



Bullet Valves

Due to the flexibility of design, the bullet valve is available in many dimensional variants to meet high flow, compact space and extremely fast and repeatable response times.

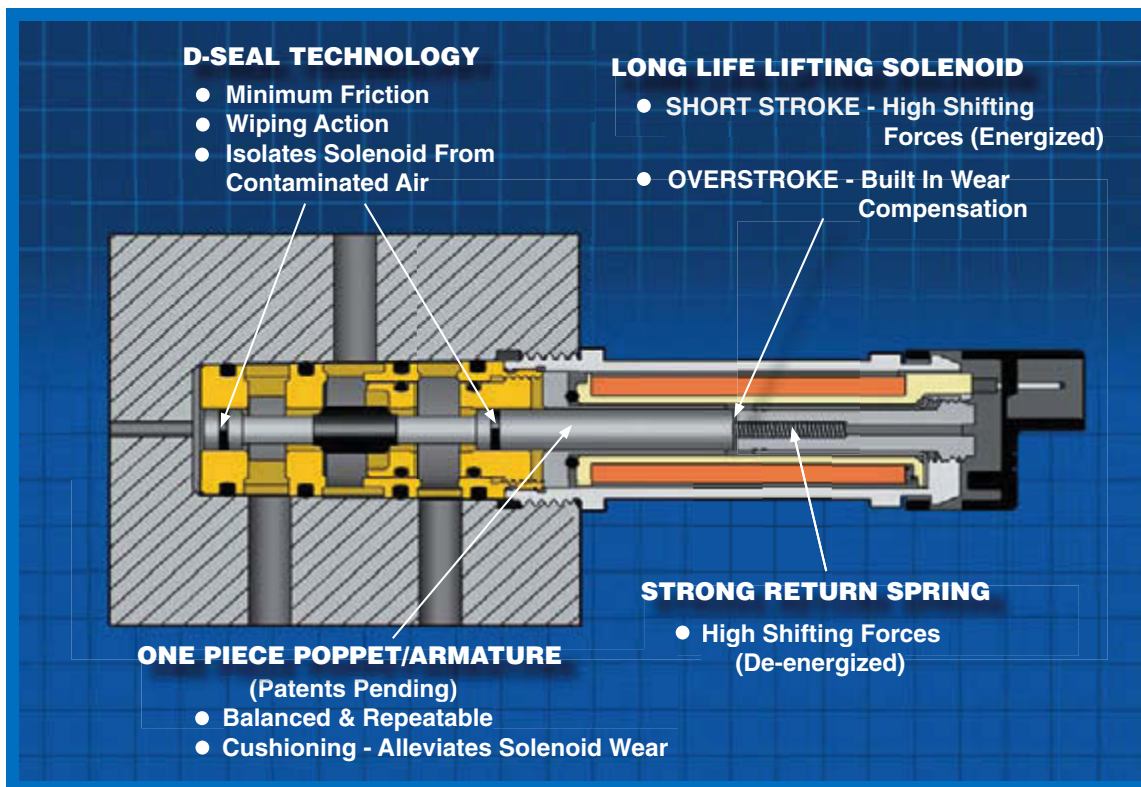
Please contact us to evaluate your application correctly.

Bullet Valve™ (BV) Series

The Bullet Valve™ represents yet another evolution in air valve technology from MAC.

- VERY FEW PARTS
- LONG LIFE LIFTING SOLENOID
- ONE PIECE POPPET / ARMATURE (PATENTS PENDING)
- BALANCED DESIGN
- SOLENOID ISOLATED FROM CONTAMINATED AIR
- UNIQUE MOUNTING

The threaded cartridge configuration allows for a variety of mounting possibilities, such as direct integration into pneumatic actuators or vacuum generators without the need of external tubing or fasteners. 2-way & 3-way models of the BV cartridge are available. A surface manifold mount configuration is also offered.





Bullet Valve®



Australian MDN Partner
pneutech.com.au
1300 879 613

Function	Flow [max]	Manifold mounting	Series
2/2	Up to 0.07 Cv	Cartridge	BV209A

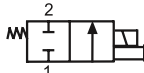
OPERATIONAL BENEFITS

1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life
7. Unique mounting - no fasteners or screws required.



HOW TO ORDER

VALVE

Type	2 Way	
Cartridge (Standard)	BV209A-CA1-00- xxxx - xxx	
Cartridge (Axial Flow)	BV209A-CB0-00- xxxx - xxx	

SOLENOID OPERATOR

xxxx - xxx				
Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	GC 24VDC (2.5W) GE 24VDC (4.0W) GH 12VDC (2.5W) GK 12VDC (4.0W)	† O No lead wire A 18"	C For Top Cover Option and Can w/ Outer Threads	JST Connector TA No ground wire Flying Leads BA
		† Not available for flying leads cover		

* High wattage – high speed options – consult factory
High wattage configurations require intermittent duty cycles.

** ERC – Energy Reduction Circuitry – Reduces the effective wattage at continuous duty
ERC wattage reduction options – consult Pneutech.

CIRCUIT BAR

Bullet valve type	Cyl. port size	Spacing (mm)	Side cylinder port	Bottom cylinder port
Standard	M5	11	CCMV09A-00AAB- xx	CCMV09A-00BAB- xx
	M7	11	CCMV09A-00AAC- xx	CCMV09A-00BAC- xx
Axial flow	M5	11	-	CCMV09A-00BDB- xx
	M7	11	-	CCMV09A-00BDC- xx

xx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.



