

HANG GLIDER

FOX

OWNER / SERVICE MANUAL



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Schemes

Thank you for purchasing an Aeros hang glider.

The hang glider Fox will allow you to train and float in the sky with maximum level of safety. With this glider you will acquire not only right skill and confidence, but also receive a great pleasure of soaring flight.

Please read and be sure you thoroughly understand this manual before flying the Fox. Be sure you are thoroughly familiar with the glider and the contents of this manual before initial operation.

We encourage you to read this manual thoroughly for information on the proper use and maintenance of your Aeros glider. If you have access to the Internet, please visit us regularly at <http://www.aeros.com.ua>

In case of any doubts or questions contact your local dealers or Aeros.

We wish you a safe and enjoyable flying career.

Aeros Ltd.

Definitions

Definitions used in this Manual such as WARNING, CAUTION and NOTE are employed in the following context:

WARNING

OPERATING PROCEDURES, TECHNIQUES, ETC. WHICH IF NOT FOLLOWED CORRECTLY, MAY RESULT IN PERSONAL INJURY OR DEATH.

CAUTION

OPERATING PROCEDURES, TECHNIQUES, ETC. WHICH IF NOT STRICTLY OBSERVED, MAY RESULT IN DAMAGE TO THE AIRCRAFT OR ITS INSTALLED EQUIPMENT.

NOTE

Operating procedures, techniques, etc. which considered essential to highlight.

1. TECHNICAL INFORMATION AND OPERATING LIMITATIONS

The Fox has been designed for foot launched training and soaring flight. It has not been designed to be motorized, tethered, or towed. It can be towed successfully using proper procedures though.

Flight operation of the Fox should be limited to non-aerobatic maneuvers; those in which the pitch angle will not exceed 30 degrees nose up or nose down from the horizon and the bank angle will not exceed 60 degrees.

	Fox-16	Fox-13
Sail area, sq.m. (sq.ft.)	16.2 (174)	13.4
Wing span, m (ft.)	9.6 (31.5)	8.65 (28.4)
Aspect ratio	5.7	5.6
Nose angle, °	120	118
Weight (without bags), kg (lb)	24 (53)	19
Number of sail battens	15	13
Breakdown length, m (ft)	5.8/3.9/2.2	5.09/3.12/-
Tested load, G	+6/-3	+6/-3
Wind speed max, m/sec (mph)	12 (27)	12/(27)
Min. airspeed, km/h (mph)	25 ()	25 (
VNE, km/h (mph)	81 (50)	81 (50)
Min. clip-in weight, kg (lb)	60 (132)	
Max. clip-in weight, kg (lb)	114 (251)	

Aeros recommends that no attempt should ever be made to deliberately spin the glider.

The stability, controllability, and structural strength of a properly maintained Fox have been determined to be adequate for safe operation when the glider is operated within the entire manufacturer specified limitations.

No warranty of adequate stability, controllability, or structural strength is made or implied for operation outside of these limitations.

Operating the Fox outside of the above limitations may result in injury and death.

Flying the Fox in the presence of strong or gusty winds, or turbulence may result in loss of control of the glider, which may lead to injury and death.

Do not fly in such conditions unless you realize and wish to personally assume the associated risks.

2. FOX REASSEMBLY AFTER SHIPPING PROCEDURE

1. With the glider in the bag (4 meters long) lay the glider on the ground.
2. Unzip the bag. Undo the Velcro straps. Remove the batten bag, the speed bar and the rear leading edge tubes # 3 from the bag.
3. Unfold the sail along the leading edge to its full length. Attach the rear leading edge tubes # 3 to the front leading edge tubes # 2 according to the marking (L-left, R-right, marks must be on top).

Working on one wing at a time and working with the appropriate leading edge # 3, fold the outer sprog, which is attached to the rear leading edge, towards the inboard end of the leading tube # 3. Slide the inboard end of the leading edge tube # 3 into the sail.

Then slide the rear leading edge forward, allowing the sprog end to come outside the sail at the corresponding hole, and slide the rear leading edge into the front leading edge.

Align the rear leading edge properly so that the sprog is on the inside of the leading edge, and slide the rear leading edge forward, rotating as necessary, until the slot in the rear leading edge engages securely

into the clevis pin in the front leading edge. When the rear leading edge is fully engaged, you will not be able to rotate it.

4. Tighten the sail along the leading edge by putting the sail mount webbing into the slot in the end cap of the leading edge # 3.

NOTE

The sail mount screws on the front part of the leading edge tubes # 1 must be unscrewed, otherwise the excess sail tension will not allow tightening the sail.

The sail mount screws have to be screwed back after you accomplish all steps in section "Fox set-up procedure" from item 1 through item 9.

5. Secure the sail mount webbing to the leading edge # 3 with the sail mount webbing Velcro.

NOTE

When spreading the wings with the sail mount screws been unscrewed check that the sail mount webbing is in proper position in the slot of the end cap of the leading edge # 3.

6. Install the wing tip bags.

Put battens on top of the glider between Mylar pockets in the front part of the glider.

Place Velcro ties around the glider.

Put the speed bar between leading edges in the rear part of the glider.

Put the glider bag back on and zip it up.

3. FOX BREAKDOWN FOR SHIPPING PROCEDURE

This process will basically be the reverse of reassembling after breakdown for shipping. Before beginning, read through the section above on how to re-install the rear leading edges.

1. Lay the glider on the ground or floor, unzipped the bag and remove the Velcro ties. Remove the speed bar and battens from the glider. Remove the protection wing tip bags.
2. Check to see that the leading edges are marked "Left" and "Right". If they are not, mark them with an indelible marker.
3. Unscrew the sail mount screws from the leading edges # 1.
4. Undo the sail mount webbing Velcro and remove the sail mount webbing from the leading edges end caps. With the outboard sprog folded towards the nose pull the rear leading edge straight aft and slide it backwards carefully out of the sail. Tape or pad the edges of the front end of the leading edge tubes # 3, and the rear of the leading edge tubes # 2 to prevent sail damage during transportation.
5. Carefully fold the rear of the sail over against the front, place Velcro ties around the glider and put on the glider bag, turning the bag 180 deg (i.e. matching the front part of the bag to the rear part of the glider).
6. Zip up the glider bag zipper.

4. FOX SET-UP PROCEDURE

1. Lay the glider on the ground, with the bag zipper up and at right angles to the wind.
2. Undo the zipper, pull out the battens and the speed bar.
3. Lift and deploy the control frame legs.

Remove the quick pin from the corner bracket. Insert the corner bracket all the way into the speed bar, positioning the speed bar so that the off-set of the speed bar is directed forward in the direction of flight (fig. 1 and fig. 2).

Install the quick pin (from front to rear), securing the bracket to the speed bar (fig. 2).



Figure 1



Figure 2

CAUTION

DO NOT FORCE THE FITTING INTO THE SPEEDBAR IF IT DOES NOT SLIDE IN FREELY AND CHECK FOR DIRT OR DAMAGE TO THE FITTING OR THE INSIDE OF THE SPEEDBAR.

4. Flip the glider upright on the control bar. Try to set the speed bar on level ground. Remove the glider bag and all the Velcro sail ties. Do not remove the leading edge tip protection bags at this time (fig. 3).
5. By lifting up the nose batten, push the nose batten fully back into the sail so that the V-tip of the batten rest on top of the keel tube (fig. 4).



Figure 3

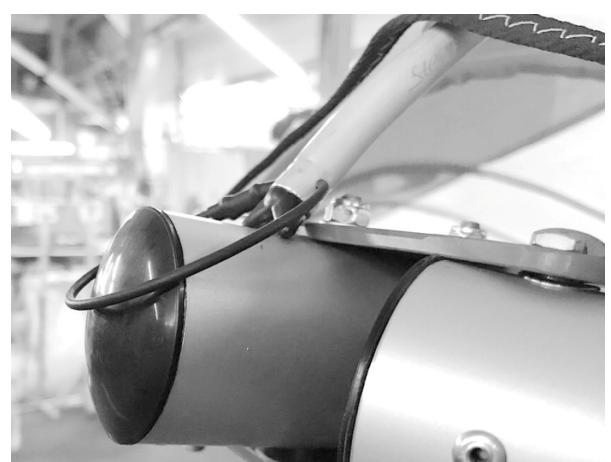


Figure 4

6. Spread the wings almost all the way. The kingpost will automatically rise half way up (fig. 5).



Figure 5

When spreading the wings make sure the washout bridles are not twisted or tangled around the bridle carabiner (fig. 6).



Figure 6

7. Remove the battens from the batten bag, and check each batten for symmetry against the corresponding batten from the other wing. Align the battens at the nose, and at about the 60% chord point. There should not be any deviation of more than 3 mm (1/8") from one batten to the other along the full length of the battens.

If you choose not to check your battens for symmetry before each flight, you should, at a minimum, check them once a month.

Aeros convention is that red marked battens go in the left wing and green marked battens in the right. Battens are numbered from the center outwards, and the longest batten in a Fox is designated as the "No. 1" batten. Install the cambered battens in the sail, leaving out the shortest three on each side for now.

Install the batten tips into the hem of the trailing edge. At each batten, make sure the opening in the underside of the trailing edge hem is spread to accept the tab on the batten tip. Make sure the tab slides fully into the hem.

CAUTION

INSERT THE BATTENS CAREFULLY, SO AS TO MINIMIZE STRESS AND WEAR ON THE SAIL.

Never insert or remove battens with the crossbar tensioned (except for up to the last three on each side) and never insert or remove battens with heavy wind pressure on the top of the sail or in any condition which causes the battens to slide with great resistance in the pockets.

To open or close the batten tip lever - press firmly on the undersurface of the tip lever to disengage or engage it (fig. 7).

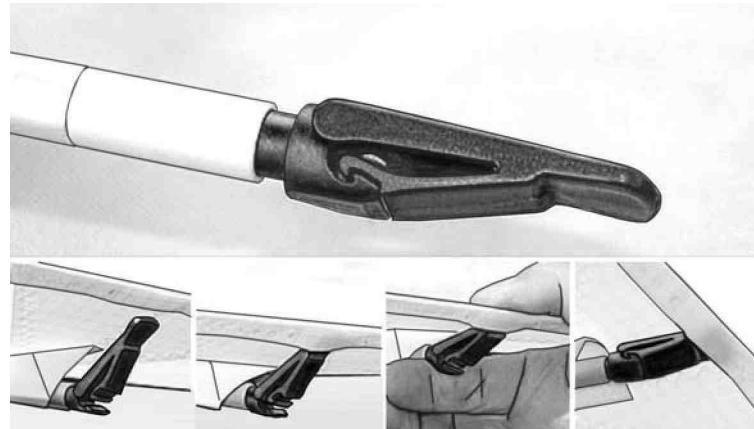


Figure 7

8. Spread the wings all the way and check all cables for any twisted thimbles or tangled cables. At the rear inside of the keel pocket find the sweep (crossbar tensioning) wire. Pull the sweep wire out the rear end of the keel pocket, and check that the sweep wire is not wrapped around the keel. Attach the ring of the sweep wire to the hook, which is placed on the keel tube (fig. 8).



Figure 8

9. Pull the top rear wire backwards, the king post will stand all the way up. Attach the ring of the rear wire to the same hook on the keel tube on top of the sweep wire ring (fig. 9 and fig. 10).



Figure 9



Figure 10

10. Install the last three cambered outboard top surface battens. Install the tip lever battens as shown on the figures below (fig. 11 and fig. 12).



Figure 11



Figure 12

11. The next step is to install the outboard sprogs. To do so swing the sprop away from the leading edge and push it towards the leading edge in to the receptacle. Make sure the sprop sits all the way in the sprop receptacle (fig. 13).

