Instruction for packing and use
- the REAL-X Student AFF
Container OP – 103, Harness PS-034 S

Technical description
of the REAL-X Student AFF

P – 002 - 08

5th edition

In Jevíčko 11/2012

List of changes

If there is a need of change or a completion of the text of this manual, the holder will be noticed through bulletins, which will have new (corrected) pages in the appendix. Manual holder is obliged to make a record of the received change to the List of changes, and exchange the invalid pages for the valid ones. Changed or completed parts of the text will be marked on their sides with the vertical line, after that they will be marked on the bottom of the page with the change number and the date of the change edition.

Serial number of change	Chapter	Number of pages concerned	Date of edition of new pages	Number of bulletin, through which the change was edited	Date of bulletin authorization	Date of implementation Signature

WARNING!

It is necessary to pass appropriate parachutist training program to minimize the risk of serious injury or death or destruction or damage of the parachute set Real-X.

Never use this parachute set in case that you have not read this warning, have not finished the prescribed training program, and you have not understood all appropriate handbooks for operating of this parachute set.

To prevent the risk of death, serious injury, destruction of the canopy or its damage, we recommend to meet following:

MAXIMAL AIRLANDING SPEED	**240 km/hrs / 130 KNOTS**
MAXIMAL WEIGHT OF LOAD **(skydiver + outfit + equipment)**	**115 kg / 253 lb**
M O D E L	**OP-103 / PS-034 S**
PART NUMBER	
S E R I ES	
PRODUCTION DATE	

This parachute was tested and certified according to the regulation TSO C 23d.

MarS a.s.

Okružní II. čp. 239

569 43 Jevíčko

CZECH REPUBLIC

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HEAD I.

Technical description (TP) of Container Real-X Student AFF (OP-103)

1. Definition

1.1. This technical description is intended to understand basic parameters, parts and rules for using the Container with harness.

1.2. Container with harness is intended to train skydivers, eventually to carry out sport parachute descents.

2. Tactically-technical parameters

2.1. Basic parameters - table

SIZE OF THE CONTAINER REAL-X	MAX. SPEED FOR CASE OPENING km/hrs/knots	MAX. WEIGHT OF LOAD skydiver + outfit + equipment (kg/lbs)
06 (175/175)	240/130	115/253
07 (175/200)	240/130	115/253
08 (210/250)	240/130	115/253
09 (210/282)	240/130	115/253

2.2. Functional container parameters

Container ensures correct function during:

- weight of the skydiver including outfit in the range in accordance with the table 2.1.
- flight speed from 90 to 240 $km.h^{-1}$
- releasing the canopy from the carrying harness using release for throw-off
- descent with continuous parachute opening using the static line VL-025 L
- descent with opening of the parachute case with static line VL-025 L with engaged canopy case (prompt opening)
- free descent with hand-opening using the kill line pilot chute PV-042 / PV-043 / PV-052 / PV-053 (with persistence min. 3s.).

2.3. Operating conditions

- Main as well as reserve parachutes can be packed for a descent by a maximum of the time stated in valid technical description for used type of parachute.
- Function of the case with harness is guaranteed in temperatures from – 40 to + 93,7 ^{o} C with relative humidity accordant with these temperatures.
- Skydiver's outfit must be tightened to the skydiver's body so that it does not obstruct correct function of the parachute case.

2.4. Parameters to mark reliability

Warranty period

a) Is 24 months in condition that repair and replacing of worn-out parts are carried out, storage conditions are maintained, and regular inspections with airing the parachute are carried out.

b) Is counted from the date of parachute expedition, which is listed in parachute logbook.

c) During warranty period the producer does not accept the claims in these cases

- damage of the parachute part caused by catching the outfit
- user breaks the packing, storage and maintenance conditions
- parachute logbook of the parachute is missing, or it is not filled in correctly
- the instructions in this technical description are not followed
- a unqualified intervention was carried out on the parachute

2.5. General repair

- To the general repair such parachutes are send, which were considered by the user of user´s deputy as inappropriate for following use
- General repair is carried out directly by a producer or an organization or a person certified by a producer.

2.6. Total service life

Total service life is determined for at the longest 15 years from the production date, but depending especially on the technical state of the given case. From this reason, following terms must be kept:

a) Replace damaged parts in time and immediately. Replacement must be written into parachute logbook.

b) Carry out repairs of the parachute and its parts in time and immediately, always in accordance with repair technical conditions. Every carried-out repair must be written into parachute logbook.

c) After 5 years of using a technical inspections with at the longest of 2 years validity must be carried out. The outcome of the inspection is written into the parachute logbook.

d) In Main Risers VK – 33/ … (mini-system) replace the Main Risers at the latest upon completing 300 dives or after 5 years of use.

e) In Main Risers VK – 44/ …, the Main Risers must be sent to the manufacturer or person authorised by the manufacturer to perform specialist inspection and evaluate the actual condition of Main Risers at the latest upon completing 300 dives or after 5 years of use.

Check of the technical state of the parachute (technical inspection) is carried out by a producer, certified organization or person.

3. Function of the case

3.1 Descent with continuous parachute opening using the static line VL-025 L

After the skydiver´s jump from the airplane and the strain of the static line VL-025 L imbedded on aircraft board, the weight of the skydiver pulls out the closing pin from the closing line of the packaging segment of the main parachute. The flaps are opened and after that drawn out from the case of stabilizing parachute ST-015, which is connected to the end of static line VL-025 L, and in which the stabilizing parachute PZ-015 is packed. After its filing the container with packed main parachute canopy is drawn out by operation of stabilizing parachute. By continuing fall the lines are unlaced from the rubber loops on the container, and the closing flap of the container is released. (**ATTENTION!** Only such rubber loops can be used, which are prescribed for given type of used lines of the main parachute canopy).

After stretching the lines to their full length the container is drawn from the canopy. Canopy chambers will be in turn filled with air. Opening the canopy is slowed down with the slider, which obstructs too fast canopy opening with its resistance. Slider divides the canopy lines to four packs, on which it is attached at the same time.

After complete filling of the canopy with air and moving the slider to the loose ends of the carrying harness, skydiver releases the control loops of the main parachute. By their pulling to the chest height and returning again to the upper position, control lines are released from the breaking loops on the loose ends. Parachute is fully opened and the canopy will soon start sliding in the air. Parachute controls the descent using control lines towards the chosen landing area.

3.2 Descent with opening of the parachute case with static line VL-025 L with engaged canopy case

After jump from the aircraft, the static line VL-025 L that is attached to the board line, pulls out the drawing line needle from the line loop of the main parachute case and releases its flaps. During continuous fall the canopy sac, which is laced to the drawing line with packed canopy of the main parachute, is pulled out from the case.
Lines are unlaced from the rubber loop on the canopy sac, and the closing flap of the canopy sac is released. After the lines are stretched to their full length the canopy sac is pulled off the main parachute canopy, and the canopy chambers are in turn filled with air.
If the side chambers of the canopy are not filled, skydiver several times pulls and releases the control lines and brings the parachute to the operating mode, in which then the chambers will be filled with air.
Opening the canopy is slowed down with slider, which is pulled on four line packs. After all chambers of the canopy are filled with air, by moving the slider to the loose ends of the carrying harness the parachute is open. Skydiver releases the control loops from the loose ends and by pulling the loops (to the chest height) the control lines are released from the breaking loops on the loose ends. After completing previous actions the canopy start to slide with the air. To prevent the slider from obstructing, it is possible to cause its collapse by using the drawing lines.
Skydiver using the control lines controls the parachute towards the given target. If the side chambers of the canopy are not filled, skydiver several times pulls and releases the control lines and brings the parachute to the operating mode, in which then the chambers will be filled with air.

