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Equipment handbook for the dual parachute **Firebird Tandem**



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1. Foreword

This Handbook applies to the Firebird Tandem main canopy. It describes the operating, packing and maintenance Instructions. It is the duty of the Owner/User to make himself well versed in the contents of this Handbook. Before using the Parachute and to strictly adhere to the Instructions contained within this Handbook in the use of the Parachute. Because the described Parachute contains a main Parachute with Steering and Braking Capabilities, we strongly recommend that the user obtain a thorough theoretical and practical briefing in dealing with this parachute from the Manufacturer. In this way the Owner/User would guarantee himself the optimal functional safety aswell as a long life expectancy for the Parachute. In addition, with his proper behavior, he contributes to the avoidance of accidents, which in the least spares him and the general public annoyance and damage.

General Data:

Classification: German Type Certification

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2. Operating Data

Size:	330 / 360 / 400 sqft.
Weight:	circa. 6 / 8 Kg
Max Load on Canopy:	330 / 408 lbs = 185 kg 360 / 441 lbs = 200 kg 400 / 500 lbs = 227 kg
Max. Deployment Speed:	150 KEAS / 277 Km/h
Max. Repack Cycle:	180 Days

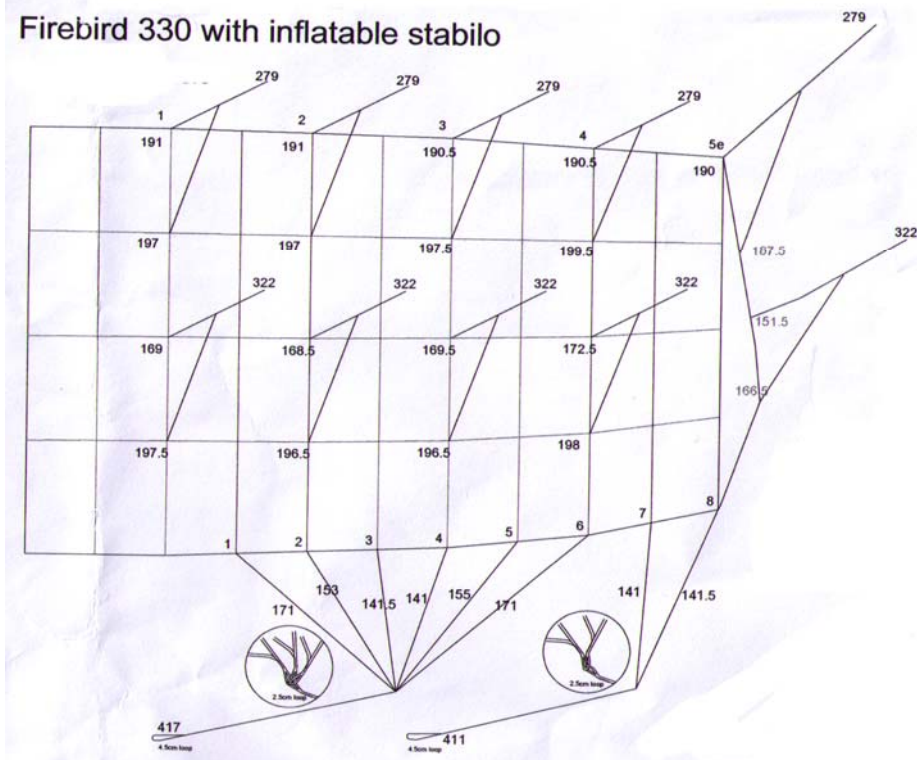
3. Parts List

Maincanopy
Lines
Slider
Links

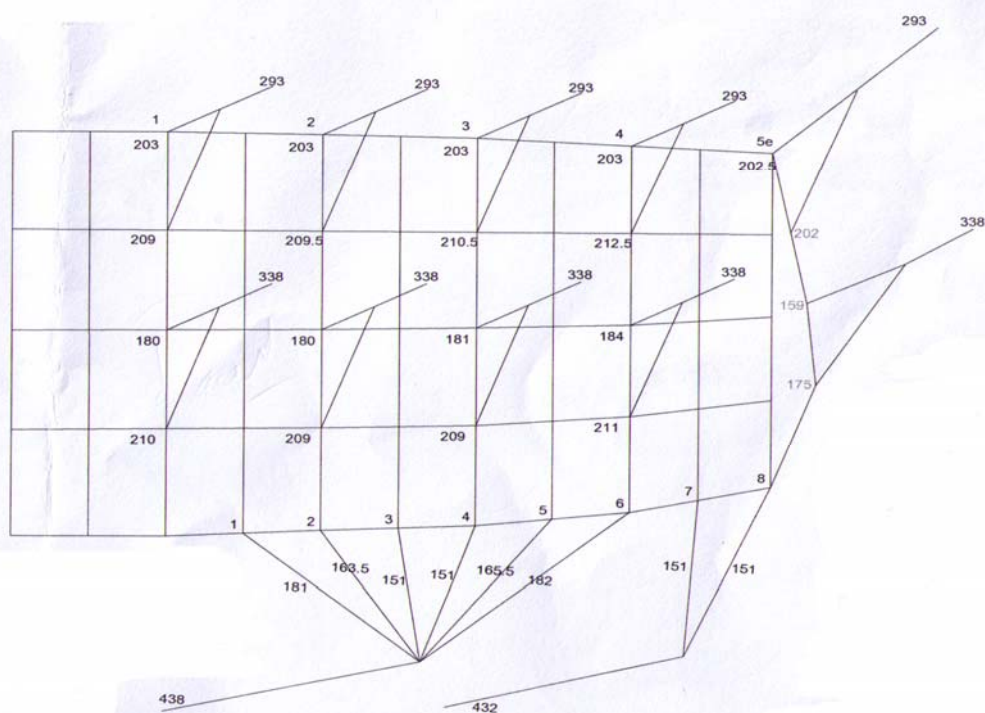
4. Main Parachute

9-Cell Ram Air semi elliptical Parachute of zero porosity Fabric in I-Beam / Cordwise construction. Without braking loops for the steering toggles.

Firebird 330 with inflatable stabilo



Firebird 360 with inflatable stabilo



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5. Assembly Instructions

We recommend that your new Firebird Tandem should be assembled and packed into your parachute system by an qualified person (FAA rigger or equivalent). Before you begin, be sure the risers, toggles, free bag, pilot chute, harness, container and other items are compatible with your Firebird Tandem canopy.