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Bullet Valves

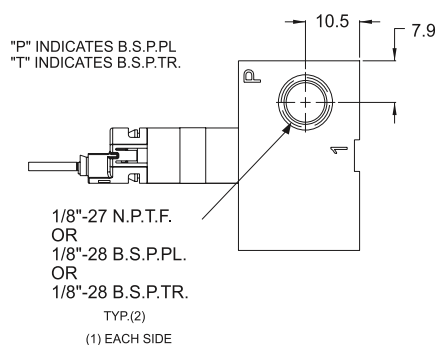
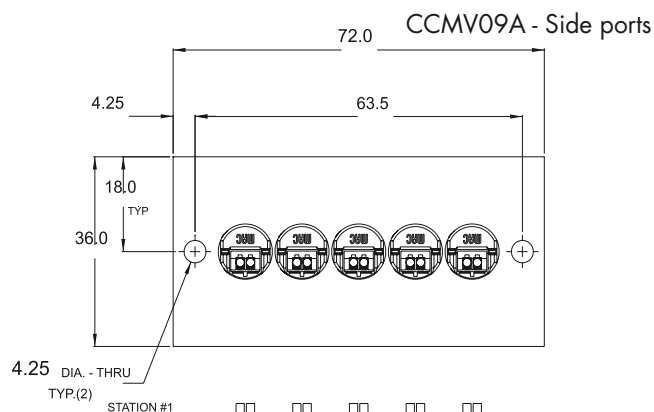
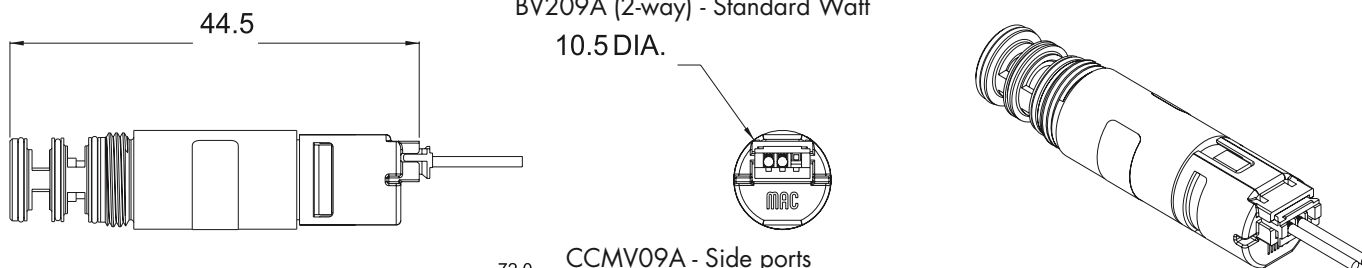
TECHNICAL DATA

Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40µ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar ΔP=1 bar):	Up to 0.07 Cv
Voltage range:	-15% to +10% of nominal voltage

Tools: Manifold cavity step reamer: T-6961 • Insertion/removal socket: AT-1180 (Bit) AT-1185 (Bit Holder) AT-1184 (Handle)

DIMENSIONS

Bullet Valve with "JST" Cover and Circuit Board for LED., MOV., & Diode Options
BV209A (2-way) - Standard Watt



BV209A SIDE PORTS

CYL.	DIMENSION "A"
#10-32	17.20
M5x0.8	17.20
M7x1.0	17.20



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Function	Flow [max]	Manifold mounting	Series
3/2 NC, Universal	Up to 0.06 Cv	Cartridge	BV309A

OPERATIONAL BENEFITS

1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life
7. Unique mounting - no fasteners or screws required.



HOW TO ORDER

VALVE

Type	3 Way N.C.	3 Way Universal
Cartridge	BV309A-CC1-00- XXXX - XXX	BV309A-CD1-00- XXXX - XXX

SOLENOID OPERATOR

Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	GA 24VDC (1.0W) GC 24VDC (2.5W) GE 24VDC (4.0W) GH 12VDC (2.5W) GK 12VDC (4.0W)	† 0 No lead wire A 18" † Not available for flying leads cover	C For Top Cover Option and Can w/ Outer Threads	JST Connector TA No ground wire Flying Leads BA

* High wattage – high speed options – consult Pneutech

** ERC wattage reduction options – consult Pneutech

CIRCUIT BAR

Port size	Spacing (mm)	Side cylinder port
M5	11	CCMV09A-00ABB- xx
M7	11	CCMV09A-00ABC- xx

xx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.

* High wattage configurations require intermittent duty cycles.

** ERC – Energy Reduction Circuitry – Reduces the effective wattage at continuous duty.



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Bullet Valves

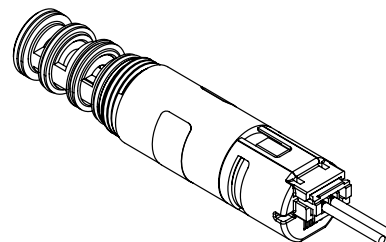
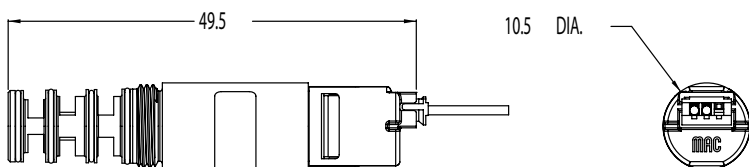
TECHNICAL DATA

Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40µ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar ΔP=1 bar):	Up to 0.06 Cv
Voltage range:	-15% to +10% of nominal voltage

