NANOLIGHT TRIKE WING

ADAM-13T

OWNER / SERVICE MANUAL

Manufactured by:

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Thank you for purchasing an Aeros wing for your nanolight trike.

The ADAM-13T wing has been designed especially for Flylight Airsports and Aeros sub 70 nanolight trikes, using a Fox-13T nanolight trike wing as a base.
It is a light weight wing designed to comply with sub 70kg aviation regulations. These regulations allow hang glider pilots to fly sub 70kg aircraft on wheels with a simple powered endorsement, which means there is no need to do a full ultralight licence.
Minimum amount of battens for maintaining the airfoil has resulted in relatively low weight and fast set up time.
The ADAM-13T has double surface with relatively large percentage of undersurface which gives the wing more performance compare to Fox-13T wing.
The wing is very well balanced in both roll and pitch, and because of its excellent handling, it is real pleasure to fly.

Please read and be sure you thoroughly understand this manual before flying the ADAM-13T wing. Be sure that you thoroughly familiar with the wing 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 wing. 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 directly.

We wish you 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

Wing type	ADAM-13T
Sail area, sq.m. (sq.ft.)	13 (140)
Wing span, m (ft)	8.65 (28.4)
Aspect ratio	5.75
Nose angle, deg	121
Number of upper sail battens	15
Number of bottom sail battens	4
Stall speed, kmph (mph)*	37 (23)
Range of operating overloads, g	+4/-2
Max. clip-in weight, kg (lb)	155 (342)
Weight without bag, kg (lb)	26.1 (57.5)

* - with maximum wing load

WARNING
THE ADAM-13T IS DESIGNED FOR FLYING WITH A NANOLIGHT TRIKE ONLY. DO NOT USE ADAM-13TWING FOR FREE FLYING.

Flight operation of the ADAM-13T 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 bank angle will not exceed 60 degrees.

Aeros recommends that no attempt should ever be made to deliberately spin this wing.

The stability, controllability, and structural strength of a properly maintained ADAM-13T have been determined to be adequate for safe operation when the wing 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 ADAM-13T outside of the above limitations may result in injury and death.

Wind Limitations:
Maximum Cross Wind Component - 2m/s;
Maximum Wind Strength - 8m/s.

Flying a nanolight trike with the ADAM-13T wing in strong or gusty winds or turbulence may result in loss of control of the wing, which may lead to injury and death.

CAUTION
MOISTURE ON THE WING CAN INCREASE STALL SPEED AND SHOULD BE REMOVED PRIOR TO TAKE OFF.

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

2. ADAM-13T REASSEMBLY AFTER SHIPPING PROCEDURE

1. Lay the wing in its transportation bag (packed in the 4 meters long package) on the ground.

2. Unzip the bag. Undo the Velcro straps. Remove the batten bag, the control bar and the outer leading edge tubes # 3 from the bag.

3. Unfold the sail along the leading edge to its full length. Attach the outer leading edge tubes # 3 to the front leading edge tubes # 2 according to the markings (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 leading edge tube #3, 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 leading edge tube #3 forward, allowing the sprog end to come outside the sail at the corresponding hole.
Align the leading edge tube #3 properly so that the sprog is on the inside of the leading edge, and slide the outer leading edge forward, rotating as necessary, until the slot in the leading edge tube #3 engages securely into the clevis pin in the front leading edge tube. When the leading edge tube #3 is fully engaged, you will not be able to rotate it.

Figure 1

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. (fig. 1).

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

6. Install the wing tip bags.
Put battens on top of the wing between Mylar pockets in the front part of the wing.
Place Velcro ties around the wing.
Put the speed bar between leading edges in the rear part of the wing.
Put the wing bag back on and zip it up.

3. ADAM-13T 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 wing on the ground or floor, unzip the bag and remove the Velcro ties. Remove the speed bar and battens from the wing. Remove the protection wing tip bags.

2. Unscrew the sail mount screws from the leading edges # 1.

3. 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 exposed ends of the inner leading edge tubes # 3, and do the same for the outer leading edge tubes # 2 in order to prevent sail damage during transportation.

4. Check to see that the leading edges are marked “Left” and “Right”. If they are not, mark them with an indelible marker.

5. Carefully fold the outermost area of the sail over onto the innermost area of the sail, place Velcro ties around the wing and put on the wing bag, turning the bag 180 deg (i.e. matching the front part of the bag to the rear part of the wing).

6. Zip up the wing bag zipper.

4. ADAM-13T SET-UP PROCEDURE

1. Lay the wing on the ground, with the bag zipper up and the nose of the wing pointing into the wind.

2. Undo zipper, undo Velcro ties and take out the control bar.

3. Lift and separate the control frame uprights.
Remove the quick pin from the corner bracket. Insert the corner bracket all the way into the control bar.

Install the quick pin bolt (from front to rear), securing the bracket to the control bar.

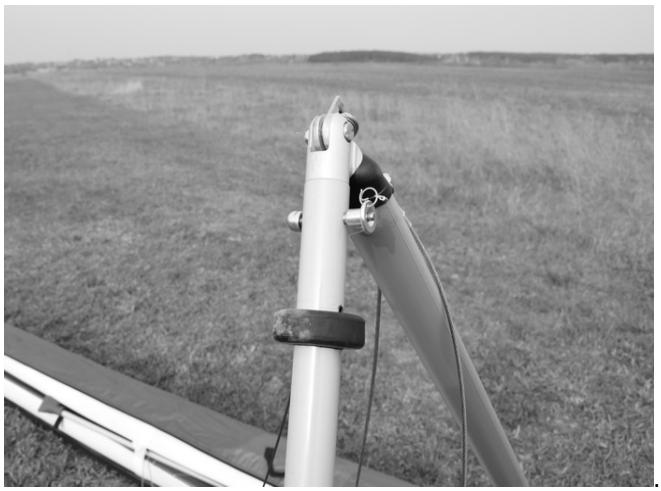


Figure 2

Figure 3

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

4. Flip the wing upright on the control bar. Try to set the control bar on level ground. Remove the wing bag, protection pads and all the Velcro sail ties. Remove the battens set. Do not remove the leading edge tip protection bags at this time.

5. By lifting up the nose batten, push the nose batten fully back into the sail so that the V-tip of the batten rests on top of the keel tube (fig. 4).

Figure 4

Figure 5

6. Install the kingpost (fig. 5), making sure that sweep wires positioned on either side of the kingpost mount (fig. 6). When installing the kingpost make sure the top wires and washout bridles are not twisted or tangled (fig. 7).

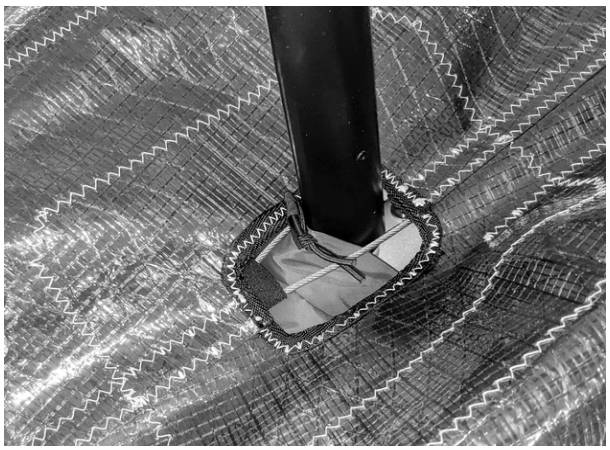


Figure 6

Figure 7

7. Attach the bottom front wires to the hook on the bottom nose plate (fig. 8).

Figure 8

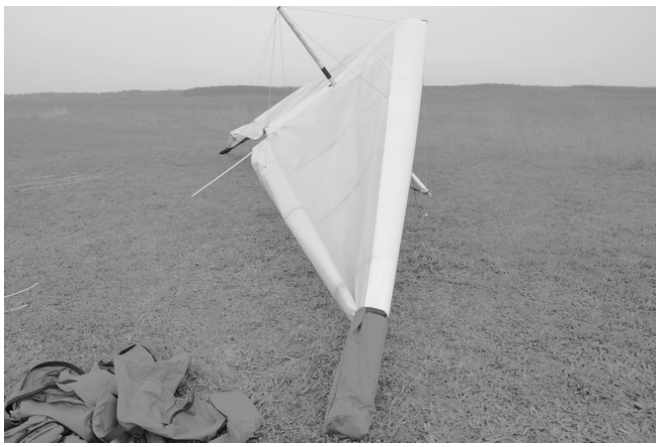


Figure 9

If the keel tube extension has not been installed in the keel tube there is a time to install it now. The ADAM-13T wing has unique design keel tube extension. Make sure you install it properly and all the way in to the front and rear plastic supports in the keel tube.
Now you will have the wing resting on the keel tube with the wingtip protection bags on (fig. 9).

8. The next step is installing the top surface battens. 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 their front tips, and at about the 60% of the 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 the red marked battens go in the left wing and green marked battens in the right wing. Battens are numbered from the center outwards, and the longest batten in ADAM-13T is designated as the "No. 1" batten. Install the cambered battens in the sail, leaving out the shortest three on each side for now.

9. Spread the wings all the way and check all cables for any twisted thimbles or tangled cables. Open the double surface zipper and find auxiliary tensioning rope. At the rear inside of the keel pocket find the sweep (cross tube tensioning) wires handle. Take the auxiliary tensioning rope in one hand and sweep wires handle in the other hand. Pull the auxiliary tensioning rope and the sweep wires handle rearwards, checking that the sweep wires are not twisted and not wrapped around the keel. Attach the shackle of the sweep wires to the hook, placed on the keel tube (fig. 10). Stow the auxiliary tensioning rope inside the double surface and close the undersurface zipper.

WARNING
IN-FLIGHT DISENGAGEMENT OF THIS ATTACHMENT WILL CAUSE A COMPLETE LOSS OF STRUCTURAL SUPPORT OF THE WING AND A TOTAL LOSS OF CONTROL. NEVER ATTACH THE PULL HANDLE WEBBING OF THE SHACKLE TO THE HOOK, EVEN TEMPORARILY!