3.3 Free descent with hand-opening with the use of the kill line pilot chute PV-042 / PV-043 / PV-052 / PV-053 (with persistence min. 3s.)

Skydiver after jumping from the aircraft and after at least 3 seconds of free fall have passed, pulls out used drawing auxiliary parachute from the pocket placed on the lower part of the packaging segment of the main parachute, and throws him energetically to the current of air in such way, that it is not possible to cover the auxiliary parachute with the body of descending skydiver. Drawing auxiliary parachute, with its resistance, draws the closing needle out from the closing line of the packaging segment of the main parachute. After that the flaps are opened and then the container with the packed canopy of main parachute drawn out. During continuous descent the lines unlace from the rubber loops on the container, and the closing flap of the container is released. (**ATTENTION!** Only such rubber loops can be used, which are prescribed for given type of used lines of the main parachute canopy).

After stretching the lines to their full length the container is drawn from the canopy. Canopy chambers will be in turn filled with air. Opening the canopy is slowed down with the slider, which obstructs too fast canopy opening with its resistance. Slider divides the canopy lines to four packs, on which it is attached at the same time.

After complete filling of the canopy with air and moving the slider to the loose ends of the carrying harness, skydiver releases the control loops of the main parachute. Their pulling to the chest height and returning again to the upper position, control lines are released from the breaking loops on the loose ends. Parachute is fully opened and the canopy will soon start sliding in the air. Skydiver controls the descent using control lines towards the chosen landing area.

4. Parts of the container with the harness

4.1	Container OP – 103	1 pcs
4.2	Harness, type PS – 034 S	1 pcs
4.3	Ripcord Handle Reserve U – 051	1 pcs
4.4	Ripcord Handle Reserve U – 079	1 pcs
4.5	Reserve pilot chute PV – 055	1 pcs
4.6	Free bag VV – 075	1 pcs
4.7	Reserve steering toggles RP – 006	1 pair
4.8	Main parachute risers (mini-system)	
	VK – 33/430/17 Jh, VK – 33/510/20 Jh with RSL (for size 06–07)	1 pair
	Main steering toggles RP – 008 Jh (for size 06-07)	1 pair
	or	
	Main parachute risers	
	VK – 44/400/RP, VK – 44/500/RP with RSL (for size 08, 09)	1 pair
	Main steering toggles RP – 002 R (for size 08, 09)	1 pair
4.9	Main Deployment bag VV – 074	1 pcs
4.10	Kill line pilot chute PV-042 / PV-043 / PV-052 / PV-053	1 pcs
4.11	Static line VL-025 L	1 pcs
4.12	Stabilizing parachute ST-015	1 pcs
4.13	Stabilizing parachute case PZ-015	1 pcs
4.14	Hard Aluminium Knife NK-02	1 pcs

Assembly chart of parts of specific container sizes 06 - 09

	Container Size (INDEX)			
Type specification of parts	175/175 size 06	175/200 size 07	210/250 size 08	210/282 size 09
Reserve pilot chute	PV-055			
Free bag	VV-075/06	VV-075/08	VV-075/08	VV-075/08
Reserve steering toggles	RP-006			
Reserve parachute	WP 175	WP 175	WP 210	WP 210
Softlines MarS lengths 135 or 145 mm or Softlines P.D. (PD Slink) or Rapid links WIRT CZ (4 kN)				
Container, Harness	OP-103, PS-034 S			
Main Deployment bag	VV-074/06	VV-074/07	VV-074/08	VV-074/09
Kill line pilot chute	PV-042 or PV-043 or PV-052 or PV-053			
Main parachute risers	VK-33/430/17 Jh with RSL or VK-33/510/20 Jh with RSL		VK-44/400/RP with RSL or VK-44/500/RP with RSL	
Main steering toggles	RP-008 Jh	RP-008 Jh	RP-002 R	RP-002 R
Three Ring Release Ripcord	U-079			
Ripcord Handle Reserve	U-051			

Assembly chart of parts of specific Reserve parachute PZS-92

	Container Size (INDEX)	
Type specification of parts	210/250	210/282
	size 08	size 09
Reserve pilot chute	PV-055	
Reserve parachute	PZS-92	PZS-92
Rapid links WIRT CZ (4 kN)		
Container, Harness	OP-103, PS-034 S	
Main Deployment bag	VV-074/08	VV-074/09
Kill line pilot chute	PV-042 or PV-043 or PV-052 or PV-053	
Main parachute risers	VK-44/400/RP with RSL or VK-44/500/RP with RSL	
Main steering toggles	RP-002 R	
Three Ring Release Ripcord	U-079	
Ripcord Handle Reserve	U-051	

5. List of replaceable parts

Except the case and the carrying harness other parts are replaceable.

6. Technical description of the parts of the Container with the harness

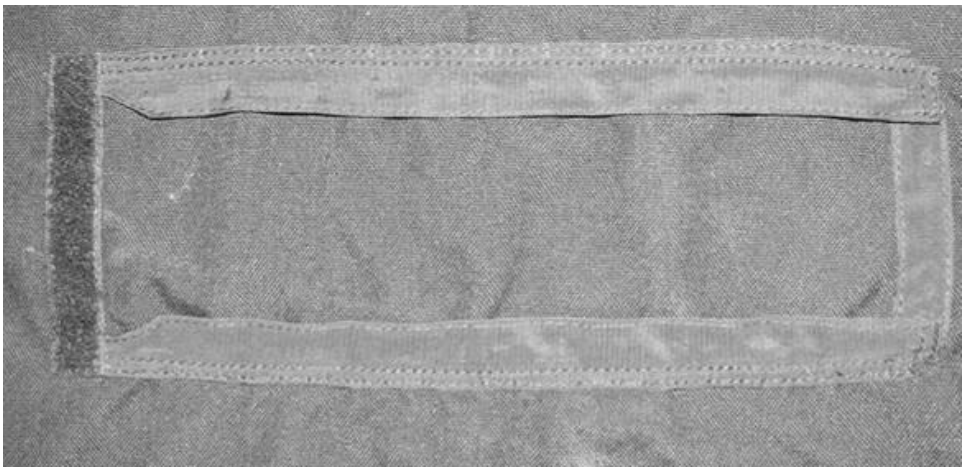
6.1. The Container OP-103 (pic. 1)

