



END

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### Preliminary remarks

#### 1 Description

- 1.1 Safety instructions
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#### 2 Diagnosis

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- 2.2 Functional test – Testing the specified status of functions
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## 1.1 Safety instructions

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- 1 All inspection, test and repair work must be performed exclusively by adequately trained personnel.
- 2 All work steps and procedures described are to be performed with consideration to the applicable directives and regulations stipulated by the relevant local authorities and in compliance with the provisions on health protection, prevention of accidents and environmental protection.

3 Special notes in this repair manual are highlighted as follows:



**WARNING** ... indicates possible risks for persons and their prevention.



**ATTENTION** ... indicates possible damage or destruction of material and their prevention.

**Note:** ... introduces an additional explanation for better understanding the work to be carried out.

**Installation note:** ... introduces an additional explanation for better understanding the installation work to be carried out.

4 Prior to all repair work, the following work has to be carried out:

- Disconnect the seat suspension from the power supply.
- Move the seat suspension down to the end stops.

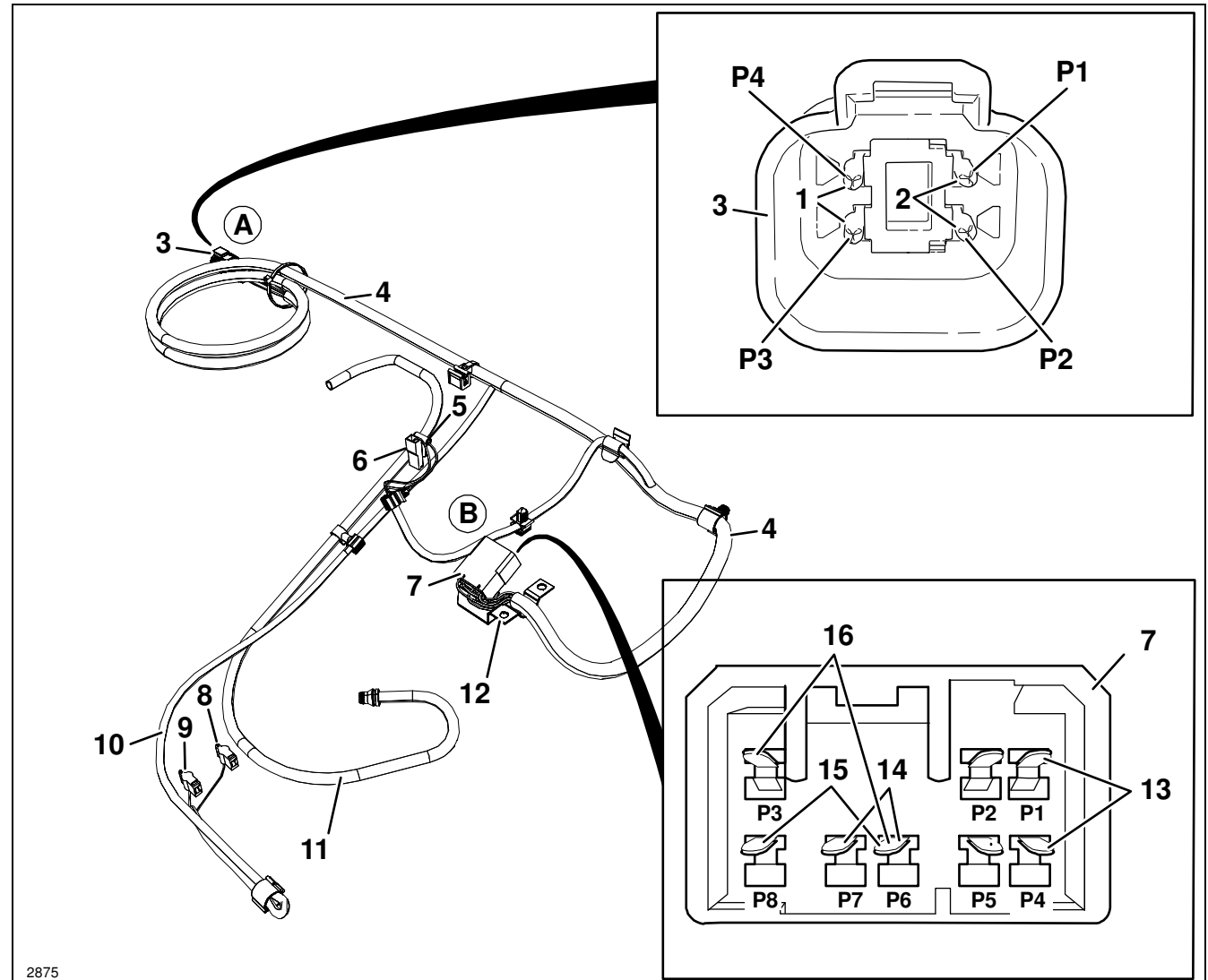
5 When using oil, grease and other chemical substances, the relevant safety regulations for the handling and use of these products must be observed.



## 2.1 Overview of components



- (4) Cable harness for seat suspension
- (5) Plug at the micro-switch (blue line)
- (6) Plug am Micro-switch (red line)
- (7) Plug (cable harness for seat suspension) (8-pin)
- (8) Right-angle plug (blue line)  
Voltage at the compressor
- (9) Right-angle plug (black line)  
Ground at the compressor
- (10) Cable to compressor
- (11) Air hose between compressor and  
additional air supply
- (12) Holding plate



**2.3 Overview of faults – Pointing out possible faults that might occur**

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Fault description	Possible cause	Troubleshooting
<p>Compressor is not running.</p> <ul style="list-style-type: none"> <li>- No voltage at the compressor.</li> <li>- Voltage is present at the compressor.</li> <li>- Compressor is running, seat does not move upwards or seat lowers after a short time</li> </ul>	<ul style="list-style-type: none"> <li>• No voltage.</li> <li>• Micro-switch is too far from the cam disk.</li> <li>• Micro-switch is defective or cam switch is bent.</li> <li>• Compressor is defective.</li> <li>• Air hoses are leaky.</li> <li>• Air spring is leaky.</li> <li>• Air tank of additional air supply is leaky.</li> <li>• Compressor is leaky or defective.</li> </ul>	<p>Check the compressor (Chap. 2.4, step no. 1.1).</p> <p>Adjust the micro-switch (see Chapter 3.13).</p> <p>Check the micro-switch (Chap. 2.4, inspection step no. 3.1).</p> <p>Replace the compressor (see Chapter 3.11).</p> <p>Check the air hoses (Chap. 2.4, step no. 4.1).</p> <p>Replace the air spring (Chap. 2.4, step no. 4.2).</p> <p>Check the air tank for the additional air supply (Chap. 2.4, step no. 4.3).</p> <p>Replace the compressor (see Chapter 3.11).</p>
<p>Seat suspension pumps up and remains in the middle position, while the compressor is running.</p>	<ul style="list-style-type: none"> <li>• The sealing ring of the level control is not tight.</li> </ul>	<p>Replace the level control (see Chapter 3.12).</p>

**2.4 Troubleshooting – Locating the fault**

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Step no.	Inspect/operate	Result/Specified status	Troubleshooting			
1.3	<ul style="list-style-type: none"> <li>• Bridge contacts of the right-angle plugs.</li> <li>• Pull up the handle for height adjustment and measure the resistance at the pins P3 and P4:</li> </ul> <div style="text-align: center; margin-top: 10px;"> <table style="border: none; margin: auto;"> <tr> <td style="padding: 0 10px;">P3</td> <td style="padding: 0 10px;"><math>\Omega</math></td> <td style="padding: 0 10px;">P4</td> </tr> </table> </div>	P3	$\Omega$	P4	<p><math>\ll 1 \Omega</math> (resistance of the line to the compressor)</p> <p><math>\gg 1 \Omega (\rightarrow \infty)</math> (interruption)</p>	<p>Replace compressor (see Chapter 3.8).</p> <p>Replace the cable harness for seat suspension (see Chapter 3.22).</p>
P3	$\Omega$	P4				
1.4	<ul style="list-style-type: none"> <li>• Reconnect the electrical connection (A and B).</li> <li>• Switch the ignition on</li> <li>• Pull up the handle for height adjustment.</li> </ul>	<p>Compressor is running and seat suspension moves upwards.</p> <p>Compressor is running and seat suspension does not move upwards; compressor is leaky (return valve).</p>	<p>End of inspection.</p> <p>Replace the compressor (see Chapter 3.11).</p>			

**2.4 Troubleshooting – Locating the fault**

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Step no.	Inspect/operate	Result/Specified status	Troubleshooting
5.2	<ul style="list-style-type: none"> <li>• Bridge the pins P6 and P8 in the plug of the cable harness for seat suspension (8-pin) (pin assignment for the heater).</li> <li>• Measure the resistance at the pins P3 and P4 in the cable harness plug for seat suspension (4-pin).</li> </ul> <p style="text-align: center;">P3     Ω     P4</p>	<p>&lt;&lt; 1 Ω (R→0) (pass)</p> <p>&gt;&gt; 1 Ω (R→∞) (interruption)</p>	<p>Proceed with step no. 5.3.</p> <p>Replace the cable harness for seat suspension (see Chapter 3.22).</p>
5.3	<ul style="list-style-type: none"> <li>• Bridge the pins P6 and P7 in the plug of the cable harness for seat suspension (8-pin) (pin assignment for the lumbar support).</li> <li>• Measure the resistance at the pins P3 and P4 in the cable harness plug for seat suspension (4-pin).</li> </ul> <p style="text-align: center;">P3     Ω     P4</p>	<p>&lt;&lt; 1 Ω (R→0) (pass)</p> <p>&gt;&gt; 1 Ω (R→∞) (interruption)</p>	<p>Proceed with step no. 5.4.</p> <p>Replace the cable harness for seat suspension (see Chapter 3.22).</p>

### 3.1 Seat suspension – removal and installation

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#### REMOVAL / INSTALLATION

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- 7 Lift off the upper seat part (2) at the seat suspension (1) and put it aside.

