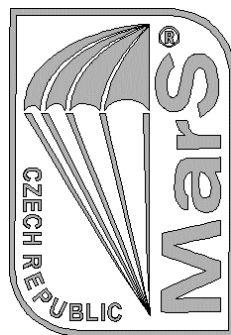


**Technical Description of the MarS-T
Tandem Parachute Container OP-095T
with the PS-052T and PS-053T-1 Harnesses**

**Instructions for Packing and Use
No. P-005-05**



10 th Issue

In Jevíčko, 03/2015

Contents

Chapter I.

Technical Description of the MarS- T Tandem Parachute Container /with the PS-052T and PS-053T-1 Harnesses/

1. System Specification
2. Tactical and Technical Parameters
3. Reliability Assuring Parameters
4. Parts of the System
5. Description of the Parachute System Main Parts
6. Description of the Parachute Container

Chapter II.

Parachute System Packing Instructions

1. General Guidelines
2. Packing of the Reserve Parachute
3. Packing of the Main canopy

Chapter III.

Container/Harness Use and Maintenance Instructions

1. Preparation before Jumps
2. Jumps with the MarS-T Tandem Parachute Container (OP-095T)
3. Inspection and Folding of the Container after Jumps
4. Storage
5. Transportation

Chapter IV.

The PS-053T-1 Student Harness Use and Maintenance Instructions

1. Preparation before Jumps
2. Jumps with the PS-053T-1 Student Harness
3. Inspection and Folding of the Harness after Jumps
4. Storage
5. Transportation

Chapter V.

Technical Conditions for Repairs

1. Repairs Permitted to the User
2. Number of Sewing Stitches with Specific Thread Types
3. Diagrams with Patches

Note: Technical conditions for repairs are available at the manufacturer or an authorized repair service and are not a direct part of these “Instructions for Packing and Use No. P –005 – 05”

Chapter VI.

Dirt Removal, Washing, Cleaning

WARNING!

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

Never use this equipment

- A. Unless you have read and understood this warning label or**
- B. Unless you do not have a valid required qualification, or you have completed required training course for the use of this system led by a person certified by the system manufacturer, who as well has a valid licence issued by the system manufacturer to lead such training courses,**

OR

- C. Unless you have read and understood all relevant flight manuals for tandem systems and instructions for their packing and you have performed at least 100 jumps with a tandem parachute set of other manufacturers, you have been examined for the system use by a person with a valid licence certified by the system manufacturer and also has a valid required licence issued by the system manufacturer to examine other people.**
- 2. In order to eliminate the risk of a serious injury, death, destruction or damage of the canopy, it is recommended not to exceed the following limits: load and speed at the parachute opening - see tactical and technical parameters (Charts nos. 1 and 2).**

MarS a.s.

Okružní II 239

569 43 Jevíčko

CZECH REPUBLIC

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 texts will be marked with a vertical line along the side, they will be further marked with a number and issue date of the change at the bottom of the page.

Sequence number of the change	Chapter	Nos. of sheets With referred change	New sheet issue date	No. of bulletin with issued change	Approval Date of the bulletin	Date of Execution Signature

CHAPTER I

1. Specification of the Container

The aim of this Technological description is only to introduce basic parameters, parts and guidelines for the use of the MarS-T Tandem parachute container (hereinafter container) to users.

The Technical description does not deal with training nor the system use for tandem jumps. The MarS-T parachute system is designed for tandem jumps with the use of brake parachute deployed out of the parachutist's hand and then released with a hand release.

2. Tactical and Technical Parameters

2.1. Basic functional parameters

The basic functional parameters of the MarS-T system are limited by the main (Chart no.1) and reserve (Chart no.2) parachute parameters as follows:

Chart no.1

The HOP 330 Main canopy tactical and technical parameters	
The BP-01T-1 (BP – 04T-1) Brake parachute area	1.47 m ² (1.33 m ²)
Canopy dimensions	10,00 x 3,49 m
Area	30.66 m ²
No. of cells	9
No. of suspension lines	20
Max. canopy weight	6.4 kg
Descent rate at the weight of 180 kg depending on the braking mode	4.0 – 6.5 m.s ⁻¹
Gliding ratio	1 : 3.5 – 4.5
Turn speed for 360° at the weight of 180 kg	3.0 – 6.0 s
Forward speed at the weight of 180 kg	max. 20 m.s ⁻¹
Maximum canopy load	227 kg
Speed range (immediate opening)	120 – 335 km.h ⁻¹
Altitude range	1200 – 4000 mT

