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# 1750 Poppet Valves

# POPPET VALVES • 1/4"- 1 1/2", 3/2, NPT (BSP)

# PILOT SOLENOID OPERATED

# **General Description**

A range of compact 3/2 pilot solenoid operated poppet valves in Stainless Steel for use on gases and liquids.

- High flow.
- · Hazardous area solenoids.
- · Coil with 316 housing.
- ATEX
- UL / CSA
- Low temperature range.

# **Operating Medium**

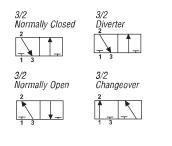
## Gases

Filtered lubricated or nonlubricated air, inert gas, sweet (natural) gases. sour gas option available. (details on application)

# Liquids

Low pressure hydraulic, mineral oil or water. (details on application)

# **Functional Symbols**



# **Technical Data**

#### Ports

• 1/4" - 1-1/2" NPT (BSP option available)

# • 1/4" NPT pilot ports

- Working Pressure (gases & liquids)
- 3 to 12 bar (45 to 174 psi)

#### Cv (Kv)

- 1/4" 1.75 (25) 3/8" - 2.2 (31)
- 1/2" 4.00 (57) 3/4" - 10.2 (146)
- 1" 15.0 (214) 1-1/4'' - 20.0 (286)
- 1-1/2" 28.0 (400)

## Working Temperature

- Valve only version -20°C to +180°C (-4°F to +356°F)
- Solenoid Ambient temperature -20°C to +65°C (-4°F to +149°F)
- Low temperature version -50°C (-58°F ) (optional)

#### **Minimum Pilot Pressure**

- At 6.3 bar (90 psi) body pressure 1/4" - 3/8" Spring return 4.0 bar (58.0 psi) 1/2" - 1-1/2" Spring return
  - 3.0 bar (43.5 psi)

# Maximum Flow

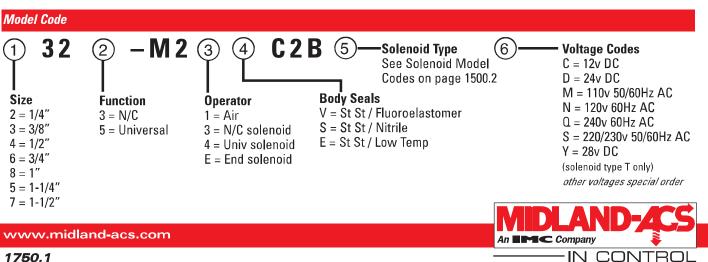
- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 1/4" 2668 L/min (94 SCFM)
- 3/8" 3521 L/min (124 SCFM)
- 1/2" 6402 L/min (226 SCFM)
- 3/4" 16005 L/min (565 SCFM)
- 1" 24008 L/min (848 SCFM)
- 1-1/4" 32010 L/min (1130 SCFM)
- 1-1/2" 44814 L/min (1583 SCFM)



# **PNEUMATIC VALVES**

## **Construction Materials**

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Poppet
- 316 Stainless Steel Spring
- 1/4", 3/8" and 1/2" Fluoroelastomer 3/4", 1", 1-1/4" and 1-1/2" Nitrile Solenoid
- Refer to solenoid specification



#### 11/05

# **1750 SERIES**

# POPPET VALVES • 1/4" - 1 1/2", 3/2, NPT (BSP)

# PILOT SOLENOID OPERATED

# SOLENOID MODEL CODES

Model Code	Safety Rating	Protection and Housing Material	Approved Area	Ingress Protection	Weight kg (lbs)
CL	NEMA 7 & 9	Flameproof. Stainless Steel Class H insulation	Class I, Groups C & D Class II, Groups E, F &	NEMA 4 G	0.29 (0.65)
D	EExd IIC T5	Flameproof. Ferritic cast iron.	Zones 1 and 2	IP67	1.30 (2.87)
К	EExd IIC T6	Flameproof. 316 Stainless Steel or Aluminium.	Zones 1 and 2	IP67	1.62 (3.57)
Р	EEx me II T4/T5	Increased encapsulation. Glass reinforced polyar	id. Zones 1 and 2	IP66	0.63 (1.39)
Т	EEx ia IIC T6	Intrinsically safe. Glass reinforced polyamid.	Zones 0	IP66	0.53 (1.17)
4	None	32mm solenoid. Moulded Plastic.	Not approved	IP65	0.20 (0.44)

