

# High Pressure Control Valve

Model 4418F

## Overview

The 4418F has been designed specifically for use as an air start valve for diesel engines or as a fuel shut-off valve for gas turbine applications. Its durable, high quality construction and compact size make it ideal for use with gas turbines in the 0 to 15 MW size range.


## Typical applications

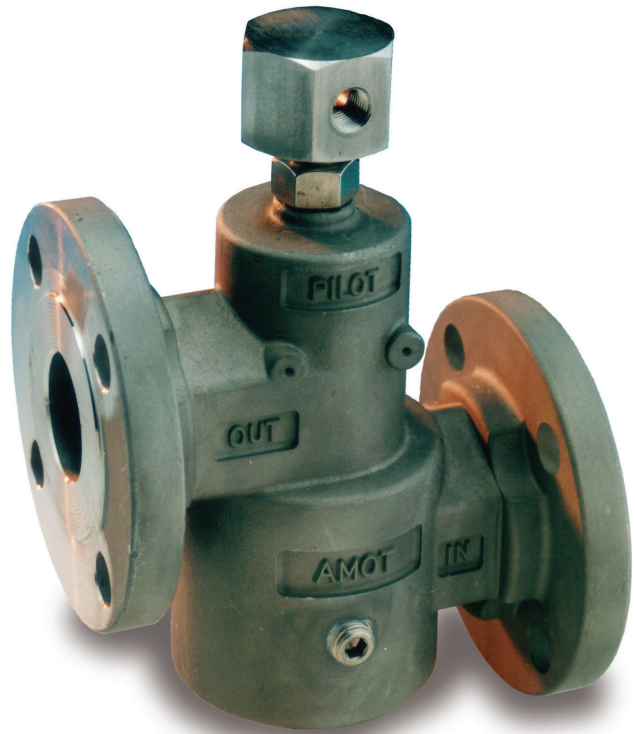
- Starting air/gas valve
- Vented fuel gas valve
- Control valve

## Key features and benefits

- Vent port eliminates need for separate bleed valve - reduced system cost
- Optional open/close indication switch - simpler system set up and diagnostics
- Fully adjustable for optimized system operation

## Accreditations

- PED Suitable for Group 1 & 2 liquids (ensure materials are compatible)
- ATEX  11 2 G X
- CE Complies with all relevant EU directives



**4418F**  
**High Pressure**  
**Control Valve**

**amot**

[www.amot.com](http://www.amot.com)

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## Operation

### 2-Way Version

When pressure is applied to the PILOT port, the main ports (IN and OUT) are opened to allow flow through the valve. When the pilot pressure is released, a spring closes the main ports.

### 2-Way Vented Version

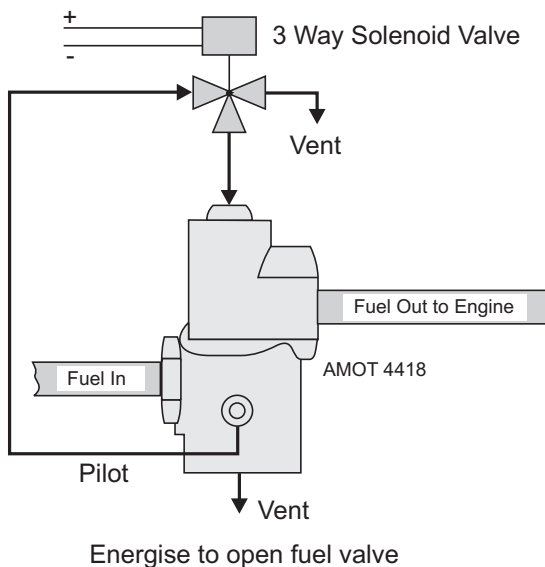
When Pilot Pressure is applied to the PILOT port, IN Port is open to the OUT Port; the VENT Port is closed. When pilot pressure is removed, the IN

Port closes while the VENT Port opens to the OUT Port, relieving pressure within the valve and down stream piping.

