

Frese ALPHA Automatic Balancing Valve

Application

The Frese ALPHA Valves are particularly designed and manufactured for the automatic balancing of heating and cooling circuits.

The Frese ALPHA Cartridges - the second generation cartridges - are an integral part of the Frese ALPHA Valves limiting the flow at the specified level even under fluctuating pressure conditions.

The patented design of these cartridges introduces a replaceable orifice plate for higher flexibility and a resistant diaphragm for higher accuracy. From small size threaded valves (DN15) to big flanged type valves (DN1000), from small heating units to district cooling applications, Frese ALPHA Valves guarantee the hydraulic balance of the system regardless pressure fluctuations.

Benefits

- Balancing of the system takes place automatically even under fluctuating pressure conditions

Design

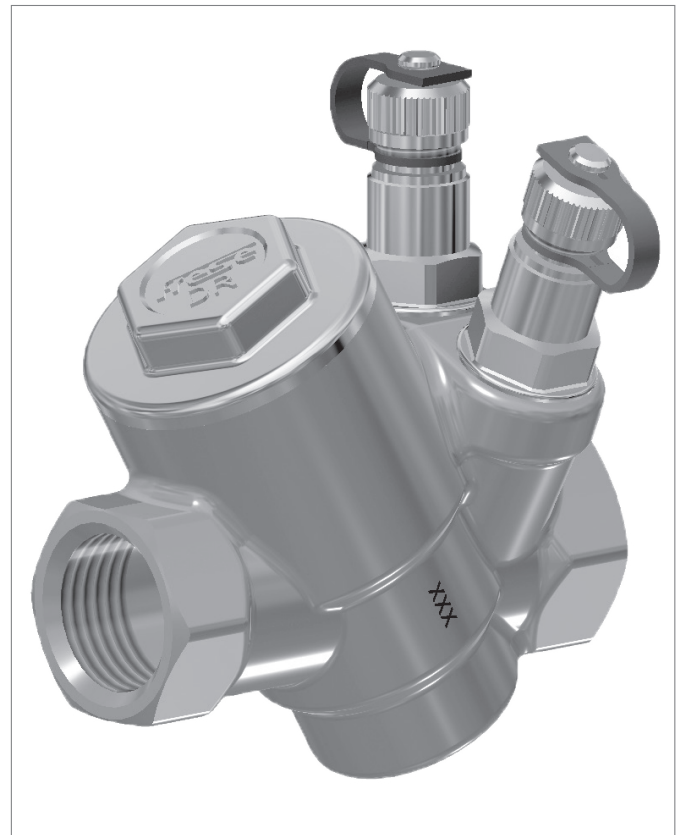
- No need to use balancing valves in the distribution lines, main distribution lines and supply lines.
- Less time to define the necessary equipment for a hydraulic balanced system.
- No impact if the calculated distribution of pressure in the installation is not accurate.
- Security that the specified flow is also the real one
- No requirements on pipe lengths before and after the valve

Installation

- Minimized commissioning time due to automatic balancing of the system
- Cartridge solution makes flushing procedure very easy
- No need for oversized pumps and oversized control valves

Operation

- Energy savings due to elimination of overflows
- Higher comfort due to correct distribution of water in the system and to optimized function of the control valves



Features

Wide product range covering all applications:

- sizes from DN15 to DN1000
- different end connections (female/female, union connections, flanges)
- dezincification resistant brass, ductile iron.
- P/T plugs, drain, combi-drain.
- Kit solution with strainer and ball-valves, solution with integral ball-valve.
- Modifications & extensions of the system do not affect the hydraulic balance in the other parts of the system.
- Tamper resistant cartridge independent of flow regulation errors during commissioning and operation of the system.
- Self-cleaning cartridge not allowing dirt to compromise the accuracy of the valve.
- Resistant diaphragm between the moving parts of the cartridge eliminates friction, noise and impact from water hammer.

Frese ALPHA Automatic Balancing Valve

Female/Female threaded

A very simple and efficient solution for automatic balancing of heating/cooling circuits.

