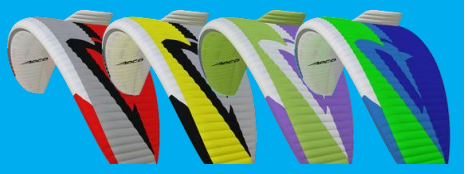
2026/05 (rev. 0)

F3 MKII
PURE STABILITY

F3 MKII

USER MANUAL



LWT FAR 3D RTS PBH CHP HIT WAA BBP

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APCO AVIATION

CONTENTS

WARNING

THIS IS NOT A TRAINING MANUAL. IT IS EXTREMELY DANGEROUS TO YOURSELF AND OTHERS
TO ATTEMPT TO FLY THIS OR ANY PARAGLIDER WITHOUT FIRST COMPLETING A FLYING COURSE
GIVEN BY A QUALIFIED INSTRUCTOR.

APCO AVIATION'S GLIDERS ARE CAREFULLY MANUFACTURED AND INSPECTED BY THE FACTORY.
PLEASE USE THE GLIDER ONLY AS DESCRIBED IN THIS MANUAL. DO NOT MAKE ANY CHANGES TO THE GLIDER.

F3 MKII IS A LIGHT WEIGHT GLIDER. SHOCK AND LOAD TESTED UP TO 160 KG. FULL APPROVAL.
THE WING IS DESIGNED FOR CROSS COUNTRY AND RECREATIONAL FLYING.
F3 MKII IS NOT AN ACROBATIC WING AND IS NOT DESIGNED FOR HIGH LOAD AEROBATIC MANEUVERS.

AS WITH ANY SPORT – WITHOUT TAKING THE APPROPRIATE PRECAUTIONS, POWERED PARAGLIDING CAN BE DANGEROUS.

1 DISCLAIMER OF LIABILITY

Taking into consideration the inherent risk in paragliding or hang gliding, (free flying and motorized), it must be expressly understood that the manufacturer and seller do not assume any responsibility for accidents, losses and direct or indirect damage following the use or misuse of this product.

Apco Aviation Ltd. is engaged in the manufacture and sale of paragliding, motorized paragliding and emergency parachute equipment. This equipment should be used under proper conditions and after proper instruction from a qualified instructor. Apco Aviation Ltd. disclaims any liability or responsibility for injuries or damages resulting from the use of this equipment. The glider is designed to perform in the frame of the required class as certified.

2 INTRODUCTION

The F3 MKII is the next generation of the acclaimed F3, rebuilt from the ground up to bring top speed, safety, and performance at incredible efficiency to experienced pilots across all paramotor disciplines.

The F3 MKII uses an advanced Reflex profile, incorporating all proven technologies from the NRG platform, to increase both performance and stability throughout the speed range. The sail tension has been optimized to give the wing incredible rigidity without negatively affecting performance, so the wing is and feels very solid and reassuring in flight.

The riser / speed system / trim system has been re-designed to incorporate all of APCO's ground-breaking technologies. The F3 MKII features APCO's Flow Aligned Ribs (FAR), morphing direction from centre to tip, aligning the ribs with the natural flow direction for increased performance and stability. The canopy incorporates 2 functional 3D cuts for the best possible leading-edge shape definition. Construction weight reduced to as low as 3.9 kg while retaining APCO's legendary durability.

3 TECHNICAL DATA

F3 MKII / Size	22	24	26
Code	22322	22324	22326
Cells	56	58	60
Area [m²]	22.6	24.0	25.4
Area (projected) [m²]	19.11	20.30	21.48
Span (incl. Stabilizer) [m]	11.42	12.00	12.58
Span (projected) [m]	9.04	9.50	9.96
Aspect Ratio	5.77	6.0	6.23
Aspect Ratio (projected)	4.28	4.45	4.62
Weight Range (all up) Paramotor [kg]	70–100	70–120	70–140
Weight Range (all up) Para-Trike [kg]	70–120	70–140	70–165
Canopy Weight [kg]	4.35	4.60	5.05
Root Cord [m]	2.42	2.42	2.42
Tip Chord [m]	0.25	0.25	0.25
Length of Lines on B [m]	6.96	7.26	7.56
Total Length of Lines [m]	340	356	380

V-min [km/h] at optimal wing loading*	25
V-trim (closed) [km/h]	36–40
V-trim (neutral) [km/h]	43–47
V-trim (open) [km/h]	50–56
V-max [km/h]	69
Min Sink [m/s] at optimal wing loading	1.2 m/sec

** All data measured at sea level, using a combination of GPS and Speed Probe, averaged over several runs.*

4 CONSTRUCTION

The glider is constructed with a top and bottom surface, connected by ribs. One top and bottom panel, together with the connecting ribs is called a cell. Each cell has an opening on the front lower part. The cells fill with air forcing the panels to take the shape dictated by the air-foil (rib) section. On either side the wing ends in a stabilizer or wing tip, which provides straight-line (Yaw) stability and produces some outward lift to keep the span-wise tension.

The front part of the ribs incorporates APCO's FLEXON batten system to keep the leading edge shaped at high speeds and in turbulent air. The line hook-up points are made of Dyneema and embedded in the bottom surface of the wing for minimal drag and maximum performance.

5 MATERIALS

The glider is made from tear resistant Ripstop Nylon cloth, which is P.U. coated to zero porosity and then siliconized to give the fabric high resistance to the elements. The lines are made of Dyneema and polyester sheathed Technora for protection against UV, wear and abrasion. The delta maillons and V-links that attach the lines to the risers are made of stainless steel and aluminium.

6 FLEXON® BATTEN SYSTEM

New generation FLEXON® batten system is incorporated in the leading edge of the ribs, ensuring perfect profile shape instead of traditional Mylar reinforcement. FLEXON® battens reduce the weight of the glider by an additional 500 g and will guarantee no deterioration in performance or launch characteristics over time. The FLEXON batten system is practically indestructible, safeguarding performance over the lifespan of the glider.