6. Attaching to Risers

When assembling the canopy onto risers with rapid links, it is important that the following directions be followed precisely.

The connector links supplied by FIREBIRD for use with their canopies are of the highest quality and carefully inspected and tested. It is important that no substitute links be used. Other links may look similar, or even identical, to those supplied by FIREBIRD, but any substitute could be considerably weaker than the original. (Original MS 22002-2 tensile strenght: 3000 lbs)

If these directions are followed correctly, and only parts supplied by FIREBIRD are used, these links will provide excellent service.

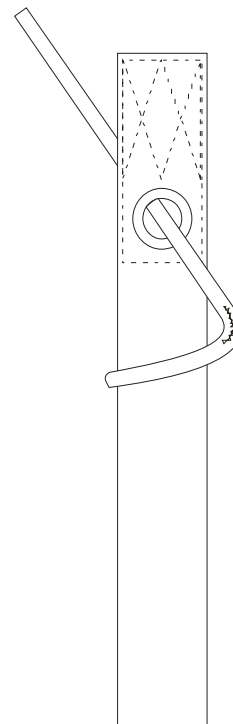
- 1) Remove all grease and dirt from links, using a solvent that will leave no residue. Trichloreothlane or any electrical contact cleaner is recommended.
- 2) Inspect the link carefully. Check for nicks, burrs or any sign of bending or stress.
- 3) Slide one the link onto riser.
- 4) Perform a thorough line check at this point, making absolutely sure that the canopy is straight. After the links are tightened with locking compound (LOCtite, Permanex or Truelock), it will be very difficult to correct any errors.
- 5) When you are sure the canopy is straight, unscrew the screws and put one drop of lock ing compound on the threads. Immediately tighten them gently tight. Clean off any excess thread lock with a clean, dry rag. Do not use water or solvents.
- 6) Make a small match mark along the screw and the link. This mark will serve as an easy method to check for tightness. If the match mark remains intact, then the screw is still in place. If the upper and lower parts of the mark become miss-aligned, then the screw has shifted. Should this happen, the link must be immediately disassembled, cleaned and inspected. If no damage has occurred, the riser/link/line assembly may be reattached according to steps 1 through 5.

