

**rotork<sup>®</sup>**  
**MIDLAND**

## Poppet Valve Catalogue



### **Poppet Valves**

1750 series pilot operated  
1750 series pilot solenoid operated  
1750 series plunger or lever roller operated

**Redefining Flow Control**

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Rotork is the global market leader in valve automation and flow control. Our products and services are helping organisations around the world to improve efficiency, assure safety and protect the environment.

We strive always for technical excellence, innovation and the highest quality standards in everything we do. As a result, our people and products remain at the forefront of flow control technology.

Uncompromising reliability is a feature of our entire product range, from our flagship electric actuator range through to our pneumatic, hydraulic and electro-hydraulic actuators, as well as instruments, gearboxes and valve accessories.

Rotork is committed to providing first class support to each client throughout the whole life of their plant, from initial site surveys to installation, maintenance, audits and repair. From our network of national and international offices, our engineers work around the clock to maintain our position of trust.

**Rotork. Redefining flow control.**



## Introduction

A range of 3/2 pilot operated poppet valves in stainless steel 316L for use on gases. Specifically designed for harsh environments, designed for actuator control.

Rotork Midlands' 1750 series is available in 1/4" to 3" NPT port sizes. 316L construction makes this valve range ideal for severe service / hazardous environments.

3/2 function for cylinder or actuator control incorporating:

- Low power consumption
- Low temperature options
- High flow rates
- Relevant industry approvals including SIL
- Sweet (natural) and sour gases as well as low pressure hydraulic, mineral or water
- Hazardous protection concepts



## 1750 Series Poppet Valve – Pilot operated

A range of 3/2 pilot operated poppet valves in stainless steel 316L for use on gases.

### Features and Benefits

- Specifically designed for severe environments
- Ambient temperature range  
-20 to +180 °C (-4 to +356 °F)
- 316L stainless steel construction
- Designed for actuator control
- Large flow paths (up to 110 Cv)
- NACE capability option available

### Working Temperature Range

- 1/4" to 1 1/2" -20 to +180 °C (-4 to +356 °F)
- 2" & 3" -20 to +80 °C (-4 to +176 °F)
- Low temperature option -50 to +90 °C (-58 to +194 °F) - available up to 2"

### Working Pressure

- Up to 12 bar (174 psi) maximum inlet pressure
- Minimum pilot pressure valve size dependent.

### Ports NPT (BSP option available)

- 1/4" to 3" NPT
- Pilot ports 1/8" or 1/4" (valve size dependent)



### Operating Media

- Gases – filtered lubricated or non lubricated air, inert gas, sweet (natural) and sour gases
- Liquids – low pressure hydraulic, mineral oil or water (please consult factory)

### Construction Materials

- Body & trim: 316L stainless steel
- Springs: 316 stainless steel
- Seals: 1/4" to 1 1/2" fluoroelastomer (standard option)  
2" and 3" nitrile (standard option)  
1/4" to 2" EPDM (low temperature version)

Drawings and 3D models for all valves and solenoid options available on request

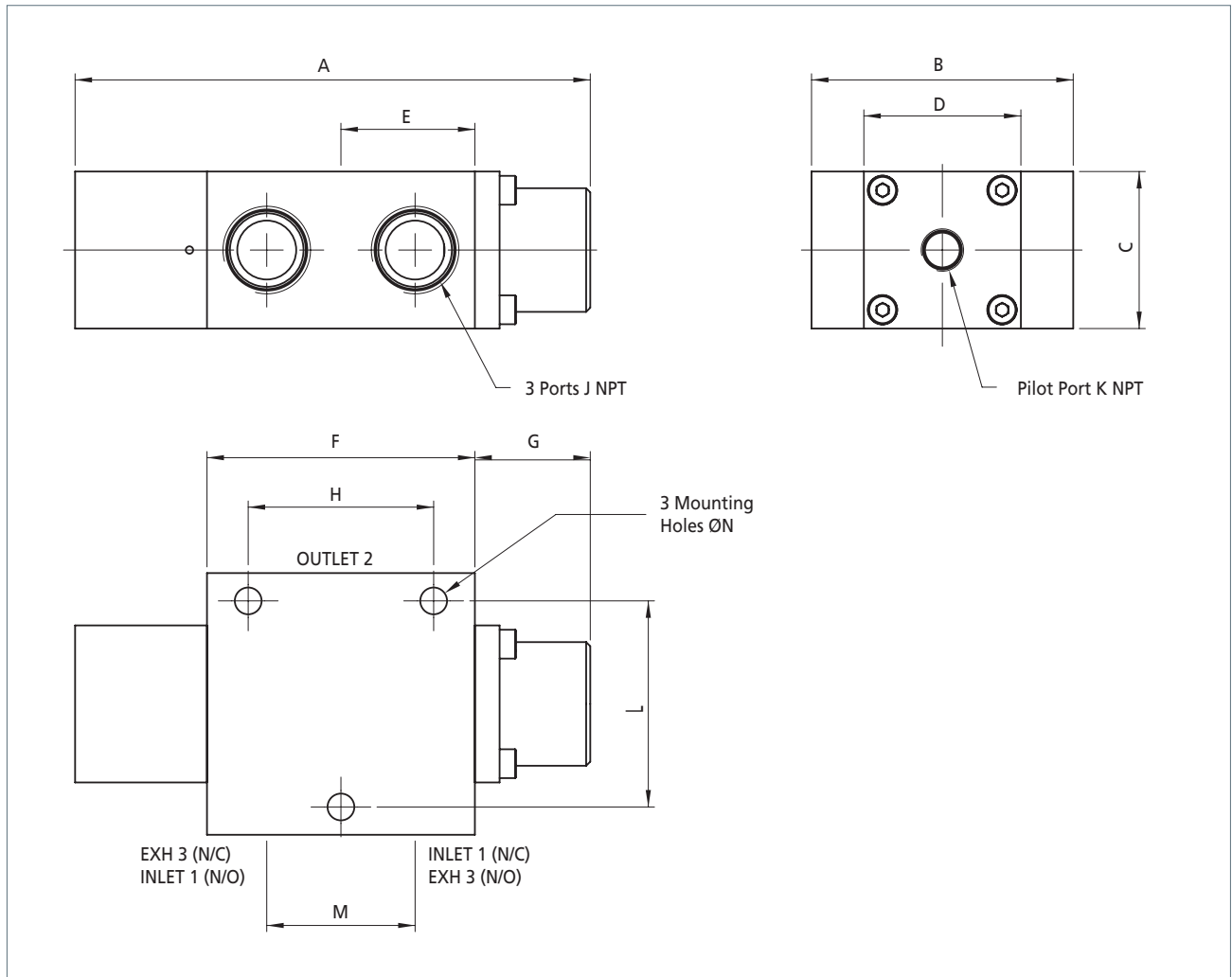
Product Code	Low Temperature Version	Size	Mass (kg)	Max. Flow L/Min	Max. Flow SCFM	Min. Pilot Pressure	Cv
2325M21-VC2B	2325M21-EC2B	1/4"	0.65	1216	43	4.0 bar	1.2
3325M21-VC2B	3325M21-EC2B	3/8"	0.9	1809	64	4.0 bar	1.8
4325M21-VC2B	4325M21-EC2B	1/2"	1.5	3518	124	3.0 bar	3.5
6325M21-SC2B	6325M21-EC2B	3/4"	5	8041	284	3.0 bar	8
8325M21-SC2B	8325M21-EC2B	1"	5	12866	454	3.0 bar	13
5325M21-SC2B	5325M21-EC2B	1 1/4"	11	17650	624	3.0 bar	18
7325M21-SC2B	7325M21-EC2B	1 1/2"	11	22379	923	3.0 bar	26
9325M21-SC2B	9325M21-EC2B	2"	18.7	50861	1797	3.0 bar	50

