# Instructions for packing and use - the REAL-X OP – 103 Container/Harness

# Technical Description of the REAL-X (OP – 103) Container/Harness P – 001 - 05



12th issue

in Jevíčko 09/2009

## **List of Changes**

In case of necessity to change or amend this manual, the holder will be notified by means of bulletins. New (corrected) sheets will be enclosed to such bulletins. The holder of the manual is obliged to record all obtained changes into the List of Changes and replace out-of-date sheets with valid sheets. Changed or amended manual parts will be marked with a vertical line on sides, they will be further marked with the number and issue date of the change at the bottom of the page.

Sequence No. of the Change	Chapter	Sheet nos. with Changes	Date of Issue of New Sheets	No. of the Bulletin with Issued Changes	Date of the Bulletin Approval	Date of execution Signature

# **WARNING!**

1. 1. Training and experience are required to reduce and eliminate the risk of serious or fatal injuries.

A – Never use the equipment unless you have read and understood this warning LABEL

and have also completed a required training course specified for the use of such equipment.

#### Or

B – Unless you have read and understood all relevant flight manuals and instructions for packing and you have performed at least 100 jumps.

2. In order to eliminate the risk of a serious injury, death, destruction or damage of the canopy, it is strongly recommended not to exceed the following limits:

MAXIMUM EXIT SPEED	240 km/hour / 130 KNOTS
MAX. LOAD WEIGHT	120 kg / 265 lb
(of the parachutist + gear + equipment)	
MODEL/TYPE	OP-103/PS-055
	or
	<b>OP-103/PS-034 U</b>
PARTNO.	
SERIES	
DATE OF PRODUCTION	

This parachute is certified under TSO C 23d.

MarS a.s. Okružní II. čp. 239 569 43 Jevíčko THE CZECH REPUBLIC

#### CHAPTER I.

Technical Decsription of the Container/Harness

- 1. Purpose
- 2. Tactical and technical parameters
- 3. Functions of the container
- 4. Parts of the container/harness
- 5. List of replaceable parts
- 6. Parts of the container/harness technical description

#### CHAPTER II.

Instructions for Packing and Use

- 1. General instructions
- 2. Inspection of the container before use
- 3. Removal of faults/Troubleshooting
- 4. Guidelines for the replacement (assembly) of parachute parts
- 5. Packing Tools
- 6. Packing of the Container
- 7. Assembly of a Cypres EXPERT device
- 8. Assembly of an MPAAD device

#### CHAPTER III.

Storage and Transportation of the Parachute (container)

- 1. Preparation of the parachute (container) for storage
- 2. Storage of the parachute (container)
- 3. Transportation of the parachute

#### CHAPTER IV.

Removal of Dirt, Washing, Cleaning

# **CHAPTER I.**

### Technical Description of the Real-X (OP-103) Container

#### 1. Purpose

- 1.1. The aim of this technical description is to provide basic parameters, parts and guidelines for the use of the container/harness.
- 1.2. The container/harness is designed for sports jumps, mostly RW disciplines and it is used only for free falls.

#### **2.Tactical and Technical Parameters**

#### 2.1. Basic parameters

SIZE OF THE	CONTAINER	CONTAINER	MAX. SPEED	MAXIMUM	NOTE
REAL-X	VOLUME OF	VOLUME OF	AT THE	WEIGHT	
	THE	THE MAIN	CONTAINER	(kg/lbs)	
CONTAINER	RESERVE	PARACHUTE	OPENING		
	PARACHUTE	(cm <sup>3</sup> /cu.in)	km/hour/knots		
	$(cm^{3}/cu.in)$				
02	2679/163	3017/184	240/130	120/265	
03	3389/207	3631/221	240/130	120/265	
04	3556/217	3737/228	240/130	120/265	
05	3809/232	4846/295	240/130	120/265	
06	4304/262	6348/387	240/130	120/265	
07	5005/305	7363/449	240/130	120/265	
08	5537/338	7813/476	240/130	120/265	

#### 2.2. Functional parameters of the container

The container assures proper functioning on condition that:

- The weight of the parachutist including gear is in accordance with data in the chart no. 2.1
- Flight speed ranges between 90 to 240 km.h<sup>-1</sup>
- The canopy is disconnected from the harness by means of the cutaway release
- Freefalls last 3 seconds in minimum.

