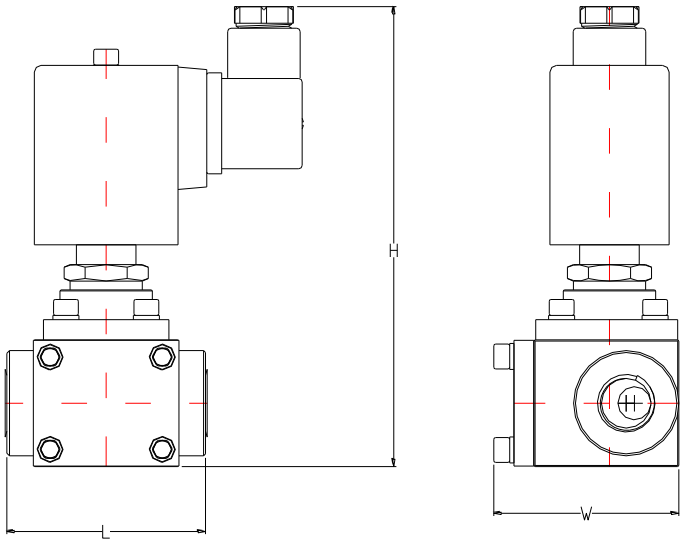
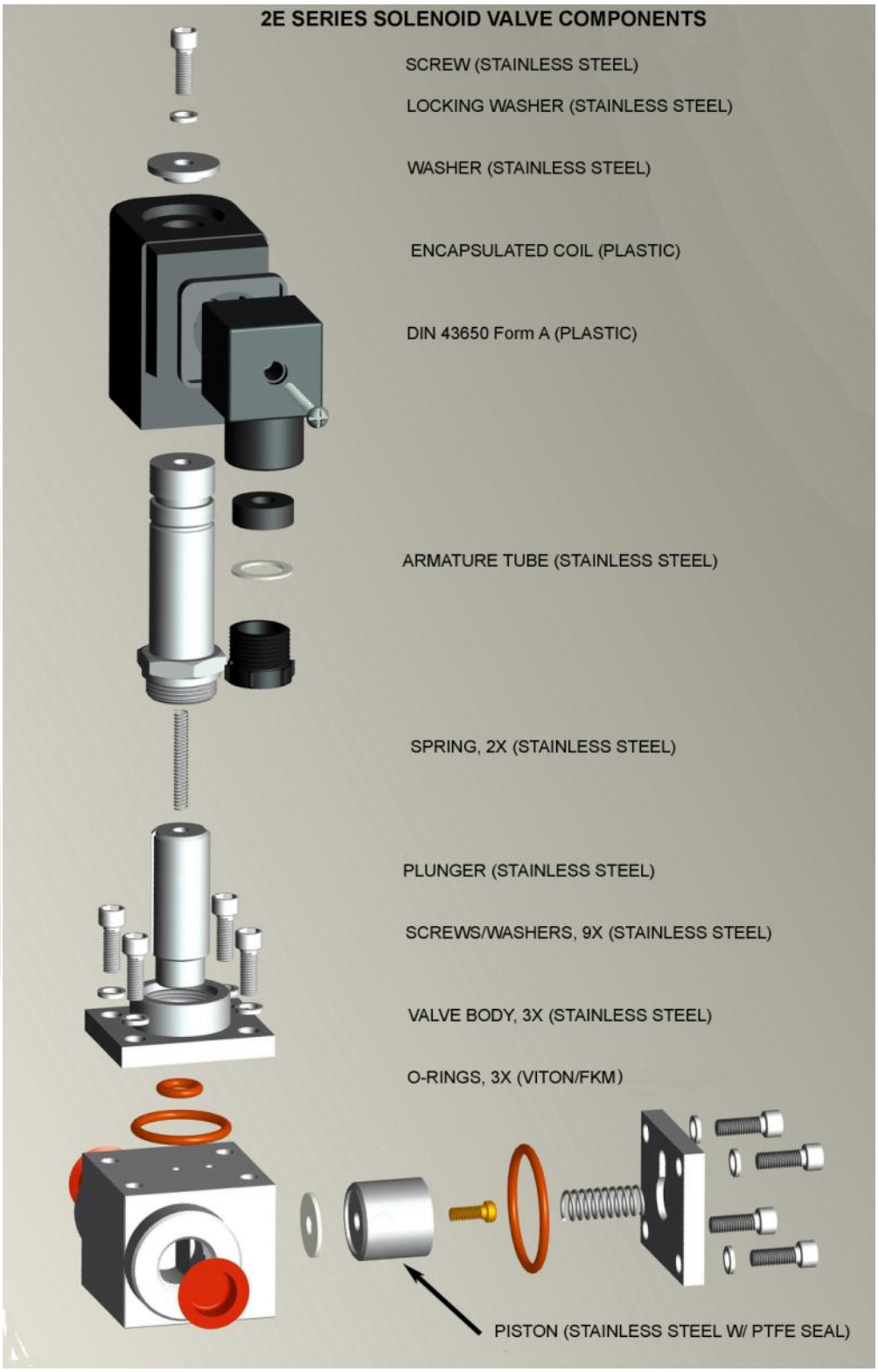
2E100-250 Series 2/2 Way High Pressure Solenoid Valve



