A Letter from the President

Dear Customer,

We'd like to thank you for your purchase of your new JOJOWING´S SONIC canopy. We're confident you'll be pleased with it in every way.
We urge you and your rigger to carefully inspect your new canopy to completely familiarize yourself with its features and the quality workmanship. Should you find anything that does not seem right to you or your rigger, please contact us immediately.

Again, thank you for choosing JOJOWINGS canopy. With proper care it should last many years and hundreds of jumps.

Yours sincerely, with a team of staff and test parachutists,

František Salava
director

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CANOPY SONIC

OWNER´S MANUAL

JOJO WINGS

Chvalínská 2109

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Česká republika

Read this manual completely before assembling, packing or using your Jojowings canopy.

JOJOWINGS welcomes suggestions of ways to improve this publication. If you feel parts are incorrect or hard to understand, please let us know in writing.

This manual is not a promotional material. It comes only along with the SONIC canopy. The manual or any part of it cannot be used, sold or distributed with any other product than the JOJOWINGS SONIC canopy for which it is approved.

WARNING!

Each time you use this parachute you risk serious bodily injury or death.

You can substantially reduce this risk by:

1) assuring that every component of the parachute system has been assembled and packed in strict compliance with the manufacturer's instructions

2) by obtaining proper instruction in the use of this canopy and the rest of your equipment

3) and by operating each component of the system in strict compliance with the owner's manual and safe parachuting practices.

However, parachute systems sometimes fail to operate properly - even when properly assembled, packed and operated - so you risk serious injury or death each time you use the system.

About This Manual

It is beyond the scope of this manual to teach you how to deploy, fly, land or maintain parachute.

The Czech Aeroclub publishes recommended procedures on learning to jump and using skydiving equipment. We urge you to learn and follow these procedures. We also recommend you obtain instruction from a competent rated instructor before using this parachute for the first time.

Other countries have similar organizations for instruction. If you are not in the Czech republic get instruction from a competent instructor that is rated by your country's organization.

Jumping this parachute without first receiving thorough and personal instruction increases the serious injury or death.

Sport parachuting technology and procedures continue to advance rapidly. Although reasonable care has been made in the preparation of this manual, Jojowings cautions that it may contain information that may be incorrect or behind the current state-of-the-art parachute use. For these reasons, we urge you to work closely with qualified experts - riggers and instructors - to help you inspect, assemble, pack, use and maintain this parachute.

We also welcome your comments, good or bad, about our products.

Read Before Assembly or Use

Since parachutes are manufactured and inspected by people, there is always a possibly this parachute contains defects as a result of human error. Therefore, the entire parachute system - main and reserve canopies, harness, container, and other components - must be thoroughly inspected before their first use and before each subsequent use.

Parachutes get weaker through time for a number of reasons. They receive wear during packing, deployment and landing. Exposure to many agents, including sunlight, heat and household chemicals, significantly weakens parachutes. The damage may or may not be obvious.

To help minimize the risk of parachute failure and possible serious injury or death, the entire parachute system should be thoroughly inspected at least every 120 days or 50 jumps, whichever comes first. It should be immediately inspected if at any time it is exposed to a degrading element, unusually hard opening, or any time damage may be suspected.

Remember that some chemicals will continue to degrade the parachute long after initial exposure. Regular and thorough inspections are necessary to insure the structural integrity, reliability, and flight characteristics of the system are maintained.

Always know the entire life history of every part of your parachute system. That way you'll know no part has been exposed to an element that may seriously weaken or damage it.

Technical description of SONIC CANOPY

1. Specification

The aim of this Technical description is to provide users with only basic parameters, parts and guidelines for the use of the SONIC canopy.

The SONIC parachute is designed for sports jump training.

The Sonic canopies are normal clasified canopies. The Sonic 220 canopy can be used as a student canopy.

2. Technical and tactical parameters

Basic parameters

size		SONIC						
		108	120	135	150	170	190	220 S
surface		108 ft^2	120 ft^2	135 ft^2	150 ft^2	170 ft^2	170 ft^2	220 ft^2
Number of chambers		18/9	18/9	18/9	18/9	18/9	18/9	18/9
Exit weight - kg	STUDENT	----	----	----	----	----	----	60 -105
	ADVANCED	50 - 65	50 - 77	50 - 87	55 - 96	60 - 107	60 - 118	60 -120
	EXPERT	50 – 95	50 – 95	50 - 105	55 - 120	60 - 125	60 - 130	60 - 130

The main canopy functional parameters

The parachute secure proper functioning at:

- flight speed from 0 to 240 KM per hour in altitude between 900 and 4000 meters
- free fall jumps with minumum lasting at least 3 seconds
- jumps with manual release

Operational conditions

- Parachute can be packed ready for jumps for 120 days in maximum
- Its proper function is secure at temperature between from 30 to 80 °C at the relative humudity corresponding with these temperatures.

Reliability assuring parameters

Warranty period

a) Lasts 24 months on conditions that repairs and replacements of used parts are carried out, storage conditions and maintained and regular inspections connected with the airing of the system are performed.

b) The warranty period begins with the shipment date of the system to the maximum of 24 months from the manufacture date.

c) During warranty period the manufacturer will not accept claims in the cases as follows:

- Damage of parachute system parts caused by thair catching on gear (by jump, manipulation on the ground, packing)
- Violation of conditions of packing, storage an maintenance of the parachute system
- Missing parachute logbook or its improper records
- Failure to follow the instructions of this techincal description
- Any unskilled handling with the system

Total Life

The total life of the parachute is not determined, however technical condition of each system or its part is important. Therefore it is required to keep the following conditions:

a) Replace damaged parts in time and without any delay. Each and every repair must be recorded in the parachute logbook.

b) Repair the system and its parts in time and without any delay, always according to this technical manual. Each and every repair must be recorded in the parachute logbook.

c) After the elapse of 5 years of use carry out overall technical inspections (validity is for 2 years in maximum, result is to be recorded in the parachute logbook) till the end of its total service life (technical life).

The evaluation of the technical condition of the system (technical inspection) is performed directly by the manufacturer or by an authorized senior parachute technician.

Picking The Right Canopy

It is important for your safety and enjoyment that you match your canopy with your ability and weight. Jojowings canopies are built in several models that span a wide range of canopy surface area. Any canopy's descent rate and forward speed increases as the weight it is carrying - the so-called suspended weight - increases. The canopy also becomes more responsive as forward speed increases. It also reacts more radically when it is stalled or tuned.

Because of these aerodynamic facts, it is unsafe to put too much weight under any particular canopy. Safe and comfortable landings will be difficult to obtain, even for experienced jumpers under ideal conditions. Less experienced jumpers will have even a harder time and be at greater risk.

Determining the wing loading of the parachute you intent to jump or buy is a good guide to matching your weight to a particular canopy.
Wing loading is easily calculated by dividing the total suspended weight in pounds by the surface area of the canopy in square feet. Total suspended weight is the weight of the jumper plus all his clothing and gear- including the main parachute itself.

The surface area of Jojowings canopies is printed on the data panel, on the center cell rib, or on the center cell top surface near the tail. (Be sure to actually check the data panel - canopies of different sizes may look the same.) A typical ready-to-jump sport piggyback (rig and both canopies) weighs 20 to 30 lb. Add this, plus the weight of your jumpsuit, clothing and accessories to your bodyweight to get the total suspended weight. For example, a jumper who weighs 165 lb. with his jumpsuit on and who jumps a packed rig that weighs 25 lb. Would have a suspended weight of 190 lb.

