

# Owner's manual

Rescue system

Cruciform reserve

## SQUAD *LIGHT*

Version 2.1

Date 10.2018

## Content

Welcome to SOL TEAM!.....	4
1. General information .....	5
2. Introduction.....	5
3. The Project -Squad Light.....	6
a. Technical data .....	6
b. Limits and Inspection .....	7
c. Over all vision – Rescue system and container .....	8
d. Construction and material .....	10
e. Inner container.....	10
f. Outer container .....	10
g. Label .....	10
4. Packing, installing and compatibility .....	11
a. Use of the Squad Light .....	11
b. Harness without integrated container .....	11
c. Use with an outer container or deployment bag of another company .....	11
d. Harness with integrated container for parachute .....	11
e. Harness with integrated container and combined release handle .....	12
f. Towing.....	12
g. Instruction for packing and installing.....	12
5. Release .....	18
6. Take-off checklist.....	19
7. Maintenance, storing and inspection.....	20
a. Care .....	20
b. Repairs.....	20
c. Storing .....	20
8. Nature and environment .....	21
9. Out of use .....	21



10. Warranty .....	21
a. Warranty Terms .....	21
b. Warranty Pre-requisites .....	21
c. This warranty does not cover .....	22
11. Final words .....	23
12. Inspection log .....	24



## Welcome to SOL TEAM!

---

You've chosen a high-quality product, produced within the most rigid international security norms.

Thanks' for choosing SOL PARAGLIDERS.

In case you have any questions, doubts, or simply more interest in the newest products of SOL Paragliders, here is our contact information:

*Sol Sports Ind. e Com. Ltda.*

*Rua Walter Marquardt, 1180*

*Caixa postal 370*

*89259-565 Jaraguá do Sul, SC - BRAZIL*

*Telephone (+55) 47 3275 7753*

*E-mail: [info@solsports.com.br](mailto:info@solsports.com.br)*

*[www.solsparagliders.com.br](http://www.solsparagliders.com.br)*

*facebook [solparagliders](#)*

*instagram [@solparagliders](#)*



## 1. General information

---

Please read the manual with attention and observe the following information:

- The pilot should be able, using the information in this manual:
  - to attach the emergency parachute to the harness
  - to maintain it
  - to re-pack it
  - to use it if the need arises
- Each pilot is responsible for the use of his equipment.
- Any injuries or damage occurring by using this emergency system cannot be held the responsibility of the manufacturer.
- The pilot is exclusively responsible for the maintenance and full functionality of his equipment.
- This parachute has been solely designed for use as an emergency rescue system for paragliders. Do not under any circumstances use this parachute for free fall parachuting, BASE jumping or with any other type of aircraft.
- The rescue system cannot be used during flight for fun or without necessity.
- This rescue system was developed for freeflight sports to increase security.
- Paragliding is a potentially dangerous sport that can cause serious injury. Flying a paraglider is undertaken with the full knowledge that paragliding involves such risks.
- This equipment belongs within the category of light air sport equipment with less than 120 kg weight."

## 2. Introduction

---

SOL Paragliders produces a complete line of rescue systems. These systems fit for beginners and professional pilots at the same time.

As Sol Paragliders, we are flying a lot: testing gliders, for fun or breaking world or national records. So, it was only logic to develop our own rescue systems to assure the evolution in safety, performance, ease of operation and innovation.

As in any other product of SOL Paragliders, we are using always the best and most carefully chosen materials. They are granting a long life and a high security standard. All rescue systems are manufactured in our own industrial park.



### 3. The Project -Squad Light

With each year, Paragliders are more safety. But even then, always exists the possibility of collision, collapse or line break. In such a situation, a rescue system could be the difference between life and death, especially a system that opens fast.

The rescue system Squad Light is manually released. It was especially developed for paraglider flight. The project was designed for fast opening after release and the construction (inner / outer container), was made to avoid an accidentally opening during flight.

All materials are carefully chosen from the best products on the international market. But it is most important that the container of the rescue system is being carefully examined before each flight, to ensure the release without any problems.