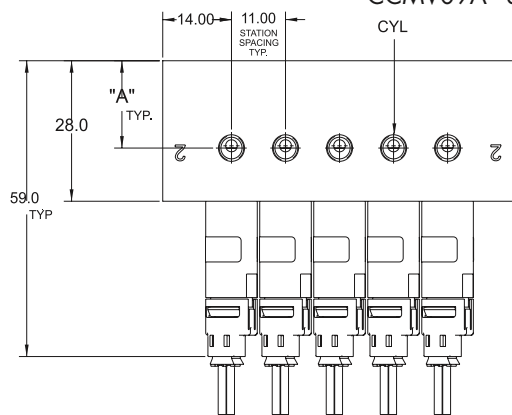
Tools: Manifold cavity step reamer: T-6962 • Insertion/removal socket: AT-1180 (Bit) AT-1185 (Bit Holder) AT-1184 (Handle)

DIMENSIONS

Bullet Valve with "JST" Cover and Circuit Board for LED., MOV., & Diode Options
BV309A (3-way) - Standard Watt



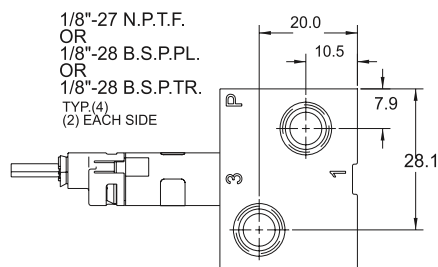
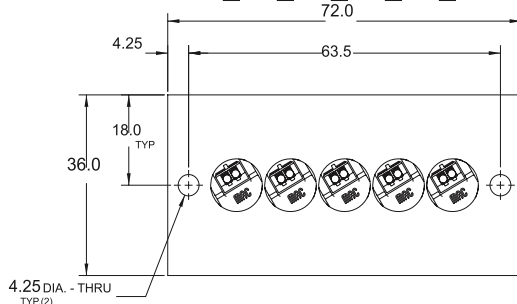
CCMV09A - Side ports



BV309A
SIDE PORTS

CYL	DIMENSION "A"
#10-32	17.4
M5 X 0.8	17.4
M7 X 1.0	18.9

"P" INDICATES B.S.P.PL.
"T" INDICATES B.S.P.TR.





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Function	Flow [max]	Manifold mounting	Series
2/2	Up to 0.08 Cv	Cartridge	BV210A

OPERATIONAL BENEFITS

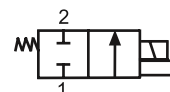
1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life
7. Unique mounting - no fasteners or screws required.



HOW TO ORDER

VALVE

Type	2 Way
Cartridge (Standard)	BV210A-CA1-00-xxxx-xxx
Cartridge (Axial Flow)	BV210A-CB0-00-xxxx-xxx



SOLENOID OPERATOR

xxxx - xxx

Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	EH 24VDC (2.5W) EG 24VDC (4.0W) EK 12VDC (2.5W) EJ 12VDC (4.0W)	† 0 No lead wire A 18" † Not available for flying leads cover	C For Top Cover Option and Can w/ Outer Threads	JST Connector TA No ground wire Flying Leads BA

* High wattage – high speed options – consult factory
High wattage configurations require intermittent duty cycles.

** ERC – Energy Reduction Circuitry – Reduces the effective wattage at continuous duty
ERC wattage reduction options – consult Pneutech.

CIRCUIT BAR

Bullet valve type	Cyl. port size	Spacing (mm)	Side cylinder port	Bottom cylinder port
Standard	M5	12	CCMV10A-00AAB-xx	CCMV10A-00BAB-xx
	M7	12	CCMV10A-00AAC-xx	CCMV10A-00BAC-xx
Axial flow	M5	12	-	CCMV10A-00BDB-xx
	M7	12	-	CCMV10A-00BDC-xx

xx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.



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TECHNICAL DATA

Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40µ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar $\Delta P=1$ bar):	Up to 0.08 Cv
Voltage range:	-15% to +10% of nominal voltage

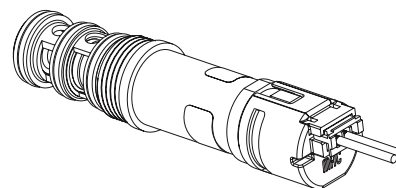
Tools: Manifold cavity step reamer: T-6960 • Insertion/removal socket: AT-1181 (Bit) AT-1185 (Bit Holder) AT-1184 (Handle)

DIMENSIONS

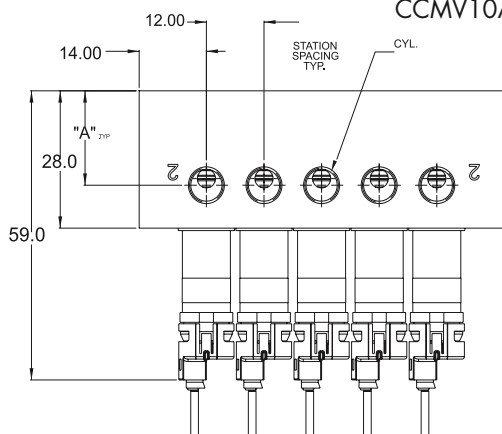
Bullet Valve with "JST" Cover and Circuit Board for LED., MOV., & Diode Options
BV210A (2-way) - Standard Watt