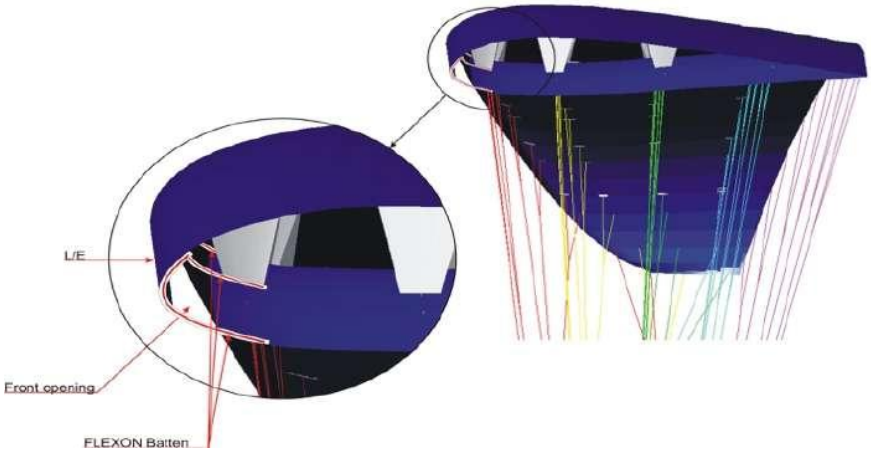


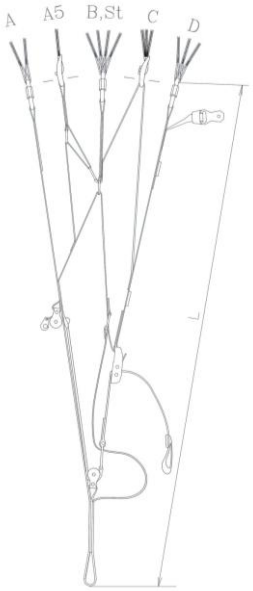
Fig. B – FLEXON® Batten system: leading edge cross-section showing L/E, Front opening and FLEXON Batten positions

7 TRIMMING

All APCO gliders are trimmed for optimum performance combined with unsurpassed safety. It is very important not to re-trim or tamper with any of the lines or risers as this may alter the performance and safety. Adjusting the brake line should be done in accordance with this manual and carefully checked before flying.

8 RISERS

The F3 MKII is equipped with embedded OAA system risers that incorporate both stainless steel classic maillons and APCO exclusive aluminium V-links. The risers have both an accelerator and trimmers. The trimmer markings have been designed to accommodate initial material stretch – the Main blue neutral trim position line comes into effect after a few flights. At no time should the pilot change the risers or use risers not intended for this specific glider.



Length of risers L (Neutral Position L=485)					
Connection to:	A1,3	A5	B,St	C	D
Speedsystem not activated trim down	485	465	460	445	435
Speedsystem not activated trim (0)	485	485	485	485	485
Speedsystem not activated trim up	485	485	485	565	615
Speedsystem activated trim (0)	350	420	455	53	615

Fig. 1 – Riser line length diagram

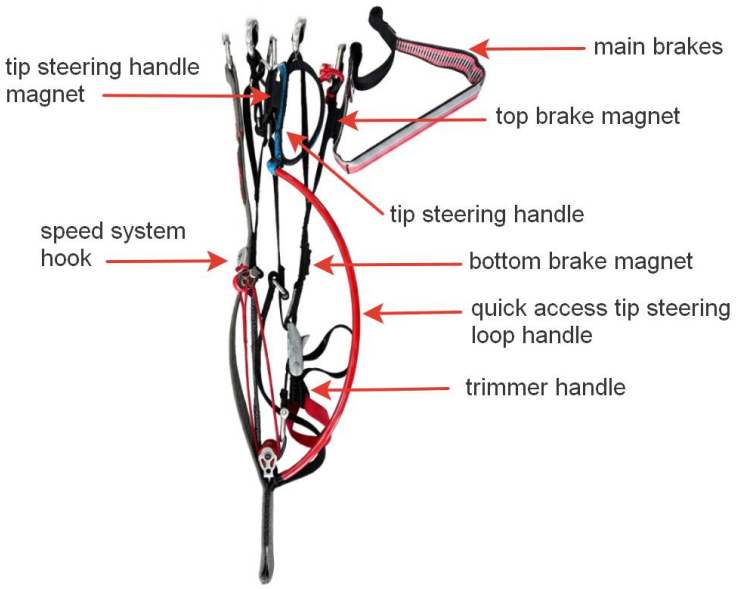


Fig. 2 – Riser assembly: trimmer handle, brake magnets and speed system hook

V-link Connector

The V-link is very light and strong and allows new riser design possibilities when used in combination with the classic maillons. The V-links do not allow line trimming using the classic method, but it is possible by applying the following method on the loops of the lines on each level:

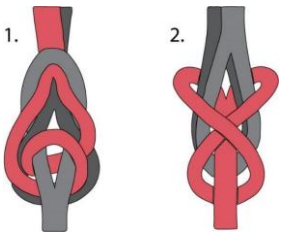


Fig. C – Line loop adjustment: Method 1 (left) and Method 2 (right) knot techniques

Line size	Method 1	Method 2
1.5mm	5mm	7.5mm
1.3mm	5mm	6.5mm
1mm	5mm	6mm

Fig. D – Loop adjustment lengths by line diameter

Apply desired method on different line diameters not mentioned in the table above but please note that the results will differ.

Please note that the V-link "Zero" point is different from the classic delta maillons:

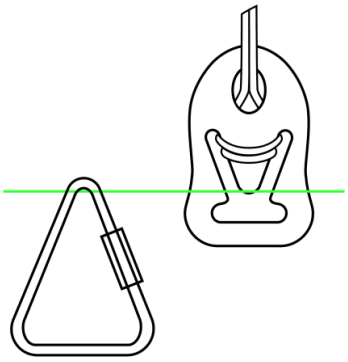


Fig. E – V-link 'Zero' reference point compared to classic delta maillon

V-Link Snap-On Plastic Insert Installation

Fig. F – V-Link Snap-On Plastic Insert Installation Manual – 5-step procedure with photo reference

CAUTION

AT NO TIME SHOULD THE PILOT CHANGE THE RISERS OR USE RISERS NOT INTENDED FOR THIS SPECIFIC GLIDER.
THIS WILL AFFECT THE PERFORMANCE AND SAFETY OF THE GLIDER.

9 TRIMMERS

The F3 MKII risers are equipped with replaceable trimmers. The neutral setting is when the A/B/C/D riser legs are of equal length in flight (Main Blue mark on the trim webbing). For take-off and landing, set the trimmers in the closed (minimum trim speed) position. After take-off, set to Neutral. Close again before landing.

