Minimizer™ Truck Seat System
Long Haul Series

Service Manual
Read and understand this manual before servicing this seat
INTRODUCTION

SERVICE AND REPAIR
Proper service and repair are important to the safe, reliable operation of this seat. Service and repair should be performed only by responsible technicians who have been properly instructed and authorized to do so. The procedures recommended in this manual are safe effective methods for performing service and repair operations.

We could not possibly know, evaluate, and advise the service trade of all conceivable ways in which service can be done or of the possible hazardous consequences of each way. If you use a service procedure which is not recommended, be sure that personal safety and equipment safety will not be jeopardized.

It is the responsibility of the technician performing the service and repair to:
- Inspect for abnormal wear and damage
- Choose a repair procedure that will ensure your safety, the safety of others, and the safe operation of the equipment
- Fully inspect and test the equipment to ensure that the repair or service has been properly performed and the equipment will function properly.

This manual describes the correct service procedures for the Minimizer Long Haul Seat series. The information in this manual was current at the time of printing and is subject to change without notice or liability.

READ AND UNDERSTAND THIS SERVICE MANUAL
Learn how to service models 101358, 101359, 101360, 101361, 101362 and 101363. Consult your dealer or service professional if you do not understand the instructions in this manual and/or need additional information.

KEEP THIS MANUAL
This manual should be considered a permanent part of the seat and be available for reference when servicing the seat.
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**General Information**

**Important Hints**

- Seat repairs should be carried out by service technicians only.

- The description in chapter 2 explains the removal of sundry seat components. The installation of these seats components generally happens in reverse sequence.

- Not all fastening parts for hoses and cables (e.g., cable binder) will be mentioned in detail. After repairs it is necessary to locate the hoses and cables, as well as fastening and securing components, into original position.

- Hoses, electrical lines and Bowden cables must not be crushed or bent.

- Due to safety reasons, pay attention to the correct positioning and to the observance of the tightening torques of the screws and bolts when exchanging component parts, including the seat belt anchorage points.

- After each repair, a functional test and, if pneumatic parts are involved, a leak test should be done.

**Critical fastener torques:**

<table>
<thead>
<tr>
<th>Fastener</th>
<th>Torque</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8</td>
<td>=20 Nm</td>
<td>+5Nm Suspension to riser</td>
</tr>
<tr>
<td>M10</td>
<td>=22 Nm</td>
<td>+/-2Nm Seat rails to suspension</td>
</tr>
<tr>
<td>Armrest to seat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/16”UNF-2B</td>
<td>=35Nm</td>
<td>+5Nm Seat Belt to ICP Bar</td>
</tr>
</tbody>
</table>

- Backrest in forward folded position must not be used as lift help.
AVAILABLE IN:
• PREMIUM CLOTH
• ULTRA LEATHER

FULLY ADJUSTABLE SHOCK ABSORBER + AIRBAG SUSPENSION

14 “STANDARD” FEATURES

#1 IN DRIVER SAFETY & WHOLE BODY HEALTH

TPS MAGAZINE AFTERMARKET PRODUCT OF THE YEAR

MINIMIZER™ LIFETIME WARRANTY

OPTIONAL PREMIUM FEATURES:

A
HEATED BACKREST AND SEAT CUSHION

B
COOLED BACKREST AND SEAT CUSHION

C
REVITALIZING MASSAGER

*Premium Options sold as:
- Heated & Cooled
- Heated & Revitalizer

Option A & B Switch Not Shown will be located above feature 10, 11, & 12 switches

Option C uses the remote

14 “STANDARD” FEATURES

1 ADJUSTABLE ARMRESTS
2 FULL SWIVEL BASE
3 SEAT TILT ADJUSTMENT
4 FORE/AFT ADJUSTMENT
5 SEAT CUSHION LENGTH ADJUSTMENT
6 FORE/AFT LOCKABLE ISOLATOR
7 AIR DUMP
8 ADJUSTABLE SHOCK ABSORBER
9 AIR HEIGHT ADJUSTMENT WITH MEMORY
10 LOWER AIR LUMBAR SUPPORT
11 UPPER AIR LUMBAR SUPPORT
12 SIDE AIR SUPPORT BOLSTERS
13 HEAD & SHOULDER ADJUSTMENT
14 BACKREST (FULL RECLINE)
Serial number location:
Serial number and model label are located at the front side of the lower frame of the suspension unit, and are visible when lifting up the Bellow.

