

Disassembly of the Modulate Action Pilot Valve Piston. Series 820



Objectives of the presentation. Increase special knowledge.

1. [Objectives](#) | 2. [Seal](#) | 3. [Cap and bug-screen](#) | 4. [Bonnet, spindle, body and Piston unit](#) | 5. [O-rings](#) | 6. [Feeding seat unit](#) | 7. [Manifold block](#)

Aim of this presentation is to explain the **disassembly** of the **Modulate Action Pilot Valve Piston**.



Disassembly Instructions. Removing the seal.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1 Cut wire with combination pliers
Remove seal

2. Supplies

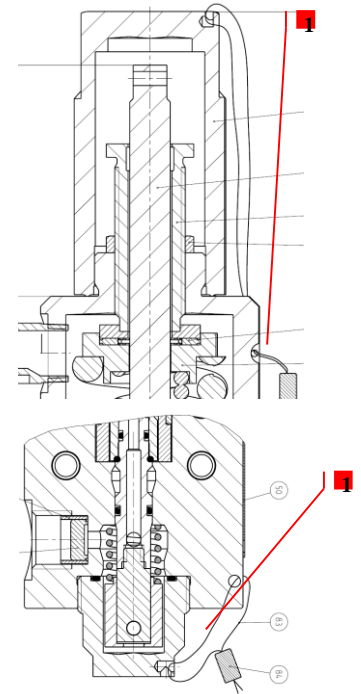
- None

3. Tools

- Combination pliers

4. Appliance

- None



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Disassembly Instructions. Disassembly of the cap and bug-screen.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1 Loosen cap [40] with open-end wrench and remove
- 2 Unscrew and remove bug-screen [64]
Option Test Gag:
Unscrew screw in cap [40]

2. Supplies

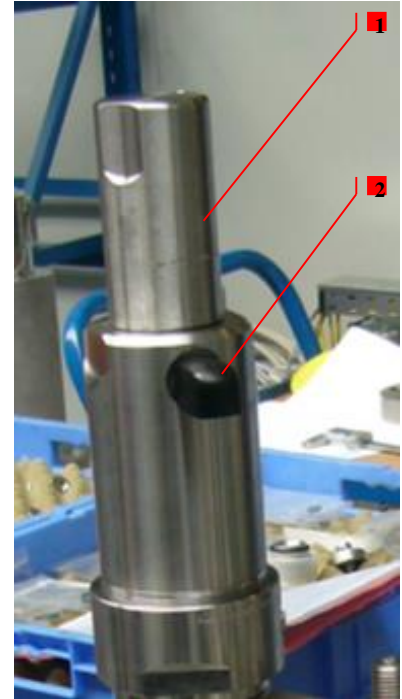
- None

3. Tools

- Open-end wrench acc. to LID

4. Appliance

- Test bench



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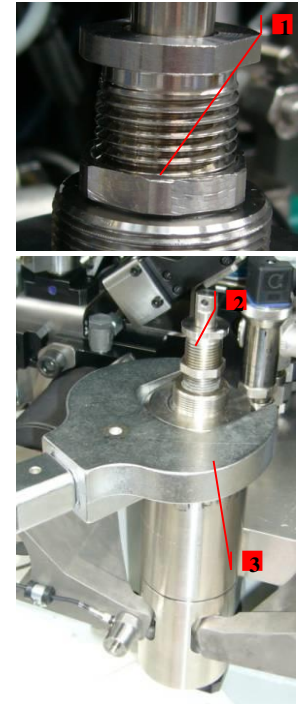
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Disassembly Instructions. Disassembly of the bonnet and spindle unit.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1** Loosen lock nut [19] with open-end wrench
- 2** Apply an open-end wrench in a counterclockwise direction on adjusting screw [18] until no more pressure can be felt from spring.
- 3** Loosen bonnet [9] with open-end wrench



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Disassembly Instructions. Disassembly of the bonnet and spindle unit.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

4 Lift up bonnet [9] along with spindle unit

5 Take spindle unit out of bonnet [9]

2. Supplies

- None

3. Tools

- Open-end wrench acc. to LIDaqq

4. Appliance

- Test bench



Disassembly Instructions. Disassembly of the spindle unit.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1** Remove successively bushing; bearing [69]; (upper) spring plate [16] and spring [54] of spindle [12]
- 2** Screw off (lower) spring plate [17] of spindle [12]

