



RESERVE PACKING MANUAL

**Manual
TM159
Edition 02 - 2004**

P1482-00	Smart 99
P1482-10	Smart 110
P1482-20	Smart 120
P1482-30	Smart 135
P1482-40	Smart 150
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P1482-70	Smart 190
P1482-80	Smart 220
P1483-00	Smart 250



WARNING!

- 1 PROPER TRAINING AND / OR EXPERIENCE ARE REQUIRED TO LOWER THE RISK OF SERIOUS INJURY OR DEATH.

NEVER USE THIS EQUIPMENT UNLESS YOU HAVE:

- A READ THIS WARNING LABEL AND THE APPROPRIATE OWNERS MANUAL AND PACKING INSTRUCTIONS AND COMPLETED A "CONTROLLED PROGRAM OF INSTRUCTION" IN THE USE OF THIS PARACHUTE ASSEMBLY.
 - B READ THIS WARNING LABEL AND APPROPRIATE OWNERS MANUAL AND PACKING INSTRUCTIONS AND COMPLETED AT LEAST 100 RAM-AIR PARACHUTE JUMPS.
- 2 LOWER THE RISK OF DEATH, SERIOUS INJURY, CANOPY DAMAGE AND HARD OPENINGS BY NEVER EXCEEDING THE LIMITS SHOWN BELOW:

MAXIMUM DEPLOYMENT SPEED	:	150 KNOTS
MAXIMUM EXIT WEIGHT (JUMPER+CLOTHING+EQUIPMENT)	:	lbs
MODEL & SIZE	:	
PART NUMBER	:	
SERIAL NUMBER	:	
DATE OF MANUFACTURE	:	
AVERAGE PEAK FORCE MEASURING ON STRENGTH TESTS:		

APPROVED FOR USE WITH SINGLE HARNESS RESERVE PARACHUTE ASSEMBLIES EQUIPPED WITH A MAIN PARACHUTE RELEASE.

PARACHUTE SYSTEMS SOMETIMES FAIL TO FUNCTION PROPERLY EVEN WHEN CORRECTLY ASSEMBLED, PACKED AND OPERATED SO THAT YOU RISK SERIOUS INJURY OR DEATH EACH TIME YOU USE THIS OR ANY PARACHUTE SYSTEM!

MANUFACTURED UNDER TSO C23d

AERODYNE RESEARCH CORPORATION
12649 RACE TRACK ROAD, TAMPA, FLORIDA, 33626, USA
PHONE (813) 891 6300 - FAX (813) 891 6316

REMOVAL OF THIS LABEL IS PROHIBITED AND VOIDS THE TSO

MADE IN SOUTH AFRICA

Read the warning on page 2 of this manual and follow the instructions before packing and/or using the product.
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The Aerodyne Creed

"Our Customer"

The world is getting smaller and at Aerodyne, we have a global "Vision" of the future. We know our customers are "Smart" and we need innovative new products, of the highest quality, and tested to the highest standards. We need programs that appeal to you and add value, responsiveness and convenience.

We have made the commitment never to be content and never follow the "others". We will lead the way and expand the envelope. We will be the "Icon", the symbol of a new standard in our sport.

We know we haven't chosen the easiest path, but few things worth having are easy. You are the primary focus, your needs and your convenience. It is this concept we shall build upon, because ultimately you, our customer, will determine our success.

Aerodyne International (United States of America, France, South Africa, the World)

