TEAR DROP 1 PIN SF & VIPER OWNERS MANUAL

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INTRODUCTION

TEAR DROP 1 PIN SF & VIPER OWNERS MANUAL

First of all we would like to thank you for choosing a Thomas Defence Systems Ltd Tear Drop 1 Pin SF or Viper, you have shown impeccable taste.

The Tear Drop 1 Pin SF & Viper is a harness and container system designed for free fall sport parachuting. It is available in a wide variety of container sizes to fit practically any main or reserve canopies on the market today. This harness/container system is the most innovated on the market today. TDS have developed the single pin pop top reserve container, giving both safety and ease of packing. The TEAR DROP 1 PIN version also lends itself to the CYPRES and VIGIL A.A.D.
PATENT NUMBERS: U.S.A #4898346. GERMANY #3805085.
EUROPEAN # P58903422. 7-08. TSO C23D FAA Ref; GH/vk/12/01/4615:94

Please read this manual thoroughly before assembling, packing or using your Tear Drop 1 Pin SF or Viper. Your Tear Drop 1 Pin SF or Viper should be assembled and packed by a certified Rigger (or equivalent rated person in your country). Assembly of this harness/container must also be in accordance with the reserve parachute manufacturer's manual and the AAD manufacturer's manual.

If after reading this manual you still have questions concerning the Tear Drop 1 Pin SF or Viper please contact us, we will be more than willing to help. If you have any suggestions or see a need for some changes in the Tear Drop 1 Pin SF or Viper please let us know by calling or writing to:
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FACTS: about Thomas Defence Systems Ltd
TDS has been manufacturing parachute equipment since 1968 and has provided services from students to British team members. Over fourty-five years in our sport has provided TDS with a wealth of experience in developing and manufacturing parachute equipment with an enthusiasm and commitment in the complete sense, a service second to none. This in turn means you can be confident in the knowledge that with TDS you are using the very best available, from the initial PLF through to the highest levels of competing. Each rig has been designed, tested and built with quality materials, quality workmanship, system functionality and longevity. Qualified personnel oversee all aspects of the production, maintenance and repairs operations at the loft. Every care is taken to ensure that each rig from TDS meets the highest possible standards.

THE MAIN CONTAINER FUNCTION:

The main canopy may be deployed by either throw away or pull-out pilot chute.

THE THROW AWAY MAIN PILOT CHUTE:

The throw away is an external pilot chute located in a spandex pocket on the rear of the leg strap or on the bottom of the container. The pilot chute is attached to a bridle line. Sewn to the bridle line is a curved pin. This pin keeps the main container closed until the pilot chute inflates thus removing the pin, opening the main container and extracting the main parachute.

THE PULL-OUT MAIN PILOT CHUTE:

The pull-out base mounted pilot chute is a soft handle located on the bottom right hand corner of the main container, (the pilot chute is stowed inside the main container) this connects to a straight pin at the base of the pilot chute, hence, 'base-mounted'. As the handle is pushed straight down the straight pin releases the loop allowing the main container to open. The pull action extracts the pilot chute from inside the main container. The pilot chute must be thrown manually into the clean air-flow. The wearer must throw to their side and release the pilot chute. The pilot chute then pulls out of the main container. For the apex pull-out pilot chute the system of deployment activation is as is for the base mounted pilot chute, however the pad is located on top of the pilot chute.

THE RESERVE CONTAINER:

The reserve parachute container is held closed by a single pin. The reserve ripcord is protected by a cover on the inside back of the jumper. The reserve ripcord handle is manufactured of metal and fits into a pocket on the left hand main lift web. The reserve pilot chute is a domed shaped externally mounted pilot chute that is held closed by the use of a single loop through the center of the reserve pilot chute. The external mounting ensures that the reserve pilot chute escapes to the clean air-flow in deployment as fast as possible, as there is no need for the flaps to be knocked out of its way. You may have a Stevenson Lanyard attached to the reserve ripcord handle end, so that when you cutaway the main parachute the lanyard acts like a static line and pulls the reserve ripcord.

THE HARNESS:

The harness is constructed from either type 7 or type 8 Mil-Spec webbing and incorporates the 3-ring circus. It also features the unique TDS shaped harness design.

PARTS LIST

TEAR DROP 1 PIN SF & VIPER OWNERS MANUAL

THE TEAR DROP 1 PIN SF OR VIPER IS SHIPPED TO THE CUSTOMER WITH THE FOLLOWING COMPONENTS:-

***HARNESS/CONTAINER.**
MAIN RISERS WITH CONTROL TOGGLES.
MAIN DEPLOYMENT BAG.
CUTAWAY HANDLE.
MAIN PILOT CHUTE AND BRIDLE.
^RESERVE PILOT CHUTE WITH CLOSING LOOP.
#RESERVE RAM-AIR FREE BAG FOR SQUARE RESERVES.
RESERVE RIPCORD.
RESERVE CONTROL TOGGLES.
MAIN LOOP.
TEAR DROP 1 PIN SF/VIPER OWNER'S MANUAL.

***All TEAR DROP 1 PIN SF or VIPER harness/containers are manufactured to accept the Cypres or Vigil A.A.D.**

^Only the TEAR DROP 1 PIN SF or VIPER reserve pilot chute may be used with the TEAR DROP 1 PIN SF or VIPER harness/container system. Do not substitute with any other pilot chute.

#Only the TEAR DROP 1 PIN SF or VIPER reserve free bag may be used when packing a ram-air reserve into the TEAR DROP 1 PIN SF or VIPER harness/container system. Do not substitute with any other free bag.

Components parts and spares are also available individually from:

Your TEAR DROP 1 PIN SF/VIPER dealer
OR
Thomas Defence Systems Ltd
Pinfold Lane
Bridlington
East Yorkshire
Y016 6XS
England
Tel: + 44 (0) 1262 678299
Fax: + 44 (0) 1262 602063
www.thomas-sports.com

BEFORE JUMPING THE TEAR DROP 1 PIN SF or VIPER

TEAR DROP 1 PIN SF & VIPER OWNERS MANUAL

The TDS Tear Drop 1 Pin SF or Viper may be jumped only by persons who have received thorough instruction on its use from a qualified instructor. It is the responsibility of the owner (not necessarily the user) to ensure it is properly assembled, maintained, packed, worn and used, also that the user has the training and skill to use it properly. Read and understand this manual and be qualified by proper instruction for parachute activities before use. The manual is NOT a course of instruction on how to make a parachute jump. Nor does it contain the various regulations that govern sport parachuting and related activities. This information is best obtained from government bodies. The person whom inspects and packs both the main and reserve parachutes must be qualified to do so. Finally, nothing in this manual is meant to discourage the reader from using the TDS Tear Drop 1 Pin SF or Viper in a reasonable and prudent way. The information and specifications in this manual where in effect at the time of printing, Thomas Defence Systems Ltd, reserve the right to change specifications or design at any time without prior notice and without incurring any obligation.

