PILOT'S OPERATING HANDBOOK

for all aircraft of the IKARUS C42 SERIES

Model: C42 / C42B / C42C / C42CS

LTZ-Nr. : 61141 / 61141.1 / 61141.5 / 61141.7

Type : **IKARUS C 42 Series**

Airplane Identification: _____

Serial Number: _____

Reference: POH C42 SERIES ISSUE1 (B) REV7

Ref int : PRO_200412_C2_DL_CI_POH-B-Issue1_v7

Date: 25 April 2020

This handbook is to be kept in the aircraft at all times.

The described options of the C42 Series use are certified for Germany and have been tested in Germany.

Please note that for using the C42 Series as a tow plane for towing gliders, towing aerial signs or decanting sky divers, different regulations may apply in different countries. Please contact your local authorities for further clarification.

This manual is a translation from the original in German, in case of doubts the original version is decisive. (PFBH C42 Serie Ausgabe-4 rev6 23/08/2019)

Table of Revisions

Rev. No.	Issue No.	Description	Date	Signature
0	1	Creation of POH for Belgium.	20/01/2017	L.Chan
1	1	Adding noise section	23/02/2017	L.Chan
2	1	Minor text changes	07/09/2017	L.Chan
3	1	Speed modification and text changes	12/09/2017	L.Chan
4	1	Change of contact details	23/02/2019	L.Chan
5	1	Change of contact details	30/06/2019	L.Chan
6	1	Update of certain points, indicated by a ligne on the left side	12/04/2020	L.Chan
7	1	Change of contact details	25/04/2020	L.Chan

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Owner _____

_____

_____

This Pilot Operating Handbook belongs to the aircraft: _____
and is to be kept in the aircraft at all times.

Introduction

C42 series aircraft are built in compliance with the airworthiness requirements of various countries and are certified as Microlight, Ultralight, Advanced Ultralight and Light Sport Aircraft.

To operate the aircraft the pilot must hold a license or certificate appropriate to this category of aircraft. The aircraft is not to be flown unless it is registered, carries registration markings in accordance with the requirements of the country in which the aircraft is to be flown, and has a Permit to Fly or certificate of Airworthiness valid in the country of operation.

The aircraft is to be flown under daytime VFR conditions. Flight in conditions other than daytime VFR without the correct aircraft equipment and pilot ratings is extremely dangerous and can result in serious injury or death.

Pilots holding licenses for other categories, even higher ones, are required to be checked out by an appropriately qualified instructor prior to flying this aircraft as it possesses characteristics that are unique to light sport type aircraft. These characteristics include low inertia, susceptibility to turbulence and wind gradient and special engine considerations.

The safety of all occupants, the aircraft and persons on the ground are the sole responsibility of the pilot in command. Do not operate this aircraft in a manner that would endanger the occupants, the aircraft or persons on the ground.

Bear in mind that the engines used in C42 aircraft are not certified aviation engines and thus may not offer the same safety standards found in other classes of aircraft. Prepare your flight so that you can always reach an emergency landing area should you experience engine failure. On cross country flights, ALWAYS keep an emergency landing field in sight.

Changes to the control system, structure, wings and engine are prohibited.

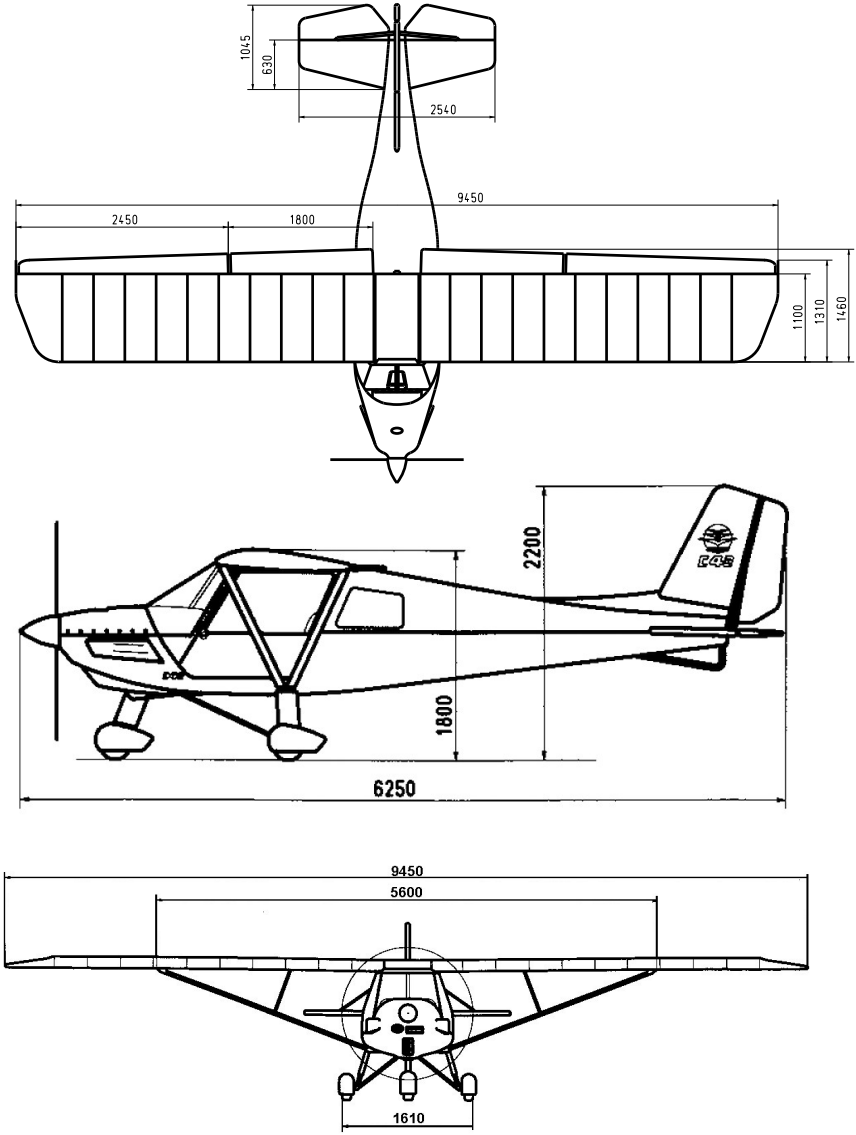
These changes would invalidate any certificate of airworthiness or permit to fly and as such would result in an insurance becoming null and void.

All operating difficulties and equipment failures should be reported to your dealer or the manufacturer.

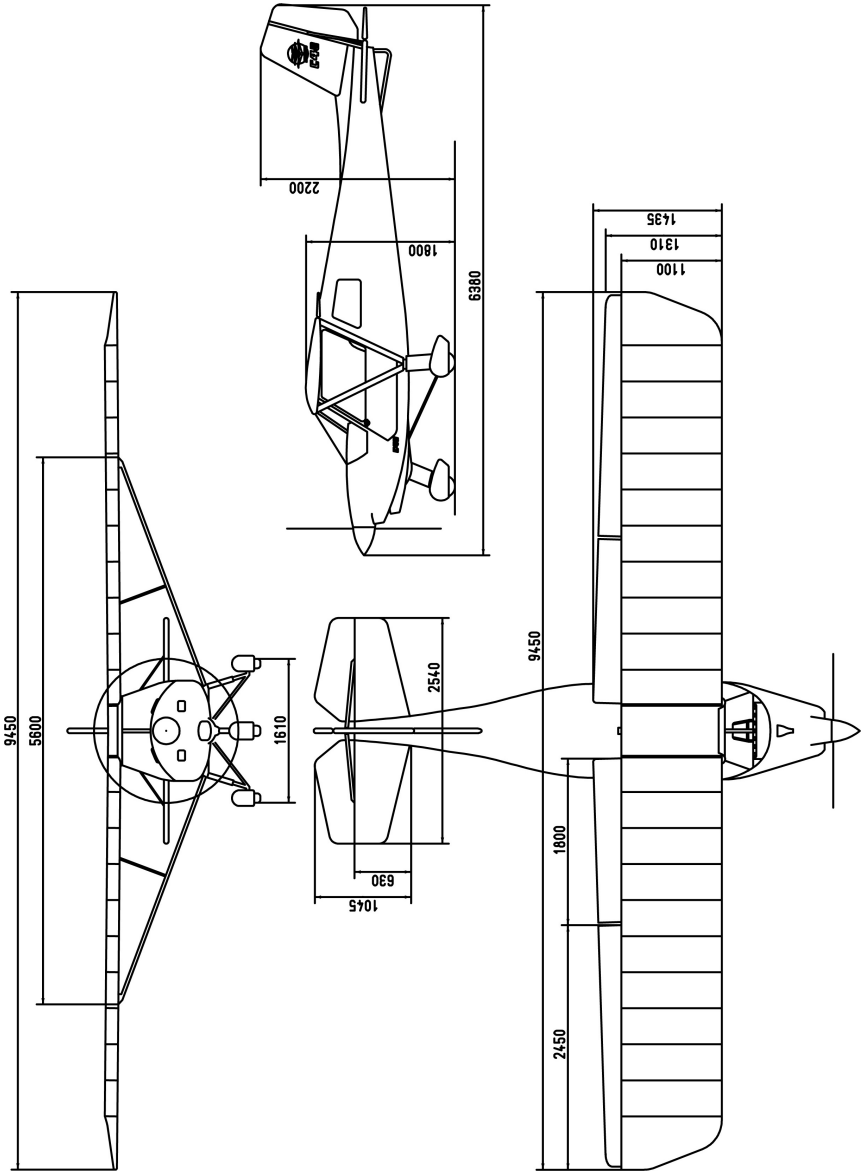
For fire safety reasons, smoking is prohibited on board of the aircraft.