Chart no. 2

The WP 370 Reserve canopy tactical and technical parameters	
The PV-055 Reserve pilot chute area	0.5 m ²
The V-113 canopy dimensions	9.9 x 3.47 m
Area	34.35 m ²
No. of cells	9
No. of suspension lines	30
Canopy weight	6,10 kg
Descent rate at the weight of 120 kg depending on the braking mode	2.5 – 6.5 m.s ⁻¹
Gliding ratio	1 : 2 – 3.5
Turn speed for 360° at the weight of 120 kg	6 – 15 s
Forward speed at the weight of 120kg	max. 15 m.s ⁻¹
Strength necessary for the pull of the reserve parachute release and cutaway	22.2 – 97.9 N
Maximum canopy load	227 kg
Maximum opening speed	324 km.h ⁻¹
Minimal altitude	500 mT at the speed of 125 km.h ⁻¹

3. Reliability Assuring Parameters

3.1. Warranty

Warranty period lasts 2 years 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. The warranty period begins with the shipment date of the system and is to be recorded in the parachute logbook.

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

- Damage of parachute system parts caused by their catching on gear
- Damage of parachute system parts that occurred during the use
- Violation of conditions of packing, storage and maintenance of the parachute system
- Missing parachute logbook or its improper records
- Failure to follow the instructions of this technical description
- Any unskilled handling with the parachute system

3.2. General Overhaul and Inspections

3.2.1. Parachute systems are accepted for general overhaul if a user evaluates further use of such a parachute system as not suitable. General overhaul is performed either directly by the manufacturer or by an organization or person authorized by the manufacturer.

3.3. Total Life

The total life is set to **20 years** in maximum; however technical condition of each system or its part is important. Therefore it is required to keep the following conditions:

3.3.1. Perform inspections and replace damaged parts in time and without any delay. Any replacement of parts must be recorded in the parachute system logbook.

3.3.2. Repair the parachute 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.

3.3.3. 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 overall service life (technical life).

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

3.3.5. In Main Risers VK-44/500/TC-1, the Main Risers must be sent to the manufacturer or person authorised by the manufacturer (parachute technician, senior parachute technician with valid authorization) 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.

3.3.6. Systems that do not comply with operational conditions must be put out of operation.

3.4. Service Life of the Container

The total life of the **MarS-T** tandem parachute container is set to **20 years** in maximum. It is, however, required to keep the following conditions:

- a) After the elapse of **5 years** the user is required to send the parachute for a technical inspection to the manufacturer or a senior parachute technician appointed by the manufacturer. Further technical inspection is to be carried out under the same conditions every 2 years in minimum.
- b) The prolongation of the life must be recorded into the parachute logbook by a responsible person.

4. Parts of the System

- 4.1. The PV – 055 Reserve pilot chute
- 4.2. The VV – 042 Free bag
- 4.3. The RP – 010 Reserve parachute steering loops
- 4.4. The BP – 01T – 1 (BP – 04T – 1) Brake parachute
- 4.5. The Z – 002T – 1 Brake parachute suspension attachment
- 4.6. The VV – 072 (VV – 072 – 1) Main deployment bag
- 4.7. The HOP-330 Main canopy
- 4.8. The VK – 44/500/TC – 1 Main Risers
- 4.9. The RP – 009 TC – 1 Main canopy steering loops
- 4.10. The RP – 011 TC – 1 Auxiliary equipment steering loops
- 4.11. The OP – 095T Parachute container
- 4.12. The PS – 052T Parachute harness
- 4.13. The U – 068T (U – 082T) Cutaway release
- 4.14. The U – 069 Reserve parachute release
- 4.15. The U – 070T Brake parachute release (primary)
- 4.16. The U – 073T Brake parachute release (secondary)
- 4.17. The RSL-TANDEM SS – 061T Release line
- 4.18. The PS – 053T – 1 Student harness
- 4.19. The PZ – 027 Logbook case
- 4.20. The BD – 02 Packing Mat
- 4.21. The G – 099 (G – 216) Bag
- 4.22. The NK – 02 (NK – 03) Hard aluminium knife

5. Description of the System Main Parts

5.1. The PV-055 Reserve pilot chute

It is designed to pull the free bag with the reserve canopy and lines out of the parachute container. It is made of PAD fabric and net. The bottom is reinforced with duralumin sheet. The chute PV-055 for AAD Tandem: m2, CYPRES, VIGIL is equipped with a coiled spring with the minimal ejection strength of 180 N.



5.2. The VV-042 Free bag

Is designed as a storage place for the stowed reserve canopy and lines. A connecting webbing is sewn on the top part of the bag securing the bag connection to the pilot chute. The bag is made of polyamide fabric and is reinforced with 20, 25 and 43-mm-wide webbings. The connecting webbing is 5.25 m long and 50 mm wide. The webbing secures the bag is pulled out even in case of a collapse or the pilot chute is caught up.