COMPATIBILITY

It is the responsibility of the owner (not necessarily the user) or qualified packer to ensure that the main and reserve parachutes that are been packed are the correct size for the Tear Drop 1 Pin SF or Viper they are connected to. There are many types of main and reserve parachutes on the market today and the Tear Drop 1 Pin SF or Viper can be manufactured to accept most of them. This manual does not contain instructions on inspection and assembling each one, for these steps it is the responsibility of a qualified packer to use the appropriate method for any main/reserve that he/she packs and to pack according to the harness/container manufacturer's instructions. Deviating from these instructions results in a void pack job and no responsibility will be held by THOMAS DEFENCE SYSTEMS LTD.

MODIFICATIONS

It is common for jumpers to alter their rigs by modification. A high percentage of these alterations/modifications cause malfunctions or make it difficult to use the rig correctly. Alterations/modifications if improperly done may affect balance, structure strength, harness configuration, performance, flight characteristics and airworthiness.
The manufacturer (TDS) must be notified before you make any changes to your Tear Drop 1 Pin SF or Viper; even "insignificant" alterations may have very negative or unforeseen effects. The Tear Drop 1 Pin SF or Viper were designed and built the way they are as a result of years of testing and development. There are reasons for having things the way they are, reasons that might not be apparent at first. Alterations/modifications carried out without the manufacturers consent will void the manufacturers' responsibility.

THE MAIN

PACKING THE MAIN

First refer to the manufacturers' instructions for laying out the main parachute, setting the brakes and otherwise preparing the main parachute to put into the deployment bag. If you require further instruction seek the advice of the main canopy manufacturer, or a suitable instructor.

1. **Fold the parachute slightly wider than the deployment bag.**

2. **Place the parachute on top of the deployment bag, then push the parachute out into the corners of the deployment bag. Then close the bag, making sure that you have filled out the corners of the bag.**

3. **Thread the bungies through the grommets of the bag and stow all the lines on the deployment bag.**

4. **Pull the pilot chute bridle out of the top of the deployment bag until the load bearing ring on top of the parachute seats against the grommet on the top of the main deployment bag.**

5. **Set the deployment bag in the tray of the main container with the lines facing the bottom the container and the pilot chute bridle coming out of the top of the container. (SEE FIGURE #1)**

FIGURE #1

WARNING

YOUR LINES MUST BE STOWED AT THE BOTTOM OF YOUR CONTAINER

6. **When using a throw away pilot chute the bridle line comes out of the top right hand side of the main container.**

A. **Close the bottom flap #1, then the top flap #2, right side flap #3, then the left side flap #4. Insert the curved pin through the closing loop from right to left. Next, dress the container making sure that the risers are correctly positioned. Remove the pull up cord. Note that the container will not open if the pull-up cord is left in.**

B. **There is a small pocket down the right side of the bottom flap this is for running the bridle line down to the pocket on the B.O.C. If the throw away is on the right of leg then mate the velcro on the pilot chute bridle, starting from the top of the pouch on the leg strap and follow along the side of the container putting the extra bridle length under the right hand side flap of the container.**

FOLDING THE MAIN PILOT CHUTE

A. **Lay the pilot chute out over the leg strap, net side up so the edge of the circle is at the mouth of the spandex pocket. S-Fold the bridle line on the half of the pilot chute over the pocket.**

B. **Fold the pilot chute in half over the bridle line. (see FIGURE #2) then bring the corners up to form a wide triangle. (see FIGURE #3).**

C. **Fold the triangle in half, forming a skinny triangle. (see FIGURE #4).**

D. **Fold the triangle into thirds, forming a skinny triangle, then fold it once more. (see again FIGURE #4).**

E. **Fold the pilot chute in half so that the handle is even with the skirt. (see FIGURE #5)**

F. **Then stow the pilot chute into the spandex pocket with the toggle showing at the top**.

FIGURE #2

FIGURE #3

FIGURE #4

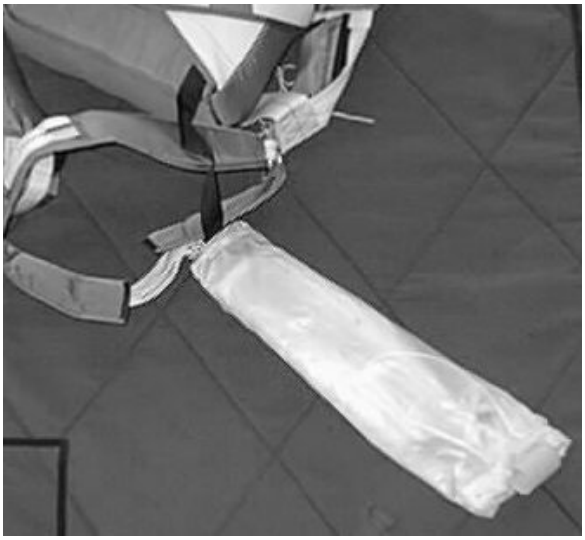


FIGURE #5

INSTALLATION & ATTACHMENT OF RETRACTABLE PILOT CHUTE

1. **Remove old pilot chute and bridle line, if fitting to old system.**
2. **Check bag for proper size grommet, number 4.**
3. **Thread the retention line and kill line from the outside of the bag to the inside of the bag.**

4. **Thread the two loops at the bottom of the bridle line into the grommet.**
5. **Insert rapid link into loops forming a circle with the kill line in the center.**
6. **Attach retention line using the rapid link to attachment point on canopy.**

