ELIPTIX R-20 Series

Advanced hydraulic solutions for optimal management of liquid conveyance systems

Aquestia

Directing the Flow

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Accurate, Rapid, Reliable and Quiet

The ELIPTIX R-20 series is a line of composite material, diaphragm-operated hydraulic control valves with a working pressure up to 10 bar. The valves are suitable for installation on water transmission, landscape and irrigation systems.
The R-20 series has an innovative elliptic shaped diaphragm that integrates well with a wide variety of regulating control pilots, solenoids and control accessories.

Unique in the ELIPTIX R-20 Series

Available in sizes up to 8"
Separate double chamber for 6"-8" valves

Features & Benifits

- Excellent regulating capabilities for a wide range of flow rates from drip (500 l/h) up to maximum flow
- Operational from low pressure up to 10 bar
- Highly reliable operation and durable over time
- Quick-reaction operation
- Rapid response to changes in flow rate
- Designed to reduce cavitation damage
- Silent operation
- Low head losses
- Wide range of connections: Flanged, Threaded and Grooved
- Simple mechanism
- Easy inline maintenance
- User-friendly

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ELIPTIX R-20 SM (3W)

Weir-type, Elliptical-shaped Diaphragm, 3-way
Manual Override, Pressure Sustaining Control Valve

ELIPTIX R-20 E (3W)

Weir-type, Elliptical-shaped Diaphragm, 3-way, Electric
Operated Control Valve

ELIPTIX R-20 Q (3W)

Weir-type, Elliptical-shaped Diaphragm, 3-way,
Quick Pressure Relief Control Valve

ELIPTIX R-20 R (2W)

Weir-type, Elliptical-shaped Diaphragm, 2-way,
Pressure Reducing Control Valv

ELIPTIX R-20 RM (3W)

Weir-type, Elliptical-shaped Diaphragm, 3-way
Manual Override, Pressure Reducing Control Valve

ELIPTIX R-20 M (3W)

Weir-type, Elliptical-shaped Diaphragm, 3-way,
Manual Control Valve

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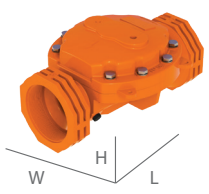
Technical Specifications

Straight Valves

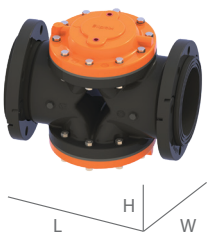
Size	End Connection	Dimensions (mm)			Weight (Kg)	Control Chamber Volume (ml)	Hydraulic Performance	
		Length	Width	Height			Working Pressure (bar)	Kv
1½" (40 mm)	Threaded	180	140	105	0.7	94	0.5-10	40
2"N (50 mm)	Threaded	190	140	108	0.7	94	0.5-10	51
2"S (50-80-50 mm)	Threaded	237	166	105	1.3	150	0.4-10	91
2"S (50-80-50 mm)	Union (SW)	330	166	116	1.8	150	0.4-10	91
2"S (50-80-50 mm)	Solvent welding	277	166	112	1.6	150	0.4-10	91
2½" (65 mm)	Threaded	259	166	112	1.5	150	0.4-10	91
3"N (80 mm)	Threaded	277	166	121	1.5	150	0.4-10	91
3"N (80 mm)	Grooved	277	166	112	1.3	150	0.4-10	91
3"N (80 mm)	Flanged	282	198	198	3.3	150	0.4-10	91
3"S (80-100-80 mm)	Threaded	310	240	168	3.6	400	0.4-10	240
3"S (80-100-80 mm)	Grooved	310	240	154	3.2	400	0.4-10	240
3"S (80-100-80 mm)	Flanged	315	240	208	4.3	400	0.4-10	240
4" (100 mm)	Threaded	350	240	181	3.9	400	0.4-10	240
4" (100 mm)	Grooved	350	240	166	3.5	400	0.4-10	240
4" (100 mm)	Flanged	356	240	228	7	400	0.4-10	240
6" (150 mm)	Solvent welding	494	339	281	17	2300	0.4-10	542
6" (150 mm)	Flanged	424	339	258	15	2300	0.4-10	542
8" (200 mm)	Flanged	502	340	340	18	2300	0.4-10	607

$Kv = Q / \sqrt{\Delta p}$ Where Q=Flow Rate (m^3/h), ΔP=Pressure loss across the valve (bar), when fully open

Suitable for 1½" - 4"



Suitable for 6" - 8"