5.3. The RP-010 Reserve parachute steering loops

Are designed to steer the parachute. Are sewn from a 25-mm-wide strap. The reinforced loop part designated for steering line connection is equipped with an “O”-sized grommet. The steering line is threaded into this grommet.



5.4. The BP-01T – 1 (BP – 04T – 1) Brake parachute

Is designed to slow the tandem pair's fall and to open the parachute container and pull the container with stowed main canopy with lines out of the parachute container. The canopy dome is made of polyamide fabric with the area of 1.47 m² (1.33 m²). The parachute bottom is made of polyester mesh. The brake parachute is reinforced with webbings that at the bottom part, pass to a connecting Kevlar 40-mm-wide webbing, through which a sliding line that pulls down the brake parachute up to the disconnection of the brake parachute shackle placed on the main canopy container. A plastic coated line is connected to this binding. This line is designed to cover the pocket which is designed to stow the brake parachute suspension attachment, and parts of the connecting webbing of the brake parachute placed on the bottom part of the main parachute container. There is a flexible pin attached at the end of the Kevlar webbing for the closing of the main container and there is also an eye connecting the main canopy container.



5.5. The Z – 002T – 1 Brake parachute suspension attachment

It serves as a link between the brake parachute and tandem pilot's harness. Stainless metal parts are used for this harness.



5.6. The VV-072 (VV – 072 – 1) Main deployment bag

Is designed to store the folded main canopy and lines. A loop linking the connecting webbing of the pilot chute or brake parachute is sewn to the deployment bag top part. The deployment bag is made of cotton aeronautical fabric and is reinforced with 20, 25 and 44-mm-wide webbings.



5.7. The VK – 44/500/TC – 1 Risers

They link the main canopy suspension lines with the parachute harness to which they are attached with a three-ring system.



5.8. The RP-009 TC – 1 Main canopy steering loops

They are designed to steer the parachute. Steering lines are attached to them. Are sewn from a strap 20 mm wide. The reinforced loop part, designed for connection of the steering line, is equipped with an “O”-sized grommet, where the steering line is threaded.



5.9. The RP – 011 TC – 1 Auxiliary equipment steering loops

Are designed to steer the main canopy. Are sewn from a strap 20 mm wide.



5.10. The OP- 095T parachute container

It is designed to store the reserve parachute and main canopy as well as other parachute parts.

The trapezium-shaped container is made of polyamide fabric. After the back pad, main canopy container and the reserve parachute container are sewn together, they form one unit.

The main canopy container consists of a bottom, left side, right side and bottom flaps. The bottom flap is equipped with the closing line of the main canopy container. A covering flap is sewn to the upper flap. This covering flap is equipped, as well as the one on the reserve parachute, with a replaceable polycarbonate window that serves for checking the position of the main (reserve) parachute container closing pin.

On the bottom flap of the main parachute there is a pocket sewn where the brake parachute suspension attachment and brake parachute are stored.

The reserve parachute container consists of the following parts: The main container that passes to the left and right side flaps. Top inner and outside flaps are sewn on the top part of the main container. Bottom inside and outside flaps are sewn on the bottom part. The top outside flap has a replaceable polycarbonate window, which is a way of how to check the position of the reserve parachute release closing pin. The reserve parachute closing line is placed in the reserve parachute bottom.

Cutaway cables and secondary HP cutaway cables are tightened to the right shoulder pad. The reserve parachute cable hose is fastened to the left shoulder pad. This hose passes up to the left harness main strap.



5.11. The PS – 052T Parachute harness

It is designed to attach the main and reserve parachutes to the tandem pilot's body. It spreads the opening shock to the body and reduces it.

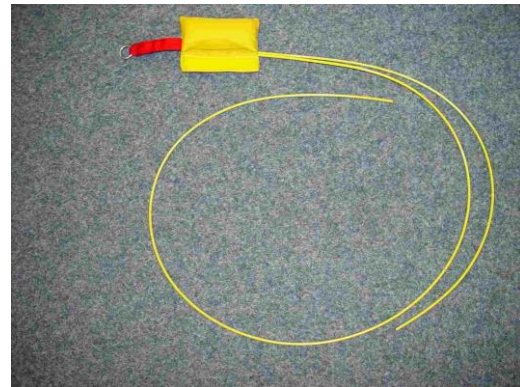


5.12. The U – 068 T (U – 082T) Cutaway release

Is designed to disconnect the HOP 330 main canopy from the harness.