Here's an example of how to calculate wing loading of a 210 sq. ft. canopy and the jumper used in the example above: 190 lb./210 sq.ft ' 0.9 lb./sq.ft.
Calculate the wing loading now for the canopy you intend to jump.
If this figure is below 0.7 and 1.0 it will turn fast and go fast. It will require skill to land well in many weather conditions or at high altitudes. Be sure your skill level is up to the demands of this situation. If the wing loading is greater than 1.0 lb./sq.ft. you are exposing your self to a dangerous situation. Turn rates, forward speed and rate of descent will all be very high. Control range may be short with stalls happening very abruptly with little warning. Normal landing techniques may not work. Extra speed on approach to landing may be required to get enough flare to stop your rate of descent. Therefore, a front riser approach to hook turn may be required, either of which are very dangerous.

Jojowings does not recommend that anyone jump a canopy that will result in the wing loading exceeding 1.0 lb./sq.ft.
It also is useful to compare the wing loading of a canopy you intent to jump with the wing loading values of parachutes you've been jumping. If the different is great, you should expect the new canopy to perform very differently than the ones you've jumped before.

A Note About Slope Soaring

Parachutes were frequently used for slope soaring or paragliding in the past. While this is an acceptable use, it can be very dangerous. The following guidelines will reduce the danger:

1) Obtain competent instructor before atempting any slope soaring. Many countries have organization that certify instructors.
2) Know the site. Never be the first one to launch at a site. Talk to several people who have used the site before under similar weather conditions. Make sure the site is free of turbulence. Turbulence may collapse your canopy and you may fall all the way to the ground, causing severe injury or death.
3) Know the limitations of your canopy. Glide ratios, minimum sink rate, launch speed, flight speed, tolerance to turbulence and recovery characteristics are just some of the things you need to know. These all vary according to wing loading, jumper weight, and canopy type. You must be very familiar with this canopy before attempting any paragliding. Canopies designed specifically for paragliding may perform much better than this canopy. Therefore, do not judge the suitability of a site based on the performance of a paraglider.
4) Make sure that you can make the landing area before you launch. Check the flight path or obstacles. Don't launch if there are any dangerous obstacles along your flight path.
5) Inspect your parachute frequently and thoroughly. In skydiving the jumper structurally tests his parachute every time he deploys it. If there is any structural deficiency the opening shock will normally cause failure at an altitude where he can safely deploy his reserve. A slope soaring pilot is not so fortunate. Turbulence can collapse a canopy and the subsequent opening shock can be hard enough to cause a failure. This could happen at an altitude that is too low for the reserve to work.
6) We recommend you use a reserve designed specifically for paragliding. Because paragliding reserves are frequently required to work at very low altitudes, a skydiving reserve is not adequate.

Assembly

Your canopy should be assembled by a properly certified rigger. Before you begin, be sure the risers, toggles, bridle, deployment bag, pilot chute, harness, container and other items are compatible with your SONIC canopy and each other.

Some toggles, for example will not work properly on certain type of risers.

Assemble your system in accordance with the owner´s manual for your rig.

The instructions below are for attaching toggles that have a grommet in the center to canopies with Vectran lines. If another type of toggle is used consult the container manufacturer for proper installation.

Two common problems that may happen if the toggles are installed improperly are

a) the toggle knot getting caught on the guide ring and,

b) the knot slipping

Be sure that your installation is safe. The container manufacturers instructions may not be compatible with this canopy.

Periodic Inspection Procedure

(Performed at assembly and after every 50 jumps or 120 days, whichever comes first.)

As mentioned above, your Sonic canopy must be inspected thoroughly before it is jumped the first time and periodically thereafter. This procedure is more thorough than the inspection which should be completed each time the parachute is packed.

You or your rigger should inspect your parachute system in a clean, well-lighted area that will allow you to spread the main canopy out.

Here is one recommended procedure for inspecting your SONIC main canopy. Consult the owners manual for your rig and other components for instructions on inspecting them.

It's best to inspect your canopy in a careful, systematic way. We recommend starting at the top of the canopy and working down to the risers. You should leave the canopy attached to the rig.

1. **Bridle attachment.** Check to be sure the bridle is correctly attached to the canopy. Check the integrity of the canopy fabric and reinforcement tapes in the area where the bridle ring is attached.

2. **Top surface.** Spread the canopy out on its bottom surface and inspect the top surface. Look for rips, stains , or failed seams. Check the fabric strength by grabbing a handful of fabric in each hand and trying to tear the canopy with a moderate tug.

3. **Bottom surface.** Turn the canopy over and spread it out to inspect the bottom surface. Check for rips, stains, and failed seams. Check the fabric strength (see #2 above). Check the line attachment points.

4. **Inspect each rib** from the leading edge to the tail by looking inside each cell. Pay extra attention to line and bridle attachment points.

5. **Lay the canopy out neatly on one side,** stacking each rib on top of the others. Check that all lines in each line group are the same length and that the trim differential between each line group is correct for this canopy. Check the condition of the stabilizers and slider stops.

6. **Suspension lines.** Check the full length of each line for amage and wear. Look for fraying at all cascades (the Yshaped junction of two lines) and where each line attaches to the connector link or soft-links.

7. **Slider.** Be sure the fabric isn´t torn, that the grommets are undamaged and have no sharp edges, and that they are securely attached to the slider.

8. **Risers.** Be sure the barrels of the connector links are tightened and the slider stops are properly positioned (slinks). Or if it is done using soft-links, whether this assembly is done properly.

The toggles must be installed to the main steering lines. The rigger must check the correct assempbly of the togglers and correct function of the whole system including guide rings on the risers.

9. **The rest of the assembly.** Follow the instructions in the rig manufacturer´s owner´s manual to inspect the rest of your parachute system.

10.Write the check into the logbook.

Pre-Packing Instructions

Introduction

Today's ram-air canopies are very reliable parachutes. If a ram-air has straight lines - that is, if it is assembled correctly and untangled after the last time it was jumped – it will usually inflate even if folded in ways that are quite unusual.

In other words, it is difficult to pack a ram-air main canopy so it won't open.

We're not saying other packing methods won't work with your Sonic canopy. But the method shown here will probably help your canopy open more consistently.

Before You Begin

Where you pack your SONIC canopy is important.

Since sunlight irreversibly damages nylon parachutes, an indoor or shady area is best. Packing in the sunlight is unavoidable at most places, so try to reduce your canopy's exposure to direct sunlight as much as possible.

Packing on concrete and asphalt should also be avoided because they will wear the fabric, lines and fittings that are used to build your parachute system. A dry lawn or a packing table are the best.

Packing behind a building or van will make packing easier because it blocks the wind.

Czech Aeroclub regulations require that a main parachute be packed by either a certified rigger or the person who will jump it. Other countries may have similar regulations.

A Word About Help

When you're learning to pack, never hesitate to ask a rigger or your instructor to help. They will show you tips that will make the process faster and easier. Be sure they refer to this manual, however, as they might not know our packing method.

Read The Manual First

Read these packing instructions completely before you begin. Doing so will give you a better idea of what you're doing, and it will help you go a little faster.

Packing Canopies Made of Zero Porozity Fabric

Canopies made from ZP can be packed just like any other similar canopy.
There are many different pack jobs currently being used. We recommend the pro-pack detailed in the owner´s manual.

This pack method consistently results in soft, on-heading openings, with minimum risk of canopy damage. Others may not work as well. If you try a different pack method, you do so at your own risk. If you use a slide or book pack, start at the tail and work forward to squeeze the air out.

