



User manual
Reserve Parachute
SHINE

Pull down APEX Rescue parachutes



www.supair.com

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Thank you for choosing the SHINE reserve parachute! We are glad to be able to share our common paragliding passion with you.

SUP'AIR has been designing, manufacturing and distributing accessories world wide since 1982. Choosing a SUP'AIR product is the right choice for anyone to make, for it is supported by thirty year of expertise and innovating designs driven by customer feed

Next, are explicit instructions to familiarize yourself with the product's technical features. Please, carefully read the following content!

Visiting our website at www.supair.com, will also bring you the latest updates. Additionally, if in doubt, questions will be answered by contacting any of our network representatives. Naturally the entire SUP'AIR Team will be at your disposal to promptly

We wish you the best of flights.

The SUP'AIR team.

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Welcome to the world of free flying : a shared world of passion.

The SHINE is a round reserve parachute, stable with an optimal descent rate, simple to use by design and efficient. It will perfectly suit and meet the requirements all paraglider pilots need.

The reserve parachute "SHINE" was designed by the SUP'AIR in-house Development team.

The SHINE is part of the latest hemispherical reserve parachute generations, using Decitex 20 fabric and a line layout entirely made of Dyneema®. Those characteristics make it a reliable, light and robust rescue system.

We use known materials for best results and highest performance. The design and material choices were well thought-out in regard to longevity and quality.

SUP'AIR's reserve parachute SHINE

Indicating that it meets European and German safety requirements.

After reading this manual, we recommend you to conduct a harness hang-test before your first flight to ensure proper rescue setup and functionality.

N.B. : The following three icons will help you to understand this manual



Advice



Caution !



Danger !!

Technical specifications

SHINE	Size S	Size M	Size L
Maximum Total Hooking Weight.	85 Kg	105 Kg	125 Kg
Weight	1,10 kg	1,25 kg	1,54 kg
Projected area	17,52 m ²	19,05 m ²	23,45 m ²
Surface area	28,1 m ²	31,15 m ²	38,93 m ²
Gore number	14	16	18
Volume (max) (L)	2,9 L	3,8 L	4,7 L

*Total flying weight without the glider.

Characteristics :

Sink rate below 5.5 m/s at maximum load (tests and measurements conducted in a laboratory).

Fabric : MJ International D20, PA 6.6 haute tenacité, 20dctex 30 gm/m².

Suspension lines : Liros 00148-0131 / Liros 00099-1192 (S, M et L) / Cousin Trestec 2411 Rescue line (Biplane).

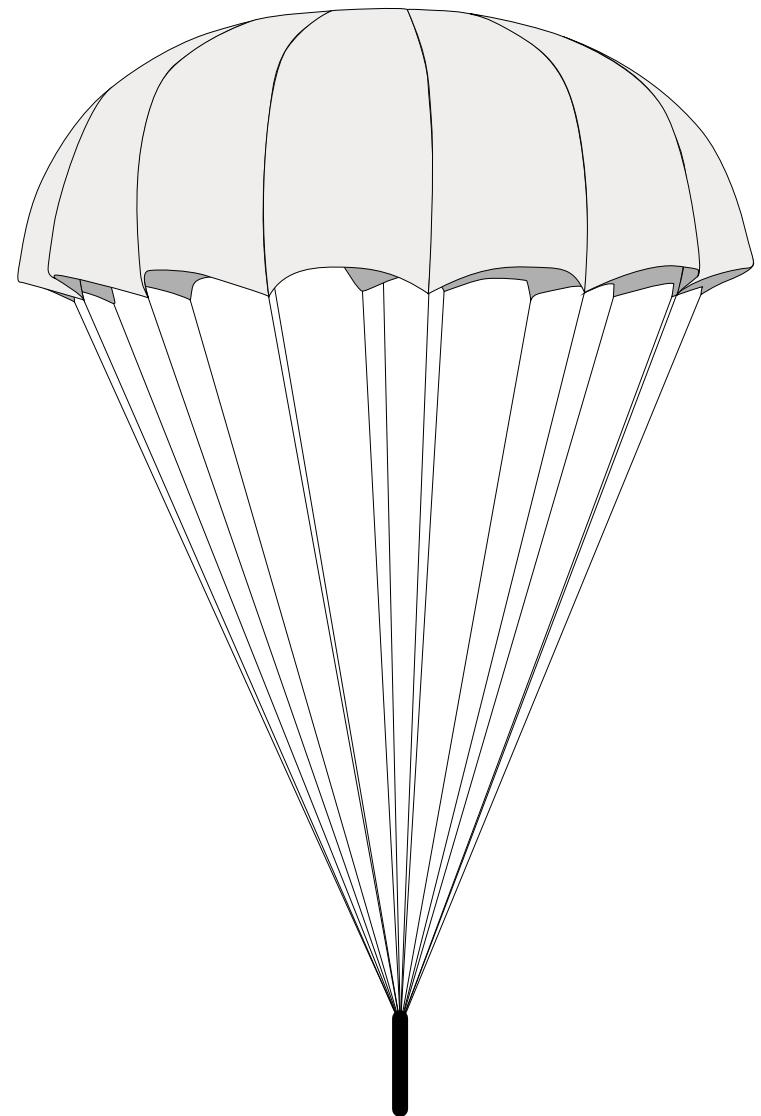
Riser bridle : Longueur 28cm, tresse Dyneema® 6 mm épissurée 2 500DaN.

Pull-down Apex type.

Options

-(120 g) 145 mm "STD" risers.

- Two stainless steel 6 mm square Maillons Rapides® (for the connection harness reserve/parachute) - (84 gr. for the set) - Lark's head knot connection on the reserve parachute side.