Three Side Views

IKARUS C42 (C42A)



IKARUS C42B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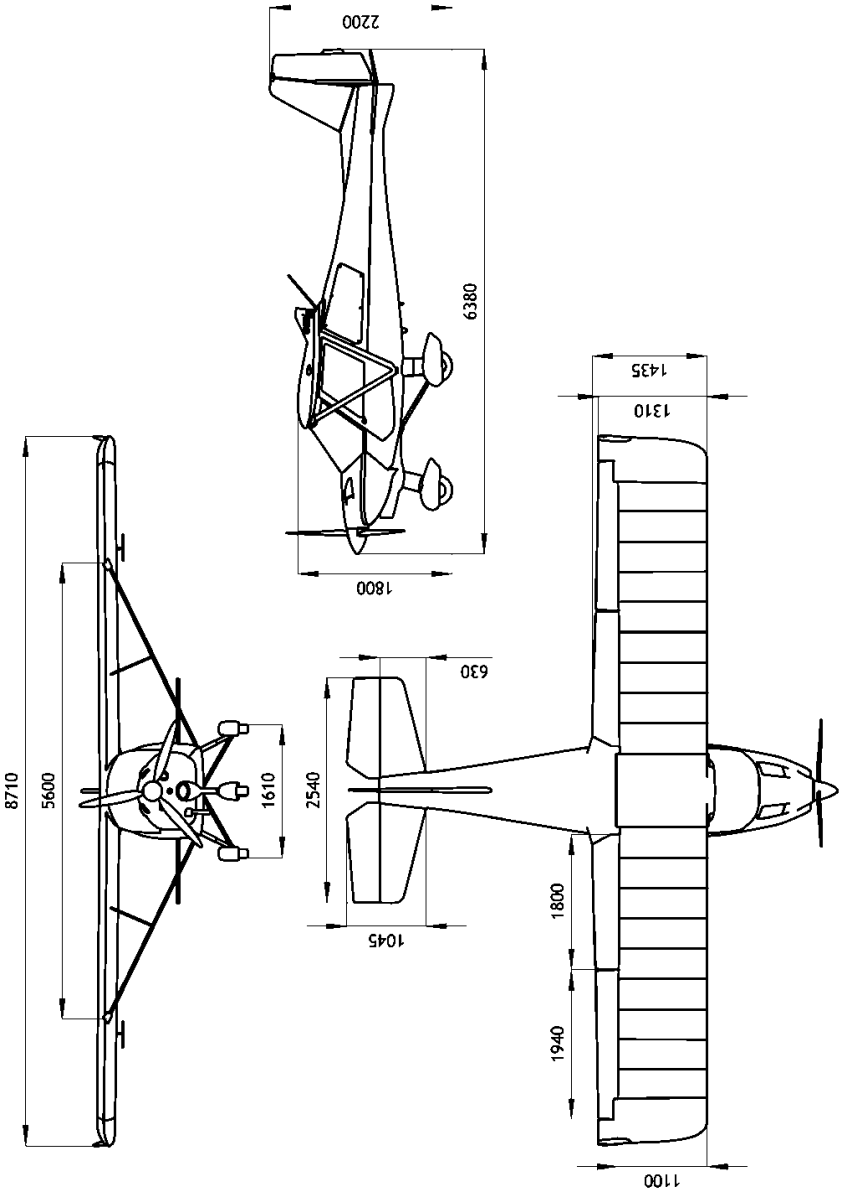
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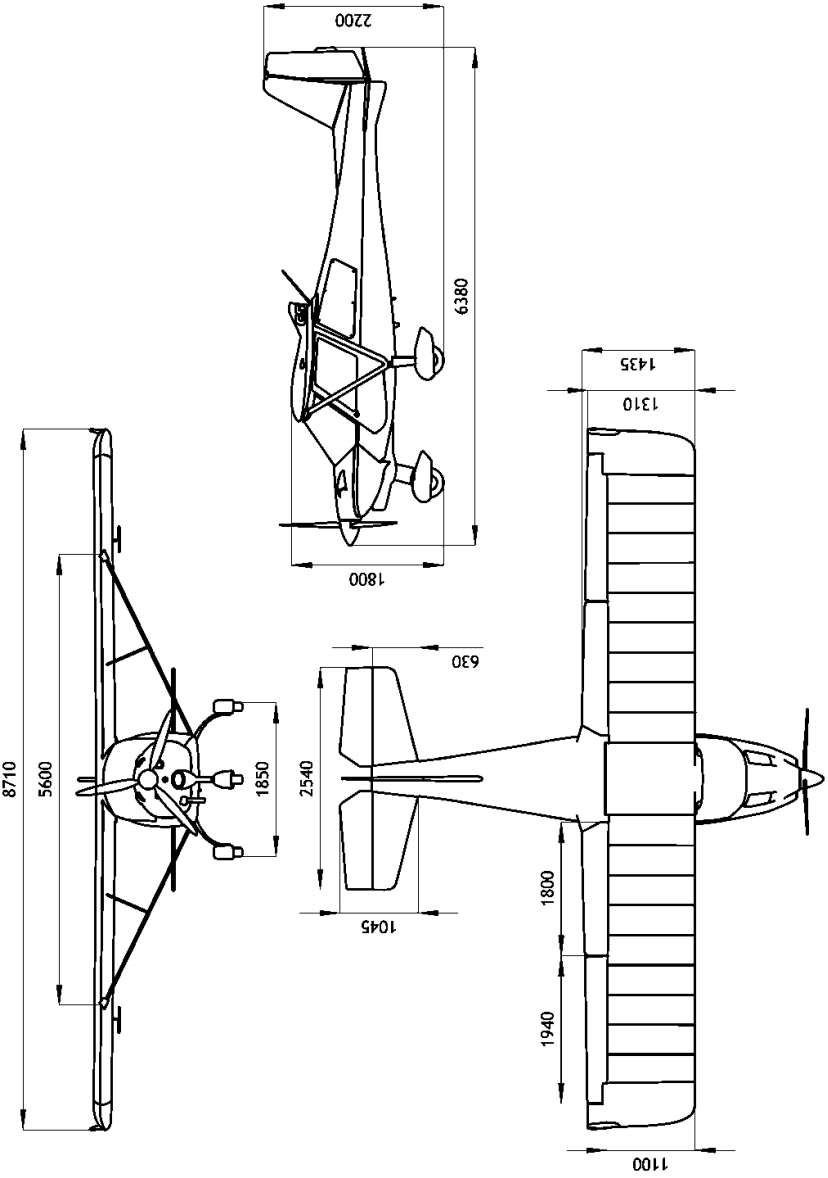

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1. Operating Limits

1.1 Air Speeds

Speed to never-exceed:			
C42 (C42A)	V_{NE}	=	180 km/h (97 kts)
C42B & C42C	V_{NE}	=	216 km/h (116 kts)
C42CS	V_{NE}	=	225 km/h (121 kts)
Speed in turbulent air:			
C42 (C42A), C42B & C42C	V_B	=	180 km/h (97 kts)
C42CS	V_B	=	187 km/h (100 kts)
Maximum maneuver speed:	V_A	=	148 km/h (80 kts)
Speed with landing flaps set:			
until 2009 :	V_{fe}	=	105 km/h (56 kts)
since 2010 :	V_{fe}	=	117 km/h (63 kts)
Stall speed:			
flap position I :	V_S	=	75 km/h (40 kts)
flap position II :	V_{S1}	=	70 km/h (38 kts)
flap position III :	V_{S0}	=	65 km/h (35 kts)

If V_A speed is exceeded, only little rudder movement are allowed.

1.2 Weights

Maximum take-off mass:	450,0 kg (992 lb)
Maximum take-off mass, with installed rescue system:	472,5 kg (1041 lb)
Empty weight:	see last weighting report
Payload:	see last weighting report min. 65 kg (144 lb)

1.3 Structural Limitations

Maximal admissible positive load factor: + 4 g
Maximal admissible negative load factor: - 2 g

1.4 Center of Gravity Limits

Reference datum (PB) : Wing leading edge at a rib station

Forward center of gravity: 300 mm after PB (11.8 in)
Rearward center of gravity: 560 mm after PB (22.0 in)

1.5 Air Speed Markings

White arc:	until 2009:	71 - 105 km/h	(38 - 57 kts)
	since 2010:	71 - 117 km/h	(38 - 63 kts)
Green arc:	C42 (C42A), B & C	79 - 180 km/h	(43 - 97 kts)
	C42CS	79 - 187 km/h	(43 - 100 kts)
Yellow arc:	C42 (C42A), B & C	180 - 216 km/h	(97 – 116 kts)
	C42CS	180 - 225 km/h	(97 – 121 kts)
Yellow triangle:		V_X = 100 km/h	(54 kts)
Yellow line:		V_A =148 km/h	(75 kts)
Red line:	C42 (C42A)	V_{NE} =180 km/h	(97 kts)
	C42B & C42C	V_{NE} = 216 km/h	(116 kts)
	C42CS	V_{NE} = 225 km/h	(121 kts)

ATTENTION : C42 - No yellow arc ! -> VB = V_{NE}

The deviation curve for the airspeed indicator can be interpolated from the following table.