Packing a canopy made of ZP is a new skill that must be learned. At first, it will be more difficult to pack than canopies made out of conventional materials. However, with practice it will become just as easy. You can make the pack job considerably easier by getting a bag that is lightly larger than your main container. It is easier to squeeze a small amount of the air out after the canopy is in the bag. (Consult the container manufacturer about this.)

The key to making the job easy is to pack fast and accurately. Each fold or roll must be done quickly and correctly the first time. This will only come with practice. Packing does not hurt the canopy, so please practice until you are good at getting a neatly folded canopy into the bag before you start jumping the canopy.

The fabric has a memory and always tries to open back up. Once you start, you must continue until the canopy is in the bag and the first locking stows are secure. You can´t waste time at any point in the packing procedure because this gives the canopy time to move around, form a big mess, and you will have to start over again.

After the folding and organizing portion that is done while standing is complete, you should roll the tail as tightly and as far as possible. Be careful not to let the tail unroll while squeezing the air out. If you kneel on the canopy facing the pilot chute attachment just above the warning label you will be in a better position to control this. Slowly lay down on the canopy while still containing it with your hands. The only place for the air to leak out is the stitch holes, so go slowly. If you go too fast, the air will blow the pack job apart.

Note

Sonics are designed for a slow-to-medium speed opening when packed as described in the manual - with each side of the nose rolled four complete turns towards the center. Do not tuck the nose into the center cells. The new airfoil design causes the center cells to form a pocket that can hold the rolls there during opening. Additionally, tucking the end cells into the center cells will result in unreliable opening times, with some very long snivels. Repeat: Do not do this.

Inspection - (Performed before each packing)

You must inspect your parachute system each time you pack it. The inspection takes only a few moments and will help prevent the malfunctions and other problems. The inspection is best done when the rig and canopy are stretched out on the ground prior to packing. (The procedure outlined below is different than the thorough inspection that must be performed periodically and when the parachute is first assembled or if damage is suspected. The thorough procedure was presented earlier.)

If you discover any worn or improperly rigged components, bring them to the attention of a certificated rigger before jumping the system again.

During your inspection of the entire system, pay special attention to the items listed below.

Any damaged or worn parts must be repaired or replaced before jumping the system again.

Start with the harness and container and work up to the canopy and pilot chute. Although the owner´s manual that came with the rig contains specific inspection procedures, be sure to check the items listed below.

Reserve. It must be sealed and in date. The ripcord pin(s) must be seated properly and not bent. The cable must move freely in its housing. The ripcord handle must be properly stowed in its pocket. If the rig is equipped with an automatic ripcord release, it must be installed and calibrated correctly.

Harness. Inspect the entire harness for broken stitches and excessive wear.

Main Container. The locking loop (or cones) must not be worn, as a problem with the locking device can result in a premature opening, or a locked container.

Risers. Check the riser releases carefully. They must be installed and assembled properly. Be sure the release cables are inserted correctly in the white loops.

Check the steering lines and toggles. Look for damage, loose knots and slipping toggles. (Serious injuries could result if an incorrectly attached toggle detaches from the steering line during the landing flare – don´t let it happen to you.)

Check the connector links or soft links. The threaded barrels must be securely tightened and not cracked.

Slider. Be sure the slider isn´t twisted, and that its grommets are free of nicks or burrs that can damage the suspension and steering lines.

Suspension and Steering Lines. Inspect these lines for wear. Be sure they are continuous (not tangled). Each must go straight from its link to the canopy without wrapping around other lines. The risers must not be twisted, either.

A tip: Pick up your canopy neatly after each landing, and lay it down neatly when you reach the packing area. Doing this will make your packing go faster because the lines will most likely stay continuous (or not passed through each other, as can happen if you walk through some lines after landing).

If you find any incorrectly routed or twisted lines, it is usually better to leave the risers attached to the harness while you correct the problem (unless the risers were attached incorrectly to begin with). Disconnecting the risers usually makes it more difficult to straighten things.

Canopy. Be sure the canopy is not on backwards. Inspect it for tears, especially where the lines and pilot chute bridle attaches. (You should periodically look inside the center cell to inspect this junction.)

Deployment Bag, Bridle and Pilot Chute. The owner´smanual for these items is the best source of inspection information. Tears or failing seams in the main pilot chute are especially hazardous. So is a worn bridle or one that is too short.

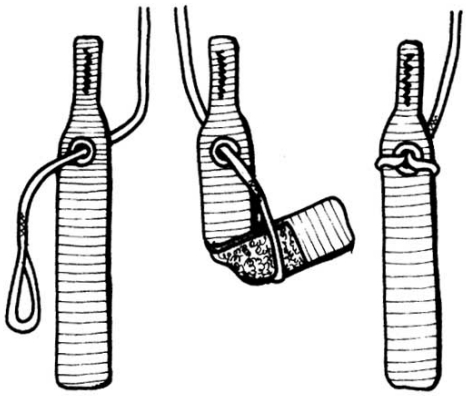
After packing your canopy a few times, you´ll be able to combine the above inspection procedures with the packing procedures – you´ll inspect it as you pack it.

Packing Procedures

Stretch your parachute system out on the ground with the rig laying with the containers facing up. (If someone were wearing your rig at this point, he would be lying face down with his head towards your canopy.) Pull the lines straight before setting the rig down.

Brake Setting Procedures

The lenght of the break lines is set by the manufacturer.



Pull the break line through the slider, then the guide loop and finally the loop.

Loop the loop through the loop on the break line as shown.

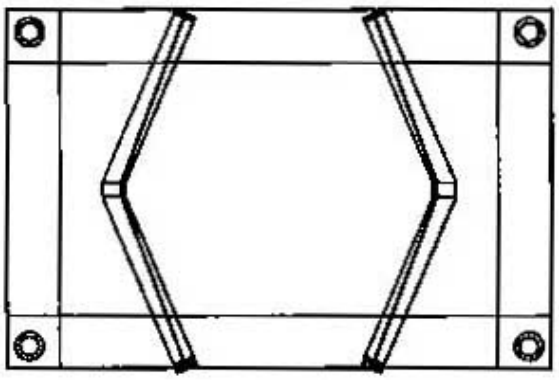
After the parachute assembly has been checked, store the brakes as instructed by the harness manufacturer.

Set the break lines as shown.

Slider Bumpers

Check slider bumper position.It must protect slider grommets from link damage. When using the soft-link system, the spider bumpers are not installed.

Slider preparation



The slider is designed to slow the speed of the canopy opening and thereby reduce the dynamic impact.

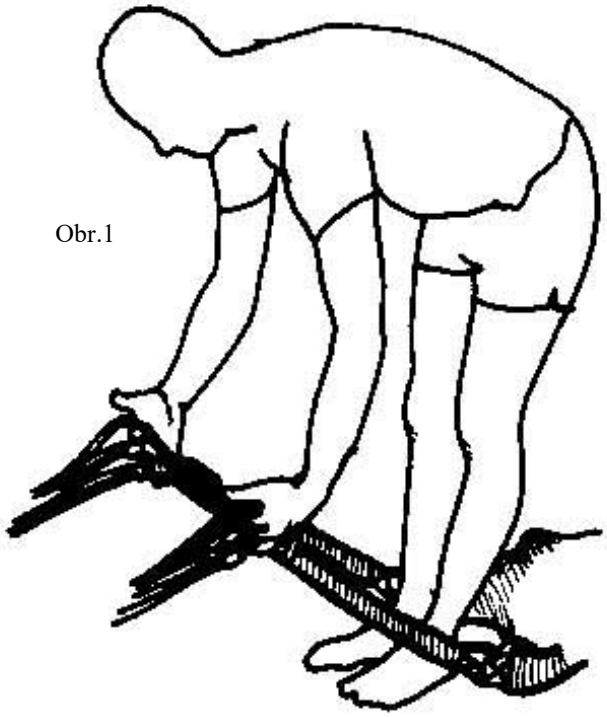
The slider is made of polyamide fabric. It has the shape of a rectangle in the corners of which the rings are inserted - the grommets. Through the grommets both the suspension and break lines pass. The slider is provided with guides of recessed (collapsing) lines.