Technical data

Valve Housing:	DZR brass, CW602N
O-rings:	EPDM
Pressure class:	PN25
Temperature:	-20°C to + 120°C
Diff. Pressure Range:	7 - 600 kPa
Thread:	ISO 228

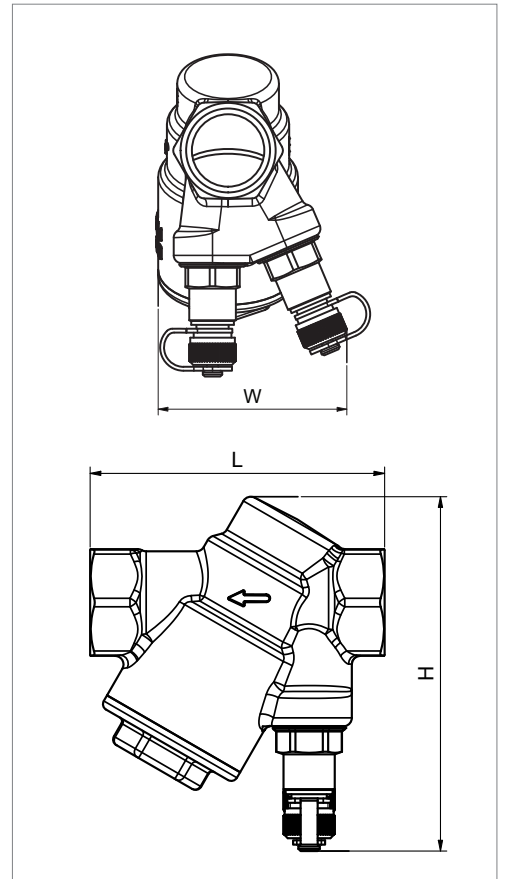
Frese product numbers are marked with an X. X represents the 5 different options available for different accessory features - see below.

E.g. 49-9041 = Frese ALPHA DN32 equipped with 2 pcs. 1" P/T-Plugs.

Flow Cartridge is selected from Cartridge Catalogues and ordered under individual numbers.

Frese no.	Dimensions
49-900X	DN15
49-901X	DN20
49-902X	DN25
49-903X	DN25L
49-904X	DN32
49-905X	DN40
49-906X	DN50

The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).
Recommendation: Water treatment to VDI 2035.



Accessories	1		2		4		5		6		Net Weight	
	2 pcs 1" P/T plugs		2 pcs 2" P/T plugs		Plug and drain valve		Combidrain and 2" P/T plugs		2 pcs plugs			
W, H & L are stated in [mm]	W	H	W	H	W	H	W	H	W	H	L	Kg
15	49	83	64	121	57	85	65	121	43	69	69	~0.50
20	49	83	64	121	57	85	65	121	43	69	77	~0.50
25	53	83	68	121	61	85	69	121	46	69	84	~0.65
25L/32/40	63	112	77	150	70	114	78	150	63	109	115	~1.45
50	72	112	82	150	75	114	83	150	63	109	130	~1.45

Specification text

The valve shall operate by means of an automatic balancing cartridge with replaceable orifice plate and internal diaphragm. The pressure class of the valve shall be PN25. The valve housing shall be made of DR brass.

Frese ALPHA Automatic Balancing Valve

ALPHA kit

A kit solution containing an Alpha Female / Female Valve, a strainer and two isolation ball-valves.

Technical data

ALPHA Valve:

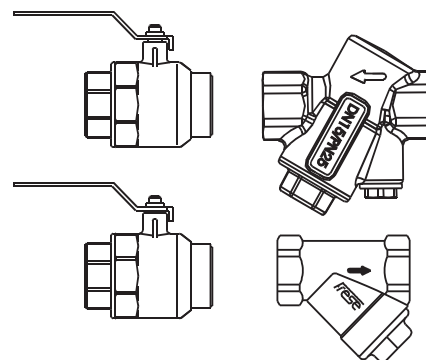
Valve Housing:	DZR brass, CW602N
O-rings:	EPDM
Seal:	PTFE
Pressure class:	PN25
Temperature:	-20°C to + 120°C
Diff. Pressure Range:	7 - 600 kPa
Flow range:	See Cartridge Catalogue
Thread:	ISO 228

Strainer:

Valve Housing:	DR, Dezincification Resistant Brass
Filter:	Stainless steel
Seal:	PTFE
Mesh:	32 (0,5 mm)
Pressure class:	PN16
Temperature:	-20 to + 150°C
Thread:	ISO 228

Ball Valve:

Valve Housing:	DR, Dezincification Resistant Brass
O-rings:	EPDM
Seal:	PTFE
Pressure class:	PN20
Temperature:	-20 to + 110°C
Thread:	ISO 228

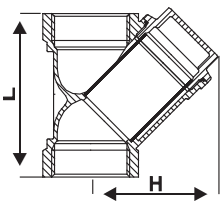


Flow Cartridge is selected from Cartridge Catalogues and ordered under individual numbers.