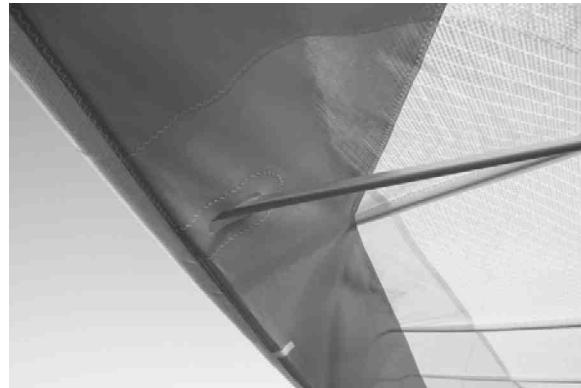


Figure 13

12. Attach the bottom front wires to the hook on the bottom nose plate (fig. 14).

13. Install the nosecone, which is connected to the front part of the keel tube (fig. 15).



Figure 14

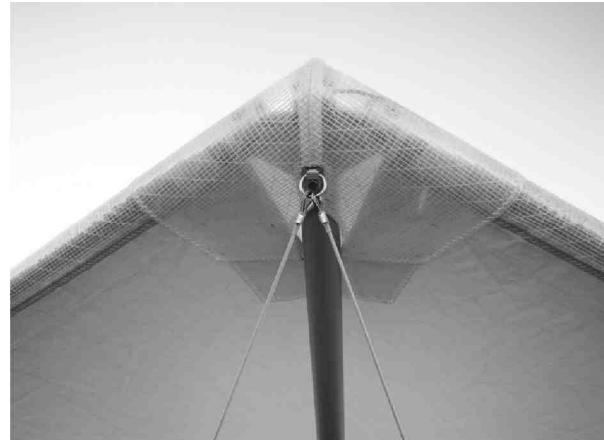


Figure 15

WARNING

DO NOT FLY WITHOUT THE NOSECONe!

5. PREFLIGHT PROCEDURE

Conduct a complete preflight inspection of the glider, checking all assemblies, which have not already been checked. Every bolt, nut, pin, safety ring, and fastener of any kind should be checked during every pre-flight. A full pre-flight inspection should precede every flight you make, not just the first flight of the day.

Carefully check the entire length of the leading edge pocket to insure that the Mylar insert is lying flat in the pocket. If any section of the Mylar is folded under, de-tension the crossbar, remove as many battens as necessary and unfold the Mylar.

Along the left leading edge:

Open the crossbar junction access zipper and look inside, making sure that side wires are properly secured, that the thimbles are not cocked on the tang. Check the split pin and the nut, which secures the leading edge – crossbar junction. Check that the sail is not caught on the crossbar end, or on any of the hardware. Don't forget to close the access zipper (fig. 16).



Figure 16

At the left wingtip: Check that the tip lever batten is properly installed.

Along the trailing edge, left wing

Check that there are no tears in the sail material along the trailing edge

Check that all battens are properly secured

Check that the outboard sprog is properly secured in position supporting the last outboard cambered batten.

Check that the washout bridles are properly engaged.

From the rear keel

Check that the sweep wires and rear wire are tight and secured on the hook on the keel tube (fig. 17).



Figure 17

Check the nut of the kingpost channel, which secures the channel to the keel. Check the safety ring and the clevis pin, which secures the kingpost to the channel.

Check the safety ring, nut and bolt which secures the hang loop to the kingpost. Check the kingpost top for proper attachment of the bridles and condition of the top rear wire, carabiner and bridle wires.

Along the trailing edge, right wing: Same as for the left wing.

At the right tip: Same as for the left tip.

Along the right leading edge: Same as for the left leading edge.

Under the glider at the control bar: Sight down the downtubes, making sure that they are straight.

WARNING

DO NOT FLY WITH BENT DOWNTUBES!

Check the cables at the control bar corners, making sure there are no kinks or twisted thimbles. Check for proper installation of all nuts and safety rings at the control bar corners (fig. 18).



Figure 18

Check the sweep wire for wear where it passes through the kingpost channel (fig. 19).

Check the crossbar center plate's assembly including the sweep wire/X-bar junction and the center bolt (fig. 20).

Also, visually inspect the crossbars by sighting along the length of the crossbars looking for any evidence of damage.

Check the control frame apex bracket hardware, including the clevis pin safeties, the control bar top plug bolt and nut, and the kingpost bracket bolt and nut.

Check the main and backup hangloops.



Figure 19



Figure 20

6. LAYING THE GLIDER DOWN FLAT

Once you have the glider set up, it can be laid down flat on the ground.

1. Remove the nose cone from the nose.
2. Release the bottom front wires from the nose hook.
3. Lay the glider down with nose into the wind.

Reverse the procedure to set the glider upright again.

7. LAUNCHING AND FLYING THE FOX

WARNING

BEFORE LAUNCHING, HOOK IN TO THE GLIDER AND DO A CAREFUL HANG CHECK.

We recommend that you hang as close to the speed bar as possible - this will give you lighter control pressures and better control in both roll and pitch.

1. If the wind is more than 25 km/h (15 mph) or gusty you should have an assistant on your nose wires on launch, and, if necessary, an assistant on one or both side wires. Make sure all signals are clearly understood. Do a hang check immediately prior to launch. The angle at which you hold the glider should depend on the wind speed and slope of the terrain at launch; you want to achieve a slight positive angle of attack at the start of your run.
2. Run aggressively on launch and ease the bar out for lift off.
3. The flying characteristics of the Fox are typical of a low performance flex wing. Make your first flights from a familiar site in mellow conditions to give you time to become accustomed to the glider.
4. Do not take off if the sail is wet, especially if the leading edge is covered with raindrops, as the stall speed will increase significantly.

WARNING

ALWAYS FLY WITH A DRY SAIL!

5. For the same reason take special care to avoid ice-covering the glider, particularly the leading edge in wintertime.

8. SPEED TO FLY

The range of **trim speed** for the Fox is 30 - 32 km/h (19-20 mph). The speed bar position in front of the pilots face corresponds to this range.

The range of the **stall speed** for the Fox is 25 - 26 km/h (16-17 mph). The glider is stable at the beginning of stall. While pushing out the speed bar, the bar pressure is progressively increase.

The Fox speeds up to 75 km/h (47 mph), being essentially roll neutral, with no tendency to yaw. The bar pressure progressively increase.

9. AEROTOWING

Special care must be taken in any form of towing.

WARNING

MAKE SURE THAT ALL THE HARNESS ROPES ARE HIDDEN INSIDE THE HARNESS AND WILL NOT GET TANGLED ON THE CART DURING TAKE OFF.

If possible, it is best to adjust the keel cradle on the cart to re-set the glider to the proper angle of attack. For Fox the best angle of the keel tube in relation to horizon is approx. 20 deg. If it is not possible to re-adjust the cart, recognize the launch will be more demanding, and more dangerous, as the glider will have an increased tendency to leave the cart at a lower speed, where lateral control is reduced, and the tendency to come off the cart with one wing low is increased. To some degree, this can be compensated for by pulling forward through the control bar to position the speed bar below your shoulders, and holding tight to the hold down rope. This will cause the glider to raise the keel as it begins to develop enough lift to lift out of the cart. At that point, and not before that point, you can release the rope and ease your weight aft to fly the glider off of the cart. Be prepared to pull in once clear of the cart if necessary so as not to climb more quickly than the tug. Note that the bar pressure of the Fox will be relatively high during the aerotowing.

Once clear of the cart and in the position behind the tug, use firm lateral movements of short duration for roll and directional control in order to stay in the position behind the tug. Do not move to one side of the bar and wait for the glider to respond - this will lead to over control and being out of position, and may lead to roll / yaw oscillations. It is better to "bump" the glider firmly in the direction of the desired correction and then return to center. If you need more correction, bump again. In pitch, stay on top of the situation and be as aggressive as necessary to keep the tug on the horizon.

WARNING

GET APPROPRIATE TRAINING FOR AEROTOWING!

10. LANDING THE FOX

Under ideal conditions, landing approaches are best done so as to include a long straight final into the wind at a speed above best L/D speed. In a very limited field, or a field which slopes slightly downhill, when landing in light wind, you may need to make your final approach at a slower speed, perhaps as slow as minimum sink, in order to be able to land within the field.

In winds of less than 5 km/h (3 mph), if the landing area slopes downhill at more than 10:1, you should seriously consider landing downwind and uphill; or crosswind, across the slope. Landing attempts, which require slow speed approaches, maneuvering around obstacles or into a restricted area, or downwind or crosswind landings are not recommended for pilots below an advanced skill level.

Some pilots have had difficulty with roll / yaw oscillations on final. The best way to avoid this is to fly your entire approach at a constant airspeed, and to control your touchdown point by making adjustments to the shape of your pattern. You should choose your approach speed based on the amount of wind and turbulence present - in stronger wind and more turbulent air fly faster. In any case try to fly a constant airspeed throughout the approach.

Once established on a straight final approach, with wings level and flying directly into the wind, you should fly the glider down to where the speed bar is about 1-1.5m (3-4 ft) off the ground. At this altitude, let the control bar out just enough to "round out" so that your descent is arrested and your flight path parallels the ground. The remainder of your approach will consist of bleeding off excess speed while paralleling the ground and keeping the wings level and the nose pointed in your direction of flight until it is time to "flare" for landing.

Prior to the landing flare your body position should be generally upright, but slightly inclined forward, with your head and shoulders forward of your hips and your legs and feet trailing slightly behind. Many pilots make the mistake of trying to get too upright at this stage of the landing, which actually reduces your flare authority and makes it harder to land on your feet. Your hands should be at shoulder width and shoulder height on the uprights.

You should be relaxed, with a light grip on the bar, and your weight should be fully supported in your harness and not at all by your arms. (If your harness does not allow you to hang in the proper semi-upright landing position "hands off," without supporting your weight on the control bar, you will have a lot more difficulty making good landings.

11. FOX BREAKDOWN

Breakdown of the glider is the reverse of assembly.

1. Remove the nosecone. Remove any instruments.
2. Pull out the outboard sprogs, swing them towards the leading edge and fix with the Velcro.
3. Remove the tip lever battens and three shortest cambered battens.
4. Install the tip bag of the sail at this time.
5. Detach the bottom front wires at the nose plate.
6. Unhook the rear wire from the hook on the keel tube, de-tension the crossbar sweep wire and let the wings fold in slightly.
7. Remove the remaining top surface battens except for the battens # 1.
8. Fold the wings all the way in to the keel pulling the sail over the top of the leading edges. At each wingtip, remove the tip cover bag. Lay the kingpost down forward against the keel. Install the protective pad and sock over the rear wire junction bolt and the rear end of the keel.
9. Lift the nose batten string up, then pull it sideways and down, so that the nose batten tip lowered from the top of the keel tube.
10. Pull the sail out away from the keel until it is even on top and bottom. Roll the sail gently and carefully, parallel to the trailing edge of the front and then outboard portion of the sail.

NOTE

Try to roll the sail in such a way that the leading edge portion remains as smooth as possible. Do not attempt to stuff the sail between the Mylar pocket and the leading edge tube at any point where you feel resistance, and do not attach the Velcro ties so tight so as to induce creases in the Mylar or leading edge sail material.

11. Install the wing tip cover bags.
12. Secure the sail with the Velcro sail ties.
13. Stow the battens in the batten bag and stow it in the front part of the glider.
14. Install the sail velcros around the sail and stow the nosecone under the most forward Velcro.
15. Install the glider bag. Flip the glider over onto the ground. Detach the speed bar. Fit the speed bar in the protection bag and stow it between the leading edges in the aft part of the glider.
16. Fold up the control frame and install the control frame bag, lay it down against the keel.
17. Zip up the glider bag.

12. GLIDER TUNING

Properly tuned, the glider is safe, comfortable and fun to fly. The glider has been tested and tuned by the manufacture or your dealer. However, in case you have enough experience, you may tune the glider by yourself, as written below, if necessary. There are a number of adjustments that affect the flight characteristics.

WARNING

DO NOT PERFORM MORE THAN ONE ADJUSTMENT AT ONCE. IF YOU DO NOT HAVE ENOUGH EXPERIENCE TO TEST FLY THE GLIDER, ASK MORE EXPERIENCED PILOT TO DO IT FOR YOU. IT SHOULD BE PERFORMED IN SMOOTH AIR AND WITH CAUTION.

BATTENS

The battens will need to be trued to the template time after time. Small variations in batten camber (± 10 mm at trailing edge) will not have significant effect on flight characteristics.

BATTENS TENSION

With some airtime on the glider the battens tension may get too loose, this may cause the trailing edge to flutter. If the battens tensioned too much, the handling will become harder. Make sure the battens tensioned on both wings identical.

All battens on the Fox are tensioned by lever batten tips. The desired batten tension can be easily adjusted by the threaded batten tip adjuster. The battens have to be tensioned until the lever batten tip is about 30 degrees of travel before becoming straight.