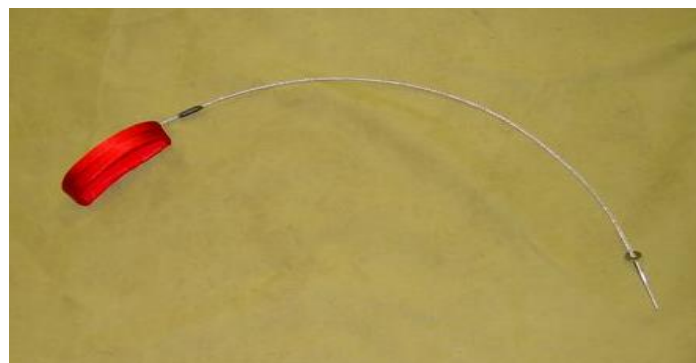
U – 068 T



U – 082 T

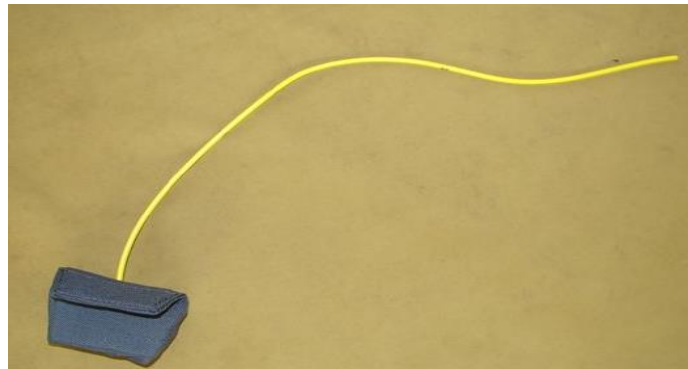
5.13. The U – 069 Reserve parachute release

Is designed to open the reserve parachute container.



5.14. The U – 070 T Brake parachute release (primary)

It is designed to release the brake parachute from the attachment of the brake parachute by the parachutist.



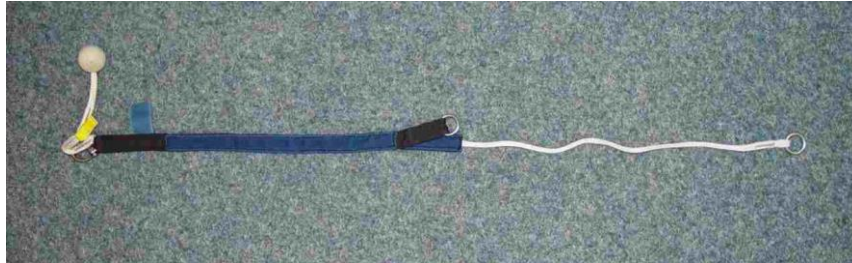
5.15. The U – 073T Brake parachute release (secondary)

It is designed for an emergency brake parachute release from the attachment of the brake parachute by the parachutist or for a student to train releases.



5.16. The RSL-TANDEM SS – 061T Release Line

The line is designed to open automatically the reserve parachute during the main canopy cutaway and/or to cut away the left harness riser in case the harness right riser tears and/or to open the reserve parachute container by the parachutist.



5.17. The PS – 053T – 1 Student Harness

The harness is designed to connect the student's body to the main canopy harness. It spreads the opening shock to the student's body and reduces the shock.



5.18. The PZ – 027 LogBook Case

The logbook is stored into this case to protect it from damage and dirt.

5.19. The BD-02 Packing Mat

It protects the container/harness during packing and also after the system is packed.



5.20. The G – 099 Bag (the G – 216 Bag)

It is used for the system placement, storage and transportation.



G-099



G-216

5.21. The NK – 02 (NK – 03) Hard Aluminium Knife

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



NK-02



NK-03

Chapter II

The MarS-T Tandem Parachute System Packing Instructions

1. General Guidelines

1.1. Basic Guidelines

- The parachute entirety and its technical conditions are to be checked before the parachute packing. Damaged parts are either replaced or repaired.
- During packing it is recommended not to expose the parachute to direct sunlight.
- The parachute is packed by one person.
- The MarS-T tandem parachute container is used as a set together with the WP 370 MarS canopies, or possibly with other canopy types based on the approval of the manufacturer and the Czech Test Office of the Czech Aviatric Club (of AeČR)
- Any adjustment of the parachute container is forbidden without the manufacturer consent.