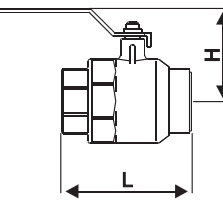
Please see accessories for feature selection.

Frese no.	Dimensions
49-9466	DN15
49-9476	DN20
49-9486	DN25
49-9496	DN25L
49-9506	DN32
49-9516	DN40
49-9526	DN50

Strainer	Dimensions	Weight [kg]	L [mm]	H [mm]
	DN15	0.158	56	41
	DN20	0.282	69	50
	DN25	0.440	82	62
	DN32	0.638	90	71
	DN40	0.820	101	78
DN50	1.280	121	96	



Ball Valve	Dimensions	Weight [kg]	L [mm]	H [mm]
	DN15	0.195	62	44
	DN20	0.327	73	47
	DN25	0.502	85	55
	DN32	0.869	106	75
	DN40	1.348	113	82
DN50	2.371	135	94	



The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).
Recommendation: Water treatment to VDI 2035.

Specification text

The valve shall operate by means of an automatic balancing cartridge with replaceable orifice plate and internal diaphragm. The pressure class of the valve shall be PN25. The valve housing shall be made of DR brass. The housing of the strainer shall be made of DR brass; the filter shall be replaceable and made of stainless steel. The filter mesh shall be 32 (0.5 mm).

Frese ALPHA Automatic Balancing Valve

Fixed Female/Male for union connection

An automatic balancing valve with an integral ball valve and one union end for ease of installation

Technical data




Valve Housing:	DZR brass, CW602N
O-rings:	EPDM
Seal:	PTFE
Pressure class:	PN25
Temperature:	-20°C to + 120°C
Diff. Pressure Range:	7 - 600 kPa
Flow range:	See Cartridge Catalogue
Thread:	ISO 228



Frese product numbers are marked with an X. X represents the 3 different options available for different accessory features - see below.

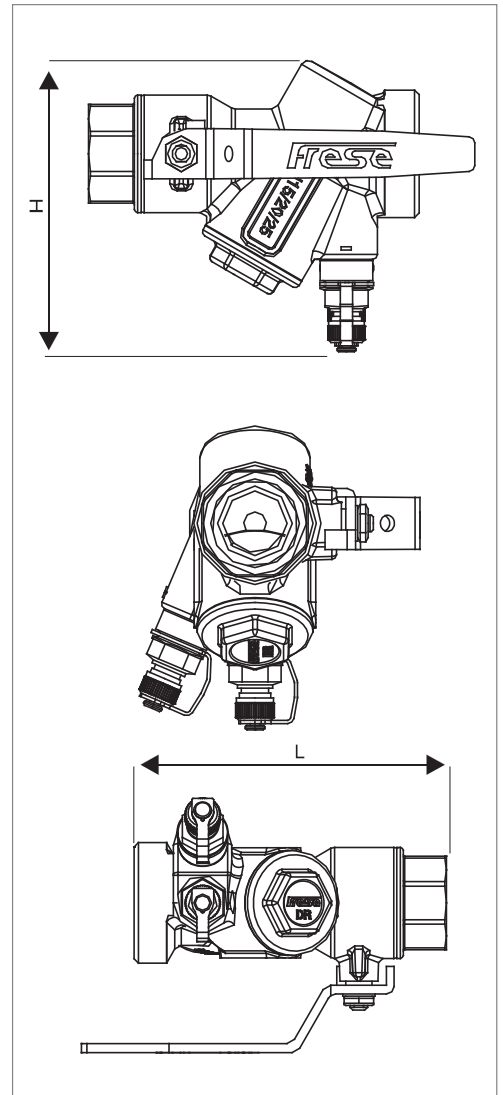
E.g. 49-9431 = Frese ALPHA DN32 equipped with 2 pcs. 1" P/T-Plugs.

Flow Cartridge is selected from Cartridge Catalogues and ordered under individual numbers.