Container OP-103 (front part, back padding and shoulder padding) are produced from the PAD fabric (valid for sizes 06, 07, 08, 09)
or the front part from the PAD fabric and the back padding, shoulder padding is produced from the black pressed fabric (valid only for size 06).
In packaging segment the main as well as the reserve parachute are packed. Packaging segment has a trapeze shape with the rounded edges. After sewing the back padding, main parachute case and reserve parachute case form one unit. Main parachute case is composed of the back padding from the bottom, and of the perimeter part of the main parachute case around perimeter. Onto this part the lower flap, left and right side flap of the reserve parachute case are sewn. Intermediate flap covers with its lower part the main parachute case from above, and with its upper part overlaps to the area of the reserve parachute case. Reserve parachute case is composed of the main part, which passes to the right and left flap of the reserve parachute. In the back padding neckline the upper closing flap of the reserve parachute and covering flap of the reserve parachute, which is inserted into the upper part of the intermediate flap, are sewn. On the bottom of the reserve parachute bushings for placing the closing lines of the reserve parachute are molded. Closing line of the main parachute case is threaded through the bushing on the bottom part of the main parachute case.

pic. 1

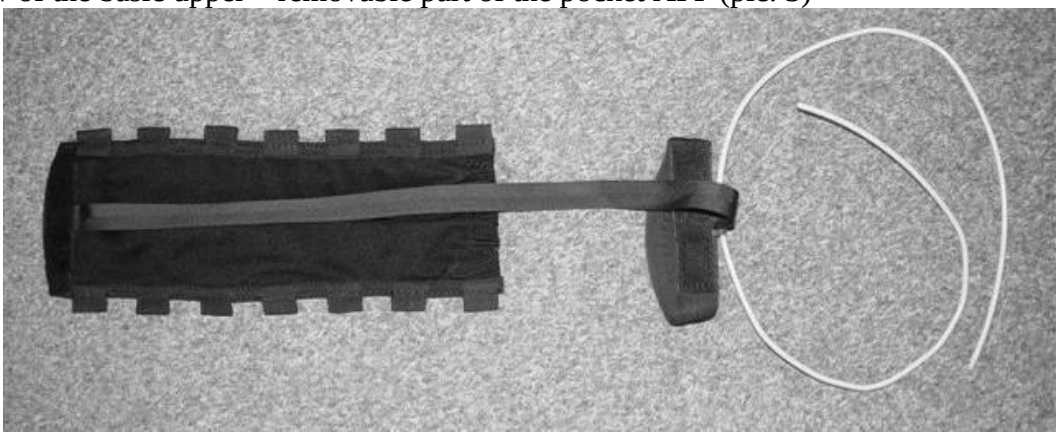
On the bottom part of the packaging segment of the main parachute a removable pocket AFF for packing the kill line pilot chute PV-042 / PV-043 / PV-052 / PV-053 is placed.

View of the basic bottom part of the pocket AFF sewn to the packaging segment (pic. 2)



pic. 2

View of the basic upper – removable part of the pocket AFF (pic. 3)



pic. 3

Procedure of attaching the pocket AFF are shown on pics 4 to 9

Storing the remaining part of the throw-off line (pic. 5)

Correctly stored remaining parts of the throw-off line (pic. 6)

Connecting the release of the throw-off pocket AFF, phase 1 (pic. 7)

Connecting the release of the throw-off pocket AFF, phase 2 (pic. 8)

View of the completely attached pocket AFF to the packaging segment (pic. 9)

pic. 4

pic. 5

pic. 6

pic. 7

pic. 8

pic. 9

WARNING:
The removable pocket AFF may be used only by a trained instructor AFF!
Before every descent following inspection must be carried out:

- **of correct connection of the pocket AFF;**
- **of the surface of yellow plastic coated line;**
- **moulding of the line in the clamp (it must not move);**
- **compactness of binding loops, compactness of all ribbon closings.**

6.2. Harness PS-034 S (pic. 10)

Is made of PAD strap and serves to the attachment of the parachute case to the skydiver´s body.
Is composed of main straps that verge into leg straps, chest straps and hipster strap.

pic. 10

On the main strap, there are pockets made for storage of the throw-off release U-079 and reserve parachute U-051. Main strap is divided by a buckle that serves for regulation of carrying harness size (pic.11).

pic. 11

Main straps is doubled and above the throw-off loop Ø 33 mm (valid for size 06, 07) or Ø 44 mm (valid for size 08, 09) separates in two. The fork of the separated strap forms loose ends with loops to connect reserve parachute. On the leg straps there is padding sewn, which enable to adjust the size of leg straps in leg perimeter of the skydiver.

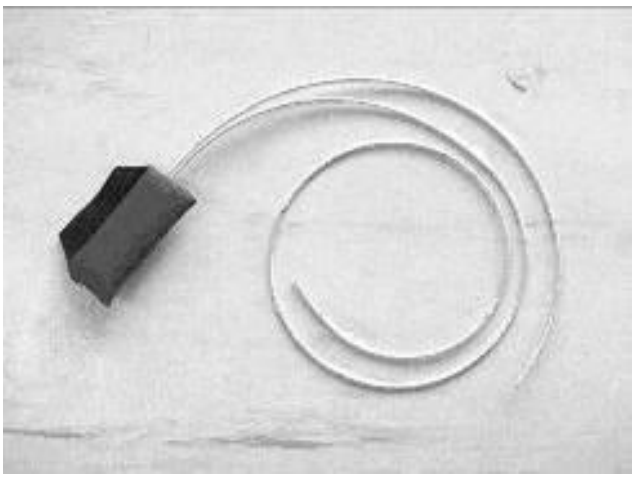
6.3. The Ripcord Handle Reserve U – 051 (pic. 12)

Release secures the opening of the reserve parachute container. It consists of a handle and a cable with a needle. The handle is made of a trapezoidal stainless-steel tube.

pic. 12

6.4. The Three Ring Release Ripcord U-079 (pic. 13)

The release secures the disconneting of the main parachute canopy from the harness. It consists of a handle and a plastic-coated steel cable. A Velcro strap is sewn on the release handle, which helps fix the release in the pocket on the harness.



pic. 13

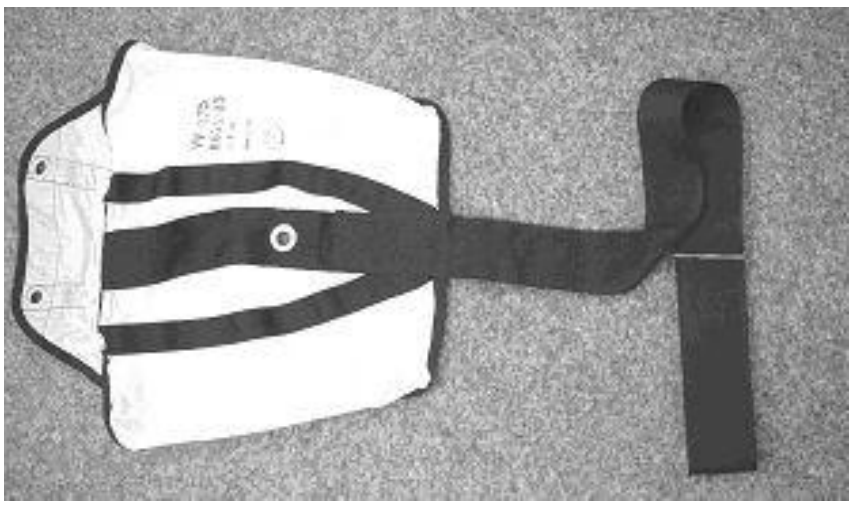
6.5. The Reserve pilot chute PV – 055 (pic. 14)