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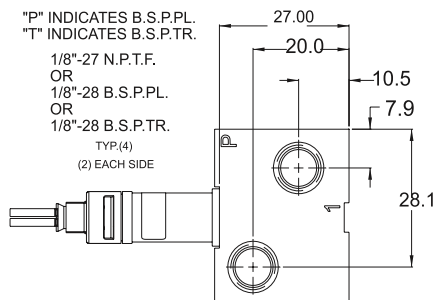
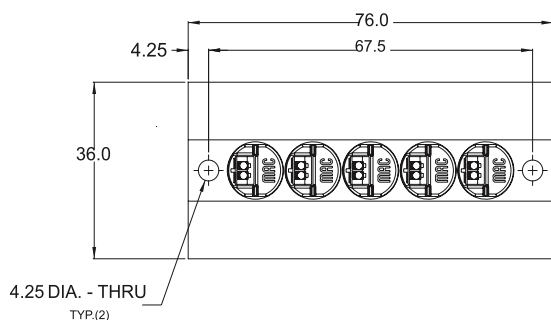


CCMV10A - Side Ports



BV210A
SIDE PORTS

CYL.	DIMENSION "A"
#10-32	17.90
M5x0.8	17.90
M7x1.0	19.25



"P" INDICATES B.S.P.L.
"T" INDICATES B.S.P.T.R.
1/8"-27 N.P.T.F.
OR
1/8"-28 B.S.P.L.
OR
1/8"-28 B.S.P.T.R.
TYP.(4)
(2) EACH SIDE



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Function	Flow [max]	Manifold mounting	Series
3/2 NC, Universal	Up to 0.09 Cv	Cartridge	BV310A

OPERATIONAL BENEFITS

1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life
7. Unique mounting – no fasteners or screws required.

HOW TO ORDER



Valve	Type	3 Way N.C.	3 Way Universal
Cartridge (Standard)		BV310A-CC1-00- xxxx - xxx	BV310A-CD1-00- xxxx - xxx
Cartridge (Diaphragm)		BV310A-DC1-00- xxxx - xxx	

SOLENOID OPERATOR

xxxx - xxx

Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	†† HR 24VDC (.75W) HC 24VDC (2.5W) HD 24VDC (3.0W) HE 24VDC (4.0W)	†† HS 12VDC (.75W) HH 12VDC (2.5W) HJ 12VDC (3.0W) HK 12VDC (4.0W)	† O No lead wire A 18"	C For Top Cover Option and Can w/ Outer Threads
		† Not available for flying leads cover		TA JST Connector No ground wire BA Flying Leads

†† Only available with Diaphragm type valve

* High wattage - high speed options - consult Pneutech

** ERC wattage reduction options - consult Pneutech

CIRCUIT BAR

Port size	Spacing (mm)	Side cylinder port
M5	12	CCMV10A-00ABB- xx
M7	12	CCMV10A-00ABC- xx

xxx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.

* High wattage configurations require intermittent duty cycles.