ATTACHMENT:
REMEMBER: YOU MUST COCK THE SYSTEM BEFORE YOU CLOSE YOUR CONTAINER. TO COCK THE PILOT CHUTE PULL THE APEX (HANDLE) OF THE PILOT CHUTE UNTIL THE CENTRE LINE OF THE PILOT CHUTE IS TAUT *DO THIS BEFORE PACKING THE CANOPY INTO THE BAG*

INSTRUCTIONS FOR THE PULL-OUT

A. **S-fold the pilot chute bridle across the top of the container and lay the folded pilot chute on the center of the deployment bag with the base coming out of the right hand bottom corner.**
B. **Place the pull-out pad onto the velcro on the bottom of the container.**
C. **Close the container with the closing loop, following the #'s on the main container flaps.**
D. **Ensure that where the pad and pin is attached to the pilot chute, it is free from snagging on the right side.**
E. **Remove the pull-up cord and tuck the excess bridle and base of the pilot chute up under the bottom right hand flap.**

PACKING A SQUARE RESERVE

Because of the size range of square reserve canopies available today, this manual does not contain instructions on inspection, assembling and flaking. Please follow the packing instructions of your reserve manufacturers' manual.

TYPICAL PRO PACKING EXAMPLE

TOOLS REQUIRED

1 X T Bar
1 X Pull up cord
1 X Packing paddle

1. **Thoroughly inspect the pilot chute bridle, deployment bag, canopy, lines, links, loop, risers, container and harness.**

2. **Follow canopy manufactures instructions for**
A. **Attaching the canopy to risers.**
B. **Attaching toggles to steering lines.**
C. **Flaking canopy.**
D. **Folding the nose of the canopy.**
E. **Setting deployment brakes.**
F. **Splitting the tail.**
G. **Stowing the slider.**
H. **Dressing the canopy.**

3. **Prepare the free bag so that it is ready to be packed. To do this, insert one end of the pull up cord through the grommet in the top and bottom of the bag, and tie it to the other end so that it won't slip out during the packing procedure. NOTE; Some riggers prefer to use a T bar instead of a pull up cord. Insert the T bar through the bag from the bottom. The T bar or pull up cord will be used later to pull the loop through the bagged canopy**.

PACKING A SQUARE RESERVE

FIGURE #1

4. FIGURE #1
Dress the canopy to the width of the reserve bag.

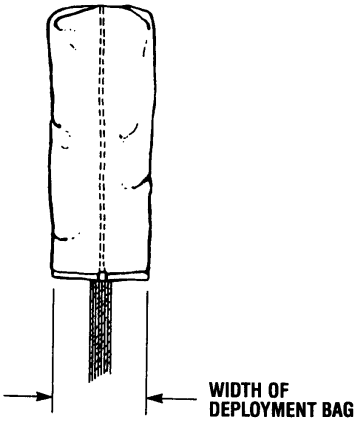


FIGURE #2

5. FIGURES #2, #3, #4
Kneel on the trailing edge and keeping the center seam in the middle of the bundle, push the middle of the top of the canopy down to your knees until the bundle resembles two ears, as shown in FIG #2.
Spread the center of the trailing edge out to the approximate width of the reserve bag and kneel on it again. Using a pushing and rolling motion, shape the ears so that the bundle resembles the 'V' shape in FIG #3. Then place the reserve bag as shown in FIG #4. The grommet of the reserve bag and the T bar should be right at the crutch of the 'V' formed by the bag.

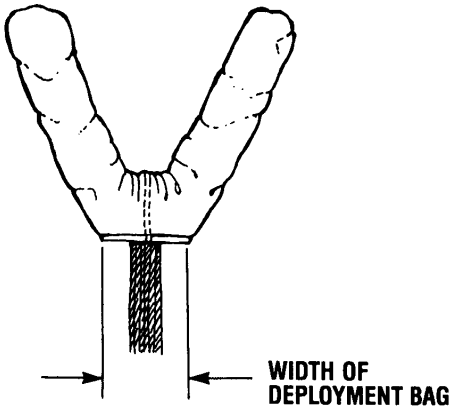
6. FIGURE #5
Kneel on the canopy so that your knee holds the locking flap of the reserve bag in place, then stuff each arm of the 'V' into its respective side of the reserve bag. The 'T' bar will be effectively surrounded by canopy and should be well filled as shown in FIG #5.

FIGURE #3

7. FIGURE #6
'S' Fold the rest of the canopy into the reserve bag as shown in FIG #6.

8. FIGURE #7
Lock the reserve bag closed with the suspension lines and safety stow (only safety stow elastics must be used).

9. FIGURE #8
Stow the reminder of the suspension lines into the pouch on the under side of the bag. 'S' Fold half of the lines into the left side of the pouch and then the other half into the right side of the pouch. Be sure none of the lines are trapped between the Velcro at the mouth of the pouch.