1.2. The MarS-T Parachute System Inspection before its Use

The system parts are checked in the following order:

- | | |
|---|------------------------------|
| • Reserve pilot chute | PV – 055 |
| • Free bag | VV – 042 |
| • Reserve parachute steering loops | RP – 010 |
| • Brake parachute | BP – 01T – 1 (BP – 04T – 1) |
| • Brake parachute suspension attachment | Z – 002T – 1 |
| • Main deployment bag | VV – 072 (VV – 072 – 1) |
| • Main risers | VK – 44/500/TC – 1 |
| • Main canopy steering loops | RP – 009 TC – 1 |
| • Auxiliary equipment steering loops | RP – 011 TC – 1 |
| • Parachute container | OP – 095T |
| • Parachute harness | PS – 052T |
| • Cutaway release | U – 068T (U – 082T) |
| • Reserve parachute release | U – 069 |
| • Brake parachute release(primary) | U – 070T |
| • Brake parachute release (secondary) | U – 073T |
| • RSL-TANDEM Release line | SS – 061T |
| • Student Harness | PS – 053T – 1 |
| • Logbook case | PZ – 027 |
| • Packing mat | BD – 02 |
| • Bag | G – 099 (G – 216) |
| • Hard aluminium knife | NK – 02 (NK – 03) |

The above mentioned parts are checked if they are not damaged, sewing, fabric, webbings and straps are checked if they are intact.

A special attention is paid to metal parts:

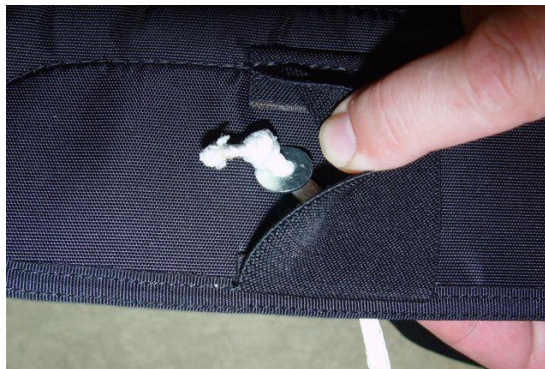
- Releases (grommets) cannot have any apparent fracture, fraying or any other damage
- The surface of the plastic-coated cutaway release cannot have the surface damaged; the ends must have the same lengths leading out of the cutaway cable with the length of 180 mm in minimum
 - the RSL-TANDEM Release line SS-061T and closing lines (of the main and reserve parachutes) cannot be damaged and must be in perfect entirety
 - Release cables must not be damaged and dirty.

1.3. Removal of Faults on the Container

- a) to remove faults replace damaged parts or
- b) repair parts that can be replaced during the time when the parachute is used, i.e.:
 - the U-070T brake parachute release (primary)
 - the U-073T brake parachute release (secondary)
 - the U-069 reserve parachute release
 - the U-068T (U – 082T) cutaway release
 - the RSL TANDEMSS – 061T release line

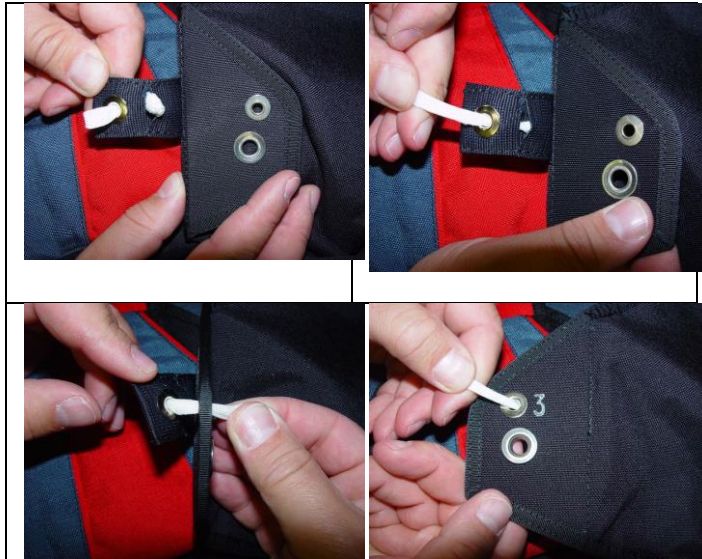
1.4. Sequence of the replacement (assembly) of parachute parts

- a) The use, assembly and disassembly of RSL are done according to the P – 003 – 99 Description.
- b) Replacement of the main canopy closing line BSH 80.



Note: To close the main canopy container, use only the original closing eye delivered by the manufacturer.

c) Replacement of the main canopy safety closing line BSH 45.



Note: To close the main canopy container, use only the original closing lines delivered by the manufacturer.

d) Connecting the brake parachute suspension attachment



e) Connection of the RSL TANDEMSS – 061T release line



f) Replacement of the reserve parachute closing line – see the P-004-05 Instructions to find the sequence of steps

g) Tightening of the canopy to the main canopy container



h) Tightening of the BP -01T- 1 (BP - 04T - 1) brake parachute to the main canopy container



1.5. Packing Tools

It is recommended to use the packing set for the packing of the MarS-T parachute system. The packing itself should be done on a suitable field packing pad.

