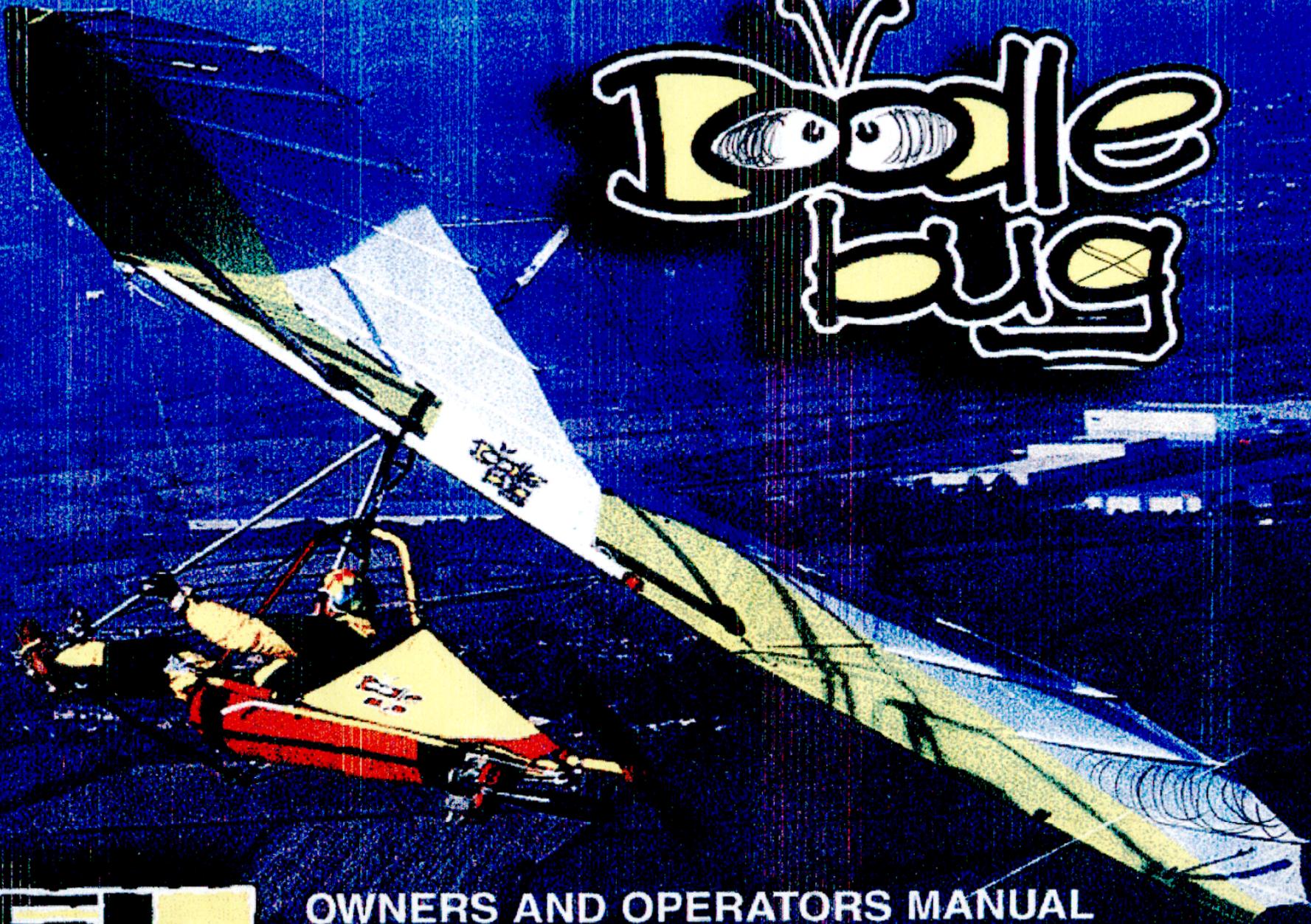


Doodlebug



OWNERS AND OPERATORS MANUAL

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RIGGING THE DOODLE BUG (see photo sheet 1)

Place the Bug on the ground with the bag zip upwards. Undo the zip and remove the leg velcros just behind the seat. **fig 1.**

Pull out the legs and attach the leg elastics to the rear frame plates. **fig 2**

Ensure that none of the leg lines are trapped or tangled. Roll the Bug over and stand it on its legs and remove the bag. **fig 3.**

Raise the overhead strut and pull the elastic attach cord on to the plastic hook. Pay close attention to how the cord goes around the quick link. **fig 4.**

Open rear compartment and place the fuel tank into the webbing cradle. secure the strap and tighten the adjuster. Connect the fuel line with the snap connector, make sure the seals are clean of dust and grit as this will cause air and fuel leaks. **fig 5.**

Close the rear enclosure. Take the propeller out of its bag and check for any damage, if none found, remove the pin, washer and wing nut of the rear of the prop shaft and slide the prop onto the shaft, it will only attach one way. Note: keep the shaft and prop pin lightly oiled with WD-40 or similar. Rotate the propeller until the holes in the propeller boss and the shaft line up then insert the pin. If the pin is reluctant to go through both, remove the pin, rotate the propeller 180 degrees and try again. **Fig 6.**

With the pin pushed through put the large washer on to the end of the shaft and tighten the wing nut on. Before finally nipping up the wing nut ensure that the hole for the safety ring in the pin is aligned with the prop face to allow easy insertion of the safety ring. Make sure that the safety wire goes through the wings of the wing nut. **Fig 7.**

The bug is now ready to attach to your wing.

ATTACHING THE BUG TO YOUR WING (see photo sheet 2)

Place the glider 90 degrees to the wind and rest the glider on to its keel, the keel is still attached at this point. **Fig 8.**

Bring the Bug around the back of the glider and lift the keel of the glider. **Fig 9.**

Bring the Bug from the back and move forwards to just behind the base bar and clip the Bug to the glider's hang strap. Remove the keel rear of the rigging and rest the truncated keel on to the back of the bug. **Fig 10.**

Attach the side wires to the wing attachment points using the quicklinks provided making sure not to pass over the top of the rear rigging wires. **Fig 11.**

The aircraft is now ready to enter for flight.

Note: If the wind is in excess of 15 knots the wing needs to point between 90 degrees and 120 degrees to the wind.

TO GET INTO THE HARNESS (see photo sheet 3)

Before getting in to the harness arrange the straps so that they are at hand and not crossed or tangled. **Fig 12.** Lengthen the shoulder straps as this will ease putting them on later. Enter the harness from the front by kneeling with your back to the seat and your feet under the main seat. Put on the leg straps and tighten. Again it is important to have the leg straps reasonably tight for take off. If they are too long your back side will be too low to the seat and you will not be able to get into it after take-off. **Fig 13.**

IMPORTANT: ensure that the seat is flat and not foiled over on to itself as this will make entering the seat almost impossible after take off.

Check that the 'Gob Throttle' is not going to be trapped when you get in. **Fig 14.**

Put on shoulder straps on one at a time. Tighten the shoulder straps making sure that you are in front of the main straps. **Fig 15.**

Buckle the chest straps together, do not over tighten. **Fig 16.**

At this point connect your parachute, if you have one, to the clips sewn on the chest straps.

Hold the uprights and push them forwards while you stand up ensuring that you do not step backwards as this will collapse the legs. **Fig 17.**

Now that you are upright remove any slack in the leg loops and finally tighten the shoulder straps. Arrange the 'Gob Throttle' so that it comes over your shoulder and through the uprights, not around the outside of them. You are now ready to start the engine.

Note: Setting the side lines on the bug is critical and should only be carried out by an approved dealer or by the factory. If you change your wing please contact your dealer or the factory and they will assist you in setting up your bug to the new wing.

STARTING THE ENGINE (photo sheet 4)

Starting in the harness.

Whilst keeping the wing level pull the de-compressor toggle at the end of the starboard frame tube. **Fig 18.** Move the choke lever fully forward for full choke. The choke should be kept fully on when the machine is not in use as it prevents dirt entering the carb.

Make sure that both the hand throttle and the 'Gob Throttle' are closed. Fully back for the hand throttle and the mouth part of the 'Gob Throttle' fully open. Now move the ignition switch into the up position. **Fig 19.** Ensure that the area is clear of on lookers and shout "**Clear Prop!**" Propellers are lethal and do kill. Put the kick start loop over your right foot and kick downwards firmly, repeat until the engine fires. **Fig 20.** The engine will fire but not run as the choke is on full. Now take off the choke and set the hand throttle to 25% throttle. Pull the de-compressor toggle and kick start again.

If the engine fires but stops repeat the whole series again. Remember to de-compress. When the engine starts let it run for a minute on 25% throttle then bring the power up to 50% and let it run for approximately 3 seconds then give it a full throttle run for 15 seconds, this is to clear the fuel line of any air locks. When the air runs through the carb. there will be a reduction in power, bring the throttle back to 75% and then bring the power back up to full throttle and again run for 15 seconds.

After this return the engine to idle. The engine is ready for flight.

Place the 'Gob Throttle' into your mouth with **the cable coming out the top.** Pick up the wing and you are now ready for take off. **Fig 21.**

Starting out of the harness.

You may wish to start and warm the engine before attaching it to the wing.

Never attempt to start the engine without the propeller attached.

With the bug fully rigged, pointed into wind and with the front of the frame on the ground carry out the same start procedure as above but rotate the kick start rope pulley at the front so that the starter rope can be pulled vertically upwards. Place your foot over the front of the starboard frame side to anchor it against pulling the starter cord.

When you have the engine running always keep the front of the frame down on the ground.

NEVER ATTEMPT TO LIFT THE FRAME WITH THE ENGINE RUNNING!

Stopping the engine.

Sounds daft but if you apply full choke to stop the engine then switch the ignition switch down for off then this will leave a good charge of air / fuel mix in the crankcase and will make starting easier next time.

In an emergency turn the ignition switch off first.

Air re-starts.

Make sure to stop the engine with the choke whilst flying, do not switch the ignition switch off. When the engine has stopped pull the de-compressor toggle.

If the engine has been off for less than 10 minutes, close the choke and set 25% hand throttle. Put your right foot into the kick start loop and kick straight out above the control frame base bar. The engine will fire with one or two kicks, if not do a cold engine start.

Cold engine re-starts.