2. Supplies

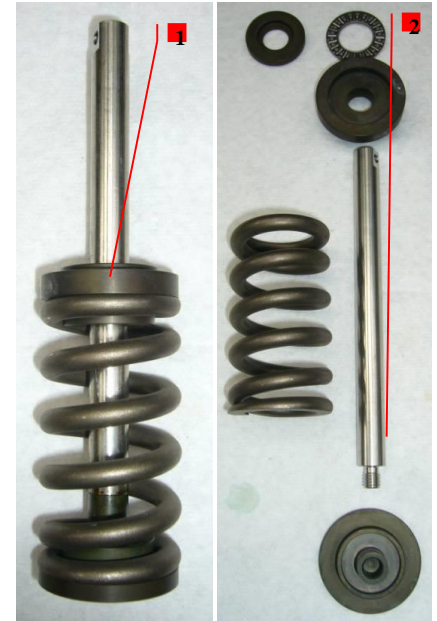
- None

3. Tools

- Drift pin

4. Appliance

- Parallel vice with aluminium jaws



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Disassembly Instructions. Disassembly of the bonnet.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1** Loosen lock nut [19] of adjusting screw [18]
- 2** Screw adjusting screw [18] out of bonnet [9]
- 3** Completely unscrew lock nut [19] of adjusting screw [18]

2. Supplies

- None

3. Tools

- None

4. Appliance

- None



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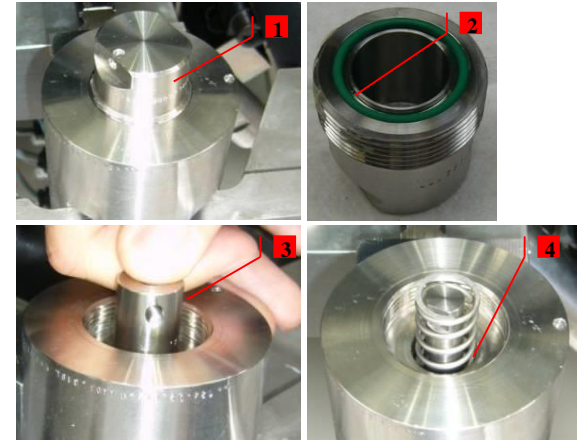
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Disassembly Instructions. Disassembly of the body's bottom side.

1. [Objectives](#) | 2. [Seal](#) | 3. [Cap and bug-screen](#) | 4. [Bonnet, spindle, body and Piston unit](#) | 5. [O-rings](#) | 6. [Feeding seat unit](#) | 7. [Manifold block](#)

1. Steps – Descriptions

- 1** Loosen plug [20] with open-end wrench and screw off
- 2** Take out O-ring
- 3** Remove parallel pin [44] with drift pin
- 4** Remove coupling [43] and return spring [42] by lifting them upwards



Disassembly Instructions. Disassembly of the body's bottom side.

1. [Objectives](#) | 2. [Seal](#) | 3. [Cap and bug-screen](#) | 4. [Bonnet, spindle, body and Piston unit](#) | 5. [O-rings](#) | 6. [Feeding seat unit](#) | 7. [Manifold block](#)

2. Supplies

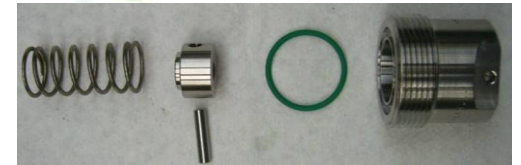
- None

3. Tools

- Open-end wrench acc. to LID
- Hook tool for O-rings
- Drift pin

4. Appliance

- Test bench



Disassembly Instructions. Disassembly of the piston unit and body.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1 Pull piston unit out of body [1]

2. Supplies

- None

3. Tools

- None

4. Appliance

- Test bench



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Disassembly Instructions. Disassembly the guide bush from the piston.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1 Place unit in parallel vice with aluminium jaws
- 2 Unscrew piston, upper [47]
Pull guide bush [2] off piston [41]

