PRECISION aerodynamics

TR Series Reserve

Packing Instructions

TR Series Reserve Packing Instructions

Flat Pack Method of the Reserve Canopy.

Place the slider at the connector links.

Grasp the rear line and control line groups in the left hand and the front line groups in the right hand. Walk towards the parachute, separating the line groups as you go. Once at the stabilizer edge, shake the parachute from side to side.

While maintaining control of the line groups, lay out the parachute in front of you and away from the harness/container. Maintaining line tension will help in later steps.

Walk to the top of the canopy and:
Count and flake out the cells leading edges.
Count and flake out the B-line seams.
Count and flake out the C-line seams.
Count and flake out the D-line seams.
Count and flake out the control lines and the remainder of the trailing edge of the canopy.

Fold the leading edge under the A-line group.

Grasp the B-line group under slight tension and fold over the A-line group.

Grasp the C-line group under slight tension and fold over the B-line group.

Grasp the D-line group under slight tension and fold over the C-line group.

Pull out the left four (4) cells of the nose towards the left.

Pull out the right four (4) cells of the nose towards the right.

Flake the control lines onto the center of the canopy, splitting the groups and corresponding trailing edge into half.

Bring the slider up from the connector links until it is touching the slider stops and quarter the slider between the slider stops.

Flake the tail of the parachute on top of itself. This step will involve folding half cells between the control lines and whole cells on the remainder of the trailing edge.

Pull tail down carefully to just above slider and cocoon the parachute by wrapping the tail around the flaked cells.

DO **NOT** include the nose in this cocoon. The cocoon should roughly be the same width as the free bag.

Carefully squeeze out any trapped air.

“S”-fold the four (4) nose cells under the corresponding side of the parachute.

“S”-fold lower portion of canopy up to the trailing edge of the parachute and place under the trailing edge.

Place the Free-bag under the canopy.

“S” -fold the canopy on top of itself.

Fold the canopy back over itself.

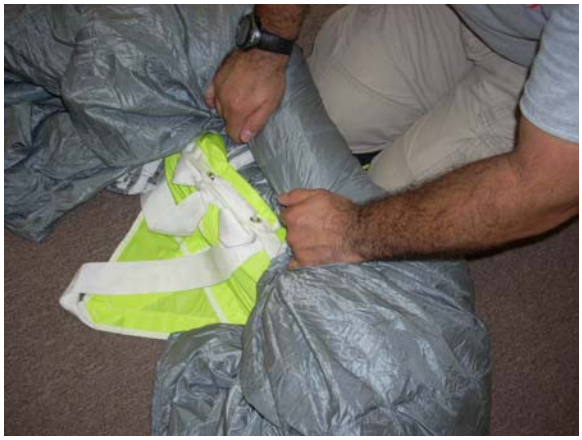
Tuck the canopy into the corners of the Free-bag.

Use the Free-bag bridle to hold the safety stow in place.

"S"-fold the canopy over onto itself once again.

Smooth out and make sure that the canopy is no wider than the Free-bag.

Follow the center seam to the end.



Roll the center material to the depth of the Free-bag. Place your knee on to hold in place.

Straighten and smooth out the “ear” formed after following the center seam.

Grasp “ear” and “s”-fold it on top of itself.

Place into the Free-bag.

Repeat the other side “ear”.

Fold the Free-bag over the canopy in order to close with the safety stow.

Use two (2) line bites @ 1 1/2” -2” to secure the Free-bag closed.

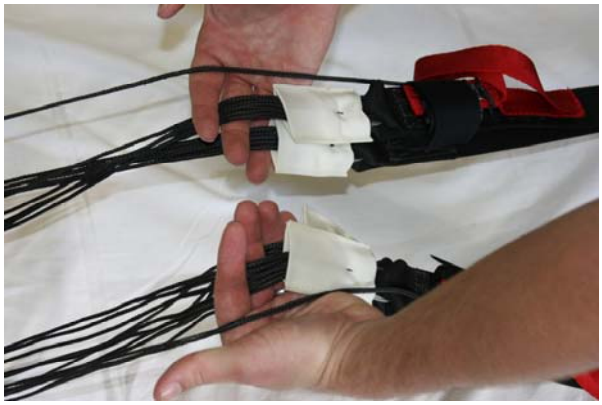
Begin to stow the rest of the reserve parachute lines into the pocket on the Free-bag.

Alternate back and forth until lines are into the pocket and Reserve Risers are to the Free-bag.

Pack the reserve in the harness / container according to the manufacturer's instructions.

PRO Pack Method of the Reserve Canopy.

Stow the Reserve Riser Brake Toggles in accordance with their instructions.



With no twists in the risers, place the left front riser line group between the middle and ring finger of the left hand.

Place the left rear riser group between the middle and fore finger of the same hand.

Place the control line between the fore finger and the thumb.

