

EasyTouch

Assembly Guide

for

NorSap 1600-S



PREFACE

This document is intended to guide the assembly process of the EasyTouch gas spring release system (hereafter called “EasyTouch”) on NorSap’s 1600-S chair and models based on this.



NorSap 1600-S

Other relevant documents for this product are:

- EasyTouch Troubleshooting Guide for NorSap 1600-S
- EasyTouch Short Guide Troubleshooting and Assembly for NorSap 1600-S

Where this document refers to NorSap, this may also be your local NorSap distributor.



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1. ASSEMBLY AND ADJUSTMENT OF EASYTOUCH SYSTEM TO A GAS SPRING

1.1. Prerequisites

- Tools needed for attaching EasyTouch to gas spring unit:
 - Open wrench size 17mm.
 - Medium to strong thread locking adhesive.
 - Padded pliers, for carefully gripping the EasyTouch button piston.

1.2. Information and tips from EasyTouch manufacturers' manual

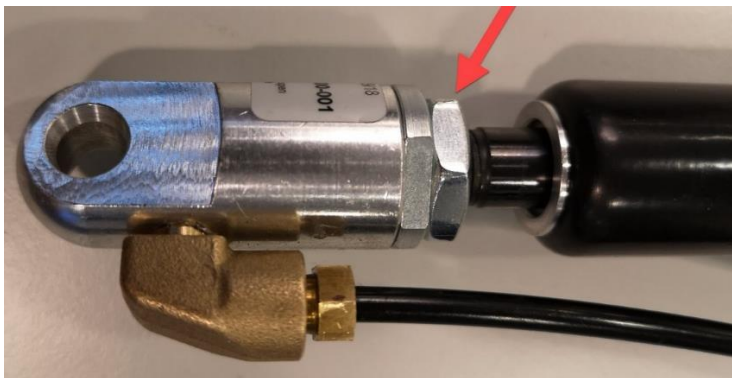
- Recommended operation temperature: 0° C - +45 °C.
- Assembly with the lockable gas spring should be at a room temperature of around +20°C. In case of other operating or room temperatures for assembly, please note that adjustment can change if temperature changes significantly.
- Hydraulic release systems are assembled "in oil" and cleaned afterwards. Oil residue does not automatically mean that the system is leaky.
- Tube connections must not be released.
- Do not turn around or release angle connectors.
- Do not bend the hydraulic tube, pinching, buckling or cutting, minimum bending radius 50mm.
- To use the short hydraulic release system (Easytouch), please use the corresponding lockable gas spring. In case of any questions, please contact NorSap.
- In case of malfunction or leakage which can be traced back to the points mentioned above, any right of warranty expires.



1.3. Assembly and adjustment

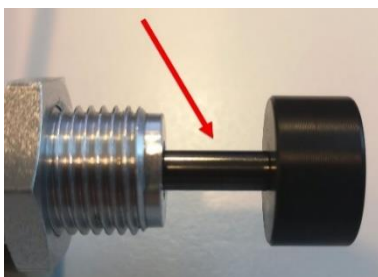
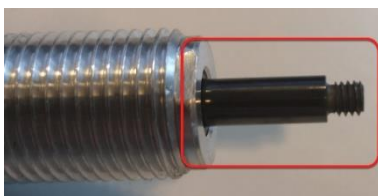
To obtain optimal functionality, correct assembly and adjustment of the EasyTouch short hydraulic release system onto the gas spring are crucial. When adjusted correctly, the button should have a noticeable lash or ideally 3-4 mm, before releasing the gas spring.

Screw the piston rod threaded end of the gas spring into the release head of the EasyTouch system, until a slight counter pressure is noticeable. The gas spring release rod now touches the piston on the inside of the EasyTouch release head. At this point, the button lash is 0 mm. Unscrew the gas spring piston rod by a half turn (180°) to achieve the correct button lash of 3-4 mm. Secure the (pre-assembled) nut on the gas spring piston rod thread, making sure that the gas spring piston rod does not rotate in respect to the EasyTouch release head. Double check that the lash when pressing the button is 3-4mm.



Note: It is crucial to prevent scraping or other markings on the button piston. Slight damaging or imperfection causes leakage over time, which leads to malfunction of the EasyTouch release system and thus the chair.

Therefore, when assembling or disassembling the button, use padding on the pliers to ensure the integrity of the button piston surface.



2. REPAIRING EASYTOUCH SYSTEM ON THE 1600-S CHAIR

2.1. Prerequisites

- It is recommended to perform this repair with two persons.
 - To ease the process, place a table or other support at each side of the chair, to put the armrest aside without damaging or disassembling the remaining cabling and tubing.
- Disconnect the chair from its electrical power source, if applicable.
- Tools needed to perform all necessary operations in regards to EasyTouch on the 1600-S series:
 - Open wrench size 10mm
 - Open wrench size 22mm
 - Hexagon key / Allen key size 6mm
 - Hexagon key / Allen key size 5mm
 - Hexagon key / Allen key size 4mm
 - Hexagon key / Allen key size 3mm
 - Torx bit size T-20 mm
 - Pliers with padding



