



Owner's Manual

RE-5L Emergency Parachute

Series 4, Part No. 50-216/06:00

Series 5, Part No. 50-216/07:00

© **SPEKON Sächsische Spezialkonfektion GmbH**
Nordstraße 40
D-02782 Seifhennersdorf
GERMANY

Tel: ++49 (0)3586 456-0
Fax: ++49 (0)3586 456-167
E-mail: info@spekon.com
[http:// www.spekon.com](http://www.spekon.com)

Warning

No responsibility will be accepted by the manufacturer for improper functioning of the emergency parachute if

- it is used without the previous approval of the manufacturer outside the conditions and operating limitations set in this manual;
- the instructions for packing and pre-flight procedures, the general instructions as well as the inspection cycle term have been failed to follow and keep.

Table of Contents	Page
1 Technical Description	4
1.1 Intended Use	4
1.2 Technical Specifications	4
1.3 Scope of Supply and Parts List	5
1.4 System Function	6
1.5 Description of the Parachute	6
1.5.1 Canopy with Suspension Lines	6
1.5.2 Pilot Chute	7
1.5.3 Container	7
1.5.4 Harness	8
1.5.5 Locking Device	8
2 Instructions for Packing and Pre-Flight Procedures	8
2.1 Packing Tools	8
2.2 Inspection	9
2.3 Packing Instructions	10
2.3.1 Pre-Packing Procedures	10
2.3.2 Flaking, Pleating and Folding the Canopy	10
2.3.3 Riser Placement	12
2.3.4 Stowing of Suspension Lines	12
2.3.5 Placing Canopy in Container	13
2.3.6 Placing Pilot Chute and Closing Container	13
2.3.7 Completion	14
2.4 Putting on and Fitting of the Harness	15
3 General Instructions	15
3.1 Parachute Steering	15
3.2 Landing	15
3.3 Storage and Maintenance	16
3.3.1 Storage	16
3.3.2 Maintenance	16
4 Maintenance and Repair	17
4.1 Inspection Cycle	17
4.2 Scope of Inspection	17
4.2.1 Canopy with Suspension Lines	17
4.2.2 Pilot Chute	17
4.2.3 Container and Harness	18
4.2.4 Locking Device	18
4.2.5 Miscellaneous	18
4.2.6 Repair	18
5 Illustration Section	19

1. Technical Description

1.1 Intended Use

The RE-5L parachute is a personnel parachute. It is an emergency parachute assembly which can be used by glider and airplane pilots as well as balloonists. Furthermore it can be employed by aircraft control and escort personnel.

1.2 Technical Specifications

The RE-5L is a back parachute.

Alternatively, it can either be activated manually by pulling the ripcord or automatically by pulling the static line.

If desired, the RE-5L will be equipped with a manual opening option only. In this case, the parachute will be delivered without the static line and the notes described in the parachute manual about how the parachute opens automatically do not apply.

The RE-5L emergency parachute meets the minimum standards set in TSO/JTSO-C 23d.

Technical Data

Maximum Deployment Speed for Maximum Operation Weight:		
a)	327 km/h (176 kts/203 mph)	for 115 kg (254 lbs)
b)	278 km/h (150 kts/172 mph)	for 122 kg (270 lbs)
Minimum Bail Out Altitude for Horizontal Flight and Immediate Activation:		
a)	for v = 60 - 110 km/h:	80 m
b)	for v = 110 - 327 km/h:	60 m
Minimum Opening Altitude for Vertical Fall:		125 m
Repack Cycle:		360 Days
Service Life:		15 Years
Temperature Range:		-40°C to +94°C (-40°F to 201°F)
Canopy Area:		41.5 m²
Number of Gores and Suspension Lines:		24
Dimensions of the Packed Parachute:		
Series 4		840x380x65 mm
Series 5		550x380x90 mm
Weight of the Packed Parachute:		
Series 4		7.5 kg
Series 5		7.2 kg
Force Needed to Open Locking Device:		7-15 daN
Turn Speed:		ca. 30 Degrees/s
Forward Speed:		1-2 m/s
Rate of Descent Near the Ground:		
for 77 kg Operation Weight		6.1 m/s
for 122 kg Operation Weight		7.3 m/s

Important

The manual is to impart important information to the certificated senior or master rigger concerning the right maintenance of the RE-5L parachute assembly. It should also provide the pilot with important information about operation and how to maintain operational readiness. Reading this manual does not replace the training of maintenance and inspection personnel. It should not enable the owner to pack the emergency parachute on his own without training.

Any activities listed in this manual can only be performed by persons especially trained or certificated for this purpose. Serious accidents may occur if you do not follow the manual or deviate from its instructions.

If any questions arise please do not hesitate to contact the manufacturer. We will be pleased to give you expert information.

