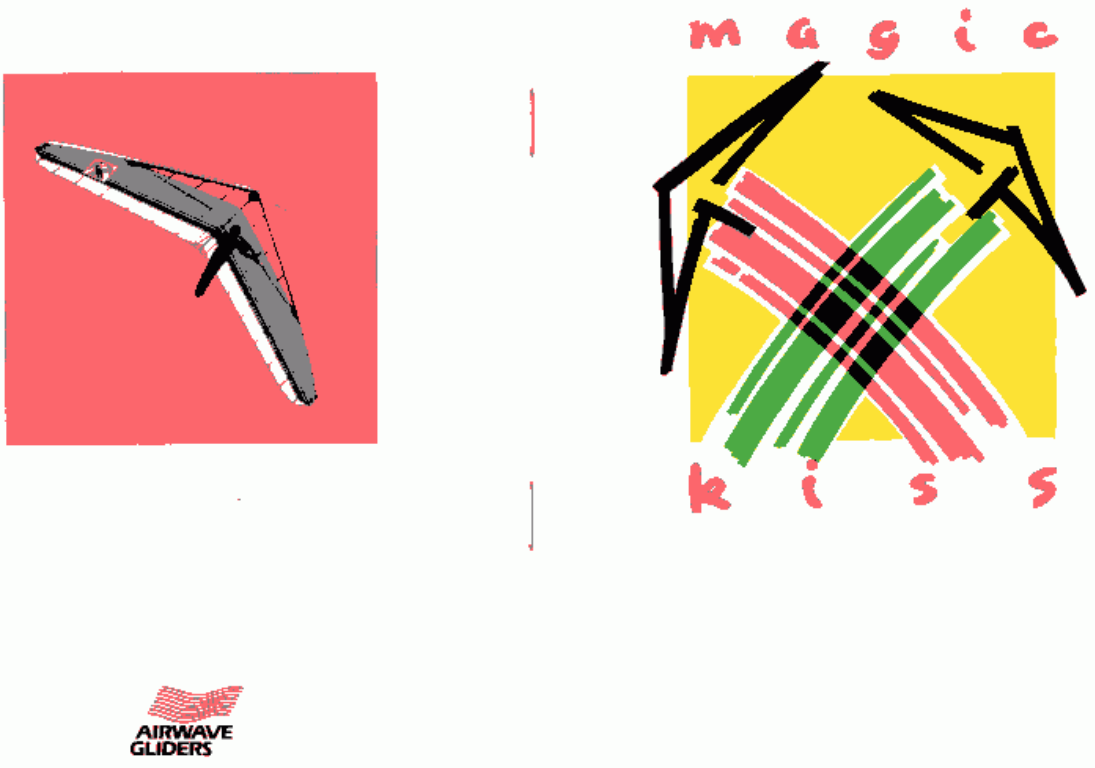


AIRWAVE GLIDERS

p01: Airwave Gliders

Magic Kiss 154

Owners Manual

Congratulations on your purchase of an Airwave Gliders MAGIC KISS.
We hope to provide you with many hours of enjoyable flying.
If you ever need any spare parts or advice do not hesitate to contact your nearest Airwave Gliders dealer, or contact us direct.

DIMENSIONS
Wing area is 154 Ft^2 14.4 m^2.
Wing Span is 34.1 Ft 10.4 m
Aspect Ratio 7.4
Nose Angle 132deg.
Luffline height, trimmer loose 70 mm ± 5mm
Luffline height, trimmer tight 50 mm ± 5mm
Anhedral 200 mm ± 10 mm
Keel bend 18mm ± 2 mm

OPERATING LIMITS
Certified weight limits 115 - 210 lbs 52-95Kgs
Optimum pilot weight range 130 - 190 lbs 57-85 Kgs
Indicated stall speed 16 m.p.h. with max. pilot weight.
Indicated maximum speed 52 m.p.h. with minimum pilot weight.
Flight operations must be limited to non-aerobatic manoeuvres.
It is recommended that this glider be flown by a pilot who is trained to a B.H.G.A. P2 or equivalent.
Load should only be applied to the glider through the pilot's hang point.
Towing devices which load the glider elsewhere can be dangerous.
This glider must not:
a) be flown with more than 210 lbs (95 Kgs) payload.
b) exceed 30 degrees nose up or down to the horizon.
c) exceed 60 degrees bank angle left or right to the horizon.
d) be flown inverted or backwards.
e) be flown with auxiliary power unless designed, installed and tested by the factory.

This Glider Was Test Flown By .....

Date ... Place .....

p02: SECTION 1: RIGGING INSTRUCTIONS

Your **MAGIC KISS** has been designed to be rigged simply and efficiently. The instructions given below provide you with the step-by-step procedure for rigging your glider. By closely following these instructions, you can ensure that your glider will rig easily and that you will not cause damage to the structure.

The hang point of your new **MAGIC KISS** will be in the large hole in the keel pocket behind the A frame. The exact position for your own weight and personal preference should be found by trial and error, but a good first guess for your hang point is 12 cm behind the A frame bolt position.

The MAGIC KISS may be set up in either of two ways. The first procedure is preferable, in which the glider is left on the ground, nose into the wind until ready to launch. In this procedure, the control frame is set into position last and it reduces possible damage to the glider in the event of a sudden gust of wind. The second technique is with the control frame set into position at the beginning of the procedure. This allows the glider to be set up off the ground. Which is better in lower wind conditions or on rough terrain and it is effective in keeping the sail clean.

1) Place the glider in its bag on the ground with the nose into the wind and the zip facing upward. Unzip the cover bag, remove the battens from the nose area, undo the glider ties and assemble the control frame. NOTE: Check that all the rigging is outside of the Control frame triangle and check that the bolt, wingnut and safety split-ring are fully assembled.

2) Roll the glider over so that it is the right way up and flat on the ground. Ensure that the control frame is central and that the rigging is unsnagged.

3) At this stage you must decide to rig the glider standing on it's 'A' frame or flat on the ground. If you decide on the former, then stand the glider on it's 'A' frame, but do not fasten the nose catch. Both rigging procedures now continue in the same way.

4) Remove the cover and all the ties. Carefully walk each wing half way out to its approximate flying position before walking them all the way out. Clear the side wires through the top surface of the sail to ensure that they do not catch. **AT THIS STAGE IT IS ESSENTIAL TO ENSURE THAT THE KEEL AND LEADING EDGES ARE ALWAYS IN THE SAME PLANE OR DAMAGE WILL RESULT.**

5) Raise the kingpost, but do not yet attach the luff lines.

6) Check the battens against template and for symmetry. Place all green tipped battens in the right wing. Working from the centre to die tip, insert all the top battens, including half battens, with gentle pressure until they meets resistance. Lift the sail at the trailing edge and gently shake, this enables the batten to slide into place over the cross tube. **DO NOT USE FORCE!** Do the same with the red battens in the left wing All battens are secured in position with a "double purchase" method. To secure, place the bottom loop onto the batten end fitting and pull the top loop over and into the fitting notch.

7) Insert the nose batten "tail end first" from the nose of the glider, seating the front end of the batten tube onto the rivet fitting on the keel tube just in front of the nose plate.

8) Rotate the tip struts into position, ensuring that they are seated properly into their leading edge fittings.

9) You should now find the cross tube tension webbing appearing immediately at *the* rear of the keel pocket. It is automatically pulled into this position by the elastic cord which runs down into the rear of the keel tube. Pull on the webbing loop handle. Keep about 50 cm to the rear of the glider for max leverage with your knees against the base bar. Pull the cross boom tensioner cables back until the shackle can be inserted into the alloy catch on the keel tube. The spring pin will lock the shackle in its proper position.

10) Secure the luff lines and top rear rigging snap hook onto the shackle located at the top of the kingpost.

11) To install the tip batten, look through the leading edge pocket at the wing tip and guide the tip batten over the tip strut and onto the tip batten hook. Secure it with all four elastics. The wing tip fairings are fixed with simple Velcro patches, put them in place at this stage.

12) If it is not already standing, lift the glider onto the control frame (be careful of snagging the tip battens), ensure that all the lower rigging is untangled. Slip the ring fastener into the nose catch below the nose plate.

13) Install the glider's nose fairing, starting with the two top Velcro tabs and gently pulling the fairing down and around the nose plate to connect the two bottom Velcro tabs on the shroud to its corresponding tab sewn on the under-surface behind the keel.