To increase batten tension rotate the threaded lever batten tip adjuster counter clockwise. To decrease batten tension rotate the threaded lever batten tip adjuster clockwise.

SAIL MOUNT CAPS ADJUSTMENT

The turn of the glider can be corrected by rotating one of the sail mount plastic caps. The left turn is corrected by twisting the right sail cap clockwise (twisting the sail up at the trailing edge). The right turn is corrected by twisting the left sail mount cap counter clockwise (twisting the sail up at the trailing edge). If rotation of the plastic cap on one side is not enough to compensate turn, you can at the same time rotate the plastic cap on another wing in opposite direction (fig. 21).

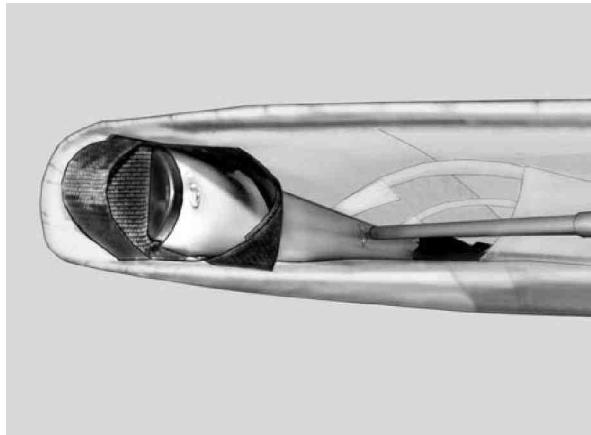


Figure 21

CG ADJUSTMENT

CG adjustment is done by changing the location of your hang point along the keel. The farther forward your hang point is, the faster the glider will trim, the less effort will be required to fly fast, and the more effort will be required to fly slow.

On the Fox, the hang loop fwd and aft position is adjusted by repositioning the kingpost in the kingpost channel.

13. FOX BREAKDOWN FOR SHIPPING PROCEDURE IN A 2 METERS SHORT PACKAGE (Fox-B and Fox-BM models only)

The Fox design allows for the glider transportation in a 2.2 meters short package.

Please read and be sure you thoroughly understand this manual before breaking down your glider into a short package.

You will need an unobstructed area 2 m by 9 m (6x30 ft). Make sure the surface is clean. If it is abrasive, you should either cover it with protective tarp or be extremely careful not to scrape your sail.

1. Start breaking down the glider with the glider lying on its back. Unzip and remove the glider bag and put battens and the speedbar aside. Remove the control frame and the keel protection bags. Remove all battens from the sail including the keel batten.

2. Spread the wings slightly. Remove the screws that tether the nose part of the sail at the leading edge tubes (fig.22). Undo the sail mount webbing Velcro and remove sail mount webbing from the plastic end at the rear leading edge (fig. 23).



Figure 22

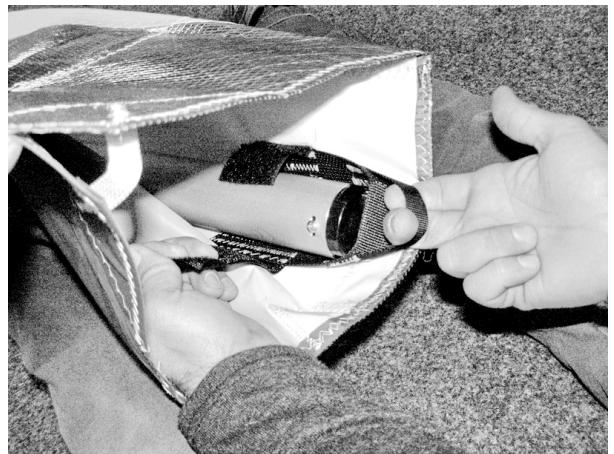


Figure 23

Note: Reassemble the hardware removed in its place in original order so that it doesn't get lost. All disassembled assemblies on the glider must be reassembled in the proper order and orientation.

3. Unbolt bottom and upper side wires from the crossbar and feed them through the holes and out of the sail (fig. 24).



Figure 24



Figure 25

4. Unbolt the upper front wire from the nose plate and feed it through the hole and out of the sail (fig. 25).

5. Remove the keel pocket mounting screw from the keel pocket webbing at the rear part of the keel tube. Detach the rear cables from the keel tube (on the fig. 26 shown for Fox BM).

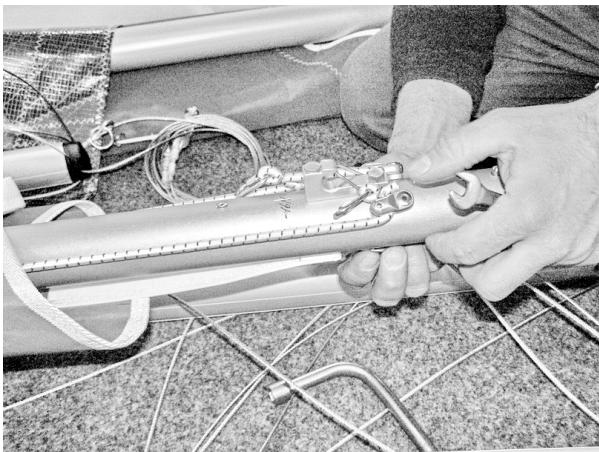


Figure 26



Figure 27

6. Detach the main hang loop from the back-up hang loop (fig. 27 and fig.28). Remove the king post from the hang loop and from the king post channel (fig. 29).



Figure 28



Figure 29

7. Unscrew appropriate carabiners and detach the sweep wire and the upper rear wire from rubber cords (fig. 30).

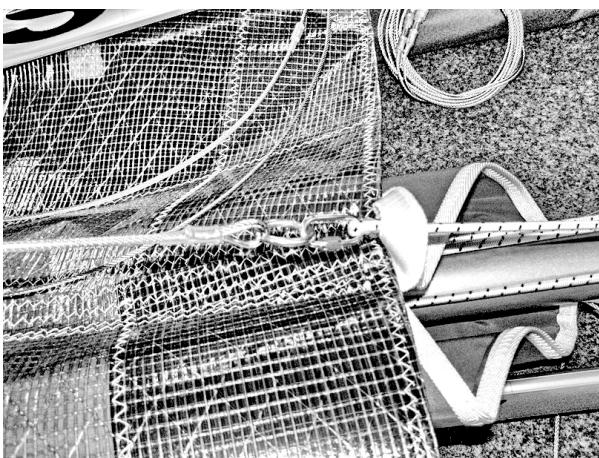


Figure 30



Figure 31

8. Unbolt the crossbar from the leading edge tube. Remove the crossbar ends from the sail. Slide the crossbar central joint along the keel tube towards the nose plate.

9. Detach washout bridles from the front wire bridle (fig. 31).

10. Slide the frame out of the sail. If you encounter resistance, stop and find out what is hanging up.

11. Fold the sail along its leading edge carefully. Put the sail in the glider bag, making sure the wider part

of the sail goes into the wider part of the glider bag and zip the glider bag up (fig. 32 and fig. 33).



Figure 32



Figure 33

12. Remove battens from the batten bag. Disconnect battens #1 and #2 as shown on the fig. 34, or simply unscrew the rear part of the batten on the newer models and put all battens back in to the batten bag.

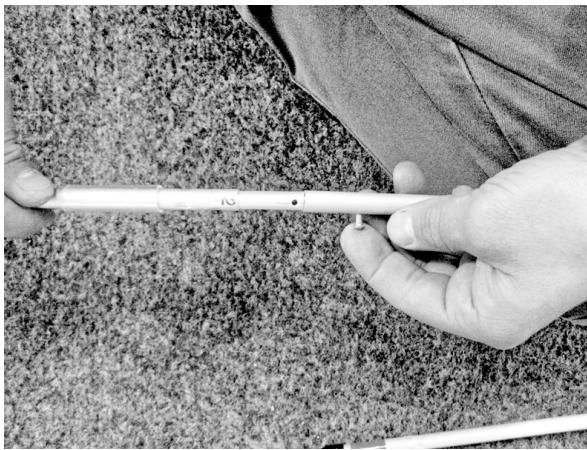


Figure 34

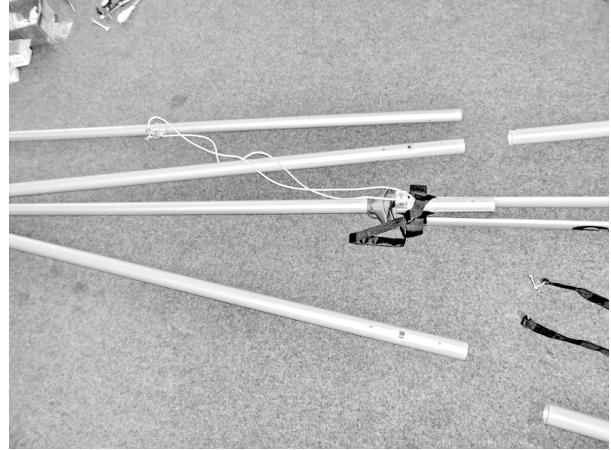


Figure 35

13. Detach the rear part of the keel tube. Disconnect leading edge tubes and crossbar tubes (fig. 35).

14. Fold lower control frame fittings as shown on fig. 36. Roll up all wires as shown on fig. 36 and fig. 37. Put protection bags on the control frame, the king post and the keel tube.

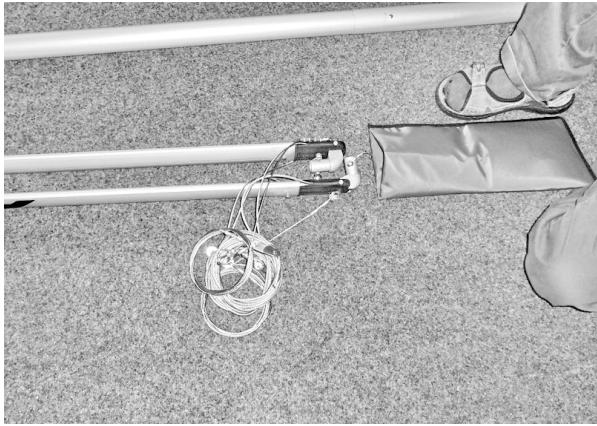


Figure 36



Figure 37

15. Rotate the control frame around its apex forward so, that the control frame lower fittings are directed towards nose plates of the frame (fig. 38).

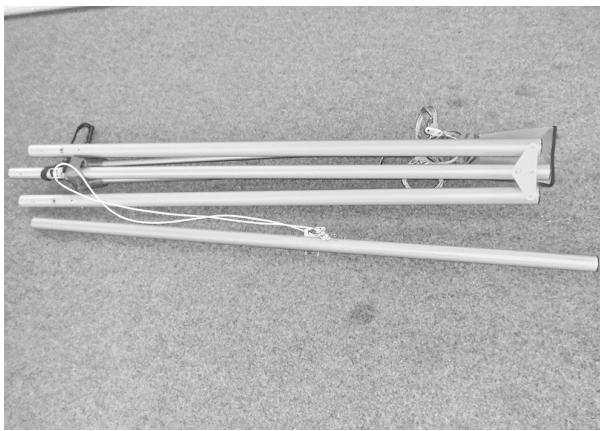


Figure 38

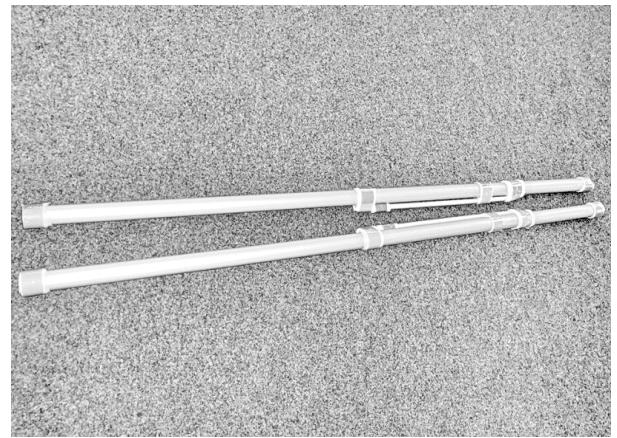


Figure 39

16. Wrap bearing faces of tubes with soft foam to protect them from possible damage during transportation (fig. 39).

17. Put two Velcro ties on the glider bag with the sail inside (fig. 40). Pack all components of the frame on top of it carefully, using pieces of soft foam as pads in places that stick out or interfere with each other in order to protect frame parts from damage during transportation (fig. 41).



