

Dynamic Balancing Valve

Frese ALPHA

DN15-DN800

At the heart of flow control

BHUTORIA

Is proud to be a Key Supply
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- KNOWLEDGE
- QUALITY
- INNOVATION
- MANUFACTURING EXCELLENCE
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Frese
Energy-saving valves



Frese ALPHA Wafer

The ALPHA valve is particularly designed and manufactured for the automatic balancing of both cooling and heating circuits. With the ALPHA cartridge as an integral part of the valve, the flow is limited at the specified even under fluctuating pressure conditions.

This Frese ALPHA wafer-type valve can contain, depending on the size and the design flow, up to 85 Frese ALPHA cartridges.

Applications

Applications for the Frese Alpha includes:

- Fan coil units
- Underfloor heating
- Air handling units
- Plant equipment

Specification

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



Frese ALPHA

Dynamic
Balancing
Valve

Frese at the heart of flow control

Frese

Innovative solutions from Frese balance global HVAC systems accurately and efficiently. From cooling systems in the Middle East to heating systems in Scandinavia, our products transform state of the art technology into everyday solutions.

Over 25 years' experience producing dynamic balancing solutions, has positioned Frese as the leading manufacturer of energy saving valves and through our commitment to innovation, we continue to be at the forefront of technological advancements in our areas of expertise.

To support our products, the knowledge, experience and dedication of our employees and partners ensure our solutions are applied correctly to maximise savings and position Frese as the authoritative voice for pressure independent and dynamic solutions.

Frese ALPHA

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 diameter threaded valves to large diameter type valves, 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.

Features

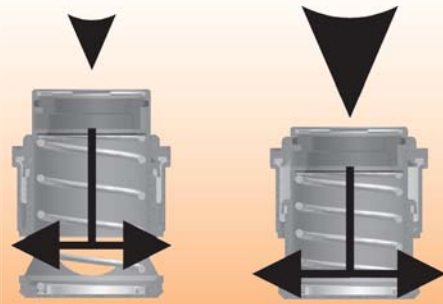
- Wide product range covering:
 - sizes from DN15 to DN800.
 - dezincification resistant brass, ductile iron.
 - P/T plugs, drain, combi-drain.
 - Kit solution with strainer and ball-valves, solution with integral ball-valve.
- Modifications & extensions of the system do not affect the hydraulic balance in the other parts of the system.
- Tamper resistant cartridge independent of flow regulation errors during commissioning and operation of the system.
- Dirt in the system does not compromise the accuracy of the valve due to the self-cleaning cartridge.
- Resistant diaphragm between the moving parts of the cartridge eliminates friction, noise and impact from water hammer.

Frese ALPHA Cartridge

Operation

When the pressure increases, the spring will be compressed and the piston will respond and reduce the outlet area and vice versa.

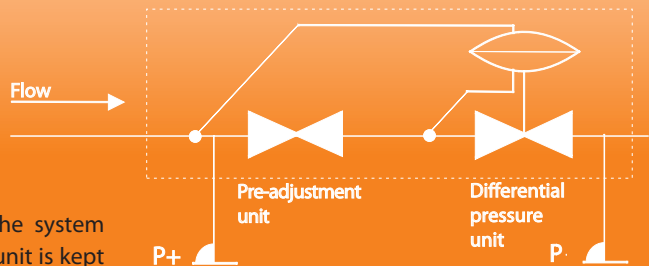
The result is a constant flow rate through the valve, independent of pressure fluctuations.



