



ICARO
Qica²

MANUAL
Version 2/PPG/2022

TABLE OF CONTENTS

TO GET TO KNOW YOUR PICA 2	5
FLYING WITH THE PICA 2	8
FLIGHT PREPARATION.....	8
LAUNCH PREPARATIONS	9
LAUNCH.....	9
ACTIVE FLYING.....	10
FLYING WITH ACCELERATOR	11
TURNING	11
LANDING.....	11
DESCENT TECHNIQUES.....	12
BIG & SMALL EARS	12
B-LINE-STALL	12
SPIRAL DIVE	12
WINGOVER	13
WHAT HAPPENS WHEN IT HAPPENS?.....	13
KNOTS AND TANGLES	13
DEEP / PARACHUTE STALL.....	13
ASYMMETRIC COLLAPSE.....	14
SYMMETRIC COLLAPSE.....	14
EMERGENCY STEERING.....	14
NEGATIVE SPIN.....	14
FULL STALL	14
FLYING WITH MOTOR (PPG).....	15
CARE INSTRUCTIONS, REPAIRS, INSPECTION	19
CARE INSTRUCTIONS.....	19
REPAIRS.....	20
TERMS OF THE WARRANTY	21
ANNEX.....	23
WARRANTY CARD	23
USERS NEEDS FOR INSPECTIONS	23
INSPECTION INSTRUCTIONS	23
PART LIST	24
LINE PLAN ALL OVER (ALL SIZES)	25
LINE TYPE, LENGTH AND TITLE (ALL SIZE).....	25
DESCRIPTION OF THE RISERS.....	29
DESCRIPTION OF THE CANOPY	30

Congratulations on buying your **PICA 2** and welcome to the family of ICARO - pilots!

Before you get to know your glider please read the manual, there is important information inside.

Your PICA 2 is pattern tested in A. Therefore, the glider is a “paraglider with good passive safety and forgiving flight characteristics. It is relatively resistant to abnormal flight conditions. It is appropriate for all pilots including pilots of all training levels.”

The flight maneuvers during the certification process should not be overrated. Certification results provide only little information when you are flying in thermically active and turbulent air because the glider classifications serve to inform solely regarding the performance of a paraglider during extreme flight maneuvers in stable air conditions.

The PICA 2 in the sizes S, M, ML and L are registered by the **Direction générale de l'aviation civile** (DGAC) and can therefore be used as a motor-driven paraglider (PPG). It may be only used for those purposes described in this manual.

It is strictly prohibited to fly the PICA 2

- ***under the influence of drugs or alcohol,***
- ***in insufficient experience or training of pilots,***
- ***without guilty license,***
- ***beyond the minimum and maximum recommended Take Off- Weight,***
- ***with damaged glider, lines, risers or harness***
- ***in the rain, in snow, in the clouds and fog and in turbulent weather conditions,***
- ***with motor drive (except size S, M, ML and L)***
- ***tandem- flying and Aerobatics.***

PICA 2 with the motorized risers may only be used for flights without motor if the riser is attached to the lower attachment point, the trimmers are closed and the straps A, A1, B and C are the same length.

The trimmers may not be used to increase the speed in flight without motor, otherwise the EN type test is no longer valid. Only the accelerator is to be used for this.

If you cannot keep your glider under control, use the rescue system in good time. Always pay attention to ground distance.

Our products are made with great care and state of the art. Each glider before it is delivered to the dealer or flight school is checked by ICARO paragliders (incoming test). This date is entered in the identification plate and as well guarantee as the first 2-year-check period starts.

On that score an approved ICARO dealer or teacher at the flight school must inflate a new ICARO paraglider in the wind or should carry out the first flight before the wing is handed over to you. This date is entered in the identification plate and as well warranty as the first 2-year-check period

starts. If this seal is missing, it must be assumed that this glider is not identical in construction with the model tested at the specification center.

The use of this paraglider is entirely at your own risk. Every pilot bears the responsibility of his/her own safety.

To get to know your glider, we recommend that you practice with your glider on the ground. Pulling up in flat gradients is great practice for fine tuning your launch techniques. Here you can get to learn the reactions of your glider without any stress and hectic. Ground practice pays off in the air.

All technical data and instructions were drawn up with great care. ICARO paragliders cannot be made responsible for any possible errors in this manual.

Important information in this manual is written in ***fat cursive writing***. Any important changes to this manual will be published in our homepage (www.icaro-paragliders.de).

Any modification to the paraglider (lines, canopy, risers) is dangerous and can lead to unwanted reactions of the paraglider. When our paragliders leave production, they are within the allowable tolerance range. This is very narrow and must not be changed under any circumstances, as the optimal relationship between performance, handling and safety is no longer guaranteed, no longer corresponds to the type-tested paraglider and is therefore no longer type-tested.

You can only fly your glider with a valid flying license and in accordance with local rules and regulations. The manufacturer or distributor assumes no responsibility for accidents occurring while using it.

Every pilot must ensure that the glider is properly checked at regular intervals.

Many countries have specific regulations or laws regarding paragliding activity. It's your responsibility to know and observe the regulations of the region where you fly.

Occasionally flown extreme flight or Acro maneuvers do not pose any danger to the structure and strength of the material. However, frequent extreme loads accelerate the aging process considerably, so that a check must be carried out earlier on gliders that are frequently subjected to these maneuvers. The same applies to gliders that are flown at sea or in salty air for a longer period.

Environmental aspects:

The materials of which a paraglider is made require a special waste disposal.

So please send disused gliders back to us. We will care about a professional waste disposal without costing for you.

Please do our nature-near sport in a way which does not stress nature and environment!

Please do not walk beside the marked ways, do not leave your litter, do not make unnecessary loud noises, and respect the sensitive balance in the mountains.

To get to know your PICA 2

Allowed for training	yes
Certified / allowed for aerobatics	no
Certified / allowed for flying with passengers	no
Certified / allowed for towing	yes
Certified / allowed for flying with motor drive (only size S, M, ML and L)	yes

Technical data		XS	S	M	ML	L
Certification LTF/ EN		A	A	A	A	A
Number of cells		38	38	38	38	38
Number of risers		3+1	3+1	3+1	3+1	3+1
Riser length	mm	480	480	520	520	520
Maximum way of the accelerator	mm	90	90	110	110	110
Trimmer	mm	none	none	yes	yes	yes
Weight of the glider	kg	3,7	3,9	4,3	4,5	4,9
Wing Area flat	m ²	20,5	22	25,5	27,5	29
Wing Area projected	m ²	17,4	18,7	21,6	23,3	24,6
Wingspan flat	m	10,1	10,5	11,3	11,7	12,1
Wingspan projected	m	7,9	8,2	8,8	9,1	9,4
Aspect Ratio		5,0	5,0	5,0	5,0	5,0
Aspect Ratio projected		3,6	3,6	3,6	3,6	3,6
Take off weight.	kg	56-75	65-85	80-105	95-115	110-130
<i>DGAC Homologation</i>		-----	yes	yes	yes	yes
<i>DGAC Weight range (PPG)</i>	kg	-----	60-105	80-115	95 - 125	110 - 140
<i>Length of motor risers</i>	mm	-----	520	520	520	520
<i>Trimmer</i>		-----	yes	yes	yes	yes
<i>Maximum way of the trimmer</i>	mm	-----	100	100	100	100
<i>Accelerator</i>		-----	yes	yes	yes	yes
<i>Maximum way of the accelerator</i>	mm				-----	
<i>Maximum power</i>	kW		25	30	30	30
Check interval						24 months or 150 operating hours, depending on what occurs sooner.

PICA 2 is a single-seated paraglider. The PICA 2 has good resistance to abnormal flight conditions and is suitable for pilots of all training levels who place value on the highest possible level of passive device safety. For pilots with less than 15 to 20 flight hours per

year, only EN A-classified paragliders are recommended. He is neither suitable for aerobatics nor pattern tested.

In normal flight, the flight and control behavior of the PICA 2 requires mastery of the flight techniques taught in the basic training. Mastering active flying is essential for safe thermal flights.

In the event of malfunctions, it is advantageous to have the basic theoretical knowledge of how to avoid and control malfunctions learned in the training course, although devices in this category do not place any significant demands on the pilot.

It is therefore recommended to learn and practice both troubleshooting and rapid descent aids during safety training.

The PICA 2 is neither suitable nor approved for aerobatics. All maneuvers in which a bank angle of 60° or a pitch angle of 30° are exceeded are considered aerobatic, as well as flight maneuvers in which the canopy is flown from behind.

The PICA 2 in sizes S, M, ML and L is registered by the ***Direction générale de l'aviation civile*** (DGAC) and approved as a motorized paraglider. You can find additional information about flying with a motor under a separate article.

Canopy

The conventionally constructed profile nose with rods and the rearwardly offset suspension points on the A-level with a newly calculated performance profile and the mixed material Skytex 38 and STA 15 Techfiber Services Inc. are the essential features of the new PICA 2.

The advantages that this new profile offers the pilot are:

- The glider starts better and easier, which makes training operations much easier.
- A better dynamic pressure is achieved over the entire range of the angle of attack, because: the higher this is, the more stable the canopy is over the entire speed range.
- The paraglider, stalls later, and gives the pilot a larger control line area.
- In high-speed flight, the profile is more dimensionally accurate than with conventional profiles and
- The reduced air resistance results in better gliding and climbing performance. In addition, different fabric materials on the upper and lower sail reduce the weight, but still guarantee the highest form and aerodynamic stability and strength. The dirt outlet openings on both sides of the leech make it easier to clean the inside of the canopy. The coating makes the fabric water-repellent, UV-stable and air-impermeable. Between the single groups of main lines are taut ribbons sewn in, which are regulating the tension of the sail.

