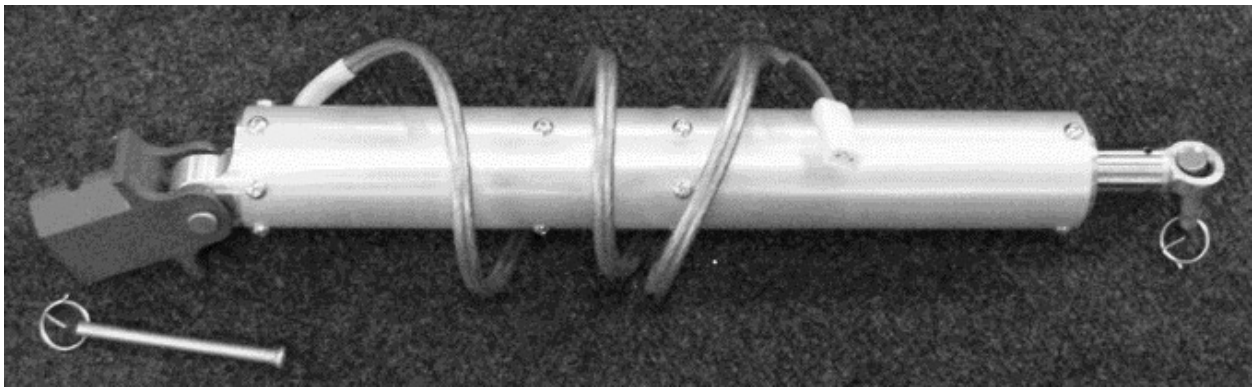
WING TRIM MECHANISM

OWNER /SERVICE MANUAL



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CONTENTS

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.

The trim device mechanism is designed for trimming your aircraft in pitch.

Please read and be sure you thoroughly understand this manual before operating your trim device. Be sure you are thoroughly familiar with the trim device and the contents of this manual before initial operation.

It is important that you 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.

1. Specifications of the Trim Device

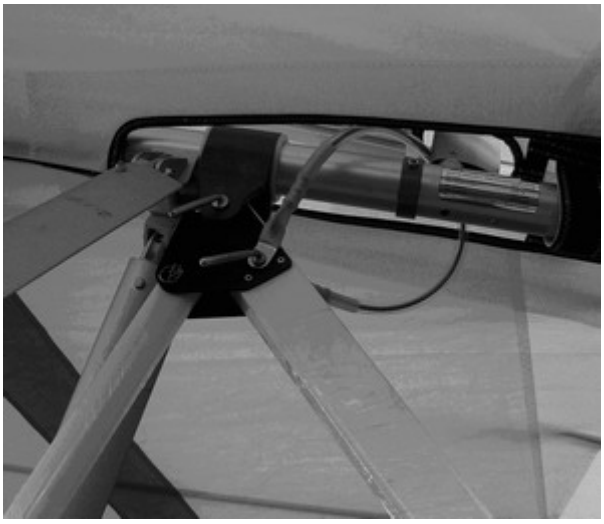
Voltage supply	9 – 14 V
Nominal force	300 kg
Maximum force	1000 kg
Consumption current at nominal force	10 A
Travel	60 or 92 mm
Emergency travel	70 or100 mm
Complies with	IP54
Moving speed	15 mm/sec.
Operating mode	Short-term, repeated
Temperature range	-15…+55 °C
Time to failure	
relay	500000 turn-ons
terminal switch	100000 turn-ons
electric motor	1000 hours
Dimensions	Diam. 48 x 371 mm
Weight	1.425 kg

NOTE:
In the power supply system of the trim device it is necessary to have a 15A safety fuse.

The trim device consists of:
- travel mechanism;
- rear bracket;
- front bracket;
- electric wiring with connectors, control switch and safety fuse.