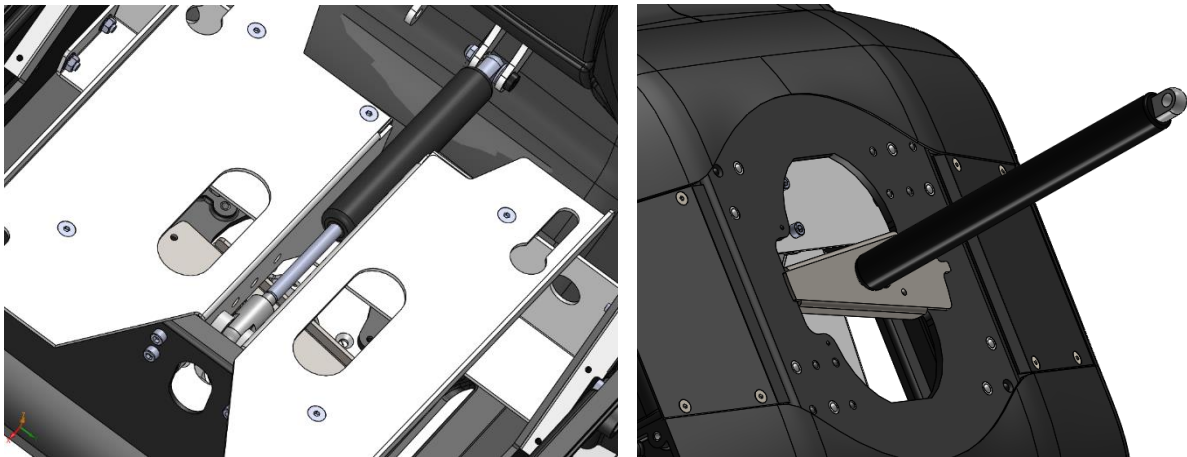
2.1.1. Buttons and their functions



- The forward button in the armrest typically operates the function for adjusting the chair up and down.
- The other button operates the function for adjusting the backrest tilt.

2.2. Removal of necessary parts common for both gas springs

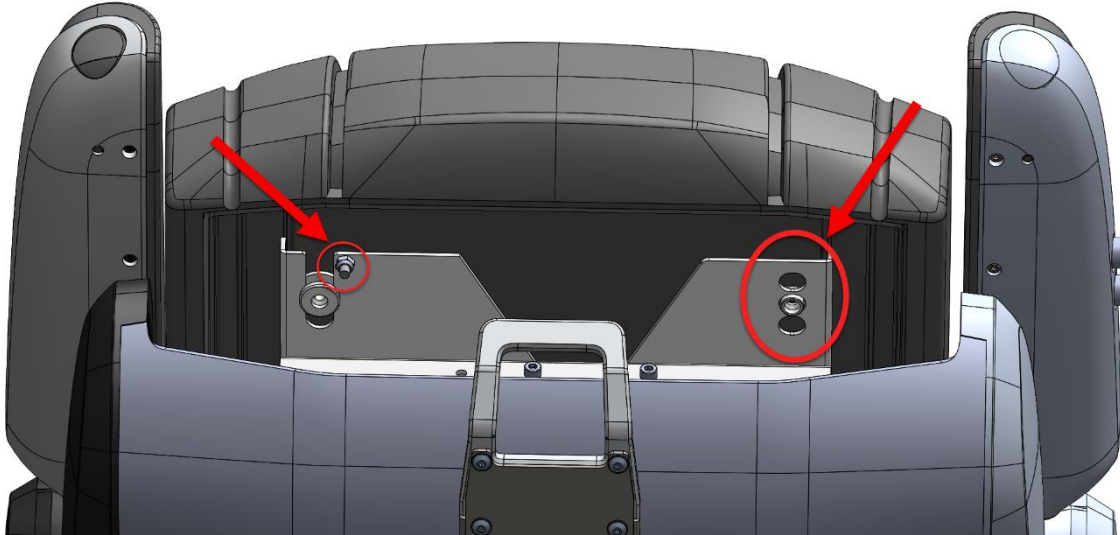
The standard 1600-S series chair has two EasyTouch functions, one for the backrest tilt, the other for the seat height. The description below first describes the steps to get access to the EasyTouch unit for the backrest, then the steps to get access to the column EasyTouch system. For both gas springs, there are some common steps i.e. the removal of the seat cushion and the relevant armrest.



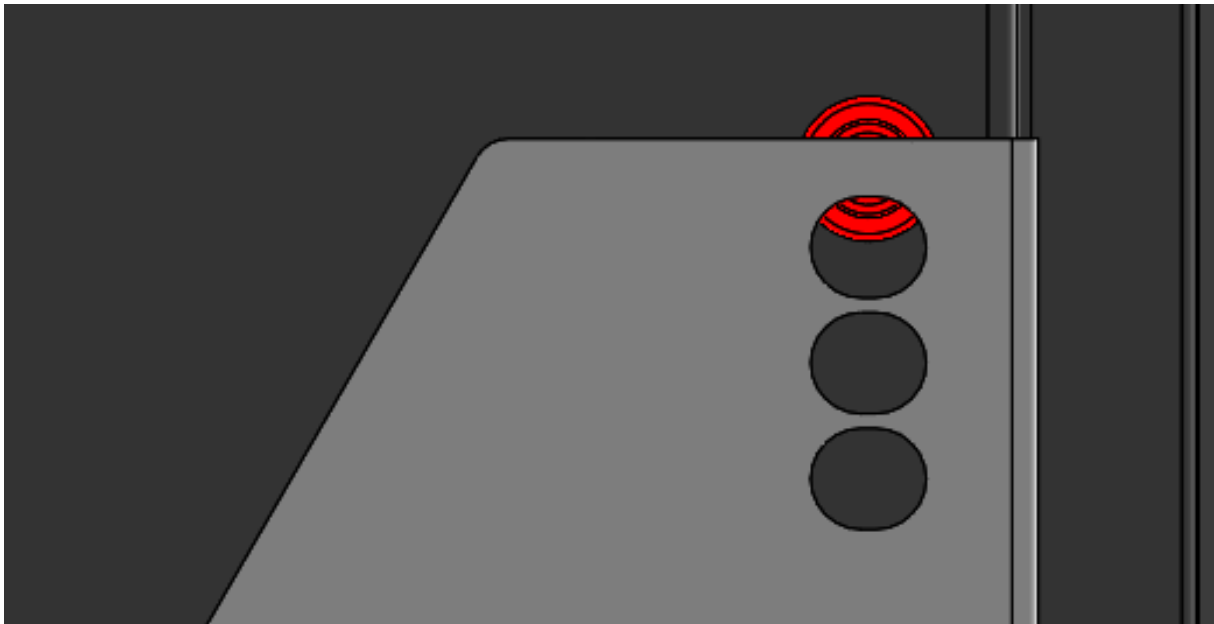
In the process of the removal of the EasyTouch units it is recommended to have one person assisting.