Specifications				
Model	2E-100-3/8	2E-150-1/2	2E-200-3/4	2E-250-1
Price	$404.25	$504.00	$605.85	$669.90
Port Size (NPT)	3/8	1/2	3/4	1
Orifice (Cv)	10mm (Cv=4)	15mm (Cv=9.2)	20mm (Cv=16)	25mm (Cv=24)
Length (L)	60mm	70mm	80mm	90mm
Width (W)	56mm	65mm	75mm	85mm
Height (H)	125mm	138mm	144mm	154mm
Medium	Air, Liquid, Water, Steam, (Option: Cryogenic with all PTFE seals and seat)			
Action type	Pilot Piston			
Temperature	-40 to 356 ^{0}F (-40 to 180 ^{0}C)			
Operating Pressure	80-1450 psi (0.6～10 MPa)			
Maximum Pressure @25^{0}C	1450 psi (10 MPa)			
Materials	Body: Stainless Steel, Armature Tube Assembly: Stainless Steel Core tube, Core spring and Core, Seal: Piston (PTFE); O ring (Viton/FKM)			
Coil	20 WATT, IP65 Encapsulated plug-in coils. DIN 43650, Form A , Class F, Option Class H, 100% ED (Continuous Duty)			
Standard Voltage Options	12, 24 VDC**;** 24, 110/120, 220/240 VAC, 50/60 Hz			
Length	2.4” (60 mm)	2.8” (70 mm)	3.1” (80 mm)	3.5” (90 mm)
Height	4.9” (125 mm)	5.4” (138 mm)	5.7” (144 mm)	6.1” (154 mm)
Installation	Install the valve in any position, preferably over horizontal pipeline with the coil upright. It is recommended to place a 150 mesh strainer upstream of the valve with a porosity ≤ 100μ.			


2E SERIES SOLENOID VALVE COMPONENTS
SCREW (STAINLESS STEEL)
LOCKING WASHER (STAINLESS STEEL)
WASHER (STAINLESS STEEL)
ENCAPSULATED COIL (PLASTIC)
DIN 43650 Form A (PLASTIC)
ARMATURE TUBE (STAINLESS STEEL)
SPRING, 2X (STAINLESS STEEL)
PLUNGER (STAINLESS STEEL)
SCREWS/WASHERS, 9X (STAINLESS STEEL)
VALVE BODY, 3X (STAINLESS STEEL)
O-RINGS, 3X (VITON/FKM)
PISTON (STAINLESS STEEL W/ PTFE SEAL)

Installation and Operation:

To connect the valve Inlet and Outlet:
Connect the inlet and outlet in the direction of the arrow marked on the valve.

To install coil:
Put the coil onto the armature tube of the valve. Put the lock-washer and nut onto the armature tube. Hand tighten the nut, then use a wrench to tighten the nut to a quarter turn; **do not over-tighten the nut, it may cause the armature tube to fail pre-maturely**.