Figure 10

Figure 11

10. Remove the keel tube extension and support the wing under the keel tube with it as shown on the figure 11.

11. Remove the wingtip protection bags and install the last three cambered outboard top surface battens.

12. The next step is installing the batten tips into the hems of the trailing edge (fig. 12). 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. To open or close the batten tip lever, press firmly on the undersurface of the tip lever to disengage or engage it.

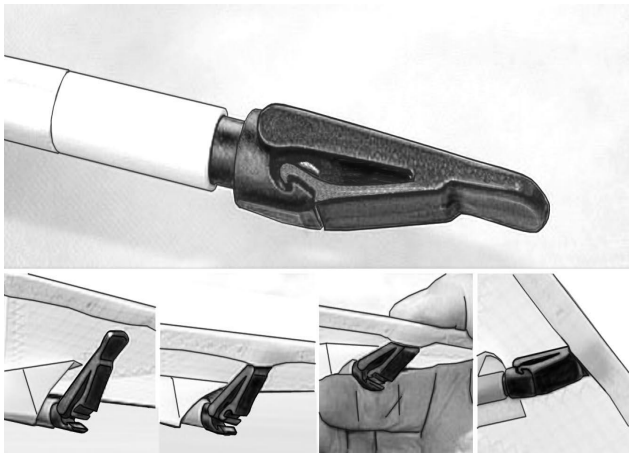


Figure 12

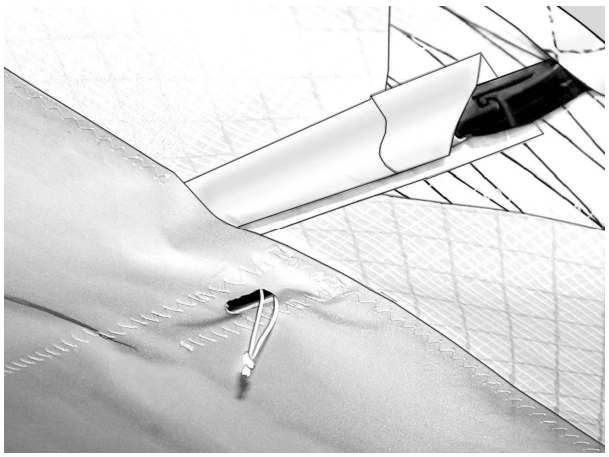


Figure 13

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

Never insert or remove battens with the crosstube 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.

13. Install the bottom surface battens (fig.13).

14. Install the trailing edge carbon battens in the trailing edge pockets as shown on the figure 14. Slide the carbon batten rearwards until it is installed into the hem of the trailing edge completely (fig. 15).

Figure 14

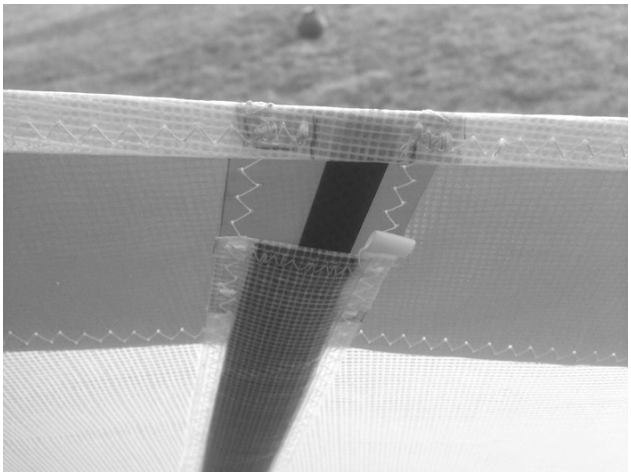


Figure 15

15. Install the lever battens as shown on the figures 16 and 17.

Figure 16

Figure 17

16. The next step is to install the outboard sprogs. To do so swing the sprog away from the leading edge and push it towards the leading edge in to the receptacle (fig. 18). Make sure the sprog sits all the way in the sprog receptacle.

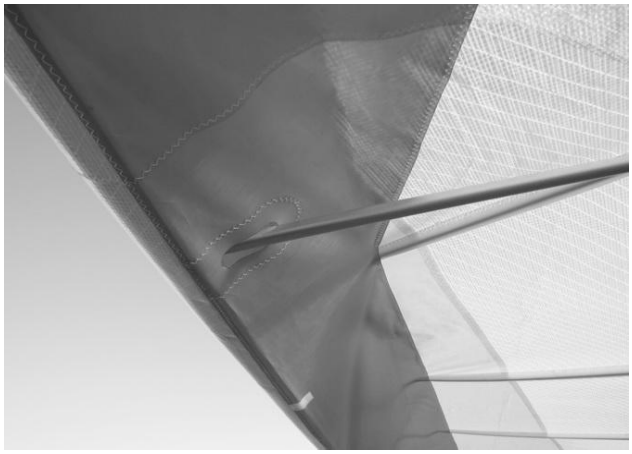


Figure 18

Figure 19

17. Remove the keel tube extension, supporting the wing under the keel tube and lower the wing on its nose.

18. Install the hang bracket (fig. 19, shown for Fox-13T). Place a plastic cube on the keel tube between the two stop rings. Then mount the U-plate, fit the two bolts, tighten the nuts and secure with the safety rings.

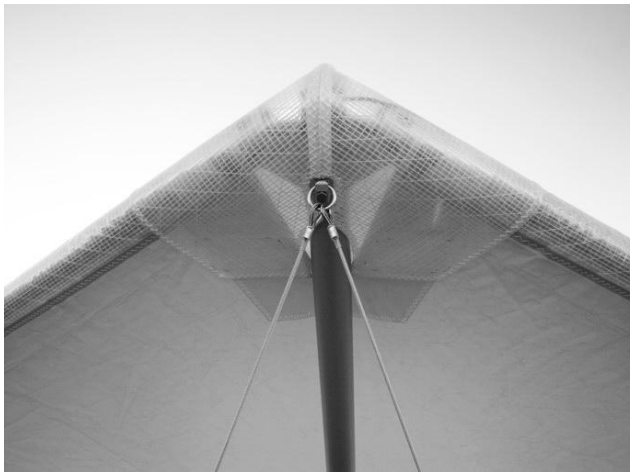


Figure 20

19. After the wing is attached to the trike, having ensured that the keel batten is correctly positioned and resting with its nose on the keel tube, install the nose cone by first attaching it to the upper surface of the wing and then by pulling the lower edges of the nose cone backwards to the lower surface (fig. 20).

WARNING
DO NOT FLY WITHOUT THE NOSECONE!

5. PREFLIGHT PROCEDURE

Conduct a complete preflight inspection of the wing, 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 tangs. 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 (fig. 21).

Figure 21

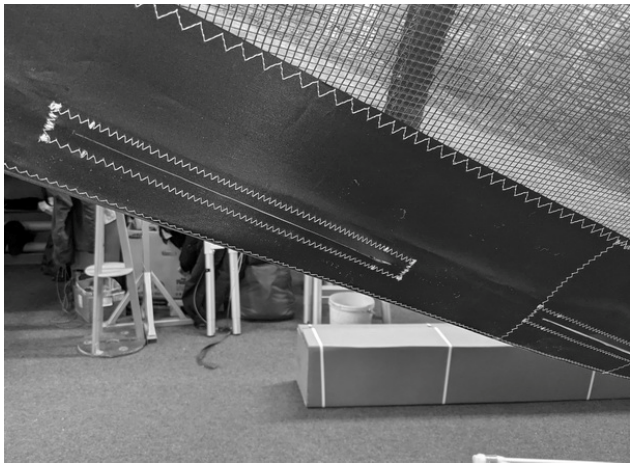


Figure 22

Open the LE tube #3 to LE tube #2 junction access zipper and check that the LE tube #3 is properly engaged in to the LE tube#2. Close the access zippers (fig. 22).

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 trailing edge carbon batten is properly installed.

Check that the outboard sprog is properly secured in position supporting the last outboard cambered batten.
Check that the washout bridles are properly engaged (fig. 23).

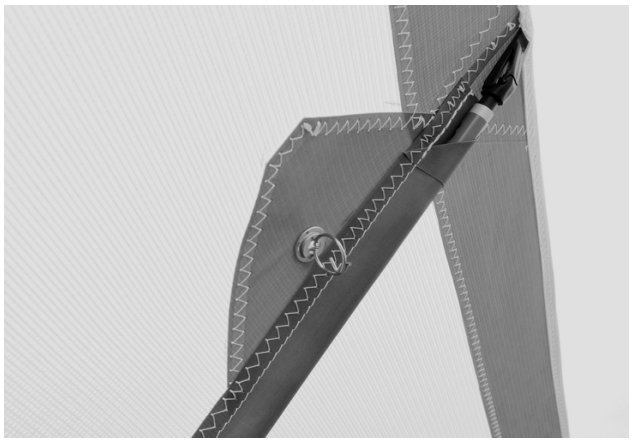


Figure 23


Figure 24

From the rear keel

Check that the shackle of the sweep wires is properly secured on the hook on the keel tube (fig. 24).

Check that the two innermost washout bridles are properly engaged (fig. 25).

Check the kingpost top for proper attachment of the bridles and condition of the top front wire, carabiner and bridle wires (fig. 26).


Figure 25


Figure 26

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 wing 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. 27).

Figure 27

Figure 28

Figure 29

Figure 30

Under the wing at the control frame apex:

Open the undersurface zipper. Check the crossbar center plate's assembly including the sweep wires/X-bar junction and the center bolt (fig.28).

Check the sweep wires for wear.

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

Check that the kingpost is properly installed.

Check the control frame apex (fig. 29) and the hang block bracket hardware (fig. 30).

Close the undersurface zipper.

