FREE
FLIGHT
ENTERPRISES

USER MANUAL

L.A.R.A. AND P.D.A. PARACHUTES

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INTRODUCTION

Free Flight Enterprises was the first to develop emergency reserve parachutes for hang gliding and paragliding. In the event of a structural failure, mid-air collision, irrecoverable collapse, or a medical emergency, your emergency reserve is your last and best chance to avoid serious injury. Free Flight has been selling emergency reserve parachutes for 34 years, and we believe we have the best products in the industry.

WARRANTY INFORMATION

NO WARRANTY – DISCLAIMER - WAIVER

Due to the unavoidable risks associated with the use of this parachute equipment, Free Flight Enterprises, Inc. makes no warranty, either expressed or implied. Parachute equipment is sold with all faults and without any warranty, merchantability, or fitness for any purpose.

Free Flight Enterprises, Inc. disclaims any liability in tort for damages, direct or consequential, including personal injuries resulting from a malfunction or from a defect in design, manufacturing, materials, or workmanship, whether caused by negligence on the part of Free Flight Enterprises, Inc. or otherwise.

By use of any parachute equipment manufactured or sold by Free Flight Enterprises, Inc., or allowing its use by others, buyers and/or users, waive any liability on the part of Free Flight Enterprises, Inc. for personal injuries or other damages arising from use.

The liability of Free Flight Enterprises, Inc. is limited to replacement of defective parts found upon examination by Free Flight Enterprises, Inc., and limited to defective materials or workmanship not caused by accident, striking, improper use, alteration, tampering, excessive use, misuse, or abuse. Product must be returned within 60 days of purchase.

PRODUCT WARNING

!!WARNING!!

1. Parachuting is a high-risk activity, which may cause or result in serious injury or death.

2. Parachutes sometimes malfunction, even with proper design, manufacturing, assembly, packing, maintenance, and use. The results of such malfunctions may result in serious injury or death.

3. Do not purchase or use any parachute equipment manufactured or sold by Free Flight Enterprises, Inc. unless you understand and voluntarily accept these risks.

4. Do not purchase or use any parachute equipment manufactured or sold by Free Flight Enterprises, Inc. unless you have read, understand, and accept this Warning and the No Warranty-Disclaimer-Waiver.

COMPONENTS

Our parachutes are available in two different designs – the P.D.A. (pulled down apex) and L.A.R.A. (low aspect annular ratio). The P.D.A. design was the first improvement in hang glider reserves over the older conical parachutes. The P.D.A. has a line connected to the parachute apex that pulls down the apex, flattens the parachute, and increases inflated diameter. This increases drag and reduces the sink rate, which gives performance with a lighter, less expensive chute and a smaller pack volume.

The L.A.R.A. technology takes the concept one-step further, using specially shaped gores (the triangular segments in the parachute canopy) to better control the inflated shape and further enhances the aerodynamic performance of the parachute. A properly designed annular parachute gives the lightest parachute weight and smallest pack volume for a given rate of descent.

There are no structural differences between the hang gliding “HG” and paragliding “PG” canopies. You may convert the PG canopy for hang gliding by adding a bridle extension; however, we strongly recommend a paraswivel, which is integral on the HG configuration. Without a paraswivel, a spinning broken hang glider can close the canopy by twisting the bridle and shroud lines.

All hang gliding parachutes are fitted with a 25-foot bridle and a paraswivel connection between the bridle and parachute lines. The 25-foot bridle extends beyond the glider wings so that the deployment bag will reach clear air beyond the glider before the lines are pulled from the deployment bag. This reduces the chance of entanglement with the glider. The paraswivel prevents a spinning or rotating glider from twisting up the parachute lines and closing the canopy during descent.

All paragliding parachutes are fitted with a 4-foot bridle so that the parachute canopy will deploy below the main paraglide canopy. A paraswivel attachment is optional.