The pilot chute secures the opening of the reserve container and pulling the free bag (with a stowed reserve parachute canopy) out of the reserve parachute container. It is made of PAD fabric and net. The bottom is reinforced with duralumin sheet.
The chute is equipped with a coiled spring with the minimal ejection strength of 180 N.

pic. 14

6.6. The Free bag VV – 075 (fig. 15)

Is designed for stowing a packed canopy of the reserve parachute into the reserve parachute container. It is made of PAD fabric. A bushing is pressed-on in the middle of the container for leading the closing line of the reserve parachute. A loop for the attachment of the pilot chute is sewn on the other end of the webbing.



pic. 15

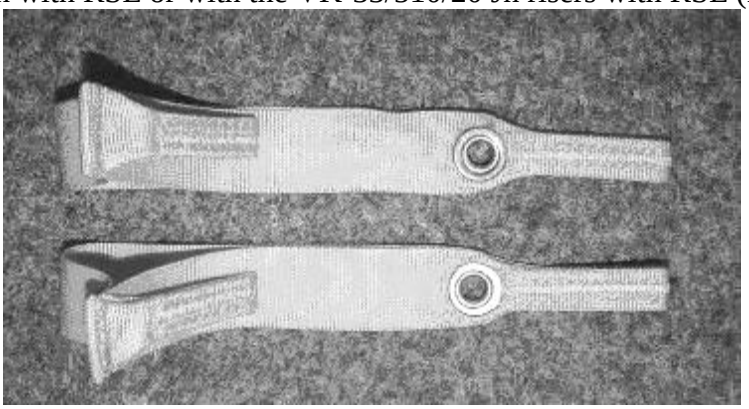
6.7. Reserve steering toggles RP-006 (pic. 16)

Are made of a 20mm-wide PAD strap, is designed to control the Wing reserve parachute (RP – 006 without reinforcement). Forms an eye with a pressed-on bushing at its end, which secures the connection of the main steering line.

pic. 16

6.8 Main steering toggles

The RP-008 Jh (pic. 17) are made of a 25mm-wide PAD strap, is designed to control the main parachute. Forms an eye with a pressed-on bushing at its end, which secures the connection of the main steering line. The RP- 008 Jh are used as a set with the VK-33/430/17 Jh with RSL or with the VK-33/510/20 Jh risers with RSL (for size 06-07).



pic. 17

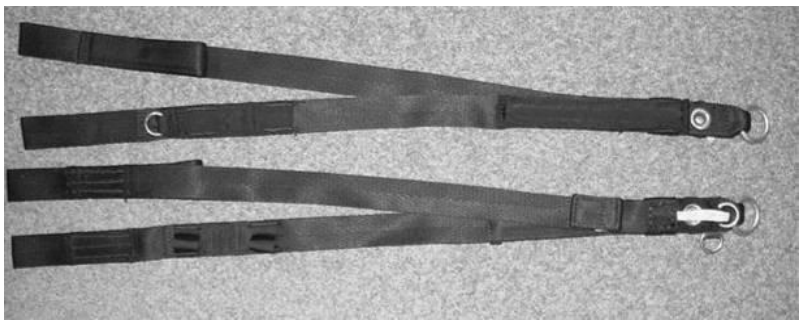
The RP-002 R (fig. 18) are made of a 30mm-wide PAD strap, is designed to control the main parachute. Forms an eye with a pressed-on bushing at its end, which secures the connection of the main steering line. The RP- 002 R are used as a set with the VK-44/400/RP with RSL or with VK-44/500/RP with RSL the risers (for size 08, 09).

pic. 18

6.9 Main Risers of the harness with RSL

VK–33/430/17 Jh, VK–33/510/20 Jh with loop of Ø 15 mm for size 06, 07 mini-system (pic 19)

Serve to connect the main parachute canopy to the harness PS-034S with three-ringlet system. They are sewn of the PAD strap of the width 26 mm. The construction of loose ends enables to connect the Reserve static line RSL SS-058a with the stainless carabine. On the straps ends there are loops, to which the carrying lines of the main parachute canopy are connected through screwing clips or softlinks. On the back part of the straps a loop of Ø 15 mm serving for threading the controlling line is sewn.



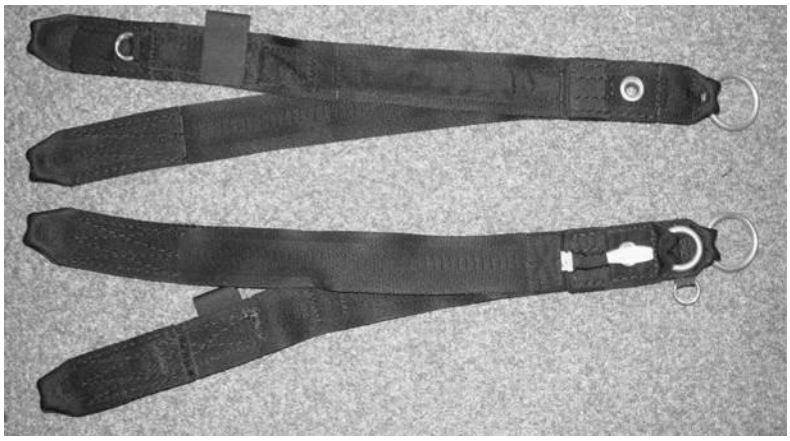
pic. 19

WARNING:

Strap in the area of ringlets that are part of the three-ringlet system needs to be maintained clean, so that it is easily flexible. It is necessary to clean and move it at least once a month, to prevent its hardening and thereby declining the function quality during the disconnection of the three-ringlet system itself. Warning is valid for all types (varieties) of Main Risers of the carrying harness.

VK–44/400/RP, VK–44/500/RP with loop of Ø 15 mm for size 08, 09 (pic. 20)
Serve for connection of the main parachute canopy to the carrying harness PS-034S with the help of three-ringlet system. They are sewn from PAD strap of the width 43 mm. Construction of the loose ends enables to connect the Reserve static line RSL SS-058a to the stainless carabine. On the straps ends there are loops, to which the carrying lines of the main parachute canopy are connected through screwing clips or softlinks. On the back part of the straps a loop of Ø 15 mm serving for threading the controlling line is sewn.

Note: the number after the first slash gives the straps length from the division.



pic. 20

WARNING:
Strap in the area of ringlets that are part of the three-ringlet system needs to be maintained clean, so that it is easily flexible. It is necessary to clean and move it at least once a month, to prevent its hardening and thereby declining the function quality during the disconnection of the three-ringlet system itself. Warning is valid for all types (varieties) of Main Risers of the carrying harness.

6.10 Kill line Pilot Chute PV – 042, 043, 052, 053 (pic. 21)

Serves to open the main parachute case and to draw the container of the main parachute canopy from the packaging segment. It is sewn of the PAD fabric, lower part of the canopy is sewn of the porous fabric – micromesh, and it is strengthened with the binding that ends in loops for connecting the connecting binding, that forms a hollow, in which the intermediate line moves freely, with the help of this line the drawing pilot chute is collapsed. On the end of the hollow there is a buffer made of the folded bindings and softlink SFL BP-01, with the help of which the placing of the container on the connecting binding is fixated. Above this buffer a closing needle is sewn. On the end of the connecting line there is a loop made, with which the pilot chute is fastened to the main parachute canopy.