14) Insert the lower surface battens carefully, as there is the possibility of missing the batten pocket as battens enter the sail. When the batten reaches the leading edge pocket, push up on the double surface near the leading edge, finish inserting the batten and put on the single retaining elastic.

NOTE: When the batten is inserted properly, the tip should be resting against the bottom of the leading edge.

Never fly your MAGIC KISS with the double surface zip undone or without Its nose fairing as this adversely effects the glider's pitch stability characteristics.

Your MAGIC Kiss is now ready for a pre-flight inspection. It Is Important that this is carried out every time you rig the glider and before you fly.

p04: **SECTION 2: PREFLIGHT INSPECTION**

The nature of the MAGIC KISS is such that many of the pre-flight checkpoints common to other flex wings are hidden to eliminate parasitic drag. A thorough preflight procedure is mandatory with all aircraft, and the best technique is a circular walk around the glider. Start at one location, the nose plate is ideal, and check each assembly point available for inspection. Keep in mind the THREE MOST CRITICAL set-up factors. These are the nose catch, the control frame base tube bolts and the cross tube tensioner. As stated in the set-up procedure, ENSURE THAT ALL SECURING PINS ARE PROPERLY POSITIONED AND CANNOT PULL THROUGH.

Starting at the nose, a suitable pre-flight checklist would be:
1) Sight along both leading edges checking for similar curves.
2) Walk towards the port wing tip feeling for dents in the tube.
3) Pause at the wing bolts and look into the sail through the zipper inspection access.
4) Continue to the tip and check the ball tip for rotation and security.
5) Sight the leading edges and cross tube down the inside of the sail at the tip.
6) Check the tip struts. Make sure the tip batten is OVER the tip strut.
7) Walk to the keel checking the battens to ensure that they are properly secured.
8) Check the luff line attachment points, both at kingpost and trailing edge grommets
Ensure that the luff lines are not wrapped around the batten ends.
9) Check the cross tube wire to keel catch connection.
10) Check the rear top rigging.
11) Continue with items 2 to 7 in reverse order on starboard wing.
12) Check the nose catch.
13) Check all the lower rigging.
14) Check that the control frame uprights are straight and that the bolts are correctly assembled with their wing nuts and rings.
15) Check cross tube plates and related assemblies.
16) Ensure double surface zip is done up and the nose fairing is on.
17) HOOK IN AND HANG CHECK.

p05: **SECTION 3: FOLD DOWN PROCEDURE**

To fold down your MAGIC KISS, just reverse the set-up procedure steps as described. Included here are a few guidelines to follow which will save you time and prevent wear areas on your sail:

1) Always let off the Magic trimmer before de-rigging the glider.

2) While tensioning or slackening the MAGIC KISS's cross tubes, ensure the keel and leading edges are all In the same plane.

3) Always try to fold the wings in symmetrically, bringing both leading edges back together at the same time.

4) If you are de-rigging the glider on the A frame, before you fold the Wing undo the nose catch.

5)The first glider tie should hold the keel in the same plane as the leading edges. To do this fasten the two leading edges together, but position the keel underneath the bottom strap.

6) Generally, if anything offers you resistance during any phase of the MAGIC KISS setup or fold-down procedure, be sure to stop and investigate.

7) Make sure that the cross-tube tension cable is free to run forward.

8) Roll or fold the sail from the outer luff line into the Mylar reinforced leading edge pocket. 9) Put one glider tie just behind where the top laterals emerge from the sail, a second one half way between the A-frame apex and the nose plate holding the leading edge pockets overlapped and the third sail tie provided with your glider about 2 feet inboard from the leading edge tip. Do not over-tighten your sail ties. This keeps the mylar pockets and the rest of your sail free of wrinkles and creases.

10) Pads are provided to eliminate wear. The control frame bottom pad should include the keel, and the main span cables (side cables) must point to the rear of the glider. The control frame top padding should be pushed down to the sides of the kingpost this eliminates wear on the double surface but it is easier to push this pad into place before the glider ties are tightened.

REMEMBER NEATNESS COUNTS!

SECTION 4: TRANSPORTATION AND STORAGE

The MAGIC KISS should always be laid zipper facing up especially during transportation. Avoid hard spots pressing on the glider at any time and have as many supports as possible. During transportation use rope or webbing rather than elastic to secure the glider and tie both ends of the glider to a support or down to the ends of the vehicle in order to stop the glider flexing. If the glider bag is loose and the glider is travelling at high speed on a car roof, it will chafe the glider's sail. This 'glider flog' can be easily prevented by tying up the bag. It is preferable to keep the glider dry and ensure that the glider Is dry before storing.

p06: SECTION 5: FLYING TECHNIQUES

Take Off

The MAGIC KISS is slightly tail heavy and is very easy to launch in both calm and windy conditions. When you hold the glider prior to your take off run, you should have the nose slightly elevated and the wings level. AGAIN MAKE SURE THAT YOU ARE HOOKED IN! Run hard and case the bar out for lift-off.

Turns

The MAGIC KISS has straight-forward flight characteristics, typical for a defined aerofoil flex-wing. The glider can be easily directed into a turn, even at very low flying speed. However, to obtain the best handling characteristics and fast roll rate, it is advisable to pull in for a little extra flying speed. To enter the turn, move to one side and push out slightly. The MAGIC KISS will maintain in a turn of a required bank angle and radius until the turn is removed. Give yourself an extra margin of safety and DON'T fly your glider at the slowest possible airspeed when scratching for lift close to the terrain.

Straight Flight

The MAGIC KISS requires relatively light pitch inputs. This means that it is quite easy to increase airspeed rapidly and the useable speed range of the glider is quite wide. Until fully familiar with the flight characteristics of the glider, care should be taken when accelerating to higher speeds since it is possible to set up a pilot induced yaw oscillation. Over correction can cause increased oscillation. If this occurs, slow down to normal flying speeds and all will return to normal. Practise accelerating your glider in smooth conditions until, after several hours on the glider, you will learn to compensate correctly and any initial oscillation problem will evaporate. For max glide performance pull the trimmer on all the way. In this configuration the Magic Kiss will track more steadily.

Thermalling

This is best done with the trimmer slack and is also very straight-forward. The optimum speed for thermalling is a little above the min sink flying speed, but it may be necessary to fly faster than this in rough conditions to maintain good control. Once a turn is initiated a bank angle of anywhere between 10 and 50 degrees can be used, depending on the nature and diameter of the thermal. The MAGIC KISS is a precise glider to fly. It can accelerate quickly from small pilot inputs and will turn fast. It requires more precise pilot input than the Magic IV and should be treated with respect whilst learning to fly it.

Stalls

When practising stalls always make sure that you have sufficient altitude. The stall characteristics of the **MAGIC KISS** are very straight forward. If you push out slowly it is hardly possible to stall the glider at all and the MAGIC KISS will mush without a tendency to drop a wing. The sink rate is more than doubled, if you 'fly' the glider in this mode. If you push out harder, the nose of the glider will come up a little higher. This is followed by a gentle pitch down and the glider will regain flying speed. There is not a lot of altitude lost in this type of manoeuvre. Never stall your glider completely with the nose pitched-up very high.

This is one of the most uncontrollable and dangerous manoeuvres for any tailless aircraft and can result in a tail slide and severe tumble. Stalls in a coordinated turn are difficult to do by mistake. If you push out too much in a turn the glider will turn tighter, unless you are flying very very slowly in which case you may enter a spin (see Spins).

Spins

The MAGIC KISS will strongly resist spinning. However should you stall one wing in a turn, move your weight forward and the glider will recover quickly from a spin (half a turn) without entering extreme attitudes and without extreme loss of height. This is due to the MAGIC KISS's positive roll-yaw coupling and a neutrally balanced roll characteristic.

Landing

This is a simple matter. Your final approach should be a straight glide into the wind at faster than best glide airspeed. Bleed your speed off slowly, wings level and ground skim onto your chosen landing spot. In light or no wind conditions a full flare is required. When it is time to flare, flare aggressively and abruptly and hold the W frame out. It is possible to make steep approaches to a landing area or target utilizing the mush mode, this should only be done in steady, smooth winds. It is not recommended to mush the MAGIC KISS all the way to the ground.

IMPORTANT NOTICE

As with any high performance aircraft, special care should be taken to note the operating limitations which have been ascertained by careful testing.

Flight operations should not exceed those laid down in the operating limits at the front of this manual.