6. LAYING THE WING DOWN FLAT

Once you have the wing set up, it can be laid down flat on the ground. This can be useful if you have to secure the wing in case of the wind speeds suddenly increase and there is no time to brake down the wing fast and safely.
Remove the nose cone from the nose of he wing.
Release the bottom front wires from the nose hook.
Lay the wing down with nose pointing into the wind.

Reverse the procedure to set the wing upright again.

7. SPEED TO FLY

The range of ***trim speed*** for the ADAM-13T is 55 - 60 km/h (34-37 mph).
The ***stall speed*** for the ADAM-13T is 37 km/h (23 mph). The wing is stable at the beginning of stall. While pushing out the speed bar, the bar pressure is progressively increase.

The ADAM-13T speeds up to 85 km/h (53 mph), being essentially roll neutral, with no tendency to yaw. The bar pressure will increase progressively as the speed increases.

WARNING
ALL SPEEDS ARE MEASURED WITH AEROS ANT NANOLIGHT TRIKE.

8. ADAM-13T BREAKDOWN

Breakdown of the wing is the reverse of its assembly.

1. Detach the hang bracket from the keel tube.

2. Support the wing under the keel tube with the keel tube extension as shown on the figure 31.


Figure 31


Figure 32

3. Remove the nosecone and instruments if they have not been removed earlier.

4. Pull out the outboard sprogs, swing them towards the leading edge and fix them with Velcro.

5. Remove the undersurface battens.

5. Remove the tip lever battens and three shortest cambered battens. Remove the trailing edge carbon battens.

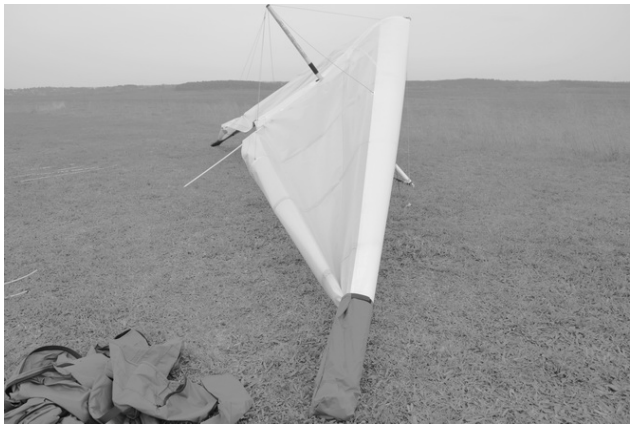


Figure 33

6. Install the tip bags on the outer parts of the wing.

7. Install the keel tube extension in the keel tube, rotating it as necessary until the slot in the keel extension engages completely into the bolt in the rear part of the keel tube (fig. 32).

8. Lower the wing on the keel tube with the wingtip protection bags on (fig. 33).

9. De-tension the crossbar sweep wires and let the wings fold in slightly.

10. Remove the remaining top surface battens except for the two innermost battens.

11. Detach the bottom front wires at the nose plate.

12. Fold the wings all the way towards the keel pulling the sail over the top of the leading edges. At each wingtip, remove the tip cover bag. Install the protective pad over the rear wires junction bolt at the rear end of the keel tube (fig. 34).

13. Remove the kingpost from the kingpost mount. Lay the kingpost down against the keel. Install protection bags on the top and on the bottom of the kingpost (fig. 35).

Figure 34

Figure 35

Figure 36

Figure 37

14. Using the root batten wire loop lower the front end of the root batten from the keel tube (fig. 36).

15. Install the control frame apex protection pad (fig. 37).

Figure 38

16. Install the keel tube extension protection bag (fig. 38).

17. 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 to the 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 tight so as to induce creases in the Mylar or leading edge sail material.

Working from the trailing edge, roll the sail tightly to the leading edge and install the wing tip cover bag. Secure the sail with Velcro ties.

18. Stow the battens in the batten bag and staff them in the front part of the wing between Mylar pockets.

19. Install the Velcro ties around the sail and stow the nosecone under the most forward Velcro.


Figure 39

20. Install the wing protection bag (fig. 39). Flip the wing over onto the ground. Detach the control bar. Fit the control bar in the protection bag and stow it between the leading edges in the aft part of the wing.

21. Fold up the control frame and install the control frame protective bags. Lay the control frame down against the keel. Before doing so arrange the cables and lay them along the control frame.

22. Stow the hang brackets in its bag between leading edges in the most rear part of the wing.

23. Zip up the wing bag.

9. WING TUNING

Properly tuned, the wing is safe, comfortable and fun to fly. The wing has been tested and tuned by the manufacture or your dealer. However, in case you have enough experience, you may tune the wing 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 WING, ASK MORE EXPERIENCED PILOT TO DO IT FOR YOU. IT SHOULD BE PERFORMED IN SMOOTN AIR AND WITH CAUTION.

BATTENS

The battens will need to be compared and adjusted to match the batten profile template at regular intervals. Small variations in batten camber (± 10 mm at the trailing edge) will not have significant effect on flight characteristics.

BATTENS TENSION

With some airtime on the wing the battens tension may get too loose, this may cause the trailing edge to flatter. If the battens tensioned too much, the handling will become harder. Make sure the battens tension on both wings identical.
All battens on the ADAM-13T are tensioned by lever batten tips. The desired batten tension can be easily adjusted by the threaded batten tip adjuster.

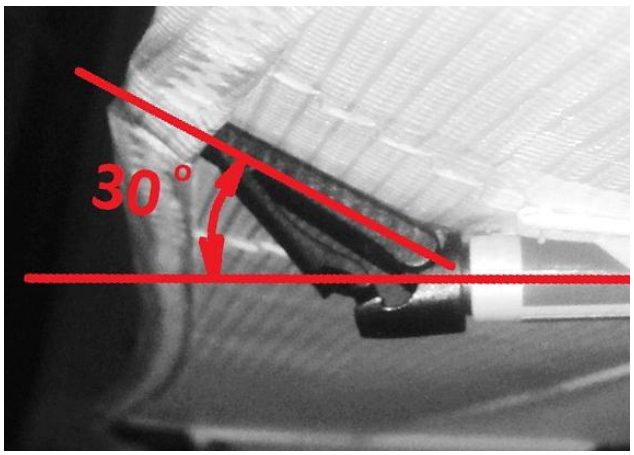


Figure 40

The correct batten tension can be adjusted and checked as follows. Unlatch the batten tip without taking it out of the pocket at the trailing edge of the sail. Measure the angle between the opened part of the batten tip and the batten tube. If this angle is about 30 degrees, then the batten tension is adjusted correctly (fig. 40).
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 wing can be corrected by rotating one of the sail mount plastic caps (fig. 41).

Figure 41

A left turn is corrected by twisting the right sail cap clockwise (twisting the sail up at the trailing edge). A 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.

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 wing will trim, the less effort will be required to fly fast, and the more effort will be required to fly slow.
On the ADAM-13T, the hang point position is adjusted by repositioning the hang bracket along the keel tube.
The trim speed of the ADAM-13T is 55-60 km/h. with the hang bracket installed in the most forward position.

10. 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 wing, which require it. Safety requires that your wing be fully airworthy for every flight. Nuts and bolts must always be secure, safety rings must always be in place, and damage to any part, which could compromise the airworthiness of the wing, cannot be tolerated. If you have a question about the need to repair or replace some part of your wing, 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 wing 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 safety rings 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 wing with silicone spray lubricant. Also spray your battens before you install them in the wing 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 wing 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.

SPECIAL CIRCUMSTANCES

1. Any time you suffer a crash or extremely heavy landing you should have an “annual” inspection done on your wing to insure that you find all damaged parts.
Heavy landings may also impose very high loads on the sprogs and bridle lines. Inspect them accordingly.

2. If your wing is ever exposed to salt water you will need to have the wing 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 and dried completely.
3. If you fly regularly at the coast, be aware that the sea mist spray can have the same effect. Hose down your wing after such flights, and keep a special lookout for corrosion.

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

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

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 wing's airframe are critical components of the wing'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.

The wing's cables, like other structural components on the wing, 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 wing 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 regularly. 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.

Replace washout wires, all bottom wires, cross bar tensioning wires every 4 years regardless of their conditions.

CHECKING THE SAIL WASHOUT

Sail washout is determined by the length of the washout cables and angles of the outer sprogs. When replacing the upper cables, it is helpful to measure the sail washout to make sure it remains unchanged. The sprog angles, provided the outer sprog tubes are not bent, will always be constant. Therefore we will be measuring the sail washout which is created by using washout cables.

1. Fully set up the wing on a reasonably level surface with the keel tube extension installed in the keel.

2. Place three equal supports, about 1,7 m (5.5 ft) tall, under the each leading edge tube / cross tube junction and under the keel tube between the control frame and nose plates.

3. Tie one lightweight string or sawing thread tightly across the wing between battens #3 and #3 and another string between battens #4 and #4.

4. Measure the height of each thread in relation to the top of the keel tube extension. The results should be as follows:

Batten number	Sail height above the keel tube, mm
3 – 3	225
4 – 4	270

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

11. IN CLOSING - A FEW WORDS ON YOUR SAFETY

- Flying nanolight trikes is a grate fun but it is, as any form of flying, associated with risks. Your safety can be greatly enhanced by following a few simple rules:

- Your wing 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 wing, you should consult your dealer or Aeros for advice.

- Fly a wing suited to your level of ability. A new risk may arise when you first fly a new type of the wing.

- The reactions of your new wing may well differ from those of the wing you where used to. In order to keep this risk low, we recommend that you gradually become familiar with your new wing.

- Before every take-off always do both an assembly check and a pre-flight check of your wing and a trike unit.

