

SERVICING MANUAL FOR SPINALIS® CHAIRS

Outline of Servicing Procedures

Individual steps of servicing procedures for repairs of SpinaliS® chairs are outlined below. All steps can be performed by a single person in most of the cases. If an individual step requires assistance of an additional person, this is explicitly stated. The procedures for a disassembly and a reassembly of SpinaliS® chairs are described below. Whenever the need for servicing arises with respect to a default or a replacement part, please do execute only activities, which are needed to eliminate the reported default or insert the replacement part in question.



Metal base - legs



Casters (wheels)



Gas pump



Decorative gas pump cover



PVC / ABS backrest cover



PVC linear bearings



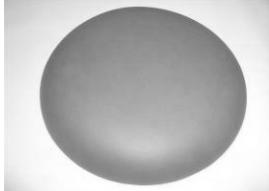
Wood holders



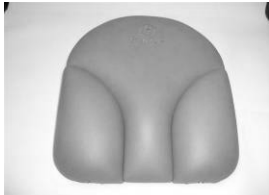
Metal backrest frame



Metal mechanism with spring



Seat



Backrest



Armrest

Procedures for a disassembly of a SpinaliS® chair to individual components and a subsequent reassembly:

REMOVAL OF CASTERS

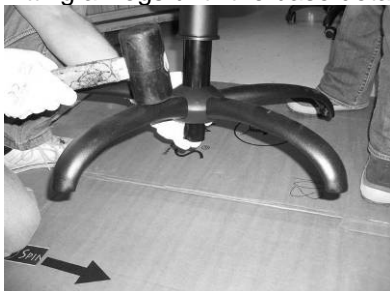
Remove the caster by gripping the caster with your hand and pull it out of the metal chair base. If the metal shaft stays within the base, use pliers to pull it out of the base.

REMOVAL OF METAL BASE

Two persons have to execute this activity. There are two ways how to remove the base.

Please do make sure to first remove all casters from the base.

A) The person A holds the SpinaliS® chair and raises it approximately 20cm above the floor (please make sure to adequately protect the floor). The person B uses a rubber hammer and hits the metal base repeatedly as close as possible to the centre of the gas pump. The person B should continue hitting all legs until the base detaches from the gas pump.



B) Alternatively, you can turn the SpinaliS® chair upside down and position the base on a solid foundation (please make sure to place protective material on the table surface to prevent the metal base from scratching). Position and hold a piece of wood at the bottom of the gas pump and hit it with

a heavy metal hammer until the gas pump detaches from the base. Please make sure to hold the SpinaliS® chair firmly throughout the procedure so that it does not fall on the ground.



REMOVAL OF GAS PUMP

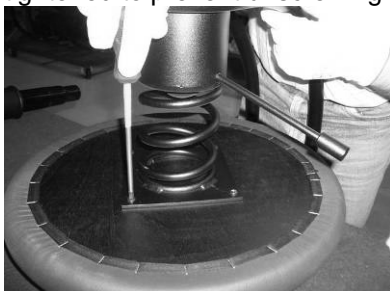
The person A holds the SpinaliS® chair and raises it some 20 cm above the floor (which should be adequately protected). The person B keeps hitting the gas pump from different sides with a rubber hammer until the gas pump is separated from the spring mechanism.



Sometimes it may happen that the gas pump cannot be removed due to a conoid joint between the lift and the spring mechanism. In such case the spring mechanism needs to be replaced as well. After executing the procedure explained above you can install all components which need replacing and reassemble the SpinaliS® chair. Please do not forget the decorative gas pump cover.

REPLACEMENT OF SEAT

If a seat needs to be replaced, please position the SpinaliS® chair so that the seat is placed flat on a table. Please unscrew the four screws, which hold the seat in place and replace the padded seat. Screw back the screws by **manually inserting each screw into the individual hole. Please screw it tightly for a couple of times to make sure that the screw fits well into the coil.** You can use a screwdriver only after the described steps are completed. This way a possible detaching of wooden nuts from the seat, which would damage the seat is prevented. The screws have to be securely tightened to prevent unscrewing.



REPLACEMENT OF ARMREST

Before replacing the armrest remove the backrest from the spring mechanism. Alternatively lift the entire SpinaliS® chair and place it upside down on a table. Make sure to hold the chair the entire time so that it does not fall on the ground. First remove the circular protective sticker from the screws and unscrew the two screws. Next, replace the padded part of the armrest. Screw back the screws by manually inserting each screw into the individual hole. Please screw it tightly for a couple of times to

make sure that the screw fits well into the coil. You can use a screwdriver only after the described steps are completed. The screws have to be securely tightened to prevent unscrewing. Then repeat the procedure for the other armrest, if needed.