Maximum flow at 6 bar, with 1 bar differential  
Minimum pilot pressure at 6.3 bar body pressure

### Certification Options Available

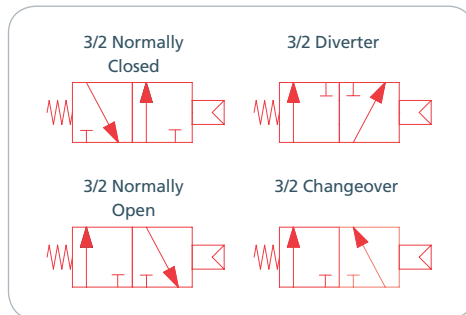


# 1750 Series Poppet Valve – 1/4" to 1/2" Pilot operated

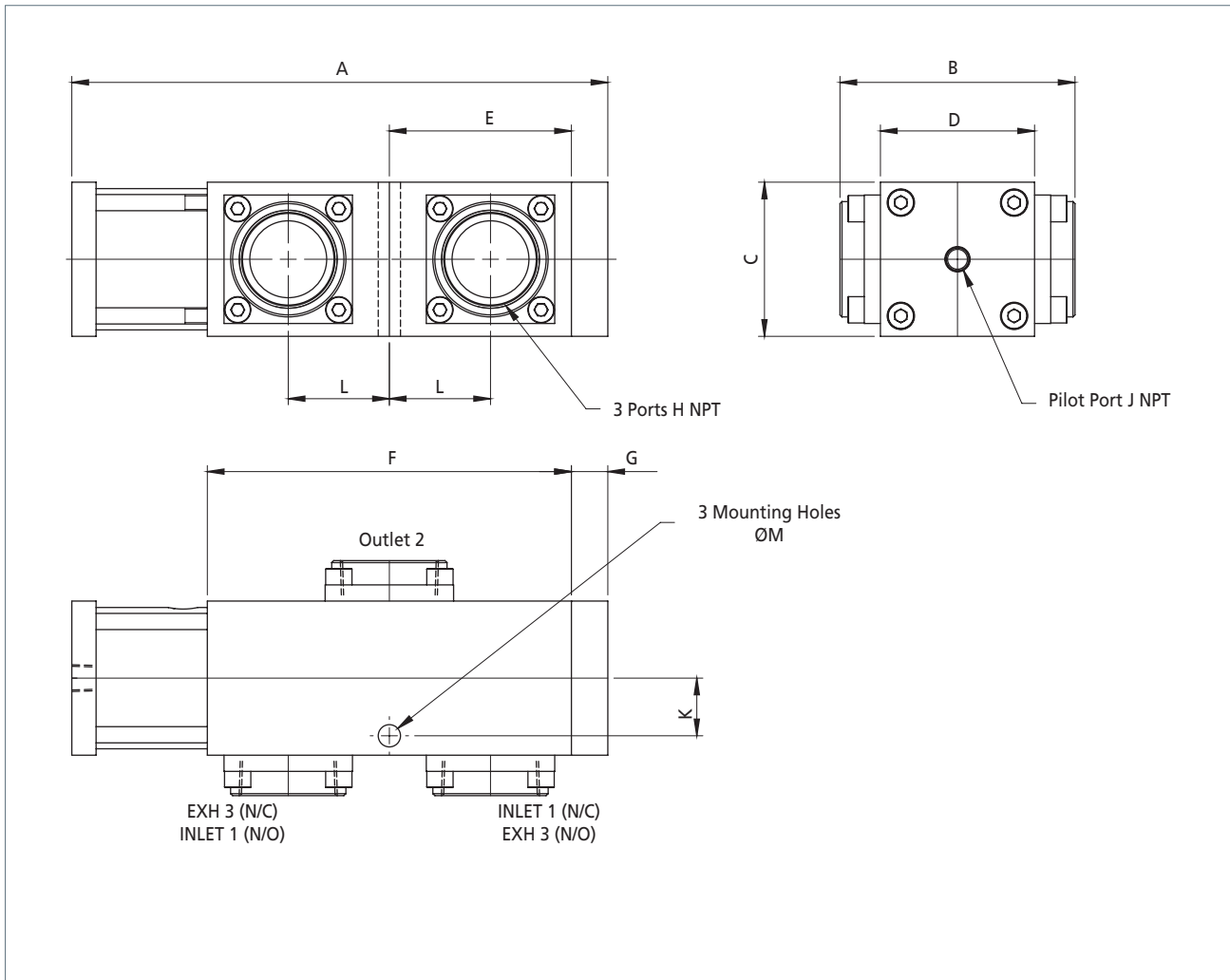


## Ordering Information

Product Code	Low Temperature Version	Size	A	B	C	D	E	F	G	H	J	K	L	M	N
2325M21-VC2B	2325M21-EC2B	1/4"	92	44.5	32	32	27	54	10	26	1/4"	1/8"	35	28	5.5
3325M21-VC2B	3325M21-EC2B	3/8"	92	51	32	32	27	54	10	38	3/8"	1/8"	40	28	6.5
4325M21-VC2B	4325M21-EC2B	1/2"	125	63.5	38	38	32.5	65	28	45	1/2"	1/8"	50	36	6.5

