How to disassemble High Performance

Disassembly instruction type 441

Objectives of this Presentation. Increase special knowledge.

Aim of this presentation is to give an overview about the **disassembly of High Performance safety valve type 441**.

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General. High Performance Safety Valves.

LESER **High Performance** safety valves are the ultimate solution for all industrial applications for steam, gas and liquid. They were used e.g. for protection of chemical processes and quipment and for heat exchangers.

Advantages:

- Great variety
- Soft seal for increased tightness
- Valve sizes from DN 20 to DN 400
- Great variety of materials and options to fit any application
- High capacity compared to the API requirements

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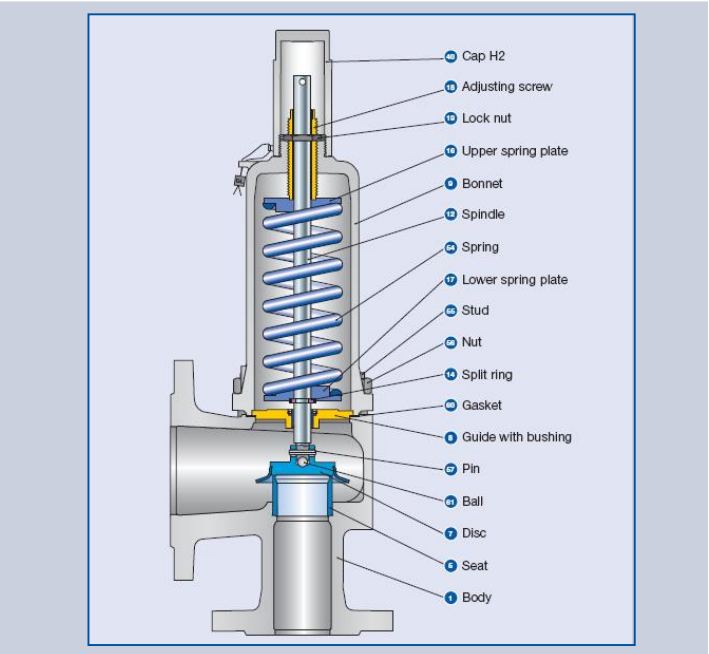
General Illustration.

Cross-selection view of High Performance 441



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Disassembly of the type 441. 1. Disassembly of the O-ring damper. 1.1

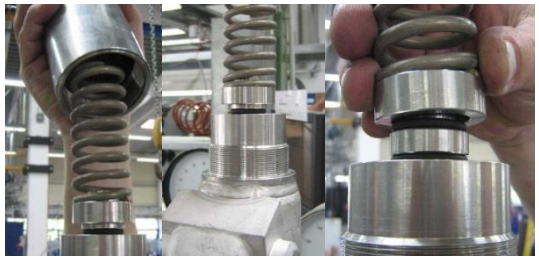
1.1 O-ring damper H4 (Option code: J66).

Step 1.1-1

- Unscrew the lever with an open-end spanner
- Tools: Open-end spanner

Step 1.1-2

- Remove the cap - spring - support sleeve - first O-ring - counter ring - second O-ring from the lever one after the other



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1.1 O-ring damper H4 (Option code: J66).

Step 1.1-3

- Individual parts of the O-ring damper

Step 1.1-4

- Remove the retaining clip and steel pin from the spindle
- Pull the O-ring damper spindle off the valve spindle

1.2 O-ring damper H2 (Option code: J65).

Step 1.2-1

- Loosen cap
- Tools: Open-end spanner

Step 1.2-2

- Remove cap
- Remove pressure spring from opposite ring

Step 1.2-3

- Take counter ring from the O-ring or support sleeve

1.2 O-ring damper H2 (Option code: J65).

Step 1.2-4

- Pull O-ring off the spindle

Step 1.2-5

- Remove the support sleeve from the adjusting screw

Step 1.2-6

- Individual parts of the O-ring damper H2

Disassembly of the type 441. 2. Disassembly of the test gag / blocking screw.

Step 2-1

- Loosen the test gag in the cap or lever and remove
- Tools: Open-end spanner

3. Disassembly of the lift indicator

Step 3-1

- Remove lock nut
- Release second nut
- Remove lift indicator completely

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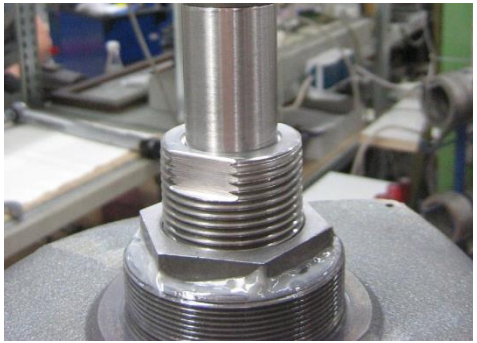
4.1 Disassembly of the cap H2.

