

THE POWER PACK

INFORMATION

The Power Pack serves the same purpose as a typical compressor does for pneumatic actuators, but with water instead of air.

The Power Pack is the driving force of the actuator(s) and delivers 50 bar of pressurized water or a water glycol mix to the actuator(s). The Power Pack is a necessity when using Hydract actuators. The Power Pack includes an accumulator (hydrophore) or an uninterruptible power supply (UPS) which works as a fail-safe if a power failure should occur.

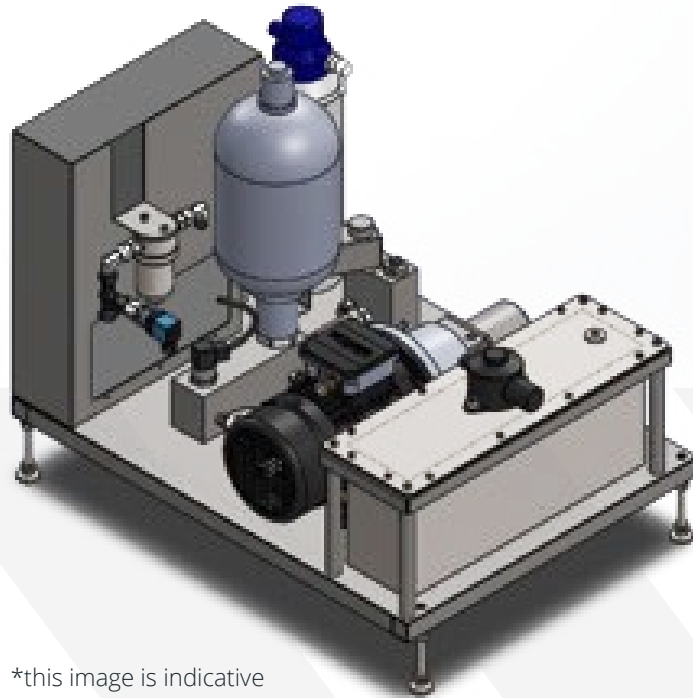
The accumulator also works as a pressure storage device to ensure that the pump does not need to continuously run. It is recommended to include both an uninterruptible power supply and accumulators for larger systems.

The Power Pack comes equipped with a reversed osmosis system.

The Power Pack can also be equipped with an optional UV-sterilizing unit to kill potential bacteria growth in the system.

TECHNICAL DATA

PRESSURE OUTPUT	The Power Pack delivers 50 bar
HYDRAULIC FLUID	The Power Pack can be used with a water and glycol mix or with regular tap water
REVERSE OSMOSIS	The system will keep the water clean with Reverse Osmosis
ACCUMULATOR / UPS	The accumulator and the uninterruptible power supply (UPS) size are calculated from the number of valves required to be operated in the event of a power failure
UV-STERILIZING UNIT	The optional UV-sterilizer kills potential bacteria build up in the system and ensures a clean and sterile water supply to the actuators
OVERALL DIMENSIONS	The pump, accumulator, UPS and the water tank in general determine the overall size of the Power Pack and will increase in size accordingly to the amount and use of actuators in the installation
INPUT/OUTPUT CONNECTIONS	Return line: 3/8" up to 1½" BSPP Pressure line: 1/4" up to 1" BSPP (depending on the Power Pack size)
POWER SUPPLY	Power supply: 3 phase (voltage can be specified)
CUSTOMIZATION	The Power Packs can be specified to order to meet customer requirements
AMBIENT TEMPERATURE	-20°C to +45°C



*this image is indicative

FEATURES AND BENEFITS

- » Automatic water top-up
- » Automatic cleaning of water twice a week
- » Balanced pressure
- » Redundant pump
- » Possibility to expand existing powerpack
- » Reversed osmosis reduces maintenance, operating, and energy costs
- » Very low energy consumption
- » Programmable via PLC

ACCURATOR

INFORMATION

The Hydract actuators are working with pressurized tap water or with water containing glycol. The pressurized water is supplied in a 50 bar closed leak free system. The pressure is produced by a decentralized power unit called the Power Pack together with an accumulator (or uninterruptible power supply) capacity suitable for the number of valves required to go to a safe position in the event of power failure.