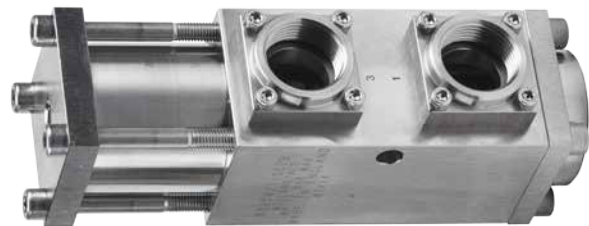


# 1750 Series Poppet Valve – 3/4" to 2" Pilot operated

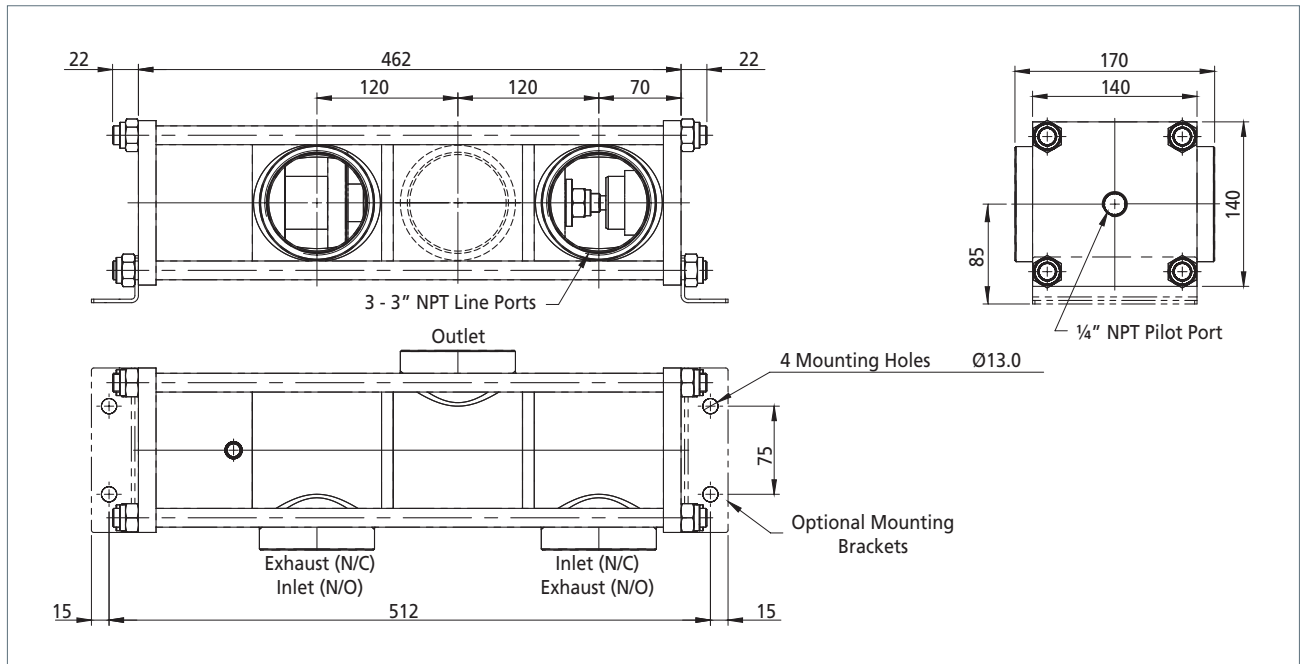


## Ordering Information

Product Code	Low Temperature Version	Size	A	B	C	D	E	F	G	H	J	K	L	M
6325M21-SC2B	6325M21-EC2B	3/4"	202	96	63.5	63.5	53	106	22	3/4"	1/4"	23	30	11
8325M21-SC2B	8325M21-EC2B	1"	202	96	63.5	63.5	63	126	22	1"	1/4"	23	35	11
5325M21-SC2B	5325M21-EC2B	1 1/4"	265	116	76	76	90	180	18	1 1/4"	1/4"	28.5	50	11
7325M21-SC2B	7325M21-EC2B	1 1/2"	265	116	76	76	90	180	18	1 1/2"	1/4"	28.5	50	11
9325M21-SC2B	9325M21-EC2B	2"	339	140	102	102	120	240	13	2"	1/4"	38	62	13



# 1750 Series Poppet Valve – 3" Pilot operated

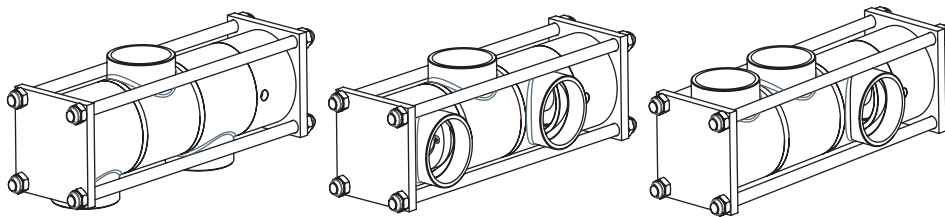


## Ordering Information

Product Code	Size	Mass (kg)	Max. Flow L/Min	Max. Flow SCFM	Min. Pilot Pressure	Cv
C325M21-SC2B	3"	30	111894	3954	See below	110 (90 offset ports)

Low temperature version not available in 3".  
If alternative port positions are required consult factory. See examples below.

## Alternative Port Positions



## Pilot Pressures for 3" Poppet Valve

Line Pressure (bar)	Pilot Pressure (bar)
1	2
2	2.4
3	3.2
4	3.4
5	3.6
6	4.2

Line Pressure (bar)	Pilot Pressure (bar)
7	5
8	5.6
9	6.2
10	6.6
11	7.2
12	7.6



# 1750 Series Poppet Valve – 1/4" to 1/2" Pilot solenoid operated

A range of 3/2 pilot solenoid operated poppet valves in stainless steel 316L for use on gases.

