

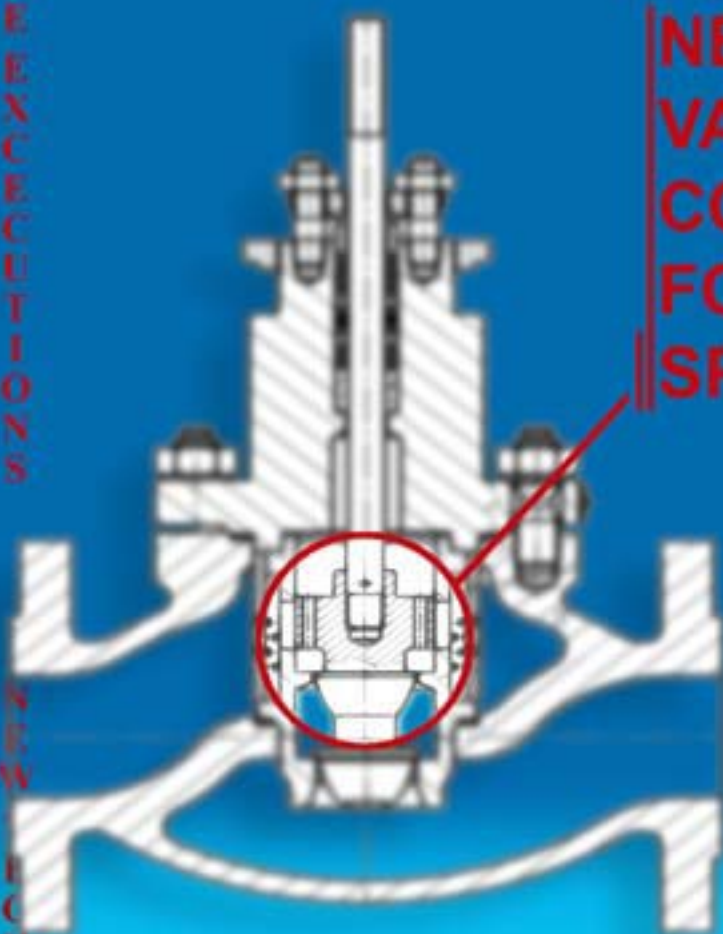
ZAKŁADY AUTOMATYKI "POLNA" S.A.

SPECIAL EXCECUTIONS



EXTREME
EXCECUTIONS

NEW
VALVE
CONSTRUCTIONS
FOR
SPECIAL USE



2005



NEW
TECHNOLOGIES

Dear Sirs,

We would like to present to you a review of special executions of control valves, which are now widening the assortment of our catalog products.

These studies rose in reply to concrete needs of our Customers and they were aimed at elimination or limitation of impact of a number of unfavourable phenomena related to flow, such as cavitation, evaporating (flashing), chocked flow, excessive noise, high override forces, wearing off internal elements of the valve, etc. Products for the professional power industry constitute a separate group including control valves for steam, water injection valves, desuperheaters and other customized valve solutions.

Solutions presented herewith are making the review of our design and production possibilities and they are posing a new offering in solving of various problems connected with valves' operation. This information will be filled in with new studies to the measure of their rising.

We will be grateful for any advice and suggestions, which can be helpful in creating additional new studies.

We wish to thank all our Customers, institutions and design offices, whose kindness and cooperation has contributed to the continuous improvement and enriching of our offer.

We are heartily inviting you to further cooperation.

Main Specialist
of Products Design

A handwritten signature in black ink, appearing to read 'Jamroz', followed by a horizontal line.

Stanisław Jamroz Msc. Eng.



**ANTI - CAVITATION
PROTECTION**

K

**LIMITATION OF
EVAPORATION INFLUENCE**

F

**LIMITATION OF CHOCKED
FLOW AND NOISE**

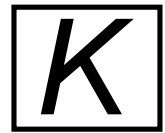
H

**OFFERING FOR POWER
PLANTS**

E

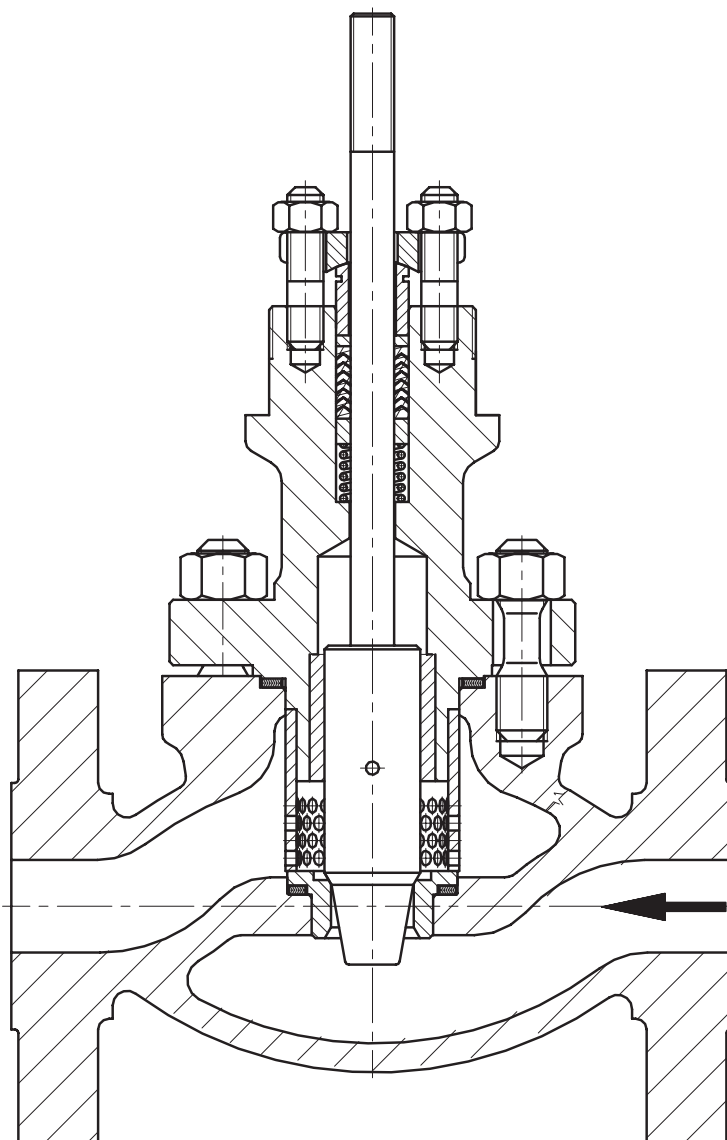
CUSTOMIZED SOLUTIONS

S



ANTI - CAVITATION PROTECTION

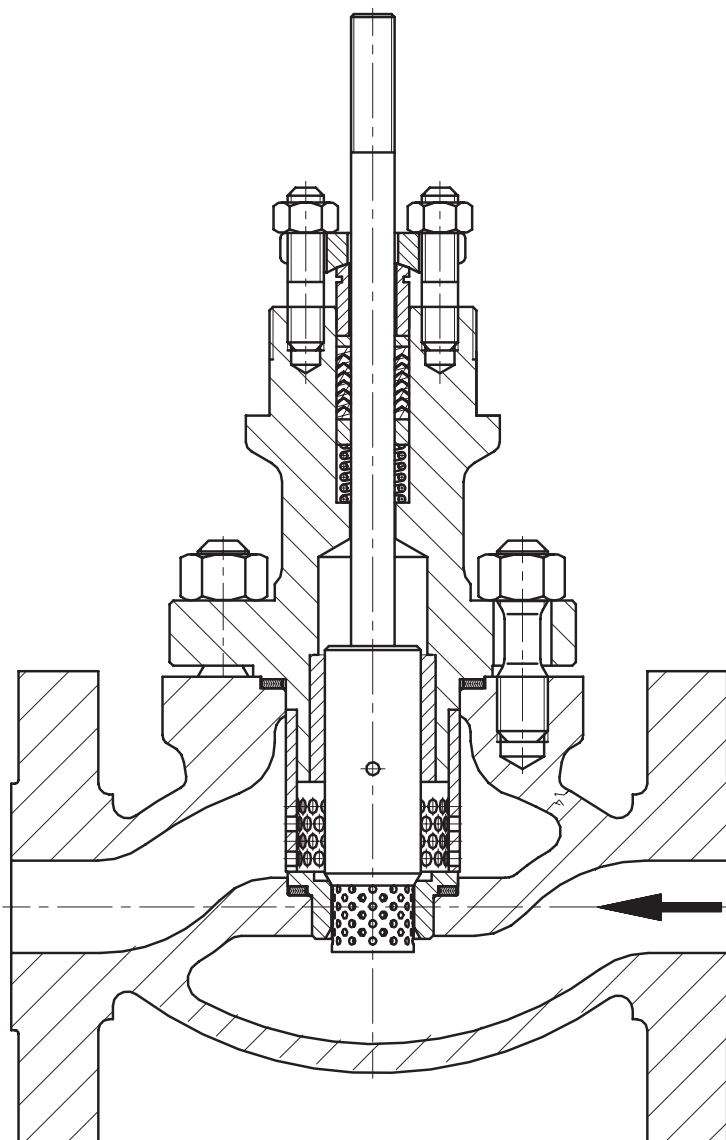
- ***USING HIGH HARDENED MATERIALS FOR VALVE INTERNAL PARTS***
- ***IMPLEMENTING DESIGN WITH HIGHER PRESSURE RECOVERY FACTOR F_L***
- ***MULTI STAGE PRESSURE DROP ACROSS THE VALVE***



VALVE WITH THROTTLING CAGE AND PROFILE PLUG

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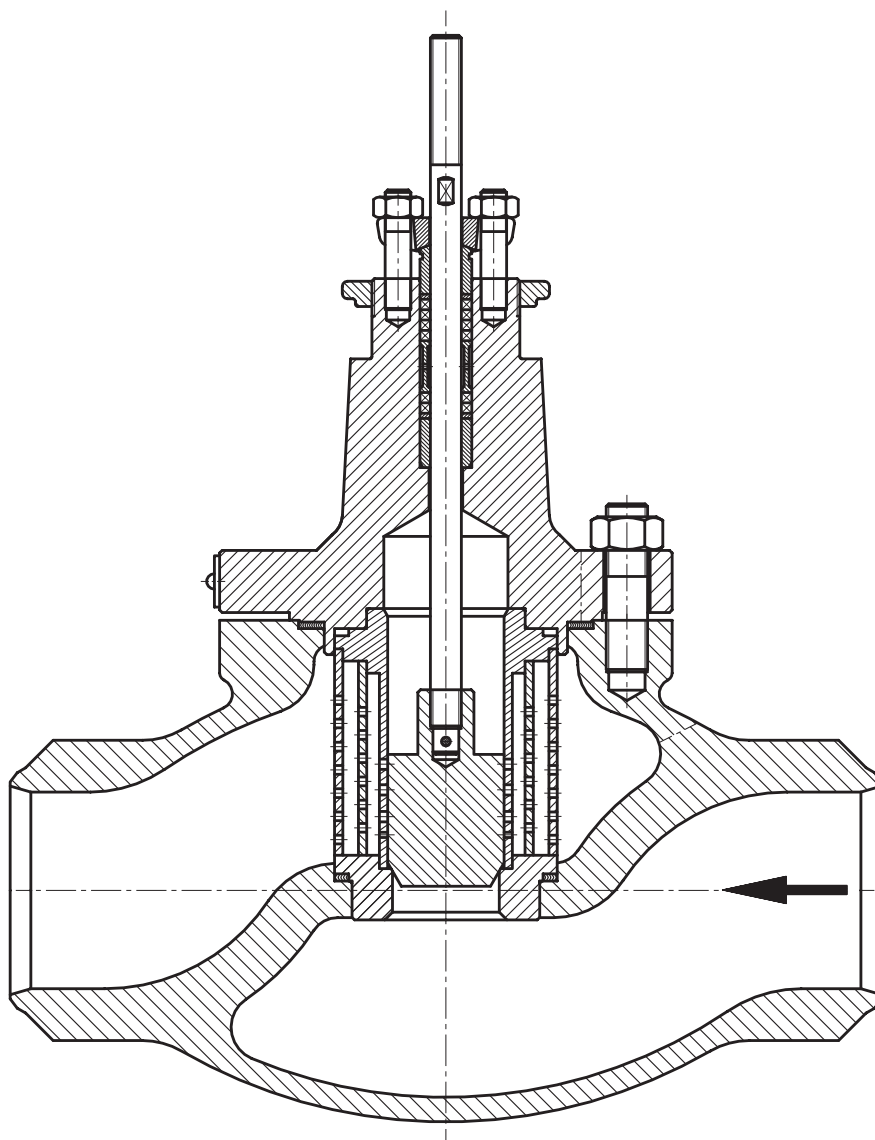
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VALVE WITH THROTTLING CAGE AND PERFORATED PLUG

