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Application Engineering Europe

LIQUID INJECTION VALVE SERIES 935

General information

Take-a-part Liquid Injection 935 series Valve are designed for temperature control. Applications include:

- Desuperheating of discharge gas on compressors. In this case bulbs are mounted on the high-pressure outlet of the compressor
- Control of compressors oil temperatures

Features

- Modular design for economical logistics and easy assembly and servicing
- Combinations of different charges with various orifice springs cover a very large application range
- XB power element with a long-life laser welded stainless steel head resists corrosion
- Large diaphragm eliminates disturbances to the valve and provides smoother and consistent valve control over wide range of operation
- High-quality materials and processes for high reliability and long lifetime
- Flanges: brazing ODF/ODM connection with straight through and angle style configuration
- For maintenance no loosen the pipes connections are necessary, due there are no operationally relevant parts inside the flange






935

- Capillary tube length 3m
- Max. allowable pressure PS:
 - 46 bar with XB Power assembly
- Medium Temperature range TS: -45...+65 °C

TAKE-APART DESIGN

935 valves consists of 3 main assembly parts:

Valve Series	Power element	Orifice	Flange	
			Angle	Straight through
935	XB1019***-2A	X10-***	 C501-5/ C501-5mm C501-7 / C501-7mm A576 / A576-mm	 9761-3 / 9761-3mm 9761-4 / 9761-4mm 6346-17

Each part can be selected individually and combined according to the system requirements by following of 2 selection steps.

Step 1: Single Selection - Orifice & Power Element according required Capacity and Temperature

Valve Type	Capacity Code	Orifice Type	Orifice Part No.	Capacity (kW)														Power element	
				A1								A2L							
				R134a	R513A	R450A	R404A R507	R452A	R407C	R410A	R448A	R449A	R32	R454A	R454C	R455A	R1234ze		R1234yf
935*-	A	X10-B01	803621	4.0	3.6	3.5	3.8	3.9	5.6	6.1	5.2	5.2	9.0	5.1	4.3	4.9	3.1	2.9	XB 1019-**-2A
		X10-C01	803641																
	B	X10-B02	803622	7.8	7.1	6.9	7.4	7.6	10.9	11.8	10.1	10.1	17.5	9.9	8.3	9.6	6.1	5.6	
		X10-C02	803642																
	C	X10-B03	803623	11.1	9.9	9.7	10.3	10.8	15.4	16.6	14.2	14.2	24.7	14.0	11.6	13.4	8.6	7.9	
		X10-C03	803643																
	D	X10-B04	803624	16.3	14.7	14.4	15.6	16.0	22.8	24.6	21.0	21.0	36.6	20.7	17.3	20	12.8	11.8	
		X10-C04	803644																
	E	X10-B05	803625	22.5	20.2	19.7	21.0	21.9	31.2	33.7	28.8	28.8	50.2	28.4	23.6	27.4	17.5	16.1	
		C10-C05	803645																
	G	X10-B06	803626	32.0	28.8	28.1	29.9	31.2	44.5	48.1	41.1	41.1	71.5	40.5	33.7	39.0	24.9	23.0	
		X10-C06	803646																
	X	X10-B07	803627	46.6	41.9	40.9	43.5	45.4	64.9	70.0	59.8	59.8	104	59.0	49.1	56.8	36.3	33.5	
		X10-C07	803647																









*) Temp. Code	Spring Code	Temperature range °C	Power Element Part No.	***) Charge Code UL, KL, YL, JL, LL
3	B	-1 ... +17	803151	XB 1019 UL-2A
6	C	+14 ... +38	803437	XB 1019 KL-2A
105	C	+44 ... +70	803155	XB 1019 YL-2A
106	C	+66 ... +94	802829	XB 1019 JL-2A
100	C	+94 ... +121	802810	XB 1019 LL-2A

NOTE: For other operating conditions use the "Select" tool (www.climate.emerson.com/en-gb). For assistance with selection, please contact your local Emerson Sales offices.

Type Code Power Element - e.g. XB1019 UL-2A

Type XB1019 PS: max 46 bar	X	-	A	Equalizer A internal
Charge Code - Temperature Range UL -1 ... +17 °C KL +14 ... +38 °C YL +44 ... +70 °C JL +66 ... +94 °C LL +94 ... +121 °C				Capillary Tube Code 2 3.0 m 4 6.0 m





Step 2: Single Selection – Flange

Valve type	Power Element	Orifice	Flange Style				Connection (Inlet x Outlet)		
			Angle	Part No.	Straight through	Part No.	metric	imperial	
935	X1019...2A	X10-B01 X10-C01 X10-B02 X10-C02	 C501-5	803232		9761-3	803240	-	3/8" x 5/8" ODF
			C501-5mm	803233	9761-3mm	803241	10 x 16 mm ODF	-	
		 C501-7	803234		9761-4	803350	-	1/2" x 5/8" ODF	
			C501-7mm		803235	9761-4mm	803243	12 x 16 mm ODF	-
		-	-	-		6346-17	803330	16 x 22 mm ODF	5/8" x 7/8" ODF
			A576	803238	-	-	-	-	5/8" x 7/8" ODF 7/8" x 1-1/8" ODM
			A576-mm	803239	-	-	-	16 x 22 mm ODF 22 x 28 mm ODM	-