*K-TYPE solenoid shown - see solenoid specification chart*

## Features and Benefits

- Specifically designed for severe environments
- Ambient temperature range -20 to +180 °C (-4 to +356 °F) (valve only - see solenoid specification chart for details)
- 316L stainless steel construction
- Designed for actuator control
- Large flow paths (up to 110 Cv)
- NACE capability option available

## Working Temperature Range

- 1/4" to 1/2" -20 to +180 °C (-4 to +356 °F)
- Low temperature option available -50 °C (-58 °F) - solenoid fitted (consult factory for product codes)

## Working Pressure

- Up to 12 bar (174 psi) maximum inlet pressure
- Minimum pilot pressure valve size dependent

## Ports NPT (BSP option available)

- 1/4" to 1/2" NPT
- Pilot ports 1/8"



## Operating Media

- Gases – filtered lubricated or non-lubricated air, inert gas, sweet (natural) and sour gases - NACE
- Liquids – low pressure hydraulic, mineral oil or water (please consult factory)

## Construction Materials

- Body & trim: 316L stainless steel
- Springs: 316 stainless steel
- Seals: 1/4" to 1/2" fluoroelastomer
- 1/4", 3/8" and 1/2" pilot solenoid poppet valves have internal feed to solenoid, therefore can only be used 3/2 normally closed, if normally open or separate pilot supply is required please consult factory

Drawings and 3D models for all valves and solenoid options available on request

Product Code	Size	Mass (kg)	Max.Flow L/Min	Max.Flow SCFM	Operating Pressure	Cv
2323M23-VC2B*#	1/4"	0.65 +solenoid	1216	43	3 to 12 bar	1.2
3323M23-VC2B*#	3/8"	0.9 +solenoid	1809	64	3 to 12 bar	1.8
4323M23-VC2B*#	1/2"	1.5 +solenoid	4020	142	3 to 12 bar	3.5

\* Denotes solenoid type. See page 12-13

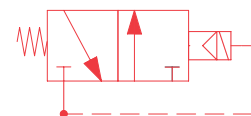
# Denotes Voltage. See page 12

Maximum Flow at 6 bar, with 1 bar differential  
Minimum Pilot Pressure at 6.3 bar body pressure

## Certification Options Available

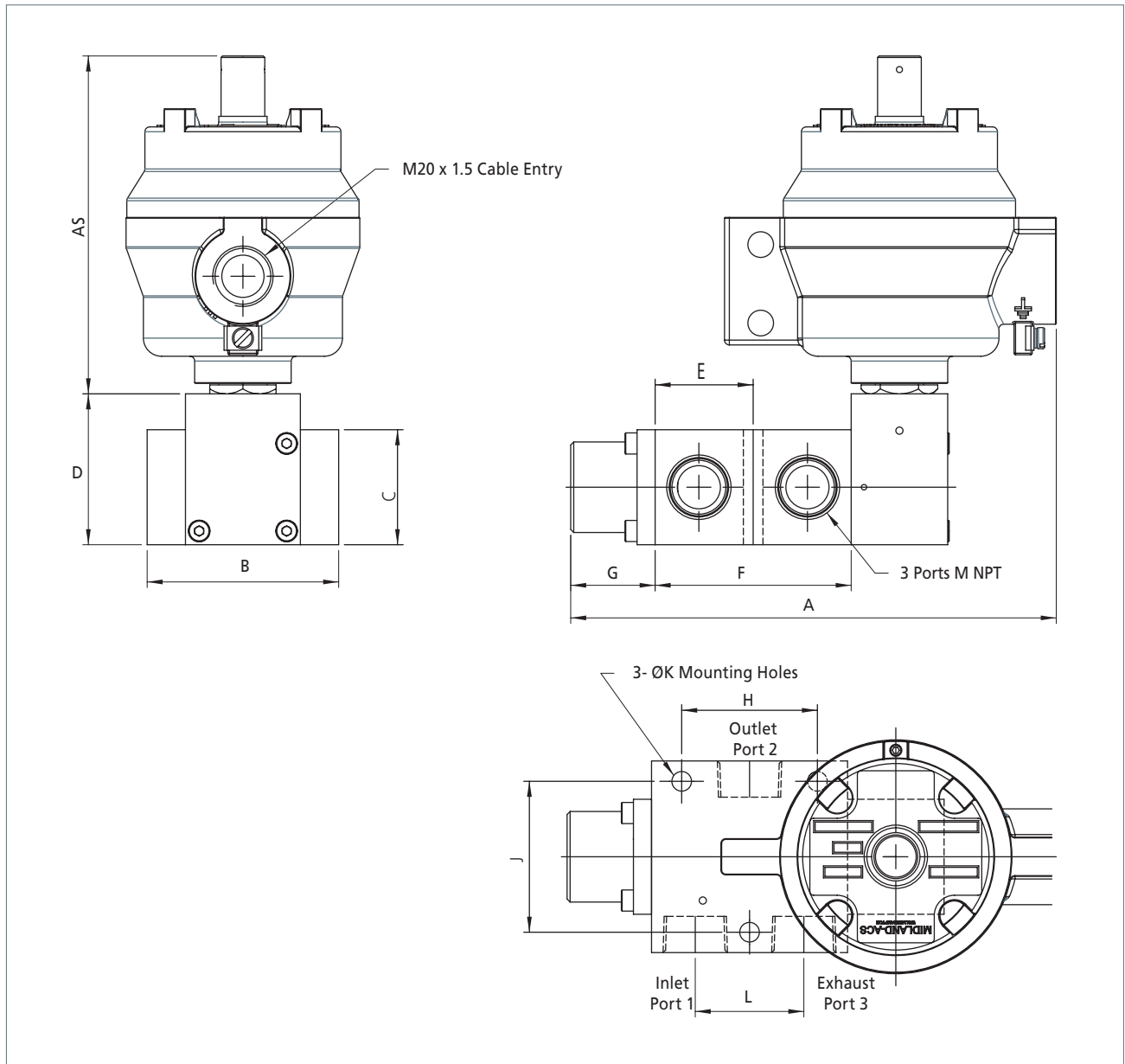


Internal Feed to Solenoid 3/2 N/C





# 1750 Series Poppet Valve – 1/4" to 1/2" Pilot solenoid operated



## Ordering Information

Product Code	Size	A	B	C	D	E	F	G	H	J	K	L	M
2323M23-VC2B*#	1/4"	132	44.5	32	41	27	54	10	26	35	5.5	28	1/4"
3323M23-VC2B*#	3/8"	132	51	32	41	27	54	10	38	40	6.5	28	3/8"
4323M23-VC2B*#	1/2"	161	63.5	38	50	32.5	65	28	45	50	6.5	36	1/2"

\* Denotes solenoid type. See page 12 - 13  
 # Denotes Voltage. See page 12

# 1750 Series Poppet Valve – 3/4" to 3" Pilot solenoid operated

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

K-TYPE solenoid shown - see solenoid specification chart

## Features and Benefits

- Specifically designed for severe environments
- Ambient temperature range -20 to +80 °C (-4 to +176 °F) (valve only - see solenoid specification chart for details)
- 316L stainless steel construction
- Designed for actuator control
- Large flow paths (up to 110 Cv)
- NACE capability option available