Before packing, the recessed lines have to be fully extended, the end pieces must be pushed into the mouth of the recessed lines. Failure to do so may result in extremely hard opening, damage or failure of the parachute, or serious injury to the parachutist.

Folding the Canopy- „Pro-pack“

1) Crouch next to the risers and face your canopy. Slip the fingers of your left hand between each left-hand riser and between the left-hand steering line and the risers. Do the same with your right hand. The idea is to have each line group and each steering line occupying a slot between two fingers. Stand between the right and left-hand

Obr.1



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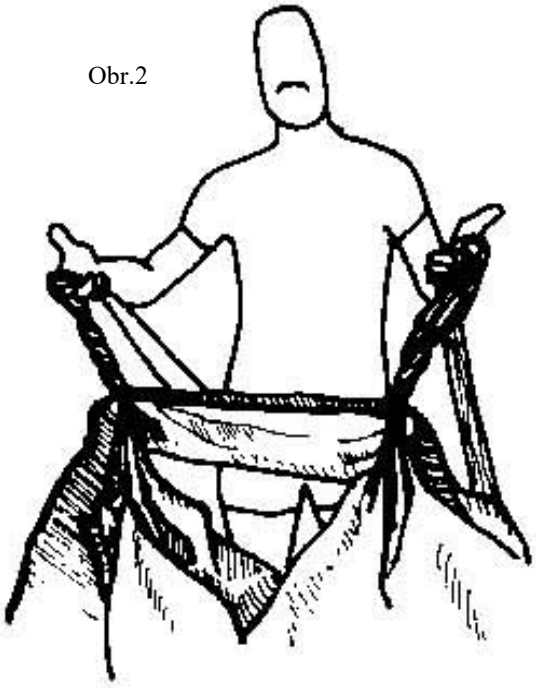


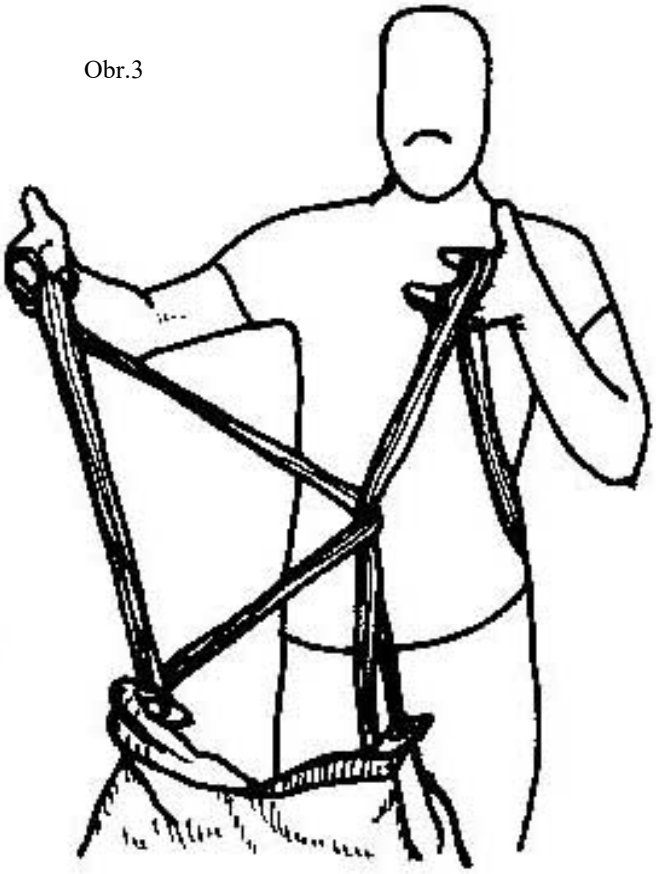
riser groups and grasp the lines as shown.

Be sure there are no twists in the risers. Start moving up the lines, allowing them to slide between your fingers. Push the slider ahead until you reach the bottom of the canopy.

2) At this point, it´s possible to determine if your canopy and lines aren´t straight. If there are twists in the lines as shown, this means your rig did a loop through your risers at some point. To fix this, drop the lines, stretch the canopy and lines out again, and straighten the entanglement out. Get help from a rigger if you have any questions. Do a linecheck again to make sure you have done it correctly.

3) If the lines look something like this, then a steering line or riser group passed around everything
else.
A steering line that passes around everything else will result in a malfunction that will almost surely require a breakaway.
If you don´t know how to fix this, get qualified assistance.

Obr.3

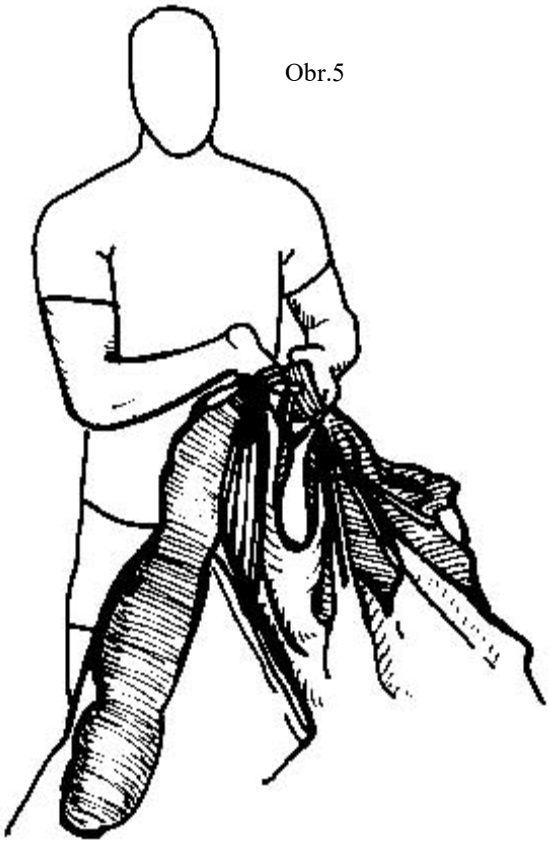


Obr.4

4) When you reach your canopy, pull both hands apart as far as the slider will allow. Shake the canopy a couple of times to settle everything.

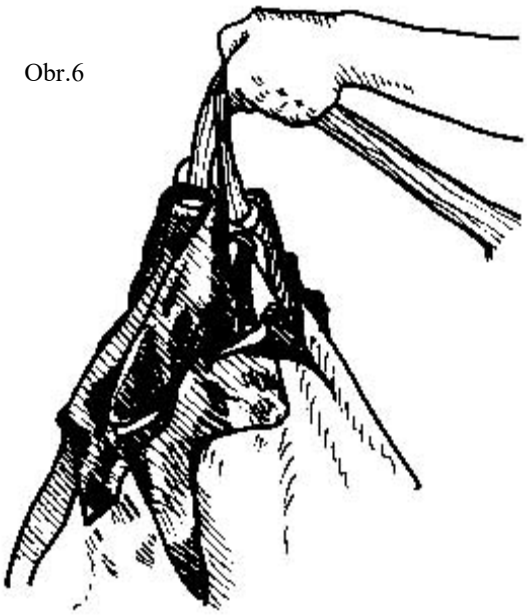
If the canopy is clear there will be four distinct line groups going all the way to the stabilizers with no lines crossing each other and no twisted
lines.