Preferred models			
Model Number	Description	Weight kg (lbs)	Symbol
2323M23-VC2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return, N/C	0.65 (1.43) + Sol	
2325M24-VC2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return, UNIV	0.65 (1.98) + Sol	
3323M23-VC2B*+	3/8" NPT 3/2 Pilot solenoid operated, spring return, N/C	0.90 (3.31) + Sol	
3325M24-VC2B*+	3/8" NPT 3/2 Pilot solenoid operated, spring return, N/C	0.90 (3.31) + Sol	
4323M23-VC2B*+	1/2" NPT 3/2 Pilot solenoid operated, spring return, N/C	1.50 (19.97) + Sol	
4325M24-SC2B*+	1/2" NPT 3/2 Pilot solenoid operated, spring return, UNIV	1.50 (24.38) + Sol	
6325M24-SC2B*+	3/4" NPT 3/2 Pilot solenoid operated, spring return, UNIV	5.06 (24.38) + Sol	
8325M24-SC2B*+	1" NPT 3/2 Pilot solenoid operated, spring return, UNIV	5.06 (24.38) + Sol	
5325M24-SC2B*+	1 1/4" NPT 3/2 Pilot solenoid operated, spring return, UNIV	9.06 (24.38) + Sol	
7325M24-SC2B*+	1 1/2" NPT 3/2 Pilot solenoid operated, spring return, UNIV	11.06 (24.38) + Sol	

\* Specify solenoid type

+ Specify solenoid voltage

Without solenoid fitted specify "Z" in position 13 (for Zones 0,1 & 2), 'A' in a position 13 (for NEMA 7 & 9).

1/4", 3/8" and 1/2" Normally Closed versions have internal air supply to the solenoid - Specify code 3 in position 4 and code 3 in position 7 of model number code. 1/4", 3/8" and 1/2" Normally Open and Universal versions require a separate air supply to the pilot solenoid - Specify code 5 in position 4 and code 4 in position 7 of model number code. 3/4" to 1 1/2" Normally Open, Normally closed and Universal versions always require a separate main air supply to be taken to the pilot solenoid - Specify code 5 in position 4 and code 4 of position 4 and code 4 of position 7 of model number code.

It is recommended that consideration be given to positioning a non-return valve in the separate supply line to the solenoid. This will help to prevent backflow from the solenoid servo should a temporary/severe pressure drop occur across the main valve when it opens.



#### **1750 SERIES**

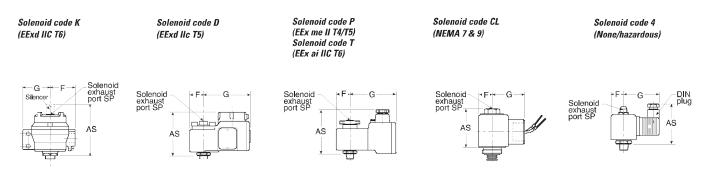
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# PILOT SOLENOID OPERATED

SOLENOID ASSEMBLIES SOLENOID CODE K (EExd IIC T6), SOLENOID CODE KC (NEMA 7 & 9)



#### **INSTALLATION DIMENSIONS mm (inches)**

Model Code	AS	F	G	SP	
CL	42(1.65)	18 (0.71)	40 (1.57)	1/8" NPT	
D	76(2.99)	25 (0.71)	84 (1.57)	1/8" NPT	
К	110(4.33)	52 (0.71)	58 (1.57)	M8	
P & T	71.5(2.81)	25 (0.71)	81 (1.57)	1/8" NPT	
4	57(2.24)	19.5 (0.71)	50 (1.57)	1/8" NPT	

