

valves

# **Poppet Valves**

*for Compressed Air and Vacuum*



# numatics®

<b>Poppet Valves</b> .....	3-20
How to Order .....	3
<b>NF Series - Solenoid Pilot Actuated</b> .....	4-8
1/8" to 3/8" Technical Data .....	4
1/8" to 3/8" Dimensions .....	5
1/2" to 1-1/2" Technical Data .....	6
1/2" to 1-1/2" Dimensions .....	7-8
<b>NF Series - Air Pilot Actuated</b> .....	9-12
1/8" to 1-1/2" Technical Data .....	9
1/8" to 3/8" Dimensions .....	10
1/2" to 1-1/2" Dimensions .....	11-12
<b>NF Series - Solenoid Air Pilot &amp; Air Pilot Actuated</b> .....	13-17
1/4" to 3/8" Technical Data .....	13
1/4" to 3/8" Dimensions .....	14
1/2" to 1-1/2" Technical Data .....	15
1/2" to 1-1/2" Dimensions .....	16-17
<b>NM Series - Foot Pedal Valve</b> .....	18
<b>Accessories - Coils, Repair Kits, Pipe Plugs</b> .....	19
<b>FAQs &amp; Additional Information</b> .....	20



### For Compressed Air and Vacuum

The Numatics Poppet Valves are ideal for single acting cylinders, Air Bellows and vacuum material handling.

- CAD Drawings Available
- High Flow
- Rugged Design
- Bubble Tight
- Low Cost
- CSA and CE Approved



### How to Order

NF 1 BA N 52 4 N 000 61

#### Valve Series

NF = Poppet for Compressed Air  
NG = Poppet for Vacuum

#### Port Size

1 = 1/8"  
2 = 1/4"  
3 = 3/8"  
4 = 1/2"  
5 = 3/4"  
6 = 1"  
8 = 1-1/2"

#### Valve Actuator

BA = Solenoid pilot with spring return  
PA = Air pilot with spring return

#### Valve Function

G = 2 Position 2-way Normally Closed (non-passing)  
N = 2 Position 3-way Normally Closed (non-passing)  
P = 2 Position 3-way Normally Open (passing)

#### Mounting

52 = Line mounted (ports in valve body)

#### Wiring Options

O = No wiring - Air piloted  
2 = DIN Style Plug-in solenoid, AC voltage  
4 = DIN Style Plug-in solenoid, DC voltage

#### Port Type

N = NPTF Pressure ports

#### Voltage

00 = Air Pilot  
30 = 110VAC/50-60Hz  
40 = 220VAC/50-60Hz  
60 = 12VDC  
61 = 24VDC

#### Special Options

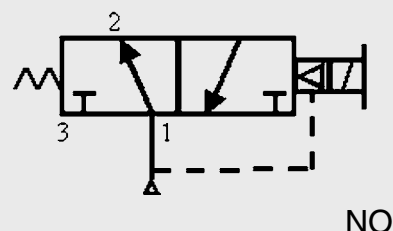
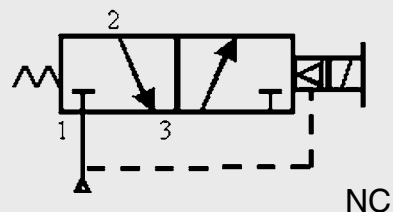
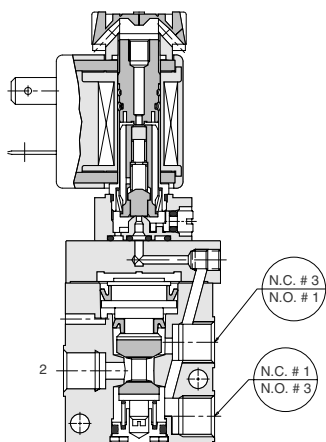
000 = No Option  
14A = External pilot (standard on air pilot only valves)  
11M = No manual override access  
66W = Field installable electrical connector included w/light  
60T = Field installable electrical connector included w/o light  
68C = (14A) External pilot (standard air pilot only valves) + (11M) no manual override access  
68D = (11M) No manual override access + (66W) Field installable electrical connector included w/light  
68E = (14A) External pilot (standard air pilot only valves) + (66W) field installable electrical connector included w/light  
68F = (11M) No manual override access + (60T) Field installable electrical connector included w/o light  
68G = (14A) External pilot (standard air pilot only valves) + (60T) field installable electrical connector included w/o light  
69A = (11M) No manual override + (14A) External pilot (standard on air pilot only valves) + (66W) Field installable electrical connector included w/light  
69B = (11M) No manual override + (14A) External pilot (standard on air pilot only valves) + (60T) Field installable electrical connector included w/o light



## Poppet Valves NF Series

### Solenoid Pilot Actuated - 1/8" to 3/8"

- 3-way design
- Use with air or neutral gas
- AC & DC voltages available



**NOTE:** 3-ported, 2 position valve (1/8" to 3/8") can be converted to a 2 way valve by inserting a pipe plug into the exhaust port.

### Technical Data

PORTS (NPTF)	1/8"	1/4"	3/8"
Cv	0.5	1.8	2
Flow Capacity	23 SCFM* (492 NI/min)**	83 SCFM* (1773 NI/min)**	93 SCFM* (1970 NI/min)**
*80 PSIG upstream pressure to atmosphere downstream **6 Bar upstream to 5 Bar downstream			
Operating Pressure Range	24-145 PSIG (1.7 - 10 Bar)		
Temperature Range	23° to +122°F ambient (-5° to +50°C ambient)		
Coil Type	U1 Series Coil		

### Operating Data

VOLTAGE	12VDC	24VDC	110 VAC 50-60Hz	220 VAC 50-60Hz
Power Consumption	3.5W	3.5W	max 5VA	max 5VA
In-rush Current	3.5W	3.5W	max 7.8VA	max 7.8VA

Plug Specifications: NEMA 4, IP 65 with plug-in connector  
Solenoid Rating: Continuous Duty

