

## 008 RIGGING AND DE-RIGGING

Aim: To learn how to rig and de-rig a glider.

Not all gliders enjoy the luxury of remaining rigged and hangared when not being used. Indeed, gliders often have to be rigged prior to flight and derigged after...or if they land in a field requiring a trailer retrieve. It is fair to say that most two seat trainers are usually left rigged so your initial exposure to the task of rigging and derigging is likely to be with privately owned single seaters, where the owner requires some assistance. As soon as you start flying cross country, you will be expected to know how to rig and de-rig the aircraft you fly. Here are some general pointers on how to perform this task safely and efficiently, these are based on the Grob 102, but the principles are transferable to most gliders.

General:

- Know how many people are required for the particular glider type...usually a minimum of 3.
- Know who is in charge and follow their directions.
- Wing stands and fuselage cradles and supports can be used... know where to position and secure them.
- Check the Flight Manual for guidance on the rigging or de-rigging sequence.
- Never let go of something unless sure it is okay to... fuselages have been left to fall over!
- When holding wing tips, use very small movements in response to the person calling for adjustments
- When lining up the wing spars for wing pins or control hook-ups. An instructor will show you how to respond to instructions like "up a bit" or "back a bit".
- Guard against over exertion... call for assistance and don't lift in a way that strains your back.
- Secure the trailer at the correct angle for getting components out or in.
- Line the trailer into wind so the fuselage is into wind.
- In windy conditions, use more people and guard against the wings trying to fly when rotating them.
- Gusts have caught people by surprise and wings have been blown out of their hands...crunch!

Rigging:

Ensure helpers know how and in what sequence components are removed from the trailer.

If components are going to be removed from the trailer and left on the ground, ensure they are well supported clear of obstacles like sticks and stones. Ensure they are readily visible so they won't get walked on or driven over.... Yep... this has happened to wings and canopies!! E x p e n s i v e.

Clean and grease rigging pins and fittings prior to assembly. together.

Do not get your fingers in places where they can be caught or crushed by the components.

Put any cradles or rigging / trailering gear back in the trailer so it is ready for going on the road.

De-rigging:

Know the sequence for both derigging and loading into the trailer.

Ensure adequate people are there to assist.

Ensure adequate lighting. Car lights may be required if out in a farmers field at night.

Be careful not to lose any small items like pins or locking devices. Know where to stow them.

Secure the cockpit items to ensure nothing is lose and able to damage the canopy when trailering.

**Example; Imagine you have landed the Grob 102 in a field and are now waiting for your retrieve crew to bring the trailer.**

There are one or two things you can usefully do while you are waiting.

1. Remove the wing tape from the main wings, inspection cover and tail plane. Do not litter the farmer's field; plan to bring your rubbish home with you.
2. Remove the inspection cover and carefully place it in the cockpit.

3. Disconnect the four control connections through the inspection hole.
4. Wait for the crew before proceeding further.



When the crew arrive;

1. Position the trailer about half a wingspan in front of the glider, apply the brakes and remove from the vehicle.
2. Remove the canopy and put aside in a safe place.
3. Remove the tail plane and place aside in a safe place.
4. Move glider onto belly dolly and secure with the winch hook.
5. Support one wing with the trestle.
6. Fit the wing tip dollies and make sure there is a clear unobstructed path to the glider.
7. Unlock the bayonet fittings (2) on the unsupported wing.
8. With one person on the tip and two at the root, slide the wing out from the fuselage.
9. Carry the wing, tip first, to the trailer. The port wing (left) goes on the right hand side of the trailer.
10. Repeat for the 2<sup>nd</sup> wing.
11. Attach the rear frame and insert the tail plane, securing it with bungees.
12. Secure all loose items in the cockpit and replace and lock the canopy.
13. Carefully push and steer the fuselage to the trailer, and align tracks.
14. Push fuselage into trailer, allowing tail wheel to slide into recess.
15. Tie down tail.
16. Carefully replace trestle and ramp into trailer so that they will not bounce in travel.



Notice the bayonet position.  
The top picture is correct.

Take great care not to scratch the wings or the leading edge on the trailer

Clutter like this must be secured

On the road

1. Before towing a glider trailer for the first time, practice with someone more experienced beside you, on the airfield.
2. Don't drive too fast, and make sure everything in the trailer is secured.

Rigging is almost the reverse procedure as de-rigging.

1. Rig on level ground.
2. Remove the canopy first.
3. Never have the tail plane fitted and the main wings not, if the glider topples over the damage can be significant.
4. Fit the Starboard (Right) wing first, and secure the 2 collars.
5. When fitting the Port wing; make sure you align the pin at the end of the spar as it mates with the root of the Starboard wing.
6. It is best to fit the tail plane with 3 people---two to hold the tail plane, the third to connect the elevator and guide it into position.
7. Before sealing up the inspection panels get an independent inspection of the connections.

**Tip:** Watch a rig or de-rig and learn from observing what each of the participants does in the process. Don't be backward in offering assistance as the more hands the better... and you may need help rigging later yourself.

**Need To Know:**

- How to assist with rigging and de-rigging gliders operating at Nympsfield.
- Specifics relating to your glider trailer and rigging equipment and how to rig and de-rig any glider you fly solo.
- Ensure components like wing spars, spigots and control rods are lined up before bringing structures

**Further Reading:** Glider Flight Manual. Specific instructions on how to rig and derig the glider.