# Technical Description, User's Manual and Packing Instructions for the HOP-330 Main Parachute

# **List of Changes**

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 The holder of the manual is obliged to record all obtained changes into the List of Changes and replace out-of-date sheets with valid sheets.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

			Issue				
Sequence		Nos. of Sheets	Date	Bulletin No.			
no. of	Chapter	with Referred Changes	Of New Sheets	With Issued Change	Date of Bulletin	Date of Execution Signature	
the Change					Approval		

# **WARNING!**

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

Never use this canopy unless

A - you have read and understood this warning label and you have not completed a required training for the use of this rigging,

or

- B unless you have read and understood all relevant flight manuals for tandem systems and packing instructions and you have performed at least 100 jumps with a tandem parachute,
- 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 (Chapter I, section 2.1 and 2.2 of this Description)

JOJO WINGS, s.r.o. Chvalínská 2109 CZ-413 01 Roudnice n.L. CZECH REPUBLIC

# **CONTENTS**

#### CHAPTER I.

# The HOP-330 Canopy Description

- 1. Specification
- 2. Tactical and Technical Parameters
- 3. Functions of the Canopy
- 4. Parts of the System
- 5. List of Replaceable Parts
- 6. Technical Description of Parts

#### CHAPTER II.

Parachute Packing Instructions

#### CHAPTER III.

#### **Instructions for the Use of the Parachute**

- 1. Preparation before Exits
- 2. Opening of the Parachute

#### CHAPTER IV.

# **Storage Instructions and Transportation**

- 1. Storage Conditions
- 2. Transportation

#### CHAPTER I.

#### Technical description of the HOP-330Main Canopy

#### 1. Specification

- 1.1. The aim of this Technical description is to provide users with only basic parameters, parts and guidelines for the use of the main canopy of the MarS-T tandem system/hereinafter HOP-330. The Technical description does not deal with training nor the HOP-330 use for jumps in pairs.
- 1.2. The HOP-330 canopy is designed to be used as the main canopy for jumps in pairs (tandem jumps) together with the MarS-T parachute system/ in containers with tandem arrangement and it can be used for jumps with brake parachute opened out of the parachutist's hand and then released with a manual release.

#### 2. Tactical and technical parameters

#### 2.1. Basic parameters

Brake parachute area BP – 01T	1,47 m <sup>2</sup>
Canopy dimensions	10,00 x 3,49 m
Area	30,66 m <sup>2</sup>
Number of cells / double chambers	9
Number of suspension lines	20
Maximum canopy weight	6,4 kg
Descent rate at the weight of 180 kg depending on the braking mode	4.0 - 6.5 m.s <sup>-1</sup>
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 <sup>-1</sup>

#### 2.2. The main canopy functional parameters

The parachute secures proper functioning at:

- The pilot and student weight including parachute and gear from 110kg and not exceeding 227 kg;
- Opening parachute speed between 120 and 335 km.h<sup>-1</sup> ( immediate opening );
- The altitudes between 1200 and 4000 mT;
- jumps with an open brake parachute opened out of the parachutist hand and then released with a manual release.

#### 2.3. Main canopy operational conditions:

- The parachute can be packed ready for jumps for 180 days in maximum;
- Its proper function is secured at temperatures between 30 and + 80° C at the relative air humidity corresponding with these temperatures;
- The connection of the tandem pair or parachutist's gear must be done in such a manner that it does not prevent the parachute from proper functioning.

#### 2.4. Reliability assuring parameters:

#### Warranty period

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 system 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 system

#### 2.5. General Overhaul and Inspections

- Parachute systems are accepted for general overhaul if a user representative evaluates further use of such a system as not suitable.
- General overhaul is performed either directly by the manufacturer or by an organization or person authorized by the manufacturer.
- Repairs and checks of the CYPRES 2 TANDEM device follows the regulations of Instructions for the use of the CYPRES 2 safety device.
- Repairs and checks of the MPAAD device follows the regulations of Instructions for the use of the MPAAD safety device.

