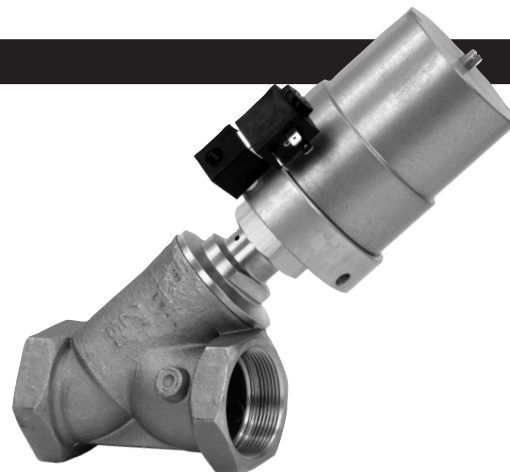
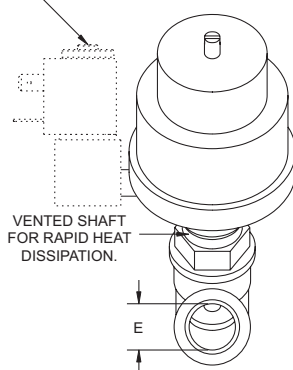
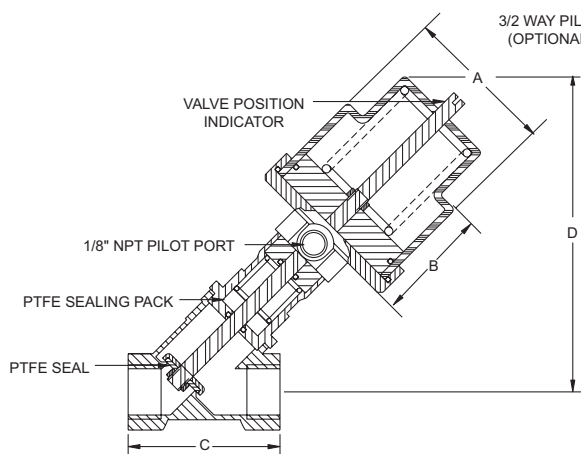




The Spartan Scientific Series APV-20 is a 2-way, 2-position valve specifically designed for the control of steam. The APV-20 uses a specially designed Teflon Chevron® seal which ensures separation of the media and pilot sections. In the single acting normally closed version, the APV-20 uses a spring extended pneumatic operator connected to a sealing disc which when retracted, unseats from a precision orifice and allows fluid flow. When pilot pressure is removed, the APV-20 seat returns to the orifice and flow stops. A feature of the APV-20 is the ON-OFF indicator at the top of the pneumatic actuator. The APV-20 can be used for high temperature liquids compatible with the materials of construction and steam. The bronze body is standard and is available in sizes ranging from 1/2" to 2" NPT and can control media up to 300 psi. Also available is a three way solenoid pilot valve (Spartan Series 3823), which may be added to operate the APV-20. Consult factory for details.

## Dimensional Data

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED



DIMENSIONAL TABLE				
Port Size (E) NPT/BSP	A	B	C	D
1/2"	2.50"	3.62"	2.32"	4.80"
3/4"	2.50"	3.62"	2.72"	5.12"
1.0"	2.50"	3.62"	3.00"	5.43"
1.25"	4.00"	5.12"	3.75"	7.87"
1.5"	4.00"	5.12"	4.25"	8.15"
2.0"	4.00"	5.12"	5.08"	8.66"

DIFFERENTIAL PRESSURE CHART				
Port Size (E) NPT/BSP	Cv / GPM @ Δ P = 10 psi	Δ p (psi)	Pilot Pressure (psi)	Cylinder Bore (A)
1/2"	6.2 / 20	255	75	2.50
3/4"	15 / 48.5	165	75	2.50
1.0"	18 / 57.2	120	75	2.50
1.25"	41 / 132	180	82.5	3.15
1.5"	58 / 185	180	82.5	3.15
2.0"	91 / 291	105	82.5	3.15

## Technical Data

**Function:** 2/2-way, normally closed, remote air pilot

**Port Size:** 1/2", 3/4", 1.0", 1.25", 1.50", 2.0" NPT

**Orifice Size:** 15, 20, 25, 32, 40, 50 mm

**Pressure:** 0 - 255 psi (Depending on orifice size)

**Flow Range:** 6.2 - 91 Cv

**Temp. Range:** -30°C - +180°C

**Media:** All fluids and gases compatible with wetted materials.  
Steam to +180°C food applications with solid particles.