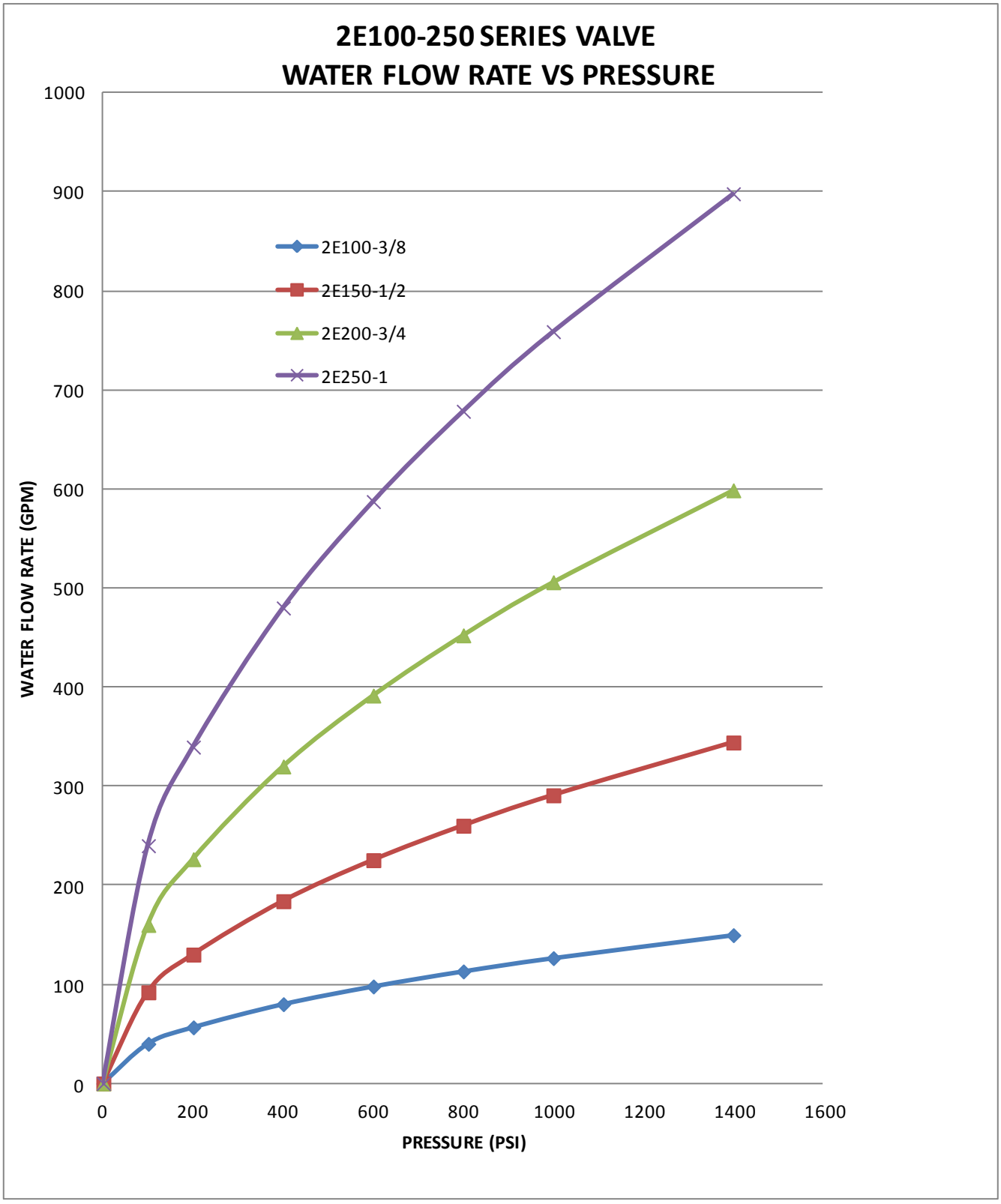
To connect DIN coil:
1. Remove the Philip screw from the plastic housing and unplug it from the DIN coil.
2. From the screw opening, push the terminal block out from the plastic housing.
3. Note the 1, 2 and ground markings on underside of DIN enclosure.
4. For DC DIN Coil, Connect 1 to Positive, 2 to Negative.
5. For AC DIN Coil, connect 1 to HOT wire, 2 to Neutral wire, and if required connect
6. **Do not energize the coil without installing it onto the valve, it will burn the coil and create fire hazards.**

Safety Note: Standard valves are supplied with continuous duty coils. The proper class of insulation for the service is indicated on the coil. The coil temperature may become hot after being energized for extended periods, but it is normal. Do not energize the coil without installing it onto the valve or connect the coil to a wrong voltage, as it may overheat and damage the coil; although the coil is made of flame retarded material, misuse of the coil in this manner could create fire hazards and generate smoke or burning odor which indicates excessive coil temperature and should disconnect the power to the coil immediately.