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7. Attaching Toggles

Make sure the steering line goes through the grommet of the slider.

Route the steering line through the guide ring on the riser. Then route it through the grommet in the toggle (or the ring of the small toggle for the extra brakes), starting from the side with Velcro. Pull the toggle through the finger-trap loop and tighten.
(Only use Tandem Toggles!)



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8. Periodic Inspection Instructions

The equipment should be re-examined every 12 months.

The main parachute canopy and the container system should be thoroughly examined every 50 jumps or every 120 days after assembly, whichever comes first.

This examination is considerably more detailed than the inspection that is to be carried out each time the parachute is packed. The inspection can be carried out according to the following directions. The system should be examined in place that is clean, dry, well lighted and large enough that the parachute can be completely laid out.

The following inspection sequence is systematic and meaningful:

1. Canopy Top Skin

The canopy should be completely spread out. Pay attention to all seams, potential tears, burns and separations.

2. Canopy Bottom Skin

Turn the canopy over and check it in the same manner the top skin was inspected. In addition, pay special attention to the suspension line attachments.

3. Interior Ribs

Each rib of the canopy, from the nose to the trailing edge, should be examined. This requires crawling into each cell. Pay special attention to the reinforcement tapes, the suspension line attachment points and the pilot-chute attachment. Also check that the cross-ports are not frayed.

4. Outer Side of Canopy

Lay the canopy on its side, so that the cells are stacked one on top of the other. In this way the condition of the stabilizers and slider stops can be examined.

5. Suspension Lines

The entire length of the lines should be examined for damage. Pay special attention to the cascades and the connector links. Check that the connector links are securely fastened.

6. Slider

The slider should be checked for damage to the fabric, the reinforcement tapes and the seams. The grommets should have no sharp edges, must be tight and securely attached to the slider.

7. Steering Lines

Check that the steering lines and secondary flairs run straight and orderly through the slider and also through the small ring on the main riser and are correctly fastened to the steering toggles. If the steering lines or secondary flairs are twisted, they should be straightened by twisting in the opposite direction.

8. Connector Links

See page 6, 6. Attaching to risers

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**Should something unusual be noticed during the inspection,
contact the manufacturer immediately.
When it doubt - play it safe and contact us!**

9. Safekeeping and Storage

The parachute should be kept dry (at 45-70% relative humidity) and cool (10-15°C / 50-60° F), in a container through which light will not pass. Ultraviolet light can cause invisible damage to the fabric through decay of the nylon fibers. The parachute should be kept away from all types of corrosive substances such as lye, acids, fuels, varnishes and solvents.

In extremely hot and humid climates the canopies should be re-packed in a shorter cycle than 180 days.

10. Cleaning

Basically, parachute canopies should only be cleaned with fresh water. The use of brushes or rough sponges should be avoided.

After contact with salt water, the parachutes should be rinsed with fresh water at least three times within the first 24 hours.

The removal of oil, tar or similar substances should be discussed with the manufacturer. The parachute should not be cleaned in a washing machine.

Only dry the canopy by hanging them in the shade. After cleaning the canopy it should be subject to a thorough re-examination.

11. Repair, Alteration and Replacement

Repairs, alterations and modifications may only be performed by the manufacturer or by arrangement with the manufacturer. Only official replacement parts or those approved by the manufacturer may be used.

We recommend to replace the complete lineset after 350 - 500 jumps.

**Disregard for these procedures
can void the airworthiness!**

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12. Packing Instructions for Firebird Tandem

The modern, ram-air parachutes produced today are very reliable canopies. As long as the parachute is packed with straight and untangled lines, it will usually open.

Nevertheless, we recommend the packing instructions illustrated on the following pages in order to achieve consistently good, soft openings that are better for the fabric and the skydiver.