L.A.R.A. SPECIFICATIONS

MODEL	GORES	ITEM WEIGHT (LBS)	DIAMETER (FT)	SQ FT	PILOT WEIGHT MAX (LBS)	LINES, SUSP, VENT, CENTER (LBS)	BRIDLE / RISER BREAKING STRENGTH (LBS)
L.A.R.A. 175, HG*	20	5.3	15.0	294.0	175	NYLON 400, 360, 2000	NYLON 6,000
L.A.R.A. 175 GOLD, HG*	20	4.7	15.0	294.0	175	SEPCTRA 500, 500, 2000	KEVLAR 6,000
L.A.R.A. 175, PG*	20	5.1	15.0	294.0	175	NYLON 400, 360, 2000	NYLON 6,000
L.A.R.A. 175 GOLD, PG*	20	3.8	15.0	294.0	175	SEPCTRA 500, 500, 2000	KEVLAR 6,000
L.A.R.A. 250, HG*	22	5.8	16.0	328.0	250	NYLON 400, 360, 2000	NYLON 6,000
L.A.R.A. 250 GOLD, HG*	22	4.7	16.0	328.0	250	SEPCTRA 500, 500, 2000	KEVLAR 6,000
L.A.R.A. 250, PG*	22	5.6	16.0	328.0	250	NYLON 400, 360, 2000	NYLON 6,000
L.A.R.A. 250 GOLD, PG*	22	4.1	16.0	328.0	250	SEPCTRA 500, 500, 2000	KEVLAR 6,000
L.A.R.A. 400, HG*	24	10.0	20.0	503.0	400	NYLON 400, 360, 2000	KEVLAR 13,500
L.A.R.A. 400 GOLD, HG*	24	7.8	20.0	503.0	400	SEPCTRA 500, 500, 2000	KEVLAR 13,500
L.A.R.A. 400, PG*	24	9.5	20.0	503.0	400	NYLON 400, 360, 2000	KEVLAR 13,500
L.A.R.A. 400 GOLD, PG*	24	6.8	20.0	503.0	400	SEPCTRA 500, 500, 2000	KEVLAR 13,500

***ADD 1 LB IN ITEM WEIGHT FOR THE PARASWIVEL ON THE L.A.R.A. AND P.D.A.**

P.D.A. SPECIFICATIONS

MODEL	GORES	ITEM WEIGHT (LBS)	DIAMETER (FT)	SQ FT	PILOT WEIGHT MAX (LBS)	LINES, SUSP, VENT, CENTER (LBS)	BRIDLE / RISER BREAKING STRENGTH (LBS)
P.D.A. 20, HG*	20	5.0	18.4	238.0	250	250 LBS	NYLON 6,000
P.D.A. 20, PG*	20	4.5	18.4	238.0	175	400 LBS	NYLON 6,000
P.D.A. 22, HG*	22	6.0	20.0	302.0	260	400 LBS	NYLON 6,000
P.D.A. 22, PG*	22	5.5	20.0	302.0	230	400 LBS	NYLON 6,000
P.D.A. 24, HG*	24	8.5	21.9	336.0	350	360 LBS	NYLON 9,800
P.D.A. 24, PG*	24	8.0	21.9	336.0	300	360 LBS	NYLON 9,800
***ADD 1 LB IN ITEM WEIGHT FOR THE PARASWIVEL ON THE L.A.R.A. AND P.D.A.**							