2.2.1. Removal of the seat

- Remove the nyloc nut (seat end stop) underneath the forward right edge of the seat cushion.
- Slide the seat carefully forward after lifting the forward left edge of the seat cushion out of the positioning holes.



- When the seat is beyond the frontmost position, as illustrated in the image below, grab the backend of the seat and carefully move it back and forward while lifting. When the back of the seat pops out of its retaining slot holes, remove the seat by sliding it forward.



2.2.2. Removal of the armrest cushion for access to EasyTouch button unit

To create access to the EasyTouch buttons, the arm rest cushion needs to be removed. Start by unscrewing 3 x Screw $\varnothing 4,5 \times 19$ A4 DIN 7983. Then pull the cushion straight out from the armrest (sideways). The x-mas tree clips should remain in the cushion for easier re-assembly.

The next step is the loosening of the Easytouch button unit.

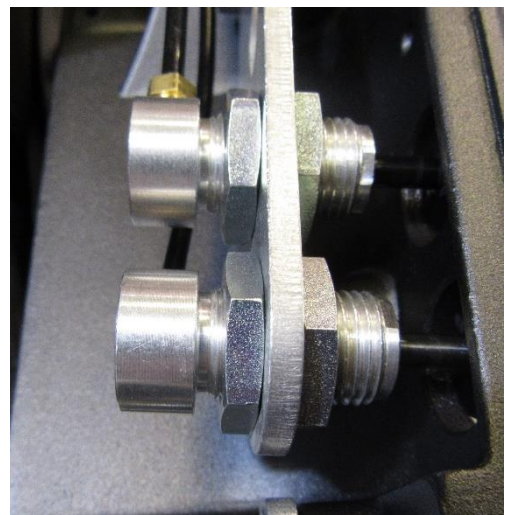
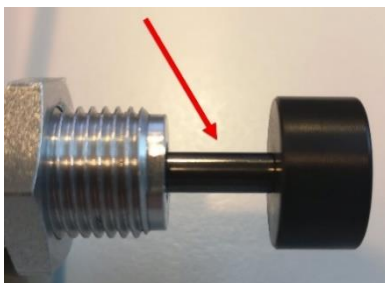
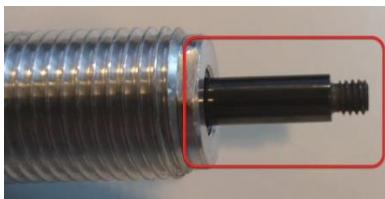


Note: to prevent damaging the cushion, hand-tighten the screws when re-assembling.

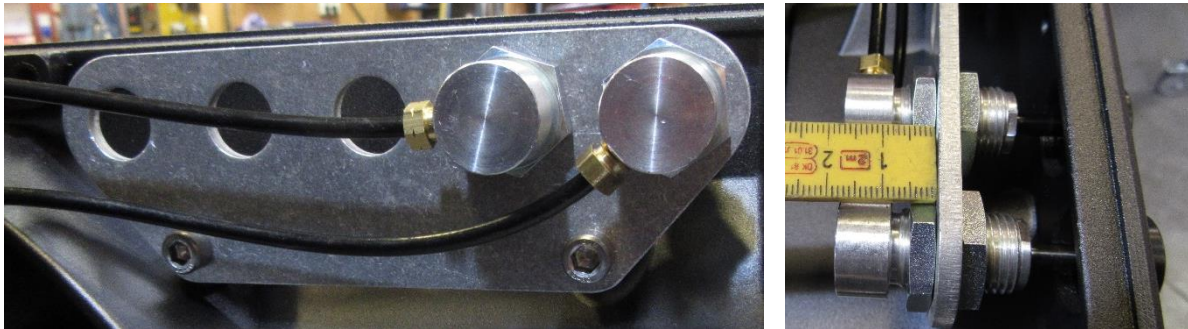
2.2.3. Loosening and removing the EasyTouch button unit

- Remove button carefully.

Note: It is important prevent scrapes or dentations on the button piston rod. The slightest damage or imperfection may cause leakage over time, resulting in loss function. Therefore, when attaching or disassembling the button, use padding on the pliers.



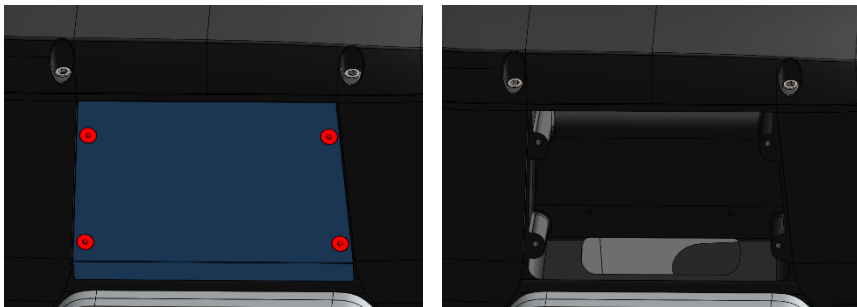
- To remove the EasyTouch button units from the bracket, loosen and remove the two nuts from the EasyTouch button unit.



- To ensure correct re-assembly of the button units in the bracket, follow the measurement displayed in the image at the right side above.