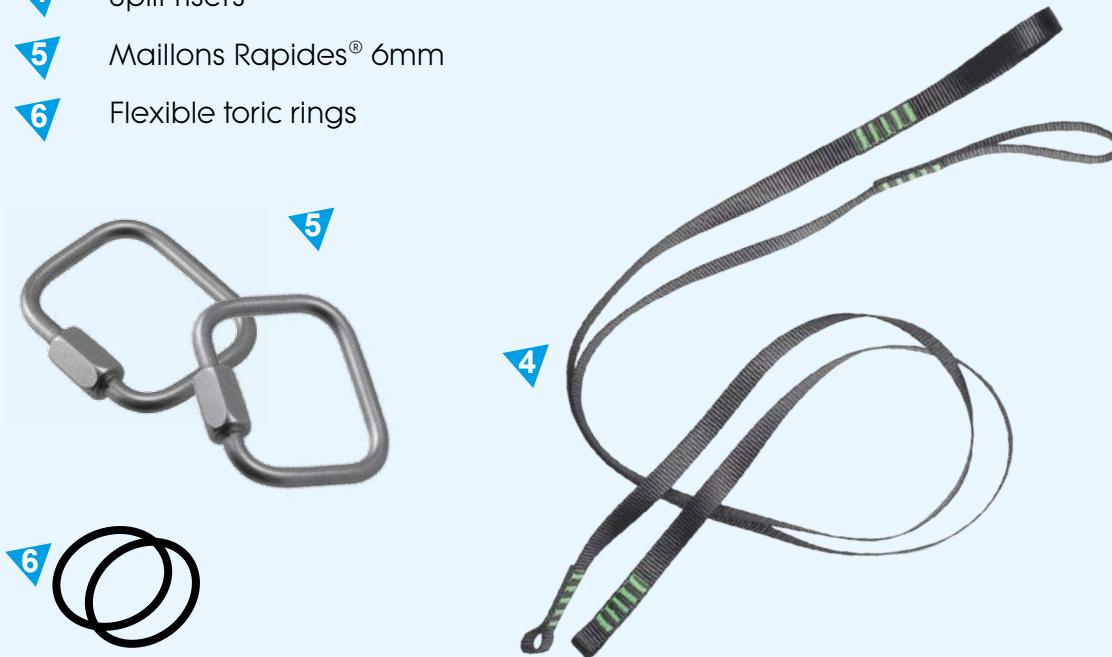
Equipment overview

- 1 Folded reserve parachute inside its deployment bag (POD)..
- 2 Single reserve parachute bridle loop.
- 3 Label with serial number, and manufacturing date.



Options :

- 4 Split risers
- 5 Maillons Rapides® 6mm
- 6 Flexible toric rings



This notice shows the information requested by the EN 12491 norm. This European Norm (EN) is required for all the paragliding reserve parachutes. All our reserve parachutes are conforming to the EN norm.

The reserve parachute certification code EN 12491 is described as follows:

- Flight proper sequence: during a straight flight, the reserve parachute is deployed. In order to conduct accurately reproducible tests by avoiding any interference from the paraglider, the test-pilot releases his paraglider at peak height during a roll
- The maximum sink rate is measured during the last 30 meters, the paragliding wing is released, below or equal to 5,5 m/s under maximum load.
- Stability is checked in a subjective visual way (with a rolling effect or not), and is gauged against the overall sink rate (an unstable reserve parachute usually demonstrates a higher sink rate).
- The reserve parachute opening speed must be inferior to 5 seconds.
- Structural tests (resistance): consists of verifying the overall structural integrity of the parachute under maximal load for a given horizontal 40 m/s speed. There can not be any failure / damage taking place on the riser / lines / canopy system

Flight test

European Norm 12491

200 m

Opening speed + Wing jettisoning

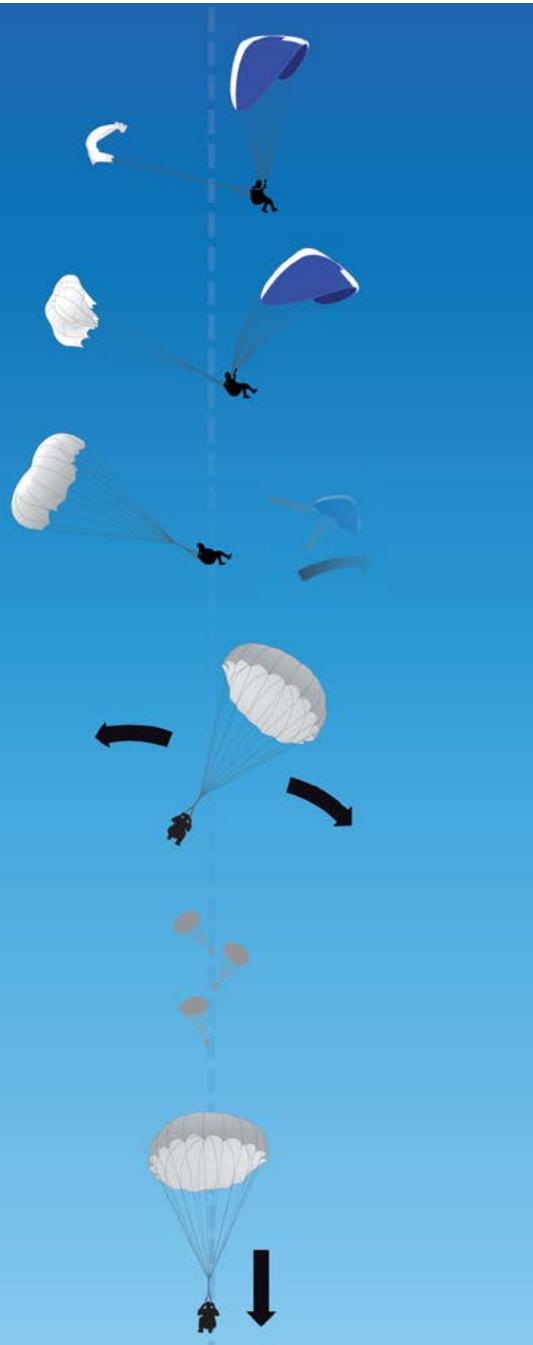
150 m

STABILITY

30 m

Sink rate \leq 5,5 m/s at maximum load.