- 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!***

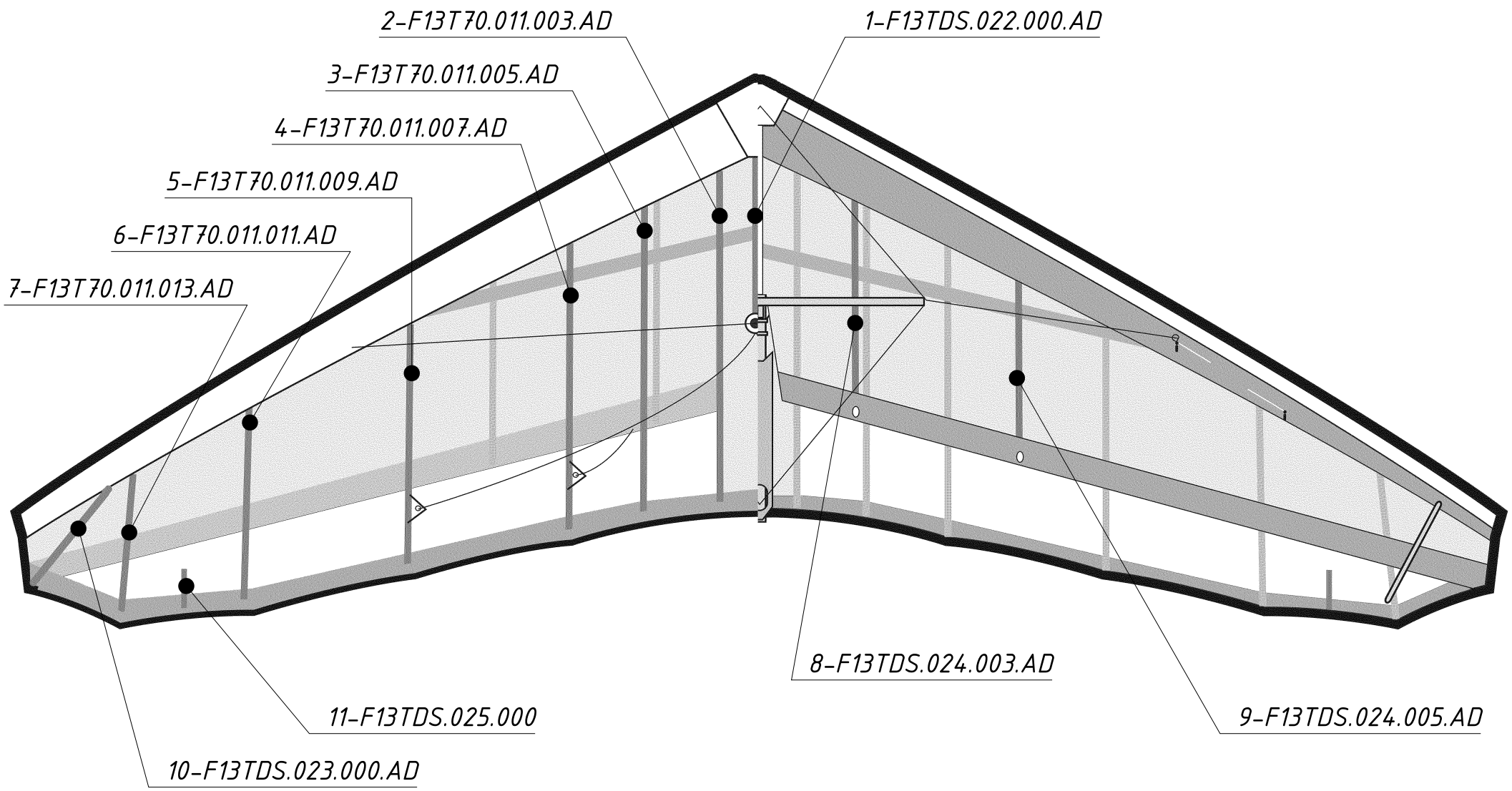
- A wet wing must be dried before storing. Do not leave your wing wet for more than one day because corrosion may result.

- Don’t push your luck; it is your responsibility to know the limits of your wing and the limits of your own experience. Remember that ultimately your safety is your responsibility.

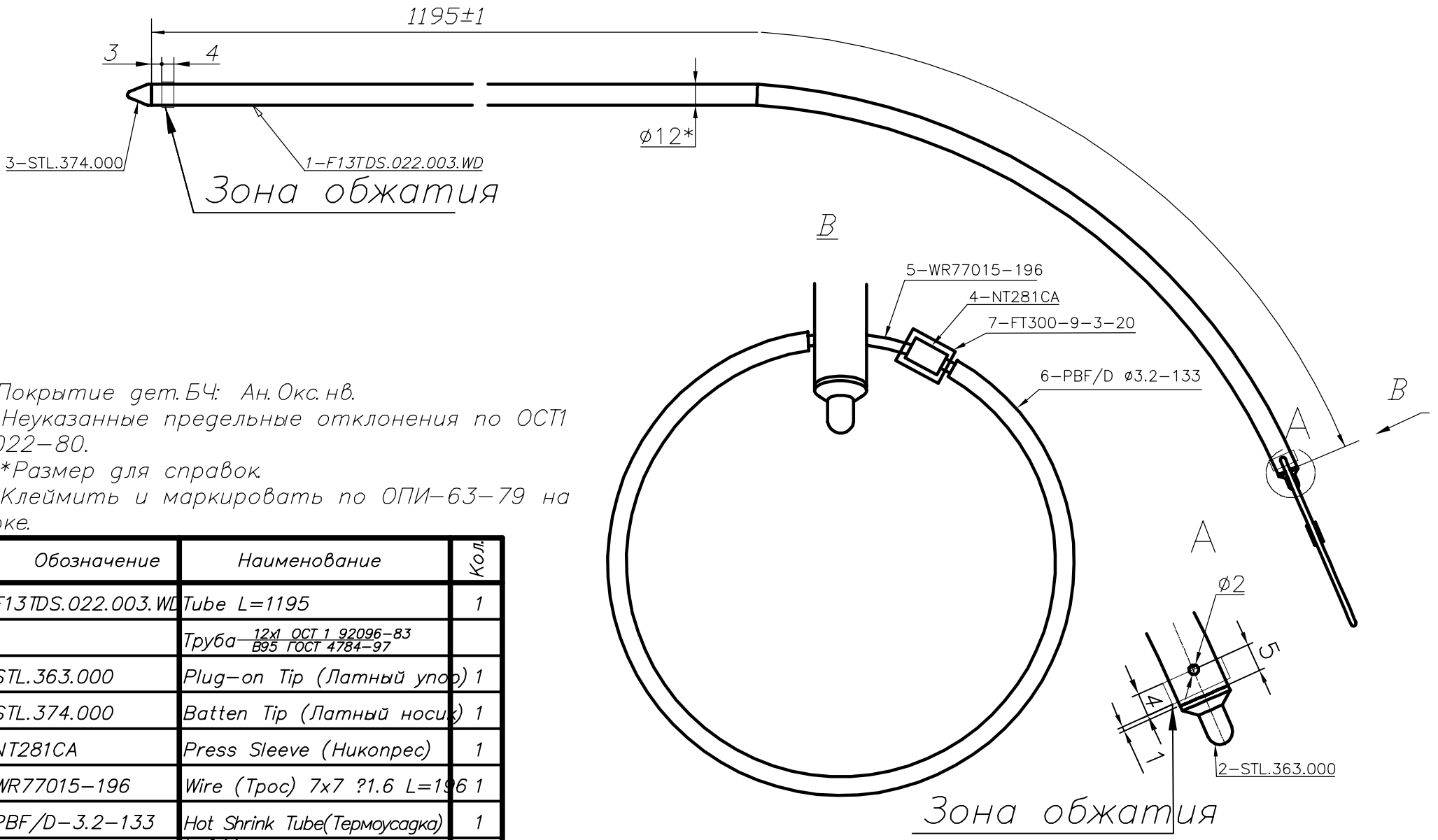
- Fly only in places that are suitable for flying.

- With proper care and maintenance, your wing will retain a high level of airworthiness for many years.

Have fun. Fly safely.
Aeros Team



AEROS		F13TDS.010.000.AD Battens Set (Комплект лат)		Scale:



1. Покрытие дет. БЧ: Ан. Окс. нв.
2. Неуказанные предельные отклонения по ОСТ1 00022–80.
3. *Размер для справок.
4. Клеймить и маркировать по ОПИ–63–79 на бирке.

