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## **Extreme Sport Helmets**

### **User's manual and maintenance guide**

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Icaro 2000 congratulates you on your purchase of this new extreme sports helmet.

The principal purpose of our helmets, safety, has been achieved without sacrificing comfort or aerodynamic performance, by virtue of the innovative technology that we have applied.

All Icaro 2000's new helmets are tested at CSI (an organization authorized by the Ministry of Transport, with certification from Germany's TUV), and they have attained **certification as helmets for airborne sports, for hang gliding and paragliding, in accordance with the European standard EN 966.**

The "Fly" has also obtained certification in accordance with European standard **EN 1077.**

**Icaro 2000 recommends the use of certified helmets only**

Our network of distributors world-wide ensures the availability of parts and service wherever you go to practice your sport.

Enjoy yourself!...

For further information or service, please consult your nearest Icaro 2000 retailer, or contact the company direct at:

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## General information

### Choosing and purchasing a helmet

When you purchase a helmet, the most important moment is choosing the right size. If you have never purchased a helmet, you probably don't know your own size. Take your time when choosing a helmet. Try several, and follow these criteria:

Put the helmet on and fasten the strap:

- The helmet should not be so loose that it moves around, but neither so tight that you can feel a continuous pressure on your head
- A helmet that is too large may slide down and obstruct your eyes
- Try to pull it off, moving it back and forth: if it tends to slip off or move around, it is too large
- Lean your head forwards, grip the helmet's rear edge, and try to pull the helmet off. If the helmet slides off, it is not suitable for the shape of your head.

If, while trying on the helmet, it does not perform satisfactorily for just one of these criteria, you should try another size or another model.

When compared with the jet, or open-face, helmet, the full-face helmet also guarantees protection for the chin area. Consider this carefully when you are choosing your helmet.

Never purchase a second-hand helmet, even if the price is good. There is no way of discerning its real conditions (whether it has been involved in an accident, etc.).

### The structure of a helmet

- Outer shell:
  - thermoplastic or composite fibre material. These materials give the external shell **high perforation resistance, strength, elasticity, and lightness**.
- Crushable foam inner shell:
  - expanded polystyrene. It is damaged even by a minimal blow, and in this case the helmet should be replaced.
- Comfort lining:
  - expanded polyurethane and transpirant, non-allergenic textile. Its purpose is to adapt the helmet to different sizes, while also guaranteeing comfort and hygiene. It may be removable and washable.
- Vents:
  - provide internal ventilation and air circulation.
- Chin strap.
  - This usually has a rapid fastening system.
- Visor:
 

Anti-abrasion thermoplastic material; it may also be anti-fogging. It should be replaced when vision is impeded by small scratches on the surface. **The visor** also not only **increases** the helmet's **passive safety** characteristics, but also its **active safety**, by increasing the **width of the field of vision when compared to the use of any type of sunglasses**.

### Using the helmet

Once you have **chosen** the most suitable helmet, make sure that you **wear it correctly**. For safety, it should always fit snugly, and the strap should be tightly fastened.

A helmet will never be able to guarantee total protection for the head when subject to the forces produced by

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whatever type of impact. However this is no excuse to forego wearing a helmet. You should **always wear your helmet**, in order to exploit the protection that it provides, whatever impact may occur.

## Four things that you should never forget

1. **Before using the helmet**, read all the instructions, and follow the suggestions carefully to ensure a correct fit.
2. **Do not use the helmet without fastening the strap.** An unfastened helmet will fall off during the first impact, leaving the head defenceless for successive impacts. There is also the risk of it falling off during flight.
3. **Do not** fasten the helmet **using just the velcro.** The velcro that may be present on the strap serves purely to stop it flapping in the wind.
4. **To ensure maximum performance, never modify your helmet, whatever the circumstances.**

