



# Skyline Soaring Club

**Discus CS Assembly**

**18 Nov 2017**





# Discus CS Assembly Checklist

## Setup Prep

- Trailer in location where assembly will not block other aircraft
- Trailer chocked, brake on, clamshell open, aft door down in contact
- Pull ramp out, fold center rail into place
- Tail boom unlashed, lifting strap available
- Wing dolly and wing stand assembled and ready
- Wipe clean and grease all wing and fuselage attach fittings & control fittings

## Position Fuselage

- Roll fuselage out until tail wheel is at end of ramp
- Use lifting strap, lift tail boom, roll out until fuselage dolly at end of ramp
- Open canopy, remove rigging tool, screw into vertical tail assembly hole
- Confirm spoilers are closed but unlocked, dump valve closed (forward)
- Clean and lubricate main spar pin
- Remove strap securing fuselage to dolly

## Mate Wings to Fuselage

- Position wing dolly parallel to fuselage at trailing edge of left wing fairing
- Lift and walk left wing out until it can be lowered into wing dolly
- Bend in leading edge of wing (fill port) should be just outside dolly cradle
- Position wing so spar lines up with hole, rotate cradle level, insert spar end
- Clean & lubricate both sides of fittings – 2 lift pins, spar end pin, main pin hole
- Align wing and push into place, insert main spar pin 1", handle towards left
- Put wing stand under left wing, reposition dolly and repeat for right wing
- When both wings are seated, insert main spar pin fully, safety clip end

## Attach Horizontal Stabilizer

- Clean and lubricate all fittings
- Insert aft edge of horizontal stabilizer against elevator control pins
- Pull on rigging tool, press down on leading edge until pin seats
- Remove rigging tool

## Landing Gear

- Ensure fuselage dolly clear of gear door
- Crank ramp jackscrews to raise fuselage dolly enough for gear to extend
- Actuate landing gear handle to full forward position, confirm down & locked
- Remove tail stand and wing dollies or stands
- Lower ramp and fuselage dolly until weight is supported on gear

## Final Prep

- Remove original wingtips, replace with winglet tips using rigging tool.
- Tape wing roots, wing tips, horizontal tail and tool hole
- Ensure parachute is in cockpit, rigging tool in side pocket
- Check required paperwork in cockpit
- Install and secure charged batteries, confirm radio and variometer work
- Lower ramp until weight is entirely on gear, roll glider clear
- Put equipment and ramp back in trailer and secure trailer
- Independent final assembly check – spar pin and clip, batteries secure, flight controls connected, canopy locks, release functional, brake functional
- Positive Control Check completed
- Canopy in place and properly secured

(Disassemble in reverse order)



# Prepare the Trailer (1)

**Position the trailer where it will not block other aircraft from taxiing, chock wheels**



**Pull safety clips and latch pins, open latches at aft end of trailer**



**Raise the trailer clamshell top, check for overhead obstacles and internal loose items**



**Release the sliding latch pin from the left side of the aft lower door**





# Prepare the Trailer (2)

**Open the lower aft door and allow it to hang, note if not enough space**



**Check parking brake set, lower tongue if needed so aft door hangs free, then raise**



**When aft door is straight down and firmly set, trailer is stabilized and ready to unload**



**Pull out the sliding ramp, check alignment, unfold the center rail**





# Position the Fuselage

**Unfasten and open the tail boom tie-down strap**



**Roll the tail out until the tail wheel is at the aft stop of the ramp, monitor boom clearance**



**Using a lifting strap, lift the tail boom and walk it aft until fuselage dolly is at end of ramp**



**Open canopy, check cockpit condition, locate spar pin, rigging tool, winglets, checklist**





# Prepare the Fuselage

Check dump valve closed (right side) and airbrakes unlocked (left side)



Unfasten and remove the tie-down strap that runs through the spar opening



Assemble and position the wing dolly near the wing trailing edge



Remove the wingtip covers and reposition them on the aft corners of the trailer sides





# Position the Left Wing

**Lift and walk the tip of the left wing out, dolly should be inside bend in leading edge**



**From the spar end, reposition the wing to align perpendicular to fuselage**



**Rotate wing to level, rest end of spar in hole, clean & lube 7 pins and receivers**



**Ease wing into position, keeping pins aligned, refine wing dolly height if needed**



# Secure the Left Wing

Remove main spar pin from its bag, clean and lubricate



Insert spar pin only one inch into left wing spar, rotate handle to left side wall



Position wing stand 2/3 of the way out the wing, then lower and remove wing dolly



Check left wing alignment and elevation from right side spar alignment marks







# Mate the Right Wing

Repeat process for right wing, remember to clean and lube spar pin and end fittings



Safety clip for the main spar pin is stowed on the parachute static line ring, left aft cockpit



Complete positioning and alignment of left wing, elevation is critical, insert wing fully



With main spar pin fully seated, secure with safety clip





# Secure Horizontal Tail and Winglets

**Pull pin to release tail strap at top of clamshell, remove tail**



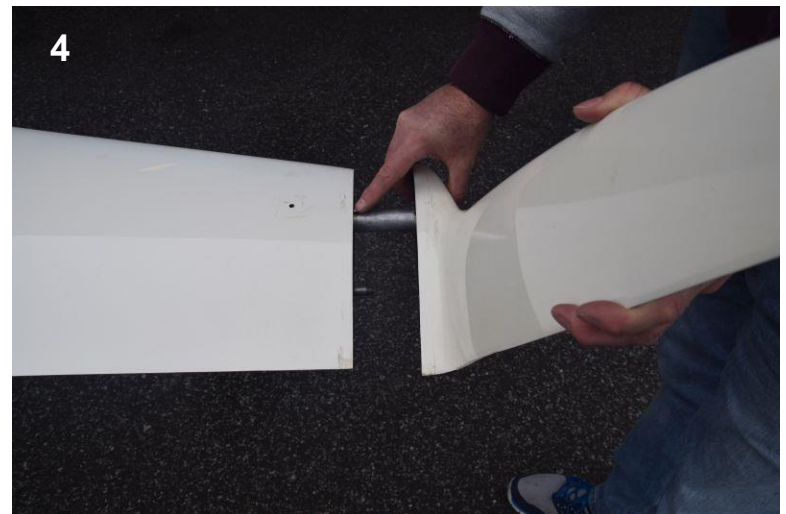
**Clean and lubricate elevator bayonet pins and forward attach point fittings**



**Slide tail onto aft pins, pull rigging tool to open forward fitting, seat and close, remove tool**



**Remove stock wing tips, align winglet spar pin, push in to seat**



# Finish Up

Using the jack handle, raise the ramp, lower the gear, then lower the ramp, freeing glider



Secure batteries, one behind seat back, one under instrument panel, check circuits



Install TE probe, tape wing roots, winglets, and tail rigging hole



Install tail dolly, check tire pressures, move glider from trailer area, secure trailer