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SUMMARY

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1 TECHNICAL CHARACTERISTICS

1.1 LIST OF EFFECTIVE PAGES

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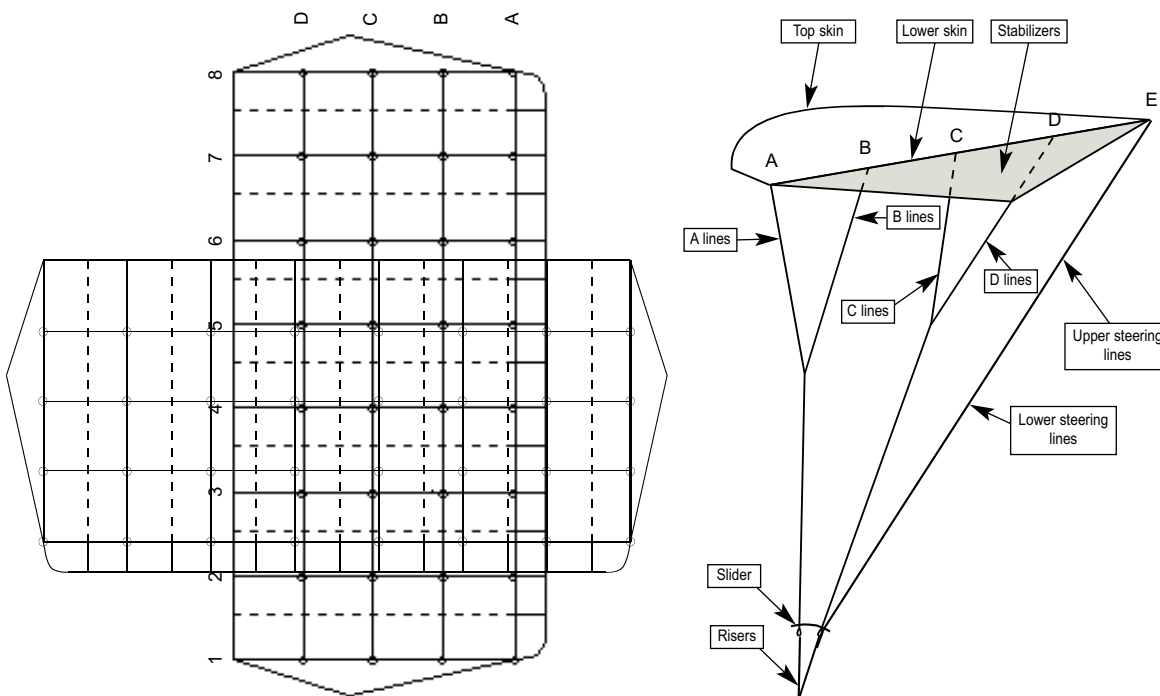


1.2 INTRODUCTION

THE SMART RESERVE MUST BE CHECKED AND ASSEMBLED BY A QUALIFIED RIGGER.

Before assembly, check the SMART RESERVE canopy, lines and links ensuring that the SMART RESERVE is compatible with the harness / container and deployment system with which it is to be used.

1.3 DESCRIPTION



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1.4 TECHNICAL SPECIFICATIONS AND LIMITATIONS

P/N	CANOPY MODEL	SHIPPING WEIGHT	AREA	MAXIMUM SPEED	RECOMMENDED WEIGHT	MAXIMUM WEIGHT	SPAN LOWER SKIN	CHORD	ASPECT RATIO	VOLUM
		KG/LB	SQ.FT	KNOTS	KG/LB	KG/LB	M/FT	M/FT		CU.IN
P1482-00	SMART 99	1.5/3.3	99	150	55/122	100/220	4.30/14.10	2.14/7.02	2.16	262
P1482-10	SMART 110	1.7/3.7	110	150	66/145	100/220	4.52/14.82	2.25/7.38	2.16	275
P1482-20	SMART 120	1.8/4.0	120	150	75/165	100/220	4.72/15.48	2.35/7.7	2.16	293
P1482-30	SMART 135	1.9/4.2	135	150	80/177	100/220	5.00/16.4	2.48/8.13	2.16	333
P1482-40	SMART 150	2.0/4.4	150	150	85/187	120/265	5.28/17.32	2.63/8.62	2.16	346
P1482-50	SMART 160	2.1/4.6	160	150	90/198	120/265	5.43/17.81	2.70/8.85	2.16	360
P1482-60	SMART 175	2.2/4.9	175	150	95/209	120/265	5.69/18.66	2.83/9.28	2.16	384
P1482-70	SMART 190	2.3/5.1	190	150	100/220	120/265	5.93/19.45	2.95/9.67	2.16	409
P1482-80	SMART 220	2.8/6.2	220	150	105/231	120/265	6.37/20.89	3.17/10.40	2.16	476
P1483-00	SMART 250	3.0/6.6	250	150	115/254	136/300	6.95/22.80	3.33/10.92	2.16	488