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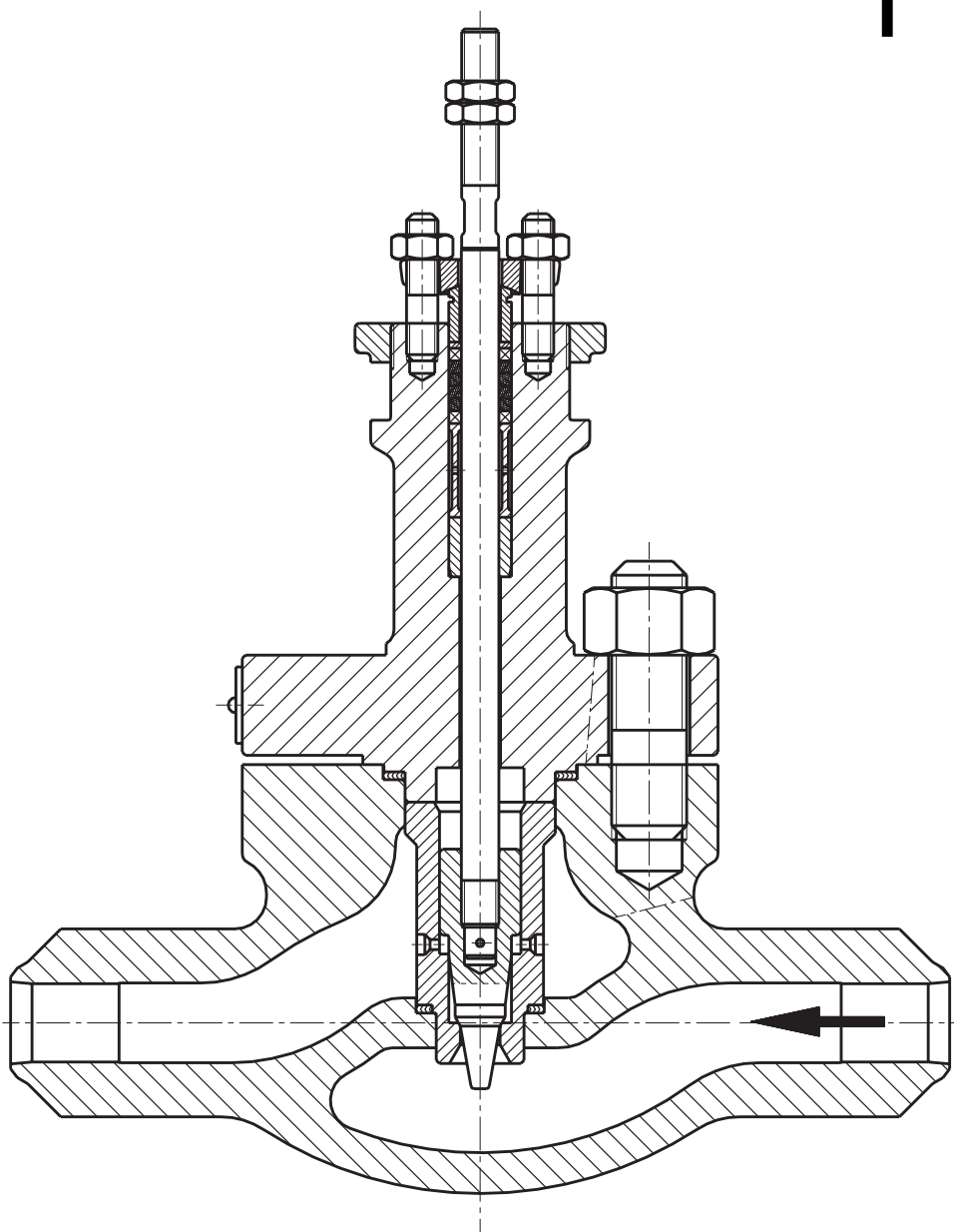
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VALVE WITH PISTON PLUG AND TWO THROTTLING CAGES

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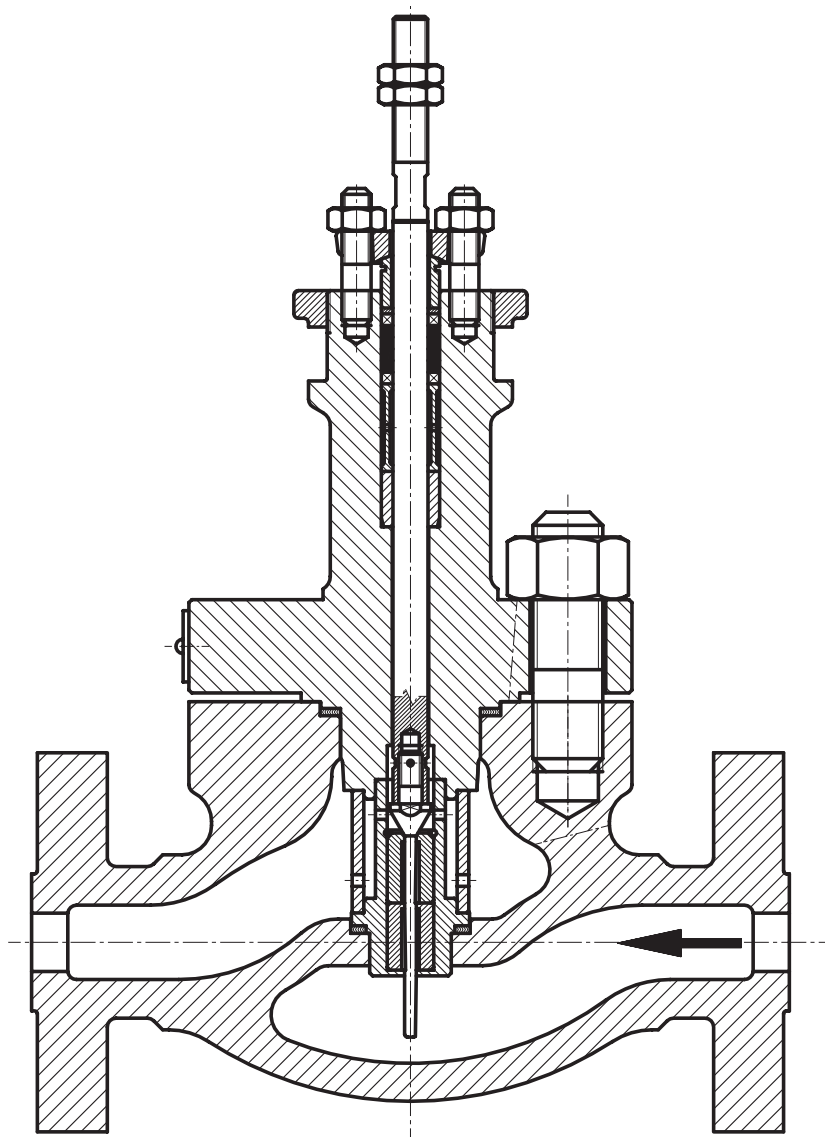
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VALVE WITH 3-STAGE THROTTLING, ACTIVE AND PASSIVE

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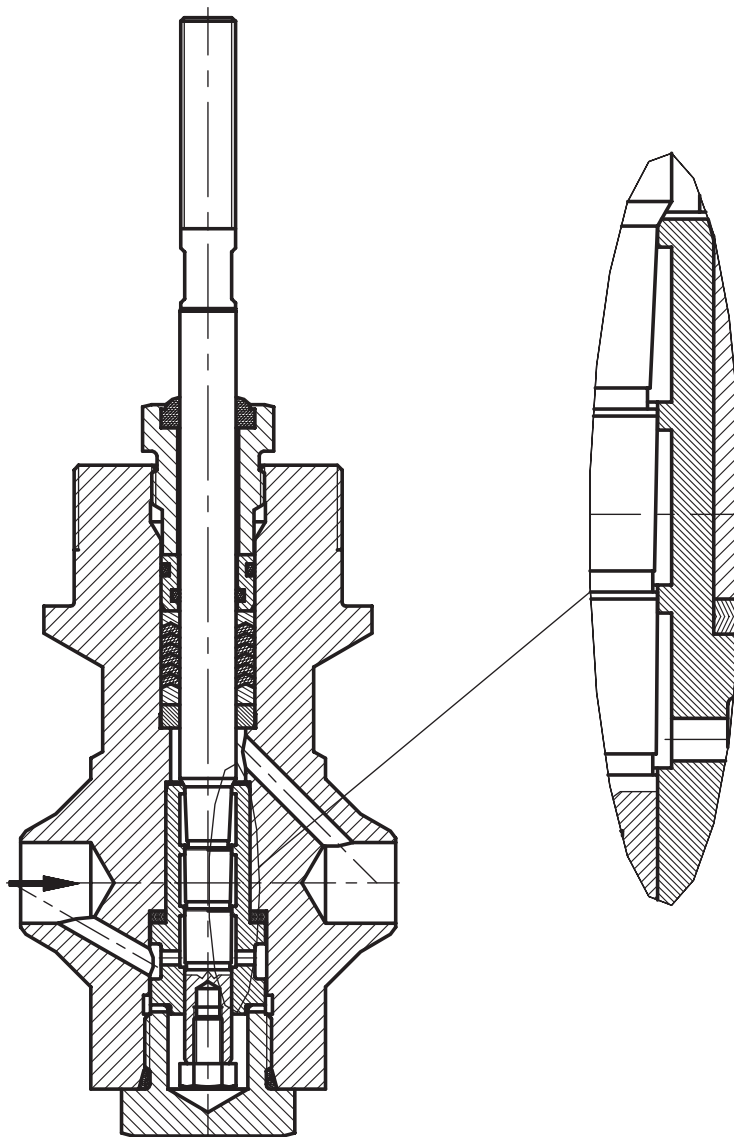
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VALVE WITH 4-STAGE THROTTLING, ACTIVE AND PASSIVE