No aircraft is totally safe; there are inherent risks involved in flying a hang glider. It is quite possible to fly the Magic Kiss beyond its operating limits, DO NOT DO IT. The responsibility for safety rests ultimately with the pilot who must decide whether the aircraft he/she is about to fly has been properly maintained, preflight checked and is in an airworthy condition.

p08: SECTION 6: TUNING

The MAGIC KISS has undergone a rigorous test-flying programme in a wide range of conditions. As a result, it is precisely timed to achieve maximum flying performance. Therefore, it should not be necessary to make any changes in your glider's tuning or configuration. If, however, you have any questions, please contact your authorised AIRWAVE dealer.

If any adjustments are made on your glider, we recommend that they be noted in your Maintenance Log which you will find at the end of this Manual. It is then easy to go back and trace occasional problems.

Turns
If your MAGIC KISS develops a slight tendency to want to turn. Check the following

Check your battens against the batten plan. Check that the batten bungee tensions are the same on both sides. Check that the keel is straight. Check that the leading edges are straight. Check that a leech line has not been accidentally pulled. When you have checked that everything is correct mid if your glider still has a turn, then it may be necessary to adopt one of the following techniques.

~ 1) Differential Batten Bending: The only two battens that should be changed are the two curved tip battens. For example, if your glider has a right turn in it, the battens on the right hand side would require an addition of approximately 10 mm of camber to the slow wing (in this case the right wing). The camber of the corresponding battens on the fast wing should be decreased by approximately 10 mm.

2) Differential Batten Tension: Tightening the batten tension also has the same effect as increasing the camber. Try tensioning the battens on the slow wing.

3) Differential Leech Line Tension: Some people have been able to tune out a turn by tightening the leech line on the side towards which the glider turns.

4) Weight at the Tip: The crudest but perhaps most effective method of tuning out a turn is to place a small weight at the tip of the leading edge. Quite small weights can make quite a difference. The weight should be added to the opposite leading edge to the direction to which the glider turns. Start with a small weight and increase it ***slowly. If the*** addition of *the* weight is relatively permanent, the neatest way to do it is to put lead shot inside the ball tip cup. If this is done please ensure it is noted in the manual so that the next owner of the glider knows that it is there.

Pitch Trim

This is accomplished by simply moving the hang loop on the griptape within the hole in the keel pocket. lb make the glider fly faster, simply move the hang loop forward. The difference in trim speed betweenhaving the hang loop all the way forward to all the way back should be about 5 mph.

NOTE: The main hang loop is always the shortest of the two and always located directly behind the back-up.

Handling / Speed &Glide

The only adjustments that are permitted in order to change the tuning of the MAGIC KISS are batten tensions and leading edge tensions. Tighten the battens for more performance, slacken the battens for more handling. Add a 3/16" shim to the leading edge to enhance performance, but expect a deterioration in handling. Remove the standard shim to improve handling especially if you want your battens really tight.

p09: SECTION 7: MAINTENANCE SCHEDULE

Your new **MAGIC KISS** will require very little in the way of maintenance if you care for it properly in your day to day use. Here are some general points to follow in maintaining your new MAGIC KIS S which will help ensure the safety of your flying and the performance retention of your glider. We suggest you follow this maintenance schedule faithfully. Your care will always pay off in the future.

Every 10 Hours

Check all ribs against the batten pattern.

Every 50 Hours

-Inspect all cross tube support cable c6mponents (tangs, pins, nuts, bolts, cross tube plates, and cable itself).

-Inspect all batten elastics.

--Check all tubing for possible wear damage which could occur during set-up, fold-down, or transportation.

-Inspect sail mounting grommets and webbing at tips.

Every 100 Hours

-A complete inspection of your glider is recommended, including all rigging and components, replacement of any worn or bent bolts or locknuts connecting 2 moving parts together (i.e., cross tube plate junction bolt, cross tube / leading edge bolt, etc.)

-If any tube is badly scratched, dented, or damaged, it should be replaced.
---Check the critical airframe measurements. (See Airframe Maintenance)

--Critical sail tears should be mended by a professional sailmaker. (See also Sail Maintenance below.)

-Please contact your AIRWAVE dealer for a complete and professional inspection of your glider.

Sail

1) If you must wash the sail, wash it with a light detergent only. Better still, wipe the sail down frequently with a soft, damp cloth and that will keep detergent washing to a minimum. 2) Acetone or alcohol can be used to remove stubborn stains without harming the sail. (Do not use any solvents on a mylar sail).

3) **Rinse very thoroughly after cleaning with any detergent or solvent.**

4) To renew the lustre of Dacron, you can use a product called 'Sail Bright' available from marine hardware stores.

5) Apply sail repair tape to any rips or tears in your sail. This will prevent fraying on the edges where the tear is located. However, do not worry about small tears continuing unless they are located at stress points around the tip panel, nose or trailing edge panel.

6) Keep an eye on all the grommets and all areas of the sail that take extra abuse.

7) The best thing you can do for your sail is to always use the glider bag. Do not carry your glider on top of a car, even for short distances, without- one. . Sun and weather cause more deterioration than hours of flying. Keep your MAGIC KISS covered when not in use.

8) Be careful and precise when you re-pack your glider after each flight. Keep all the padding that arrived with the glider when it was new, pack everything the same way. A few extra moments vhen you de-rig the glider will give you many extra hours of noiseless and anxiety-free flight.

p10: ***Cables***

1) Naturally any frays or kinks in your cables should be examined with great care and any frayed cables should be replaced immediately.

2) AIRWAVE recommend that the flying wires are replaced every 150 hours or yearly, whichever comes first. Each cable has a breaking strength in excess of 400 Kg. Actual non-aerobatic in-flight loads seldom exceed 200 kg. Inspect the thimbles; if elongation is evident that cable should be replaced. If you must constantly set your glider up and break it down, in rough, rocky areas, you will need to replace your cables more frequently than someone who flies the grasslands. Most damage is done to cables by 'heavy landings' or crashes. Use your best judgement - those cables hold the frame together.

Lufflines and Compensator

Check that the compensator string is attached to the front top rigging wire at right angles. Then to check that the string has not stretched, the luff line heights should be checked with the Magic Trimmer both on and off. To measure the luff line heights fully rig the glider and stretch a fine string across each of the three pairs of luff lines. The string should be attached to the batten adjacent to each luff line, so that it is at the same height as the sail at that luff line. With the string tight, measure the distance between the string and the top of the keel. The measurements are at the front of this manual.

Airframe

Examine your tubes for dents, wear spots, corrosion and bends.

The critical dimensions for the airframe are listed at the front of this manual and should be checked. These are the luffline heights as described above, the anhedral, and the keel bend. With the glider lifted to make sure that the mainspans are tight, the anhedral is the distance between the bottom of the keel and a tight string held between the two wing bolts. The bend in the keel is measured with a tight string between the aft lowers exit hole and the bottom of the keel behind the nose plate. The measurement is taken at the heart bracket.

Hardware and Bolts

1) For all practical purposes, AIRWAVE hardware exceeds all required and maximum load tests in hang gliding (flight) applications. "AN" bolts, however, are not indestructible and bending them even in light crashes is common. Check them periodically to be safe. Discard and replace any bent bolts.

2) All bolts, of course, should show an exposed thread above the locknut during pre-flight.

Battens

When inserting battens, place them in their pockets smoothly and gently to avoid wear on the sail and on the batten ends. Pushing them rapidly into the pockets at an angle will wear out the stitching on the edge of the pockets. The friction will wear the batten ends rapidly, and will damage the sail itself

Annual Inspection

Even if yours is the best kept MAGIC KISS, you should have the glider stripped down for a full Inspection at least once a year. This can be done by yourself or preferably by one of our professional AIRWAVE DEALERS.

p11: **SECTION 8: TAKING APART AND REBUILDING YOUR GLIDER**

Preparation

In order to best perform this operation, you must first place your glider "right side up" on two saw horses located 1 m from both ends, with all ties removed and with the leading edge spread approx. 30 cm apart. (You can actually perform the same operation on a clean floor or lawn.) Next, you need to flip the sail on the outside and the top of the airframe in a manner to expose the under-surface facing upwards. Your glider is equipped with X-tube to Leading Edge junction inspection zippers, open the zippers and move the sail around to allow you to work on the X-tube to L.E. junction. You may want to dismount the sail at the L.E. Tips and slip the sail slightly forward to provide better working access to the X-Tubes junction.

Stripdown

1) Remove the lock nuts that are retaining both side cable tangs onto X-T#be bolt. Slip the top side cables off the sail and replace nuts.

