

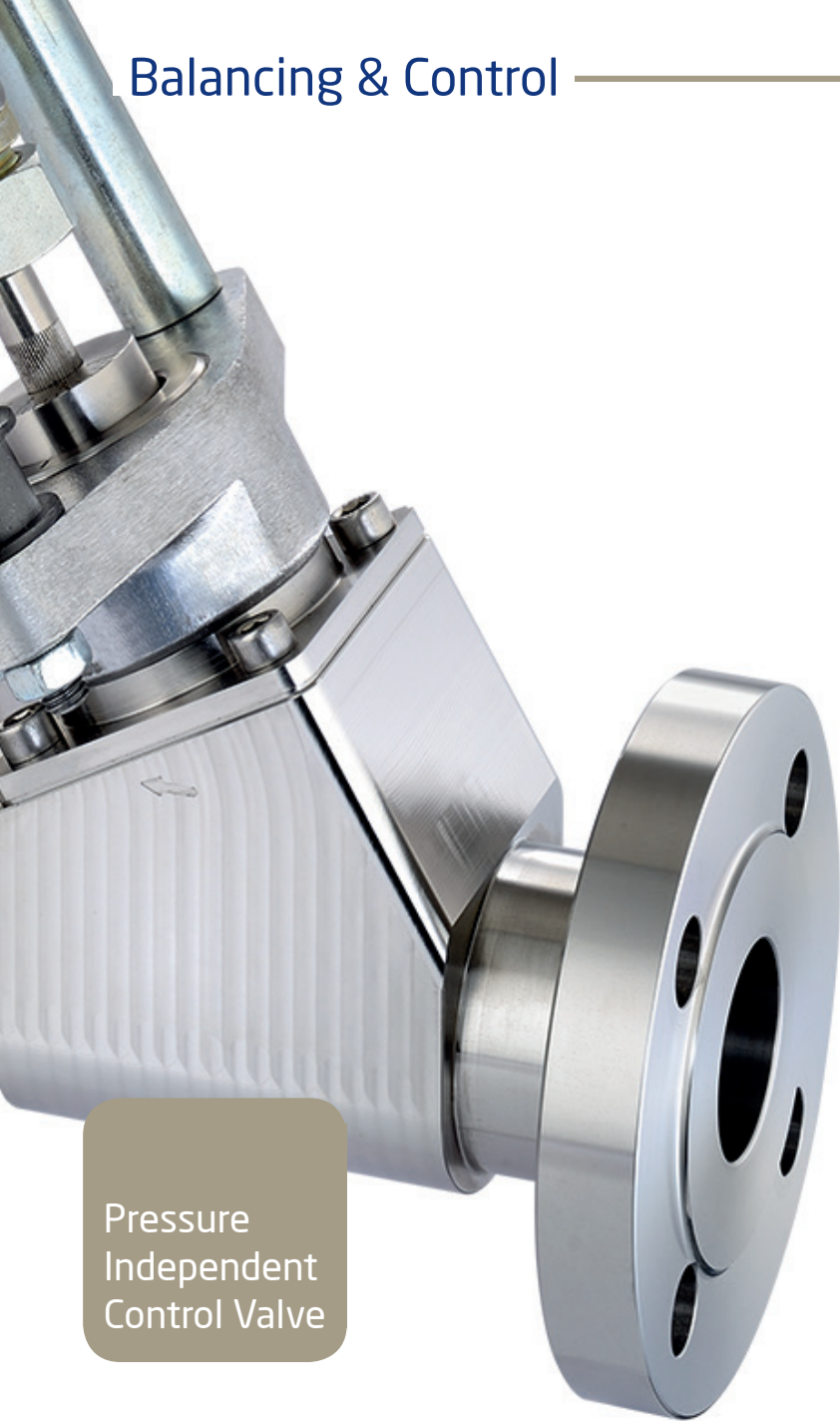


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Frese OPTIMA Compact HCR

Pressure Independent Control Valve



Pressure Independent Control Valve

Frese

Over 30 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 - now entering the industrial market.

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.