Any parachutes delivered by us are produced and checked in accordance with the company's quality management system.

Each parachute has an authorized release certificate (EASA Form One).

1.3 Scope of Supply and Schedule of Part Numbers

Component Part	Part No.	Comments
Canopy	50-186/10:00	
Pilot Chute	50-144/16:00	
Container		
Series 4	50-290/11:00	
Series 5	50-290/10:00	
Harness		
Series 4	50-291/06:00	
Series 5	50-291/07:00	
Locking Device		
Static Line	50-12/01:00	on Customer's Request
Ripcord	500-50-76	
Carrying Bag	50-138/08:00	on Customer's Request
Man./Auto. Locking Loop (2x)	50-164/02:00	Spare Part
Man. Locking Loop	50-164/03:00	Spare Part
Parachute Manual		
Log Book		

1.4 System Function

Depending on how the parachute is packed, the pack can be activated

- manually by pulling the ripcord handle,
- automatically by pulling the static line which is fastened to the aircraft with a snap hook.

The pilot chute jumps out of the container by means of its spring force and will then be caught by the airstream after you have opened the lock formed by loop and pin on the pack.

The pilot chute deploys and pulls the single folds of the placed canopy out of the container one after another. The canopy inflates and the descent begins.

1.5 Description of the Parachute

1.5.1 Canopy with Suspension Lines

The round canopy (fig. 1) is designed as a conical canopy. It consists of 24 gores and is made of nylon fabric (type 6,6) with differing air permeability having a lower air permeability in the apex and skirt area. The canopy area is 41.5 m².

The skirt area of gores No. 24, 1 and 2 is constructed with a drive vent which provides forward speed and turn control of the canopy.

The upper and lower peripheral edge of the canopy (apex and skirt) is reinforced by means of tapes. Each third gore seam is reinforced by a longitudinal tape. Continuous, circular reinforcements are sewn onto the canopy between panels Nos. 2 and 3, 3 and 4 as well as 4 and 5.

Air pockets are sewn onto gores Nos. 9 to 17 on the canopy's skirt to support the deployment process.

Two skirt retainers are sewn onto the skirt on the right-hand and left-hand side next to the suspension line No. 12. Their task is to temporarily enclose the skirt area when the canopy is stretching and to counteract irregularities when the canopy is deploying.

The vent has a diameter of approx. 550 mm and is guyed with 6 vent lines.

The suspension lines connect the canopy to the harness. The free length of the suspension lines measured from the canopy skirt to the connector links on the risers is 4.75 m; the free length of suspension lines Nos. 1 and 24 is 5.40 m. Suspension lines Nos. 2 and 23 are color-coded on the connector links and serve as control lines at the same time.

1.5.2 Pilot Chute

The pilot chute consists of an eight-part pilot chute canopy, the outer and inner cone, the conical spring as well as the bridle.

A nylon fabric (F 111) with low air permeability is used for the pilot chute canopy. The fabric of the cone parts has high air permeability. Pilot chute canopy and cone parts are reinforced by means of tape.

The conical spring is located inside the inner cone.

The apex area of the pilot chute canopy is reinforced to cover the spring and equipped with two grommets to secure the pilot chute inside the container.

The longitudinal tapes of the outer cone form a loop on their lower end in which the bridle is knotted into. It connects the pilot chute to the vent lines of the parachute canopy and has a length of approx. 750 mm when knotted.

1.5.3 Container

The container is designed flexibly. It is integral with the harness. The container base of series 4 is approx. 840 x 380 mm; the base of series 5 is 550 x 380 mm. It is made of para-pack nylon duck fabric.

The key component parts of the container are:

- two main cuts with four container flaps;
- two rubber band attachment tapes for the inboard and outboard rubber bands to stow the suspension lines on the base of the container;
- one suspension line cover with a sewn-in positioning ring which holds the pilot chute in place;
- four positioning flaps to retain the single folds of the inserted canopy in place;
- one base with reinforcing metal plate;
- two side flaps with a guiding tunnel for the main lift web;
- manual and manual/automatic locking loop;
- back pad (with integrated seat pad in series 4);
- yoke;
- one protective ripcord housing for the ripcord;
- one static line pocket with padded protective cover flap for the manual/automatic model.

The log book is stowed inside a pocket which can be found on the inner side of the back pad.

The back pad consists of a special textile fabric that is highly breathable by means of a special combination of material and bonding. It therefore avoids a build-up of heat and leads off sweat from the body.

1.5.4 Harness

The harness connects the canopy to the user. If fitted correctly, it evenly distributes the opening shock all over the body.

The key component parts of the harness are:

- main lift web;
- back strap;
- leg strap;
- two-piece chest strap;
- chest and leg pads;
- harness fasteners;
- ripcord pocket guiding tunnel with ripcord pocket.