REMOVAL OF PADDED BACKREST FROM METAL BACKREST FRAME

Two persons need to be involved in this activity.

First, please remove the PVC plug on the left and the right side of the ABS cover with a hand nail or a regular screwdriver (the exceptions are models HK and SP).



Use an electric d5 mm drill to bore through the rivet holding the backrest. Use an extended 5mm drill for models HK and SP in order to be able to reach the rivet situated in the inside of the frame. Please make sure not to damage the frame or the backrest whilst executing this activity. The person B should insert a PVC or a cardboard protection between the frame, the drill and the backrest. At the same time the person B should also make sure to hold the backrest firmly so that it does not fall to the floor once the person A finishes drilling through both rivets. You can also use an extended 5mm, 20 cm long drill in order to decrease possibilities of damaging the SpinaliS® chair.



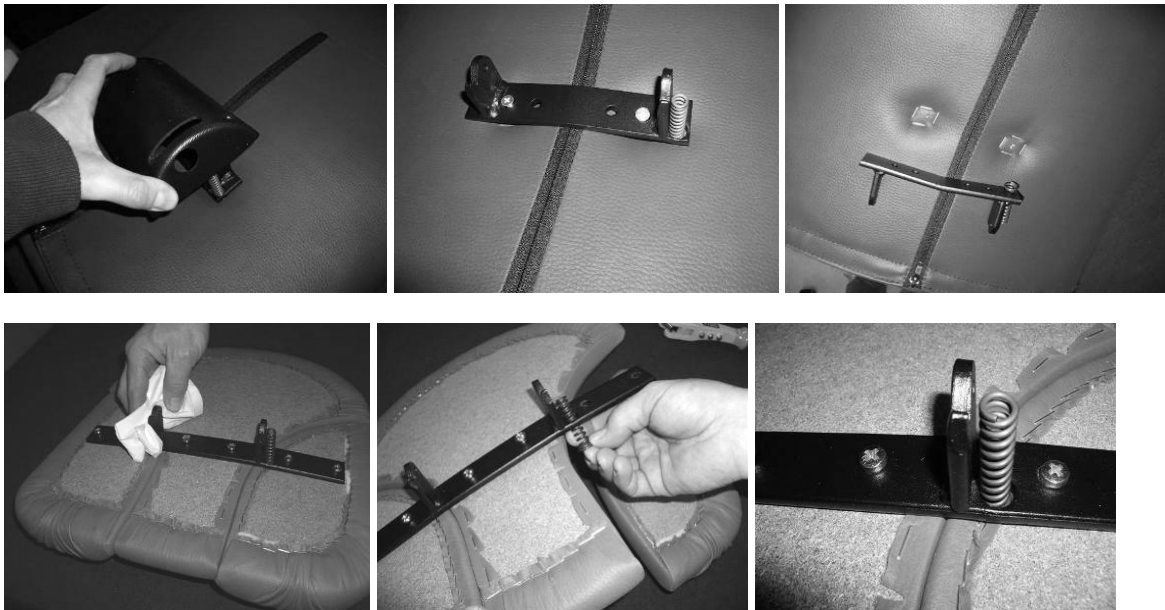
After drilling through both rivets please separate the backrest from the metal backrest frame. Please also remove any parts of the rivet, which may have remained in the metal frame by either drilling it through or by using a screwdriver and a hammer. Hit the remaining rivet parts and so remove them from the hole. Please clear away all metal parts immediately thereafter to prevent making the padded parts dirty.

COMPONENTS PARTS OF BACKREST:

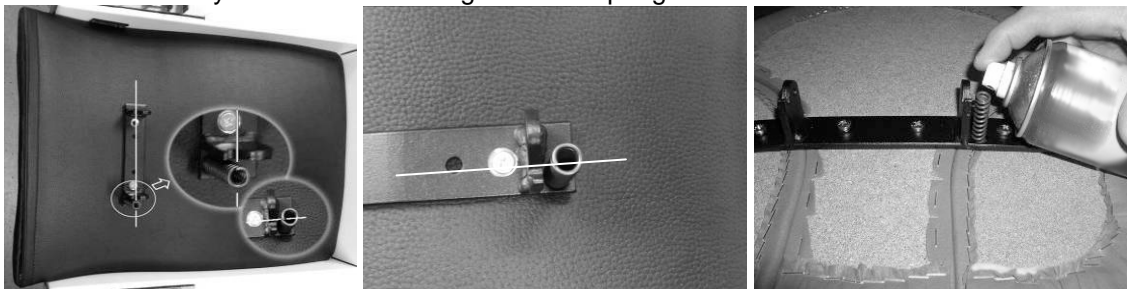
If you wish to disassemble the backrest (BS, AP, NG), please place it on a working surface, remove protective stickers or plugs from screws and unscrew them to remove the PVC cover. Wipe the metal frame with a rag and make sure to remove any chips that were caught in grease whilst drilling.