Pressure Independent Balancing and Control

Pressure independent balancing and control is an innovative, energy saving alternative to traditional hydronic balancing and control methods that use separate static balancing valves, differential pressure control valves and two port control valves. A system with pressure independent balancing and control valves provides efficient and accurate flow limitation, differential pressure control and temperature control ensuring the design flow conditions are realised at all times irrespective of pressure fluctuations in the system or part load conditions.

Frese OPTIMA Compact HCR · Pressure Independent Control Valve

The Frese OPTIMA Compact HCR (High Corrosion Resistant) is the third generation of pressure independent control valves from Frese. The OPTIMA Compact HCR is an automatic flow, pressure and temperature control valve for industrial systems that combines the functions of an externally adjustable balancing valve, a differential pressure control valve and a full authority modulating control valve in one single, compact valve housing.

The Frese OPTIMA Compact HCR provides modulating control with full authority regardless of any fluctuations in the differential pressure of the system making it possible to achieve 100% control of the flow. In addition, the correct application of the Frese OPTIMA Compact HCR can also significantly reduce pump energy consumption and improve the efficiency of other hydronic system components.

The valve operates by self-adjusting to the pre-set flow under fluctuating pressure conditions whilst also providing full modulating control. To achieve the design flow rate, the valve is set using the simple pre-setting scale on top of the valve to the required set point, which can be determined using the official Frese flow graphs.

Benefits

- Easy to size and select as only the flow rate is required
- Simplifies system design
- Compact housing for ease of installation
- Simplified commissioning process as no proportional balancing is required
- Full stroke modulation with full authority at all times, regardless of the pre-set flow
- Provides system flexibility
- Improves the energy efficiency of heating and cooling systems

HCR Pressure Independent Control Valve



Technical Data · Frese OPTIMA Compact HCR · DN15 - DN40

Size Range:	DN15-DN40
Max. Differential Pressure:	600 kPa
Valve Housing:	AISI316L
Diaphragm:	Reinforced HNBR (FKM on request)
Pressure Class:	PN16/25/40
Temperature Range:	-20°C to 120°C
Flow Range:	525 l/h to 9,500 l/h
Leakage Rate:	EN1349 Class IV



Technical Data · Frese OPTIMA Compact HCR · DN50 - DN80

Size Range:	DN50 – DN80
Max. Differential Pressure:	1,200 kPa
Valve Housing:	AISI 316 (CF8M)
Diaphragm:	EPDM (FKM on request)
Pressure Class:	PN16/25
Temperature Range:	-20°C to 150°C
Flow Range:	3,500 l/h to 43,000 l/h
Leakage Rate:	EN1349 Class IV