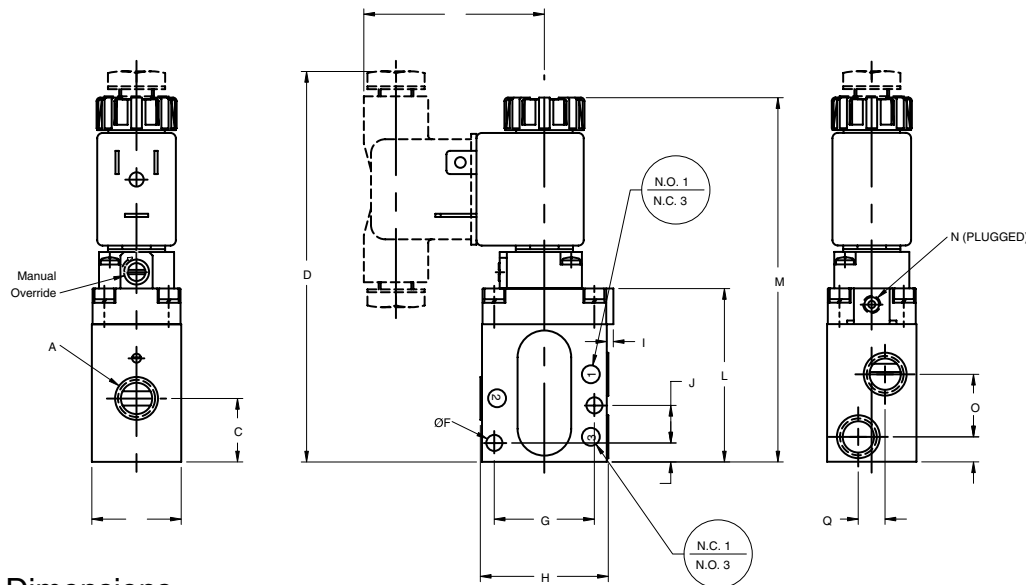


RESPONSE TIME (SECONDS)	ENERGIZE	DE-ENERGIZE
1/8" (NC)	0.015	0.020
1/2" & 3/4" (NO)	0.030	0.023
1" (NC)	0.015	0.030

NC: normally closed NO: normally open



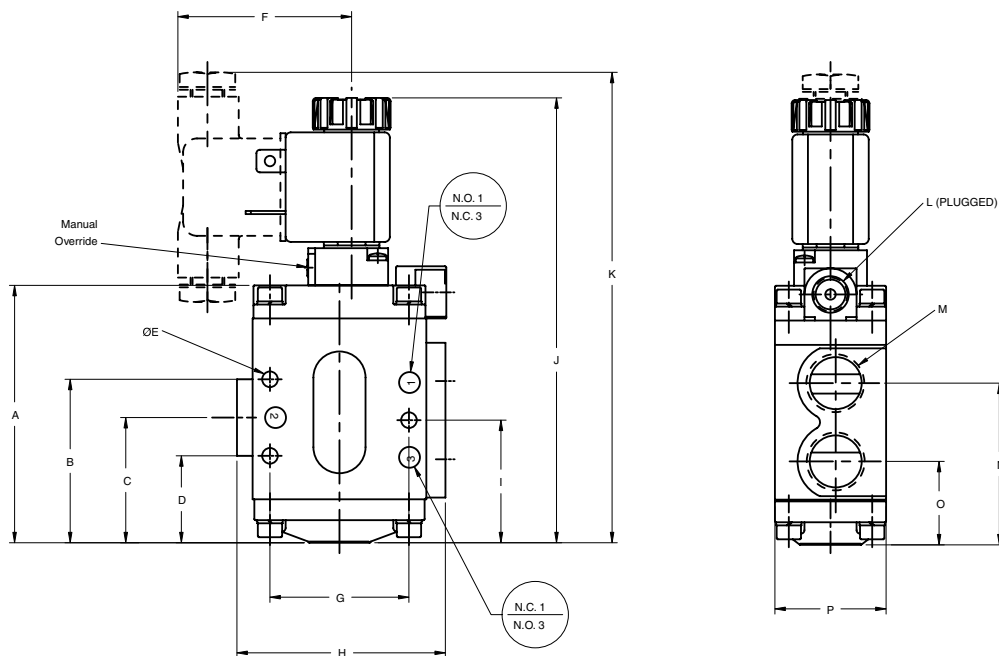
### 1/8" to 3/8" Dimensions for Solenoid Pilot Actuated



#### 1/8" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1/8" NPT	0.984 (25.0)	0.699 (17.8)	4.488 (114.0)	1.969 (50.0)	0.177 (4.5)	1.102 (28.0)	1.417 (36.0)	0.073 (1.9)	0.413 (10.5)	0.209 (5.3)	1.909 (48.5)	4.016 (102.0)	(M5)	0.689 (17.5)	0.276 (7.0)	0.295 (7.5)

### 1/4" to 3/8" Dimensions for Solenoid Pilot Actuated



#### 1/4" to 3/8" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
2.913 (74.0)	1.850 (47.0)	1.417 (36.0)	0.984 (25.0)	0.177 (4.5)	2.028 (51.5)	1.575 (40.0)	2.362 (60.0)	1.398 (35.5)	5.079 (129.0)	5.354 (136.0)	1/8" NPT	1/4" or 3/8" NPT	1.850 (47.0)	0.945 (24.0)	0.945 (24.0)

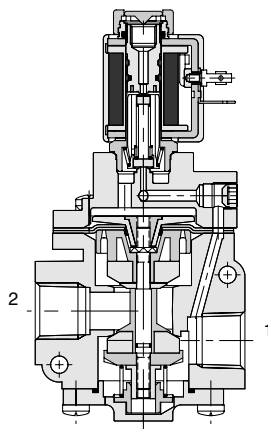
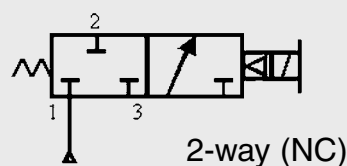
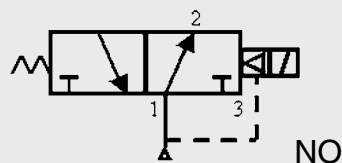
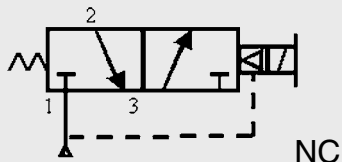
Dimensions = inches  
(in parentheses) = mm



## Poppet Valves NF Series

### Solenoid Pilot Actuated - 1/2" to 1-1/2"

- 3-way design & 2-way design
- Use with air or neutral gas
- Solenoid pilot actuated
- AC & DC voltages available



#### NOTE:

- Always Supply Port #1
- Manual override (11M) is not available on N/O (normally open) valves
- Port 3 Cv must not be restricted.

- Normally open valve is a normally closed function using a normally open pilot operator

NOTE: 1/2" to 1-1/2" valves cannot be converted to a 2 ported (2-way), 2 position valve. If a 2-way valve is required, it must be ordered as a 2-way.

## Technical Data

PORTS (NPTF)	1/2"	3/4"	1"	1-1/2"
Cv	5	5.6	8.8	24
Flow Capacity	232 SCFM* (4924 NI/min)**	260 SCFM* (5515 NI/min)**	407 SCFM*** (8667 NI/min)**	1111 SCFM**** (23637 NI/min)**
	*80 PSIG upstream pressure to atmosphere downstream** **6 Bar upstream to 5 Bar downstream		***70 PSIG upstream pressure to atmosphere downstream ****60 PSIG upstream pressure to atmosphere downstream	
Operating Pressure Range	30-145 PSIG (2 - 10 Bar)		32-145 PSIG (2.2 - 10 Bar)	36-145 PSIG (2.5 - 10 Bar)
Temperature Range	23°F to +122°F ambient (-5°C to +50°C ambient)			
Coil Type	U2 Series Coil			

## Operating Data

VOLTAGE	12VDC	24VDC	110 VAC 50-60Hz	220 VAC 50-60Hz
Power Consumption	11W	11W	max 10VA	max 10VA
In-rush Current	11W	11W	max 16VA	max 16VA

Plug Specifications: NEMA 4, IP 65 with plug-in connector  
Solenoid Rating: Continuous Duty

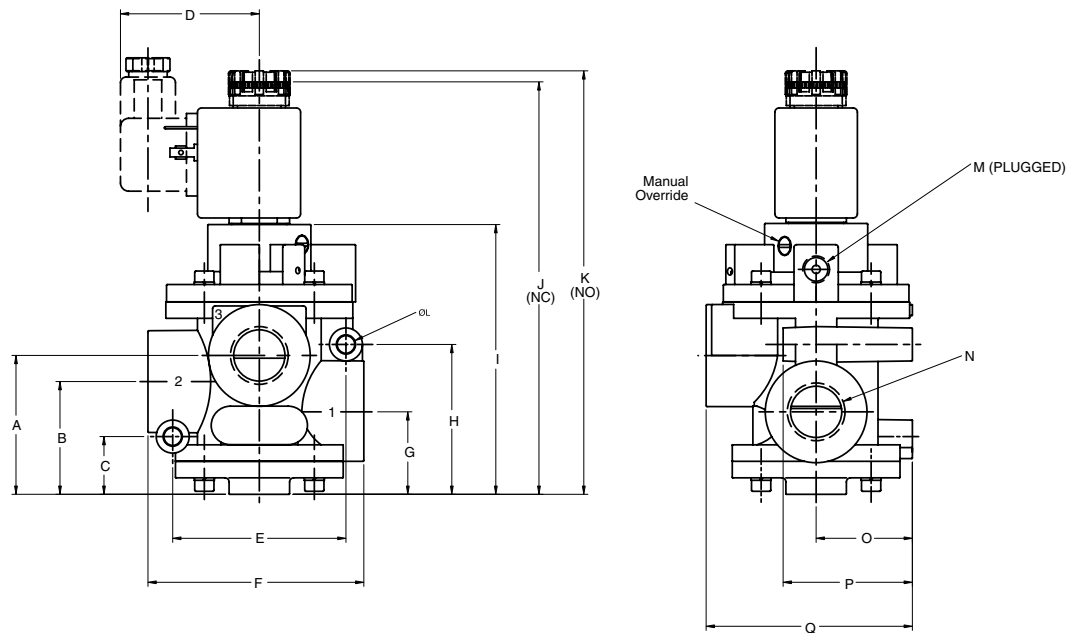


RESPONSE TIME (SECONDS)	ENERGIZE	DE-ENERGIZE
1/2" & 3/4" (NC)	0.017	0.027
1/2" & 3/4" (NO)	0.030	0.022
1" (NC)	0.020	0.032
1" (NO)	0.028	0.023
1-1/2" (NC)	0.047	0.022
1-1/2" (NO)	0.055	0.020