The actuator will by default open and close the valve slowly and ramp up to full velocity to reduce the risk of creating pressure transients (water hammers). The speed and seat position is fully programmable and can be specified to

order. The actuator can be installed as normally closed, normally open and/or with regulation ability. The double seat actuator can independently control the upper and lower seats (seat lift) in order to keep the valve clean during operation.

The Hydract Valve internals do not require pressure balancing as a precaution towards pressure transients due to being hydraulically locked. Furthermore, the lower seat shape ensures optimal flow conditions. During upper and lower seal flush, the upper or lower disc of the valve internals are independently lifted enabling the seals to be cleaned.

TECHNICAL DATA

DOUBLE SEAT:	HDm: Diameter: 99 mm Height: 418 mm Stroke length: Up to 47 mm	HDs: Diameter: 99 mm Height: 380 mm Stroke length: Up to 30 mm
SINGLE SEAT:	HSm: Diameter: 100 mm Height: 445 mm Stroke length: Up to 47 mm	
COMMUNICATION	AS -i bus & Bluetooth 4,2 (tablet) compatible. PROFIBUS and IO_Link	
POWER SUPPLY	24-30 volt DC supply from bus system Peak current: <=250mA Standby current: <=100mA Optional battery backup	
MAXIMUM FORCE	Upper seat: 12500N (downward), 9300N (upward) Lower seat: 4500N (downward), 3200N (upward) Single seat: 12500N (downward and upward)	
FILTRATION REQUIREMENTS	5 µ m abs filter on return line It is recommended that a 3 µ m filter is used on the pressure line	
WORKING PRESSURE	4,7 to 5 MPa	
MATERIALS	FDA approved materials Material not in contact with product: AISI 304 Seals in EPDM Control top Housing in ABS with cleaning chemical resistant coating	
OPENING & CLOSING OPERATIONS	Velocity: from 0,1 - 11,5 mm/s Opening and closing times are dependent on valve stroke, between 3 and 12 seconds. Each actuator can be also configured with normal or fast speed for open/close operations.	
POSITION CONTROL	Accuracy ± 0.05 mm (both single, upper, and lower seat)	
SEAT CALIBRATION	The upper seat seal compression can be adjusted by connecting the actuator to a tablet (Hydract app). This ensures the seal can be adjusted during it's lifetime and ensure the correct expansion.	
AMBIENT TEMPERATURE	-20°C to +45°C	

CONTROL & COMMUNICATION

Full digital process control! Standard communication is I/O link ensures that every Hydract Valve communicates individually. This enables proactive performance reporting and maintenance procedures. Precise valve position is essential to optimal system operation and automation. The control and communication is fully digital and programmable to meet your production needs. The 360° LED display for easy visual valve status is also fully programmable.

HYDRAULIC CYLINDER

The piston rod of the cylinder transmits the power from the displacement of pressurized hydraulic fluid via the piston inside the cylinder.

LANTERN

The lantern works as a separation between the actuator and the valve house. The design is open which allows for visual inspection of the piston seal and leakage.

VALVE HOUSES

Hydract offers a broad and versatile valve house programme for different process applications. The Hydract Valve house internal is elliptical which creates a more uniform flow velocity and thereby better cleanability. Houses can be combined crosswise and can be either clamped or welded.

ACTUATOR

The Hydract actuator has tremendous force of up to 12.500 N and is hydraulically locked – eliminating the risk of unintentional mixing of fluids. Due to the precise control and power the actuator can position the piston by 5/100 mm. As water is incompressible it grants better mechanical work. It simply uses the energy better. The actuator will by default open and close the valve slowly and ramp-up to full velocity to reduce the risk of creating pressure transients (water hammers). The Hydract actuator reduces the electrical power consumption by more than 95 % for valve actuation.