If the engine has been stopped for over 10 minutes leave the choke on full and close the hand throttle. Check the de-compressor and the ignition switch are on.

Kick until the engine fires then stops. Close the choke and set the hand throttle to 25%, pull the de-compressor toggle and kick the starter. The engine should fire within two kicks.

LAUNCHING AND LANDING

Take Off and Initial Climb.

Before take off check all round for other traffic.

1. Hold the wing level and pointed into wind. Keep the wing at a neutral angle of attack.

2. Apply full power smoothly with the 'Gob Throttle'.

3. Go with the machine, do not hold back and do not try to out run the bug.

4. Once you have accelerated to a good speed allow the wing to rise up above your head without raising the nose too high. You control this by letting the control frame rise upwards and not forwards. If the nose comes too high you may initiate a turn.

If this happens spit out the 'Gob Throttle' immediately and run to a stop. You are not committed to the take off yet and it is not a problem to walk back to the starting point and have another go!

5. Keep running until the machine pulls you off the ground, if you try to sit down too early the wing will be on the wrong side of its drag curve and will decelerate. Pushing the bar out will slow you down further and deposit you onto the ground.

Once airborne climb straight ahead. **Keep the climb angle shallow** by pulling the bar in slightly and maintaining an air speed 3 - 5 mph higher than that of the wings normal trim as opposed to pushing out for a high climb angle. **Airspeed is security and essential for easy roll control.**

6. Once established in the climb and at a sensible altitude **relax to trim** and take one arm at a time behind the main straps and back on to the uprights. Once through the main straps lean back and lift both knees up, the seat will automatically come up under your legs.

7. Keep climbing and fly at trim then lift your legs and pass you feet over the base bar.

This sequence needs to be fully understood as you cannot get your legs over the base bar until you have moved back behind the main straps.

8. Change from the Gob Throttle to the hand throttle, keep climbing until you reach a safe height. Glance up and grab the foot stirrup, look ahead, pull down and forwards the stirrup with one hand and place it on to your opposite foot, push your foot out and place the other foot into the stirrup.

You are fully in the Bug, enjoy!

In the event of an engine failure during the initial climb, pull the bar back to lower the nose and maintain airspeed, adopt the gliding attitude. If you have sufficient height come back through the main straps, if not land straight ahead with your arms behind the straps.

Important: Maintain airspeed in the event of an engine failure by pulling the bar in!

Landing.

First landings.

1. Arrive over your intended landing field with at least 500'.

2. Set up for a circuit method of landing. **Pict 1.**

Whilst moving on the 'down wind' take your feet out of the stirrup with one hand on the stirrup and velcro the stirrup on the over head spreader bar. The legs will automatically come down but **do check that they have come down.**

3. Throttle to idle and use the choke to stop the engine, switch off the ignition switch, down for off.

4. Bring your feet back behind the base bar.

5. Bring one arm at a time forwards through the main straps, you will come upright into the 'Gorilla Position'.

6. You should now be near or on the 'base leg' of your circuit. Fly with a little extra speed on the approach, initiate the round out at 10 feet and as your feet start to touch gently raise the nose, as you feel the skids touch increase the flare until you run to a stop.

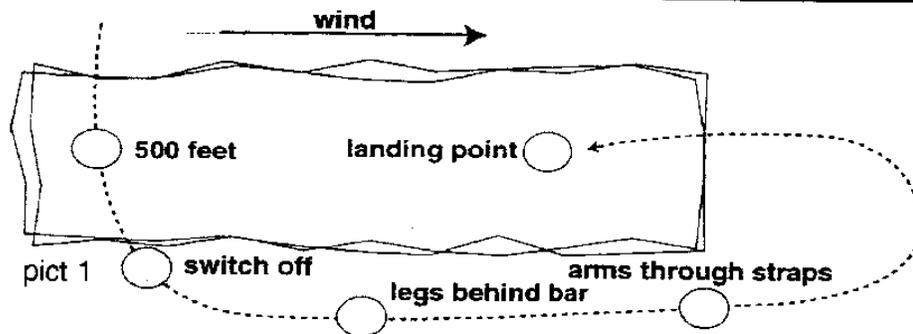
It is a temptation to leave the power on until you are sure you will land where you want. This may lead to a mad last minute rush in order to switch off the engine and is not recommended for the first attempts.

Do not land with the engine running. If you trip on landing you may catch the throttle and apply full or partial power which will not help your circumstances at all.

Once you are practiced at this sequence it is possible to leave the power on until you are established on finals.

You then have the option to do a 'go around' if necessary.

Note: Ensure that you choose a sensible field that is both large and clear of obstacles on the approach and climb out. The size of the field should be enough to land straight ahead in the event of an engine failure immediately after take off and on the initial climb out.



GETTING OUT OF THE HARNESS (photo page 5)

After landing turn the aircraft approximately 90 degrees to the wind. With the control frame on the ground undo the leg loop buckles first. **Fig 22.**

Next undo the chest strap. **Fig 23.**

Slip one shoulder strap and lean forwards to hold the front rigging with your free hand. Remove the other shoulder strap and let the bug down to the ground. **Fig 24.**

Now gently lower the keel of the wing down onto the back of the bug. **Fig 25.**

Note; it is good practice to have a keel sock to stop abrasion of the top fairing. Keel socks are available from Flylight.

The bug is now parked. **Fig 26.**

If the wind is strong it is advisable to detach the bug and lay the wing flat.

FLYING AND GENERAL HANDLING.

Climbing.

Because of the wings relatively low air speed a full powered climb on the bug can appear to be very steep. It is important to maintain sensible airspeed whilst climbing especially close to the ground i.e. initial climb take off. The most sensible airspeed is 3 - 5 mph above the manufacturers normal trim speed for their wing. If you attempt to climb at a slow airspeed close to the stall, like most aircraft the roll control will become responsive and the aircraft will have a tendency to roll into a turn which will be hard to correct unless air speed is increased.

Remember: airspeed is safety.

The airspeed for the best rate of climb will be nearer to that of best glide than that of minimum sink.

Climbing turns.

There has been a lot of work in the development of the bug regarding powered turns. If the side line setting the hang length of the bug to the base bar is correct (your bum should be approximately 1 inch or 25mm from the base bar) then the aircraft should be easy and responsive in climbing turns with no undue overbank tendency. The handling characteristics of the wing will change little with the addition of the bug.

As with most powered aircraft in a full powered climbing turn there will be a slight overbank tendency. [This the bug remains fully controllable up to a maximum bank angle of 60 degrees.

Do not fly outside the manufacturers placarded limitations for the wing. If you do you will be seriously compromising the safety of the aircraft and may result in structural failure.

Level flight.

When the power is reduced to cruise settings there is a noticeable trim change. As the power reduces the aircraft will move away from you (if allowed) by up to 4 inches (100mm). This is perfectly normal.

Level flight normally requires half throttle or less making the bug very economical, normally using about 1 hour per hour.

The general handling and flight attitude are improved compared to the climb and the bug / wing become comfortable making long flights a delight.

Turns.

With low power settings the general handling of the bug / wing is little changed to that of free flight. Turns feel perfectly normal and should be executed exactly the same as in free flight.

Stall Recovery.

Most hang glider pilots have a tendency to remove power in the advent of a stall and recover conventionally a glider, bar back to lower the angle of attack and returning to gliding flight when airspeed is resumed.

Unfortunately when the power is removed the airspeed will reduce deepening the stall.

Recovery from an inadvertent stall will be made quicker and with less height loss if at the point of stall the power is increased and the bar moved back simultaneously. As the nose lowers and the airspeed increases to normal flight the nose can be raised to adopt a shallow climb angle. Once established in the climb the aircraft can then be returned to its previous mode of flight.

Correct use of power aids recovery from a stall.

Recovery from a stall in a turn.

At the point of stall bring the bar back. As the nose lowers and the airspeed increases, roll the wing level and raise the nose and increase the power to adopt a shallow climb. Again, once established in the climb the aircraft can then be returned to its previous mode of flight.

Gliding flight.

For most efficient gliding it is best to stop the engine. The glide with the bug will be similar to that of free flight except that the sink rate will be fractionally higher because of the increased payload and the glide will be down because of the slight increase in drag.

General handling should be improved because of the increase in payload and the more comfortable flying.

Because of the wide variety of wings that the bug will fit onto we cannot give hard and fast performance however the best performance is achieved on the more advanced wings.

The best all round handling is not necessarily achieved by marrying the bug to an intermediate glider but it is a fair assumption that that style of combination will exhibit good all round handling and be more suitable for a low hour recreational pilot.

MAINTENANCE

The bug like any mechanical device does require regular maintenance and inspections. You will need to do a thorough daily pre-flight inspection before taking to the air and it is necessary to do this in a formatted manner.

Daily Inspection.

Check:

1. All webbing, buckles, hang strap and back up strap for wear or abrasion
2. Karabiner.
3. Seat for wear and abrasion.
4. Throttles and choke for smooth and correct operation.
5. De-compressor toggle for operation.
6. Foot stirrup and retract lines for no tangles.
7. Leg lines for no tangles.
8. Upper fairing for correct attachment and security.
9. Fuel tank and fuel lines for no leaks, especially the fuel line for no air leaks.
10. Fuel line connector seals for cleanliness and no cuts or abrasion to the 'O' ring.
11. Seat frame cross tube attachment nuts and bolts.
12. Overhead strut rear end attachment to the engine frame.
13. Drive belt for correct tension. (first 2 hour checks)
14. Engine attachment bolts.
15. Carb. bolts.
16. Throttle mixer and throttle lever on carb.
17. Choke lever on carb.
18. Leg attachment bolts.
19. Skids for wear and tear.
20. Prop shaft for cracks or lack of them.
21. Propeller for any damage.

First 2 Hour Checks:

Belt tension. If you press the belt inwards from rest it should not move more than 10mm. If it does place 0.7mm shims between both drive shaft attachment webs and the engine. If the belt is still too slack use the 1.2mm shims instead. You will need to detach the rear of the upper fairing for this.

Carb. bolts and exhaust manifold bolts for tightness. Do not overtighten.

Propeller bolts for tightness. Wood shrinks as it gets old so this needs to be checked regularly.

5 Hour Checks:

Engine:

Barrel / head bolts for tightness. Do not over tighten.

Engine manifold and carb. bolts.