Repeat for the opposite hand and line groups.

The slider should be between your body and the parachute.

Walk towards the parachute between the line groups, moving the slider up the lines with you and separate the line groups in your hands.

Upon reaching the parachute, check that the control lines are not twisted around any other line groups.

If so, restart this step or perform another continuity check.

Step outside of the lines, group the lines together in one hand and place this group over your shoulder.

For these instructions, the parachute is over the left shoulder. Switch orientation if using the right shoulder.

With the parachute in the correct orientation (nose towards the container, tail away from the container) start counting the 9 leading edge cells out.

Start by slightly turning the parachute over your shoulder, resting the right outside cell against your body.

Count each cell and grasp this group.

Push the nose through the center of the parachute and pull it briskly back out.
Place the tip of the leading edge between your knees and hold the material in place.

Starting with the A-line group, count the 5 right cells between the A- and B- line attachment points and flake the material away from the center of the parachute.

Count the 5 right cells between the B- and C- line attachment points and flake the material away from the center of the parachute.

Count and flake the 5 right cells between the C- and D- lines.

Count and flake the 5 right cells between the D- lines and the Control Lines / tail.

Repeat this process on the other side of the canopy.

Separate the nose, one half on the side, center cell in the middle and second half on the other side.

Raise the canopy so that it is parallel to the floor and gently lay it on the floor.

Pull the slider down and away from the slider stops. Flake the nose cells on one side of the canopy.

On the outside folds, smooth out the material between the A-B lines.

Fold the A-B panels in half to narrow the pack job for the free-bag.

Do **Not** Include the **Nose** in these folds. Repeat for B-C, C-D panels.

Flake the tail of the parachute on top of itself.

After one side is flaked and smoothed out, repeat the other side.

Pull tail down carefully to just above slider and cocoon the parachute by wrapping the tail around the flaked cells.

DO **NOT** include the nose in this cocoon. The cocoon should roughly be the same width as the free bag.

Carefully squeeze out any trapped air.

“S”-fold the four (4) nose cells under the corresponding side of the parachute.

“S”-fold lower portion of canopy up to the trailing edge of the parachute and place under the trailing edge.

Place the Free-bag under the canopy.

“S” -fold the canopy on top of itself.

Fold the canopy back over itself.

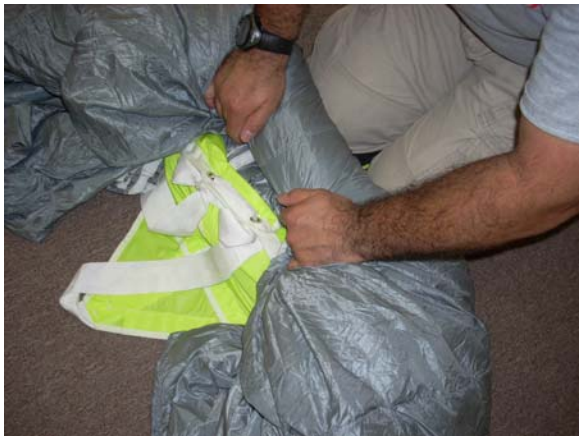
Tuck the canopy into the corners of the Free-bag.

Use the Free-bag bridle to hold the safety stow in place.

"S"-fold the canopy over onto itself once again.

Smooth out and make sure that the canopy is no wider than the Free-bag.

Follow the center seam to the end.



Roll the center material to the depth of the Free-bag. Place your knee on to hold in place.

Straighten and smooth out the “ear” formed after following the center seam.

Grasp “ear” and “s”-fold it on top of itself.

Place into the Free-bag.

Repeat the other side “ear”.

Fold the Free-bag over the canopy in order to close with the safety stow.

Use two (2) line bites @ 1 1/2” -2” to secure the Free-bag closed.

Begin to stow the rest of the reserve parachute lines into the pocket on the Free-bag.

Pack the reserve in the harness / container according to the manufacturer's instructions.

Care and Maintenance

General Storage Requirements

To ensure that serviceability standards of the reserve are maintained, every effort will be exerted to adhere to the following general storage requirements:

1. When available, a climate controlled building should be used to store the Precision Aerodynamics reserve.

2. The Precision Aerodynamics reserve shall be stored in a dry, well ventilated location and protected from pilferage, dampness, fire, dirt, insects, rodents and direct sunlight.

3. The Precision Aerodynamics reserve will **NOT** be stored in a manner which would prevent ventilation or interfere with light fixtures, heating vents, fire fighting devices, cooling units, exits or fire doors.

4. The Precision Aerodynamics reserve will **NOT** be stored in a damaged, dirty or damp condition.

5. The Precision Aerodynamics reserve will **NOT** be stored in direct contact with any building, floor or wall. Storage will be accomplished using bins, shelves, pallets, racks or dunnage to provide airspace between the storage area floor and the equipment.