FEATURES AND BENEFITS

- » Hydraulic lock that withstands pressure transients
- » Full regulation capability and on/off
- » Bi-directional flow
- » In-line mixing
- » 5/100 mm precision
- » No unintentional mixing of fluids
- » Reduced energy consumption
- » Fast calibration via app
- » Fully digital and can be programmed to meet any demand
- » Upper and lower seat can be programmed to fit your CIP cleaning (pulse, spray, small opening, etc.)
- » Can be configured to be both NC/NO

SINGLE SEAT VALVE

INFORMATION

The Hydract single seat valve housing is designed in corporation with hygienic design specialists to offer a great hygienic and cleanable valve house for the industry. The design of the valve house creates optimal conditions in terms of cleanability and flow.

It is designed to deliver high performance every time, every day!

The valve houses are clamped together with the actuator to ensure fast and easy assembly of the total valve system.

The flow direction is bi-directional, meaning that the flow can be both upstream and downstream using the same valve.

Seat calibration and lifetime – The upper seat seal compression can be adjusted by connecting the actuator to a tablet in our Hydract app, which you can download at ... [\[INPUT LINK\]](#). This ensures the seal can be adjusted during it's lifetime and ensure the correct expansion when exposed to heat which aids in increasing lifetime of the seal.

Flow conditions – The reduced pressure drops inherent with this design, when compared to typical ON/OFF valves, is used to gain more control over the same stroke, thus giving more stability.

The valve sizes are shown in below table. Please contact Hydract for other designs.

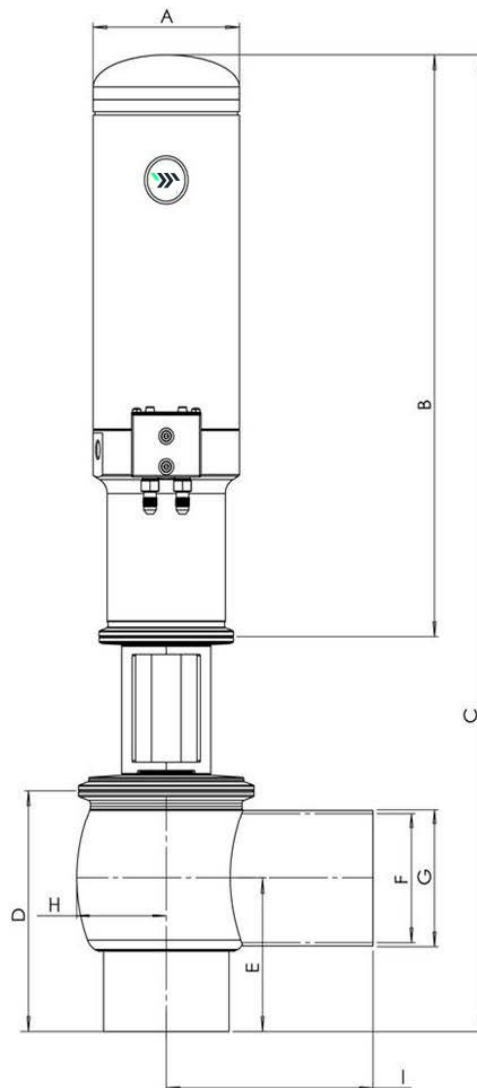
TECHNICAL DATA

PRESSURE:	
PRODUCT PRESSURE	PN 145 psi (10 bar) / vacuum -13,8 psi (0,95 bar)
HOUSING	PN 360 psi (25 bar)
PRESSURE RESISTANCE	PN 650 psi (45 bar)
MATERIAL:	
WITH PRODUCT CONTACT	AISI 316 L / EN 1.4404
WITHOUT PRODUCT CONTACT	AISI 304 / EN 1.4301
SEAL	EPDM, HNBR or FKM
SURFACE:	
WITH PRODUCT CONTACT	Ra ≤ 0.8 µm
WITHOUT PRODUCT CONTACT	Ra ≤ 1.6 µm

FEATURES AND BENEFITS

- » Hygienic design
- » Easy to clean
- » High wall shear stress
- » Elliptical shape
- » Bi-directional flow

