

# AZ plug valves with conical plug the cavity-free design characteristic

Excellent for toxic and aggressive chemicals,  
abrasive, crystallizing and polymerizing media

## free of cavities and maintenance

- PTFE sleeve covers and protects the entire plug
  - sealing surfaces remain dry and are not in contact with the media
  - free of media between plug and body
- maintenance-free by self-lubricating and chemical-resistant PTFE-sleeve

## flexible

- multi-way valves
- whole range of multi-way plugs for all configurations

## adjustable

- Constant accessibility guaranteed
- adjustable also with mounted actuator / gearbox
- adjustable even under extreme operating conditions

## Type ISO-STANDARD

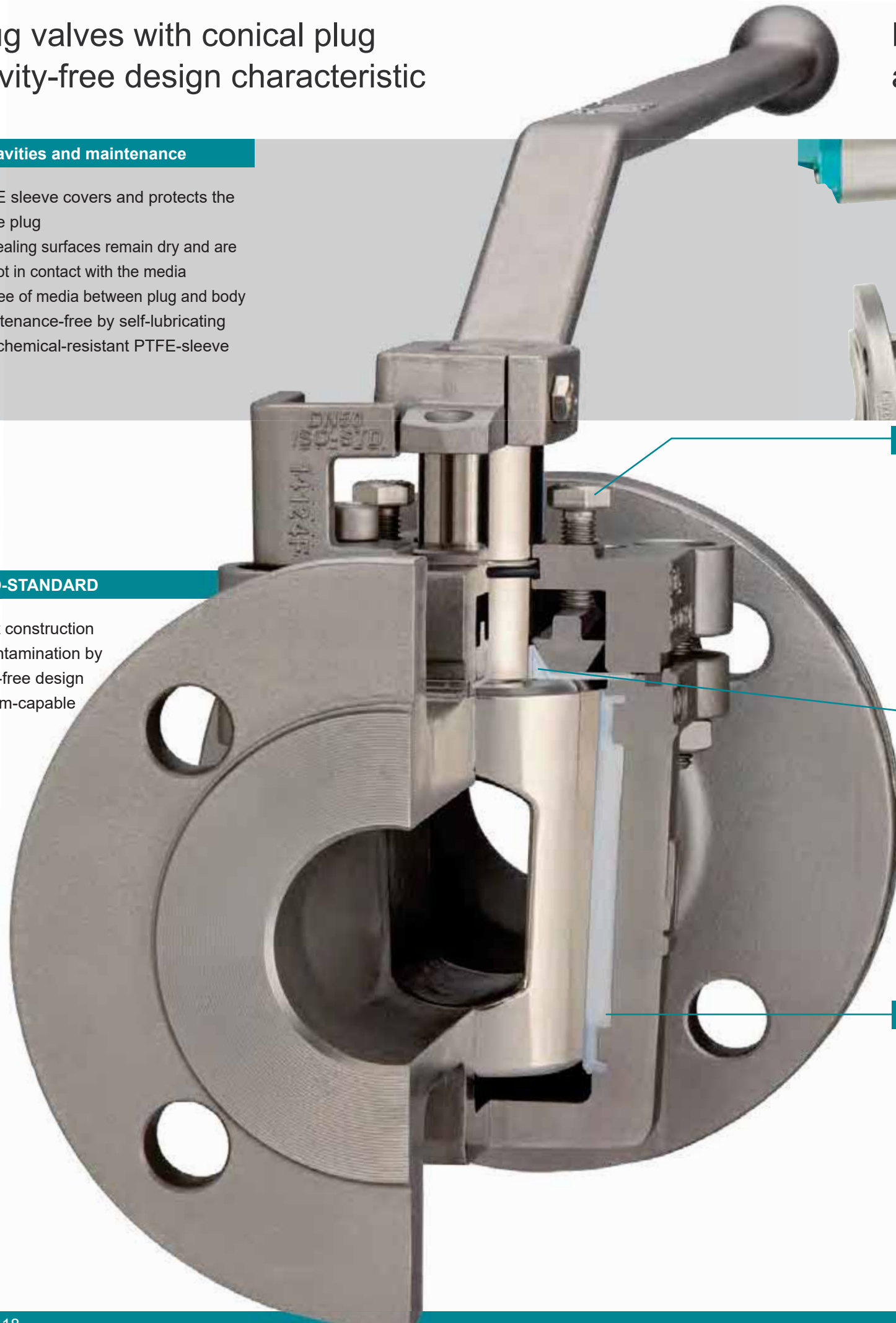
- robust construction
- no contamination by cavity-free design
- vacuum-capable