Frese no.	Dimensions
49-935X	DN15
49-937X	DN20
49-939X	DN25
49-941X	DN25L
49-943X	DN32
49-945X	DN40

Accessories	1		4		6		L, W & H are stated in [mm]	
							L	Net Weight [kg]
Dimensions	W	H	W	H	W	H		
15/20/25	87	94	95	95	81	75	107	~0.71
25L/32/40/50	124	126	127	127	112	115	160	~2.15

All threads are ISO type. Length is total valve length with one union connection. Length in mm. * Material in contact with water	Frese no./ Lenght with one union	Male ends  DZR Brass *	Frese no./ Lenght with one union	Soldering ends  Brass	
	DN15	43-4310/132	15 mm	43-4102/127	
	DN20	43-4312/132	18 mm	43-4103/127	
	DN25	43-4314/146	22 mm	43-4104/129	
				28 mm	43-4105/128
	DN25L	43-5330/200	28 mm	43-5122/180	
	DN32	43-5332/200	35 mm	43-5123/197	
	DN40	43-5334/202	42 mm	43-5124/197	



The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene). Recommendation: Water treatment to VDI 2035.

Specification text

The valve shall operate by means of an automatic balancing cartridge with replaceable orifice plate and internal diaphragm. The pressure class of the valve shall be PN25. The valve housing shall be made of DR brass. The housing shall have one fixed threaded end and one union end. The valve includes an integral ball valve with handle.

Frese ALPHA Automatic Balancing Valve

Fixed Female/Female for union connection

An automatic balancing valve with an integral ball valve and one union end for ease of installation

Technical data

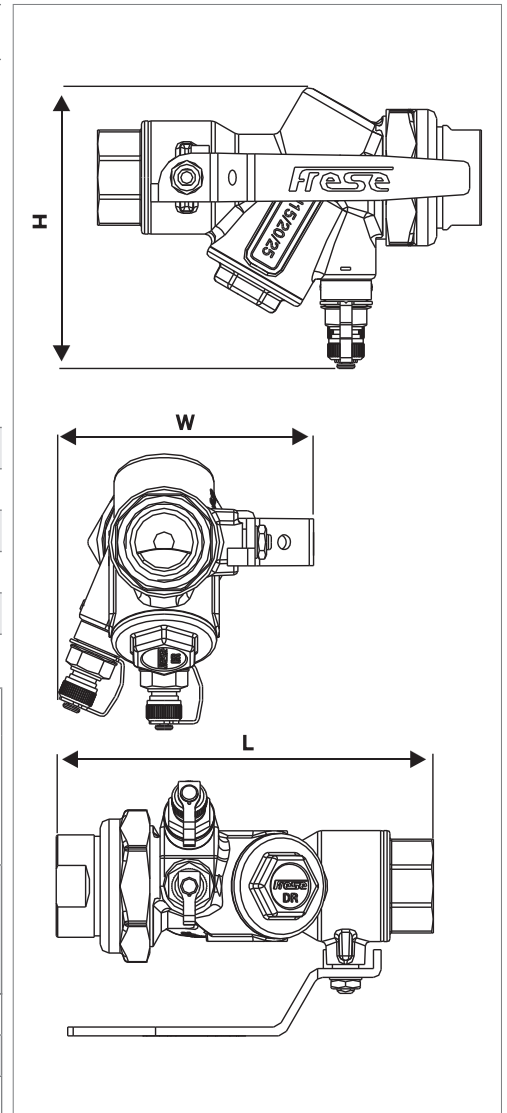
Valve Housing:	DZR brass, CW602N
O-rings:	EPDM
Seal:	PTFE
Pressure class:	PN25
Temperature:	-20°C to + 120°C
Diff. Pressure Range:	7 - 600 kPa
Flow range:	See Cartridge Catalogue
Thread:	ISO 228

Frese product numbers are marked with an X. X represents the 2 different options available for different accessory features - see below.

E.g. 49-9421 = Frese ALPHA DN32 equipped with 2 pcs. 1" P/T-Plugs.

Flow Cartridge is selected from Cartridge Catalogues and ordered under individual numbers.