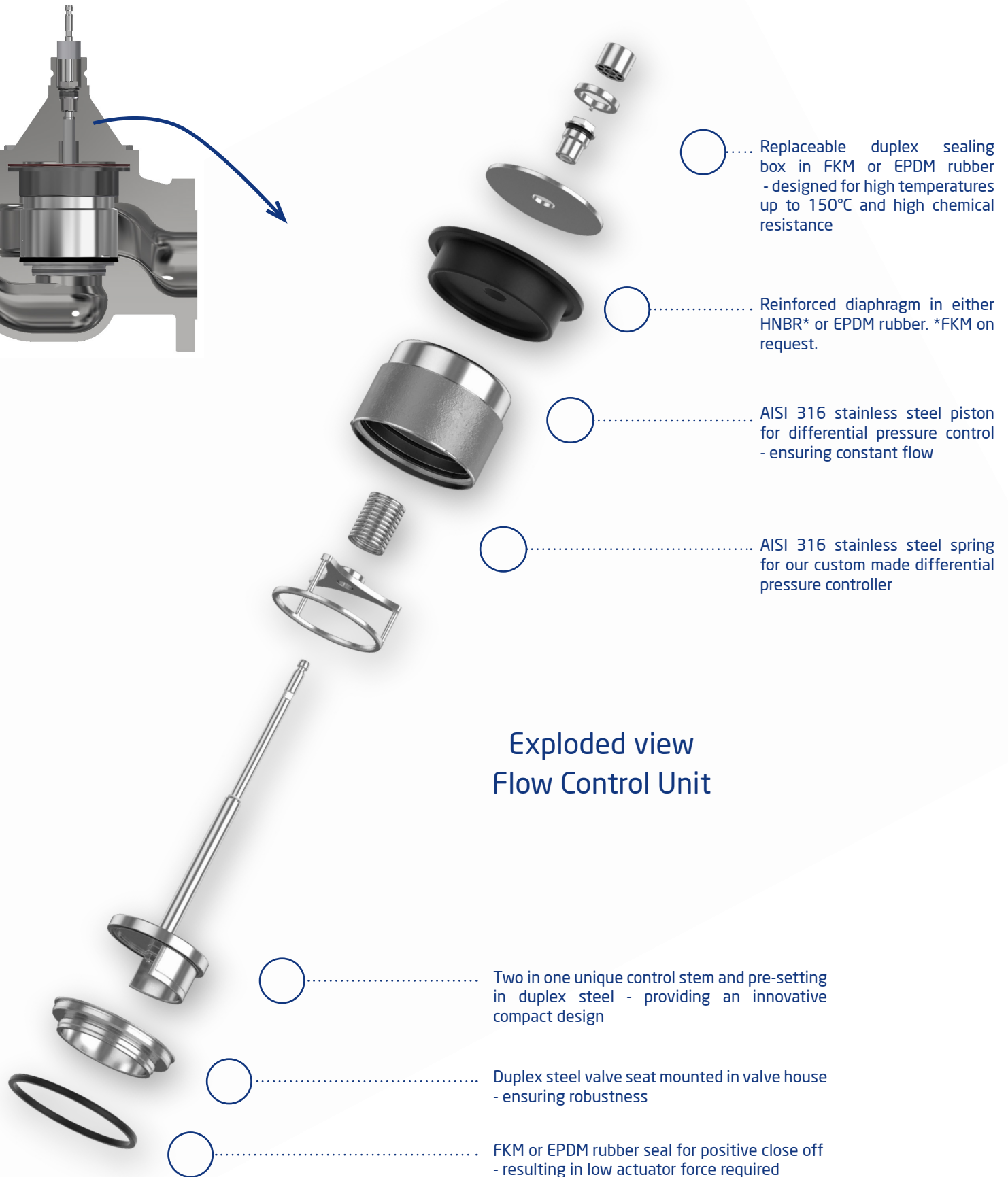
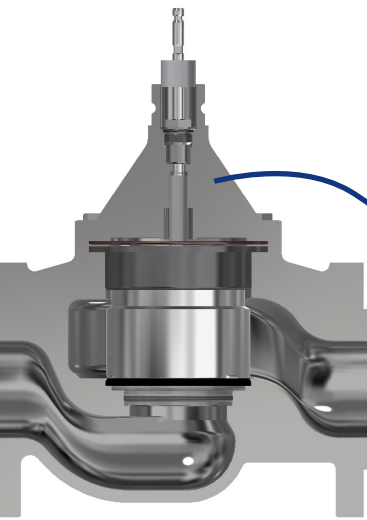


Technical Data · Frese OPTIMA Compact HCR actuators

Product Series:	HO-series, HCR DN15-DN300
Actuator type:	DN50 – DN80
Protection Class:	IP 54 to EN 60529 (IP65 as accessory)
Power supply:	24V AC/DC, 230V AC
Control signal:	0-10 V, 2-10 V, 0-20 mA, 4-20 mA, 3-point
Feedback signal:	0-10V DC, 4-20 mA
Ambient operating conditions:	0°C to 60°C

Please note: A wide selection of actuators can be provided including failsafe functionalities and MODBUS functionality. Please contact Frese for further information.

Frese OPTIMA Compact HCR · Unique & patented design



..... Replaceable duplex sealing box in FKM or EPDM rubber - designed for high temperatures up to 150°C and high chemical resistance

..... Reinforced diaphragm in either HNBR* or EPDM rubber. *FKM on request.