EN 12491 norm



STRUCTURAL TEST

EUROPEAN NORM 12491

Horizontal speed 32 m/s or
115 km/h at maximum load.





Guideline procedures to follow with our reserve parachutes::

To begin with, we must stress that using a reserve parachute should never be taken for granted or considered to be without risks to the pilot. A reserve parachute is only there to deploy in case of an emergency situation.

The pilot's weight must conform to the parachute manufacturer's recommended load limitations to be fully operational. Any intent to use a reserve parachute above the manufacturer's recommended weight limitations is dangerous and must totally be a

- Any reserve parachute riser connection to the harness must result with the pilot landing on his legs and standing.

The parachute must be left unmodified to keep it aligned with the certification procedure it went through to assure for a proper deployment sequence to take place.

- It is very important to learn how the parachute works, and only during a SIV course (Simulated Flight Incident) or equivalent exercise.

Deploying the Reserve Canopy:

- Find the deployment handle.
- Hold it firmly and pull it out of the outer container or harness.
- Using the deployment handle, jettison the inner pod forcefully into open air and AWAY from the paraglider.



**Let go the rescue pod handle!
Do not keep it in your hand!**

The reserve parachute pod will automatically open upon reaching maximum line and riser length once under tension.

- Thanks to the Apex line, the reserve deployment will be short and easy
- Once the reserve parachute is deployed, the pilot must disable the paraglider by symmetrically pulling as much as possible on the «B» risers to bring the rescue overhead to stabilize the descent.
- Upon landing, the pilot must be ready to cushion the impact by flexing his legs and roll sideways; exercising what is called a PLF landing (Parachute Landing Fall).

RECOMMENDATION AND CARE FOR THE PARACHUTE AFTER A WATER LANDING:

In case of a water landing, the parachute must be dried, followed by line stretching and reconditioning, following the manufacturer's guide lines. Let the parachute dry outdoors in a shaded area, away from direct sunlight

Pre-stretch the lines with a 30 kg, and 50 kg. load for the Apex in order to limit Nylon shrinkage due to moisture and humidity. It is preferable to check the lines length with a 9 kg. load (see measurements chart on page 13).

- Proceed with the repacking procedure according to the manufacturer's guide line manual.
- Ensure a correct reserve parachute installation inside the harness by doing an extraction during a hang-test. Repeat installation procedure afterward.

To be noted:

An EN12491 certified reserve parachute must theoretically have a touch-down speed, equal or inferior to 5,5 m/s, which corresponds to a 1,80 meter jump. This impacting speed can greatly vary due to a few relevant factors: The air mass, the overall hooking

The paragliding wing's influence on the overall set-up (paraglider / reserve parachute) is important and not predictable nor quantifiable. The scenario can not be reproduced during the tests.

As such, the descent rate of a non neutralized wing could bring the risk of experiencing much higher values than those obtained during the certification procedure.



In spite of the positive statistics showing the obvious benefits of using a reserve parachute in case of an emergency, the latter can not be taken for granted at any time or place.

Connecting the reserve parachute to the harness

The reserve parachute installation will vary relative to the riser type used. Please review the following recommendations :

- « Y » risers setup. >> Two (2) 6mm Maillons Rapides® are needed (Ref. : MAILCARIN6) + two (2) toric elastic rings (Ref. : MPPP044).
- Separate STD risers (Ref. : ELESOLOSTD). >> One (1) square 7mm Maillon Rapide® will be needed (Ref. : MAILCARIN7) + four (4) flexible toric rings (Ref. : MPPP044).

Follow the instructions corresponding to the type of risers you intend to use.

1. Reserve parachute to harness connection with « Y » risers.

>> « Y » riser reserve parachute connection.

Make a loop to loop (Lark's head) knot between the single reserve parachute riser and the base of the « Y » riser where the bigger bridle diameter loop is located.

>> « Y » riser connection to the harness.

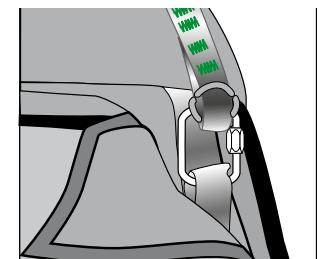
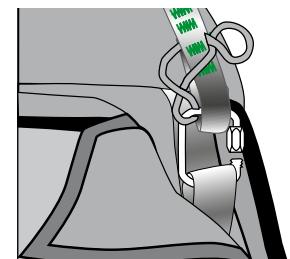
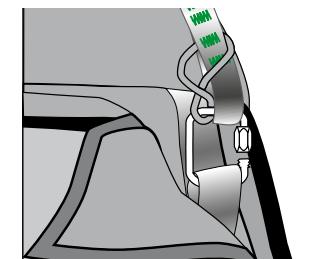
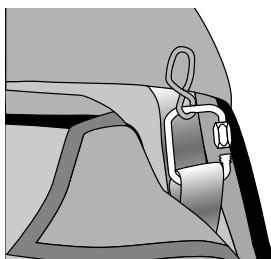
1. - Take two (2) square 6mm Maillons Rapides® and two (2) flexible toric rings.

- Unfasten the Velcros (or zip) located alongside the shoulder protective sleeves to reach the reserve parachute connection loops on the shoulder straps.

2. - Open the Maillon Rapide®- Push the bridle's buckle through.

- Push the maillon through the flexible toric ring.

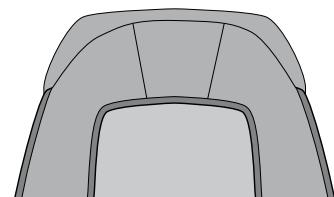
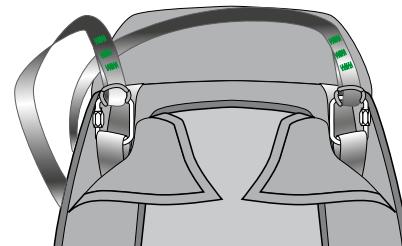
- Twist



6. Repeat sequence 1 through 5 on the other side of the harness.

7. Tuck away the risers excess (without making knots) under one single flap :

- Either to the right side if you wish to place your reserve parachute handle to the right (recommended if right handed).
- Or to the left side if you wish to place your reserve parachute handle to the left (recommended if left handed).
- Close the protective sleeves Velcros (or zip).