**Note:**

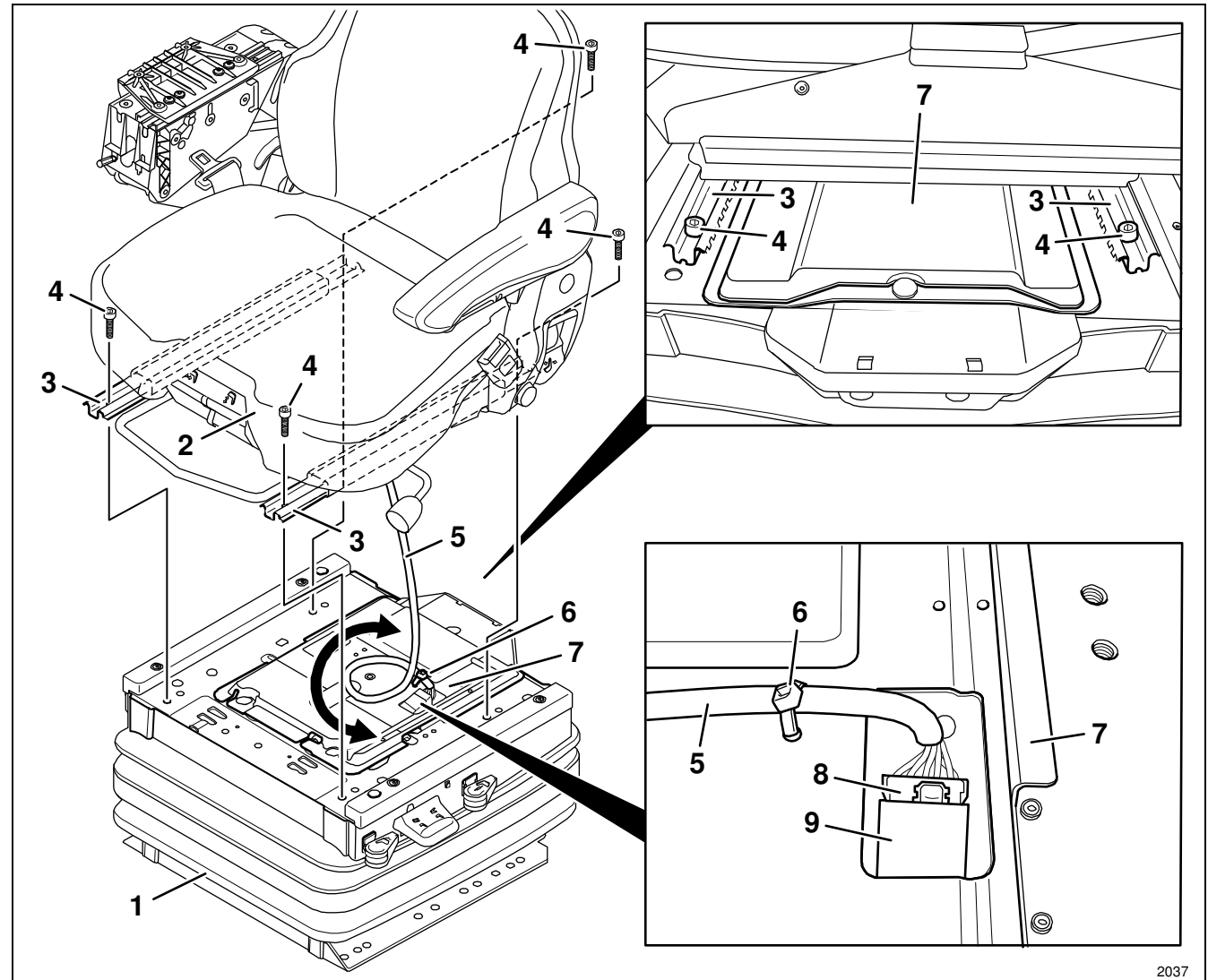
When laying it down, make sure that the cable harness of the upper seat part (5) is not overstretched.

**Installation note:**

To prevent the cable harness of the upper seat part (5) from being squeezed and rubbed, the cable harness (5) should be placed in a slackness loop (round arrow) between the seat suspension (1) and the upper seat part (2).

- 8 Remove the seat suspension (1).

- 9 Re-install the components in the reverse order of their removal.



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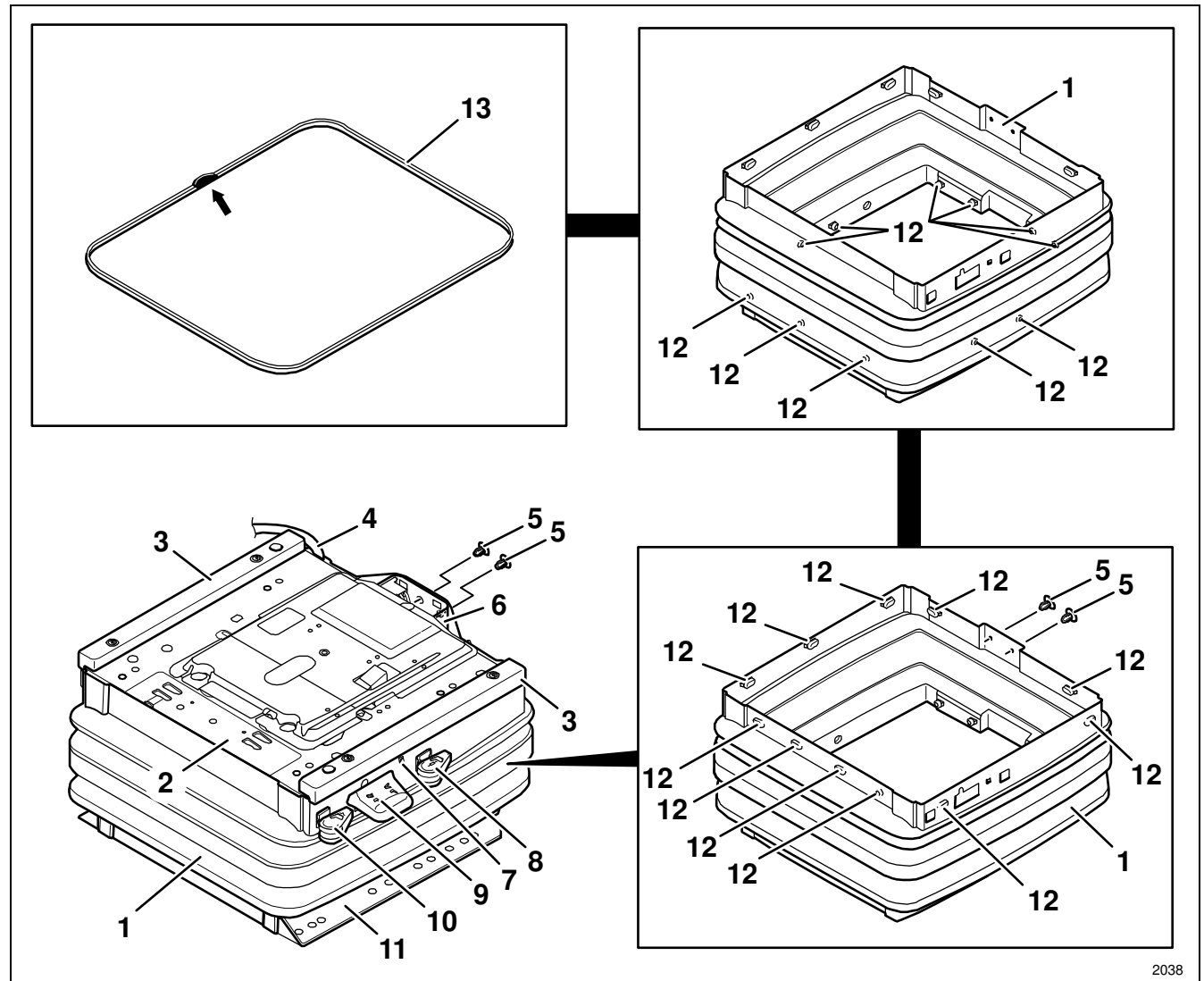
### 3.4.1 Bellows – removal and installation (seat suspension with handle on the left)



#### REMOVAL / INSTALLATION

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- (1) Bellows
- (2) Upper suspension part
- (3) Cover (left and right)
- (4) Cable harness for vehicle connection
- (5) Bellows pin
- (6) U-profile
- (7) Hook
- (8) Handle for vertical shock absorber - adjustment
- (9) Handle for height adjustment
- (10) Handle for fore/aft isolator
- (11) Lower suspension part
- (12) Keyhole nubs
- (13) Wire insert



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### 3.5.1 Bowden pull wire and handle for vertical shock absorber adjustment – removal and installation (seat suspension with handle on the left)



#### REMOVAL / INSTALLATION

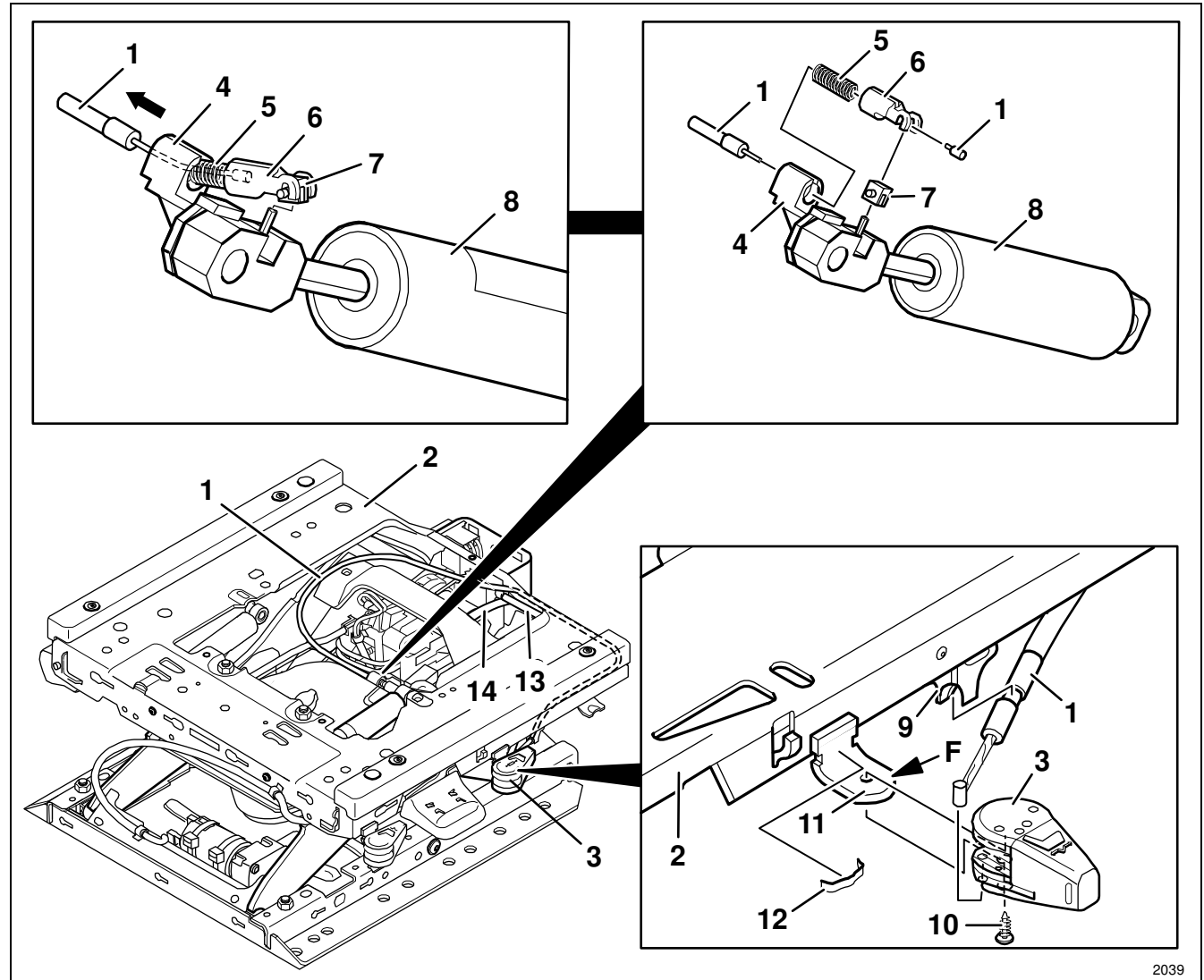
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- 1 Remove the upper seat part from the seat suspension (see Chapter 3.1).
- 2 Remove the center and rear covers (Chap. 3.2).
- 3 Take off the bellows from the upper part of suspension (see Chapter 3.4).