Lines

The entire line system is formed from individual lines, which are sewn and looped at both ends. The lines and stitching are subject to rigorous production controls, to ensure high and consistent manufacturing quality.

Upon delivery, the PICA 2 is provided with an “anchor stitch” trim loop on the C level. These are used to compensate for the unavoidable changes in length of the lines, which depend, among other things, on climatic conditions, the storage of the glider, maneuvers, the type of line used, etc.



As a rule, the A and B planes stretch slightly due to the higher load in the front area of the canopy, while the C-level mostly remains unchanged or even shrinks a little under certain circumstances. This makes the glider a little slower due to the higher angle of attack.

The first signs of a trim change are

- worse start
- Changed flight behavior, the glider is slower and more sluggish or
- Tending to deep stall when flying with big ears.

After the first 15 to 20 flight hours, the lines stretch or shrink the most, so that ICARO Paragliders recommends that an initial trim check be carried out by an authorized workshop.

If one of these possibilities occurs, we recommend opening the trim loops on the C level step by step to counteract these effects (first, instead of the anchor stitch, use a double loop. If nothing changes in the above properties, then open the double loop and hang the line in the line lock).



If there is still no improvement, the glider must be checked and measured by qualified personnel. He has the option of either trimming the canopy without changing the lines or, in the worst case, replacing the affected lines with new ones.

If you are not sure or have any questions, please contact your dealer.

The PICA 2 is delivered from the factory with the best **brake position** for most pilots. But tall or short pilots, or those with a harness with non-standard attachment points might consider it necessary to change the position of the brake handles.

If the brakes are to be shortened, it is extremely important to avoid the adjustment affecting the glider's trim speed. There must always be some slack in the brakes when they are fully released. This can be checked with the glider inflated above the pilot's head. There should be a noticeable bow in the brake lines, and the brakes should be having no effect on the shape of the trailing edge.

If you need to change the brake line lengths, do it maximum 5 cm at a time, and check it at an easy training hill. Check especially that both lines are the same length, as any asymmetry will lead to tiring and possible dangerous flying characteristics.

Check with ICARO paragliders before you intend to change the length of the lines. Any unauthorized change to the length of the lines (including the control lines) that is not approved by ICARO paragliders is dangerous, leads to unwanted reactions of the paraglider, and the loss of the type test and is therefore prohibited.

Risers

The Glider has 3-fold risers with separated A-risers an acceleration system which will be activated with a foot bar.

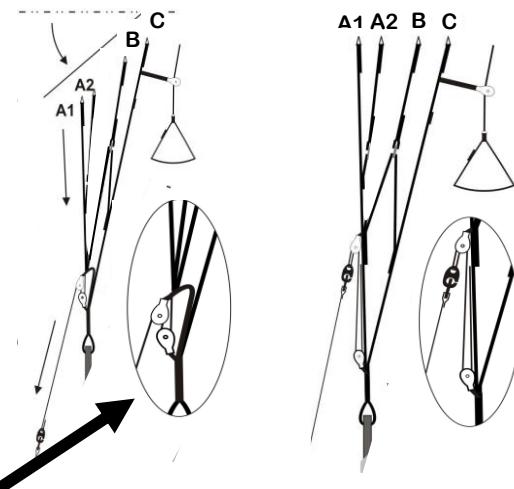
A special riser with trimmer and accelerator is optionally available for PPG. The PICA 2 with the motorized risers may only be used for flights without motor if the riser is attached to the lower attachment point, the trimmers are closed and the straps A, A1, B and C are the same length.

Acceleration system

When flying normal all risers have the same length. When using the accelerator system, the risers are shortened by a constructive exactly defined length.

Therefore, the angle of attack of the canopy is smaller and speed increases.

The length of the accelerator is adjusted to the left and right of the foot pedal so that when your leg is fully extended, then the acceleration is at maximum – both rollers are touching.



Please pay attention that the glider will not be pre-accelerated, while the accelerator is loosened, when the acceleration ropes are set too short. Assembling the accelerator is reliant upon the harness, e.g., numbers of return pulleys, rope guide ...

The more turbulent the weather conditions and when near the ground, the less acceleration should be used.

Do not use the acceleration system and brakes at the same time! It is very dangerous to use both simultaneously as it can result in serious collapses.

Flying with the PICA 2

Harness

The PICA 2 is certified for use with harnesses GH type. Practically all modern harnesses are GH type harnesses. Older harnesses with fixed cross belts (GX type) are not certified and should not be used.

The adjustment of the harness chest strap controls the distance between karabiners and affects the handling and stability of the glider. Excessive tightening the chest strap increases stability but also the risk of twists following glider collapse, and it also increases the frequency of getting collapses due to poor feedback from the glider.

The risk of twisting is also strongly affected by the seating position of pilot. Flying in a laid back (reclined) position makes it much more difficult to react in time to prevent riser twisting. With the chest strap in a more closed position the glider also has more tendency to maintain a stable spiral, lengthening of the chest strap gives more feedback from the glider but decreases stability.

ICARO paragliders recommends following settings:

Take-off weight	< 80kg	80 kg -100 kg	> 100kg
Horizontal distance of the main karabiners	38 cm – 42 cm	42 cm – 46 cm	46 cm – 50 cm

Flight preparation

- When choosing an area to lay out the glider before launching, try to find somewhere that is relatively free of stones and sharp rocks. Pay particular attention to the top surface, where the canopy touches the ground.
- Never step on your glider – stepping on it will weaken the cloth.
- We recommend keeping an eye on other pilots, spectators, and smoking people near of the glider. Many of them do not appreciate the fragility of the lines and cloth.
- Whilst unfolding your paraglider check the canopy and cell walls for damage. Always take into consideration that the paraglider may have become damaged during transportation.
- Make sure that no sand, stones, or snow get inside the canopy as the extra weight collected in the trailing edge may slow down or even stall the glider. Sharp edges damage the canopy.
- Check the lines for knots, twisting and damage, the brake lines for knots, kinks and their symmetric. Loose or incorrect brake knots can cause serious accidents through loss of the steering of the glider!
- Separate the line groups carefully and bring the risers in order. All lines must run freely from harness to canopy. It is equally important that the lines are unhindered and cannot get caught up during the launch.
- There should not be any lines underneath the canopy. If the lines wrap around the canopy, this can result in injury or death!
- Check the rescue system (handle's pins fixed in the loops and the closed cover of your harness).
- Check your harness and make sure that all connections to pilot are correctly closed. Check that all karabiners are closed and can not be opened accidentally in flight and the risers are not twisted.
- Check canopy (all cells are open), wind direction and airspace.

Do not launch if there are any defects!!!

Launch preparations

Before every launch you should carry out the standard 5-point checking procedure. Do the checks following the same sequence every time.

1. Helmet, harness, carbines closed.
2. Lines, risers, and accelerator/ trimmer, ok?
3. Leading edge open?
4. Wind direction and strength, ok?
5. Airspace and start area, ok?

Launch

The most important thing during the take-off is, like at all other gliders too, not the force but the constancy of the pull.

At the start advice to fix the accelerator with the Velcro which is attached at the front of the sitting board, to avoid tripping while pulling up the glider or when starting up.

Hold only the middle A risers and the handles of the brakes. When you pull on the A-risers, the lines in the middle of the wing should be under tension before the lines

on the wing ends. This ensures an even easier start. Use progressive pressure on the A risers and the energy of our own bodies weight until the wing is fully inflated overhead. The canopy is inflated quickly due to the super short lines. When there is no pull from the lines and the wing is overhead, use slight pressure on the brake. Look up and make sure that the canopy is fully inflated. After a few accelerating steps and at the same time let go of the brakes gently, you will take off. Then use slight pressure again on the brakes to fly at a speed with minimal sink rate.

When there is strong wind the reverse launch technique is recommended. Holding the brakes, turn around to face the wing passing one set of risers over your head as you turn. We suggest building a "wall" by partially inflating your glider on the ground, thus sorting out the lines thoroughly.

Towing

- When towing, pay attention to the country-specific regulations and ensure that the towing is only carried out by competent personnel.
- Before towing you should read the safety instructions for the towing equipment. • For winch towing you must use a tow release that has been specially built and approved for this purpose.
- Connect the tow release to the main attachment point for the carabiners according to the manufacturer's recommendation.
- Direction corrections during the take-off phase and before reaching the safe altitude are to be avoided.
- Care must be taken to descend at a shallow angle from takeoff to safety height.
- Do not overbrake during the towing process and always steer carefully, as the glider flies with an increased angle of attack.

Active flying

Active flying in normal flight means that the wing is always kept at a safe angle of attack and, if possible, vertically above the pilot. The moving air affecting the wing often changes the angle of attack in an unwanted way. When flying into an upwind the paraglider often bucks, the wing drops back, the angle of attack increases, getting closer to a stall. In upwind the canopy pitches forward, the angle of attack is reduced and there is the risk of a collapse. Both can occur symmetrically, on both sides or asymmetrically, on one side only. It is impossible to control the angle of attack by looking to the canopy. Look in the direction you are flying, changes in the horizon inform the pilot about the canopy's movements.