Large drive pulley / shaft bolt for tightness. Do not over tighten, this is a shear bolt not a tensile bolt.

20 Hour Checks:

Spark plug, if it looks less than perfect replace instead of cleaning.

Belt tension.

Fuel filter. This is inside the fuel tank, drain it of fuel and sight the filter through the filler opening.

Engine mounts and prop shaft mount.

100 Hour:

De coke piston and barrel and check rings.

Check little end bearings. We recommend that these are done by an approved dealer or by the factory.

Replace the flexible coupling tube between the exhaust and exhaust manifold.

500 Hour:

Replace engine frame.

Replace legs and skids.

Replace engine mounts and prop shaft mount.

Replace karabiner.

Replace large drive / shaft bolt.

Replace drive belt.

Warning: If any item shows excessive wear then replace before next flight

PART LIST

Frame:

Side Frame L/H DBF1
Side Frame R/H DBF2
Cross Tube DBF3
Plastic End Cap DBF4
Rear Prop Shaft Mount DBF5
Side Line Attach Plate DBF6
Rear Lower Aft Plate DBF7
Rear 6mm Bolt DBF8
Leg DBF9
Leg Over Sleeve DBF10
Leg Elastic DBF11
Leg Elastic Clip DBF12
Leg Skid DBF13
Leg Skid 6mm Bolt DBF14
Plastic Top Hat DBF15
Outer Leg Line DBF16
Inner Leg Line DBF17
Overhead Strut DBF18
Top Hat and Screw DBF19
Steel Guide DBF20
Plastic End Cap DBF21
Plastic Rings DBF22
5mm Bolt DBF23
Cross Tube Bracket DBF24
Cross Tube Bracket/Frame Side 6mm Bolt DBF25
Cross Tube 6mm Bolt DBF26
Leg Retract Line DBF27
25mm Stainless Ring DBF28
Stirrup Elastic DBF29
Stirrup Line DBF30
Foot Stirrup DBF31
Clevis Pin DBF32
Main Harness DBF33
Upper Fairing DBF34
Self Tap Screw DBF35
Elastic Loop DBF36
Lower Fairing DBF37
Seat/Fairing elastic DBF38
Side Line DBF39 L/H DBF39 R/H
Quick Link DBF40
Harness Plastic Retainer DBF41
Side Line Tensioner DBF42
Hang Loop DBF43
Back Up Loop DBF44
Carabiner DBF45
Pulley Guard DBF46
Starter Rope Guide DBF47

Fuel System:

Fuel Tank DBP1
Tank Cradle DBP2
Fuel Line, 2 Piece DBP3
Breather Line DBP4
Black Fuel Line DBP5
Fuel Filter DBP6
Snap Connector DBP7
Fuel Filter DBP8
Jubilee Clip DBP9

Packing:

Bug Bag DB1
Manual DB2

Drive System

Alluminium Drive Pulley DBD1
Large Pulley DBD2
Clutch Drum DBD3
Clutch DBD4
Counter Sunk Screw DBD5
6mm H/T Bolt DBD6
Pulley Belt DBD7
Inner Drive Shaft DBD8
Bearing Spacer DBD9
Bearing DBD10
Outer Drive Shaft DBD11
Propeller Pin and Safety Wire DBD12
Safety Ring DBD13
8mm Wing Nut DBD14
8mm Large Washer DBD15
Propeller DBD16
Propeller Hub DBD17
Propeller Hub Plate DBD18
Propeller 5mm Bolt DBD19
Propeller Bag DBP20

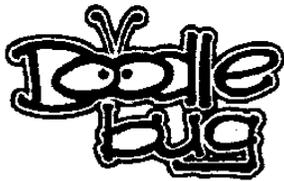
Throttle System

Throttle and Choke Quad DBT1
3mm Self Tap Screw DBT2
Hand Throttle Cable DBT3
Choke Cable DBT4
Gob Throttle DBT5
Gob Throttle Cable DBT6
Solder Less Nipple DBT7
Throttle Mixer DBT8
Half Moon Washer DBT9
5mm Bolt DBT10
Choke Spring DBT11
De Compressor Cable DBT12
Engine Case, Pullet and De-compressor Lever DBT13
Ignition Switch DBT14
Ignition Cable DBT15

Engine:

All Engine Components Use The Radne Parts List

Radne Raket 120 DBE1
Exhaust Manifold DBE2
Exhaust DBE3
Exhaust Springs DBE4
Exhaust Hang Strap DBE5
5mm Bolt DBE6
Large Washer DBE7
Exhaust Clamp DBE8
Exhaust / Manifold Safety Wire DBE9
Exhaust Safety Wire DBE10
Engine Safety Wire DBE11
Carb Plate DBE12
Carb Mount Bolt 5mm DBE13
Engine Shim 1mm DBE14
Engine Shim 0.5mm DBE15
Engine Frame DBE146mm Bolt DBE16
6mm Bolt DBE17
Rubber Bobbin DBE18
8mm Nyloc DBE19
8mm Washer Small DBE20
8mm Washer Small DBE21
Engine Attach Bolt 8mm DBD22



SHORT PACK ASSEMBLY AND BREAKDOWN

FOR FULL SHORT PACK BUG OPTION WITH SHORT PACK BAG AND PADDING

REMOVE THE BUG FROM IT'S BAG AND THEN REMOVE THE PROTECTIVE PADDING.

NOTE HOW THE PADDING FITS BEFORE REMOVING.

FIG 1.

THE ILLUSTRATION IS MISSING THE TOP AND BOTTOM FOR CLARITY.

PLACE THE BUG ON CLEAN GROUND, PREFERABLY GRASS OR A BLANKET.

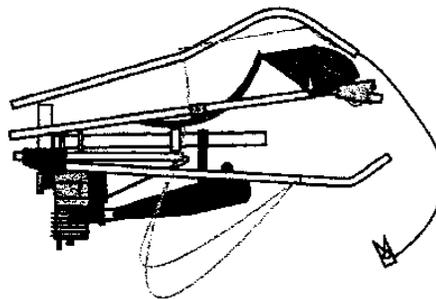


FIG 2.

SWING THE SIDE FRAME, OVERHEAD STRUT AND SEAT THROUGH 180 DEGREES. BE CAREFUL NOT TO STRAIN ANY OF THE THROTTLE AND CHOKE CABLES.

YOU MAY FIND THAT THE PULL START ROPE HAS PULLED TAUGHT AND IS INHIBITING THE OPENING. IF SO PULL THE DE COMPRESSOR TAB AT THE FRONT OF THE RIGHT HAND SIDE FRAME, THEN GENTLY PULL SOME OF THE STARTER ROPE OUT TO GIVE ENOUGH SLACK.

ENSURE THAT THE OVERHEAD STRUT IS IN POSITION AS IN THE ILLUSTRATION AND CHECK THAT NONE OF THE LEG LINES ARE CAUGHT ON THE INSIDE OF THE FRAME.

AFTER A FEW ASSEMBLIES YOU WILL GET A FEEL OF WHERE THE STRINGS SHOULD BE

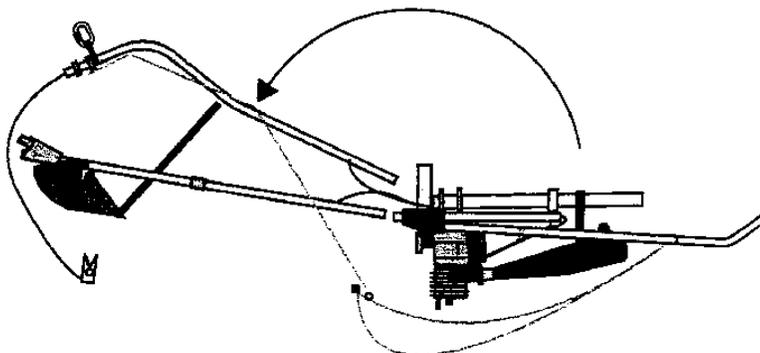


FIG 3.

CAREFULLY ALIGN THE SIDE FRAME TUBES TO THEIR RESPECTIVE PLUGS ON THE FRONT OF THE ENGINE FRAME.

REMOVE THE PIN AND SPLIT RING FROM THE PLUG, PUSH ON THE SIDE FRAME AND ALIGN THE HOLES THEN INSERT THE PIN THROUGH BOTH THE SIDE FRAME AND THE PLUG AND SECURE WITH THE SPLIT RING.

NOTE: ROCK THE BUG ONTO ITS RIGHT SIDE TO DO THE LEFT HAND SIDE FRAME AND IT'S LEFT SIDE TO DO THE RIGHT HAND SIDE FRAME

ENSURE THAT ALL THE LEG LINES AND STIRRUP LINES ARE ON THE OUT SIDE OF THE SIDE FRAMES

WHILE THE BUG IS ON IT'S SIDE CONNECT THE OVERHEAD STRUT TO IT'S PLUG ON THE TORSION BAR ON THE ENGINE FRAME. AGAIN ALIGN UP THE HOLES IN BOTH THE OVERHEAD STRUT AND THE PLUG AND INSERT THE PIN AND SECURE WITH THE SPLIT RING.

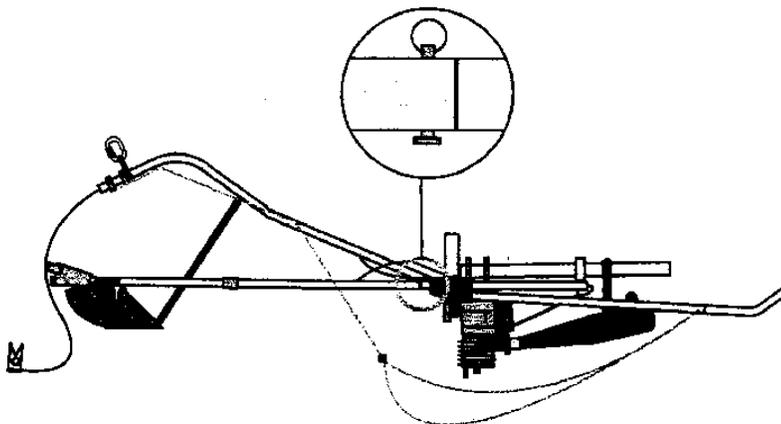


FIG 4.