## In case of accident

- If the accident happens to you:
  - The inner shell will be deformed – though the deformation may not be visible to the naked eye – because it has absorbed the impact.
  - **After an accident, even if the impact was minor, the helmet should be replaced, regardless of whether there is visible damage or not.**
- If you witness an accident:
  - Keep calm.
  - Report the accident immediately, if possible by phoning for an ambulance (dial 118 in Italy). Only medically-qualified personnel know exactly how to deal with injuries.
  - Never move an injured person, unless this is absolutely essential because of a situation of greater danger.  
If the spinal column is damaged, moving the injured person could damage the spinal cord, causing permanent paralysis.
  - If the victim is wearing a helmet, do not remove it, but open the visor to facilitate respiration.
  - Keep the victim calm, and, if possible, cover him. Shock provokes shivering and a sensation of cold.
  - Do not give the victim alcoholic drinks.
  - Stem the flow of blood from wounds, protecting your hands with gloves or similar, throwing them away later if they have been dirtied with blood. Do not apply tourniquets: if you place a tourniquet in the wrong position, you could worsen the situation.
  - Never put the victim into a private car. Wait for the ambulance. If the victim is conscious, talk to him or her and try to calm him or her down.

## Helmet maintenance

The helmet protects your head, and so it should be **treated with care**.

The **visor** should be **changed** when it has **scratches** preventing satisfactory vision.

The helmet can be **seriously damaged by**:

- Paints and varnish
- Petrol
- All types of chemical solvent
- Excessive heat (do not leave your helmet exposed to the sun)
- Inappropriate modifications

Scrupulously follow the instructions provided by the manufacturer.

**Never modify your helmet in any way.**

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If you think that the helmet that you have chosen is not right for the shape of your head, replace it... and this time choose more carefully!

A helmet does not have a fixed lifespan. However, it is a good rule to replace it after five years of correct use.

## Removing and fitting the inner comfort lining:

**Important: do not use sharp or pointed tools such as screwdrivers etc., unless specifically requested in the instructions, in order not to scratch the helmet or damage its structure.**

For some models, as previously mentioned, the inner comfort lining can be removed in order to wash or replace it.

In this case, the padding, which consists of a single piece or several components, is fastened to the inner polystyrene shell by means of a series of Velcro fasteners, and it is fixed at front and back by tabs that slot between the outer shell and the internal polystyrene shell.

Before removing the padding, it is a good idea to make a note of the position of the various padding components and of the ear protectors, if present, and likewise their position with respect to straps and other parts.

Disassembly is easy to perform. You just have to be careful when unfastening the Velcro, gripping the Velcro tape itself and not pulling on the padding.

The same technique should be used for the tabs: pull the tabs themselves, while gently and slightly separating the external shell and the internal polystyrene shell.

To reassemble the lining, just reverse the removal sequence, ensuring that all parts of the comfort lining are repositioned centrally and symmetrically, and checking the correct position of all the parts.

When you are sure that all parts of the lining have been reassembled correctly inside the helmet, press firmly over the Velcro fastening strips in order to fasten the lining.

## Visor removal and assembly

The visor can be removed if it has to be cleaned thoroughly or replaced.

If you decide to fly without the visor, remove all the components that are not part of the helmet shell itself, and cover the holes with the adhesive pads supplied.

After a period of time, it may be necessary to replace the visor friction components.

Place the helmet onto a table, ensuring that it is entirely stable, and lower the visor into its position of normal use.

**Important:** when fitting and removing the visor, be careful not to scratch the surface of the helmet or visor with the screwdriver or other sharp or abrasive objects.

Don't touch a mirror-finish visor with your hands, because it may become opaque as a result of the acidity of perspiration.

## Rollbar, Scarab, Glam, TZ and SkyRider

These types of helmet all share the same visor assembly system. The only difference is that there is a rubber washer under the aluminium washer in the Rollbar, Scarab and Glam models.

- Aluminium washers with rubber for Rollbar, Scarab and Glam helmets. Without rubber for TZ and SkyRider helmets.



**IMPORTANT:** the nylon screw which guides and controls movement of the visor must never, for whatever reason, be replaced with a stronger steel screw. A nylon screw is used specifically so that it breaks in the event that the visor opens suddenly and violently as a result of high-speed air flow. If the visor opened and remained open, it would cause a sudden increase in air resistance, which could cause a stress high enough to break the pilot's neck. Breakage of the nylon screw prevents this from occurring. The pilot would have to make an emergency landing, but this is infinitely preferable to the former situation.