**CERTIFIED DEPLOYMENT SYSTEM:
FREE BAG AND SPRING PILOT CHUTE**

**CERTIFIED PACKING METHOD:
SEE THE INSTRUCTIONS IN THIS MANUAL**

2 OPERATING INSTRUCTIONS

Before assembly, check the **SMART RESERVE** canopy, lines and links ensuring that the **SMART RESERVE** is compatible with the harness-container and deployment system with which it is to be used.

Read and follow all operating instructions and all manufacturer specifications instructions and requirements for use of the equipment.

2.1 ASSEMBLY

2.1.1 Lay the canopy and harness out and individually attach each connector link to its respective riser. Ensure proper line continuity and that the links are compatible with the risers.

2.1.2 Check that the slider is correctly installed (tapes facing the canopy).

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2.1.3 Tighten the connector links (Do not overtighten!).

2.1.4 Clear the steering lines of any twists and route them through the appropriate grommets and guide rings on the rear risers.

CAUTION: The steering lines must pass directly from the trailing edge of the canopy through the slider grommet and the guide ring, without passing under or through any suspension lines.

2.1.5 Attach the steering toggles at the trim marks on the steering lines (Refer to the owner's manual of the harness-Container system).

2.1.6 Re-check the whole assembly for line continuity and direction of flight i.e. canopy facing forward.

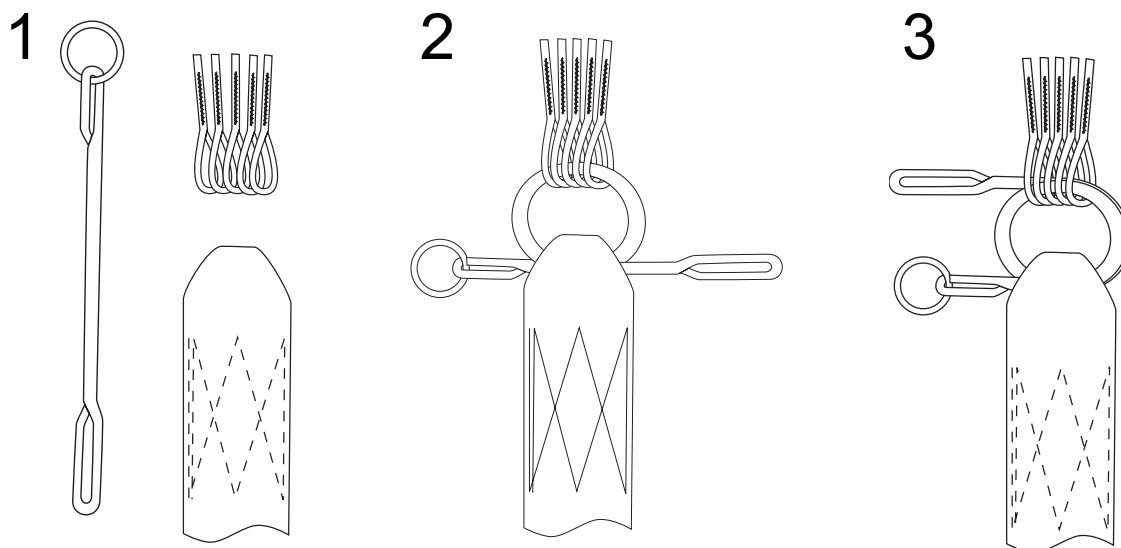
2.1.7 Carry out a thorough inspection before packing the reserve, especially if the reserve has been used.

