

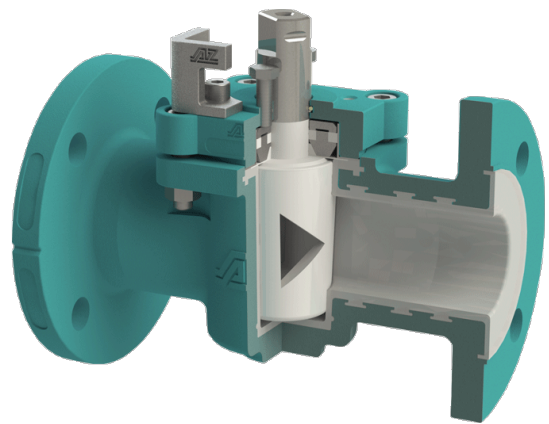
# RH-A

## Control valve with chemical-resistant, vacuum-proof lining

DIN-EN: DN 15 - 200 / PN 10 - 40

ASME: NPS ½" - 8" / class 150

PT range:  $-30 < T < 230^{\circ}\text{C}$ , vacuum  $10^{-8}$  mbar



## Design Features

### Design Characteristics

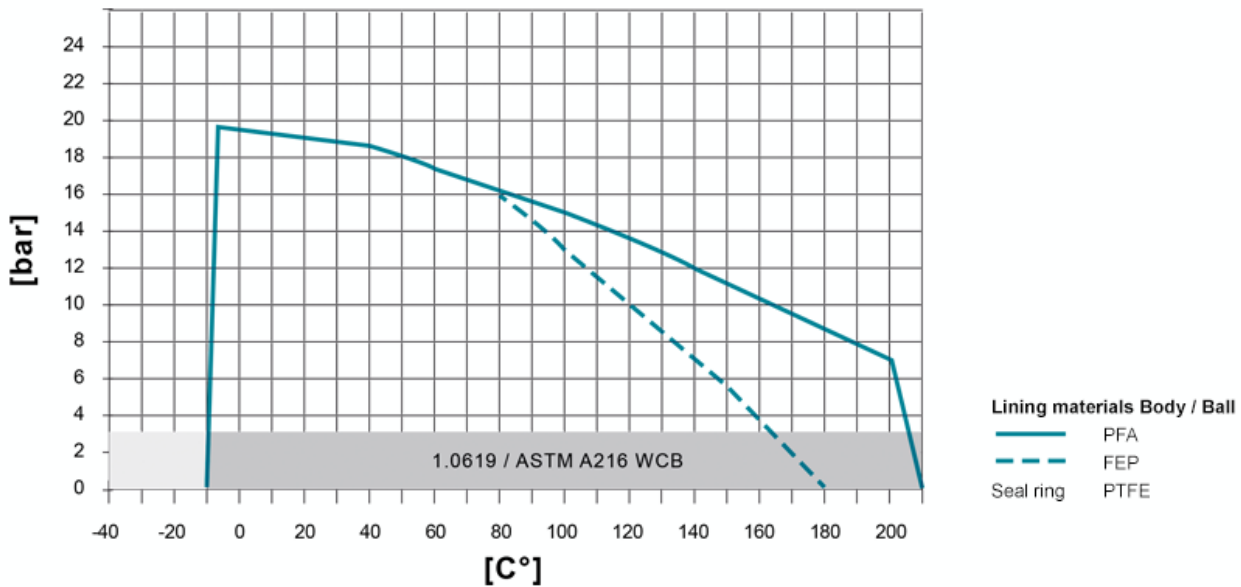
- different KVS values
- individual control characteristics
- free passage possible with open valve
- equal percentage or linear characteristic line
- cost-effective automation
- readily reproducible control position

The construction of the RH-A control valves is based on our standard cavity-free plug valve with chemical resistant PFA/FEP-lining. A wide range of materials for housings, plugs, as well as for sleeves or linings are available for different areas of application. If required, the control valves can also be supplied with a heating jacket.