Figure 40



Figure 41

18. Put some foam sheets on both ends of the frame package for additional protection. Wrap the frame package around in the glider bag and tie it up with remaining Velcro straps (fig. 42 and fig. 43).



Figure 42



Figure 43

19. Put the 2 meters transportation bag on the glider (fig. 44). Now your glider is ready for transportation (fig. 45).



Figure 44



Figure 45

Fox reassembling procedure from a 2 meters short package is reverse to its breakdown procedure. Please read written above manual and be sure you thoroughly understand it before reassembling your glider from a 2 meters short package.

14. FOX REASSEMBLING AFTER SHIPPING PROCEDURE FROM A 2 METERS SHORT PACKAGE (Fox-B and Fox-BM models only)

Please read and be sure you thoroughly understand this manual before reassembling your glider from a short package. Also re-read section "Fox breakdown for shipping procedure in a 2 meters short package (Fox-B and Fox BM models only)" and refer to photos from this section, if necessary, during reassembling procedure.

1. Same as for breakdown procedure, you will need an unobstructed area 2 m by 9 m (6x30 ft). Make sure the surface is clean. If it is abrasive, you should either cover it with protective tarp or be extremely careful not to scrape your sail.

Remove the 2 meters short transportation bag from the glider. Unfold the 6 meters bag with the sail in it and take the frame off the glider bag (fig. 46).



Figure 46

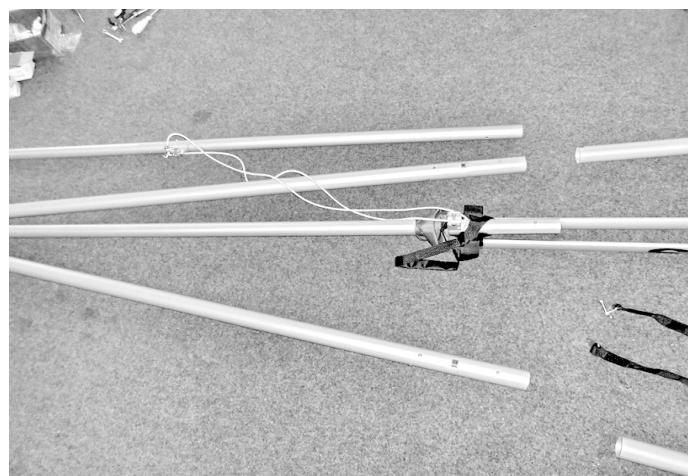


Figure 47

2. Check completeness of the frame parts and make sure they have no damage after transportation. Rotate the control frame around its apex backwards so, that the control frame lower fittings are directed aft (fig. 47). Connect the rear keel tube with the front keel tube. Align both tubes and than slide the rear keel tube forward, rotating as necessary, until the button spring in the rear keel tube engages securely into the hole in the front keel tube.
3. Identify the leading edges as to front, middle and rear. Identify them as left and right, checking the "right" / "left" markings in order to make sure you are mounting leading edges correct. Connect the middle leading edge with the front leading edge. Align both tubes and slide the middle

leading edge into the front leading edge, rotating as necessary, until the spring button in the middle leading edge engages securely into the holes in the front leading edge (fig. 48). Repeat for another half wing.

Connect the rear leading edge with the middle leading edge. Align both tubes and slide the rear leading edge into the middle leading edge, rotating as necessary, until the slot in the rear leading edge engages securely into the clevis pin in the middle leading edge. When the rear leading edge is fully engaged, you will not be able to rotate it. Repeat for another half wing (fig. 49).

4. Identify crossbar tubes as to left and right, checking the "right" / "left" markings, they have to be on top of the tubes.

Align front and rear crossbar tubes and slide the rear crossbar forward, rotating as necessary, until the spring button in the rear crossbar engages securely into the holes in the front crossbar. When the rear crossbar tube is fully engaged, you will not be able to rotate it.

5. Position the crossbar on top of the frame so that the central unit of the crossbar is on the keel tube and crossbar tubes are along the leading edges. Set the pullback wire inside the kingpost channel and connect it with the appropriate rubber cord using a carabiner.

6. Remove protection bag from the control frame. Unwind all wires and identify them as to front, rear and side. Check the wires are not damaged or tangled. Carefully inspect Nicopress sleeves and wires near Nicopress sleeves: there should be no damage nor visible deformation.

At this stage the frame is basically assembled and ready to install the sail.



Figure 48



Figure 49

7. Install the Mylar inserts in the sail (if they have been removed before). Make sure you install it right side up; the slit edge is at the front and on the bottom. The easiest way to install the Mylar is to push it into the pocket using a long lofting batten attached to the end of the Mylar insert, which is first inserted in the pocket.

You will have to stop from time to time to make sure the Mylar is properly lying flat in the pocket. Do not push the Mylar too far into the pocket. Make sure there are no folds in the Mylar, especially at the tips. Make sure the Mylar wraps in the proper direction to follow the sail around the leading edge as it enters the pocket.

8. Position the sail on the floor with the keel pocket down and the wings folded over so that the leading edges lie along the length of the root line, with the Mylar pockets lying on top.

9. The frame is most easily inserted into the sail with the rear leading edges installed. Rotate the washout struts forward, towards the nose (fig. 50).



Figure 50

10. Position the frame with the control frame facing down and with the rear end of the leading edges at the nose of the sail (fig. 50). Slide the frame into the sail through the nose opening, making sure that the leading edges of the frame pass properly into the leading edge pockets of the sail and don't get caught at the rear of the bottom surface near the root. As you feed the frame slowly into the sail, check periodically to see that none of the hardware is snagging on the sail. At certain stage don't forget to insert the keel tube into the keel pocket.

11. When the frame is fully inserted, slide the tip part of the sail on both rear leading edges forward, towards the nose as far as necessary to extract washout struts out through the washout holes in the sail.

12. Reach into the sail from the sail tip, find the sail mount strap and stretch it towards the aft end of the leading edge, using the handle on the mount strap. Position the sail mount strap to the end cap slot of the leading edge tube and make sure the sail is mounted properly. Close the safety Velcro around the leading edge tube.

13. Attach the rear sail mount strap to the keel tube. Attach the bottom rear wires to the keel tube.

14. Attach the kingpost to the keel tube channel using a clevis pin and secure it with a safety ring. Check that the routing of the sweep wires is right and outside the kingpost channel. Connect the hang loop to the kingpost. Put the back up hang loop on the keel tube (fig. 51) and pass it in the main hang loop. Connect both hang loops with Velcro.



Figure 51



Figure 52

15. Bolt the crossbar to the leading edge tube and splint the joint.

16. Feed the upper side wires through the corresponding holes in the sail. Bolt upper and lower wires to the crossbar, making sure that no wires are wrapped around a crossbar or leading edge and that no thimbles are cocked or twisted. Note that the upper side wire is attached to the front facing side of the crossbar and the lower side wire is attached to the rear facing side of the crossbar.

17. Insert the upper front wire into the sail (fig. 52) and attach it to the nose plate. Secure it with a safety ring.

18. Install the nose batten.

19. Connect washout bridles with the front wire bridle.

20. Feed the upper rear wire through the corresponding loop on the trailing edge of the sail. Connect the upper rear wire with the rubber cord, using its carabiner.

21. Set the glider up onto the control bar.
22. Spread the wings slowly and carefully, making sure that the sail rides forward as necessary at the nose without catching. Be careful: you can easily tear the sail open at the nose at this point.

Note: When spreading the wings with the sail mount screws been unscrewed check that the sail mount webbing is in proper position in the slot of the end cap of the leading edge # 3.

23. Tension the crossbar and install sail mount screws back in to the leading edge tubes.

Finish assembling the glider as written in the glider manual.

15. MAINTENANCE

This section contains a recommended schedule of periodic maintenance. None of the items in this section are a substitute for the continual and consistent practice of proper pre-flight inspections and immediate maintenance of any items on the glider, which require it. Safety requires that your glider be fully airworthy for every flight. Nuts and bolts must always be secure, safeties must always be in place, and damage to any part, which could compromise the airworthiness of the glider, cannot be tolerated. If you have a question about the need to repair or replace some part of your glider, feel free to contact your dealer or Aeros directly. It is not always obvious which items require attention and which may not. Minor dents or dings in a non-critical location on an airframe tube may not require any repair or maintenance. On the other hand, a wire that has been kinked one time can fail very quickly after that, and should be replaced immediately.

We recommend that you have all maintenance work done by your Aeros dealer.

EVERY SIX MONTHS

1. Check the sail washout as described in the last section.
2. Check your battens on a flat level floor against the batten diagram provided, and correct any that deviate from the pattern by more than 6 mm (1/4").
3. If you fly in a dusty or sandy environment, it will help to prolong the life of your batten pockets if you wipe each batten with a rag before you install it in the sail.
4. Have a complete inspection performed on the glider and replace any suspension system component that shows any wear, and any cable that shows any kinks, wear, damage, corrosion, etc.
5. Inspect all bolts for tightness, all safeties for proper installation and possible damage. Inspect plates and fittings for damage, holes in tubes for elongation.
6. Inspect the sail for wear, tears, UV damage, loose stitching, etc.
7. Lightly spray all zippers on the glider with silicone spray lubricant. Also spray your battens before you install them in the glider to lubricate the insides of the batten pockets. Do not use any other type of lubricant. Wipe off any excess silicone so that it does not attract dirt.
8. Inspect the outboard sprogs. If the sprogs have been loaded heavily, it is possible that the sprog tubes may have been bent.

EVERY YEAR

In addition to the normal six month service items, also perform the following:

1. Have the sail completely removed from the frame, and disassemble all frame components. Inspect every part of the glider for any damage or wear. Inspect the tubes for straightness and for signs of corrosion.
2. Anytime you have the sail off the frame, inspect all of the batten pockets and batten pocket terminations.

- Replace bottom side wires and hang loops.

SPECIAL CIRCUMSTANCES

1. Any time you suffer a crash or extremely hard landing you should have an "annual" inspection done on your glider to insure that you find all damaged parts. Following any hard landing be sure to inspect the apex hardware, the control frame legs and speed bar, and all control frame fittings for damage. Any time you replace a downtube or speed bar, you must carefully inspect all related fittings and replace any that are bent or damaged.

Hard landings may also impose very high loads on the sprogs and bridle lines. Inspect them accordingly.

2. If your glider is ever exposed to salt water you will need to have the glider completely disassembled in accordance with the recommended annual inspection procedure. All frame parts will need to be disassembled, including the removal of all sleeves and bushings, flushed liberally with fresh water, dried completely.

3. A wet glider must be dried before storing. Do not leave your glider wet for more than one day, because corrosion may result.

4. Take special care to avoid ice-covering the glider, particularly the leading edge in wintertime.

5. If you fly regularly at the coast in windy conditions, be aware that the sea mist spray can have the same effect. Hose down your glider after such flights, and keep a special lookout for corrosion.

6. Keeping your sail clean will extend the life of the cloth. When cleaning the entire sail you should generally use only water and a soft brush. You may clean small spots or stains with any commercial spot remover that is labeled for use on polyester.

A NOTE ABOUT CABLES AND CABLE MAINTENANCE

The cables which support the glider's airframe are critical components of the glider's structure, and must be maintained in an airworthy condition. It is a general practice in the design of aircraft structures to design to an ultimate strength of 1.5 times the highest expected load in normal service.

Hang glider cables, like other structural components on the glider, are typically designed with a structural safety factor of only about 50% above the expected maximum load. No significant loss in cable strength can be tolerated.

A cable with even a single broken strand must be replaced before the glider is flown again. A cable which has been bent sharply enough to have taken a permanent set must also be replaced immediately.

Some degree of fatigue due to repeated bending of cables is almost unavoidable in an aircraft that is assembled and disassembled with every flight. Bottom side wires are subject to the highest loads in flight, and are therefore the most critical. This is why we recommend that these wires be replaced annually, even if there is no known damage.