#### **2.3. Operational Conditions**

- Main and reserve parachutes can be packed for jumps for 12 months in maximum, unless the manufacturer of the main and reserve parachutes do not specify a different period.
- The functioning of the container/harness is assured when stored between - 40 to + 93.7 °C at relative air humidity corresponding to such temperatures.
- The gear of the parachutist must be attached to the parachutist 's body in such a manner that assures the proper functioning of the container

#### 2.4. Parameters Assuring Reliability

Warranty period

- a) Lasts 24 months on condition that repairs and replacements of used parts are carried out, storage conditions are maintained and regular inspections connected with the airing of the parachute are performed
- b) Begins with the date of the shipment of the parachute shipment must take place not later than 6 months since the production date in maximum

c) During warranty period the manufacturer will not accept claims in the following cases of:

- Damage of parachute parts caused by their catching on gear
- Violation of conditions of packing, storage and maintenance of the parachute by the user
- Missing parachute log book or its improper records
- Failure to follow the instructions of this technical description
- Any unskilled handling with the parachute

#### 2.5. General Overhaul

- Parachutes are accepted for general overhaul if a user/a representative of the user evaluates further use of such a parachute as not suitable.
- General overhaul is performed either directly by the manufacturer or by a organization or person authorized by the manufacturer.

#### 2.6. Total Service Life

The total service life of the parachute is set to 15 years since the production date in maximum. However, it depends on the technical condition of each container. Therefore it is required to meet the following conditions:

a) replace damaged parts in time and without any delay. Any replacement of parts must be recorded in the parachute log book.

b) repair the parachute and its parts in time and without any delay, always according to technical conditions of repairs. Each and every repair must be recorded in the parachute log book.

c) after the elapse of 5 years carry out overall technical inspections (validity - 2 years inmaximum, result to be recorded in the parachute log book) till its unworthiness for jumps

The evaluation of the technical condition of the parachute (technical inspection) is performed directly by the manufacturer or by an authorized organization or person.

# 3. Functions of the Container

#### Free falls with manual opening

After the exit out of the aircraft and after 3 seconds have passed in minimum, the parachutist throws away the pilot chute. The parachute container opens and the pilot chute withdraws the container with a stowed canopy. Suspension lines are unlaced from rubber loops on the container and the closing flap of the container becomes released. ATTENTION use only loops that encircle the bundle with lines tightly.

After the lines are extended in full length, the container is pulled off the canopy and canopy cells are gradually inflated with air.

The spreading of the canopy is slowed down by the slider, which is anchored on four bundles of suspension lines.

After all cells of the canopy are inflated with air and the slider moves to the risers of the supporting harness, the parachute is opened. The parachutist releases the steering loops and by their pulling (to their chest), steering lines are released from brake rings at risers. After all these operations are completed, the canopy begins gliding in the air. The parachutist controls the parachute with steering lines to a set place for landing.

### 4. Parts of the Container/Harness

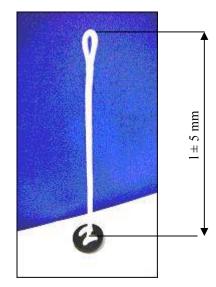
4.1	Container (OP – 103)	1 piece				
4.2	Harness (type $PS - 055$ or $PS - 034$ U)	1 piece				
4.3	Release of the reserve parachute $(U - 064 \text{ or } U - 051)$	1 piece				
4.4	Cutaway release $(U - 079)$	1 piece				
4.5	Reserve pilot chute ( $PV - 038$ )	1 piece				
4.6	Canopy container of the reserve parachute $(VV - 075)$	1 piece				
4.7	Steering loops of the reserve parachute ( $\check{R}P - 006$ )	1 pair				
4.8	Main parachute risers					
	(VK – 33/430/17 Jh, VK – 33/510/20 Jh for size 02-07)	1 pair				
	Steering loops of the main parachute (RP – 008 Jh for size 02-07) 1 pair					
	or					
	Main parachute risers					
	(VK – 44/400/ŘP, VK – 44/500/ŘP for size 08)	1 pair				
	Steering loops of the main parachute $(RP - 002 R \text{ for size } 08)$	1 pair				
4.9	Canopy container of the main parachute $(VV - 074)$	1 piece				