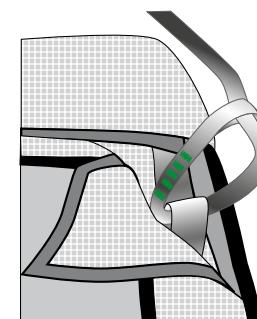
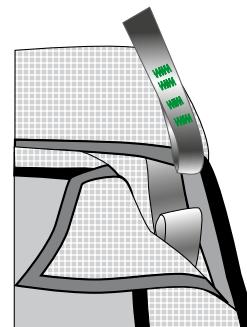
Connecting the reserve parachute to the harness

2. Reserve parachute/harness connection with SDT separate risers.

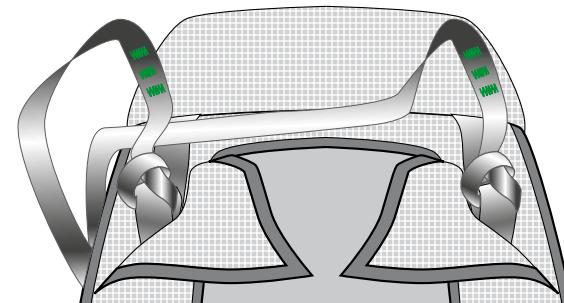
>> Risers to harness connection using a loop to loop (Lark's head) knot.

1. - Unfasten the Velcros located alongside the shoulder protective sleeves to reach the reserve parachute shoulder straps connection loops.

2. - Attach each riser to the shoulder attachment points by making a Lark's knot (loop to loop connection). Use the largest bridle loop ends.



3. - Tidy up the assembly.
- Make sure for the risers not to be longer than one another.
- Tighten each connection securely.



>> Separate riser reserve parachute connection.

One (1) square 7mm Maillon Rapide® will be needed + two (2) flexible toric rings.

1. - Open the 7mm square Maillon Rapide®.
- Connect the reserve parachute single riser loop.
- Push the maillon through the toric ring
- Twist

2. - Push the end riser through the toric ring.
- Push the maillon through the risers buckles.

3. - Give a second twist to the toric ring.
- Push the buckle through the maillon.

4. - Repeat steps 1 through 3 with the second riser..

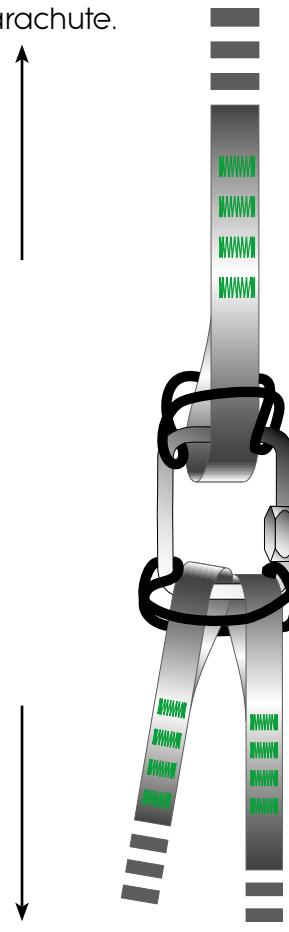
5. - Tidy up the assembly.
- Make sure for the risers not to be longer than one another.
- Close the Maillon Rapide® tightly by hand.
- Tighten using pliers and making a $\frac{1}{4}$ turn.



Connection of the tandem reserve parachute to the risers

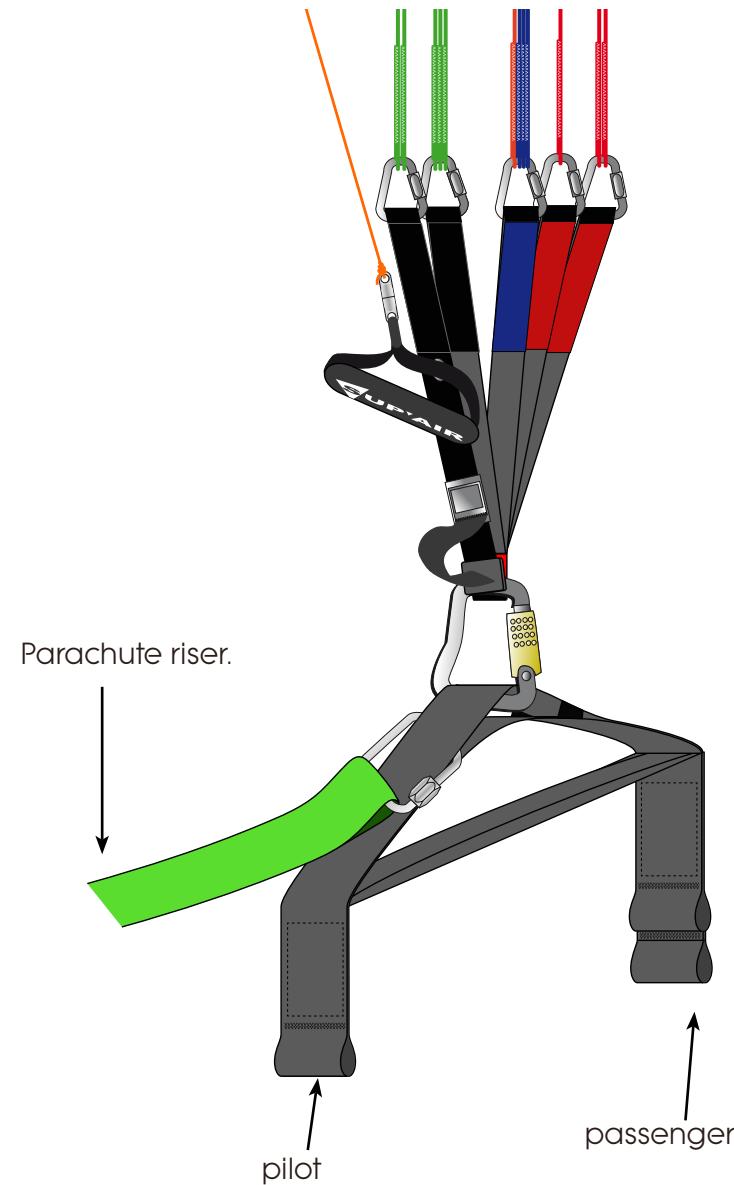
1. Connect the risers to the parachute using a rectangular 7 mm stainless steel (Inox) Maillon Rapide®, then use toric elastic rings to secure the bridles to the Maillons as indicated below.