## Working Temperature Range

- 3/4" to 3" -20 to +80 °C (-4 to +176 °F) valve only, see separate table for solenoid ambient temperatures
- Low temperature option -50 °C (-58 °F) available for 3/4" to 2" only (solenoid dependant - consult factory for product code)
- Fluoroelastomer option +180 °C available 3/4" to 1 1/2" only (consult factory for product code)

## Working Pressure

- Up to 12 bar (174 psi) maximum inlet pressure
- Minimum pilot pressure via solenoid supply port (valve size dependent - see chart)

## Ports NPT (BSP option available)

- 3/4" to 3" NPT
- Pilot Ports 1/8" or 1/4" (valve size dependent)

## Operating Media

- Gases – filtered lubricated or non-lubricated air, inert gas, sweet (natural) and sour gases - NACE
- Liquids – low pressure hydraulic, mineral oil or water (please consult factory)

## Construction Materials

- Body and trim: 316L stainless steel
- Springs: 316 stainless steel
- Seals: 3/4" to 3" Nitrile



Drawings and 3D models for all valves and solenoid options available on request

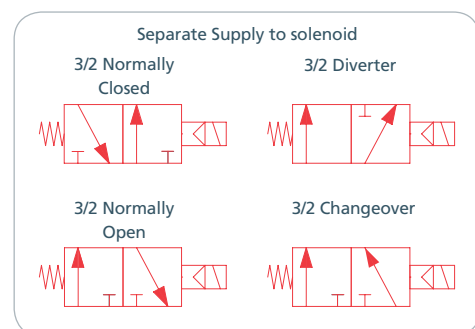
Product Code	Size	Mass (kg)	Max.Flow L/Min	Max.Flow SCFM	Minimum Solenoid Supply Pressure	Cv
6325M24-SC2B*#	3/4"	5 +solenoid	8041	284	4 bar	8
8325M24-SC2B*#	1"	5 +solenoid	12866	454	4 bar	13
5325M24-SC2B*#	1 1/4"	11 +solenoid	17650	624	4 bar	18
7325M24-SC2B*#	1 1/2"	11 +solenoid	22379	791	4 bar	22
9325M24-SC2B*#	2"	18.7 +solenoid	50869	1798	4 bar	50
C325M24-SC2B*#	3"	30 +solenoid	111895	3955	7 bar	110

Maximum Flow at 6 bar, with 1 bar differential

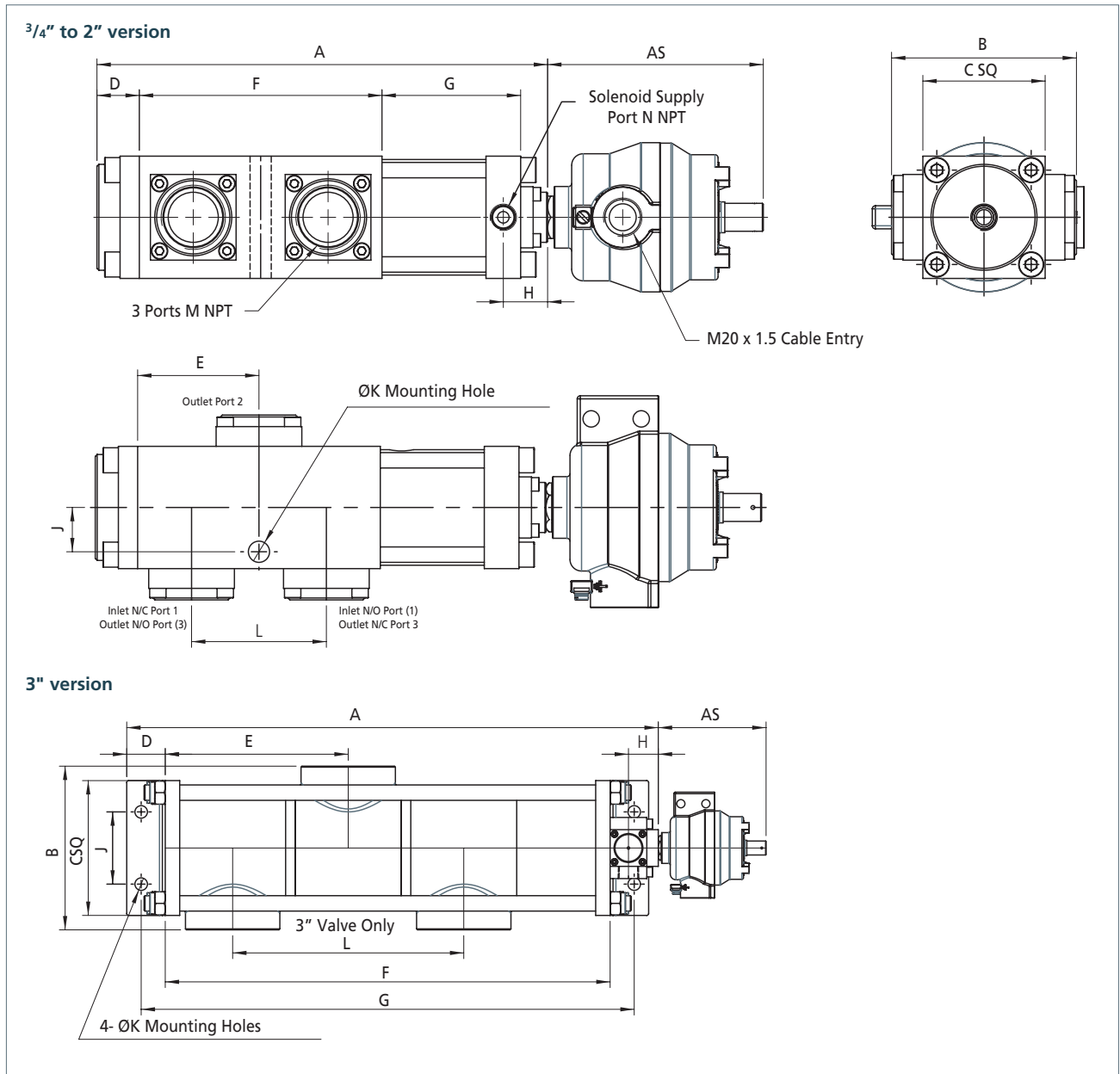
\* Denotes Solenoid Type. See Page 12 - 13