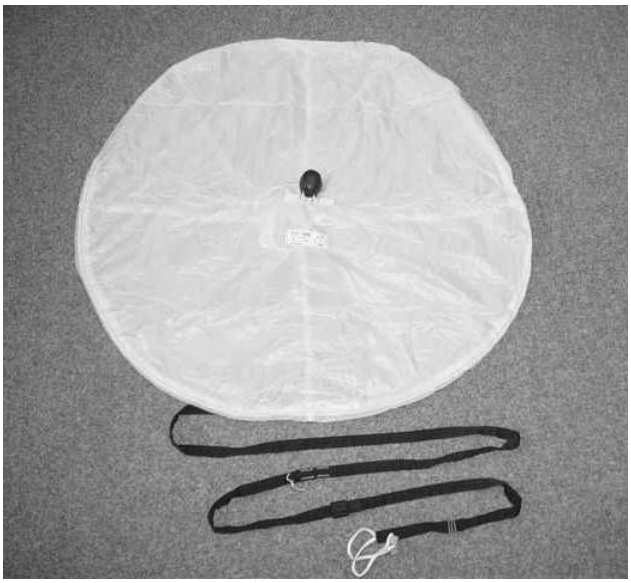
Types:

With a anchorage (leather ball – hackey sack):

Ø of the auxiliary parachute PV-042 is 700 mm, PV-043 is 800 mm.

With textile anchorage (free fly handle):

Ø of the auxiliary parachute PV-052 is 700 mm, PV-053 is 800 mm.



pic. 21

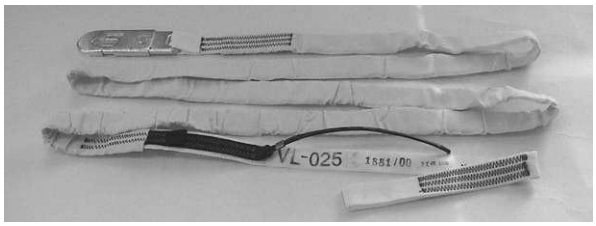
6.11 Main deployment bag VV – 074 (pic. 22)

Serves to store the packed main parachute canopy to the packaging segment of the main parachute. It is sewn of the PAD fabric. On the container there are strengthening bindings of the width 25 mm and loops to thread the rubber loops sewn. On the closing flap there are 3 bushings serving for closing the container moulded. In the middle of the parachute there is moulded hollow that server to connect the connecting binding of the drawing auxiliary parachute of the main parachute to the container, and at the same time the collapsing line of the drawing auxiliary parachute of the main parachute is threaded through this hollow.

pic. 22

6.12 Static line VL-025 L (pic. 23)

The line server for forced opening of the main parachute case, for drawing the stabilizing parachute PZ-015 case from the packaging segment of the main parachute, and for activation of the stabilizing parachute ST-015. On one end of the line a carabine for anchoring the line on the aircraft board is sewn, on the other end there is a sewn loop serving for connecting stabilizing parachute PZ-015 case. In the distance of 500 mm from the end with the loop, there is a sewn releasing line.
The whole length of the line is 2 900 mm.

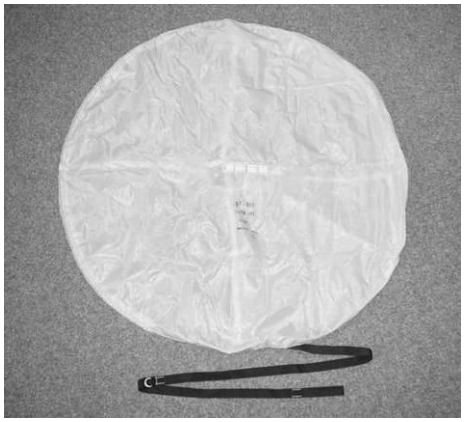


pic. 23

WARNING:
When using the static line VL – 025 L, it is necessary to check the length of the streched system: static line VL – 025 L and case of the stabilizing parachute PZ-015.
Static line with case must not in any case resctrict or endanger controlling components of the aircraft, which should be used for carrying out the. parachute descent.

6.13 Stabilizing parachute ST – 015 (pic. 24)

Stabilizing parachute serves to stabilize the skydiver´s descent. It is sewn of PAD fabric, Ø of the parachute is 900 mm, lower part of the canopy is sewn of the porous fabric – micronesh and it is strengthened with the binding ending in loops for connection of the connecting binding, on which end there is loop through which the parachute is connected with the help of screwing clip to the main parachute canopy (pic. 25). Above this loop in the distance of 450 mm there is sewn loop of Ø 15 mm.



pic. 24

pic. 25

6.14 Stabilizing parachute case PZ – 015 (pic. 26)

The case serves to store the stabilizing parachute ST – 015. It is sewn of the PAD fabric. On the case perimeter there is a strap sewn that forms a loop for connecting the drawing line VL-025L. The case is closed with the help of sewn ribbon closings

pic. 26

6.15 Hard Aluminium Knife NK – 02 (pic. 27)

It is used to cut the suspension lines or the system parts and gear during malfunctions of the system or system parts.

pic. 27

HEAD II.

Instruction for packing the case

1. General instructions

a) Before packing the parachute it is necessary to check the parachute completeness and its technical state.
Damaged parts are replaced or repaired.

b) During parachute packing it is recommended not to expose the parachute to the direct sunlight.

c) One person packs the parachute. Each packing of the reserve and main parachute is recorded in the parachute logbook.

d) Real-X case is usually used in complete with canopies of types WP, when every size of the reserve parachute canopy must be in accordance with appropriate case size or PZS-92 for sizes 08, 09, each canopy size of the reserve parachute must correspond to a suitable container size.

e) Any adjustment to the parachute case with the harness is not allowed.

2. Inspection of the case before use

Prior to packing, the user must perform visual inspection of all parts of the parachute set, if the parts are not damaged, the sewing is not interrupted, fabric, binding, straps, race closing, and metal parts. Damaged parts must be repaired or replaced. In designated parts it is necessary to record the replacement into the parachute log.

WARNING:
It is prohibited to perform diving with a parachute set with damaged or worn function parts!