IAS km/h	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
EAS km/h	65	74	83	91	100	109	117	125	134	142	151	160	168	177	185

1.6 Engine RPM Limitations

Maximum engine RPM:	n = 5800 trs/min, for 5 min. max
Maximum continuous RPM:	n = 5500 trs/min

1.7 RPM Gauge Markings

Yellow arc:	n = 5500 - 5800 rpm
Red line:	n = 5800 rpm

1.8 Flap Settings

Position I:	cruising
Position II:	take-off / landing
Position III:	landing

1.9 Maximal Speed for Flap Settings

Position I:	VNE (see 1.5)
Position II:	max. 135 km/h (73 kts)
Position III:	max. 120 km/h (65 kts)

1.10 Propellers for BRP ROTAX 912 UL

With propeller WARP DRIVE 2-blade 68” (1.72 m Ø) constant speed,
Pitch 23.5° à 400 mm from hub,

Full throttle RPM on ground	max. 5200	1/min
Propeller RPM	approx. n = 2300	1/min

With propeller WARP DRIVE 3-blade 68” (1.72 m Ø)
Pitch 21.0° à 400 mm from hub,

Full throttle RPM on ground	max. 5200	1/min
Propeller RPM	approx. n = 2300	1/min

With propeller Sport-Prop 3-blade 68” (1.72 m Ø)
Pitch 19.5° à 400 mm from hub,

Full throttle RPM on ground	max. 4900	1/min
Propeller RPM	approx. n = 2150	1/min

With propeller GSC 3-blade 68” (1,72 m Ø)
Pitch 21.0° à 400 mm from hub,

Full throttle RPM on ground	max. 4900	1/min
Propeller RPM	approx. n = 2150	1/min

With propeller Neuform CR2-75 2-blade 69” (1,75 m Ø)
Pitch 27.0° à r = 365mm from hub,

Full throttle RPM on ground	max. 5100	1/min
Propeller RPM	approx. n = 2250	1/min

With propeller Neuform CR3-75 3-blade 69” (1,75 m Ø)
Pitch 24.0° à r = 365 mm from hub,

Full throttle RPM on ground	max. 4800	1/min
Propeller RPM	approx. n = 2100	1/min

With propeller Kiev Prop BB 263/1800 3-blade (1,71 m Ø)
Pitch 22,0° à r = 400 mm from hub,

Full throttle RPM on ground	max. 4800	1/min
Propeller RPM	approx. n = 2100	1/min

With propeller Helix H50F-1,75m-R-SI-12-3 3-blade (1,75 m Ø),
Pitch 16.0° à r = 656 mm from hub

Full throttle RPM on ground	max. 4880	1/min
Propeller RPM	approx. n = 2150	1/min

1.11 Hélices pour BRP ROTAX 912 ULS

With propeller WARP DRIVE 3-blade 68” (1,72 m Ø)
Pitch 25.0° à 400 mm from hub,

Full throttle RPM on ground	max. 5200	1/min
Propeller RPM	approx. n =2150	1/min

With propeller GSC 3-blade 68” (1,72 m Ø)
Pitch 25.0° à 400 mm from hub,

Full throttle RPM on ground	max. 4800	1/min
Propeller RPM	approx. n = 1975	1/min

With propeller Neuform CR3-75 3-blade 69” (1,75 m Ø)
Pitch 27.0° à r = 365 mm from hub,

Full throttle RPM on ground	max. 4900	1/min
Propeller RPM	approx. n = 2000	1/min

With propeller Neuform CR3-V-R2H 3-blade 71” (1,80 m Ø), variable
Pitch de 16° à 30° à r = 750 mm from hub,

Full throttle RPM on ground	entre. 4200 - 5600	1/min
Propeller RPM	approx. n = 1700 - 2300	1/min

With propeller Kiev Prop BB 283/1800 3-blade (1,80 m Ø),
Pitch 24,0° à r = 400 mm from hub,

Full throttle RPM on ground	max. 4900	1/min
Propeller RPM	approx. n = 2000	1/min

With propeller Helix H50F-1,75m-R-S-14-3 3-blade (1,75 m Ø),
Pitch 17.0° à r = 656 mm from hub

Full throttle RPM on ground	max. 4800	1/min
Propeller RPM	approx. n = 1975	1/min

With propeller DUC Hélices Flash -1,75m 3-blade Composite (1,75 m Ø),
Pitch 23.5° à r = 660 mm from hub

Full throttle RPM on ground	max. 5250	1/min
Propeller RPM	approx. n = 2160	1/min

1.12 Noise Table for BRP ROTAX 912 UL and 912 ULS

The C42 Series is in accordance with the regulations in force and does not exceed the noise limit of 65dB (A)

1.12.1 ROTAX 912 UL

Propellers	dB (A)			
	C42	C42B	C42C	C42CS
WARP DRIVE 2 blade	58.1	58.1	58.1	58.1
WAPR DRIVE 3 blade	59.4	59.4	59.4	59.4
Sport-Prop 3 blade	60.0	60	60.0	n/a
GSC 3 blade	59.27	59.27	59.27	n/a
Neuform CR2-75 2 blade	59.3	59.3	59.3	59.3
Neuform CR3-75 3 blade	55.8	55.8	55.8	55.8
Kiev Prop BB 263/1800 3 blade	59.1	59.1	59.1	59.1
Helix H50F 3 blade	59.6	59.6	59.6	59.6

1.12.2 ROTAX 912 ULS

Propellers	dB (A)			
	C42	C42B	C42C	C42CS
WAPR DRIVE 3 blade	59.8	59.8	59.8	59.8
GSC 3 blade	59.8	59.8	59.8	n/a
Neuform CR3-75 3 blade	58.5	58.5	58.5	58.5
Neuform CR3-V-R2H 3 blade	59.0	59.0	59.0	59.0
Kiev Prop BB 283/1800 3 blade	59.7	59.8	59.8	59.8
Helix H50F 3 blade	59.7	59.7	59.7	59.7
DUC Flash 3 blade	59.5	59.5	59.5	59.5

1.13 Engine Limitations

According to the operating manual ROTAX engines:

	ROTAX 912 UL	**ROTAX 912 ULS**
Take-off (5 min)	81 hp / 5800 rpm	100 hp / 5800 rpm
Continuous	79 hp / 5500 rpm	95 hp / 5500 rpm
75%	59 hp / 5000 rpm	69 hp / 5000 rpm
65%	51 hp / 4800 rpm	61 hp / 4800 rpm
55%	43 hp / 4300 rpm	51 hp / 4300 rpm
Type of oil	AERO Shell Sport Plus 4 (for other types, see operating manual ROTAX)	
Oil Quantity	min. 2.6 l à max. 3.05 l	
Oil temperature	min. 50°C max. 140°C optimum 90°-110°C	min. 50°C max. 130°C
Oil pressure	Pression normale 2 - 5 bar (Démarrage froid 7 bar)	
Fuel	Euro-Super ROZ 95 sans plomb (DIN EN228 max. 5% éthanol) Super Plus ROZ 98 sans plomb (DIN EN228 max 5% éthanol) AVGAS 100 LL ou AVGAS UL91	
Fuel pressure	0.15 - 0.4 bar	
Cyl. Head temp.	max. 150°C optimum 110°C	max. 135°C
Magneto check	à 4000 trs/min	
RPM drop	max. 300 trs/min	

2. Restrictions

- Aerobatics and maneuvers with more than 60° bank are prohibited
- Daylight, VFR conditions only.
- No flight in icing conditions
- Do not attempt flight in turbulent conditions or in winds exceeding 40 km/h (22 kts), and less when it is gusty.
- Always follow the appropriate regulations for this category of aircraft.

3. Note to Engine Operation

The Rotax 912 is a 4-cylinder, four stroke, horizontally opposed, water-cooled engine.

Never move the prop with the ignition (MAG) switches on!

Fuel type for four-stroke 912 UL and 912 ULS engine:

Super leaded or unleaded (according to DIN EN 228 with max. 5% ethanol), AVGAS 100 LL or AVGAS UL91

To start the engine:

Main fuel valve	OPEN
Electrical fuel pump	ON
Throttle	IDLE
Choke	OPEN
Carburetor heat	OFF
Ignition (both magnetos)	ON
Propeller area	CLEAR
Brakes	PARK
After engine starts, choke	CLOSED

If the engine does not start, repeat the starting procedure.

If the engine has been flooded, close main fuel valve, open the throttle to a half and start the engine. When the engine starts, quickly reduce the throttle to idle.

A four-stroke engine requires a long warm up period. Run the engine at 2000 rpm for at least 2 minutes then increase to 2500 rpm – 3000 rpm until the oil temperature is at least 50°C (122°F).

The cylinder heads of the ROTAX 912 engine are liquid-cooled whereas the cylinder barrels are air-cooled.

In the case of the C42 (C42A), there are separate cooling systems for the coolant and the oil.

In the case of the C42B, C42C and C42CS only the coolant is cooled by a cooler. The coolant and oil systems are connected to one heat exchanger; thus, the temperatures of both fluids adapt to each other. The temperatures of the coolant, oil and cylinder head is therefore, almost identical. Due to heat exchange the oil also warms up faster during the run-up phase. It is, however, still necessary to mask the water cooler if optimum engine temperature (>90°C) is to be achieved during cold weather operation (max. one third of the surface may be covered with tape or self-adhesive neoprene).

Perform the MAG check at 4000 rpm. Rpm drop should not exceed 300 rpm with a maximum difference between MAGs of 115 rpm.

In case your aircraft is equipped with a cowl flap, please refer to the instructions in the paragraph 4.9 : Equipped with Optional Cowl Flap

4. Flight Operations

4.1 Taxiing

The nose wheel steering is conventional and is directly connected to the rudder pedals. Push the right pedal to turn right. Push the left pedal to turn left.

Taxiing is simple. The turning radius of the C-42 is small, and the plane handles cross wind during taxing very well.

When taxiing with a strong tail wind, hold the control stick firmly in the neutral or nose-down position.

When taking off or landing on bumpy grass strips, exercise caution to avoid striking the propeller.

4.2 Take-off and Climb

After completing the "before take-off" checklist:

Runway and approach are cleared: LINE UP

Set trim to neutral. (with an electrical trim the third lamp from above)

Wing flaps in take-off position (flap position II).

Gently bring the throttle to full forward position, check tachometer.

At full throttle, the tips of the propeller blades produce hard knocking sounds.

Pull the stick slightly back during the initial roll.

The nose wheel will lift off at approx. 50 km/h (27 kts).

Further accelerate with the nose wheel up 5-10cm off the ground.

Aircraft with the Rotax 912 ULS (100 hp) have a greater engine torque which must be countered by a slight right rudder input.

The aircraft will take-off at 70 km/h (38 kts). Push the stick slightly forward and increase airspeed to 110 km/h (59 kts) in shallow climb.

Continue to climb at 110 km/h (59 kts).

Retract flaps at a height of approx. 150 ft (50m). This will cause a slight nose-heavy moment. After reaching a safe altitude the electrical fuel pump can be switched off.

Trim the aircraft to 110 km/h (59 kts) and continue climbing. Slight right rudder is necessary to compensate both engine and propeller torque during climbing.

