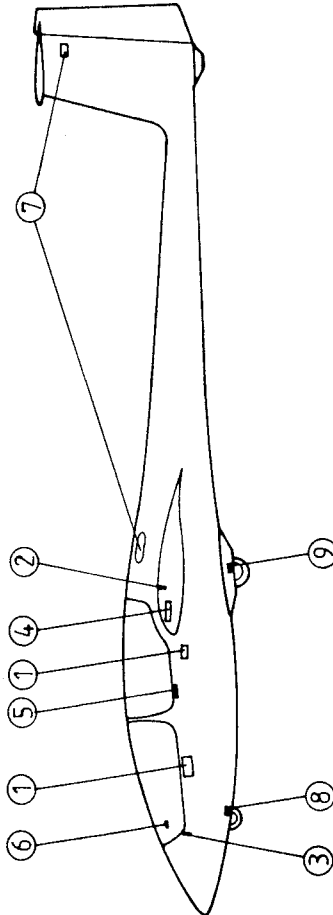
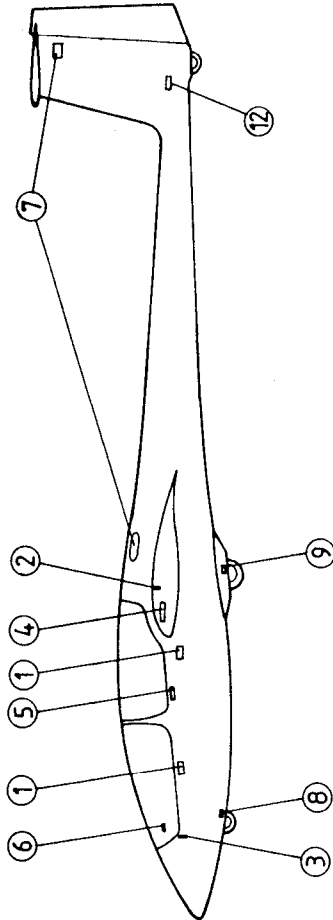


Setting of placards

II. 9



Setting of placards [Only with tail wheel]



V. RIGGING AND DE-RIGGING

V.1. RIGGING

Rigging the ASK 21 can be carried out by four persons without mechanical assistance, and by three persons with the use of a fuselage stand or a wing support. Prior to rigging, all pins, pinholes, and all control system connections must be cleaned and greased.

1. Set up the fuselage and hold it horizontal.
2. Plug the 2-prong spar end of the left wing into the fuselage and - if available - place a wing support under the wingtip.
3. Plug in the right wing.
4. Insert the two main pins and safety them with the safety hook at the spar tunnel. **Never** insert the rear wingpins prior to the main pins !
5. Insert rear attachment pins; unscrew T-grip and check whether the safety lock is engaged.
6. Connect aileron ball fittings behind the spar tunnel. You must be able to touch the ball pivot by feeling through the slot in the socket. Press the safety lock.
7. Connect airbrake ball fittings behind the spar tunnel.
8. The horizontal tail is fitted onto the fin from the front. Screw in the Allan bolt from above and tighten it with some pressure. The spring-loaded retainer must snap securely into place, i.e. into one of the longitudinal slots of the Allan bolt.
9. Connect elevator !

Note: If your glider features a horizontal tail unit with automatic elevator connection, fit the horizontal tail onto the fin from the front, simultaneously the elevator

must go into its connector. The tailplane is now pushed back until the Allan bolt at the leading edge can be screwed in; this should be screwed in tightly until the spring retainer snaps securely into place.

10. Carry out a pre-flight check, referring to the Check List.
11. Check operation of control circuits.
12. Check operation of wheelbrake and the tire pressure.

V.2. DE-RIGGING

De-rigging is done in reverse order of rigging. One must take care that the rear wing attachment pins have to be removed prior to the main pins.

V.3. PARKING

When parking the glider the canopies have to be locked.

V.4. ROAD TRANSPORT

The design of a glider trailer is a detailed subject and cannot be discussed in details here. Of course, a closed trailer is preferable, but an open trailer may also serve its purpose. An open trailer is generally simpler and lighter. It is important that the individual components are well fixed and that they have a large support surface.

Schleichers will supply general drawings of structural components for the purpose of building a trailer on request.

the whole control system is actuated by pushrods. The long pushrods are 16 Ø x 1,0 mm aluminium with ball bearing supports. The cockpit controls and the shorter pushrods are welded steel. The control system levers are milled duraluminium or welded steel.