#### a. Technical data

Model	32	35	38	42	57	
Weight	1,43	1,63	1,78	1,96	3,00	Kg
Max. Takeoff weight	55-95	70-110	85-125	100-140	140-220	Kg
Area	32	35	38	42	57	m <sup>2</sup>
Sink rate	5,0	5,0	5,0	5,3	5.3	m/s
Height	5,84	6,20	6,46	7,04	8,18	m
Lumber od lines	17	17	17	17	25	
Packing volume	3,3	4,1	5,0	5,8	9	Lt
Certification	EAPR-RG 0638/17	EAPR-RG 0637/17	EAPR-RG 0621/17	Air Turquoise EP 233.2018	EAPR-RG 0789/18	LTF EN



## b. Limits and Inspection

The Squad Light is not suitable for speeds more than 32m/s or 115 km/h.

Avoid storing the reserve for long periods in areas with high humidity, heat or extreme cold, this causes premature aging of the materials and could influence the flight characteristics of your glider.

The LTF Norm quotes:

- Temperatures from -30°C to +70°C during the storage should not interfere with the security during the use of the equipment.
- Temperatures from -30°C to +50°C and oscillation of the relative air humidity between 25% and 100% during use should not interfere with the security.
- **The permission of use expires with -30° C.**

Every 6 months the rescue system must be opened, aired repacked and installed. This procedure is to be registered in the inspection log. The time interval could be less, if the system has been involuntary opened or after intensive flight periods or very humid weather conditions.

The packing and installing of the system should be done by a qualified person, a special workshop or SOL Paragliders.

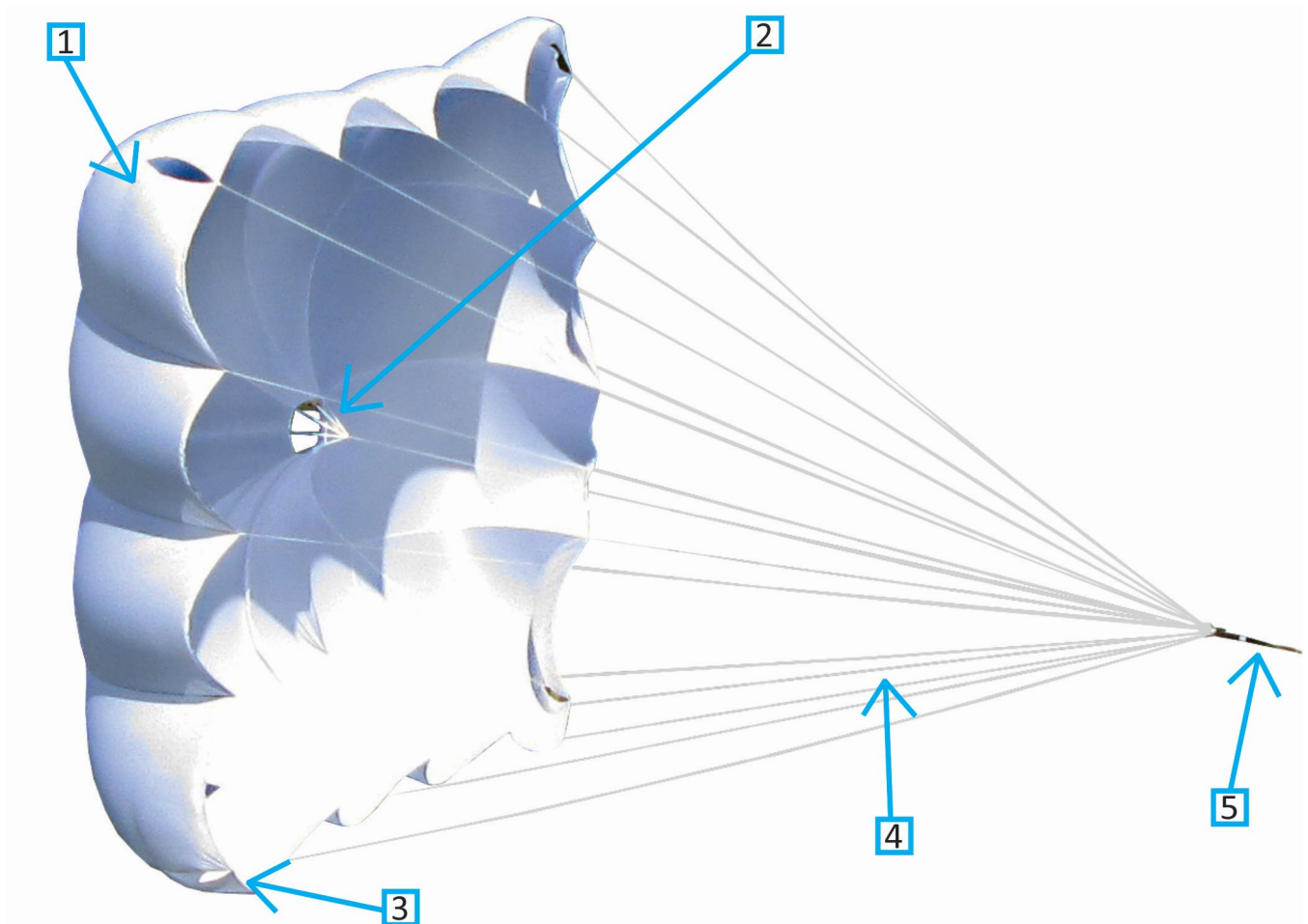
The rescue system should be aired for 12 hours before repacking and installing. This must be done in a dry and ventilated room without direct sunlight.