NC: normally closed NO: normally open

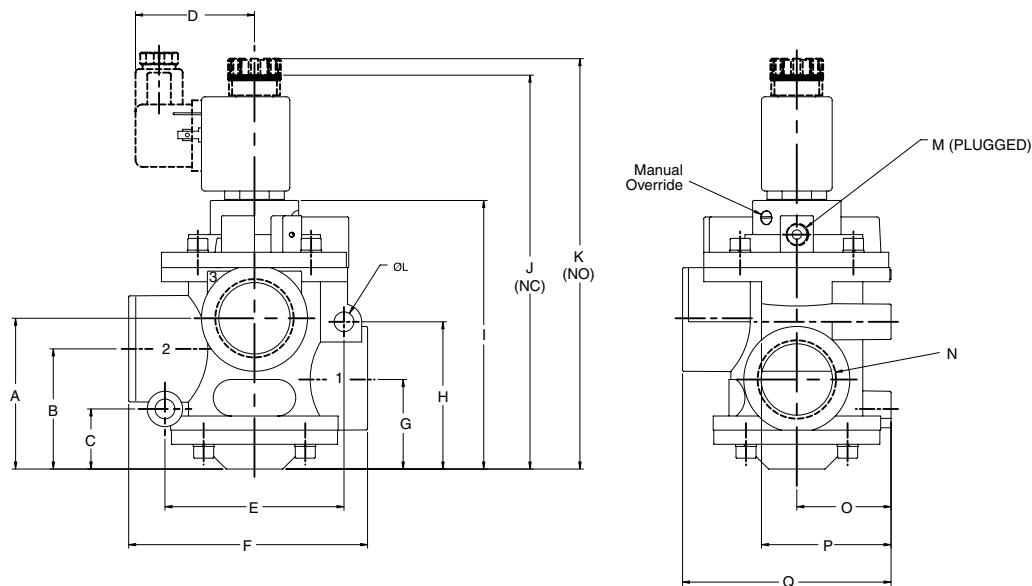


### 1/2" TO 1" Dimensions for Solenoid Pilot Actuated



### 1/2" & 3/4" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1.988 (50.0)	1.614 (41.0)	0.827 (21.0)	1.988 (50.5)	2.480 (63.0)	3.091 (78.5)	1.181 (30.0)	2.146 (54.5)	3.996 (101.5)	5.906 (150.0)	6.063 (154.0)	0.252 (6.4)	1/8" NPT	1/2" to 3/4" NPT	1.378 (35.0)	1.850 (47.0)	2.953 (75.0)



### 1" NPT Dimensions

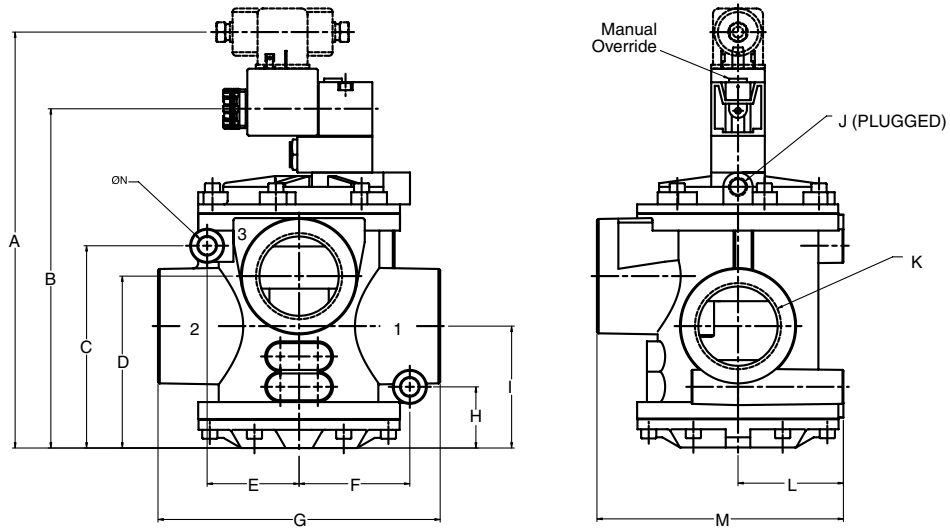
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
2.520 (64.0)	2.008 (51.0)	1.004 (25.5)	1.969 (50.0)	2.992 (76.0)	3.976 (101.0)	1.496 (38.0)	2.461 (62.5)	4.528 (115.0)	6.575 (167.0)	6.850 (174.0)	0.331 (8.4)	1/8" NPT	1" NPT	1.575 (40.0)	2.165 (55.0)	3.504 (89.0)





## Poppet Valves NF Series

### 1-1/2" Dimensions for Solenoid Pilot Actuated

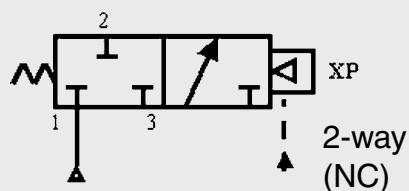
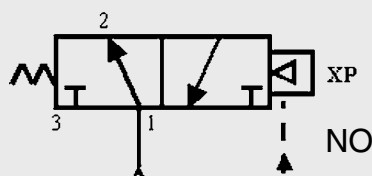
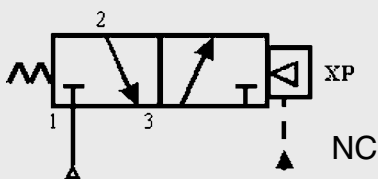


Dimensions = inches  
(in parentheses) = mm

### 1-1/2" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M	N
9.173 (233.0)	7.480 (190.0)	4.449 (113.0)	3.780 (96.0)	2.028 (51.5)	2.441 (62.0)	6.220 (158.0)	1.339 (34.0)	2.677 (68.0)	1/8" NPT	1-1/2" NPT	2.323 (59.0)	5.433 (138.0)	0.394 (10.0)

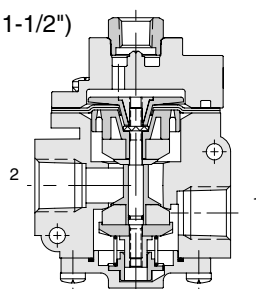




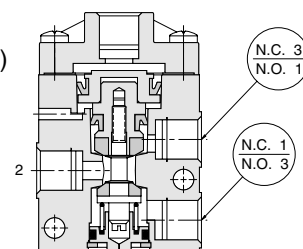
### Air Pilot Actuated Valves - 1/8" to 1-1/2"

- 3-way & 2-way design
- Air pilot actuated
- Use with air or neutral gases
- For lubricated or non-lubricated service

(1/2" to 1-1/2")



(1/8" to 3/8")



NOTE: 1/2" to 1-1/2" not available in (NO).

NOTE: Always supply Port 1.

NOTE: 3-ported, 2 position valve (1/8" to 3/8") can be converted to a 2 way valve by inserting a pipe plug into the exhaust port.

NOTE: 1/2" to 1-1/2" valves cannot be converted to a 2 ported (2-way), 2 position valve. If a 2-way valve is required, it must be ordered as a 2-way.

### Technical Data

PORTS (NPTF)	1/8"	1/4"	3/8"
Cv	0.5	1.8	2
Flow Capacity	23 SCFM* (492 NI/min)**	83 SCFM* (1773 NI/min)**	93 SCFM* (1970 NI/min)**
*80 PSIG upstream pressure to atmosphere downstream **6 Bar upstream to 5 Bar downstream			
Operating Pressure Range	24-145 PSIG (1.7 - 10 Bar)		
Pilot Pressure	Minimum 58% of Operating Pressure		Minimum 67% of operating pressure
Temperature Range	23° to +122°F ambient (-5° to +50°C ambient)		

PORTS (NPTF)	1/2"	3/4"	1"	1-1/2"
Cv	5	5.6	8.8	24
Flow Capacity	232 SCFM* (4924 NI/min)**	260 SCFM* (5155 NI/min)**	407 SCFM*** (8667 NI/min)**	407 SCFM**** (8667 NI/min)**
	*80 PSIG upstream pressure to atmosphere downstream **6 Bar upstream to 5 Bar downstream		***70 PSIG upstream pressure to atmosphere downstream ****60 PSIG upstream pressure to atmosphere downstream	
Operating Pressure Range	32-145 PSIG (2.2 - 10 Bar)			36-145 PSIG (2.5 - 10 Bar)
Pilot Pressure	Minimum 67% of operating pressure			
Temperature Range	23° to +122°F ambient (-5° to +50°C ambient)			

