

## Modular Analytical Components

Compliant with ISA/ANSI SP76.00.02

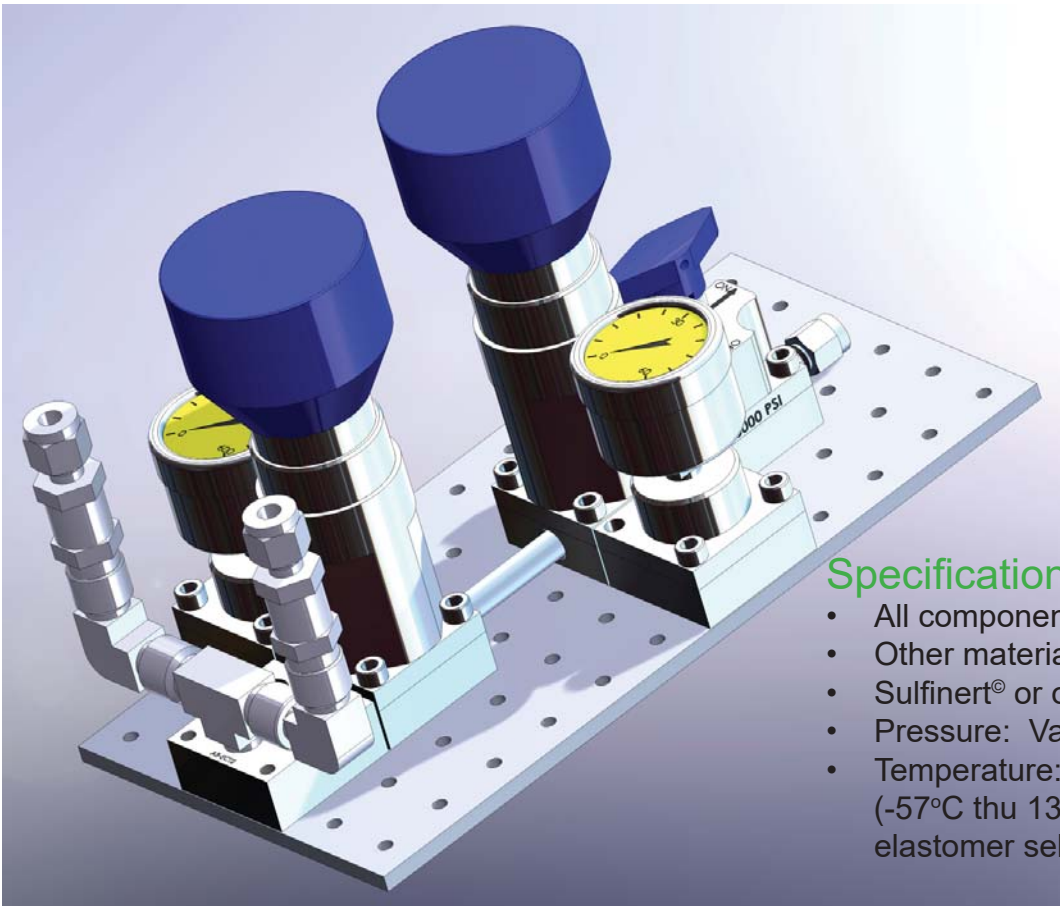
## TVI - MODULAR ANALYTICAL COMPONENTS

### Concept:

MAC system is designed specifically for analytical lab applications. The ISA/ANSI SP76.00.02 components offer maximum space reduction, maximum flexibility, and minimal dead volume in the construction analytical flow control systems. Assembly of the flow control system is extremely simple and versatile. All components are provided and snap together and then secured by socket head cap screws.

### Features:

- Compliant with ISA/ANSI SP76.00.02 open architecture standards.
- Offers chance to dramatically reduce space requirements.
- Reduces dead volume and improves purge times.
- Eliminates conventional installation issues such as cutting and bending tubing. No welding is necessary.
- All modules are on the same plane. This allows for easy swapping or replacement of modules.
- Interchangeability - The same components can be used in a variety of applications.