If you have to replace the small spring in the backrest holder, please unscrew the screws, which hold the backrest and the metal wood holder. Replace the spring with a new one and please make sure to position it so that it is not in contact with the metal frame. Finally screw back the wood holder and PVC cover.



Before reassembly make sure to oil or grease the spring.



Please place the ABS/PVC cover onto the backrest (do make sure to place it in centre of the frame) and screw it evenly with 4 screws. If you are dealing with an AP and NG model, please place the ABS/PVC cover so that the cut in the cover is positioned closer to the upper side of the backrest.

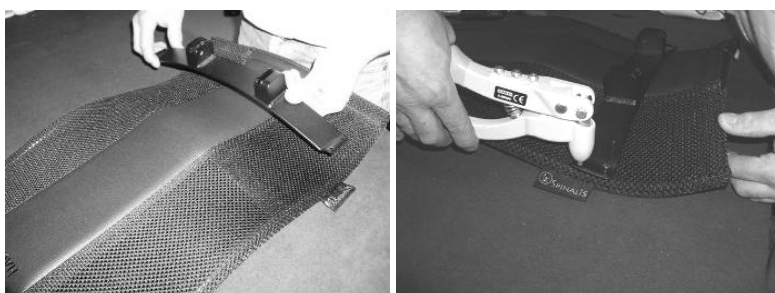


Should you want to separate the backrest from the backrest holder (model HK or SP) please use the 5mm drill to drill through 4 rivets holding the backrest and the backrest holder. After drilling through the rivets please first make sure to remove any chips occurred due to drilling and clean the backrest and the holder with a rag.

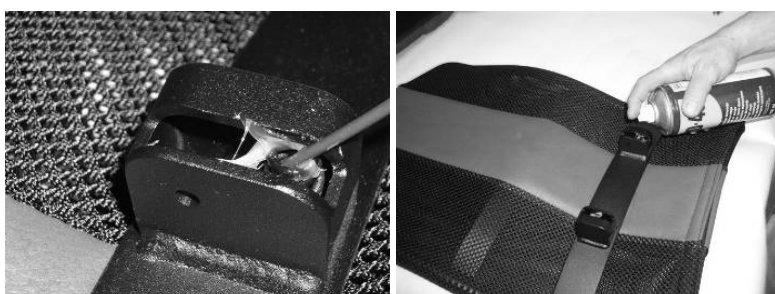
In the event that the small spring in the backrest holder is broken, the holder will need to be replaced with a new one.



Fix the backrest holder to the backrest with four rivets. Place the backrest onto a working surface. Place the backrest holder so that all four holes on the backrest and on the holder are aligned. Insert the rivets and fix them using specific tongs.



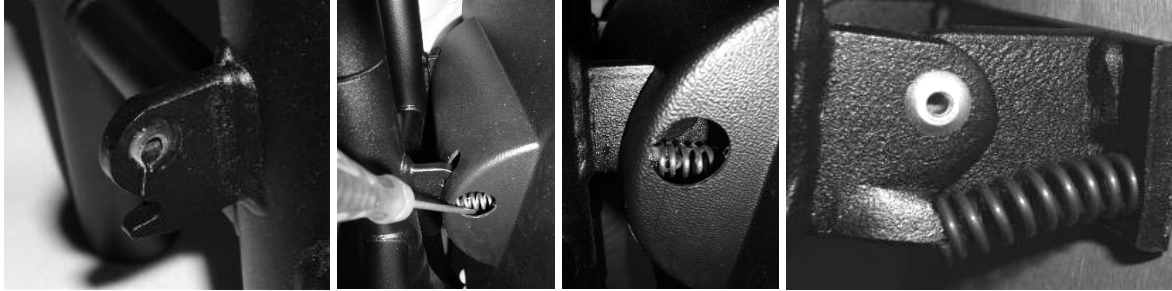
Before reassembly please make sure to oil or grease the small spring. Please pay special attention not to make the backrest dirty.