Frese no.	Dimensions
49-934X	DN15
49-936X	DN20
49-938X	DN25
49-940X	DN25L
49-942X	DN32
49-944X	DN40



Accessories	1		5		L, W & H are stated in [mm]	
					L	Net Weight [kg]
Dimensions	W	H	W	H		
15/20/25	87	94	103	133	129/129/146	~0.87
25L/32/40/50	124	126	135	164	195/195/200	~2.54

All threads are ISO type. Length is total valve length with one union connection. Length in mm. * Material in contact with water	Frese no./Length with one union	Female ends DZR Brass *
	DN15	43-4210/129
	DN20	43-4212/129
	DN25	43-4214/146
	DN25L	43-5230/195
	DN32	43-5232/195
	DN40	43-5234/200

The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene). Recommendation: Water treatment to VDI 2035.

Specification text

The valve shall operate by means of an automatic balancing cartridge with replaceable orifice plate and internal diaphragm. The pressure class of the valve shall be PN25. The valve housing shall be made of DR brass. The housing shall have one fixed threaded end and one union end. The valve includes an integral ball valve with handle.

Frese ALPHA

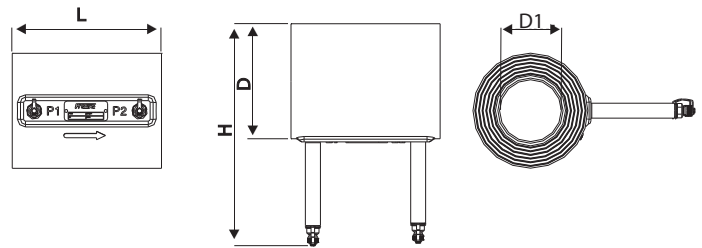
Automatic Balancing Valve

Flanged ductile iron

A wafer-type valve containing, depending on the size and the design flow, up to 136 Frese ALPHA cartridges

Technical data

Valve Housing:	Ductile iron DIN 1693 GGG-40
O-rings:	EPDM
Fasteners:	AISI 306
Pressure class:	PN16 (PN25)
Temperature:	-20°C to + 110°C
Diff. Pressure Range:	13 - 600 kPa
Flow range:	See Cartridge Catalogue



Frese no. (PN16)	Frese no. (PN25)	Dimensions	L [mm]	D [mm]	D1 [mm]	H [mm]	Net Weight [kg]	Cart./Valve (Pcs.)
-	49-9073	DN50	170	100	80	218	3.41	1
-	49-9083	DN65	170	119	80	237	4.79	1
-	49-9093	DN80	170	131	80	249	5.27	1
49-9103	49-9540	DN100	170	163	100	281	6.90	2
49-9163	49-9541	DN125	170	193	125	311	9.00	3
49-9113	49-9542	DN150	170	216	150	334	11.7	4
49-9123	49-9543	DN200	170	271	200	389	18.8	7
49-9133	49-9544	DN250	170	326	260	440	23.4	12
49-9143	49-9545	DN300	170	383	315	501	33.4	15
49-9153	49-9546	DN350	170	443	355	561	44.2	19
49-9173	49-9547	DN400	170	496	405	614	51.6	26
49-9183	49-9548	DN450	170	545	455	663	57.5	33
49-9193	49-9549	DN500	170	601	508	719	67.8	40
49-9203	49-9550	DN600	170	715	610	833	88.9	56
49-9213	-	DN800	170	880	760	998	127	85
49-9233	-	DN900	202	1009	905	1127	237	112
49-9223	-	DN1000	202	1126	1005	1244	308	136

Blind Caps can be fitted instead of cartridges if the full flow capacity is not required. Frese A/S can deliver the valve with the cartridges installed (Frese number i.e. 49-9073-01 instead of 49-9073). Valves are delivered with 4" P/T-Plugs. From DN100 the valves are delivered with an eye bolt.

The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).
Recommendation: Water treatment to VDI 2035.

Specification text

The valve shall operate by means of automatic balancing stainless steel cartridges with replaceable orifice plate and internal EPDM diaphragm. The pressure class of the valve shall be PN16/PN25. The valve housing shall be made of ductile iron type GGG40. The valve shall comply with flanges according to EN/ANSI standards.

Frese A/S assumes no responsibility for errors, if any, in catalogues, brochures, and other printed matter. Frese A/S reserves the right to modify its products without prior notice, including already ordered products, if this does not alter existing specifications. All registered trademarks in this material are the property of Frese A/S. All rights reserved.

Frese A/S
Sorøvej 8
DK- 4200 Slagelse
Tel: +45 58 56 00 00
info@frese.d