For aircraft in which the pilot is exposed to the airflow, with top speeds above 80 km/h, we strongly recommend the use of helmets that have a visor safety locking system, such as our Rollbar or Rega models.

### Assembly

On each side of the helmet there are two holes with threaded bushes.



The visor assembly system consists of a nylon screw with a flat washer (in the Scarab, this washer is not present) and a concave washer that fits under the screw head, plus a steel screw with an aluminium washer.



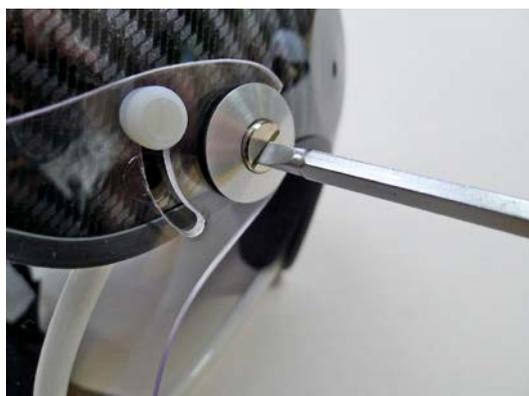
- Position the plastic screw and the concave washer onto the front slot of the visor;
- Place the flat washer onto the screw on the inside face of the visor (on the Scarab, this washer is not present)



- Fasten this screw to the helmet shell, screwing it only partially into the front threaded hole;



- Repeat the operation on the other side.
- Then place the steel screw with the aluminium washer into the rear-most slot on the visor, and tighten, using a flat screwdriver, the screw until you can feel a **light degree of resistance**;



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- Repeat the operation on the other side.
- Complete assembly by tightening the plastic screws.

### Removal of the visor

To remove the visor, it is easier to follow a different order with respect to the inverse order of assembly:

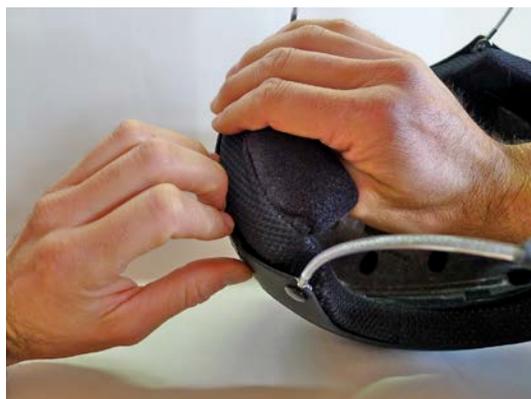
- Unscrew the two nylon guide-control screws fastened to the two front threaded holes;
- Unscrew the steel screws that hold the visor to the helmet, and remove them from the rear holes.

### Fly UL

**IMPORTANT: the Fly UL helmet's certification applies only when the helmet is fitted with earphones. Therefore it should be used only when fitted with noise-excluding or interphone earphones**

To fit the earphones, the helmet's polystyrene lining has to be removed.

- Grip the internal polystyrene lining with one hand, and the outer shell with the other, and pull out the polystyrene.



- Unscrew the screw visible on the side of the helmet, and remove it along with the threaded bush.



- To fit the earphone, you will have the following components:



- In order to attain the best position for the earphone, we recommend straightening the metal wire bracket a little, by using a vice or a pair of pliers.



- Insert the plastic threaded bush into the wire bracket as shown below.



- Position the earphone and bush inside the helmet shell so that the bush is centred on the hole in the helmet shell.



- Insert the screw and tighten with a screwdriver.



- Repeat the same operations on the other side of the helmet to fix the other earphone.
- Then reposition the polystyrene lining into the helmet shell, ensuring that it is symmetrical.



- Place the helmet upside-down on a table. Place one hand on the front part of the polystyrene lining, and one hand on the rear part, and then press down towards the table in order to return the polystyrene to its original position.