Inspection interval: Each 24 month a complete inspection and control is necessary, this includes a carefully and complete visual control of all parts (textile, seams, lines, bridles) if there are damages or wear. The inspection must be made with the properly tools (light table, tools for packing). The work must be documented in the inspection log.

Limit of use: 10 years, even if the rescue system never has been used. A recommendation of use can be made from the worker within his responsibility after the inspection.



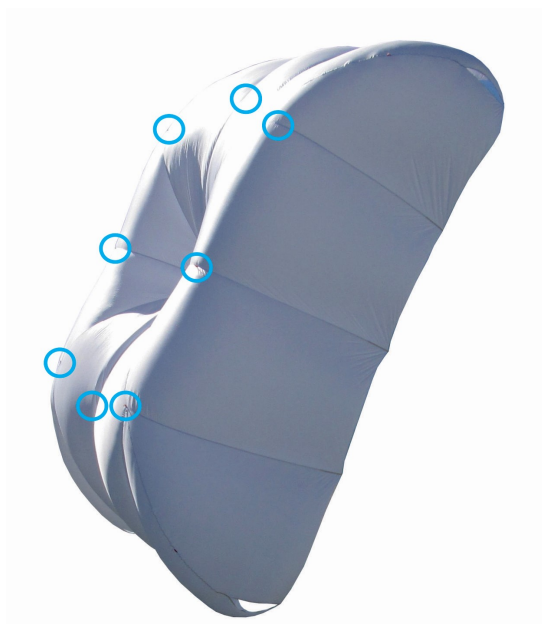
c. Over all vision – Rescue system and container



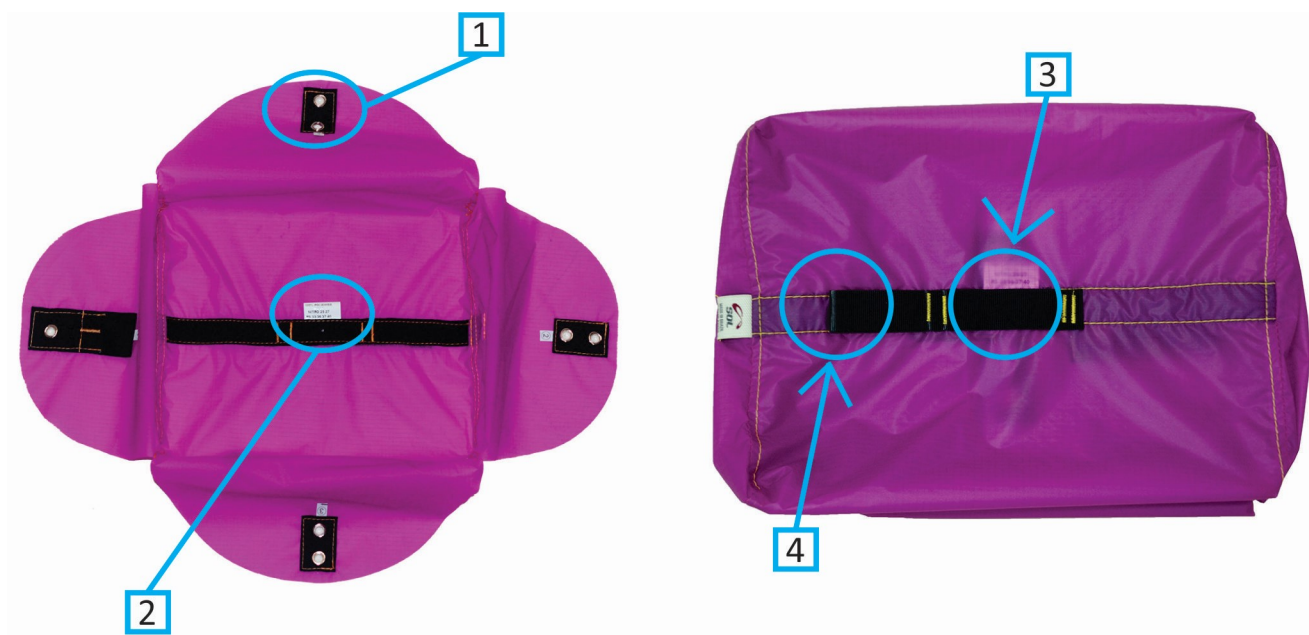
- 1 Canopy
- 2 Connection points centerline
- 3 Connection points lines
- 4 Lines
- 5 Bridles