2) Disconnect all six luff line ball terminals from the cable loops and slip the lines through the grommets.

3) Remove the screws securing the sail at the nose plate junction, slip the sail back a bit and remove the top front cable tang off the top nose plate. Slip the cable off its sail slot running along side the nose rib pocket. At this point, we would recommend that you "coil" all the free top rigging into rolls in order to keep the procedure organized.

4) You can now remove the entire kingpost tube off the glider with the top rigging attached. Do not remove the kingpost base block.

5) Now you must detach the lower rear rigging from the keel tube. The wire is fastened to the keel with a short clevis pin located directly below the machined slot.

6) Remove the side wires from the base of the a frame.

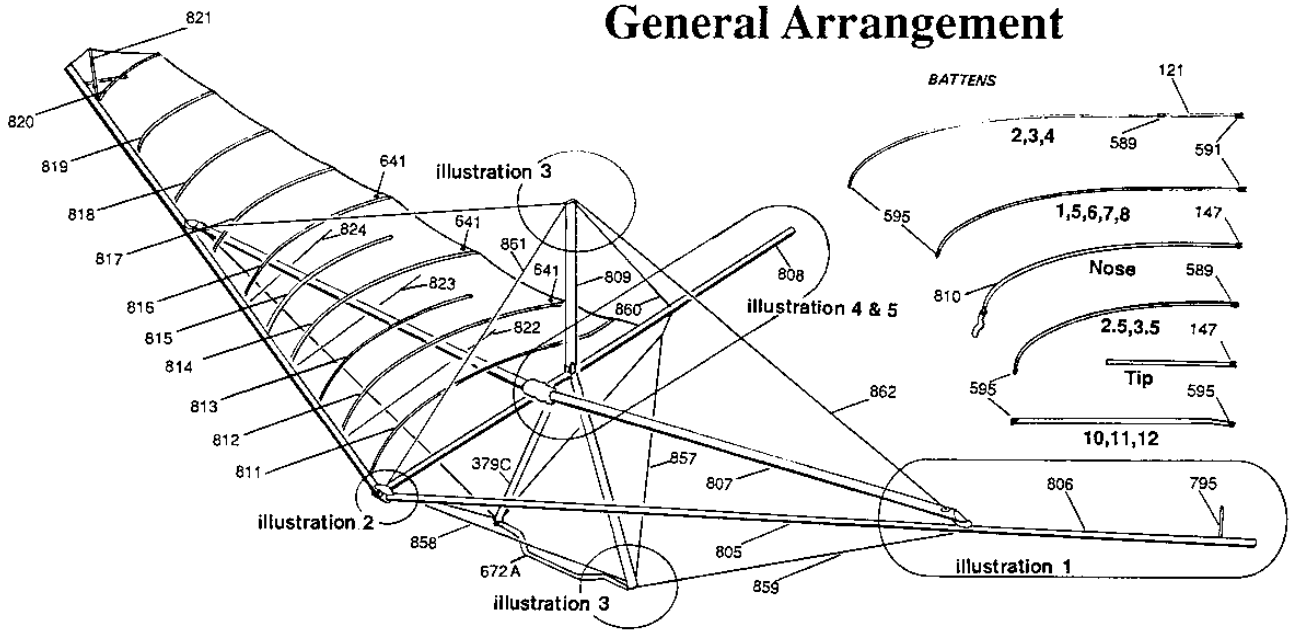
7) You can now proceed to slip the sail off the rear of the airframe, taking great care not to catch the sail on any parts of it. Be especially careful when nearing the washout tubes, the cross tubes centre junction, the control bar apex and the wingbolt area.

Rebuilding the glider

The re-assembly procedure of your MAGIC KISS is best achieved by simply reversing the steps described above. When the glider is complete, rig it as if to go flying. Inspect all joints and connections. Check that the trimmer works. Check the anhedral, keel bend, and luff line heights.

Please remember that the de-assembly and re-assembly of your glider provides the best opportunity to give an extensive and thorough inspection to each and every component.
Take advantage of it!

p12: General arrangement

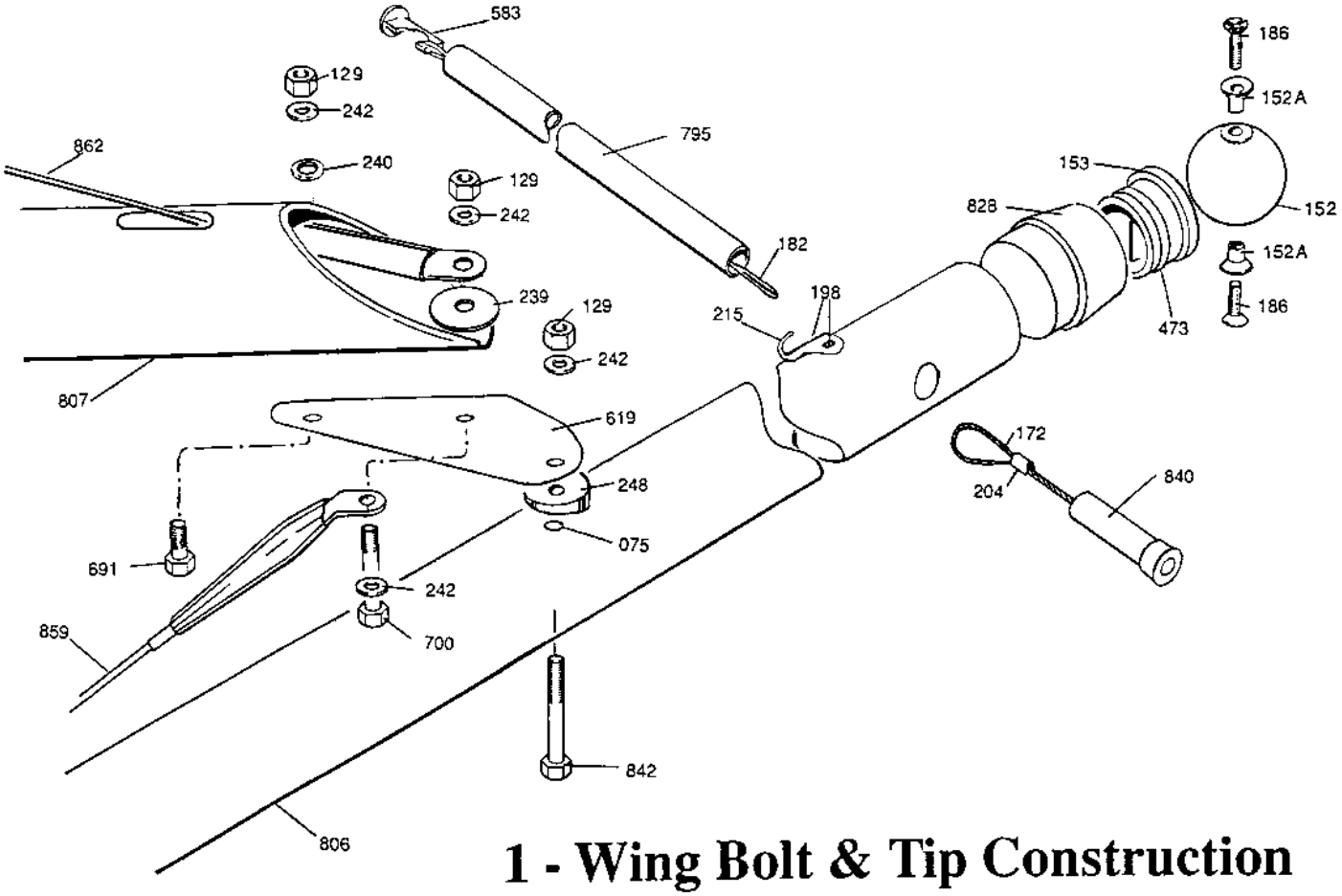


p13: # General Arrangement

key	Part	Description	units
121	FG 1/4*.7M	Rod Fibre Glass 70cm	
147	PM AG 1/2T	Batten Tip 1/2" -	
379C	M4 AF UP/M	Upright Aerofoil medium	
589	PM BJS G	Batten Joint Sleeve Green -	
591	PM BTR G	Batten Tip Rear Green -	
595	PM BTF G	Batten Tip Front Green	
641	PM LLB	Luff Line Balls	
672A	M SBS	Speed Bar Small	
795	MK TS	Tip Strut - Kiss	
805	AW4 LE I	Leading Edge Inner - Kiss -	
806	MK54 LE 0	Leading Edge Outer - Kiss -	
807	MK54 XT	Cross.,Tube - Kiss -	
808	NW4 K	Keel - Kiss -	
809	MK54 KP	King Post - Kiss	
810	MK B NOSE	Batten Nose - Kiss -	
811	MKB1G	Batten 1 Kiss Green -	
812	MK B2 G	Batten 2 Kiss Green -	
813	MK B2.5 G	Batten 2.5 Kiss Green -	
814	MK B3 G	Batten 3 Kiss Green -	