## Noise-excluding and Interphone earphones

Rollbar, Scarab, Glam, TZ and SkyRider

### Assembly of noise-excluding earphones onto the helmet shell

Fixing the interphone earphones onto the helmet shell makes it possible to position the earphones a small distance from the ears so that they are not in direct contact. This improves comfort on long-duration flights and during the short periods of time on the ground when the pilot is wearing the helmet.

**IMPORTANT: Headphones should never be worn under the helmet. In the case of impact, rigid components in direct contact with the head become potentially wounding elements**

To fit the interphone, the only tools that you need are a screwdriver and a hex key. The photo below shows the components used to fit an interphone earphone.



For the models SkyRider, Scarab and Rollbar, the steel washer is smaller, as shown below.



The helmet shell has holes for fitting the visor, along with two other holes, one on each side, for fitting the earphones.



The Rollbar and the Scarab have, as well as the hole for the screw, a shallow well that accommodates the plastic component used to fix the earphone.



To install the earphones, the polystyrene inner lining has to be removed.

- Hold the front edge of the helmet shell with one hand, and with the other, grip the PVC tube and use your thumb to push the internal polystyrene lining towards the front.



- After having moved the polystyrene lining a few centimetres, extract the whole lining from the helmet shell.



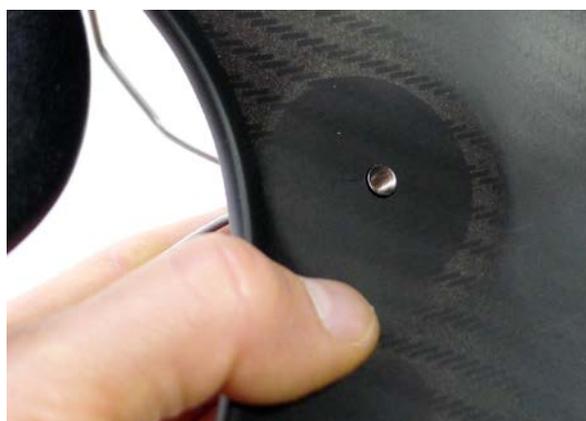
- Place the hollow bolt's knurled washer onto the bolt.



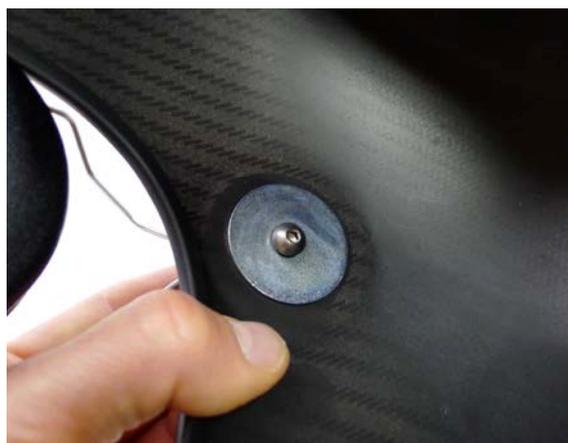
- Put the hollow bolt into the plastic component, and then position the latter into its position on the earphone bracket.



- Then place the earphone onto the helmet, so that the hollow bolt enters the hole on the helmet shell.



- Place the steel washer onto the hollow bolt, and then insert the hex drive screw.



- Then tighten the screw using a hex key and a slot-head screwdriver.
- Repeat the same procedure for the other side of the helmet.

**IMPORTANT: don't use any type of thread-locking fluid. This type of helmet shell is damaged by contact with this liquid.**

Once you have completed assembly of both earphones, insert the polystyrene lining into the helmet shell.

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- First, insert the rear part of the polystyrene, holding it symmetrically with respect to the helmet shell.



- Then place the helmet shell onto a table. With one hand at the front and the other at the back of the helmet, press down towards the table in order to slide the polystyrene lining back to its original position.



- Once you have inserted the lining, check that it is symmetrically positioned.

### **Fitting interphone earphones to the helmet**

Interphone earphones are fitted to the helmet in the same way as noise-excluding earphones. To complete assembly of the interphone, you have to:

- Place the interphone cable inside the helmet shell in such a way that when the polystyrene has been replaced, the cable is not damaged by contact with screws or rivets.
- Then replace the polystyrene into the helmet shell as described above.