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Bullet Valves

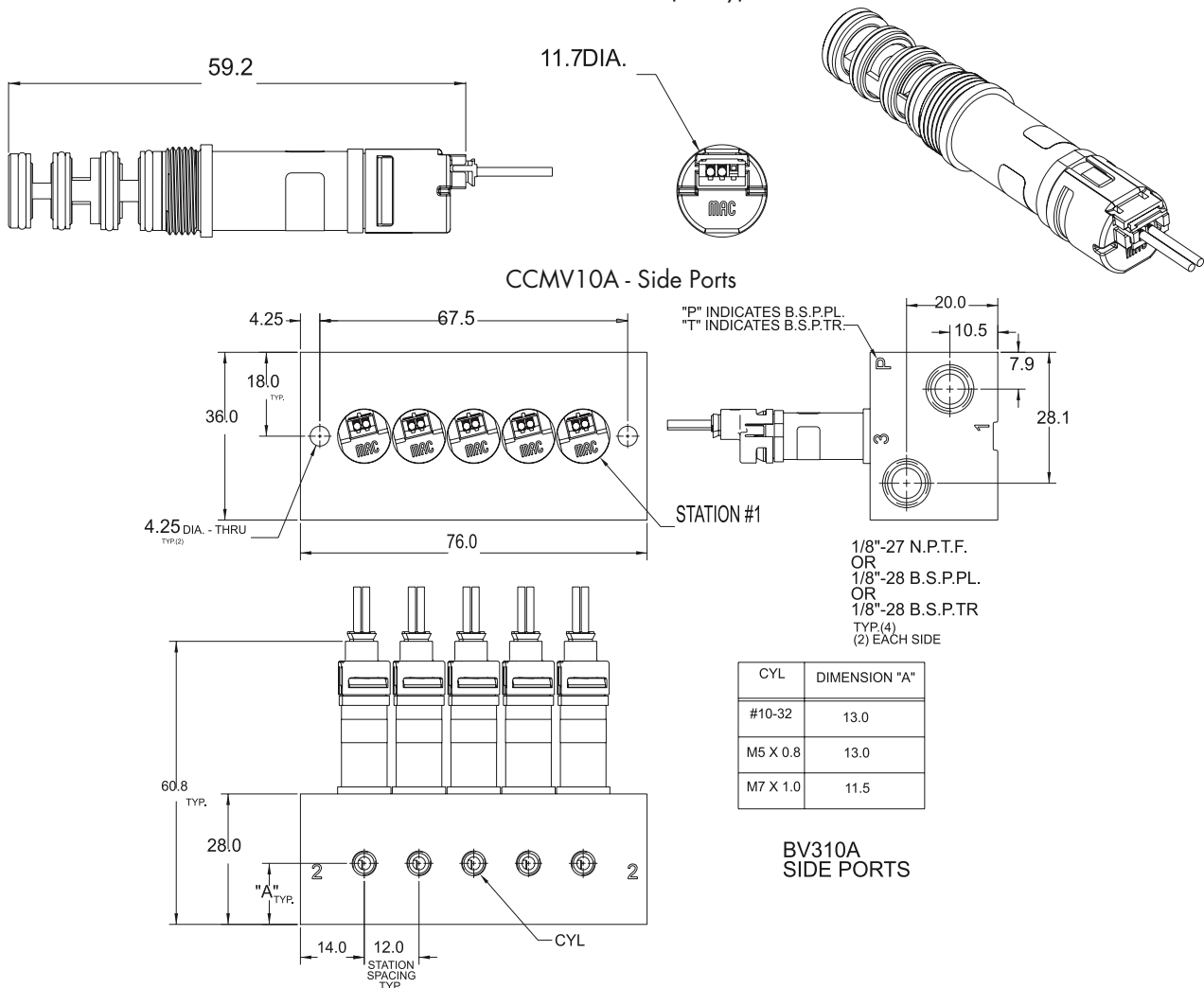
TECHNICAL DATA

Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40μ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar ΔP=1 bar):	Up to 0.09 Cv
Voltage range:	-15% to +10% of nominal voltage

Tools: Manifold cavity step reamer: T-7396 • Insertion/removal socket: AT-1181 (Bit) AT-1185 (Bit Holder) AT-1184 (Handle)
Modifications: MOD L001 (Modified diaphragm valve for <1cc/Min leak rate)

DIMENSIONS

Bullet Valve with "JST" Cover and Circuit Board for LED., MOV., & Diode Options
BV310A (3-way) - Standard Watt





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Function	Flow [max]	Manifold mounting	Series
3/2 NC, Universal	Up to 0.08 Cv	Manifold mount - Non plug-in	BV310A

OPERATIONAL BENEFITS

1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life.

HOW TO ORDER



VALVE

Type	3 Way N.C.	3 Way Universal
Manifold Mount - Non plug-in	BV310A-LC1-00- XXXX - xxx	BV310A-LD1-00- XXXX - xxx

SOLENOID OPERATOR

XXXX - XXX				
Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	HC 24VDC (2.5W) HH 12VDC (2.5W)	† O No lead wire A 18"	B Cover For Manifold Body	JST Connector TA Flying Leads BA No ground wire

* High wattage - high speed options - consult factory

** ERC wattage reduction options - consult factory

NON PLUG-IN CIRCUIT BAR

Port size	Spacing (mm)	Side cylinder port	Bottom cylinder port
M5	12	CBMV10A-00ABB- xx	CBMV10A-00BBB- xx
M7	12	CBMV10A-00ABC- xx	CBMV10A-00BBC- xx

xx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.

OPTIONS

BV310A- LC 1 -00- **XXXX** - **xxx**
Replace with "O" for no manual operator

How to order bar configured for regulator

CBMV10A-00 **A** BB- **xx**
Replace with D for regulator - Side ports
Replace with E for regulator - Bottom ports

Note: Regulator must be ordered separately - see next page

* High wattage configurations require intermittent duty cycles.

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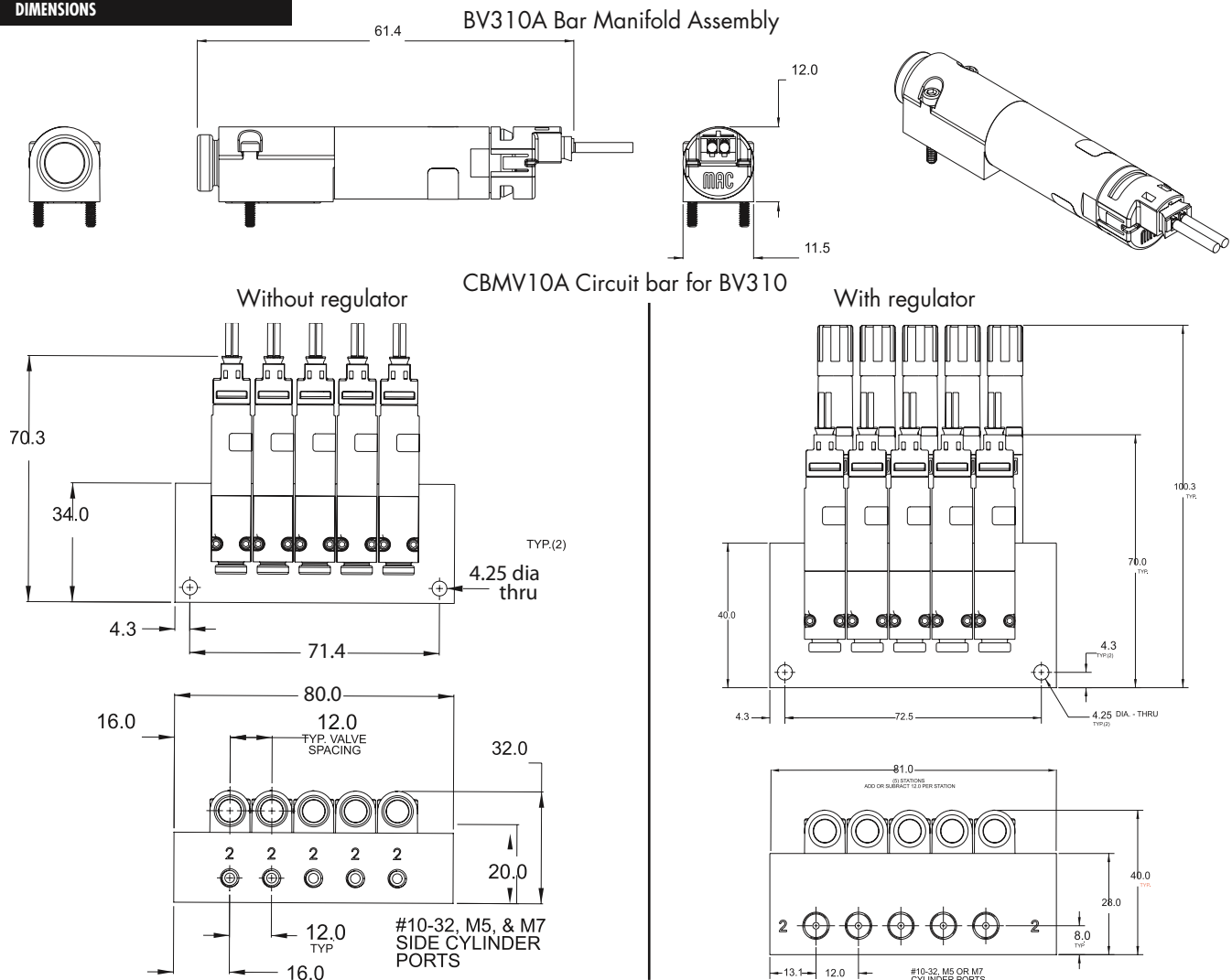
Bullet Valves