Please specify these numbers for spare part orders.
Seats using Universal Riser:
- Disconnect air supply lines and electrical connections.
- Remove old seat from Truck and keep floor bolts.
- Position New Universal Riser so holes in riser line up with the holes in floor. Use original floor bolts to secure riser to floor.
- Remove 4 bolts at bottom corners of suspension.
- Attach angle brackets to front and rear of suspension with bolts included with riser.
- Position on top of riser by lining up bracket holes with weld nuts on riser and install 4 bolts (Torque to 20 NM +/- 5NM)
Seats using 38.1 Risers:
- Remove old seat from Truck and keep floor bolts.
- Disconnect air supply lines and electrical connections.
- Position New 38.1 Riser so holes in riser line up with the holes in floor. Use original floor bolts to secure riser to floor.
- Remove 4 bolts at bottom corners of suspension.
- Position Seat and suspension on top of riser by lining up riser holes with threaded holes at bottom corners of suspension. Install 6 bolts included with riser up into bottom corner holes of suspension (Torque to 20 NM +/- 5NM).
International Wide Bolt Pattern / Volvo / Late model PACCAR Risers

- Remove old seat from Truck and keep floor bolts.
- Disconnect air supply lines and electrical connections.
- Remove 4 bolts at bottom corners of suspension.
- Position riser to suspension by lining up top riser holes with threaded holes at bottom corners of suspension. Install 6 bolts included with riser up into bottom corner holes of suspension (Torque to 20 NM +/- 5NM).
- Position seat into truck and use original floor bolts to secure to floor.
Seat Cushion Removal (Figure 1)
- Lift up lever (1) and pull seat cushion to foremost position.
- Undo two screws (2) and remove tilt handle (3) from seat cushion (F).
- Lift up lever (1) and slide sideways towards (A) as shown in the picture below.
- Move seat cushion forwards until seat cushion releases on its own.
- Disconnect electrical feeders for seat cushion heater and ventilation, if necessary.

Seat Cushion Mounting:
- Bowden cable (8) must be positioned between lever (1) and seat cushion ground plate.
- Lay the keyholes (4) of the seat cushion (on the cushion’s bottom side) onto the sliders (7) at the rear.
- Push lever (1) upwards (don’t move cushion) and push lever in direction of arrow (B)
- Press down on the seat cushions while lining up the four key holes (5) onto the sliders (7) at the front and back.
- Push the cushion in direction of backrest (till stop) while still pressing down on the complete seat cushion till handle engages.
- Check now if all four sliders (7) are locked in the keyholes (4 & 5) (no vertical movement allowed).
- Take note, that the cushion is now locked in horizontal and vertical direction.

Sliders for Seat Cushion:
- Dismantle seat cushion.
- Pull out plastic pin (6) and squeeze out slider (7).

Sliders Mounting:
- Mount sliders (7) at the seat frame.
- Push in pin (6) (level of pin head (6) must be flat to fit the flat of the slider head (7), (see Section C).
Figure 2
Covers Seat Frame IPS-Valve, switches for heating, swivel and air-conditioning covers, lever side (5):
- Remove seat cushion.
- Adjust suspension to highest position and secure it with block between lower suspension axle and front frame.
- Press nose of shoulder adjustment lever (21) till nose of handle disengages.
- Pull off handle (21) downwards.
- Unscrew screw (1 front screw) and (2) number 2 top screws.
- Undo two plastic rivets (3).
- Fold backrest completely forwards and remove one screw (4).
- Remove cover (5) from seat frame.