*Packing loops*



- 1 Volume adjustment
- 2 Label with information for seize and compatible rescue systems for this container
- 3 Loop for connecting the outer container
- 4 Loop for connecting the harness with the inner container



#### d. Construction and material

Fabric: SOL CL20 20x20D OC 30 gr/sm

Container: Gelvenor LCN 0066 OLKS 49 gr/sm

<b>Line Fabrikant</b>	Cordaville-BR
<b>Type</b>	SOL PA 3 mm Flat
<b>Material</b>	Poliamida (Nylon) 6.6

Risers: Cousin Dynalight Ø5mm 2.400 DaN

Attach Band(loops): Fitaneu 10 x 0.8 mm PP 140 kg

Sewn Tread: Guterman / Coats Poliester continuous filament 60 white  
Linhanyl / Coats Poliamide 20-30-40 Black/|Red

#### e. Inner container

The deployment bag is made of Nylon. His form facilitates the opening after release. An attached elastic band closes the bag.

#### f. Outer container

The outer container is made of elastic material, like neoprene. Two curved hooks attached to the release handle are closing him. This system permits a rapid control before each start if the container is closed.

#### g. Label

All necessary product information could be found on the label at the bridles: seize, serial number, date of production, name of the coworkers who managed the packing and inspection. Another label, seamed to the canopy, informs: name of the model, serial number, seams, execution and date of packing, inspection and production.

### Attention

This information should be at hand in case of soliciting other information or repair!



#### 4. Packing, installing and compatibility

Packing and installing must be made with full attention and care. The use of air sport equipment supposes that the pilot has the knowledge to use this equipment. The owner takes exclusive responsibility for all risks associated with its use.

- The parachute and the release handle must be at a place with easy access.
- In case of using the rescue system with a paramotor, the parachute cannot be installed in a place where he stands the risk to fall in to the propeller after release.
- The bridles must be free from all obstacles and on the outside of the structure.
- The connection between bridles and equipment must be made to withstand the foreseeing force acting on release.
- Paramotors must be prepared for installing a rescue system.

##### a. Use of the Squad Light

The Squad Light was developed for use with a paraglider. The use for a tandem glider is not allowed. He can be used with a paramotor, since the permitted weight is not exceeded. For tandem flight must be use o squad light – size 57.

##### b. Harness without integrated container

In case your harness comes without an integrated container for a rescue system you can use o front container. The bridles must be connected with the principal connection of your harness. For correct installing you must read the owner's manual of the harness.

##### c. Use with an outer container or deployment bag of another company

The use of an outer container or o deployment bag made by another company depends on the seize and certification. In case you are using a container with the wrong seize or without certification the airworthiness expires. For installing the rescue system in to a container made by another company and connecting the container to the harness you must read the owner's manual.

##### d. Harness with integrated container for parachute

Almost all modern harnesses are coming with a container to install a parachute. For correct installing read the owner's manual.



### e. Harness with integrated container and combined release handle

Some harnesses come with a complete system of integrated container and release handle which are designed for a perfect fit with the harness. Using such a system requires that the inner container is compatible with the rescue system. There are two things to consider:

1. The volume of the Handle/integrated container system must match the rescue system. This information could be found in the section Technical data.
2. The inner container must guarantee the parachute release without any problems. An inner container with complete opening of the upper side, with 4 or more sheets (shamrock container) fulfills this demand.

The use of a deployment bag with one side opening must be certified by the responsible organ.

The further installation is to be found in the owner's manual.