Obr.5



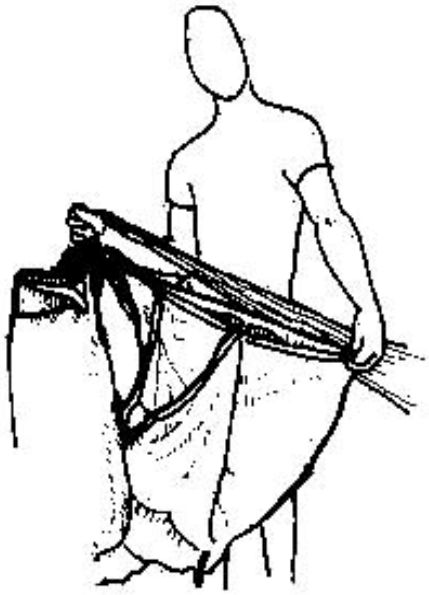
5) The nose openings should be facing the rig and the tail should be farthest
from the rig. If the reverse is true, double check to be sure the rig is container-side up (the back pad is on the ground). If the rig is positioned correctly and the
canopy is not oriented as described above, then the canopy
was attached to the harness backwards!

Obr.6



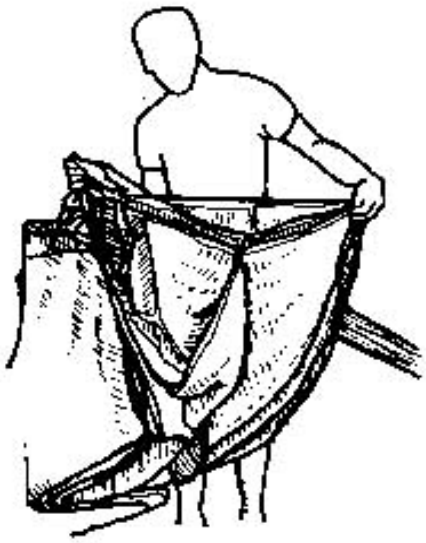
6) Now step to one step outside the lines and transfer the lines to one

hand so that the left and right sides of the canopy hang at the same height. It
isn't necessary to keep the line groups separated by the fingers of your hand because you've already determined the lines and canopy are straight. Your
canopy should look like the above illustration. All lines should be kept taut and the nose should still be facing the rig.
The slider should be against the slider stops on the stabilizers.



Obr.7

Obr.8



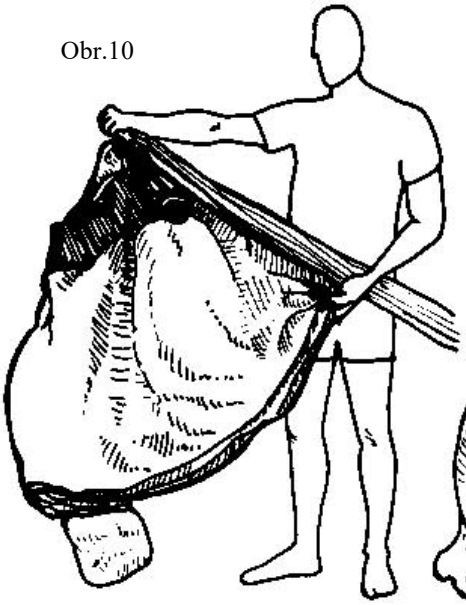
Obr.9

7) Starting with the end cell nearest your legs, flake the entire nose with one hand as shown.

8) Pull each cell completely out, and keep it in your hand.

9) Then pick up the next, taking care not to miss any until all of them are in your hand.

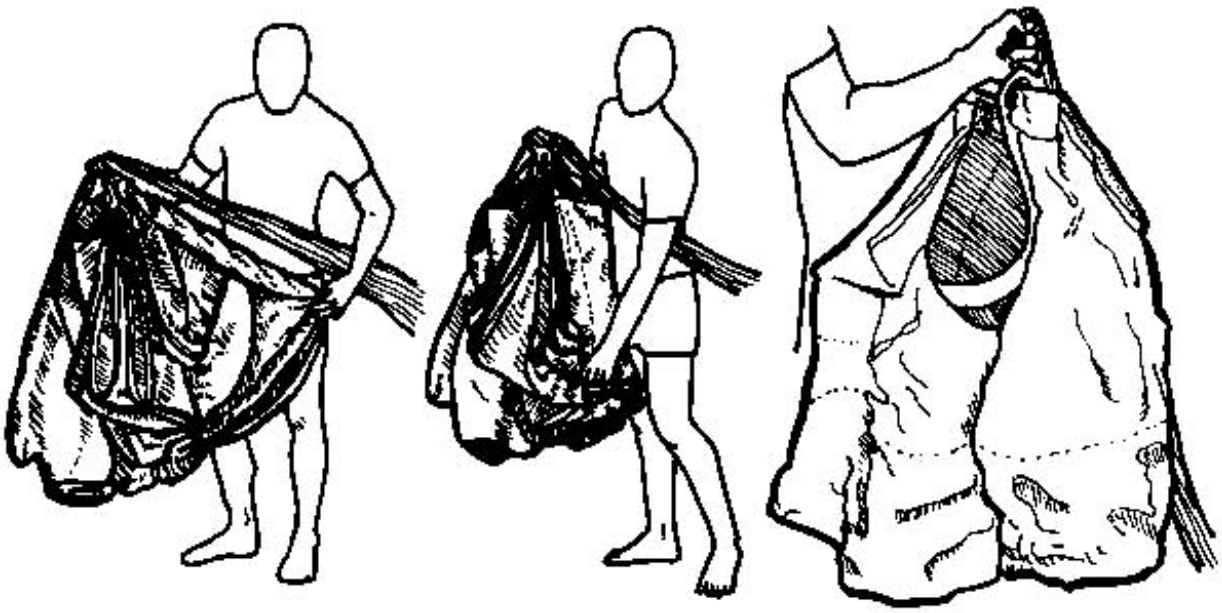
Obr.10



Obr.11

10 a 11) When you have the entire nose flaked, tuck it between your knees and hold it there.

If your canopy is new, or it tends to open comfortably fast, then follow your steps 12 through 15. If it tends to open too slowly, skip to step 16.

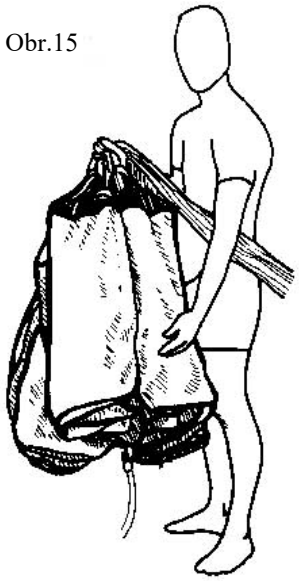


Obr.12 Obr.13 Obr.14

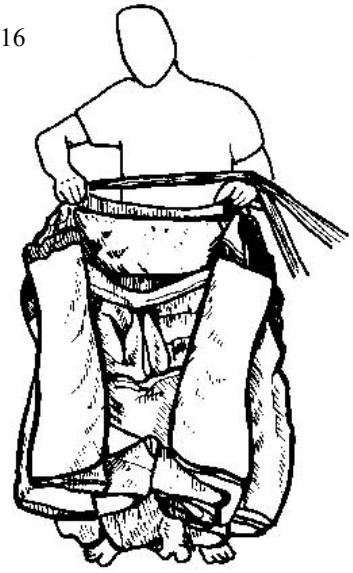
12 a 13) Loosen your knee grip on the nose of the canopy. Find the very middle of it (by running your hand down between the front two slider grommets; exactly half the lines will be on one side and half on the other). While leaving the very middle cell hanging, pick up all the others on one side and roll them in towards the middle.