Elevator control system

Both control sticks are built as 2-armed levers and feature universal joints. The control sticks are linked together by a main steel tube torsion rod at the bottom. This torsion rod features at its front and rear end an adjustable stop for both control sticks. Another bent steel tube torsion rod leads from the rear control stick to a combined elevator/aileron rocker arm. From there a short aluminium pushrod leads to a 180° duraluminium bellcrank which is linked up by a long aluminium pushrod which runs through 4 support bearings; the support bearings consist of a fiberglass bracket with 3 ball bearings. Via a 90° duraluminium bellcrank, the control forces are lead upwards into the fin using a fiberglass plastic pushrod. Here connects a 180° duraluminium bellcrank to a short aluminium pushrod which in turn connects to a M12.41/HOTELLIER joint which operates the elevator.

Elevator with automatic connection:

Instead of the aluminium pushrod, an actuating pushrod is installed, which is supported with a parallel rocker.

Trim

The trim is spring suspended and consists of 2 trim levers, 1 connecting pushrod and the 2 trim springs with slotted gate sheet metal. The trim levers are connected to the control sticks with a knurled nut at the control stick bearing bolt. A friction brake is tightened with this knurled nut at the control stick

bearing bolt. The braking force should be distributed evenly between the front and rear brake. The brake should be tightened so strong that even with extremely opposed positions of stick and trim lever, the trim will not move. The trim connecting pushrod features a stop at its front and rear end. The springs with the adjusting plate between them, are suspended into the 2 rings of the front control shaft. The adjusting plate itself is mounted to the bolt of the trim connecting pushrod; here the trim may be adjusted.

The trim should be adjusted such that with 1 pilot and the trim set full forward, a trimmed speed of 150-160 km/h (81-86,3 kts; 93,2-99,4 mph) is reached; then the trim lever is in a slightly forward position when the stick is free and in its center position (elevator connected).

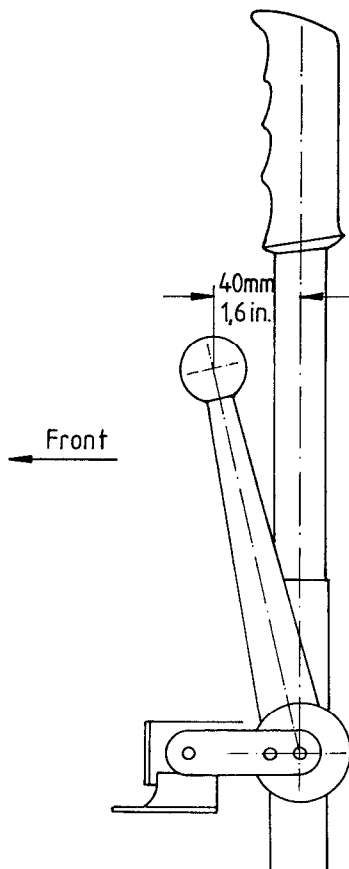
To adjust the trim roughly to a trimmed speed of max. 160 km/h (86,3 kts; 99,4 mph):

1. Connect elevator.
(This is inapplicable when your glider features the automatic elevator connection).
2. Adjust the trim spring such that the stick is set to the above-mentioned relative position to the trim lever. Friction must be balanced by "feeling for" the center position.

Trim indicator

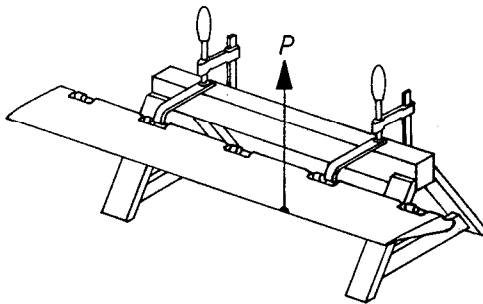
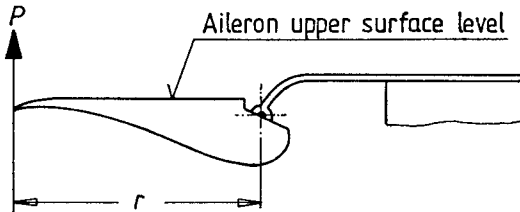
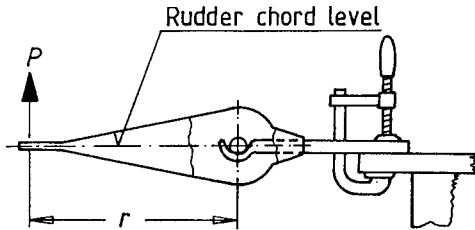
In addition to the visible position of the trim lever itself, the trim features a trim indicator. The trim indication should be in the center position when the trim lever is vertical to the glider's longitudinal axis. It can be adjusted by opening the clamp at the trim connecting pushrod and by displacing the Bowden cable. Then retighten the clamp.