DIMENSIONS

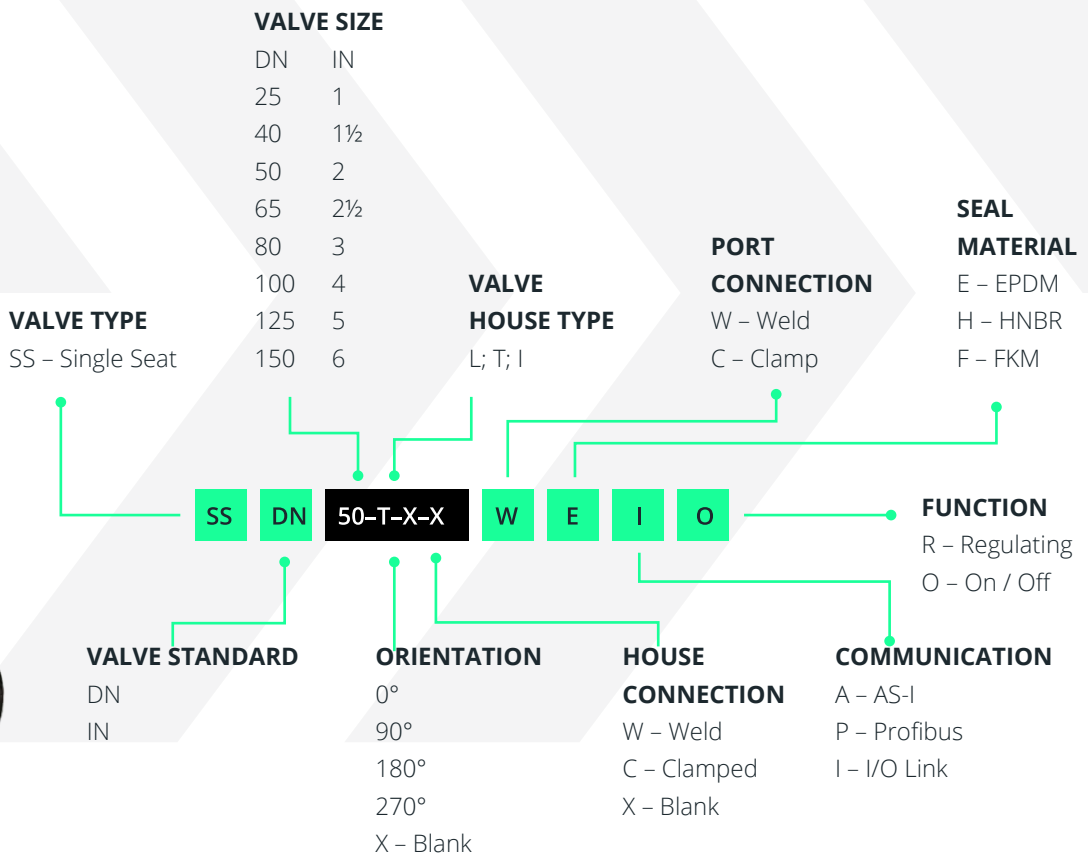


DIN/OD	ØA	B	C	D	E	ØF	ØG	H	I
DN25	99	363	508,4	75	50	26	29	21	75
DN40	99	363	554	88	90	38	41	36	90
DN50	99	363	554	88	90	50	53	42	90
DN65	99	363	614	108	110	66	70	58	110
DN80	99	363	622	110	110	81	85	64	110
DN100	99	363	633	110	110	100	104	80	110
DN125	99	363	661	202	125	125	129	100	125
DN150	99	363	752	292	200	150	154	128	200
1"	99	363	508,4	75	50	22,2	25,4	21	75
1½"	99	363	554	88	90	34,8	38,1	36	90
2"	99	363	554	88	90	47,5	50,8	42	90
2½"	99	363	614	108	110	60,2	63,5	58	110
3"	99	363	622	110	110	72,8	76,1	64	110
4"	99	363	633	110	110	97,4	101,6	80	110
5"	99	363	661	125	125			100	125
6"	99	363	752	200	200	146,9	152,4	128	200

NUMBER SYSTEM

HOW TO SPECIFY VALVES

- Orientation - For first valve house, always use 'X' or '0'. All subsequent valve house orientations are referenced to the first house.
- Valve house type - L = 2 port, one bottom port, 1 side port. T = 3 port, one bottom and 2 sides. I = piggable bottom port.