2. Installing the Trim Device on the Aircraft

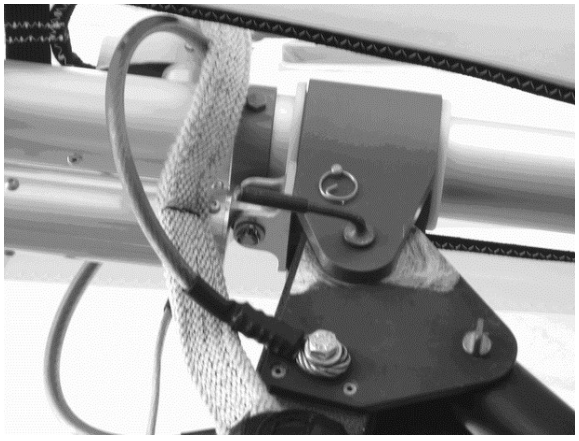
To install the trim device the wing has to be mounted and raised on the trike.
For correct trim device operation the backup loop has to be connected so that it passes **once** over the keel and back to the pylon (see photo). Make sure the back up loop will not hang to the keel tube details and will not restrict the trim mechanism movement.

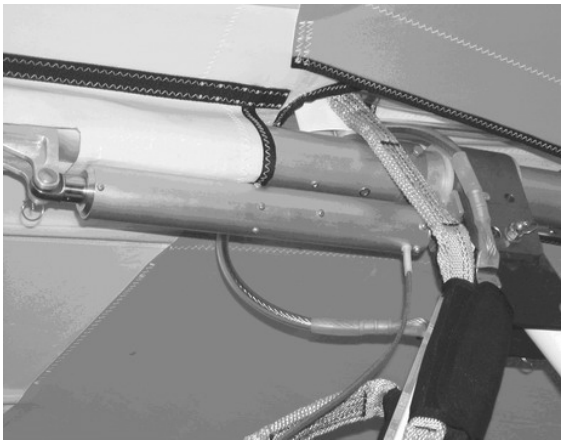


- Connect the trim device to the rear bracket on the keel tube using the pin and a safety ring.

- To connect the front bracket of the trim device move the control bar all the way backwards to set it against the front seat, positioning the keel tube in right position for sliding the front bracket of the trim into the hangblock of the wing. Watch out for your fingers! Fix the front bracket in place with the pin and a safety ring.

NOTE:
It may be helpful to stand behind the wing on a small ladder and use a soft rope loop around the top of the mast and to use this with one hand for leverage, while with the palm of the other hand, push the keel tube of the wing to slide the wing just enough to line-up the front bracket to go in easily into the hangblock. It may also be helpful to use a soft rubber or plastic mallet to tap the front trim bracket pin lightly in.





- Connect the pin to the socket connector of the trim device wiring.

- Check the trim device operation in most forward and aft position. Set the trim device in take-off position, which is 20 - 30mm from the most aft position. Fix the electrical wire of the trim device with a plastic hose clamp.

3. Removing the Trim Device from the Aircraft

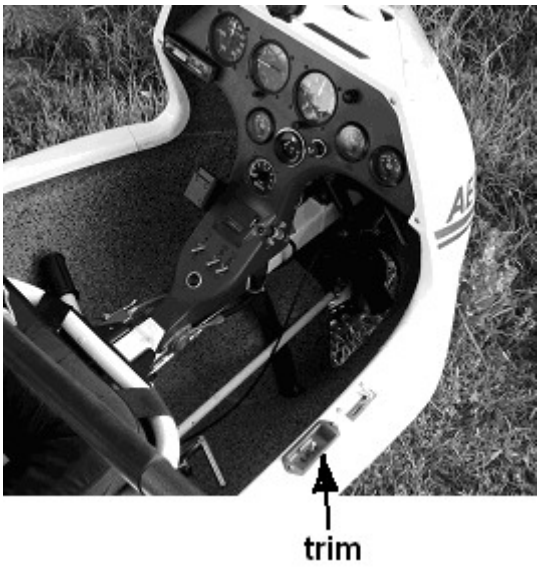
WARNING:

THE TRIM DEVICE CAN BE MOUNTED OR DISMOUNTED FROM THE AIRCRAFT ONLY WHEN THE WING IS ATTACHED TO THE TRIKE IN ITS FLYING POSITION (RAISED ON THE TRIKE). LOWERING AND REMOVING THE WING FROM THE TRIKE BEFORE THE TRIM DEVICE HAS BEEN DISMOUNTED WILL LEAD TO THE TRIM DEVICE AND BRACKETS DAMAGE.