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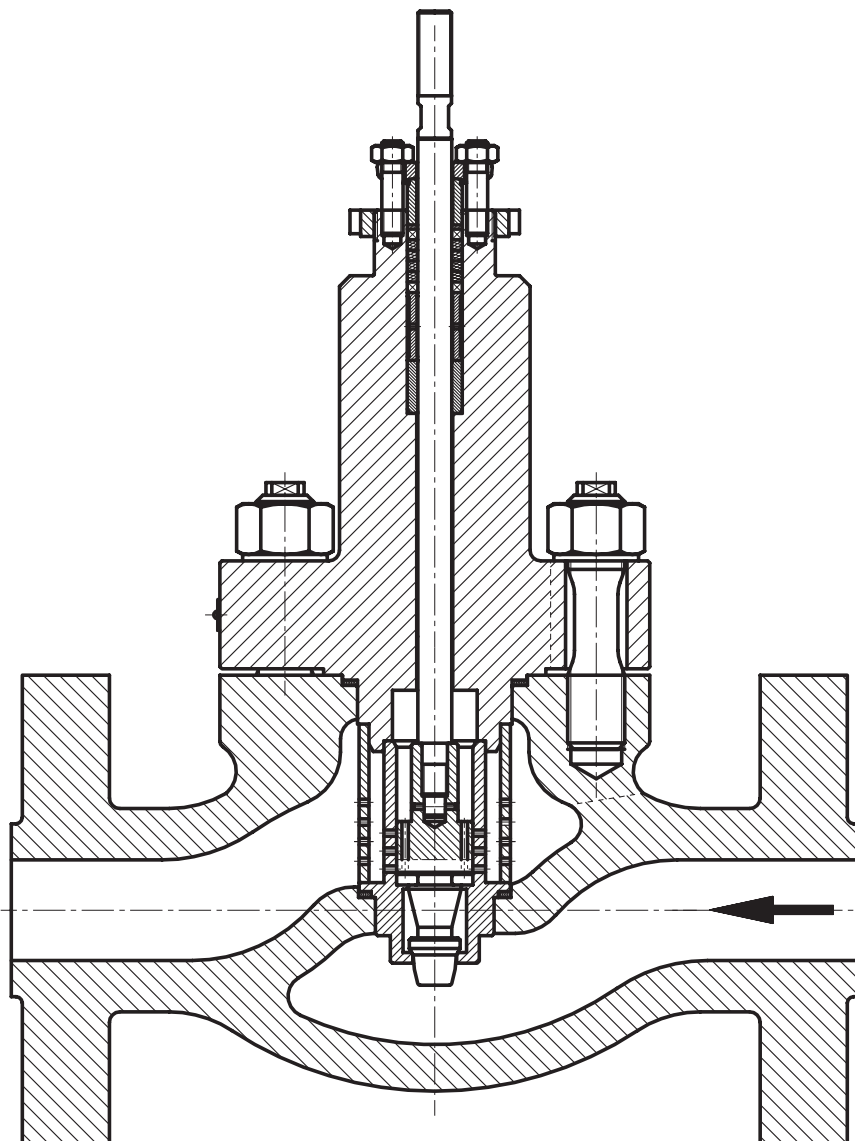
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VALVE WITH 3-STAGE THROTTLING, ACTIVE

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VALVE WITH 4-STAGE THROTTLING, ACTIVE AND PASSIVE

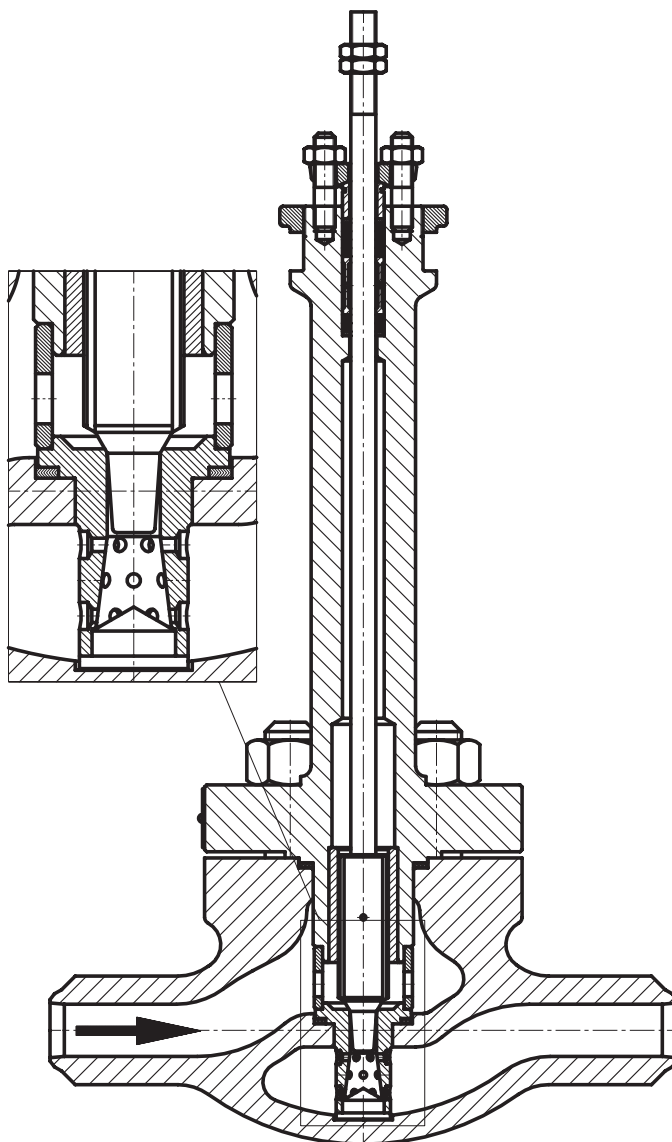
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LIMITATION OF EVAPORATION INFLUENCE

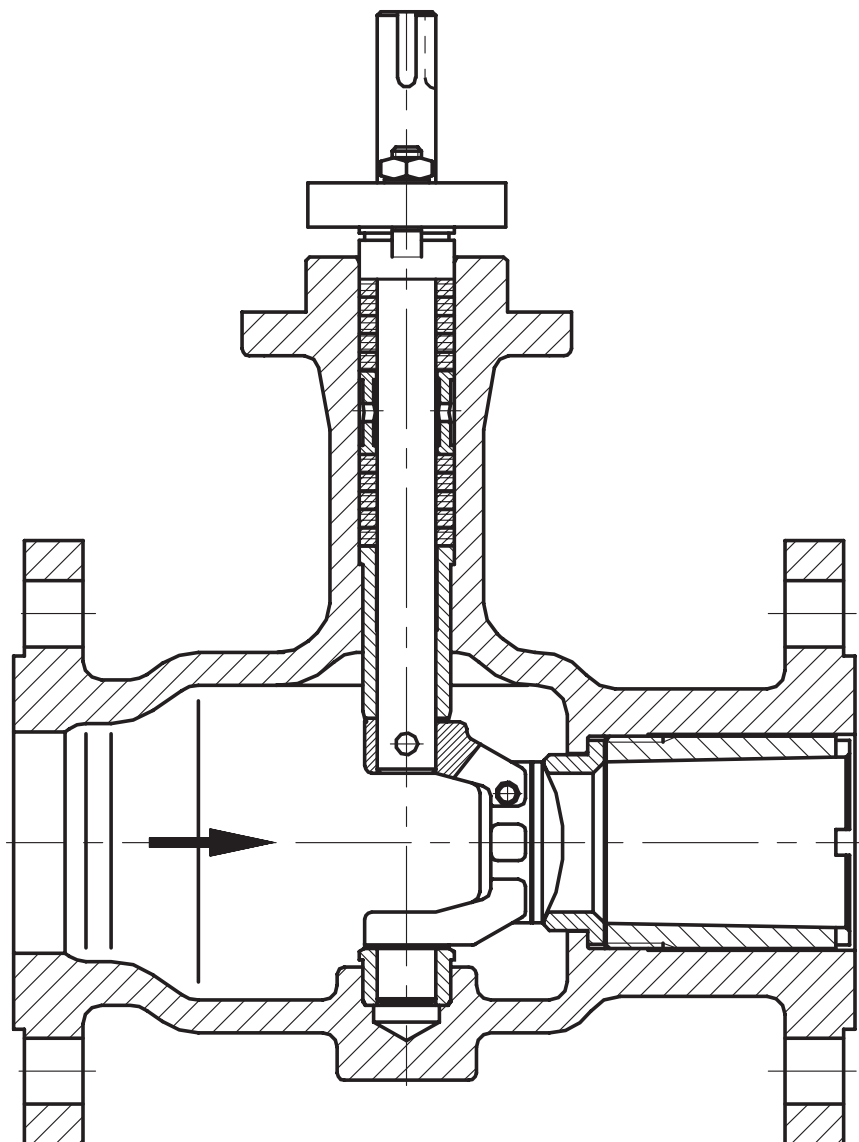
- ***USING HIGH - HARDENED MATERIALS FOR VALVE
INTERNAL PARTS***
- ***USING ANTI - CORROSION VALVE INTERNAL LINING***
- ***EROSION - PROOF VALVE DESIGN, VALVES WITH
PROTECTION SLEEVES AND CAGES***



GLOBE VALVE WITH PROTECTION CAGE IN THE SEAT

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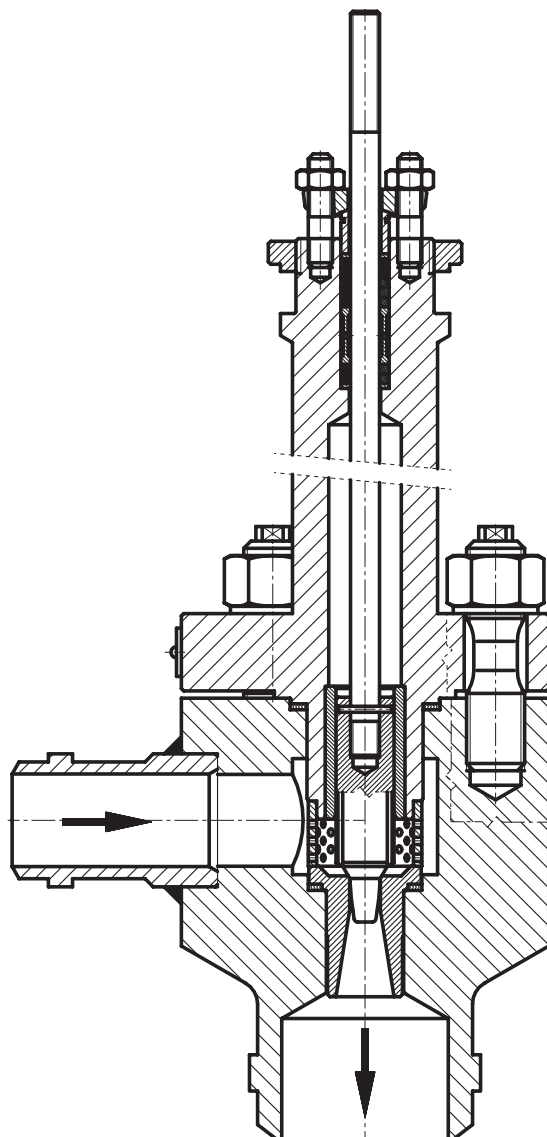
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VALVE WITH ROTARY PLUG AND PROTECTION SLEEVE