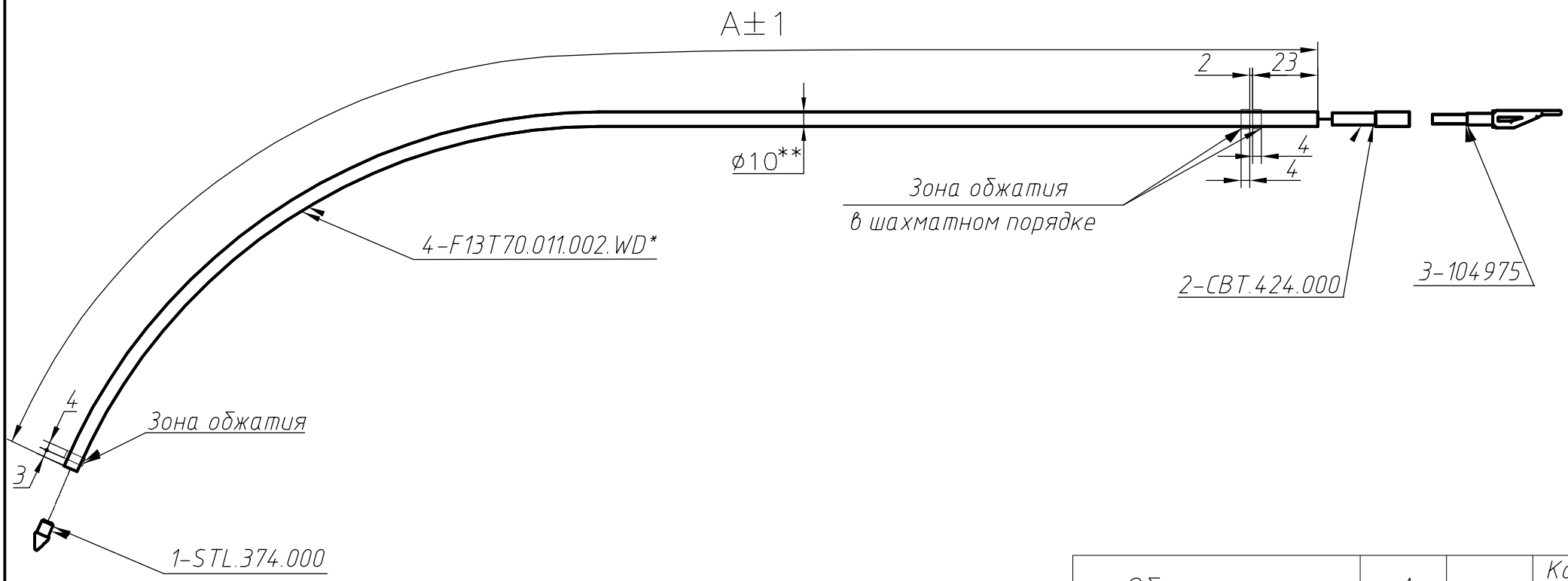
Поз.	Обозначение	Наименование	Кол.
1	F13TDS.022.003.WD	Tube L=1195	1
		Труба 12х1 ОСТ 1 92096–83 / В95 ГОСТ 4784–97	
2	STL.363.000	Plug–on Tip (Латный упор)	1
3	STL.374.000	Batten Tip (Латный носик)	1
4	NT281CA	Press Sleeve (Никопрес)	1
5	WR77015–196	Wire (Трос) 7x7 ?1.6 L=196	1
6	PBF/D–3.2–133	Hot Shrink Tube(Термоусадка) L=133	1
7	FT300–9–3–20	Hot Shrink Tube(Термоусадка) L=20	1

AEROS

F13TDS.022.000.AD

Keel Batten (Лата килевая)

Scale:



Обозначение	A		Кол. на изделие
F13T70.011.003.AD	2111		2
.005.AD	1934		2
.007.AD	1800		2
.009.AD	1542		2
.011.AD	1270		2
.013.AD	875		2

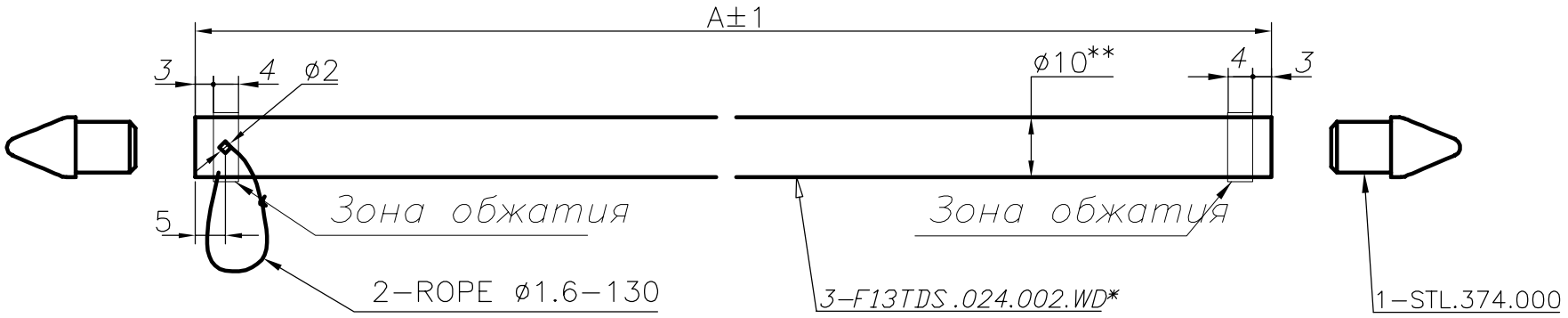
1. *Номера деталей указаны для латы F13T70.011.003.AD
2. Неуказанные предельные отклонения по ОСТ1 00022-80.
3. **Размер для справок.
4. Покрытие для деталей БЧ: Ан.Окс.нв.
5. Деталь поз.2 вставляется в дет. поз.4 и фиксируется обжатием дет. поз.4
6. Клеймить и маркировать по ОПИ-63-79 на бирке.

AEROS

F13T70.011.000.AD

Top Battens №1-6 (Верхние латы №1-6)

Scale:



1. Покрытие деталей БЧ: Ан.Окс.нв.
2. Неуказанные предельные отклонения по ОСТ1 00022–80.
3.* Номера деталей указаны для латы F13TDS.024.003.AD
4. **Размер для справок.
5. Шнур поз.2 вязать двойным прямым узлом.
6. Клеймить и маркировать по ОПИ–63–79 на бирке.

Обозначение	A	Кол. на изделие
F13TDS.024.003.AD	1420	2
.005.AD	1190	2

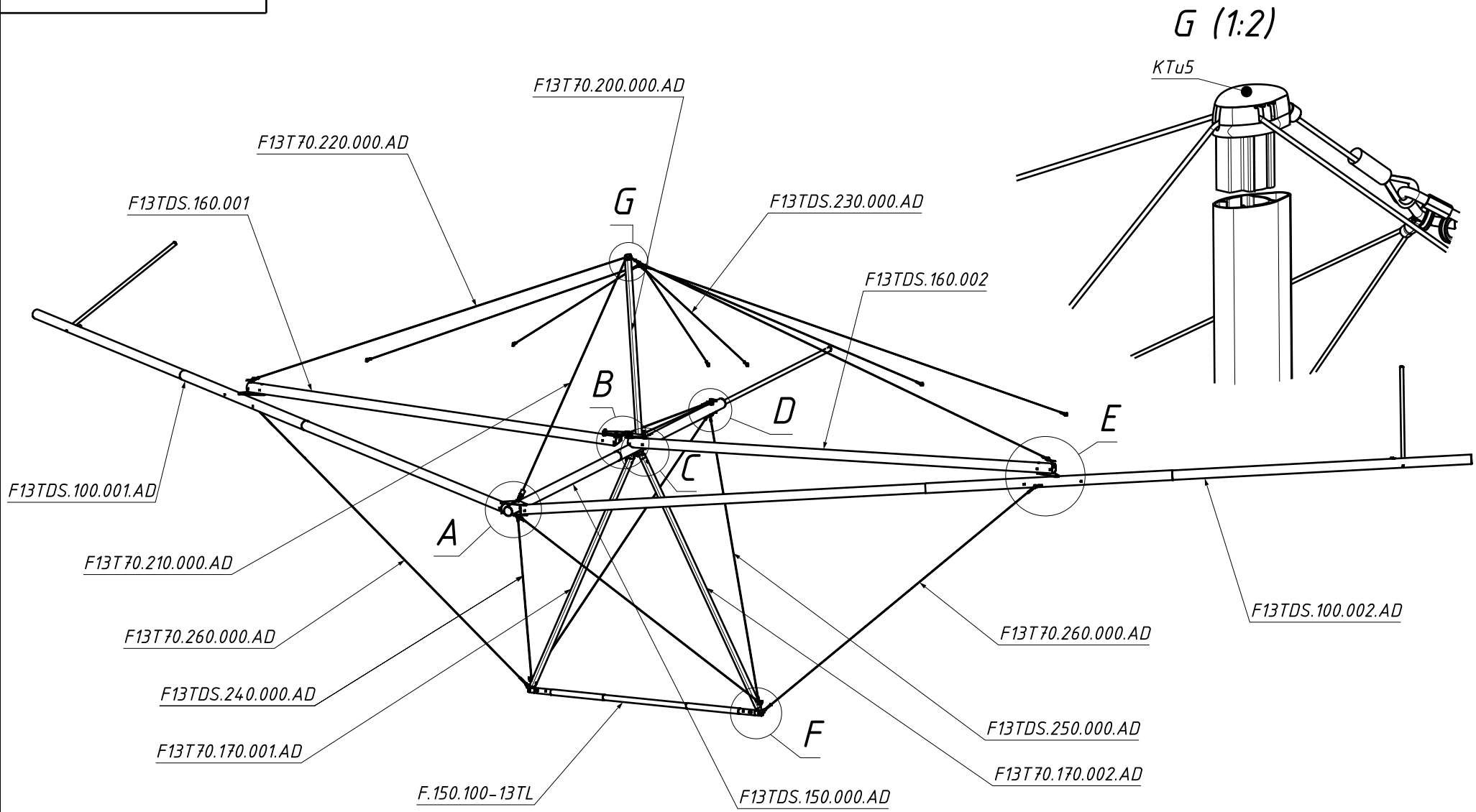
AEROS

F13TDS.024.000.AD

Bottom Battens №1–2 (Нижние латы №1–2)

Scale:

F13TDS.030.000.AD



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Разраб.				
Проверил				
Т.контр.				
Нач.бюро.				
Н.контр.				
Утв.		Дробышев С.		