3. Eliminating faults on the Container

a) Removal of faults is carried out by an exchange of damaged parts or a repair according to instructions stated in Technical Conditions of Repairs/Technicke podminky oprav.

b) Parts that are permitted to be exchanged during the operation:

- Ripcord Handle Reserve
- Three Ring Release Ripcord
- Exchange of risers of the main parachute harness
- Closing line of the main and reserve parachute
- Steering toggles of the reserve and main parachute
- Free bag
- Main Deployment bag
- Reserve Pilot chute
- Kill line Pilot Chute
- Static line
- Reserve static line RSL (Automatic Opening Of The Reserve Parachute)
- Stabilizing parachute
- Case of the stabilizing parachute

4. Replacing parachute parts

Replacement of the packing line of the reserve parachute for AAD m2, Cypres, Vigil (pic. 28 a, b, c)

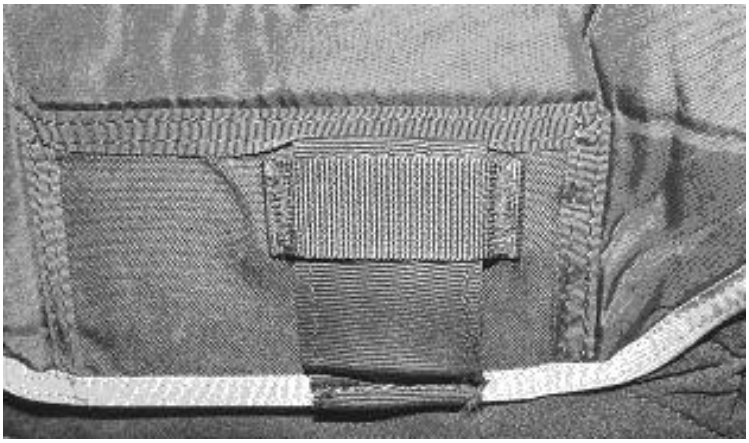
pic. 28 a

pic. 28 b

pic. 28 c

Replacing the packing thread of the main parachute case (pic. 29, 30)

pic. 29

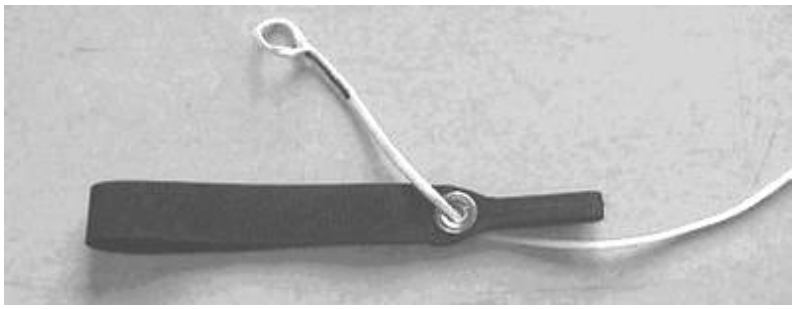


pic. 30

Lacing the drawing auxiliary parachute on the binding on the canopy sac (pic. 31)

pic. 31

Connecting controlling loops of the reserve parachute RP – 006 on the controlling line – in the same way the controlling loops of the main parachute (RP-008 Jh or RP-002 R) are connected (pic. 32, 33)



pic. 32

pic. 33

Slowing down the reserve parachute (pic. 34, 35, 36)

pic. 34

pic. 35

pic. 36

Connecting the Main risers of the carrying harness of the main parachute to the harness (pic. 37, 38, 39, 40)

pic. 37

pic. 38

pic. 39

pic. 40

5. General conditions for assembling the safety devices into the reserve parachute package:

Installation of the safety device into the package part can be performed **solely** by a trained person with authorization of 'Senior parachute Technician'.
The safety device **must be installed** only in the original set supplied by MarS and installed into the package directly by the manufacturer or another authorized person.

WARNING:
The closing cord designed for closing the reserve parachute package must always pass through the aperture in the cutter of the safety device!

6. Assembly of AAD an m2 device

The assembly is carried out according to Instructions for use - the Users´Manual of m2.

7. Assembly of AAD a Cypres Expert Device

The assembly is carried out according to Instructions for use - the Users´Manual of Cypres.

8. Assembly of AAD an Vigil device

The assembly is carried out according to Instructions for use - the Users´Manual of Vigil.

9. Packing Tools

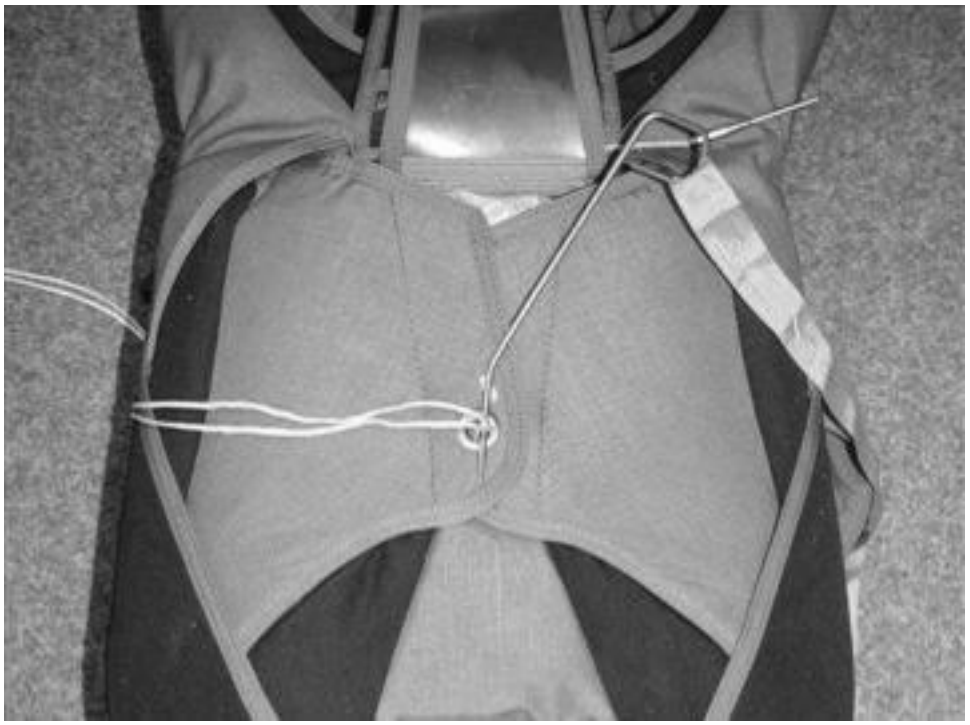
We use the following tools for packing reserve parachutes:
a) Accessory needle with a webbing
b) Line for the limitation of the container extension
c) Packing line.

10. Packing the Container

Packing the reserve parachute:

is carried out according to the technical description for packing the used canopy of the reserve parachute until the phase of packing the canopy of the reserve parachute to the reserve parachute container. Loose ends of the reserve parachute are packed to the packaging segment next to each other. Then the procedure follows according to the next pictures.

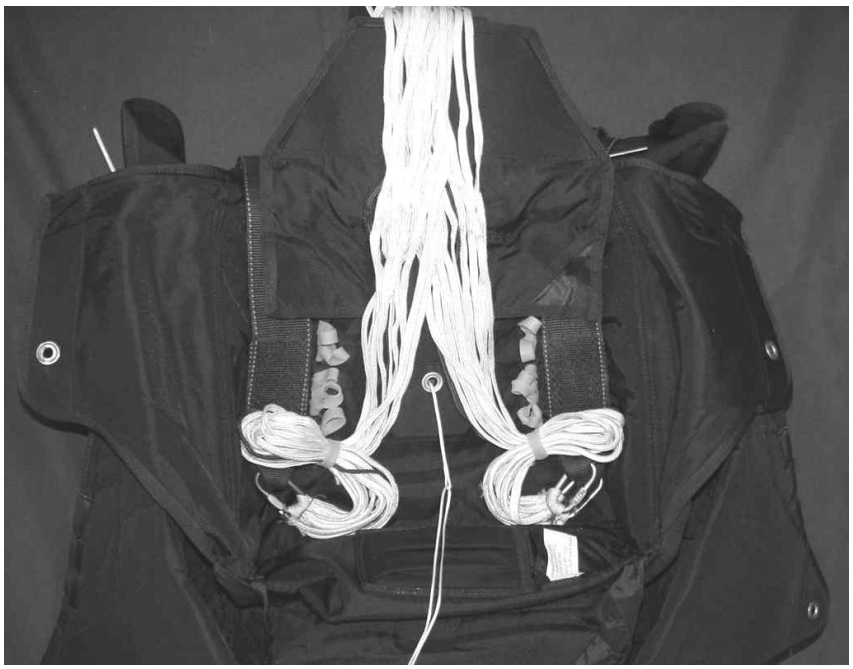
The flaps are closed in order according to the numbering of reserve parachute flaps, it means no. 1 to no. 6.




