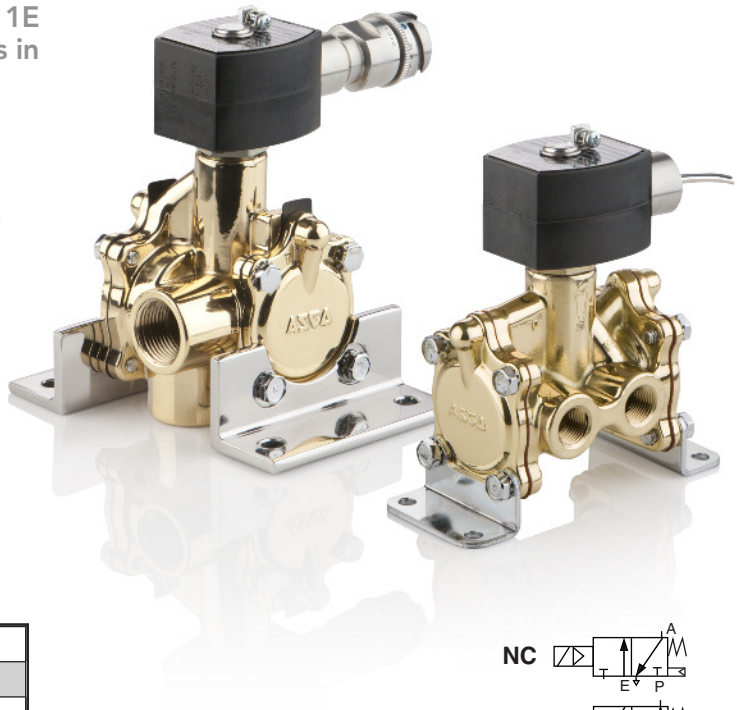
3-Way Solenoid
For Oil-Free Instrument Air
3/8", 1/2", 3/4", and 1" NPT

SERIES
NT8316

The NT Series, 3-way diaphragm-operated pilot controlled solenoid valve, is used primarily as a Class 1E safety-related pilot operator on larger control valves in nuclear power plants.

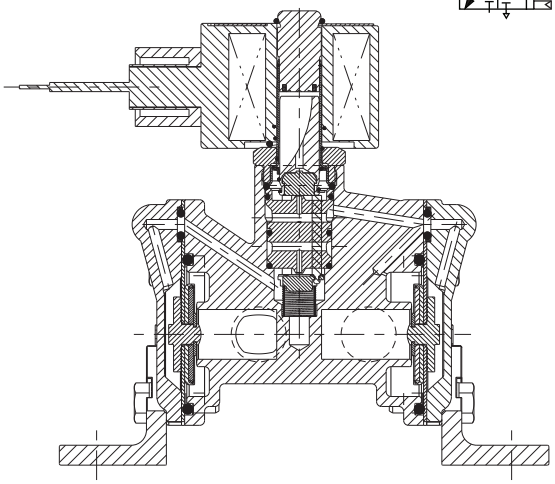
Qualification Report AQR 35115-3/AQR 100115



Features

- Elastomers (diaphragm, gaskets, o-rings, discs): resist high radiation, high temperature degradation effects
- Designed for integration into digital controls
- High flow and reverse flow capabilities
- DC valves have suppression diode
- Quick Disconnect Connector (QDC)*
- Field side connector supplied with up to 30 ft. leads, with a temp rating of 392˚F (200˚C)*
- One piece solenoid/coil design for ease of maintenance

*See Coil and connector order page



Construction

Valve Parts in Contact with Fluids	
Body	Brass
Diaphragm	Gamma +
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide (AC Model)	Brass
Springs	302 Stainless Steel
Seals and Disc	Gamma +
Disc-Holder	Stainless Steel
Pilot Cartridge	Brass

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			
		AC		
	DC Watts	Watts	VA Holding	VA Inrush
H	14.6	10.1	25	50

Replacement Coil Base Part Number
(without voltage and lead length)

Coil/Lead Type	DC		AC
	With Diode	Without Diode	
Peek Leads	G432267	G434924	G431786
Silicone Leads	G433397	G512230	G501520
Coil w/QDC	G438046	N/A	G438440

Nominal Voltages: 48, 125, or 250VDC; 120/60 or 220/50 AC.
Must be specified when ordering

Installation

- Solenoid can be mounted in any position without affecting operation
- High strength mounting brackets

Solenoid Enclosures

Standard: Watertight, Types 3, 3S, 4, & 4X

Nominal Ambient Temp. Ranges

32°F to 140°F (0°C to 60°C)

Approvals

CSA Certified.