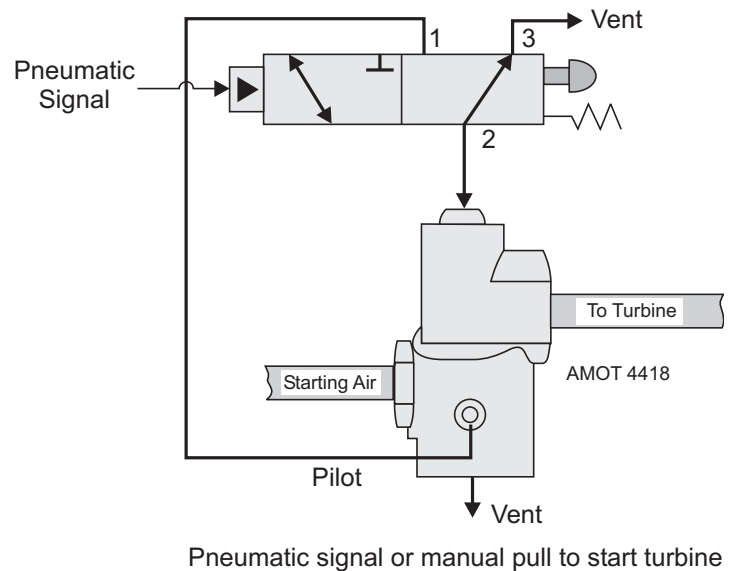
When used on a fuel gas system, the fuel intake manifold is vented causing quick shutdown of the engine.

## Applications

### Fuel valve for turbine or engine



### Starting air for turbine or engine



# High Pressure Control Valve - Model 4418F

## Specification

<b>Body materials</b>	Stainless steel			
<b>Standard internals</b>	Stainless steel			
<b>Optional internals</b>	Aluminum			
<b>Standard seals</b>	Viton or Nitrile			
<b>Operating temperature</b>	From -29°C to 204°C		(From -20°F to 400°F)	
<b>Valve pressure rating</b>	From 13 bar to 50 bar		(From 195 psi to 720 psi)	
<b>Max. working pressure</b>	50 bar		(720 psi)	
<b>Pilot pressure (standard)</b>	30 PSI (2.1 Kg/cm <sup>2</sup> ) to 150 PSI (10.5 Kg/cm <sup>2</sup> ) Dependent on process working pressure			
<b>Flow coefficient</b>	IN to OUT	1"	Kv = 15.5	Cv = 18
		1½"	Kv = 28.5	Cv = 33
		2"	Kv = 2934	Cv = 34
	OUT to VENT (all)		Kv = 1.7	Cv = 2.0
<b>Close Time*</b>	Less than 100ms			

\* Contact AMOT for advice on suitable solenoid valves and pilot pressures.

## Weight

### Weight in Kg (lbs)

Valve size	1" & 1½" threaded	1" & 1½" flanged	2" threaded	2" flanged
<b>Weight</b>	3.6 (8)	7.72 (17)	4.1 (9)	10.4 (23)

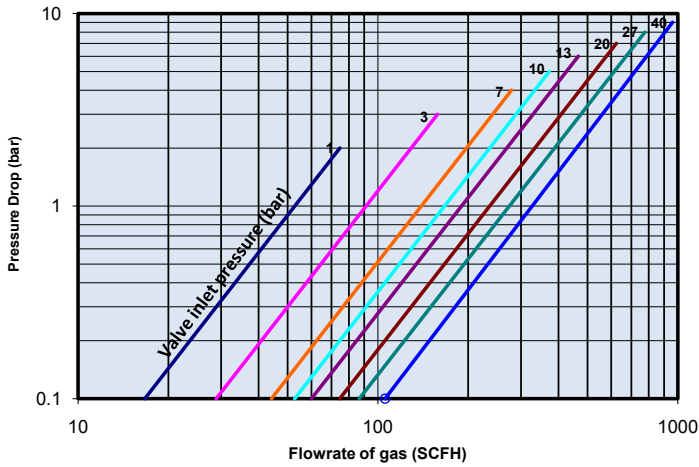
## Operating temperature and pressure ratings

Temperature		ANSI Class 150 flange, Aluminum Spool		ANSI Class 300 flange, S.S. Spool		ANSI Class 600 flange, S.S. Spool		NPT & BSP				ND 40		ANSI Class 150	
								Aluminum Spool		S.S. Spool		S.S. Spool		S.S. Spool	
°C	°F	Bar	PSI	Bar	PSI	Bar	PSI	Bar	PSI	Bar	PSI	Bar	PSI	Bar	PSI
-29 to 38	-20 to 100	19	275	50	720	50	720	19	275	50	720	40	580	19	275
93	200	16	235	43	620	43	620	17	240	43	620	34	500	16	235
149	300	15	215	39	560	39	560	15	215	39	560	31	445	16	215
204	400	13	195	36	515	36	515	13	195	36	515	28	410	13	195