### f. Towing

It is the pilot's responsibility to use suitable harness attachments and release mechanisms and to ensure that they are correctly trained on the equipment and system employed. All tow pilots should be qualified to tow, use a qualified tow operator with proper, certified equipment, and make sure all towing regulations are observed. In case you are using a front container assure that the parachute can be released at all time.

### g. Instruction for packing and installing

The packing and installing is explained by the following illustrative photos and information. The packing and installing should be made by an instructed person, a specialized workshop or SOL Paragliders.

## Attention

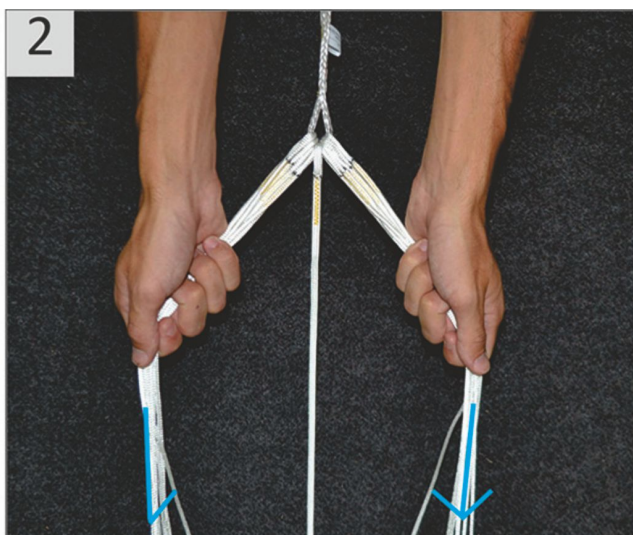
This parachute system has been tested and found compliant using the original manufacturer's inner container. Use of any other inner container may produce different results, including failures.







**1 Clear lines and textil.**



**2 Separate lines and center lines.**



**3 Separate lines and clear center lines.**



**4 Begin folding with the first panel, as seen in the photo.**



**5 Smooth the panel at the upper side, using the loops.**



**6 Open the second panel, for correct folding.**



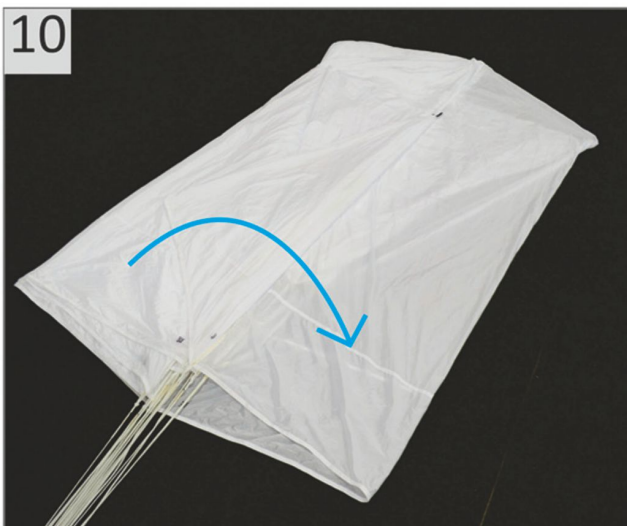
**7** Fold in to the middle and open the minor panels.