Specifications

Pipe Size (in)	Orifice Size in (mm)	Operating Pressure Differential Air psi (bar)			Safe Working Pressure psi (bar)	Cv (Kv=m³/h) Flow Factor		Base Catalog Number	Watt Rating	
		Min.	Max. AC	Max. DC		Pressure to Cylinder	Cylinder to Exhaust		AC	DC
Normally Closed										
3/8	5/8 (16)	10 (0.7)	175 (12)	175 (12)	250 (17)	1.90 (1.63)	2.72 (2.33)	NT[ ] 8316G054 [ ]	10.1	14.6
1/2	5/8 (16)	10 (0.7)	175 (12)	175 (12)	250 (17)	2.90 (2.49)	3.27 (2.80)	NT[ ] 8316G064 [ ]	10.1	14.6
3/4	11/16 (17)	10 (0.7)	175 (12)	175 (12)	250 (17)	4.10 (3.51)	4.20 (3.60)	NT[ ] 8316G074 [ ]	10.1	14.6
1	1 (25)	10 (0.7)	175 (12)	175 (12)	250 (17)	14.42 (12.36)	11.75 (10.07)	NT[ ] 8316G034 [ ]	10.1	14.6
Normally Open										
3/8	5/8 (16)	10 (0.7)	175 (12)	175 (12)	250 (17)	2.00 (1.71)	2.79 (2.39)	NT[ ] 8316G056 [ ]	10.1	14.6
1/2	5/8 (16)	10 (0.7)	175 (12)	175 (12)	250 (17)	3.10 (2.66)	3.40 (2.91)	NT[ ] 8316G066 [ ]	10.1	14.6
3/4	11/16 (17)	10 (0.7)	175 (12)	175 (12)	250 (17)	4.10 (3.51)	4.27 (3.66)	NT[ ] 8316G076 [ ]	10.1	14.6
1	1 (25)	10 (0.7)	175 (12)	175 (12)	250 (17)	14.17 (12.14)	11.60 (9.94)	NT[ ] 8316G036 [ ]	10.1	14.6

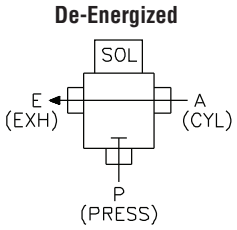
Note: See last page for a complete catalog number example and optional features.

Dimensions: inches (mm)