TECHNICAL DATA

Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40µ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar ΔP=1 bar):	Up to 0.08 Cv
Voltage range:	-15% to +10% of nominal voltage
Spare parts:	- Pressure seal, body to base: 16985 - Mounting screw, body to base: 35166 - 2 pcs required - Regulator for bar: PR44A-A0A X - Blank Station Cover Plate: N-BV008

X = A 0 to 100 PSI
B 0 to 60 PSI
C 0 to 40 PSI
D 0 to 15 PSI

DIMENSIONS





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Function	Flow [max]	Manifold mounting	Series
2/2	Up to 0.24 Cv	Cartridge	BV214A

OPERATIONAL BENEFITS

1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life
7. Unique mounting – no fasteners or screws required.



HOW TO ORDER

VALVE

Type	2-Way (standard)	2-Way (axial flow)
Cartridge	BV214A-CA1-00- xxxx-xxx	BV214A-CB0-00- xxxx-xxx

SOLENOID OPERATOR

Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	CC 24VDC (2.5W) CH 12VDC (2.5W) CK 12VDC (4.0W)	O* No lead wire A 18"	C For Top Cover Option and Can w/ Outer Threads	JST Connector TA No ground wire Flying Leads BA
* Not available for flying leads cover				

CIRCUIT BAR

Bullet valve type	Cyl. port size	Spacing (mm)	Side cylinder port	Bottom cylinder port
Standard	M7	17	CCMV14A-00AAA- xx -P	CCMV14A-00BAA- xx -P
	1/8"	17	CCMV14A-00AAB- xx -P	CCMV14A-00BAB- xx -P
Axial flow	M7	17	-	CCMV14A-00BDA- xx -P
	1/8"	17	-	CCMV14A-00BDB- xx -P

xx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.

Note: Common inlet & exhaust are 1/4" BSP



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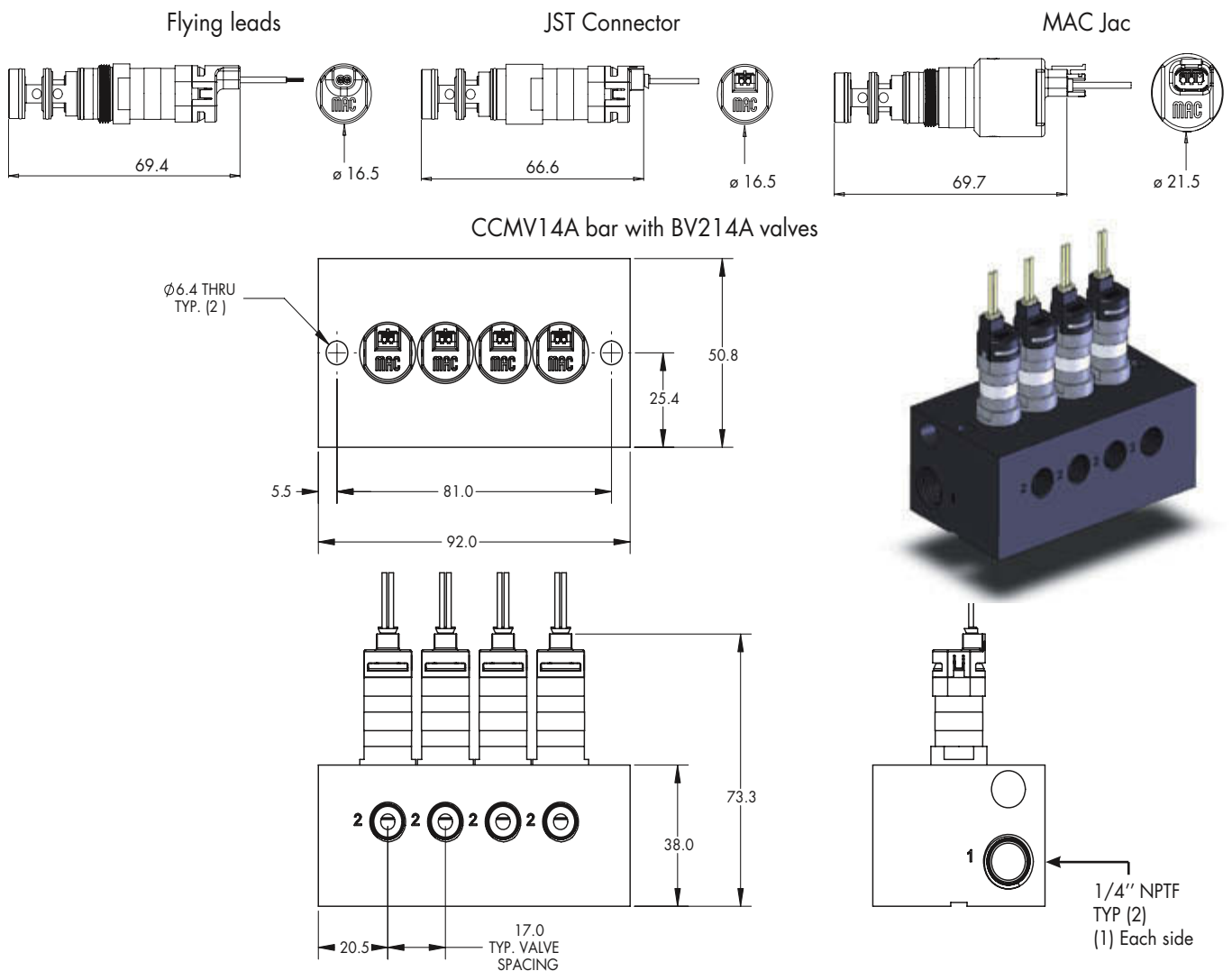
Bullet Valves