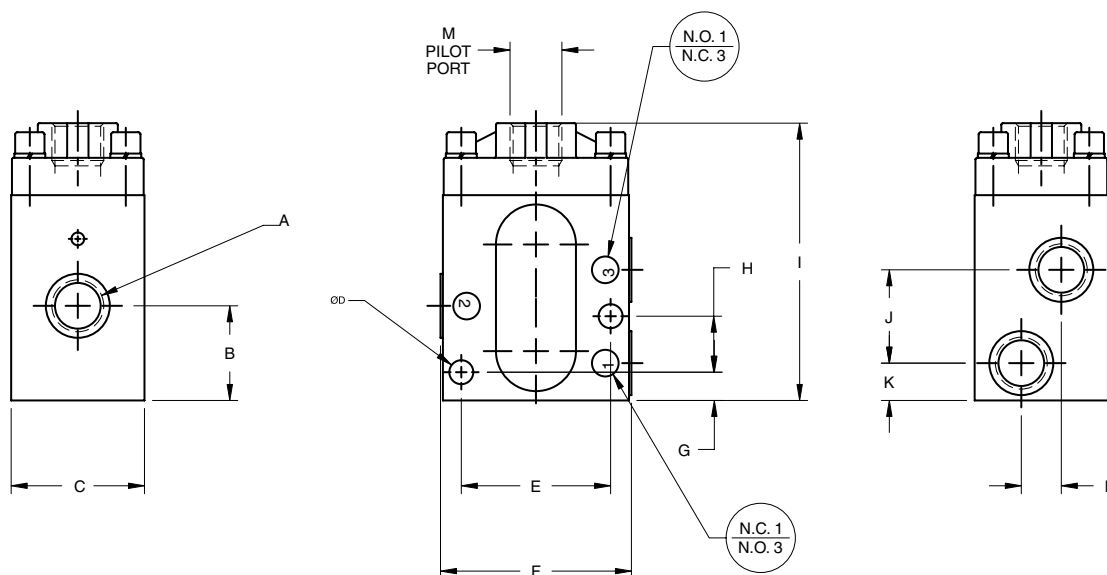
RESPONSE TIME (SECONDS)	ENERGIZE	DE-ENERGIZE
1/8" (NC, NO)	0.005	0.008
1/4" & 3/8" (NC, NO)	0.005	0.007
1/2" & 3/4" (NC)	0.007	0.010
1" (NC)	0.010	0.012
1-1/2" (NC)	0.036	0.015

NC: normally closed NO: normally open



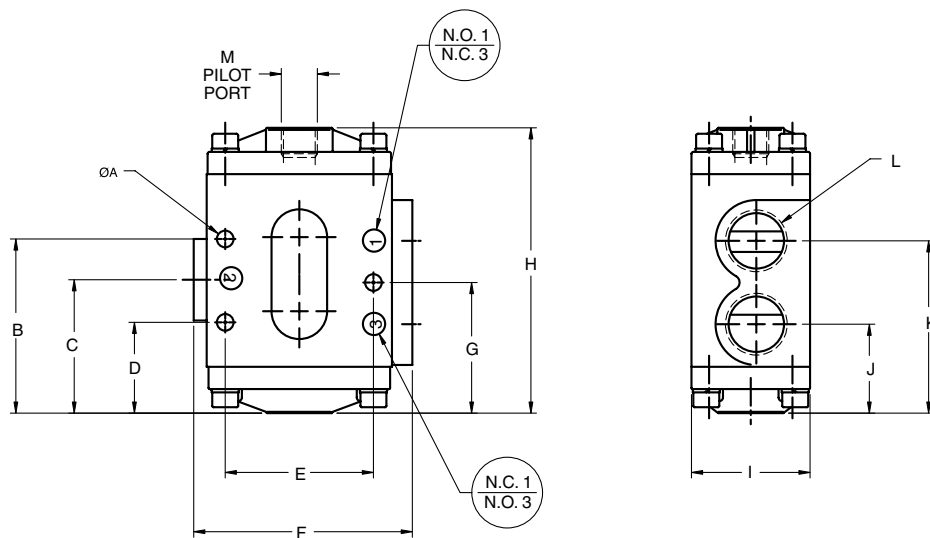
## Poppet Valves NF Series

### 1/8" to 3/8" Dimensions for Air Pilot Actuated



### 1/8" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M
1/8" NPT	0.699 (17.8)	0.984 (25.0)	0.177 (4.5)	1.102 (28.0)	1.417 (36.0)	0.209 (5.3)	0.413 (10.5)	1.988 (50.5)	0.689 (17.5)	0.276 (7.0)	0.295 (7.5)	1/8" NPT

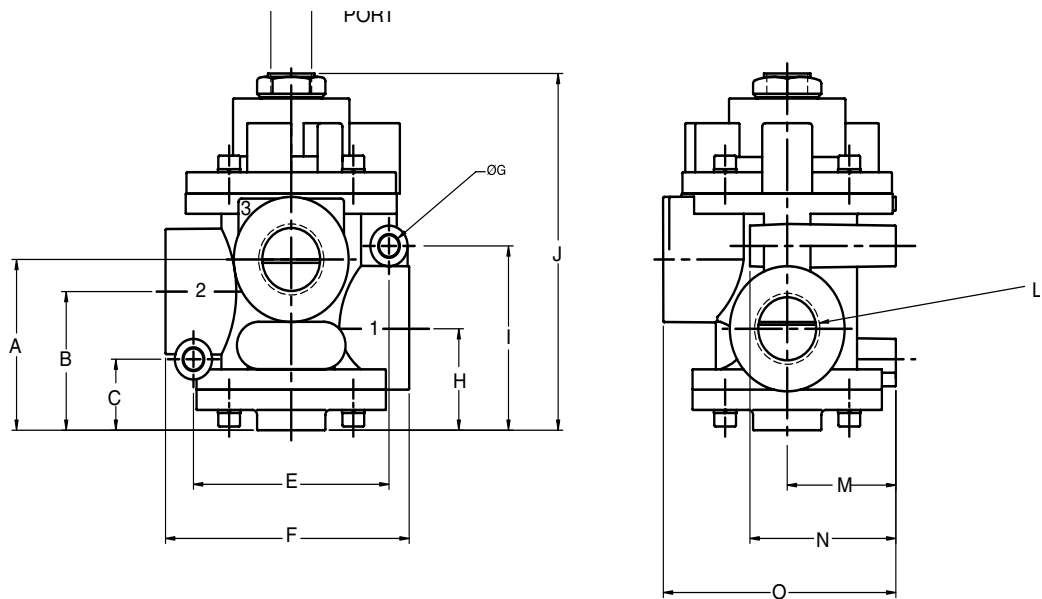


### 1/4" & 3/8" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M
0.177 (4.5)	1.850 (47.0)	1.417 (36.0)	0.945 (24.0)	1.575 (40.0)	2.362 (60.0)	1.398 (35.5)	3.031 (77.0)	1.260 (32.0)	0.945 (24.0)	1.850 (47.0)	1/4" or 3/8" NPT	1/8" NPT



### 1/2" to 1" Dimensions for Air Pilot Actuated

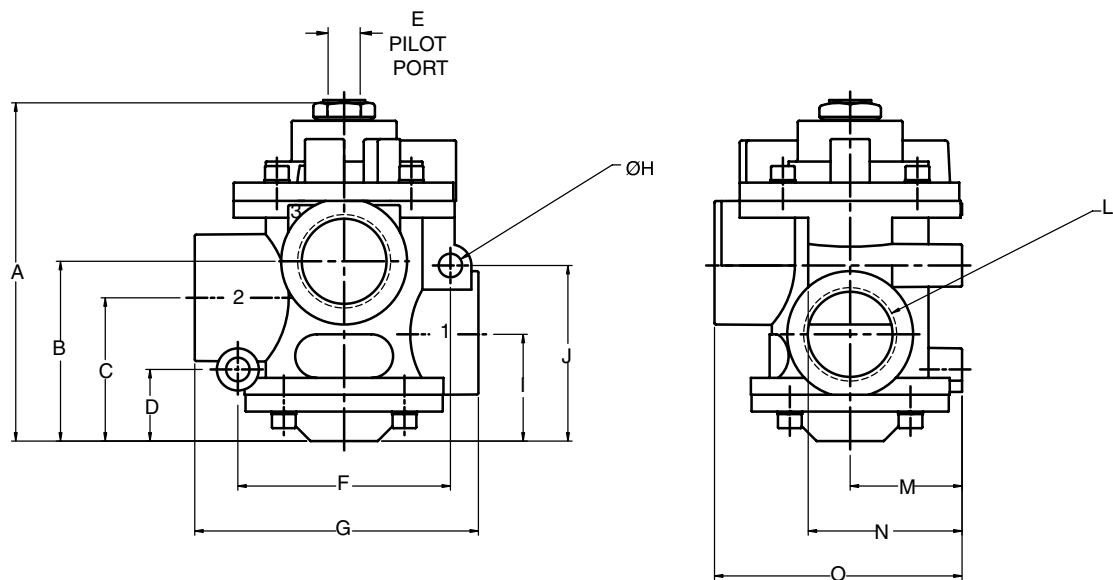


Dimensions = inches  
(in parentheses) = mm

### 1/2" & 3/4" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	L	M	N	O
1.988 (50.5)	1.614 (41.0)	0.827 (21.0)	1/4" NPT	2.480 (63.0)	3.091 (78.5)	0.252 (6.4)	1.181 (30.0)	2.146 (54.5)	4.134 (105.0)	1/2" TO 3/4" NPT	1.378 (35.0)	1.850 (47.0)	2.953 (75.0)