Braking is also an absolute must! If the canopy pitches forward, the angle of attack decreases. In the case of strong forward pitching there is a risk of the canopy collapsing due to its insufficient angle of attack. The pilot must therefore prevent the canopy from pitching forward by pulling the controls down on both sides. Inversely, the angle of attack increases if the wing drops back behind the pilot, e.g. when entering into a thermal. The canopy is closer to stalling.

In these flight situations a significant braking movement by the pilot can lead to a spin or a stall. When the wing drops back, the pilot therefore must not brake and/or if the pilot is already holding the controls low, he must release them accordingly.

Any change in the angle of attack immediately transfers in to a change in the control pressure of the brakes. The control pressure presents the pilot with immediate information on the angle of attack and on what the canopy is doing or about to do.

Flying with accelerator

When using the accelerator, be careful. The accelerator should be employed, to compensate for high angles of attack and the associated potential risk of a stall. Do not step too quickly because your glider will dive down from the strong change in angle of attack. Put equal pressure on the speed bar with your feet until the pulley touches the A-riser, and the glider will quickly gain speed and the sink speed remains very moderate from beginning up to full speed.

The more turbulent the weather conditions and when near the ground, the less acceleration should be used. Using the accelerator decreases the angle of attack and can make the glider more prone to collapse.

Do not use the acceleration system and brakes at the same time! It is very dangerous to use both simultaneously as it can result in serious collapses.

In flight without engine, trimmers must not be used, otherwise the EN type approval is no longer valid.

Turning

A combined steering technique is suitable for every situation. The glider is agile and reacts to steering impulses quickly and directly. Strong, one sided pulling of the brakes brings the glider into an obvious side angle and the glider flies fast steep curves until spiral dive begins.

If the brake lines are pulled too fast or too far the glider will be stalled!

A one-sided stall is signalized clearly by: The curves inner side of the wing is getting soft, and nearly stops. In this case you have to release the brake lines!

Landing

Always stand up in the harness in the landing position very early to be able to react as fast as possible to sudden events. Set up your final landing leg to face into the wind to minimize groundspeed. If you leave the inflated leading-edge bang on the ground, this can cause the cell walls to burst!

***Do not brake too much, to avoid a stall of the glider in this very low altitude!
Do not reduce height by “pumping” with the brakes.***

Descent techniques

The methods described here can stress the material and structure of the paraglider and the pilot to their physical and psychological limits. They should therefore only be used for training and in emergency situations.

- *Training of descent techniques and simulation of flight incidents (SFI) should only take place at professional safety training seminars with professional trainer and only while flying over water.*
- *Before inducing any exercise control the airspace beneath.*
- *During the exercises stay in contact with the canopy.*
- *If the glider is out of control, use your reserve parachute.*

Big & Small Ears

The aim of this exercise is to descend in strong thermals. Only take the outer lines of the A-risers in your hand, without releasing the brakes and pull down leaving it run through your hands (use gloves!).

Sink rate increases but not the forward speed. If you use the acceleration system, then higher sink speeds can be achieved.

Reopen the wing by pushing up with your hands and if necessary, then pump the brakes with short symmetric movements. For directional control while using the big ears, you should use weight shift.

Never attempt tight turns or spirals with Big Ears, as the A-lines will be overstressed.

B-Line-Stall

B-Line-Stall is not so effective, furthermore stresses the material of the glider and reduces operating life of the canopy. To enter and hold a B-line-stall requires considerable strength.

It is very dangerous performing a B-line-stall incorrectly and following errors must be avoided:

- *pulling too far on the B-line-stall aid, so that the A-lines are pulled too,*
- *exit is too slow,*
- *releasing the B-line-stall aid without simultaneously pushing up with your hands,*
- *using brakes during or directly after exiting,*
- *Brakes must not be shortened by twisting around your hand during the exercise.*

Spiral Dive

In a controlled spiral dive, the pilot applies an active flying technique in the same way as when circling in thermals. The strong centrifugal forces in a spiral dive, however, change the control pressure. It increases by a multiple of the force.

Even in moderate spirals, the pilot reaches double acceleration of gravity (2G). Subsequently, the control pressure also doubles.

To initiate a spiral dive, look in the direction you want to go, roll your body weight in that direction and at the same time smoothly pull down on the inside brake. The **PICA 2** will start to turn, and then drop into a spiral.

In the spiral dive an uncontrolled acceleration of the canopy must be prevented. As the canopy always accelerates via the outside of the wing, the spiral speed is controlled via the outside brake by applying the active flying technique.

If the speed increases in an unwanted manner, pull the brakes further to slow down. If the wing becomes too slow, it can be speeded up by releasing the outside control.

If you pull abruptly and too far on the brakes, the canopy may enter a negative spin. When entering a spiral dive keep the brake on the outer curve released.

The glider does not have a tendency for stable spiral dive.

If under certain conditions, it should go into a stable spiral dive then actively exit the maneuver by bringing your weight into a neutral position, release the brakes of the inner curve side and brake gently on the outer curve side until you notice that the wing starts to level out. Then gently brake on the inside curve for several turns until normal flights returns.

Wingover

The **PICA 2** is an agile glider, and it is quite easy to get to an excessively high angle of bank in just a few turns. Practice wingovers gently at first, as there is a chance of quite large collapses at high bank angles.

What happens when it happens?

Knots and tangles

The best way to avoid knots and tangles is to inspect the lines before you inflate the wing for take-off. If you notice a knot before, take off, immediately stop running and do not take-off.

If you have taken-off with a knot you will have to correct the drift by leaning on the opposite side of the knot and gently apply the brake line on that side too. You can gently try to pull on the brake line to see if the knot becomes unfastened or try to identify the line with the knot in it. Try to pull the identified line to see if the knot releases. If the knot is too tight and you cannot remove it, carefully and safely fly to the nearest landing place.

Be very careful when trying to remove a knot. When there are knots in the lines or when they are tangled, do not pull too hard on the brake lines, there is an increased risk of the wing to stalling or negative turn being initiated.

Deep / Parachute Stall

Your glider has been carefully designed to resist entering deep stall. Before exiting a deep stall, please ensure that the brakes are fully released. Actively exit the deep stall by reaching up and push forward with both palms on the A-risers or pull on them. Avoid flying in very humid air or in rain. A wet canopy may have very unpredictable flying characteristics, one of which is a radically increased risk of deep stall.

Never pull the brake-lines during a parachute stall, because the glider would go into a full stall immediately. If you find yourself flying in unavoidable rain we strongly recommend that you avoid any sudden movements or radical

brake line input, that you do not pull Big Ears or B-Line-Stall, and that you steer clear of turbulence and avoid a deep flare on landing.

Asymmetric Collapse

While flying in turbulent conditions it may occur that a portion of your glider deflates. However, just like in flying in turbulences, please pull gently on both brakes. Re-inflation is speeded up by counteracting the turning movement of the canopy until normal forward flight return. Then pump the brake line on the collapsed side.

If the canopy is in front of the pilot after an asymmetrical collapse, the pilot must immediately and decisively break down the open side to prevent an uncontrolled rotation. The same rule applies here: If the wing is ahead, braking is a must. Sometimes, however, the angle of attack on the open, not-collapsed side is relatively high and the wing is behind the pilot. Then a significant control movement would cause a stall and its potentially extreme reactions.

If the collapsed part of the canopy is very big, you have to brake the open side very dosed (not too much!) to avoid a stall.

Symmetric Collapse

Your PICA 2 normally re-inflates promptly in a symmetric collapse without pilot input. Applying the brakes symmetrically will speed things up.

Emergency Steering

Should it no longer be possible to steer your glider, for example due to a broken line, the glider may be steered by gently pulling on either rear riser.

By steering this way airspeed is reduced hardly. Therefore, for landing you must change to the rear risers to control your glider. Handling will be more direct so being careful not to pull too hard.

Negative Spin

If the pilot abruptly applies full brake to one side of the glider while the other side is at zero brake, the faster side may fly around the braked and stalled side resulting in a spin. Alternatively, if flying very slowly with almost full brakes on both sides, if one hand releases one brake suddenly, while the other continues with full brake, the glider may enter a negative spin. To exit a spin just do "hands up" to release the brakes and the glider will return to normal flight.

If you do not have control over your glider and you are running out of altitude, immediately deploy your reserve parachute.

Front stall

After a front stall of the canopy, the wing moves backwards while the pilot with his higher mass moves further ahead. Wing behind, pilot ahead, significantly high angle of attack – there is only one thing to do:

Do not brake or you run the risk of a dangerous stall.

The pilot must not pull the control lines before the canopy is at least above him again. If the canopy then shoots forward dynamically, it is absolutely vital to stop the motion in a consistent and decisive manner via the brakes.

Full Stall

Spin and full stall are both dangerous and somewhat unpredictable exercises. Do not stall or spin your paraglider on purpose.

To initiate a full stable stall, apply both brakes to maximum arm extension. If possible, grasp the seat of your harness to assist keeping your arms locked. The pilot will swing back under the canopy and finally the canopy will stabilize to a full stall. Once in a stable stall, the exercise can be completed. Release the brakes just a little and let the glider fill until it regains shape. Then release the brakes fully and your glider will return to normal flight.