- Apply park brake (if available).
- Set the trim device to the aft position and then slightly forward (10-15mm from the most aft position).
- Disconnect the pin from the socket connector of the trim device wiring.
- Disconnect the rear bracket of the trim device.
- Disconnect the front bracket of the trim device and remove the trim device from the wing.

4. Trim Device Operation

Trim device switch should be activated in wings level attitude only, not during turns. To activate loosen grip on the control bar to allow control bar position to move and press the activation switch.
For take off and landing the trim device position is 20 – 30 mm (1 - 1.25 inch) from most aft position (visual check).
For cruise trim the aircraft on desired cruise speed with the trim device.
The travel range of 60 or 92 mm is sufficient for trimming the aircraft in the horizontal straight flight.
After the trim device has reached the most forward or aft positions its travel automatically stops.
The control switch is mounted and labeled on the aircraft. Version of the trim device control switch position is shown on the photo:



WARNING:

THE TRIM DEVICE IS DESIGNED TO OPERATE IN HORISONTAL FLIGHT, DURING TAKE OFF AND LANDING ONLY.

WARNING:

IT IS NOT RECOMMENDED TO USE THE TRIM DEVICE IN MOST FORWARD POSITION IN TURBULENT AIR IN ORDER TO AVOID EXCEEDING MAX. LOAD FACTOR.

CAUTION:

DO NOT LEAVE THE TRIM DEVICE IN MOST FORWARD OR AFT POSITION FOR LONG PERIOD OF TIME.

CAUTION:

THE TRIM DEVICE PUSHES THE HANGBLOCK AT THE BOTTM, SO IT IS NOT A CENTER PUSH SYSTEM. BECAUSE OF THIS IN CERTAIN RARE CIRCUMSTANCES IT IS POSSIBLE THAT THE TRIM DEVICE PUSHES AT THE BOTTOM BUT THE HANGBLOCK DOES NOT MOVE AT THE TOP AND REACHES A SLIGHT ANGLE AND GETS “COCKED”. IF YOU ACTIVATE THE TRIM DEVICE ACTIVATION SWITCH AND THE CONTROL BAR POSITION DOES NOT MOVE, STOP ITS USE AND TRY AND MOVE THE CONTROL BAR BACK AND FORTH SLIGHTLY TO MAKE THE HANGBLOCK SQUARELLY ALIGNED (UNCOCKED). ONCE ALIGNED, YOU CAN ACTIVATE THE TRIM DEVICE AGAIN. THERE SHOULD BE NO PROLONGED OPERATION OF THE ACTIVATION SWITCH IF THE CONTROL BAR POSITION DOES NOT SEEM TO CHANGE. IT IS RECOMMENDED TO CLEAN THE KEEL TUBE WITH A SOFT RAG TIME AFTER TIME AND SPRAY IT WITH A SILICONE SPRAY IN PLACE WHERE THE HANGBLOCK MOVES.

NOTE:

In case of the trim device failure in most forward position it is recommended to use flat, with no obstacles landing field which is long enough for landing due to increased landing approach speed.

5. Maintenance and Storage

The trim device is maintenance-free.
However, few simple rules will help you to maintain the trim device in good condition.
The trim device has to be positioned at 10-15mm from the most rear position for storage.
Wipe off the trim device carefully with the soft clean rags from any mildew or dirt before storage.
Store the trim device in its bag in a dry area.
The recommended storage temperature is +5+25 deg. C.
If your trim device failed to operate check the safety fuse. Do not attempt to dismount or repair the trim device and contact your dealer or Aeros directly for replacement, if necessary.