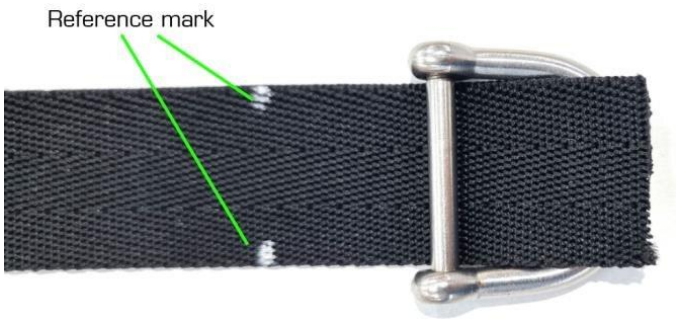


Fig. 3 – Trimmer webbing: Main NEUTRAL mark and fully closed trim level

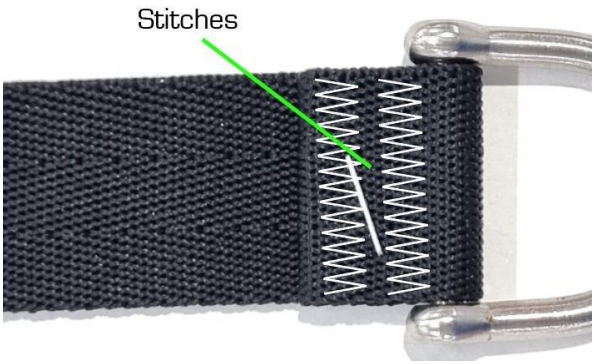


Fig. 4a – Trimmer webbing on D-ring

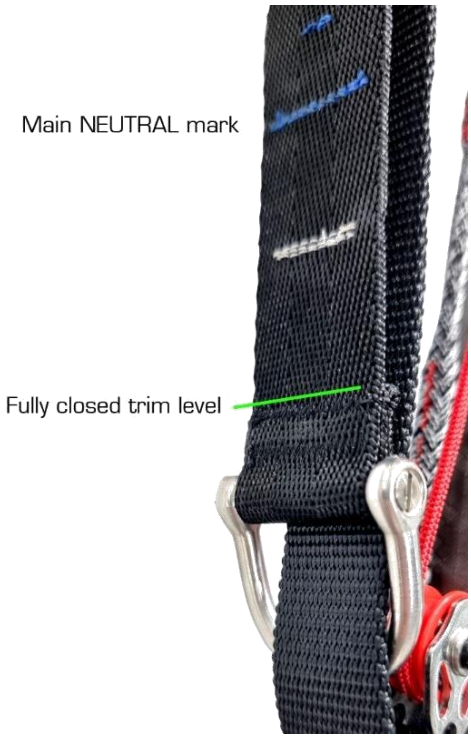


Fig. 4b – Securing new webbing with stitches

CAUTION

DO NOT USE MAIN BRAKE HANDLES WHEN THE TRIMMER IS SET BETWEEN NEUTRAL AND FULLY OPEN LEVELS.
USE TIP STEERING HANDLES ONLY.

Replacing Trimmer Webbing

The trimmer webbing is replaceable. It is highly recommended to allow a certified repair centre or APCO factory to replace it. Remove the worn-out webbing by cutting from the metal D-ring (do not open the D-ring screw; use Loctite if opened). Secure new webbing with a stitch capable of a breaking load of minimum 300 kg.

10 OAA SYSTEM (ONE ACTION ACCELERATION)

OAA – One Action Acceleration system – allows pilots to simultaneously operate both the speed system and the trimmer for optimized angle of attack at any given speed. The OAA system allows automatic operation of the trimmers according to the position of the speed bar, enabling a larger speed range in one smooth action.

Fig. 5 – OAA system: OAA Line and OAA Pulley on the riser

- Prior to using the speed bar, move the trimmers to the Neutral position – Blue mark line on the trimmer webbing.
- It is not recommended to apply the speed bar with trimmers fully open – this will not result in a greater speed range.
- Do not use main brake handles while the OAA is activated.

11 SPEED SYSTEM

Assembly & Adjustment

Install and adjust the speed system prior to first flight. Connect the speedbar hook to the riser speed system hook. Adjust the speed bar line length to allow full engagement and, most importantly, allow the speed system to fully disengage when the speed bar is released to prevent permanent activation.

Installing and adjusting the speed system prior to first flight - Refer to the harness or paramotor user manual of your specific model. The following is a general info for reference only: First attach the Harness / Paramotor to the glider while on the ground. Connect the speedbar hook to the riser speed system hook. Sit in the harness preferably while hanging and have someone hold the riser up in a flying position for you. Adjust the speed bar line length to allow full engagement of the speed system and most importantly – allow the speed system to fully disengage when the speed bar is released to prevent permanent activation of the speed system.

It is recommended to route the speedbar line through the harness or paramotor pulleys in a way that will allow the riser speed system to follow the optimal pull vector as in the illustration.

• Set the trimmers to Neutral before activating the speed system.

• Activating the speed system while trimmers fully open will not increase maximum speed.

• Do not use main brake handles while the OAA is activated.

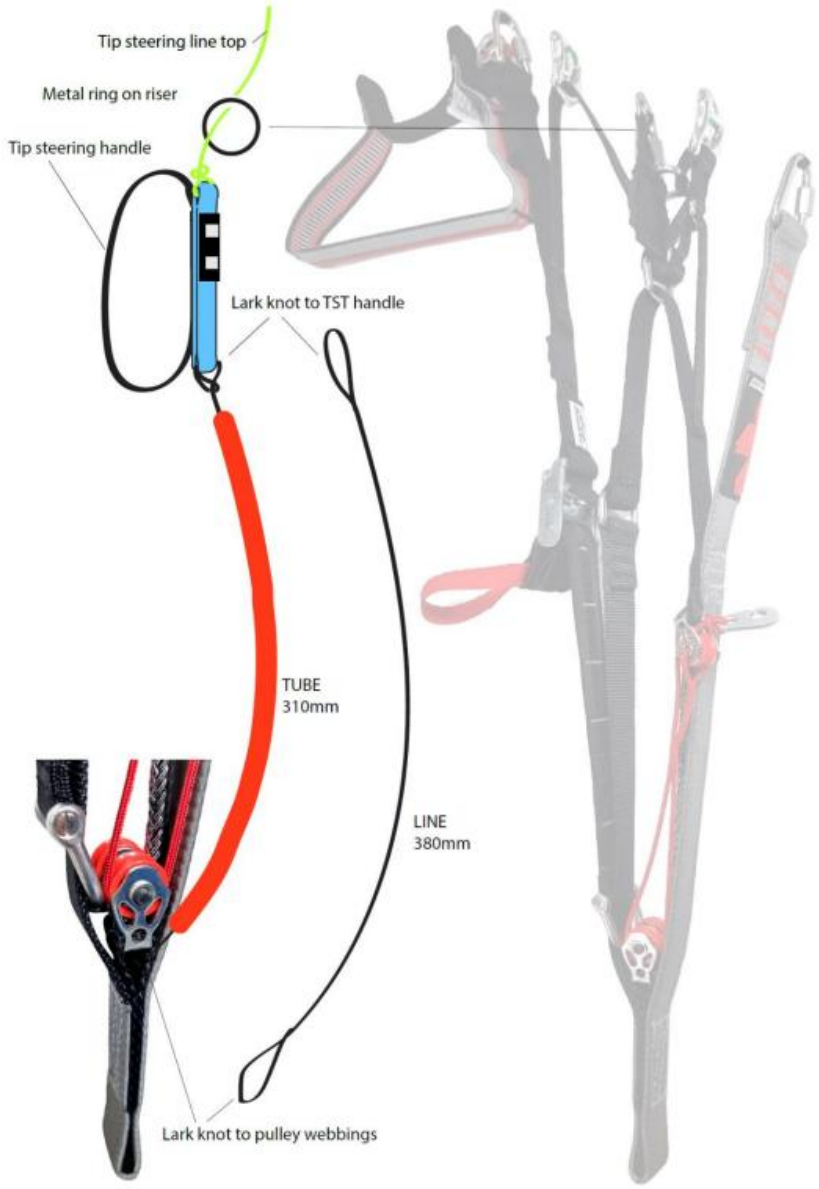
Fig. 6 – Speed system: Riser speed system hook connects to Speedbar hook; green arrow shows optimal pull vector