#### 2.6. Total Life

The total life is set to 15 years in maximum, however technical condition of each system or its part is important. Therefore it is required to keep the following conditions:

- Perform inspections and replace damaged parts in time and without any delay. Any replacement of parts must be recorded in the parachute system logbook.
- Repair the system and its parts in time and without any delay, always according to this technical manual. Each and every repair must be recorded in the parachute logbook.
- After the elapse of 5 years of use carry out overall technical inspections (validity is for 2 years in maximum, result is to be recorded in the parachute logbook) till the end of its total service life (technical life).
- The evaluation of the technical condition of the system (technical inspection) is performed directly by the manufacturer or by an authorized senior parachute technician. This inspection is recorded and must be archived one year longer than the parachute life, in case of any doubt this report must be made available to the manufacturer.
- Systems that do not comply with conditions for the life prolongation must be put out of operation.

# 3. Parachute function during jumps with brake parachutes, deployed from the parachutist's hand and released with a manual release:

- 3.1. After the exit out of the aircraft, the tandem pilot/instructor takes the stable belly position and between the 3<sup>th</sup> and 5<sup>th</sup> seconds opens the brake parachute and continues in required time of the freefall.
  - 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!
- 3.2. The pilot pulls the primary brake parachute release at required altitude above the ground, which disconnects the three-ring system of the brake parachute suspension and release the brake parachute webbing. The closing pin, connected to the brake parachute connecting webbing, opens the container and the collapsed brake parachute, with its resistance, pulls the main canopy bag with the packed parachute out of the main canopy container.

Suspension lines of the parachute are unlaced out of rubber sleeves placed along the sides of the main canopy container. After all the lines are stretched, the main canopy container is opened, and the stowed main canopy is released out of the container and air begins to inflate 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.

- 3.4. 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 on the slider. Securing pins on both sliding lines are stuck out and secured on the slider back edge.
- 3.5. Then the tandem pilot unbrakes the parachute and transfers it into the mode of full gliding. During the successive gliding fall, the pilot prepares the auxiliary steering line handles in such a manner that the pilot could easily grasp them during landing. At the same time the pilot opens the brake system protectors of the steering lines (in order to improve the clearness of the steering line rings). Then the tandem pilot steers the parachute with main steering lines to a set place.
- 3.6. Before the landing stage begins (at the height of approx. 500mT), the tandem pilot takes 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 manner 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 do any manoeuvres in order to increase the forward speed. It is strictly forbidden to do any drastic changes in the fall direction at altitudes lower than 50mT! Violation of this restriction may cause a serious injury of the tandem pilot or student.

# 4. Main Canopy Parts

The canopy is used together with the following parts

4.1.	Brake parachute	BP - 01T	1 piece
4.2.	Brake parachute suspension attachment	Z - 002T	1 piece
4.3.	Deployment bag	VV-072	1 piece
4.4.	Main canopy	HOP – 330	1 piece
4.5.	Risers	VK - 44/500/T	1 piece
4.6.	Main canopy steering loops	$\check{R}P-009$	1 piece
4.7.	Auxiliary equipment steering loops	ŘP – 011	1 piece

#### 5. List of Replaceable Parts

With the exception of suspension lines and canopy, all the remaining parts can be replaced. The replacement of each part is to be recorded into the parachute logbook.

# 6. Technical Description of Parachute Parts

# 6.1. The BP-01T Brake parachute

The brake parachute is designed to slow down the tandem pair's fall and further to open the parachute container and pull the container with stowed main canopy and suspension lines out of the parachute container. The canopy dome is made of polyamide fabric with the area of  $1.47 \, \mathrm{m}^2$ . The parachute bottom is made of polyamide tulle (net). The brake parachute is reinforced with webbings that - at the bottom part - pass to a connecting Kevlar webbing, 40 mm wide, through which a sliding line, which pulls down the brake parachute up to the disconnection of the brake shackle on the main canopy container, goes. There is a pin attached at the end of the Kevlar webbing for closing the main container, and an eye connecting the main canopy container.



#### 6.2. The VV-072 Deployment bag

The deployment bag is designed as a storage place for the stowed main canopy and lines. An eye is sewn to the top part of the deployment bag to connect the pilot chute or brake parachute connecting webbing. The deployment bag is made of cotton aeronautical fabric and is reinforced with 20, 25 and 44-mm-wide webbings.