2. The Reserve Parachute Packing

Packing the WP 370 reserve parachute into the VV-042 canopy container is described in details in the Technical Description of the WP 370 No. P-004-05.

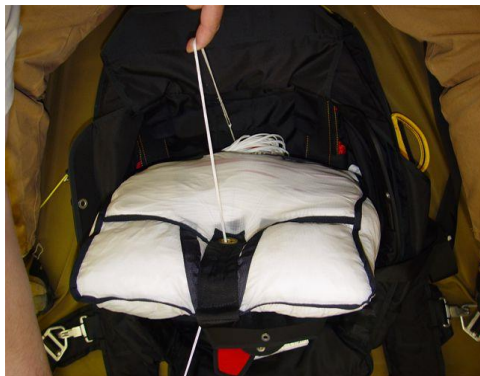
2.1. Closing of the reserve parachute container



Draw the packing line through the remaining part of the closing line eye and then pass both ends of the packing line through the sleeve in the reserve parachute deployment bag with a stowed reserve canopy.

Pass both ends of the packing line through the reserve parachute container flap marked no. 1 and secure the line eye with an auxiliary packing pin.

Fold the deployment bag connecting webbing into a V-shape while 1.5m remains unfolded. Close the flap of the reserve container marked no.2 and secure the line eye with an auxiliary packing pin.



Fold the remaining free bag connecting webbing along the closing flap edge no. 2, draw the packing line through the spring and the PV-055 pilot chute sleeve. Put the centre of the pilot chute base surface on the sleeve that closes the flaps no.2, press down the pilot chute and remove the redundant fabric of the pilot chute canopy from the space between the springs. Push the pilot chute spring as much as possible and after the packing pin is removed, pass the line eye through the pilot chute. Then secure it again with a packing pin (needle) on the pilot chute top. Stow the remaining fabric of the pilot chute canopy as usual and close the reserve container flap marked no. 3. Secure the closing eye with a packing pin.



Close the reserve container flap nos. 4 and 5 in the same way as the previous one. Then secure it again with a packing pin.

Put the RSL SS-061T release line ring on the U-069 reserve parachute release cable, close the no.6 flap of the reserve parachute container and put the U-069 reserve parachute release pin into the loop of the closing line. The end of the pin put below the covering webbing on the flap no. 6. Stow the excess connecting webbing into the loop in the top right part of the reserve parachute container flap marked no. 6.

Seal the reserve parachute in a usual manner.



Close the cover flap with a transparent window. Now the reserve parachute is ready for use.



3. Main Canopy Packing

The HOP 330 main canopy packing is described in details in The Technical Description for Packing and Use No. P-003-05 up to the stage of packing the canopy into the container including lines. Further packing into the MarS-T tandem system container depends on the type of the jump:

Put the deployment bag with a stowed canopy and suspension lines in rubber sleeves into the main canopy container in such a manner that the lines are put into the container bottom part, i.e. in the direction from the reserve parachute room. Stow the harness risers between the reserve parachute and cover flap. Thread the main canopy closing line (recommended length of 30+5mm) through the middle part of the closing flap. Then tighten side flaps of the main canopy (first the right one, then the left one). Thread the brake parachute connecting webbing pin through the closing line.







Then tighten main canopy side flaps (first the right, then the left one).

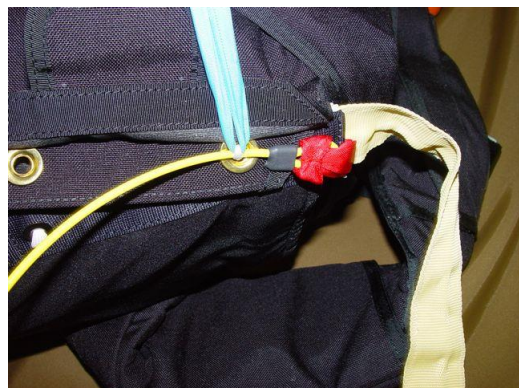




Thread the closing pin attached to the connecting webbing of the brake parachute through the closing line.



Use a three-ring system to secure the connecting webbing ring into the brake parachute suspension attachment.
Then decollapse the brake parachute by pulling the brake parachute attachment.





Fold the brake parachute according to attached pictures and store into the elastic pocket on the bottom flap of the main canopy container.

Complete parachute system packed for the jump ad 2.

