of skin supported by 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 Tie-down instructions

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.

Tie-down procedures:

1. Fuel Selector close, Master switch and other switches switched OFF, Ignition switch 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.

8.5 Servicing operating fluids

See appropriate chapters in the ROTAX engine Maintenance and Operator's manuals and *PiperSport* aircraft Maintenance manual for more instructions.

8.5.1 Approved fuel grades and specifications

Recommended fuel type:

(refer to the ROTAX Operator's manual section 10.2.2 Fuel, Rotax Service Instruction SI-912-016)

MOGAS

European standard	- min. RON 95, EN 228 Super, EN 228 Super plus
US standard	- ASTM D4814
Canadian standard	- min. AKI 91, CAN/CGSB-3.5 Quality 3

CAUTION

Fuels that contain more than 5% ethanol blend have not been tested and are not permitted for use.

AVGAS

US standard - AVGAS 100 LL (ASTM D910)

AVGAS 100 LL 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. Thus it should only be used in case of problems with vapor lock or when other types of gasoline are unavailable.

Fuel volume:

Wing fuel tanks volume.....*2x15.06 [US gal] (2x57 [liter])*

Unusable fuel quantity .....*2x0.13 [US gal] (2x0.5 [liter])*

8.5.2 Approved oil grades and specifications

Recommended oil type:

(refer to the Rotax Operator's manual section 10.2.3 Lubricants, Rotax Service Instruction SI-912-016)

Motorcycle 4-stroke engine oil of registered brand with gear additives.

Use only oil with API "SG" classification or higher!

Use multi-grade oil. Use of mineral oil is not recommended.

Type of oil used by aircrafts manufacturer:

- see Section 9, Supplement No. 02

Oil volume:

Minimum .....*0.87 [US gal] (3.3 [liter])*

Maximum .....*1.0 [US gal] (3.8 [liter])*