WARNING

THE USE OF THE SPEED SYSTEM IN TURBULENT CONDITIONS OR CLOSE TO THE GROUND IS DANGEROUS.
WHILE FLYING WITH THE ACCELERATOR, THE GLIDER HAS A REDUCED ANGLE OF ATTACK AND IS THEREFORE
MORE SUSCEPTIBLE TO TURBULENCE AND MAY COLLAPSE OR PARTIALLY DEFLATE.
THE ACCELERATOR SHOULD IMMEDIATELY BE RELEASED IN THIS CASE.

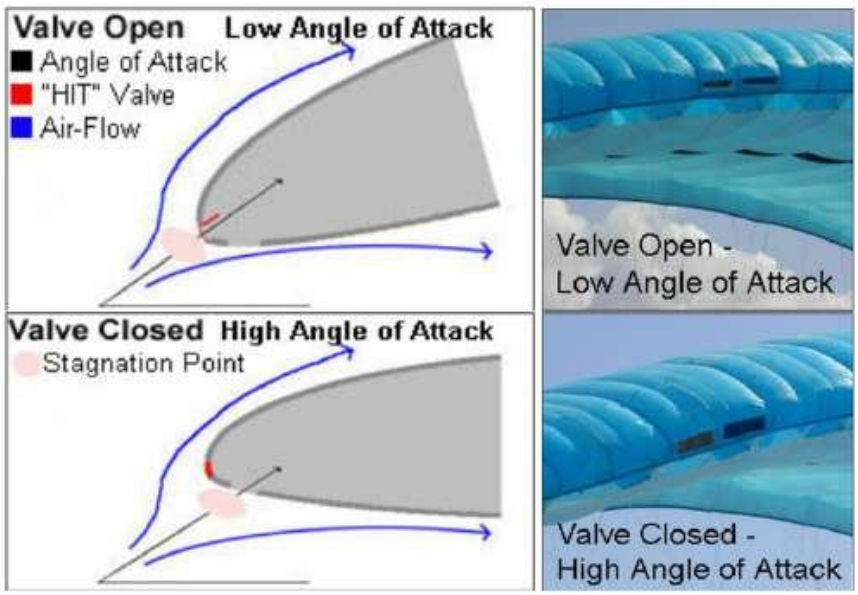
TIP STEERING LOWERING KIT – 15KIT

The 15kit is a method of tip steering using a flexible tube and a line connected to the tip steering handle on top end and fixed to the riser on the bottom. This option is installed on all F3 MKII risers by default.



This method enables steering the glider by pushing or pulling the tube. It was designed to lower the toggle height, enabling comfortable and intuitive input at various trimmer levels as well as flying styles. The kit can be removed and tip steering is possible with tip steering handle only. Installation instructions: 1. Run the black Dyneema line through the pulleys webbing at the bottom of the riser. Make a lark knot and make sure the free end comes out on the correct side L or R. 2. Install the red tube on the black Dyneema line. 3. Undo the tip steering handle knot and run the free end of the black Dyneema line through the bottom small loop of the handle and make a lark knot by squeezing the tip steering handle through the line loop to end up with a connection like in the illustration. 4. Make sure the top steering line is running through the retaining ring on the riser as per the illustration and tie it to the top loop of the tip steering handle. For removal of the assembly please reverse the steps above.

12 HIT VALVES (HIGH-SPEED IN-TAKE)



Valve Open / Valve Closed diagrams

The F3 MKII is equipped with an Active HIT Valve system (patent pending) to improve the overall performance and safety of the wing especially during accelerated flight.

The valve system allows maximum inflow of air when the glider acquires a lower angle of attack while accelerated. HIT valves open and close in flight to increase the internal pressure of the glider.

For the valves to work properly it is important to keep them wrinkle free especially in sub zero temperatures. Make sure the valves are lying flat and are in the closed position when you fold the glider. Before launch the pilot should check all the valves and verify that they are flat and cover the entire area of the mesh opening. Creased and wrinkled valves will not adversely affect the safety of the wing.

13 HARNESS

All of APCO's gliders are developed with the use of ABS (Automatic Bracing System) type harnesses without cross bracing. We recommend the use of an ABS harness with all our gliders. For best safety and performance, we recommend an APCO harness equipped with a Mayday emergency parachute.

CAUTION

WE RECOMMEND NOT TO USE CROSS BRACING STRAPS.
APCO GLIDERS ARE DEVELOPED AND TESTED WITHOUT THE USE OF CROSS BRACING.
USING AN ABS HARNESS WITH CHEST STRAP SET AT THE SPECIFIED WIDTH
(CHECK THE CERTIFICATION STICKER ON YOUR GLIDER)
WILL RESULT IN THE HIGHEST PASSIVE SAFETY ON YOUR GLIDER.

14 EMERGENCY PARACHUTE

It is recommended to use a certified rescue parachute when flying, no matter your intended altitude or flying style. Attaching the rescue parachute should be done in accordance with the recommendations of the harness and reserve parachute manufacturer. Always check the reserve handle and locking pins during every pre-flight check.

15 PRE-INITIAL FLIGHT INSPECTION

Pilots, please ensure that your glider has been test flown and fully checked by your dealer before taking it into your possession.

15.1 First Check and Preflight Inspection

- Connection points between the glider and the harness / paramotor.
- Check that there are no lines twisted, tangled or knotted.
- Check that the risers and speed-system are hooked up to the harness correctly.
- Check that the trimmers are set to the neutral position or below.
- Motor and harness related checks to be done in accordance with respective manufacturer's manual.

Regular Inspection Checks

- Damage to lines, webbing and thread on the stitching of the harness and risers.
- The stainless-steel connection links on the risers are not damaged and are fully closed.
- The pulleys of the speed system are free to move and the lines are not twisted.
- The condition of the brake lines, stainless steel rings and the security of knots.
- The sewing and connection of the lines.
- Damage to hook-up points on the glider, internal damage to ribs and diagonal ribs.
- Damage to the top and bottom panels and seams between panels.

15.2 Brake Setting

Before the first flight the pilot / dealer has to inflate the glider in the flight configuration to check and if needed, adjust the brake line length. The brakes should have about 10 cm of free travel from the brake guide on the riser to the activation point.