key	Part	Description	units
815	MK B3.5 G	Batten 3.5 Kiss Green	
816	MK B4 G	Batten 4 Kiss Green	
817	MK B5 G	Batten 5 Kiss Green	
818	MK B6 G	Batten 6 Kiss Green	
819	MK B7 G	Batten 7 Kiss Green	
820	MK B8 G	Batte~ 8 Kiss Green	
821	MK B TIP G	Batten Tip Kiss Green	
822	MK B10 G	Batten 10 Kiss Green	
823	MXBI1G	Batten 11 Kiss Green	
824	MX B12 G	Batten 12 Kiss Green	
857	RG54 ALA	Rigging K 154 Aft low Aero	pair
858	RG54 FLA	Rigging K 154 Fwd low Aero	pair
859	RG54 MS	Rigging K154 Mainspan -	
860	RG54 TA	Rigging K 154 Top Aft -	
861	RG54 TF	Rigging K 154 Top fwd -	
862	RG54 TL	Rigging K 154 Top laterals -	

Please note that battens with green in the description are for right hand parts. For and R for G in the part no. left hand parts replace green with red

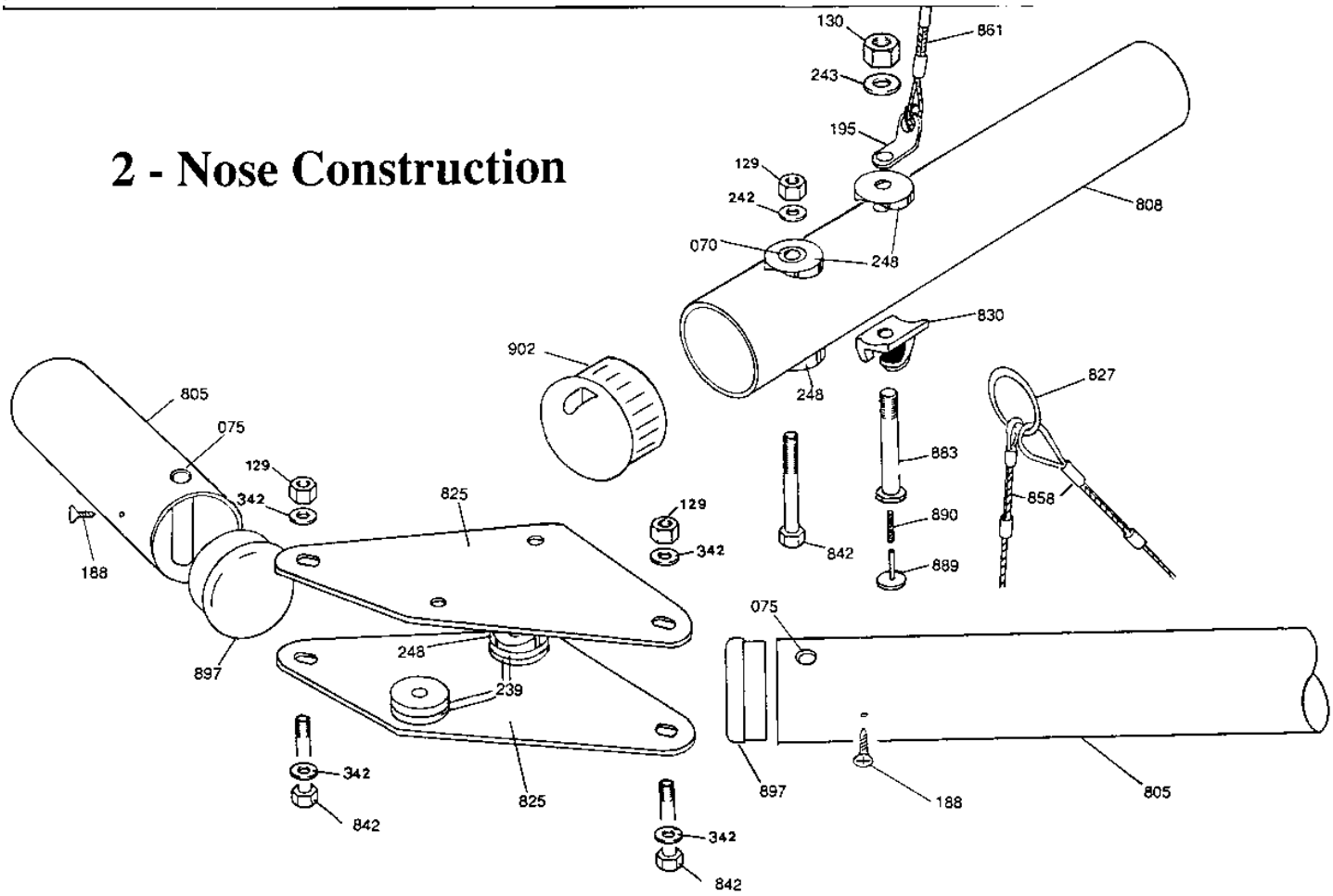


1 - Wing Bolt & Tip Construction

p15: # 1 Wing Bolt & Tip Construction

key	Part No.	Description	Units
075	BU 5/16'	Bush LEJS	
129	NT 1/4"	Nut 1/4" Aerotight	
152	PM CSBS	Ball and Insert	
152A	PM CSS	Ball Tip Spacer	
153	PM CSC	End Plug Leading Edge -	
172	RG 2MM	Tip Strut Wire Loop	metres
182	RP BE 4MM	Shockord 4mm	metres
186	SC 6*25MM	Screw Machine 6 x 25mrn -	
198	SF D639BS	Pop Rivets 639	
204	SF N 31	Nicopress 2mrn	
215	SF TBH 15	Hook Tip Batten	
239	WA 1 1/4"	Washer 1 1/4" Plastic -	
240	WA 1/4"	Washer 1/4" Plastic -	
242	WA M6	Washer 6mm -	
248	WA SW 39	Washer Saddle Large -	

key	Part No.	Description	Units
473	AT LES	Leading Edge Shim	
583	PM TSH	Tip Strut Hook	
619	AF CXTP	Cross Tube Plate	
691	BT 4 6A	Bolt AN4 6A	
700	BT 4 10A	Bolt AN4 10A	
795	MK TS	Tip Strut - Kiss	
806	MK54 LE 0	Leading Edge Outer - Kiss	
807	MK54 XT	Cross Tube - Kiss	
828	PM CCR	Cup Conversion Ring	
840	AF TSB	Tip Strut Bullet	
842	BT 4 26A	Bolt AN4 26A,	
859	RG54 MS	Rigging K154 Mainspan	pair
862	RG54 TL	Rigging K154 Top laterals -	

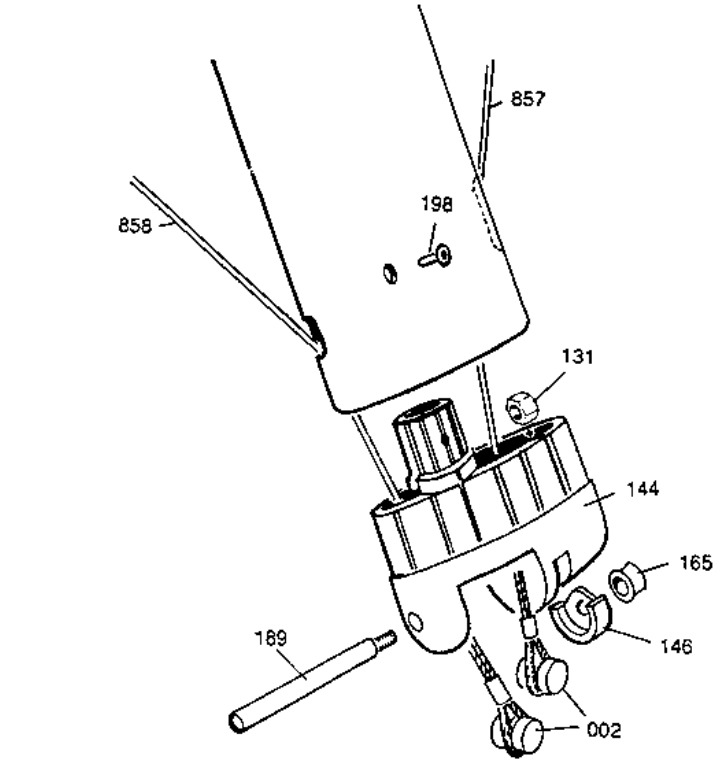

2 - Nose Construction
130
861
243
195
129
242
808
070
248
830
902
248
827
805
075
129
342
825
883
858
890
188
129
342
842
889
897
248
075
239
342
825
897
188
805
842
342
842