It is imperative that the pilot fully completes this exercise and holds on, as a premature release while the glider is still falling back may cause the glider to rapidly dive ahead past the pilot. There is a possibility of the pilot landing in or entangling in the glider.

Flying with motor (PPG)

In this appendix to the PICA 2 manual, you will find all relevant information about flying with a motor. This supplements the 3 chapters

- "Flying with the PICA 2",
- "How do I get back down?", and
- "What do I do if it happens?"

because these are basically also valid for flights with a motor.

Application area

The PICA 2 is ideal for powered flight due to its good all-round properties.

For this, however, the optionally available motor risers must be used, which can also be used for flying without a motor.

Engine compatibility

The necessary test flights were carried out with a commercially available engine of the medium power class (30 kW). Other engine models should, if they do not exceed this maximum output, show largely the same reactions.

Risers and assembly of the motor risers

ICARO paragliders are always delivered with the standard risers. At special request of the customer, however, we can assemble these before delivery and include the standard risers separately.

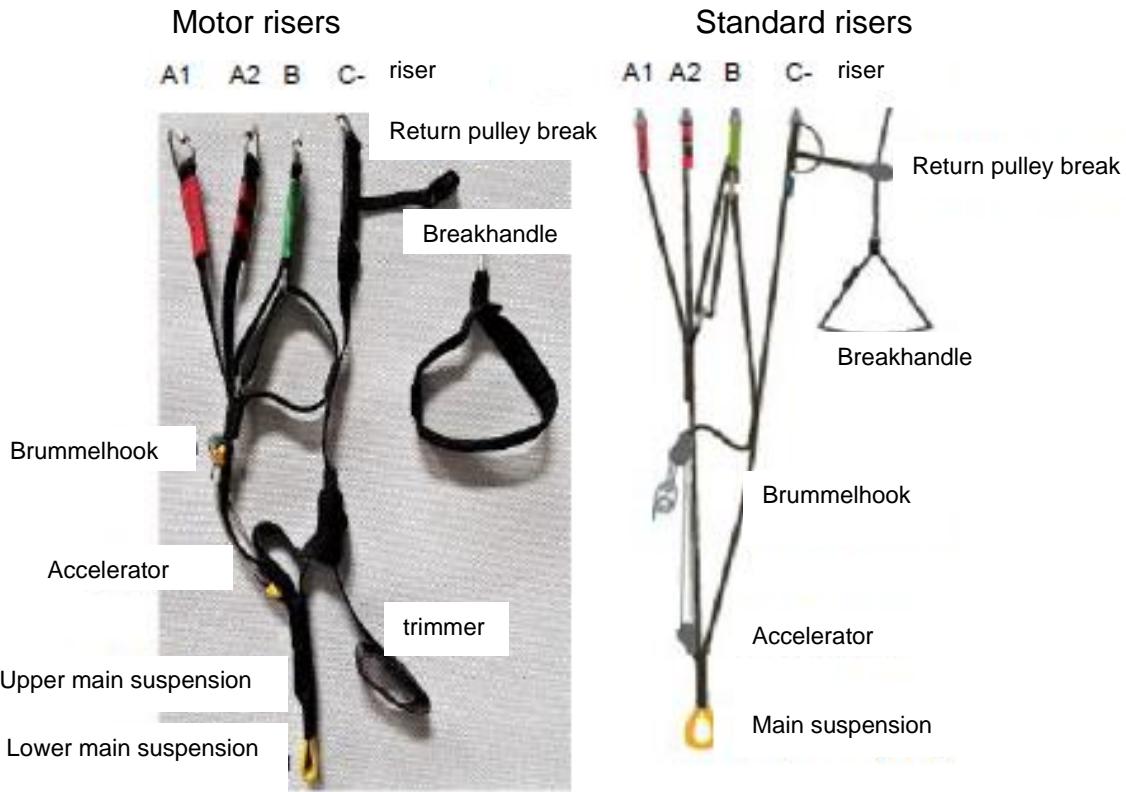
If you want to assemble the risers by yourself, there are a few things to consider.

As can be seen in the below picture, both risers are the same in structure and length, the difference is that the motor riser **additionally has a trimmer and a second main suspension**.

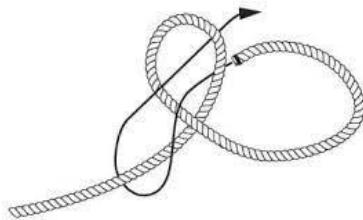
Carry out the conversion in the following order:

1. Remove the safety clips from all line locks
2. Loosen the screw connection of the line locks on both risers so that you can loosen them completely with your fingers (open-end wrench MW 7).
3. Open the line lock A1, take out the line and put it into the line lock A1 of the motor riser and screw the line lock with your fingers as far as you can.

4. Then open the line locks A2, B and C in the following order, take the respective lines out of the line lock and put them into the respective line lock of the motor riser; **Attention: pay attention to the order!!!!!**
5. Tighten the line lock with your fingers.



Next, open the knot on the brake handle, guide the brake line through the pulley and put it from above (coming from the canopy) through the pulley of the motor riser, then through the swivel of the brake handle and knot the brake line (a bowline is recommended as this can also be opened again under tension).



Now go to a free field and pull your paraglider up several times to check that all lines are installed in the correct line locks and in the correct order.

Then carefully tighten all line locks with the open-end wrench (make sure that you do not overtighten them) and secure them with the plastic clips.

If you use the upper main suspension, make sure that you also shorten the brakes by this length (difference between the upper and lower main suspension), otherwise the braking distance will be longer.

With the trimmers the torque of the motor can be balanced, the additional accelerator pedal is intended to change the angle of attack and thus to accelerate the paraglider.

The default setting of the trimmer is always closed and will be used

- for starting,
- for landing,

- when climbing with motor,
- for maneuvers intended to aid descent, and
- if the air is turbulent.

The handling is best in the standard setting. In addition, in the event of a malfunction, the glider is in the optimal trim to recover as quickly as possible.

Flying with the trimmers open changes the behavior of the wing; Curves destroy more height and are steeper, the reopening of a side collapse is more dynamic. Therefore, we do not recommend using the trimmer and the accelerator at the same time to increase speed.

Always set the trimmers to the default setting in turbulent air or before descending.

The trimmers may not be used to increase the speed in flight without motor, otherwise the EN type test is no longer valid. Only the accelerator is to be used for this.

The PICA 2 with the motorized risers may only be used for flights without motor if the riser is attached to the lower attachment point, the trimmers are closed and the straps A, A1, B and C are the same length.

Start

Always lay out your paraglider on the leeward side of the engine. Never leave your engine or the paraglider with the engine on the leeward side of the paraglider connected when your equipment is unattended.

At the start, choose a sufficiently long, flat or gently sloping meadow without obstacles. Thanks to the excellent take-off behavior of the PICA 2, the trimmers do not have to be opened during take-off because this increases the take-off speed and thus the take-off distance.

If you fly the PICA 2 in the weight range for powered flight, it also has an increased trim speed. The associated higher take-off and landing speed is particularly noticeable when there is little wind.

Wait until the umbrella is over you and gently accelerate. If the engine is used too early, it could inhibit the wing's inflation characteristics, causing the wing tips to come up faster. Try to walk upright and accelerate until the canopy takes off. Climb calmly and avoid flying over trees, power lines or the like so that you can always land safely in the event of an engine failure. It must always be possible to get to a decent landing site, even if the engine is on strike.

Climb

Once you are in the air, you should keep going upwind to gain altitude. If the trimmers are set to their default settings, you will get the best climb.

- Do not try to climb steeper and faster with the use of the brakes, because this makes the paraglider more susceptible to interference and the pendulum effect can also become extreme.
- Do not change direction unless you have enough altitude and speed.
- Avoid low turns with the wind at low speed.

Flight behavior

The flight behavior of the PICA 2 when flying with a motor is largely identical to flying without a motor with the same wing loading.

Although the PICA2 is damped in its rolling movements, you can create a "rocking movement" with a combination of propeller torque and pilot weight shift and / or use of the brakes.

To stop that

- gently remove the gas,
- Make sure you are centered with your weight and
- the brakes are free.

At full throttle, torque is what makes your wing want to make a slight turn. The best countermeasure is to adjust the trimmer.

Since a higher wing loading is possible for powered flight due to the higher take-off weight (see table), the maneuvers are more dynamic. The same applies to flying with the trimmer open and accelerating, because this reduces the angle of attack. Although the PICA2 is very stable, the trimmers should remain closed when flying through turbulent air.

Avoid abruptly accelerating or taking it away, as this can cause the glider to rock. This can be stopped by applying the brakes.

Landing

Always land against the wind and always with the engine at a standstill!

On the final approach, fly your paraglider straight ahead and at trim speed until you are about three feet above the ground. Pull the brakes slowly and progressively to flare the paraglider out.

Make sure not to flair too hard or too fast, as your paraglider could rise again a little before the current breaks off. Choose an approach that suits the landing field and conditions. In light winds you have to flair strong, long and progressive in order to reduce your speed over the ground as much as possible.

In strong winds you have to turn towards your paraglider. Then pull the brakes symmetrically and evenly to stall him.

Sample check

The PICA 2 is type-tested in all sizes for the foot start EN / LTF. For powered flight, sizes S, M, ML and L have been registered by the French DGAC (Direction générale de l'aviation civile).