The connection between the risers of both main lift webs and the suspension lines is realized via the connector links. The main lift webs are designed as a sling seat on their lower parts. The main lift webs are held in place on the container by the side flaps and can be adjusted by shoulder adapters.

The back strap is integral with the container. Their ends are sewn up with the main lift web whereas the connection to the main lift web is realized by means of an adjustable side strap in the RE-5L series 5.

Fastening and adjustment points can be found on the chest strap as well as on the leg straps. Quick release buckles (on customer's request also snap hooks) are used as fastening devices. The ripcord handle pocket can be found on the left main lift web. It is sewn onto a guiding tunnel, which can slide along the main lift web.

1.5.5 Locking Device

If desired, each of the RE-5L series can be delivered with manual opening option solely as well as with the manual/automatic opening option.

The locking device of the manual model consists solely of the ripcord; the manual/automatic opening option of ripcord and static line.

The static line has on its upper end a snap hook which can be hooked to the aircraft and a loop-on cable knotted to it on the lower end.

2 Instructions for Packing and Pre-flight Procedures

2.1 Packing Tools

The parachute can be packed on a packing table or a field pack mat.

For packing, you need two temporary packing pins, two pull up cords and three shot bags.

2.2 Inspection

The emergency parachute must be thoroughly inspected before each packing.

Lay the entire parachute assembly down on the packing area and stretch it from the harness to the canopy apex. Arrange entangled and twisted parts in proper order. Check the right position by lifting up suspension lines Nos. 1 and 24 on the skirt and move along these lines towards the D-rings with bar. The suspension lines are in the right position when both suspension lines are free of twists and lying along the inside edge of the upper risers (fig. 2). The inside area of the container base must face upwards in the process.

Recommended order during the inspection:

- Log book
- Parts of the locking device
- Canopy with suspension lines and pilot chute
- Container with harness, quick release buckles

Check particularly during the inspection:

- Log book for proper entries
- Textile component parts for tears, dirty marks, torn seams or other damage
- Metallic component parts for proper functioning, breaks, cracks or rust
- Parts of the locking device
Ripcord handle for cracks, wire cables for torn strands, locking pins for deformations; solder points, grommets and locking loops for being in perfect condition
- Connection between pilot chute, bridle and canopy for perfect condition on the attachment points; secured to the pilot chute with hand stitches
- Quick release buckles for proper functioning — buckle tongue engages perfectly with the locking part of the buckle and the two rotary levers snap back into position; protective metal cover flap can be moved and all rivets and balls are still in place

Any damage which has been discovered during the inspection must be repaired.

The at this time valid "Repair Instructions for Emergency and Personnel Parachutes" (editor: SPEKON Sächsische Spezialkonfektion GmbH) must be followed if any repairs need to be done.

2.3 Packing Instructions

2.3.1 Pre-packing Procedures

Attach the canopy's apex to the end of the packing table by using a cord loop. Adjust the main lift webs to size 5. Fold the positioning flaps and the suspension lines cover flap past the center of the container.

Further pre-packing procedures differ depending on the chosen opening option.

- manual/automatic:

Open the static line pocket cover on the top flap and thread the loop-on cable, which is fastened to the static line, through the metal guide ring on the upper edge of the container. Continue to thread it through the guiding slot formed by two tapes into the inside of the container (fig. 3).

Invert the container: the back pad is facing upwards. Fold back the back pad.

Thread one locking loop man./auto. (50-164/02:00) through each of the two grommets on the container base.

Put one ripcord locking pin through each of these two loops. Secure it with adhesive tape to prevent it from being pulled out accidentally (fig. 4). Close the back pad again and turn the container into its starting position.

Then stow the static line in the static line pocket.

Open the protective cover flap lowered over the two rows of inboard and outboard rubber bands on the top flap and stow the static line in the inboard and outboard rubber bands making "S"-folds (3-4 folds per rubber). The remaining free length is approx. 20 cm (fig. 5). Close the cover flap and put the snap hook under the rubber tape located on the top side of the cover flap (fig. 6).

- manual:

There is no need for placing the loop-on cable in the container if the parachute is only packed for the manual release.

Move one end of the locking loop man. (50-164/03:00) through each of the two grommets on the container base and secure it with adhesive tape to prevent it from being pulled out accidentally (fig. 7). Close the back pad again and turn the container to its starting position.

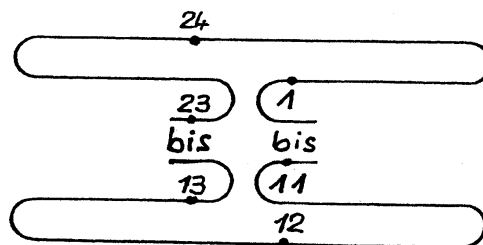
2.3.2 Flaking, Pleating and Folding the Canopy

Tighten the whole system consisting of canopy, suspension lines and container and check the suspension lines again.