Have fun. Fly safe.

Aeros Ltd.

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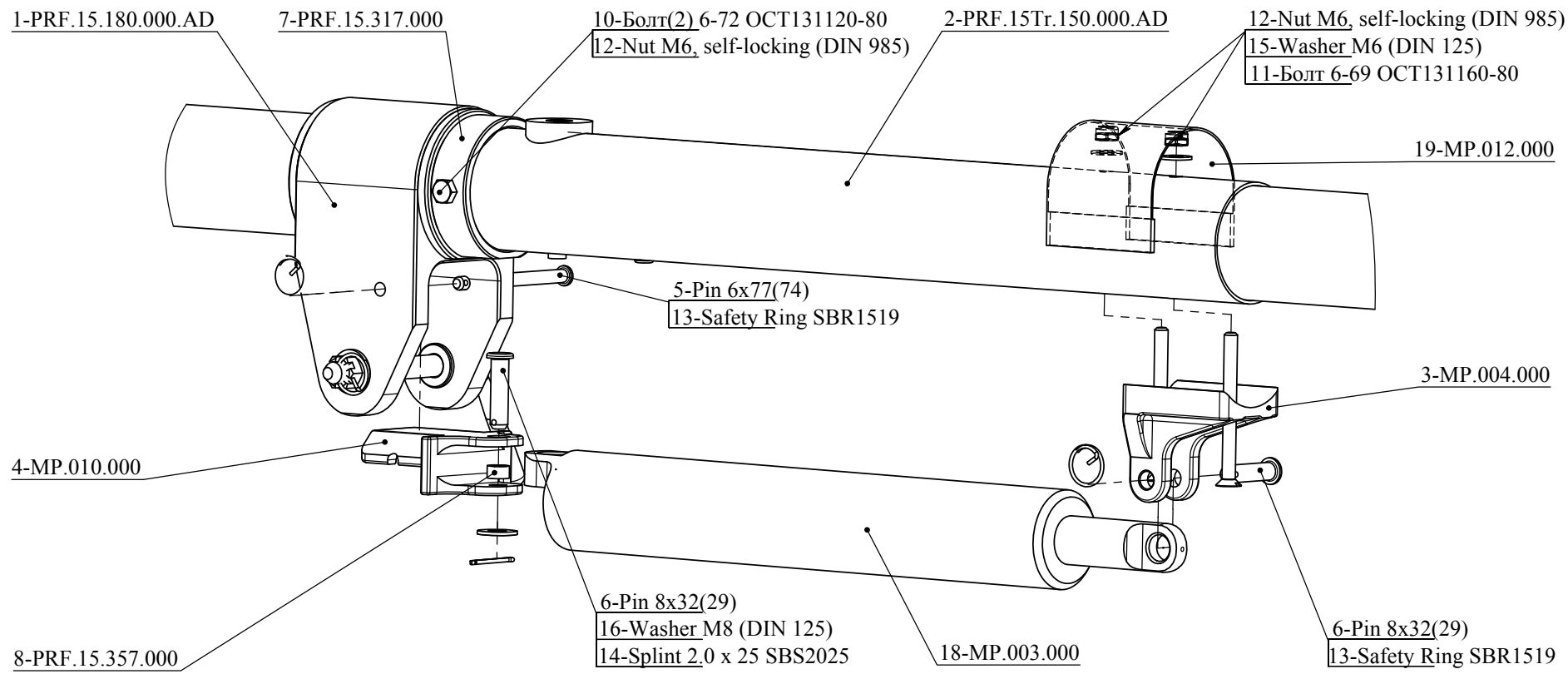

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Т.контр.				
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MP.001.000.AD

Keel Tube with Linear Actuator

Лит.	Масса	Масштаб
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Лист 1	Листов 1	

"AEROS"

Копировал

Формат А3

Перв. примен.