- Container harness	PS-052T	1 piece
- Student Harness	PS-053T-1	1 piece
- Parachute container	OP-095T	1 piece
- Free bag	VV-042	1 piece
- The WP 370 reserve parachute	WP-370	1 piece
- Reserve parachute steering loops	RP-010	1 pair
- Reserve pilot chute	PV-055	1 piece
- Reserve parachute release	U-069	1 piece
- Cutaway release	U-068T (U-082T)	1 piece
- Release line RSL	SS-061T	1 piece
- Main deployment bag	VV-072 (VV-072-1)	1 piece
- Main canopy	HOP 330	1 piece
- Main canopy steering loops	RP-009 TC-1	1 pair
- Steering loops of the main canopy auxiliary equipment	RP-011 TC-1	1 pair
- Brake parachute	BP-01T-1 (BP-04T-1)	1 piece
- Brake parachute release(primary)	U-070T	1 piece
- Brake parachute release (secondary)	U-073T	1 piece

Chapter III

Container/Harness Use and Maintenance Instructions

1. Preparation of the Parachute before Jumps

Pack the Mars-T tandem parachute system container according to the packing instructions mentioned in Chapter II, paragraph 2 and 3. The container is delivered as a set with the HOP 330 main canopy and WP 370 reserve parachute.

Before you fix the harness on your body, loosen tightening buckles on the harness and also the buckles leading out of a cross strap.

Hold the parachute and put it on your body in such a manner that the hands are drawn under shoulder straps. Stand up in an upright position and buckle up the chest strap and leg straps. Tighten them so that the parachute attaches the body tightly. The harness size can be adjusted with buckles on the main strap. It is required to maintain the same length both on the left and right sides. Store the excess strap under the cover with a tape closing on the leg pad.

Before entering the plane check the following:

- Connection of the release
- Storing of the cutaway release webbing
- Entirety of cutaway release cables
- Proper connection of risers to the harness (three-ring system) and entirety of closing lines of the main and reserve parachutes
- Functioning of safety device
- Proper connection of the RSL TANDEM release line
- Proper insertion of the release pin of the reserve parachute container and the entirety of the closing loop
- Proper insertion of the main parachute container release pin and the entirety of the closing loop
- Proper closing of the area with the stowed brake parachute shackle with the brake parachute
- Proper closing and tightening of all the harness buckles
- Complete wearing of the parachute.

2. The MarS-T Parachute System Jumps

MarS-T tandem parachute system is intended to be used together with the brake parachute deployed from the hand of the parachutist and released with a manual release afterwards. Tandem parachute system function during jumps with brake parachutes, deployed from the hand and released with a manual release afterwards:

- After exit out of the aircraft, the tandem pilot/instructor takes the **stable belly position** and between the 3th and 5th seconds opens the brake parachute and continues in required time of the braking freefall. He pulls the brake parachute release at required altitude above the ground, which disconnects the brake parachute shackle lock. Then the brake parachute collapses and it opens the main canopy container with its resistance and at the same time it pulls the main container bag out of the main canopy container. Further functioning of the braking parachute causes that suspension lines of the main canopy are unlaced out of rubber sleeves. This opens the main canopy container and streaming air inflates the main canopy cells step by step. After the canopy's cells are inflated, the slider slips down in the direction from the canopy to the harness risers
- In this stage the tandem pilot checks proper functioning of the main canopy. If the parachute is fully functional, then the tandem pilot collapses the slider with sliding lines. Securing pins on both drawing/sliding lines are stuck out and secured on the slider back edge.
- Then the tandem pilot releases the parachute brakes and the parachute is transferred into the mode of full gliding. During the successive gliding the pilot prepares the auxiliary steering line handles in such a manner that the pilot could easily grasp them during the landing stage. At the same time the pilot opens the brake system covers of the steering lines (in order to improve the clearness of the steering line rings). After all these steps, the tandem pilot releases the side connecting straps of the Student harness, he/she moves the strap buckles to the furthest point from the Student harness and reconnects to the main canopy harness. Then the pilot/instructor steers the parachute with steering lines to a set destination.
- Before the landing stage begins (at the height of approx. 500mT), the tandem pilot holds a pair of auxiliary steering lines that secure a comfort landing even during windless weather. The tandem pilot performs the landing manoeuvre in such a way that from the altitude of 100mT no sudden changes of the landing direction are necessary. Due to the canopy's functions, it is not required to perform any manoeuvres in order to increase its forward speed. **It is strictly forbidden to do any drastic changes in the direction of the fall at altitudes lower than 50mT!** Violation of this restriction may cause a serious injury or death of the tandem pilot or the student.

Note: If the parachute did not deploy within 5 seconds after the exit out of an aircraft, the main canopy cannot be open sooner than after the elapse of 10 seconds from the brake parachute deployment because of reaching the freefall speed, which secures a safe spreading of the main canopy. **The main canopy cannot be open sooner due to its possible serious damage and/or possible injury and health damage of the tandem pilot and student!**

3. Inspection and Storage of the Parachute Container after Exit

After performed jumps, it is necessary to remove any dirt. Then place it into a portable bag so that the harness metal parts are not in direct contact with unpacked canopy, i.e. with buckled facing the bag sides.