# SOLENOID SPECIFICATIONS

Model Code	K	D	Р	Т	CL	4
Type of Protection	EExd IIC T6	EExd IIc T5	EEx me II T4/T5	EEx ia IIc T6	NEMA 7 & 9	None
Approved Area	ed Area Zones 1 and 2 Zones 1 and 2 Zone		Zones 1 and 2	Zone O	Class I, Groups C & D, Class II Groups E, F & G	None
Degree of Protection	IP67	IP67	IP66	IP66	NEMA 4 (IP55)	IP65
Housing	316 Stainless Steel alt Aluminium Epoxy coated	Ferritic, Cast Iron Epoxy painted	Glass reinforced Polyamid (St St conduit hub)	Glass reinforce Polyamid	d Chromate Stainless Steel Steel Coil potted	Molded Plastic
Cable entry (Alt cable entry available)	M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5	1/2" NPT 24" leads	DIN plug
Power DC Consumption AC	5W 5W	8W	6W		7.3W 1.8W 7.3W 1.8W 5.6W 1.8W 5.6W 1.8W	9W 9W(inrush 32VA)
Maximum Admissable Surface Temp	85°C (185°F)	100°C (212°F)	T4 135°C (275°F) T5 100°C (212°F)	85°C (185°F)	160°C (320°F)	N/A
Maximum Ambient Temperature	40°C (104°F)	40°C (104°F)	T4 75°C (167°F) T5 40°C (104°F)	65°C (149°F)	40°C (104°F)	55°C (131°F)
Maximum Fluid Temp	80°C (176°F)	75°C (167°F)	75°C (167°F)	<b>75°C</b> (167°F)	105°C (221°F)	75°C (167°F)
Approved Standard	ATEX	ATEX	ATEX	ATEX	UL Listed CSA Certified	N/A N/A
Certificate Number	SIRA03ATEX1319	02ATEX6008X	02ATEX6023X	02ATEX6066X	026894X0000	N/A

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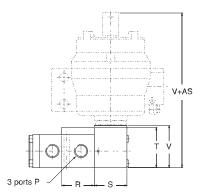
An **EMC** Company

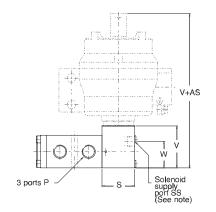
# PILOT SOLENOID OPERATED

INSTALLATION DIMENSIONS mm (inches)

3/2 Pilot Solenoid Operated - Spring Return, 1/4", 3/8", 1/2" Valve Bases

2323M23-VC2B\*+ 3323M23-VC2B\*+ 4323M23-VC2B\*+





2323M24-VC2B\*+

3323M24-VC2B\*+

4323M24-VC2B\*+

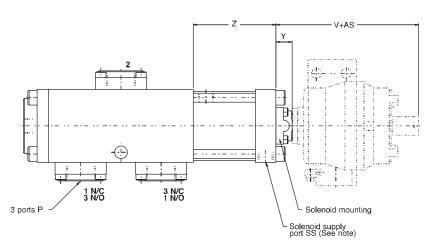
For solenoid dimensions, see page 1750.3

Model Number	Р	R	S	Т	V	VE	W	X	SS
2323M23-VC2B*+	1/4" NPT (1/4" NPT)	32 (1.26)	32(1.26)	39(1.54)	41(1.61)	-	-	-	-
2325M24-VC2B*+	1/4" NPT (1/4" NPT)	-	32(1.26)	-	41(1.61)	-	26(1.02)	-	1/8"NPT(1/8" NPT)
3323M23-VC2B*+	3/8" NPT (3/8" NPT)	32 (1.26)	32(1.26)	39(1.54)	41(1.61)	-	-	-	-
3325M24-VC2B*+	3/8" NPT (3/8" NPT)	-	32(1.26)	-	41(1.61)	-	26(1.02)	-	1/8"NPT(1/8" NPT)
4323M23-VC2B*+	1/2" NPT (1/2" NPT)	38 (1.50)	32(1.26)	45(1.77)	50(1.97)	-	-	-	-
4325M24-VC2B*+	1/2" NPT (1/2" NPT)	-	32(1.26)	-	50(1.97)	-	37(1.46)	-	1/8"NPT(1/8" NPT)

1/4", 3/8" and 1/2" Normally closed versions have internal air supply to the solenoid - Specify code 3 in position 4 and code 3 in position 7 of model number code. 1/4", 3/8" and 1/2" Normally open and Universal versions require a separate air supply to the pilot solenoid - Specify code 5 in position 4 and code 4 in position 7 of model number code.