VARIANTS

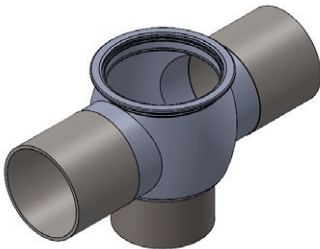
Single Chamber
1 port + bottom



DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
5"	.	.	.
6"	.	.	.

Single Chamber
2 port + bottom

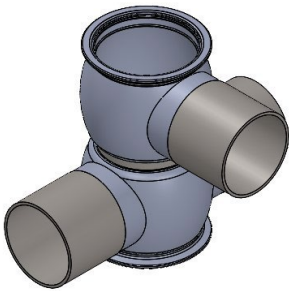


DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
5"	.	.	.
6"	.	.	.

VARIANTS

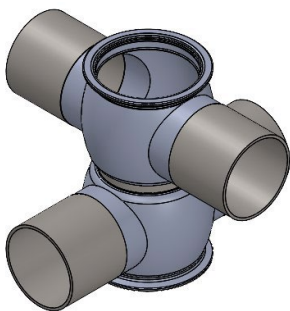
Double Chamber
3 port



DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
5"	.	.	.
6"	.	.	.

Double Chamber
4 port



DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
5"	.	.	.
6"	.	.	.

DOUBLE SEAT VALVES

INFORMATION

The Hydract double seat valve housing is designed in corporation with hygienic design specialists to offer a great hygienic and cleanable valve house for the industry. The design of the valve house creates optimal conditions in terms of cleanability and flow. It is designed to deliver high performance every time, every day!

Flow direction – The flow is bi-directional (flow can be both upstream and downstream).

Mixproof safety – The valve internals seal off the two pipelines to avoid any unintentional mixing of fluids. If seal leakage should occur, the leaking fluid will travel through the leakage chamber instead and thereby creates a visible leak indication.

Seals - The available seal materials are EPDM, HNBR and FKM. Reciprocating shaft seals use PTFE as the contact material to extend lifetime.

Seat calibration and lifetime – The upper seat seal compression can be adjusted by connecting the actuator to a tablet in our Hydract app, which you can download at ... [\[INPUT LINK\]](#). This ensures the seal can be adjusted during it's lifetime and ensure the correct expansion when exposed to heat which aids in increasing lifetime of the seal.

Flow conditions – The conical shape of the lower seat allows for an optimal flow when opening, closing or using the valve for regulation. The reduced pressure drops inherent with this design, when compared to typical ON/OFF valves, is used to gain more control over the same stroke, thus giving more stability.

Please contact Hydract for other designs.