Whenever possible, take-off into the wind.

The maximum demonstrated crosswind component for take-off and landing is 30 km/h (16 kts). No special procedures are required. The starting direction must be ensured by " Provision upwind.

During the initial take-off phase, it is essential that the aircraft accelerate sufficiently to prevent stalling, should a sudden loss of power be experienced.

By a loss of engine power at altitudes below 260 ft (80 m) do not attempt course corrections of more than 90°. Quickly trim the aircraft to a gliding speed of 100 km/h (54 kts) (push stick forward). Avoid obstructions. Using the flaps touch down at a low speed. The approach phase can be shortened by slipping. Before undertaking an emergency landing in rough terrain, turn off the fuel valve and the ignition.

4.3 Cruise

In cruising flight the most economical cruise speeds are between 140 and 170 km/h (75 – 91 kts) for the models C42 (C42A), C42B and C42C, or between 160 km/h and 190 km/h (86 kts et 102kts) for the C42CS. The required engine performance depends upon aircraft load at the maximal continuous engine speed is 5500 rpm.

In order to fly the aircraft comfortably, it should be trimmed to the desired airspeed with the throttle set for the appropriate rpm for horizontal flight.

Example: Typical cruising set up:

	Rotax 912 UL	**Rotax 912 ULS**
Engine RPM:	4500 rpm	4500 rpm
Air Speed :	150 km/h (81 kts)	160 km/h (86 kts)
Fuel consumption:	10 -12 l/h	11 - 13 l/h

The maximum speed of must never be exceeded (VNE):

C42 (C42A) :	180 km/h (97 kts)
C42B & C42C :	216 km/h (116 kts)
C42CS :	225 km/h (121 kts)

In a turbulent weather the maximum airspeed is 180 km/h (97 kts) for the C42 (C42A), C42B and C42C, or 187 km/h (100 kts) for the C42CS.

At the first indication of carburetor icing (rpm drop, stuttering engine running, increase in fuel consumption as indicated by the flow meter, if installed) apply carburetor heat and, if possible, fly the aircraft into non-icing conditions

4.4 Turn in Flight

Turns are coordinated using the aileron and rudders. With the increase of airspeed, significantly less amount of rudder deflection is needed.

Banks of 45° degrees or more are not recommended, a banking angle of more than 60 degrees is prohibited. In steep banks keep the nose and airspeed under control by means of the rudders and elevator.

4.5 Stall

In cruising flight configuration (flap position I), the stalling speed is 75 km/h (39 kts). The engine cowling will be well above the horizon. At approximately 80 km/h (43 kts) there will be a slight buffeting of the airframe. When flown in this condition the aircraft is fully controllable. However, lateral altitude corrections must be done mainly with the rudder.

Example: right wing low → rudder deflection to the left.

If the aircraft is stalled slowly with the elevator in detent, it will enter into a stable stalled descent. Altitude loss can be up to 100 ft (30 m).

During a whip stall, the aircraft clearly pitches down (up to 40°). By slightly releasing the elevator, airspeed will increase and the aircraft will return to horizontal flight. Maximum altitude loss is 250 ft (75 m).

The aircraft reacts similarly in all flap positions.

Stall speeds for the various flap positions at a take-off weight: 472.5kg (1042 lbs):

V_s flap position I (cruising flight)	ca. 75 km/h (40 kts)
V_{s1} flap position II (take-off/landing)	ca. 70km/h (38 kts)
V_{s0} flap position III (landing)	ca. 65 km/h (35 kts)

The stall speeds above will be affected by variations in take-off weights.

4.6 Approach and Landing

Begin with your approach early enough in order to set the correct landing configuration without hurrying.

- **Activate** carburettor heat.
- The electrical fuel pump **must be switched on**.

In order to be able to steeply approach short landing strips, use flap position 2 (landing). Moreover, the glide path can be effectively shortened by a sideslip.

Before proceeding to flap position 2 reduce the speed below velocity V_{fe} :

Until 2009 :	105 km/h (57 kts)
Since 2010 :	117 km/h (63 kts)

The best speed to engage the flaps is between 90 and 100 km/h (48 and 54 kts)

On final approach with flap position III keep the speed at about 90 km/h (48 kts) with the engine at idle.

The glide angle in flap position II (take-off/landing) is significantly shallower and thus the flare distance is much longer. The approach speed should be about 105 to 110 km / h (57 – 59 kts).

At the height of approximately 3 m begin rounding out to the landing flair. Begin final flair at the height of about 50 cm. Landing speed is approx. 70 km/h (38 kts).

4.7 Shutting Down the Engine

Shut off all electrical accessories and radios **before** shutting down the engine.

Under normal conditions, the engine will have cooled down sufficiently during descent and taxiing so that it can be shut down by turning off the ignition.

4.8 Sudden Loss of Engine Power

4.8.1 Loss of Engine Power During Take-off

Depending on the speed and altitude, lower nose and trim to gliding speed at 100 km/h (54 kts), with flaps at position II. Do not attempt to return to airfield if altitude is below 1000 ft after gliding speed has been reached. At lower altitudes, it is best to land straight ahead without attempting any course corrections.

Before attempting an emergency landing in rough terrain, turn off the fuel valve and switch off the ignition. When landing in a high vegetation (grain or similar) reduce speed directly above the vegetation by extending the flaps to position III, pull stick fully aft and allow the aircraft to sink into the vegetation.

4.8.2 Loss of Engine Power in Cruise Flight

Cross-country flights should be planned to ensure that a suitable landing field could be reached in the case of a loss of the engine power.

Once gliding speed has been established (flap position I = cruising flight, V_{IAS} = 90 - 100 km/h (48 - 54 kts)), look for a suitable landing field taking into consideration wind conditions. The best glide ratio is approx. 11:1 at 2.5 m/s (490 ft/min).

A lower rate of descent can be achieved with flap position II (take-off/landing), at approx. 90 km/h (48 kts), it does not however result in a better glide path.

With sufficient altitude, you may attempt to restart the engine, check:

- Fuel valve OPEN
- Magneto switches ON
- Fuel SUFFICIENT
- Fuel pump ON

4.8.3 Start the Engine in Flight

- both magneto switches ON
- electrical fuel pump ON
- throttle ¼ OPEN
- carburetor heat OFF
- fire up engine using starter

Maintaining airspeed to windmill the prop can help.

4.9 Equipped with Optional Cowl Flap

If your aircraft is equipped with the cowl flap, you have a possibility to control the temperatures of your engine via manual adjustment of the cooling air.

There by, you are in the position to keep the engine temperatures in the optimal range (90°-110°C) independent of outside temperatures. It works in C42 both for the oil and cylinder head temperature and coolant temperature due to the installed oil and water heat exchanger.

Moreover, you can considerably shorten warm-up period by starting up the engine with a fully closed cowl flap.

It does not only protect the engine but also saves fuel. Though, for a reasonable and secure handling of the cowl flap it is necessary to closely monitor the oil and cylinder head temperature.

Attention: If the cowl flap is closed the cooling air supply to the radiator will not be sufficient over a longer period, i.e. the oil and cylinder head temperature and coolant temperature will rise to an inadmissible range (the red warning light range). In order to not to forget to close the cowl flap, there will be installed an additional factory-provided warning light which flashes up when reaching the cylinder head temperature and coolant temperature of 117° C. In this case, the cowl flap should be immediately fully opened.

The cooling down of the cylinder head temperature to admissive and optimal temperatures can be supported by reducing the engine output and increasing the airspeed in descending.

The functionality test of the cowl flap is made during pre-flight inspection.

Principally, you should not wait for flashing of the caution lamp, but you have to observe the temperature and to open the cowl flap manually at the temperature of 90°-110°.

4.10 Emergency Procedures

4.10.1 Stalling due to Low Speed

- Reduce back pressure on the stick and lower the nose.
- Recover

4.10.2 Sideslip

- Set rudder in the opposite direction to a sideslip
- Reduce back pressure on stick

4.10.3 Spin

- Throttle to idle.
- Apply rudder opposite to the direction of rotation until the rotation will stop
- Reduce back pressure on stick
- Slowly pull aircraft up

4.10.4 Spiral Dive

- Set aileron and rudder opposite to the direction of rotation and
- pull back the stick slightly until a horizontal position will be taken.

4.10.5 Loss of Elevator Control

With the elevator trim flap, the aircraft can be trimmed to speeds between 80 and 170 km/h (43 and 92 kts).

In calm weather condition it can also be used to try to land the aircraft. If in doubt, deploy the parachute rescue system.

4.10.6 Loss of Aileron Control

Use the rudder to control the aircraft via skidding rolling moments. If in doubt, deploy parachute rescue system

4.10.7 Loss of Rudder Control

Controlling flat curves is possible with the ailerons only.

- If possible, perform a field landing in a straight flight.
- If in doubt, deploy parachute rescue system.

4.10.8 Carburetor Fire

- Main fuel valve OFF
- Electrical fuel pump OFF
- Full throttle
- Sideslip
- Follow emergency landing procedures

4.11 Parachute Deployment

Attenttion: Follow the instructions in the BRS or JUNKERS PROFLY– parachute operator's manual provided with your aircraft.

(COMCO IKARUS cannot be held responsible for any malfunctions of the parachute unless it is proven that the malfunction is caused by a faulty installation.)

Every Aircraft equipped with a parachute is provided with adequate instruction manual depending of the parachute manufacture, and a registered functioning certificate.

Be certain to follow the instructions of the manufacturer for required maintenance and particularly the avoidance of moisture in the parachute pack. Should the parachute get wet, it must be aired and repacked. (Only by the manufacture)

The parachute is placed in the fuselage as described in the appendices of this manual.

There is a time limit on the use of the rocket cartridge in rocket-deployed systems. (Please follow the provided manufacturer instructions delivered with your aircraft)

Removal, replacement or placement of a parachute should be undertaken by an authorized person or by the aircraft manufacturer to allow proper guarantee on the product and on the aircraft.

Before taking off, remove the system's safety pin.

After landing secure the system with the safety pin.