## PT-Diagram

General Pressure-Temperature-Diagram



The specified values depend on the respective application (medium). Operating temperatures under  $-20^{\circ}\text{C}$  only with body material 1.4408 or low-temperature steel. High pressure resistance / temperature resistance on request, e.g. PN 40.

Sleeve: There are different sleeve materials / compounds available.

## Materials

### Standard body materials

- Ductile cast iron ENJS 1049, ASTM Gr 60-40-18 / A395

### Standard plug materials

- Stainless Steel 1.4308, ASTM A351 CF8

### Special materials

- Carbon Steel 1.0619, ASTM A216 WCB
- Stainless Steel 1.4408, ASTM A351 CF8M
- Unalloyed stainless steel casting (low Temp.) 1.1138, LCC/LCB/A352

### Lining materials

- Body: PFA, PFA-conductive, FEP
- Plug: PTFE, PFA, PFA-conductive, FEP

## Sealing Systems

**Chemical sealing to prevent fugitive emission of aggressive and toxic media with PTFE packing for additional stem sealing;  $T_{\max}$  230°C**

### Type CA

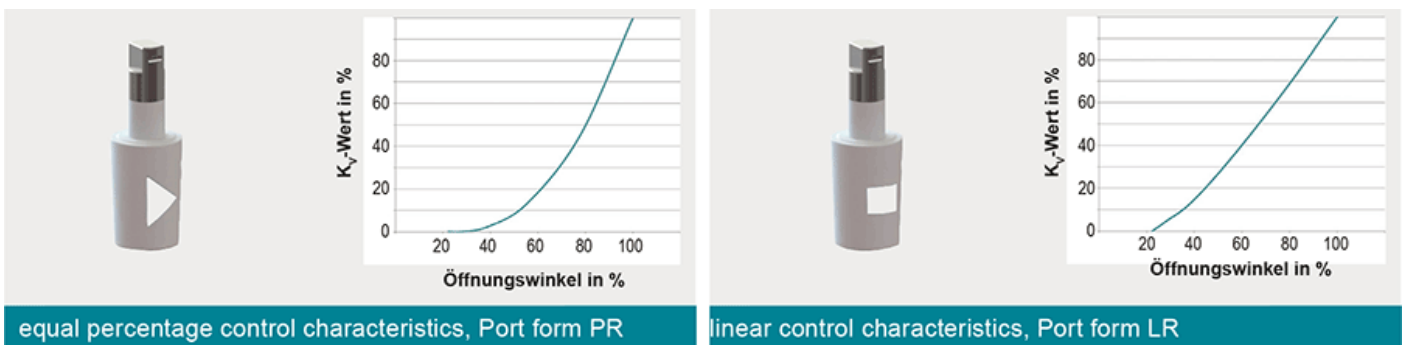
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**Chemical sealing for fluctuating temperatures to prevent fugitive emission of aggressive and toxic media with PTFE packing for additional stem sealing;  $T_{\max}$  230°C**

### Type CASN-A

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## Port Forms



As standard, there are ten plugs forms available per valve size, consisting of five linear and five equal percentage control characteristics.

Furthermore, bespoke plug forms can be calculated and designed according to customer-specific requirements that combine, for example, control properties and free passage.