Switch for seat lowering:
- Remove screws (7).

IPS valve (12):
- Lift up locking tab (8) safely and Remove air pipe (9) from “Y” connector (10).
- Disconnect three hoses from valve unit.
- Undo retainers of valve and push out valve from cover (5).

Cover, opposite lever side (2):
- Remove cover (20) in general sense of cover.

Operating unit air-conditioning:
- Unhook switch (22) from side cover (5) and unplug connector (23).

Wire diagrams with color codes are found on Pages 42-46 for your convenience.
Backrest Removal
- Remove shoulder adjustment handle (8) in figure 4
- Remove side covers (Both sides) See page 11.
- Remove plug (7).
- Remove e-clip (2) and roller (3).
- Remove cable from cable guide (5).
- Remove plug (9) from cable guide.
- Take out e-clip (1), and completely remove cable from guide.
- Disconnect lumbar airlines (13) and electrical connections (12).
- Remove clip (10) from control side backrest bolt, then remove both (16) bolts.
- Remove backrest from frame.

Figure 4
Lever / Lever Springs for Backrest

Lever for backrest adjustment and lever springs
- Remove side cover for seat frame (lever side without loosening hoses)
- Remove e-clip (1), Remove handle (3) then remove springs (2) and (5) and remove shoulder handle bracket (6).

Shoulder adjustment
- Remove e-clip (7) and roller (8)
- Pull out securing plug (10) and remove cable ball (11) from lever (pull cable out of cable guide, if necessary)
- Remove bolt (12)
Height Adjustment Handle/Cable
- Adjust seat frame tilt to the upmost position.
- Remove seat cushion. See page 9.
- Remove nut (2), remove Bowden cable (3) from fastening (4) and pull cable nipple (5) out of valve lever (6)
- Remove two screws (1), Push Bowden cable (3) out of bearing (7) and pull height adjustment handle and cable (8).

- After mounting: Adjust valve (6) for height adjustment (how do you do this?).
Shock Absorber Adjustment:
- Remove seat cushion. (see page 9)
- Remove retaining e-clip (1) and lever bowden cable (2-grey) out of shock adjustment bracket(3).
- Unscrew two screws (4).
- Knock pin (5) out of lever (6) and pull bowden cable out of seat frame

Figure 7
Lever for Tilt Adjustment
- Remove seat cushion. (see page 9)
- Remove side cover without disconnecting hoses (yellow, red and clear).
- Adjust seat frame tilt adjustment to upper position.
- Press down spring (1), unhook from fixation (2) and pull spring out from levers (3).
- Remove handle for height adjustment (6).
- Lever bearing (7) out of seat frame and remove Bowden cable (black) from lever (3)
- When mounting, hook spring (1) at first in lever (3).
- Press down spring (1) with a screwdriver in area “Y” and hook spring behind fixation (2).
Adjustment instructions for Bowden cable of tilt adjustment
- Pull lever for tilt adjustment up.
- Adjust Bowden cable in a way, that between lever (1) and plate (2) so no gap is visible.
- The inclination adjustment must release completely and must move noiselessly when pulling the lever (no clattering of tooth segments).
Tooth segment for backrest adjustment

- Remove seat cushion. (See page 9) and Backrest (See page 13)
- Remove side cover for seat frame without disconnecting hoses or electrical connections.
- Remove e-clip (1) and loosen springs (2) at pin (3) of lever (4).
- Remove nuts (5)
- Slide plate (6) off.
- Remove tooth segment (7)

Figure 10
Upholstery cover for backrest cushion
- Disconnect three lumbar/bolster air lines (1)
- Disconnect electrical connection on seats with Relaxer or Climate (3).
- Remove armrest.
- Unhook C Profiles (2).
- Pull cover upwards gently, and loosen from Velcro (6).
- Remove cardboard.
Cover for seat cushion
- Remove seat cushion. (see page 9)
- Pry upholstery tuck strip from bottom of seat cushion out of groove (2) running around seat pan (1).