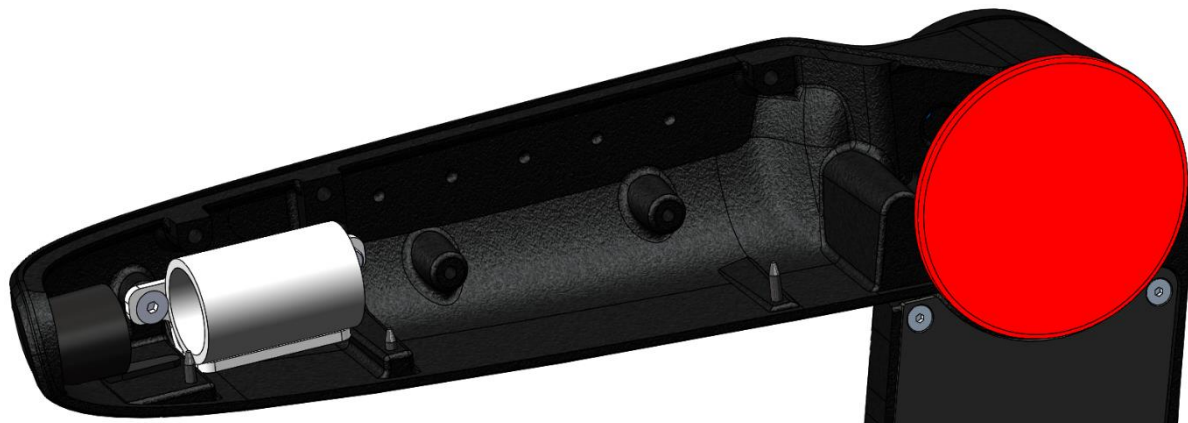
2.2.4. Removing cover beneath seat base

- Remove the cover under the seat base by removing the 4 bolts.

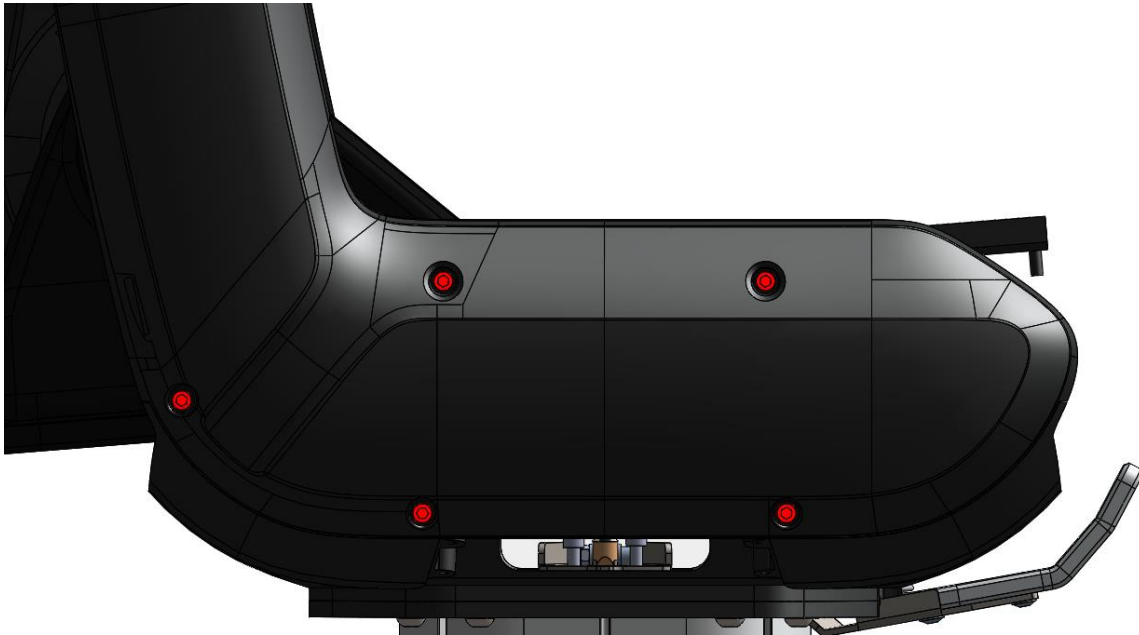


2.2.5. Removing the armrest cover and armrest

Tilt the seat backwards to ease the access to the circular plastic cover on the armrest (red part in the image below). Remove this cover and ensure that the x-mas tree clips remain in the armrest for easier re-assembly.



Remove the 5 bolts while holding the armrest and remove the armrest base from the seat base.



When the armrest is loose, carefully guide the button units of the EasyTouch system through the armrest.

2.2.6. Routing of the tubing (and cables) during re-assembly

Note: correct routing of tubing and cables (if present) is essential to obtain correct functionality of the chair function and to prevent the warranty from being void:

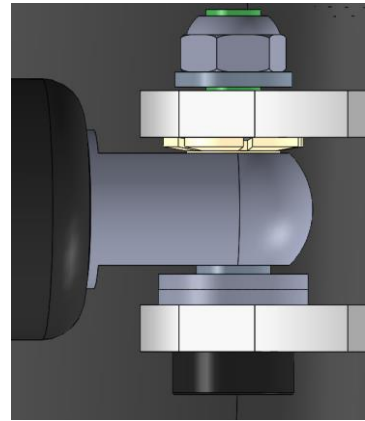
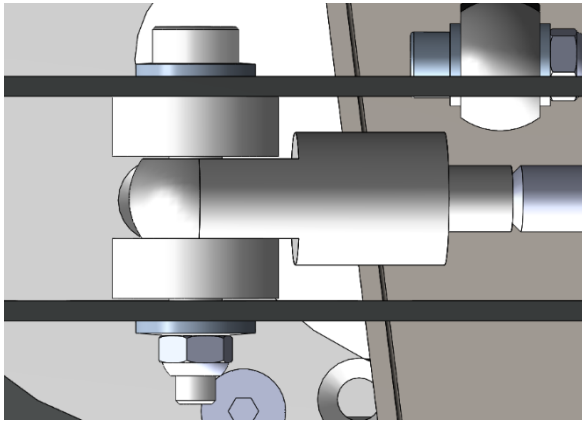
- Ensure that no cables or tubing are squeezed between the seat and the armrest or other parts.
- Tubes must be routed with a minimum bending radius of 50mm.
- Pinching, buckling and/or cutting of the tube must be avoided at all times.
- Movement of chair parts during adjustments must be taken into account when routing tubes and cables.