#### **6.3.** The canopy with lines

It is made of polyamide fabric with low permeability and has 9 cells, each of which consists of 2 chambers. The line eye strength is distributed to the canopy thanks to webbings, 13 and 20 mm wide. Remaining stressed canopy parts are strengthened with 13-mm-wide webbings, the trailing edge is strengthened with a 15-mm-wide webbing. At risers, the canopy is tied into two groups of lines on the front strap and into one group of line on the back strap. This line divides at the canopy.



# 6.4. Fast links

Four rapid links, placed at the end of suspension lines, and connect the canopy to the harness. The link minimal strength is guaranteed to 10kN.



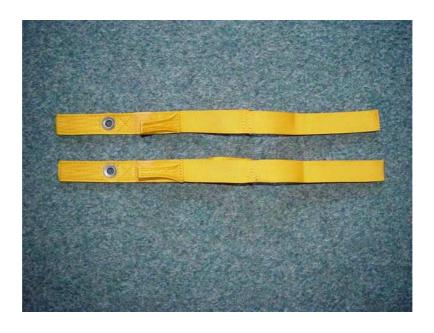
#### 6.5. Slider

The rectangular-shaped slider is made of polyamide fabric and its edge is reinforced with a 43-cm-wide webbing. Four stainless steel grommets, with inner diameter of 26 mm, are pressed in all four corners.



# 6.6. The ŘP-009 main canopy steering loops

The loops are designed to steer the parachute, with steering lines attached to the loops. The ŘP-009 steering loops are sewn from a 25-mm wide strap. An "0"-sized grommet is pressed near the reinforced part, which connects the steering line. The steering line is threaded through the grommet.



# CHAPTER II.

# **Packing Instructions**

**Periodical checks** (are performed at the system assembly and after every 50 jumps or after every 120 days – it depends which situation occurs first). The HOP 330 canopy is to be checked carefully before first jump, then perform inspections periodically in the above mentioned frequency. Such an inspection should be more thourough than the inspection carried out during packing. The canopy inspection is to be made in a clean and well-lightened place where the canopy can be extended. All damaged parts are to be replaced or repaired before the packing begins.

This check is applied only with the HOP main canopy. Instructions for the check of the harness and other parts are described in related documentation.

Be thourough and systematic. Begin with inspection at the top canopy part and continue downwards to the straps. The canopy is connected to the harness during such a check.

1. The Brake parachute attachment to the deployment bag. Check if the connecting webbing with an eye is well connected with the deployment bag. Also check the entireness of the brake parachute canopy fabric, the "kill-line" and reinforced webbings as well as the main deployment bag strengthened webbings and condition of eyes at the place where the brake parachute is attached and at the place where the main canopy is attached.



**2.** The deployment bag attachment to the main canopy. Check if the eye at the attachment point of the main canopy is intact and not damaged and if the main canopy is not damaged near the deployment bag attachment point. Then check a fast connection between the bag and main canopy.



- **3. Outside canopy fabric.** Stretch the canopy with outside canopy fabric out and check it. Concentrate on tears, stains and damaged seams. Check the fabric strength in such a way that you hold a part of the fabric in each hand and with not a very strong pull, try to tear the canopy.
- **4. Inside canopy fabric.** Turn the canopy inside out and stretch it in order to check the inside area. Concentrate on tears, stains and damaged seams. Check the fabric strength (see par. 2), then check the line anchoring.
- **5.** Check all the ribs from the leading edge up to the trailing edge while checking each chamber/cell inside. Pay special attention to the attachment point of lines and handles.
- **6.** Put the canopy carefully on one side and straighten all the ribs next to each other. Check if the lines in single groups have a correct length and if the differences in lengths of single groups correspond to required values for specific parachute types. Check the condition of stabilizers and slider stops.
- **7. Suspension lines** Check each line along the whole length if it is not damaged or worn out

Check if the connections at the place of division (an Y-shaped connection of 2 lines) are not frayed and if each line is fastened to a snap hook.

**8. Slider.** Check if the fabric is not used, rings are not damaged with any sharp edges and if they are not pulled out of the slider.

#### 9. Harness risers

Check if the union screw of snap hooks are fastened and if line protections are properly placed against slider strikes.

Steering lines should be placed and connected properly as shown in the next picture.



The auxiliary control loops are placed nearer the centre. The placement and connection is shown in the picture.



Check a proper assembly of the three-ring system. Such an inspection is to be done by an instructor.