TECHNICAL DATA

Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40µ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar, Δ P=1 bar):	Up to 0.24 Cv (4.0 W)
Voltage range:	-15% to +10% of nominal voltage

Tools: Manifold cavity step reamer: T-7331 • Insertion/removal socket: AT-1263 (Bit) AT-1185 (Bit Holder) AT-1264 (Handle)

DIMENSIONS





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Function	Flow [max]	Manifold mounting	Series
3/2	Up to 0.24 Cv	Cartridge	BV314A

OPERATIONAL BENEFITS

1. Short stroke with high shifting forces
2. Balanced poppet, immune to pressure fluctuations
3. Precise repeatability
4. Solenoid isolated from contaminated air
5. Very few parts
6. Extremely long life
7. Unique mounting - no fasteners or screws required.



HOW TO ORDER

VALVE

Type	3-Way N.C.	3-Way universal valve
Cartridge	BV314A-CC1-00- xxxx - xxx	BV314A-CD1-00- xxxx - xxx

SOLENOID OPERATOR

XXXX - XXX				
Solenoid	Voltage	Lead wire length	Solenoid can (round)	Solenoid cover
B Round	CC 24VDC (2.5W) CE 24VDC (4.0W) CH 12VDC (2.5W) CK 12VDC (4.0W)	O* No lead wire A 18"	C For Top Cover Option and Can w/ Outer Threads	JST Connector TA No ground wire Flying Leads BA
		* Not available for flying leads cover		

CIRCUIT BAR

Cyl. port size	Spacing (mm)	Side cylinder port	Bottom cylinder port
M7	17	CCMV14A-00ABA- xx - P	CCMV14A-00BBA- xx - P
1/8"	17	CCMV14A-00ABB- xx - P	CCMV14A-00BBB- xx - P

xx = Number of stations

Note: for valves mounted to bar at factory, add -9 to model numbers.

Note: Common inlet & exhaust are 1/4" BSP.



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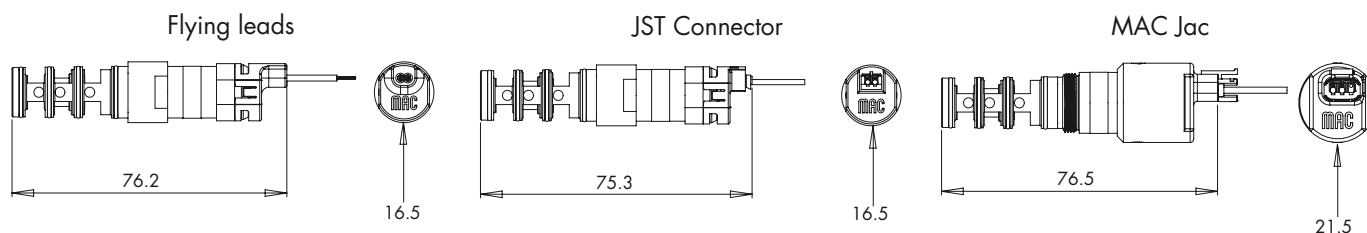
Bullet Valves

TECHNICAL DATA

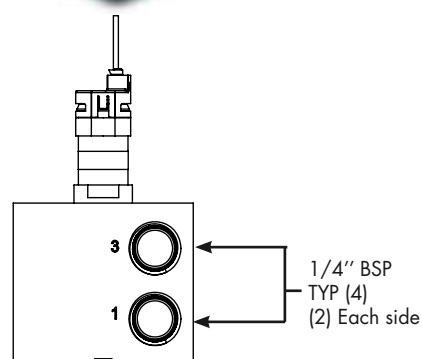
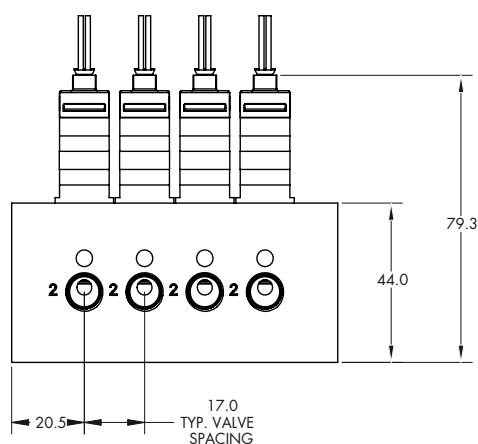
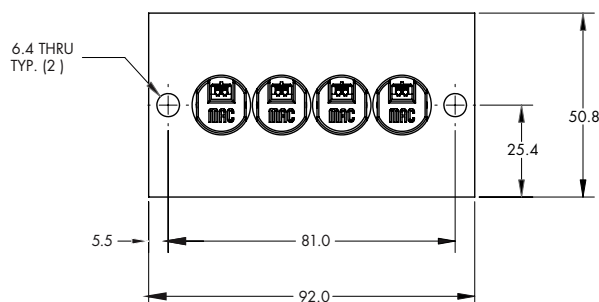
Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Vacuum to 120 PSI
Lubrication:	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration:	40µ
Temperature range:	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar, $\Delta P=1$ bar):	Up to 0.24 Cv (4.0 W)
Voltage range:	-15% to +10% of nominal voltage