10. You are now ready to put the reserve bag into the container.

PACKING A SQUARE RESERVE

FIGURE #4

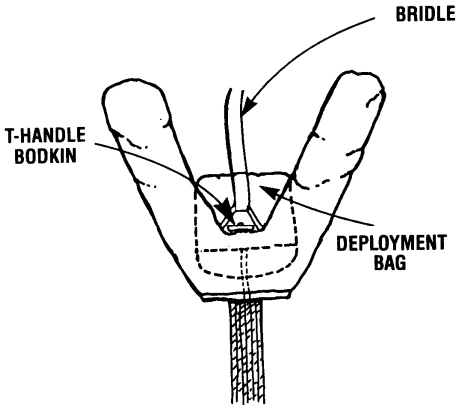


FIGURE #5

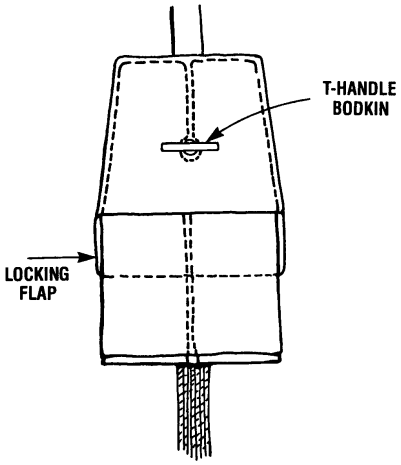


FIGURE #6

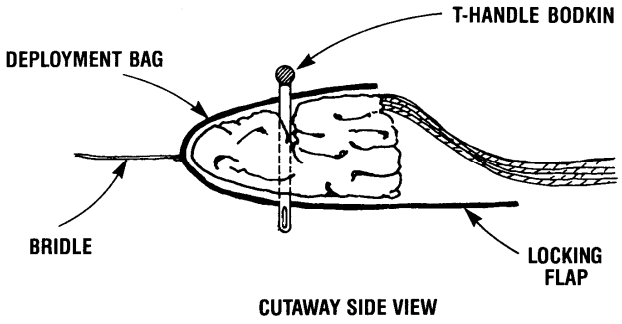


FIGURE #7

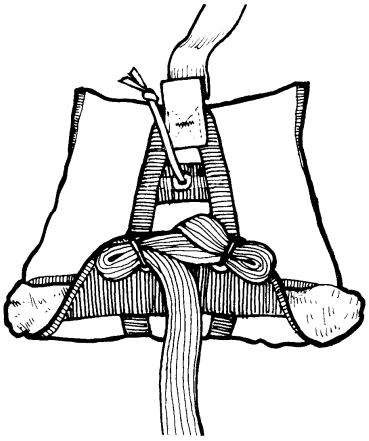
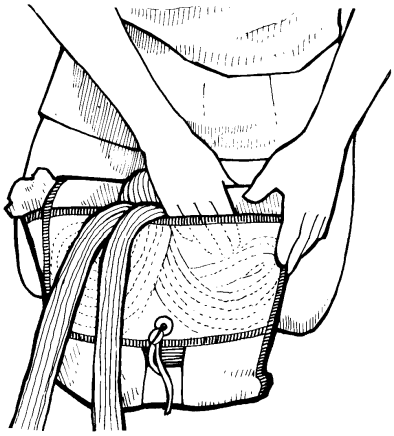


FIGURE #8



PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

A. **The reserve pilot chute is supplied with an aluminum cap on the top with 2 grommets contained in it. The off-set grommet is where the 1 pin loop is started.**

B. **Insert the 1 pin loop from the inside of the reserve pilot chute up to the off-set grommet and pass it through, ensuring that the washer prevents the 1 pin loop from passing through the grommet, SEE FIGURE #1. Make sure the adjustment of the 1 pin loop is on the outside of the pop top, SEE FIGURE #2.**

C. **When you have the 1 pin loop through the top of the pilot chute cap you then insert the 1 pin loop end back down the center grommet of the pilot chute cap leaving the finger trapped end on the outside of the pilot chute. This will then be used for tightening the loop when the reserve is packed.**

FIGURE #1

FIGURE #2

PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

D. FIGURES #3, #4, #5 AND #6 show how to close the side flaps and the routing of the square reserve bag bridle. As shown in FIGURE #4, the reserve bridle line is stowed on both sides of the reserve tray evenly. FIGURE #5 shows closing the left hand side of the reserve container. FIGURE #6 shows the right hand side flap been closed.

FIGURE #3

FIGURE #4

FIGURE #5

FIGURE #6

PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

E. **FIGURE #7 shows the top flap now closed over the 'T' bar.**

F. **FIGURE #8 shows the bottom flap of the reserve container now held in position over the 'T' bar.**

FIGURE #7

FIGURE #8

PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

G. **FIGURE #9 shows the 1 pin loop coming out of the top of the reserve pilot chute with the pull-up cord in place.**

H. **FIGURE #10 shows the pull-up cord coming back through the center of the reserve pilot chute and through the 'T' bar.**

I. **FIGURE #11 shows the reserve pilot chute now seated on top of the reserve container.**

J. **FIGURE #12 shows the TEAR DROP 1 PIN SF/Viper in the upright position with one hand on the top of the domed reserve pilot chute cap, the other on the 'T' bar. Slowly pull the 'T' bar through the reserve container bringing the pull-up cord and loop with it.**

FIGURE #9

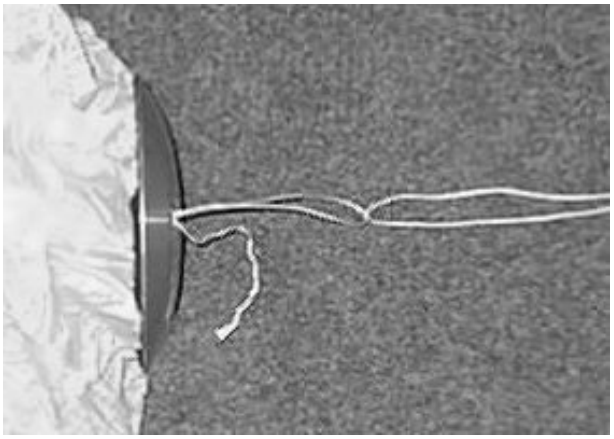


FIGURE #10

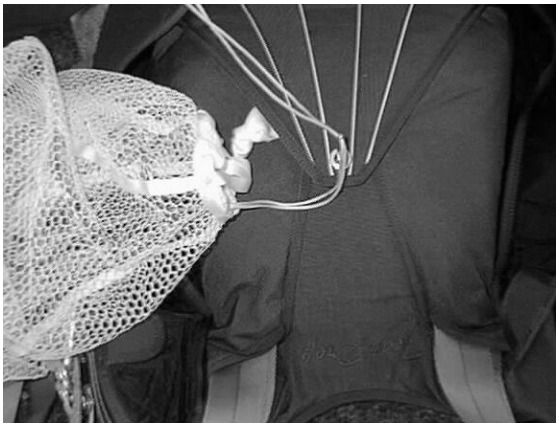


FIGURE #11

FIGURE #12

PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

K. **FIGURE #13 shows the locking off of the reserve pin with the loop. When the reserve ripcord pin is in position and locked off by the loop, REMOVE THE PULL-UP CORD.**

L. **FIGURES #14, #15 AND #16 show the stowing of the excess reserve pilot chute fabric underneath the domed 1 pin pop top cap.**