- **10. Remaining system parts.** When checking the remaining parachute system parts, proceed according to instructions referred in the documentation delivered by the manufacturer.
- 11. Write down the inspection into the parachute logbook.

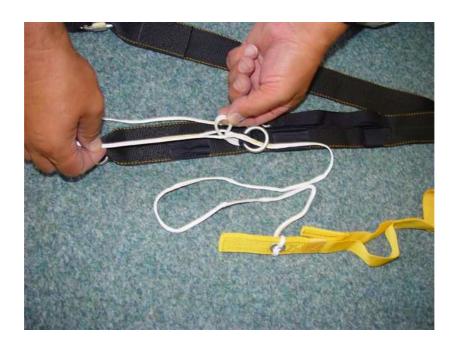
The canopy packing is performed by an authorized person (packer), who records such proper packing into the parachute logbook.

**Parachute packing** Fix the system harness to the packing pad edge and spread the canopy on it. If the lines are twisted, untwist them. Pull the slider down to the risers. Perform an inspection of all the important canopy parts.

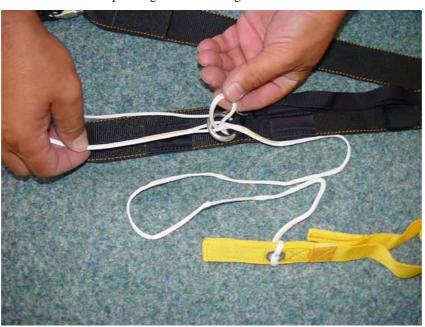
Then prepare the harness and container for the parachute packing.

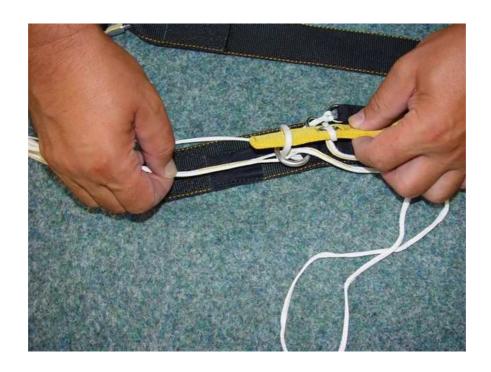
Insert the primary and secondary main canopy release into flexible hoses on the harness right and left sides, secure attachments with Velcro tapes. Prepare the packing line into the main canopy container closing loop.

Prepare the canopy for packing. Spread each part of the canopy in such a manner that suspension lines remain extended. Then smooth carefully front and back canopy parts. During the whole packing, single groups of suspension lines must remain stretched. Brake steering lines. The sequence is shown in pictures. Thread the brake loop through the ring in the steering line.



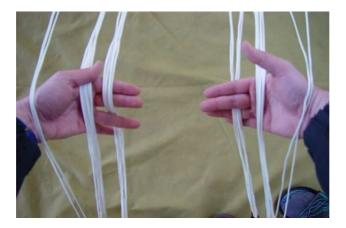
Thread the brake loop through the brake ring.







As the next step, check suspension lines in the direction from the harness straps up to the attachment of the suspension lines to the canopy. Insert your left hand fingers among single left straps and between the left steering line and straps. Repeat the same step with your right hand in such a manner that each line group and each steering line remain in the empty space between two fingers. Stand yourself between the groups of right and left straps and hold the lines as shown in the picture. Check that the straps are not twisted. Start lifting up the lines while they are sliding among your fingers until you reach the bottom canopy edge.



As soon as you reach the canopy edge, stretch out your hands as much as the slider allows. Shake with the canopy several times in order to align single canopy cells. If the canopy is aligned, there will be four clearly differentiated line groups (A, B, C, D) leading up to the stabilizers, where no lines cross one another nor remain twisted.

The aim is to get suspension lines aligned with single suspension rib trims.



After the lines are checked, connect suspension lines into one joint bundle. Now approach one side outside the lines, move the lines into one hand in such a manner that the left and right parachute sides are hanging at the same height. It is not necessary to hold each group of lines separately among your fingers because lines are already checked (and they are not twisted). The parachute should look like the one in the picture. All the lines are to be held stretched while the leading edge should be directed towards the harness all the time. The slider should touch stabilizer stops, which must be at the same height.