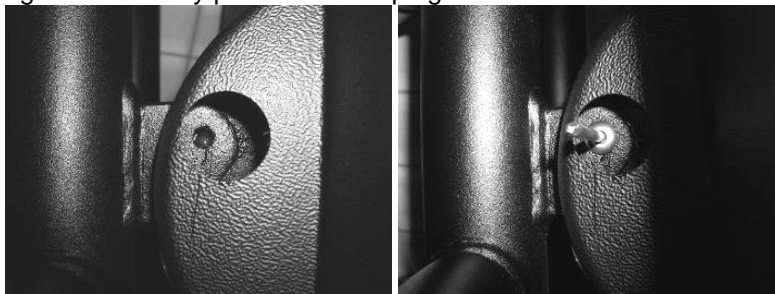
Fixing the backrest to the metal backrest frame:

Before reassembly please apply grease to the surface of both holders on the metal frame (grease should be applied to holder surfaces, which slide against each other).

Please place the backrest next to the holders on the metal frame. First insert the left rivet as there is no spring on this side, which makes re-positioning easier. The right side holds the backrest spring, which needs to be positioned onto a smaller pin in the holder with the help of a screwdriver.



Once the small spring is placed onto the pin please gently move the backrest to the position in which both holes are aligned. Insert the rivet. Use manual tongs and please first fix the left rivet and then the right rivet. Finally place the PVC plug onto the PVC cover.



BS, AP, NG,



HK, SP

ELIMINATION OF OTHER POTENTIAL DEFICIENCIES

Elimination of deficiencies when assembling the base of the SpinaliS® chair:

Should you be unable to insert the caster into the base due to small metal chips, left over from welding, please remove the chips by gently hitting them with the tip of the screwdriver or with the caster shaft. Insert the caster using harder pressure.



Deficiencies arising when assembling the backrest and the spring mechanism – cases when the backrest mechanism is stuck or inactive (the button used to raise the backrest cannot be rotated anymore).

A) In most cases this can be eliminated by hitting the bottom side of the left armrest with your hand and at the same time gently rotating the button used to raise and lower the backrest clock-wise. Once the thread and the slider align the problem is solved and the backrest can be raised and lowered with the button easily.



B) Another cause of a problem can be a misalignment of tubes at backrest or at the spring mechanism.

To test if the stated reason is the cause of deficiency please put the bearing on one tube without installing the button and test if the backrest tube slides down smoothly. Then repeat the stated with the other bearing.

If both tubes are sliding down normally, test the other tube with the thread, testing both backrest tubes. The button used to raise the backrest will have to be used for one tube. This will at the same time make it possible to check the thread and the nut in the tube.



Now please determine which part is the faulty one. Please use another SpinaliS® chair and find out which is the fault part by replacing individual SpinaliS® chair components.

First unscrew both backrests, exchange them and fix them onto the other SpinaliS® chair.

If you are unable to fix the backrest of the faulty SpinaliS® chair onto the seat of the other SpinaliS® chair, the backrest is most probably faulty and needs to be replaced.

If you are unable to fix the backrest from the other SpinaliS® chair onto the seat of the faulty SpinaliS® chair, the spring mechanism is most probably faulty and needs to be replaced.

Elimination of deficiencies – cases when a SpinaliS® chair raises or lowers by itself or cases when a SpinaliS® chair cannot be raised or lowered at all

Before replacing a gas pump please follow the procedure described below in order to make sure that the gas pump is the faulty part. The lift handle can easily be the faulty part in which case the fault is easily repaired.

Please first make sure to determine whether the gas pump is the faulty part or the lift handle on the spring mechanism.

Please check if the lift handle can be moved freely vertically at least 1-2 mm up and down. If yes, the gas pump is most probably faulty and needs to be replaced.



If you are unable to move the lift handle 1-2 mm up and down vertically, this means that it is pressed against the button of the gas pump, which results in an automatic raising and lowering of the SpinaliS® chair. This deficiency can be eliminated by pulling the lift handle with moderate force (as when trying to lift some 15 kg) upwards towards the seat for approximately 5 mm. This will cause a minor bending of the lift handle, which will create some 1-2 mm free movement area for the lift handle. This way the pressure on the button, which was the cause of the problem, will be released.



If you are able to move the lift handle vertically for more than 2 cm or if you can move it left and right, the metal spring mechanism is most probably faulty and will need to be replaced.

Backrest slowly descends by itself

The cause of this problem can be a lack of friction between the PWC bearing and the backrest mechanism. This fault can be repaired easily.