ROLL THE BUG ON TO ITS SIDE AND PULL DOWN THE LEGS SO THAT YOU CAN ATTACH THE TANG ON THE END OF THE LEG STRINGS TO THE SPIGOT ON THE SIDE FRAME.

ATTACH THE LEG ELASTIC HOOK ONTO THE LOWER REAR PROP SHAFT PLATE

ONCE BOTH LEGS AND LEG LINES ARE ATTACHED YOU CAN STAND THE BUG ON ITS LEGS AND FRONT.

CHECK THAT NO LINES ARE TANGLED OR CAUGHT.

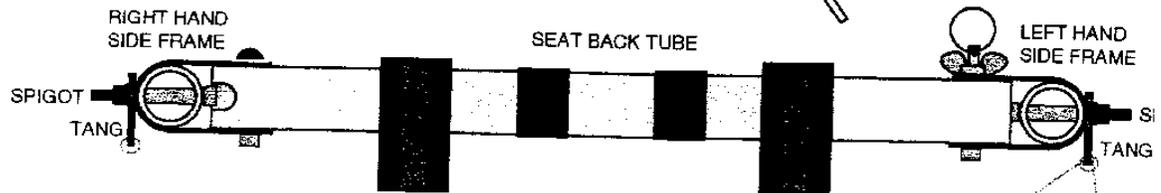
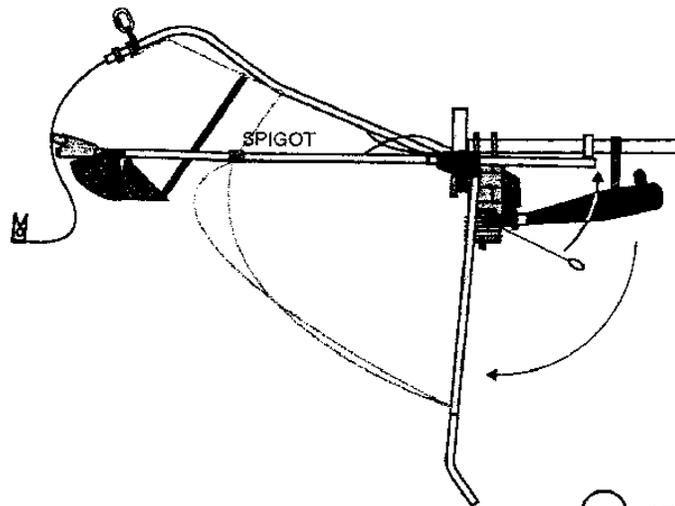


FIG 5.

SWING OUT THE SEAT BACK TUBE. REMOVE THE BOLT AND WING NUT FROM THE SIDE FRAME PLATE, AND BY PUSHING THE SIDE FRAMES APART SWING AND LOCATE THE SEAT BACK TUBE BETWEEN THE TOP AND BOTTOM PLATES. ALIGN THE HOLES IN THE PLATES AND THE TUBE THEN INSERT THE BOLT. PUSHING THE SIDE FRAMES APART WILL MAKE IT EASIER TO PUSH THE BOLT THROUGH. SCREW THE WING NUT ONTO THE BOLT AND TIGHTEN. (DO NOT OVER TIGHTEN AS THIS WILL CRUSH THE TUBE) SECURE THE SPLIT RING INTO THE BOLT TOP.

FIG 6.

ATTACH THE FAIRING ELASTIC TO ITS ANCHOR POINT ON THE OVERHEAD STRUT USING BOTH ENDS OF THE ELASTIC LOOP.

PULL ON THE LOWER PART OF THE TOP FAIRING AND PLACE THE EYELETTED HOLE OVER THE SIDE FRAME SPIGOT. (ENSURE THAT THE STIRRUP STRINGS THAT ATTACH TO THE LEG STRINGS ARE ON THE OUTSIDE OF THE FAIRING BEFORE ATTACHING THE FAIRING TO THE SPIGOT)

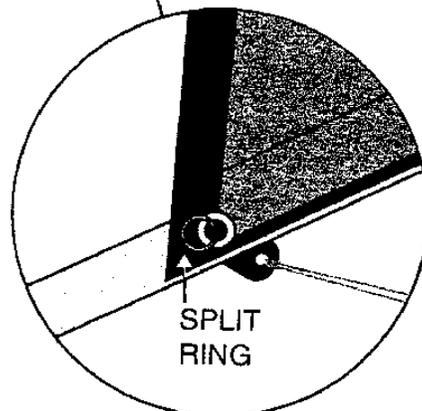
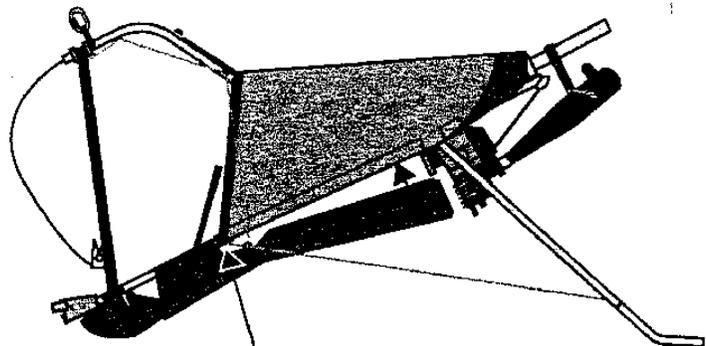
SECURE THE FAIRING TO THE SPIGOT BY INSERTING THE SPLIT RING THROUGH THE HOLE IN THE SPIGOT END. (FIG 6 DETAIL)

VELCRO THE THE UNDERSIDE FAIRING TO THE TOP FAIRING. MAKE SURE THAT THE FAIRING IS PULLED BACK ENOUGH TO KEEP IT SMOOTH AND WRINKLE FREE.

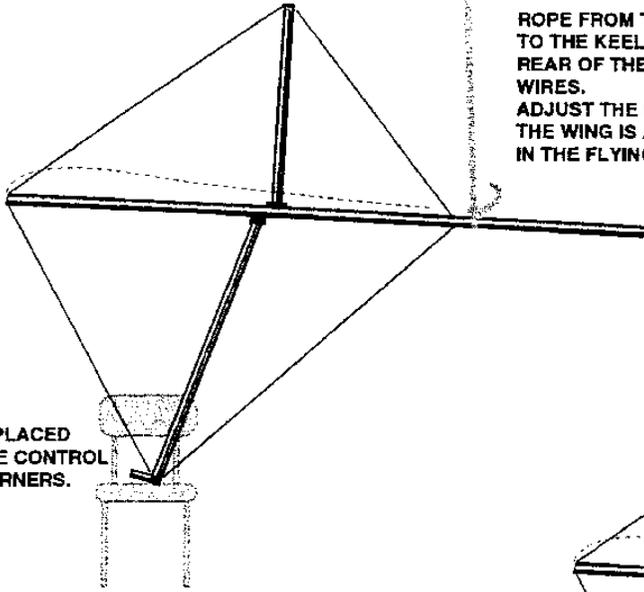
LASTLY FIT THE FUEL TANK AND PROPELLOR AS NORMAL.

TO BREAK DOWN THE BUG JUST REVERSE THESE GUIDELINES.

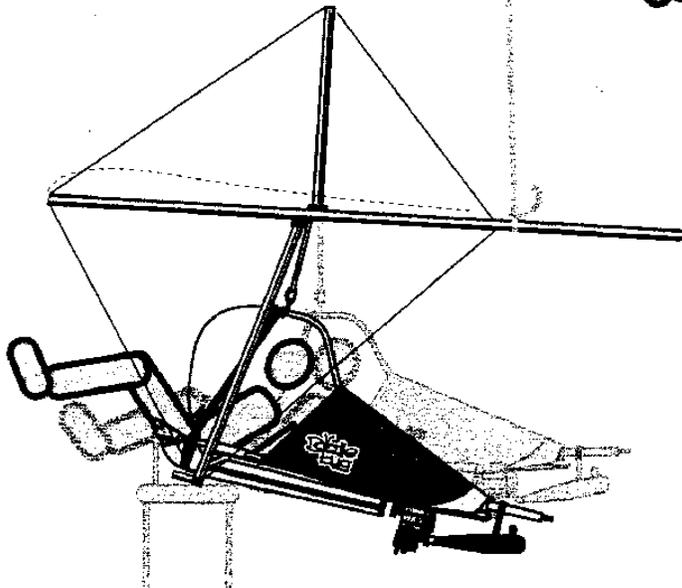
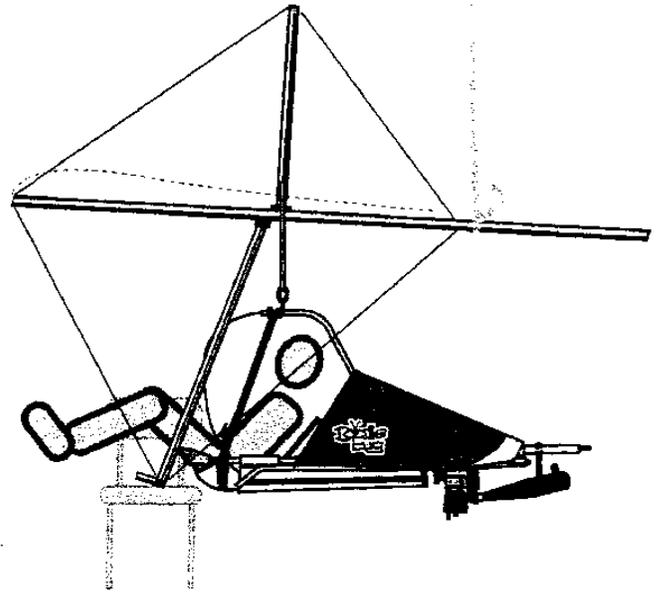
IF YOU HAVE NOT PURCHASED THE BREAK DOWN BAG AND PADDING PAY ATTENTION TO SHARP EDGES AND MAKE SURE THAT ALL WEAR POINTS ARE COVER WITH PADDING IF YOU ARE GOING TO BREAK DOWN YOUR BUG



SETTING THE BUG TO THE WING.