**8** At least fold the minor panels one over the other.



**9** Repeat the steps with the next panels.



**10** After folding all panels fold each half of them to one side.



**11** Continue till half of the panels.

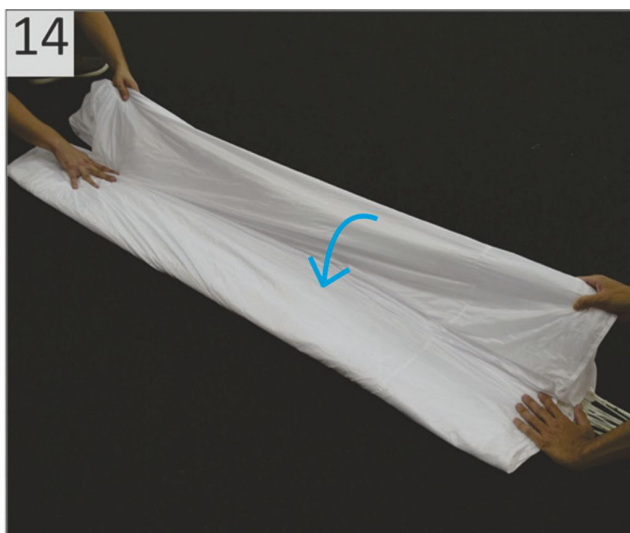


**12** Fold each half to the middle.





**13** *This should be the result.*



**14** *Fold one side above the other.*



**15** *This should be the result.*



**16** *Now fold them like an accordion three times.*



**17** *At the end fold the upper side to the inside.*



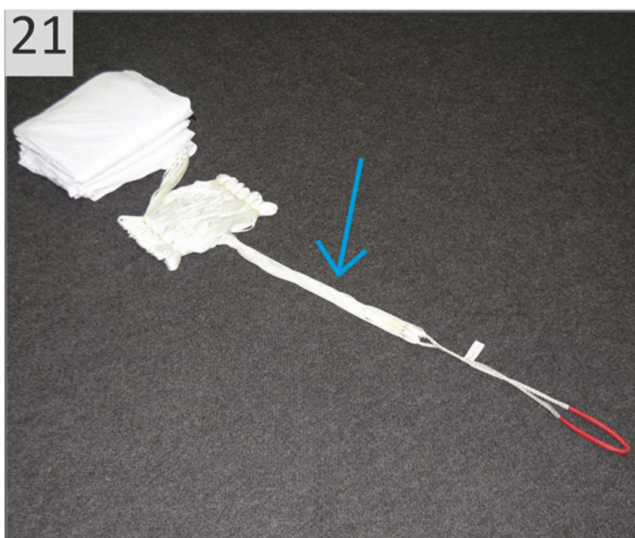
**18** *It should be this way.*



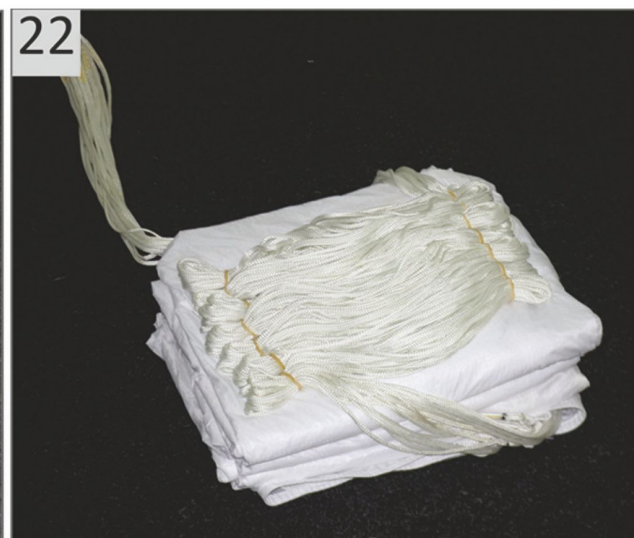
**19** *This should be the result.*



**20** *Put the lines in S-form, corresponding the canopy side length.*



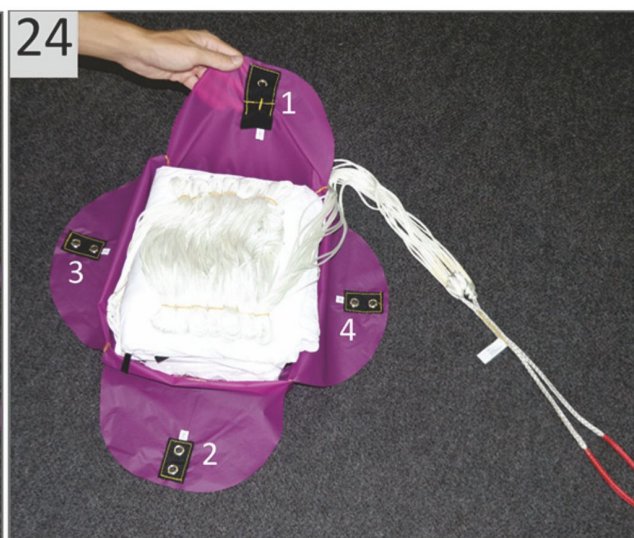
**21** *Don't fold all the line length leave something out.*