Notice:
Before mounting the cover, bend hooks in the groove (2) from the seat pan (1), if necessary.
Air Chamber for lumbar support
- Remove backrest cover partially.
- Unscrew four screws (1) and loosen foam part from frame.

**Hint:**

Don’t tighten screws (1) when mounting the foam part. The distance between screw head (1) and shackle () should come to 1 mm.
- Disconnect three hoses (3).
- Pull out lumbar assembly from behind cross-braces (4).

**Hint:**

When mounting the air chamber unit, take care, that chamber carrier plate (2) has to be mounted behind cross-braces (4).
Air Spring
- Remove seat cushion. (see page 9)
- Pull out Bellow fixation in front and side area.
- Secure suspension unit (4) at the highest position with block (length: 75mm) between the scissor axle and lower suspension frame.
- Remove lower shock absorber bolt (5) (refer to figure 15) lift up shock absorb (), and move out air spring (4) frontwards.
- Lift up fixing hook (1) safely and Remove air pipe (2)
- Undo Screw (3).
- Turn round air spring (2) 90 degrees and take it out from lower holder (5).
- After mounting the new air spring, nose must fit to the hole at the upper air spring holder.

Figure 14
Height Adjustment

When exchanging the shock absorber, all parts of the kit must be exchanged!

- Remove seat cushion and pull out lower bellow fixation.
- Secure suspension unit at the highest position by a distance block (length: 75mm).
- Undo nut (1), loosen screw (2) and remove socket (3).
- Unscrew lower shock absorber fixation (5).

Remove retaining washer (6) and lever Bowden cable (7 - grey cable) out of fastening (8).

Figure 15
Valve Removal for height adjustment
- Remove seat from vehicle, lay seat on its back side, access to valve is through bottom of suspension.
- Remove nut (1), remove Bowden cable (2 - black) from bracket (3) and pull cable nipple (4) out of valve lever (5).
- Carefully lift up fixing tabs (6) and Remove air pipes (7 – yellow and red) from valve (11).
- Unhook spring (8).
- Turn around valve (11) on scissor tube (12) and pull it off the scissor tube (12).

After mounting: See page 29
Switch for quick lowering
- Remove seat cushion.
- Remove plastic cover (1).
- Unscrew screw (2).
- Disconnect hoses () () () from connector (6).
- Unscrew screw () and unhook switch (7) in the upper area out of cover.
Tooth segment for shoulder adjustment (articulating back)
- Remove backrest cover and pull it upwards to the shoulder area.
- Unscrew bolt (1), nuts (2) and take off plate (3).
- Unhook spring (4).
- Remove retaining washer (5) and remove Bowden cable (6) from lever (7).
- Take out lever (7) and tooth segment (8).
Valve adjustment
- Lower seat and adjust Height Adjustment to upper position.
- Adjust Bowden cable (Black) by adjusting nut (1) so that the distance between lever (2) and air spring holder (3) comes to 2mm.

Bowden cable adjustment:
- Pull handle (5) to the upmost position and adjust Bowden cable (# - Color) of valve () for height adjustment in that way, that lever arm (?) has still a little clearance.
Swivel
- Remove pneumatic (2) and electrical lines.
- Remove seat from vehicle.
- Remove seat cushion (See page 9)
- Disconnect isolator cable, shock adjustment cable, height adjustment cable, and air lines, and electric.
- Remove the four screws that hold the slides to the swivel ()
- Place upper part of seat in safe location.
- Pivot swivel to side and remove 4 screws () holding swivel to suspension.
Swivel Changeover

Seats come from the factory with the swivel unit configured for the left side of the truck cab. If the seat is to be installed on the right side of a vehicle, the swivel unit must be reconfigured:

- Remove the seat cushion assembly. (Figure 1)
- Locate the two M8 socket head bolts in the swivel unit near the large thru hole as shown in yellow below.
- Take the M8 bolts you just removed from hole position 5 and hole position 9 and move them to the locations shown in red in the image on the right, hole positions 2 and hole position 10 as shown above.
- Torque the M8 bolts to 24 foot-pounds in the new locations.
- After seat cushion assembly is replaced, return swivel adjustment handle to locking position.
Heating seat cushion
- Remove seat cushion. (See Page 9)
- Lever seat cushion cover out of beading (2) running around seat ground plate (1).
- Disconnect electrical connection (3).
- Pull off heater (4) carefully from the foam.