2.3. Inspection and removal of the backrest EasyTouch system

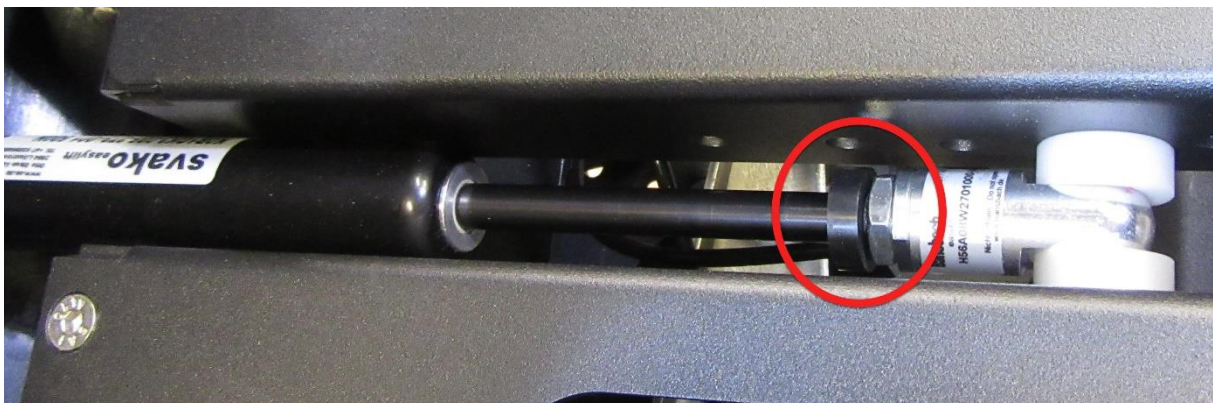
For this part, in the process of the removal and attaching the EasyTouch unit in the backrest it is recommended to have one person assisting. One person holds and adjusts the back, while the other person inspects and/or disassembles the gas spring unit. For further investigation remove the gas spring intact and use the EasyTouch troubleshooting section.



When re-assembling make sure to mount the washers and bolts exactly as shown below.

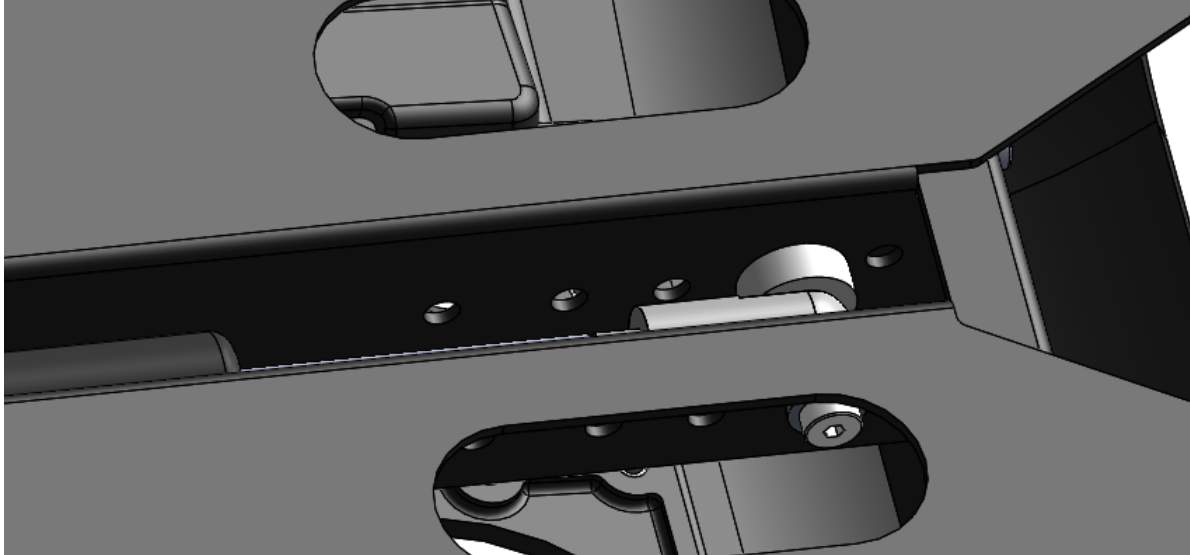


When re-assembly ensure that the retainer ring attached to the gas spring, this is only applicable for the backrest gas spring system.