Function

The following applies to all flow control valves:

- $Q = K_v \cdot \sqrt{\Delta p}$
- $Q = \text{Flow (m}^3/\text{h)}$
- $K_v = \text{Opening area}$
- $\Delta p = \text{Differential pressure (Bar)}$



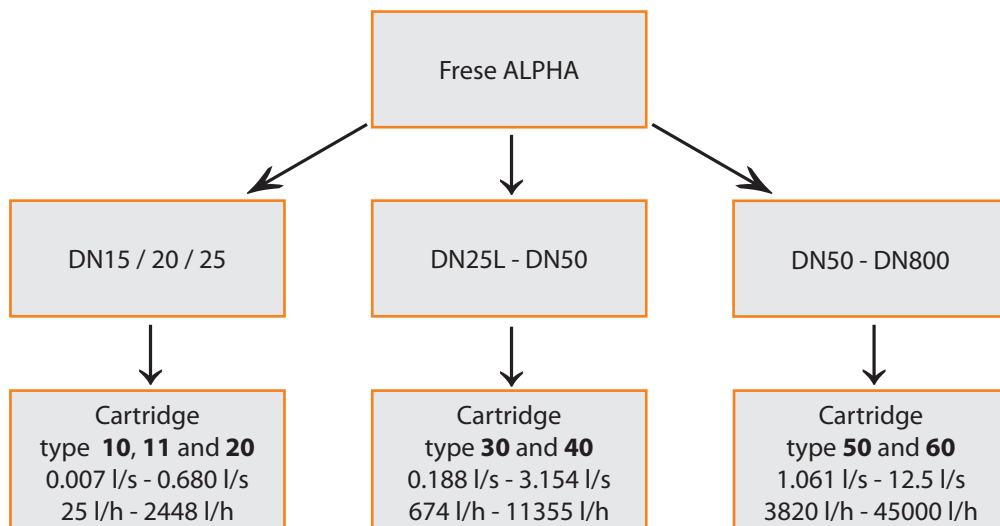
The Frese ALPHA cartridge reacts to pressure fluctuations in the system ensuring that the differential pressure across the pre-adjustment unit is kept constant.

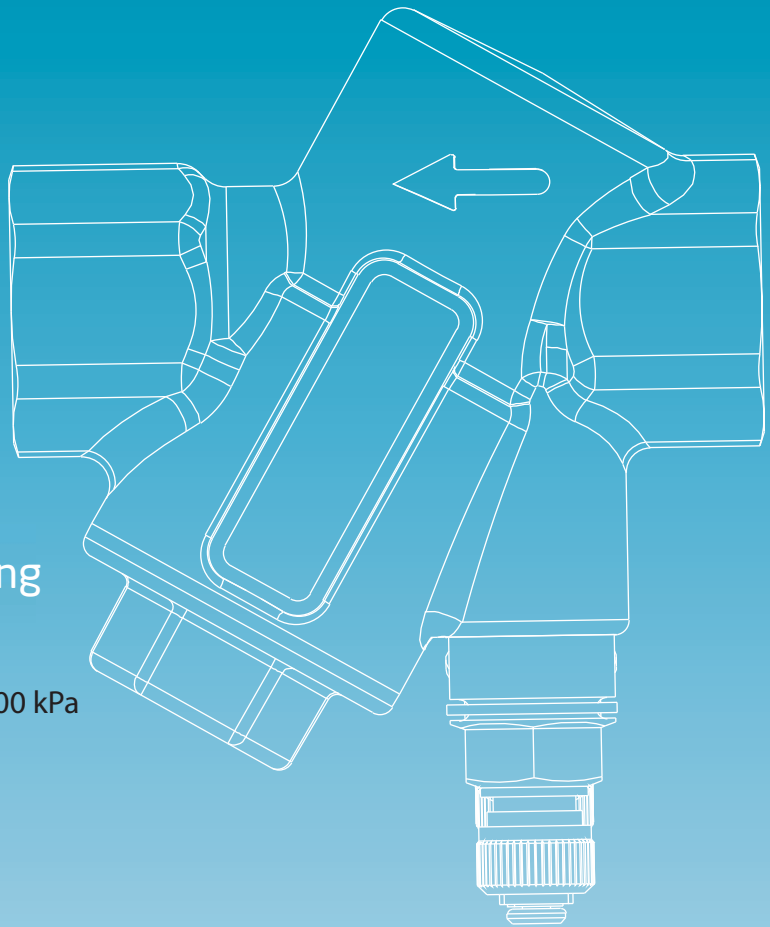
This ensures that the maximum flow limit is achieved in accordance with the design.