2.1.8 Installation of soft links

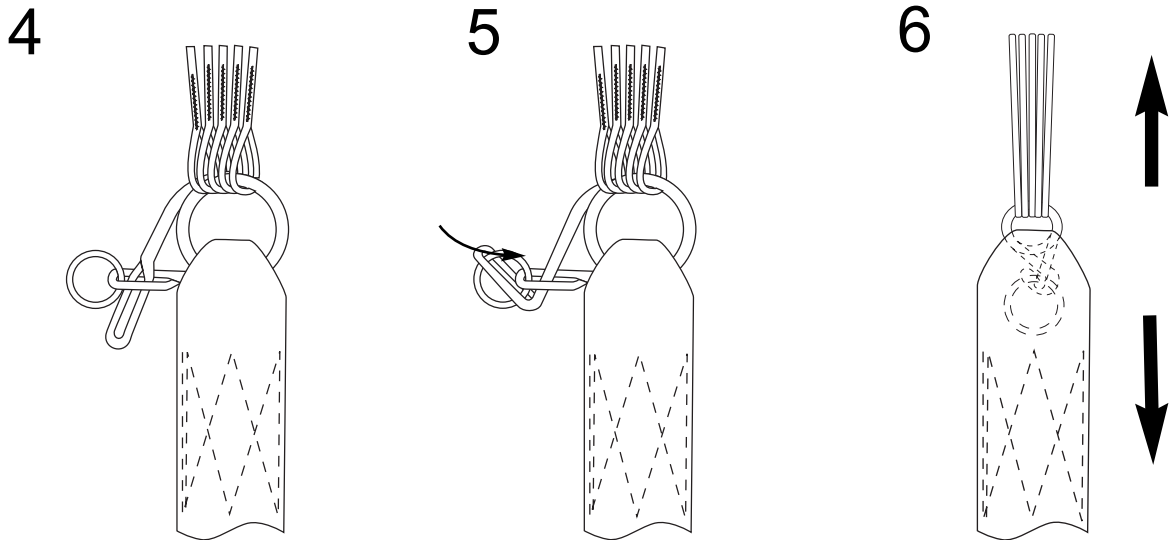
Soft link type for individual reserve canopies.

PN: **P 1487-01**

Installation procedure on front and rear reserve risers:



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2.2 PACKING

2.2.1 INSPECTION BEFORE PACKING

Prior to packing the SMART RESERVE a thorough inspection must be made (refer pg22).

- Upper skin
- Lower skin
- External ribs
- Internal ribs
- All stitchings on fabric and lines
- Slider and grommets

Take note of any worn, damaged, corroded or incorrectly rigged components, which must be repaired or replaced before the reserve is packed for use.

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2.2.2 PACKING INSTRUCTIONS

THE SMART RESERVE MUST ONLY BE PACKED BY A QUALIFIED RIGGER / RESERVE PACKER.

LAYING THE CANOPY OUT

After assembling and inspecting the SMART and harness / container, lay the system out on a smooth, clean surface.

1 Set the brakes



2 Close the line stow keepers



3 Take the line groups at the risers and walk up to the canopy



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- 4** Suspend the canopy over the shoulder



- 5** Count out 7 nose inlets



- 6** Take all 7 nose inlets in your hand



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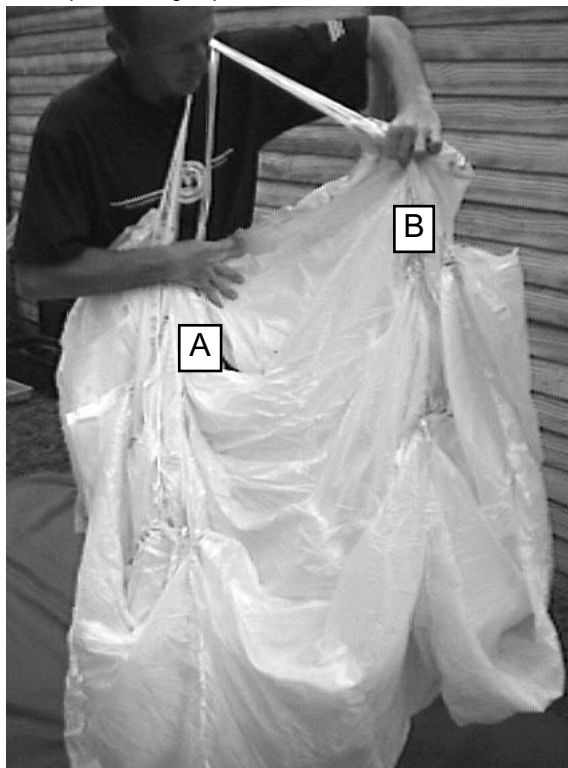
7 Grip nose inlets between your knees