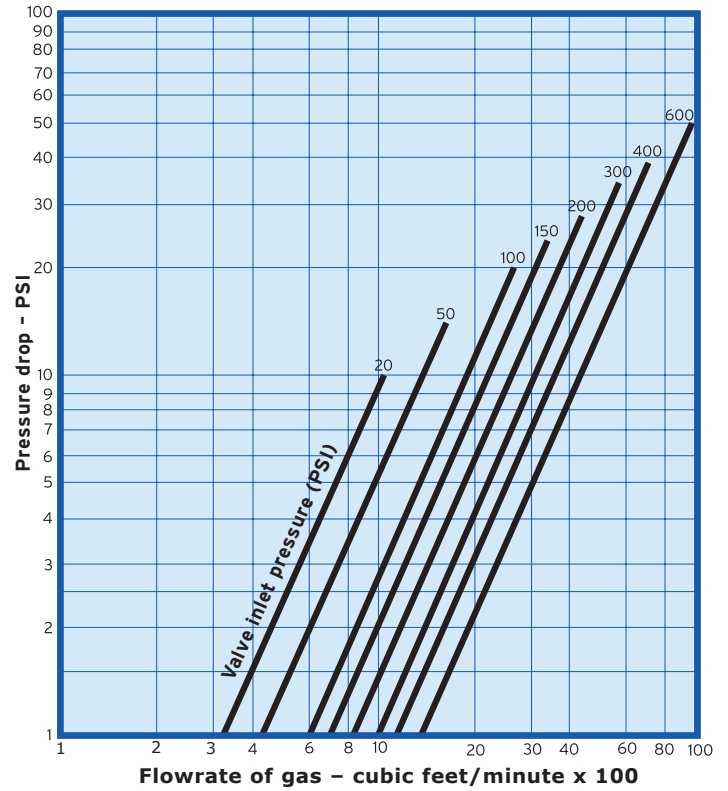
# High Pressure Control Valve - Model 4418F

## Valve characteristics

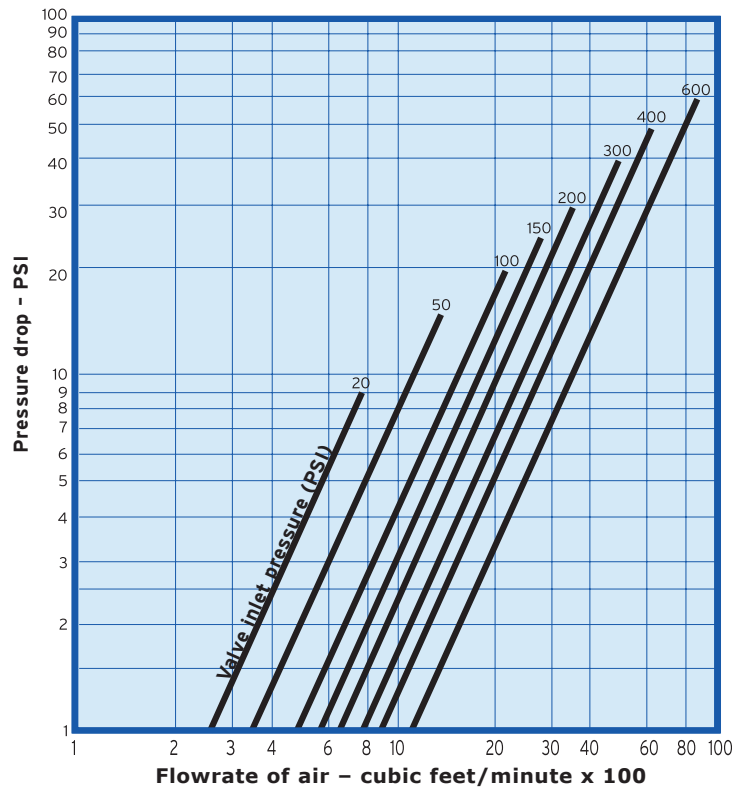
### Pressure drop for natural gas



1", 1 1/2" and 2"  
Specific gravity of 0.65 at 60°F (15°C)