FIGURE #13

FIGURE #14

FIGURE #15

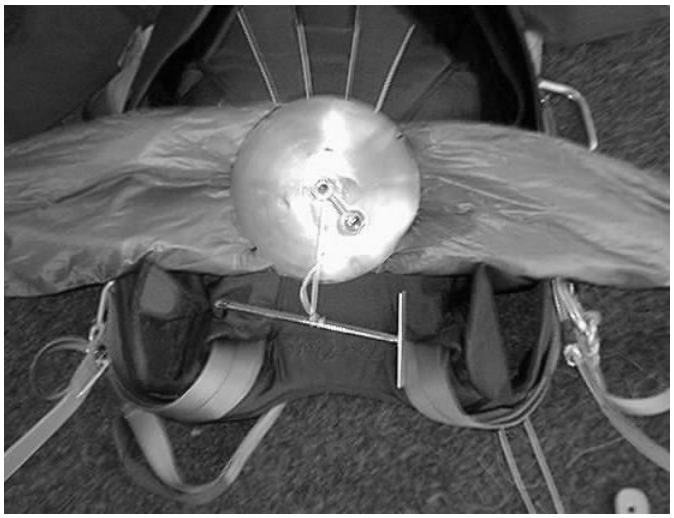
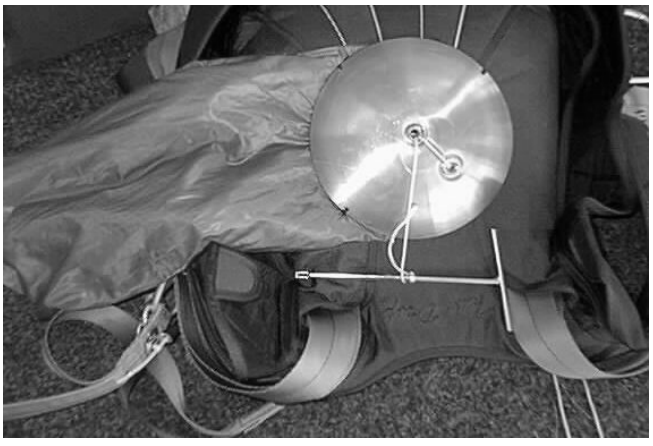


FIGURE #16



PACKING A SQUARE RESERVE

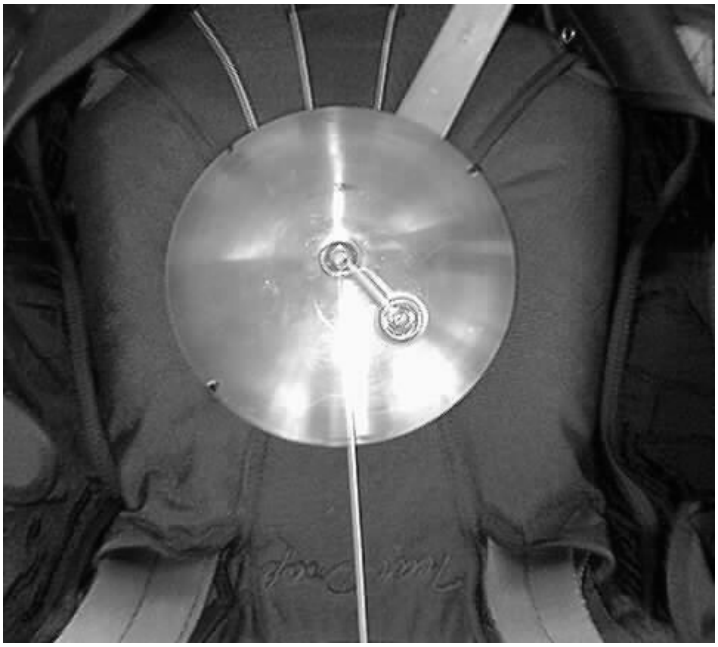
Preparation of the reserve pilot chute and closing the reserve container

M. **FIGURES #17, #18 AND #19 show the stowing of the excess reserve pilot chute fabric underneath the domed 1 pin pop top cap.**

FIGURE #17

FIGURE #18

FIGURE #19



PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

N. **FIGURE #20 shows the preparation for pulling the loop.**

O. **FIGURE #21 shows pulling up the loop through the center of the reserve pilot chute.**

P. **FIGURE #22 and #23 show the stowing of the excess line on the loop.**

FIGURE #20

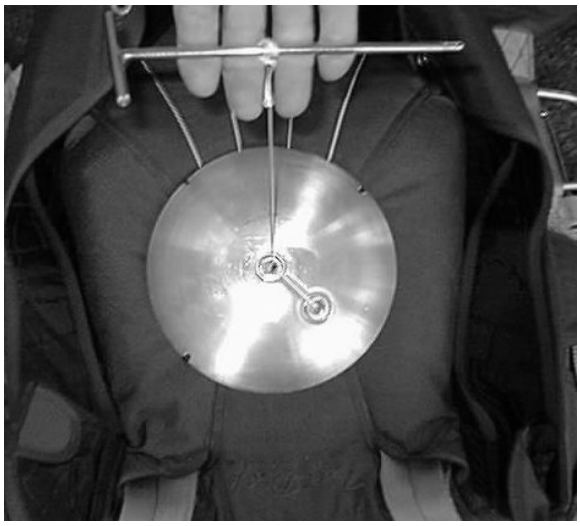


FIGURE #21

FIGURE #22

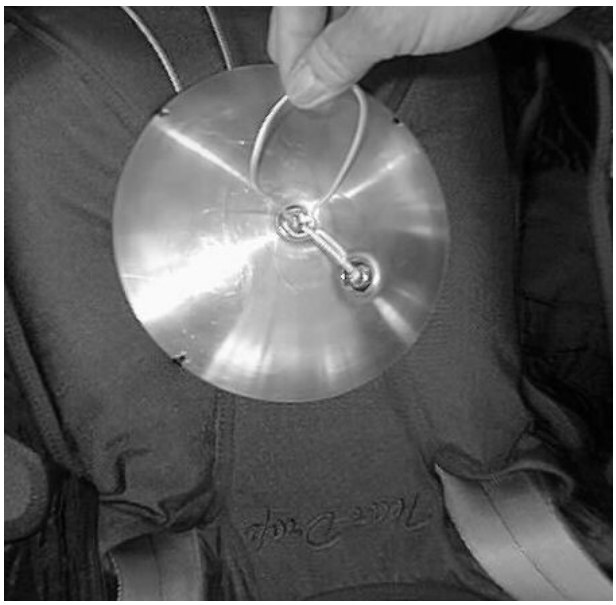
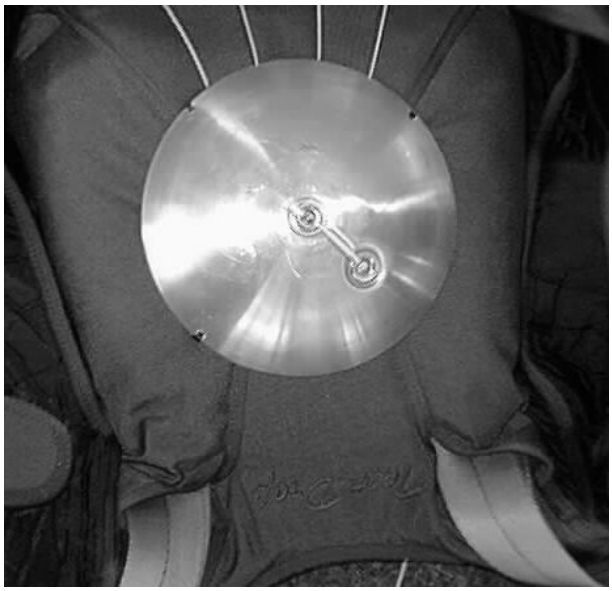