#### Removal and installation

- 4  **WARNING** Risk of crushing!

Move the seat suspension to the highest position and secure it between the swinging structure and the lower suspension part by means of suitable spacers.



### 3.6 Vertical shock absorber – removal and installation



#### REMOVAL / INSTALLATION

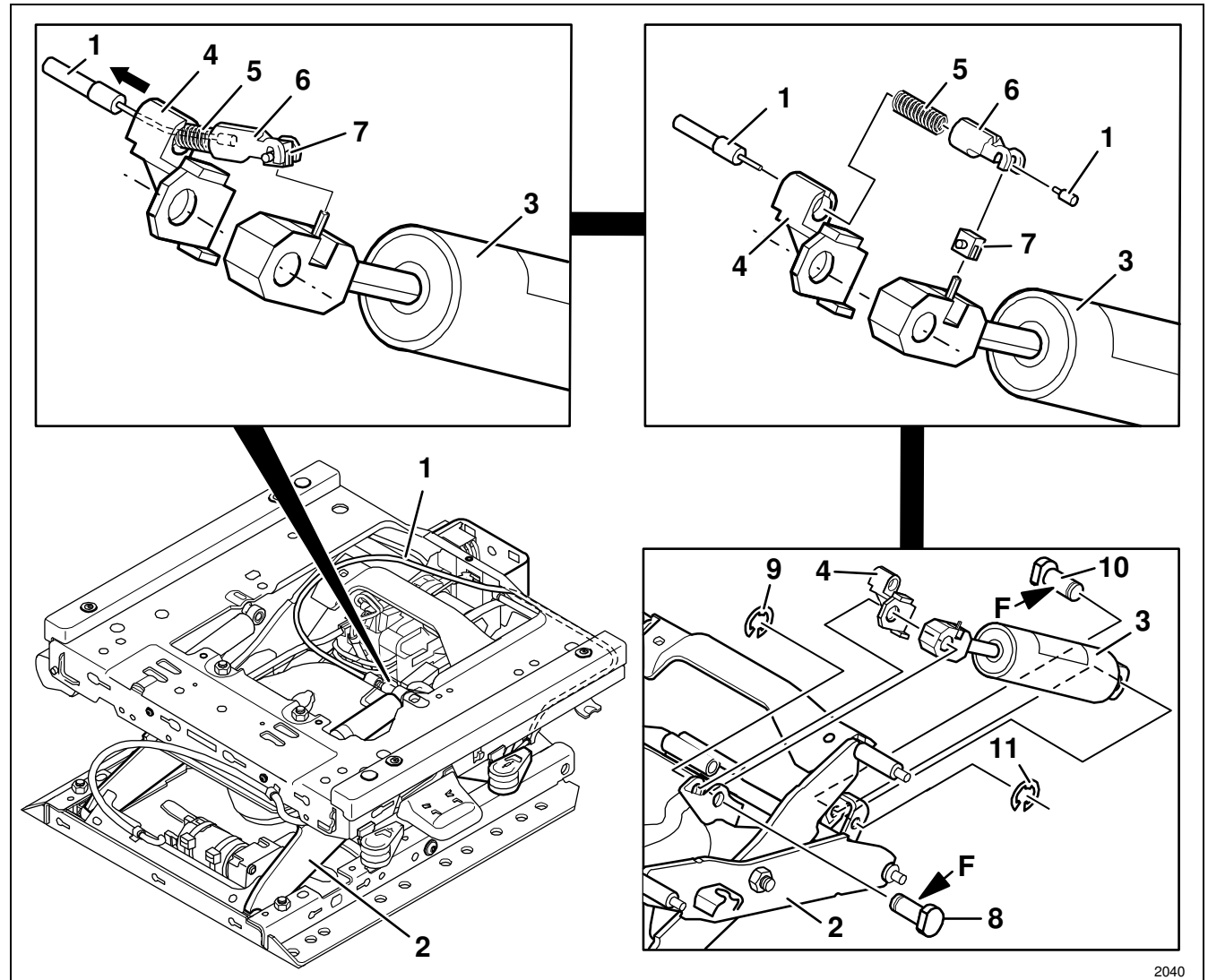
#### TABLE OF CONTENTS

- 1 Remove the upper seat part from the seat suspension (see Chapter 3.1).
- 2 Remove the center and rear covers (Chap. 3.2).
- 3 Take off the bellows at the lower suspension part (see Chapter 3.4), push it upwards and fix it in this position.

#### Removal and installation

- 4  **WARNING** Risk of crushing!

Move the seat suspension to the highest position and secure it between the swinging structure and the lower suspension part by means of suitable spacers.



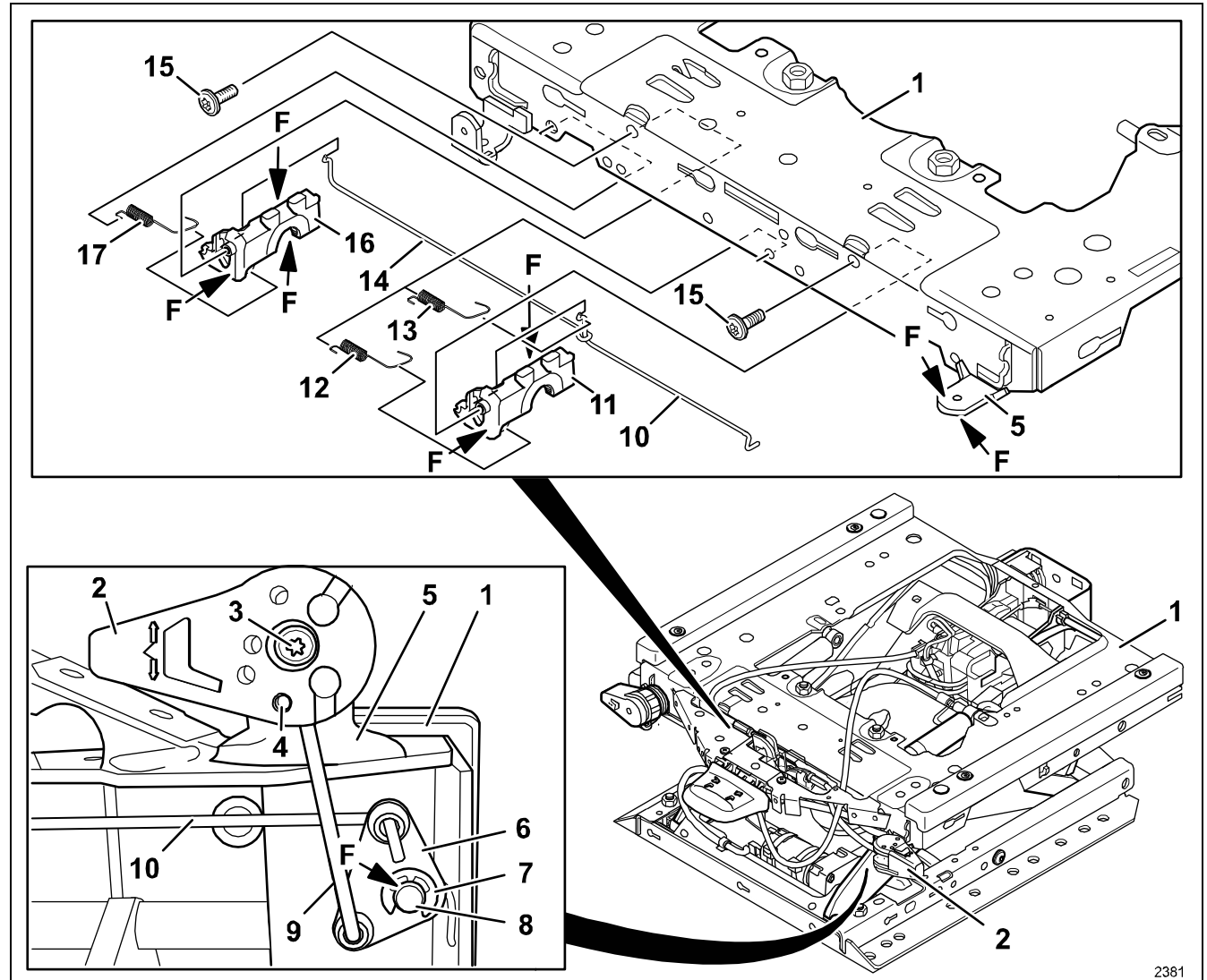
### 3.7.2 Locking mechanism for fore/aft isolator – removal and installation (seat suspension with handle at the front)



#### REMOVAL / INSTALLATION

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- (1) Upper suspension part
- (2) Handle for fore/aft isolator
- (3) Rounded head screw  
(inner race)..... 2.5 Nm
- (4) Clamping sleeve
- (5) L-bar (at the upper suspension  
part) ..... to grease
- (6) Swivel lever
- (7) Lock washer
- (8) Stud (at the upper suspension  
part) ..... to grease
- (9) Linkage rod (short)
- (10) Linkage rod
- (11) Stop lever..... to grease
- (12) Tension spring
- (13) Tension spring



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### 3.8.1 Handle for fore/aft isolator – removal and installation (seat suspension with handle on the left)

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REMOVAL / INSTALLATION

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- 4 Carefully pull out the linkage rod (5) at the handle of the fore/aft isolator (1).