Should you need to make use of the rescue system, you should try to be in the frame of the parameters described in the parachute user manual:

Shut down the engine before deploying the parachute.

- Pull the rescue clutch located between and above the 2 occupants
- Try to steer the aircraft to a less agglomerated direction and ground

5. Handling on Ground

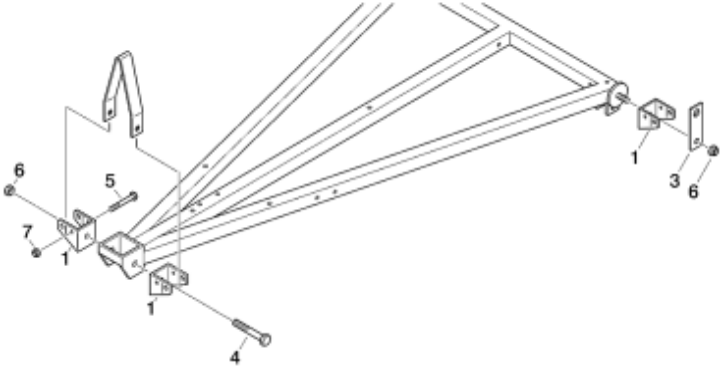
5.1 Maneuver

Manual moving of the aircraft is accomplished by using the tail struts upper connections as push points. Since there is no tow bar applicable at the nose gear, you must press down the tail to raise the nose wheel off the ground. With the nose wheel clear of ground, the aircraft can be simply steered by pivoting it on the main wheels.

5.2 Suspension

The aircraft may be lifted with a hoist of at least 500 kg (1000 lbs) capacity by using T-support ceiling hangers.

Use suitable spring snap hooks for the three designated mounting points on the cabin roof.



5.3 Parking

When parking please consider following factors:

- as a general precaution, set parking brake
- block the wheels with wheel blocks or brake blocks
- flap to zero = position 0

In severe weather and strong wind conditions, tie down the aircraft as outlined in paragraph 5.4 if a hangar is not available.

Caution:

Do not set parking brakes during cold weather (when accumulated moisture may freeze the brakes) or when brakes are overheated.

5.4 Tie-Down

When parking the aircraft outdoors, nose into the wind if possible. Set parking brakes or block wheels with brake pads.

Use ropes or belts and fasten them to the tie down points (upper end of the front wing struts). Then secure them to the ground anchors.

Do not use chains, wire or steel cables to tie down the aircraft.

Additionally, mount a rope or strap between the engine cowling and propeller spinner and secure to another ground anchor.

The control stick must be secured with the help of the safety belt in a fully retracted position.

Tie down point at the upper front strut area.

Tie down point between the engine cowling and propeller spinner.

6. Minimum Equipment List

- Four-point harness for each seat
- Airspeed indicator true Colour Coding
- Altimeter with Kolsmann window
- Compass
- Tachometer
- Cooling liquid temperature gauge
- Oil temperature gauge
- Oil pressure gauge
- Fuel gauge
- Generator charge control
- Data placard
- Pilot's operating handbook
- Parachute rescue system (optional)
- Checklist

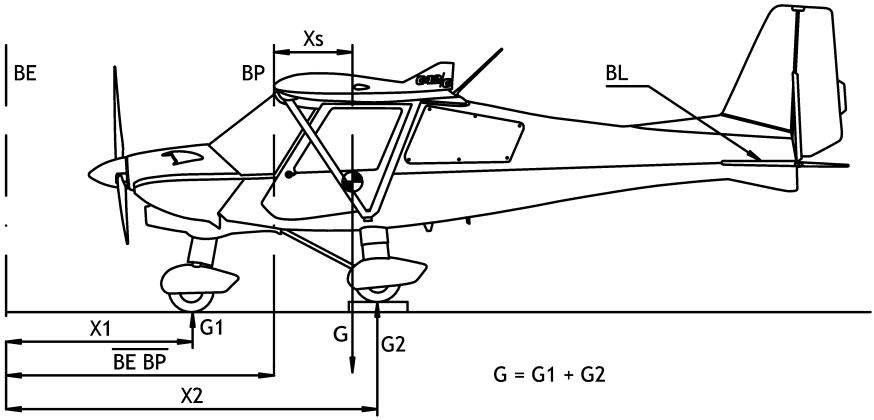
7. Dimensions

Dimensions can be taken from page 6 to 9 and from the annex of this pilot operating handbook.

8. Weight and Balance

Place the aircraft in a level position on three scales with the stabilizer and elevator leveled.

The center of gravity is measured in mm behind the reference datum and then calculated as a percentage of the wing chord.



Reference datum (leading edge)
Wing chord l = 1360 mm.
X1 = 230 mmm
X2 = 1770 mm ou 1775 mm (C42CS)

$$(I)\ Xs\ [mm] = \frac{G1 \cdot X1 + G2 \cdot X2}{G1 + G2} \cdot \overline{BE\ BP} = \_\_\_\_\_\ mm$$

$$(II)\ Xs\ [\%] = \frac{Xs\ [mm] \cdot 100}{1360\ mm} = \_\_\_\_\_\ \%$$

8.1 Empty Weight and Center of Gravity

Serial Number: _____

Type : _____ Identification Code: _____

Weightinh:

Reference weight: _____ kg

Empty weight: _____ kg

X1 = _____mm, X2 = _____mm

G_2 G_{2R} :_____kg + $G2_L$:_____ kg =_____ kg

G1 =_____ kg

G total =_____ kg

x_s mm: _____mm

$x_{s\ \%}$:_____% L

It is the pilot's responsibility to respect and verify that the aircraft does not surpasses the maximal take-off weight.

Empty weight: _____ kg

Maximal payload: _____ kg

Maximal payload with full tank: _____ kg

Maximal take-off mass: **450,0 kg 472,5 kg**
(Strike the unnecessary weight indication)

Place and Date: _____

Signature : _____

Loading plan

	weight x lever arm = torque		
Empty weight	kg	mm	kg mm
1. Passenger		400	
2. Fuel		950	
3. Lugage (max 10kg)		950	
total weight:		total torque:	
$\text{lever arm} = \frac{\text{total torque [kg mm]}}{total\ weight\ [kg]} =$		mm	

Maximum lever arm authorized: at max weight: 300 – 560 mm
(from the reference point BP) at empty weight: 280 – 460 mm

Place and Date: _____

Signature : _____

Loading plan

	weight x lever arm = torque		
Empty weight	kg	mm	kg mm
1. Passenger		400	
2. Fuel		950	
3. Lugage (max 10kg)		950	
total weight:		total torque:	
$\text{lever arm} = \frac{\text{total torque [kg mm]}}{total\ weight\ [kg]} =$		mm	

Maximum lever arm authorized: at max weight: 300 – 560 mm
(from the reference point BP) at empty weight: 280 – 460 mm

Place and Date: _____

Signature : _____

9. Data Placard and Check-List

Air Speed

Speed to never-exceed:

C42 (C42A)	180 km/h (97 kts)
C42B & C42C	216 km/h (116 kts)
C42CS	225 km/h (121 kts)
Stall speed	65 km/h (35 kts)

Load factor

Positive load factor	+4 g.
Negative load factor	- 2 g.

Maximum wind speed for operation

Steady wind	22 kts (40 km/h)
Demonstrated cross-wind component	16 kts (30 km/h)
Payload	Max_____ kg
	Min 65 kg

The pilot operating this aircraft at his own risk

Manufacturer:	COMCO IKARUS GmbH
Serial Number:	_____
Identification Code:	_____
Year of manufacture:	_____
Month :	_____
Empty weight:	_____

10. Before Take-off Checklist

1.	The seat belts are fastened?	
2.	Control system free and correct?	
3.	Parachute system unlocked?	
4.	Check fuel level	
5.	Engine fuel shut off valve	OPEN
6.	Electric fuel pump	ON
7.	Choke	OFF
8.	Carburetor preheating (C42B / C42C / C42CS)	OFF
9.	Electric instruments	ON
10.	Altimeter set?	
11.	Flaps (take-off/landing)	POSITION 1
12.	Check magnetos	
13.	Wind direction?	
14.	Runway and approach	CLEAR

11. Approved Equipement

Engine: BRP ROTAX 912 UL
Gearbox C, 2.27 :1

Approved propellers:

- WARP DRIVE 2-blade, 68” diamètre
- WARP DRIVE 2-blade, 68” diamètre
- Sport-Prop 170R 3-blade
- GSC 3-blade, 68” diamètre
- Neuform 2-blade CR2-75 ground adjustable
- Neuform 3-blade CR3-75 ground adjustable
- Kiev Prop 3-blade BB 263/1700 ground adjustable
- Helix 3-blade H50F-1,75m-R-SI-12-3 ground adjustable

Engine: BRP ROTAX 912 ULS
Gearbox C, 2.43 :1

Approved propellers:

- WARP DRIVE 3-blade, 68” diamètre
- GSC 3-blade, 68” diamètre
- Neuform 3-blade CR3-75 ground adjustable
- Neuform 3-blade CR3-V-R2H variable pitch (manuel or electric)
- Kiev Prop 3-blade BB 283/1800 ground adjustable
- Helix 3-blade H50F-1,75m-R-S-14-3 ground adjustable
- DUC Hélices Flash 3-blade ground adjustable

Approved parachute rescue systems:

- BRS 5-UL4
- BRS-6-1050-SP-DAeC
- Magnum High Speed Soft pack
- Magnum Light Speed Soft pack

Be certain to follow the instructions of manufacturer for installation, required maintenance and particularly the avoidance of moisture in the parachute pack. Should the chute get wet, it must be aired and repacked.

There is a time limit on the use of the rocket cartridge in rocket deployed systems.

- Before taking off, remove the system safety pin.
- After landing secure the system with the safety pin.