# Denotes Voltage. See Page 12

## Certification Options Available



# 1750 Series Poppet Valve – 3/4" to 3" Pilot solenoid operated



## Ordering Information

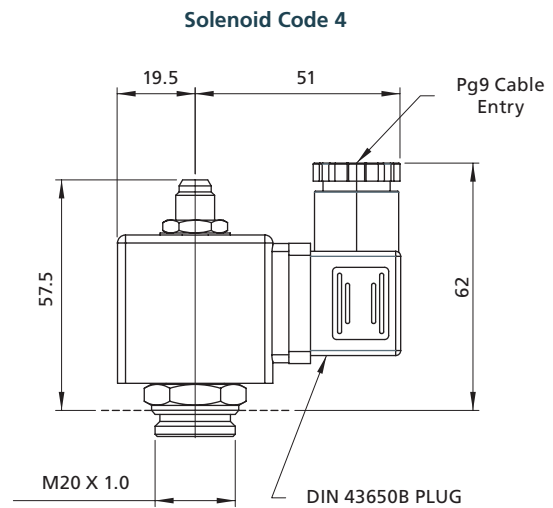
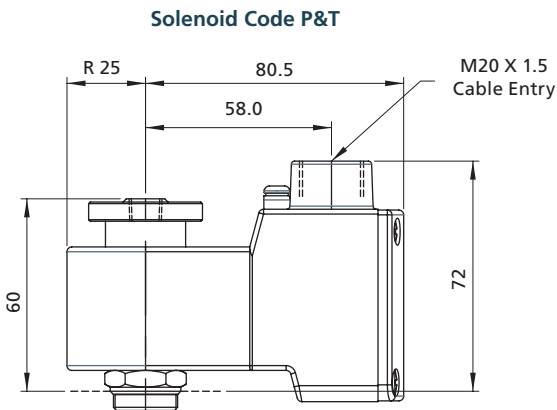
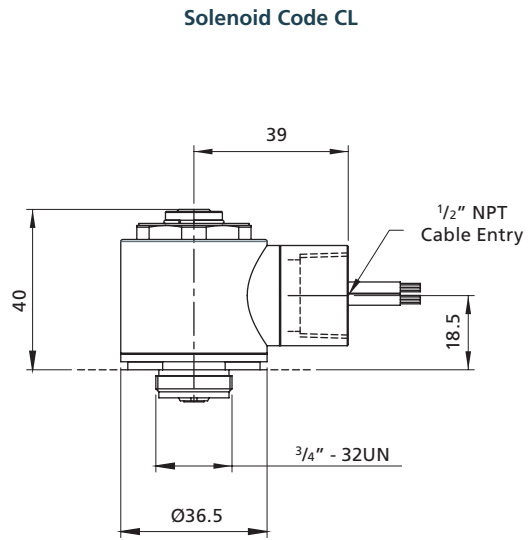
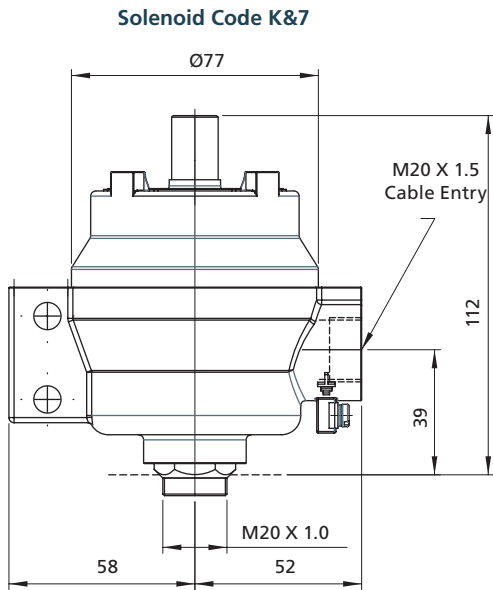
Product Code	Size	A	B	C	D	E	F	G	H	J	K	L	M	N
6325M24-SC2B*##	3/4"	214	96	63.5	22	53	106	72	23	23	11	60	3/4"	1/4"
8325M24-SC2B*##	1"	234	96	63.5	22	63	126	72	23	23	11	70	1"	1/4"
5325M24-SC2B*##	1 1/4"	285	116	76	18	90	180	73	23	28.5	11	100	1 1/4"	1/4"
7325M24-SC2B*##	1 1/2"	285	116	76	18	90	180	73	23	28.5	11	100	1 1/2"	1/4"
9325M24-SC2B*##	2"	378	140	102	13	120	240	86	24	38	13	124	2"	1/4"
C325M24-SC2B*##	3"	552	170	140	40	190	462	512	31	75	13	240	3"	1/2"

If alternative port positions are required consult factory.

\* Denotes solenoid type. See page 12 - 13

# Denotes Voltage. See page 12

# 1750 Series Poppet Valve – Solenoid operators for use with pilot solenoid poppet valves



## Voltages

Code	Voltage
C	12 VDC
D	24 VDC
F	48 VDC
M	110 VAC 50/60 Hz
S	220 VAC 50 Hz
Y	28 VDC