CHECKING THE SAIL WASHOUT

- Fully set up the glider on a reasonably level surface.
- Place three equal supports, about 1.7 m (5.5 ft) tall, under the each leading edge tube-cross tube junction and in place behind the connection of rear bottom cables to a keel tube.
- Tie a lightweight string tightly across the wing from the inner of the supported battens to the corresponding batten on the other wing.
- Measure the height of each thread relative to the top of the keel tube. The results should be as follows:

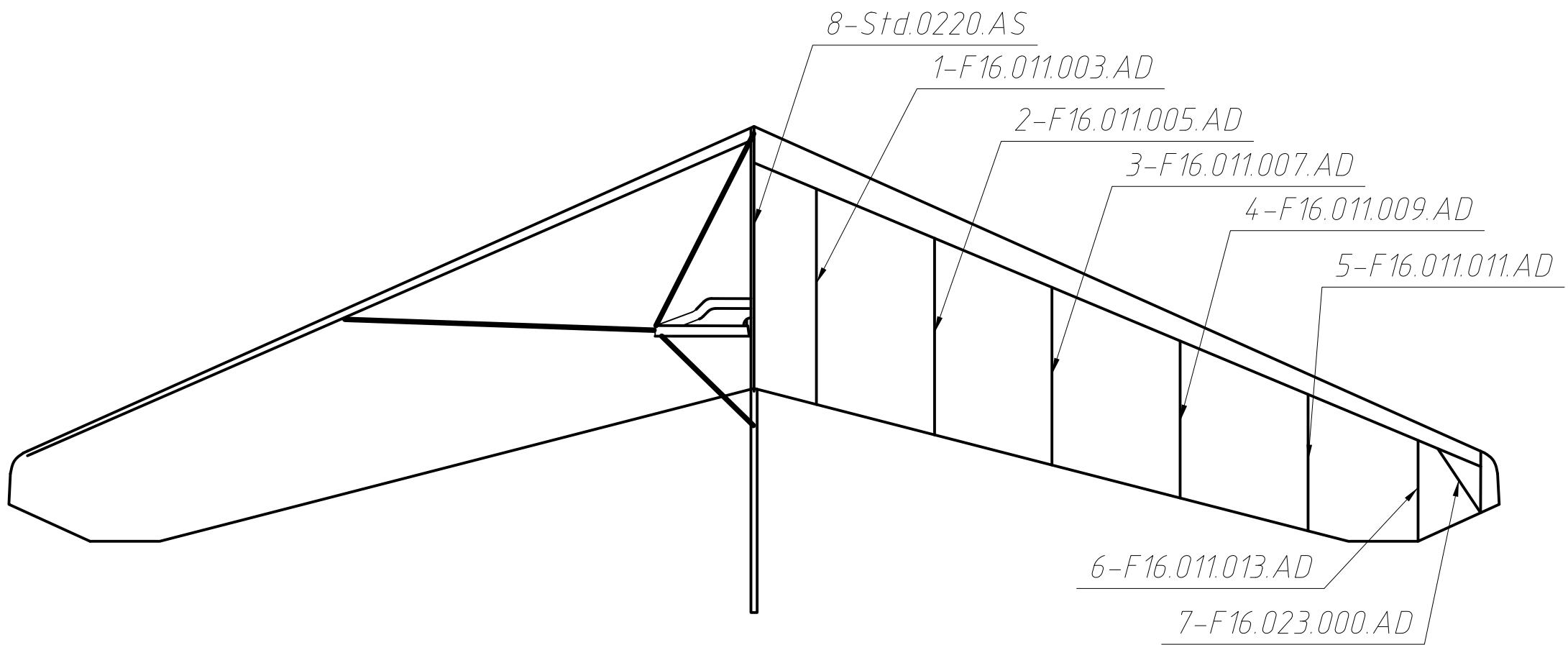
Fox-16	
Batten number	Sail height above keel tube, mm
1 - 1	258
2 - 2	375
3 - 3	359
6 - 6	335

If measured distances are less than those of written in the table above, the glider should not be flown until re-adjusted. The tolerance is \pm 20 mm. If measured distances differ from those of written in the table for 20 mm per side, the glider should not be flown. In such case consult your local dealer.

16. IN CLOSING - A FEW FINAL WORDS ON YOUR SAFETY

- Hang gliding is an active air sport with associated risks. Your safety can be greatly enhanced by following a few simple rules:
- Your glider is delivered to you ready to fly. Do not make any adjustments, which are not described in this manual.
- If you are in doubt about any aspect of your glider, you should consult your dealer or Aeros for advice.
- Only fly after having attended a good school, recognized by your hang gliding federation.
- Fly a glider suited to your level of ability. A new risk may arise when you first fly a new type of the glider.
- The reactions of your new glider may well differ from those of the glider you were used to. In order to keep this risk low, we recommend that you gradually become familiar with your new glider.
- Before every take-off always do both an assembly check and a pre-flight check.
- Do not take off if the sail is wet, especially the leading edge, as the stall speed will increase significantly.
- ***Always fly with a dry sail!***
- A wet glider must be dried before storing. Do not leave your glider wet for more than one day, because corrosion may result.
- Never fly alone.
- Do not attempt towing of any kind, unless you have attended a recognized towing school.
- Don't push your luck. It is your responsibility to know the limits of your glider and the limits of your own experience. Remember, that ultimately your safety is your responsibility.
- Fly only in places, which are suitable for hang gliding.
- With proper care and maintenance, your glider will retain a high level of airworthiness for many years.

Have fun. Fly safely.
Aeros Team



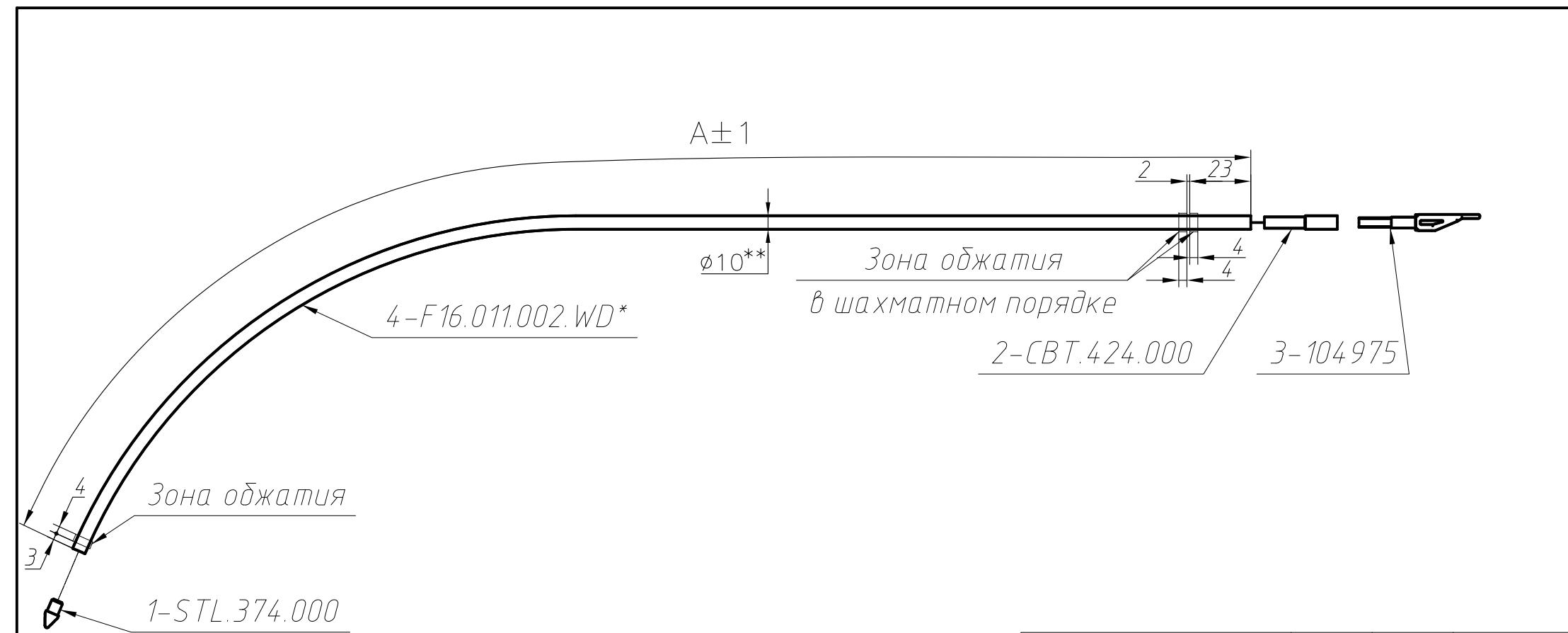
AEROS

by:	Date:

F16.010.000.AD
Battens Set (Комплект лам)

B95

Scale:



1. *Номера деталей указаны для латы F16.011.003.AD

2. Неуказанные предельные отклонения по ОСТ 100022-80.

3. **Размер для справок.

4. Покрытие для деталей БЧ: Ан.Окс.нв.

5. Деталь поз.2 вставляется в дет. поз.4 и фиксируется обжатием дет. поз.4

6. Клеймить и маркировать по ОПИ-63-79 на дирке.

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.005.AD	2162	2	2
.007.AD	1833	2	2
.009.AD	1550	2	2
.011.AD	1285	1	2
.013.AD	931	1	2

AEROS

F16.011.000.AD
Top Battens №1-6 (Верхние латы №1-6)

Scale:

F16.100.000.AD

Перв. примен.

Справ. №

Подпись и дата

Инв. № подп.
Подпись и дата
Взам. инв. №
Инв. № дубл.

15-F16.650.000.AD

5-F16.300.001.AD

10-F16.610.000.AD

8-F16.450.000.AD

12-F16.630.000.AD

13-F16.635.000.AD

1-F16.150.000.AD

4-F16.250.000.AD

7-F16.350.000.AD

2-F16.200.000.AD

14-F16.640.000.AD

2-F16.200.000.AD

9-F16.600.000.AD

32-F16.501.000

3-F16.220.000.AD

D

B

C

E

F

H

G

19-STD.0344.AS

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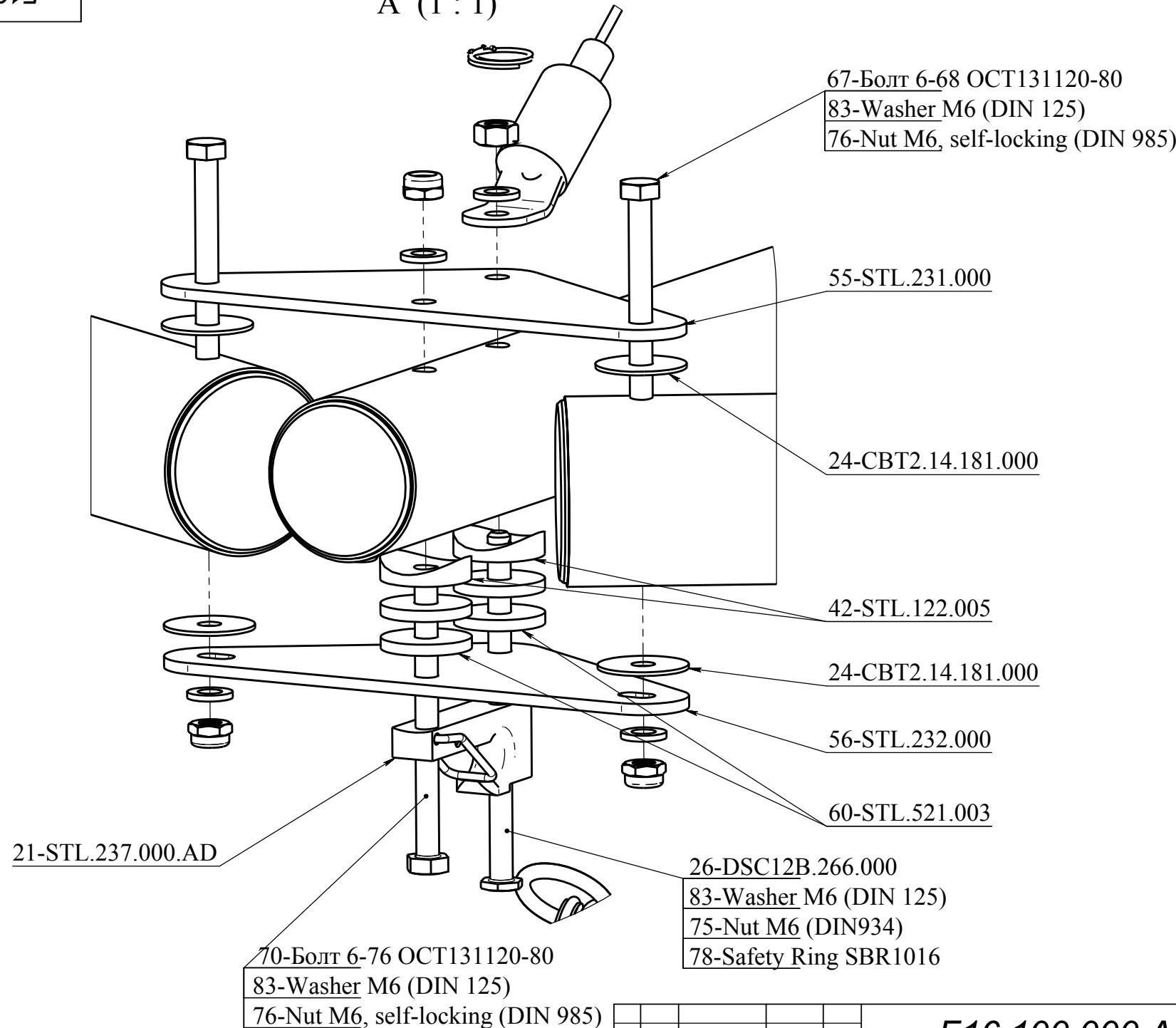
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Нач. КБ			
Н.контр.			
Утв.			