FIGURE #23



PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

Q. **FIGURE #24 shows the 1 pin fabric pop top cap.**

R. **FIGURE #25, #26 AND #27 show how to place the 1 pin fabric pop top cap onto the domed cap of the reserve pilot chute with the aid of a packing paddle.**

FIGURE #24

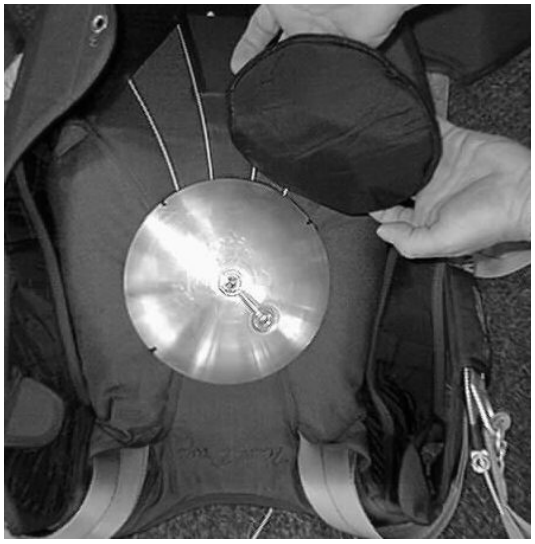


FIGURE #25

FIGURE #26

FIGURE #27

PACKING A SQUARE RESERVE

Preparation of the reserve pilot chute and closing the reserve container

S. **FIGURE #28, #29 and #30 show how to place the 1 pin fabric pop top cap onto the domed cap of the reserve pilot chute.**

T. **FIGURE #31 shows the complete job.**

NOW COUNT ALL YOUR TOOLS

FIGURE #28

FIGURE #29

FIGURE #30

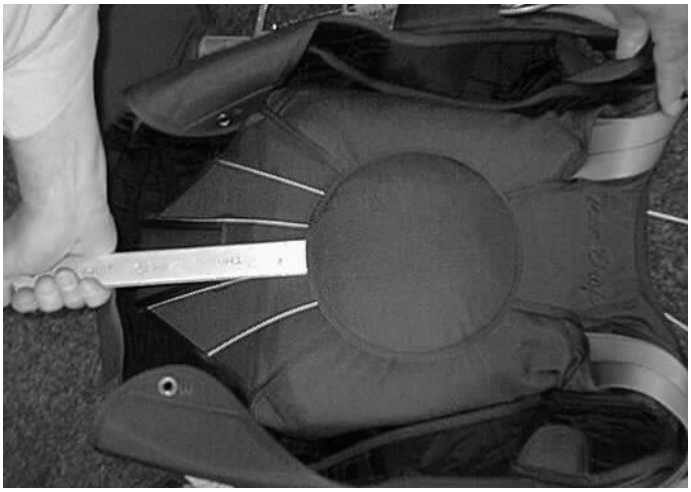
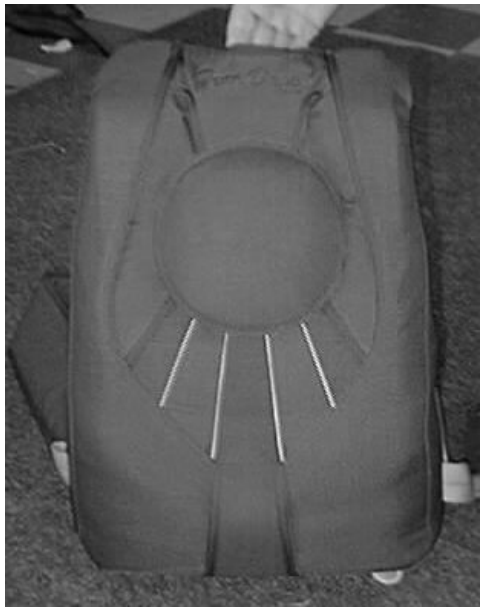


FIGURE #31



This procedure assures that every TEAR DROP 1 PIN SF or VIPER has the correct loop length for a good pack job and an easy ripcord pull. The CYPRES and/or VIGIL loop does not stretch and allows the ripcord to slide more easily than a nylon loop would, even when the reserve pilot chute is pulled firmly down on the container.