#### 3/2 Pilot Solenoid Operated - Spring Return, 3/4", 1", 1-1/4", 1-1/2" Valve Bases

6323M24-SC2B\*+ 8323M24-SC2B\*+ 5323M24-SC2B\*+ 7323M24-SC2B\*+



For basic valve dimensions, see page 1750.6 For Solenoid dimensions see page 1750.3

Model Number	Р	Y	Ζ	SS
6325M24-SC2B*+	3/4" NPT (1/4" NPT)	14 (0.55)	72(2.83)	1/4"NPT(1/4" NPT)
8325M24-SC2B*+	1″NPT (1/4″ NPT)	14 (0.55)	72(2.83)	1/4"NPT(1/4" NPT)
5325M24-SC2B*+	1 1/4" NPT (1 1/4" NPT)	14 (0.55)	73(2.87)	1/4"NPT(1/4" NPT)
7325M24-SC2B*+	1 1/2" NPT (1 1/2" NPT)	14 (0.55)	73(2.87)	1/4"NPT(1/4" NPT)

3/4" to 1 1/2" Normally open, normally closed and universal versions always require a separate mains air supply to be taken to the pilot solenoid. Specify code 5 in position 4 and code 4 of position 7 of model number code.



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1750 SERIES

# 1750 Poppet Valves POPPET VALVES • 1/4" - 1-1/2", 3/2, NPT (BSP)

# **PILOT AIR OPERATED**

#### **General Description**

A range of compact 3/2 pilot operated high flow poppet valves in stainless steel for use on gases.

- Compact
- High flow
- 3/2 N/O, N/C and Universal
- Meet NACE standard
- Non lube
- Low temperature range

#### **Operating Medium**

#### Gases

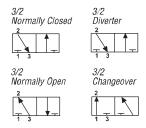
Filtered lubricated or non-lubricated air, inert, sweet (natural) gases. Sour gas option available.

(details on application)

#### Liquids

Low pressure hydraulic, mineral oil or water. (details on application)

# **Functional Symbols**



#### **Technical Data**

Ports

- 1/4" 1-1/2" NPT (BSP option available)
- 1/4" NPT pilot ports

## Working Pressure (gases & liquids)

• 2 to 12 bar (30 to 174 psi)

Cv (Kv)

- 1/4" 1.75 (25) 3/8" - 2.2 (31)
- 1/2" 4.00 (57) 3/4" - 10.2 (146)
- 1-1/4" 20.0 (286) • 1" - 15.0 (214)
- 1-1/2" 28.0 (400)

#### Working Temperature

• -20°C to +180°C (-4°F to +356°F) Low temperature version

-50°C (-58°F ) (optional)

#### **Minimum Pilot Pressure**

- At 6.3 bar (90 psi) body pressure
  - 1/4" 3/8" Spring return 4.0 bar (58.0 psi)
- 1/2" 1-1/2" Spring return 3.0 bar (43.5 psi)

#### Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 1/4" 2668 L/min (94 SCFM)
- 3/8" 3521 L/min (124 SCFM)
- 1/2" 6402 L/min (226 SCFM)
- 3/4" 16005 L/min (565 SCFM)
- 1" 24008 L/min (848 SCFM)
- 1-1/4" 32010 L/min (1130 SCFM)

1-1/2" - 44814 L/min (1583 SCFM)



## **Construction Materials**

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Poppet
- 316 Stainless Steel Spring
- 1/4", 3/8" and 1/2" Fluoroelastomer seals
- 3/4", 1", 1-1/4" and 1-1/2" Nitrile seals