**Note:**

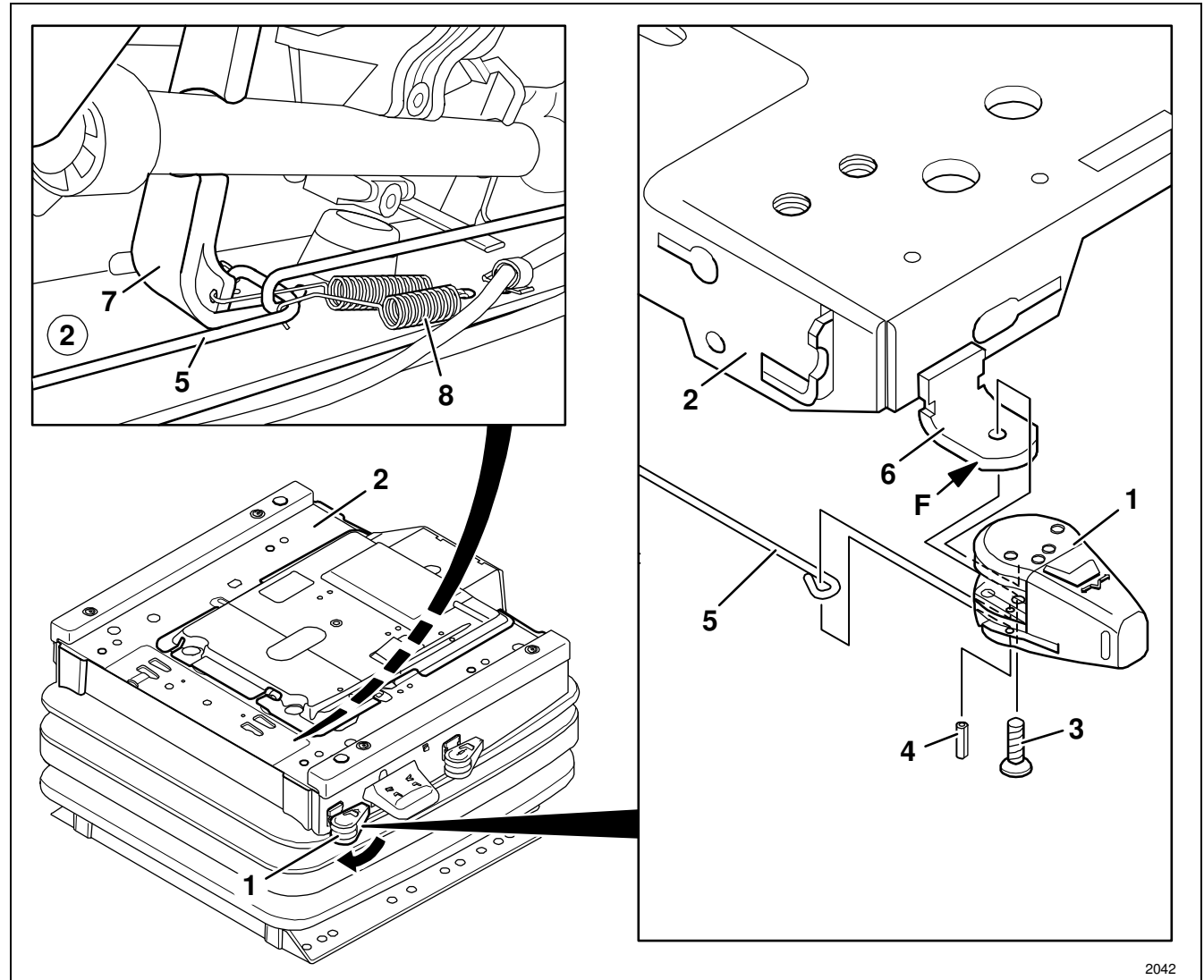
Make sure that the linkage rod (5) remains hung into the stop lever (7) and that the tension spring (8) remains hung into the linkage rod (5).

- 5 Pull off the handle for the fore/aft isolator (1) at the L-bar (6) of the upper suspension part (2).

**Installation note:**

Apply acid-free multi-purpose lubricant to the sliding surfaces (F) on the top and bottom side of the L-bar (6).

- 6 Re-install the components in the reverse order of their removal.



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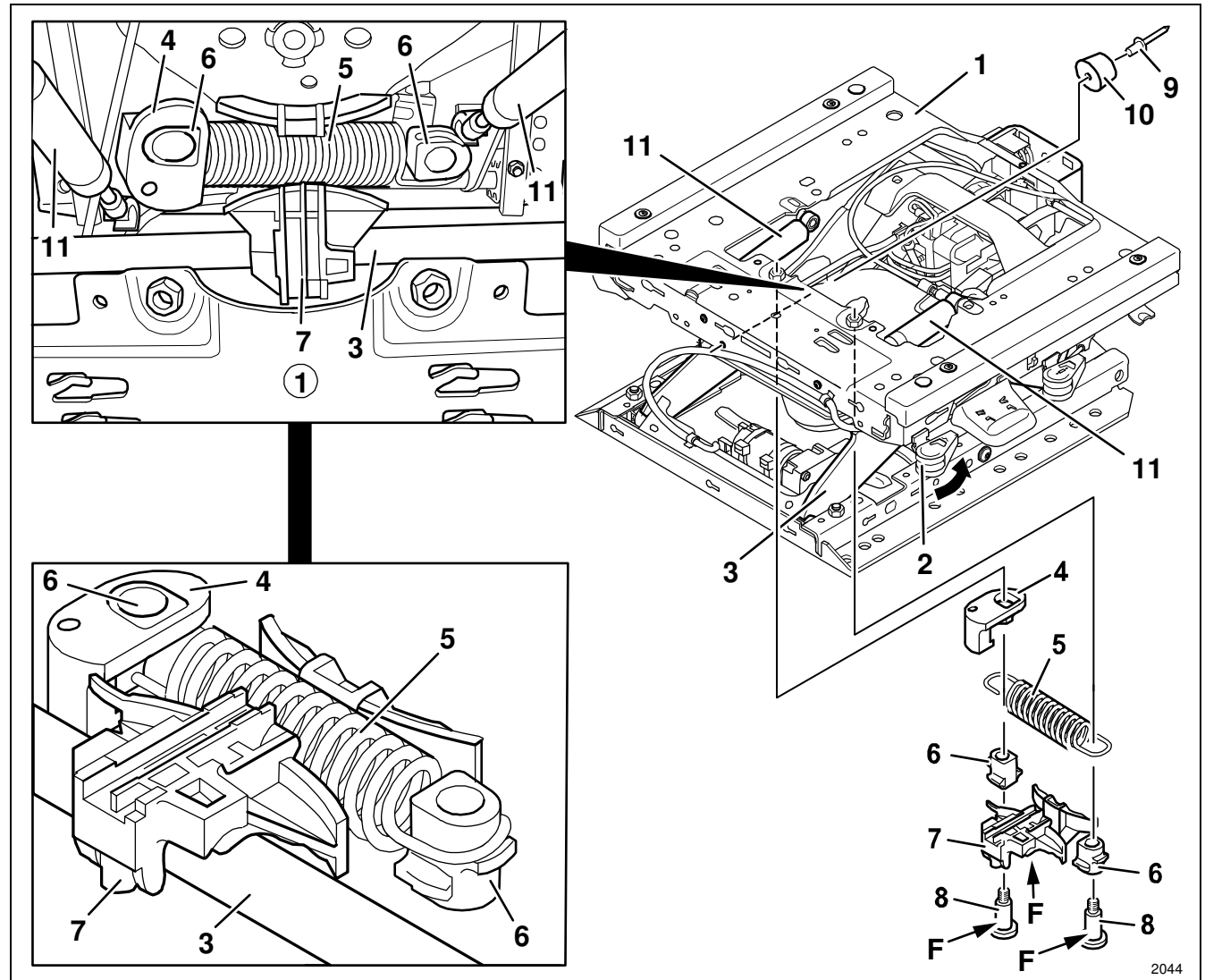
### 3.10 Fore/aft isolator unit – removal and installation



#### REMOVAL / INSTALLATION

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- 6 Turn the handle of the fore/aft isolator (2) backwards to unlock the fore/aft isolator unit.
- 7 **If the longitudinal horizontal shock absorber is defective:**  
Remove the longitudinal horizontal shock absorber (Chapter 3.9).
- 8 **If the longitudinal horizontal shock absorber is not defective:**  
Lift off the longitudinal horizontal shock absorber at the tube of the swinging structure (see Chapter 3.9).