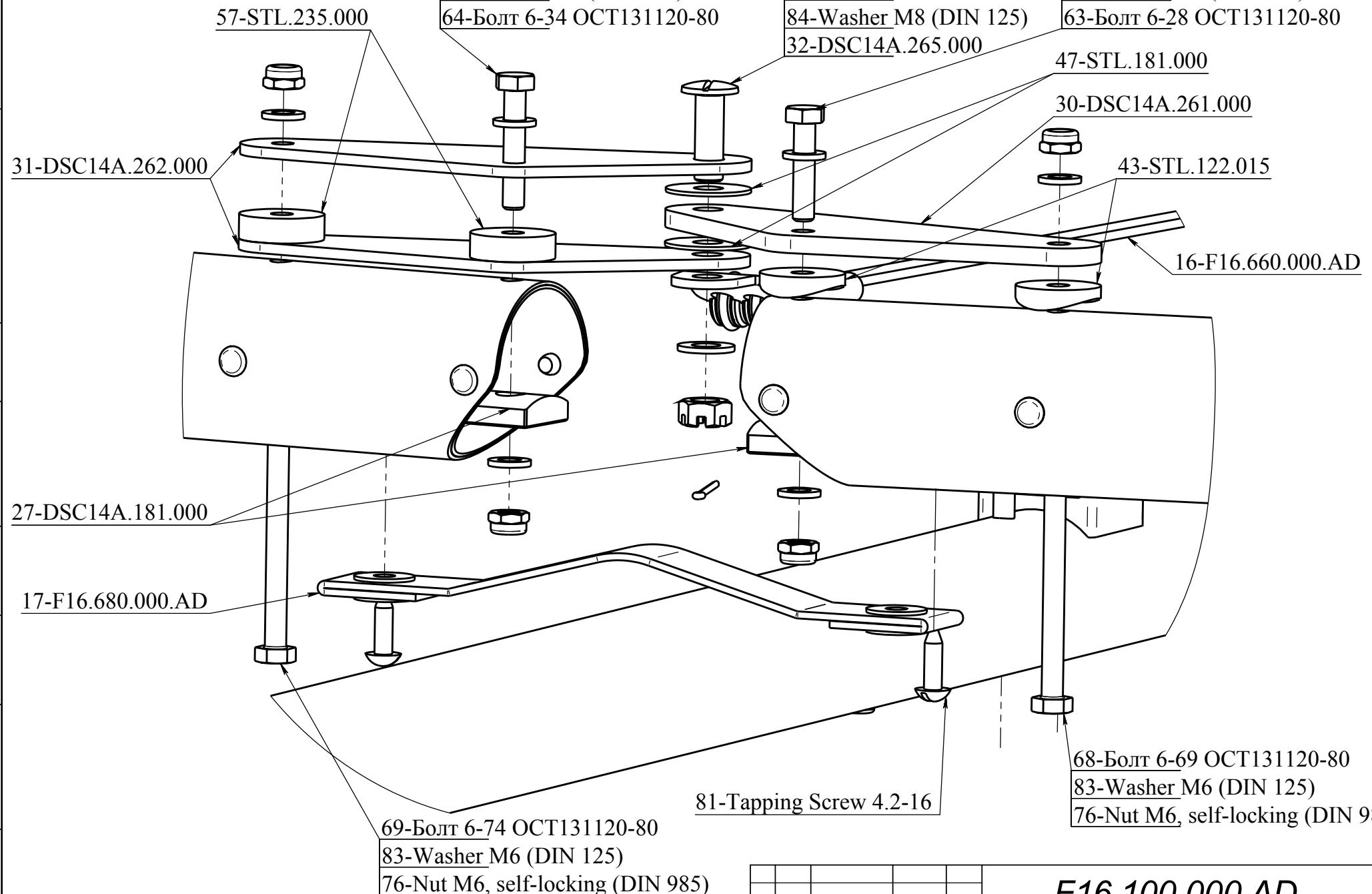
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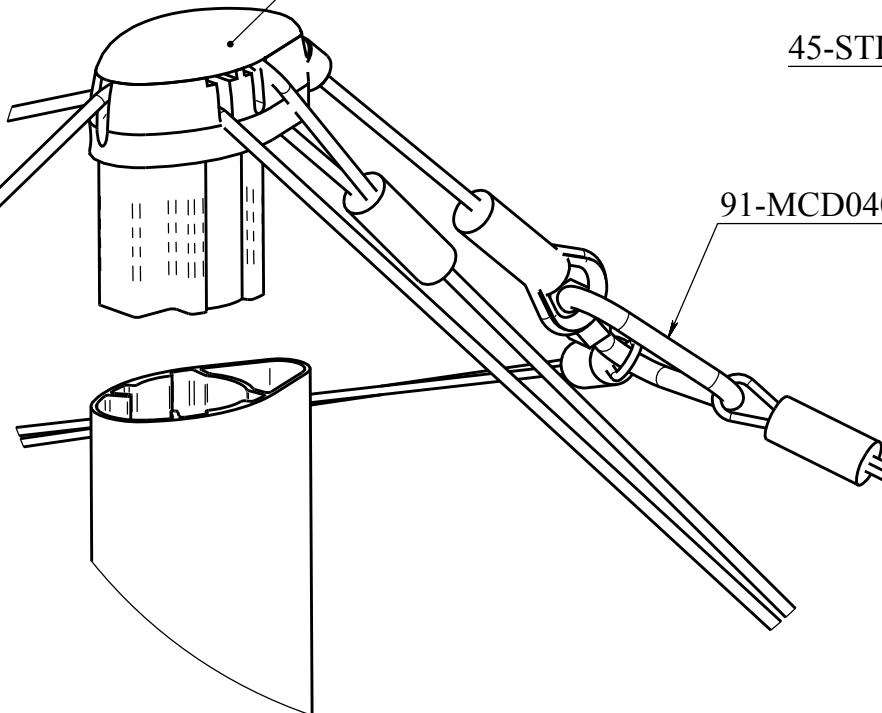
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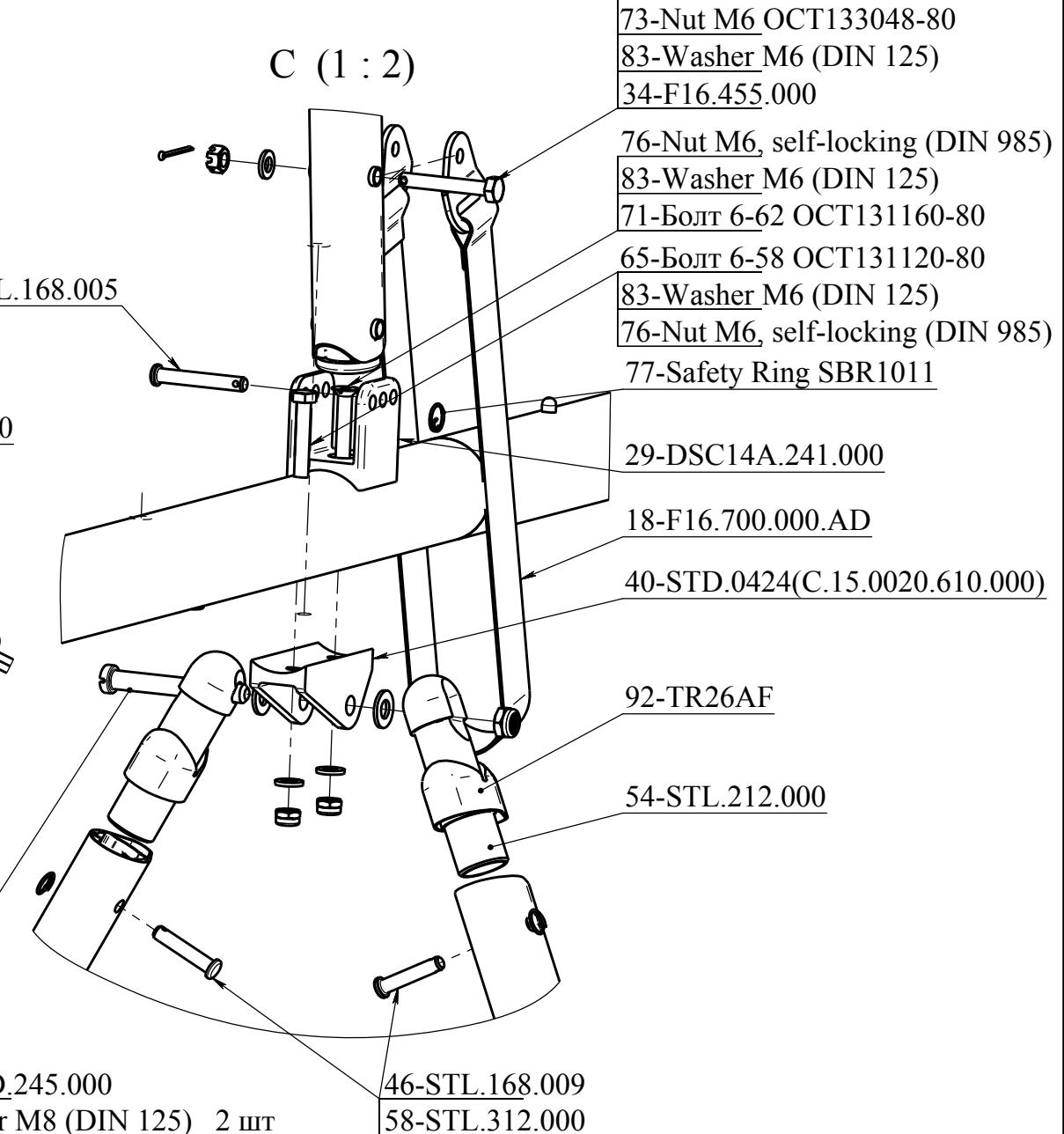
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91-MCD040

36-OPT.D.245.000
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74-Nut M8 OCT 133059-80



80-Splint 2.0 x 25 SBS2025
73-Nut M6 OCT133048-80
83-Washer M6 (DIN 125)
34-F16.455.000

76-Nut M6, self-locking (DIN 985)
83-Washer M6 (DIN 125)
71-Болт 6-62 OCT131160-80
65-Болт 6-58 OCT131120-80
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77-Safety Ring SBR1011