Asser	nbly chart of parts	of specific conta	ainer sizes 02 - 0	)5	
		Container Siz	ze (INDEX)		
Type specification					
of parts					
	100/100	120/120	130/130	150/150	
	size 02	size 03	size 04	size 05	
Reserve pilot chute	PV-038	PV-038	PV-038	PV-038	
Canopy container	VV-075/02	VV-075/03	VV-075/04	VV-075/05	
of the reserve					
parachute					
Steering loops of	ŘP-006	ŘP-006	ŘP-006	ŘP-006	
the reserve					
parachute					
Reserve parachute	WP 110	WP 130	WP 130	WP 150	
			(WP 150)		
	Softlines MarS lengths 145 mm – SFL 145 or				
	Softlines SFL BP-01 or Softlines P.D. (PD Slink) or				
	Bolt clips WIRT CZ (4 kN)				
Container, Harness	OP-103, PS-055 or				
	OP-103, PS-034 U				
Canopy container	VV-074/02	VV-074/03	VV-074/04	VV-074/05	
of the main					
parachute					
Pilot chute	PV-042 or PV-043 or PV-052 or PV-053				
"kill line"					
Main parachute	VK-33/430/17 Jh				
risers	VK-33/510/20 Jh				
Steering loops of	RP-008 Jh				
the main parachute					
cutaway release	U-079				
Reserve parachute	The U-064 or U-051 reserve parachute release				
release	is delivered with the PS-034 U harness,				
		release is delive		· ·	

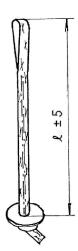
		of specific container Container Size (I			
Type specification of parts			()		
	175/175	175/200	210/250		
	size 06	size 07	size 08		
Reserve pilot chute	PV-038	PV-038	PV-038		
Canopy container of the reserve parachute	VV-075/06	VV-075/08	VV-075/08		
Steering loops of the reserve parachute	ŘP-006	ŘP-006	ŘP-006		
Reserve parachute	WP 175	WP 175	WP 210		
	Softlines MarS lengths 145 mm – SFL 145 or Softlines SFL BP-01 or Softlines P.D. (PD Slink) or Bolt clips WIRT CZ (4 kN)				
Container,	OP-103, PS-055 or				
Harness	OP-103, PS-034 U				
Canopy container of the main parachute	VV-074/06	VV-074/07	VV-074/08		
Pilot chute "kill line"	PV-042 or PV-043 or PV-052 or PV-053				
Main parachute	VK-33/430/17 Jh	VK-33/430/17 Jh	VK-44/400/RP		
risers	VK-33/510/20 Jh	VK-33/510/20 Jh	VK-44/500/RP		
Steering loops of the main parachute	RP-008 Jh	RP-008 Jh	RP-002 R		
cutaway release	U-079	U-079	U-079		
Reserve parachute	The U-0	64 or U-051 reserve	parachute release	e	
release	is delivered with the PS-034 U harness,				
		release is delivered	/	narness	

Length of the reserve parachute closing				
line				
Size of	MPAAD			
container				
01				
02	$80 \pm 5 \text{ mm}$			
03	$85 \pm 5 \text{ mm}$			
04	$90 \pm 5 \text{ mm}$			
05	$95 \pm 5 \text{ mm}$			
06	$100 \pm 5 \text{ mm}$			
07	$105 \pm 5 \text{ mm}$			
08	$110 \pm 5 \text{ mm}$			

Chart of main parachute closing line depending on the size of the reserve parachute container (mm)



Main parachute closing line depending on the size of the main parachute container for size 02-05 ( $30 \pm 5$  mm), for size 06-08 ( $40 \pm 5$  mm).



# 5. List of Replaceable Parts

Except for the container/harness, all other parts can be replaced.

### 6. Technical Description of Parts of the Container/Harness

#### 6.1. The OP – 103 Container (fig. 1, 2)

Container / Harness OP-103 (the front part, back pad and shoulder pads) are made of PAD fabric with the minimal strength as follows: texture 1700 N, weft 1300 N, (applies for size 02 and 06) or the front part of PAD fabric with the minimal strength as follows: texture 1700 N, weft 1300 N and back pad with shoulder pad are made of black pressed fabric (applies for size 02 and 06).