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Technical Specifications

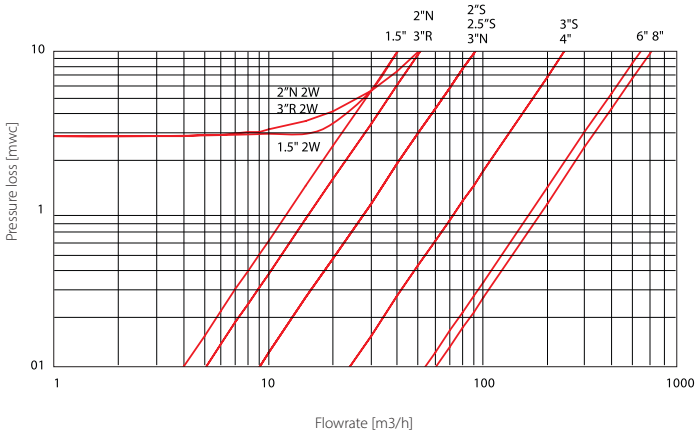
Angle Valves

Size	End Connection	Dimensions (mm)			Weight (Kg)	Control Chamber Volume (ml)	Hydraulic Performance	
		FTC	Width	Langth			Working Pressure (bar)	Kv
2S" 3W	Threaded	148.20	185.20	209.7	1.45	150	0.2-10	86
3" 3W	Threaded	168.00	221.00	229.5	1.65	150	0.2-10	86
	Flanged	162.30	261.50	264	2.90	150	0.2-10	86
	Grooved	162.30	206.70	223.8	1.55	150	0.2-10	86

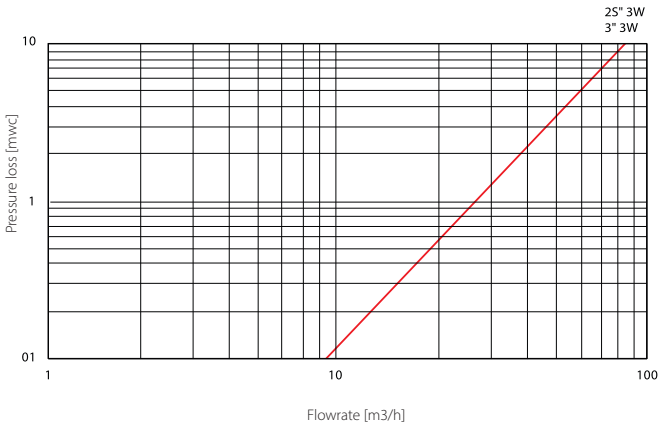
*2W- including solenoied
FTC - Face To Center
Kv= Q /√Δp Where Q=Flow Rate (m^3/h), ΔP=Pressure loss across the valve (bar), when fully open

Flow Charts

Straight Valves



Angle Valves



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Diaphragm Working Pressure

Diaphragm Model	Working Pressure
Low pressure	0.2 - 5 (bar)
Default	0.4 - 10 (bar)

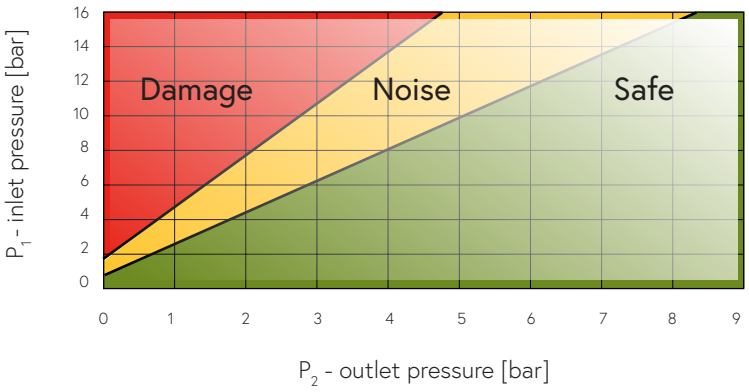
* Other diaphragm materials available on request

Bolts tightening

Size	Recommended Torque [Nm]	
	Min.	Max.
1.5" - 2"	4	4
2"S - 3"	12	15
3"S - 4"	25	30
6" - 8"	25	30

Cavitation Data

Determining safe operating pressure drop conditions



$$\sigma \text{ system} = \frac{P_1 - P_{Vapor}}{P_1 - P_2}$$

Where
σ = Cavitation number [no units],
P = Absolute pressure [either unit are acceptable; e.g.: bar/mwc/psi]

* Operating conditions inside the cavitation damage zone is permissible for infrequent periods of short duration.
* Based on cavitation index (sigma values) as defined by Utah State University Water Research Laboratory.
* Operating conditions, at standard temperature and elevation.

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Advanced hydraulic solutions for optimal management of liquid conveyance systems

Aquestia is a world leader in providing optimal solutions for surge protection, water loss reduction and pressure management, by integrating uniquely developed products with innovatively designed software. Bringing together three strong brands - A.R.I., DOROT and OCV – we combine decades of experience, a wealth of knowledge and expertise, and a wide range of solutions and services. We are where liquid flows, serving customers in segments that include waterworks and wastewater systems, irrigation, fire protection, mining, ballast water, desalination, commercial plumbing, aviation fueling, oil & gas, and more.

Aquestia – high-quality, reliable products and committed service - for your peace of mind.

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