### 1" to 1-1/2" Dimensions for Air Pilot Actuated



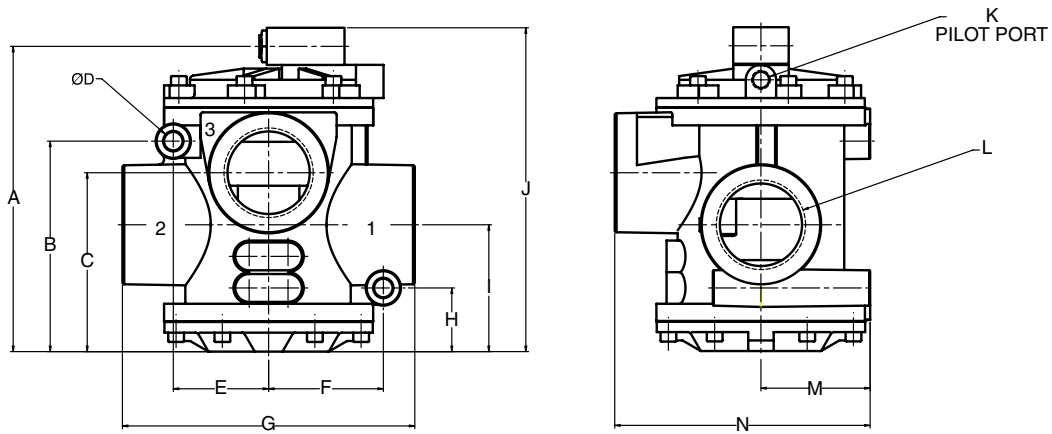
### 1" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	L	M	N	O
4.744 (120.5)	2.520 (64.0)	2.008 (51.0)	1.004 (25.5)	1/4" NPT	2.992 (76.0)	3.976 (101.0)	0.331 (8.4)	1.496 (38.0)	2.461 (62.5)	1" NPT	1.575 (40.0)	2.165 (55.0)	3.484 (88.5)



## Poppet Valves NF Series

### 1-1/2" Dimensions for Air Pilot Actuated



### 1-1/2" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M	N
6.467 (164.3)	4.449 (113.0)	3.780 (96.0)	0.433 (11.0)	2.028 (51.5)	2.441 (62.0)	6.220 (158.0)	1.339 (34.0)	2.677 (68.0)	6.860 (174.3)	1/8" NPT	1-1/2" NPT	2.323 (59.0)	5.433 (138.0)

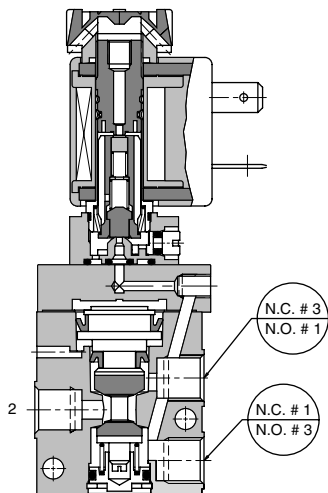
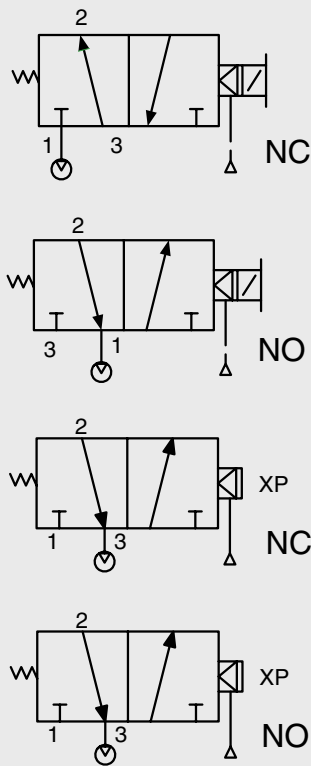
Dimensions = inches  
(in parentheses) = mm



## Poppet Valves NG Series

### Solenoid Air Pilot and Air Pilot Actuated Vacuum Valves - 1/4" to 3/8"

- Solenoid External Air Pilot Actuated
- 3 ported, 2 position
- For lubricated or non lubricated service
- Diaphragm actuated
- Polyurethane diaphragm



Note: For Air Pilot information and dimensions refer to pages 8, 9 & 10

### Technical Data

PORTS (NPTF)	1/4"	3/8"
Cv	1.8	2
Operating Vacuum Range	Maximum 29.9" of Hg (759.5 mm of Hg)	
Pilot Range	36 - 145 PSIG (2.5 - 10 Bar)	
Temperature Range	23°F to +122°F ambient (-5°C to +50°C ambient)	
Coil Type	U2 Series Coil	

### Operating Data

VOLTAGE	12VDC	24VDC	110 VAC 50-60Hz	220 VAC 50-60Hz
Power Consumption	11W	11W	max 10VA	max 10VA
In-rush Current	11W	11W	max 16VA	max 16VA

Plug Specifications: NEMA 4, IP 65 with plug-in connector  
Solenoid Rating: Continuous Duty



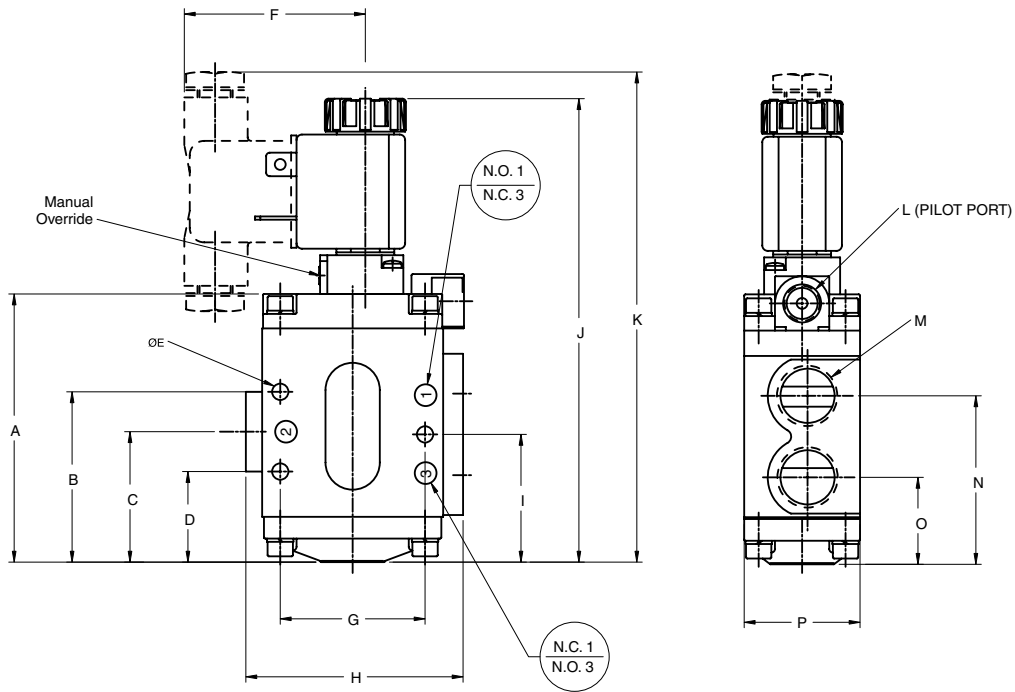
RESPONSE TIME (SECONDS)	ENERGIZE	DE-ENERGIZE
1/4" & 3/8" (NC)	0.016	0.027
1/4" & 3/8" (NO)	0.016	0.027