Container / Harness OP-103 (the front part, back pad and shoulder pads) are made of PAD fabric with the minimal strength as follows: texture 1700 N, weft 1300 N (applies for size 07 and 08).

The main and reserve parachutes are stowed in the trapezoidal container with rounded edges. The back pad, main parachute container and reserve parachute container are sewn together and form one unit. The container of the main parachute consists of: the back pad on the bottom and the circumferential part of the main parachute container on sides. The bottom flap, left side flap and right side flap of the main parachute container are sewn on the circumferential part. The bottom part of the central flap covers the main parachute container. The reserve parachute container consists of the main part that leads into the right and left flaps of the reserve parachute. The top closing flap and the covering flap of the reserve parachute are sewn on the neck-hole of the back pad. The covering flap is inserted into the top part of the central flap. Bushings for the closing line of the reserve parachute container are pressed-on to the bottom of the reserve parachute. The top closing flap of the reserve parachute container are pressed-on to the bottom of the reserve parachute. The closing line of the main parachute container are pressed-on to the bottom of the reserve parachute. The closing line of the main parachute container are pressed-on to the bottom of the reserve parachute. The closing line of the main parachute container are pressed-on to the bottom of the reserve parachute. The closing line of the main parachute container is led through the grommet on the bottom flap of the main parachute container.

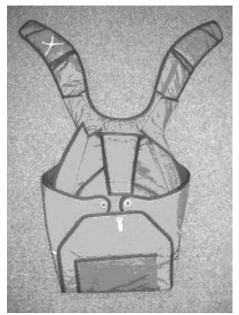


fig. 1

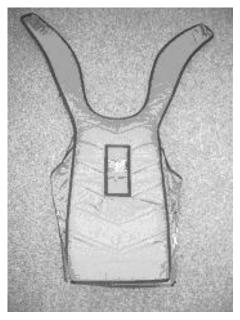


fig. 2

#### 6.2. Harness

The PS-055 or PS - 034 U harnesses are delivered together with the container.

#### The PS-055 Harness

The supporting harness is made of a PAD strap with the minimal strength of 17,000 N and is designed for the attachment of the parachute container to the body of the parachutist. The supporting harness consists of main straps, leg straps, chest straps, back straps and lumbar strap.

The main strap is doubled and bifurcates into two parts above the cutaway ring, which is 33 mm large. The divided strap forms ends with loops for the attachment of the reserve parachute. Pockets for the release of the reserve and main parachutes are sewn on the main straps. Another cutaway ring is sewn in the bottom part of the main strap. The lumbar strap, a part of the leg strap with a tightening buckle and part of the leg strap for drawing through the buckle lead from the cutaway ring. The main straps placed at the chest straps are divided with cutaway rings with the diameter of 33 mm, to which chest straps are attached.

Reserve parachute brakes are sewn on the back strap.

The back strap leads from the cutaway ring placed after the bifurcated main strap.

Leg pads are sewn on leg straps, inner sides of leg pads are equipped with sewn-on loops for lacing through the rounded rubber designed for the tightening of the container to the parachutist's body. The size of the pressure strength can be regulated by different positions of knots made on the rounded rubber.

#### The PS-034U Harness

The supporting harness is made of a PAD strap with the minimal strength of 17,000 N and is designed for the attachment of the parachute container to the body of the parachutist. The harness consists of main straps, leg straps, chest straps, back straps and a lumbar strap.

The main strap is doubled and bifurcated into two parts above the cutaway ring, which is 33 mm large. The bifurcated strap forms ends with loops for the attachment of the reserve parachute. Pockets for the release of the reserve parachute and cutaway are sewn on the main straps. Another cutaway ring is sewn in the bottom part of the main strap. The lumbar strap, a part of the leg strap with a tightening buckle and part of the leg strap for drawing through the buckle lead from the cutaway ring. Chest straps are sewn on main straps.

Reserve parachute brakes are sewn on the straps to secure the attachment of the reserve parachute.

The back strap leads from the cutaway ring placed after the bifurcated main strap. Leg pads are sewn on leg straps.

#### 6.3. The U-064 Release of the reserve parachute (fig. 3a)

The release secures the opening of the reserve parachute container. It consists of a handle and a cable with a needle. A Velcro strap is sewn on the release handle, which helps fix the release in the pocket on the harness.