8 Separate the canopy in the middle



9 Separate line groups A & B



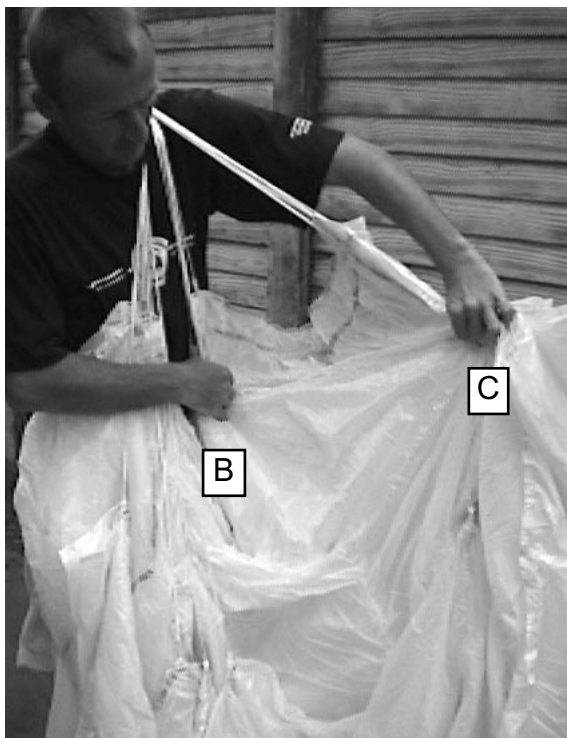
10 And fold the fabric between A and B



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11 Separate line groups B to C



12 Fold the fabric between B & C and do the same between C & D.



13 Flake the stabilizer



14 Flake the tail outwards



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15 Make sure tail is clear



16 This is a view of canopy after flaking



17 Flaking 3 nose inlets on each side



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18 Lay the canopy on the ground with the lines taught



19 Fold the right side nose inlets



20 Place B lines on top of A lines



21 Fold stabilizer B to A



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22 - 23 Place C lines on top of B lines



23 Fold stabilizer C to B



24 Place D lines on top of C lines



25 Flake the stabilizer outwards



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26 Flake the tail



27 Align the center panel



28 Repeat the same operation on the left side of the canopy.



29 Place the slider against the sliders stops



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30 Fold the stabilizers



31 Pull the centre of the tail down to cover the slider grommets



32



33 Dress the canopy to the width of the deployment bag





34 S-fold the nose under each side



35 S-fold the tail and slider ensuring that the slider doesn't move



36 Hold this S-fold with your knees



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37-38 Make the second S-fold and hold with your knees



38



39 Pull out the center cell.



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40 Separate the 'ears'



41 Roll the center cell as shown



42 Dress the 'ears' on each side



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- 43** The canopy is now ready to insert into the deployment bag



- 44** Slide the deployment bag over the canopy



- 45** View of canopy in the deployment bag.



- 46** Close the reserve deployment bag.
At this stage of reserve packing, read and follow the specific manual of your harness-container.



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**IN FLIGHT USE:**

Should you encounter a line twist after canopy deployment, do not release the brakes until you have cleared the twist.