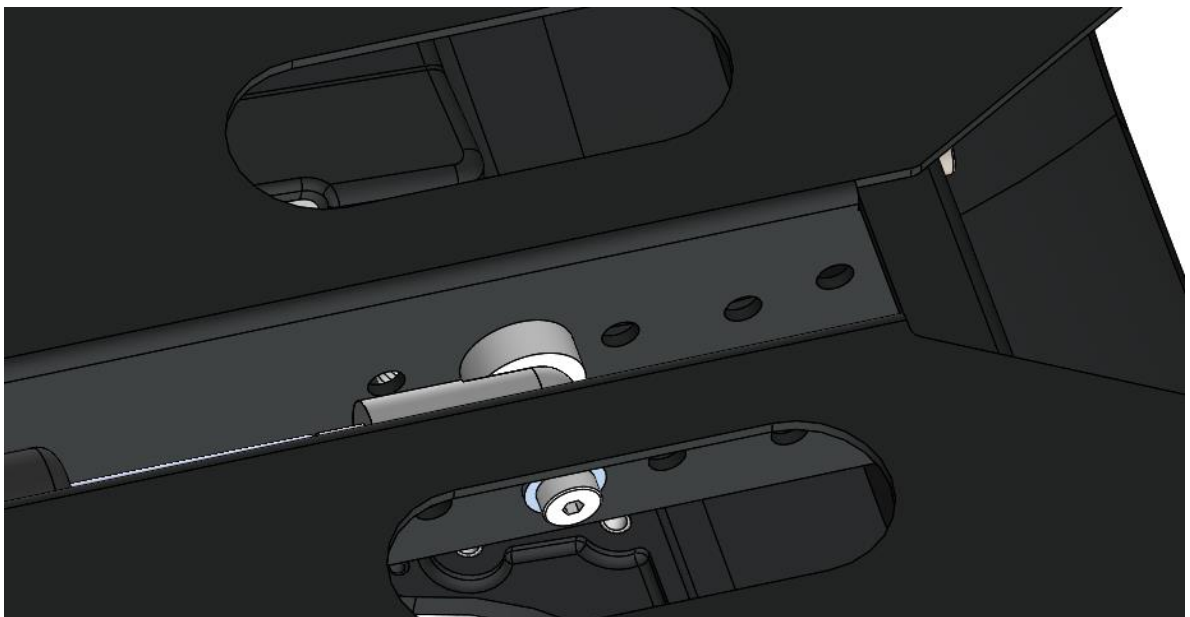


2.3.1. Placement of the gas spring on different models

For **leather back**, the EasyTouch release head is attached in the second hole from the front.



For **aluminium back**, the EasyTouch release head is attached in the second hole from the back.



2.4. Inspection and removal of column EasyTouch system

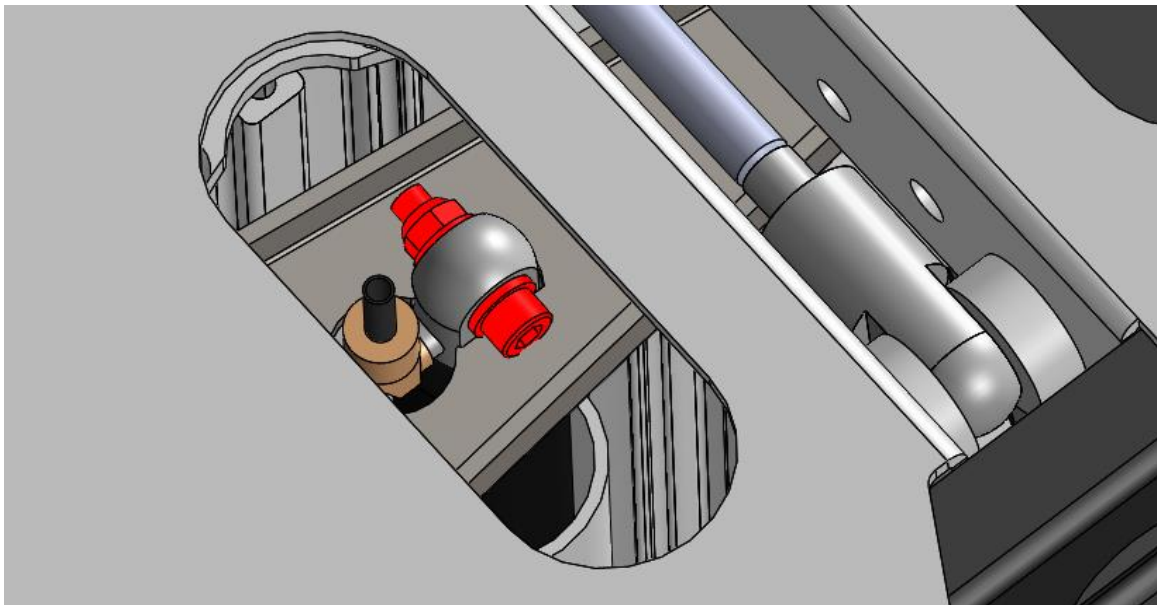
To remove the EasyTouch system from the column, there are two approaches.

The first is approach (approach 1 below) is more straightforward and can be performed by one individual (it is, however, still recommended to be two persons). For this approach access to the lower end of the column and more space are needed.

The other approach (approach 2 below) should only be considered when access to lower end of the column is blocked. This approach includes splitting the seat base from the top of the column and lifting it straight up and out of the column, as described earlier in this document.