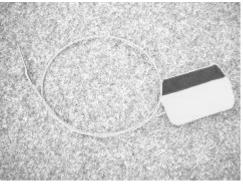


fig. 3a

#### Or

#### The U-051 Release of the reserve parachute (fig. 3b)

The 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.



fig. 3b

#### 6.4. The U-079 Cutaway Release (fig. 4)

The cutaway 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.

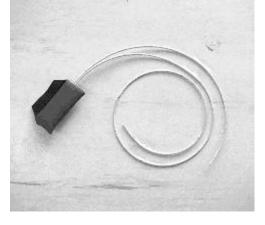


fig. 4

#### 6.5. The PV-038 Pilot Chute of the Reserve Parachute (fig. 5)

The pilot chute secures the opening of the reserve parachute container and pulling the deployment 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 180N.



fig. 5

#### 6.6. The VV-075 Canopy container of the reserve parachute VV – 075 (fig. 6)

The container 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 50 mm wide and 3600 mm long webbing is sewn on the bag. A loop for the attachment of the PV-038 pilot chute is sewn on the other end of the webbing.

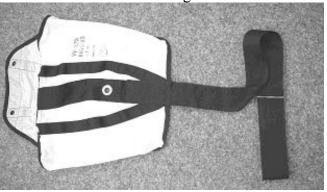


fig. 6

#### 6.7. Steering loop of the reserve parachute (RP-006) fig. 7a

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





#### 6.8. Steering loop of the main parachute (RP-008 Jh) fig. 7b

The steering loop, made of a 25mm-wide PAD strap, is designed to control the main parachute. The steering loop forms an eye with a pressed-on bushing at its end, which secures the connection of the main steering line. The RP- 008 Jh steering loops are used as a set with the VK-33/430/17 Jh or with the VK-33/510/20 Jh risers (for size 02-07).

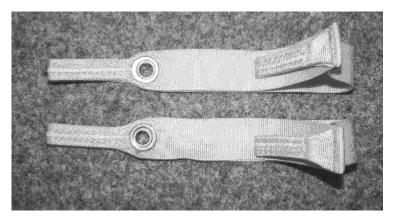


fig. 7b

#### Steering loop of the main parachute (RP-002 R) fig. 7c

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



fig. 7c

#### 6.9. Risers of the harness

#### VK - 33/430/17 Jh, VK - 33/510/20 Jh, fig. 8a (for size 02-07).

Risers of the supporting harness of the main parachute are designed for the connection of the main parachute canopy to the PS-034 U or PS-055 harnesses by means of a three-ring system. They are made of a 26mm-wide PAD strap, with the minimal strength of 17,000N. The bottom part of the division is equipped with a three-ring system securing the connection to the harness. There are loops at the end of the straps, into which suspension lines of the main parachute canopy are connected by means of bolt clips. A 15-mm ring is sewn on the back of the straps securing the leading of the main steering line.

The number under the slash -430 or 510 shows the strap lengths from the division.

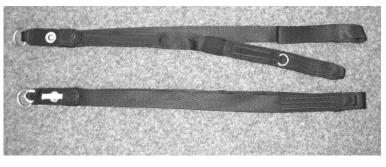


fig. 8a

#### VK - 44/400 (500) / RP, fig. 8b (for size 08).

The loose ends of the main parachute's supporting harness are used to connect the parachute canopy to the harness by means of a system of three rings. These ends are made of a 43 mm wide PAD tape with a minimum strength of 17,000 N. The bottom (divided) part is made of the set of three rings that serve to fasten the parachute to the harness. The tapes end with loops into which the screwing clips introduce the supporting lines of the main parachute canopy.

The number under the slash -400 or 500 shows the strap lengths from the division.



fig. 8b

#### **Caution:**

The strap near the rings, which are a part of a three-ring system, must remain slightly flexible. Therefore it is required to bend it at least once a month to prevent it from hardening which could result in worsening of its proper functions during the disconnection from the three-ring system. This caution applies to all types of risers of the harness.

# CHAPTER II.

#### Instructions for the packing of the container

# 1. General Instructions

a) Before packing the parachute, it is necessary to check the entirety and technical condition of the parachute. Damaged parts are either replaced or repaired.

b) It is not recommended to expose the parachute to direct sunlight during packing.

c) The parachute is packed by one person. Each packing of the reserve parachute is to be recorded into the log book.

d) The Real-X container is used as a set with the canopies of the WP series from WP 110 to WP 210, each canopy size of the reserve parachute must correspond to a suitable container size.

e)No adjustment of the parachute container/harness is acceptable.