6


Mars

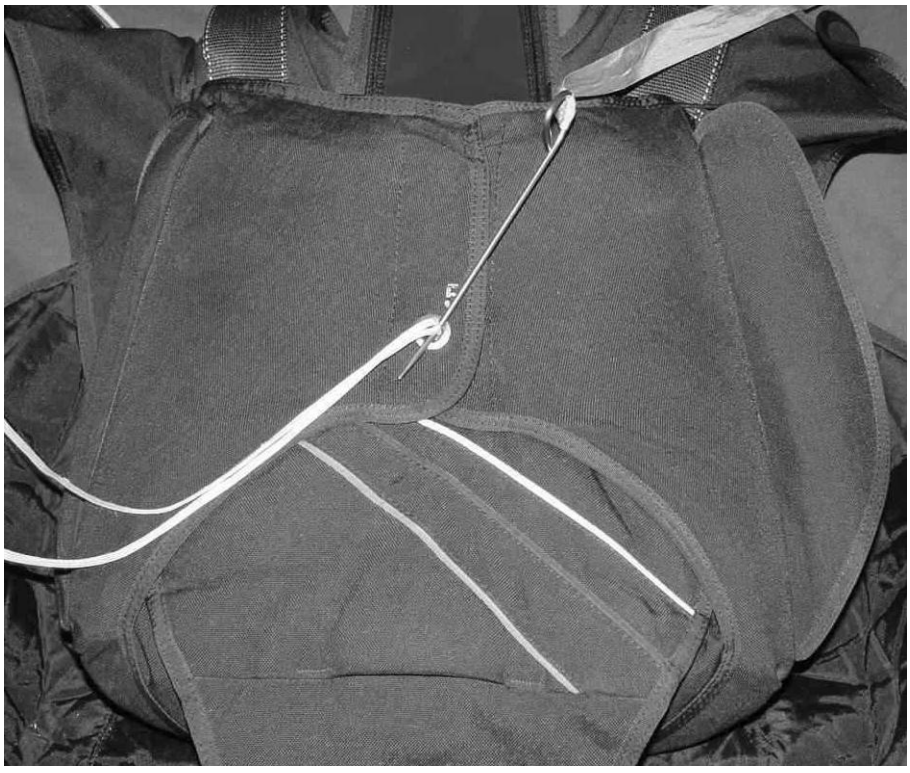
The packing of the reserve parachute PZS-92 is carried out according to instructions for the packing of the reserve parachute canopy PZS-92 no. P-003-93. Step: packing of the canopy of the reserve parachute into the container. Then follow the steps as shown in next fig.
The flap is closed according to the numbering, i.e. no.1 – 6.




1


2


3




6


Mars

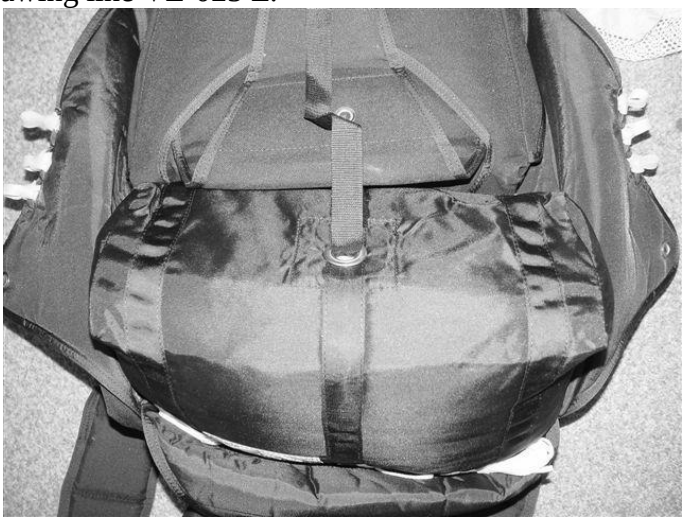
Packing the Main risers
Are put in between the loose ends cover and packaging segment of the reserve parachute.

Must be fitted with a loop RSL for connection of the Reserve static line RSL with the stainless carabine.

Packing the main parachute:

a) Descent with continuous parachute opening using the static line VL-025 L

Packing the canopy of the main parachute into container VV-074 is carried out in accordance with the description given by producer of the used main parachute. Packed canopy of the main parachute stored in the container VV-074 is packed into the packaging segment of the main canopy so that the remaining length of the carrying lines of the main parachute is packed on the bottom of the packaging segment of the main canopy, and the main parachute container is packed with the lines towards the lower flap of the packaging segment of the main parachute. In the upper part of the canopy sec (in bushing) is connected stabilizing parachute ST-015 with the connecting binding, the stabilizing parachute is then packed to the case of the stabilizing parachute PZ-015, which is connected to the drawing line VL-025 L.



The procedure of the packing the stabilizing parachute case PZ-015 and closing the flaps of packaging segment of the main parachute is carried out according to the following pictures in order – lower, upper, right, left flap.

Packing the main parachute:

b) Descent with opening of the parachute case with static line VL-025 L with engaged canopy case

Packing the main parachute canopy into the container VV-074 is carried out in accordance with technical description of the producer of used main parachute. Packed main parachute canopy stored in container VV-074 is put in the packaging segment of the main parachute so that the remaining length of the main parachute lines is packed on the bottom of the packaging segment of the main parachute, and the main parachute container is stored with the lines towards the lower flap of the packaging segment of the main parachute.

Static line VL-025 L threading out of the lacing of the canopy sac is lead from the left around the intermediate flap. We tighten first the lower and upper flap of the main parachute, then both side flaps (in order right, left). Through closing line loop we thread through the drawing line needle. We fold the drawing line to the rubber loops on the side flaps of the main parachute. The drawing line carabine is hung to the loop sewn on the upper flap of the main parachute.

c) Descent with hand-opening using the kill line pilot chute of main parachute PV-042 / PV-043 / PV-052 / PV-053

Connecting the connection binding of the kill line pilot chute with the main deployment bag VV-074

Soft link SFL (with a strap) is made from Microline cord with minimum strength 1300 lb. One end of the cord includes a sewn strap, and the injected cord passes through the strap lug creating another lug.

The second end of the soft links forms a lug which provides a connecting connection upon assembly by means of passing through the binding.

The connecting binding of the kill line pilot chute passes through the bushing in the bag upper part so the lugs on the connecting binding are passed into the bag internal part.

Loose lug of soft link passes through the lugs created on the connecting binding of the kill line pilot chute.