Technical Data · Frese ALPHA Cartridge

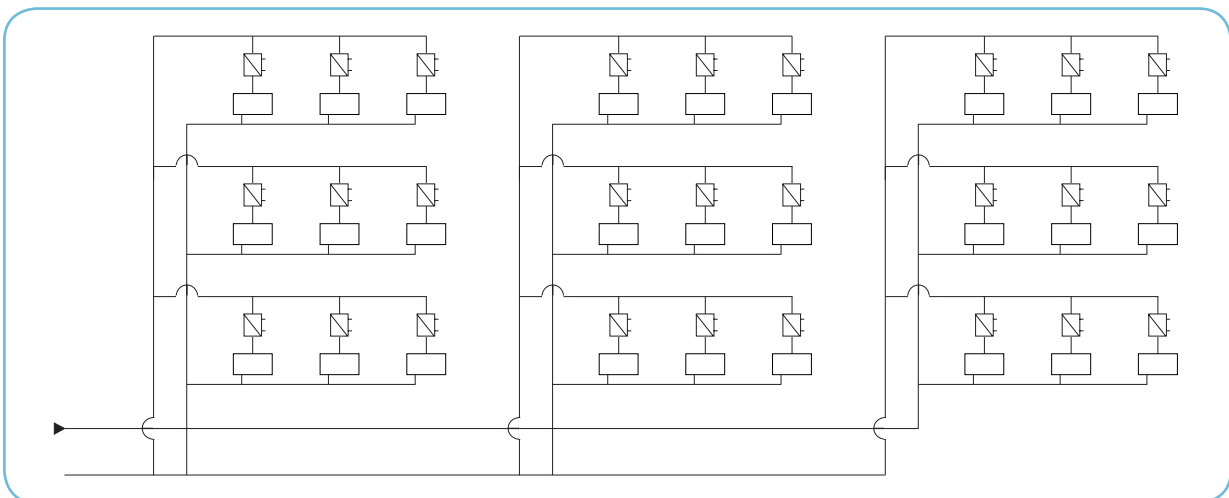
Cartridge Material:	DZR Brass CW602N
O-rings:	EPDM 281
Spring:	Stainless Steel 1.4310 (Low pressure & High pressure cartridges)
Diaphragm:	HNBR (Low pressure cartridges) HNBR reinforced (High pressure cartridges)
Medium Temperature:	-20 to +120°C





Dynamic balancing

- Max differential pressure: 600 kPa
- Temperature: -20 to +120°C
- Dimensions: DN15-DN800
- Material:
 - DN15-50: DZR brass
 - DN50-800: Ductile Iron
- Static pressure: PN25



Water distribution system, dynamic balancing

In the dynamic system the individual terminals can be adjusted independently of each other. This simply requires one balancing valve per terminal.

BHUTORIA[^]

Bhutoria Airconditioning Pvt Ltd

340/2722, Motilal Naga #2
Link Road, Opp Bangur Nagar
Goregaon (W), Mumbai 400090 India
Tel +91 22 2878 8849 Email: info@bria.net.in
www.bria.net.in

Frese
Energy-saving valves

KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING
EXCELLENCE

CUSTOMER FOCUS

Denmark - Main Office

Frese A/S
Tel: +45 58 56 00 00

Germany

Frese Armaturen GmbH
Tel: +49 (0)241 475 82 333

United Kingdom

Frese Ltd
Tel: +44 (0) 1704 896 012

Turkey

Frese Eurasia DISTIC. LTD. STI.
Tel: +90 216 580 93 60

China

Frese Valves (Ningbo) Co., Ltd.
Tel: +86 (21) 51103212

Saudi Arabia

Frese Saudi Arabia
Tel: +966 2 6608230

Australia & New Zealand

Frese Asia Pacific
Tel: +61431 794 414

South Africa

Frese Asia Pacific
Tel: +61431 794 414