# 1750 Series Poppet Valve – Pilot solenoid operated

## Solenoid specifications

Model Code	K	7	CL	P	T	4
<b>Type of Protection</b>	Exd IIC T6	Exd IIC T4	NEMA 7 & 9	Eex me II T4/T5	Eex ia IIC T6	Non-hazardous
<b>Approved Area</b>	Zones 1 and 2	Zones 1 and 2	Class I, Div 1, Group C & D. Class II, Div 1, Groups E, F, & G. Class II, Div 2, Groups C, D, E, F & G	Zones 1 and 2	Zones 0	None
<b>Degree of Protection</b>	IP67 (NEMA Equivalent: 6)	IP67 (NEMA Equivalent: 6)	NEMA 4 (IP55)	IP66 (NEMA Equivalent: 4X)	IP66 (NEMA Equivalent: 4X)	IP65 (NEMA Equivalent: 4)
<b>Housing</b>	316 Stainless Steel alt Aluminium Epoxy coated	316 Stainless Steel alt Aluminium Epoxy coated	Stainless Steel. Coil potted	Glass reinforced Polyamid (Stainless Steel conduit hub)	Glass reinforced Polyamid	Moulded plastic
<b>Cable Entry</b>	M20 x 1.5 (Optional 1/2" NPT consult factory for code)	M20 x 1.5 (Optional 1/2" NPT consult factory for code)	1/2" NPT or 24" flying lead	M20 x 1.5 (Optional 1/2" NPT consult factory for code)	M20 x 1.5 (Optional 1/2" NPT consult factory for code)	DIN plug
<b>Power Consumption AC/DC</b>	5W 22.4 VA (110 VAC) 23.4 VA (120 VAC)	5 W 22.4 VA (110 VAC) 23.4 VA (120 VAC)	1.8 W / 1.8 W	7.5 W (DC)	2.3 W (24 VDC)	9 W (DC) 9 W (Inrush 32 VA) (AC)
<b>Maximum Admissible Surface Temp</b>	85 °C (185 °F)	135 °C (275 °F)	160 °C (320 °F)	T4 135 °C (275 °F) T5 100 °C (212 °F)	85 °C (185 °F)	N/A
<b>Maximum Ambient Temperature</b>	40 °C (104 °F)	80 °C (176 °F)	40 °C (104 °F)	T4 75 °C (167 °F) T5 40 °C (104 °F)	65 °C (149 °F)	50 °C (122 °F)
<b>Maximum Fluid Temperature</b>	80 °C (176 °F)	80 °C (176 °F)	105 °C (221 °F)	75 °C (167 °F)	75 °C (167 °F)	75 °C (167 °F)
<b>Solenoid Weight (kg)</b>	1.62	1.62	0.29	0.63	0.53	0.20
<b>Approved Standard</b>	ATEX, CSA, UL, IECEX & EAC	ATEX, CSA, UL, IECEX & EAC	UL Listed / CSA Certified & EAC	ATEX, CSA, UL, IECEX & EAC	ATEX, CSA, UL, IECEX & EAC	EAC

### NOTES:

The combination of valve and coil will determine maximum ambient i.e. always the lower of the two.  
‘T’ type solenoid only available with 28 VDC coil (Y).



## 1750 Series Poppet Valve – Plunger or roller lever operated

A range of 3/2 mechanically operated poppet valves for cylinder position detection in stainless steel 316L for use on gases.

### Features and Benefits

- Specifically designed for severe environments
- Ambient temperature range -20 to + 80 °C
- 316L stainless steel construction
- Mechanically operated
- Limit switch for end of actuator stroke detection
- NACE capability option available

### Ambient Temperature Range

- -20 to +80 °C (-4 to +176 °F)

### Working Pressure

- Up to 12 bar (145 psi) maximum inlet pressure

### Maximum Flow

- 402 l/min (14.2 SCFM)  
(at 6.0 bar with 1.0 bar differential)

### Ports NPT (BSP option available)

- 1/8" NPT



### Operating Media

- Gases – filtered lubricated or non-lubricated air, inert gas, sweet (natural) and sour gases
- Liquids – low pressure hydraulic, mineral oil or water (please consult factory)

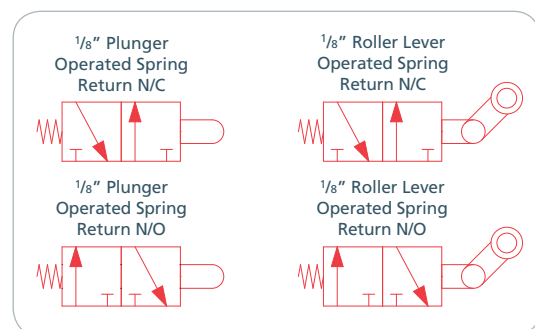
### Construction Materials

- Body and trim: 316L stainless steel
- Springs: 316 stainless steel
- Seals: Nitrile

Drawings and 3D models for all valves and solenoid options available on request

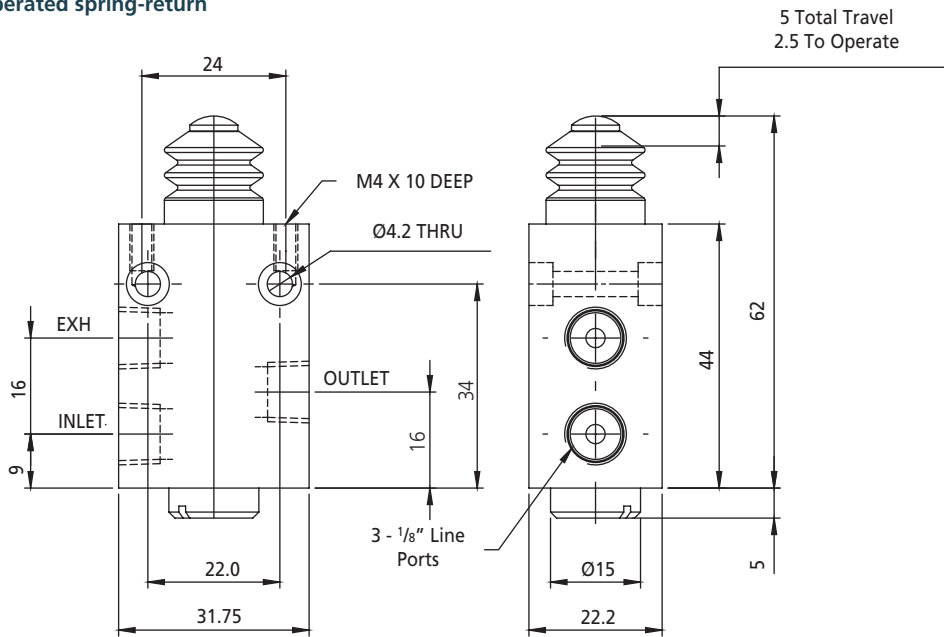
Product Code	Size	Description	Mass (kg)	Operating Force		Cv
				N	lbf	
1323M62-SM2B	1/8"	Plunger operated, spring-return, N/C	0.21	44	9.9	0.26
1324M62-SM2B	1/8"	Plunger operated, spring-return, N/O	0.22	80	18	0.26
1323M82-SM2B	1/8"	Lever roller operated, spring-return, N/C	0.28	20	4.5	0.26
1324M82-SM2B	1/8"	Lever roller operated, spring-return, N/O	0.29	36	8.1	0.26