NC: normally closed NO: normally open



## Poppet Valves NAG Series

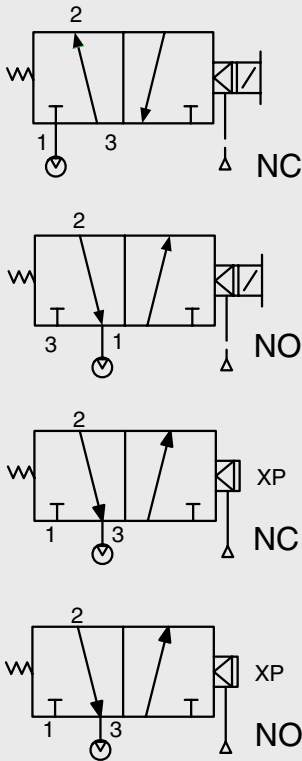
### 1/4" to 3/8" Dimensions for Solenoid Air Pilot and Air Pilot Actuated Vacuum Valves



### 1/4" & 3/8" NPT Dimensions

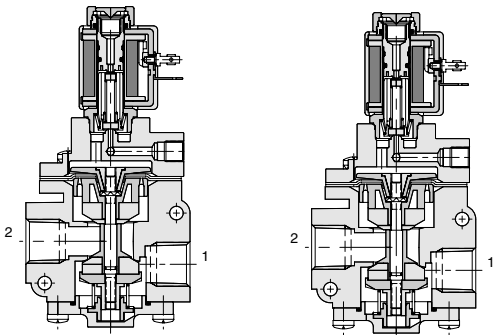
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
2.913 (74.0)	1.850 (47.0)	1.417 (36.0)	0.984 (25.0)	0.177 (4.5)	1.969 (50.0)	1.575 (40.0)	2.362 (60.0)	1.398 (35.5)	5.079 (129.0)	5.354 (136.0)	1/8" NPT	1/4" or 3/8" NPT	1.850 (47.0)	0.945 (24.0)	1.260 (32.0)

Dimensions = inches  
(in parentheses) = mm



### Solenoid Air Pilot and Air Pilot Actuated Vacuum Valves - 1/2" to 1-1/2"

- Solenoid External Air Pilot Actuated
- 3 ported, 2 position
- For lubricated or non lubricated service
- Diaphragm actuated
- Polyurethane diaphragm



NOTE: Port 3 Cv must not be restricted



### Technical Data

PORTS (NPTF)	1/2"	3/4"	1"	1-1/2"
Cv	5	5.6	8.8	24
Operating Vacuum Range	10" - 29.9" of Hg (759.5 mm of Hg)			
Pilot Pressure	43 - 145 PSIG (3 - 10 Bar)		58 - 145 PSIG (4 - 10 Bar)	
Temperature Range	23°F to +122°F ambient (-5°C to +50°C ambient)			
Coil Type	U2 Series Coil			

### Operating Data

VOLTAGE	12VDC	24VDC	110 VAC 50-60Hz	220 VAC 50-60Hz
Power Consumption	11W	11W	max 10VA	max 10VA
In-rush Current	11W	11W	max 16VA	max 16VA

Plug Specifications: NEMA 4, IP 65 with plug-in connector  
Solenoid Rating: Continuous Duty



RESPONSE TIME (SECONDS)	ENERGIZE	DE-ENERGIZE
1/2" & 3/4" (NC)	0.016	0.040
1/2" & 3/4" (NO)	0.016	0.040
1" (NC)	0.018	0.042
1" (NO)	0.018	0.042
1-1/2" (NC)	0.060	0.038
1-1/2" (NO)	0.060	0.038

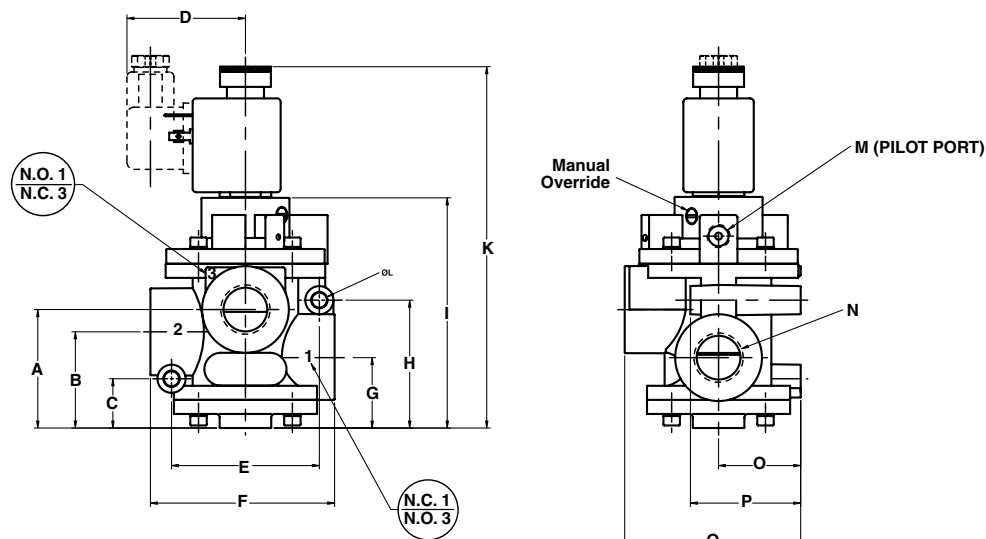
NC: normally closed NO: normally open





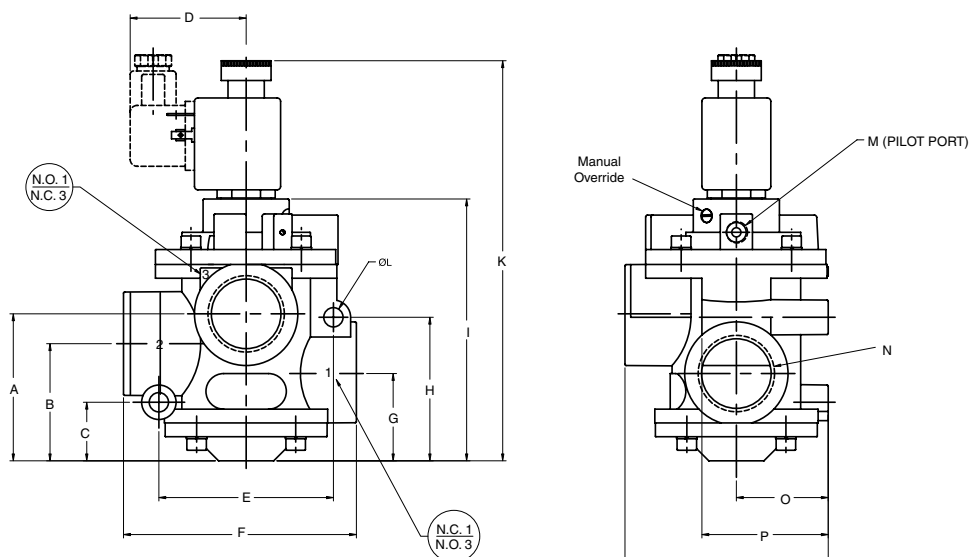
## Poppet Valves NG Series

### 1/2" to 1" Dimensions for Solenoid Air Pilot and Air Pilot Actuated Vacuum Valves



### 1/2" & 3/4" NPT Dimensions

A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q
1.988 (50.5)	1.614 (41.0)	0.827 (21.0)	1.988 (50.5)	2.480 (63.0)	3.091 (78.5)	1.181 (30.0)	2.146 (54.5)	3.996 (101.5)	6.063 (154.0)	0.252 (6.4)	1/8" NPT	1/2" or 3/4" NPT	1.378 (35.0)	1.850 (47.0)	2.953 (75.0)