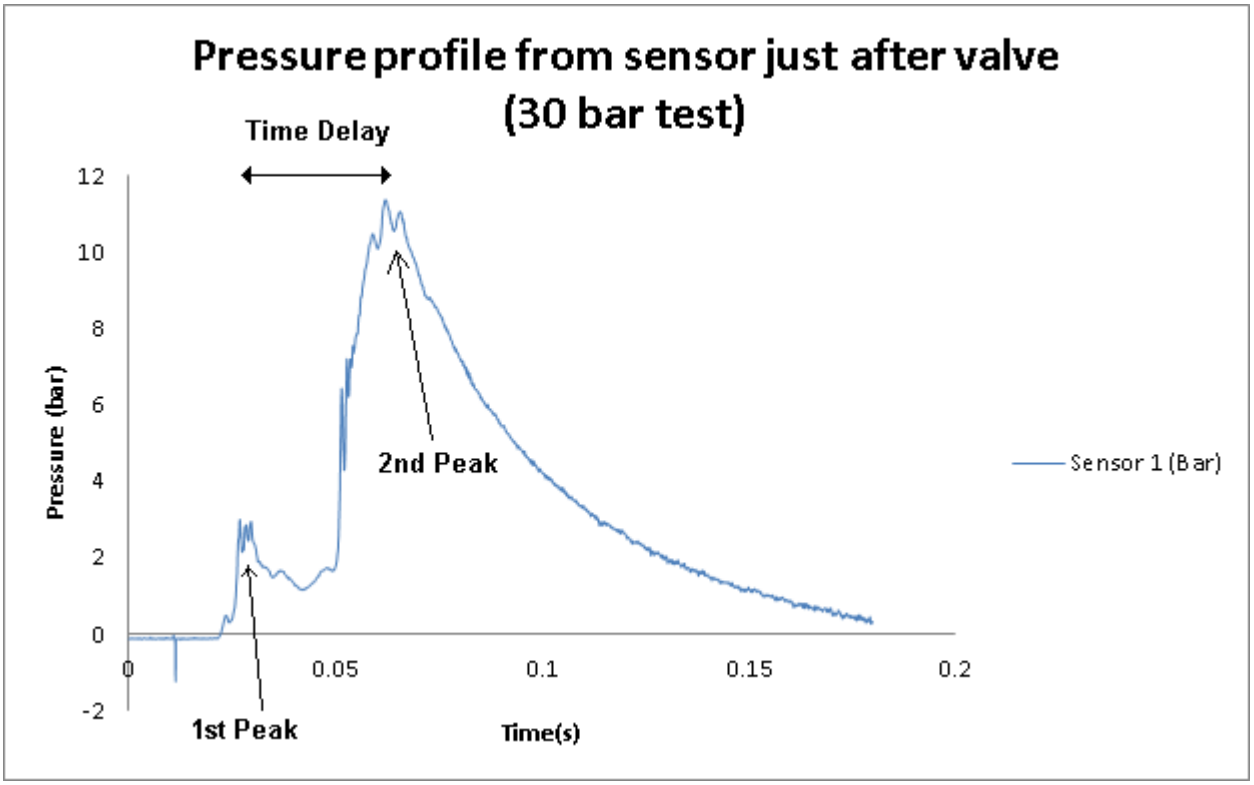
Operation: **2E series valve is a 2/2 Pilot Piston, Normally Closed Solenoid Valve.**

When the valve receives an electrical signal, a magnetic field is formed which attracts the plunger covering the main orifice to lift off, causing system pressure to drop. As system pressure on the top of the piston is reduced, full system pressure on the other side of the piston acts to lift the piston away from the main orifice, which allows media to flow through the valve. Since the bleed orifice is dimensionally smaller than the pilot orifice, the system pressure cannot rebuild on the top of the piston as long as the pilot orifice remains open.
When the valve is de-energized, it releases its hold on the plunger. Then the plunger forced by the spring drops and covers the main orifice. The system pressure builds up on the top of the piston through the bleed orifice, forcing the piston down until it covers the main orifice and stops media flow through the valve.

These valves are equipped with Teflon (PTFE) seals which is not elastic but is formable. It is because of this seal property, if the valve is used in low temperature, there may be small leak and the valve needs to be break-in to form a good mating surface between the seal and the valve orifice. Although the valve have been break-in at the factory level to make sure there is no leak, but due to shipping and installation, the break-in mating surface may have shifted and needs to break-in again, and this is very common.
This is accomplished by cycling the valve ON/OFF quickly at the operating pressure until no leak is observed.


2E100-250 SERIES VALVE
WATER FLOW RATE VS PRESSURE
WATER FLOW RATE (GPM)
PRESSURE (PSI)
2E100-3/8
2E150-1/2
2E200-3/4
2E250-1
0
100
200
300
400
500
600
700
800
900
1000
0
200
400
600
800
1000
1200
1400
1600

2E100-250 Series 2/2 Way High Pressure Solenoid Valve Response Time Profile



Conditions: High pressure air on one side (upto 30 bar) and water on other side (at 1 bar).

Courtesy of Hassan Abbas Khawaja, Researcher, High North Technology Centre, Narvik University College, Narvik, Norway

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