Approved fuel tanks:

- 1x / 2x 50 l*
- 1x / 2x 65 l

* no longer available

Approved diverse equipment:

Electrical flap drive

12. Flight Performance

12.1 Take-off Distance

	Rotax 912 UL	**Rotax 912 ULS**
Sea level, +15°C, no wind		
Take-off distance: (double seated, MTOW 472.5 kg)	105 m	95 m
Take-off distance over 15 m (50 ft) obstacle		
Single seated:	210 m	185 m
Double seated:	245 m	215 m

Speed at rotation: 70 km/h (38 kts)

Speed at 15 m obstacle: 90 km /h (49 kts)

Higher elevations and higher temperatures lengthen the take-off distances.

The figures given are valid for a MTOW of 360 kg flown solo and 472.5 kg with two persons on board. No wind, on dry, flat terrain with short grass.

12.2 Climb Rate

	Rotax 912 UL	**Rotax 912 ULS**
Sea level, +15°C, no wind		
Engine speed:	5500 trs/min	5200 trs/min
Climb rate:		
single seated:	6 m/s (1180 ft/min)	7 m/s (1377 ft/min)
double seated:	4.8 m/s (944 ft/min)	5.5 m/s (1082 ft/min)

Speed for best rate of climb:

90 km/h (49 kts)

12.3 Cruise Speed (Single Seated)

	Rotax 912 UL	**Rotax 912 UL S**
C42 à 4700 trs/min (65%)	155 km/h (84 kts)	165 km/h (89 kts)
C42B à 4700 trs/min (65%)	160 km/h (86 kts)	170 km/h (92 kts)
C42C à 4700 trs/min (65%)	165 km/h (89 kts)	175 km/h (94 kts)
C42CS à 4700 trs/min (65%)	175 km/h (94 kts)	185 km/h (99 kts)
Speed for a maximum range:	140 km/h (76 kts)	145 km/h (78 kts)

Maximum range with a 50l tank with no wind :
approx. 270 nm (500 km)

Maximum range with a 65l tank with no wind :
approx. 350 nm (650 km)

12.4 Performance with Engine Shut Down (Single Seated)

Maximal Take-off mass: 472.5 kg

Minimum sink rate: 2 m/s (393 ft/min)
à 85 km/h (46 kts) with flaps in position II

Best glide raio 1 :11
à 95 km/h (51 kts)

ATTENTION :
Follow the instructions in the ROTAX operator's manual.

13. Attaching Wings

13.1 Attaching Wings to the Fuselage

The wings are attached to the fuselage as follows :

Step 1 Bring the wing main strut into a correct position to the wing by means of attaching the auxiliary struts in the receptacles on the front and rear wing spar.

Step 2 Grip the main strut and raise the wing tip. Keeping the wing in a vertical position, carry the wing forward at 90° to the fuselage.

Step 3 Turn the wing into a horizontal position, keeping the wing tip slightly higher than the wing root.

Step 4 Slowly push the wing against fuselage and wing spar brackets.

Step 5 Before pushing against the spar brackets, look for the sideway at the rear spar intake so that to lead the rear wing spar in the locking position. When the retaining bolt is touched, rotate the right wing slightly clockwise (the left wing must be rotated counter-clockwise).

By moving slightly upwards, the rear wing spar will lock into the retaining bolt and the front wing spar will take position under the retaining bolt of the front wing tube holder.

Push the front wing spar against the bracket while slightly lowering the wing tip. The front wing spar will lock into the retaining bolt. At the same time, launch the lower end of the wing support in the square cross-frame.

Carefully check that both wing spars have properly locked into place.

Step 6 Attention and now immediately

1. Insert mounting bolts into the front wing spar bracket
2. Insert mounting bolts into the rear wing spar bracket
3. Insert toggle bolt into the square cross-frame spar to secure the wing support.
4. All three bolts must be secured with the ring pins!
5. Lift the wing to check that the wing support is fixed tight by the toggle bolt!

Repeat the step 1 to 6 fo the other wing.

Remove any aileron locks used.

Step 7 Attach right and left aileron push rods to the see-saw connection. Carefully assure that the slide mechanism of the special ball-joint connectors is in completely closed position.

Step 8 Left and right flaps connection must be locked.

Step 9 Connect the pitot tube in his connector and if installed, connect the beacons.

Step 10 Fasten wing center section fairing.

13.2 Folding Wings for Hangaring

Optional for model C42 (C42A) and C42B

1. Remove wing center section fairing.
2. Unlock aileron push rods from see-saw cross connection.
3. Unlock left and right flaps connection
4. Disconnect the pitot tube of his connector and if installed, disconnect the beacons.
5. Remove toggle bolts at the base of the wing support.
6. Remove fastening bolts at the rear wing spar.
7. Remove fastening bolts at the front wing spar.

The following 5 steps must be undertaken to fold back the wings.

Step 1 Lift right wing at the wing tip, rotate slightly to unlock first the forward wing spar and then the rear one.

Step 2 Draw the wing back off the fuselage until the stop ring on the slide tube is reached.

Step 3 Turn the wing into a vertical position – bottom surface of the wing to the forward.

Step 4 Swing the wing tip back.

Step 5 Place the wing tip on to the retainer bracket on the empennage.

Repeat steps 1 to 5 for the left wing.

14. Pre-Flight Inspection

Before each flight, the pilot must carry out a visual inspection of the aircraft.

14.1 Engine

- Check propeller and spinner for damage and security
- Check cowling near the propeller for abrasion (sign of defective engine suspension or improper cowling attachment)
- Check for leakage under the engine cowling
- Check cooling liquids and lubricants
- Check secure attachment of the engine cowling
- Check that coolers are clean (oil cooler, water cooler)
- Check air vents for blockage
- Check NACA-intake for blockages

14.2 Main Landing Gear

- Check secure attachment of all components (hub caps, brake cylinders, brake discs)
- Check for a visible deformation
- Check air pressure in the gas-filled shock absorber (aircraft level, pull aircraft down and release, gas-filled shock absorber must fully rebound)
- Check pressure and condition of tires

14.3 Left Wing

- Wing spar connections secured?
- Wing struts properly attached and secured?
- Auxiliary struts secured with quick-release fasteners?
- Pitot tube secured and free from dirt and water?
- Check aileron shift levers and push rods by opening the zippers on the wing bottom
- Check condition of fabric covering (rips, etc.)
- Check profiled struts for secure attachment
- Check wing tips and wing tube for deformation
- Check attachment of ailerons and flaps.
- Check the spring-loaded locks at the sliding sleeves for proper power transmission (they should be locked properly at the front and rear end of the tubes)
- Check QR-Spades of the C42C and C42CS model for secure attachment and deformation.

14.4 Left Side of the Fuselage

- Check condition of glass-fiber fairing (cracks, holes, etc.)
- Check secure attachment of glass-fiber fairing (missing screws…)
- Check the baggage door closed and secured, and:
  - bearing block of the horizontal rudder
  - strapping system of the ballistic rescue system
  - aileron rudder cables and pull system

14.5 Empennage

- Check attachment of the horizontal stabilizer
- Check control surface hinges?
- Check elevator inter-connection
- Trim flap secured?
- Check connection of the Flettner tab (C42C & C42CS)
- Check connections of the elevator push rod
- Check the elevator struts for secured attachment and possible deformation
- Check rudder cables for being connected and secured
- Check fabric covering (rips, chafing)

14.6 Right Side of the Fuselage

- Check condition of glass-fiber fairing (cracks, holes, etc.)
- Check secure attachment of glass-fiber fairing (check for missing screws at the upper/lower connection)
- Check elevator shift lever through the baggage hatch in the fuselage wall
- Tank filler cap secured?

14.7 Right Wing

- See 14.3 Left Wing

14.8 Inside and Outside of the Cabin

- Check condition of windscreen, doors including locking mechanism (cracks)
- Check free movement of the steering (control stick, pedals, flap lever with a lock)
- Check the brake lever and stand lock
- Check aileron lever for being connected and secured
- Visually check aileron cables and pulleys
- Check fuel valve

14.9 Instruments

- Power supply (ignition switch in the position 1)
- Altimeter setting
- Amount of fuel
- Functioning of the radio and intercom system

14.10 Drainage

- Drainage of the fuel tanks (the drainage tap is located under the copilot’s seat)

15. Care and Maintenance

Care and Cleaning:

All metal parts are corrosion-resistant and require no special care. Dirt on the aircraft and the fabric can be removed by using clear water.

Repair of the wing fabric: repair even the smallest rips for your personal safety.

A wing fabric repair kit is available from the manufacturer. It is to be applied to a clean, grease-free area by means of contact adhesive. Larger rips in the fabric or along the seams in any case must be repaired by the covering specialists. When in doubt, contact the manufacturer.

Be especially careful in the maintenance and cleaning of the cabin glazing! It is highly recommended to abundantly use clear water with a little detergent for softening and rinsing of contamination. For drying, a fine microfiber cloth should be used which is solely used for this purpose.

By no means solvent-based or acid-based detergents may be used.

All Maintenance:

All maintenance work must be carried out by appropriately qualified persons and confirmed by COMCO IKARUS GmbH.

Major Modification and Repair Works:

Must be reported and officially inspected.

Airworthiness:

Inspections in Germany must be carried out by the manufacturer or by DAeC inspectors. In other countries different regulations may apply.

Repair Works:

Repairs by the owner are limited to the exchange of defective parts. Only original spare parts may be used. In no case, shall any part be reprocessed, straightened or otherwise processed for repair and re-installation.

Periodical Inspections:

Periodical inspections (50 / 100 hour inspection) should be carried out in accordance with the provisions of the C42 COMCO IKARUS GmbH Maintenance Manual and 912 ROTAX Maintenance Manual. If not conducted, the safety of the aircraft is not guaranteed and warranty claims may be omitted. The periodical inspections should be conducted in one of our IFC (Ikarus Flight Center), ITB (Ikarus Technical Base), ISC (Ikarus Service Center). If periodical inspections should be conducted by the owner himself, these technical documents (Maintenance Manual) have to be ordered at IFC/ITB/ISC or directly at COMCO IKARUS GmbH.