**22** *Put the lines over the canopy.*



**23** *Open the bag for the parachute.*



**24** *After putting the canopy in the bag close the bag in order of the numbers.*

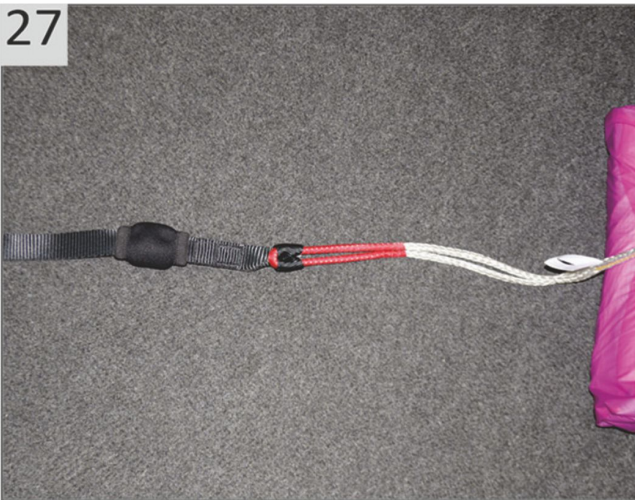




**25 Use the rest of the lines to close the bag.**



**26 Now the bag is closed and can be installed.**



**27 Connect lines and bridles.**



**28 Close the connection with the protection.**

## Attention

- Compatibility must be assured when installing the rescue system in a harness or outer/front container. In case of combining the first-time rescue system and outer container or harness with integrated container the correct functionality must be assured by instructed personal and must be recorded in the inspection log.
- Specifics' of each harness are available in the owner's manual.
- After mounting a harness back protection, the release functionality of the rescue system must be assured.



## 5. Release

---

If you are in the unfortunate situation of needing to throw your reserve, do so with conviction:

- Look; Reach; Pull; Throw.
- Look at the handle, grab it and pull out the retaining pins with enough force.
- Pull out the deployment bag.
- You need to adapt the way you pull your parachute depending on the design of your harness's deployment system. e.g. under seat positioning often requires an action to the outside so that the parachute extracts sideways from the pocket, pulling the handle upwards will not allow the parachute to release. Know your equipment and adapt your technique accordingly.
- Throw the parachute away from you as hard as you can into clear space, not towards your wing. It is important at this stage to remember to LET GO of the handle.
- Aim to throw with the direction of airflow to aid a fast opening and against the direction of rotation.
- If after throwing the parachute does not deploy (possible in low energy emergencies e.g. parachutal stall), grab the reserve bridle and give it a strong pull. This will help encourage the parachute to open faster. Or pull back the lines and do it again with all force.
- As the parachute deploys, concentrate on disabling the paraglider. There are several ways to do this: B line stall; rear riser stall; gathering the canopy by working up the A lines until you have the material in your hands or using the brakes to stall the wing. The most important thing to remember is to completely disable the wing so that it does not act against the parachute and cause a down-plane. Whichever method you choose do so symmetrically, you do not want the paraglider to start rotating, this could cause the paraglider to fly into and effectively disable the parachute.
- Due to the position of the reserve bridle hang points on most harness, deploying the reserve parachute tends to automatically put you in to the PLF position (legs down), if you are not, do everything you can to get yourself into this position, so you can absorb the landing impact with your legs. Always use a PLF when landing under emergency situations or under a rescue parachute.



## 6. Take-off checklist

---

1. Are the hooks in the right position, more than a half in the loops?
2. Is the closing correct?
3. Is the release handle easy to access?
4. Are the bridles clear and free?
5. The connection lines must not be in front of the container.
6. Are the bridles well connected at the right place?
7. Before take-off grab a few times the release handle to automate this movement. In case of an emergency things will go easier.

### Attention

- Pay attention that there is no friction between bridles and Velcro fastener.
- Pay attention for signs of wearing or aging at the bridles.
- Pay attention for signs of wearing or aging at the release handle or the closing hooks.



## 7. Maintenance, storing and inspection

---

Regular controls, right storing and good care are providing your rescue system with more life. Otherwise the functionality of your rescue system is at risk. The parachute must be inspected regularly.

### a. Care

If you land in salt water, you must immediately rinse the parachute and lines thoroughly with fresh water before it can dry. It is of vital importance to remove all traces of salt before drying otherwise permanent damage may occur. It may take several rinses to completely remove all traces of salt. If there are any visible signs of damage to the cloth or evidence of salt crystals, the parachute should be deemed un-airworthy and withdrawn from service. Completely air dry your parachute out of sunlight or other sources of direct heat. Failure to do so can result in uneven drying of cloth and lines. Your parachute must be dry before repacking.