Справ. №

Подпись и дата

Инв. № дубл.

Взам. инв. №

Подпись и дата

Инв. № подл.

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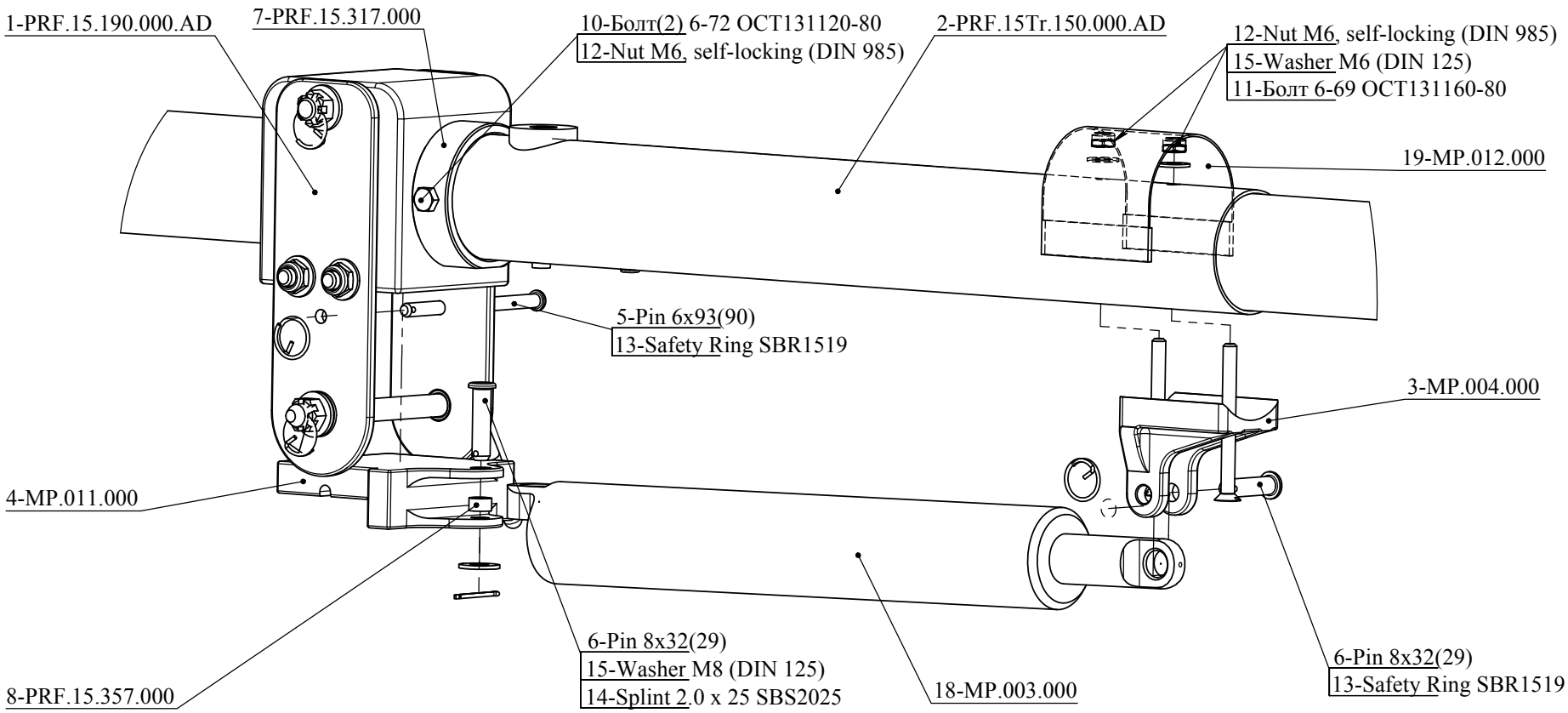

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Утв.								