Hint:

If the heater (4) is not removable without tearing up the foam, cut the heater along the broken line X and pull back protective covering from adhesive on the new heater attach new heater on top of old heater. Insure new heater is securely adhered to old heater.

Hint:

Before mounting the cover bend back hooks at the beading (2) of the ground plate (1), if necessary.

Figure 20
Heating backrest

- Remove seat cushion.(See Page 9)
- Pull cover (7) upwards while loosening fixing tapes (6).
- Disconnect three air hoses (3), electrical connector (2) and electrical connector, () if existing.
- Unhook C-Profiles (4).
- Pull off heater (8) carefully from the foam.
- If the heater (8) is not removable without tearing up the foam (4), carefully cut the heater along the broken line X and fix the new heater on top the old heater.
Climate Kit Assembly
- Disconnect three air hoses (1) and two electrical connector (heater and fan)
- Unhook C-Profiles (2).
- Pull cover upwards while loosening fixing Velcro (6).
- Remove cardboard.
- Remove Foam from Backrest frame
- Disconnect electrical connection (10) and take out fan (9).
- Remove two screws (7) and one screw (8) out of fan (9).
- Press in corrugated tube (12) a little, unhook it and pull it out of the fan bracket (11).
  Retain for reuse.
- Remove foam seal from fan bracket (11).
- Remove backer from new foam seal and stick to new fan.
- Mount corrugated tube into fan bracket (11).
- Place fan on fan bracket and secure with screws (7 and 8)
- Place foam on back frame insuring corrugated tube is in back foam channel.

Reinstall upholstery, insuring cardboard is placed in original position.
Fan for seat cushion:
- Remove seat cushion. (See page 9)
- Remove four screws retaining fan assembly (3) to seat pan.
- Pull fan assembly (4) from seat pan.

*Hint:*

*Before mounting the cover, bend hooks in the groove (2) from the ground plate (1), if necessary.*

![Figure 23](image-url)
Electronic unit for Climate System:
- Remove seat cushion (See Page 9)
- Remove two top screws from side cover (17).
- Pull off connector from electronic unit (35).
- Remove electronic unit (35)
Lever/Bowden cable horizontal suspension

- Remove swivel from suspension
- Unscrew two screws (1).
- Remove latch clip (4).
- Unhook cable from latch (3) from lever (5).
- Pull lever (5) / Bowden cable (2) out of opening (6).
Armrest removal:
- Remove 2 bolts (#1) and armrest (keep bolts)
- Install Cover Plate using the bolts from the armrest.

#1 Remove bolts and keep

#2 install cover plate using bolts from armrest.
Pneumatic Plans
Circuit Diagrams Heating/Ventilation
Plug-in connectors:
1 x 2 pol. Seat / truck heating
2 x 2 pol. Switch at seat
3 x 2 pol. Seat cushion heating
4 x 3 pol. Backrest heating

Check A
Switch for heating
Heating "On": \( U = \text{Betriebsspannung} \)
Heating "Off": \( U = 0 \text{ V} \)

Check B
Calculate internal resistance of heating:
Measure current = I
Measure voltage = U

\[ U = R \cdot I \quad \text{or} \quad \frac{U}{I} = R \]

Heating "On": max. 15.5 \( \Omega \)
min. 11.1 \( \Omega \)

Heating "Off": \( R = \infty \)
(Thermostatic switch in the seat cushion opened)
Switches for heating and ventilation