Lift up the left-hand riser pair on the D-rings with bar and take suspension line No. 13, which can be found at the inner side of the left-hand front riser, and pull this line down to the left. Walk towards the skirt while tracing this suspension line with the left hand and the remaining suspension lines of the left-hand riser pair with the right hand.

There, hold suspension line No. 13 out to the left and place the left-hand half of the canopy upon the right-hand half. Slide along the skirt from suspension line No. 13 to suspension line No. 14 with the right hand. Extend the right hand up to the right; the whole gore is tautened in the process (fig. 8). Then move the right hand quickly to the left and take suspension line No. 14 with the left hand (fig. 9). All gores are flaked in this way. Deposit the flaked canopy on the left-hand side of the packing table (fig. 10).

Now, pleat the canopy again gore by gore. The sketch below depicts the correct pleating pattern:



This scheme shows the view on the skirt of the pleated canopy as seen from the container's direction. The points marked with numbers represent the respective suspension lines.

Order the skirt and the suspension lines while pleating the single gores (fig. 11).

Start pleating the single gores by placing gore No. 12 onto the packing surface and continue pleating until gore No. 1 is placed on top.

After placing gore No. 1 on top, weight down the right-hand half of the canopy with two shot bags and place the left-hand half of the canopy upon the right-hand half that has been already ordered. Fold back and order the left-hand half gore by gore in the same way as you previously did with the right-hand half such that gore No. 24 is lying next to gore No. 1 in the end.

Ensure that the air pockets located on the skirt of gores Nos. 9 to 17 are put tautly to the outside direction when pleating the single gores.

Take the left-hand and right-hand suspension line bunches below the skirt and move them slightly from side to side such that the gore seams are brought closely together inside the canopy. Finally, check the lines again. The suspension lines Nos. 24 and 1 have to be on top (fig. 12).

After the suspension lines have been checked, place gore No. 24 onto the right half of the canopy. Then halve the gores with a drive vent (gore 24, 1 and 2) by long folding them past center of the canopy. Now, place gore No. 23 onto the right-hand canopy half over the halved drive gores to cover the drive vent. Then place the skirt retainers by turning up these fabric bands towards the canopy apex (fig. 13). Starting with the right half of the canopy, fold the lower lateral bands at 45 degrees so that they lie parallel to the suspension lines (fig. 14).

After folding the lower lateral bands on the left (fig. 15), divide the canopy in thirds by long folding first the right-hand and then the left-hand half of the canopy past center (fig. 16). Use shot bags to hold the folded canopy in place. Remove the cord loop from the canopy apex.

2.3.3 Riser Placement

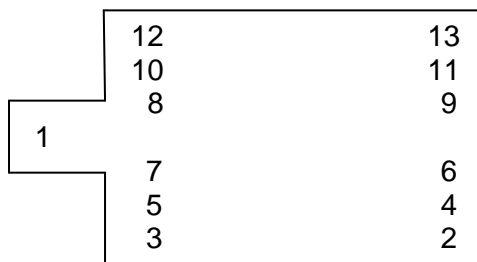
Lay the risers in the container in such a way that the D-rings with bar lie in pairs next to the free ends of the securing straps which are sewn onto the container base. As fig. 17 shows, thread the free ends of the securing straps from the base up through the D-rings, which lie in pairs on top of each other, between the straight side and the bar. Move it around the upper D-ring bar and then on the side of the bar farthest from the suspension lines through the lower ring from the top down. Next thread it upwards between the bar and the round side of the lower D-ring. Finally move it outwards between both D-rings and tighten it towards the suspension lines' direction.

A strong clamping effect arises between securing straps and D-rings when the pack is closed. Owing to this fixture, the risers cannot be pulled out of the pack by accident.

2.3.4 Stowing of Suspension Lines

Stow the suspension lines in the inboard and outboard rubber bands which are fixed to the base of the pack tray.

Stow the suspension lines according to the following scheme:



Normally, you do not need band No. 13.

Unite the two suspension line bunches from the riser's direction and stow them in the central band (1) in the pack tray according to the scheme. Take the suspension line bunch from this point on to the left-hand side of the pack tray and stow it in the outboard rubber band in the lower corner (2). Continue to stow the suspension lines following the given scheme (fig. 18). Then cover the stowed suspension lines with the protective cover held in place by hook and loop fasteners (fig. 19).

2.3.5 Placing Canopy in Container

Make the first canopy fold along the right-hand side of the container in such a way that the canopy skirt ends at the upper edge of the container. In the process, tilt the skirt at 180 degrees towards the container base.