### Specifications:

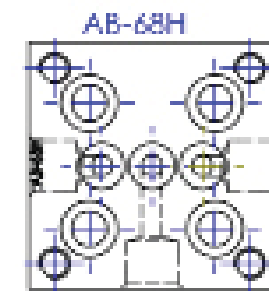
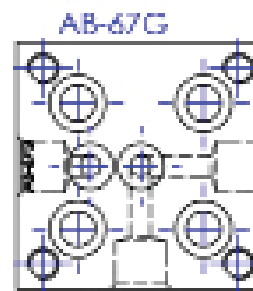
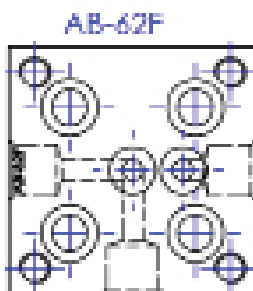
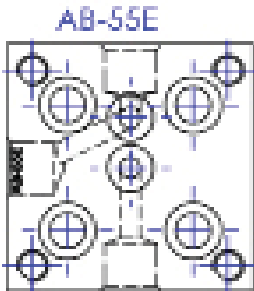
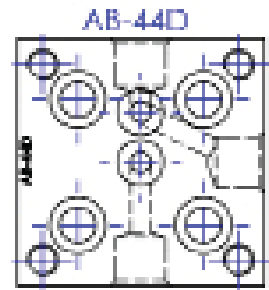
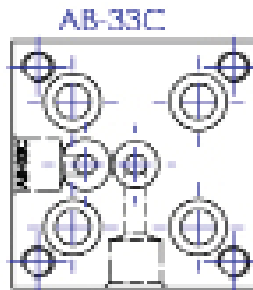
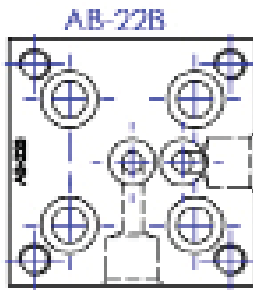
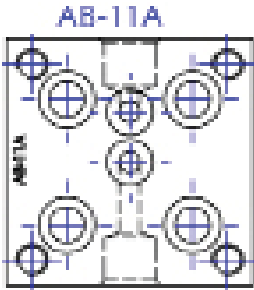
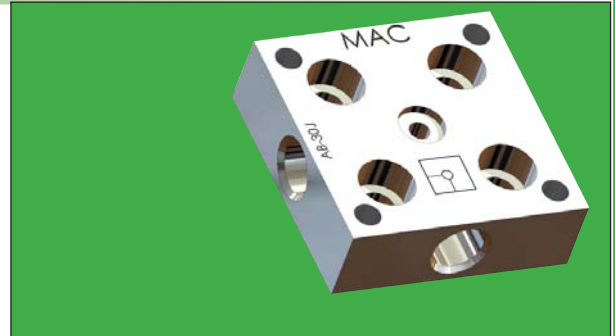
- All components are 316/316L
- Other materials are available
- Sulfinert® or other coating available
- Pressure: Vac to 600 psig (41 barg)
- Temperature: -75°F thru 275°F (-57°C thru 135°C - Depending on elastomer selection)

# TVI - MODULAR ANALYTICAL COMPONENTS

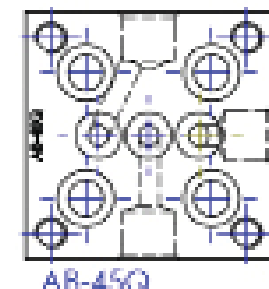
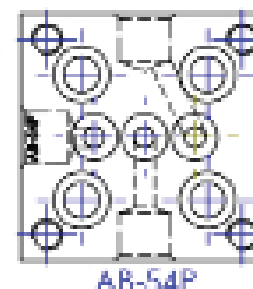
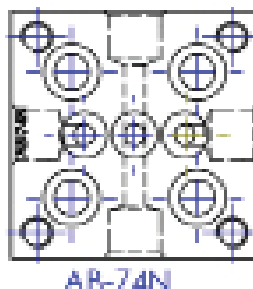
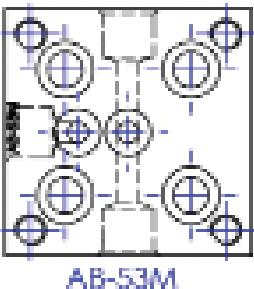
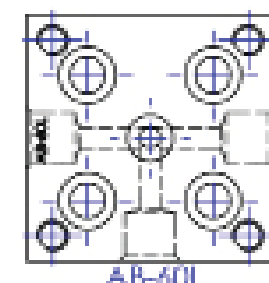
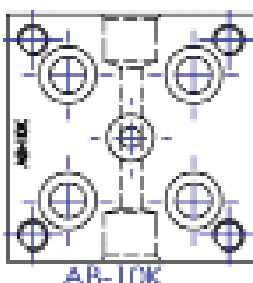
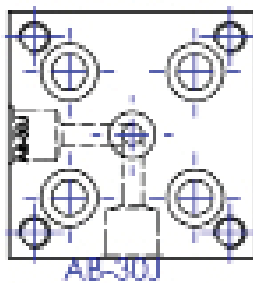
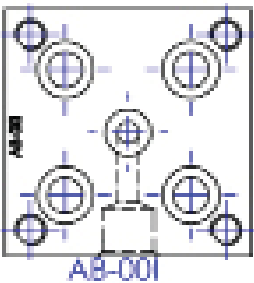
All MAC blocks include cap screws and standard Viton®-75 orings. Please see chart for additional oring options.