Climate control

Plug-in connectors:
1.xx 12 pol. Climate control
2.xx 2 pol. Seat connector
3.xx 2 pol. Fan for backrest
4.xx 2 pol. Fan for seat cushion
5.xx Hub for ground
6.xx 2 pol. Backrest heating
7.xx 4 pol. Seat cushion heating
8.xx 6 pol. Switches heating + ventilation

Check A: Signal operat. switches: each +/- 0.2 V
- "Off" 1.2 V
- H3 2.0 V
- H2 3.0 V
- H1 3.9 V
- L1 5.0 V
- L2 6.1 V
- L3 7.4 V

Check B: Supply voltage:
- heating or ventilation
- "On" = 16-32V DC
- "Off" = 0 V

Check C: Supply fans
- (U_{2} > 26V)
- "Off" 0 V
- H3 0 V
- H2 0 V
- H1 0 V
- L1 10.5 V
- L2 16 V
- L3 24 V

Check D: Supply heating
- Heating "On": supply voltage
- Heating "Off": 0 V

Remark:
When ventilation is running, the heating is occasionally switched on.
Indicator light (switching unit)

Flashing code interval:
- LED "On" 0.5 sec.
- LED "Off" 0.5 sec.

After a short break (approx. 1-6 seconds) the flashing code repeats itself.

<table>
<thead>
<tr>
<th>Flashing code</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>reserved</td>
</tr>
<tr>
<td>2</td>
<td>Fault control unit</td>
</tr>
<tr>
<td>3 *</td>
<td>Fault fans</td>
</tr>
<tr>
<td>4</td>
<td>Fault heating backrest</td>
</tr>
<tr>
<td>5</td>
<td>Fault heating seat cushion</td>
</tr>
<tr>
<td>6</td>
<td>Fault sensor for temperature</td>
</tr>
<tr>
<td>7</td>
<td>Fault operating switches</td>
</tr>
</tbody>
</table>
Revitalizer System

- Revitalizer Control
- Revitalizer Motors (2 per seat cushion)
- Revitalizer Motors (4 per backrest)
- Revitalizer Electrical Connection (Red & Black Wire)
- Heater backrest
- Heater seat cushion
Revitalizer Wiring Diagram for the driver’s seat
## Troubleshooting

<table>
<thead>
<tr>
<th>Checks for general problems</th>
<th>Results of checks</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Check if vehicle’s compressed-air supply is ensured. Switch for seat lowering must be pushed to position “upwards” and IPS*, resp. LS*, has to be exhausted.</td>
<td>Seat moves upwards.</td>
<td>Repairs only in accordance with the repair manual.</td>
</tr>
<tr>
<td>2. Check air supply inside the seat, especially hose (1), by pushing seat lowering to the position “upwards”.</td>
<td>Seat doesn’t move upwards.</td>
<td>Funktion of seat lowering / uprising is correct. Continue with check 3.</td>
</tr>
<tr>
<td>3. Raise up the seat by hand (hold the seat under the backrest) and check again by actuating IPS / LS while holding.</td>
<td>Air is floating (IPS / LS filled).</td>
<td>Transparent hose (1) could be squeezed, when the seat is in undermost position. Repair.</td>
</tr>
<tr>
<td>4. Check if the seat reacts promptly, when adjusting the seat height.</td>
<td>Seat reacts promptly.</td>
<td>Bushing A o.k.</td>
</tr>
<tr>
<td>5. Lower seat by seat lowering and adjust undermost height by handle (E). Remove seat cushion and check if plastic bushing A (steers valve for height control B) is missing, resp. possibly in a wrong position.</td>
<td>Seat doesn’t react promptly.</td>
<td>Continue with check 5.</td>
</tr>
<tr>
<td>Bushing A is missing.</td>
<td></td>
<td>Mount new part, look for correct adjustment - see drawing X. Demount height control valve B and mount it back (see manual). Correct Position of bushing A to rocker switch C see drawing X.</td>
</tr>
<tr>
<td>Bushing A exists.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* LS = lumbar support, IPS = integrated pneumatic system = lumbar support + side support
<table>
<thead>
<tr>
<th>Checks for general problems</th>
<th>Results of checks</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seats with height limiter: adjust the highest position by handle</td>
<td>Seat reaches highest position</td>
<td>Function o.k.</td>
</tr>
<tr>
<td></td>
<td>Seat reaches only the half of the possible height</td>
<td>Toohing of height limiter (2) does not engage correct (adjusmm. see 2.8.0)</td>
</tr>
<tr>
<td></td>
<td>Seat doesn’t reach the first step of the hight adjustment</td>
<td>Bowden cable (3) for height adjustment ist adjusted too loose.</td>
</tr>
<tr>
<td></td>
<td>Seat doesn’t reach the highest step of the hight adjustment (8 steps)</td>
<td>Bowden cable (3) for height adjustment ist adjusted too tautly. (adjusmm. bowden cable see 2.8.0)</td>
</tr>
<tr>
<td>Seats without height limiter: adjust highest and lowest position by handle</td>
<td>Seat reaches both positions</td>
<td>Function o.k.</td>
</tr>
<tr>
<td></td>
<td>Seat doesn’t reach both positions</td>
<td>Adjust bowden cable (3) in accordance with the hints on page 2.8.0</td>
</tr>
</tbody>
</table>