Trim Basic Adjustment



Tailheavy static balance measurement of controls.

$$M = P \cdot r \text{ (daN} \cdot \text{cm)}$$



Determination of P by use of a spring balance or a letter balance.

VII. CHECK LISTS

Pre flight check

1. Main pins safetied ?
2. Rear wing attachment pins: can you see the safety lock above the pin ?
3. Horizontal tail unit pins safetied ? Is the spring retainer engaged ?
4. Pushrod connected to elevator ? (This is only applicable for ASK 21 with manual elevator connection).

Note: If the ASK 21 features the automatic elevator connection, check this for proper fit !

5. Aileron pushrods connected to lever ? Sight control through access hole !
6. Airbrake pushrods connected to lever ? Sight control through access hole !
7. Check for foreign objects !

Attention !

With all HOTELLIER type joints one must be able to touch the ball pivot by feeling through the slot in the ball socket !

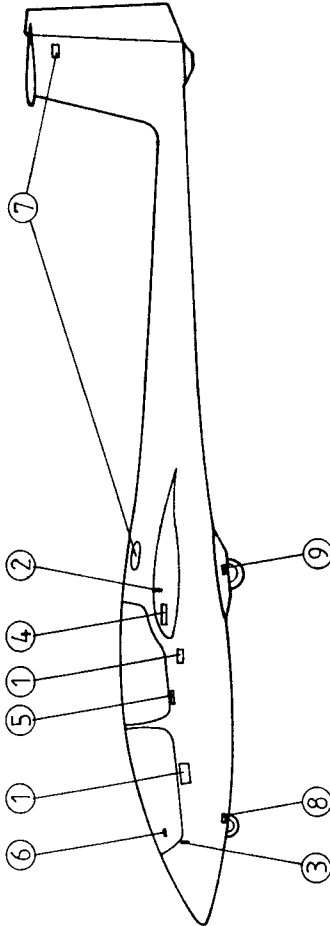
Pre take off check

1. Parachute connected ?
2. Safety harness fastened ?
3. Airbrakes locked ?
4. Trim in center position ?
5. Altimeter correctly set ?
6. Canopies closed and locked ? Rear canopy !
7. For flights with only 1 occupant, remove the rear backrest!
8. Put your toes under the toe-straps ! Do not flatten the straps ! Danger of jamming the pedals !

X. PLACARDS AND MARKINGS

1. Data placard with weight & balance data;
one placard each for the front and rear seat on the
right cockpit wall.
2. Fire-proof type plate;
on the right at the spar tunnel bottom.
3. Placard stating the approved Airworthiness Category;
on the front instrument panel.
4. Max. baggage compartment loading;
one placard each left and right on the rear cockpit
wall close to the baggage compartment opening.
5. Placard on the rear instrument panel.
6. Placard for "Pre take off check";
on the underside of the front instrument panel cover so
that the placard is visible when the canopy is open.
7. Placard on left side of top of fin;
Note: This placard is cancelled if your glider features
the automatic elevator connection.
Placard in the access hole cover !
8. Placard for tire pressure nose wheel: 2,0 bar.
9. Placard for tire pressure main wheel: 2,7 bar.
10. Airspeed indicator marking.
11. G-meter marking.

Setting of placards



For tailwheel option only

X. PLACARDS AND MARKINGS

1. Data placard with weight & balance data;
one placard each for the front and rear seat on the right cockpit wall.
2. Fire-proof type plate;
on the right at the spar tunnel bottom.
3. Placard stating the approved Airworthiness Category;
on the front instrument panel.
4. Max. baggage compartment loading;
one placard each left and right on the rear cockpit wall close to the baggage compartment opening.
5. Placard on the rear instrument panel.
6. Placard for "Pre take off check";
on the underside of the front instrument panel cover so that the placard is visible when the canopy is open.
7. Placard on left side of top of fin;
Note: This placard is cancelled if your glider features the automatic elevator connection.
Placard in the access hole cover !
8. Placard for tire pressure nose wheel: 2,0 bar.
9. Placard for tire pressure main wheel: 2,7 bar.
10. Airspeed indicator marking.
11. G-meter marking.
12. Placard for tire pressure tail wheel: 2,5 bar.

Setting of placards