### Pressure drop for air



1", 1 1/2" and 2"  
Air at 60°F (15°C)

# High Pressure Control Valve - Model 4418F

## How to order

Use the table below to select the unique specification of your 4418F high pressure control valve:

Example code	4418F	1	A	2	X	0	02	-AA	Code Description	
Valve model & revision	4418F								Model & Revision Level	
									Size	Type
Valve size and type		1							1"	2-way, normally closed
		2							1 1/2"	
		3							2"	
		4							1"	2-way vented, normally closed
		5							1 1/2"	
		6							2"	
		A							1"	PED category IV, ATEX II 2 G X, 2 way, normally closed
		B							1 1/2"	
		C							2"	
		D							1"	PED category IV, ATEX II 2 G X, 2 way vented, normally closed
		E							1 1/2"	
		F							2"	
Connections		A							In and out ports	
		B							NPT threaded	Pilot 'A' & vent ports
		C							BSP (PL) threaded	NPT
		E							DIN ND40 flanged	BSPP
		J							ANSI 300 lb. RF flanged	BSPP
		K							ANSI 150 lb. RF flanged	NPT
Internal materials									ANSI 600 lb. RF flanged	NPT
									Spool component	
		1							Aluminum*	Seal
		2							Aluminum*	Buna N/PTFE (not approved for PED)
		3							Stainless steel	Viton (not approved for PED)
		4							Stainless steel	Buna N/PTFE
		5							Aluminum* (2-way vented)	Viton
		6							Aluminum* (2-way vented)	Buna N/PTFE (not approved for PED)
	7							Stainless steel (2-way vented)	Viton (not approved for PED)	
	8							Stainless steel (2-way vented)	Buna N/PTFE	
Pilot pressure									Pilot pressure	
		X							30 to 150 PSIG	
Proximity switch options									Position indicators	
		O							None	Approvals
		E							Open	
		F							Closed	
		G							Open/closed	CSA class 1, Div 1, Groups C and D
		H							Open	
		J							Closed	
		K							Open/closed	UL Class Div 1, Groups C and D
		P							Open	
		Q							Closed	
	R							Open/closed	PED category IV and ATEX II 2G X**	
Pilot options									Pilot options***	
		00							None (for manual operation use AMOT 4057 series)	
		02							Versa 3-way, QE solenoid, SS, UL/CSA, 24VDC, Fisher 1301F	
		03							Versa 3-way, QE solenoid, SS, UL/CSA, 120VDC, Fisher 1301F	
		04							Versa 3-way, QE solenoid, SS, UL/CSA, 24VDC	
		05							Versa 3-way, QE solenoid, SS, UL/CSA, 120VDC	
		06							Versa 3-way, QE solenoid, SS, ATEX, 24VDC: Fisher 1301F	
		07							Versa 3-way, QE solenoid, SS, ATEX, 115VDC: Fisher 1301F	
		08							Versa 3-way, QE solenoid, SS, ATEX 24VDC	
		09							Versa 3-way, QE solenoid, SS, ATEX, 115VDC	
		10							Versa 4-way solenoid, SS, UL/CSA, 24 VDC:Fisher 1301F	
		11							Versa 4-way solenoid, SS, UL/CSA, 120VDC: Fisher 1301F	
		12							Versa 4-way solenoid, SS, UL/CSA, 24 VDC	
	13							Versa 4-way solenoid, SS, UL/CSA, 120 VDC		
Customer special requirements									Customer special option codes	
								-AA	Standard product	
								-***	Customer special code assigned	

\* Do not use aluminum above 240 psig (16.55 bar) @ 200 °F (94°C). Not approved for PED and ATEX.