Toward the re-serve parachute.



Toward the spreader-bars.

2. Connect the risers on top of each spreader bar (at the main loop), with the rectangular stainless steel maillons and the flexible elastic rings.



Installing the reserve parachute

3. Installing the parachute in its container.

Whether you have an outer front container or an integrated reserve parachute pocket in your harness, proceed with the installation according to the manufacturer's guidelines.



Check the completed installation during a hang-test.

After installing the reserve parachute in its container, it is mandatory to conduct a hang-test. Be certain for the handle to open all the container flaps prior the parachute extraction while evaluating the force amount exerted during the pull to jettison

Have the installation checked by a professional outfit.

Conduct an extraction test every six (6) months to ensure proper system functionality.

Note : conducting a hang-test extraction does not imply deploying the reserve parachute which will stay inside its POD.

Advise : In order to guaranty a quick opening speed and a sound structural integrity, your reserve parachute must be repacked every six months. Take advantage of the repacking procedure to conduct a hang-test extraction.



Reserve parachute folding and installation inside the harness must conform to the specific guidelines found in this manual.

SUPAIR is not liable for any other use or installation.



Packing a reserve parachute is not very difficult but requires a methodical and precise folding procedure. If you feel uneasy about repacking the reserve parachute yourself, it will be advisable for you to seek professional assistance to do the job correctly.

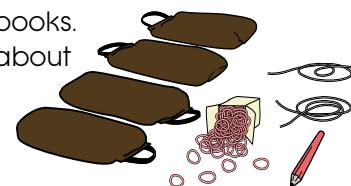
Tip: take advantage of having to repack your parachute, to deploy it on the ground and vent it for a while, prior proceeding to folding it again.

Before each repacking procedure, the following sequence must be observed :

- Carefully check each line from the canopy to the riser for any possible damage.
- Aerate the parachute for at least twelve (12) hours. Not in direct sunlight nor in a room filled with polluting chemical agents (sprays).
- Check the fabric for damage or soiling of any kind.
- Inspect the pod and parachute pocket for wear and tear to ensure a clean extraction.
- Check the properly fastened reserve parachute handle to the pod.
- Inspect the elasticated loop keeping the pod flaps securely closed.
- If you notice something unusual, send your parachute to be inspected by a professional specialized certified outfit.

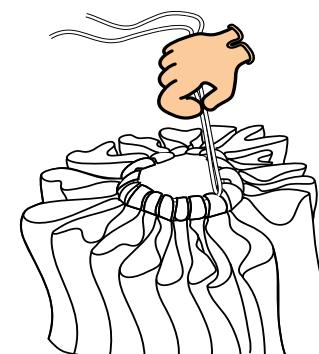
1 Make a selective list of the following items needed to complete the repacking procedure :

- Elastics to keep the lines in place.
 - Sand ballasts weights or books.
 - A small thin piece of line about 30cm long.
- POD

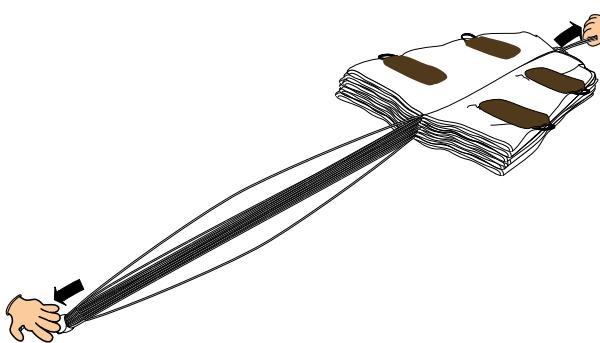


2. BKeep the parachute unruffled with the lines running freely from the bridle «loop to loop» connection to the canopy's leading edge.

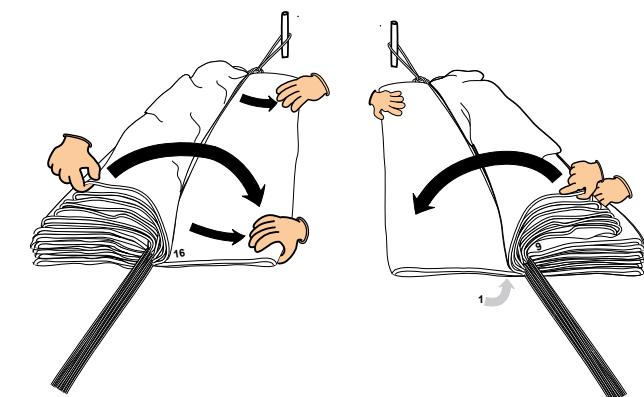
3. Tension all the lines from the riser. Push a string through the packing buckles located at the center of the panels stitching and balancing point between the lines and the central cord.



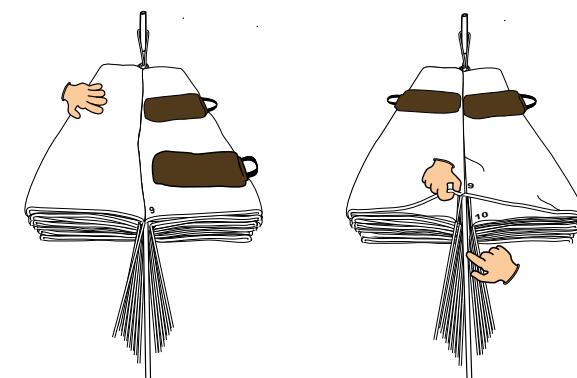
4. Control both lower and upper lines, ensuring that they run freely from the canopy to the riser(s).