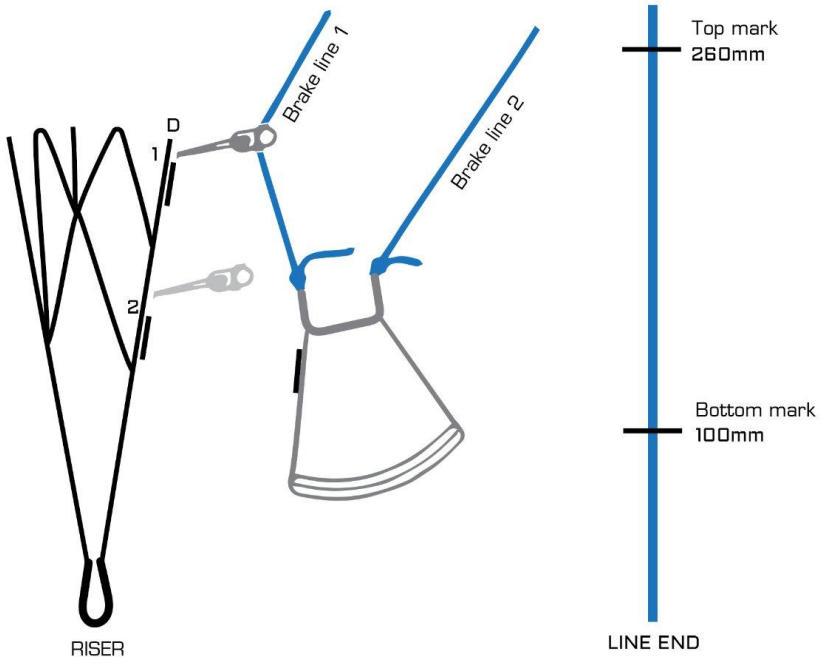


Fig. 7 – Brake line setting: pulley #1 (low hang) and #2 (high hang), Top mark 260 mm and Bottom mark 100 mm

- Pulley #1 (low hang point): move brake handle to Top mark (260 mm) and secure with a knot.
- Pulley #2 (high hang point): move brake handle to Bottom mark (100 mm) and secure with a knot.

15.3 2D Brake Operation

The F3 MKII features a 2D steering system with Split Steering Handle (SSH). The split steering handle allows differential control of each line while connected to the same brake handle for increased or differential steering input on demand.

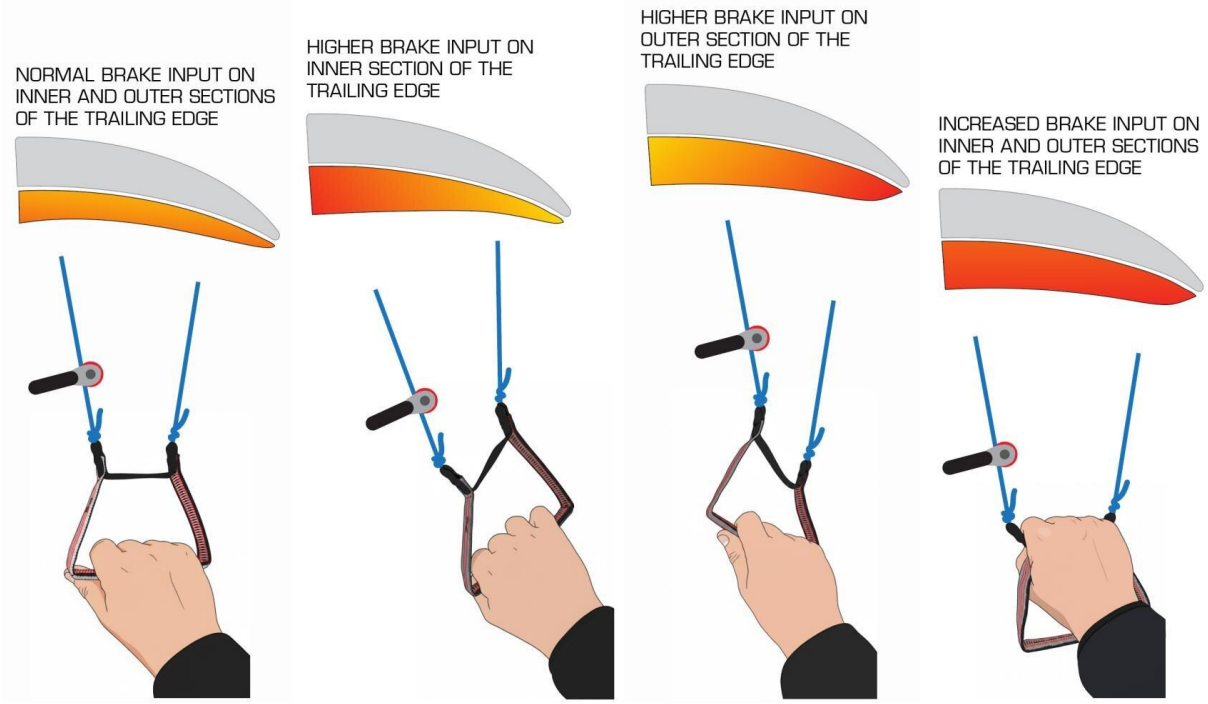


Fig. 8 – 2D brake operation modes: normal input, inner-section bias, outer-section bias, and maximum full-brake input

CAUTION

APART FROM WHEN FLARING AT LANDING THERE SHOULD BE NO REASON TO FLY WITH 70% TO 100% BRAKE.
THE SINK RATE OF THE GLIDER WILL BE EXCESSIVE AND THERE WILL BE A POSSIBILITY OF ENTERING
A DEEP STALL OR FULL STALL SITUATION.

15.4 Tip Steering

The Factory setting of the Tip Steering line should satisfy most pilots. If you shorten the tip steering line, make sure it is not over-tensioned in any speed configuration. If you extend it, make sure it is not too loose in flight, which may result in it being caught in the propeller.

15.5 Trikes

Due to the very wide assortment of trikes on the market with different set-up and design, it is necessary to verify that the specific trike can be successfully coupled with the wing. Please make sure your dealer performs the following procedures before first flight:

- Wing to be fully inspected by the dealer.

- Wing to be ground handled and visually checked while inflated.
- Connection method to the trike is in line with APCO's recommendation.
- Before first take-off perform a "taxiing" test (roll/yaw stability, pitch stability, stall tendency, brake response etc.).
- Only once the wing passes the taxiing test – make the actual test flight.
- Take the wing into your possession only after your dealer confirms airworthiness.

16 ANNUAL / PERIODICAL AIRWORTHINESS INSPECTION

It is highly recommended that your glider (and other equipment) undergo a Periodical Airworthiness Inspection by APCO, or an APCO approved / appointed service centre. This is recommended every 24 months or every 100 hours, whichever comes first.