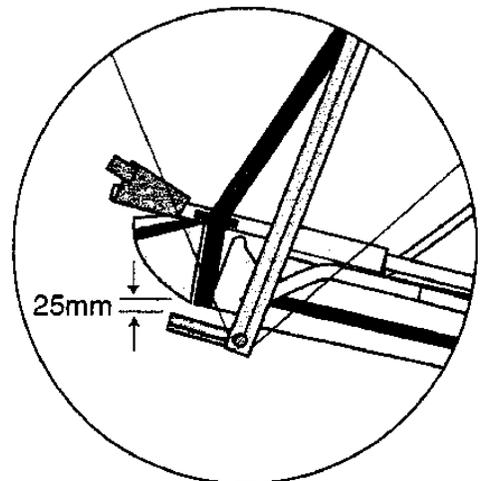


TIE THE LEGS IN THE RETRACTED POSITION ON THE BUG AND THEN CLIP THE BUG INTO THE HANG GLIDERS MAIN STRAP. GET INTO THE BUG. ADJUST THE ROPE FROM THE CEILING SO THAT THE UPRIGHTS ARE JUST AT ARMS REACH.

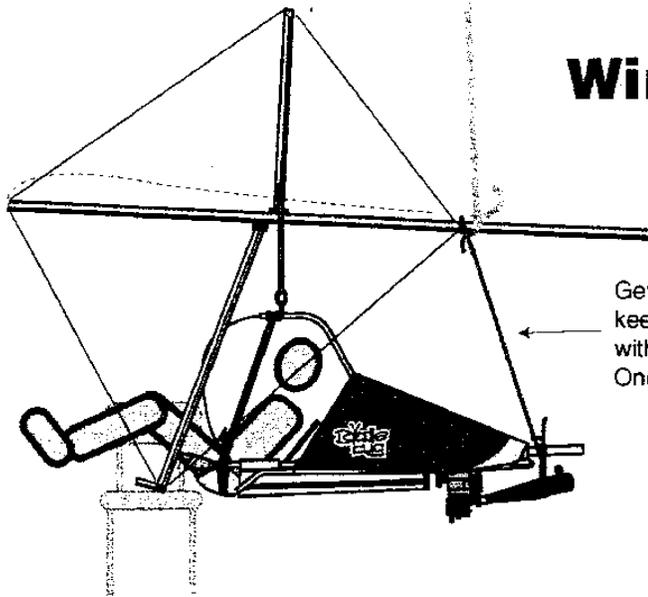


WHILST SITTING IN THE BUG PULL IN TO CHECK THAT YOUR BUM (ARSE) JUST CLEARS THE CONTROL FRAME BASE BAR. 25mm (1") SHOULD BE THE OPTIMUM DISTANCE. (SEE DETAIL BELOW)

WARNING:
IF YOU ARE SET TOO HIGH ABOVE THE CONTROL FRAME BASE BAR YOU WILL REDUCE THE ROLL CONTROL. THE HIGHER YOU ARE THE LESS ROLL CONTROL YOU HAVE. THE LOWER YOU ARE THE MORE ROLL CONTROL YOU HAVE.

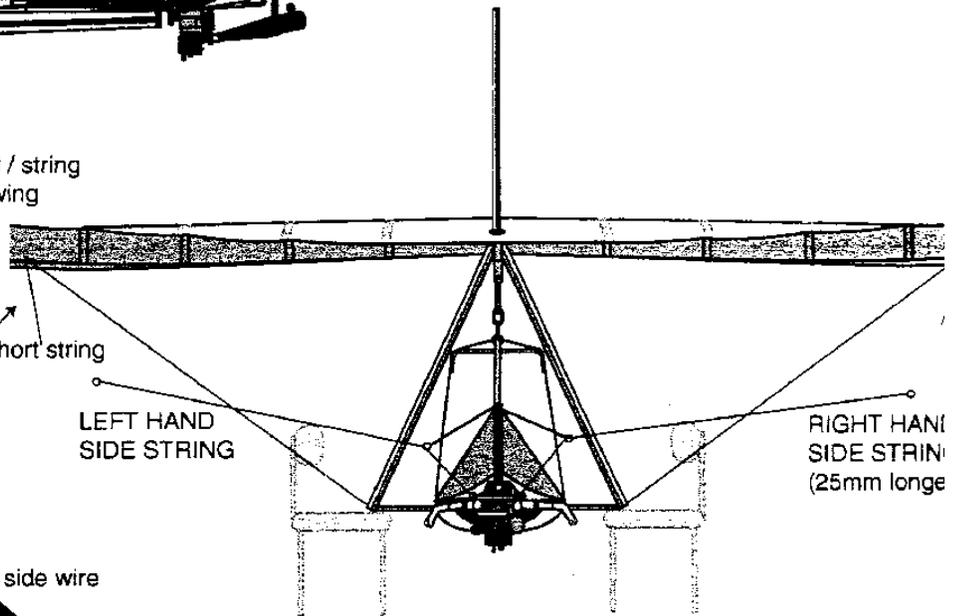
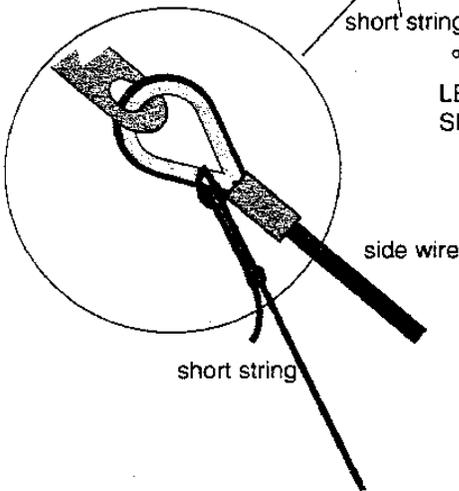


Wing set up (sheet 2)



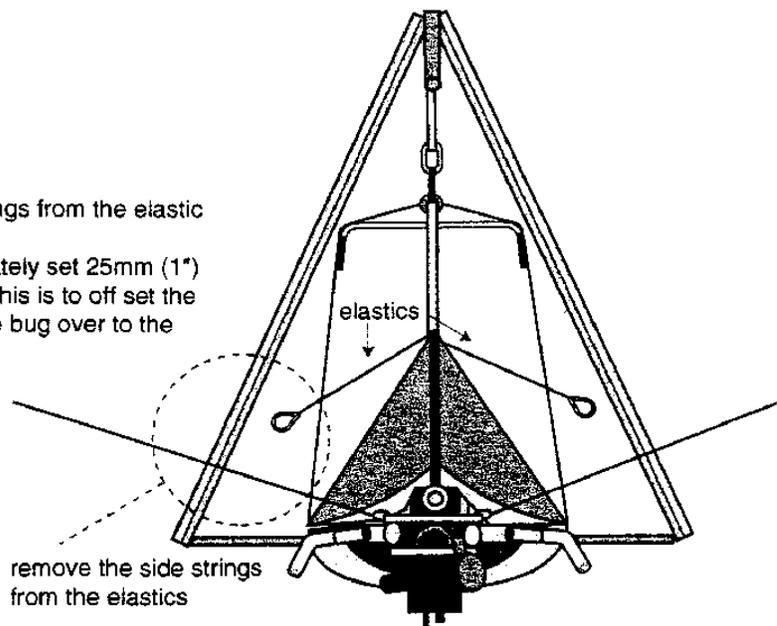
Get a friend to tie a rope or cord from the glider keel to the prop shaft, the rope should just be tight with out changing the attitude of the Bug. Once the rope is on you can get out of the Bug.

Tie a short piece of dynema cord / string to the thimble on the end of the wing side wire, ensure that a suitable knot is used. Exit the string through the same sail hole that the side wire uses.



Remove the left and right hand side strings from the elastic pull back cords.

Note: the left hand side string is deliberately set 25mm (1") shorter than the right hand side string. This is to off set the engine torque that swings the rear of the bug over to the right.

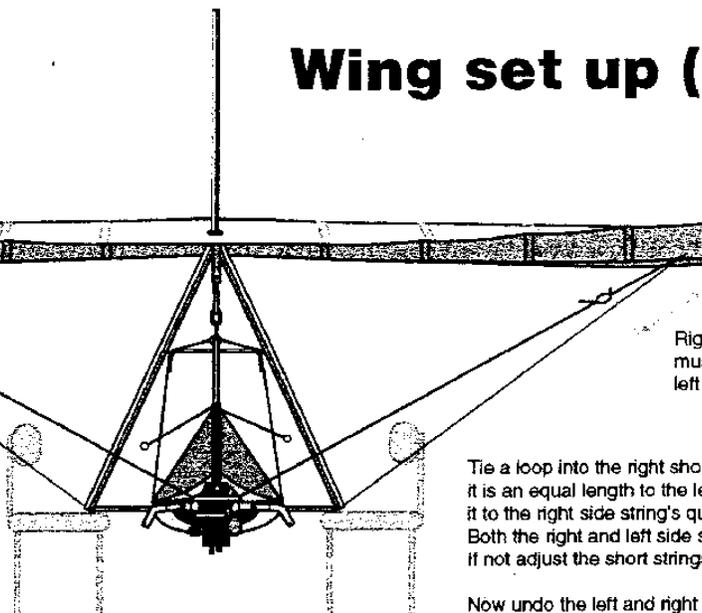


Wing set up (sheet 3)

Left short string must be same length as right short string

Right short string must be same length as left short string

Tie a loop into the left short string so that when it is attached to the quick link on the left side string the left side string just becomes taught. The bug should still be hanging vertically below the wing. Use the rope holding the prop shaft to the keel as a plumb line.

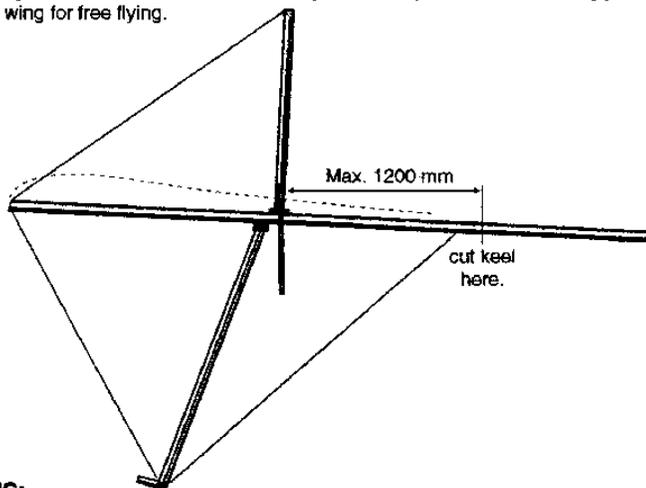


Tie a loop into the right short string so that it is an equal length to the left short string and attach it to the right side string's quick link. Both the right and left side strings should be just taught. If not adjust the short strings equally to achieve this.