Certification options available



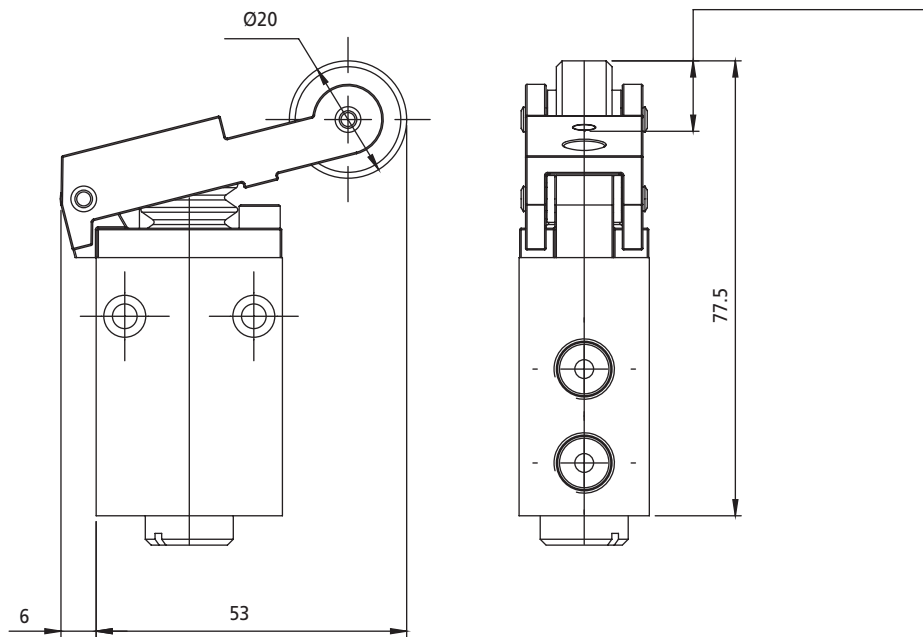
# 1750 Series Poppet Valve – 3/2 Plunger operated spring-return

3/2 Plunger operated spring-return



5 Total Travel  
2.5 To Operate

3/2 Roller lever operated spring-return



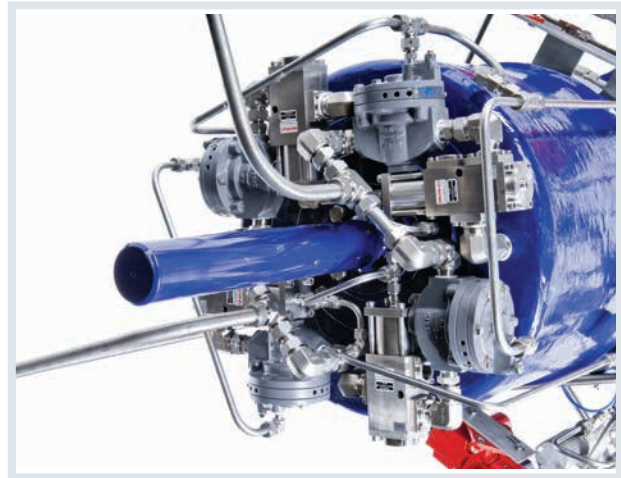
12 Total Travel  
6 To Operate

## Oil & Gas industries

# rotork® MIDLAND

Since our founding in 1956, we have been known internationally as one of the oil & gas industries premier designers and manufacturers of 316L stainless steel control equipment. Over the years we have developed an enviable reputation for high quality products, reliability and innovation.

We have the ability to investigate problems and provide comprehensive solutions for the control of hydraulic and pneumatic actuated process control valves across a broad range of industries and markets. This, coupled with repeatedly delivering impressive results worldwide, sets us apart from our competitors.



# rotork® Instruments

Rotork Instruments are experts in flow control, pressure control, flow measurement and pressure measurement.

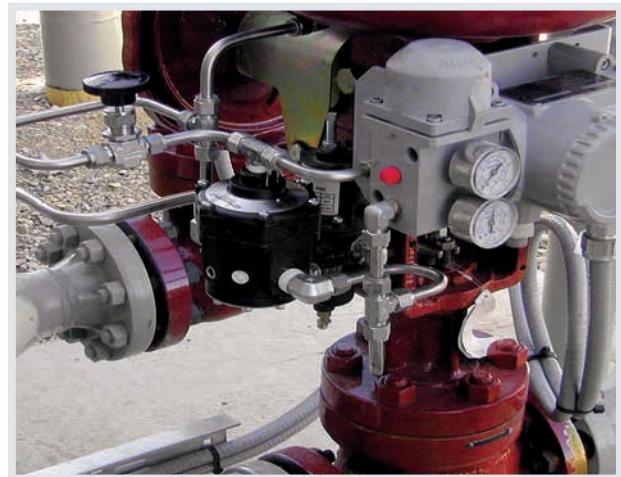
We manufacture products and components that are trusted for applications where high precision and reliability are required.

Rotork Instruments has manufacturing facilities in USA, Italy, Brazil, India, China and Singapore.

The Rotork global sales and service network supports all Rotork Instruments products. This network is the biggest global actuation support organisation in the world with direct sales offices and agents in all industrialised countries.

Customer service and field support provides quick and effective response to customer requirements.

The Rotork Site Services network is represented throughout the world and provides valuable service and assistance to all industries.



## Service and Support

# rotork® Site Services

In each of our divisions, Site Services staff are dedicated to providing customer service and support, carrying out new installations and delivering retrofit projects. These teams are based out of service centres around the world and are complemented by factory-trained agents.

Our expert technicians support Rotork customers, allowing us to deliver on our promise of global solutions backed by local service.

**Visit [www.rotork.com](http://www.rotork.com) to identify your nearest Rotork location.**



### Client Support Programme

Rotork offers a premium level of product reliability and availability through the flexible Client Support Programme (CSP). Designed to facilitate the highest production demands while providing a tiered approach to maintenance, the CSP is committed to reducing maintenance downtime and costs.

Through consultation, the CSP is tuned to deliver the optimum level of maintenance through predictive maintenance algorithms.

#### Features of the CSP are:

- Fixed term prices for Rotork products and services
- Customisable cover based on equipment criticality to production
- Equipment performance related targets for reliability and availability
- Priority support with customisable response times
- Fully parts and labour inclusive, no additional costs or discounted labour and parts
- Fix or replace options
- Periodic equipment performance and status reports
- Built-in regular health checks on all equipment

#### Benefits of the CSP include but are not limited to:

- Year-on-year reduced maintenance costs
- Easy budget management
- Maximised production resulting in reduced downtime
- Year-on-year improved reliability and availability
- Optimised resource usage to accelerate in-house projects
- Reduced lifecycle costs



# rotork®

Redefining Flow Control

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Rotork Midland Ltd.  
Patrick Gregory Road  
Wolverhampton  
WV11 3DZ, UK  
*tel* +44 (0)1902 305 678  
*fax* +44 (0)1902 305 676  
*email* sales.midland@rotork.com

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