### 3.11 Compressor – removal and installation

#### REMOVAL / INSTALLATION

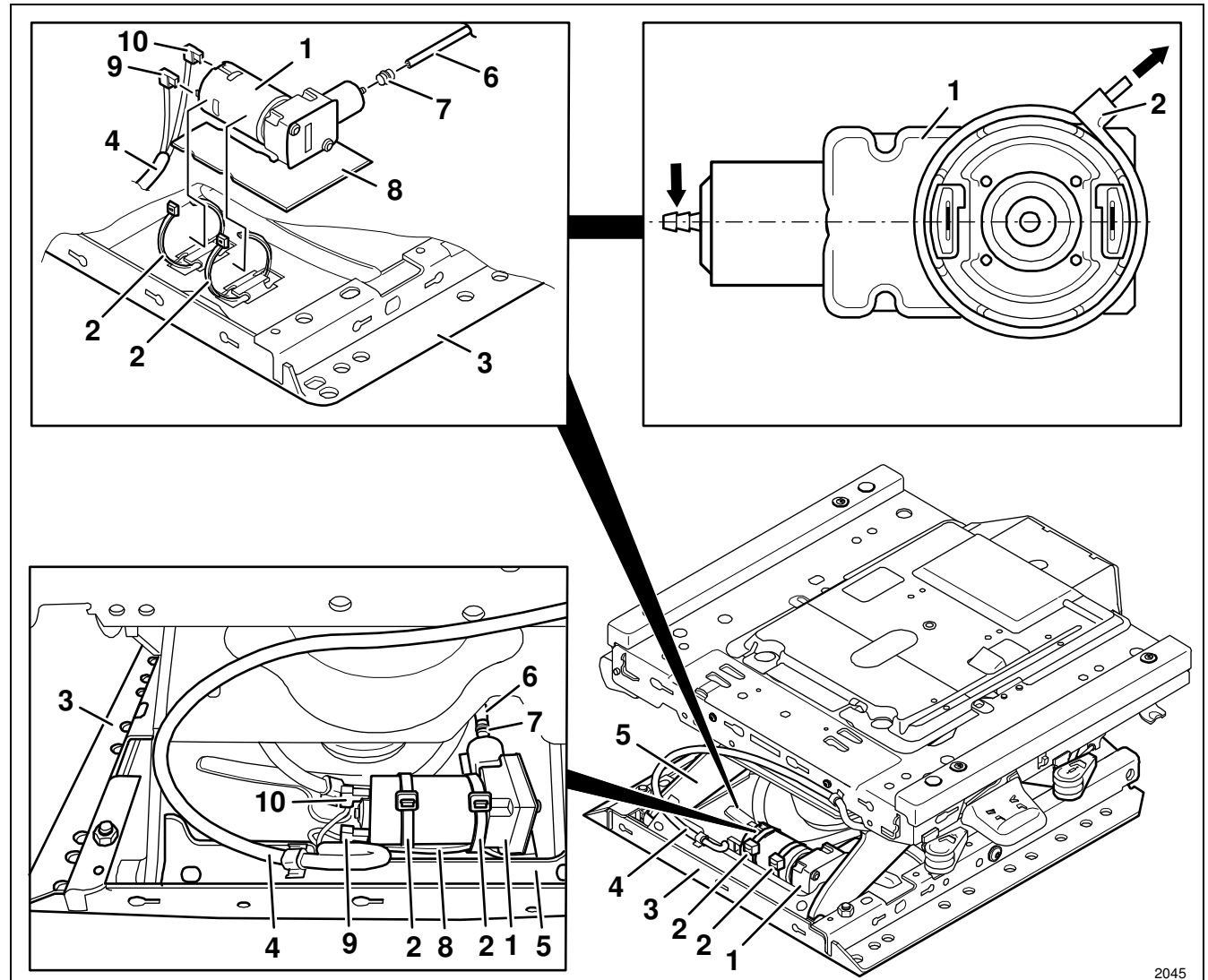
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- 10 Remove the pad (8) from the lower suspension part (3).

**Installation note:**

Place the pad (8) between the lower suspension part (3) and the compressor (1) so that the compressor (1) cannot come into contact with the lower suspension part (3).

- 11 Re-install the components in the reverse order of their removal.



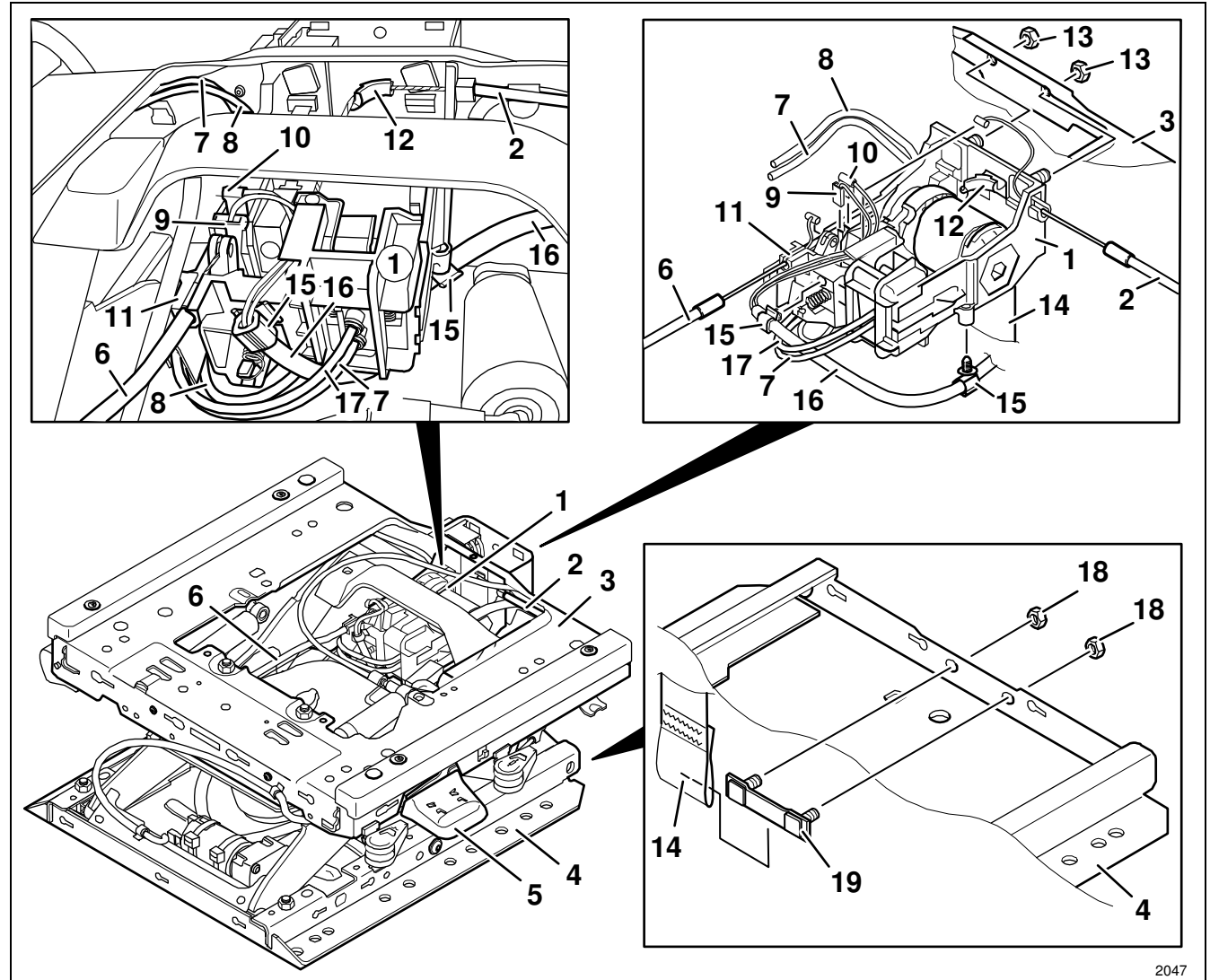
### 3.12 Level control – removal and installation

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- 17 Unscrew two micro-encapsulated hexagon nuts (13).  
**Installation note:**  
 Replace the micro-encapsulated hexagon nut (13), 25 Nm.
- 18 Pull out the level control (1) at the upper suspension part (3) and remove it in downward direction.
- 19 Re-install the components in the reverse order of their removal.



### 3.14 Air hoses – removal and installation

#### REMOVAL / INSTALLATION

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**Installation note:**

Push the compressed-air hose (2) completely onto the connection (arrow) of the compressor (4) by exerting pressure.

4.3 Pull off the nozzle (5) at the compressed-air hose (2).

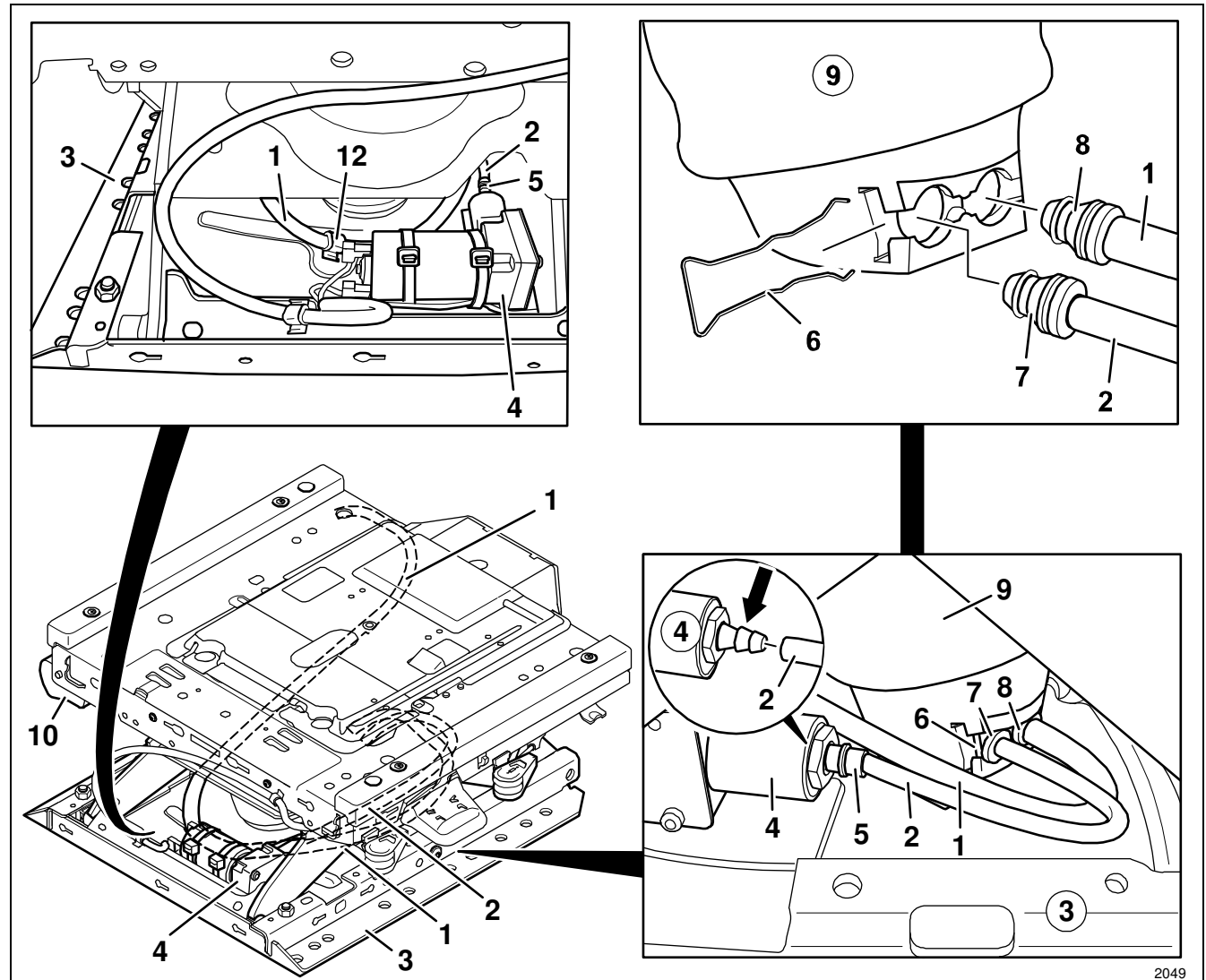
4.4 Pull the catch spring (6) out of the air spring (9).