Technical Problems:

Technical problems or defects should be reported to

- the manufacturer or the local distributor, or
- the relevant national authority

16. Parameter

Wingspan C42 (A) & C42B :	9450mm (31,0 ft)
Wing area:	12.5m^2 (134,5 ft^2)
Wingspan C42 C & C42CS :	8710mm (28,6 ft)
Wing area:	11.9m^2 (128,1 ft^2)
Wing chord at root:	1435mm (4,7 ft)

Wing dihedral (type-V) 1°

a.) Configuration angle of the wing relative to the main tube: 8,5°

Note: The incidence angle is measured from the lower edge of the rear wing tube to the lower edge of the front wing tube at the root rib.

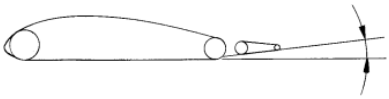
b.) Configuration angle of the horizontal stabilizer relative to the main tube: 7°

Note: The stabilizer incidence angle is measured from the lower edge of the front tube to the lower edge of the rear tube of the horizontal stabilizer.

Configuration difference angle: between the wing and horizontal stabilizer, measured at the root of the rib : **1,5°**

c.) Control Surface Deflections

Note: The angle of the aileron bottom relative to the wing chord is -5° (tangent front to rear spar). It is defined by the length of the aileron push rods.



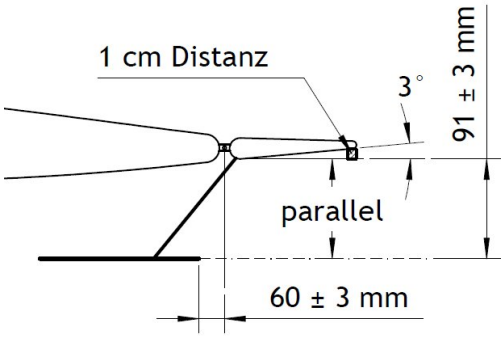
Aileron

Neutral position:	-7°± 1°	-35mm ± 10mm
Upwards:	20°± 2°	90mm ± 10mm
Downwards:	14°± 2°	70mm ± 10mm

Measuring point distance from the steering axis: 250mm

Spade settings on the aileron in the C42C and C42CS model.

Spade angle in relation to the QR-bottom +3° ± 1°



Measurement with water level at base of 1 cm under Aileron end strip.

Rudder

Left	32° ± 2°	210 mm ± 15 mm
Right	32° ± 2°	210 mm ± 15 mm

Measuring point distance from the steering axis: 410 mm

Elevator

Upwards	28° ± 2°	210 mm ± 15 mm
Downwards	20° ± 2°	130 mm ± 15 mm

Measuring point distance from the steering axis: 410 mm

Flettner rudder (C42C & C42CS)

When the elevator neutral: Flettner rudder

	0° ± 2°	78 mm ± 3 mm

Flaps

Note : Flap angle is measured from the flap bottom to the bottom of the wing at the root area (tangent front to rear spar)

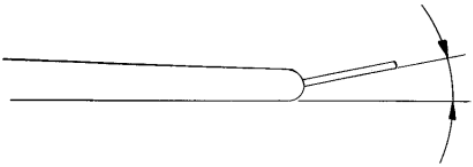
Position I	-5°± 1°	27 mm ± 5 mm
Position II (take-off/ landing)	+11°± 1°	60 mm ± 5 mm
Position III (landing)	+32°± 1°	170 mm ±10 mm

Measuring point distance from the steering axis: 310 mm

Trim tab

Lever nose-down: trim flap in relation to the rudder area -5°

Note: with mechanically actuated trim flaps do not exceed -5° upwards.



d.) Main Landing Gear

Main Landing Gear	2.0 - 2.5 bar	29 - 36 psi
Nose Landing Gear	1.6 - 2.0 bar	23 - 29 psi
Shock Absorbers	28.0 - 34.0 bar	400 - 490 psi
Quantity of Oil	200 ml (0.42 pts)	
Hydraulic Oil	HVP 10 (hydraulique)	

e.) Brakes

In the Ikarus C42 series different brake systems are used. e.g.-Sachs, Magura, Tost and Beringer brakes.

For service information, please see our maintenance manual or ask one of our IFC, ISC, Importer or the manufacturer.

f.) Moteur

For service information, please see our maintenance manual, or maintenance manual by ROTAX or ask one of our IFC, ISC, Importer or the manufacturer.

17. Particularity with the Option Handicapped Equipment

17.1 Equipment

If the following additional equipment is installed in the aircraft, it can be operated without using the feet to control the nose wheel and the rudder:

a.) modified throttle shaft including throttle lever extension
b.) rudder control lever with push rod
c.) placard on the rudder control lever.

Installation must be undertaken in accordance with the instructions of the manufacturer. The unauthorised alteration of the equipment for handicapped pilots is not permitted.

17.2 Assembling and Disassembling

The rudder control lever is installed by attaching to the mounted axle in the main tube and bolting with a hexagonal bolt M8xM40.

The push rod which is attached to the rudder control lever is connected to the right pedal of the left seat by a quick-release fastener. The sliding sleeve of the quick-release fastener is then checked for a proper fit in the locked position.

Throttle lever length is then set so that the knob of the throttle lever is approximately ten to thirty millimetres under the rudder control lever and can pass freely under it.

The additional control equipment is disassembled in reversed order

17.3 Operation

The nose wheel and the rudder are controlled with the left hand on the rudder control lever. By pulling out the rudder control lever, the aircraft turns to the left, by pushing it in, the aircraft turns to the right.

The right hand remains constantly on the control stick and operates the elevator, aileron and brakes. The left hand operates the rudder control lever and the throttle lever, which is located directly below the rudder control lever.

Take-off:

- Align the aircraft on the runway, left hand (LH) on the rudder control lever.
- Apply throttle expeditiously with LH.
- Put LH immediately back to the rudder control lever and steer aircraft during take-off run.
- After take-off in approximately 5 to 10 m above the runway, use LH to check that the throttle lever is still in the full throttle position.
- Excepting in case of power changes, LH remains constantly on the rudder control lever.

The various flight conditions, e.g. horizontal flight, turn, slow flight, side-slip, are not affected.

Landing:

The landing approach is by default. In the case of crosswind, the wing-down method should be used.

Attention should be paid to the following when flaring out:

- Air speed is approx. 100 km/h until flare out is in approx. 4 to 5 m above the runway, LH - on the rudder control lever.
- Throttle to idle using LH.
- LH should be immediately back to the rudder control lever and steer aircraft during landing roll.

When carrying out touch-and-go, follow the procedures for take-off.

18. Flying the C42 Series without Doors

Under the following conditions, the IKARUS C42 SERIES may be flown with the dismantled doors:

- All loose items (maps, documents) should be properly secured.
- The dropping of objects during flight is prohibited.
- Maximum speed for flights with one or both doors removed is 150 km/h IAS.
- Side-slipping is not permitted with dismantled doors.
- Turbulence in the cockpit will increase when the flaps are set to position III.

19. Instructions for using of LiFe Battery

The usage of LiFe-Batteries on the C42 Series is related to the battery modulation technology which allows for an effective reduction of the empty weight for more than 3,5 kg due to its high-energy density. Only available as an option. These batteries are characterised by the following qualities:

- low-maintenance
- small size
- high voltage
- fast charging
- high impulse current ability
- extremely low self-discharge

What is special is the ability to produce high battery power during the starting procedure, though the battery develops it only at a certain minimum temperature.

At cold outside temperatures, it can lead to the false conclusion that the battery is empty.

Therefore, we recommend before the very starting procedure to preheat the battery by spinning of the starter (2-3 times for 2-3 sec.) without switched on magnetos.

Once the engine is rotating with a sufficient rpm, the starting procedure can be accomplished as usually. (switching on the fuel pump, magnetos and choke)

For additional safety when using the LiFe starting battery, an automatic overvoltage protection (OVP) must be installed which prevents a detrimental high charging voltage. An automatically disconnection of the charging current is displayed by the charging control lamp. To activate the charging circuit again activate the reset button beside the charging control lamp or it will happen automatically when reaching a voltage of approx. 12 V. Repeated light-up of the control lamp signifies an error of the controller and a direct approach of the next airfield must be undertaken.

Since October 2018 (serial number 1809-7555 onwards), the overvoltage protection module is integrated into the electrical charge controller. The external OVP module is not required anymore. With this integration, the reset button is removed, as it is automated by the controller. The batterie charge will be reactivated, when the charge level is dropping below 14 V.

20. COMCO IKARUS Manufacturer Warranty

20.1 Warranty Information

COMCO IKARUS guarantees to you, the original purchaser, that the aircraft, which you have purchased from an authorised Ikarus Flight Center, to be in conformance with the applicable COMCO IKARUS specifications current at the time of manufacture for a term of two (2) years from the date of purchase of the aircraft. (Warranty Term)

This is the complete and exclusive warranty for the aircraft with original accessories of the COMCO IKARUS GmbH.

In no event, shall COMCO IKARUS be liable for damages or losses in excess of the purchase price nor for any incidental special or consequential damages, including without limitation loss of use, loss of time, inconvenience, commercial loss, lost profits or savings arising out of the use or inability to use the aircraft, to the full extent such may be disclaimed by law.

This warranty does not affect any statutory rights that you are entitled to from your purchase agreement, such as warranty of fitness for an ordinary use and service, which is common for things of the same kind, so the claims against the seller of the aircraft under the purchase agreement.

20.2 Warranty Service (After Sale)

Should the aircraft not comply with the warranted specifications, the warranty claim consists of a repair of the defect by COMCO IKARUS at no charge.

Thus, you are bound to inform COMCO IKARUS of the lack of conformity to the applicable specifications of the aircraft promptly if you detect a defect in material, workmanship or lack of conformity, in any case before the expiry of the warranty period, you must immediately bring your aircraft for service to the authorised Ikarus Flight Center, Ikarus Technical Basis or a Ikarus Service Center.

COMCO IKARUS shall not be bound by product related statements not directly made by COMCO IKARUS nor any warranty obligations applicable to the seller.