The EN / LTF type test of the PICA 2 is only upright for the flight without a motor with the motor risers if the glider is attached to the lower attachment point and the trimmers are closed (The risers A, A1, B and C must be the same length).

Care instructions, repairs, inspection

Care Instructions

- A new wing supplied from the factory is often compressed hard. The compression serves to reduce shipping costs but should not be repeated once the wing has been unpacked and flown for the first time.
- Note that the glider bag should not be used as a seat.
- Even with good care and maintenance, just like any item exposed to the elements, your glider can wear out after a certain amount of use. This can change flight behavior and safety. We recommend a regular safety inspection of the canopy and all lines.
- If you clean your glider, it is best to use warm water and a soft sponge.
- Store your glider in a dry and dark place, ideally between 5° and 30° Celsius and humidity between 55 and 65%. Do not store it near chemicals or petrol.
- If you will not fly for longer period, store the glider releasing all compression straps and take it out of its backpack so that the fabric is not compressed, creased or stretched.
- Avoid storing your glider for days at a time in a hot car.
- Unpack your paraglider shortly before launch and pack away immediately after landing to avoid any unnecessary UV exposure.
- When unfolding the paraglider ensure that neither the canopy nor the lines become too dirty. Dirt particles can damage the material and lines.
- Never use chemical cleaning agents, brushes, or hard sponges on the material, as these destroy the coating and affect the strength of the cloth. The canopy will become porous and will lose structural strength.
- Never attempt to clean your paraglider in a washing machine. Even without using detergents the simple mechanical abrasion will quickly finish the canopy and render it useless.
- If you are flying near the sea most the wing may age faster because the air is humid and salty. In this case we suggest you have it checked more often than prescribed in this manual.
- Also avoid dipping it in a swimming pool; the chlorine will damage the cloth.
- If you must rinse or clean your glider do so with fresh water. Frequent cleaning will accelerate the ageing process.
- If the glider has become wet, lay it out so that air can get to all areas of the fabric.
- After landings in trees or on water you should check the length of the lines and the canopy.
- Flying all the descent or acrobatic exercises will not normally pose a structural problem but freestyle training accelerates the ageing process dramatically.
- There is no special method packing your glider. ICARO paragliders commends the “Cell to Cell-method bag because the reinforcements of the leading edge stay flex-free on top of each other and do not fold.

- When folding your glider make sure that there are no insects inside the canopy. Many insect species contain acids that could damage the cloth. Grasshoppers gnaw their way out of a folded canopy, making it full of holes in the process.
- When you did not fly for a longer period ICARO recommends to check the glider (e.g., mildew stains, splice of the lines, corrosion of the shackles and carbines). If you are not convinced of the glider's airworthiness, please send your glider to an authorized ICARO dealer to check your glider. The same is recommended for harnesses.

Repairs

Only use original ICARO parts for repairing your glider. If you don't you lose the warranty for your glider.

Small holes in the canopy (max. 20x20 mm) can be repaired by the pilot by using self-adhesive sailcloth on both sides of the perforation.

Damage to the lines or any other repairs should only be carried out at an authorized ICARO center.

If your glider needs to be repaired, please contact your local ICARO paragliders dealer.

Inspection

It is important to have your glider inspected by a trained ICARO technician, but it is also allowed to check your glider for yourself.

In the annex you find the regulations for checks of certified gliders and items in order to perform a paraglider inspection you need.

Inspection interval

24 months or 150 operating hours, depending on what occurs sooner.

Without regular certified inspections, your glider will lose its pattern test result and warranty.

ICARO recommends having wings that are often used for training of descent exercises, acrobatics or flying in salty or sandy conditions subjected to checkups all 100 operating hours or 12 months.

It is also important, that ground handling also will be considered. All gliders, especially gliders manufactured with light and thin material are mechanically more stressed than other gliders. Therefore, ICARO recommends multiplying ground handling time with the factor 1, 5.

Not only gliders have a recurrent inspection interval. Airworthiness of harnesses and rescue systems must also be verified. Generally, it is recommended to change aluminum snap hooks after 24 months or 200 operating hours.

According to German and Austrian aeronautical legislation the owner of a glider can check the airworthiness by his own or order a third person (for example manufacturer/importer) to do this.

To perform your own airworthiness check, ICARO paragliders must give you a briefing. Should you decide to check the wing by yourself you must make sure that our guidelines are adhered to. Failing to do so will void the certification.

ICARO paragliders highly recommend that you let the manufacturer or authorized supplier/ person do the check of airworthiness.

All inspections and repairs must be documented (manual page 2).

Terms of the warranty

ICARO warranty covers the cost of materials and workmanship on gliders accepted by ICARO paragliders to fall under the warranty.

Paragliders: **24** month or **150** operating hours, depending on what is first
Harnesses and rescue systems: **24** months

***Warranty is only valid for ICARO products
with LTF/ EN certification.***

What is covered by the warranty?

Provided that ICARO paragliders accept the fault the warranty contains all necessary spare parts related to the replacement or repair of defective parts and working time.

ICARO paragliders accept no freight costs (outbound and return transportation).

What are the conditions of the warranty?

Provided that ICARO paragliders accept the fault, the warranty contains all necessary spare parts related to the replacement or repair of defective parts and working time.

- ICARO paragliders needs to be informed immediately after the discovery of a defect and the defective product must be sent to us for testing.
- The glider/ harness/ rescue system was used in normal circumstances and maintained according to the instructions. This includes the careful drying, cleaning and storage.
- The glider/ harness/ rescue system was used only within the applicable guidelines and all rules have been complied with all times.
- All flights must be accounted for within the flight book.
- There were only original spare parts used and checks, exchange and / or repairs were conducted by an authorized dealer or by ICARO paragliders company / person and properly documented.
- The online form on www.icaro-paragliders.com must be sent at least 6 weeks after buying to ICARO paragliders.

What is excluded from warranty?

- Gliders and harnesses that are used for training purposes, Acro or other official competitions,
- Gliders / harnesses who were involved in an accident,
- Rescue equipment, which has been thrown for an emergency,
- Gliders / harnesses and rescue equipment, which have been changed by yourself,
- Gliders / harnesses and rescue equipment that were not purchased from an authorized dealer / flight school,
- Gliders / harnesses and rescue equipment where the required inspection intervals were not met, and the verification of the glider was not conducted by a ICARO paragliders authorized operation / person

- Damage which has occurred due to improper treatment (i.e. storage in humidity, heat or direct sunlight)
- Parts that need to be replaced due to normal wear and tear,
- Discoloration of the cloth material used,
- Damage caused by solvents, salt water, insects, sun, sand, humidity or “debag-jumps”.
- Damage caused by force majeure.
- Damage caused by the motor (Oil, fuel, damage in cause of the prop) and towing by winch.

In case of a concluded claim the period of warranty carries on. The period of warranty and the connected claim are not prolonged and are only valid until the original date of expiry. The freight costs (transport to and from) are not paid by ICARO paragliders.

In conclusion

the satisfaction of our customers comes first in our efforts. That is why we are open to all suggestions for improvement and constructive criticism from you, because only then can we incorporate them into our new products. We also want to be able to always inform you about the latest technical innovations and information about your paraglider. However, we can only do that if you register with ICARO Paragliders by means of a guarantee registration.

You can find these on our homepage at www.icaro-paragliders.com.



ICARO paragliders

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Annex

Warranty Card

Please fill in the guarantee card which you find on our homepage www.icaro-paragliders.com and send it.

Users needs for Inspections

You will need the following items in order to perform a paraglider inspection:

- Standardized inspection report
- Porosity meter
- Spring scale
- Equipment for measuring line lengths
- Equipment for line strength testing
- Sewing machine
- Big, clean, and bright room

Technical specifications about your glider (type, serial number, size and year of production). Please call ICARO Paragliders for information.

A three-week course at ICARO Paragliders, specified to a glider type together with a legal flight license is the necessary prerequisites for permission to inspect ICARO Paragliders.

Inspection Instructions

Record Information

Spread out your paraglider in a big bright room and make a note of information such as model, type and serial number.

Porosity Test

Use your porosity meter to perform porosity checks at 4 different places of the canopy. The results are recorded in the inspection protocol and are to be evaluated according to the internal guidelines of the workshop.

Visual Control of the Canopy

Hang up the canopy so that you can do a visual check of your canopy. Check for perforations in the upper and lower sailcloth, damaged stitching between the cells, and damage to the leading/trailing edge reinforcements.
Each cell must be checked.

Visual Control of the Risers and Lines

Check the risers, the trimmers, the stitching at each line loop, the brake lines, all seams, and line contact points. Each line must be measured and inspected for kinks.

Strength test of the lines

One complete A-and B- line must be removed, measured and submitted to a strength test. The measured value of each individual line must be noted in the inspection protocol. The minimum of the line's strength are 125% of the normative guidelines.

Measurement of the lines

Measure every single line while stressing it with defined tractive force (5daN). The results are recorded in the inspection protocol and are to be evaluated according to the internal guidelines of the workshop. For all information about the lines (single length, total length, mechanical strength) please call ICARO paragliders, office@icaro-paragliders.com

Assessment

The measurements of all procedures are noted in the inspection protocol. When all facts have been recorded, the technician must make a general assessment. Check the backpack for damage to the zips, seams and straps and repair if necessary, with a sewing machine.