Step 4.1-1

- Loosen cap with a spanner and screw off
- Tools: Open-end spanner

Step 4.1-2

- Caution: The sealing ring may only be used once
- If it is necessary to dismantle the cap, the sealing ring must be replaced



4.2 Disassembly of the lever H3.

Step 4.2-1

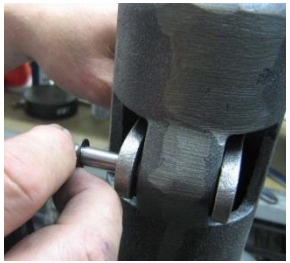
- Remove the clamping screw on the lever
- Tools: Open-end spanner, ring spanner

Step 4.2-2

- Push the retaining washers off the pin
- Tools: Pliers

Step 4.2-3

- Pull pin out
- Pull lever out of the cap



4.2 Disassembly of the lever H3.

Step 4.2-4

- Remove small plastic ball and unscrew screw
- Tools: Ring spanner

Step 4.2-5

- Remove the retaining clip and pin from the spindle cap
- Pull the spindle cap off the spindle

4.3 Disassembly of the lever H4.

Step 4.3-1

- Loosen lever and screw it off
- Tools: Open-end spanner

Step 4.3-2

- Remove retaining clip and pin
- Pull spindle cap off the spindle

Disassembly Type 441. 5. Disassembly: pressure spring & adjusting screw.

Step 5-1

- Remove lock nut from adjusting screw
- Tools: Open-end spanner

Step 5-2

- Secure the spindle from turning with a pin punch
- Apply the open-end spanner in a clockwise direction until the springs are unstressed
- Tools: Open-end spanner, pin punch

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Disassembly Type 441. 5. Disassembly: pressure spring & adjusting screw.

Step 5-3

- Screw adjusting screw out of the bonnet

Step 5-4

- Unscrew the lock nut

Step 5-5

- Remove the plastic bush

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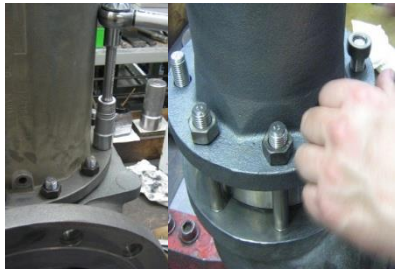
6.1 Disassembly of the bonnet DN 80.

Step 6.1-1

- Loosen the nuts and unscrew them from the studs
- Tools: Open-end spanner Ratchet



Step 6.1-2

- Carefully lift off and remove the bonnet from the body by hand or crane depending on the size and weight

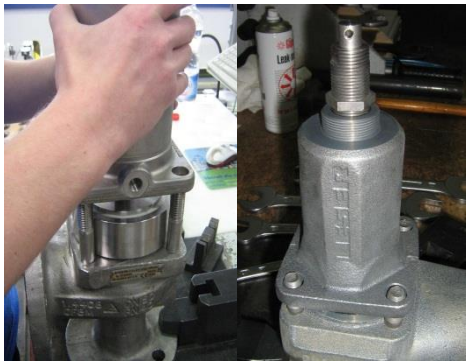
6.2 Disassembly of the bonnet DN 65.

Step 6.2-1

- Loosen the nuts and unscrew them from the studs
- Tools: Open-end spanner Ratchet

Step 6.2-2

- Carefully lift off and remove the bonnet from the body



7.1 Disassembly of the spring/disc/bellows/cooling zone assembly.

Step 7.1-1

- If there are any thrust bearings, remove them from the top spring plate
- Pull the spring plate off the spindle

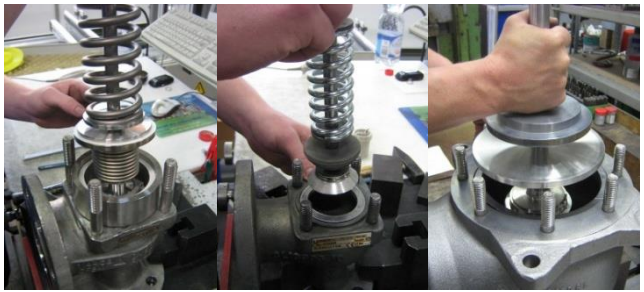
Step 7.1-2

- Pull spring(s) off the spindle

7.1 Disassembly of the spring/disc/bellows/cooling zone assembly.

Step 7.1-3

- Lift out the spindle with the bottom spring plate, guide, bellows if applicable and disc from the body



Step 7.1-4

- Remove the cooling zone / bonnet extender from the body
- Remove gaskets

7.2 Disassembly of the spindle/disc assembly (with elastomer bellows).

Step 7.2-1

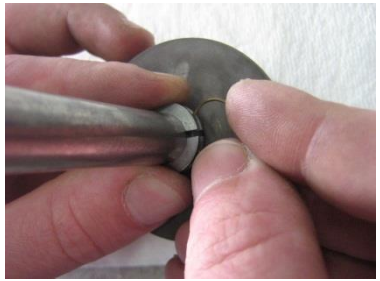
- Lift of the top spring plate and spring off the spindle one after the other