"Flake" single cells of the parachute leading edge. "Flake" the whole leading edge with one hand as shown in the picture – and begin from the end cell chamber that is nearest your legs. Stretch out each cell chamber and hold in your hands. After you stretch another one, put this cell chamber to the previous one, be careful so that you will not let any pulled out cell chambers slip before you hold fast all the cells in your hand.



Pull out and fold side stabilizers on each side. Set the centre (by moving your hand downwards between the two front rings – exactly one half of all the lines will be on one side, the other half will be on the other side). Let the middle cell hang and at the same time divide all the remaining cells on one side to the left and right sides.

Release stabilizers. With regards to the centrally positioned group including all the lines, pull out all the stabilization areas step by step until you create an irregular shape, which looks like flower petals from the top. Check that no lines around the slider stop on the stabilizer are twisted.

Find the A line group on one canopy side. If you hold the canopy in front of you, as you are doing at the moment, A lines form the front line group pass through the front slider grommets (the part nearest you).



Due to a lot of fabric between A and B line attachment points, it is easy to differentiate both line groups: look down inside the small S-shaped fold on the stabilizer and find "excess" fabric.

On one side, insert your hand between lines A and B (near the place where they pass through their own ring) and stretch out your hands to the sides. The cell chambers will be flaked properly on one side. Now repeat the same step for the second group of lines A and B and pull out the folds to the other side.



As you have pulled out the canopy between the line groups A and B, do now the same between the lines C and D. Pull out the fabric fold between both groups outside to both sides. If you look down among the stabilizer folds, the flaked folds should look aligned as shown in the

picture.



Now find the D group placed nearest the trailing edge. (Not the steering lines, these ones are attached directly at the trailing edge). Pull out the left steering lines to the left side (so that they do not get into the way). Proceed downwards along the stabilizer to the D line group and hold the D lines on the left side. You should be holding 5 lines. All the lines in your hand should pass through the same ring. If not, you are holding a wrong line.

Now when you are holding only the D lines, separate them from steering lines. On one side, grasp the whole D line group and pull it out carefully.

Fold the D line group with one move in such a manner that a fabric fold is between the lines C and D. Repeat the same step on the other side. Now hold the steering lines at the place where they are attached at the trailing edge, pull out all the trailing edge and release it directly downwards.



Fold the trailing edge into S-folds in a similar way such as stabilizers. Stretch the steering lines and auxiliary steering lines and turn the excess auxiliary steering lines twice around the forefinger and middle finger of the left or right hands, and put the resulting twist into a rubber sleeve placed on the fourth steering loop in the direction from the parachute beginning to the parachute centre.

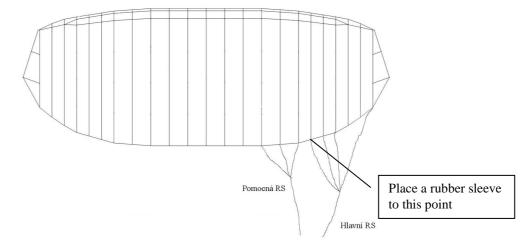
(see the canopy plan and the scheme of steering line connections)













The next step is to check if the stabilizers and their slider stops are in the proper position outside the suspension lines. If the stabilizer (or its slider stop) lies under the line, the canopy could possibly become damaged. The canopy stowed in this way should look like in the picture.



Now touch down and hold the trailing edge exactly in the centre, there is an sewn-in identification mark to find it easier.

Lift the trailing edge and put it to the slider stops and hold on this place with the same hand as you are holding the lines.



Roll the canopy trailing edge evenly around the stowed canopy and align the left and right sides in such a manner that the seams and trailing edge trims are placed against each other.



Connect both parts and roll them as shown in the picture.



Insert the rolled-up trailing edge part into the parachute centre (see the picture).



Put your free hand under the canopy carefully. Swing slightly the canopy so that the lines remain stretched and place it slowly on the pad in such a way that the canopy remains evenly divided into halves.



Move to the canopy side and place your hand under the canopy edge, where the slider is placed. Put your second hand on top a little bit further and create an S-fold. Be careful so that the slider remains on top touching stabilizers and do not let its move down along the lines.



Kneel on the canopy fold astride so that the warning label is placed between your knees. Turn the canopy rest over your knees towards your belly and span it all around with your left or right hands in such a manner that you could hold it together.