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ANGLE VALVE WITH PROTECTION SLEEVE IN THE SEAT

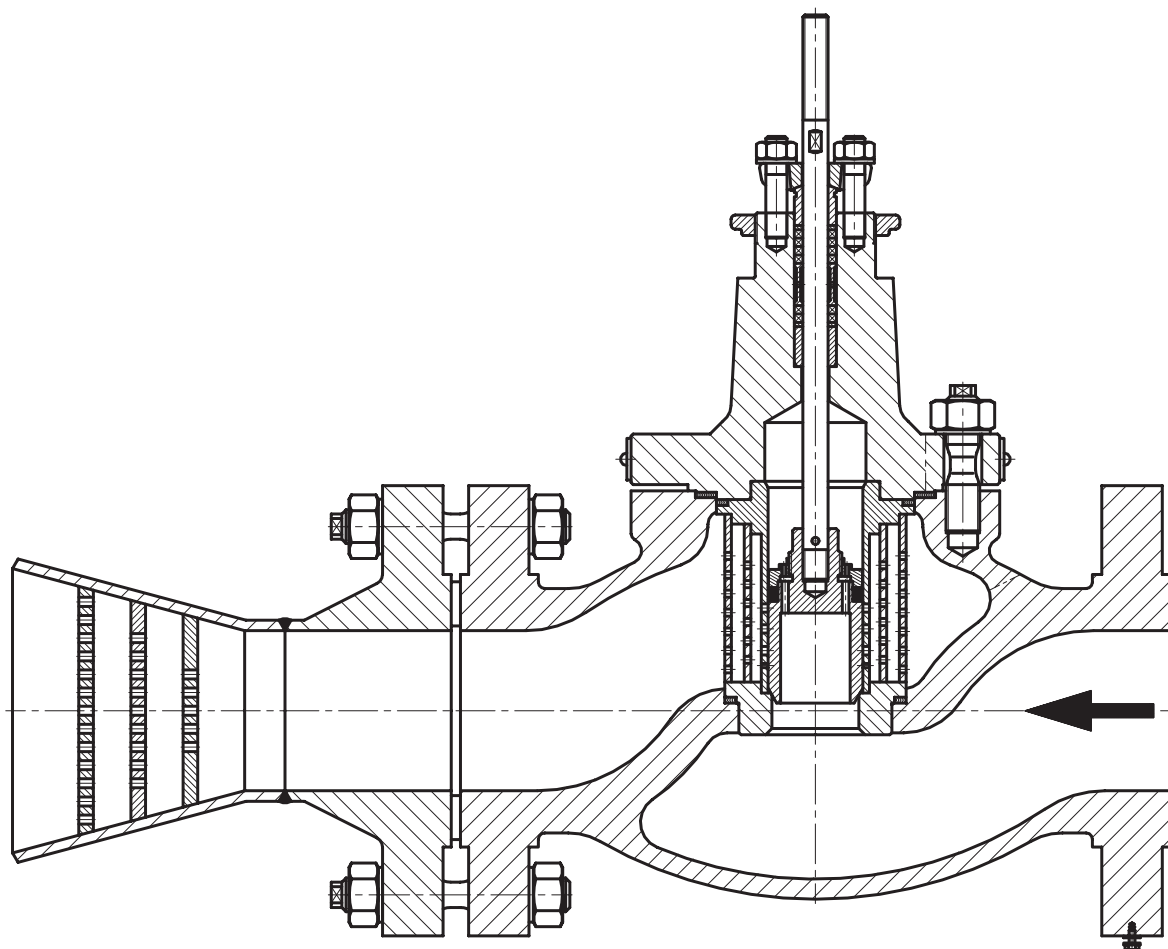
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LIMITATION OF CHOCKED FLOW AND NOISE

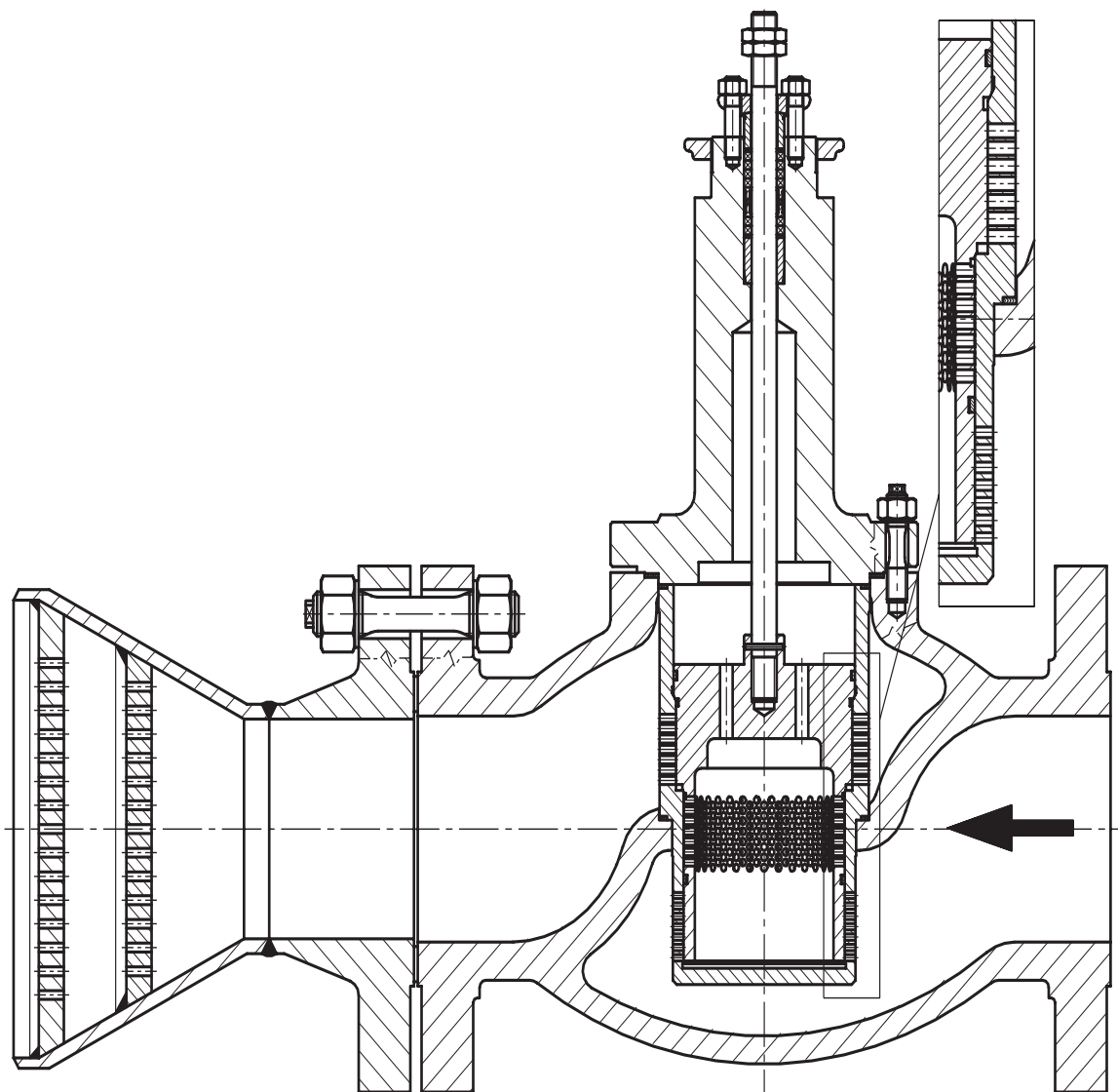
- ***MULTI - HOLE CONTROL ELEMENTS, PLUGS, CAGES***
- ***THROTTLING STRUCTURES, CAGES, PLATES***
- ***DIFFUSERS***



**BALANCED VALVE WITH CONTROL CAGE WITH FIVE
MULTI - HOLE PASSIVE THROTTLING STRUCTURES: 2 CAGES,
3 PLATES, DIFFUSER**

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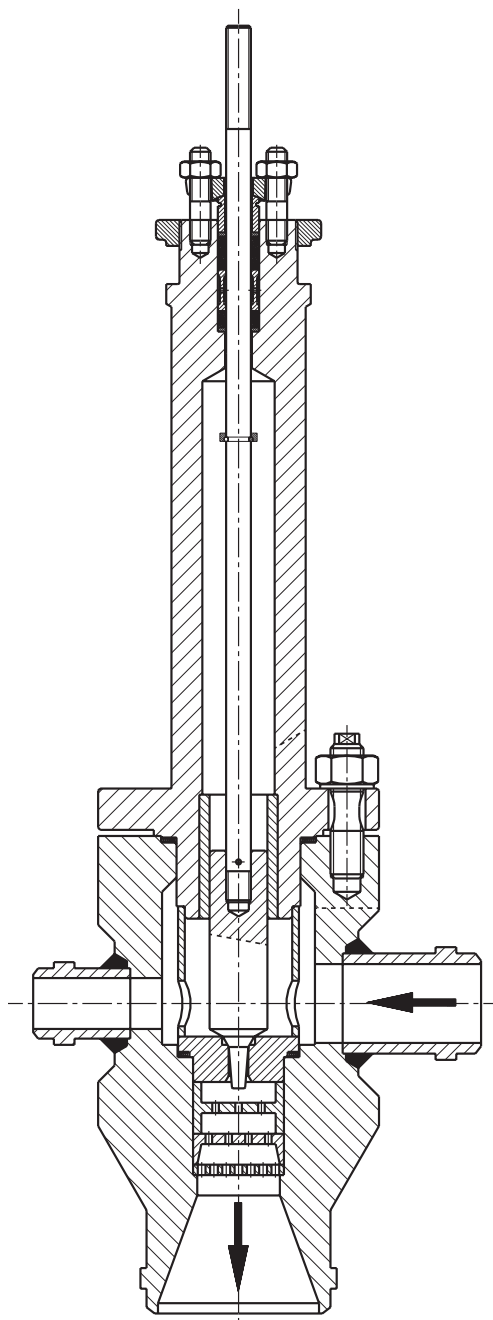
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**BALANCED VALVE WITH MULTI-STAGE ACTIVE THROTTLING:
2 THROTTLING PLATES, DIFFUSER**

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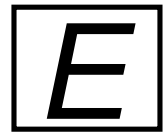
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**ANGLE VALVE DN2>DN1, 3 THROTTLING PLATES,
POSSIBILITY OF DRAINAGE**