REPAIRS

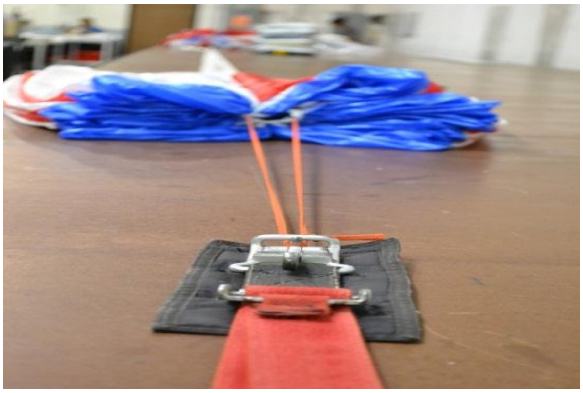
- No major repairs or any alterations are authorized. Any repairs done in the field must be of a nature that no disassembly of any portion of the canopy is required. Any such maintenance must be returned to the factory.
- A certificated senior or master parachute rigger may do repairs such as a small patch (less than 9” dimension of the largest damaged area). The repairs must be done in accordance with the procedures in the Poynters Parachute Manual.
- Repair damage with a maximum dimension of 1/2" or less using a single inside-patch made from MIL-C-44378 cloth, or an equivalent. The patch shall be a minimum of 2" and folded under at edges 1/2” on each side. Sew with a single needle sewing machine 1/16” from edge. Use a single row, 301 stbv itch, 7-11 s.p.i., with V-T-295 Type II, Class A, Size E Thread, overstitched a minimum of 1/2". Do not remove damaged material.
- Repairs shall be limited to one per gore and three per canopy.

PACKING INSTRUCTIONS

1. Thread a piece of suspension line through the tabs at the crown of the canopy. See View 1.

View 1

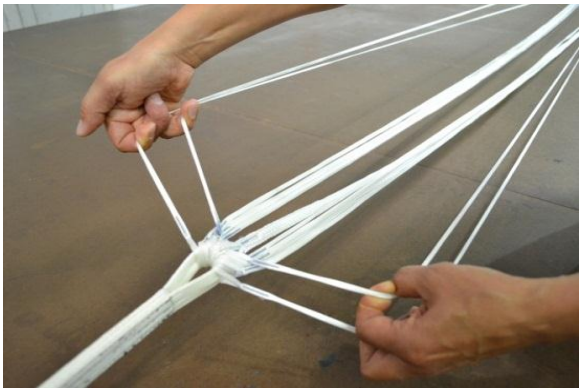
2. Tie the ends together and fasten to a tension device. See View 2.



View 2

3. Attach the other end of the parachute (at the bridle) to the other tension device. Separate the line groups (one to each side of the center line at the bridle). Run a four-line check. See Views 3 – 4.

View 3

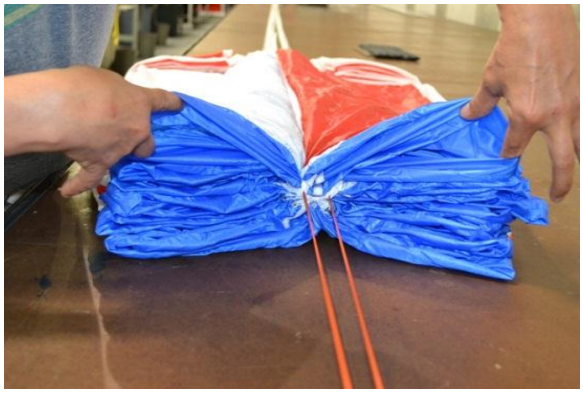


View 4

4. Flake the canopy in the conventional manner. Place half of the gores on each side. Straighten the skirt and fold each side 45 degrees. See View 5.

View 5

5. Dress each gore at the crown of the canopy with your hand. See View 6 – 7.



View 6

View 7

6. Fold the canopy in thirds. Then, fold again into fifths, placing shot bags as needed. See View 8 – 9.

View 8

View 9

7. Pull the control line from the tabs at the crown of the canopy. See View 10. **Make sure to remove control line prior to packing canopy into the deployment bag!**

View 10

8. Place the crown (or top) of the canopy in the deployment bag. See View 11.

View 11

9. S-fold the remainder of the canopy into the deployment bag. See View 12.

View 12

10. Close the first flap of the bag and stow the suspension lines using rubber bands. Make each stow no longer than 1". See View 13.

View 13

11. Using your hand or a fid with a notch end, S-fold the suspension lines into the side pouch. See View 14.

View 14

12. Along with the suspension lines, fold 2 feet of the bridle into the side pouch. Note that most of the bridle stays on the outside of the bag. See View 15.

View 15

13. Close the outside flap, S-folding the rest of the bridle using 1" stows. See View 16.

View 16

14. Using the method appropriate for the harness, place the packed parachute into the container.