All MAC blocks are laser marked with part number, MTR, and flow schematic.

PART NUMBERS ARE ABOVE EACH BLOCK  
ADD - SEE ORING CHART - EX: AB-11-V



## ASSEMBLY BLOCK VARIANTS



# TVI - MODULAR ANALYTICAL COMPONENTS



**Side Access  
End Connection**

P/N: AB-ECS2 = 1/8" NPT  
P/N: AB-ECS4 = 1/4" NPT



**Top Access  
End Connection**

P/N: AB-ECT2 = 1/8" NPT  
P/N: AB-ECT4 = 1/4" NPT



**MAC Block Connector**

P/N: AB-C-SEE ORING CHART

## SPECIFICATIONS:

- All connectors are 316/316L
- Orings selected from chart below.



**MAC Single Block Jumper Connector**

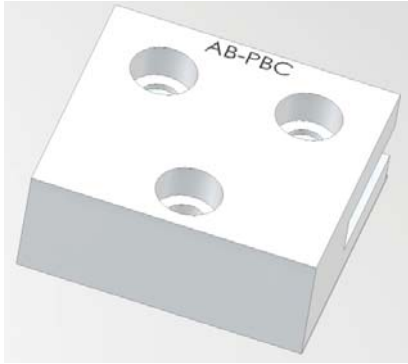
P/N: AB-CL - SEE ORING CHART

## Elastomer Selection Chart

V	Fluorocarbon Rubber
EPN	Ethylene Propylene Rubber
BN	Buna-N Rubber
NE	Neoprene Rubber
KZ	Highly Fluorinated Fluorocarbon Rubber