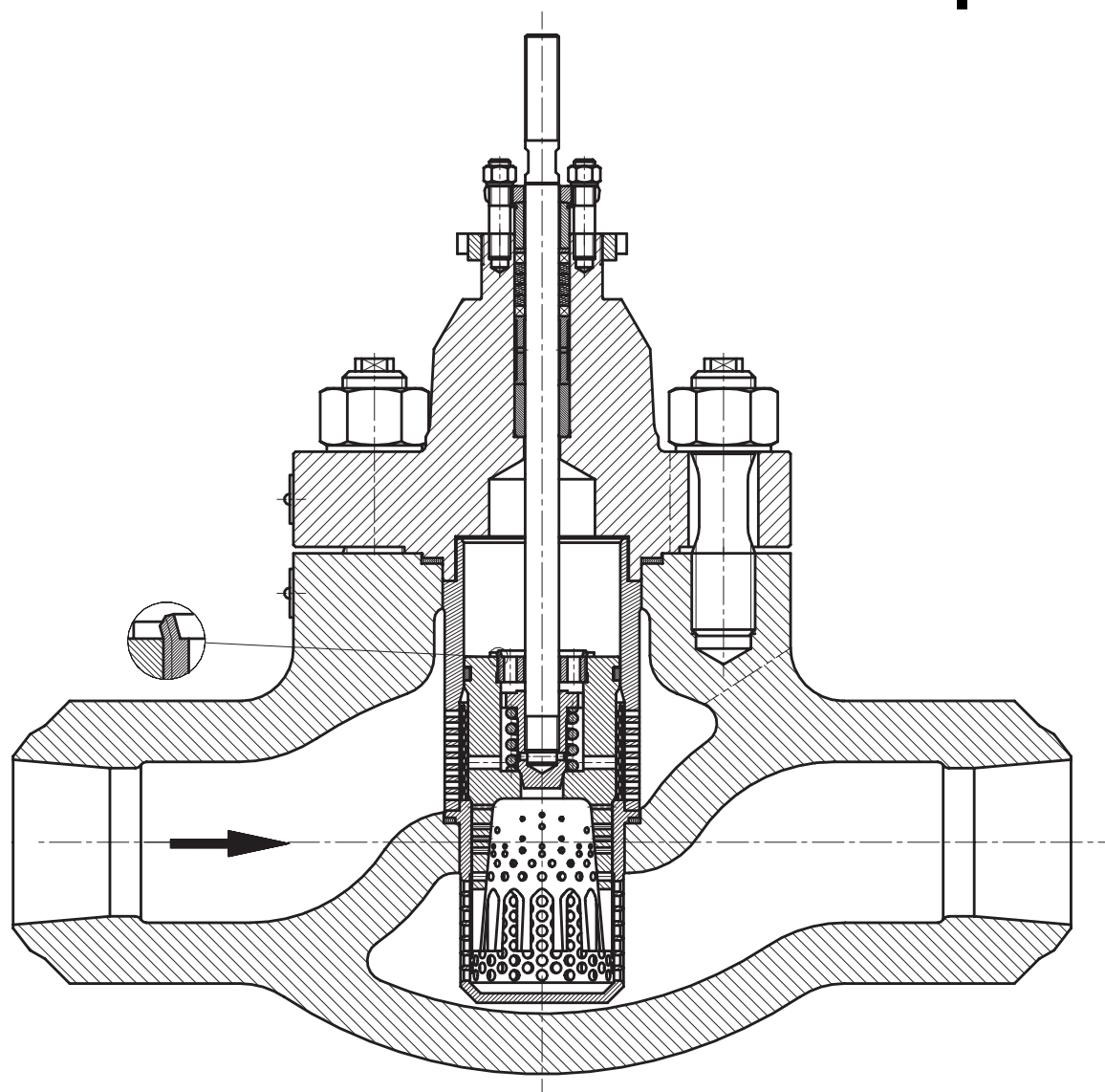
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OFFERING FOR POWER PLANTS

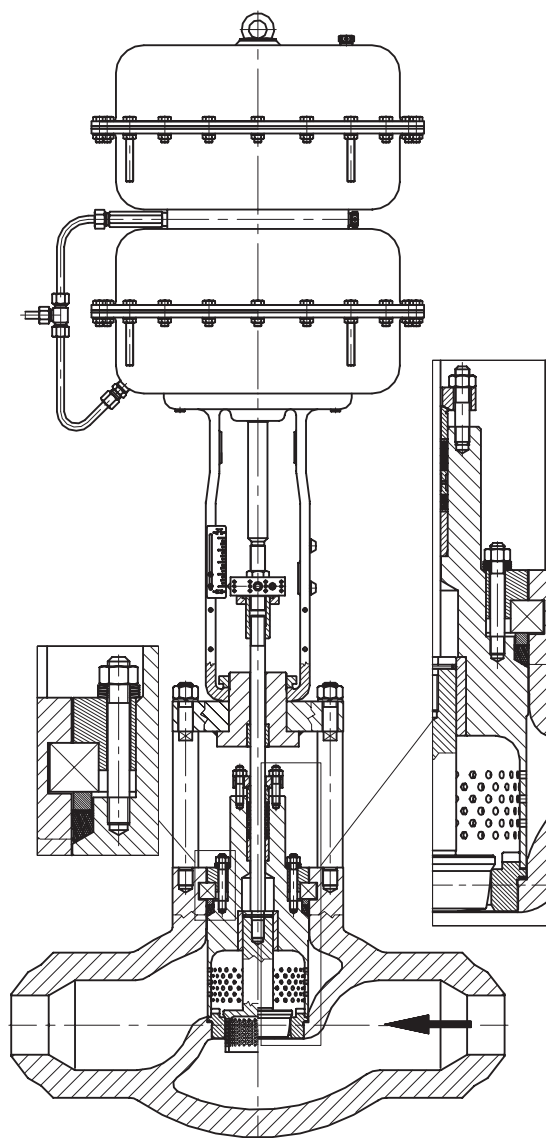
- *CONTROL VALVES FOR STEAM*
- *WATER INJECTION VALVES*
- *DESUPERHEATERS*
- *CUSTOMIZED SOLUTIONS*



**VALVE FOR STEAM, STATICALLY BALANCED, HIGH
RANGEABILITY AND SHUT-OFF TIGHTNESS, THERMAL
SHOCK AND EROSION RESISTANCE**

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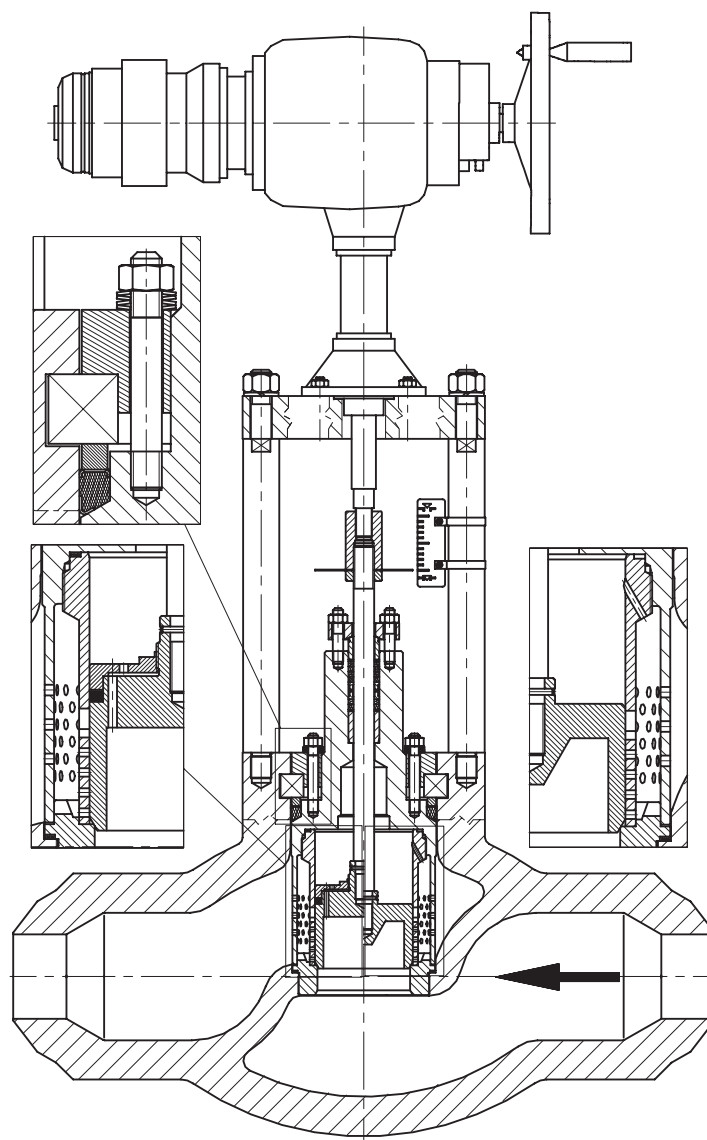
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**VALVE FOR STEAM, DN150, 200, 250; PN150...420 WITH
THROTTLING CAGE, PROFILE PLUG OR PERFORATED PLUG**

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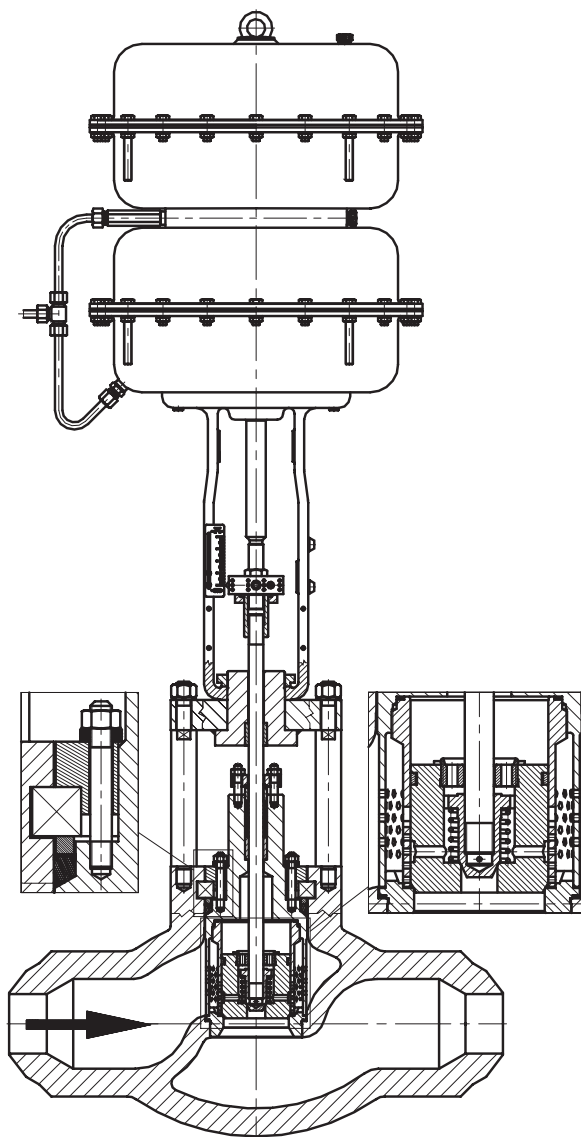
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**VALVE FOR STEAM, DN150, 200, 250; PN150...420 WITH
UNBALANCED OR BALANCED PISTON PLUG,
CONTROL CAGE AND BONNET**