14) Pull the front portion of the slider out past the nose of the canopy as shown.

Obr.15



Obr.16



15) Do the same on the other side. When you´re finished rolling the nose, it should look like the above illustration.

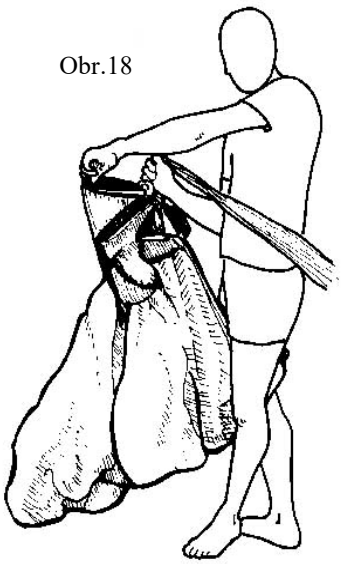
Put the rolled nose between your legs and grip it with your knees to prevent it from unrolling during the rest of the packing procedure.

FOR ILLUSTRATION ONLY
Do not unroll the nose as shown here.

16) This illustration shows how this packing method helps slow down canopy inflation. As the canopy opens (remember, this shows the canopy upside down), the center cell inflates and the sides are slowed somewhat by the fact that they are rolled separately. The result is controlled, symmetrical inflation.

Obr.17

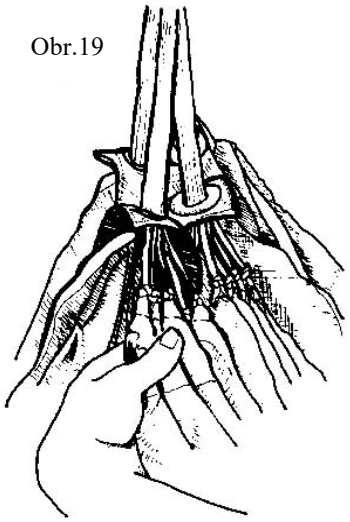
Obr.18



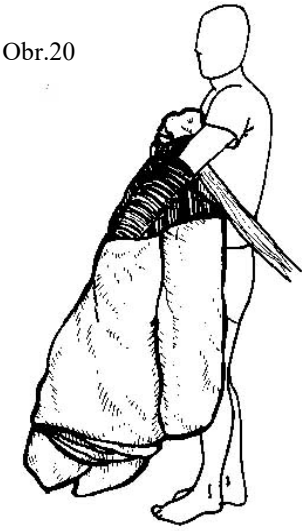
17) If your canopy opens too slowly, then leave the nose hanging neatly flaked; don´t roll it at all. This leaves it exposed to the airstream and will help the canopy inflate faster.

18) Clear the stabilizers. Since all the lines are bunched up in the middle, pull each stabilizer panel out one by one until they form an irregular shape resembling the petals of a flower when viewed from the top. Be sure none of the liens are wrapped around a slider stop on a stabilizer.

Obr.19



Obr.20

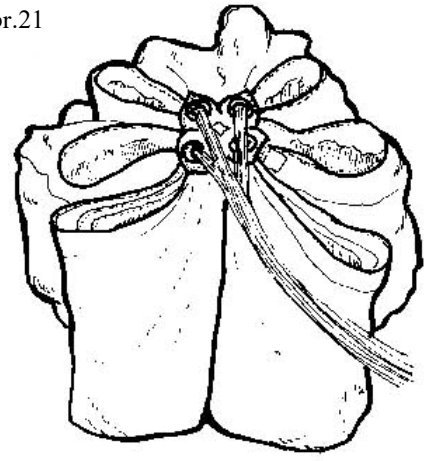


19) Find the group of A lines on one side of the canopy. With the canopy held
in front of you as you have it now, the A lines are the front part of the line group
that go through the front slider grommets, the ones that should be closest to you.

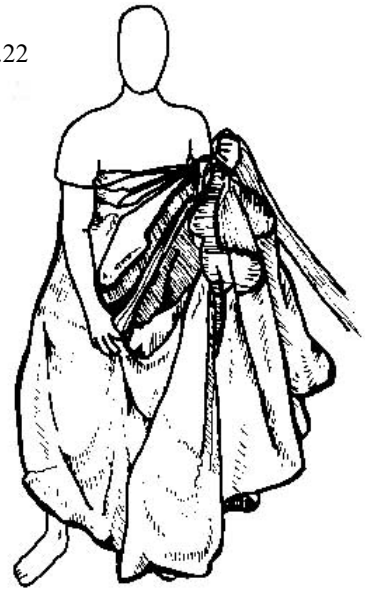
20) Since there is a lot of fabric between the A and B line attachment points, it is easy to separate the two line groups: Look down inside the first small S fold of the stabilizer and find the extra bunch of fabric.

Now make the rest of the canopy into S folds like the stabilizers: Put your hand in between the A and B lines on one side (near where they pass their own grommet) and pull them out to the side. This will give the cells on one side the correct type of flaking. Now repeat the process with the other A and B groups, pulling the fold out to the other side. (If you rolled the nose a lot in steps 12-15, you may skip this A-B S-fold since most of the fabric is probably rolled up in the nose.)

Obr.21



Obr.22



21) Now that you´ve pulled you the canopy between A and B line groups, do the same thing between B and C lines. Pull the fold of fabric between the two groups out to each side. When you look down in between the stabilizer folds after you´ve done your flaking,the folds should look neat like this.

22) Now find the D line group, the group of lines nearest the tail. (Not the steering lines, they are attached at the trailing edge.)

Pull the left-hand steering lines off to the left (to get them out of the way).
Follow the stabilizer down to the D lines and pick up all the D lines on the left side. You should have 5 lines in your hand.

All lines in your hand should go through the same grommet. If they don´t
You´ve picked up a wrong line.

Obr.23

Obr.24

23) Now that you are holding only the correct D lines, you may let go of the steering lines. Take the whole D-line group on one side and pull it out gently.

24) Fold the D-line group in with one motion to put a real fold in the fabric between the C and D lines. Do the same thing on the other side.

IMPORTANT:

As part of Step 26, be sure the stabilizers and their slider stops are correctly lying outside the suspension lines as described in Step 17 on page 25. Canopy damage is likely if a stabilizer (or its slider stop) lies under a line.

Obr.25

Obr.26

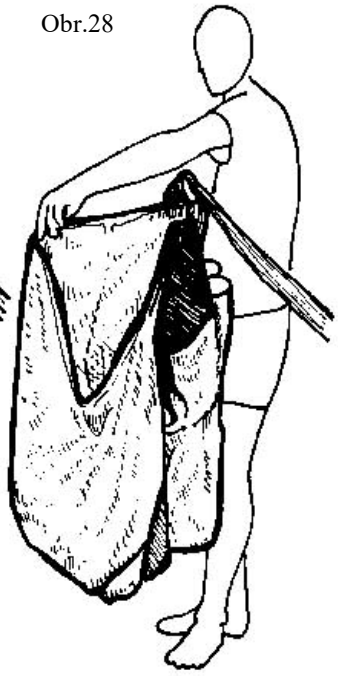
25) Now grasp the steering lines where they
attach to the tail, pull the entire tail out and drop
it straight down

26) Now organize the steering lines and tail so the canopy looks like this.

(Even though it might seem like you´ve got a disorganized wad of canopy hanging down in front of you, it should actually be a neat pack job.)