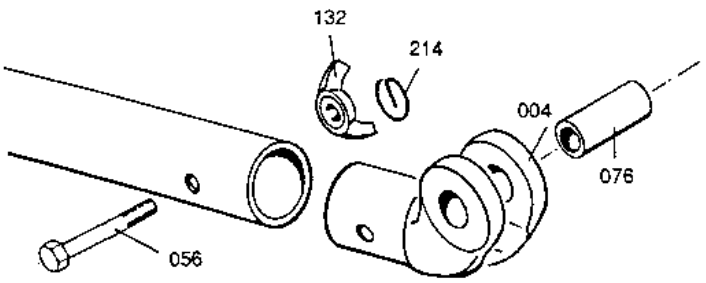
p17: 2 - Nose Construction

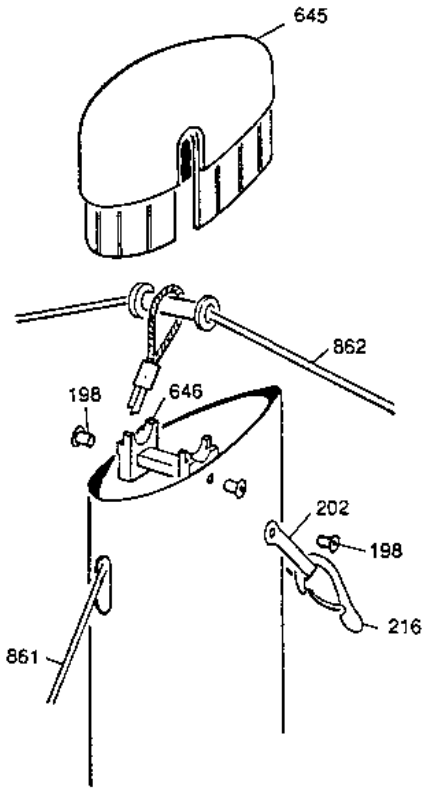
key	Part No.	Description,	Units
070	BU 1 15116	Bush Keel-Nose -	
075	BU 5/16'	Bush LE,TS -	
129	NT 1/4"	Nut 1/4" Aerotight -	
130	NT 5/16'	Nut 5/IT Aerotight -	
188	SC SUF AB8	Screw S/Tappers 804 ss	
195	SF BT	Tang Bent	
239	WA 1 114"	Washer 1 114" Plastic -	
242	WA M6	Washer 6mm -	
243	WAM8	Washer 8mm -	
248	WA SW 39	Washer Saddle Large -	
342	WA M6 B	Washer M6 Thin -	
805	MK54 LE 1	Leading Edge Inner - Kiss -	
808	MK54 K	Keel - kiss -	
825	AF KNP	Nose plates - Kiss -	
827	SF RR	Rigging Ring -	
830	AF HC	Hook Clamp -	

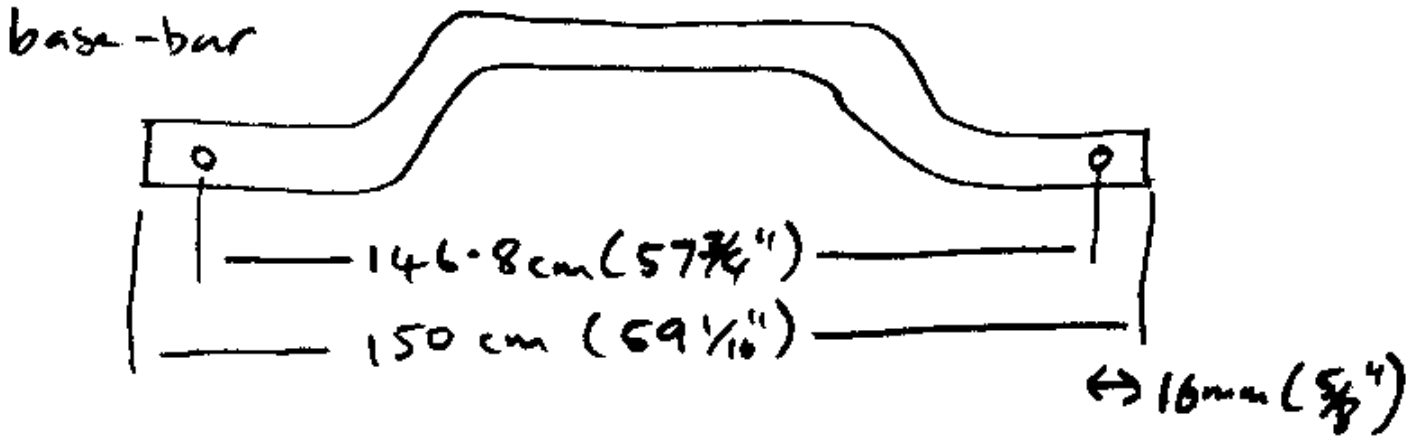
key	Part No.	Description	Units
842	BT 4 26A	Bolt AN4 26A	
858	RG54 FLA	Rigging K 154 Fwd low Aero	pair
861	RG54 TF	Rigging K154 Top fwd	
883	BT CB30	Catchbolt AN 5 30A	
889	SF CBB	Catchbolt Button	
890	SF CBS	Catchbolt Spring	
897	PM 50MM	End plug 50mm	
902	PM 1112 KN	End plug for Kiss nose	