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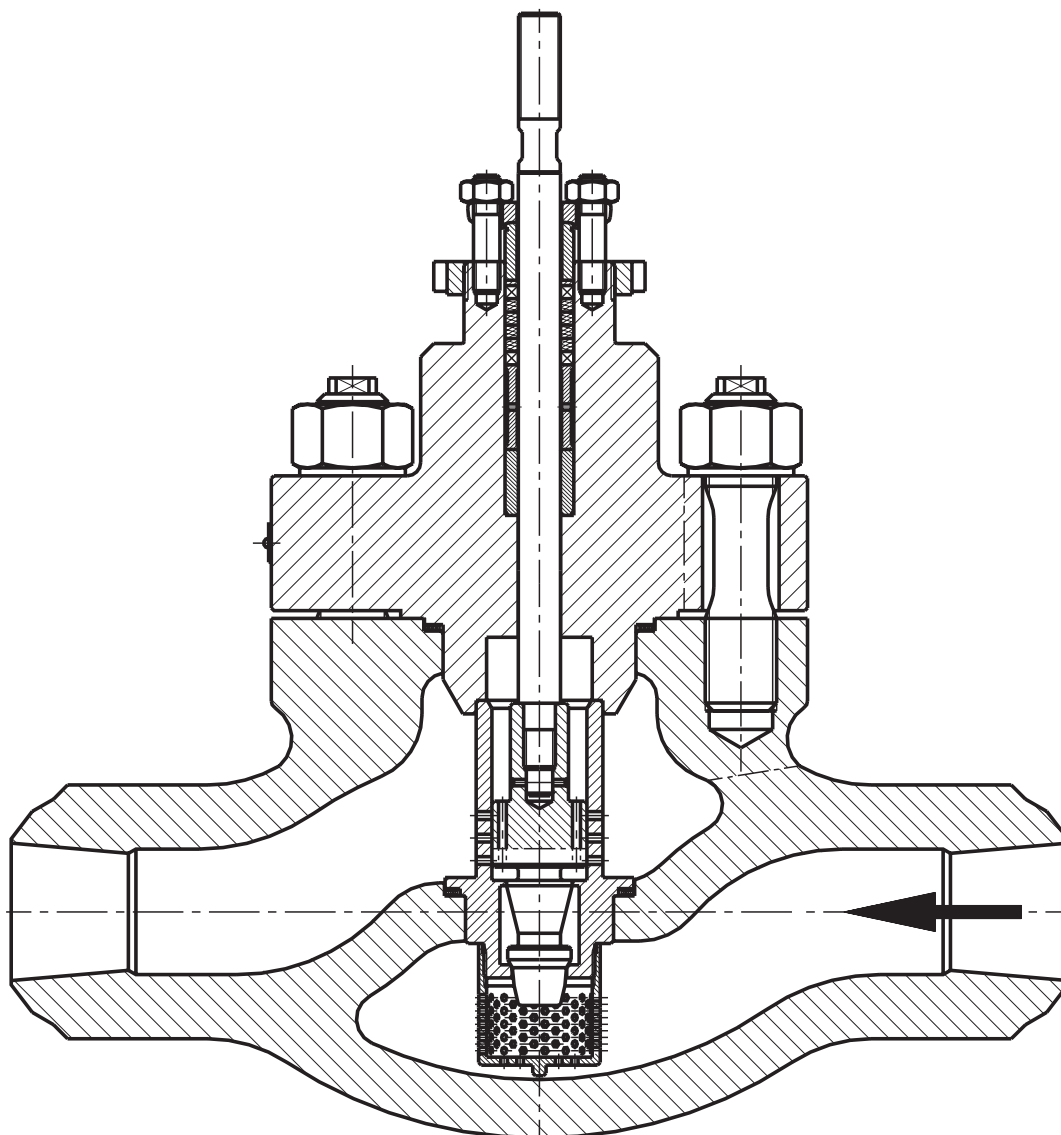
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**VALVE FOR STEAM, DN150, 200, 250; PN150...420 WITH PILOT
PLUG, STATICALLY BALANCED, HIGH RANGEABILITY
AND SHUT -OFF TIGHTNESS**

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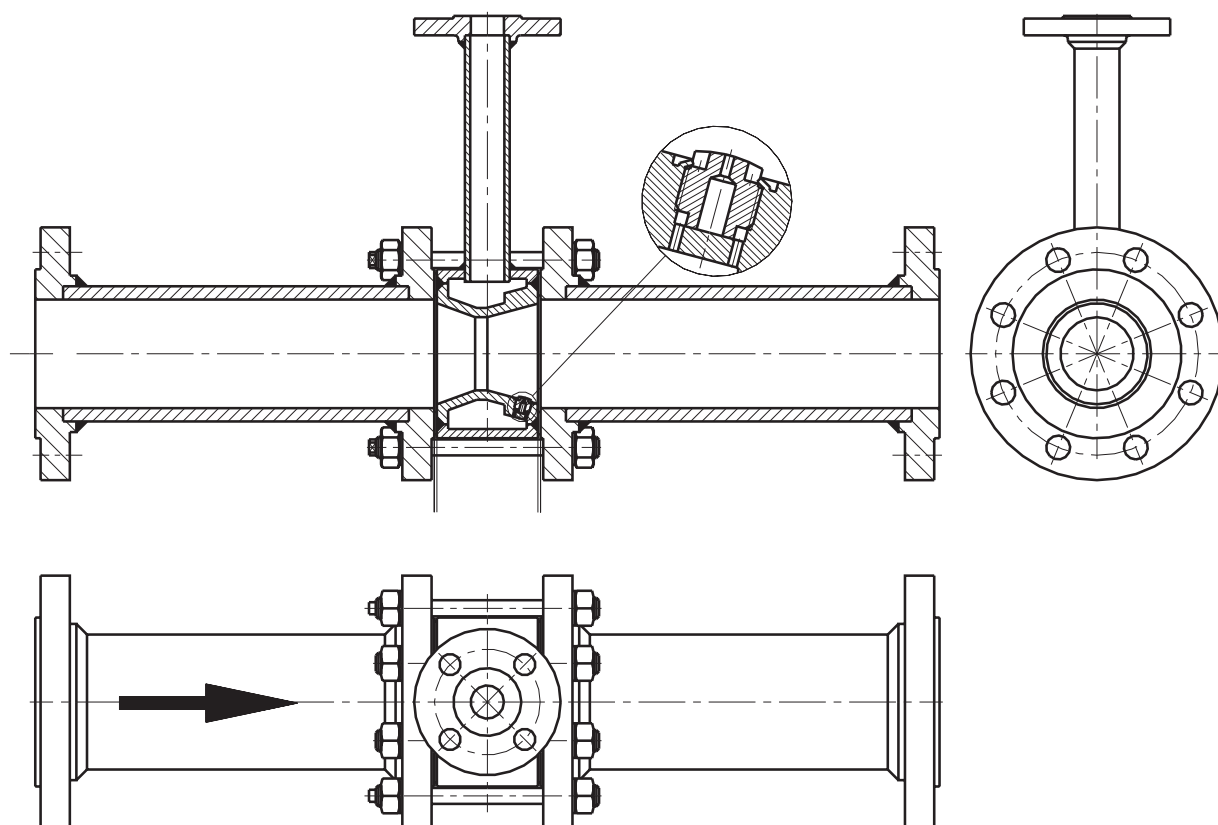
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WATER INJECTION VALVE WITH 3 - ACTIVE THROTTLING STAGE

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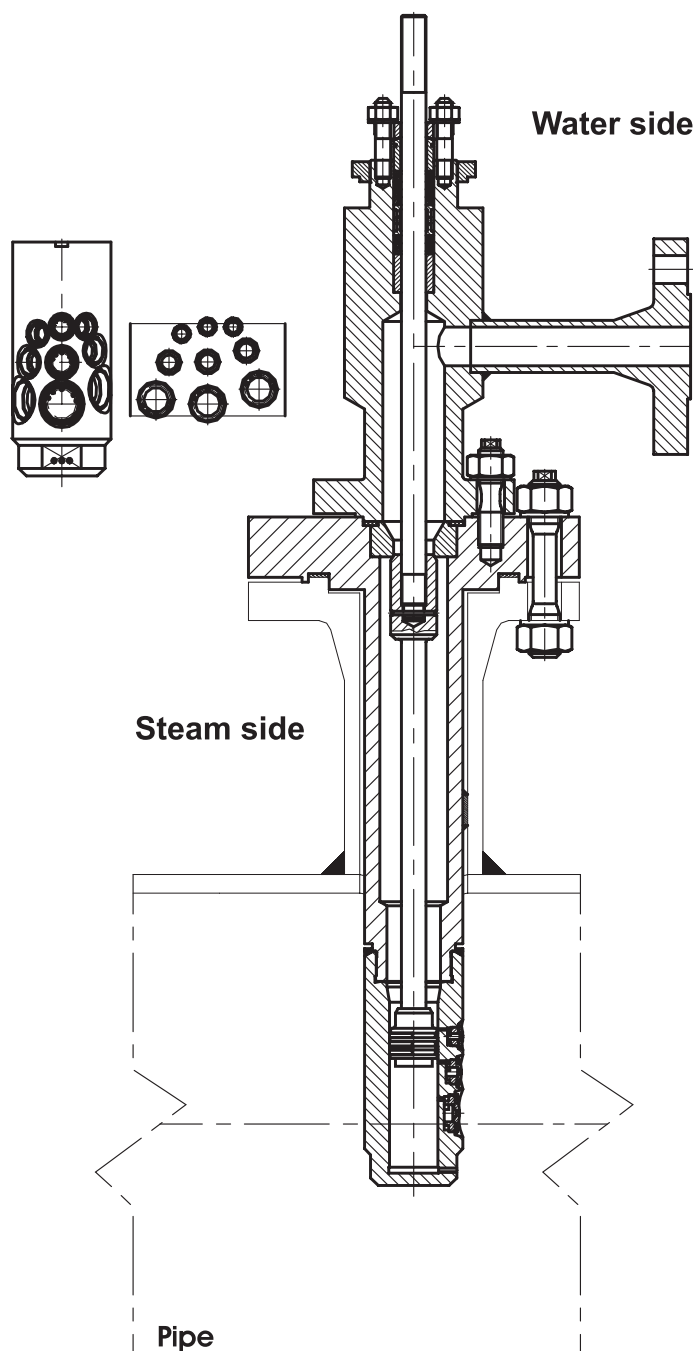
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RING DESUPERHEATER

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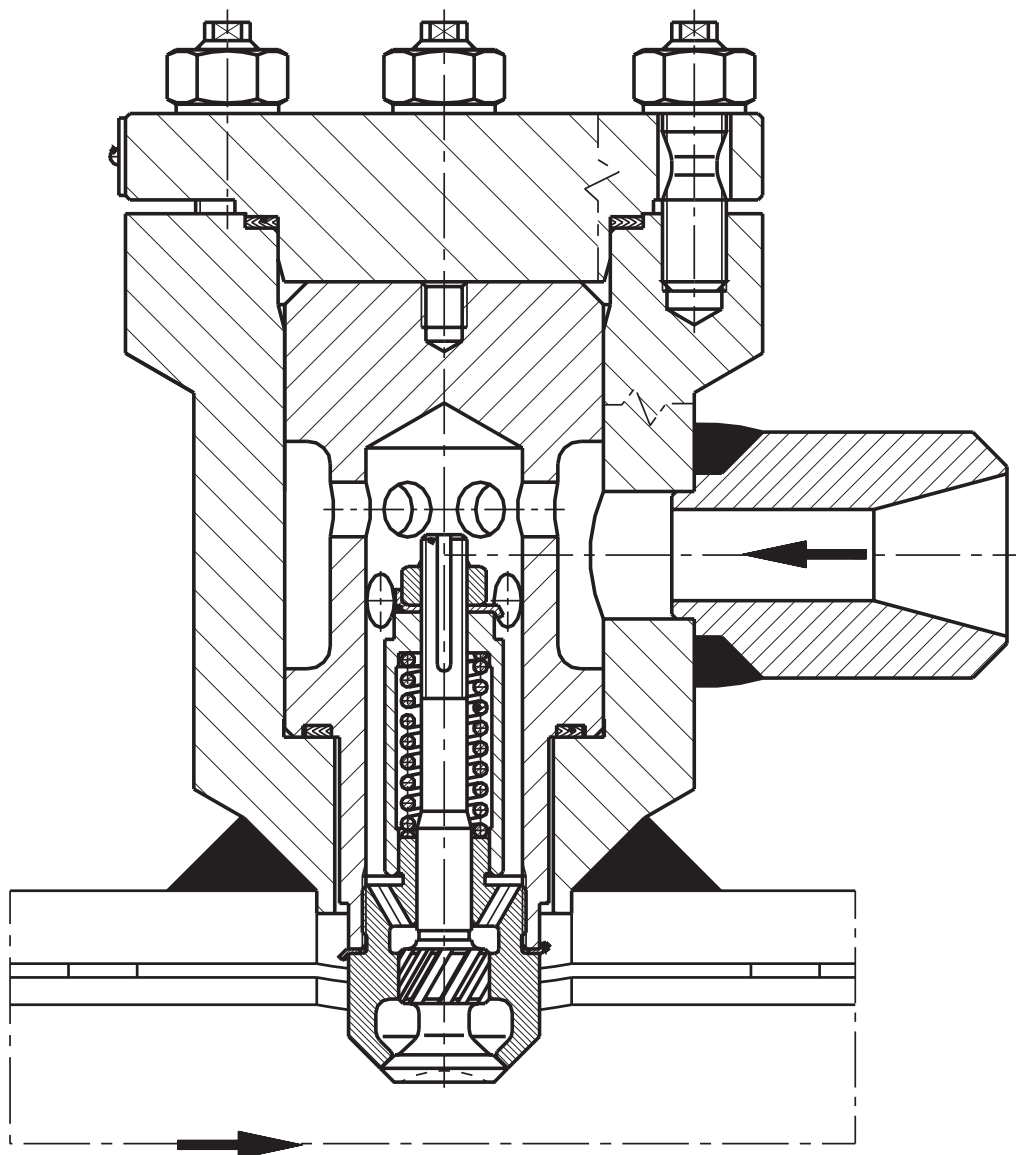
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PISTON DESUPERHEATER