For easier handling: Whenever in one of the following checks a hose has to be demounted, push button for seat lowering to position "downwards" before removing a hose. After removing, push button to position "upwards" to realise the check. Before mounting the hose, lower the seat again and after that move seat upwards for the further checks.
**Checks**

1. Check red hose (4) from valve for seat lowering / uprising (D) to the heights control valve (E) regarding correct laying (without squeezed areas). Unfix hose (4) from height control valve (D). (Lift up fixing hooks (5) a little with a very small screwdriver and demount air pipe (4), see detail drawing A). Push switch for seat lowering / uprising (D) to position upwards.

   - Compressed air leaves red hose (4).
   - Compressed air doesn’t leave red hose (4).

   **Remedy**
   - Continue with check 2.
   - Mount hose (4) back to valve (D) and exchange valve for lowering / uprising (D) incl. hose unit.

2. Mount hose (4) back to valve (B) and refit now yellow hose (6) from connector (7). Push button for seat lowering / uprising (B) to the position “upwards”.

   - Air flows out from connector (7).
   - Air doesn’t flow out from connector (7).

   **Remedy**
   - Air spring has probably a leakage exchange air spring (repair man.)
   - Continue with check 3.

3. Mount hose (6) back to connector (7) and demount hose (8) from height control valve (D).

   - Air flows out from valve (B).
   - Air doesn’t flow out from valve (B).

   **Remedy**
   - Check / repair hose (8) and connector (7).
   - Exchange valve (B) and mount hose (7).

---

**Control for seats with pneum. swivel locking**

- Outgoing air (E)
- Incoming air (P)

**Control for seats without pneum. swivel locking**

- Outgoing air (E)
- Incoming air (P)
MINIMIZER LLC
LIFETIME WARRANTY

LIMITED WARRANTY AND LIMITATION OF REMEDIES.

GENERAL TERMS.
A.1 For products, components or product categories identified in Section 2 below only, Minimizer LLC. warrants that such specifically identified products, components, or product categories will be free from defects in materials and workmanship at the time of delivery and for the applicable warranty periods stated in Section 2 for each product, component or category. All warranties are subject to the “Warranty Conditions and Limitations” described in Section 3 and to any additional conditions or limitations listed in Section 2 for each product, component or category. The warranties stated herein are in lieu of all other warranties, obligations or liabilities on the part of Minimizer LLC. Minimizer LLC. does not authorize any other person or party to: (i) act on its behalf in connection with any warranty claim or warranty work (except pursuant to a written authorization signed by Minimizer LLC. authorized representative), (ii) modify or expand Minimizer LLC. product-specific warranty(ies), or (iii) assume any warranty obligation or liability on behalf of Minimizer LLC. concerning its products.