Hold the canopy with your free hand at the place where the main canopy container is connected and fold it back across the spanning hand towards the packing pad. Smooth the container and insert a left or right part of the first canopy fold into the container as shown in the picture. Then repeat this step on other part.



Start pulling the container over the canopy, first one side, then the other one. Keep the stowed canopy corner on top during the container pulling-over, then roll up the canopy into the container corner. If so, it will be easier to press the canopy into corners and the packed canopy will look neater. Only when the whole canopy is placed inside the container, release the pressure of your knees. The above described procedure helps to fully fill the container corners and keeps the centre pressed.



After the main canopy is stowed into the bag, smooth it inside. Pay attention to the canopy trailing edge central seam and the warning label that must be placed symmetrically in the centre. The even placement influences a symmetrical canopy opening.



Close the deployment bag with a suspension line bundle. Put the remaining suspension line length into rubber sleeves so that the length of single loop is between 5 and 7 cm.



After the suspension lines are put into rubber sleeves on the main canopy deployment bag, fold the remaining suspension lines with harness risers and prepare the parachute container for the storage of the bag with suspension lines and harness risers.

As described in harness manufacturer instructions, stow the closed bag into the main canopy container. Remaining steps of the main canopy packing is described in the P-005-05 container/harness technical description.

#### CHAPTER III.

#### Instructions for the Parachute Use

#### 1. Parachute preparation before exit

The parachute system can be packed for a freefall jump with the use of a brake parachute.

Before exit the parachutist is to check the position of the seal, sealing thread intactness, packing date together with the position of the reserve parachute release cable pin and the main canopy container closing pin in closing line loops of containers, then also the position of the reserve parachute release handle, primary and secondary brake parachute releases and the cutaway release and correct connection of the three-ring system of the brake parachute suspension attachment. The release cables must be straightthrough in flexible hoses. Then the pilot checks the setting of an automatic reserve parachute release (AAD).

#### 2. Parachute opening

#### Freefall jump with the use of the brake parachute

After the exit out of the aircraft, the tandem pilot takes the **stable belly position** and between the 3<sup>th</sup> and 5<sup>th</sup> seconds deploys the brake parachute and continues in required hold time of the freefall. If the brake parachute does not open until 5 seconds from the exit out of the aircraft, the main canopy cannot be open sooner than after the elapse of 10 seconds after the brake parachute deployment due to the freefall speed slow down to the speed that secures a safe main canopy deployment. **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!** 

At set height above the ground, the pilot pulls out the main canopy release, which disconnects the brake system lock. Then the brake parachute collapses and with the brake parachute's resistance, the main canopy container is opened and it pulls the deployment bag out of the main canopy container, suspension lines are unlaced from rubber sleeves, which opens the main canopy container and streaming air starts inflating the main canopy cells. The slider slips down from the direction of 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 on the slider. Securing pins on both sliding lines are stuck out and secured on the slider back edge. Then the tandem pilot unbrakes the parachute and transfers it into the mode of full gliding. During the successive gliding the pilot prepares the auxiliary steering line handles in such a way that the pilot could easily grasp them during landing. At the same time the pilot opens the brake system protectore of the steering lines (in order to improve the clearness of the steering line rings). Then the pilot/instructor steers the parachute with steering lines to a set landing destination.

Before the beginning of the landing stage (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 necessary 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 of the tandem pilot or Student.

#### CHAPTER IV.

## Storage and Transportation Instructions

# 1. Storage Conditions

The parachutes are stored in shelves in a dry, dark and well-aired room. The distance between the bottom shelf and the floor must be 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 aggresssive substances in premises where parachutes are stored.

The following climatic conditions must be fulfilled in storage premises:

Temperature between +14 and +25 °C
 Relative air humidity between 35 and 73 %
 Average annual relative humidity between 45 and 55 %

Parachutes are stored unpacked. If packed, they cannot be stored longer than 120 days after their packing.

## 2. Parachute Transportation

On operational conditions, parachutes are transported in portable bags. In other cases parachutes are transported unpacked in a portable bag in cardboard boxes, cases and transport chests or containers. Transportation cases must have smooth and clean inside surface. The cases and transportation containers must have an inside packing paper lining.