F13TDS.030.000.AD

Fox13TDS Airframe
Fox13TDS Каркас

Литера	Масса	Масштаб
	.	1:20

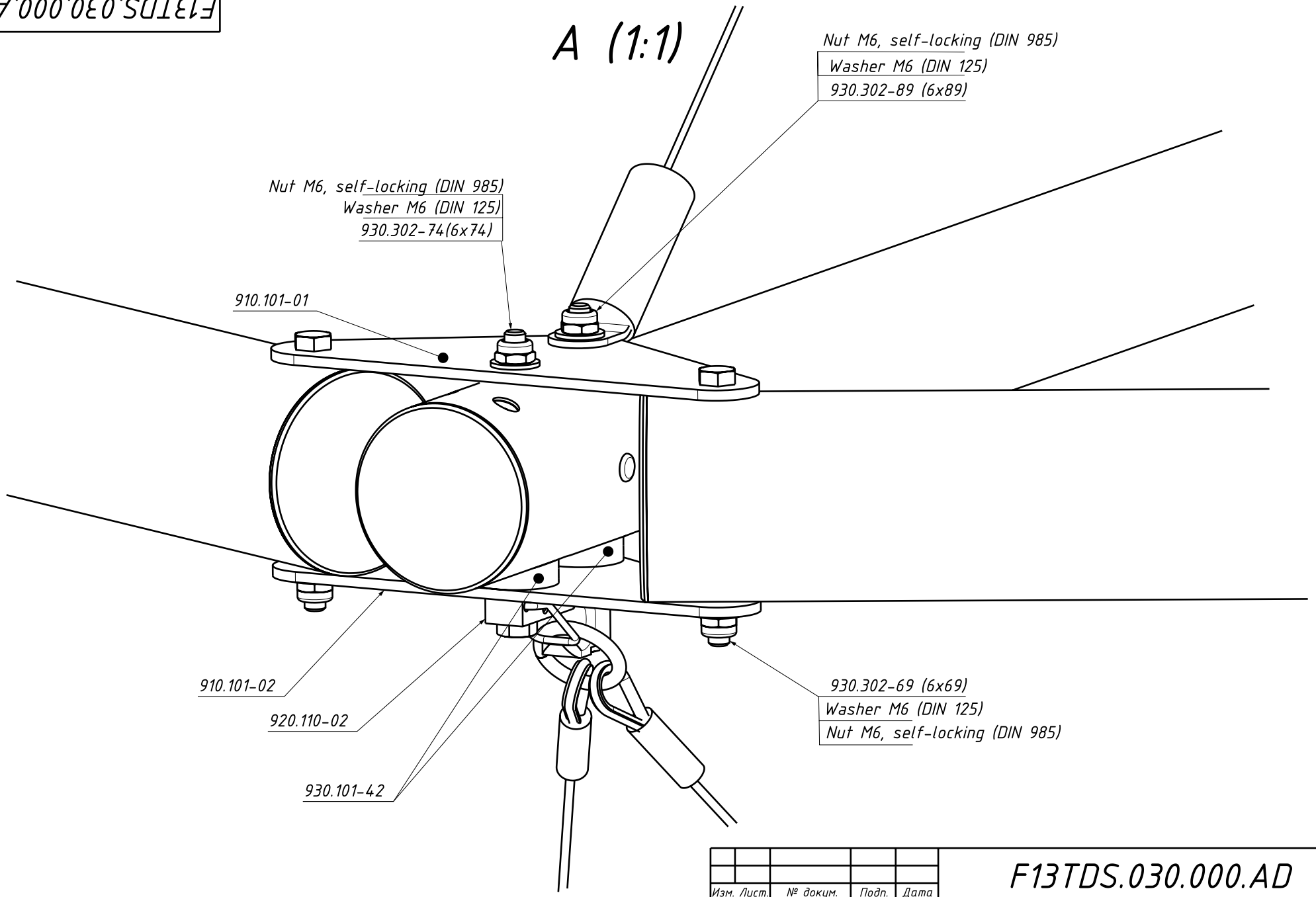
Лист	Листов
	1

Формат А3

Первич. примен.
Справочный №
Подп. и дата
Инв.№ дубл.
Взам. инв.№
Подп. и дата
Инв.№

F13TDS.030.000.AD

A (1:1)



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Т.контр.				
Н.контр.				
Утв.		Дробышев С.		

F13TDS.030.000.AD

Fox13TDS Airframe
Fox13TDS каркас

Литера	Лист	Листов
	2	2

Формат А3

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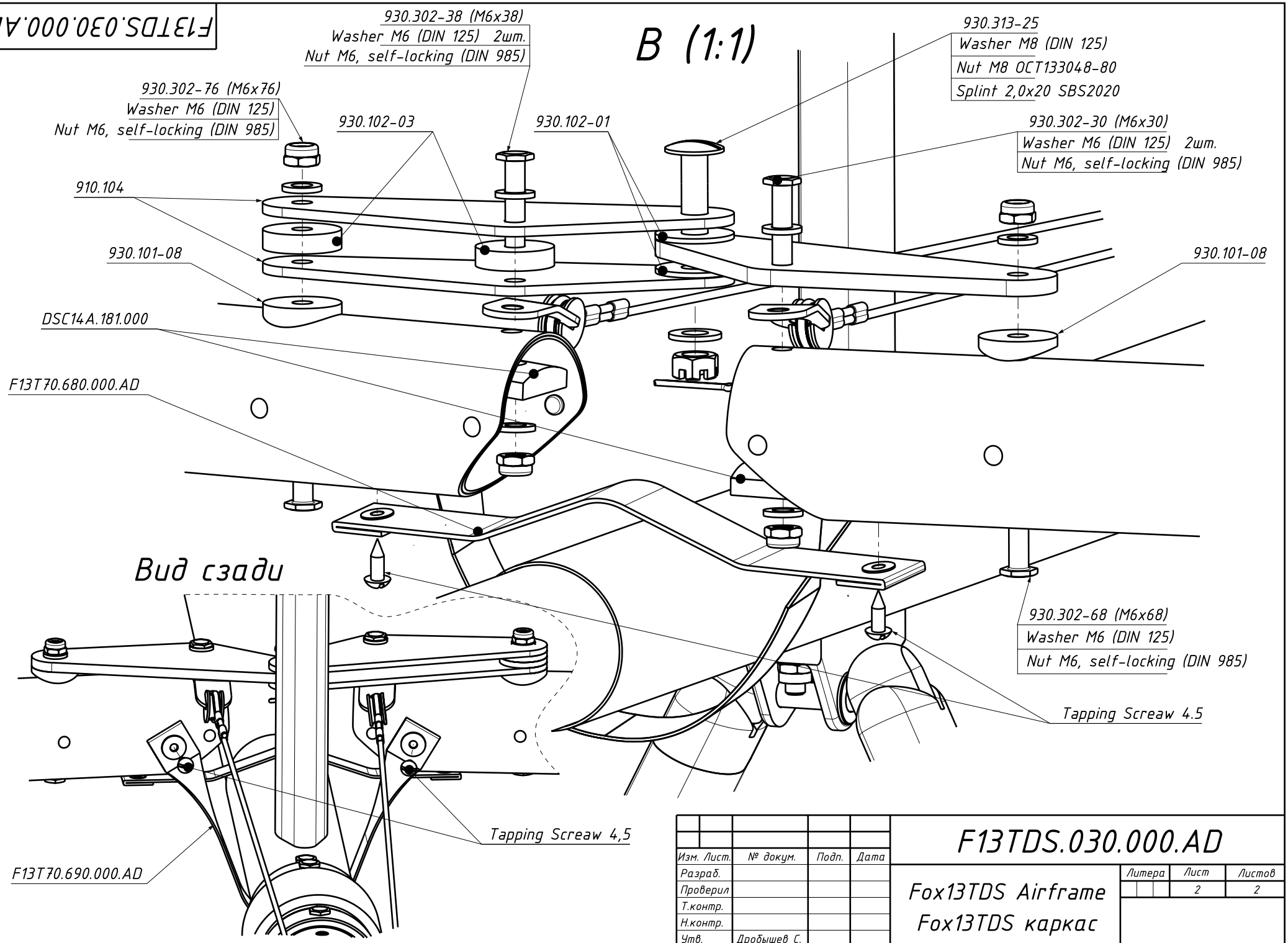
Подп. и дата
Инв.№ дубл.
Взам. инв.№
Подп. и дата
Инв.№

F13TDS.030.000.AD



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Н.контр.				
Утв.		Дробышев С.		

F13TDS.030.000.AD

Fox13TDS Airframe
Fox13TDS каркас

Литера	Лист	Листов
	2	2

Формат А3

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Взам. инв.№
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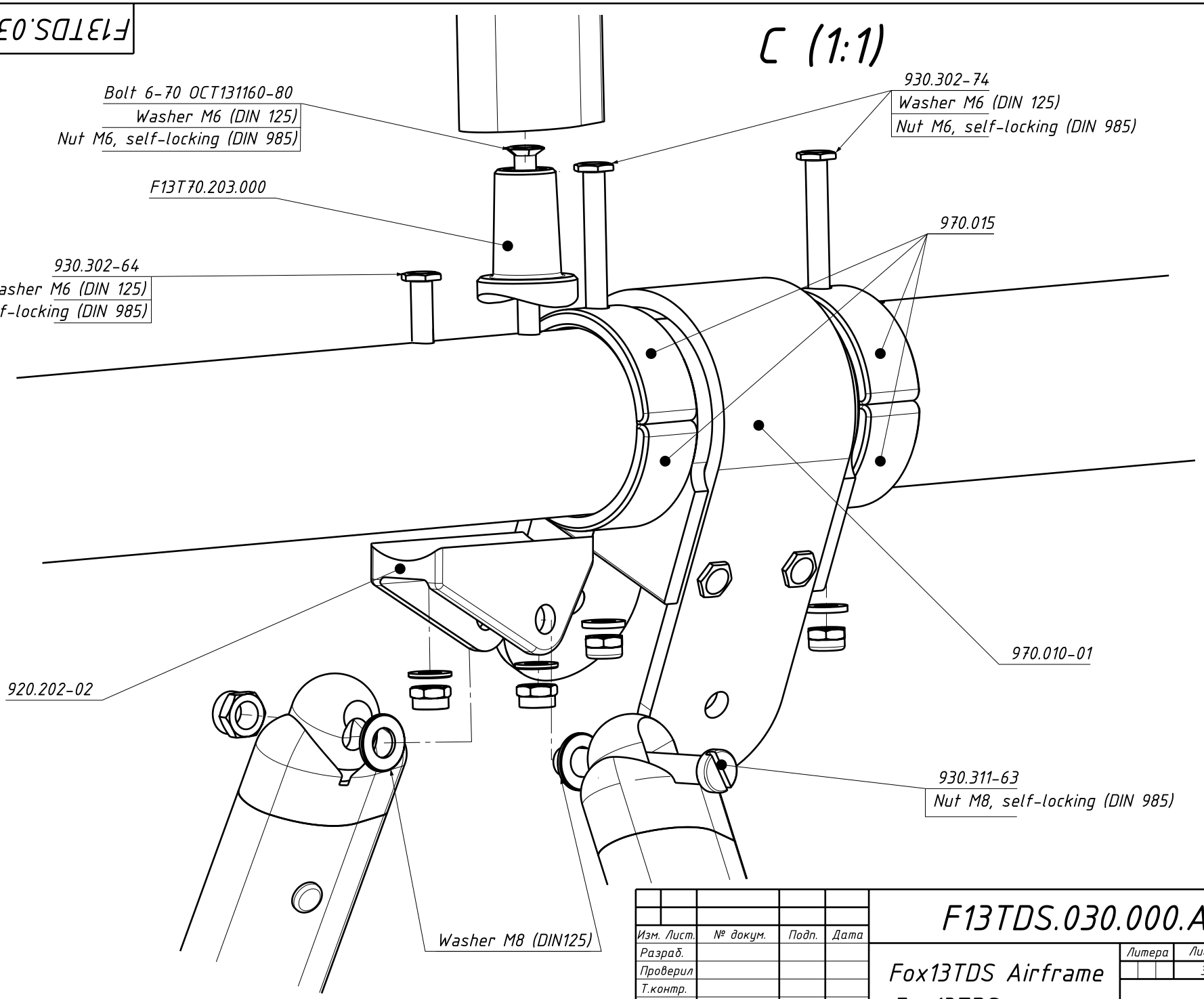
Инв.№