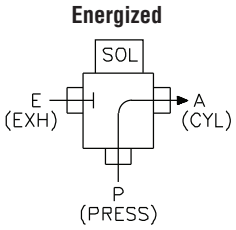
Flow Diagrams

Normally Closed

De-Energized

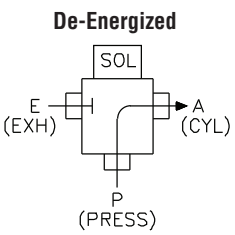


Energized

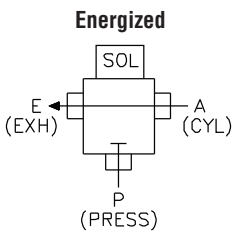


Normally Open

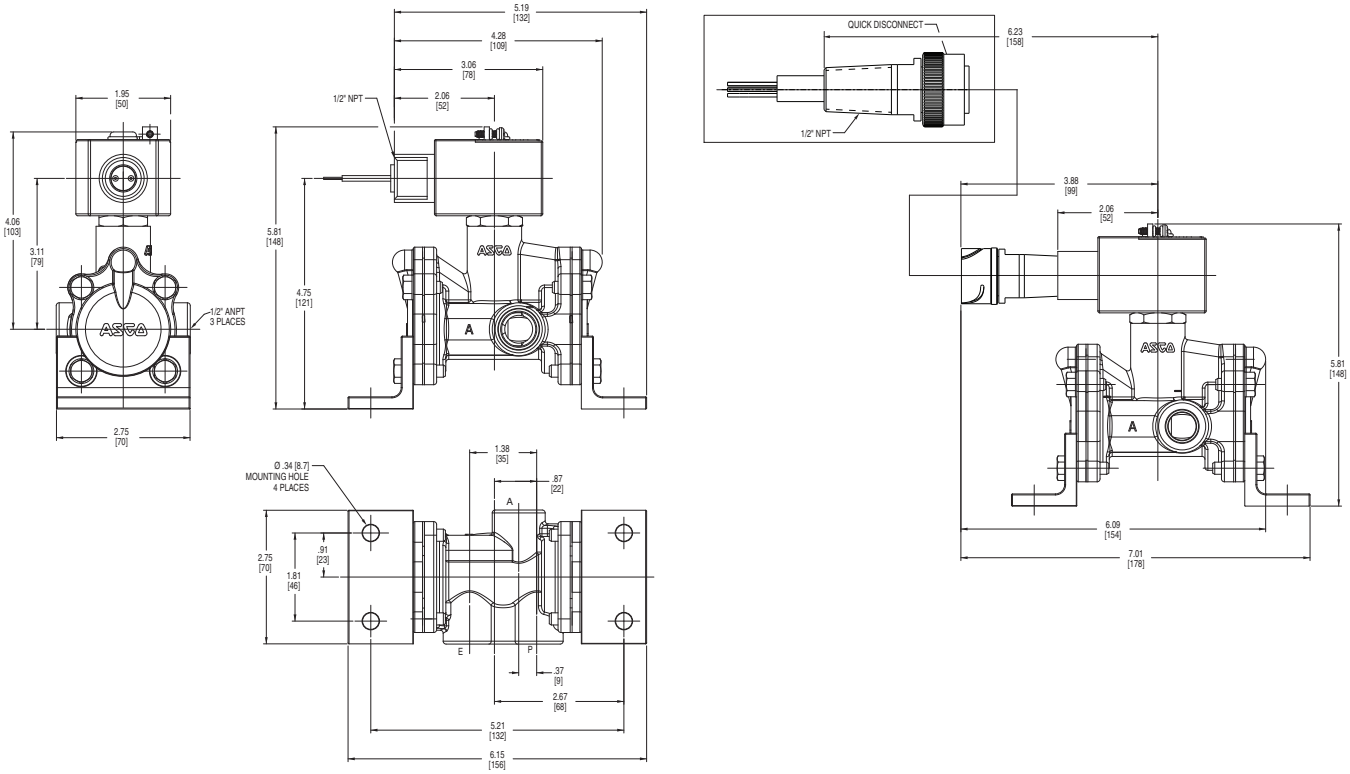
De-Energized



Energized

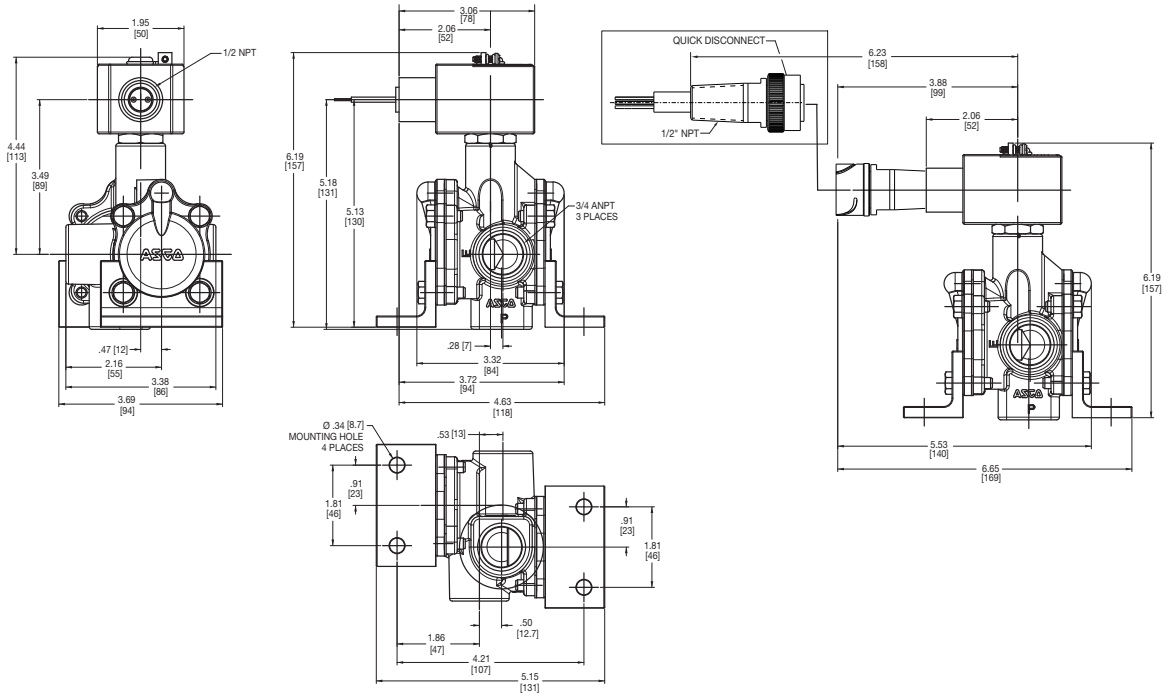


3/8" & 1/2" Pipe Size

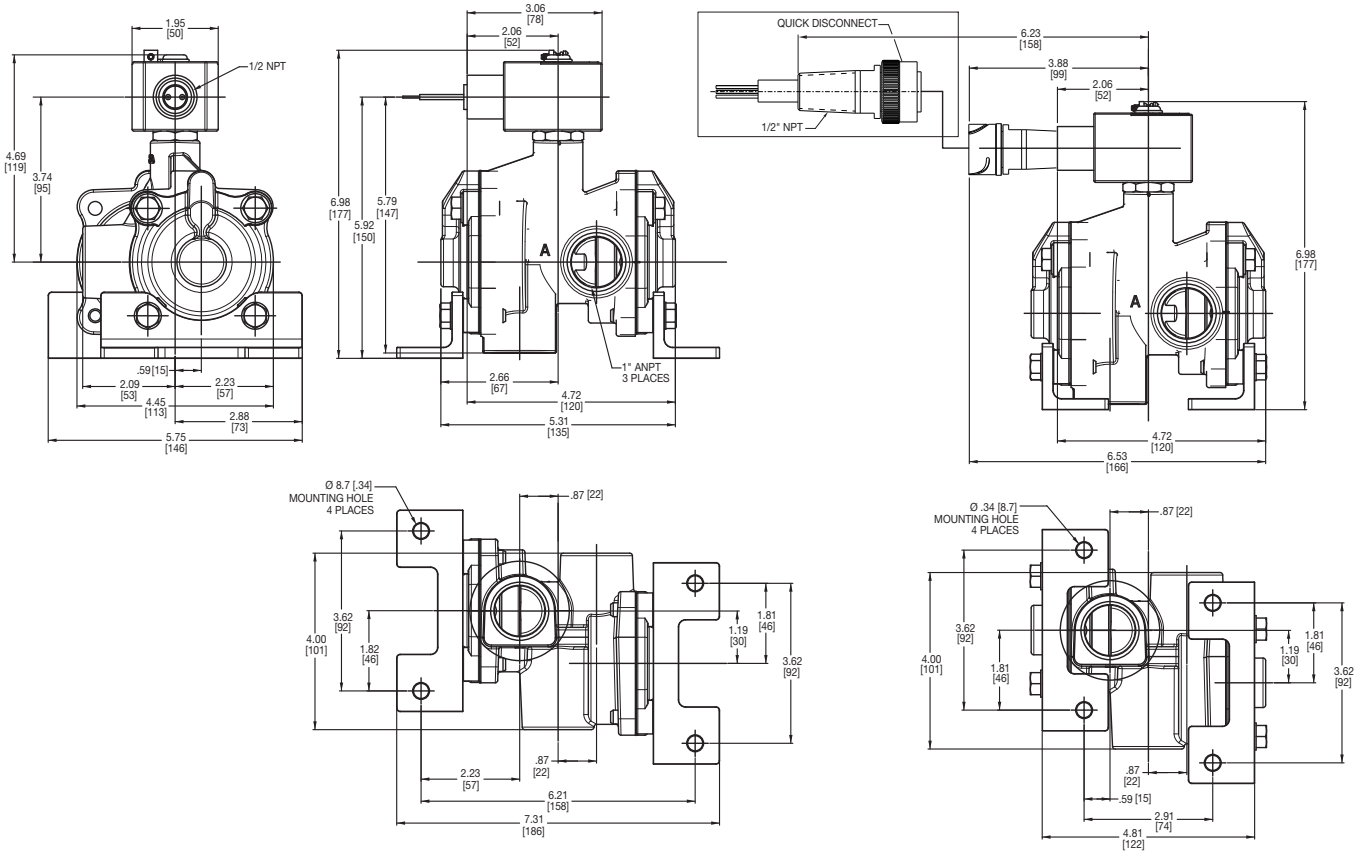


Dimensions: inches (mm)