3 - 'A' Frame Corner & Kingpost Construction



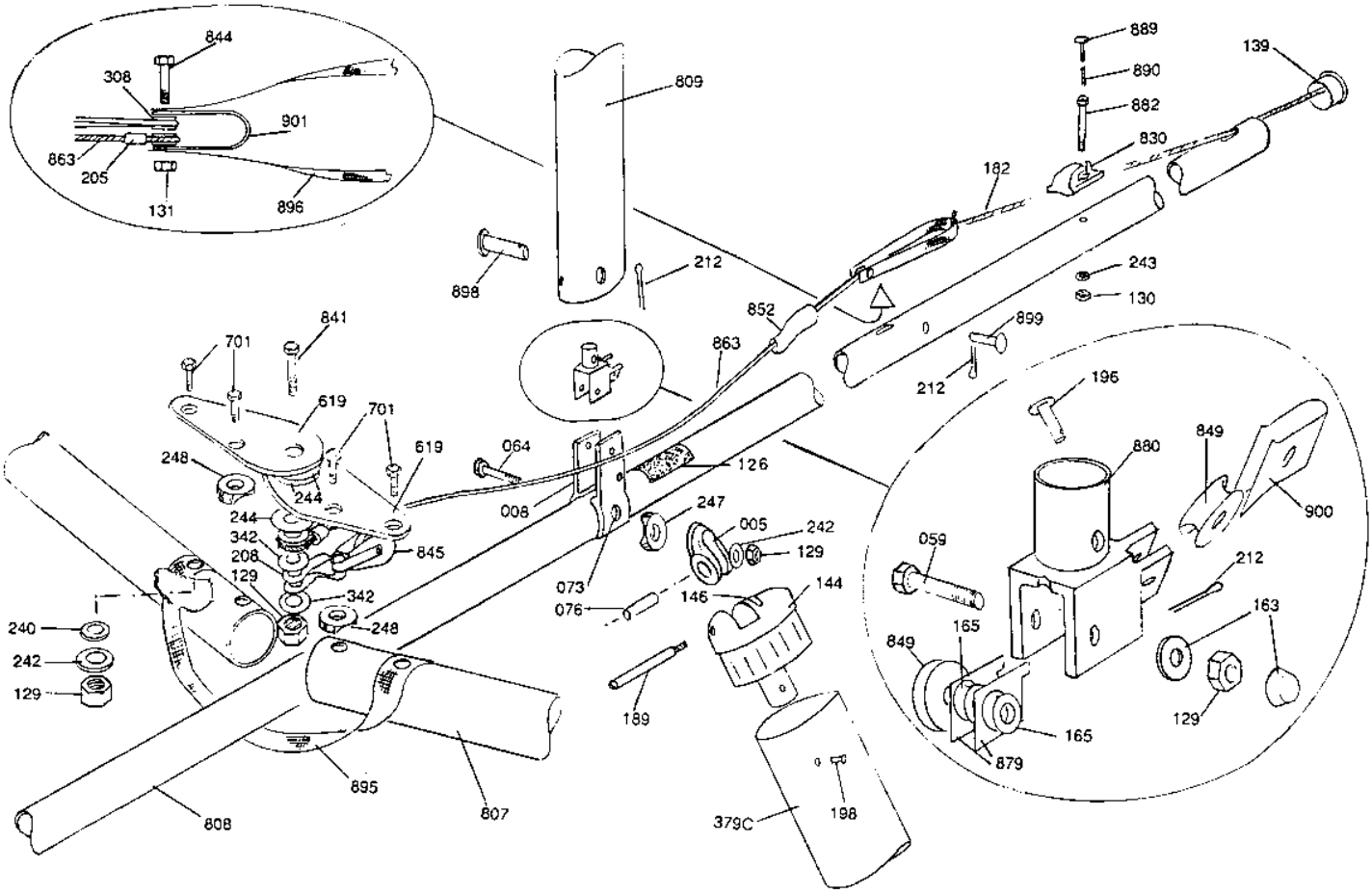






p19: # 3 -'A' Frame Corner & Kingpost Construction

Key	Part No.,	Description	Units
002	AF ARP	Rigging Pins Alloy	
004	AF FPB	Fork Plug Base Aerofoil	
056	BT 4 14	Bolt AN4 14	
076	BU DB	Bush Delrin	
131	NT A125 D66	Nut 3/16' Aerotight	
132	NT WN	Nut - Wing	
144	PM AEP	End Plug M4 Aerofoil Up	
146	PM AEP SC	End Plug Aero - Small Cap	
165	M TSBS	Trimmer sheave/brg small	
189	SF AEP	Pin Aero End -	
198	SF D639BS	Pop Rivets 639 -	
202	SF LS 23	Shackle Long -	
214	SF SR 1	Ring Split -	
216	SF YS SOMM	Hook Rigging - Drilled -	
645	PM AKPP	Plug Aerofoil King Post -	
646	PM AKPP 1	Plug - Insert Aero KP -	
857	RG54 ALA	Rigging K 154 Aft low Aero	pair
858	RG54 FLA	Rigging K154 Fwd low Aero	pair
861	RG54 TF	Rigging K 154 Top fwd	
862	RG54 711	Rigging K 154 Top laterals	



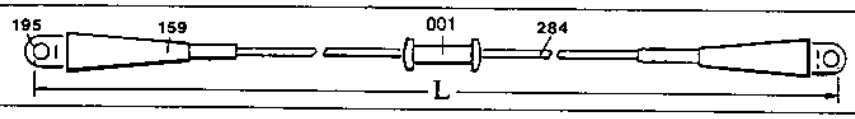
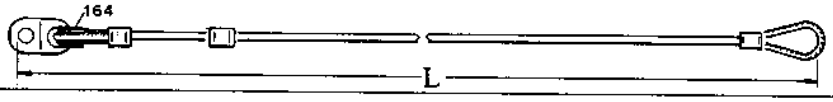
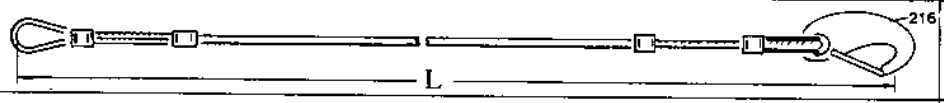
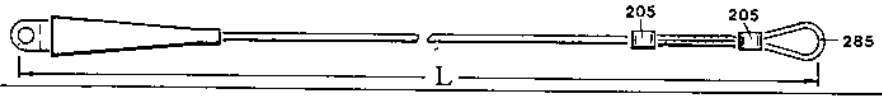
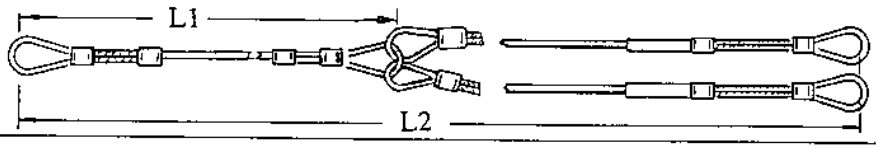
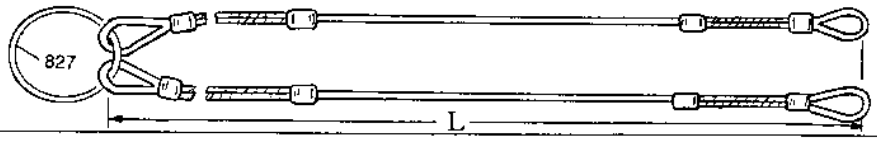
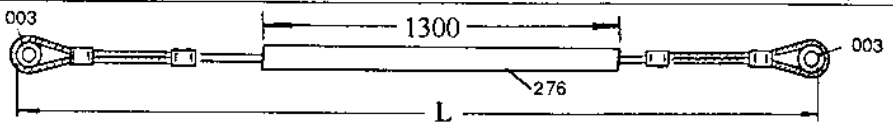
4 - Centre Line Construction

p21:4 - Centre Line Construction

Key	Part No	Description	Units
005	AF FPT	Fork Plug Top Aerofoil	
008	AF HB	Heart Bracket	
059	BT 4 16A	Bolt AN4 16A	
064	BT431A	Bolt AN4 3 1A	
073	BU 2 1116	Bush Keel-Heart	
076	BU DB	Bush Delrin	
126	FM Z74531	Safety Walk	metres
129	NT 1/4"	Nut 1N' Aerotight	
130	NT 5/16"	Nut 5/16 " Aerotight	
131	NT A125 D66	Nut 3/16" Aerotight	
139	PM 1 1/2"	End Plug 1 1/2" -	
144	PM AEP	End Plug M4 Aerofoil Up -	
146	PM AEP SC	End Plug Aero - Small Cap -	
163	PM MV NCW	Nutcaps & Washers -	
165	M TSBS	Trimmer sheave/brg small -	
182	RP BE 4MM	Shockord 4mm.	metres
189	SF AEP	Pin Aero End	
196	SF CP 7X'	Pin 114 Clevis 7/8"-	
198	SF D639BS	Pop Rivets 639 -	
205	SF N 32	Nicopress 2.5mm -	
208	SF R2850	Eyemount (Magic Trimmer) -	
212	SF SP	Pin - Split	
240	WA 1/4"	Washer 1/4" Plastic	
242	WA M6	Washer 6mm.	
243	WA M8	Washer 8mm	
244	WA MW	Washer Mylar	
247	WA SW 36	Washer Saddle Medium	

Key	Part. No	Description	Units
248	WA SW 39	Washer Saddle Large	
308	AF TSS	Trimmer Sheave Small	
342	WA M6 B	Washer M6 Thin	
379C	M4 AF UP/M	Upright Aerofoil medium	
619	AF CXTP	Cross Tube Plates	
701	BT 4 7A	Bolt AN4 7A	
807	MK54 XT	Cross Tube - Kiss	
808	MK54 K	Keel - Kiss	
809	MK54 KP	King Post - Kiss	
830	AF HC	Hook Clamp	
841	BT 4 1 1A	Bolt AN4 11 A	
844	BT 3 12A	Bolt AN3 12A	
845	BL HA 4250	Block HA4250	
849	M TSBL	Trimmmer sheave/brg large	
852	FM NEO	Neoprene XTT Cover	
863	RG54 XTT	Rigging XT Tension	
879	AF DP	Divider Plate	
880	AF UBB	Kingpost Base Block Kiss	
882	BT CB21	Catchbolt AN 5 21 A	
889	SF CBB	Catchbolt Button	
890	SF CBS	Catchbolt Spring	
895	SL XTWL	Webbing Loop Cross Tube	
896	SL WH	Webbing Handle XT Tension	
898	SF CP 1 1/4	Pin - 3/16 Clevis 1 1/4	
899	SF CP 1 3/4	Pin 1/4 Clevis 1 3/4	
900	MK MS	Mylar spacer: -pulley assy	
901	SF SH S	Shackle Forged Small	