### **Removal of interphone and earphones from the helmet**

Simply follow the reverse order with respect to assembly:

- Remove the polystyrene lining
- Unscrew the screws and remove them together with the earphone
- Repeat the operation for the other earphone
- Replace the polystyrene into the helmet shell

### **Using the interphone**

The position of the earphones and microphone is of fundamental importance for correct use of the interphone.

- While wearing the helmet, the vertical position of the earphones can be adjusted by sliding them on the metal bracket to which they are attached.



- Once this position has been adjusted, the earphones' horizontal position can be modified, either firmly against the ears or a small distance away as mentioned earlier, according to requirements.



To move the earphones away from the ears, pull them outwards. To move them closer to the ears, press on the steel bracket close to its point of attachment to the helmet.



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- The microphone should be positioned a few millimetres (3-5 mm) from the right or left corner of the mouth.

## Adjusting the chinstrap attachment cable

This adjustment can be made on all helmets in which the chinstrap is attached to the steel cable. This makes it possible to adjust the chinstrap according to the shape of your head.

- Using a hex key, loosen the screw that locks the steel cable.



- Slide the cable to the desired position within the cable locking piece.



- Tighten the screw in order to lock the cable.



- If necessary, repeat the same operations for the rear cable attachment position.



## Cleaning

### Visor and external shell

- Use **only water and neutral liquid soap** and a **soft cloth** for drying the visor.
- Do not rub the visor too hard.

### Internal Parts

#### Interior polystyrene

- Use **only a damp cloth**.
- Leave to **dry** at room temperature, protected from direct sunlight.

#### Comfort lining

- Hand-wash carefully, using just water at maximum 30° C and **neutral soap**.
- Rinse in cold water.
- Leave to **dry** at room temperature, protected from direct sunlight.

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## Accessories

Visors are available in different colours. They are easy to replace, enabling you to give the helmet optimum performance in differing light conditions.

In addition, the internal structure of the helmets enables the application of a range of accessories.

For further information, see our website:

## Important information and warnings

Pilots who are used to flying with just sunglasses or even with no eye protection at all **may take a few flights to get accustomed to the visor**. If you don't feel comfortable with the visor to start with, just lower and raise the visor during your first flights with the helmet until you get used to it.

In conditions of high humidity and/or large temperature excursions, the visor may fog. On such occasions you will immediately appreciate the difference between flying with sunglasses and with a visor: in the latter case, you just have to open the visor slightly to obtain the complete clearance of any fogging.

A helmet with a visor produces a different air sound, and it makes it easier to hear your flight instrument. If you rotate your head into a lateral position, the detachment of the airflow from the visor could give rise to anomalous sounds (the jet effect), which disappear immediately after the normal flight position has been resumed.

- **Never fly without a helmet**
  - Your life is too precious to risk losing it just because you have forgotten something
- **Use only a helmet with E.N. 966 certification**
  - European E.N. 966 certification was developed specifically for flight helmets.
  - All our helmets are constructed in accordance with the regulations contained in the E.N. 966 standard.
  - Never trust a helmet that has no label guaranteeing E.N. 966 certification.
- **We recommend the use of a full-face helmet.**
  - A full-face helmet offers improved protection in every situation.
- **Never modify your helmet for whatever reason.**
  - Modifications could reduce the level of protection, and could annul the helmet's certification.
- **Never use headphones under the helmet.**
  - Any rigid components placed inside the helmet, between polystyrene lining and the head, could become percussive and damaging elements.
- **Always ensure that the chin strap is tightly fastened.**
  - If you keep your helmet in the rucksack, don't sit on it.
  - Ensure that the helmet never falls to the ground or the floor.
  - Handle the helmet and visor with great care at all times.
  - After an accident, even when the impact is minimal, the helmet should be replaced, regardless of whether there is any visible damage or not.

**Icaro 2000 wishes you happy and safe flying.**

Icaro 2000 reserves the right to modify the characteristics of its products in any way, without any prior notice.