# TVI - MODULAR ANALYTICAL COMPONENTS



**Substrate Corner Mount**

P/N: AB-CORNER

## Standard Substrate Sizes

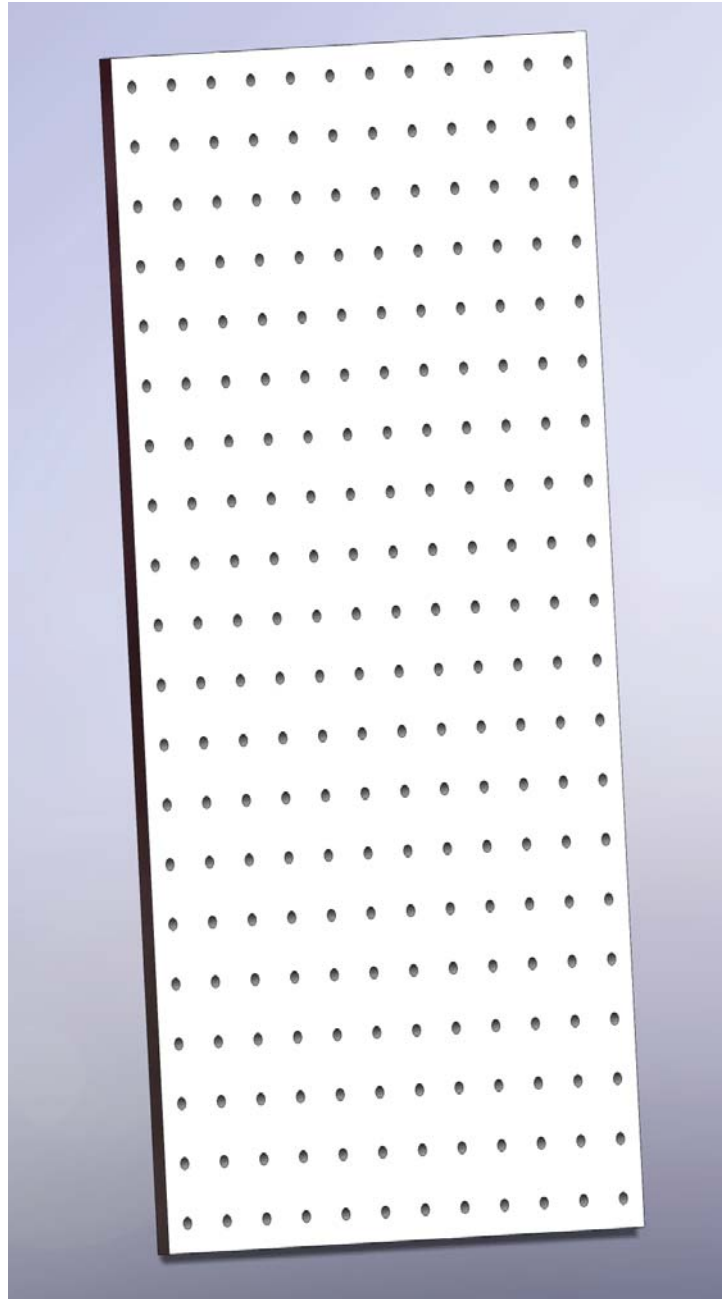
Part No.	Matrix
AB-PS2X4	2 X 2
AB-PS2X4	2 X 4
AB-PS2X6	2 X 6
AB-PS6X10	6 X 10
AB-PS8X8	8 X 8
AB-PS8X10	8 X 10
AB-PS8X14	8 X 14
AB-PS10X10	10 X 10
AB-PS12X12	12 X 12

## Specifications:

- All Substrate components are made from 300 Series Stainless Steel
- Substrates are 3/16" thick material

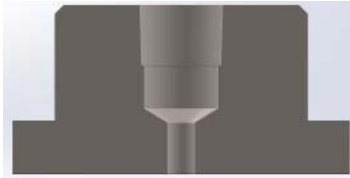
## Features:

- Corner pieces allow for easy installation and provide an offset to the mounting plane>
- 3/16" thick substrate provides rigidity to system.
- CNC machining insures a precise fit to all components