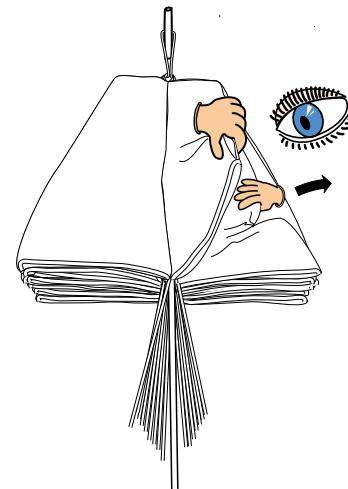
5. Successively overlap all the red panels to the right. Repeat the procedure with the white panels to the left, starting with panel number one (1).



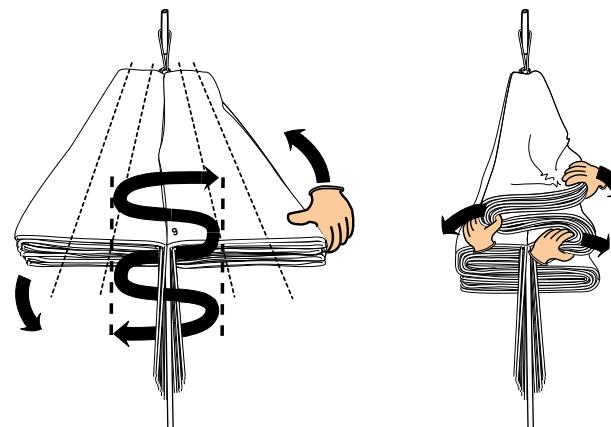
6. Be certain to have an equal panel (gore) count on each side (the panel numbers may vary with other parachute models). Be precise and verify that the bottom of the skirt (leading edge) is perfectly aligned and tidied..



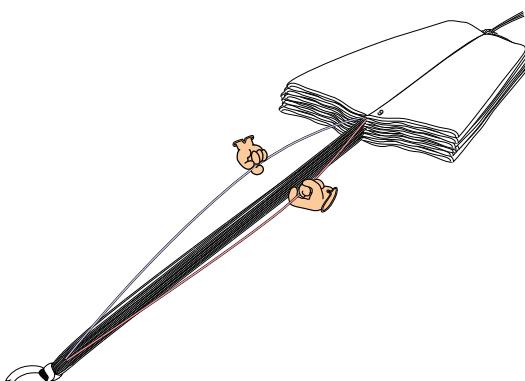
7. Lift the upper line to keep the folds tidied up along the entire panels length, and the wind channel unobstructed right up to the canopy's apex.



9. S-fold the left side of the canopy under the centre of the parachute, then S-fold the right side of the canopy onto the centre of the chute. Keep the canopy neatly folded in place using sandbags or books.

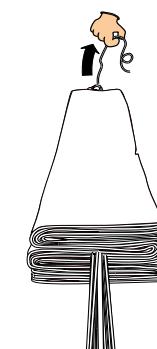


8. Be certain for the upper and lower lines to freely run from the canopy to the risers.

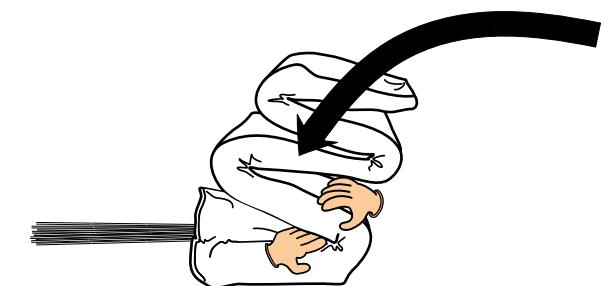


10. WARNING! Release the tension on the canopy and
IMMEDIATELY REMOVE THE TIE

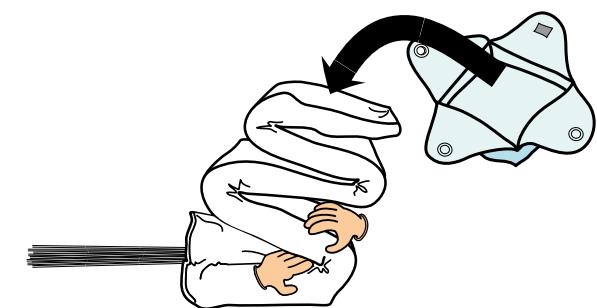
holding the folding loops together. Not conforming to the described procedure would prevent the parachute from opening! (See check list).



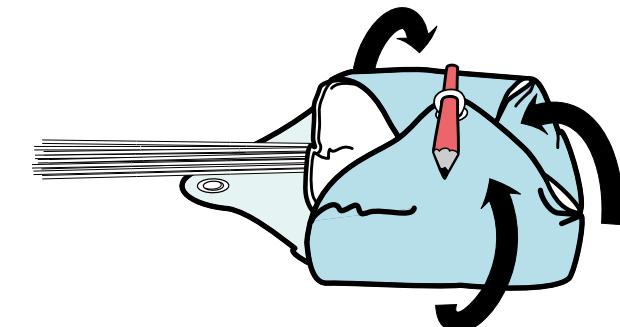
11. "S" fold the fabric.



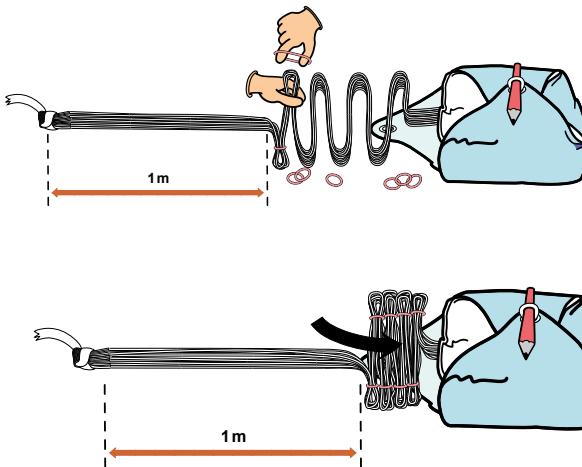
12. Place the pod at the top, then flip it all upside down with the "S" folded parachute. Keep a small space at the front of the parachute's leading edge to later fold and tuck away the lines.