Type code - Valve Kit - e.g. 9353BWL1/2X5/8

Valve Series	935	-	⌘	-	⌘	⌘	⌘	⌘	X	⌘	⌘
Temperature Code	3 -1 ... +17 °C	6 +14 ... +38 °C	106 +66 ... +94 °C	105 +44 ... +70 °C	100 +94 ... +121 °C						
Capacity Code	A	B	C	D	E	G	X				
Lower Capacity	→						Higher Capacity				
Connection	Inlet x outlet										
Capillary tube length	blank 3.0 m										
Flange Style	WL angled DL Straight through										

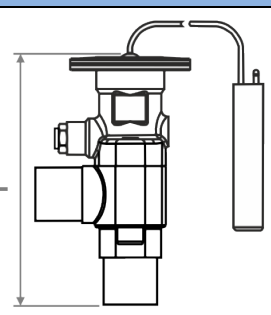
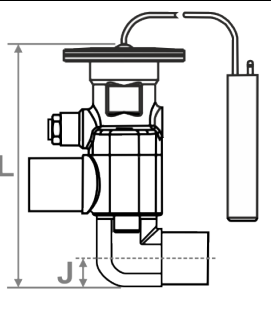
Selection Table Accessories and Spare Parts

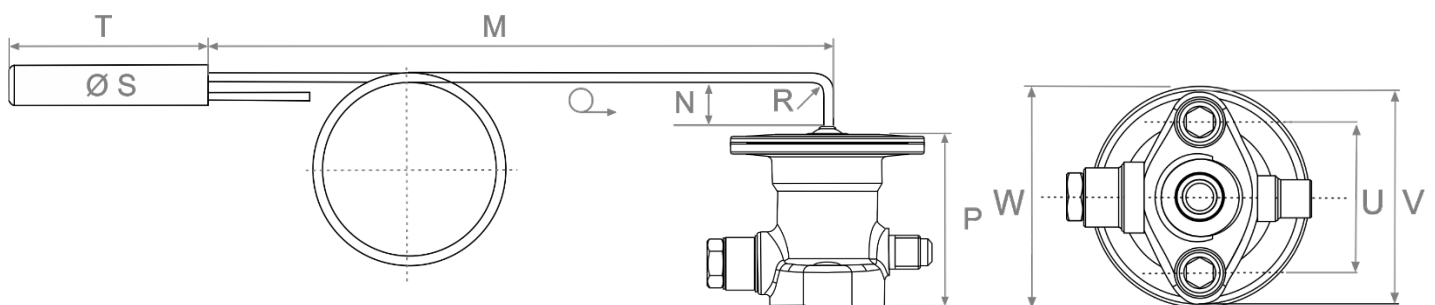
Type	Part No.	Description	Illustration
X 99999	800005	Service Tool for T, ZZ, L and 935 Series valves	
X 13455	027579	Gasket sets for T, ZZ, L and 935 Series valves	
Screw ST 32	803573	Steel Screws for flange types: C501, 9761, 6346, A576	
XA 1728-4	803260	Bulb clamp for XB1019	

Technical Data

Max. allowable Pressure PS	46 bar	Materials power element valve head	Stainless steel
Max. Test Pressure PT	50.6 bar	Materials capillary tube & bulb	copper
Temperatures TS Medium	-45 ... +65 °C	Released Refrigerants	See Selection tables A1 & A2L
Flange connections	Brass ODF or ODM	Standards	RoHS compliant
Vibration Resistance (for fastened valve, non-connected)	4g (0...1000 Hz, 1 octave/min)	Delivery	Single Package
Shock	20 g at 11 ms 80 g at 1 ms	Markings	CE not required

Dimension (mm)
GENERAL

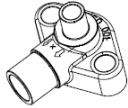
Valve (Kit)	Illustration	Power Element	Flange	Inlet x Outlet	J	L	
935		XB1019...2A	Angled	C501-5	3/8" x 5/8" ODF	-	106
				C501-5mm	10 x 16 mm ODF	-	105
				C501-7	1/2" x 5/8" ODF	-	113
				C501-7mm	12 x 16 mm ODF-	-	108
				A576	5/8" x 7/8" ODF 7/8" x 1-1/8" ODM	-	124
				A576-mm	16 x 22 mm ODF 22 x 28 mm ODM	-	124
935		XB1019...2A	Straight through	9761-3	3/8" x 5/8" ODF	17	95
				9761-3mm	10 x 16 mm ODF	17	95
				9761-4	1/2" x 5/8" ODF	17	95
				9761-4mm	12 x 16 mm ODF-	17	95
				6346-17	16 x 22mm ODF 5/8" x 7/8" ODF	17	95

POWER ELEMENT


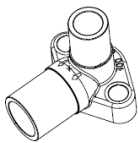
Power Element Type	M	N	S	T	Binding radius R (minimum)	P	U	V	W
XB 1019 ...-2A	3.0 m	15	16	78	10 mm	58	44.5	62	65
XB 1019 ...-4A	6.0 m	15	16	78	10 mm	58	44.5	62	65