2. Supplies

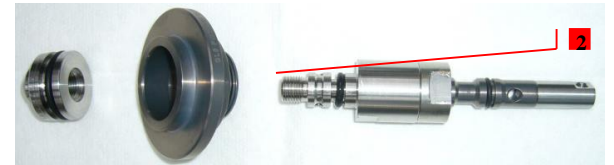
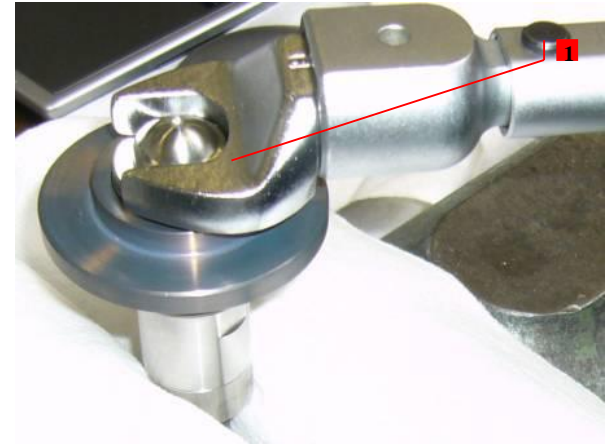
- None

3. Tools

- Open-end wrench acc. to LID

4. Appliance

- Parallel vice with aluminium jaws
- Assembling aid



Disassembly Instructions. Disassembly of the piston and feeding seat unit.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

Place piston unit in parallel vice with aluminium jaws

- 1 Loosen and remove piston [41] with open-end wrench

2. Supplies

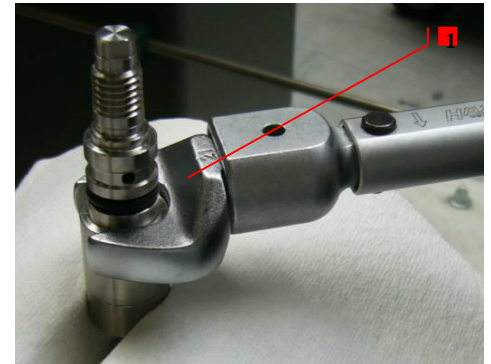
- None

3. Tools

- Open-end wrench acc. to LID

4. Appliance

- Parallel vice with aluminium jaws



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Disassembly Instructions. Removing the O-rings.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1 Remove O-rings

2. Supplies

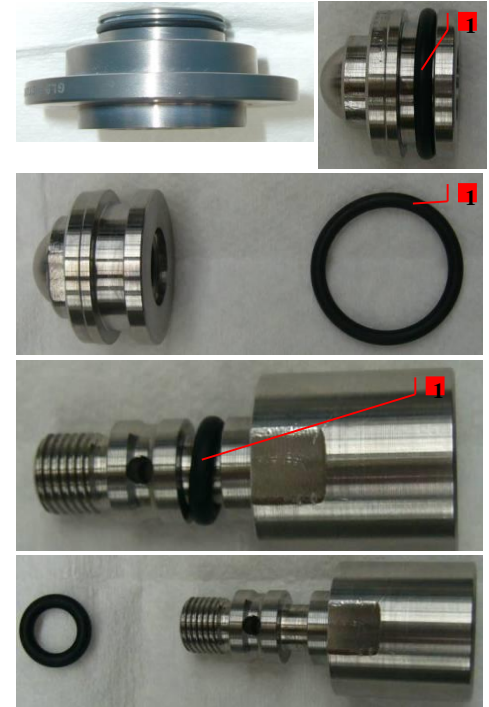
- None

3. Tools

- Hook tool for O-rings

4. Appliance

- None



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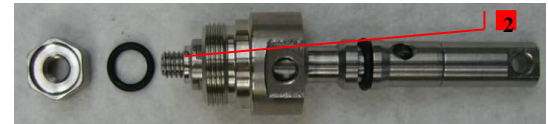
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Disassembly Instructions. Disassembly of the feeding seat unit.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. **Feeding seat unit** | 7. Manifold block

1. Steps – Descriptions

- 1** Loosen and unscrew (upper) disc feeding [7] of (lower) disc exhaust [11]
- 2** Remove O-ring
- 3** Pull (lower) disc feeding [8] and seat feeding [5] off (lower) disc exhaust [11]



Disassembly Instructions. Disassembly of the feeding seat unit.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. **Feeding seat unit** | 7. Manifold block