Porosity

Porosity is measured with a calibrated Porosimeter in at least 5 different places on the upper surface. The upper surface at 20–35% chord (from L/E) is most prone to becoming porous, and is thus the most important section to test.

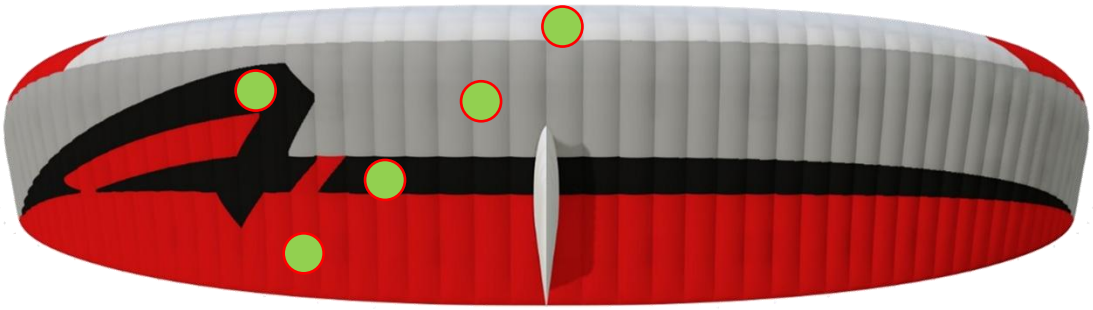


Fig. 9 – Porosity test points: red dots indicate the 5 minimum measurement locations on the upper surface

Line Maintenance

Lines must be carefully inspected periodically. Avoid sharp bending and squeezing of lines; avoid getting the lines wet. One line of each line group (A, B, C, upper and lower) must be tested for a minimum of 50% of the rated strength. If a line fails the load test, all corresponding lines must be replaced. Never replace lines with different diameter or type – this can have dangerous / fatal consequences.

17 PARAGLIDING

The F3 MKII is designed as a Paramotor wing and is not ideally suited for Free Flying. However, should you choose to do so, read the following before you do.

17.1 Take Off

Layout

Pre-flight check should be done before every flight. Spread the glider on the ground. Spread the lines, dividing them into eight groups: A, B, C, D and brake lines left and right. Lay out the glider in

a horseshoe shape to ensure all lines are equally tensioned on launch. The FLEXON rib reinforcements will keep the leading edge open for easy inflation.

NOTE: The most common reason for a bad launch is a bad layout.

Alpine / Forward Launch

The F3 MKII has very good launch behaviour in no-wind conditions. With a positive and constant force, inflate the wing holding only the A-risers, and smoothly increase your running speed. After leaving the A-risers, apply about 15% brakes and the F3 MKII will gently lift you off the ground.

Strong Wind and Reverse Launch

The F3 MKII has a lot of lifting power and care should be taken in strong wind. It is advisable to have an assistant hold you when attempting a strong wind launch. Walk towards the wing and leave the A-riser just before the glider gets above your head.

Tow or Winch Launching

All APCO gliders are well suited for winching. Very little brake, if any, need be applied on launch and during the tow. Directional changes can be made with weight shift rather than brakes.

17.2 Flight Techniques

Asymmetric Collapse

If one side of the glider partially folds or collapses, keep your flying direction by applying weight shift and some brake on the opposite side. The wing should re-inflate on its own. In the event of a big deflation (i.e. 70%), apply brake on the inflated side but take care not to pull too much as you could stall the flying side.

Cravat

In case a cravat should occur, keep your flying direction by applying some brake on the opposite side and pull down on the stabilo line of the affected side while countering the turn with the opposite brake and weight shift.

Front Stall or Symmetric Collapse

In the event of a front stall the glider will normally re-inflate on its own immediately without any change of direction. To speed up re-inflation, briefly apply 30–40% brake. Do not hold the brakes down permanently to avoid an unwanted stall.

Big Ears

Big ears are possible on the F3 MKII and can be an effective descent method. This should only be done with the trimmers in the closed to neutral range. Big ears are induced by pulling the outer A-Lines, which are on their own riser leg.

Deep Stall (Parachutal Stall)

Signs: very little or no forward airspeed; cells bulging in on bottom surface; slow turning sensation; increased vertical descent.

Recovery: Pull all A risers down until the wing starts to fly, then release immediately. Alternatively, push the speed bar to lower the angle of attack.

Spiral Dives

The F3 MKII has very good behaviour in spiral. The spiral has to be exited slowly by releasing the brake over one complete turn. Sink rates in excess of 19 m/s can be obtained.

CAUTION

SOME GLIDERS CAN BE NEUTRAL IN SPIRAL AND MAY NOT EXIT WITHOUT PILOT INPUT. PILOTS CAN SUFFER BLACK-OUTS IN SPIRALS. EXIT AS SOON AS ANY ABNORMAL SYMPTOMS ARE FELT.

Strong Turbulence

If you know it's turbulent conditions – DON'T TAKE OFF!!! If you unexpectedly encounter strong turbulence, fly with trimmers open and no brakes applied to let the reflex stabilize the glider, use only secondary brake handles (tip steering) and land as soon as possible.

Landing

- Always land into the wind.
- At about 50 meters your landing setup should begin. Head into the wind; reach your landing point by making S-turns.
- At about 15 meters make the final descent at trim speed into the wind.
- At half to one meter gently flare the glider by pulling gradually down on the brakes to the stall point.

18 POWERED FLYING

NOTE: Before each start it is necessary to perform a complete check of the paraglider, harness and power unit.

- Never place the power unit downwind of the paraglider.
- Double check that there is no fuel leakage.
- Check that there is nothing loose in the harness that could possibly contact the propeller in flight.
- Always put on and lock your helmet before getting in the harness.
- Before each launch do a full pre-flight inspection.

18.1 First Flights

We recommend flying with trimmers at the 0 position first in stable non-turbulent weather. Once you feel confident with your wing, you can start experimenting with faster trim settings and speed system, taking all necessary precautions.

18.2 Forward Launch

Please check wind direction even when it seems that there is no wind at all. In PPG flying it is most important that the launch and initial climb are performed with a head wind. Special attention must be paid to trees, power lines and other obstacles.

Pre-launch Checklist

- Helmet is on and fastened.
- The risers are clipped into the carabiners.
- The trimmers are properly set (closed for takeoff).

- Propeller is clear.
- Speed system is functioning, problem free.
- Steering lines and handles are free and not twisted.
- The engine delivers full power.
- Take-off area is clear of approaching traffic, obstacles and free to use.

REMEMBER:

The F3 MKII is best with trims fully closed for takeoff and landing.
Do not try to take off until you have your wing overhead.
Hitting power before that can cause dangerous oscillations.
Do not sit in the harness until you are sure you are flying!
Any brake operation should be smooth and gentle.