In most cases the authorized Ikarus Flight Center which sold and/or installed your aircraft and original accessories will honour a warranty claim and/or provide warranty service

20.3 Claim

In order to claim the warranty service, you must return the aircraft and/or accessory in question to the authorised Ikarus Flight Center or Ikarus Service Center in the original configuration as supplied by COMCO IKARUS.

The microlight aircraft should be accompanied with the following information

- Name of the owner
- Address of the owner
- Telephone number of the owners
- Email address of the owner
- Comco Ikarus serial number
- Total flying hours
- Number of landings
- Description oft the problem
- Digital photos if requested

In order to be eligible to receive warranty service, you must present your receipt of purchase or a comparable substitute proof of purchase bearing the date of purchase.

You must ensure that all repair or customer service is handled always by the authorized Ikarus Flight Center or Ikarus Service Center in accordance with COMCO IKARUS service requirements.

In some cases, you may be requested to provide additional information concerning the maintenance of the aircraft by the authorized Ikarus Flight Centers or Ikarus Service Centers only, therefore it is important to keep a record of any previous repairs, and make them available if questions arise concerning maintenance.

20.4 Requirements for a Warranty

This warranty will not apply if the type or serial number on the aircraft has been altered, deleted, duplicated, removed or made illegible. Comco Ikarus reserves the right to refuse from free-of-charge warranty service if the requested documentation cannot be presented or if the information is incomplete, illegible or incompatible with the factory records.

Repair, at Comco Ikarus option, may include the replacement of parts or accessories with functionally equivalent, reconditioned or new parts. Replaced parts or accessories are warranted for the balance of the original warranty time period. The original warranty period will not be extended. All original parts that have been replaced shall become the property of Comco Ikarus. Comco Ikarus does not warrant the installation, maintenance and service of the products, parts and accessories.

Comco Ikarus will not be responsible in any way for problems or damages caused by not distributed by Comco Ikarus accessories which are connected to the aircraft or used together with it. Neither does Comco Ikarus guarantee trouble-free operation of the Comco Ikarus aircraft in conjunction with these accessories. Such accessories are specifically excluded from this guarantee.

As long as the aircraft is used in conjunction with the accessories not supplied by Comco Ikarus, Comco Ikarus does not warrant the operation of the product combination and Comco Ikarus will not honour any warranty claim where the aircraft is used in such a combination and it is determined by Comco Ikarus that there is no fault with the aircraft. Comco Ikarus specifically disclaims any responsibility for any damage to the aircraft and for other damages of the aircraft with the accessories, when such accessories are not manufactured or distributed by Comco Ikarus.

20.5 Warranty Exclusion

This warranty is not valid if the defects are due to damage, misuse, tampering, neglect or lack of care and in case of alterations or repair carried out by unauthorized persons.

The following are examples of defects or damage not covered by this product warranty

- Defects or damage resulting from use of the aircraft in other than is normal and customary manner.
- Defects or damage resulting from misuse, use with incompatible devices or accessories, accident or neglect.
- Defects or damage due to improper operation, testing, maintenance, installation, adjustment, unauthorized modifications.
- The aircrafts which are disassembled or repaired other than by Comco Ikarus or the IFC / ISC in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim.
- All plastic and synthetic surfaces and all other externally exposed parts that are scratched or damaged due to a customer's normal use.
- Periodic maintenance and repair or replacement of parts due to a normal wear and tear.

21. Appendix

21.1 Placards

Objet	Emplacement
Aerobatics warning	Panel
Trim	Roof rigging
Flaps, mechanical	Roof rigging
Engine oil specifications	Inside oil inspection cover
Fuel specifications	Next to the fuelling cap
Baggage loading	At the baggage compartment
Deviation table	Panel
Controls - Choke - Heating - Carburettor heat	Middle console
Clapet de refroidissement (option)	Panel
Fuel valve	Middle console
Data placard	Middle console
Type placard, fire-resistant	Central holm-structure

21.2 Data Placard

Type:_____

Manufacturer:
COMCO IKARUS GmbH
D-88367 Hohentengen
Germany

Serial No.: _____

Year of production: _____

Never-exceed speed

C42	180 km/h (97 kts)
C42B & C42C	216 km/h (116 kts)
C42CS	225 km/h (121 kts)

Stall speed 65 km/h (35 kts)

Structural limitations

positive limit load factor:	4 g
negative limit load factor:	2 g

Load limits:

Maximum take-off weight: 450.0 kg (992 lbs) 472.5 kg (1041 lbs)
(Strike the unnecessary weight indication)

Minimum useful load 65 kg (143 lbs)

Useful load according to the Pilot's Operating Handbook

21.3 Service Problem Report Form – Aircraft

Aircraft Type: _____ Serial No._____

Year of Manufacture: _____

Engine Type: _____

Manufacture:_____

Owner: _____

Airframe: _____

Total Flight Hours until Defect: _____

Engine:_____

Airframe:_____

Total Flight Hours (Pilot) on Aircraft: _____

Description of damage: _____

_____

_____

Damage Report: _____

_____

_____

Name:_____

Date:_____ Signature:_____

21.4 Inspections Performed

Type: _____ Serial No._____

Registration:_____

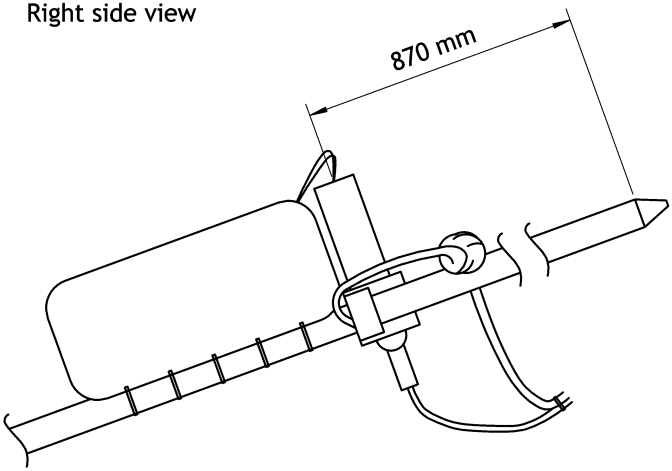
Date	Type of inspection	Recognised expert

21.5 Location of the Parachute Rescue System

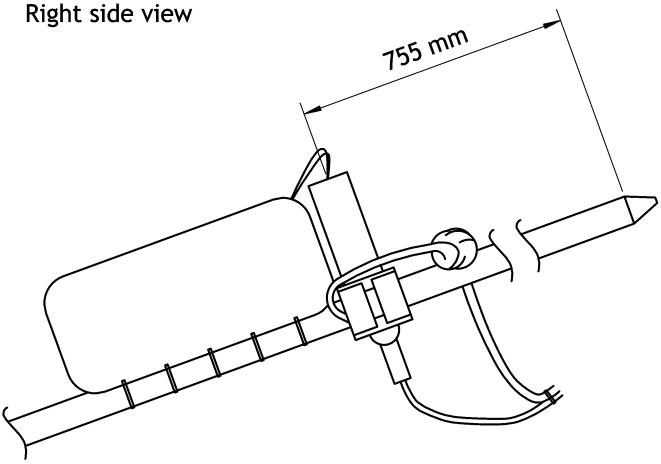
Important :

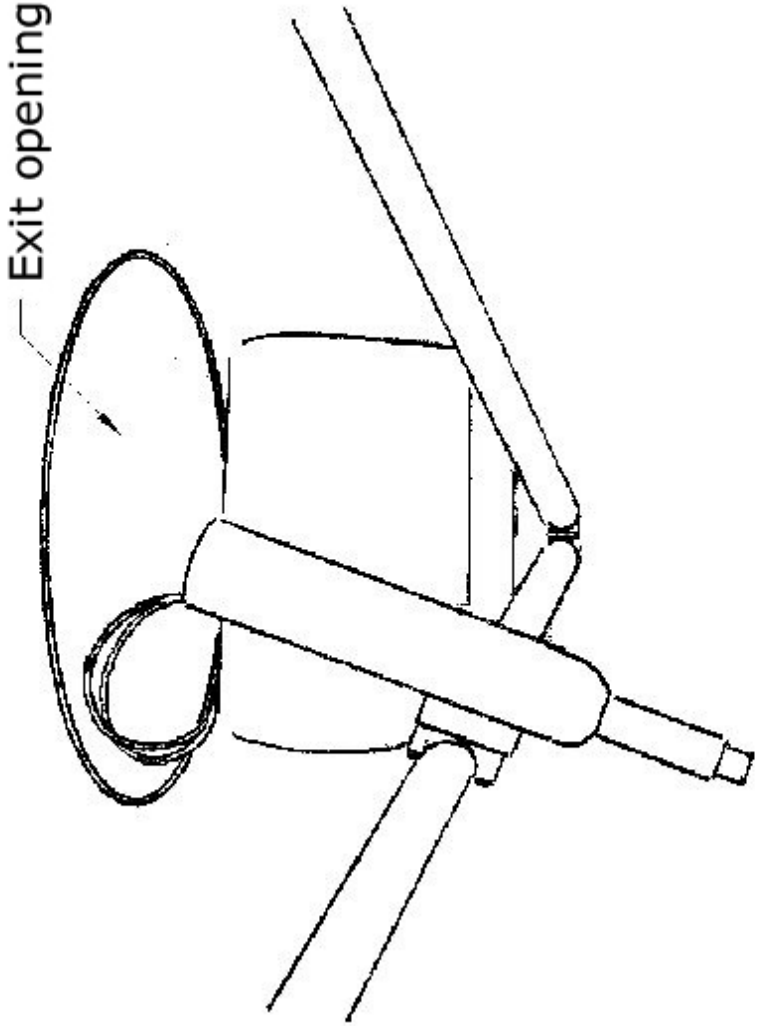
Le collier 450x7.8mmm est a monté autour du collier du fusé et de la première boucle du sac de parachute, afin d'éviter le glissement du parachute vers l'arrière.

Until September 2013
Exit opening approx. 375 mm long (in flight direction)
Right side view



Since September 2013
Exit opening approx. 375 mm long (in flight direction)
Right side view




Exit opening

21.6 Wiring Diagram