Now undo the left and right short strings from the quick link and re thread the side strings through the elastics ends.

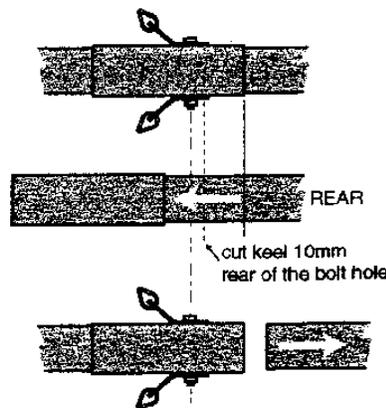
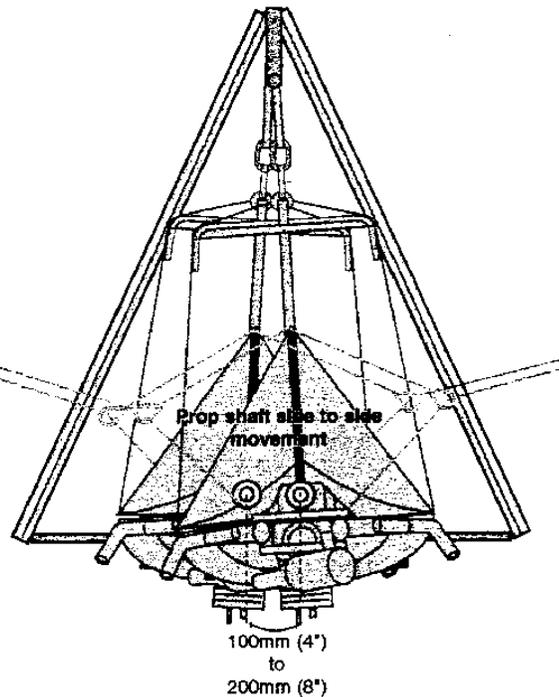
With the side strings through the thimbles on the end of the elastics and reattached to the short strings, get a friend to sit in the Bug. Remove the rope holding the prop shaft to the glider's keel and move the prop shaft from side to side. **The shaft should be able to move approximately 100mm (4") to 200mm (8") from side to side.** If the side strings are too taught the handling will become more solid and heavy. With the side strings too slack the handling will become skittish in turbulence.

The Bug is now set up to the wing. The last modification to be made to your wing is to shorten the keel tube so that it clears the propellor arch. **The maximum distance from the end of the keel tube to the hang point of the glider should be no greater than 1200mm.** Ideally the distance should be less. Most gliders have over sleeve at the terminal junction for the rear upper and lower rigging. This over sleeve can be used to joint the amputated keel enabling you to use the wing for free flying.



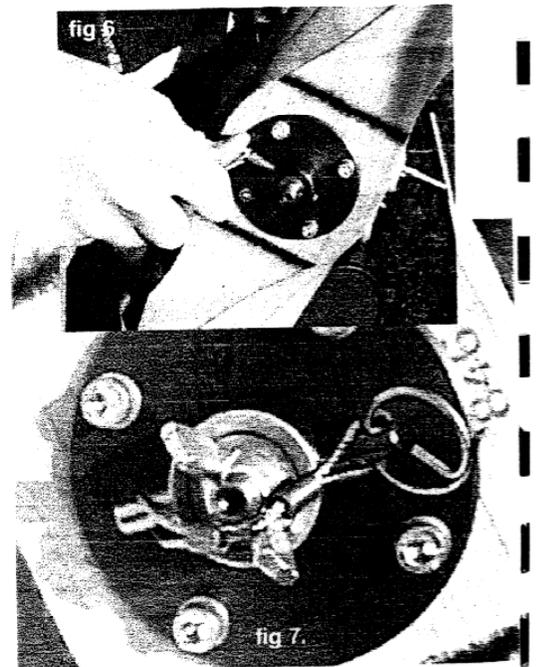
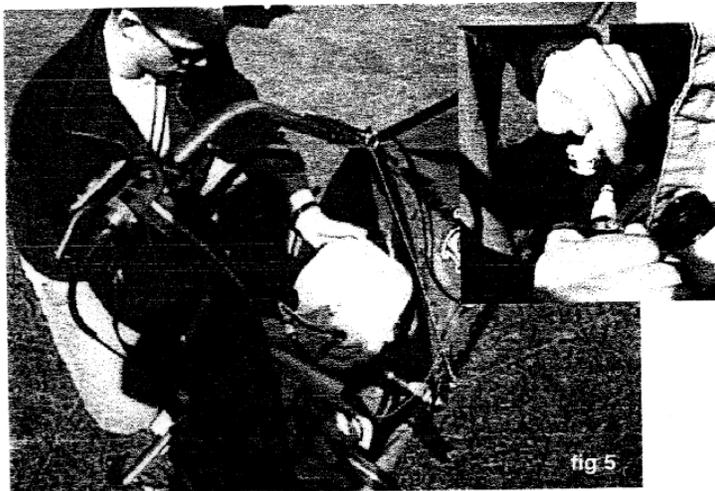
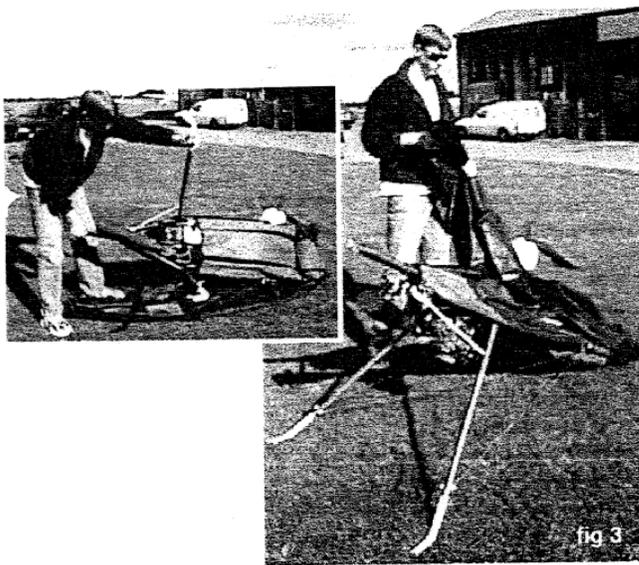
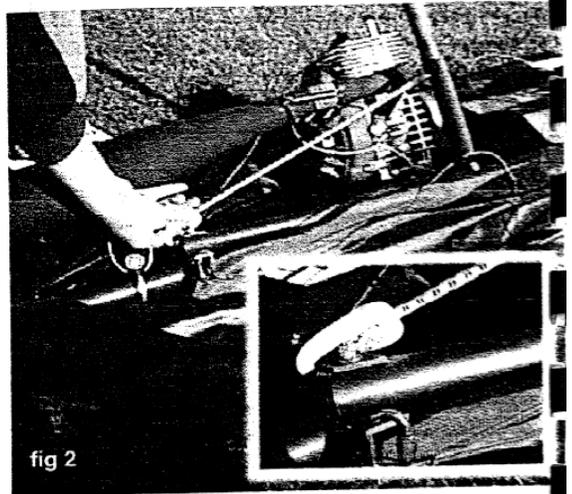
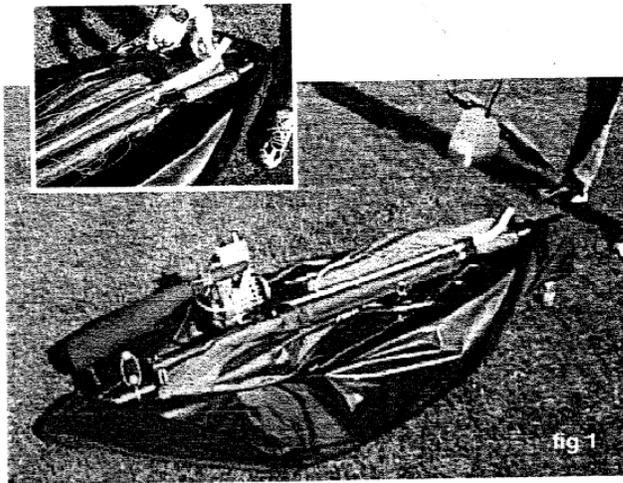
WARNING:

These are not instructions, these are guidelines. If you undertake the modification of your hang glider you will become responsible for it's integrity and safety. Please read all the set up sheets and understand them fully before you carry out any modifications to your wing. If in doubt contact your local dealer or Flylight Airsports Ltd.