# 2. Inspection of the Container before Use

Parts of the container are checked in the following order:

- The PS 034 U or PS 055 harness
- The OP 103 parachute container
- The U 079 cutaway release
- The U 064 or U 051 release of the reserve parachute

The above mentioned parachute parts are inspected in order to find out any damage and check sewing, fabric, webbings and straps completeness.

An emphasis is put on a careful inspection of metal parts as follows:

- Releases (metal bushings) that must not have any apparent fracture, fraying or any other damage.
- The cutaway release with plastic coating, must not have its surface damaged, cable ends must lead out of cutaway hoses with the same length that must reach 120 mm in minimum.
- Closing lines (of main and reserve parachutes) must not be damaged and must be in perfect entirety.
- The release cable of the reserve parachute container must be of a suitable length (with clearance sufficient for packing amounting to 50mm in minimum).
- The release cable must be straight, without any bends and sharp breaks
- The release needle must not be bent
- Cutaway hoses must not be deformed nor contain any dirt inside.

### 3. Removal of Faults/Troubleshooting

- 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/Technické podmínky oprav.
- b) Parts that are permitted to be exchanged during the operation:
  - U 064 or U 051 release of the reserve parachute
  - U 079 cutaway release
  - Exchange of risers of the main parachute harness
  - Closing line of the main and reserve parachute
  - Steering loops of the reserve parachute
  - Deployment bag of the reserve parachute
  - Deployment bag of the main parachute
  - PV-038 pilot chute
  - PV-042 or PV-043 or PV-052 or PV-053 pilot chute

# 4. Guidelines for the replacement (assembly) of parachute parts

a) Replacement of the packing line of the reserve parachute for AAD Cypres (fig. 9a)

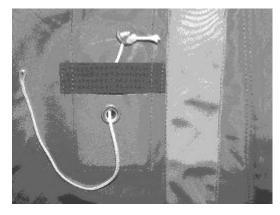


fig. 9a

b) Replacement of the packing line of the reserve parachute for AAD an MPAAD (fig. 9b)



fig. 9b

c) Replacement of the packing line of the main parachute container (fig. 10a, 10b)

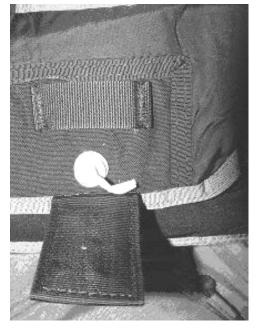


fig. 10a



fig. 10b

d) Attachment of the PV - 038 pilot chute to the deployment bag webbing (fig. 11)



fig. 11

e) Connection of the RP – 006 steering loop to the main steering line (fig. 12a, 12b)



fig. 12 a



fig. 12b

f) Braking of the reserve parachute (fig. 13 a,b,c)



fig. 13 a



fig. 13 b



fig. 13 c

g) Connection of the riser of the harness of the main parachute to the harness (fig. 14 a, b, c,d)



fig. 14 a



fig. 14 b



Connected harness riser seen from the bottom fig. 14c



Connected riser seen from the top fig. 14d

### 5. 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

### 6. Packing of the Container

6.1. The packing of the reserve parachute is carried out according to instructions for the packing of the reserve parachute canopy. Step: packing of the canopy of the reserve parachute into the container. Then follow the steps as shown in fig. 15 - 21. The flap is closed according to the numbering, i.e. no.1 - 6.



fig. 15

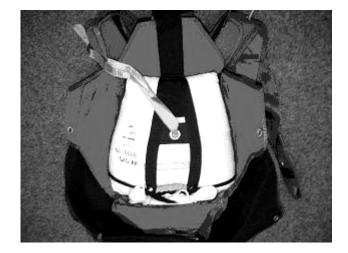


fig. 16



fig. 17



fig. 18



fig. 19



fig. 20



fig. 21a

Inserting risers

Risers are inserted between the snap and the cover of risers (fig. 21b, 21c)





fig. 21b

fig. 21c

Storige of risers in the container Risers are stored together-beside each other (fig.21d)



fig. 21d

6.2. Packing of the main parachute is carried out according to technical description of the main parachute packing. The container flaps are closed in the following order: bottom, top, right, left (see fig. 22-32).