## several sealing systems

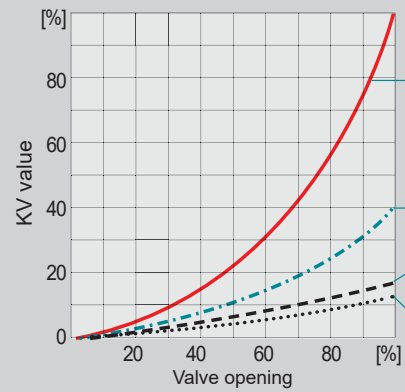
- certificate acc. to TA-Luft / ISO 15848-1 and EPA 21
- high tightness to atmosphere
- reliable tightness for years
- up to three-step seals
- sealing with "spring loaded" system on request

## Sophisticated / durable

- complete PTFE chambering
- integrated cast ribs surround the passage and prevent rotation and coldflow of sleeve
- sealing surfaces are protected from medium in open and closed position
- constant torques ( $\Delta p$  independent!)



maximum flow rate



Type ISO-EXTRA

Type ISO-STANDARD

typical high performance butterfly valve  
typical globe valve

Type ISO-EXTRA

- excellent for abrasive and solid-containing applications
- maximum flow rate compared to other valve types with the same nominal size



modular automation

- bracket according to ISO 5211 for actuator / gearbox
- simple setup of accessories due to modular system
- easy retrofitting of automation
- fast opening or closing through 90° rotation



all connections possible

- flanges acc. EN, ASME etc.
- combinations of connections
- screwed and threaded ends
- welded ends
- oversize flanges
- special connections
- compression fittings and ferrule ring couplings



vented options

- sleeve
- plug bottom
- plug upstream / downstream for automatic pressure compensation



FDA / CIP / GMP (options)

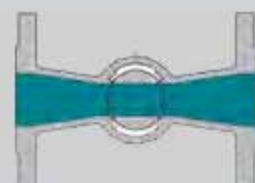
- **FDA** = Food and Drug Administration certifications and compliant materials
- **CIP** = Clean-in-Place design: Polished internal surfaces, surface finish <math><0.8 \text{ Ra } \mu\text{m}</math> (<math><32 \text{ Ra } \mu\text{in}</math>), as required by EHEDG and 3-A
- **GMP** = Good-Manufacturing-Practice



construction variants

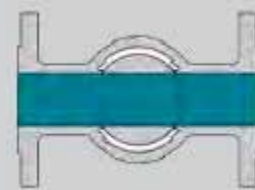
STANDARD design

- compact valve due to STANDARD plug
- optimal torques for economic automation



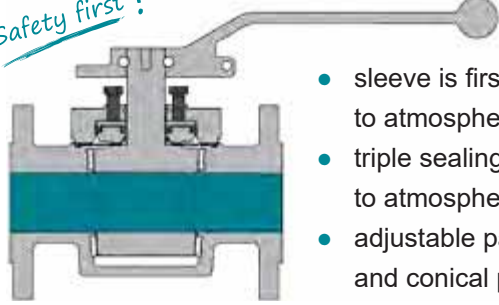
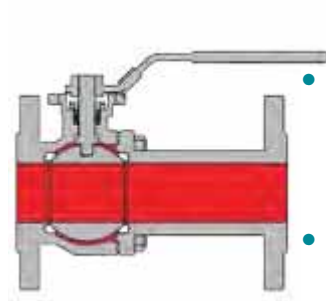