6. Proper housekeeping policies and strict adherence to all safety regulations will be practiced at all times.

Storage Specifics for Parachutes

In addition to the storage requirements stipulated in the **General Storage Requirements**, the following is a list of specifics that must be enforced when storing parachutes.

1. Except for those assemblies required for contingency operations, parachutes will **NOT** be stored in a packed configuration.
2. Stored parachute assemblies will be secured from access by unauthorized personnel.
3. A parachute that is in storage, and is administered a cyclic repack and inspection, will NOT be exposed to incandescent light or indirect sunlight for a period of more than 36 hours. In addition, exposure to direct sunlight will be avoided entirely.

In-Storage Inspection

General Information:

1. An in-storage inspection is a physical check conducted on a random sample of parachutes that are located in storage.
2. Parachutes in storage will be inspected at least once every 180 calendar days and at more frequent intervals if prescribed by the local parachute maintenance officer.
3. Inspect the parachute to ensure that it is ready for use.
4. Check to be sure the parachute has the proper identification.
5. Check that no damage or deterioration has incurred.
6. Check the adequacy of the storage facilities, efforts have been taken to control pests and rodents and protection against unfavorable climatic conditions.

Water Contamination Guide

If the **Precision Aerodynamics reserve** or any of its components has been **immersed in salt-water for more than 24 hours it will be condemned.**

If the reserve or any of its components has been immersed in water, be it fresh or salt-water, the reserve and any of the components immersed shall be rinsed immediately or placed in a double plastic bag with the top securely closed to keep the contents in a wet state until they can be rinsed. **If they cannot be rinsed within 24 hours, they will be condemned.**

! CAUTION !

REMOVE ALL INSTRUMENTS BEFORE RINSING THE RESERVE AND THE COMPONENTS.

FOLLOW THESE INSTRUCTIONS FOR RINSING AFTER WATER IMMERSION.

1. Place the equipment in a large container filled with enough fresh water to completely cover it.

2. Agitate the contents of the container by hand for **5** minutes.

3. Remove the equipment from the container and suspend or elevate it in a shaded area for a period of 5-10 minutes to allow it to drain. **Do NOT Wring** the fabric or suspension lines of a parachute canopy.
4. Repeat the procedures in steps 1. through 3. above, twice, using fresh, clean water for each rinse.
5. After the 3rd rinse, allow the equipment to drain thoroughly. Upon completion of draining, dry the equipment by elevating or suspending the item in a well ventilated room or a heated drying room with the temperature not to exceed 130° Fahrenheit or 55° Celsius. When heat is used it shall not exceed 105° F. or 40° C. The preferred temperature is 90° F. / 32° C. The use of electric circulating fans will reduce the drying time.

6. When dried, perform a technical / rigger-type inspection of the equipment. Corroded metal components or corrosion stained fabrics or suspension lines will be either repaired or replaced.

7. Record the immersion and rinsing and any repairs made to the equipment in the parachute log record.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Small Airplane Directorate
Aircraft Certification Office
One Crown Center
1895 Phoenix Blvd., Suite 450
Atlanta, Georgia 30349

DEC 1 1 1997

Mr. George Galloway
President
Precision Aerodynamics, Inc.
U.S. Highway 127 N.
P.O. Box 386
Dunlap, TN 37327

Dear Mr. Galloway:

This is in response to October 31, 1997, request for Federal Aviation Administration authorization to identify the TR Series of the Raven model reserve parachute canopy in accordance with the requirements of Federal Aviation Regulation (FAR) Part 21, Subpart O, Technical Standard Order (TSO) C23d, and SAE Aeronautical Standard AS-8015B.

We find your October 31, 1997, Statement of Conformance submitted with your request and your Quality Control Manual dated July 29, 1988, acceptable.

The following data as submitted with your October 31, 1997, letter will be retained on file for this authorization:

a. Precision Aerodynamics, Inc. Drop Test Report for TR Series Reserve Canopy.

b. Precision Aerodynamics, Inc. Drawings and Design Data for the TR Series

c. Precision Aerodynamics, Inc. TSO label for the TR Series.

d. Precision Aerodynamics, Inc. Ram Air Parachute Owner's Manual.

Effective this date, you are authorized to identify the TR Series of the Raven model reserve parachute canopy with the appropriate TSO markings required by the applicable TSO and FAR 21.607(d).

This authorization is not transferable to another person or location and is effective until surrendered, withdrawn, or otherwise terminated by the Administrator.

Your responsibilities as a holder of a TSO authorization are outlined in FAR 21.3 and FAR 21, Subpart O.

The Airframe Engineer for this authorization is Cindy Lorenzen, telephone number (770)703-6078. The Program Support Technician is Lorraine Bush, telephone (770)703-6044.

Sincerely,

Paul C. Sconyers
Associate Manager, ACE-117A
Atlanta Aircraft Certification Office