A.2 Minimizer LLC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, EXCEPT AS ARE SPECIFICALLY SET FORTH IN THIS DOCUMENT. Minimizer LLC. MAKES NO IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND Minimizer LLC. SPECIFICALLY DISCLAIMS ALL SUCH WARRANTIES. IN NO EVENT WILL Minimizer LLC. BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT(S) FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR IN-DIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR PUNITIVE DAMAGES ARISING OUT OF THE ALLEGED FAILURE OF OR DEFECT IN Minimizer LLC. PRODUCT.

A.3 You must return any product for which a defect is claimed to Minimizer LLC. in accordance with Minimizer LLC. then-current policies. Contact Minimizer LLC. at its customer service number: 800-248-3855 or visit https://www.minimizer.com for further instructions. If Minimizer LLC. determines that that product failure has occurred within the applicable warranty period and is a result of a defect in materials or workmanship, a corrective action will be assigned and a Customer Service Representative will contact you regarding the warranty fulfillment process. Minimizer LLC. reserves the right, at its sole option, to satisfy its warranty obligations by repairing the product at Minimizer LLC. expense, replacing the product, tendering the product to the original manufacturer or component manufacturer for the fulfillment of an applicable warranty, refunding the purchase price, or some combination of these.

PRODUCT SPECIFIC TERMS.
The following terms modify Minimizer LLC. general terms stated above in Section 1 for each specific product, component, or category listed in this Section 2. Please read this Section carefully and familiarize yourself with the specific warranty terms for the products you have purchased.

F Seats – Limited Lifetime Warranty.
F.1 Certain Mechanical Components. Minimizer LLC. warrants that the suspension system, controls, heating element, cooling components, and revitalizing components of Minimizer™ seats will be free from defects in materials and workmanship at the time of delivery and for the useful life of the product, subject to the Warranty Conditions and subject to the additional limitations stated below.

F.2 Seams and Other Components. For all other components, Minimizer LLC. warrants that the products will be free from defects in materials and workmanship at the time of delivery and for a period of (1) one year.

WARRANTY CONDITIONS AND LIMITATIONS. The following limitations and conditions (the “Warranty Conditions”) apply to all Minimizer LLC. warranties including each product, component or category specific warranty contained in Section 2:
A.1 No warranties shall apply if Minimizer LLC. determines that the final product configuration or installation at any time exceeded Minimizer LLC. recommended structural limits, weight or length restrictions, guidelines, or instructions for use, as published by Minimizer LLC. at the time of purchase.
A.2 No warranties shall apply to any products that were installed in contravention of Minimizer LLC. installation guidelines or instructions listed at the time of installation, including, but not limited to, use of any unauthorized hardware, tools, fasteners, supplies or installation methods.
A.3 No warranties shall apply if Minimizer LLC. determines that the applicable product or component was used on a vehicle manufactured outside of accepted manufacturing practices.
A.4 No warranties shall apply if Minimizer LLC. determines that the applicable product or component was damaged as a result of occurrences outside of ordinary operating conditions, or as a result of an accident or collision not caused by the product, or was intentionally damaged by any person.
A.5 All warranties apply only to the original owner of the product and are not transferable or assignable to any subsequent owner or user. You must retain a copy of the original product invoice to claim and validate your warranty.
A.6 All warranties apply only to the single, original vehicle installation of the product. Any removal of a product from its original vehicle or reinstallation of any kind voids all warranties.
MINIMIZER LLC
LIFETIME WARRANTY

All Minimizer fenders, brackets, tool boxes, work benches, floor mats, seats and mattresses are eligible for our lifetime warranty. You can go to www.minimizer.com/lifetime-warranty/ to officially register your product(s) and activate your warranty.

By completing the online form you will have locked in the best warranty in the industry. Other Minimizer products like slick plate have their own specific stated warranties. To ACTIVATE your warranty please complete the form in its entirety.