THE STEVENSONS LANYARD

ROUTING

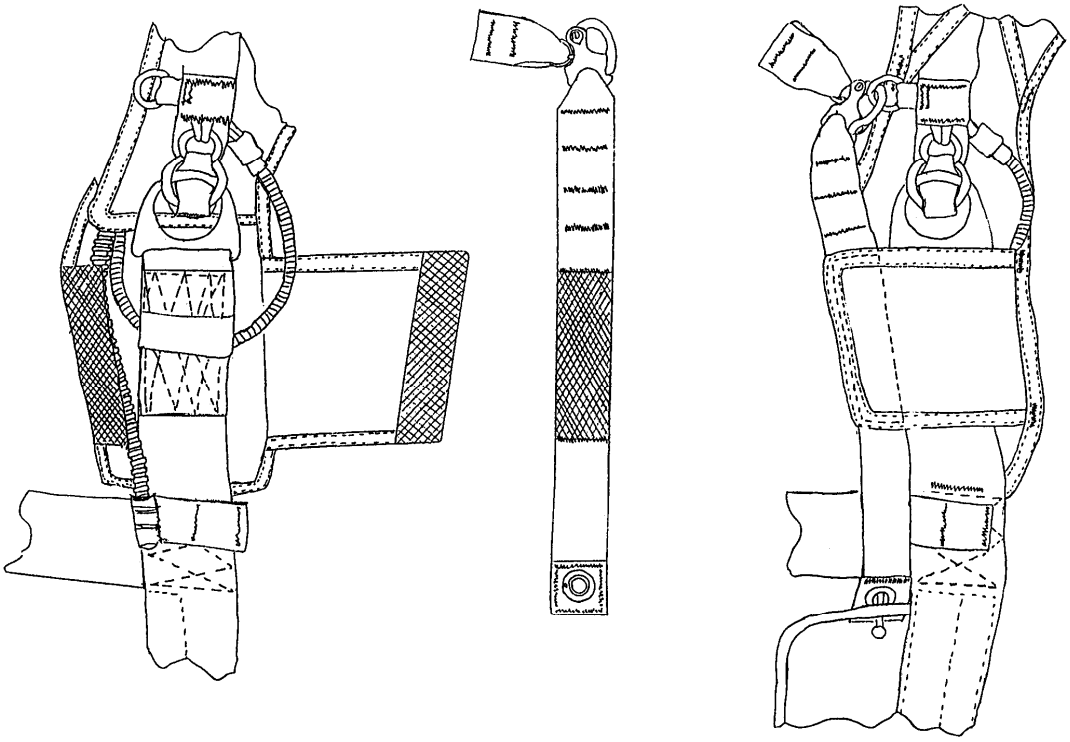
The stevensons lanyard should be connected to the 3-ring cover by the Velcro attachment as shown in FIGURE #1. This should be done when the reserve ripcord is passed through the bottom of the lanyard, through the stainless steel '0' grommet. The reserve ripcord is then passed through the reserve ripcord housing which is velcroed down to the front lift web of the harness, by the chest strap. When the reserve has been packed, you then attach the main risers to the 3-ring release. At this point you need to attach the lanyard to the main risers. Ensure that the fixed bail snap shackle is attached to the small ring on the risers and that it works smoothly and correctly.

WORKING

When the cutaway procedure is activated the main risers separate from the harness which then invokes the lanyard, as the risers go away from the harness it puts pressure on the ripcord cable and this then pulls the reserve ripcord pin. The reserve ripcord handle stays in the reserve ripcord pocket at all times, this allows the jumper to continue the cutaway and reserve pull procedure.

THE STEVENSONS LANYARD PARTS MADE UP AND INSTALLED

FIGURE #1 **FIGURE #2** **FIGURE #3**



INSPECTION OF THE TEAR DROP 1 PIN SF & VIPER

INTRODUCTION

Inspection of your Tear Drop 1 Pin SF or Viper should be at assembly, before every repack and after emergency use. Every Tear Drop 1 Pin SF or Viper must be inspected by qualified personnel, before it is used, before every repack and no matter if it was used or not after it was handled in an improper way such as after water jumps, muddy landing, etc.
Periodic inspections of the equipment must also be carried out, to examine the Tear Drop 1 Pin SF or Viper, these checks are vital for wear, damage, etc. Periodic inspection allows for any damage to be rectified immediately, putting off repairs may result in a malfunction. Periodic inspection is recommended on a monthly basis. Particular attention should be given to the areas shown below;
Different countries may have different regulations, so please check with your responsible organization regarding repack cycle, inspections, etc.

INSPECTION

1. Breakaway system. Inspect and operate on a regular basis. Check for velcro damage and wear. Inspect loops for wear & fraying. Inspect cables, nicks in cables, damaged or dirty cables, correct length and cable ends. Examine hardware, sharp edges, cracks, bends, rust, correct installation. Check velcro on breakaway handle and main lift web for cleanness and adequate holds. Check stitching, including that which holds the large 3-ring to the harness, the hand tacking and keeper.

2. Reserve system. This includes the reserve ripcord, pin, handle, housings, container, associated sewing, free bag & pilot chute. Check for bent pin, worn out velcro, broken stitches, reserve flaps, grommets for sharp edges, bag fabric & seams, safety stow, bridle seams, pilot chute fabric damage and spring force. Correct housings and condition. You should not attempt any repairs or modifications to any of these items unless you are an appropriately rated rigger.

3. Harness. Inspect the harness, check for broken stitching or frayed webbing. Examine hardware, sharp edges, cracks, bends, rust, correct installation. Leg strap elastics condition.

4. Main system. Inspect the plastic stiffeners in the container flaps any broken stiffeners should be replaced. Check grommets for sharp edges, etc. Any grommets that are badly deformed or pulling out of their setting should be replaced. A qualified rigger must replace grommets or plastic stiffeners. Main risers, velcro damage, bent rings, damaged loops, toggles intact.

5. Main pilot chute and main bag. Check the centerline of the main pilot chute. Check for broken stitches and torn fabric. Inspect the seam that joins the pilot chute mesh to the pilot chute fabric. If the mesh is torn or badly frayed, replace the pilot chute. Check velcro for damage, fraying, etc. Pilot chute fabric for porosity. Main bag, fabric condition, seams, damaged grommets, replace old rubber bands.

6. Check loops for wear. If worn out, breakage may occur causing the main canopy to malfunction and release prematurely. Replace the loop with a duplicate if wear is noticed. Ensure loops are correct length, not frayed and correct type for AAD in use.

CARE & STORAGE OF THE TEAR DROP 1 PIN SF & VIPER

CARE

1. Sunlight. The ultraviolet rays in the sunlight quickly and permanently weaken nylon. Avoid direct exposure to sunlight, especially during packing and storage.

2. Acid. Nylon is damaged by acid. Keep your Tear Drop 1 Pin SF or Viper away from hangar floors, dirty car trunks and similar areas where acids may be found. If such contamination does occur, immediately and thoroughly wash the rig with warm water and neutral soap. Do not use any detergents containing acid. Ensure that all hardware is thoroughly dried should it have got wet. If acid damage occurs or is suspected, a qualified rigger should thoroughly inspect your Tear Drop 1 Pin SF or Viper before next use.