The remaining length of suspension lines of the main parachute that could not be put into rubber loops of the deployment bag are placed to the container bottom of the main parachute.



fig. 22



fig. 23



fig. 24



fig. 25



fig. 27



fig. 28



fig. 29



fig. 30



fig. 31



fig. 32

Special warning:

The container with the canopy is stored in such a way that the lines remain in the direction from the reserve parachute, i.e. towards the bottom part of the container, top, right, left.

# 7. Assembly of a Cypres Expert Device

# During the assembly it is required to follow instructions given in Cypres Users' Guide (description of the device).

The assembly itself is simple and consists of the following steps:

# **A)** Inserting the body of the device and leading of the cable with the CYPRES pyrocartridge

1) Inserting the device of the CYPRES into the CYPRES pocket and its closing (fig. 33)



Fig. 33

Attaching the cable with the CYPRES pyrocartridge and placing the cable under the webbing (cover of the opening) into the cut opening - tube in the inside part of the flap no. 1 of the reserve parachute (fig. 34).



Fig. 34

2) Leading the cable with the pyrocartridge through the tube of the reserve inside flap no. 1 to the left up to the central part of the flap (above the CYPRES pocket) and drawing all the remaining part of the cable with the pyrocartridge out of the tube cut opening of the reserve flap no. 1 (drawing the cable from the underside to the front side).

Note: The cable with the pyrocartridge must be drawn out completely in order to prevent any possible breaking of the cable during a repeated drawing.

3) Repeated drawing of the cable with the pyrocartridge into the tube in the inside part of the reserve middle flap no. 3, attachment of the bottom part and attachment of the top part of the pyrocartridge into the rubber band and attachment. (Fig. 35).



Fig. 35

The opening of the pyrocartridge must be placed on the centre of the grommet in the flap no. 3. Inspect the pyrocartridge position from the outside part of the flap no. 3 (Fig. 36)



Fig. 36

#### **B)** Inserting and leading of the cable with the CYPRES display

1) Inserting the cable with the display into the cut opening in the bottom right inside part of the reserve container. Leading the cable with the display through the right inside part of the reserve container, drawing the cable with the display out of the inside part in the top part of the reserve container (Fig. 37, 38).



Fig. 37





2) Inserting the display into the pocket made of a transparent foil and closing the pocket (Fig. 39).





# 8. Assembly of an MPAAD device

The assembly is carried out according to Instructions for use no. P-008-03 - the Users' Manual of MPAAD Automatic Safety Device.

# CHAPTER III.

# Storage and Transportation of the Parachute (Container)

### 1. Preparation of the parachute (container) for storage

Before the parachute (container) is stored, its inspection must be carried out, if necessary its repair, replacement of damaged parts and airing. The parachute (container) is stored inside a portable bag either packed (for 12 months in maximum) or unpacked. The parachute log-book is put into the portable bag pocket.

# 2. Storage of the parachute (container)

The parachute (container) is 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. If a parachute (container) is stored for a longer period, it must be aired for 24 hours in minimum every 6 months. The parachute (container) is aired in the shade and cannot be exposed to sunlight.

Performed airing is recorded in the parachute log-book.

It is forbidden to store any metal objects that do not belong to parachutes, any oils, acids, solvents or any other aggresssive substances in premises where parachutes (containers) are stored.

The following climatic conditions must be fulfilled in storage premises:

Daily temperature ......between +14 and +24 oC Daily relative humidity ..... between 35 and 73 % Average relative humidity ... between 45 and 55 %

# 3. Transportation of the parachute

On operational conditions, parachutes (containers) are transported in portable bags. During the transportation it is required to prevent:

- a) Moistening of the container
- b) Contamination of the container with oils and chemicals
- c) Mechanical damage

# CHAPTER IV.

# **Dirt Removal, Washing, Cleaning**

- 1. 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).
- 2. 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.
- 3. 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.
- 4. Washing of containers/harnesses manually or in any washing machines is forbidden.
- 5. Cleaning of containers/harnesses using chemical agents containing chlorine or organic solvents **is forbidden**.