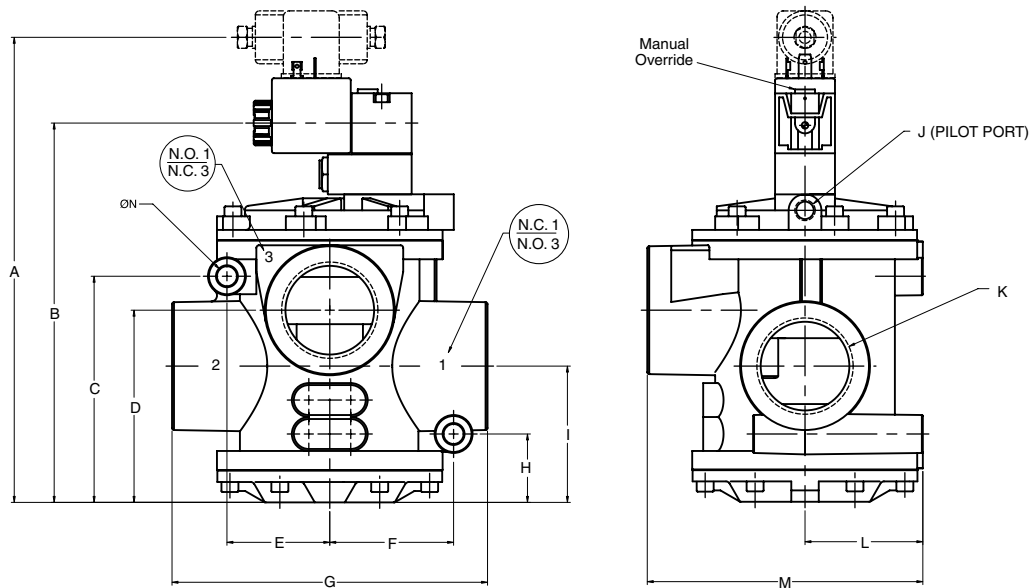
### 1" NPT Dimensions

A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q
2.520 (64.0)	2.008 (51.0)	1.004 (25.5)	1.969 (50.0)	2.992 (76.0)	3.976 (101.0)	1.496 (38.0)	2.461 (62.5)	4.528 (115.0)	6.850 (174.0)	.331 (8.4)	1/8" NPT	1" NPT	1.575 (40.0)	2.165 (55.0)	3.504 (89.0)

Dimensions = inches  
(in parentheses) = mm



1-1/2" Dimensions for Solenoid Air Pilot and Air Pilot Actuated Vacuum Valves



1-1/2" NPT Dimensions

A	B	C	D	E	F	G	H	I	J	K	L	M	N
9.173 (233.0)	7.480 (190.0)	4.449 (113.0)	3.780 (96.0)	2.028 (51.5)	2.441 (62.0)	6.220 (158.0)	1.339 (34.0)	2.677 (68.0)	1/8" NPT	1-1/2" NPT	2.323 (59.0)	5.433 (138.0)	0.394 (10.0)

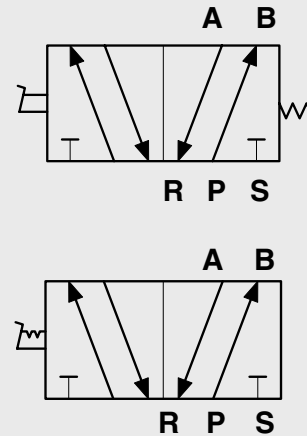
Dimensions = inches  
(in parentheses) = mm



## Foot Pedal Valves NM Series

### NM Series Pedal Valve

- 5 port 4-way valve
- Nylon shell & steel reinforced base plate
- Die cast zinc alloy valve body
- Spring return & detented models
- Large opening for foot operation



### Technical Data

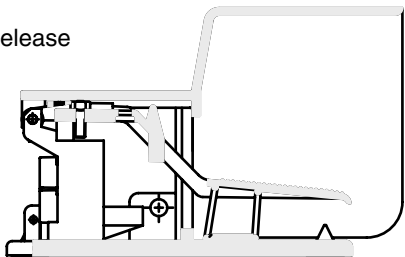
PORTS (NPTF)	1/4" SPRING	1/4" PEDAL
Cv	0.8	
Flow Capacity	22.74 SCFM (800 NI/min)	
Maximum Operating Pressure	145 PSIG (10 Bar)	
Temperature Range	14°F to +155°F ambient (-10°C to +70°C ambient)	
Fluid Temperature Range	14°F to +155°F ambient (-10°C to +70°C ambient)	

### Ordering Information

FOOT PEDAL DESCRIPTION	PART NO.
1/4" Spring Return	NM2FA4520G00000
1/4" Detented	NM2FD4520G00000

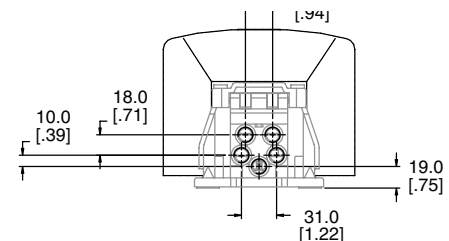
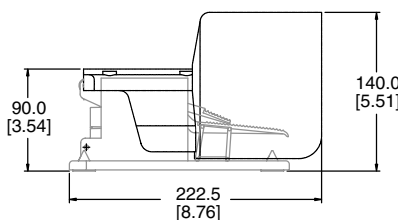
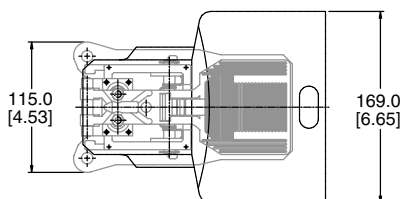
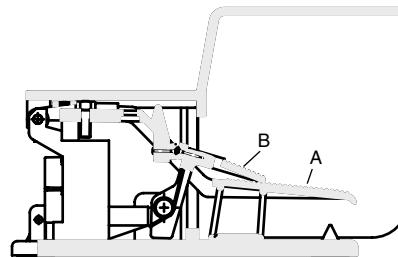
#### Spring Return Pedal

Press & Release Operation



#### Detented Operation Pedal


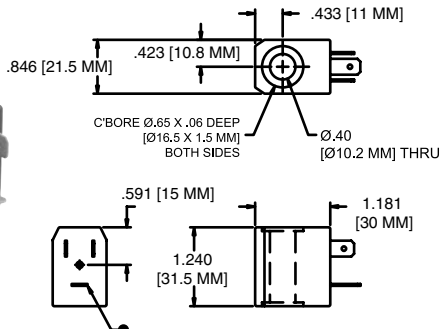

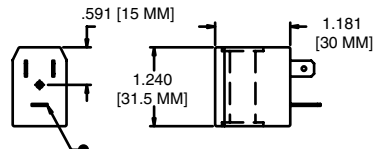
Press main pedal A to actuate & lock. Press lock pedal B to release



Dimensions = inches (in parentheses) = mm



### U1 Coil (for 1/8", 1/4" & 3/8" sizes)

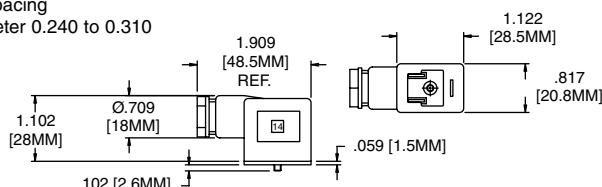
TYPE	OVERALL DIMENSIONS	*DUTY CYCLE	CONSUMPTION		TOLERANCE		MASS KG	RATED VOLTAGE	PART NUMBER
			CONTINUOUS	IN-RUSH	FREQUENCY	VOLTAGE			
	 <p>.846 [21.5 MM] .423 [10.8 MM] .433 [11 MM] .40 [10.2 MM] THRU C'BORE Ø.65 X .06 DEEP [Ø16.5 X 1.5 MM] BOTH SIDES</p>	100%	3.5W	3.5W	—	±10	0.10	12VDC	DA-0050-U
								24VDC	DA-0051-U
	 <p>.591 [15 MM] 1.181 [30 MM] 1.240 [31.5 MM]</p>	100%	5VA (max)	7.8VA (max)	±5%	±10	0.10	110V/50-60HZ	DA-0108-U
								220V/50-60HZ	DA-0124-U

\*Under continuous service a maximum temperature will not compromise the functioning of the coil provided that the working position is ventilated.