3. Oils and Grease. Petroleum compounds will stain nylon fabric. Such stains may be removed using suitable petroleum solvent. A qualified rigger should thoroughly inspect your Tear Drop 1 Pin SF or Viper before next use.

4. Water. Water in most cases will not completely damage your Tear Drop 1 Pin SF or Viper, however, it may cause some fabric colours to run. Salt water will rust the hardware if not promptly and thoroughly washed off with plenty of fresh water. Your rig will maintain its new appearance longer if it is kept dry.

5. Soil & Grass. Soil or grass stains will not damage your rig. Brush off the soil after it has dried and gently wash with warm water and a neutral soap. Ensure that no soil is lodged in the housings, hardware including the 3- ring release, reserve ripcord, pin or loops. Consult a qualified rigger if your Tear Drop 1 Pin SF or Viper is heavily soiled or extremely dirty for advice on use.

6. Abrasion. Nylon quickly frays if dragged over concrete or other rough surfaces. Do not drag your rig on the concrete while packing, use a packing mat.

STORAGE

Storage should be a dry environment, free of insects, vermin and UV rays. Should you wish to store your equipment for a period of time, remove the main and reserve parachutes from the container.
In countries that have hot, humid or damp climates, your Tear Drop 1 Pin SF or Viper should not be left or stored, for example in the boot of a car during the heat or cold of the day. If left in these climates both the main and reserve canopy should be removed from the container and the complete assembly inspected and repacked by a qualified parachute packer/rigger to ensure it is safe for operational use.

MAINTENANCE OF THE TEAR DROP 1 PIN SF & VIPER

MAINTENANCE

Follow the instructions and details set forth in this manual by the manufacturer. The owner (not necessarily the user) is responsible to keep the Tear Drop 1 Pin SF or Viper in a proper, safe and airworthy condition. Follow the national laws and regulations of the country in which the equipment is in use. The owner is responsible to report any problem that may be discovered direct to the manufacturer and must ensure that all service and/or safety bulletins are followed.

Any maintenance carried out on this Tear Drop 1 Pin SF or Viper and its supplied components must be undertaken by trained and valid licenced technical qualified personnel following the instructions in this manual. Modifications should not be carried out without the manufacturers' prior consent. Minor repairs "a repair other than a major repair". Pointer manual, Volume 1, Glossary/Index, as detailed below. Major repairs by manufacturer.

Type of Maintenance

1. **Assembly & Compatibility Check:**
   Before initial use. According to manufacturers' instructions.
   May be carried out by: Manufacturer/Certified Loft/Senior Rigger/Master Rigger.
2. **Inspection & Repack:**
   Before initial use, within 6 months in the UK, with 12 months in Germany. For all other countries follow regulated recommended repack cycle. After emergency use, after water landings and after improper use. According to manufacturers' instructions. Follow the country of use national law repack cycle. May be carried out by: Manufacturer/Certified Loft/Senior Rigger/ Master Rigger.
3. **Minor Repair: such as replacing canopies, replacing AADevices (under AAD manufacturer instructions) replacing cable housings and hardware, where major stitching is not required. Minor Container repair, repair of stitching (re-stitch). According to manufacturers' instructions and with manufacturers' prior consent.**
   May be carried out by: Manufacturer/Certified Loft/Senior Rigger/Master Rigger.
4. **Major Repair/Modification: According to manufacturers' instructions.**
   May be carried out by: Manufacturer.

THE 3-RING RELEASE SYSTEM

REQUIRED PERIODIC MAINTENANCE FOR THE 3- RINGS

The 3-ring release system has been in use for many years with excellent results. Although the system is as durable as the rest of the harness and container assembly, it requires periodic maintenance and inspection to ensure proper operation. Generally, it is NOT recommended that the risers be attached to the harness when new awaiting rigging ready to jump. The 3-ring release should be carefully inspected and operated on a regular basis. The procedures below should be done at least every month. This is especially important if the rig has not been used for a month or more. Immediate inspection is required if it has been subjected to abuse, as a drag across the runway, a water landing or exposure to a lot of dust or sand, hot, humid or cold climates.

1. Every month operate the 3-ring release system on the ground. Extract the cable completely from the housings and disconnect the risers.

2. While the system is disassembled, closely inspect it for wear. Check the loops to be sure they are not frayed.

3. Check the velcro on the breakaway handle and main lift web to be sure it is clean and adequately holds the handle.

4. Check the cable ends for a smooth finish. The ends are finished at the factory to have a smooth, tapered surface. This prevents the cable from hanging up in the loop. Check the cable ends and consult the manufacturer or a qualified rigger if there is a visual problem.

5. Check the stitching, including that which holds the large 3-ring to the harness and the hand tacking that prevent the housings from sliding through their keeper.

6. Take each riser, vigorously twist and flex the webbing near where it passes through each ring. The idea is to remove any set of deformation in the webbing. Do the same thing to the loop.

7. Check the housings for dents or other obstructions. Use the cable to do this.

8. Clean and lubricate the release cable with a light silicon spray, firmly wipe the cable few times.

9. Inspect the security of the fittings at the end of each housing.

10. If any wear is found, consult the manufacturer or a qualified rigger before using the Tear Drop 1 Pin SF or Viper.

11. Reassemble the system. Double check it. Make sure the risers aren't twisted.

PUTTING ON YOUR TEAR DROP 1 PIN SF or VIPER

When lifting the TEAR DROP 1 PIN SF or VIPER, hold the main lift web between the large harness ring and the chest strap. Put the rig on as you would a jacket, setting the

yoke across the shoulders. Step through the leg straps, ensure they are not twisted, then thread the chest strap through its friction adapter and tighten it appropriately. Be sure it is NOT threaded through the reserve ripcord handle. Tighten the leg straps, then, put the free ends of the straps down the leg pads or in the elastic keepers. It is important to secure these free ends; a loose end can easily be mistaken for a deployment handle.

REPLACEMENT PARTS

Thomas Defence Systems supplies original compatible replacement parts for the Tear Drop 1 Pin SF or Viper. When ordering parts, include the serial number and date of manufacture of your Tear Drop 1 Pin SF or Viper so that the correct part/component can be quickly supplied. The serial number and date of manufacture information can be found on the manufacturing label.