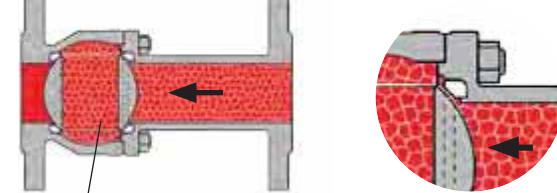

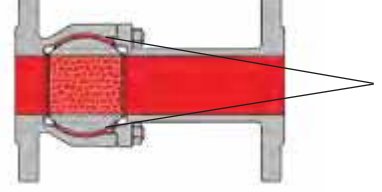
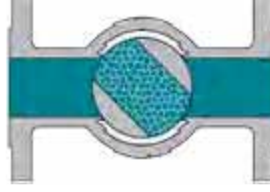
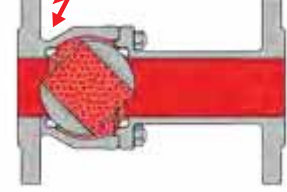
EXTRA design

- full round bore plug
- maximum flow rate, linear flow
- piggable








# Technical comparison cavity-free AZ plug valve vs ball valve

AZ Plug Valve, PTFE-sleeved	Ball valve, PTFE sealing rings
<p><i>Safety first!</i></p>  <ul style="list-style-type: none"> <li>sleeve is first sealing to atmosphere</li> <li>triple sealing system to atmosphere</li> <li>adjustable packing and conical plug</li> </ul>	 <ul style="list-style-type: none"> <li>full pressure behind the sealing rings, on the shaft and on the stem packing</li> <li>sealing to atmosphere only on the shaft</li> </ul>
Crystallizing and polymerizing media	
 <p>Standard = double block      T4-plug runs empty (optional)</p> <ul style="list-style-type: none"> <li>free of cavities, media cannot settle or be trapped</li> <li>sealing surfaces on sleeve and plug are protected</li> <li>double sealing, independent of pressure</li> </ul>	 <p>clot      only one PTFE ring seals (floating ball)</p> <ul style="list-style-type: none"> <li>forming of a clot due to cavities</li> <li>valve cannot be operated or only with difficulty</li> <li>damage to sealing rings</li> <li>torque increase through high surface pressure</li> </ul>
Aggressive / corrosive media	
 <p>free of cavities</p> <ul style="list-style-type: none"> <li>sealing surface of plug is completely covered by PTFE sleeve, thus protected from aggressive media</li> <li>corrosive media cannot be trapped behind the sleeve</li> </ul>	 <p>cavities</p> <ul style="list-style-type: none"> <li>ball sealing surfaces are permanently exposed to corrosive media and can be damaged</li> <li>solids in media can adhere to the sealing surface</li> </ul>
Solids and solid-containing media	
 <ul style="list-style-type: none"> <li>PTFE sleeve encloses and protects the whole plug</li> <li>solids cannot get jammed between plug and sleeve, no damage to sleeve</li> <li>solids are pushed away</li> </ul>	 <ul style="list-style-type: none"> <li>sealing rings can easily be damaged!</li> <li>solid materials get trapped</li> </ul>

# Modular plug valve concept for a wide range of products

BASIC-program	
<ul style="list-style-type: none"> <li>two-way and multi-port plug valves</li> <li>various valve ends (flanges, oversize flanges, welded ends, screwed and threaded ends etc.)</li> <li>Heating jacket plug valves</li> </ul>	
HIGH-PERFORMANCE valves - the add-on to the BASIC program	
<ul style="list-style-type: none"> <li>special valves and systems for processes with demanding requirements</li> <li>pre-assembled valve systems for fast and easy installation</li> <li>systems with integrated functions</li> </ul>	
Lined valves	
<ul style="list-style-type: none"> <li>combinations with PFA, FEP and PTFE materials</li> <li>control plug valves</li> <li>sampling plug valves</li> </ul>	
other plug valve designs	
<ul style="list-style-type: none"> <li>sampling systems</li> <li>control plug valves</li> <li>special constructions</li> </ul>	