4.5 Pull the coupling (7) of the compressed-air hose (2) out of the air spring (9).

**Installation note:**

First, push the catch spring (6) into the air spring (9) and then plug the coupling (7) into the air spring (9) with a click.

4.6 Remove the compressed-air hose (2).



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### 3.16.1 Holder for height adjustment – removal and installation (seat suspension with handle on the left)

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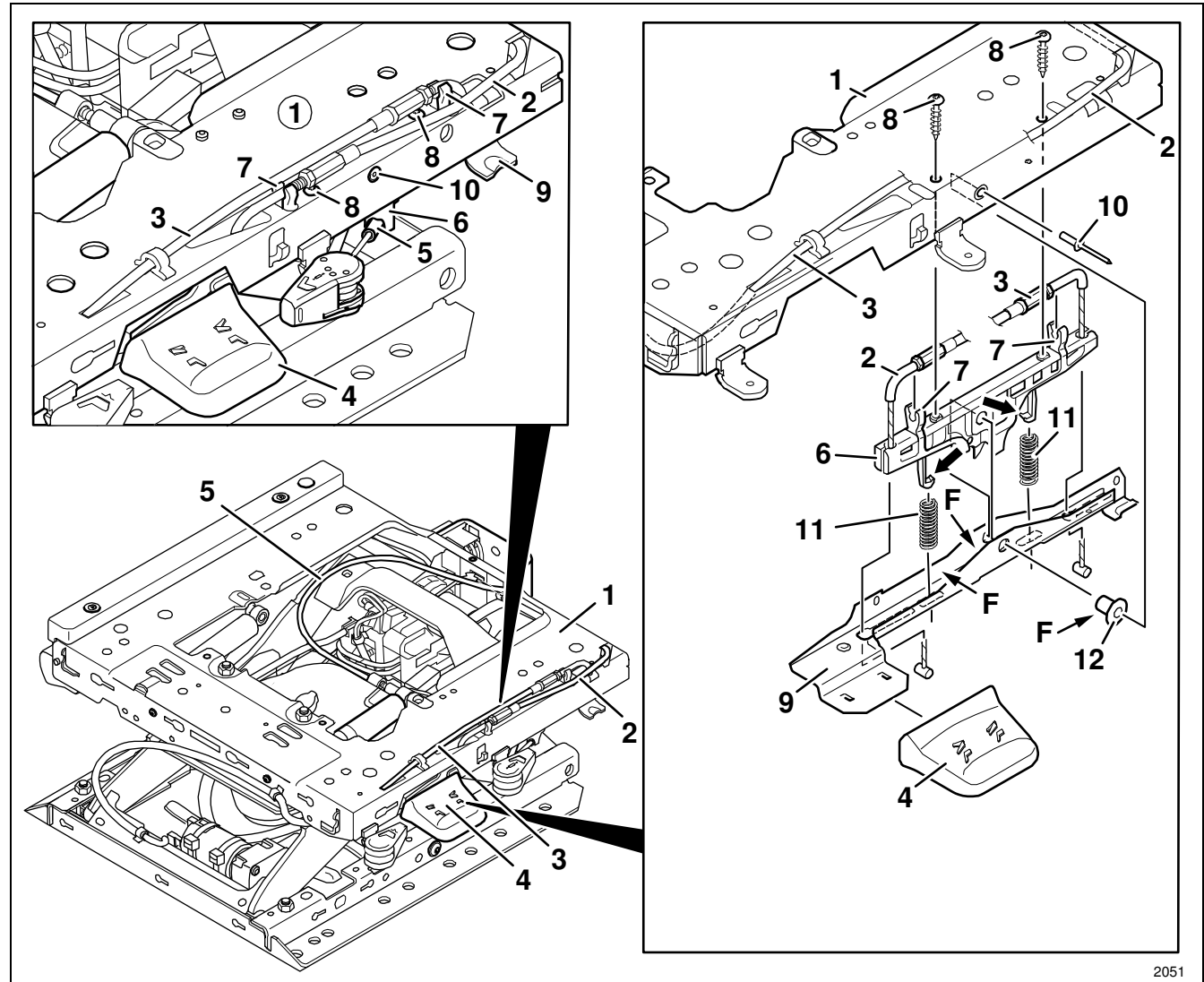
- 11 Unscrew two round head screws (8).  
**Installation note:**  
Round head screw (8), 2.5 Nm.

- 12 For easier removal of the Bowden pull wires (2, 3), pull the lever (9) together with the support (6) out of the upper suspension part (1) as far as possible.

- 13 Detach the Bowden pull wires (2, 3) each at the lever (9) and at the support (6).

- 14 Drive out the socket (12) at the lever (9) and at the support (6).

**Installation note:**  
Apply acid-free multi-purpose lubricant to the entire external surface (F) of the socket (12).



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### 3.17.1 Bowden pull wires for height adjustment – removal and installation (seat suspension with handle on the left)

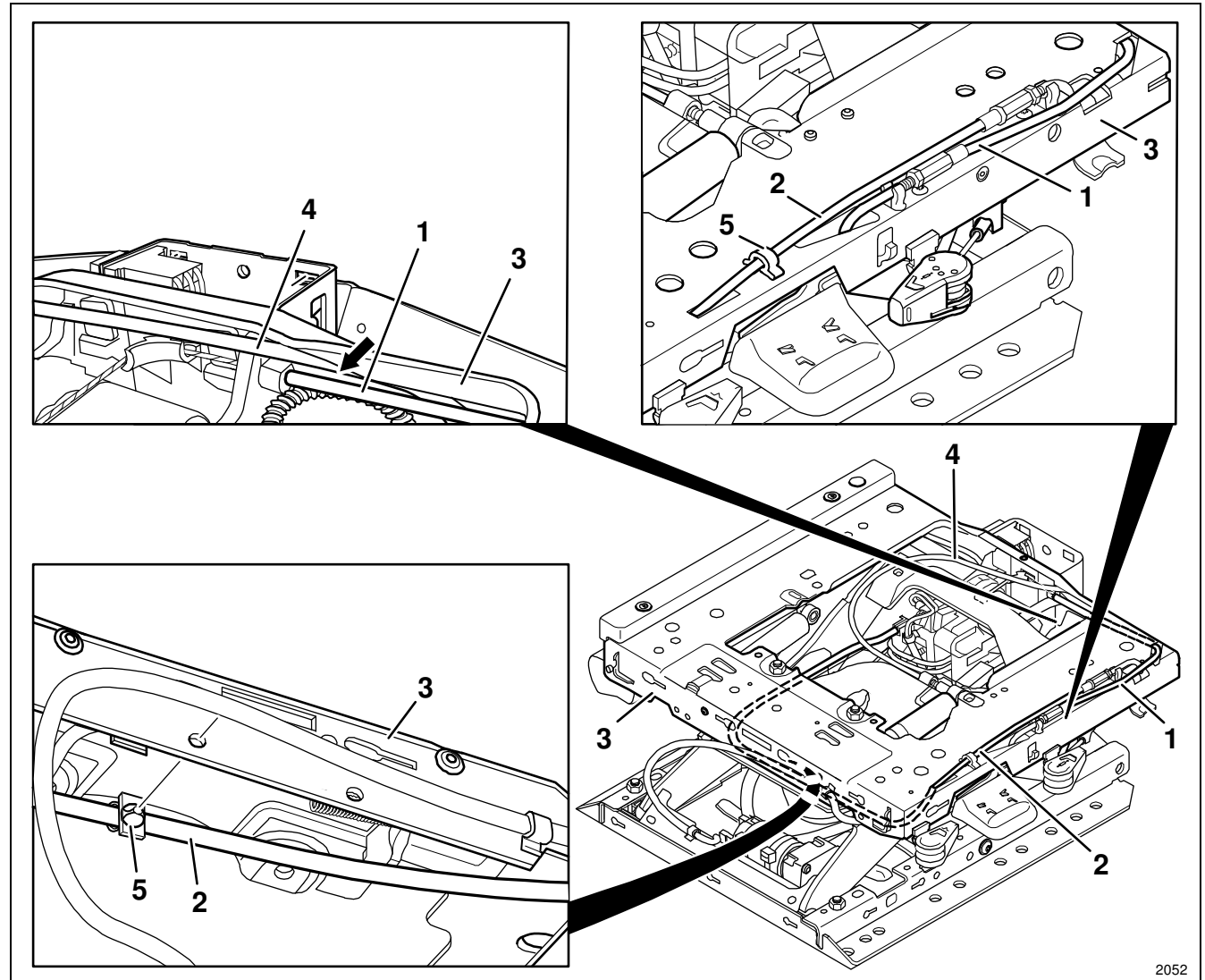


#### REMOVAL / INSTALLATION

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#### 7 Removal of Bowden pull wire for height adjustment in upward direction (2):

- 7.1 Detach the Bowden pull wire at the level control (see Chapter 3.12).
- 7.2 Detach the Bowden pull wire at the holder for height adjustment (see Chapter 3.16).
- 7.3 Pull out two through anchors (5) at the upper suspension part (3) and detach them at the Bowden pull wire (2).