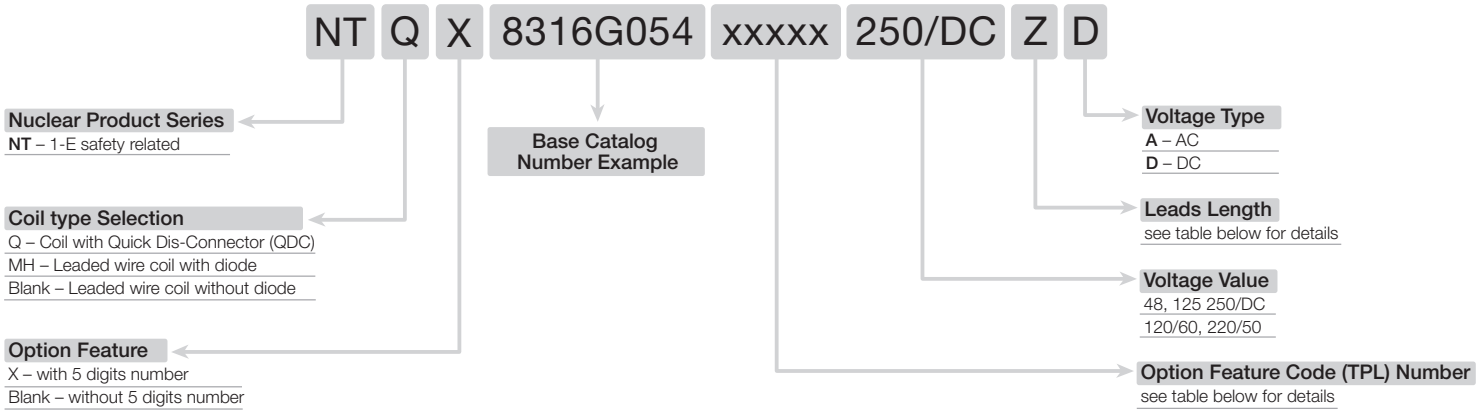
3/4" Pipe Size



1" Pipe Size



Ordering Example



Optional features table – "X" with 5 digits number

Valve Feature Option	"X" with Option Number
Valve with Suppression Diode Coil with ASCO QDC**	27253
Valve with Standard Coil with ASCO QDC	27252
Valve with Fiberglass Jacketed Silicone Lead Wire**	27233

Note: ** Suppression Diode Coil is for DC voltages only.

Field side QDC ordering information

Lead Wire Type	Field Side QDC P/N
PEEK Lead Wires	G437960-001-[ ]*
Jacketed Silicone Lead Wires	G437960-002-[ ]*

Lead length information for leaded coil & QDC field side

Length Code	Length (in)
D	18 (standard)
K	72
W	240
Z	360

Environmental Qualifications

- IEEE 323-1974/1983/ 2003
- IEEE 382-1996/ 2006
- EMC Type Testing: Meets Regulatory Guide 1.180
- Up to 170 Megarads Gamma Radiation
- 20,000 Mechanical Cycles

Design Basis Event

- HELB: 14 days @ 485°F (251°C) Peak plus 30 days post accident aging , covers AP1000 Zones 5 & 10
- LOCA: Double Peaks, 30 days @ 440°F (227°C) Maximum, covers IEEE 323-1983/2003; AP1000 Zone 1, Groups 2, 3, 7, 9 (Mild Environment), Group 6 (Harsh Environment)

Seismic Qualification

- IEEE 344-1975/1987/ 2004
- Required Input Motion (RIM) Operation Basis Earthquake (OBE): 4.0 g peak; Safe Shutdown Earthquake (SSE): 6.0 peak at 2.0-64.00 Hz
- Certified Seismic Design Response Spectra (CSDRS) & Hard Rock High Frequency (HRHF) SSE input: 6.0 g's @ 5% damping