Obr.27

Obr.28



27) Reach down and pick up the very middle point of the trailing edge; an identification marker is sewn at the middle point to help you. Raise the tail about 10 cm above the slider and hold it in place with the same hand that is holding the lines.

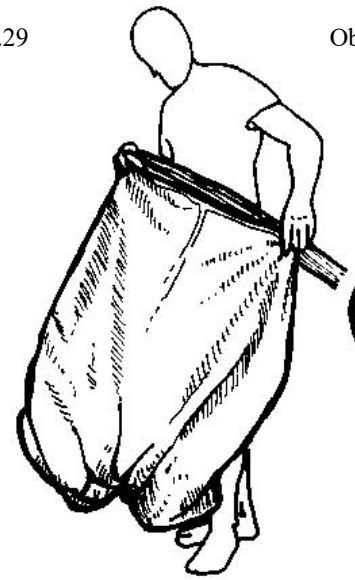
28) On one side, start with the middle of the tail being held under your thumb and pull the excess material straight out. You´re pulling out the trailing edge of the canopy that extends from the inside steering line to the very center of the trailing edge.

CAUTION:

The steering lines must stay positioned at the back of the canopy as shown in Fig. 26. If the steering lines are moved to the nose of the canopy (rather than being kept in at the back),

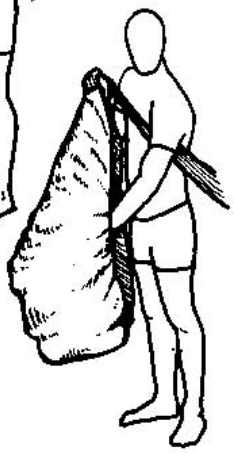
a line-over malfunction and canopy damage may result.

Obr.29



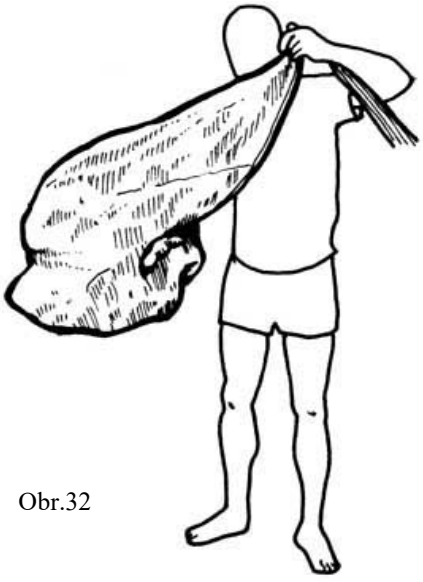
Obr.30

Obr.31



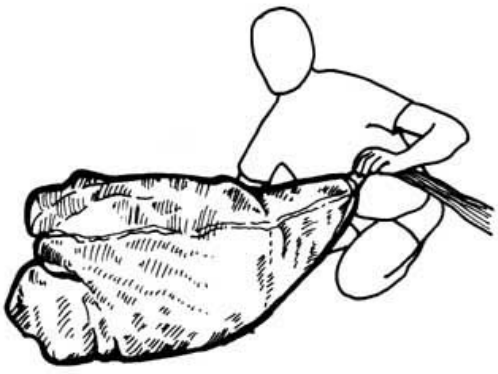
29) Wrap that part of the tail half way around the canopy. Hold in place with your knees. Fold the tail on the other side of the canopy the same way.

30 a 31) Release your knee grip on the nose and tail. Take both tail pieces in one hand and roll them together in to the middle so they completely encase the rest of the canopy.



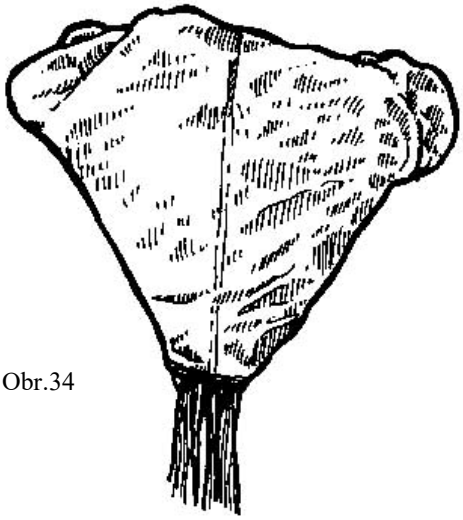
Obr.32

Obr.33

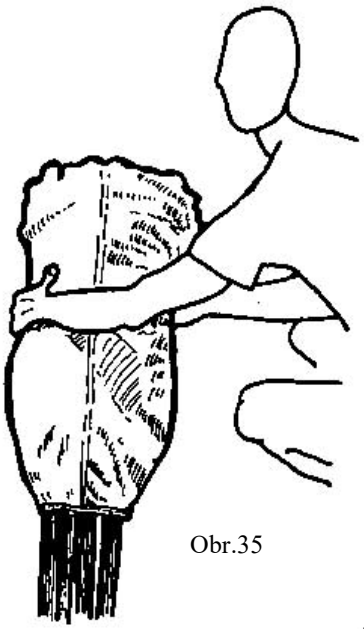


32 a 33) Place your free hand carefully under the bundle. Swing it out slightly so that the lines stay taught and gently lay it on the floor.

34) As it lies on the floor, the bundle should be triangular in shape, as shown. Note: The slider should be wrapped up in the tail and should stay that way as you stuff the canopy into the deployment bag.



Obr.34



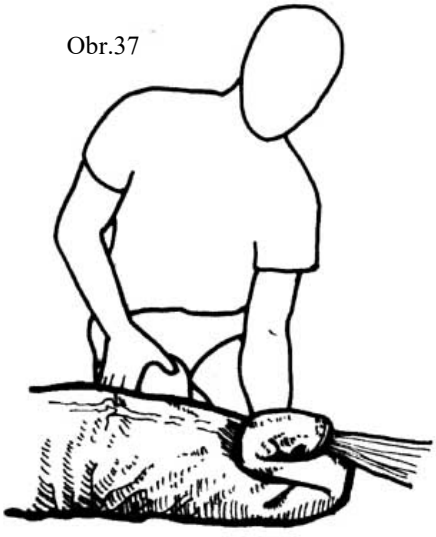
Obr.35

35) Dress canopy to a width slightly wider than the width of the bag.

All the slider should stay inside the rolled tail. The slider must not be allowed to move down the lines - even the smallest downward movement of the slider may increase opening shock and decrease reliability. Pay extra attention to the position of the slider until the bag is closed.

Obr.36

Obr.37



36 a 37)

Move to the side of the canopy and put one hand right under
the slider edge of the bundle. Place the other hand on top a little further up
and make a small S fold as shown.
Be sure the slider stays up against the stabilizers; don’t let it move down the lines.

Obr.38

Obr.39

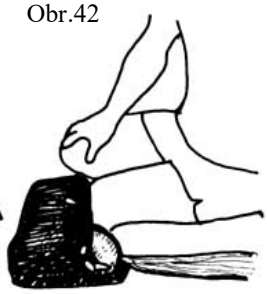
38) Now put one hand under the top of the bundle and make an S fold in
the opposite direction as shown. The remaining material can be rolled under
the fold.

39) You should now have a neat compact bundle. Try to make the folds so that the bundle is only a little wider than the bag.

Obr.40

Obr.41

Obr.42



40) Place your knee in the middle of the canopy to keep it together while you pull the bag over it.

41 a 42) With your knee still in place, pull the bag over the canopy one side at a time. Hold the corner of the canopy bundle up while you pull the bag over it, then roll the canopy into the corner of the bag. This helps get the canopy firmly into the corners, making a neater pack job. The whole canopy should be in the bag before you remove your knee. This helps completely fill the corners of the bag by keeping the middle compressed.