FLANGES - ANGLED

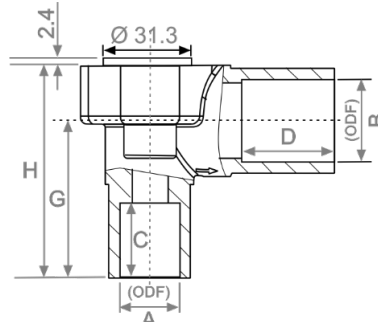
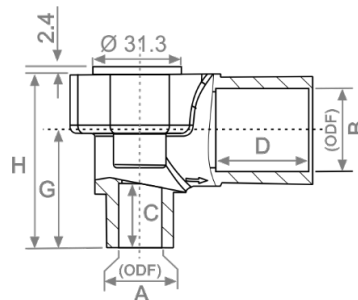
C501-5
C501-5mm
C501-7
C501-7mm



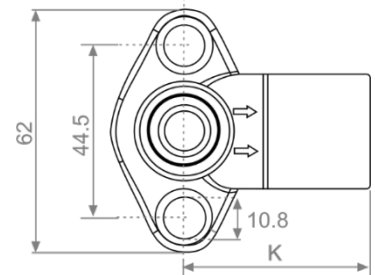
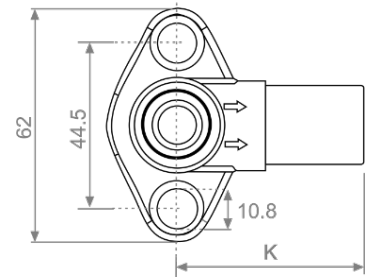
A576
A576-mm



Side view

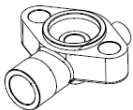


Bottom view

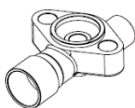


FLANGES - STRAIGHT THROUGH

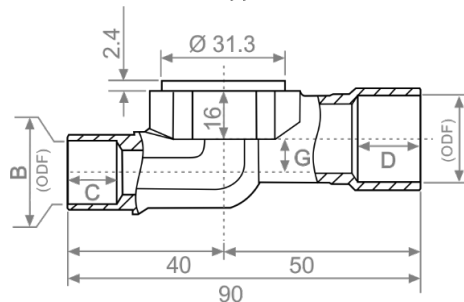
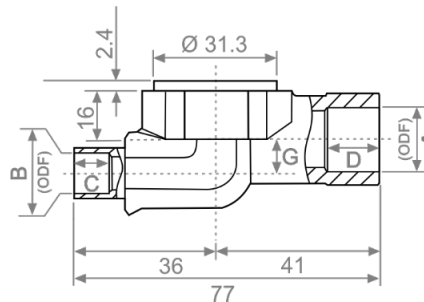
9761-3 mm
9761-3
9761-4 mm
9761-4



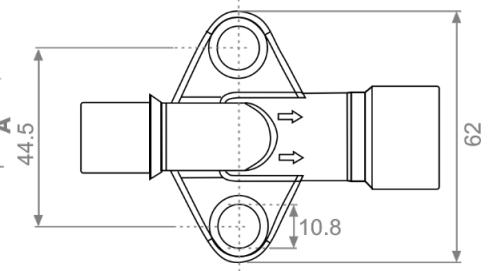
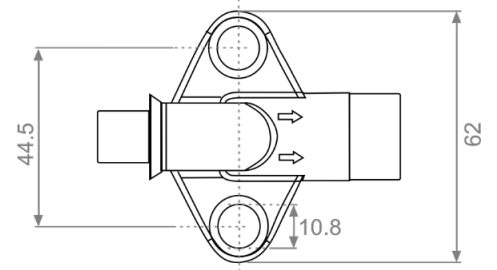
6346-17



Side view



Bottom view



Type	ODF		ODM		(mm)							
	Inlet A	Outlet B	Inlet A	Outlet B	C	D	E	F	G	H	K	
ANGLED	C501-5	3/8"	5/8"	-	-	14	21	-	-	27	39	40
	C501-5mm	10 mm	16 mm	-	-	14	21	-	-	27	39	40
	C501-7	1/2"	5/8"	-	-	17	21	-	-	30	42	40
	C501-7mm	12 mm	16 mm	-	-	17	21	-	-	30	42	40
	A576	5/8"	7/8"	7/8"	1-1/8"	21	25	-	-	43	58	50
A576-mm	16 mm	22 mm	22 mm	28 mm	21	25	25	28	43	58	50	
STRAIGHT THROUGH	9761-3 mm	3/8"	5/8"	-	-	9	13	-	-	8.5	-	-
	9761-3	10 mm	16 mm	-	-	9	13	-	-	8.5	-	-
	9761-4 mm	1/2"	5/8"	-	-	9	13	-	-	8.5	-	-
	9761-4	12 mm	16 mm	-	-	9	13	-	-	8.5	-	-
	6346-17	16 mm / 5/8"	22 mm / 7/8"	-	-	12.7	16	-	-	8.5	-	-

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