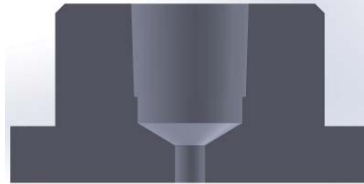


**Consult factory for sizes not shown**

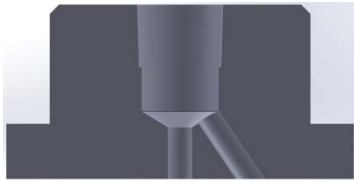
## SURFACE MOUNT INSTRUMENT ADAPTERS



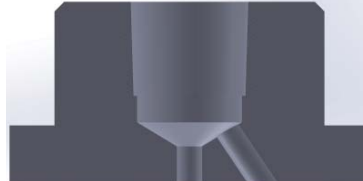
AB-2FP1 1/8" FNPT -  
SINGLE PORT



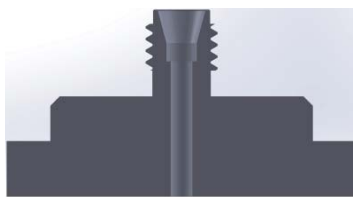
AB-FP1 1/4" FNPT -  
SINGLE PORT



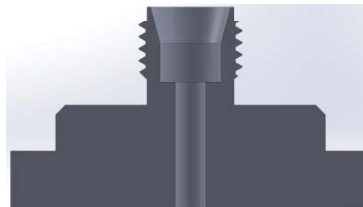
AB-2FP1 1/8" FNPT -  
DUAL PORT



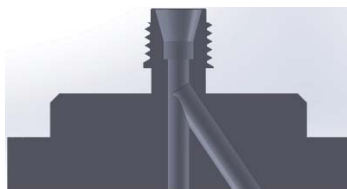
AB-4FP1 1/4" FNPT -  
DUAL PORT



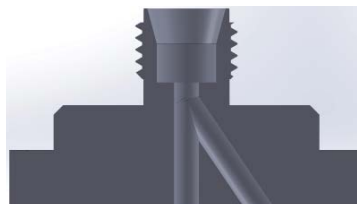
AB-2TP1 1/8" TUBING  
SINGLE PORT



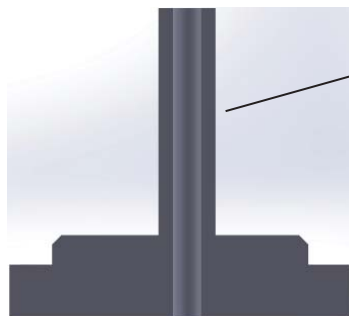
AB-4TP1 1/4" TUBING  
SINGLE PORT



AB-2TP2 1/8" TUBING  
DUAL PORT



AB-4TP2 1/4" TUBING  
DUAL PORT



AB-4RMP1 FLOW METER -  
TUBE STUB ADAPTER

Ø1/4" X 1.0" TALL  
OFFSET 0.045" TO  
FIT 4.53" C to C  
FLOW METER

### Features:

Our Surface Mount Instrument Adapters allow for a variety of ways to a wide variety of instrumentation. The adapters are available in both single port and dual port styles. AB-4RMP1 tube stub adapter is off set 0.045" to allow the use of standard flow meters with a 4.53" center to center dimension.

### Specifications:

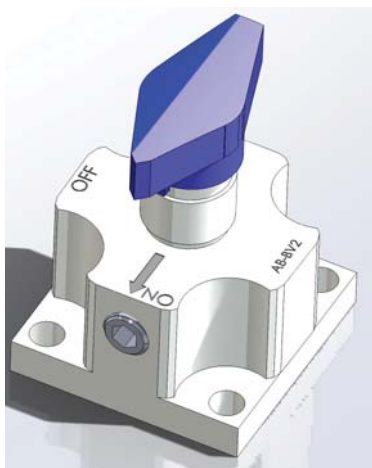
- All adapters are machined from 316/316l barstock
- All tubing adapters interchange with Swagelok® components

**Offsets available for FNPT ports.  
Consult factory for more information**

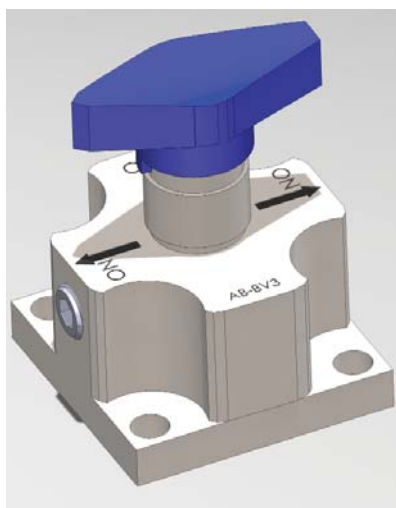
## TVI - MODULAR ANALYTICAL COMPONENTS



Non Rotating Stem Needle Valve  
P/N: AB-NRSVP2  
Wetted Parts:  
316/316L  
PEEK  
Fluorocarbon Rubber  
Other soft goods available



2 Way Ball Valve  
P/N: AB-BV2P2  
Wetted Parts:  
316/316L  
PTFE  
Fluorocarbon Rubber  
Other soft goods available



3 Way Ball Valve  
P/N: AB-BV3P3  
Wetted Parts:  
316/316L  
PTFE  
Fluorocarbon Rubber  
Other soft goods available

# TVI - MODULAR ANALYTICAL COMPONENTS

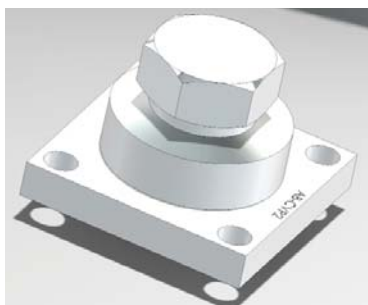


## Metering Valve

P/N: AB-MVP2 - Two port metering valve

P/N: AB-MVP3 - Three port metering valve

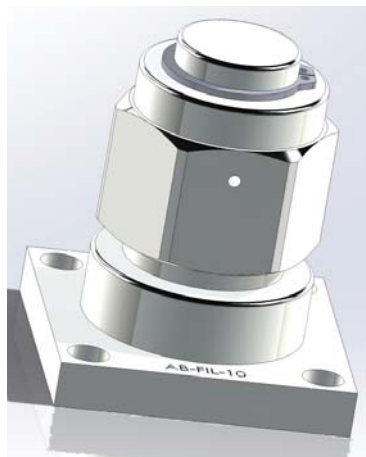
- Max flow coefficient: 0.03
- Vernier standard
- Valve is shut off capable
- 316/316L body & stem
- Soft goods PTFE & Fluorocarbon
- Other soft goods available