**Mounting:** On pipe

**Materials:** *Actuator:* Cylinder: Anodized Aluminum  
Spring: Music wire  
Rod: Stainless Steel  
Seals: Viton  
Seat: P.T.F.E.  
*Central body:* Brass  
Intermediate spring: Stainless Steel  
Chevron® sealing pack: Loaded P.T.F.E.  
Valve body: Brass

**Coil Data:** Glass filled nylon encapsulation  
(Class F, continuous duty)  
Volts: 6, 12, 24 VDC  
24, 120, 220, 240 VAC 50/60 Hz  
(3/2 way pilot optional)  
Voltage tolerance: +/- 10%

# SPARTAN SCIENTIFIC

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# Series APV-20

Angle Steam  
2-Way Air Pilot Valves

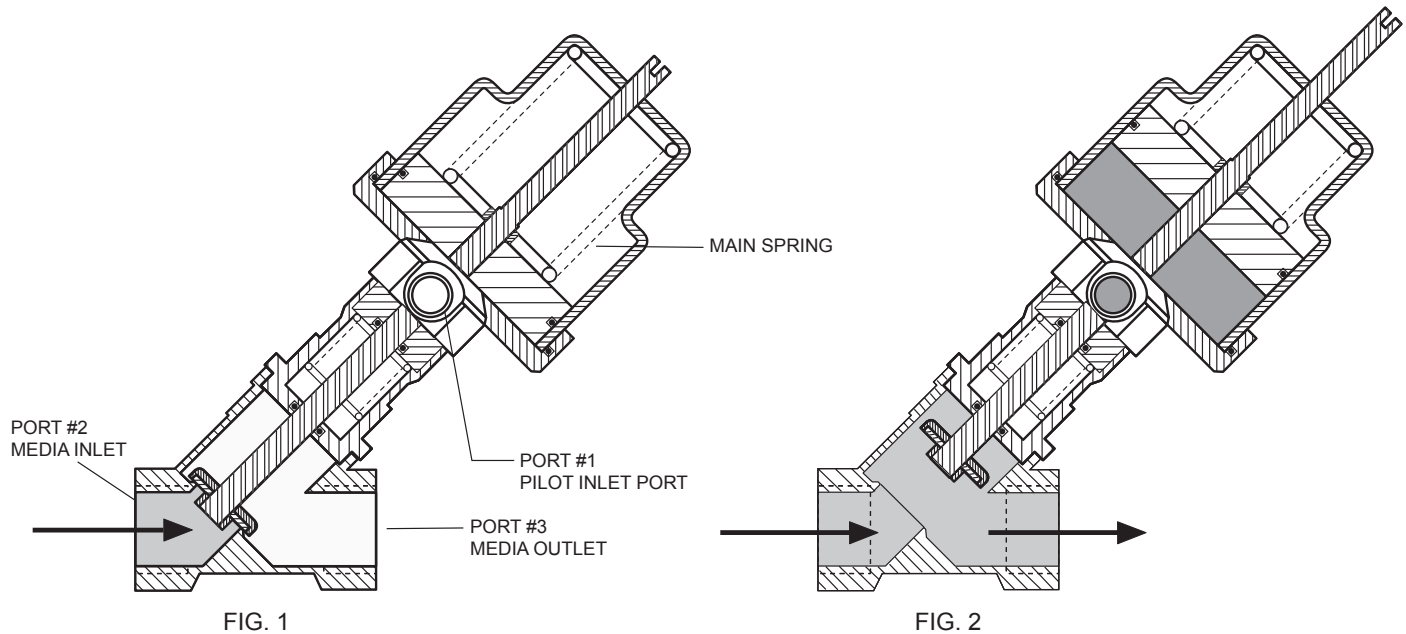
## Principles of Operation

### Normally Closed Version:

Closed (normal) position - Pilot supply is connected to port #1 and is blocked. Piston/seal assembly is held firm against the valve seat by means of the main spring. Media flow passage port #2 to port #3 is blocked.

Open position - Pilot supply is opened allowing pressure to enter the cylinder creating the force to raise the piston/seal assembly. Media flows from port #2 to port #3.

Note: In the event that pilot pressure is interrupted, valve will switch to the closed position.



## How To Order

APV20 - 00 - 41 ☐ ☐

#### \*Port Size / Orifice / Cv

- 1 - 1/2" NPT / 15mm / 6.2
- 2 - 3/4" NPT / 20mm / 15
- 3 - 1.0" NPT / 25mm / 18
- 4 - 1 1/4" NPT / 32mm / 41
- 5 - 1 1/2" NPT / 40mm / 58
- 6 - 2.0" NPT / 50mm / 91

\* All thread sizes available in BSP.  
Contact factory for details.

#### Coil / Pilot Options\*

- 0 - No Pilot
- 1 - 6 VDC
- 2 - 12 VDC
- 3 - 24 VDC
- 6 - 24 VAC 50/60 Hz
- 7 - 120 VAC 50/60 Hz
- 8 - 220 VAC 50/60 Hz
- 9 - 240 VAC 50/60 Hz

Order Example: APV20-00-4127  
APV20, 3/4" NPT port size, 20mm  
orifice, 15 Cv, 120 VAC 50/60 Hz

\*For more coil options see page 7.