## Characteristics

### Type RH-A, linear control characteristics



Type RH-A-LR / RH-SAFE-LINED-LR

#### PTFE/PFA lined plug: linear control characteristics



ASME / DIN EN	DIN	NPS	LR I-A K <sub>vs</sub> value [m <sup>3</sup> /h]	LR II-A K <sub>vs</sub> value [m <sup>3</sup> /h]	LR III-A K <sub>vs</sub> value [m <sup>3</sup> /h]	LR IV-A K <sub>vs</sub> value [m <sup>3</sup> /h]	LR V-A K <sub>vs</sub> value [m <sup>3</sup> /h]
		DN 15	½	0,7	1,5	2,7	3,9
	DN 20	¾	0,6	1,5	2,4	3,5	-
	DN 25	1	1,3	2,7	4,1	8,5	16
	DN 32	1 ¼	1,8	3,8	5,9	11	21
	DN 40	1 ½	2,9	5,7	9,4	18	33
	DN 50	2	4,4	8,9	20	27	51
	DN 65	2 ½	8,5	19	30	63	141
	DN 80	3	9,4	19	29	54	95
	DN 100	4	9,2	18	28	49	82
	DN 100S	4S	21	45	70	139	343
	DN 125	5	21	44	67	127	255
	DN 150	6	33	65	112	186	308
	DN 200	8	67	139	210	409	686

Larger valves and higher operating pressures > PN 40 / class 300 on request  
Due to geometric reasons partly threaded holes in flange drilling

### Type RH, equal percentage control characteristics



Type RH-A-PR / RH-SAFE-LINED-PR

PTFE/PFA lined plug: equal percentage control characteristics



ASME / DIN EN	DIN	NPS	PR I-A K <sub>vs</sub> value [m <sup>3</sup> /h]	PR II-A K <sub>vs</sub> value [m <sup>3</sup> /h]	PR III-A K <sub>vs</sub> value [m <sup>3</sup> /h]	PR IV-A K <sub>vs</sub> value [m <sup>3</sup> /h]	PR V-A K <sub>vs</sub> value [m <sup>3</sup> /h]
		DN 15	½	0,7	1,0	1,6	2,2
	DN 20	¾	0,5	1,0	1,5	2,1	3,3
	DN 25	1	1,2	2,5	4,1	6,0	8,1
	DN 32	1 ¼	1,8	3,7	5,9	8,6	13
	DN 40	1 ½	2,8	5,7	9,0	13	18
	DN 50	2	4,3	8,6	14	20	28
	DN 65	2 ½	8,5	18	29	45	49
	DN 80	3	9,0	18	32	42	62
	DN 100	4	8,7	17	27	39	59
	DN 100S	4S	21	42	69	94	104
	DN 125	5	20	42	65	89	96
	DN 150	6	32	63	101	144	181
	DN 200	8	66	133	208	297	386

**Model structure**

The data was determined by flow simulation and based on the VDI/VDE 2173 with a permissible deviation of +/- 10% (medium = water 20°C, pressure loss Δp = 1 bar).

**Definition Kvs**

The Kvs value designates the maximum possible throughput for a valve with a 100% opening