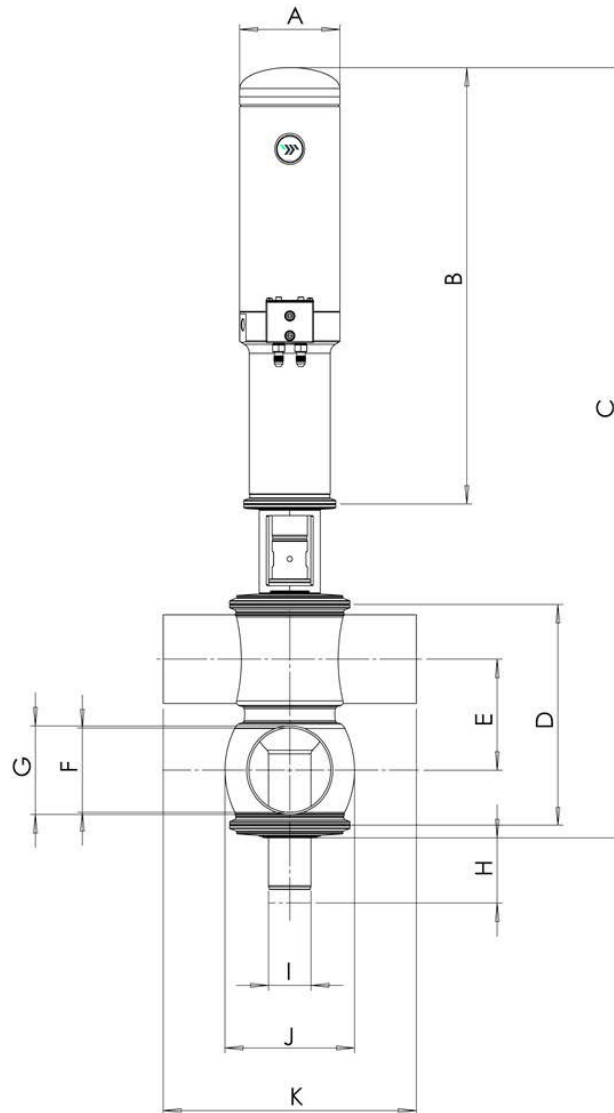
TECHNICAL DATA

PRESSURE:	
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MATERIAL:	
WITH PRODUCT CONTACT	AISI 316 L / EN 1.4404
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SEAL	EPDM, HNBR or FKM
SURFACE:	
WITH PRODUCT CONTACT	Ra ≤ 0.8 µm
WITHOUT PRODUCT CONTACT	Ra ≤ 1.6 µm

FEATURES AND BENEFITS

- » Hygienic design
- » Easy to clean
- » High wall shear stress
- » Elliptical shape
- » Bi-directional flow