Lay the folded canopy back to the top along the left-hand side of the container ensuring to lay a sufficiently big curve such that the lower part is filled out completely. Secure the part of the canopy that has already been placed on both sides by means of the two inner positioning flaps (fig. 20).

Then make a fold with the remaining part of the canopy downwards along the left-hand side and back to the top along the right-hand side. Lay a smaller curve at the lower turn: both folds lie next to each other in the lower area of the container. Secure the remaining part of the canopy on both sides by means of the two outer positioning flaps. Fold the apex of the canopy past center when packing the RE-5L series 4 (fig. 21).

Pay attention to the following when packing the RE-5L series 5:

You cannot lay both folds next to each other in the lower part because the container is shortened. Lay them on top of each other forming a small W at the lower edge of the container while making the first fold (fig. 22).

After placing the canopy in the container, its remaining free length is approx. 50 cm. Halve the apex area by folding it approx. in the middle (fig. 23) and lay it subsequently parallel with the upper edge of the container (fig. 24).

2.3.6 Placing Pilot Chute and Closing Container

Thread one pull up cord through each free end of the locking loops.

RE-5L Series 4:

Lay the bottom flap over the placed canopy and close it with three press studs on each side. The press stud sockets are located on the slim side flaps. Thread both locking loops through the grommets by using the pull up cords and secure each one with a temporary packing pin.

Close the top flap in the same way. Lay it towards the center of the container and close it with three press studs on each side. In order to shorten the bridle, S-fold the lower bridle part and put it under the top flap. Remove the upper temporary packing pin and thread the locking loop through the grommet of the top flap; secure again with the temporary packing pin (fig. 25).

RE-5L Series 5:

Lay the bottom flap over the placed canopy. Thread both locking loops through the grommets by using the pull up cords and secure each with one temporary packing pin. In order to shorten the bridle, S-fold the lower bridle part and lay it onto the folds. Cover it with the top flap. Remove the upper temporary packing pin and thread the locking loop through the grommet of the top flap; secure again with the temporary packing pin.

Since the container is shorter, both container flaps are not closed with press studs in the series 5.

Lead the bridle out of the container on the right side between bottom and top flap. Place the bottom ring of the pilot chute conical spring on the sewn-in guide ring located in the center of the container. In the process, ensure to align the two grommets on the pilot chute with the two grommets on the container base. Tuck the canopy fabric of the pilot chute under the top ring of the released conical spring. Tuck the fabric of the inner cone between two coils approximately in the middle of the spring when compressing the pilot chute. Thread the two locking loops through the grommets by using the pull up cords and secure them with the temporary packing pins (fig. 26).

In the process, hold the pilot chute in such a way that the spring coils cannot push aside and the canopy fabric cannot slip out.

After that, lay the left side flap first and then the right side flap over the pilot chute and secure them with the temporary packing pins (fig. 27). In the process, also mate the hook and loop fasteners of the RE-5L series 5 model. They can be found on the upper edge of both side flaps and the top flap respectively.

2.3.7 Completion

Secure the ripcord handle in the ripcord pocket on the harness and move the ripcord cable through the protective housing. Put the locking pins of the ripcord through the two locking loops. Remove the temporary packing pins and pull up cords; seal the lower locking pin (fig. 28). Close the cover flap.

Close the external, padded flap (yoke), located above the static line pocket, with hook and loop fastener and press studs.

Afterwards, invert the pack, open the back pad and remove the adhesive tape used to secure the loop-on cable and the man. locking pin respectively. Seal the lower locking pin when packing the man./auto. opening option (fig. 29). Take the log book out of its pocket located on the upper edge of the opened back pad, fill in all data and put it back. Close the back pad.

Fig. 30 shows the front of the packed RE-5L emergency parachute assembly series 5 ready for use

Fig. 31 shows the back of the packed RE-5L emergency parachute assembly series 5 ready for use.

Note:

If you want to open the emergency parachute automatically, un-mate the hook and loop fastener of the external, padded flap and pull the snap hook out of the rubber tape. Depending on the position of the fixing point in the aircraft, pull out the static line on the left-hand or right-hand side to the required length. Close the flap again.

Important:

- Use red seal thread (tensile strength 20-30N) and a lead seal for sealing the thread.
- Be sure to remove the adhesive tape in any case to avoid an increase of the opening force.
- Record the repack and inspection in the parachute log book.

2.4 Putting on and Fitting of the Harness

In connection with the pack, the harness is designed in such a way that it enables you to sit comfortably.