F13TDS.030.000.AD

C (1:1)



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Утв.		Дробышев С.		

F13TDS.030.000.AD

Fox13TDS Airframe
Fox13TDS каркас

Литера	Лист	Листов
	3	7

Формат А3

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Подп. и дата
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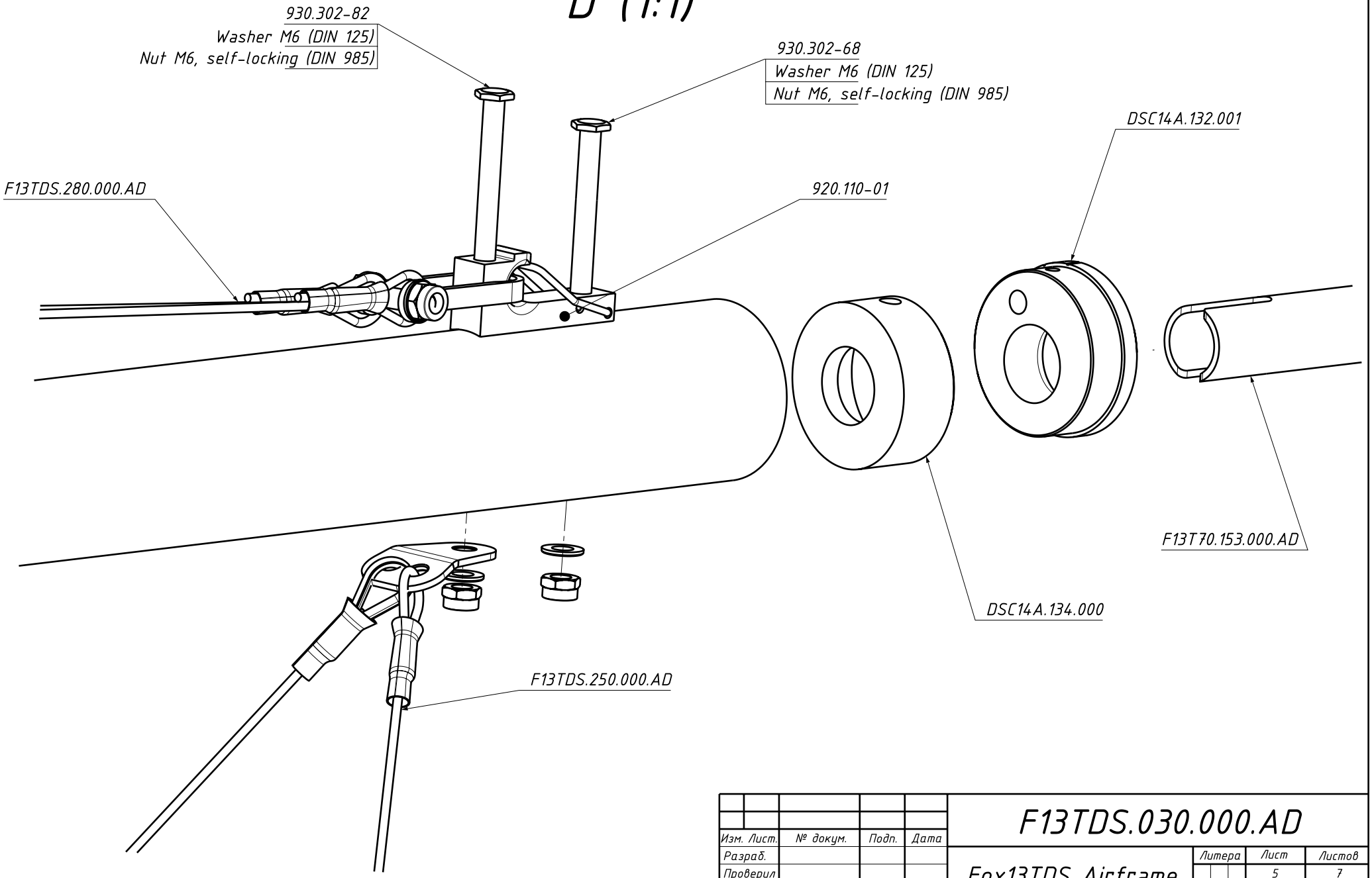
D (1:1)



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F13TDS.030.000.AD

Fox13TDS Airframe
Fox13TDS каркас

Литера	Лист	Листов
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Формат А3

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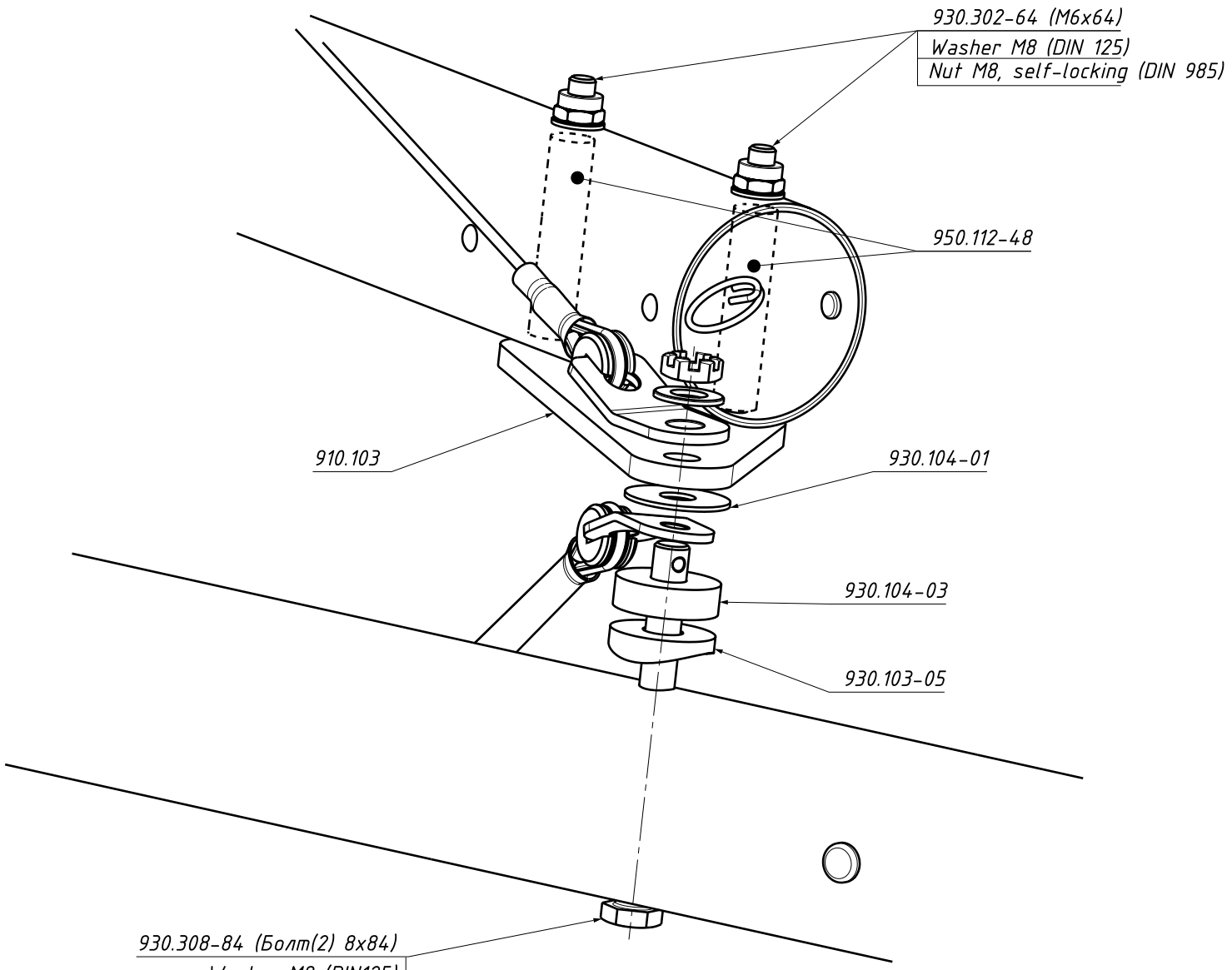

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Т.контр.			
Н.контр.			
Утв.	Дробышев С.		