Step 7.2-3

- Remove the hose clamp from the spring plate with pliers
- Tools: Pliers

Step 7.2-2

- Remove the retaining clip
- Remove the split rings from the spindle



7.2 Disassembly of the spindle/disc assembly (with elastomer bellows).

Step 7.2-4

- Pull the guide with the elastomer bellows off the spindle

Step 7.2-5

- Remove the hose clamp with pliers
- Tools: Pliers

Step 7.2-6

- Pull the elastomer bellows off the guide

7.2 Disassembly of the spindle/disc assembly (with elastomer bellows).

Step 7.2-7

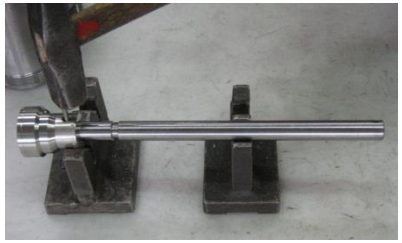
- Dismantle the spindle-disc connetction

Step 7.2-9

- Separate the spindle and disc

Step 7.2-8

- Push the pin out of the spindle



7.3 Disassembly of the spindle/disc assembly (with stainless steel bellows).

Step 7.3-1

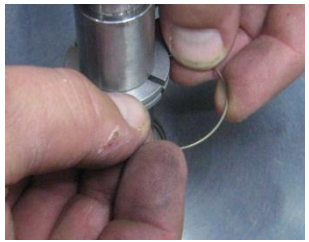
- Remove the bottom spring plate

Step 7.3-3

- Pull off the guide

Step 7.3-2

- Remove the retaining clips from the spindle
- Remove retaining clip from split rings



7.3 Disassembly of the spindle/disc assembly (with stainless steel bellows).

Step 7.3-4

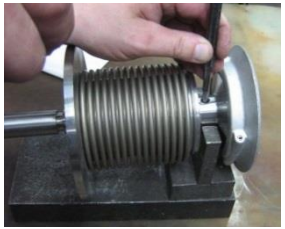
- Remove sealing ring from bellows

Step 7.3-5

- Remove lift stopper, if this is present

Step 7.3-6

- Drive out the pin
- Separate the stainless steel bellows and disc



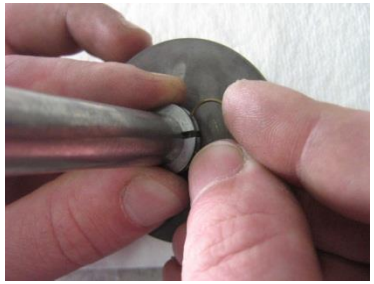
7.4 Disassembly of the spindle/disc assembly (without bellows).

Step 7.4-1

- Remove the top spring plate, spring and bottom spring plate from the spindle one after the other

Step 7.4-2

- Remove retaining clip
- Remove split rings



Step 7.4-3

- Push the guide off the spindle

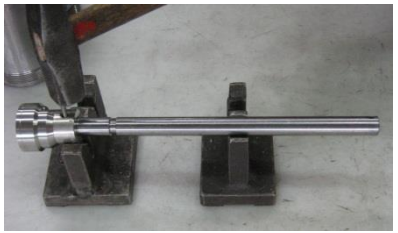
7.4 Disassembly of the spindle/disc assembly (without bellows).

Step 7.4-4

- Remove the lift stopper if this is present

Step 7.4-5

- Drive out the pin
- Separate the plate and disc



Step 7.4-6

- Tale the ball out of the disc body

Disassembly of the Type 441. 8. Unscrew the studs from the body.

Step 8-1

- Remove studs with impact wrench
- Tip: Place the guide on the opening of the body so that no studs can fall on the seat
- Tools: Impact wrench

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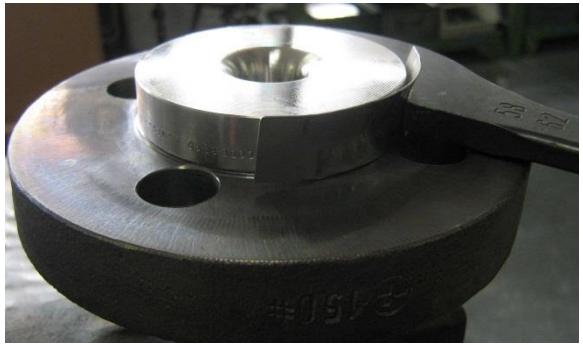
Disassembly of the Type 441. 9. Disassembly of the nozzle.

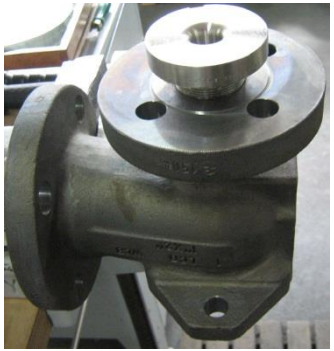
Step 9-1

- Remove nozzle with C-spanner (put a small protective plate between the nozzle and C-spanner)
- Tools: C-spanner with nose



Step 9-2

- Unscrew nozzle from the body



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Thank you for your attention.