#### PLUG-IN CONNECTOR ASSEMBLIES


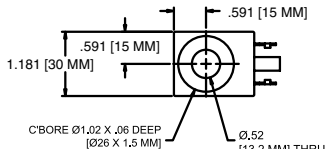

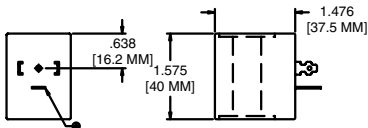
Mini-Din: 11mm pin spacing

\*Accepts Cable Diameter 0.240 to 0.310



PLUG CONNECTOR DESCRIPTION	PART NO.
Black Plug Assembly	230-364
Plug assembly with 24V Light	230-365
Plug assembly with 110V Light	230-366
Plug assembly with 220V Light	230-367

### U2 Coil

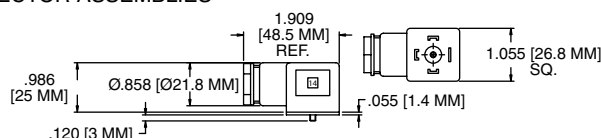
TYPE	OVERALL DIMENSIONS	*DUTY CYCLE	CONSUMPTION		TOLERANCE		MASS KG	RATED VOLTAGE	PART NUMBER
			CONTINUOUS	IN-RUSH	FREQUENCY	VOLTAGE			
	 <p>.591 [15 MM] 1.181 [30 MM] .591 [15 MM] .52 [13.2 MM] THRU C'BORE Ø1.02 X .06 DEEP [Ø26 X 1.5 MM] BOTH SIDES</p>	100%	11W	11W	—	±10	0.10	12VDC	DB-0501-U
								24VDC	DB-0502-U
	 <p>.638 [16.2 MM] 1.575 [40 MM] 1.476 [37.5 MM] .059 [1.5 MM]</p>	100%	10VA (max)	16VA (max)	±5%	±10	0.10	110V/50-60HZ	DB-0509-U
								220V/50-60HZ	DB-0510-U

\*Under continuous service a maximum temperature will not compromise the functioning of the coil provided that the working position is ventilated.

#### PLUG-IN CONNECTOR ASSEMBLIES

18mm pin spacing

\*Accepts Cable D



PLUG CONNECTOR DESCRIPTION	PART NO.
Black Plug Assembly	230-370
Plug assembly with 24V Light	230-371
Plug assembly with 110V Light	230-372
Plug assembly with 220V Light	230-373
Plug with 12 VDC Light	230-385

### Repair Kits - NF & NG Series

PORT SIZE	NF SERIES SOL. & AIR PILOT	NG SERIES EXT. AIR PILOT
1/8"	AF-9655	N/A
1/4" - 3/8"	AF-9660	AG-9660
1/2" - 3/4"	AF-9665	AG-9665
1"	AF-9670	AG-9670
1-1/2"	AF-9675	AG-9675

PIPE PLUG - NAF SERIES	PART NO.
1/8"	129-100
1/4"	129-101
3/8"	129-102



## FAQ's

**numatics®**

### Standard Poppet Valve Weight Requirements

PORT (NPT)	FUNCTION	WEIGHT	
		lbs	Kg
Solenoid Pilot (Internal) for Air			
1/8"	3/2 NC, NO	0.70	0.32
1/4"	3/2 NC, NO	1.50	0.68
3/8"	3/2 NC, NO	1.45	0.66
1/2"	3/2 NC	3.10	1.41
1/2"	3/2 NO	3.05	1.38
3/4"	3/2 NC, NO	2.85	1.29
3/4"	3/2 NC	2.55	1.16
1"	3/2 NC	4.20	1.91
1"	3/2 NO	4.25	1.93
1"	2/2 NC	3.90	1.77
1-1/2"	3/2 NC	6.25	2.83
1-1/2"	3/2 NO	6.10	2.77
1-1/2"	2/2 NC	5.65	2.56
Air Pilot (External) for Air			
1/8"	3/2 NC, NO	0.45	0.20
1/4"	3/2 NC, NO	1.25	0.57
3/8"	3/2 NC	1.20	0.54
1/2"	3/2 NC	2.70	1.22
1/2"	2/2 NC	3.15	1.43
3/4"	3/2 NC	2.55	1.16
3/4"	2/2 NC	2.90	1.32
1"	3/2 NC	3.90	1.77
1"	2/2 NC	4.25	1.93
1-1/2"	3/2 NC	5.45	2.47
1-1/2"	2/2 NC	6.35	2.63
Solenoid Pilot (External) for Vacuum			
1/4"	3/2 NC, NO	1.80	0.82
3/8"	3/2 NC, NO	1.80	0.82
1/2"	3/2 NC	3.10	1.41
1/2"	3/2 NO	3.05	1.38
3/4"	3/2 NC, NO	2.85	1.29
1"	3/2 NC	4.20	1.91
1"	3/2 NO	4.25	1.93
1-1/2"	3/2 NC	6.25	2.83
1-1/2"	3/2 NO	6.10	2.77

### Poppet Valve FAQ's

1. Are different coils available on the smaller sized poppet valves? (Yes, but a special part number is required.)
2. Is the manual override held captive in place? (Yes, the solenoid stem itself locates and holds this brass manual override in place. There is a slot (or groove) on the manual override.)
3. Is there an option code for external piloting solenoid air valves? (The option code is 14A)
4. What are these valves best suited for? (These valves are particularly suitable for applications where high flow and cycle rates are required.)
5. Is a lower watt solenoid operator available? (Yes, for U1 solenoid stems a 2.5 watt is available.)
6. Is field conversion from internal to external pilot supply possible? (Yes, in certain cases. Please consult factory.)
7. What is considered bubble tight? (Bubble tight for the poppet valve is considered as .24 cc or better per minute.)
8. Is it possible to convert N.C. to N.O.? (No, it is not.)
9. What is the cycle life of the poppet valves? (Recent tests have recorded 9 million cycles.)
10. Are viton seals available with the poppet valve? (No, they are not available.)
11. Are poppet valves strictly used for air? (Inert gases can be used with these valves.)
12. Can the internally piloted vacuum valve operate in an "open" circuit? (No, as stated, 5.9" of Hg is the minimum required.)

For more information on Poppet Valve products, contact Numatics Ltd. at (519) 452-1777, or visit [www.numatics.com](http://www.numatics.com)

# numatics®

*World Class Supplier  
of Pneumatic Components*



## **World Headquarters**

### **Numatics Incorporated**

Phone: 248-887-4111

Fax: 248-887-9190

## **UNITED STATES**

### **Numatics – Air Preparation**

Phone: 810-667-3900

Fax: 810-667-3902

### **Numatics – Valves**

Phone: 248-887-4111

Fax: 248-887-9190

### **Numatics – Miniature Valves**

Phone: 248-960-1400

Fax: 248-960-2160

### **Numatics – Cylinders**

Phone: 615-771-1200

Fax: 615-771-1201

### **Numatics – Rodless Cylinders**

Phone: 519-452-1777

Fax: 519-452-3995

### **Numatics – Automation**

Phone: 440-934-3200

Fax: 440-934-2288

## **CANADA**

### **Ontario**

Numatics, Ltd.

Phone: 519-452-1777

Fax: 519-452-3995

### **Quebec**

Numatics, Ltd.

Phone: 514-332-6444

Fax: 514-332-9273

### **British Columbia**

Numatics, Ltd.

Phone: 604-574-0401

Fax: 604-574-3713

## **EUROPE**

### **Germany – European Headquarters**

Numatics GmbH

Phone: 011-49-22 41-31 60-0

Fax: 011-49-22 41-31 60 40

### **Hungary**

Numatics Kft.

Phone: 011-36-13 82 21 35

Fax: 011-36-12 04 39 47

## **EUROPE**

### **England**

Numatics Limited

Phone: 011-44-1525-37 07 35

Fax: 011-44-1525-38 25 67

### **France**

Numatics s.a.r.l.

Phone: 011-33-1 41 21 48 88

Fax: 011-33-1 41 21 48 89

### **Italy**

Numatics srl

Phone: 011-39-030-373 19 99

Fax: 011-39-030-373 19 81

### **Netherlands**

Numatics B.V.

Phone: 011-31-418-65 29 50

Fax: 011-31-418-65 29 43

### **Spain**

Numatics Spain S.L.

Phone: 011-34-93-221 21 96

Fax: 011-34-93-221 35 14

## **AFRICA**

### **South Africa**

Numatics SA (Pty) Ltd.

Phone: 011-27-11-8 65 44 52

Fax: 011-27-11-8 65 42 90

## **LATIN & SOUTH AMERICA**

### **Mexico**

Numatics de Mexico S.A. de C.V.

Phone: 011-52-222-284 6176

Fax: 011-52-222-284 6179

### **Brazil**

Valvair Comercial Ltda.

Phone: 011-55-12-351 2874

Fax: 011-55-12-351 1958

## **ASIA & PACIFIC**

### **Australia**

Numatics Australia Pty. Ltd.

Phone: 011-61-3-95 63 86 00

Fax: 011-61-3-95 63 85 11

### **Taiwan – Asian Headquarters**

Numatics Co, Ltd. Asia

Phone: 011-886-2-29 15 16 05

Fax: 011-886-2-29 14 18 97

**For a comprehensive listing of all Numatics production and distribution facilities worldwide, visit [www.numatics.com](http://www.numatics.com)**