Preferred Models			
Model Number	Description	Weight kg (lbs)	Symbol
2325M21-VC2B	1/4" NPT 3/2 Pilot air operated, spring return, UNIV	0.65 (1.43)	
3325M21-VC2B	3/8" NPT 3/2 Pilot air operated, spring return, UNIV	0.90 (1.98)	
4325M21-VC2B	1/2" NPT 3/2 Pilot air operated, spring return, UNIV	1.50 (3.31)	
6325M21-SC2B	3/4" NPT 3/2 Pilot air operated, spring return, UNIV	5.00 (11.0)	
8325M21-SC2B	1" NPT 3/2 Pilot air operated, spring return, UNIV	5.00 (11.0)	
5325M21-SC2B	1-1/4" NPT 3/2 Pilot air operated, spring return, UNIV	9.00 (19.8)	
7325M21-SC2B	1-1/2" NPT 3/2 Pilot air operated, spring return, UNIV	11.0 (24.3)	



1750.5

**PNEUMATIC VALVES** 

# PILOT AIR OPERATED

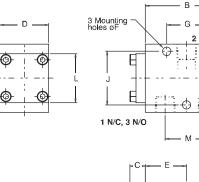
# INSTALLATION DIMENSIONS mm (inches)

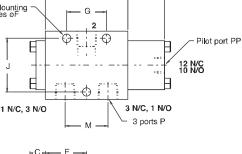
3/2 Pilot Air Operated - Spring Return, 1/4", 3/8", 1/2"

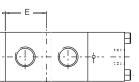


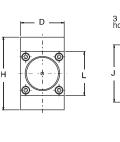
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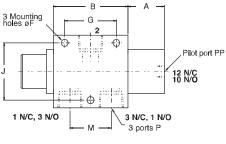


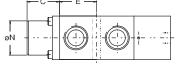






4325M21-VC2B





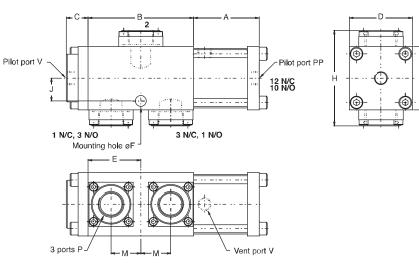
Model Number	Α	В	С	D	Ε	F	G	H	J	L	М	N	Р	РР
2325M21-VC2B	24	54	10	32	27	6.5	26	44.5	35	32	28	-	1/4" NPT	1/8" NPT
	(0.94)	(2.13)	(0.39)	(1.26)	(1.06)	(0.26)	(1.02)	(1.75)	(1.38)	(1.26)	(1.10)	-	1/4" NPT	1/8" NPT
3325M21-VC2B	24	54	10	32	27	6.5	38	51	44	32	28	-	3/8" NPT	1/8" NPT
	(0.94)	(2.13)	(0.39)	(1.26)	(1.06)	(0.26)	(1.50)	(2.00)	(1.73)	(1.26)	(1.10)	-	3/8" NPT	1/8" NPT
4325M21-VC2B	32	65	28	38	32.5	6.5	45	63.5	50	38	36	24	1/2" NPT	1/8" NPT
	(1.26)	(2.56)	(1.10)	(1.50)	(1.28)	(0.26)	(1.77)	(2.50)	(1.97)	(1.50)	(1.42)	(0.94)	1/2" NPT	1/8" NPT

#### 3/2 Pilot Air Operated - Spring Return, 3/4", 1", 1-1/4", 1-1/2"

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6325M21-SC2B 8325M21-SC2B 5325M21-SC2B 7325M21-SC2B



Model Number	А	В	С	D	Ε	F	H	J	L	М	Р	РР	V
6325M21-SC2B	66	106	22	63.5	53	11	96	23	63.5	30	3/4" NPT	1/4" NPT	1/4" NPT
	(2.60)	(4.17)	(0.87)	(2.50)	(2.09)	(0.43)	(3.78)	(0.91)	(2.50)	(1.18)	3/4" NPT	1/4" NPT	1/4" NPT
8325M21-SC2B	66	126	22	63.5	63	11	96	23	63.5	35	1" NPT	1/4" NPT	1/4" NPT
	(2.60)	(4.96)	(0.87)	(2.50)	(2.48)	(0.48)	(3.78)	(0.91)	(2.50)	(1.38)	1" NPT	1/4″ NPT	1/4" NPT
5325M21-SC2B	67	155	18	76	77.5	11	116	28.5	76	42.5	1-1/4" NPT	1/4" NPT	1/4" NPT
	(2.64)	(6.10)	(0.71)	(2.99)	(3.05)	(0.43)	(4.57)	(1.12)	(2.99)	(1.67)	1-1/4" NPT	1/4" NPT	1/4" NPT
7325M21-SC2B	67	180	18	76	90	11	116	28.5	76	50	1-1/2" NPT	1/4" NPT	1/4" NPT
	(2.64)	(7.09)	(0.71)	(2.99)	(3.54)	(0.43)	(4.57)	(1.12)	(2.99)	(1.97)	1-1/2" NPT	1/4" NPT	1/4" NPT