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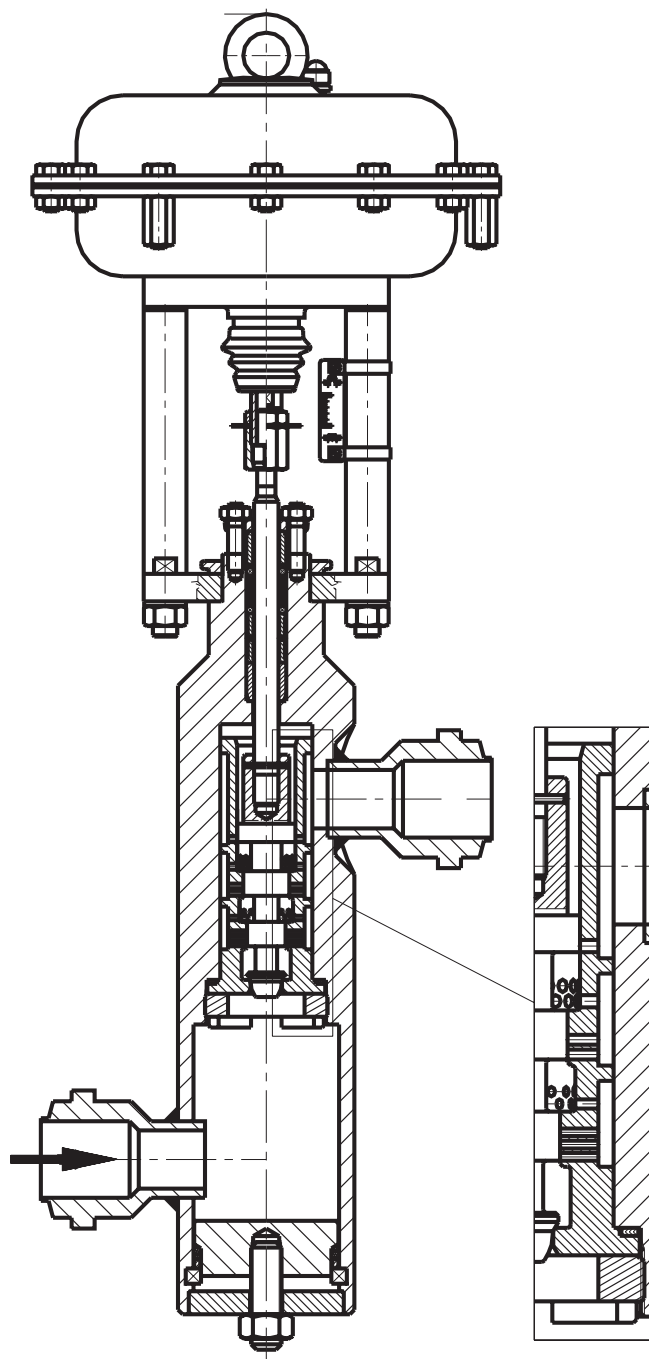
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PLUG DESUPERHEATER

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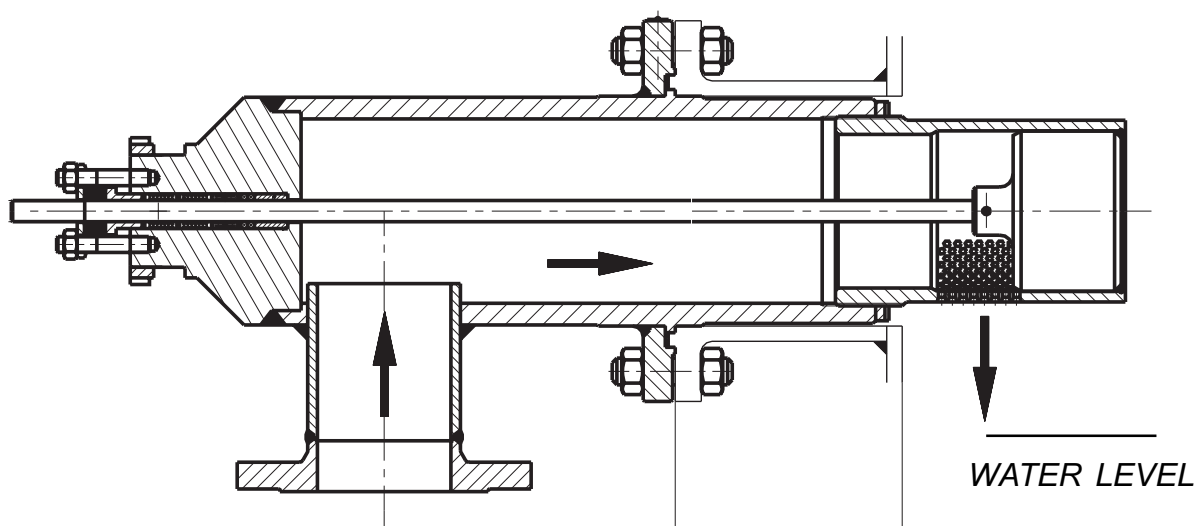
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MINIMUM FLOW VALVE

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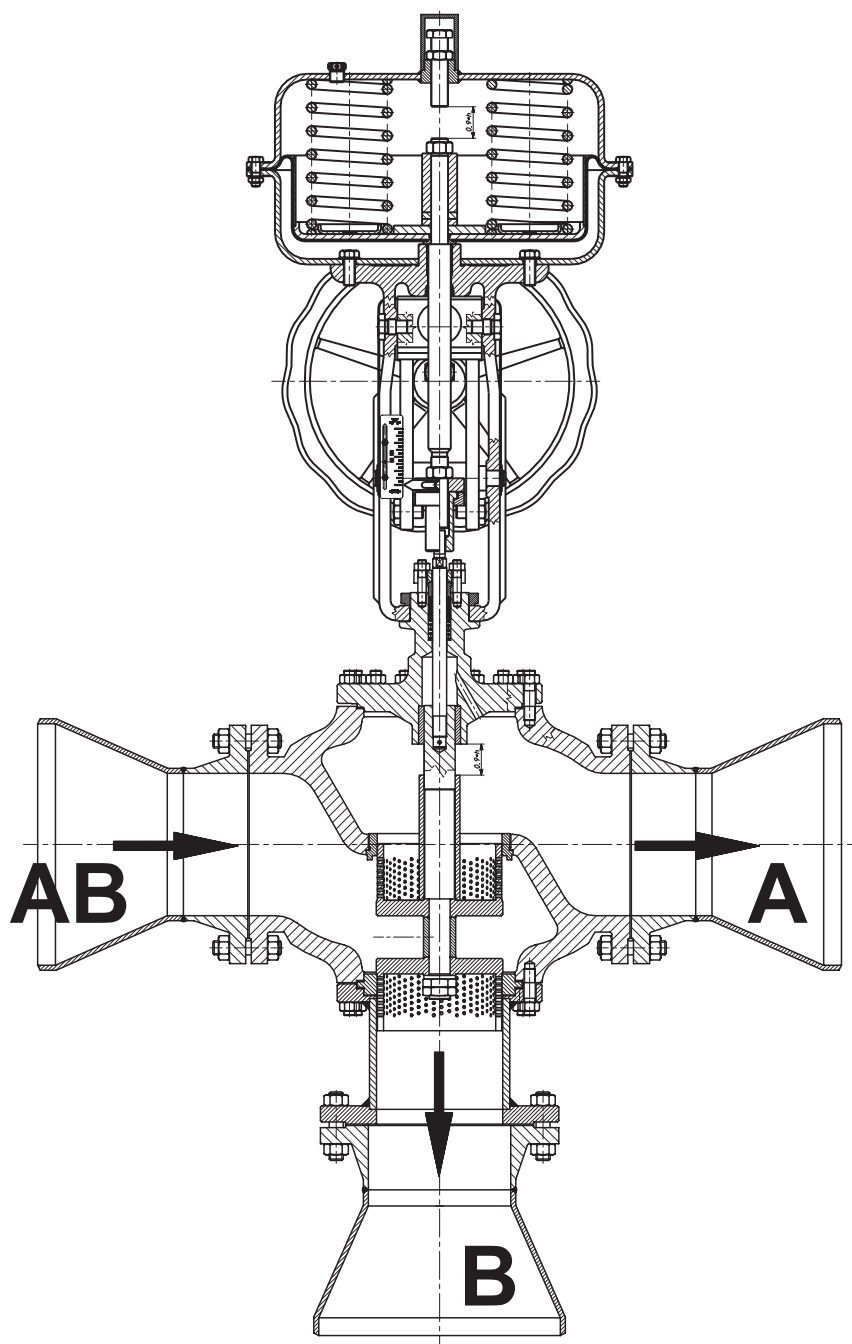
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PRESSURE BUILD -UP VALVE FOR CONDENSATE

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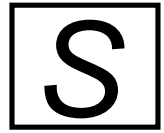
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3-WAY VALVE WITH FLOW LIMITATION