5 - Rigging

TOP LATERALS 862		6668
TOP FRONT 861		1733
TOP AFT 860		1390
MAIN SPAN 859		2697
AFT LOWERS 857		L1= 310 L2=2040
FRONT LOWERS 858		1916
CROSS TUBE TENSION WIRE 863		1380

ALL 'L' LENGTHS ARE IN mm

5 - Rigging

TOP LATERALS 862		6668
TOPFRONT 861		1733
TOP AFT 860		1390
MAIN SPAN 859		2697
AFT LOWERS 857		L1= 310 L2=2040
FRONT LOWERS 858		1916
CROSSTUBE TENSION WIRE 863		1380
	ALL ´L´ LENGTHS ARE IN mm	

p23: # 5 - Rigging

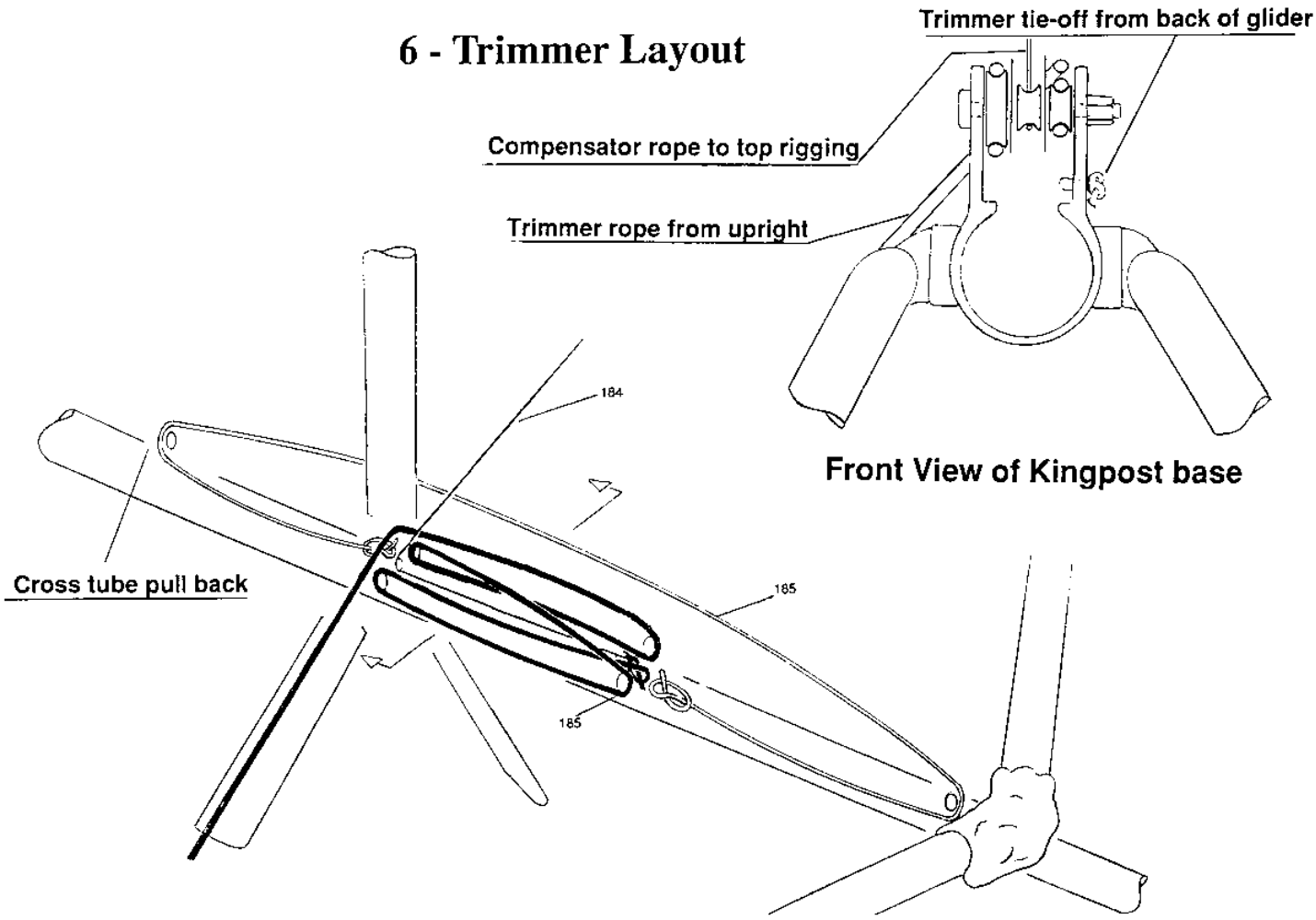
Key	Part No.	Description
001	AF AFKPS	King Post Top Slug
003	AF AS	Dead Eye (Alloy Sheave)
159	PMDMD	Rigging Sheath
164	PMNK	Never Kinks
195	SF BT	Tang Bent
205	SF N 32	Nicopress 2.5mm
216	SF YS SOMM	Hook Rigging - Drilled
276	PM R XTT PT	Plastic Tube metres
284	SF 2.5 WIRE	Rigging Wire Coated metres
285	SF 2.5MM.	Rigging Thimble
827	SFRR *	Rigging Ring
857	RG54 ALA	Rigging K 154 Aft low Aero pair
858	RG54 FLA	Rigging K 154 Fwd low Aero pair
859	RG54 MS	Rigging K 154 Mainspan -
860	RG54 TA	Rigging K 154 Top Aft -
861	RG54 TF	Rigging K 154 Top fwd -
862	RG54 TL	Rigging K154 Top laterals -
863	RG54 XTT	Rigging XT Tension -

6 - Trimmer Layout **(Over the page)**

Key	Part No.	Description	Units
184	RP LL205	Leech Line	metres
185	RP MT 4MM	Rope 4mm Prestretched	metres

p24:Trimmer Layout

6 - Trimmer Layout



A FEW LAST WORDS

Your AIRWAVE MAGIC KISS is a sophisticated high performance hang glider, that will give you years of safe and enjoyable soaring, provided that you treat it properly and always maintain a healthy respect for the demands and potential dangers of flying. Please remember that aviation is always potentially dangerous and that your safety depends on you.

With proper care and maintenance your MAGIC KISS will remain for some years at a high level of airworthiness. The MAGIC KISS has been tested internationally to beyond all current airworthiness standards, and these represent the best accumulated knowledge of what constitutes airworthiness in a hang glider. There is a lot that is still unknown, for example; what is the effective lifetime of a hang glider, and how much material degradation is acceptable without compromising airworthiness. We are sure, however, that there are forces in nature which can severely compromise your safety, regardless, of the quality of design or condition of the aircraft you are flying. Your safety is ultimately your own responsibility. We strongly recommend that you By conservatively. both in your choice of the conditions in which you fly, and in the safety margins you allow In your flying.

You are reminded that you fly a hang glider at your own risk.

We recommend that you only fly with a harness that has been tested for strength and that you always fly with an emergency parachute system.

Our magazine, AIRWAVES, exists to keep the owners of our gliders informed and up-to-date about what is happening in hang gliding, and especially what is happening at Airwave. Complete and send off the registration at the front of the manual to make sure that you get your copies.

At Airwave, our best source of feedback is from you, the pilot. If you have any comments or suggestions, please send them to us. We are always very pleased to listen to what you have to say.

SEE YOU IN THE SKY!

AIRWAVE GLIDERS LTD.
ELV LANE, SHALFLEET
ISLE OF WIGHT P030 4JY
ENGLAND

Tel: (0983) 78611
Telex: 869188 GLIDER G
Fax: (0983) 78552

p26:**CUSTOMER'S PURCHASE RECORD**
Fill this section in for future reference

1st Owner
Date..
2nd Owner
Date .....
3rd Owner
Date .....
.
Magic Kiss Serial No.
Size
Main Body Colour
Leading Edge Colour
Double Surface Colour
TuningNotes and Maintenance Record Date and By whom

Conditions for the continuing validity of the BHGA Certificate of Airworthiness
1. The Glider shall be maintained in an airworthy condition.
2. All repairs must be to Airwave Gliders original standards.
3. Major repairs to the sail shall only be carried out by Airwave Gliders or an Airwave authorised sail loft.
4. Modifications must be approved by an airworthiness inspector nominated by the B.H.G.A.
5. Repairs and /or modifications must not impair standards of airworthiness or operational safety.
6. Change of ownership shall be notified to Airwave Gliders.