DIMENSIONS

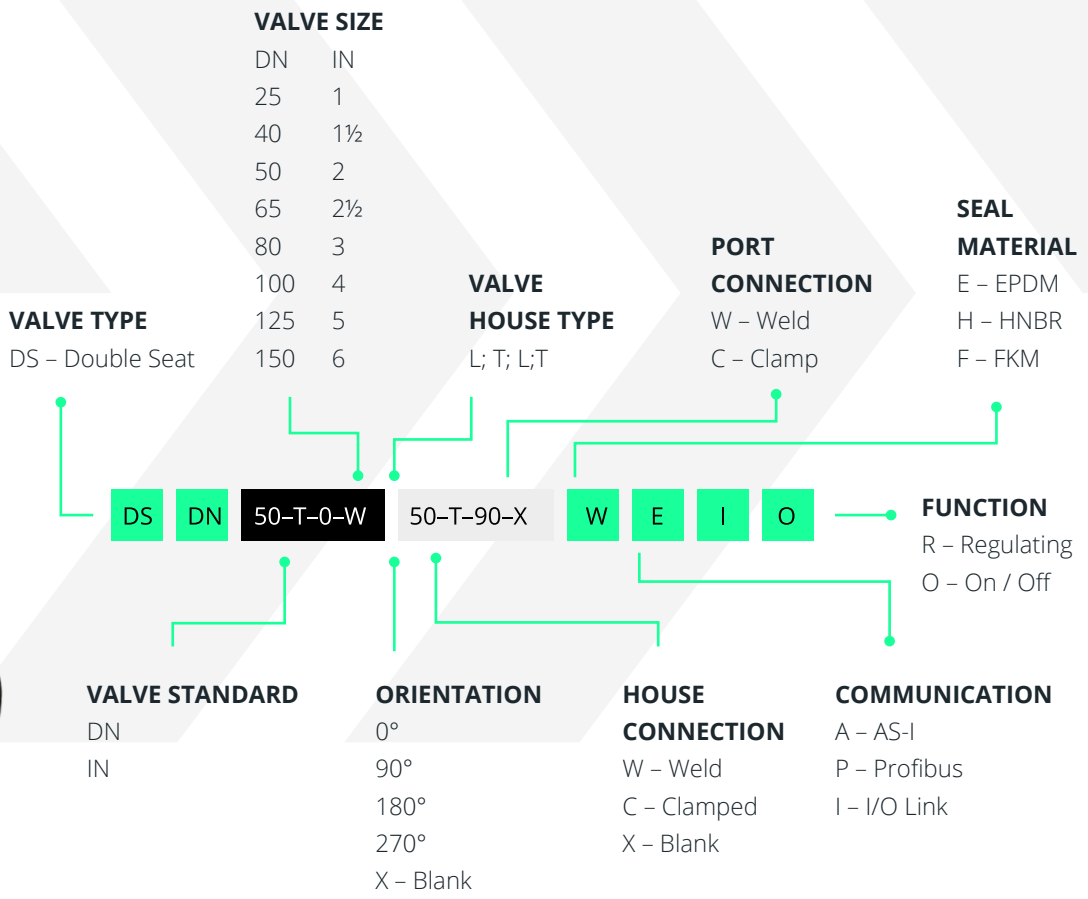


DIN/OD	ØA	B	C	D	E	ØF	ØG	H	ØI	J	K
DN25	99	380	562	77,4	61,4	26	29	59	20	60	150
DN40	99	380	587	124,6	63,4	38	41	59	20	72	180
DN50	99	380	608	148,4	75,4	50	53	59	20	84	180
DN65	99	418,5	708	181,4	91,4	66	70	71	42	116	220
DN80	99	418,5	738	211,4	106,4	81	85	71	42	128	220
DN100	99	418,5	777	249,4	125,4	100	104	71	60	160	220
DN125	99	418,5				125	129				
DN150	99	418,5				150	154				
1"	99	380	554,4	69,8	57,6	22,2	25,4	59	20	60	150
1½"	99	380	580,6	118,2	60,2	34,8	38,1	59	20	72	180
2"	99	380	603	143,4	72,9	47,5	50,8	59	20	84	180
2½"	99	418,5	696,4	169,8	85,6	60,2	63,5	71	42	116	220
3"	99	418,5	721,6	195	98,2	72,8	76,1	71	42	128	220
4"	99	418,5	771,8	244,2	122,8	97,4	101,6	71	60	160	220
DN125	99	418,5									
DN150	99	418,5				146,9	152,4				

NUMBER SYSTEM

HOW TO SPECIFY VALVES

- Orientation - For first valve house, always use 'X' or '0'. All subsequent valve house orientations are referenced to the first house.
- Valve house type - L = 2 port, one bottom port, 1 side port. T = 3 port, one bottom and 2 sides. I = piggable bottom port.

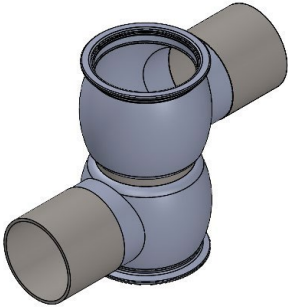


Top valve house

Bottom valve house

VARIANTS

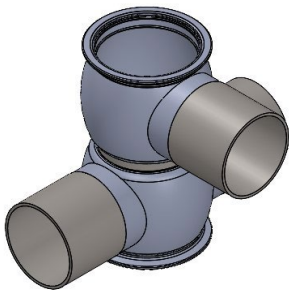
Double Seat Mixproof
2 port



DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
DN125	.	.	.
DN150	.	.	.

Double Seat Mixproof
3 port

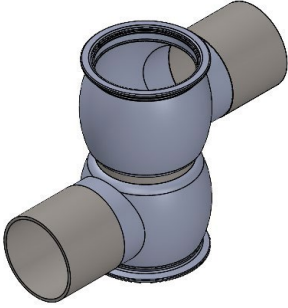


DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
DN125	.	.	.
DN150	.	.	.

VARIANTS

Double Seat Mixproof
4 port



DN	EPDM	HNBR	FMK
DN25	.	.	.
DN40	.	.	.
DN50	.	.	.
DN65	.	.	.
DN80	.	.	.
DN100	.	.	.
DN125	.	.	.
DN150	.	.	.

INCH OD	EPDM	HNBR	FMK
1"	.	.	.
1½"	.	.	.
2"	.	.	.
2½"	.	.	.
3"	.	.	.
4"	.	.	.
DN125	.	.	.
DN150	.	.	.