



# High-flow 2-way motorized ball valve

## 638 series

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### Application

The 638 series high flow 2-way motorized ball valves are perfect for shutoff and isolation in hydronic heating or cooling applications. Bubble-tight sealing, high differential pressure closeoff and significant Cv flow coefficients make the 638 series ideal for application in large-scale hydronic and geothermal systems. The valve body has dual Posi-Stop™ union connections for installation and service efficiency.

The 3-wire floating control fail-in-place actuator includes auxiliary contacts, a convenient integral manual override feature and a user-friendly position indicator.

### Typical Specification

Furnish and install on the plans and describing herein, a 638 series 2-way high-flow motorized ball valve, as manufactured by Caleffi. Each ball valve must be designed with a brass body, chrome-plated brass ball, PTFE with EPDM O-ring ball seal, double EPDM O-ring control stem seal, peroxide-cured EPDM O-ring union seal for sizes 3/4", 1", 1 1/4". The ball valve must include NPT male threaded, press and sweat connections for 1/2", 3/4", 1", 1-1/4", 1-1/2", and 2" sizes. Each valve has 230 psi (16 bar) maximum working pressure and 14 - 230 °F (-10 - 110 °C) working temperature range. Provide with optional inlet and outlet low-lead brass full-port ball valves. Each valve shall be Caleffi model 638 or approved equal. (See product instructions for specific installation information.)

### Technical Data

#### Valve body

#### Materials

Body: brass EN 12165 CW617N  
 Ball: brass EN 12165 CW617N, chrome plated  
 Ball seal: PTFE with EPDM O-Ring  
 Control stem seal: double EPDM O-Ring  
 Union seal (Posi-Stop™) for sizes 3/4", 1", 1 1/4": EPDM O-Ring  
 Note: EPDM o-rings are peroxide-cured.

#### Performance

Medium: water, glycol solutions  
 Max. percentage of glycol: 50%  
 Maximum working pressure: 230 psi (16 bar)  
 Maximum differential pressure:  
     3/4" to 1 1/4": 150 psi (10 bar)  
     1 1/2" to 2": 75 psi (5 bar)

Fluid working temperature range: 14 to 230 °F (-10 to 110 °C)  
 Operating ambient temperature range: 14 to 230 °F (-10 to 110 °C)

Shutoff leakage: bubble-tight

#### Flow coefficient:

3/4" size: Cv=20 (Kv=17)  
 1" size: Cv=42 (Kv=36.5)  
 1 1/4" size: Cv=56 (Kv=48)  
 1 1/2" size: Cv=89 (Kv=77)  
 2" size: Cv=162 (Kv=140)

#### Connections:

3/4", 1", 1 1/4", 1 1/2", 2" press, NPT male, sweat union

### Actuator

Synchronous motor

Power:

24 VAC, 6 VA

Auxiliary microswitch contact rating:

6A at 24 VAC

Protection class:

NEMA 4 (IP 65)

Stoke time (90 degrees rotation):

50 seconds

Supply cable length:

32 inches (0.8 m)

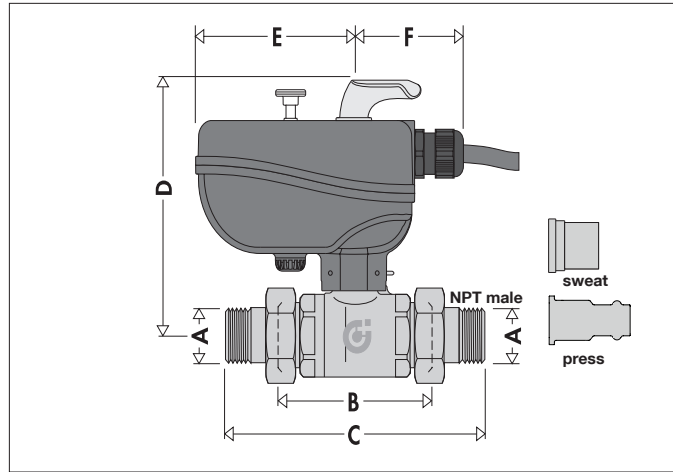
Dynamic torque:

133 lbf-in (15 N·m)

### Flow rate

Size	Flow coefficient				
	3/4"	1"	1 1/4"	1 1/2"	2"
<b>Cv</b>	20	42	56	89	162
<b>Kv</b>	17	36.5	48	77	140

**Dimensions**



Code	A	B	C	D	Lay Length	E	F	Wt. (lb.)	Cv (Kv)
638054A 103	3/4" NPT male	3 5/16"	5 1/2"	4 3/4"	--	3 3/8"	2 5/16"	3.3	20 (17)
638064A 103	1" NPT male	3 3/4"	8 1/16"	5"	--			4.5	42 (36.5)
638074A 103	1 1/4" NPT male	4 1/16"	7 1 1/16"	5"	--			5.6	56 (48)
638084A 103	1 1/2" NPT male	4 3/4"	9 3/16"	7 5/8"	--			12	89 (77)
638094A 103	2" NPT male	4 3/4"	9 3/8"	7 5/8"	--			12.4	162 (140)
638054A 109	3/4" sweat	3 5/16"	5 5/16"	4 3/4"	3 13/16"			3.3	20 (17)
638064A 109	1" sweat	3 3/4"	5 13/16"	5"	4"			4.5	42 (36.5)
638074A 109	1 1/4" sweat	4 1/16"	6 3/8"	5"	4 1/4"			5.6	56 (48)
638084A 109	1 1/2" sweat	4 3/4"	7 1/8"	7 5/8"	4 15/16"			12	89 (77)
638094A 109	2" sweat	4 3/4"	7 5/8"	7 5/8"	4 1/2"			12.4	162 (140)
638054A 106	3/4" press	3 5/16"	6 3/16"	4 3/4"	4 5/16"			2.7	20 (17)
638064A 106	1" press	3 3/4"	7 1/8"	5"	5"			4.8	42 (36.5)
638074A 106	1 1/4" press	4 1/16"	10 1/8"	5"	7 15/16"			5.8	56 (48)
638084A 106	1 1/2" press	4 3/4"	10 1/8"	7 5/8"	7 3/8"			11.6	89 (77)
638094A 106	2" press	4 3/4"	13 5/16"	7 5/8"	10 1/4"			11.8	162 (140)

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system

Job name _____	Size _____
Job location _____	Quantity _____
Engineer _____	Approval _____
Mechanical contractor _____	Service _____
Contractor's P.O. No. _____	Tag No. _____
Representative _____	Notes _____