General Remarks

Any other repairs, corrections etc. to the general condition of the paraglider must be evaluated. A copy of the results of each inspection must be sent on to ICARO Paragliders.

The technician must report any unusual faults to ICARO Paragliders within 3 days.

Inspection Reference

Only an authorized technician who has been trained by ICARO Paragliders is authorized to sign and date the glider type label and sign the manual.

Part list

Bezeichnung	Material	Oberfläche	Abmessung	Hersteller
Fangleinenschlösser	Triangel	Edelstahl	Ø 3,5 mm	Mailon
Stammleinen (Stamm)	PPSL 275	Aramid	Ummantelt Ø 1,42 mm	Liros
Mittelleinen (1 Gabel)	PPSL 160	Aramid	Ummantelt Ø 1,35 mm	Liros
Galerieleinen (2 Gabel)	DSL 70	Dyneema	Ummantelt Ø 0,95 mm	Liros
Hauptbremsleine	DSL 350	Dyneema	Ummantelt Ø 2,0 mm	Liros
Bremsmittelleine	TSL 140	Dyneema	Ummantelt Ø 1,3 mm	Liros
Bremsgalerieleinen	DSL 70	Dyneema	Ummantelt Ø 0,95 mm	Liros
Tuch Obersegel	SKYTEX 38	Nylon	Beschichtet	Skytex
Tuch Untersegel	STA 15	Nylon	Beschichtet	Techfiber Services Inc.
Tuch Profile	Skytex 32 hard	Nylon	Beschichtet	Skytex
Faden Segel	TEX 45			A&E
Faden Tragegurte	TEX138			A&E
Schlaufenband	Schiffchenwar	Nylon	12,5 mm	Schmahl
Profilverstärkung	Nylon Webbing	Nylon	Ø 2,7 mm	
Einfassband	NCV 20mm Mylar Tape	Mylar	90g 20 mm	Porcher Marine
Leinensammler (Schlösser)	Leinenschloss Clip	Kunststoff		

ICARO paragliders
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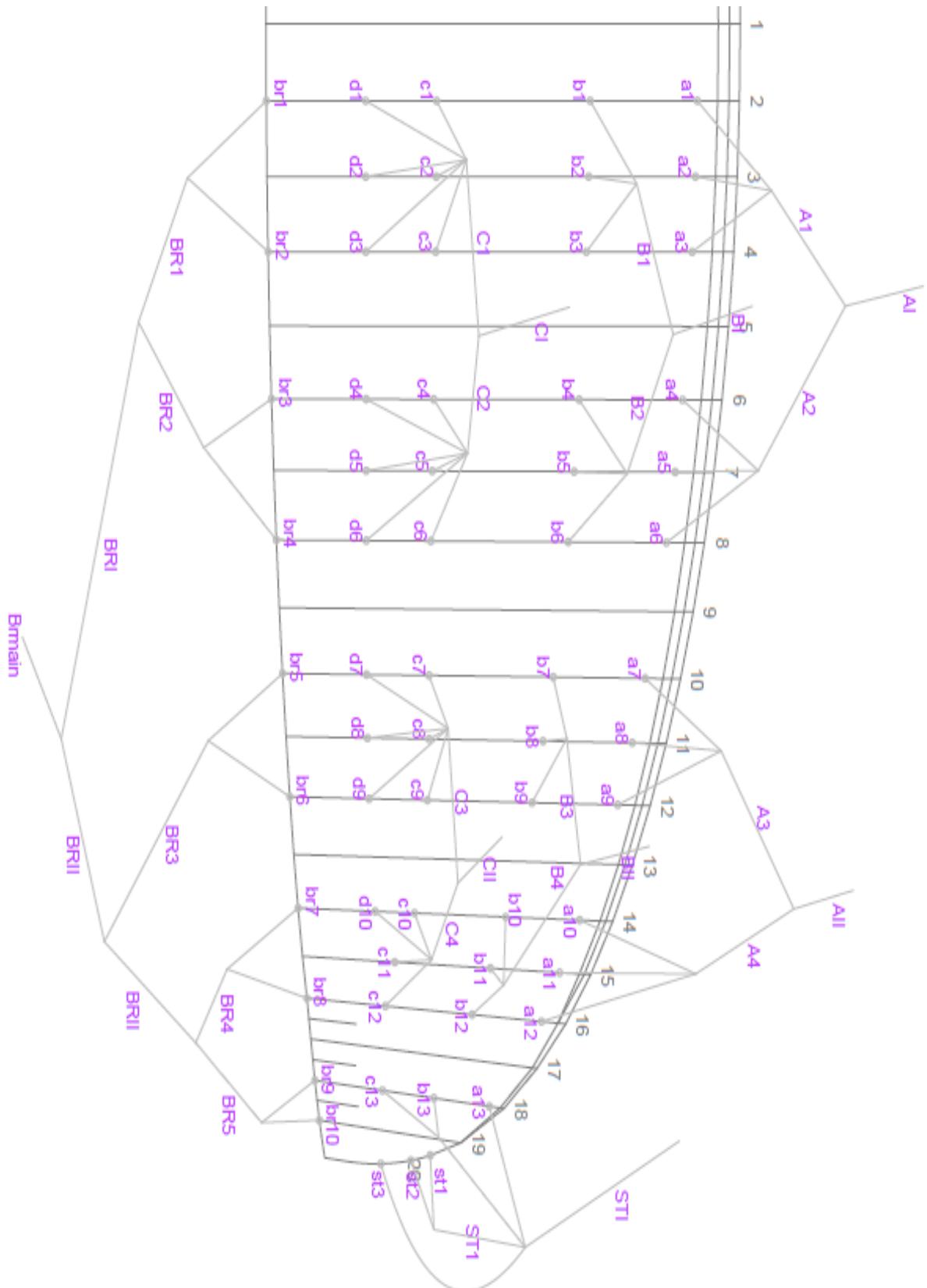
ICARO PARAGLIDERS

ICARO Paragliders
a brand of FLY & MORE GmbH,
Hochries Str. 1, 83126 Flinsbach, Germany

Wolfgang Kaiser (CEO)

Line plan all over (all sizes)

Attention: cow hitch on the C1 and CII



Line type, -length und title (all size)

(Under a pulling force of 50 N)

PICA 2 XS

Line TYPE			Line Name		
Checking	Rib	A-LINES	Rib	A'-LINES	
6018	2	DGL 70	PPSL 160	a1	
5966	3	DGL 70	PPSL 275	a2	A1
5975	4	DGL 70		a3	
5976	6	DGL 70	PPSL 160	a4	A2
5977	7	DGL 70		a5	
6035	8	DGL 70		a6	
6003	10	DGL 70	PPSL 160	a7	
5954	11	DGL 70	PPSL 275	a8	A3
5958	12	DGL 70		a9	
5966	14	DGL 70	PPSL 160	a10	A4
5958	15	DGL 70		a11	
5948	16	DGL 70		a12	
5946	18	DGL 70		a13	
5365	20	DGL 70	DGL 70	st1	ST1
<hr/>					
Checking	Rib	B-LINES	Rib	B'-LINES	
5974	2	DGL 70	PPSL 160	b1	B1
5965	3	DGL 70	PPSL 275	b2	
5926	4	DGL 70		b3	
5926	6	DGL 70	PPSL 160	b4	
5920	7	DGL 70		b5	
5983	8	DGL 70		b6	
5943	10	DGL 70	PPSL 160	b7	
5981	11	DGL 70	PPSL 275	b8	B2
5900	12	DGL 70		b9	
5956	14	DGL 70	PPSL 160	b10	B3
5827	15	DGL 70		b11	
5813	16	DGL 70		b12	
5348	18	DGL 70	DGL 70	b13	B4
5366	20	DGL 70		b14	ST1
<hr/>					
Checking	Rib	C-LINES	Rib	C'-LINES	
6076	2	DGL 70	PPSL 160	c1	C1
6008	3	DGL 70	PPSL 275	c2	
6018	4	DGL 70		c3	
6003	6	DGL 70	PPSL 160	c4	
5949	7	DGL 70		c5	
5964	8	DGL 70		c6	
5924	10	DGL 70	PPSL 160	c7	
5923	11	DGL 70	PPSL 275	c8	C2
5982	12	DGL 70		c9	
5968	14	DGL 70	PPSL 160	c10	C3
5958	15	DGL 70		c11	
5987	16	DGL 70		c12	
5371	18	DGL 70		c13	
5371	20	DGL 70		c14	ST1
<hr/>					
Checking	Rib	D-LINES	Rib	D'-LINES	
6143	2	DGL 70		d1	
6108	3	DGL 70		d2	
6108	4	DGL 70		d3	
6088	6	DGL 70		d4	
6064	7	DGL 70		d5	
6126	8	DGL 70		d6	
5937	10	DGL 70		d7	
5940	11	DGL 70		d8	
5940	12	DGL 70		d9	
5946	13	DGL 70		d10	
5927	14	DGL 70		d11	
<hr/>					
Checking	Rib	BR-LINES	Rib	BR'-LINES	
6058	r2	DGL 70	DGL 70	br1	
6051	r4	DGL 70	DGL 70	br2	
6052	r6	DGL 70	DGL 70	br3	BRI
6048	r8	DGL 70	DGL 70	br4	
6023	r10	DGL 70	DGL 70	br5	
6188	r12	DGL 70	DGL 70	br6	
6000	r14	DGL 70	DGL 70	br7	
5903	r16	DGL 70	DGL 70	br8	BRII
5116	r18	DGL 70	DGL 70	br9	
5074	r19	DGL 70	DGL 70	br10	BRIII