Tools: Manifold cavity step reamer: T-7321 • Insertion/removal socket: AT-1263 (Bit) AT-1185 (Bit Holder) AT-1264 (Handle)

DIMENSIONS



CCMV14A bar with BV314A valves





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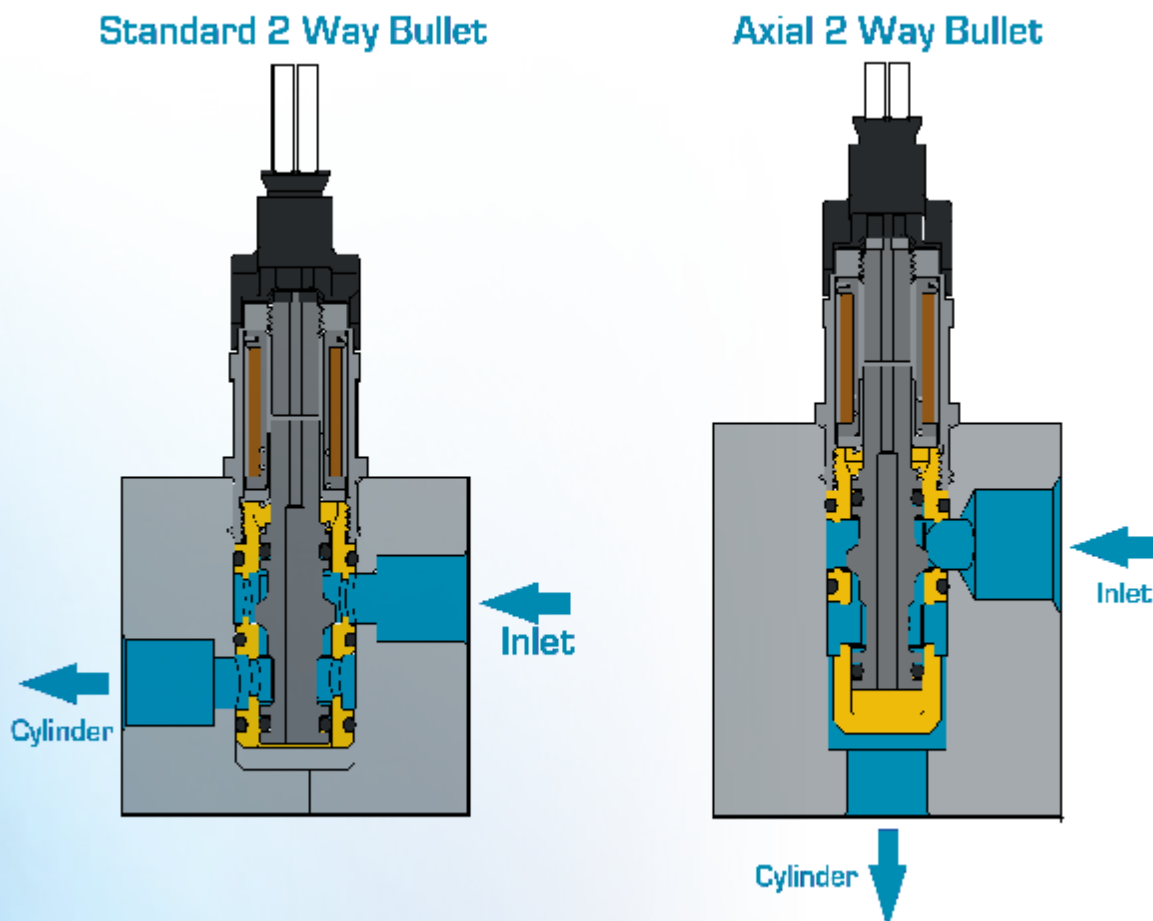
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CARTRIDGE MODIFICATIONS

Our manufacturing process of the Bullet Valve® cartridge body enables flexibility with regards to offering potential modifications that meet your specific application needs. An example of such modifications is the “axial flow” cartridge body we are currently offering for the BV09, BV210 and BV214 series.

The “axial flow” cartridge enables the valve to flow air between the bottom of the valve body and manifold it is housed in – see figure below. This modification allows for a linear flow path out of the manifold producing measurably higher outlet pulse height (force) in blow off type of applications. We have currently used this modification for applications in the sorting industry with excellent results.

If you have an application that would benefit from utilising the axial flow cartridge option or wish to discuss other potential cartridge modifications, please consult Pneutech. By understanding your application and valve requirements we can optimise the valve settings accordingly.





Bullet Valve®



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Bullet Valves

Customised Solutions

Due to the flexibility of the bullet valve design many application specific solutions can be developed. By providing a customised solution, we can incorporate many components into an assembly.