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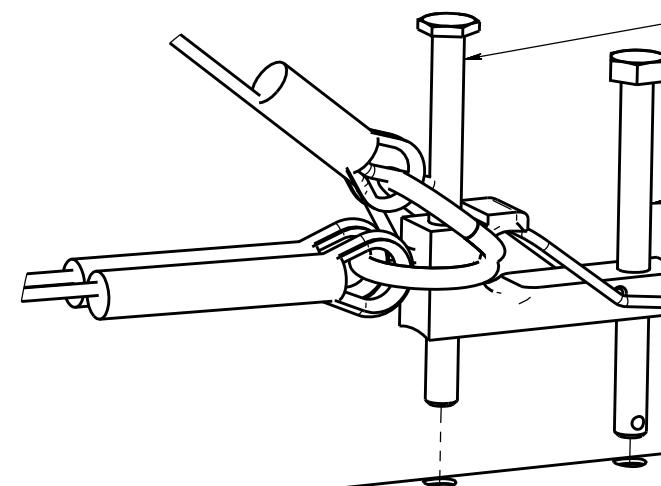
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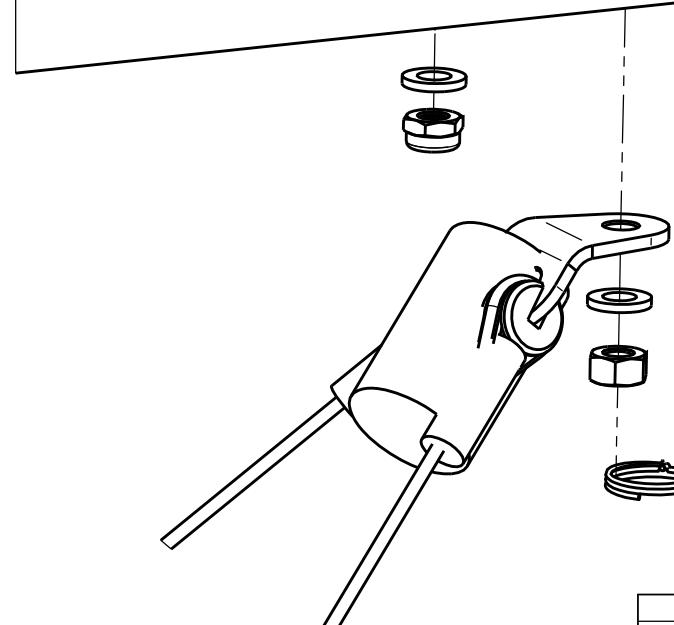
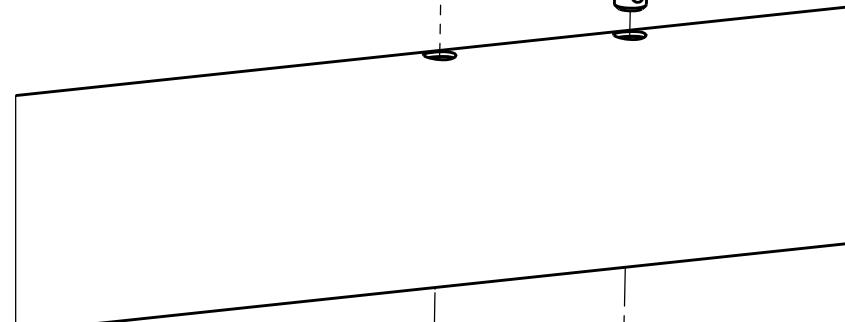
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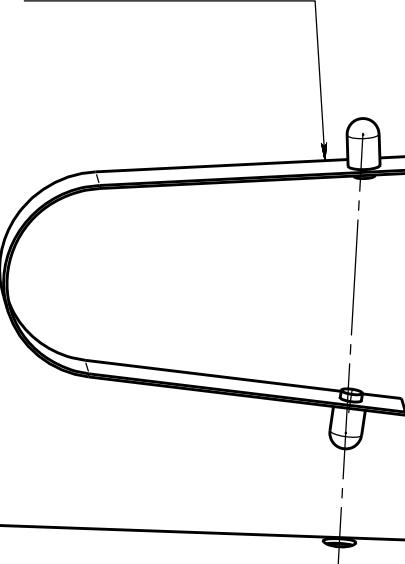
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76-Nut M6, self-locking (DIN 985)

33-F16.360.000
83-Washer M6 (DIN 125)
75-Nut M6 (DIN934)
78-Safety Ring SBR1016

21-STL.237.000.AD



20-STL.116.000.AD



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75-Nut M6 (DIN934)

78-Safety Ring SBR1016

25-DSC12A.260.000

59-STL.521.000

30-DSC14A.261.000

39-STD.0326

77-Safety Ring SBR1011

66-Болт 6-66 OCT131120-80

83-Washer M6 (DIN 125)

76-Nut M6, self-locking (DIN 985)

38-STD.0001

84-Washer M8 (DIN 125)

72-Nut M8 OCT133042-80

80-Splint 2.0 x 25 SBS2025

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19-STD.0344.AS

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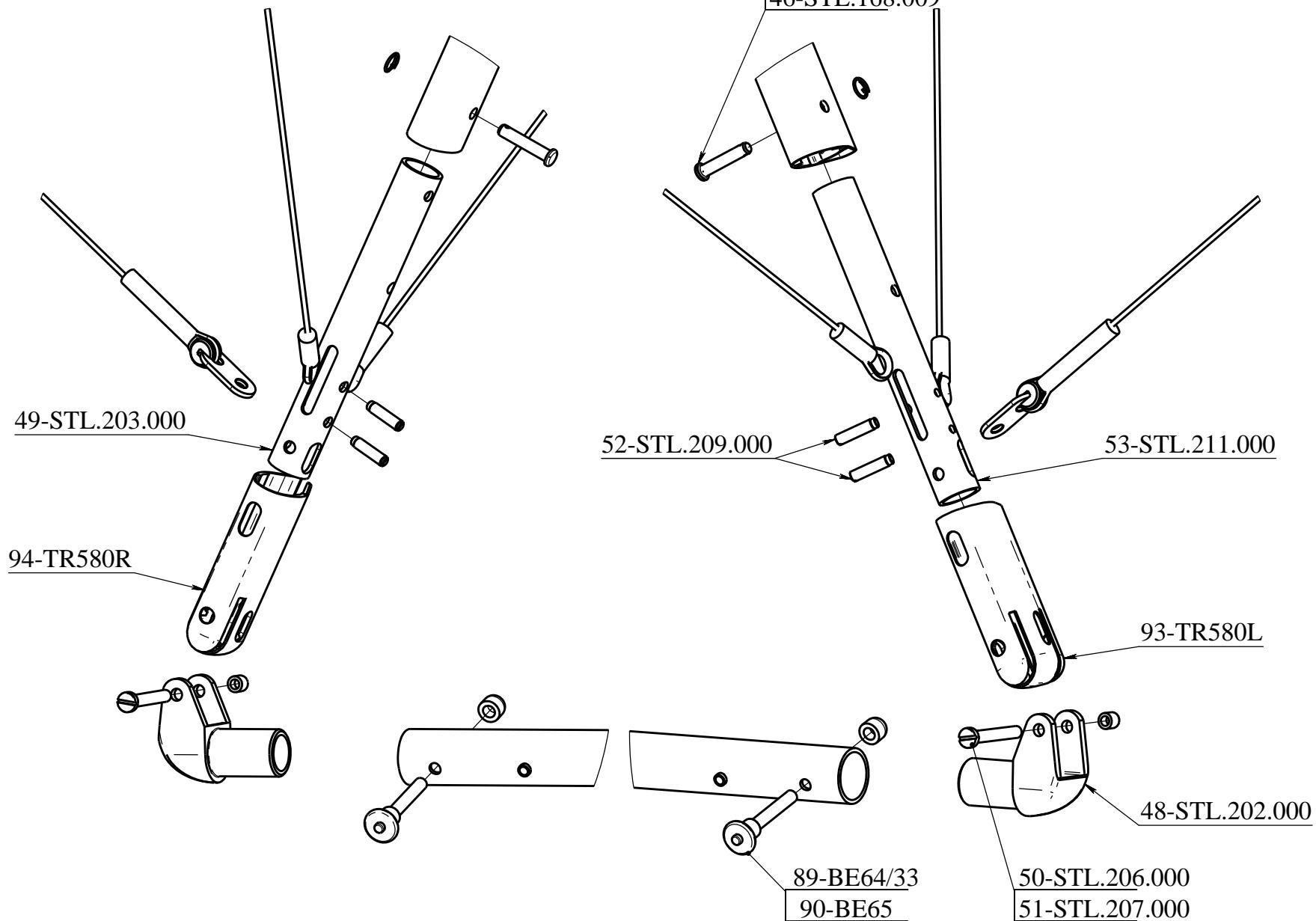
79-Safety Ring SBR1519

82-Tapping Screw 4.2x13

44-STL.132.000

87-AL051-500

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Изм.	Лист	№ докум.	Подп.	Дата

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Кол. на изделие - 1шт.

Перв. примен.

Справ. №

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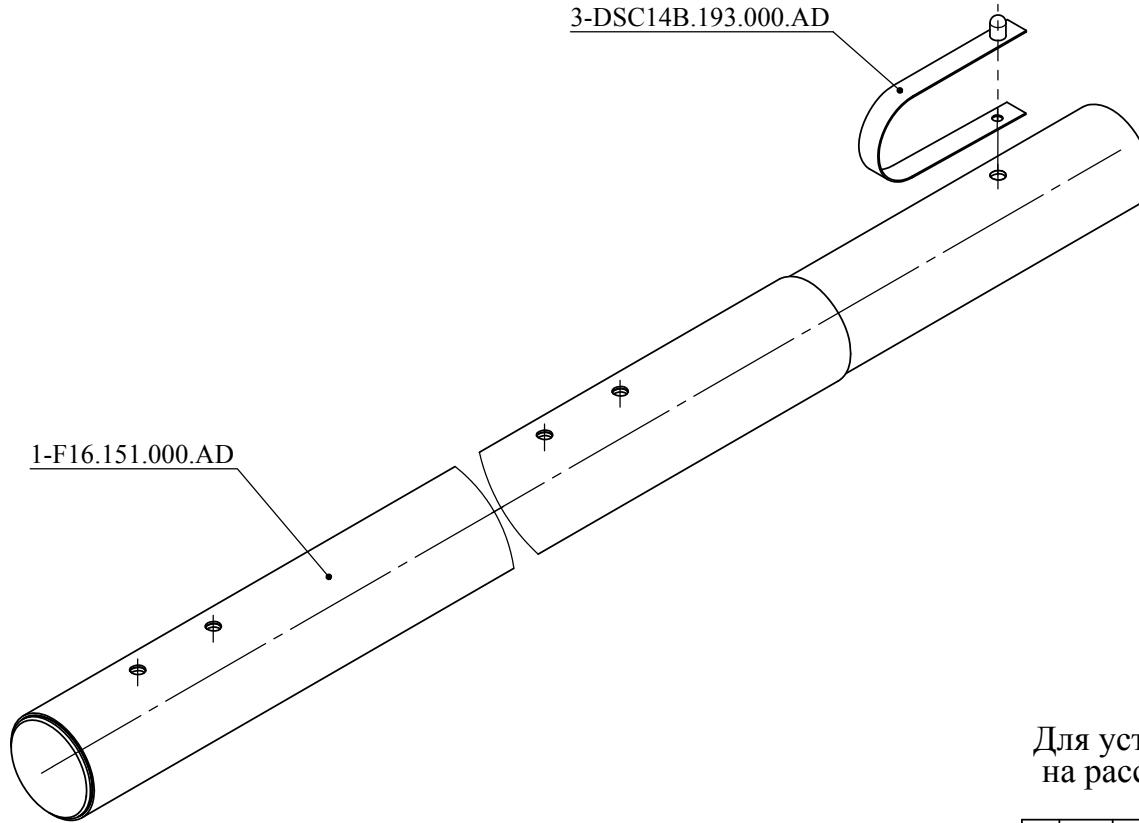
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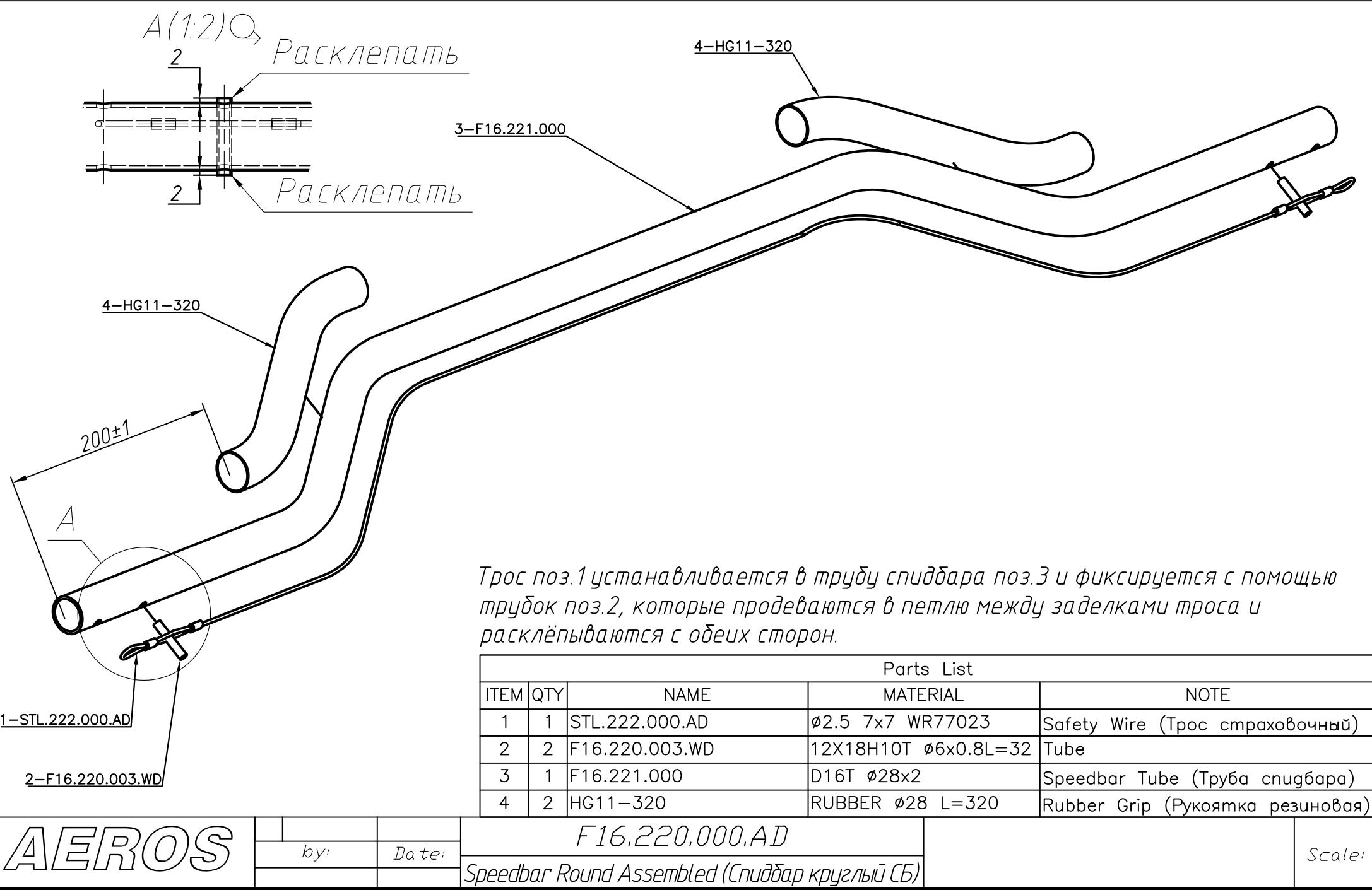
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Для установки детали поз.4 в детали поз.5 сверлится отв. ϕ 10.2
на расстоянии 15мм от торца крышки.