2.4.1. Approach 1

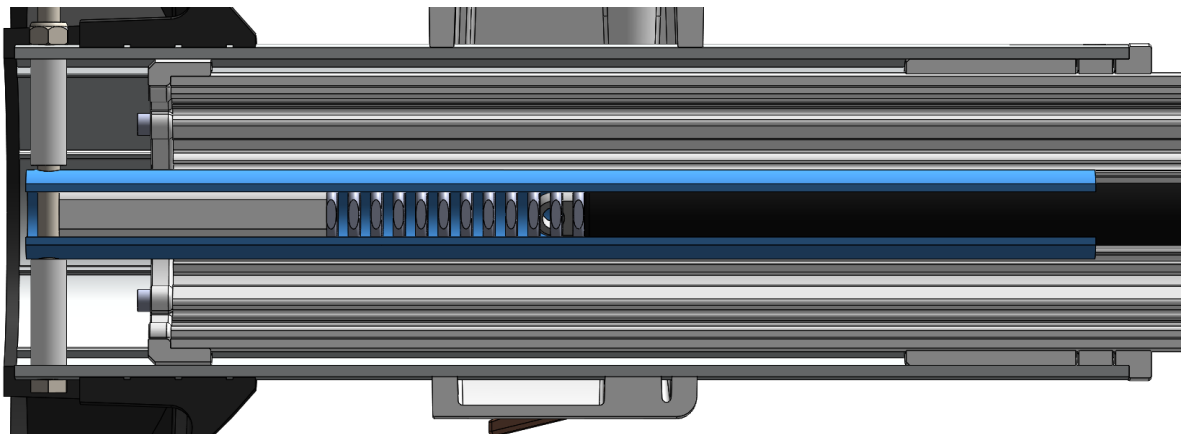
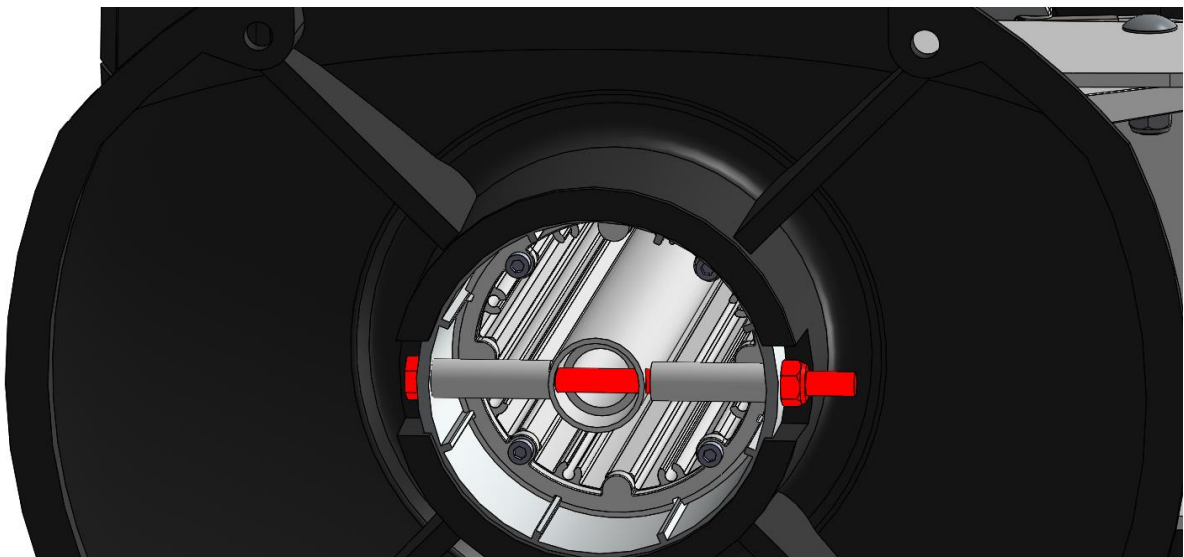
Ensure that the seat is in the lowest position. Remove the bolt (red in the picture below) securing the EasyTouch release head to the chair base, underneath the seat base.



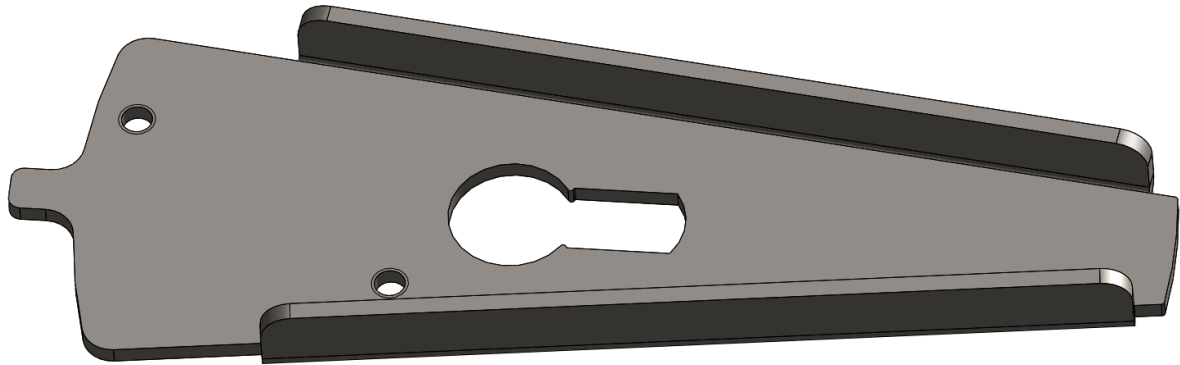
Remove the bolts securing the column foot to the deck and lay the chair down. The shape of the column foot depends on the different chair models.