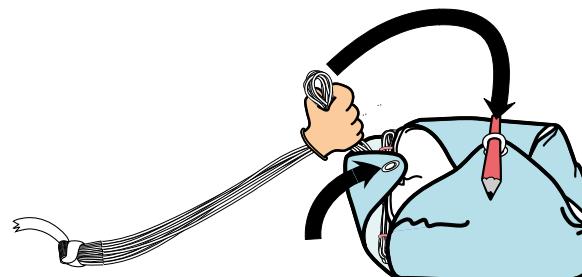
13. Close the container's rear flap and two lateral flaps..



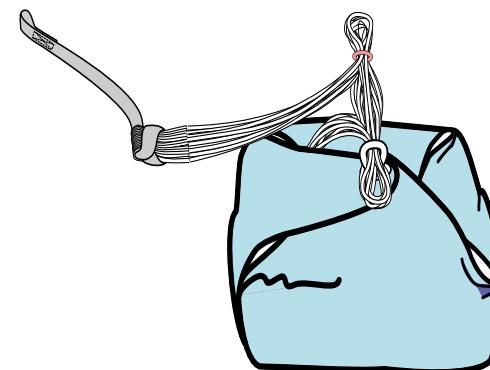
14. «S» fold the lines into the accommodating space left for them, leaving about 1m length of lines outside for the outer coils.



15. Close the fourth flap and insert about 4 cm of folded lines through the elasticated loop to keep the container closed.



16. «S» fold the coil the remainder of the lines on the outside of the reserve parachute container.



17. Verify that you have in your possession all of the listed items in step 1, as confirmation that none of them have been left inside the folded parachute.

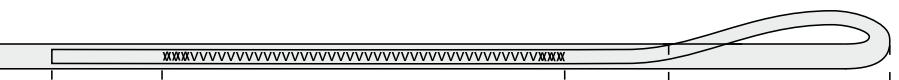
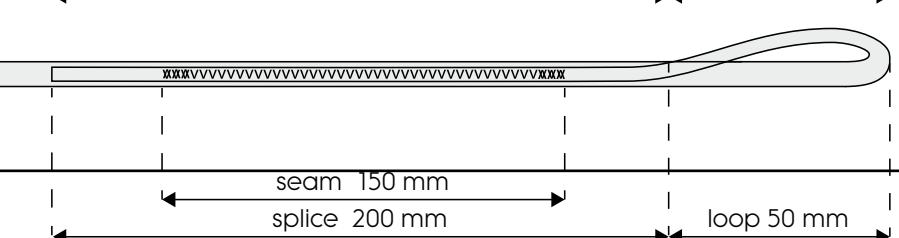


NOTE : Videos pertaining to our reserve parachutes use and packing are available, and can be viewed at www.supair.com

Measurement table

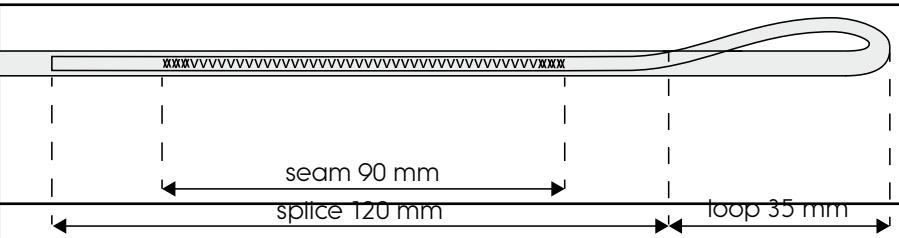
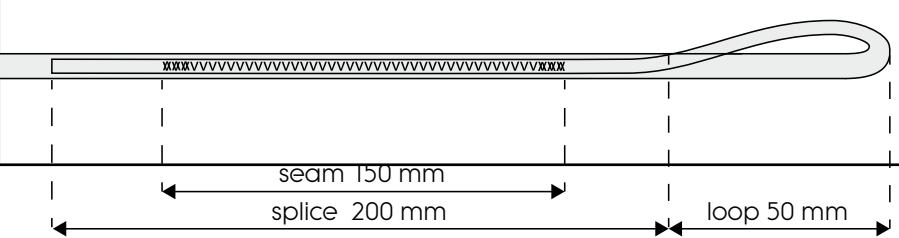
SHINE Size S reserve parachute line chart.

* Measurements made under a 5 kg. tension.

Line	Cut	Sewn	Lines number	Line material	
Main lines	4740	4430	14	Liros 00148 - 0131	2 times 155 mm extra length (35 mm buckle + 120 mm splicing - stitching length = 90 mm) 
Apex	5750	5250	2	Liros 00099 - 1192	2 times 250 mm extra length (50 mm buckle + 200 mm splicing - stitching length = 150 mm) 

SHINE Size M reserve parachute line chart .

* Measurements made under a 5 kg. tension.