After the opening, be ready to steer the canopy away from other traffic, either with the rear risers or the steering toggles. Once clear from traffic, check your canopy and your position relative to the landing area. Prepare for landing by following a trajectory that allows you to set up at sufficient altitude for a final approach facing the wind. Remember that your **"SMART"** will likely not glide as far as your main canopy.

When landing, flare the canopy symmetrically in such a way that maximum lift is achieved at the moment of touchdown. This will also reduce forward speed.

Do not turn low to the ground! Turns increase both vertical and forward speed. Without sufficient altitude your canopy will not be able to recover from the turn before landing.

Please remember it is more important to maintain a stable flight and make a proper landing flare, than to face the wind. When you are not absolutely sure that sufficient altitude remains to turn into the wind, continue to fly the canopy on its present heading and execute a good flare.

**DO NOT MAKE A TURN CLOSE TO THE
GROUND ! DANGER!**

3 MAINTENANCE

REPAIRS MUST BE MADE EITHER BY THE MANUFACTURER OR BY A QUALIFIED RIGGER!

3.1 MAINTENANCE PROCEDURES:

Important points to note during the inspection are:

3.1.1 Visually inspect the canopy for defects or damage to the fabric, tapes and seams. Any holes or tears must be patched with an overlay or standard sew-in patch. No ripstop tape patches are allowed. Any damage which requires the replacement of an entire panel or cell must be done by the manufacturer.

3.1.2 Check that all slider stops are present, intact and secure. There are four slider stops, one on each of the outer B and C line groups.

3.1.3 Check that all line attachment tapes are secure (Bartack present).

3.1.4 Check suspension and steering lines continuity and ensure that all connections and finger traps have been stitched. Lines that are worn or have broken strands must be replaced.

3.1.5 Inspect the connector links for serviceability and check that they have been correctly tightened.

3.1.6 Check the slider for correct installations, the reinforcing tape must be facing the canopy.



Inspect the inner surface of the grommets for nicks and sharp edges. Inspect the fabric for wear and tear.

3.1.7 Using the manufacturer's manual as a guide, inspect the harness / container system into which the **SMART** RESERVE is to be packed. Check all stitching for completion. Inspect hardware for damage and corrosion (rust may be removed with a lightly oiled rag).

3.1.8 Inspect the pilot chute, bridle and deployment bag. Ensure that the bridle is securely fastened to both the pilot chute and bag.

3.1.9 The ripcord cable must not be frayed. Inspect the pin and swages for security.

3.1.10 The canopy's serial number, name of manufacturer and date of manufacture printed on the identification panel, must be recorded on the packing data card.

3.1.11 Attaching the Steering Toggles: Check your Harness / Container Owners Manual for the particular attachment method required.

To make packing your "**SMART**" easier, prolong the life of the canopy and to prevent damage during packing, please observe the following instructions.

3.1.11.1 Pack where the wind cannot affect your "**SMART**".

3.1.11.2 Do not pack on concrete or asphalt. Pack your "**SMART**" on a dry lawn or on a packing mat, thereby minimising the wear on lines, links and fabric.

3.1.11.3 Inspect your "**SMART**" prior to packing. Look for any damage, wear and tear. Ensure that the lines have no twists, tangles or turns.

3.1.12 POROSITY Check the porosity in the following cases:

- After 10 uses
- After immersion in water - when the canopy is dry
- After 20 repacks (Based on 6 month repack cycle)
- After any use in abnormal conditions.

3.2 FREQUENCY OF MAINTENANCE PROCEDURES:



1 year in normal conditions of storage. (See the next paragraph)

If normal conditions are not respected, a shorter maintenance interval is recommended.

3.3 STORAGE:

Textile and others materials used in the construction of all parachutes are sensitive to the environmental elements.

When the parachute is not used it must be stored in a room where the temperature is kept between 15° and 30°. And where the humidity is kept between 15% and 70%.

Furthermore the parachute must be protected from:

- Sunlight
- Excessive heat 93° and up
- Acid and corrosive agents (car battery)
- Rodents and pests
- Chlorine
- Smoke

When not in use, the equipment should be stored in its carry bag..