## Check Valve

P/N: AB-CVP2

- 0.1 TO 3 PSI OPENING PRESSURE
- 5 PSI reseating back pressure
- Max flow coefficient: 0.09
- Wetted materials: 316/316L body & poppet; fluoro carbon oring seat; Inconel spring
- Other oring materials available



## Filters

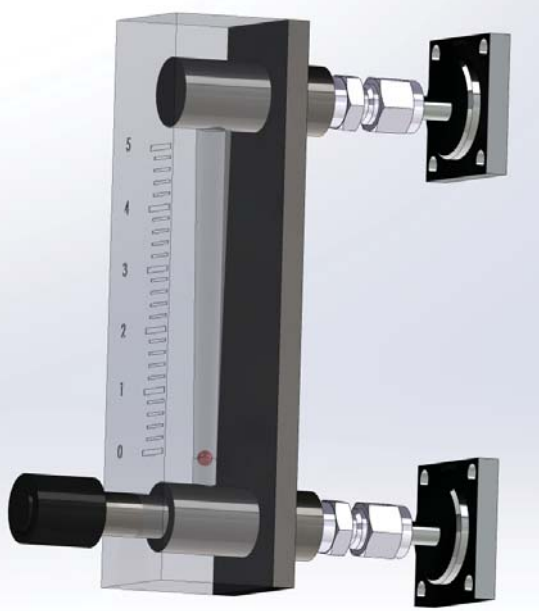
P/N: AB-FIL-see chart

- Wetted parts: 316/316L body, filter, & cap; Inconel spring, silver plated gasket
- Interchangeable filters

## FILTER ORDERING CHART

Part No:	Element Size $\mu$ M
AB-FIL-2	2
AB-FIL-5	5
AB-FIL-10	10
AB-FIL-50	50
AB-FIL-100	100

# TVI - MODULAR ANALYTICAL COMPONENTS



## ROTAMETER

MODEL NO. AB-RM

- Wetted Parts: 316ss
- Elastomers: Viton 75 Std. others available
- Accuracy: 4%
- Max Temp: 200F
- Max Press: 200 PSIG
- Ranges: consult factory

**Consult factory for part numbers to specify exact Model**



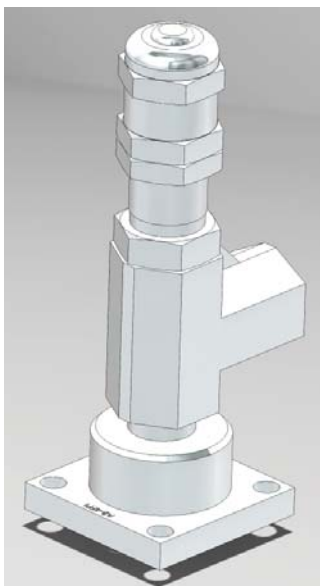
## PRESSURE GAUGE

P/N: AB-PG-see chart

- 1.5" dial size
- 316SS wetted parts
- 1/8"npt CBM
- 3-2-3% full scale accuracy
- Many ranges available

### Pressure Gauge Chart

Part No:	Range PSI-BAR
AB-PG-30	0-30 PSI/BAR
AB-PG-60	0-60 PSI/BAR
AB-PG-100	0-100 PSI/BAR
AB-PG-160	0-160 PSI/BAR
AB-PG-300	0-300 PSI/BAR
AB-PG-600	0-600 PSI/BAR
AB-PB-1000	0-1000 PSI/BAR
AB-PB-1500	0-15000 PSI/BAR



## Proportional Relief Valve

PN: AB-RV

- Wetted parts: All metal components 316/316l
- All soft goods: Fluorocarbon standard - other available
- Valve is adjustable within the range of it's spring

**Consult factory for part numbers to specify exact model**

### PROPORTIONAL RELIEF VALVE CHART

Part No:	Pressure Range
AB-RV-G	50-300 PSI
AB-RV-O	300-750 PSI