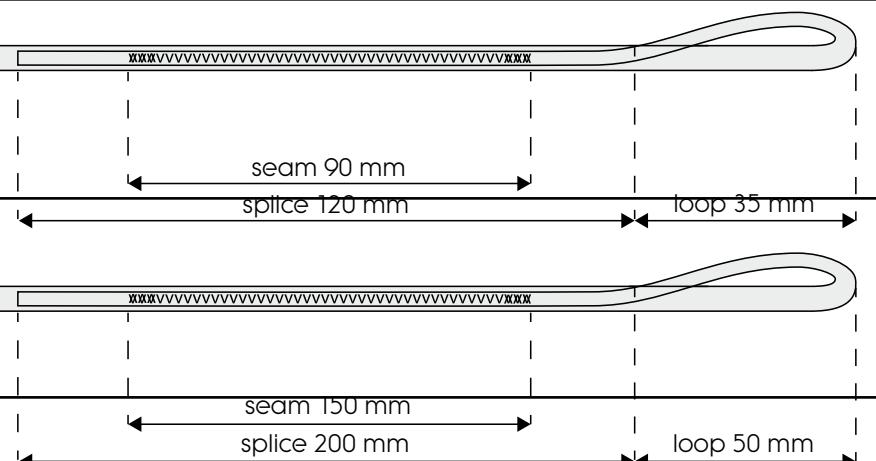
Line	Cut	Sewn	Lines number	Line material	
Main lines	5110	4800	16	Liros 00148 - 0131	2 times 155 mm extra length (35 mm buckle + 120 mm splicing - stitching length = 90 mm) 
Apex	6070	5570	2	Liros 00099 - 1192	2 times 250 mm extra length (50 mm buckle + 200 mm splicing - stitching length = 150 mm) 

Measurement table

SHINE Size L reserve parachute line chart .

* Measurements made under a 5 kg. tension.

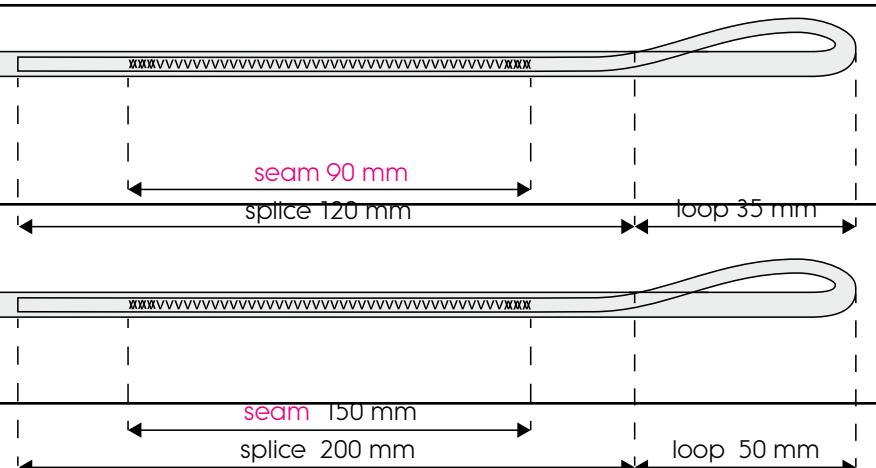
Line	Cut	Sewn	Lines number	Line material	
Main lines	5810	5500	18	Liros 00148-0131	2 times 155 mm extra lenght (35 mm buckle + 120 mm splicing - stitching lenght = 90 mm)
Apex	6880	6380	2	Liros 00099-1192	2 times 250 mm extra lenght (50 mm buckle + 200 mm splicing - stitching lenght = 150 mm)



SHINE Tandem reserve parachute line chart .

* Measurements made under a 5 kg. tension.

Line	Cut	Sewn	Lines number	Line material	
Main lines	7330	7020	22	Liros 00099-1628	2 times 155 mm extra lenght (35 mm buckle + 120 mm splicing - stitching lenght = 90 mm)
Apex	8650	8150	2	Liros 00099-1628	2 times 250 mm extra lenght (50 mm buckle + 200 mm splicing - stitching lenght = 150 mm)



Maintenance

If wet, you will have to immediately dry your parachute to avoid any bacteria / fungi buildup. Gasoline contact, or any other solvent / chemical agent, can considerably decrease and compromise your reserve parachute's structural integrity. If the case,

Storage and transport.

When not in use, you must stow away your reserve parachute in a dry, cool, clean and UV rays free environment.

During transport protect the harness against abrasion or UV deterioration (use a bag). Avoid long transports in wet conditions.

REPACKING FREQUENCY

To guaranty a fast deployment sequence and proper care for your reserve parachute, you must open and repack it every six (6) months.

LONGEVITY

Your reserve parachute was designed to last ten years if properly maintained as per manufacturer's recommendations. Pass that period, we will recommend you to have your parachute inspected at a professional certified outfit. The procedure should be implem

RECYCLING

Our materials have been specifically selected for their exceptional resilience and environmentally friendly abilities. None of the components used in the manufacturing of our reserve parachutes is environmentally harmful. The majority of the components

Repairs

In spite of using the highest quality products used during manufacturing, it is possible for your reserve to deteriorate through general use. If showing any sign of wear and tear, it should be sent for inspection and/or repairs at a professional certified

Hardware & Parts

- POD

Materials

>> Line

- Liros 00148-0131
- Liros 00099-1192 (S, M et L)
- Cousin Trestec 2411 Rescue line (Biplace).

>> Fabrics

- MJ International D20,
- PA 6.6 High strength, 20dctex 30gm/m².

>> Riser bridle :

- Braid 6 mm 2 500DaN.

SUP'AIR takes great care in its product design and manufacturing. SUP'AIR guarantees its parachutes two years from the date of purchase against any defect or design flaw that would arise under normal use. Product mishandling, excessive exposure to aggress

Disclaimer



Paragliding is an activity requiring specific skills and sound judgement. Learn how to fly within the environment of a certified paragliding school. Carry an insurance policy with you in addition to your pilot certification. Always mind and gauge your personal safety. SUP'AIR does not assume the liability in connection with your paragliding practice. Any other use or assembly than those described in this manual is not the responsibility of SUPAIR.



This SUP'AIR product has been designed exclusively for paragliding. Any other activity such as skydiving or BASE jumping is absolutely forbidden.

Pilot's gear



It is essential for you to wear a suitable head protection (certified paragliding helmet), adequate footwear and right clothing for the activity. Moreover, carrying a reserve parachute connected to your harness in flight is highly recommended.



This page will help you keep record of your SHINE scheduled maintenance.

Purchase date	
Owner's name	
Name and stamp of the shop	

<input type="checkbox"/> Care	
<input type="checkbox"/> Resale	
Purchase date	
Workshop's name/ Buyer's name	

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