The parachute should be packed carefully and in the same manner after each jump. Part of this careful procedure is to make sure that the packing area is clean and not in direct sunlight. Ultraviolet light can cause irreversible damage to the canopy fabric. When it is not possible to pack indoors at the dropzone, minimize the amount of time the canopy is subject to direct sunlight and the corresponding ultraviolet rays. When it can not be immediately packed, the canopy and harness-container should be covered and protected from damage.

Packing on concrete or asphalt should be avoided, since rough surfaces like these can damage the fabric, lines and hardware.

! Important !

Parachutes may only be packed by the jumper or a qualified individual (rigger or equivalent). Contact the manufacturer immediately with any questions.

Pre-inspection Before Each Pack Job

The complete skydiving system should be checked for compliance with the manufacturer's specifications. The parachute canopy should be stretched out with the lines taut. The lines should be checked that they are straight and not tangled and the slider should be undamaged.

FIREBIRD recommends using a pro-pack method for the main canopy production series.

**Should something unusual be noticed during the inspection,
contact the manufacturer immediately.**

When it doubt - play it safe and contact us!

Stretch the rig and parachute out so that the reserve flaps of the container face up.
It is advisable to weight down the container so that it doesn't slide so easily during packing.

1. Setting the brake of the main steering or second steering line is not necessary for the opening of the Firebird Tandem. There is no brake loop on the steering line.

Just pull the steering lines up that the steering toggles remain close to the guiding ring on the riser.

Now put the second toggle into the pocket on the riser.

Fold the main toggle in the middle and put it also in that pocket on the rear riser.



2. At last close the velcro cover of the rear riser tight to keep the toggles in place during the opening.



3. Grasp the line groups of each riser separated to check them for free routing, while walking up to the canopy.



4. All the way up under the canopy you reach the slider and now check again the routing of the lines. They must go straight thru the slider towards the bottom surface of the canopy.



5. Count all 9 cells from the front, starting on the outside and lay them on top of each other.



6. Take all 9 cells from the nose together and put them between your knees.



7. Flake out the canopy between line group A and B on each side of the parachute.



8. Flake the slider so that it forms a star at the base of the canopy.



9. Grap all D lines together, pull them out, flake the fabric between C and D lines to the outside and place the D lines in the middle of the parachute next to the slider.



10. Fold the stabiliser onto the lines in the middle.



11. Be careful when pulling the tail around the rest of the canopy, so that the steering lines and cascades stay in the middle and DON'T go around the canopy. Otherwise this could lead to a line-over situation upon opening, which in turn could result in a malfunction or severely damaged canopy.



12. The tail is up to the base of the canopy next to the slider grommets.



13. Release the 9 cells of the nose between your knees and push them gently straight in the middle of the canopy.



14. Take both sides of the tail in one hand and roll them several times towards the center of the canopy. Pay attention that the canopy fabric stays taut while being rolled, so that it rolls up to the base.
Then gently ease the evenly finished rolled tail toward the center cell of the canopy nose.
With your free hand, reach under the middle of the entire bundled canopy. Use a little forward swing to carefully lay this "cocoon" out on a flat surface. Pay attention that the suspension lines remain taut and that the cocoon stays together.



15. Secure the base of this cocoon (at the lines) with both knees and carefully squeeze the air out of the canopy. While forcing the air out, narrow the cocoon to the width of the POD/deployment bag by carefully working the fabric sideways, under the cocoon. Watch out that the seam of the center cell stays in the middle.



16. Move to the side of the canopy, put one hand under the base of the cocoon, and fold the parachute upward in an S-fold as shown.




17. Secure the first S-fold with both knees and reach under the cocoon with one hand to compress the material against your thighs. Now fold the upper part of the canopy material over your lower arm and squeeze the rest of the air out, so that it can be folded in an S-fold in the opposite direction from the first S-fold. Continuously secure the canopy material with one hand.



18. Then place one side of the canopy into the POD. Use your knee to make sure that the other (still free) side doesn't slip away while you're doing this.




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19. Now place the second side into the POD. Secure the canopy with one hand so that it doesn't slip out. How to close the POD and how to put it in the container system please follow the instructions in the manual for the harness container system.



13. Allowable Service Life

On the condition that the parachute is in accordance with the regulations and has been handled corresponding to the instructions contained in this Equipment Handbook, the allowable service life is 15 years.

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We are available at your convenience
to answer questions and provide further information at:



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