Put the harness on such that it doesn't hinder you or feels too tight. Make sure that the straps lie correctly in the guiding tunnels before putting on the harness. Then put the arms through the gap left by the main lift web and the back strap, push the sling seat downwards and close the leg straps and the chest strap by means of the quick release buckles. Adjust the main lift web on the adapters to custom fit the harness. In the process, ensure that the straps have the same length (marked with numbers). Leg straps and chest strap can be adjusted on the quick release buckles.

When the RE-5L series 5 is used, the pack can be held in place additionally by pulling the side straps.

3 General Instructions

3.1 Parachute Steering

The RE-5L emergency parachute can be steered by pulling down suspension line No. 2 (right-hand side) if you want to turn right and suspension line No. 23 (left-hand side) if you want to turn left. The suspension lines are indicated with colors.

If you pull both suspension lines at the same time, the forward speed will slow down and the parachute will slide backwards respectively.

3.2 Landing

Pay particularly attention to the following when landing:

- Do not turn when you are landing.
- Do not pull both control lines or rear risers at the same time.
- Steer the canopy in such a way that you're facing into the wind at 50 m above ground level while landing when the wind speed is higher than 3m/s.

3.3 Storage and Maintenance

Maintenance, repairs as well as packing of the emergency parachute assembly may only be done by personnel certified in the country of the parachute owner. The owner is obliged to inform himself about respective laws and regulations. The SPEKON GmbH company does only provide minimum standards in this manual.

3.3.1 Storage

The parachutes must be stored in dry, dust reduced rooms which can be ventilated well and in which they are not exposed to direct sunlight. The temperature must be constantly between 10°C and 25°C (50°F - 77°F) and the relative humidity between 30% and 70% in these rooms.

Store the parachutes in cabinets or shelves taking the following minimum distances into account:

- | | |
|------------------------|--------|
| - from the floor | 25 cm |
| - from radiators | 100 cm |
| - from external walls | 100 cm |
| - from partition walls | 50 cm |

Store the parachute documents together with the parachutes.

Do not store substances in the parachute store whose composition may weaken and destroy the parachute materials (e.g. greases, acids, oils or other chemicals). Keep the store free of vermin.

3.3.2 Maintenance

All parachutes have to be inspected and aired periodically (at least once a year). Air at least 6 hours. Hang the canopy up functionally by using a cord loop laid around the apex to air it: the canopy is free along its entire length and can be repeatedly shaken out.

If you do not need the parachute, keep it packed for extended storage. For this purpose, stretch out the canopy and fold it into thirds according to the packing instructions. Form a tail out of the suspension lines by daisy chain them and knot a suspension line piece around the tail. Roll the parachute up when it is prepared in this way.

Put the harness in the carrying bag in such a way that the harness hardware does not touch the canopy and the spring type pilot chute lies freely without pretension.

If the parachute has been dirtied owing to contaminated water, boggy or muddy ground, rinse it while changing the water several times. Then air it to dry without twisting the canopy in the process. The same applies if the canopy has got in contact with sea water.

Remove oil or grease soiling carefully with mild detergent and rinse with water.

4 Maintenance and Repair

Emergency parachutes must be inspected periodically and if necessarily are repaired. The inspection can be carried out by the manufacturer, a certified aeronautical engineering company or a parachute rigger certified for that.

4.1 Inspection Cycle

The periodic inspection has to be done after twelve months at the latest. A comprehensive inspection has to be carried out after an emergency bailout, big repairs and changes as well as on the instruction of the aviation authority.

4.2 Scope of Inspection

4.2.1 Canopy with Suspension Lines

- Visually inspect the gores and panels for yarn slippage; tears, holes and friction burns; stains and other damage.
- Visually inspect all tapes for holes, friction burns, tears and other damage.
- Visually inspect the seams for thread breakage, missing or loose stitches and friction burns.
- Visually inspect the suspension lines for chafing and fraying; friction burns and torn threads; knots or loops and other damage.
- Visually inspect the zig-zag stitching.

4.2.2 Pilot Chute

- Visually inspect the pilot chute canopy for fabric damage like shifted threads, holes and friction burns.
- Visually inspect the reinforcement tapes and bridle for damage.
- Check the attachment points of pilot chute, bridle and canopy.
- Visually inspect the stitching.
- Check the conical spring for spring force, deformation and tight press sleeves.
- Visually inspect the hand stitches on the lower (small) ring of the conical spring.
- Check that grommets are not damaged and not loose.

4.2.3 Container and Harness

- Visually inspect the fabric, pads and ripcord pocket as well as tapes and webbing for tears and holes; chafing and fraying; stains and other damage.
- Visually inspect all stitching for missing or loose stitches, thread breakage and general condition.
- Check that the inboard and outboard rubber bands for stowing the suspension lines and the static line respectively are complete and not damaged.
- Check the hook and loop fastener for proper functioning.
- Visually inspect the locking loops for damage.
- Check all hardware for corrosion.
- Check the protective ripcord housing for dents and damage.
- Check that the grommets are not loose and not deformed.
- Check the press studs and quick release buckles for proper functioning.