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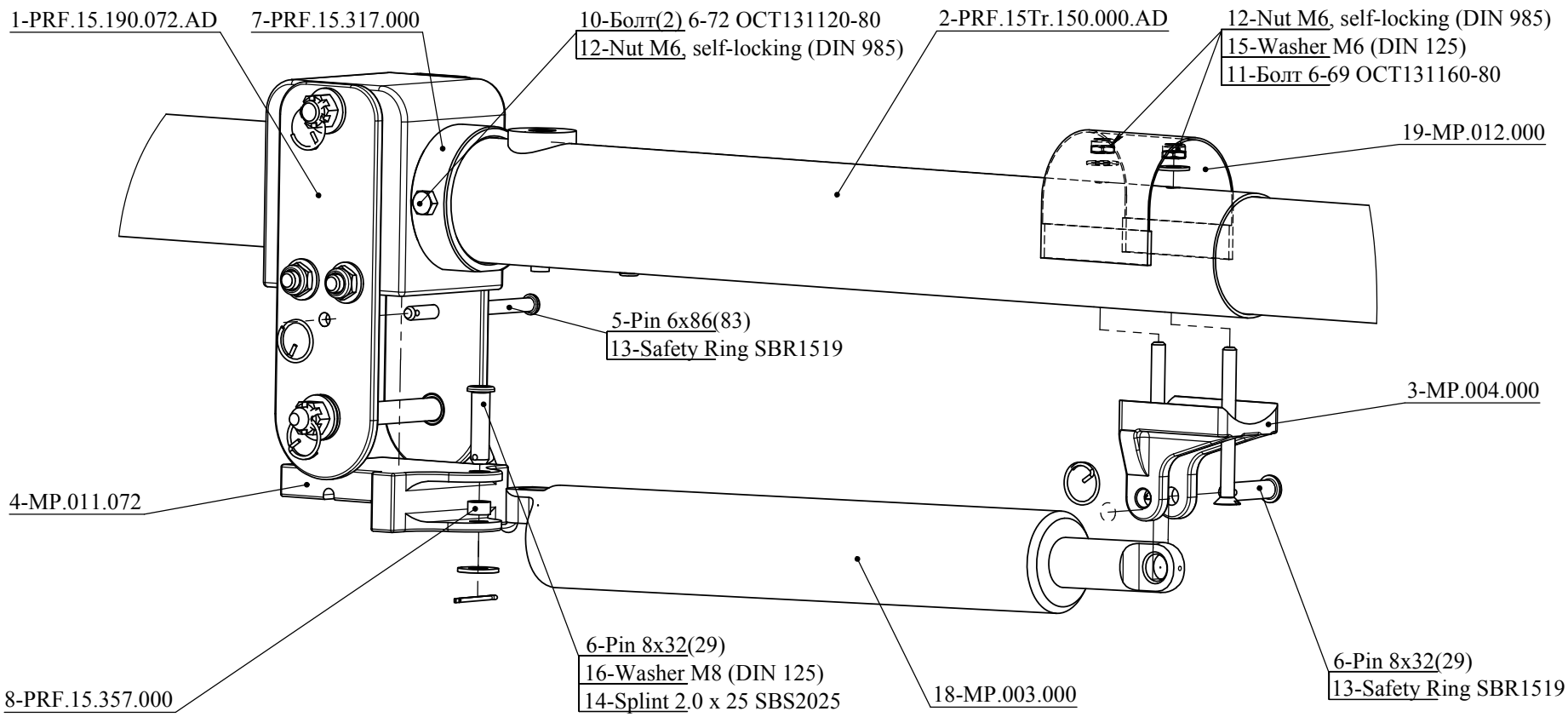

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Н.контр.				
Утв.				

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Keel Tube with Linear Actuator (Fr2) USA

Лит.	Масса	Масштаб
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Лист 1	Листов 1	

"AEROS"

Копировал

Формат А3

Перв. примен.

Справ. №

Подпись и дата

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Взам. инв. №

Подпись и дата

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