PICA 2 S

Line TYPE		Line Name	
Rb	A-LINES	Rb	A-LINES
Checking			
6251	2 DSL 70 PPSL 900	2 a1 A1	
6186	3 DSL 70 PPSL 275	3 a2 A1	
6204	4 DSL 70	4 a3 A1	
6209	6 DSL 70 PPSL 900	6 a4 A2	
6199	7 DSL 70	7 a5 A2	
6362	8 DSL 70	8 a6 A2	
6245	10 DSL 70 PPSL 900	10 a7 A3	
6188	11 DSL 70 PPSL 275	11 a8 A3	
6191	12 DSL 70	12 a9 A3	
6131	14 DSL 70 PPSL 900	14 a10 A4	
6090	15 DSL 70	15 a11 A4	
6077	16 DSL 70	16 a12 A4	
5788	18	18 a13 A4	
5503	20 DSL 70	20 a14 A4	
Checking			
6208	2 DSL 70 PPSL 900	2 b1 B1	
6137	3 DSL 70 PPSL 275	3 b2 B1	
6157	4 DSL 70	4 b3 B1	
6124	6 DSL 70 PPSL 900	6 b4 B2	
6149	7 DSL 70	7 b5 B2	
6213	8 DSL 70	8 b6 B2	
6176	10 DSL 70 PPSL 900	10 b7 B3	
6121	11 DSL 70 PPSL 275	11 b8 B3	
6131	12 DSL 70	12 b9 B3	
6089	14 DSL 70 PPSL 900	14 b10 B4	
6028	15 DSL 70	15 b11 B4	
6042	16 DSL 70	16 b12 B4	
5759	18 DSL 70	18 b13 B5	STI
5570	20 DSL 70	20 b14 B5	
Checking			
6313	2 DSL 70 PPSL 900	2 c1 C1	
6246	3 DSL 70 PPSL 275	3 c2 C1	
6291	4 DSL 70	4 c3 C1	
6239	6 DSL 70 PPSL 900	6 c4 C2	
6289	7 DSL 70	7 c5 C2	
6215	8 DSL 70 PPSL 900	8 c6 C2	
6168	10 DSL 70 PPSL 275	10 c7 C3	
6165	11 DSL 70	11 c8 C3	
6122	12 DSL 70	12 c9 C3	
6103	14 DSL 70 PPSL 900	14 c10 C4	
6089	15 DSL 70	15 c11 C4	
5911	16 DSL 70	16 c12 C4	
5579	18 DSL 70	18 c13 C5	
5570	20 DSL 70	20 c14 C5	
Checking			
6404	2 DSL 70	2 d1 D1	
6509	3 DSL 70	3 d2 D1	
6340	4 DSL 70	4 d3 D1	
6321	6 DSL 70	6 d4 D2	
6315	7 DSL 70	7 d5 D2	
6361	8 DSL 70	8 d6 D2	
6203	10	10 d7 D3	
6229	11 DSL 70	11 d8 D3	
6218	12 DSL 70	12 d9 D3	
6153	14 DSL 70	14 d10 D4	
Checking			
7144	r2 DSL 70 PPSL 900	r2 b1 BRI	
6830	r4 DSL 70 PPSL 275	r4 b2 BRI	
6643	r6 DSL 70	r6 b3 BRI	
6610	r8 DSL 70	r8 b4 BRI	
6589	r10 DSL 70	r10 b5 BRI	
6449	r12 DSL 70	r12 b6 BRI	
6404	r14 DSL 70 PPSL 900	r14 b7 BRI	
6465	r16 DSL 70 PPSL 275	r16 b8 BRI	
6398	r18 DSL 70	r18 b9 BRI	
6305	r19 DSL 70	r19 b10 BRC	Bmain

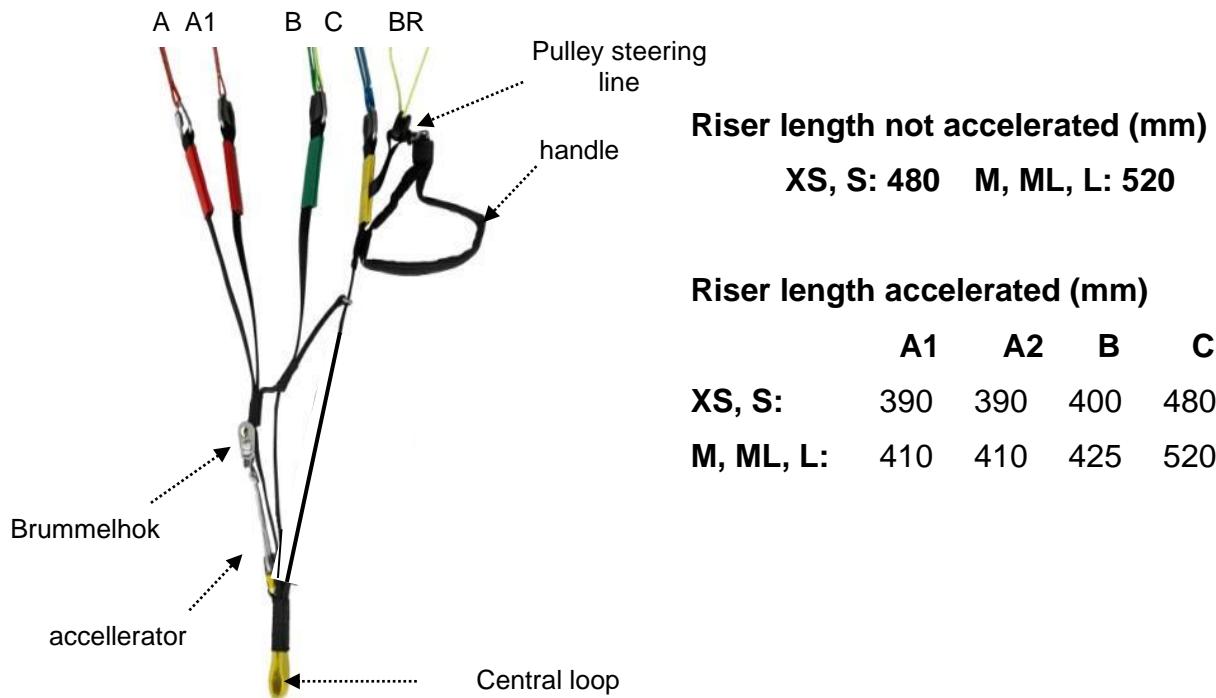
PICA 2 M

Line TYPE		Line Name	
Rb	A-LINES	Rb	A-LINES
Checking			
6722	2 DSL 70 PPSL 900	2 a1 A1	
6652	3 DSL 70 PPSL 275	3 a2 A1	
6671	4 DSL 70	4 a3 A1	
6670	6 DSL 70 PPSL 900	6 a4 A2	
6666	7 DSL 70	7 a5 A2	
6723	8 DSL 70	8 a6 A2	
6715	10 DSL 70 PPSL 900	10 a7 A3	
6654	11 DSL 70 PPSL 275	11 a8 A3	
6657	12 DSL 70	12 a9 A3	
6593	14 DSL 70 PPSL 900	14 a10 A4	
6548	15 DSL 70	15 a11 A4	
6234	16 DSL 70	16 a12 A4	
6202	18	18 a13 A4	
6003	20 DSL 70	20 a14 A4	STI
Checking			
6675	r2 DSL 70 PPSL 900	r2 b1 BRI	
6599	r3 DSL 70 PPSL 275	r3 b2 BRI	
6620	r4 DSL 70	r4 b3 BRI	
6617	r6 DSL 70 PPSL 900	r6 b4 BRI	
6600	r7 DSL 70	r7 b5 BRI	
6681	r8 DSL 70	r8 b6 BRI	
6641	r10 DSL 70 PPSL 900	r10 b7 BRI	
6592	r11 DSL 70 PPSL 275	r11 b8 BRI	
6592	r12 DSL 70	r12 b9 BRI	
6548	r14 DSL 70 PPSL 900	r14 b10 BRI	
6209	r15 DSL 70	r15 b11 BRI	
6497	r16 DSL 70 PPSL 275	r16 b12 BRI	
6194	r18 DSL 70	r18 b13 BRI	
5999	r19 DSL 70	r19 b14 BRC	Bmain
Checking			
6788	2 DSL 70 PPSL 900	2 c1 C1	
6719	3 DSL 70 PPSL 275	3 c2 C1	
6721	4 DSL 70	4 c3 C1	
6720	6 DSL 70 PPSL 900	6 c4 C2	
6705	7 DSL 70 PPSL 900	7 c5 C2	
6781	8 DSL 70	8 c6 C2	
6693	10 DSL 70 PPSL 900	10 c7 C3	
6632	11 DSL 70 PPSL 275	11 c8 C3	
6629	12 DSL 70	12 c9 C3	
6593	14 DSL 70 PPSL 900	14 c10 C4	
6552	15 DSL 70	15 c11 C4	
6248	16 DSL 70	16 c12 C4	
5999	18 DSL 70	18 c13 C5	
5999	20 DSL 70	20 c14 C5	
Checking			
6889	2 DSL 70 PPSL 900	2 d1 D1	
6810	3 DSL 70 PPSL 275	3 d2 D1	
6817	4 DSL 70	4 d3 D1	
6797	6 DSL 70 PPSL 900	6 d4 D2	
6790	7 DSL 70 PPSL 900	7 d5 D2	
6840	8 DSL 70	8 d6 D2	
6755	10 DSL 70 PPSL 900	10 d7 D3	
6698	11 DSL 70 PPSL 275	11 d8 D3	
6685	12 DSL 70	12 d9 D3	
6616	14 DSL 70 PPSL 900	14 d10 D4	
6616	15 DSL 70	15 d11 D4	
6616	16 DSL 70	16 d12 D4	
6616	18 DSL 70	18 d13 D5	
6616	20 DSL 70	20 d14 D5	
Checking			
7082	r2 DSL 70 PPSL 900	r2 b1 BRI	
7344	r3 DSL 70 PPSL 275	r3 b2 BRI	
7143	r4 DSL 70	r4 b3 BRI	
7107	r6 DSL 70 PPSL 900	r6 b4 BRI	
6679	r7 DSL 70 PPSL 275	r7 b5 BRI	
6633	r8 DSL 70	r8 b6 BRI	
6651	r10 DSL 70 PPSL 900	r10 b7 BRI	
6652	r11 DSL 70 PPSL 275	r11 b8 BRI	
6690	r12 DSL 70	r12 b9 BRI	
6633	r14 DSL 70 PPSL 900	r14 b10 BRI	
6633	r15 DSL 70 PPSL 275	r15 b11 BRI	
6633	r16 DSL 70	r16 b12 BRI	
6633	r18 DSL 70	r18 b13 BRI	
6633	r19 DSL 70	r19 b14 BRC	Bmain