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### 3.18 Bowden pull wires for height adjustment – inspection and adjustment

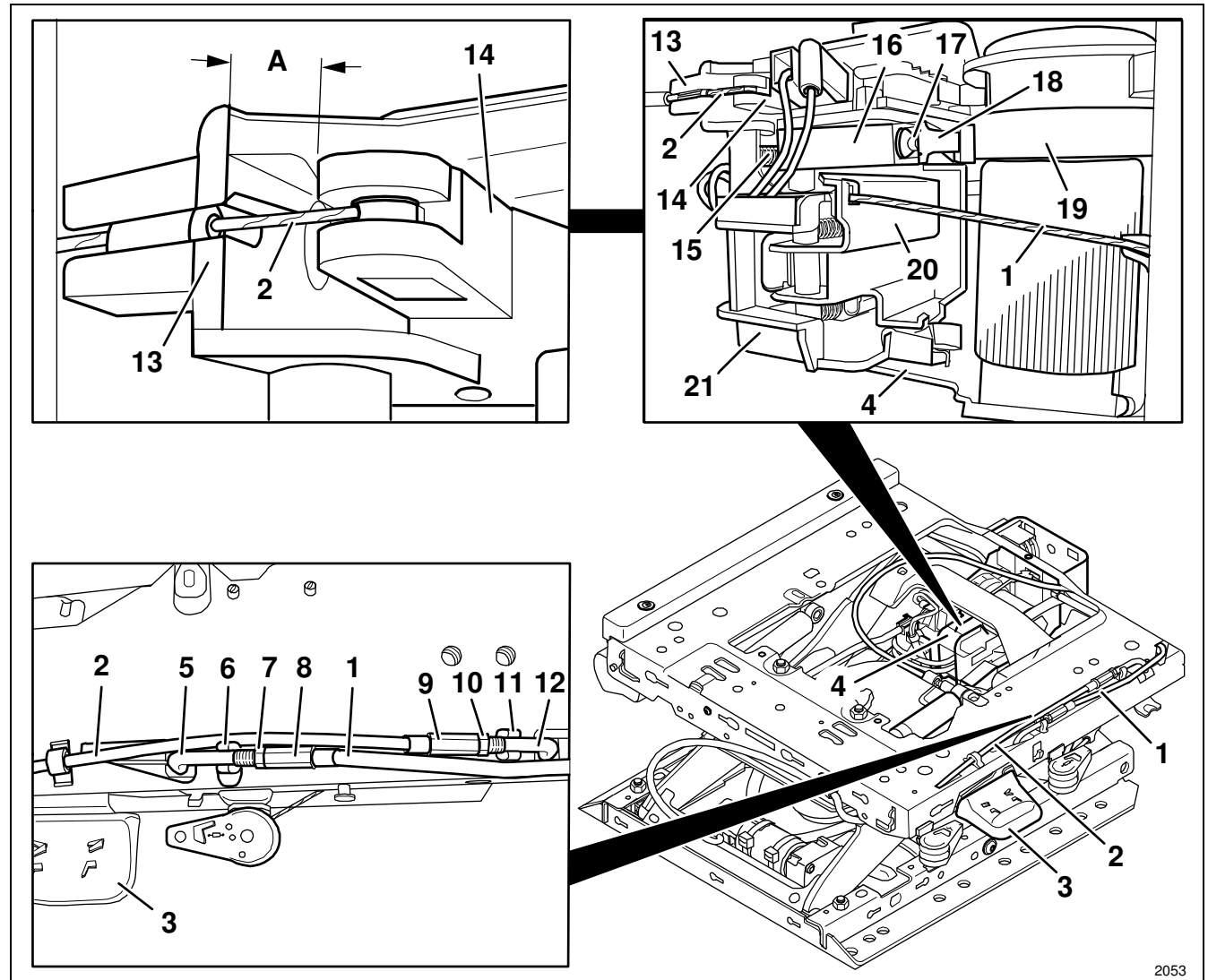


#### INSPECTION/ADJUSTMENT

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- 6 Check the clearance between the Bowden pull wire lever (14) and the holder for the Bowden pull wire end cap (13).
- Specified value:**  
 Clearance (A) = 2 mm  
 with the handle for height adjustment (3) pulled up.
- Note:**  
 When the specified value exceeds 2 mm, the suspension cannot be lifted above the middle position.



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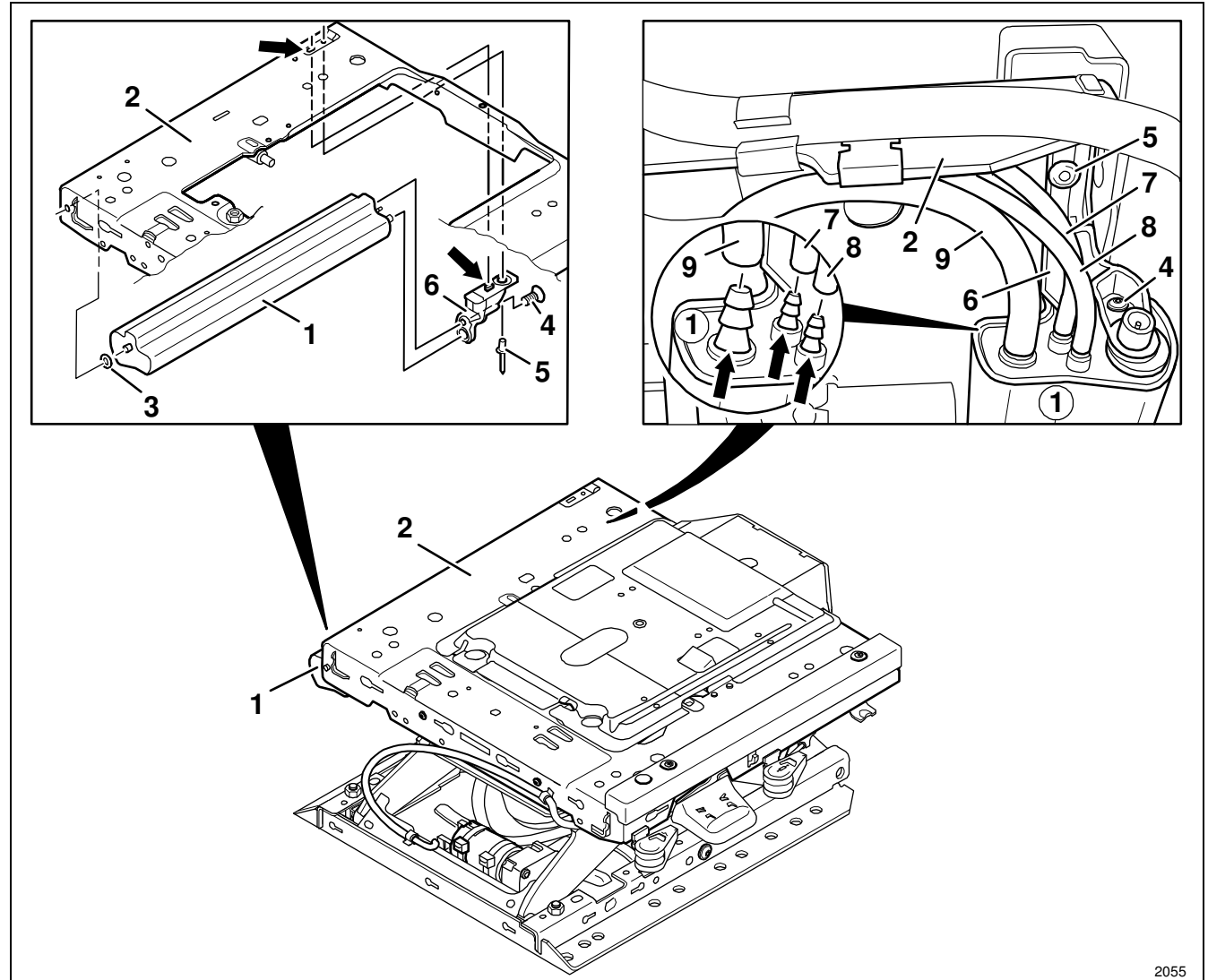
### 3.20 Additional air supply – removal and installation

#### REMOVAL / INSTALLATION

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- (1) Additional air supply
- (2) Upper suspension part
- (3) Sealing ring
- (4) Rounded head screw  
(inner race)..... 2.5 Nm
- (5) Blind rivet
- (6) Support
- (7) Air hose (level control)
- (8) Air hose (level control)
- (9) Air intake hose



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### 3.22.1 Cable harness of seat suspension with vehicle plug integrated at the rear of the upper suspension part – removal and installation

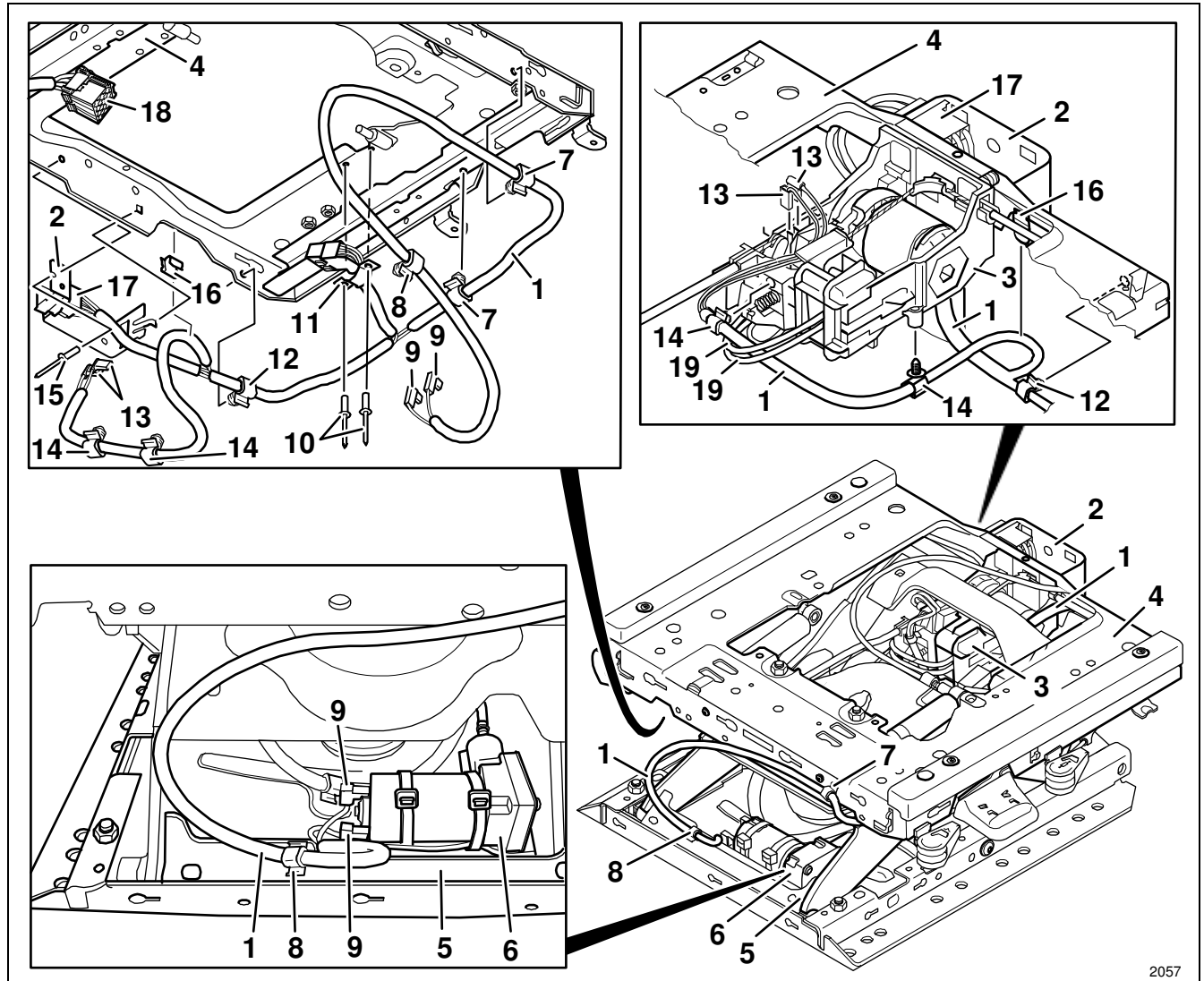


#### REMOVAL / INSTALLATION

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- (16) Clamp
- (17) Plug (cable harness of seat suspension)
- (18) Socket (cable harness for vehicle connection)
- (19) Air hose
- (20) Linkage rod (see page 6)