F13TDS.030.000.AD

Fox13TDS Airframe
Fox13TDS каркас

Литера	Лист	Листов
	6	7

Формат А3

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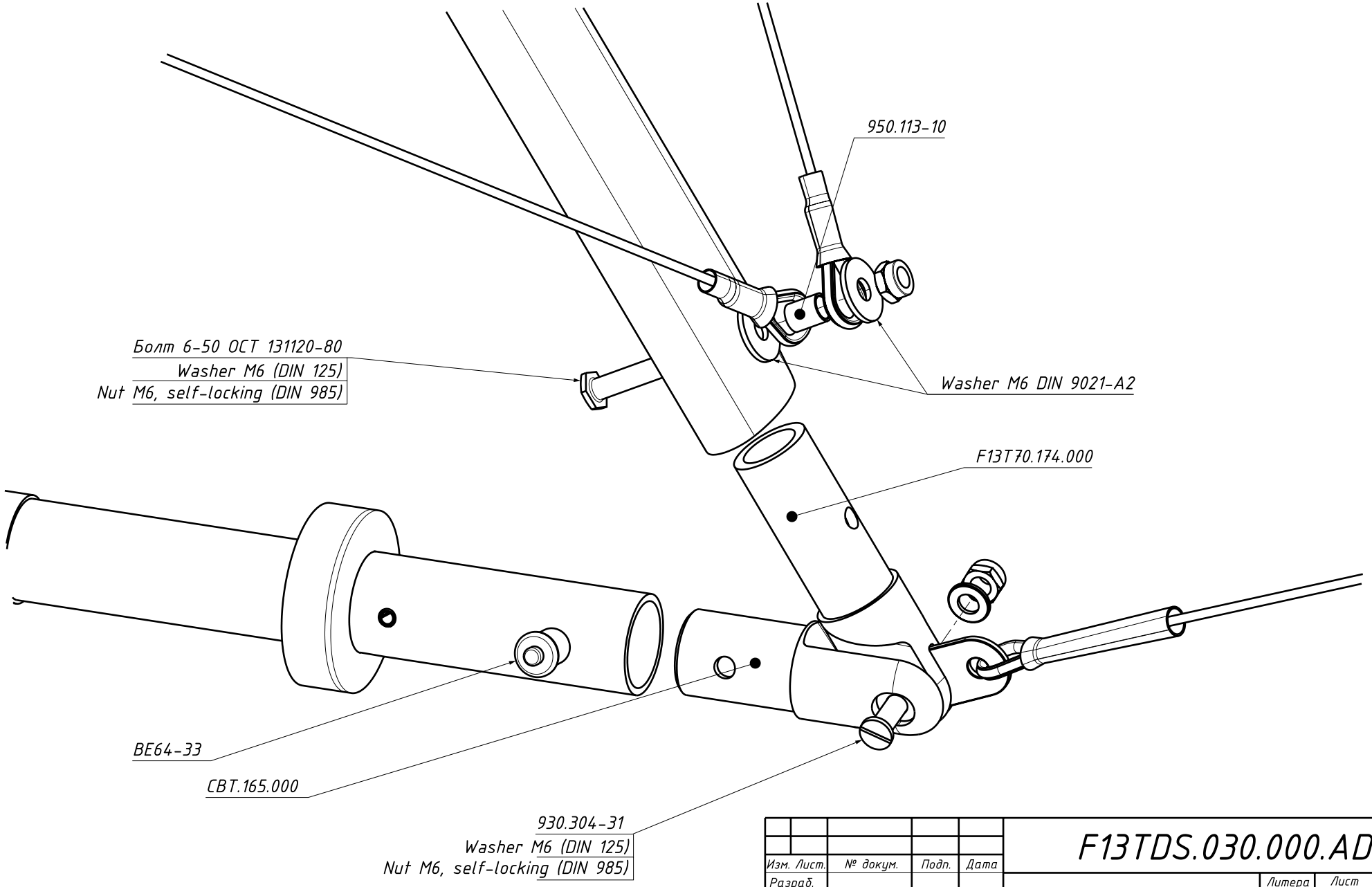
F (1:1)



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Утв.	Дробышев С.		

F13TDS.030.000.AD

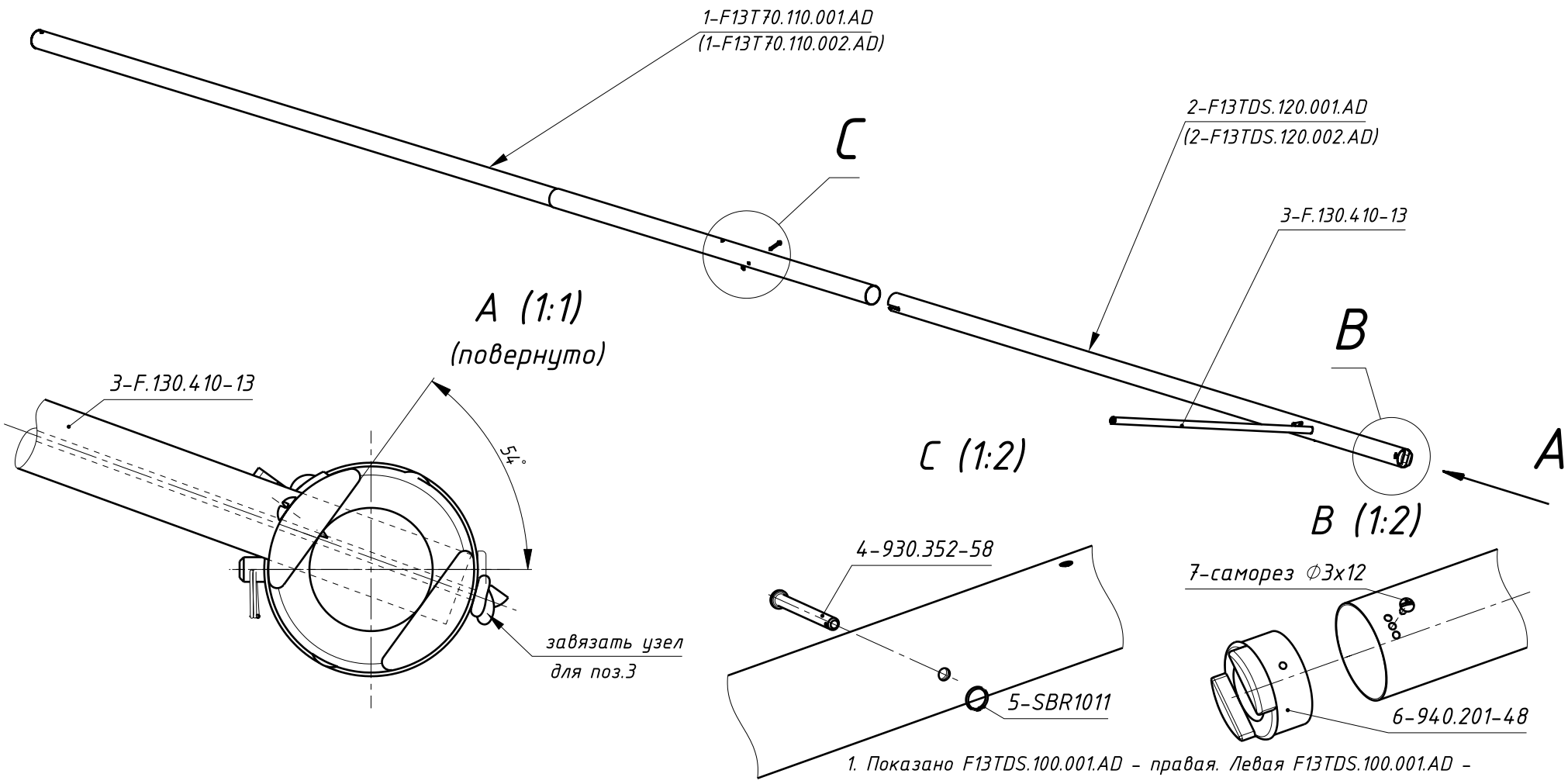
Fox13TDS Airframe
Fox13TDS каркас

Литера	Лист	Листов
	7	7

Формат А3

Первич. примен.
Справочный №
Подп. и дата
Инв.№ дубл.
Взам. инв.№
Подп. и дата
Инв.№

F13TDS.100.001.AD



1. Показано F13TDS.100.001.AD – правая. Левая F13TDS.100.001.AD – зеркально.
2. Поз.3: 001 или 002 – соответственно.
3. *Размеры для справок.
4. Клеймить и маркировать на бирке.

Поз.	Обозначение	Обозначение	F13T70.100.001.AD /к-во	F13T70.100.001.AD /к-во
1	F13T70.110.001.AD	LE Tube No.1 Right / Боковая труба №1 правая	1	–
1	F13T70.110.002.AD	LE Tube No.1 Left / Боковая труба №1 левая	–	1
2	F13TDS.120.001.AD	LE Tube No.3 Right / Боковая труба №3 правая	1	–
2	F13TDS.120.002.AD	LE Tube No.3 Left / Боковая труба №3 левая	–	1
3	F.130.410-13	Swiwel Tup / Поддержка АПУ	1	1
4	930.352-58	Clevis Pin ø6x58mm / Валик ø6x58мм	1	1
5		SBR1011 (кольцо контровочное)	1	1
6	940.201-48	End Cup / Заглушка	1	1
7		саморез ø3x12мм	1	1

Изм.	Лист.	№ докум.	Подп.	Дата
Разраб.				
Проверил				
Т.контр.				
Нач.бюро.				
Н.контр.				
Утв.		Дробышев С.		

F13TDS.100.001.AD

LE Assembled Right
Боковая труба в сборе прав

Литера	Масса	Масштаб
	3,25	1:10

Лист 1 Листов 1

Формат А3

Первич. примен. | Справочный № | Подп. и дата | Инв.№ дубл. | Взам. инв.№ | Подп. и дата | Инв.№