PICA 2 ML

Line TYPE		Line Name		
Checking	Rib	A-LINES	Rib	
6951	2	DGL 70 PPSL 160	2	a1
6978	3	DGL 70 PPSL 275	3	a2
6996	4	DGL 70 PPSL 160	4	a3
6999	6	DGL 70 PPSL 160	6	a4
6993	7	DGL 70 PPSL 160	7	a5
6962	8	DGL 70 PPSL 160	8	a6
6943	10	DGL 70 PPSL 160	10	a7
6880	11	DGL 70 PPSL 275	11	a8
6883	12	DGL 70 PPSL 160	12	a9
6817	14	DGL 70 PPSL 160	14	a10
6771	15	DGL 70 PPSL 160	15	a11
6756	16	DGL 70 PPSL 160	16	a12
6413	18	DGL 70 PPSL 160	18	a13
6207	20	DGL 70 PPSL 160	20	a14
			21	SII
Rib		B-LINES	Rib	
6902	2	DGL 70 PPSL 160	2	b1
6923	3	DGL 70 PPSL 275	3	b2
6645	4	DGL 70 PPSL 160	4	b3
6842	6	DGL 70 PPSL 160	6	b4
6834	7	DGL 70 PPSL 160	7	b5
6909	8	DGL 70 PPSL 160	8	b6
6867	10	DGL 70 PPSL 160	10	b7
6806	11	DGL 70 PPSL 275	11	b8
6769	12	DGL 70 PPSL 160	12	b9
6790	14	DGL 70 PPSL 160	14	b10
6719	15	DGL 70 PPSL 160	15	b11
6401	16	DGL 70 PPSL 160	16	b12
6193	18	DGL 70 PPSL 160	18	b13
	20	DGL 70 PPSL 160	20	b14
Rib		C-LINES	Rib	
7019	2	DGL 70 PPSL 160	2	c1
6944	3	DGL 70 PPSL 275	3	c2
6950	4	DGL 70 PPSL 160	4	c3
6937	6	DGL 70 PPSL 160	6	c4
6933	7	DGL 70 PPSL 160	7	c5
6991	8	DGL 70 PPSL 160	8	c6
6970	10	DGL 70 PPSL 160	10	c7
6957	11	DGL 70 PPSL 275	11	c8
6954	12	DGL 70 PPSL 160	12	c9
6907	14	DGL 70 PPSL 160	14	c10
6926	15	DGL 70 PPSL 160	15	c11
6460	16	DGL 70 PPSL 160	16	c12
6203	18	DGL 70 PPSL 160	18	c13
	20	DGL 70 PPSL 160	20	c14
Rib		D-LINES	Rib	
7120	2	DGL 70	2	d1
7048	3	DGL 70	3	d2
7049	4	DGL 70	4	d3
7028	6	DGL 70	6	d4
7021	7	DGL 70	7	d5
7073	8	DGL 70	8	d6
6985	10	DGL 70	10	d7
6926	11	DGL 70	11	d8
6913	12	DGL 70	12	d9
6841	14	DGL 70	14	d10
	15	DGL 70	15	d11
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	br1
7594	4	DGL 70	4	br2
7386	6	DGL 70	6	br3
7340	8	DGL 70	8	br4
7245	10	DGL 70	10	br5
7169	12	DGL 70	12	br6
7187	14	DGL 70	14	br7
7188	16	DGL 70	16	br8
7114	18	DGL 70	18	br9
7025	20	DGL 70	20	br10
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	bri
7594	4	DGL 70	4	br2
7386	6	DGL 70	6	br3
7340	8	DGL 70	8	br4
7245	10	DGL 70	10	br5
7169	12	DGL 70	12	br6
7187	14	DGL 70	14	br7
7188	16	DGL 70	16	br8
7114	18	DGL 70	18	br9
7025	20	DGL 70	20	br10
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	br11
7594	4	DGL 70	4	br12
7386	6	DGL 70	6	br13
7340	8	DGL 70	8	br14
7245	10	DGL 70	10	br15
7169	12	DGL 70	12	br16
7187	14	DGL 70	14	br17
7188	16	DGL 70	16	br18
7114	18	DGL 70	18	br19
7025	20	DGL 70	20	br20
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	brii
7594	4	DGL 70	4	br2ii
7386	6	DGL 70	6	br3ii
7340	8	DGL 70	8	br4ii
7245	10	DGL 70	10	br5ii
7169	12	DGL 70	12	br6ii
7187	14	DGL 70	14	br7ii
7188	16	DGL 70	16	br8ii
7114	18	DGL 70	18	br9ii
7025	20	DGL 70	20	br10ii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briii
7594	4	DGL 70	4	br2iii
7386	6	DGL 70	6	br3iii
7340	8	DGL 70	8	br4iii
7245	10	DGL 70	10	br5iii
7169	12	DGL 70	12	br6iii
7187	14	DGL 70	14	br7iii
7188	16	DGL 70	16	br8iii
7114	18	DGL 70	18	br9iii
7025	20	DGL 70	20	br10iii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiii
7594	4	DGL 70	4	br2iiii
7386	6	DGL 70	6	br3iiii
7340	8	DGL 70	8	br4iiii
7245	10	DGL 70	10	br5iiii
7169	12	DGL 70	12	br6iiii
7187	14	DGL 70	14	br7iiii
7188	16	DGL 70	16	br8iiii
7114	18	DGL 70	18	br9iiii
7025	20	DGL 70	20	br10iiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiii
7594	4	DGL 70	4	br2iiiiii
7386	6	DGL 70	6	br3iiiiii
7340	8	DGL 70	8	br4iiiiii
7245	10	DGL 70	10	br5iiiiii
7169	12	DGL 70	12	br6iiiiii
7187	14	DGL 70	14	br7iiiiii
7188	16	DGL 70	16	br8iiiiii
7114	18	DGL 70	18	br9iiiiii
7025	20	DGL 70	20	br10iiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiii
7594	4	DGL 70	4	br2iiiiiiii
7386	6	DGL 70	6	br3iiiiiiii
7340	8	DGL 70	8	br4iiiiiiii
7245	10	DGL 70	10	br5iiiiiiii
7169	12	DGL 70	12	br6iiiiiiii
7187	14	DGL 70	14	br7iiiiiiii
7188	16	DGL 70	16	br8iiiiiiii
7114	18	DGL 70	18	br9iiiiiiii
7025	20	DGL 70	20	br10iiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiiiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiiiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiiiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiiiiiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiiiiiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiiiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiiiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiiiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiiiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiiiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiiiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiiiiiiiiiiiii
7114	18	DGL 70	18	br9iiiiiiiiiiiiiiiiiiiiii
7025	20	DGL 70	20	br10iiiiiiiiiiiiiiiiiiiiii
Rib		BR-LINES	Rib	
7943	2	DGL 70	2	briiiiiiiiiiiiiiiiiiiiiiiii
7594	4	DGL 70	4	br2iiiiiiiiiiiiiiiiiiiiiiii
7386	6	DGL 70	6	br3iiiiiiiiiiiiiiiiiiiiiiii
7340	8	DGL 70	8	br4iiiiiiiiiiiiiiiiiiiiiiii
7245	10	DGL 70	10	br5iiiiiiiiiiiiiiiiiiiiiiii
7169	12	DGL 70	12	br6iiiiiiiiiiiiiiiiiiiiiiii
7187	14	DGL 70	14	br7iiiiiiiiiiiiiiiiiiiiiiii
7188	16	DGL 70	16	br8iiiiiiiiiiiiiiiiiiiiiiii
7114</td				

Description of the risers



Description of the motorrisers