Then pass the lug through once again around

The loose end of soft link passes through the lug formed by the injected cord of the soft link passing through the binding on the opposite end of soft link.

Pass the opposite end of soft link with binding through the loose end lug, and fasten the connection until it is sufficiently solid. Pull the formed connection to fasten by means of pulling the connecting binding of the kill line pilot chute and the bag.

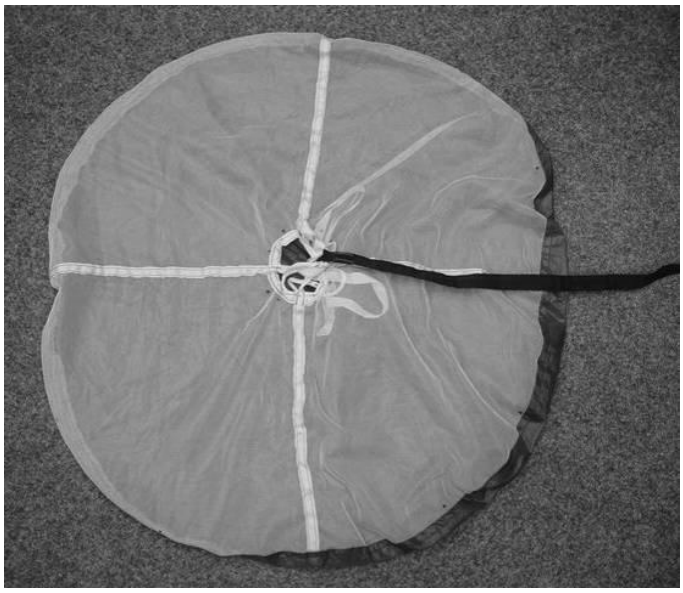
WARNING:
Prior to each use, it is necessary to check if the soft link connection is not damaged!

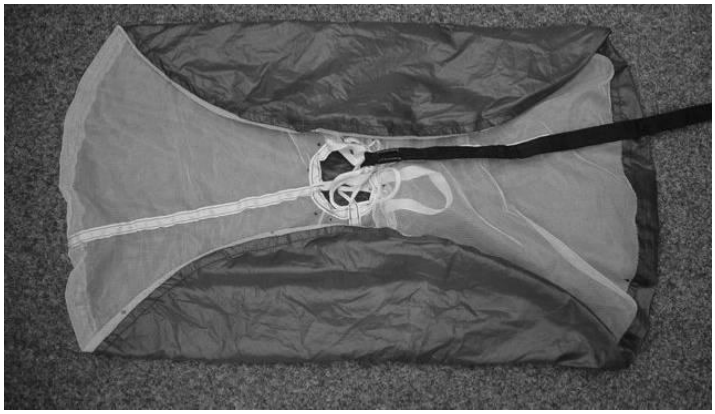
Packing the main parachute canopy into the bag VV-074 is carried out in accordance with technical description of the producer of used main parachute. Packed main parachute canopy stored in container VV-074 is put in the packaging segment of the main parachute so that the remaining length of the main parachute lines is packed on the bottom of the packaging segment of the main parachute, and the main parachute container is stored with the lines towards the lower flap of the packaging segment of the main parachute. In the upper part of the canopy sac (in bushing) there is a drawing auxiliary parachute connected with connecting binding, this parachute is after packing put in the removable pocket AFF.

When the main canopy container is closed and main canopy lines are placed on it, the pilot chute has to be decollapsed in such way to see green mark of middle line in the control window of the connecting webbing.

WARNING:
In case that the red mark is in the control window, the pilot chute has not been decollapsed, so the main container will not be opened!

Flaps of the main parachute case are closed in order – lower, upper, right, left





WARNING:
Prior to entering the airplane, check the complete arrangement in the parachute:

- **Correct fastening of the bearing harness buckles**
- **Correct connection of loose ends with the bearing harness (three-ring system)**
- **Correct inserting of the reserve parachute releaser needle**
- **Correct connection of Reserve static line (RSL)**
- **Activation of applied safety device AAD (m2, CYPRES, VIGIL).**

HEAD III.

Storing and transport of the parachute

1. Preparing parachute for storage

Before storing the parachute an inspection, eventually repair, replacement of the damaged parts and airing is carried out. If the parachute is packed, it is stored in the portable bag. Parachute may be packed at the longest for 12 months.
Parachute logbook is put into the pocket on the portable bag.

2. Storage of the parachute

Before storing the parachute set carry out its check and the check of its completeness.
Before storing the parachute in the bag, fold the unpacked canopy of the main parachute in the following way: smooth the canopy field, draw the slider with its intermediate part to the canopy, roll the back part of the canopy on the front part (leading edge), and fold the canopy from the top to the bottom edge. Braid the carrying line in a chain. Store the packed canopy in such way that it is not in direct contact with metal parts. Put the parachute in the bag and close the bag.
Put the parachute logbooks in the pocket on the portable bag.
Store the parachute set and all its parts in shelves in dry, dark, well ventilated room without direct sunlight. The parachute sets must not touch the walls, floor, or heating units. Parachute sets may be stored in shelves in two layers maximally. In rooms, where parachute sets are stored, it is not allowed to store metal objects which do not belong to the stored parachutes, nor oils, acids or substances evolving active gases. Smoking is forbidden here.
If the parachute set is stored for a longer period of time, it must be aired at least once in 6 months for at least 24 hours. Airing is done in shade.
The record of the carried-out airing is made in the parachute logbook.
During long-term storing of the parachute sets, these climatic conditions must be kept in the storage rooms:

- temperature + 14 to + 25°C
- relative humidity 35 to 73 %

Storability of the parachute sets and their accessories in storage room is for their whole operating life, when fulfilling the storage conditions above.

3. Transport of the parachute

Parachutes (cases) are in operating conditions transported in portable bags.

During transport it is necessary to prevent:

a) wetting of the case

b) oil and chemical pollution of the case

c) mechanical damage.

HEAD IV.

Dirt Removal, Washing, Cleaning

Dirt (sand, soil, mud, etc.) on the parachute container and supporting harness contaminated during the use can be cleaned mechanically (e.g. by brushing, shaking or rubbing off).

Dirt that cannot be removed mechanically, can be removed with a damp piece of cloth moistened in lukewarm water with soap or cleaning detergents. After such cleaning the container with the harness are to be dried on a place designated for such purposes.

The manufacturer warns the user that using a larger amount of water with detergents may cause the occurrence of stains of various colours or soaking of colours from the inside layer of material into the outside layer of material, in particular with containers of light colours. The warranty does not apply to such cases.

Washing of containers/harnesses manually or in any washing machines **is forbidden**.

Cleaning of containers/harnesses using chemical agents containing chlorine or organic solvents **is forbidden**.

HEAD V.

Ecological disposal instructions

Upon the total service life completion or due to wear and tear, terminate the parachute set.

Disposal of terminated parachute sets is performed as follows:

Metal parts

- Useable metal parts can be used within manufacturing upon inspection and repair work;
- Unused metal parts shall be delivered to the waste metal collection.

Textile parts can be disposed of as follows:

- Placing in the waste collection centre suitable for PAD, PES waste;
- Burning whilst complying with the conditions required for the waste disposal type, in cooperation with companies performing the disposal method.