4 Remove O-rings of (lower) disc exhaust [11]

5 Unscrew (lower) disc exhaust [11] and (lower) disc exhaust extension [45]

2. Supplies

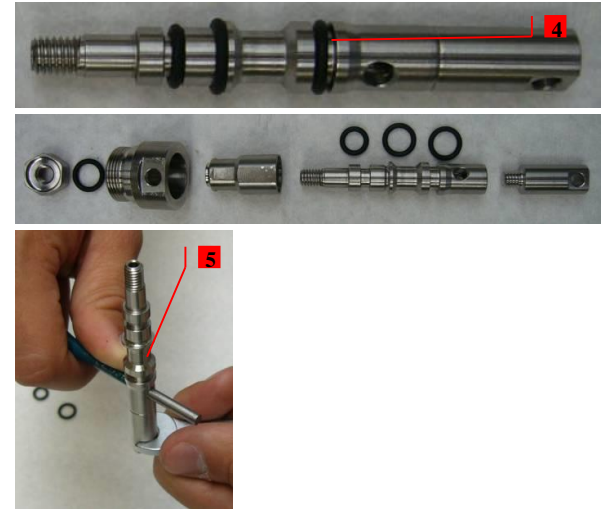
■ None

3. Tools

- Hook tool for O-rings
- Drift pin
- Open-end wrench acc. to LID

4. Appliance

■ None

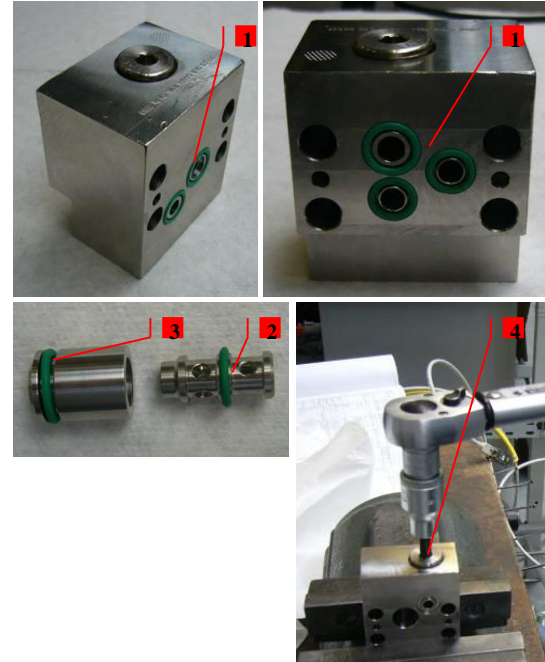


Disassembly Instructions. Disassembly of the manifold block.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. Manifold block

1. Steps – Descriptions

- 1** Remove piston [24.3], bushing[24.2] and O-rings
- 2** Remove O-rings of piston [24.3]
- 3** Remove O-rings of bushing [24.2]
- 4** Screw off lock screw [24.7] and remove gasket [24.8]



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Disassembly Instructions. Disassembly of the manifold block.

1. Objectives | 2. Seal | 3. Cap and bug-screen | 4. Bonnet, spindle, body and Piston unit | 5. O-rings | 6. Feeding seat unit | 7. **Manifold block**

2. Supplies

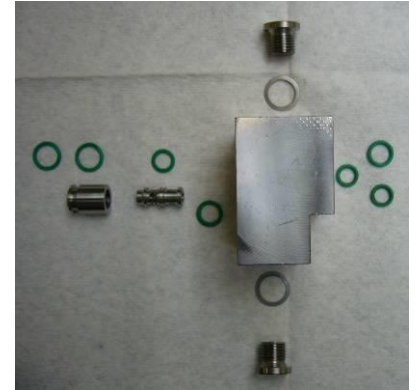
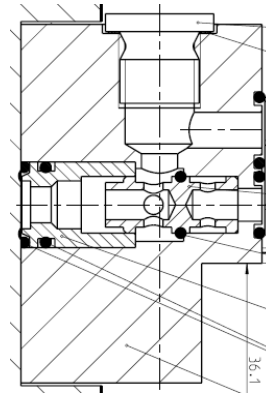
- None

3. Tools

- Allen key acc. to LID
- Hook tool for O-rings

4. Appliance

- Parallel vice with aluminium jaws
- Test bench



Disassembly of the Modulate Action
Thank you for your attention.