Follow your rig manufacturer´s instructions for closing the bag, stowing the lines, placing it in the pack tray, and closing container.

It takes practice to pack quickly and neatly. Every jumper has his own system to make the job easier, and you´lll quickly develop one of your own.

Cleaning Your Canopy

Standard Materials

Avoid washing or cleaning your canopy if at all possible. Cleaning the material will increase the porosity, causing reduced performance. Only clean areas that are contaminated with a substance that will degrade the material. Mild soap and water will remove most contaminants. If necessary, mineral spirits may be used for grease or oil. Do not use any other cleansers. Do not use cleansers that contain bleach. Avoid agitating the canopy, especially when wet. Agitation will cause a reduction in canopy performance.

Zero porosity

The Zero Porosity fabric is not affected by water. However, the reinforcement tapes may be. All tapes used in these canopies are pre-shrunk at the factory to make them more dimensionally stable. However, if they get wet this does not mean that they will come back to the exact same size when dry. Small changes in lengths may make a large difference in canopy performance. To maintain the best performance, avoid getting the canopy wet. Water jumps are not recommended. If you need to clean your canopy, please wash only dirty or contaminated areas. Use a mild soap and water only. Oil and grease usually do not penetrate the coating surface so solvents are not normally necessary. Also, some solvents may affect the coating. Avoid getting tapes wet if possible. Do not machine wash.

Storage conditions

The parachutes are stored in shelves in a dry, dark and well-aired room. The distance between the bottom shelf and the floor must be 150 mm in minimum, the distance between the shelf and walls must be 500 mm in minimum and the distance to heating radiators 1 000 mm in minimum. If a parachute is stored for a longer period, it must be aired for 24 hours in minimum every 6 months. The parachute is aired in the shade and cannot be exposed to sunlight.

Store the parachute in a package that does not penetrate the light. This prevents permanent and hard-to-detect damage caused by ultraviolet radiation from the sun and other sources.

The record of the ventilation shall be entered in the parachute log book.

It is forbidden to store any metal objects that do not belong to parachutes, nor any oils, acids, solvents or any other aggresssive substances in premises where parachutes are stored.

The following climatic conditions must be fulfilled in storage premises:

- Temperature between +14 and +25 ^{o}C
- Relative air humidity between 35 and 73 %
- Average annual relative humidity between 45 and 55 %

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PARACHUTE TESTING OFFICE

SOUHLAS

s použitím výrobku v České republice

PERMISSION
to use product in Czech Republic

Číslo/No: 063/010/AeČR

V souladu s Rozhodnutim Ministerstva dopravy České republiky, č. j. 94/2010-220-SP/3 se potvrzuje, že níže uvedený výrobek splňuje požadavky stanovené v České republice pro provoz padákových kompletů a sportovních létajících zařízení.

According to delegation from Ministry of Transport of the Czech Republic No. 94/2010-220-SP/3 is certify, the below described product is fulfilling the requirements laid down in Czech Republic for operating of the Parachute Complets and Sport Flying Apparates.

Žadatel: *Applicant:* JOJO WINGS Chvalínská 2109 Roudnice nad Labem 413 01

Výrobek: *Product:* Sportovní padák (SLZ)

Typové označení: *Type Designation:* SONIC 120

Použitý předpis: *Certification Basis:* Předpis o zkouškách hlavních padáků AeČR

Specifikace číslo: *Specification No:* 23/10/N – IP6

Omezení: *Limitation:* Maximální zatížení 95 kg, maximální rychlost 240 km/hod

Platnost: *Validity:* Do odvolání

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141 00 Praha 4 - Spořilov

.....16.03.2010.....
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According to delegation from Ministry of Transport of the Czech Republic No. 94/2010-220-SP/3 is certify, the below described product is fulfiling the requirements laid down in Czech Republic for operating of the Parachute Complets and Sport Flying Apparates.

Žadatel: JOJO WINGS Chvalínská 2109 Roudnice nad Labem 413 01
Applicant:

Výrobek: Sportovní padák (SLZ)
Product:

Typové označení: SONIC 135
Type Designation:

Použitý předpis: Předpis o zkouškách hlavních padáků AeČR
Certification Basis:

Specifikace číslo: 23/10/N – IP6
Specification No:

Omezení: Maximální zatížení 105 kg, maximální rychlost 240 km/hod
Limitation:

Platnost: Do odvolání
Validity:

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According to delegation from Ministry of Transport of the Czech Republic No. 94/2010-220-SP/3 is certify, the below described product is fulfiling the requirements laid down in Czech Republic for operating of the Parachute Complets and Sport Flying Apparates.

Žadatel: *Applicant:* JOJO WINGS Chvalinská 2109 Roudnice nad Labem 413 01

Výrobek: *Product:* Sportovní padák (SLZ)

Typové označení: *Type Designation:* SONIC 150

Použitý předpis: *Certification Basis:* Předpis o zkouškách hlavních padáků AeČR

Specifikace číslo: *Specification No.:* 23/10/N – IP6

Omezení: *Limitation:* Maximální zatížení 120 kg, maximální rychlost 240 km/hod

Platnost: *Validity:* Do odvolání

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According to delegation from Ministry of Transport of the Czech Republic No. 94/2010-220-SP/3 is certify, the below described product is fulfilling the requirements laid down in Czech Republic for operating of the Parachute Complets and Sport Flying Apparates.

Žadatel: JOJO WINGS Chvalínská 2109 Roudnice nad Labem 413 01
Applicant.

Výrobek: Sportovní padák (SLZ)
Product:

Typové označení: SONIC 170
Type Designation

Použitý předpis: Předpis o zkouškách hlavních padáků AeČR
Certification Basis:

Specifikace číslo: 23/10/N – IP6
Specification No.

Omezení: Maximální zatížení 125 kg, maximální rychlost 240 km/hod
Limitation:

Platnost: Do odvolání
Validity:

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141 00 Praha 4 - Spořilov

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Číslo/No: 067/010/AeČR

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According to delegation from Ministry of Transport of the Czech Republic No. 94/2010-220-SP/3 is certify, the below described product is fulfiling the requirements laid down in Czech Republic for operating of the Parachute Complets and Sport Flying Apparates.

Žadatel: JOJO WINGS Chvalínská 2109 Roudnice nad Labem 413 01
Applicant:

Výrobek: Sportovní padák (SLZ)
Product:

Typové označení: SONIC 190
Type Designation:

Použitý předpis: Předpis o zkouškách hlavních padáků AeČR
Certification Basis:

Specifikace číslo: 23/10/N – IP6
Specification No:

Omezení: Maximální zatížení 130 kg, maximální rychlost 240 km/hod
Limitation:

Platnost: Do odvolání
Validity:

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Číslo/No: 068/010/AeČR

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According to delegation from Ministry of Transport of the Czech Republic No. 94/2010-220-SP/3 is certify, the below described product is fulfiling the requirements laid down in Czech Republic for operating of the Parachute Complets and Sport Flying Apparates.

Žadatel: *Applicant:* JOJO WINGS Chvalínská 2109 Roudnice nad Labem 413 01

Výrobek: *Product:* Sportovní padák (SLZ)

Typové označení: *Type Designation:* SONIC 220

Použitý předpis: *Certification Basis:* Předpis o zkouškách hlavních padáků AeČR

Specifikace číslo: *Specification No:* 23/10/N – IP6

Omezení: *Limitation:* Maximální zatížení 130 kg, maximální rychlost 240 km/hod

Platnost: *Validity:* Do odvolání

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