4.2.4 Locking Device

- Visually inspect the cables for loose or broken strands and corrosion.
- Visually inspect the locking pins for deformation, proper fit, corrosion and condition of the soldering.
- Visually inspect the ripcord handle for deformations, cracks or breaks.
- Check the static line for damage and condition of the seams. Check the attachment points of snap hook, line and loop-on cable. Check the snap hook for proper functioning, damage and corrosion.

Check the locking device for proper functioning using a packed parachute.
The pull force has to be at least 7 daN and may not exceed 15 daN.

4.2.5 Miscellaneous

- Check that all measures done are completely documented.
- Check that the parachute is marked and this marking corresponds with the documentation.

The periodic inspection has to be recorded in the log book. In addition, write an inspection report.

Major repairs and changes have to be recorded in the EASA Form One form. This applies also for carrying out Airworthiness Directives (AD) if a test certificate is demanded by this AD.

4.2.6 Repair

The at this time valid "Repair Instructions for Emergency and Personnel Parachutes" (editor: SPEKON Sächsische Spezialkonfektion GmbH) are obligatory if any repairs of the RE-5L emergency parachute have to be done.

5 Figure Section

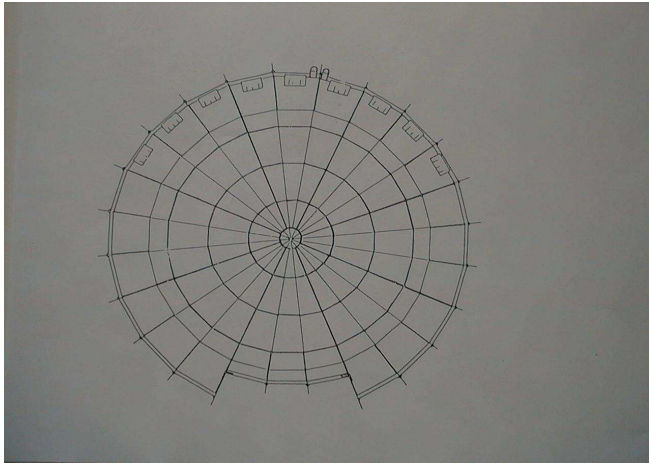


Fig. 1
Canopy

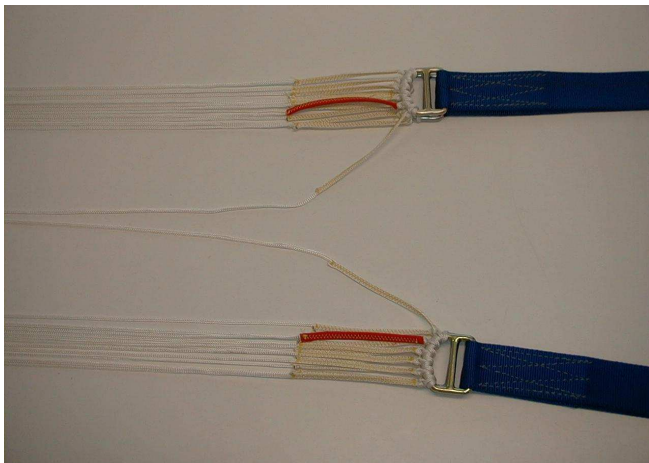