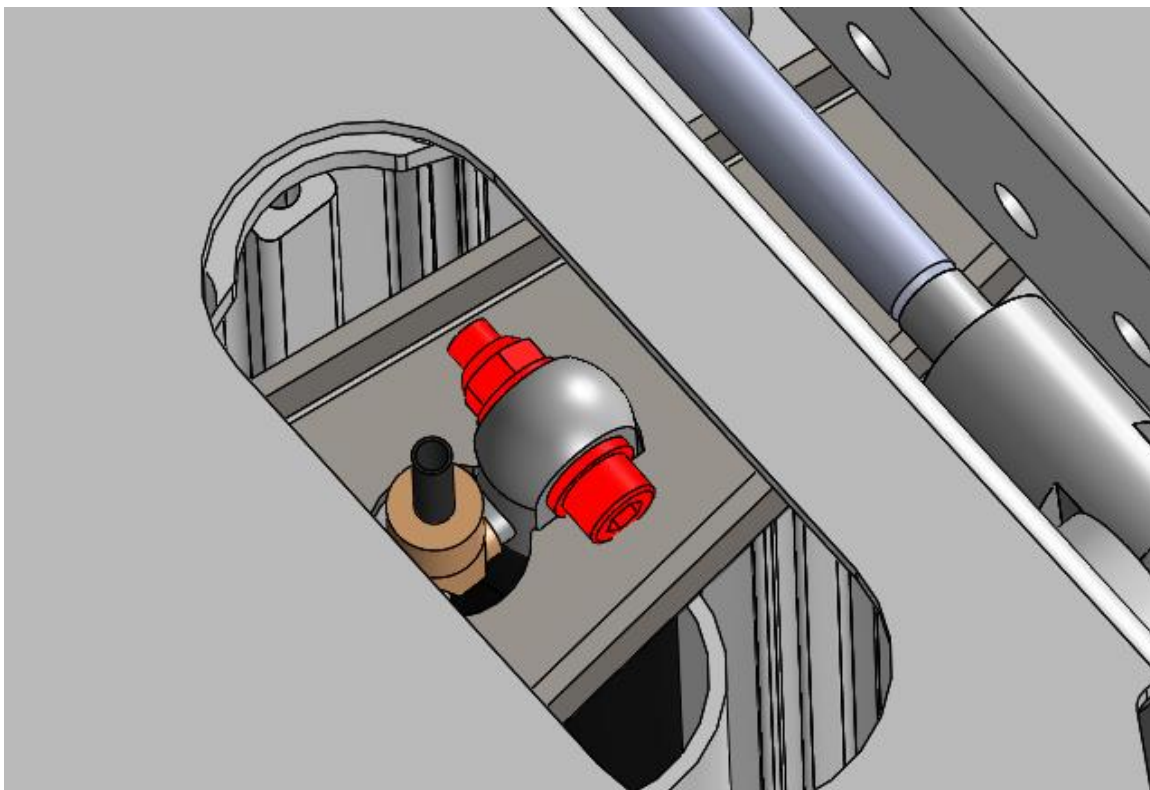
Remove the crossing bolt in the base and remove the pieces (if any) to access the gas spring (see pictures of typical setup below).



The last step to remove the EasyTouch is to guide the button unit through the attachment plate and through the column. It is a tight fit, but the button unit will pass through the hole in the plate.

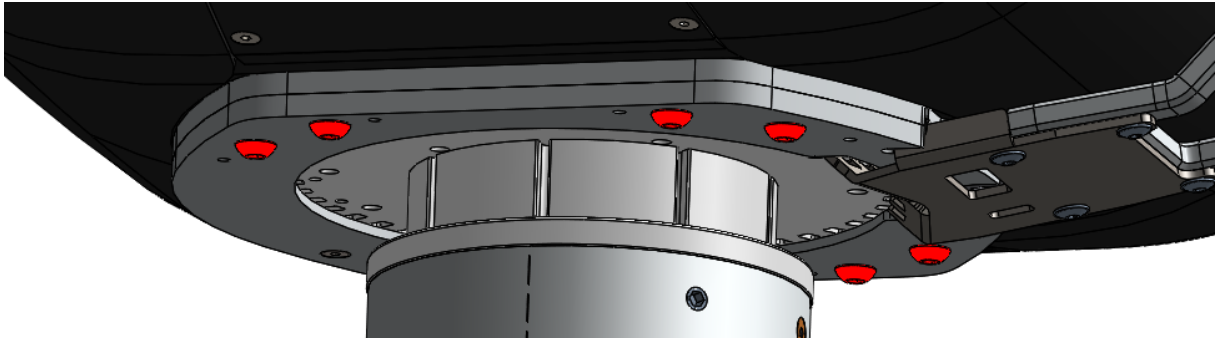


When re-assembling remember to attach the bolt (red in the picture below) securing the EasyTouch release head to the chair base, so it all stays in place during the process of lifting up the chair.

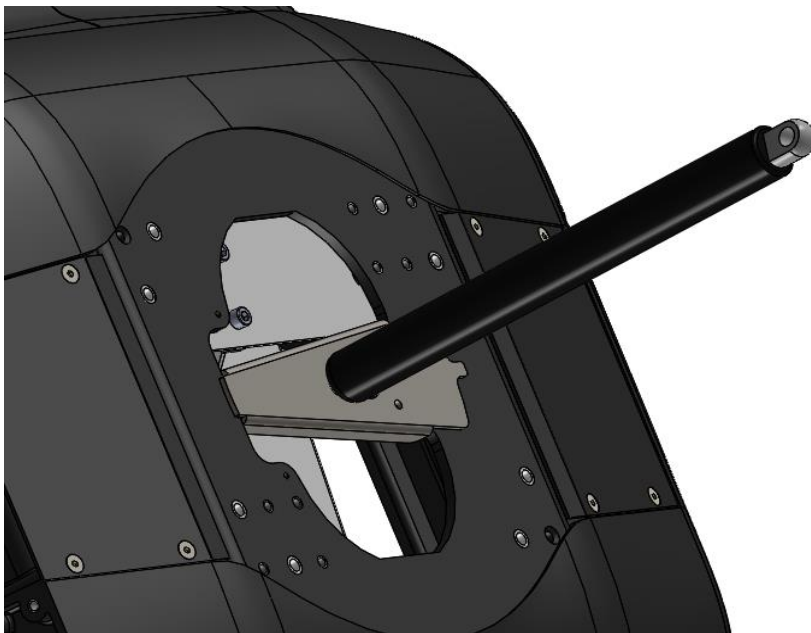


2.4.2. Approach 2

For this operation, it is recommended to have minimum three persons present. Ensure that the seat is in the lowest position before proceeding. Below the seat unit there are 8 bolts connecting the chair top to the column. Before removing these bolts, be prepared to lift the chair unit straight up (to lift the gas spring out of the column) and prepare a place to put it down for further inspection.



When the chair is safely resting on the floor proceed to inspect the gas spring unit. For further investigation remove the gas spring intact and use the EasyTouch troubleshooting section.



2.5. Re-assembly

To re-assemble the unit, follow the same guidance in reversed order.

If the information in this document is not sufficient, if any questions regarding your product remain or the need for technical support emerges, please contact NorSap for further assistance.