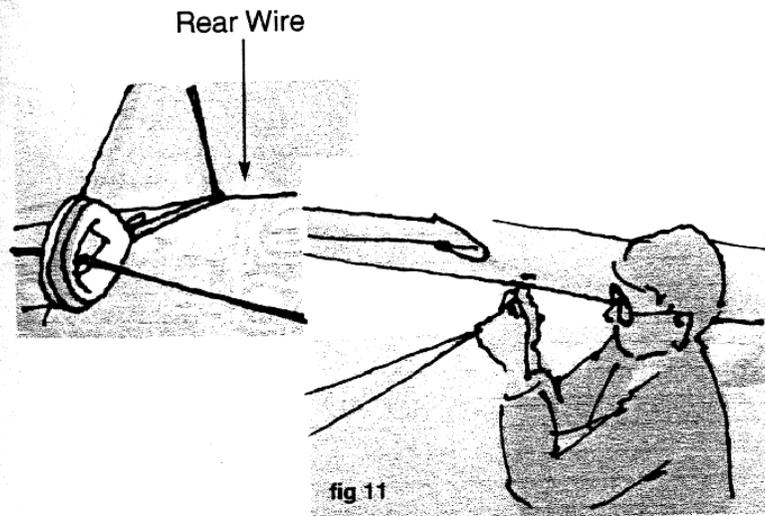
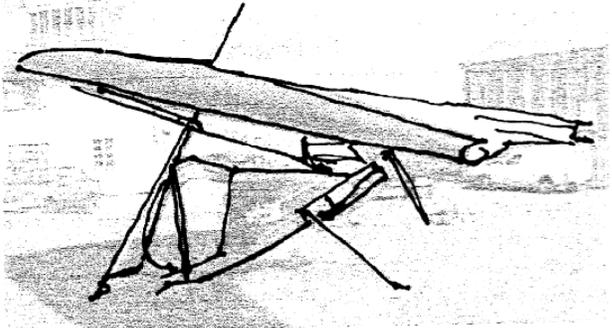
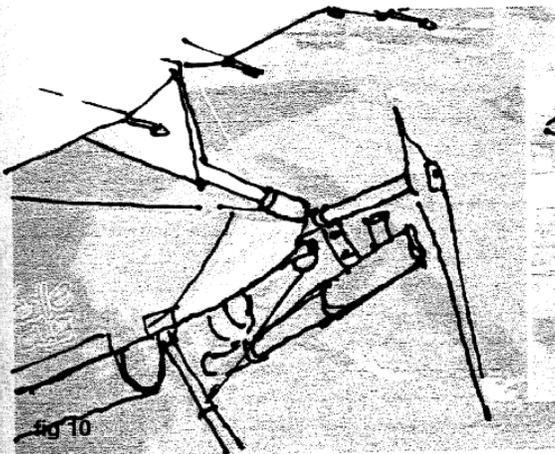
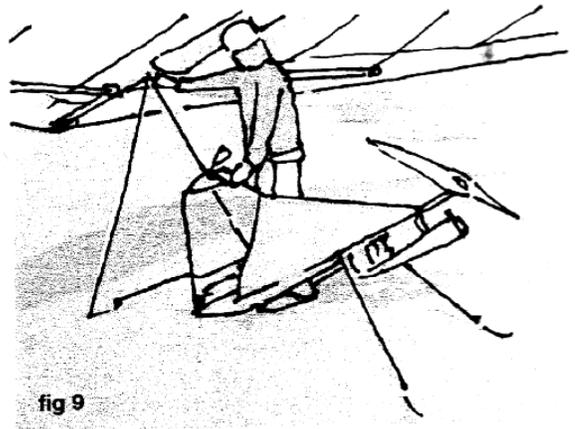
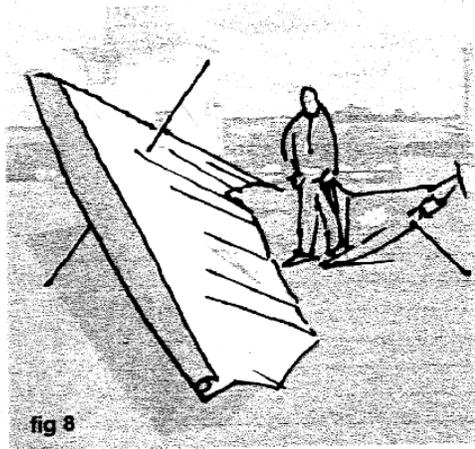
RIGGING THE DOODLE BUG

photo sheet 1



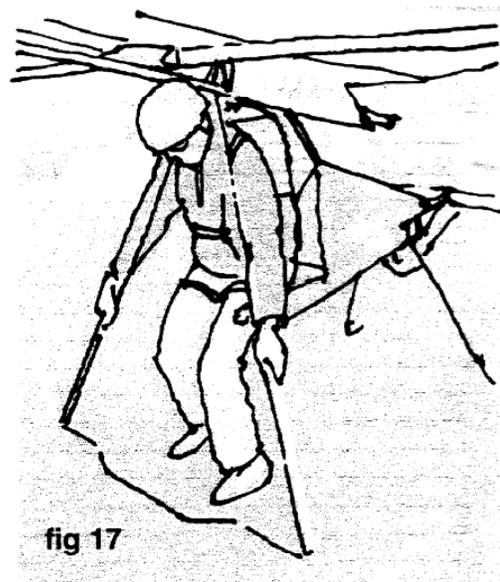
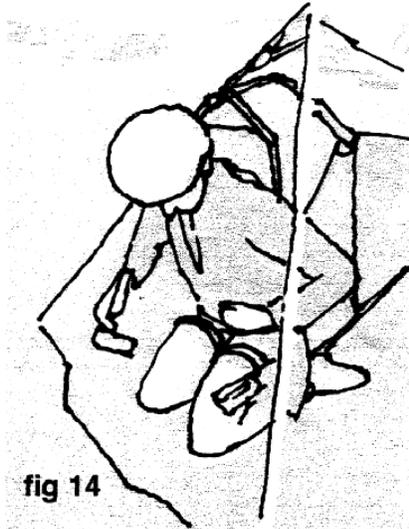
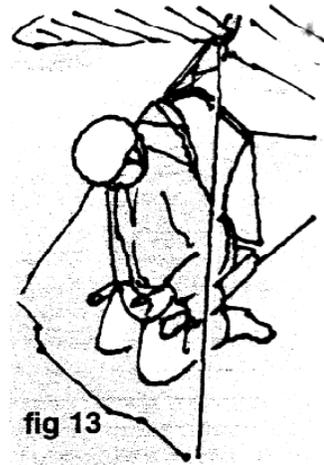
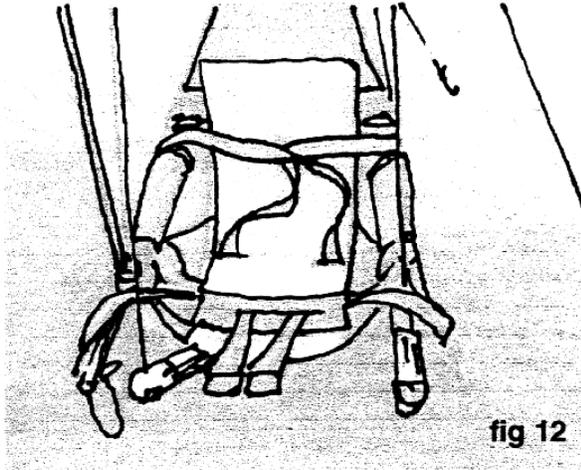
ATTACHING THE BUG TO YOUR WING

photo sheet 2



GETTING INTO THE HARNESS

(PHOTO SHEET 3)



STARTING THE ENGINE

(PHOTO SHEET 4)



fig 18

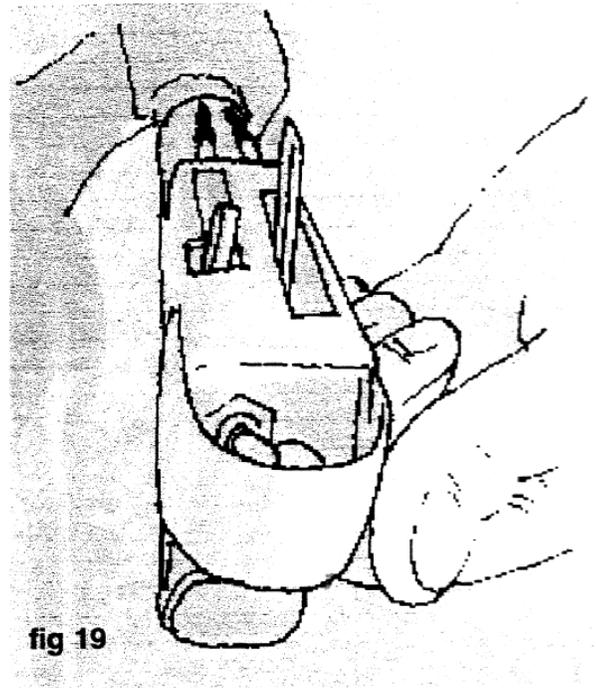


fig 19

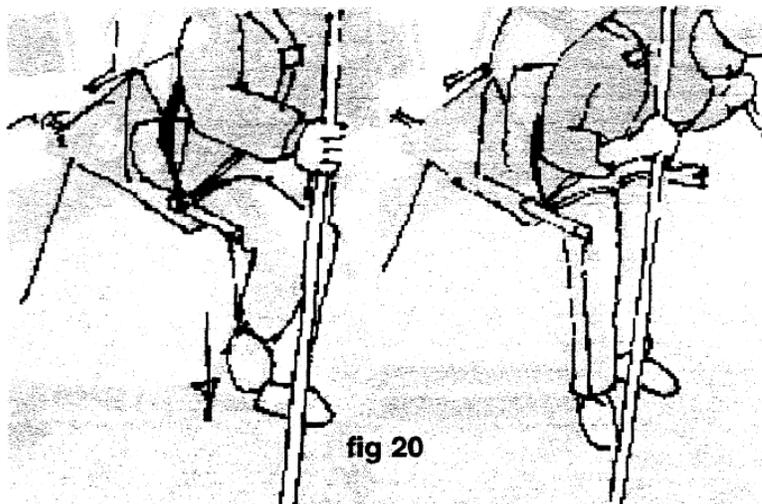


fig 20

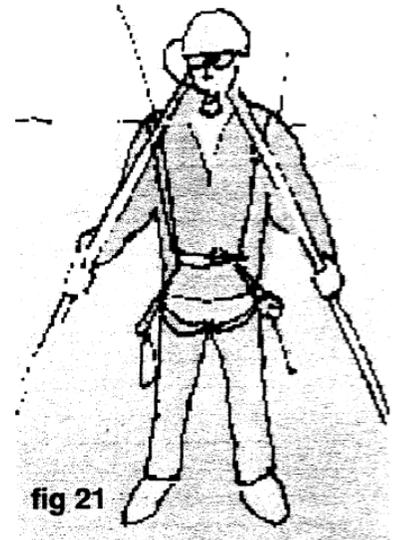


fig 21

GETTING OUT OF THE HARNESS

(PHOTO SHEET 5)