18.3 Climbing

Do not try to climb too steeply. In powered flight the F3 MKII behaves more like an airplane than a paraglider. When climbing steeply with closed trimmers and high power, beware of the possibility of stall.

18.4 Trimmers and Speed System Settings

Fully opened trimmers increase the speed and reflex, but when trimmers are opened it is highly recommended to use secondary steering only (stabilo steering). The TIP STEERING system can be used in all trimmer and speed system positions. At maximum speed bar and fully opened trimmers we highly recommend steering with the STABILO STEERING system.

18.5 Landing

Power Off Landing

At an altitude of 50 meters switch the engine off and glide as you would on a conventional paraglider. The F3 MKII preserves energy well, so there is a long float necessary, exchanging the abundant speed for lift with your brakes.

Powered Landing

Make a flat approach with the engine idling, then level out and lose the speed before final flare. Immediately on landing, switch off the engine.

19 PACKING

Spread the wing completely out on the ground. Separate the lines to the left and the right side of the glider. Fold the canopy alternately from the right and left sides, working towards the centre. Press out the air, working from the rear towards the front. Place the risers at the trailing edge and use them to finally roll up the canopy.

20 MAINTENANCE & CLEANING

Cleaning should be carried out with water and if necessary, gentle soap. If the glider comes in contact with salt water, clean thoroughly with fresh water. Do not use solvents of any kind, as this may remove the protective coatings and destroy the fabric.

21 BUTT HOLE II (AUTO DEBRIS RELEASE VALVES)

The F3 MKII is equipped with Butt-hole II, which automatically clears smaller particles such as sand, grass and stones from the wing.

Fig. 10 – Butt Hole II valve at trailing edge

Fig. 11 – BT2 feature icon

22 STORAGE

When the glider is not in use, it should be stored in a cool, dry place. A wet glider should first be dried out of direct sunlight. Protect the glider against sunlight (UV radiation). Never store or transport the glider near paint, petrol or any other chemicals.

DO NOT LEAVE YOUR PARAGLIDER IN THE TRUNK OF A CAR OR EXPOSED TO THE SUN.

Temperatures on a hot summer's day in a closed environment (car, etc.) can easily reach over 60ºC.
At these temperatures Nylon permanently changes its characteristics, rendering it non-airworthy.
APCO's warranty will not be applicable.

23 DAMAGE

Using spinnaker repair tape (for non-siliconized cloth) can repair tears in the wing up to 5 cm. A professional repair facility should repair greater damage.

24 THREE YEAR WARRANTY

APCO Aviation Ltd. guarantees the fabric of its wings against porosity to the extent that the wing becomes Unairworthy. The fabric is warranted to remain sufficiently impermeable to air, to fly safely for a period of 250 hours or 3 years, whichever comes first. APCO Aviation Ltd. undertakes at its option to repair or replace the wing, as necessary, at APCO's discretion.

This warranty is subject to the following limitations: (a) The original purchaser has properly completed and returned the Warranty Registration Card. (b) The wing owner duly records the wing's

flight time in an official Log Book. (c) The wing has undergone its periodical inspections. (d) The wing has been properly maintained and serviced exclusively by APCO authorized dealers.

This warranty does not apply to:

- Use outside the specified load limitations.
- Colour fading of the fabric.
- Damage or corrosion caused by solvents, fuel or other chemicals.
- Accidental or flight (take off/landing) related damage.
- Damage caused by emergency parachute deployment.
- Modified wings.

This warranty is transferable. The manufacturer retains the right of final decision regarding any claims.

25 GENERAL ADVICE

- Do not fly over water, between trees or power lines and other places where engine failure will leave you helpless.
- Mind the turbulence caused by other gliders or even by yourself, especially when flying low.
- It is not recommended to let go of the brakes below 100 metres.
- In general, never trust your engine. Always fly prepared for engine failure.
- Unless absolutely necessary, do not execute tight turns against the torque direction.
- Do not fly with tail wind at low altitudes – it narrows your options!
- Do not wait for the problem to grow – any change of engine sound or vibration may indicate a problem.
- Be certain of your navigation.
- Remember that not everyone is fond of your engine noise.

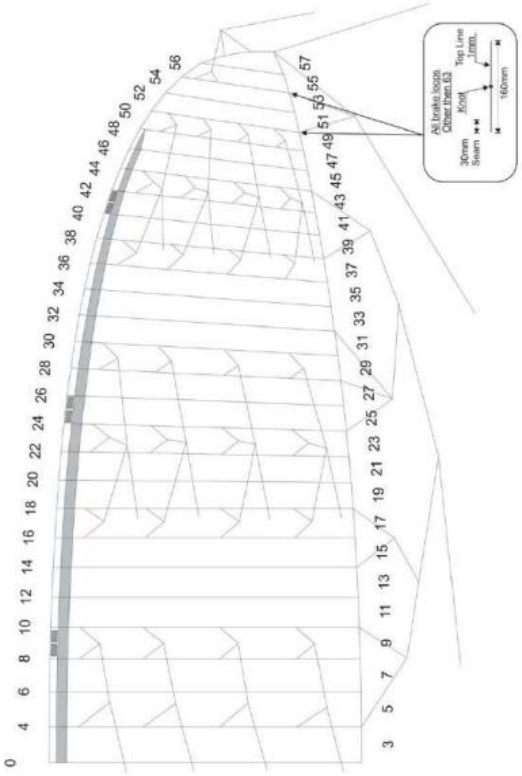
If you have any doubts about flying conditions – do not begin.

If you have any questions, please contact your dealer or APCO Aviation Ltd.

Lastly, be equipped with a certified emergency parachute and helmet on every flight.

26 F3 MKII – LINE SKETCHES

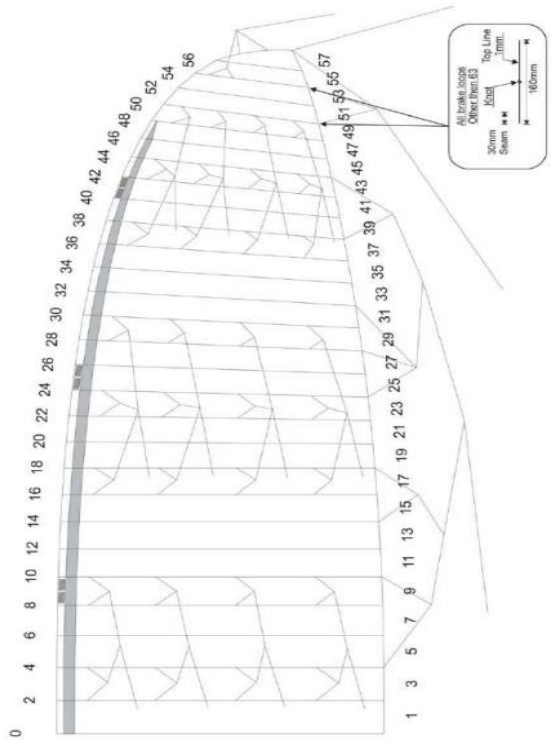
Line sketches for sizes 15.5 and 16.5 will be provided by APCO Aviation as a separate technical addendum
upon availability. Please contact your dealer or APCO Aviation Ltd. for the latest line length tables.
Email: info@apcoaviation.com | Tel: +972 4 6273727