4. Storage

Before the container is stored, its inspection must be carried out, if necessary its repair, replacement of damaged parts and airing. The container is stowed inside a portable bag either packed or unpacked.

Unfolded canopy is straightened according to its channels, the canopy is rolled from the trailing edge to the leading edge. Suspension lines are braided. The parachute container with harness is stored into the portable bag.

The parachute logbook is put into the portable bag pocket.

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 0.1m in minimum, the distance between the shelf and walls must be 0.5m in minimum and the distance to heating radiators 1m 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. It is forbidden to store any metal objects that do not belong to parachutes, nor any oils, acids, solvents or any other aggressive substances in premises where parachutes are stored.

The following climatic conditions must be fulfilled in storage premises:

- Daily temperature between +14 and +25 °C
- Daily relative humidity between 35 and 73 %
- Average relative humidity ... between 45 and 55 %

5. Transportation

On operational conditions, parachutes are transported in transportation bags.

Chapter IV

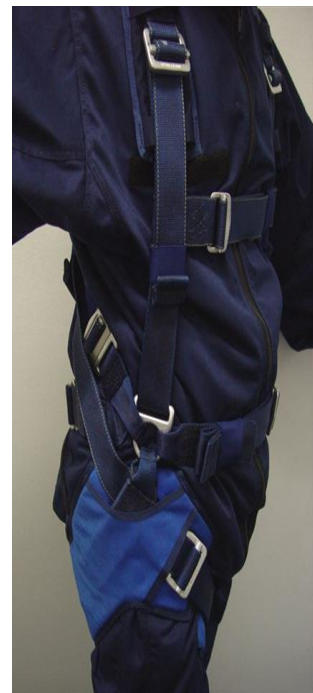
Student Harness Use and Maintenance Instructions

1. Preparation before Exit

The PS-053T-1 Student harness of the MarS-T tandem parachute system. The harness is delivered as a set of a parachute system. The harness is designed for the connection of a transported person to the PS-052T harness of the MarS-T tandem parachute system. Due to its range of possible adjustments, the harness enables to transport a wide range of body sizes.

Before the PS-053T-1 Student harness is fixed on a person, release tightening buckles on the harness and the buckles leading from cross straps and main strap buckles. Hold the harness and put it on the transported person in such a manner that the hands are drawn under shoulder straps. Buckle up the chest strap and leg straps. Tighten them so that the harness attaches the body firmly but does not strangle. The basic harness size can be adjusted with buckles on the main strap.

It is required to maintain the same length both on the left and right sides. Adjust the harness so that the loin and abdomen straps are placed about the waistline and the connecting carabiners come out tangentially from the shoulder area of a transported person. Store the remaining excess strap under protectors on leg pads or under rubber loops, which are directly on single straps (see the picture).



2. The PS- 053T-1 Student Harness Jumps

Before entering the plane check the following:

- all harness buckles are buckled up
- proper and symmetric gear fixation on the transported person
- correct setting of the connecting carabiners

Before exit out of an aircraft check the following:

- all harness buckles are buckled up
- proper and symmetric gear fixation on the transported person
- proper connection of the PS-053T-1 harness to the MarS-T PS-052T parachute system harness
- check of connection of PS-053T-1 to PS-052T with suspension carabiners and side connecting straps
- proper tightening of the harness buckles
- overall parachute fixation

3. Harness Inspection after Jumps

The PS-053T-1 Student harness inspection does not differ from the PS-052T parachute harness inspection.

4. Harness Storage

The PS-053T-1 Student Harness of the MarS-T parachute system is stored in the G-099 (G-216) transportation bag together with the parachute system.

5. Harness Transportation

The PS-053T-1 Student Harness of the MarS-T parachute system is transported in the G-099 (G-216) transportation bag together with the parachute system.

CHAPTER V

Technical Conditions for Repairs

1. Repairs permitted to the User.
2. Number of stitches with specific thread types.
3. Diagrams for patches.

Note: technical conditions for repairs are available at the manufacturer or a certified repair service as they are not a part of the “P-005-05 Instructions for Packing and Use”.

CHAPTER VI

Dirt Removal, Washing, Cleaning

1. Dirt (sand, soil, mud, etc.) on the parachute container and 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 and soaking of colours from the inside layer of material into the outside layer of material, in particular with light-colour containers. 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**.



2015

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

phone: +420 461 353 841; fax: +420 461 353 861

<http://www.marsjev.com>, e-mail: mars@marsjev.cz