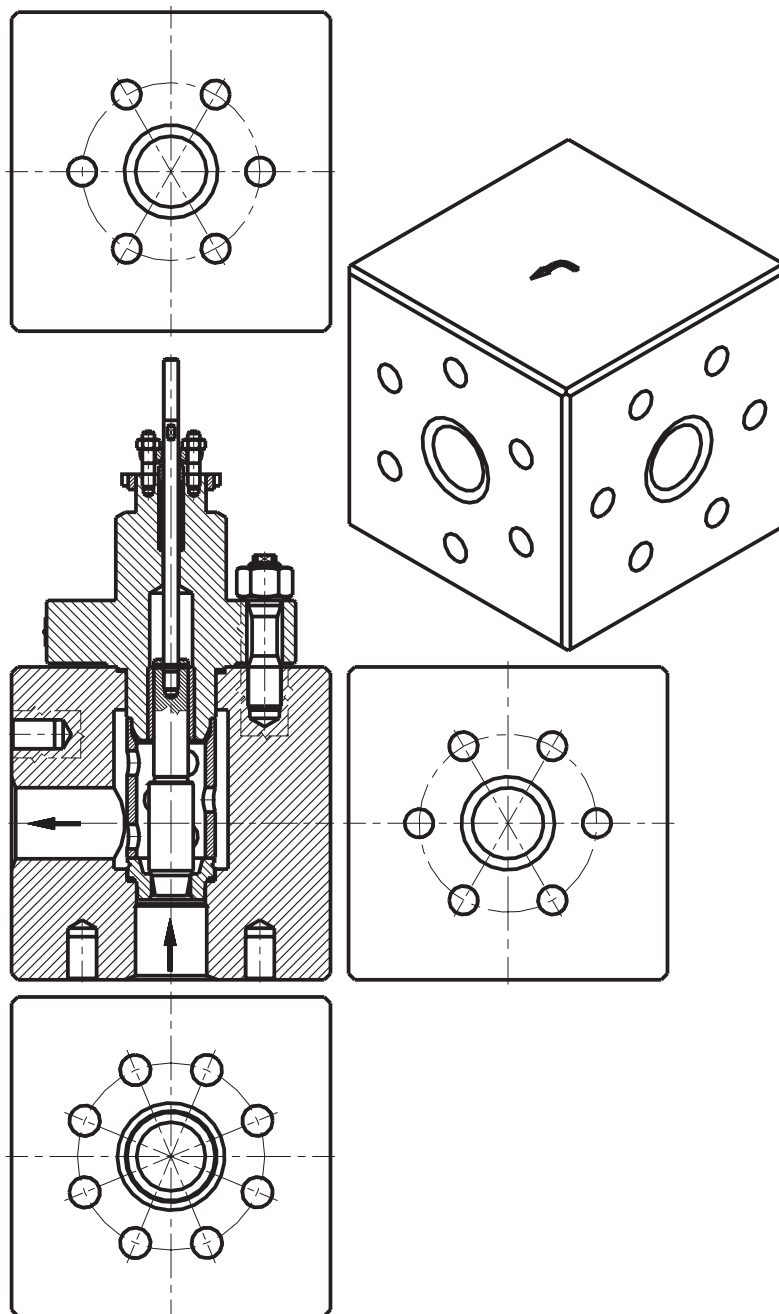
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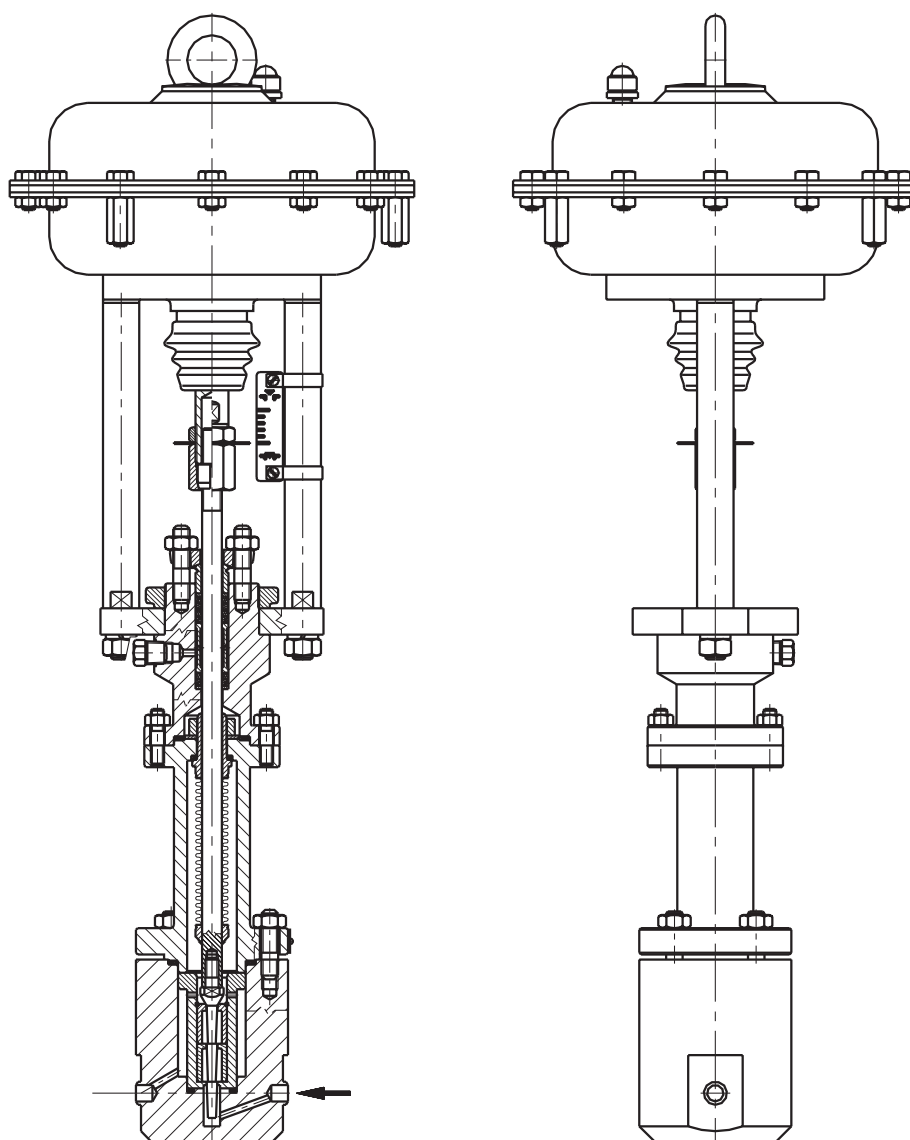
- ***EXECUTED ONTO INDIVIDUAL NEEDS OF CUSTOMERS***



ANGLE VALVE WITH SPECIAL BODY AND CONNECTION

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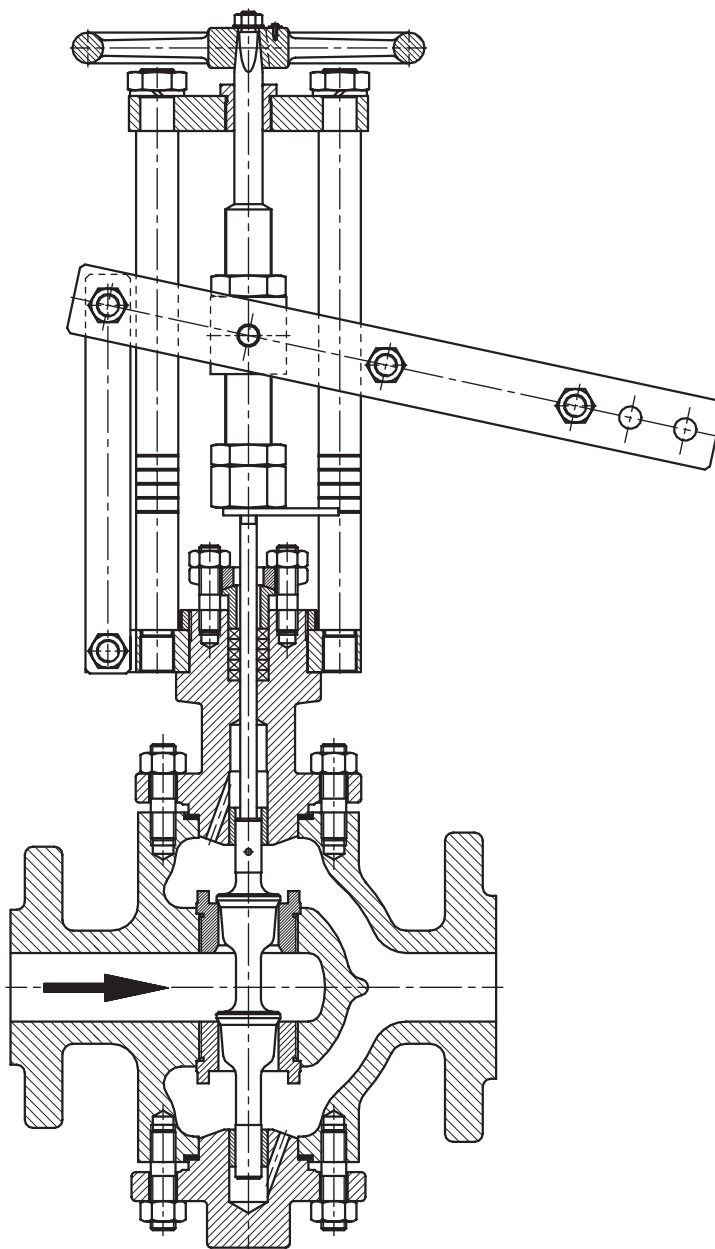
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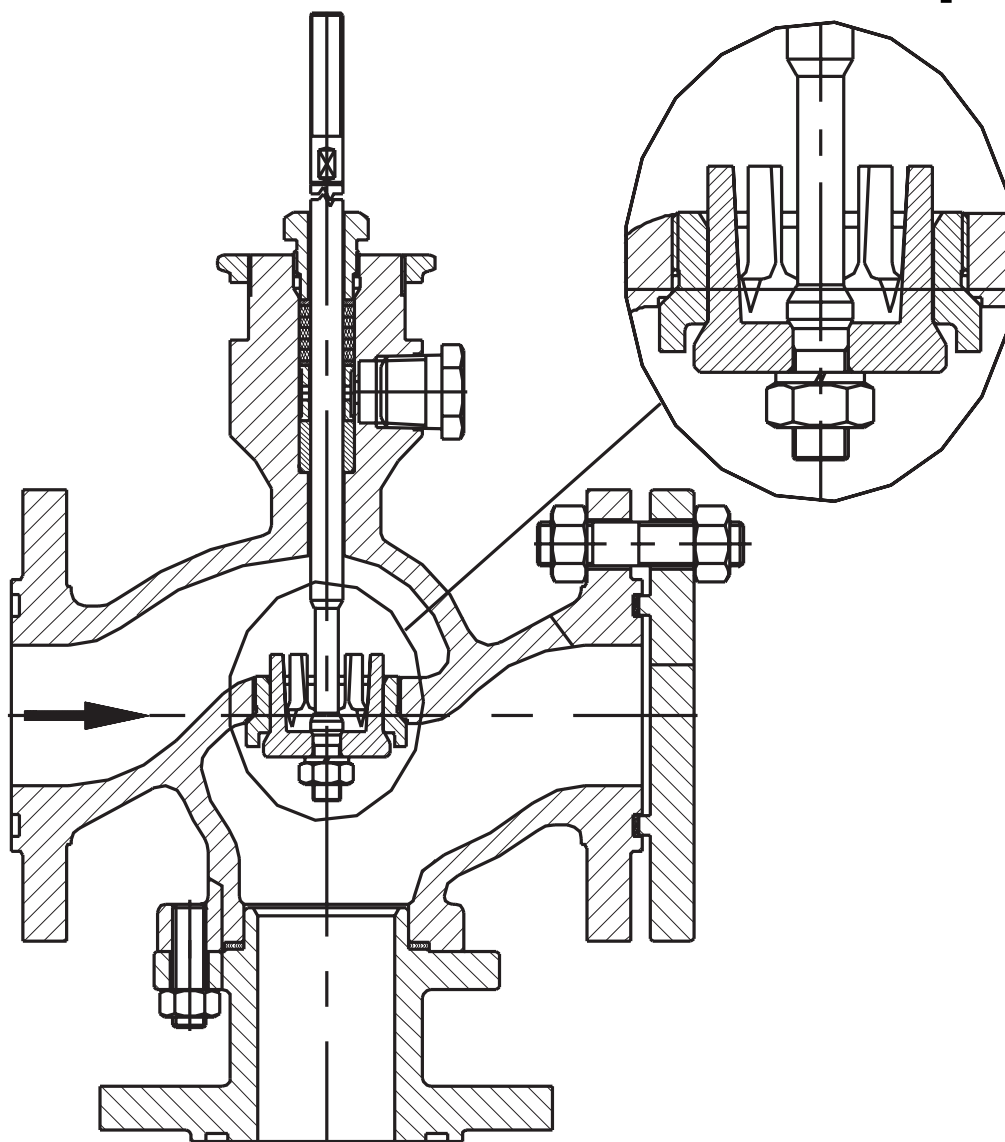
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DOUBLE-SEATED CONTROL VALVE WITH LEVER DRIVE

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ANGLE VALVE WITH MODIFIED CHARACTERISTIC

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