**Definition Kv**

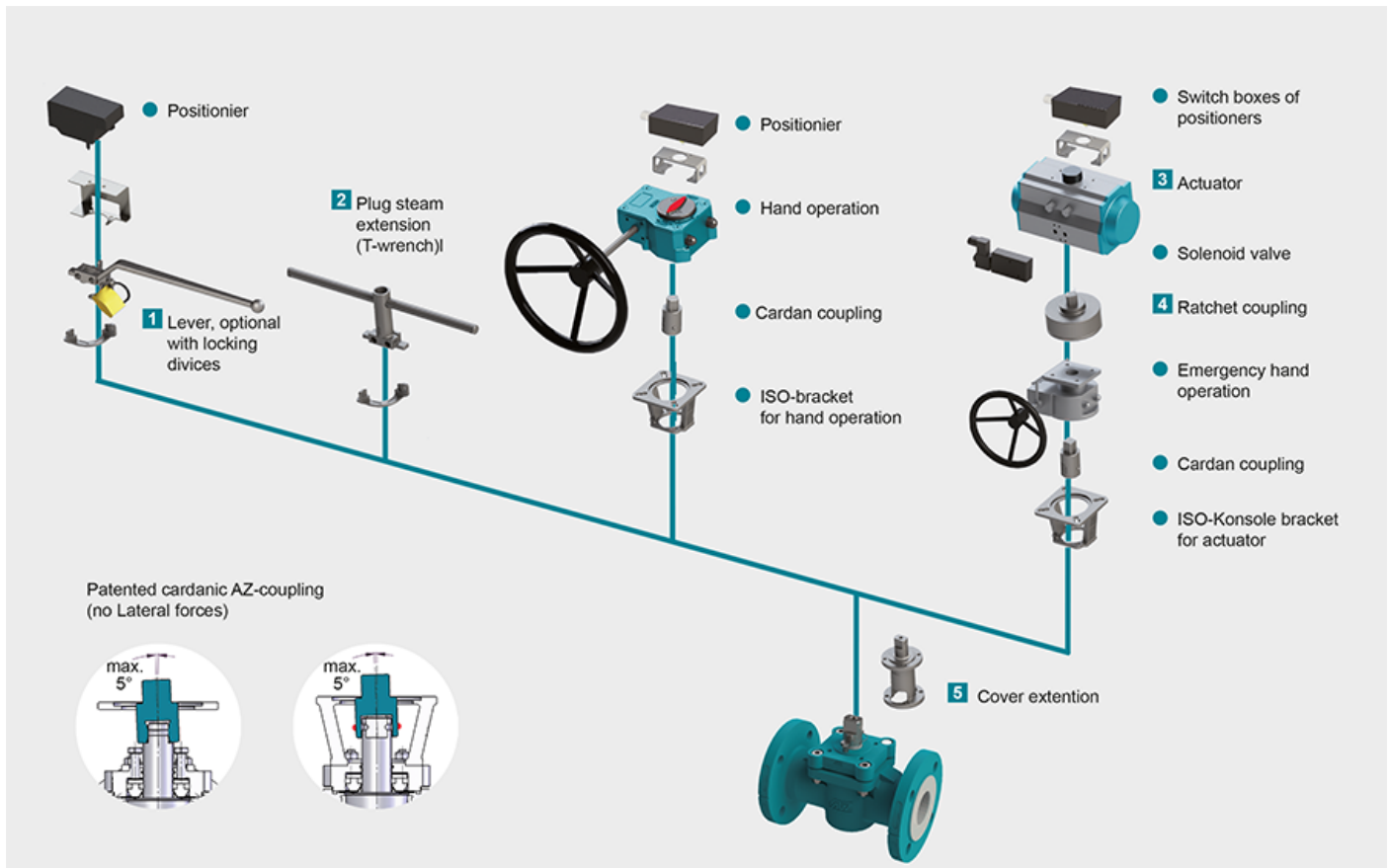
The flow coefficient Kv [m<sup>3</sup>/h] is a specific volume flow for the following conditions:

- The pressure loss (Δp) via the valve is 10<sup>5</sup> Pa (1 bar)
- The medium is water with a temperature between 278 K and 315 K (5°C to 40°C)

**Definition Cv**

The flow coefficient Cv is a valve flow coefficient that does not correspond to S.I. units. It represents the number of U.S. gallons of water which flow through a valve with a pressure loss of 1 psi (68.95 mbar) at a temperature of 40°F to 100°F (4°C to 38°C) within a minute. Cv = Kv/0,865

**Actuation**



### 1 Locking Devices

Pilot valve combinations, pad lock eyelets, linear key conception, indexing plunger arrestor.  
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### 2 Plug stem extension

Solid construction in stainless steel with T-wrench, Standard extension 100 mm or 150 mm, non standard lengths are available on request  
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### 3 Actuators

Actuators for mounting-flange acc. to DIN ISO 5211  
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NEW: Pneumatic actuator AIR GEAR for plug valves with high torque  $\geq 150.000$  Nm  
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### 4 Ratched coupling

To usw on multiport valves with standard 90° actuator for bigger switchpositions than 90°  
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### 5 Cover extension

Solid construction in stainless steel, Standard extension 100 mm or 150 mm high, non standard lengths are available on request . Hexagonal bolts on adjustment ring freely accessible. Note: Don't use with sealing FSN/FSN-SL and CASN/CASN-SL  
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