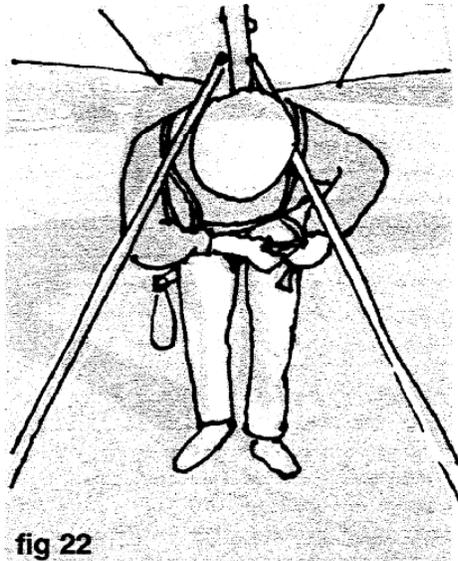


fig 22

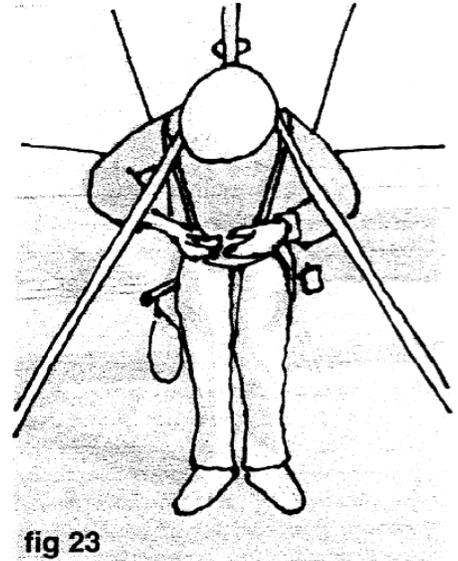


fig 23

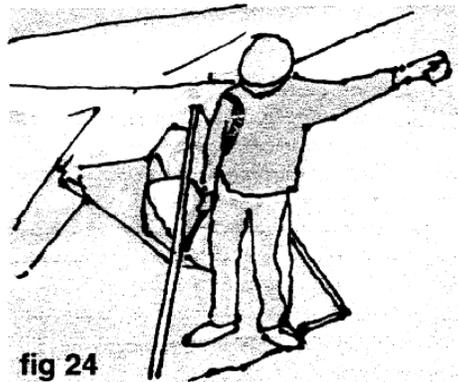


fig 24

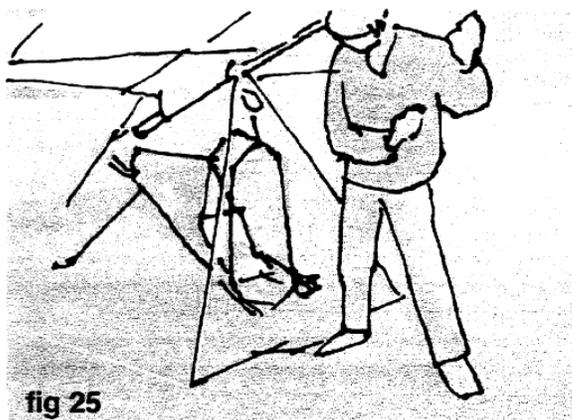


fig 25

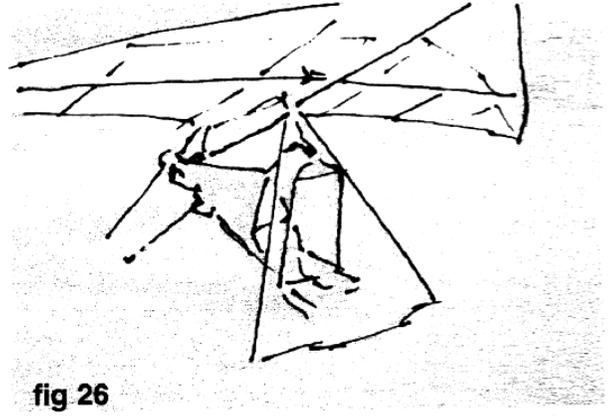
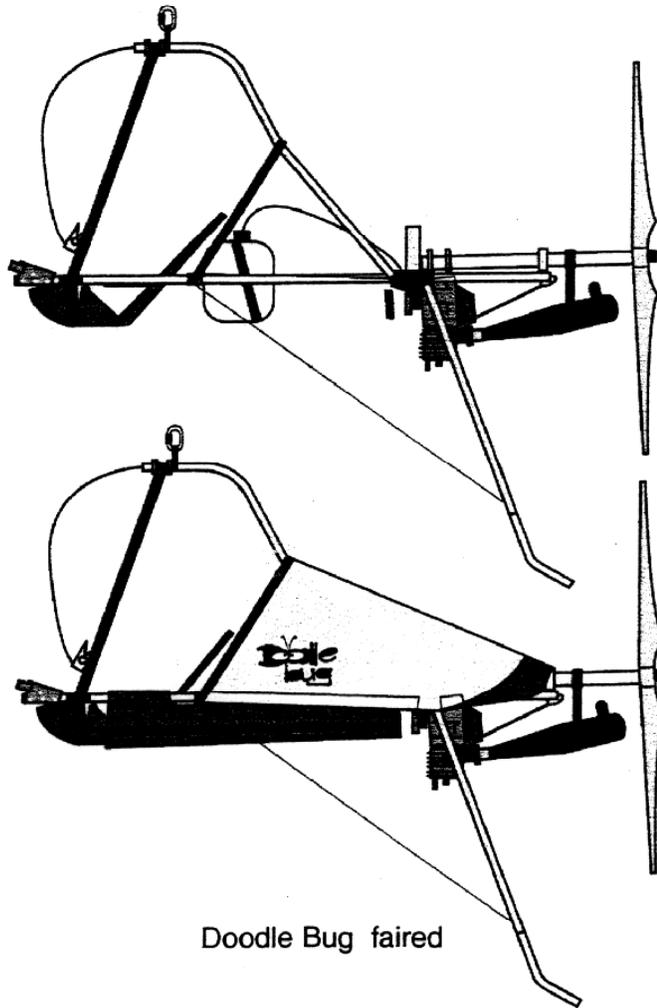
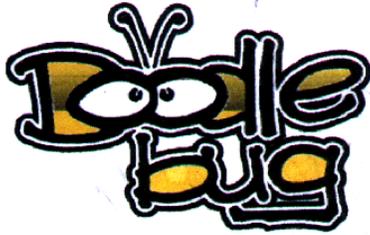


fig 26

Doodle Bug Basic



Doodle Bug faired



High Power Exhaust Kit

Before mounting the new exhaust, remove the old exhaust including the manifold. Remove the top fairing to give easy access to the propshaft.

Study the photographs so that you are familiar with the orientation of the new exhaust and manifold.

- 1) Tighten the 8mm bolt holding the prop shaft mount bracket to the exhaust, this needs to be sufficient to crush the rubber washer slightly and to close the spring washer. **Fig 1 and 5.**
- 2) Bolt the manifold to the engine, it is best to use a new exhaust gasket. Ensure that the exhaust safety wire is placed over the support strut of the manifold, as per the old manifold.
- 3) Loosely fix the 2 P clips with the rubber bobbins to the propshaft. Ensure that 3 washers are between the jaws of the P clips as illustrated in **Fig 5.**
- 4) The front P clip jaws should be on the right side of the propshaft, the rear P clip jaws to the left, as illustrated in **Fig 2, 3 and 4.**
- 5) Position the P clips fore and aft so that the propshaft mount of the exhaust will fit comfortably, tighten the lock nuts to secure the mount to the P clips, cover the nuts with the nut caps provided and a spot of super glue **Fig 3.**
- 6) Check that the propeller will clear the exhaust by at least 25mm (1") and that the exhaust cannot swing into the prop arch, if it can you have assembled the propshaft mount bracket incorrectly. Read these instructions again and check your assembly.

Fitted 207/2005.

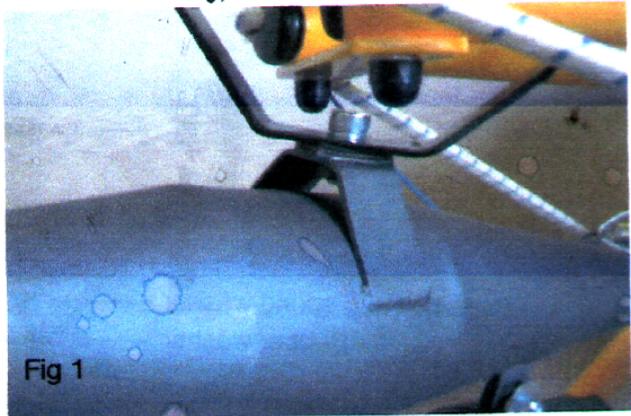
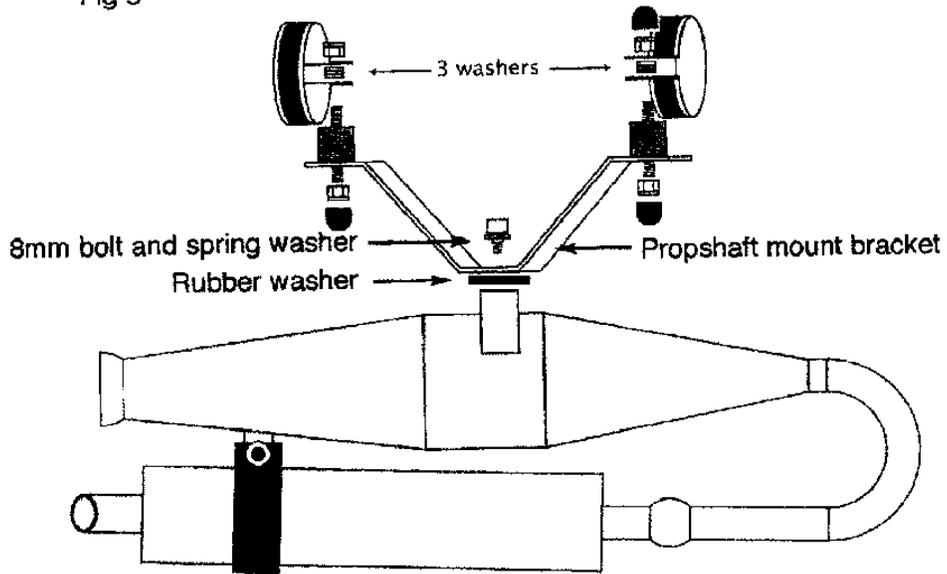


Fig 5



New leg elastics:

Remove the legs, leg strings, rear side frame plastic bungs and the old leg elastics.

Push the new elastic through the holes in the leg and knot the end as illustrated in Fig 6.

The holes for the elastic need to be at the front of the legs, swap the left leg to the right side and right leg to the left side to achieve this and re-assemble Fig 7.

Push the new plastic bungs into the end of the side frames with the holes for elastic set at 45 degrees pointing up and outwards Fig 8. This is to keep the elastic off the hot manifold

The elastic stays permanently attached.

Tie a knot in the leg elastic 10mm from the end