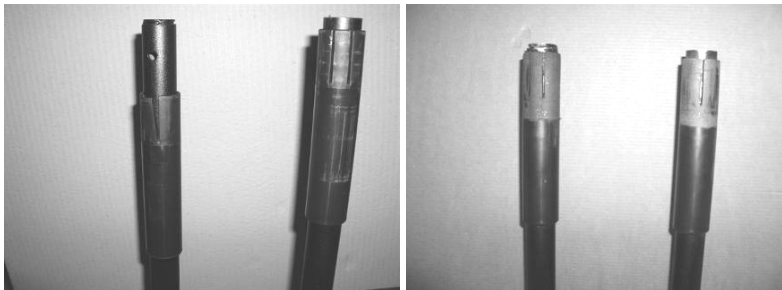
1. Please unscrew the backrest mechanism and remove it from the seat.
2. Strongly squeeze both bearing tubes together so that the distance between them is some 3-5 cm. Then release them so that they return to their original positions. This will cause a slight change in the alignment and the backrest button will no longer unscrew by itself.

3. Reattach the backrest.



The bearing slides off the tube at a reassembly or the pin on the bearing is bent:

If the bearing slides down the tube at a reassembly of a SpinaliS® chair, you have to lift it up to the height at which you are able to fix the pin into the hole in the tube.

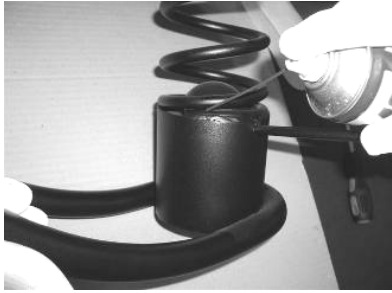


If the pin is bent, please push it back to the correct position with your fingers and fix the backrest. If the pin is broken, please remove the bearing from the tube and replace it with a new one.



Eliminating creaking of a seat

It is possible that the spring starts creaking, when the user is seating on a SpinaliS® chair or is moving the seat. Please apply some grease or KENT WHITE GREASE or oil onto the beginning of the weld (at the bottom) and/or at the end of the weld (on the top).



Eliminating creaking of the backrest:

If the backrest creaks when being moved, please apply some grease to the openings as seen on the pictures. Please apply a couple of short squirts of KENT WHITE GREASE as indicated and the problem should be eliminated.



Creaking can also occur where a gas pump is inserted into the metal base. You can get rid of the creaking by applying a couple of short squirts of KENT WHITE GREASE from all directions into the slot of the gas pump.



Getting rid of static electricity:

During the winter time static electricity can occur when using the SpinaliS® chair if the SpinaliS® chair is used in dry premises. If you feel static electricity when touching the SpinaliS® chair, please attach a metal chain to the bottom side of the gas pump. This will conduct static electricity into the ground and away from the SpinaliS® chair, which will eliminate the problem in most cases. If static electricity continues to occur, air humidity in the premises has to be raised to at least 60%.



Aligning arm rests if one of the arm rests is higher than the other:

Despite thorough continuous checks of all components during the production process it may occasionally happen that one arm rest is slightly higher than the other due to activities during the welding process.

This default can be removed by applying your force – please place one hand on the higher arm rest and pull the lower arm rest up using sufficient amount of force so that the arm rests are aligned.



Align the backrest if the arm rests are misaligned to the left or to the right:

Despite thorough continuous checks of all components during the production process it may occasionally happen that the backrest is slightly misaligned to the left or to the right due to activities during the welding process.

This default can be removed by applying your force – please place your leg on the SpinaliS® chair base, hold the backrest with both hands and pull it to the opposite side until it is aligned with the seat.



Repairing of minor cosmetic defects:

Smaller folds on upholstered parts can be removed or diminished by using a hair drier. Please direct the hot air to the area, which is folded, for a couple of minutes and then smoothen the area with your hand. Repeat doing so until the fold disappears. ATTENTION! Please be extremely careful not to damage the material with the hot air. Please test the temperature of the air on the area of the material, which is not directly visible.

Smaller scratches on a metal frame can be removed by using a thin black marker. Please colour the scratch with the marker then use the finger to smudge the surface so the colour is assimilated with the surface.

Small spots on chrome areas can be removed using a cotton rag dipped into a solution of kitchen alcohol vinegar (solution of acetic acid 2-10%).

The threads still remaining from sewing operations can be cut off with scissors. Please be careful not to damage the material when using the scissors.

Please note that this Servicing Manual for SpinaliS® chairs/Outline of Servicing Procedures (hereinafter "Manual") is a suggestion on possible actions when servicing SpinaliS® chairs, based on experience gathered by Ham d.o.o. through years. The Distributor however is free to decide whether to take this Manual into account or not, in its free discretion. Ham d.o.o. does not hold any responsibility for any actions and/or inactions taken and/or not taken by the Distributor and/or any third parties based on this Manual.

SpinaliS® - HAM d.o.o., dec. 2012