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An **EMC** Company

# **1750** Poppet Valves 1/8" NPT 3/2 POPPET VALVES

# PLUNGER OPERATED, LEVER ROLLER OPERATED

#### **General Description**

Compact 3/2 mechanically operated poppet valves in stainless steel for use on gases and liquids. For N/O, N/C and universal operation.

# **Technical Data**

#### Ports

 1/8"NPT (BSP option available) Working Pressure (gases & liquids) • 10 bar (145 psi) Cv (Kv) • 0.26 (3.7) Working Temperature • -20°C to +180°C (-4°F to +356°F) **Operating force** • at 10 bar (145 psi) body pressure N/C N/O 80N (20lbf) Plunger 44N (17lbf) Lever roller 20N (17lbf) 36N (20lbf)

#### **Maximum Flow**

 At 6 bar (87 psi), 1 bar (14.5 psi) differential 402 L/min (14.2 SCFM)



# **Construction Materials**

- Body, operator and poppet Stainless steel AISI 316L to NACE MR-01-75
- 316 Stainless steel springs
- Fluoroelastomer seals

Preferred Models			
Model Number	Description	Weight kg (lbs)	Symbol
1323M62-SM2B	1/8" Plunger operated,spring return, N/C	0.21 (0.46)	
1324M62-SM2B	1/8" Plunger operated,spring return, N/O	0.22 (0.48)	
1323M82-SM2B	1/8" Lever operated,spring return, N/C	0.28 (0.62)	
1324M82-SM2B	1/8" Lever operated,spring return, N/O	0.29 (0.64)	



#### PLUNGER OPERATED, LEVER ROLLER OPERATED

**INSTALLATION DIMENSIONS mm (inches)** 

#### 3/2 Plunger Operated - Spring Return - 1/8"

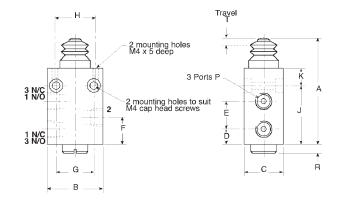
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PNEUMATIC VALVES

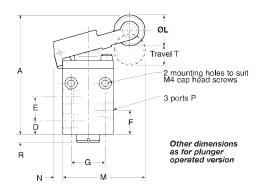


Model Number	Α	B	С	D	Ε	F	G	H	J	K	L	М	N	Р	R	Т
132*M62-SM2B	62	32	22	9	16	16	22	24	34	10	-	-	-	1/8" NPT	5	5
	(2.44)	(1.26)	(0.87)	(0.35)	(0.63)	(0.63)	(0.87)	(0.95)	(1.34)	(0.39)	-	-	-	1/8" NPT	(0.20)	(0.20)

Travel T = 2.5 (0.10) to operate, 5.0 (0.20) maximum

#### 3/2 Lever Operated - Spring Return - 1/8"

1323M82-SM2B 1234M82-SM2B



Model Number	Α	B	С	D	Ε	F	G	H	J	K	L	М	N	Р	R	Т
132*M82-SM2B	78	32	22	9	16	16	22	-	34	-	20	52.5	6	1/8" NPT	5	12
	(3.07)	(1.26)	(0.87)	(0.35)	(0.63)	(0.63)	(0.87)	-	(1.34)	-	(0.79)	(2.07)	(0.24)	1/8" NPT	(0.20)	(0.47)

Travel T = 2.5 (0.10) to operate, 5.0 (0.20) maximum