F3 22

	0	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	ST
A	1875			320	335			390	345		300	300		280	300			300	250		250	220		220	210		425		935
				1520				2045			2045			2085				1760			1645			1615					
	4390							3830										4070									560		4735
B	1875			320	335			390	345		300	300		280	300			300	250		250	220		220	210		435		960
				1520				2045			2045			2085				1740			1670			1625					
	4330							3780										4040											
C	1875			320	335			390	345		300	300		280	300			300	250		250	220		220	210				
				1520				2045			2045			2085				1765			1690			1635					
	4435							3880										4100											
D	1875			320	335			390	345		300	300		280	300			300	250		250	220		220	200				5870
				1520				2045			2045			2065				1795			1705			1635					
	4585							4035										4185											
Br	1575			1280		1170	1145		1095		980	1000						1000			1125				930	820	770		
		1100				1100				1100									1100							2360			
			1800								1800																		
								3110																		3110			

Line	Material	Diameter	DaN
Top (Hook-up Points	Dyneema	0.9	90
Center Top Lines: Rib 4	Super Aramid	1.2	120
Mid (a1,b1,)	Super Aramid	1.5	150
Mid (a,b,c,d,st, br)	Super Aramid	1.2	120
Bottom A1,B1	Super Aramid	1.9	320
Bottom A3,A5,B3,B5	Super Aramid	1.8	230
Bottom C,D, ST	Super Aramid	1.5	150
Brake top, St-top	Dyneema	1.1	95
Tip Steering	Dyneema	1.1	95
Bottom - Brake, 2D	Polyester	2.0	85



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	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	ST
A	390	345		320	345				390	345		300	300		280	300			300	250		250	220		220	210		425		935
	1910			1910					2045			2045			2085				1780			1685			1635					
	4350								4160										4350									560		5000
B	390	345		320	345				390	345		300	300		280	300			300	250		250	220		220	210		435		950
	1910			1910					2045			2045			2085				1755			1675			1635					
	4290								4110										4330											
C	390	345		320	345				390	345		300	300		280	300			300	250		250	220		220	210				
	1910			1910					2045			2045			2085				1780			1690			1635					
	4390								4215										4395											
D	390	345		320	345				390	345		300	300		280	300			300	250		250	220		220	200				6070
	1910			1910					2045			2045			2065				1810			1705			1635					
	4540								4355										4480											
Br	1575			1280		1170	1145		1095		980	1000						1000			1125				930	820	770		
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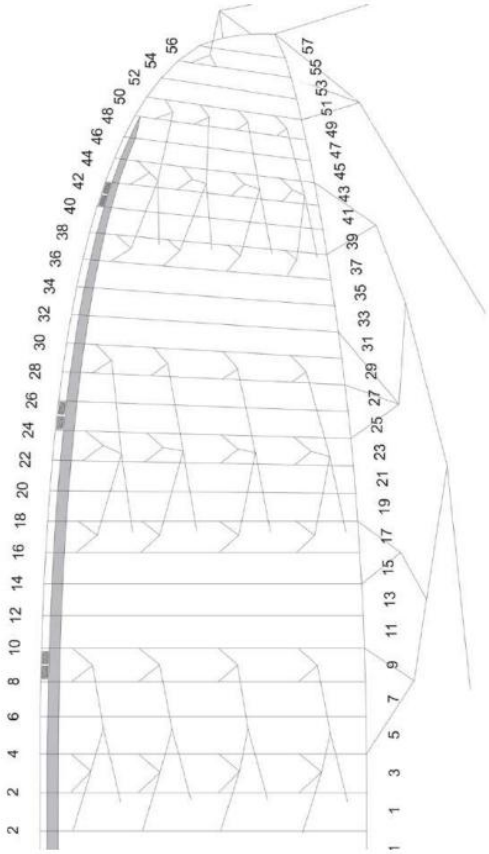

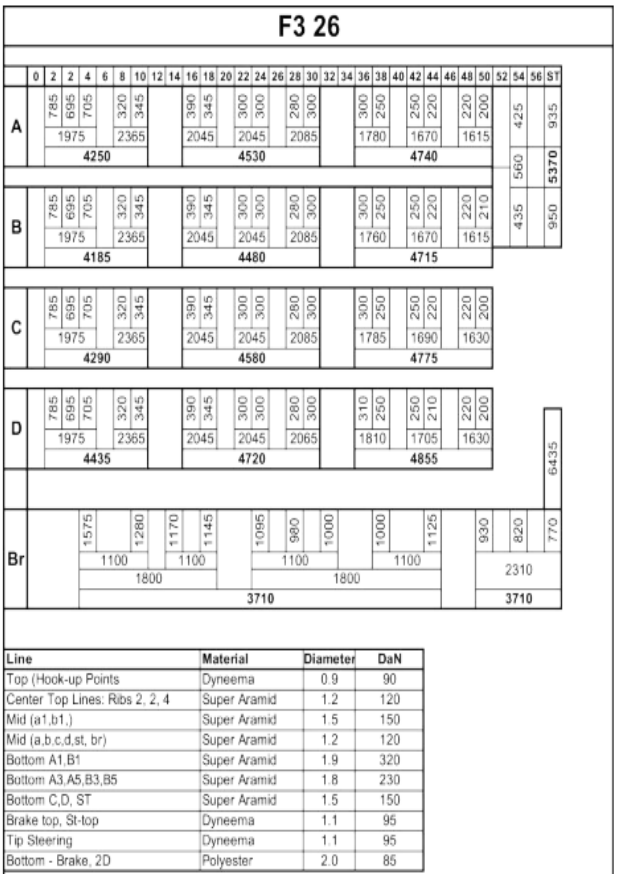

Line	Material	Diameter	DaN
Top (Hook-up Points	Dyneema	0.9	90
Center Top Lines: Ribs 2, 2, 4	Super Aramid	1.2	120
Mid (a1,b1,)	Super Aramid	1.5	150
Mid (a,b,c,d,st, br)	Super Aramid	1.2	120
Bottom A1,B1	Super Aramid	1.9	320
Bottom A3,A5,B3,B5	Super Aramid	1.8	230
Bottom C,D, ST	Super Aramid	1.5	150
Brake top, St-top	Dyneema	1.1	95
Tip Steering	Dyneema	1.1	95
Bottom - Brake, 2D	Polyester	2.0	85

APCO wishes you many hours of enjoyable flying.

Take Air!

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