- 1 Remove the upper seat part from the seat suspension (see Chapter 3.1).
- 2 Remove the center and rear covers (Chap. 3.2).
- 3 Take off the bellows from the upper suspension part (see Chapter 3.4).



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### 3.23 Upper suspension part – removal and installation

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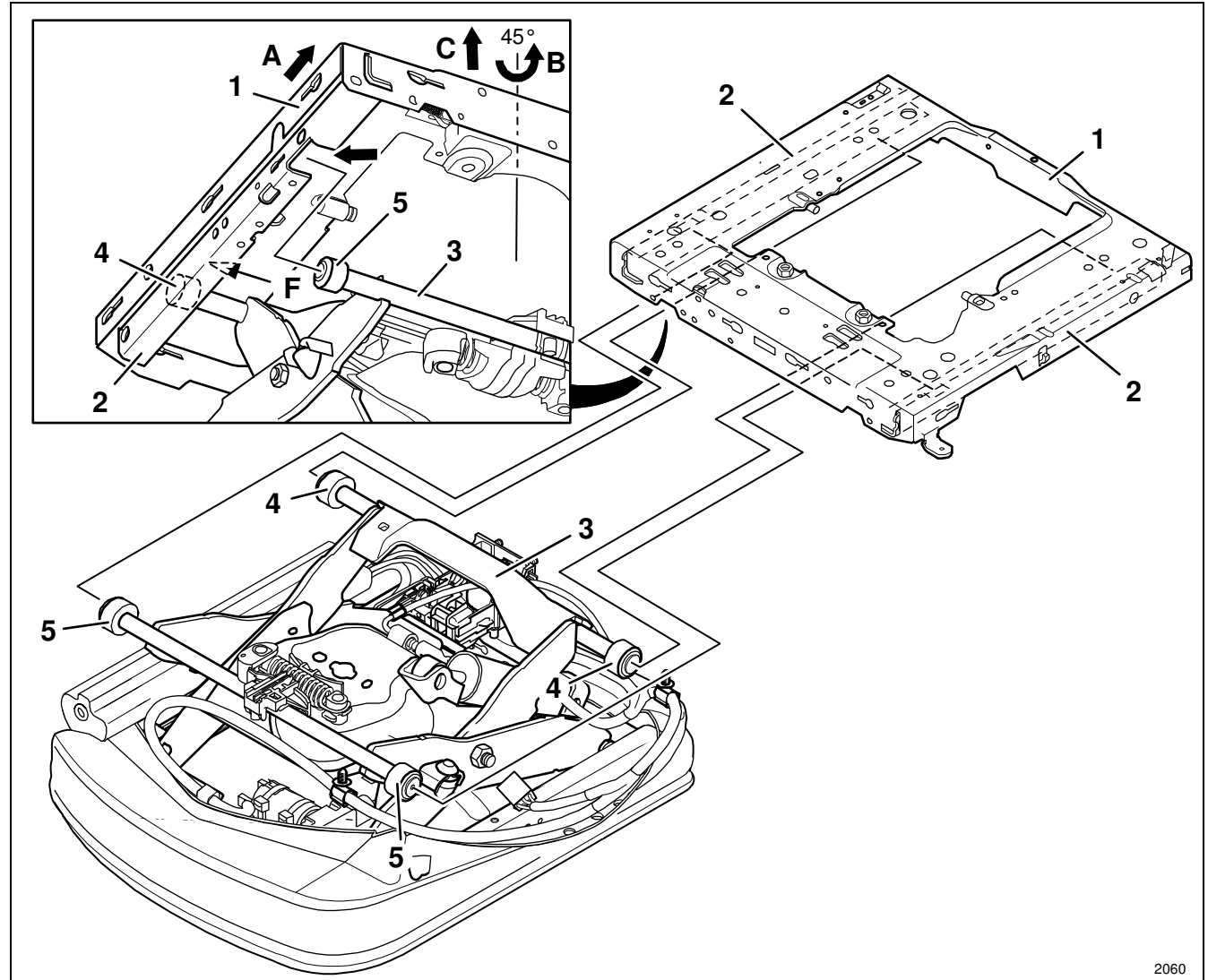
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- (1) Upper suspension part
- (2) Guiding rail (at the upper suspension part) ..... to grease
- (3) Swinging structure
- (4) Roller (rear)
- (5) Roller (front)

**Notes:**

- The locking mechanism for the fore/aft isolator is preassembled at the upper suspension part (1) (see Chapter 3.7).
- Moreover, a buffer and three clamps are preassembled at the upper suspension part (see Chapters 3.10, 3.14, 3.21 and 3.22).
- Reuse or convert assemblies which are not included in the scope of delivery of the new upper suspension part (1).



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### 3.24 Lower suspension part – removal and installation



#### REMOVAL / INSTALLATION

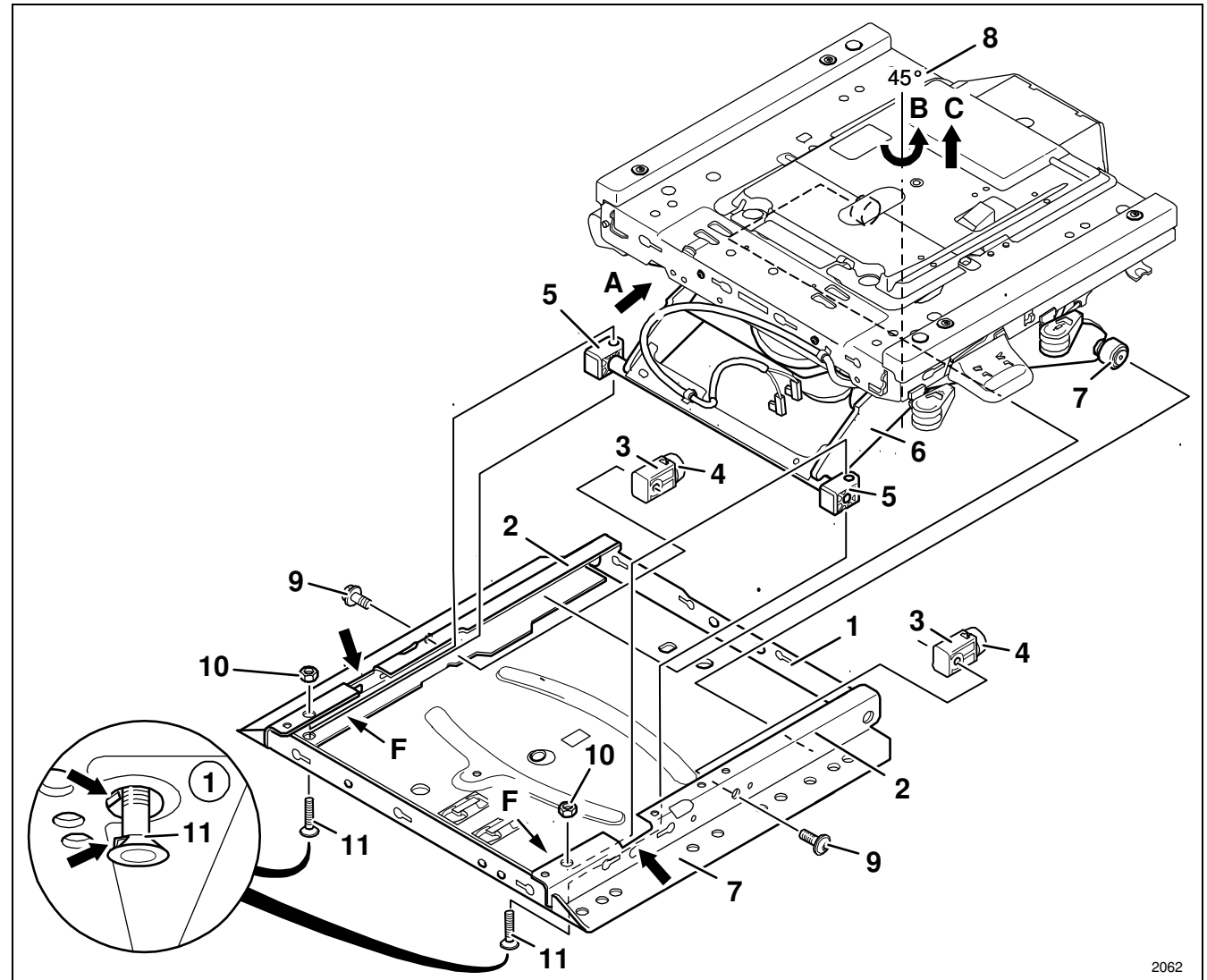
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- 4 Pull out the clip intended for fastening the air intake hose at the lower suspension part (see Chapter 3.14).
- 5 Unscrew the countersunk screw at the lower suspension part intended for fastening the air spring (see Chapter 3.19).

#### Removal and installation

- 6  **WARNING** Risk of crushing!

Move the seat suspension to the highest position and secure it between the swinging structure and the lower suspension part by means of suitable spacers.



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