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2	F16.152.000.AD	Keel Tube №2 (Килевая труба №2)		1		Пров.				
3	DSC14B.193.000.AD	Button Spring One-sided (Фиксатор односторонний)		1		Т.контр.				
4	F16.150.003.WD	Трубка 10x1x38.5	Труба Д16Т 10х1 ОСТ192096-83	1		Нач. КБ				
5	STL.101.007	Заглушка	Полиамид ПА-12-10,6 ОСТ-05-42	1		Н.контр.				
						Утв.				

"AEROS"



F16.350.000.AD

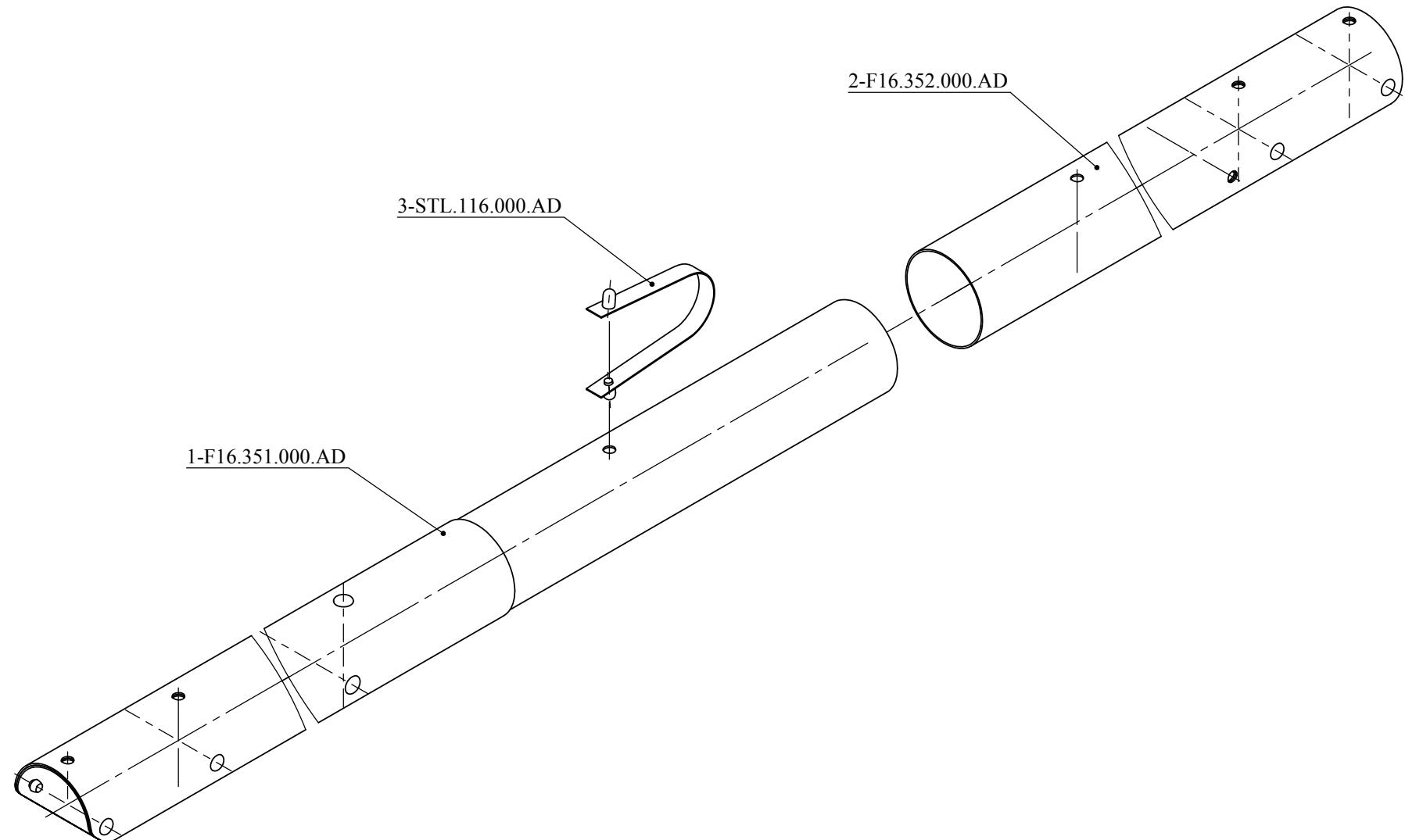
Кол. на изделие - 2шт.

Перв. примен.

Справ. №

Инв. № подл. Взам. инв. № Инв. № дубл. Подпись и дата

Инв. № подл. Подпись и дата



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	Т.контр.			
	Нач. КБ			
	Н.контр.			
	Утв.			
Лист 1		Листов 1		
"AEROS"				

Поз.	Обозначение	Наименование	Кол.
1	F16.351.000.AD	Cross-beam №1 (Поперечина №1)	1
2	F16.352.000.AD	Cross-beam №2 (Поперечина №2)	1
3	STL.116.000.AD	Button Spring (Фиксатор)	1

F16.700.000.AD

Перв. примен.

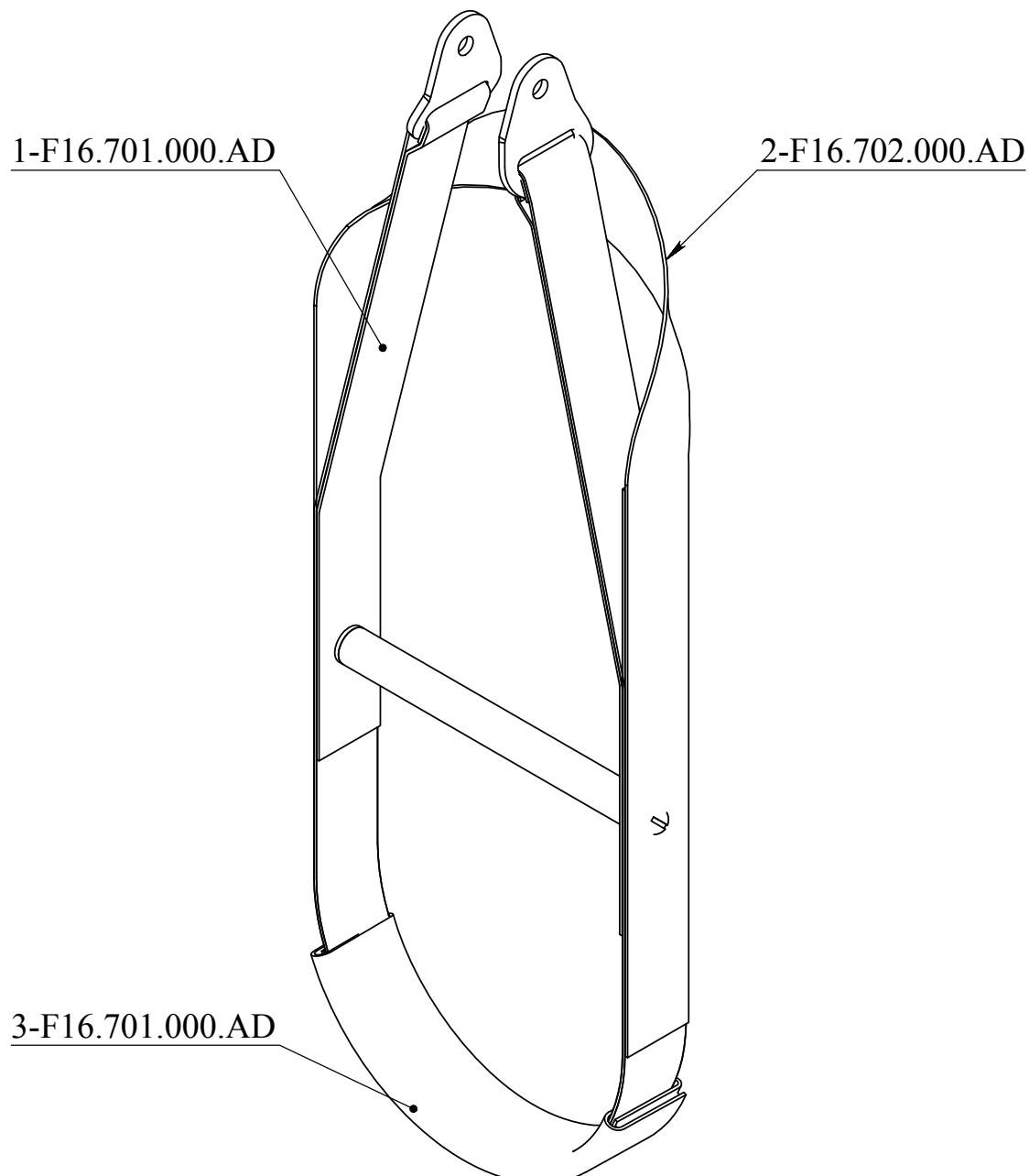
Стр. №

Инв.

Взам. инв. №

Подпись и дата

Инв. № подл.



Поз.	Обозначение		Наименование			Кол.
1	F16.701.000.AD		Main Strap (Основная лямка)			1
2	F16.702.000.AD		Safety Strap (Лямка страховочная)			1
3	F16.703.000.AD		Hang Strap Cover (Чехол лямки подцепа)			1

F16.700.000.AD

Hang Strap (Лямка подцепа)

Лит.	Масса	Масштаб
		1:2

Лист 1 Листов 1

"AEROS"