..... AISI 316 stainless steel piston for differential pressure control - ensuring constant flow

..... AISI 316 stainless steel spring for our custom made differential pressure controller

Exploded view Flow Control Unit

..... Two in one unique control stem and pre-setting in duplex steel - providing an innovative compact design

..... Duplex steel valve seat mounted in valve house - ensuring robustness

..... FKM or EPDM rubber seal for positive close off - resulting in low actuator force required

See how it works

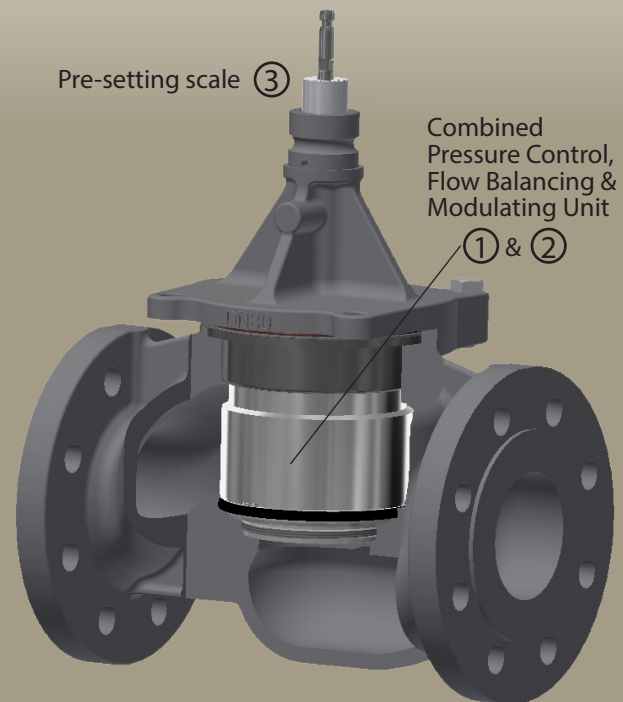
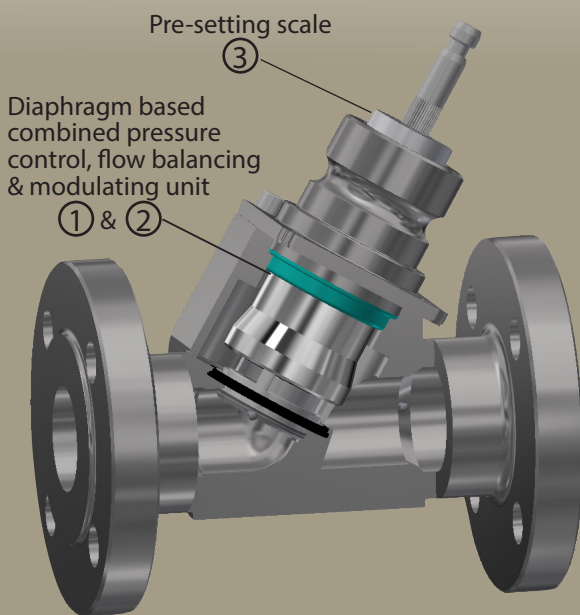
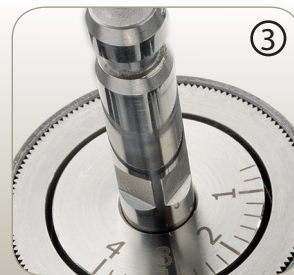
Visit www.frese.eu/optimacompact and try the interactive animation

Design

The design of Frese OPTIMA Compact HCR combines high performance with small size and compact construction. The valve combines the functions of an externally adjustable balancing valve, a differential pressure control valve and a full authority modulating control valve in one single, compact valve housing.

The main components of the Frese OPTIMA Compact HCR are:

- ① Differential pressure control
- ② Modulating control component
- ③ Presetting scale (not accessible when the actuator is mounted)
- ④ Actuator (not shown on the drawings)



Flow · DN15-DN80

Dimension		DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80
Stroke	mm	5.5	5.5	5.5	5.5	15	20	20	20
	l/h	525-2,000	525-2,000	850-4,100	850-4,100	2,000-9,500	3,500 - 24,000	6,000 - 35,000	7,000 - 43,000
Flow	l/s	0.146-0.556	0.146-0.556	0.236-1.139	0.236-1.139	0.556-2.639	0.972 - 6.669	1.654 - 9.724	1.951 - 11.954
	gpm	2.31-8.81	2.31-8.81	3.74-18.05	3.74-18.05	8.81-41.83	15.41 - 105.72	26.21 - 154.11	30.92 - 189.47



KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING
EXCELLENCE

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