If your parachute is dirty we recommend cleaning only with a damp cloth.

### b. Repairs

Repairs must be realized only by SOL Paragliders or an authorized seller. They have the necessary original parts.

### c. Storing

- Keep your parachute free from exposure to UV, moisture, dirt, dust, chemicals or any other contaminates.
- Always store all your flying equipment in a cool dry room and protect it from direct heat such as radiators or sunlight.
- Moisture, heat and humidity are the worst elements for damaging your parachute



## 8. Nature and environment

---

Please fly in accordance to preserve nature and environment.

## 9. Out of use

---

If your parachute gets out of use remember it cannot be recycled. Please give it to your distributor or your flying-school, they should know how handle it.

## 10. Warranty

---

### a. Warranty Terms

- This warranty is defined as repair or substitution of the defective parachute parts determined by the producer.
- This warranty is valid for 1 (one) year from the purchase date on.

### b. Warranty Pre-requisites

- A three-copied filled-out form: One copy to be sent to SOL Paragliders within 30 days after purchase; one copy to the sales person and one copy to the purchaser.

Or fill in the online-form: <http://www.solparagliders.com.br/registro.php>

- The equipment must be kept in accordance with the instructions provided in this manual. All the storage, folding, cleaning and care instructions must be carefully taken.
- Maintenance and inspections can only be performed by the manufacturer or authorized shop and must be properly documented.
- The checking and repacking is mandatory each 6 month.
- All shipping and handling expenses are paid by the owner.
- The final decision on exchanging or repairing the equipment will be decided by SOL Paragliders. The corresponding equipment must be sent to SOL Paragliders in the following way:
  - a) Accompanied by a copy of all inspections and a log of all flights.
  - b) Accompanied by a copy of the SOL Paragliders warranty form.



c. This warranty does not cover

- Any alterations on original fabric colors, lines and risers.
- Any damage caused by chemical products, sand, friction, cleaning products or salt water.
- Any damage caused because of errors during operation of the Power glider, incidents, or emergency situations.
- Any damage caused by inadequate operation of the Power glider.
- Power gliders that may have been subjected of any alteration from the original design and without proper permission from SOL Paragliders.
- Damages caused by inappropriate transport, storage, or settings of the power glider.
- Damages caused using not compatible components with the power glider.
- Damages caused using inappropriate packaging for the transport.
- Power gliders without original identification label and serial number.





## 11. Final words

---

Safety is the major theme of our sport. In order to fly safely, pilots must train, study, practice and be alert to the dangers around us.

To achieve excellent safety levels, we must fly regularly as much as possible, don't go beyond our limitations and avoid exposing ourselves to unnecessary dangers. Learning to fly is a slow process and takes years, so don't pressure yourself. If conditions are not favorable, keep your equipment stored away.

Don't overestimate your skills and be honest with yourself. Every year we see many accidents which in most cases could be prevented with a minor adjustment.

We are a part of the community in which we live: friends, family and even people we don't necessarily know worry about us. Our obligation towards this community is to keep ourselves healthy and that at each landing we will be one landing happier than before. We fly so that we can feel more alive.

Naturally it would be good if this rescue system never needs to be released, but a rescue system gives a sense of security and the flight experience will be more relaxed.

Some flight schools are offering training for parachute use and we recommend that you attend to them. The seminars provide valid information and experience and strengthen your trust in the rescue system.

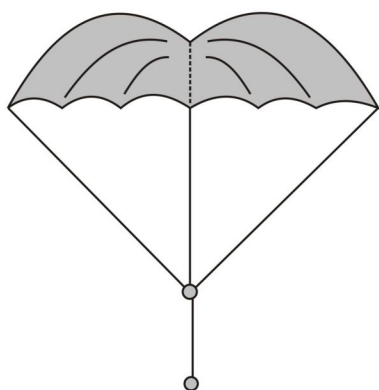
We wish you good and safe flights.

*SOL Paragliding Team*



## 12. Inspection log

### Inspection & Pack



Paraglider ( )    Hanglider ( )

Model: \_\_\_\_\_

Serial N°: \_\_\_\_\_

Manufactured: \_\_\_\_/\_\_\_\_/\_\_\_\_

### Inspection & Pack

### Inspeção & Dobragem

#	Place   Local	Date   Data	By   Por
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

[www.solparagliders.com.br](http://www.solparagliders.com.br)