Fig. 2
Suspension Line Check

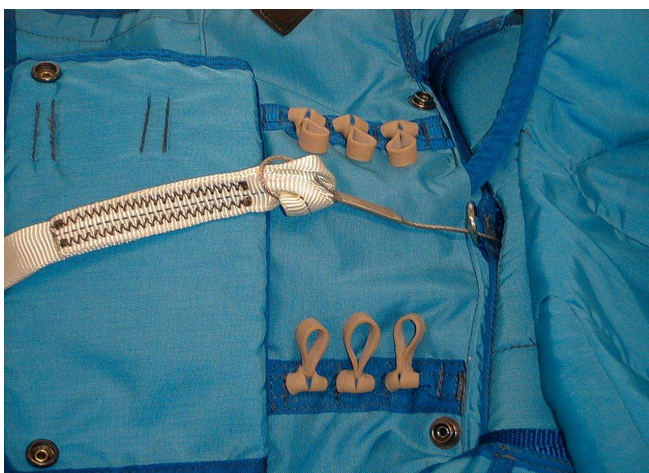


Fig. 3 man./aut.
Inserted Static Line



Fig. 4 man./aut.
Securing the Locking Pins



Fig. 5 man./aut.
Stowing the Static Line



Fig. 6 man./aut.
Stowing the Snap Hook



Fig. 7 man.
Securing the Locking Loop



Fig. 8
Tautening the Gores



Fig. 9
Flaking the Gores



Fig. 10
Placing the Folded Gores



Fig. 11
Ordering the Gores



Fig. 12
Canopy Completely Pleated



Fig. 13
Placing the Skirt Retainers



Fig. 14
Folding Lower Lateral Bands
on the Right



Fig. 15
Folding Lower Lateral Bands
on the Left



Fig. 16
Dividing Canopy in Thirds

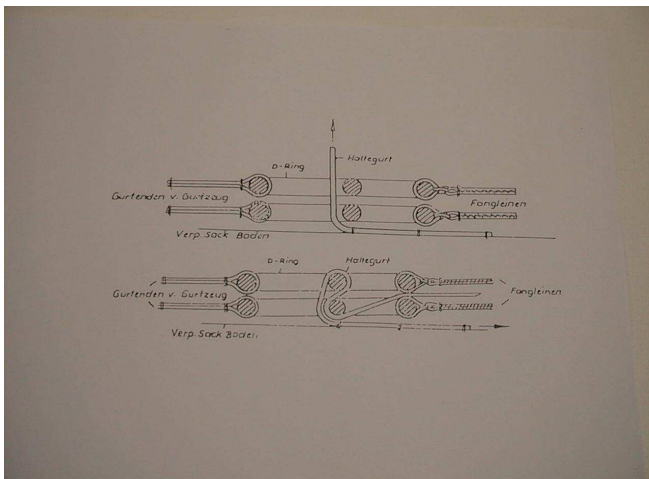


Fig. 17
Placing the D-Rings in
Securing Straps



Fig. 18
Stowing the Suspension
Lines



Fig. 19
Covering the Suspension
Lines



Fig. 20
Making the First Fold



Fig. 21 RE-5L Series 4
Making the Second Fold



Fig. 22 RE-5L Series 5
Making the Second Fold



Fig. 23 RE-5L Series 5
Folding the Apex



Fig. 24 RE-5L Series 5
Placing the Apex



Fig. 25
Closing the Top and the Bottom
Flap

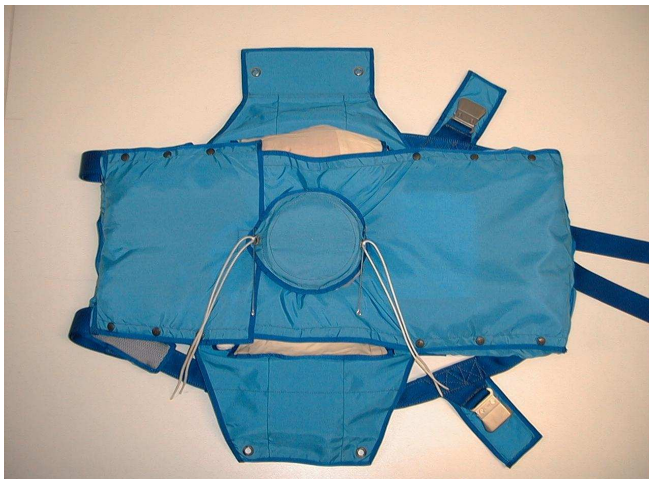


Fig. 26
Placing the Pilot Chute



Fig. 27
Closing the Side Flaps



Fig. 28
Sealing the Ripcord

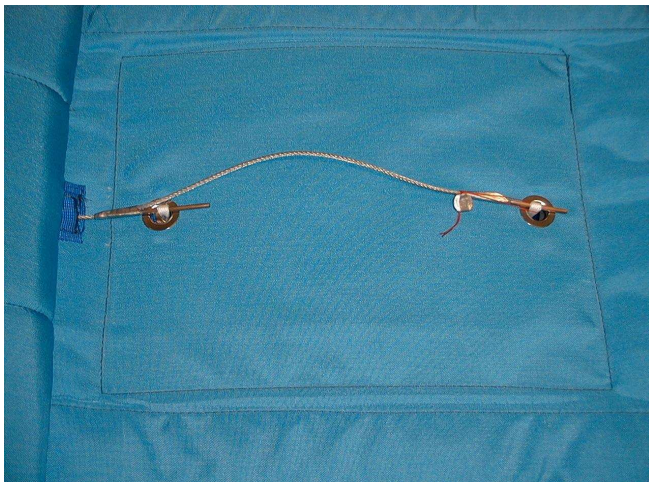


Fig. 29
Sealing the Static Line



Fig. 30 RE-5L Series 5
Parachute Ready for Use
Front



Fig. 31 RE-5L Series 5
Parachute Ready for Use
Back