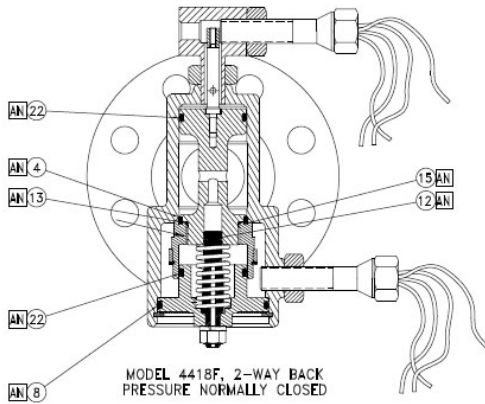
\*\* Not available with aluminum spool

\*\*\* All accessories include SS tubing & fittings mounted on valve

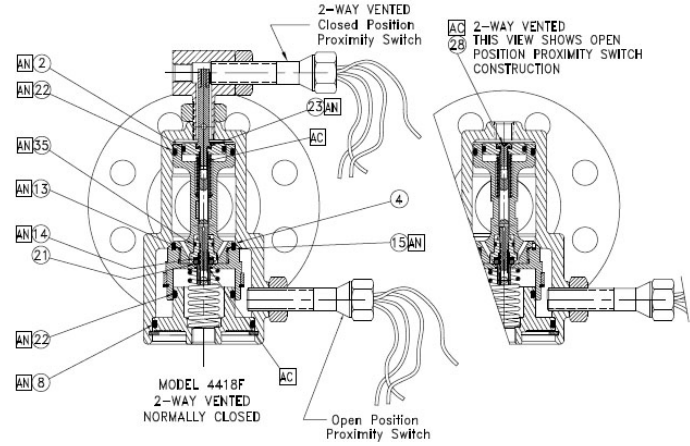
# High Pressure Control Valve - Model 4418F

## Service kits

**Model 4418F, 2-way**



**Model 4418F, 2-way vented**

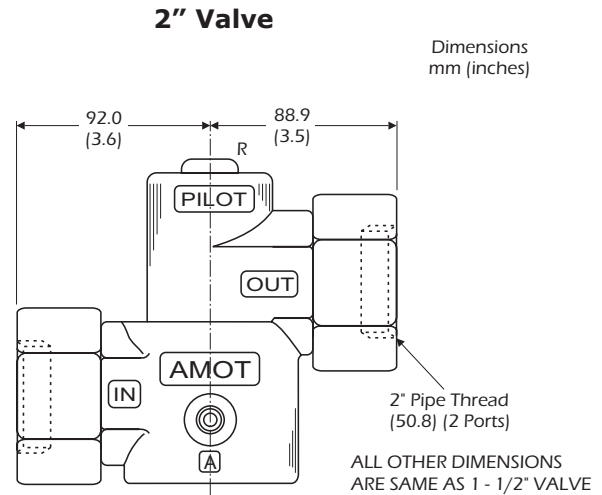
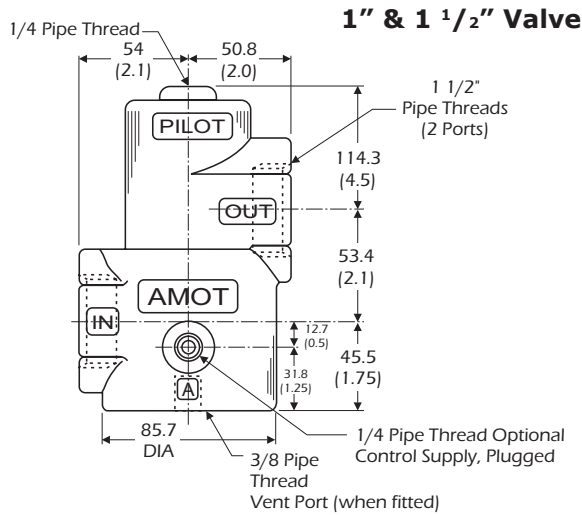


Service kit for seals		Model 4418F 2-way vented Closed position proximity switch		Model 4418F 2-way vented Open position proximity switch		Model 4418F 2-way Open or closed proximity switch	
		Viton Kit: 10450X001	Buna N Kit: 0450X002	Viton Kit: 10450X003	Buna N Kit: 10450X004	Viton Kit: 10450X005	Buna N Kit: 10450X006
Item no.	Description	Qty	Qty	Qty	Qty	Qty	Qty
2	O-ring (Viton)	1		1			
2	O-ring (Buna N)		1		1		
4	PTFE main seal	1	1	1	1	1	1
8	O-ring (Viton)	1		1		1	
8	O-ring (Buna N)		1		1		1
12	O-ring (Viton)					1	
12	O-ring (Buna N)						1
13	O-ring (Viton)	1		1		1	
13	O-ring (Buna N)		1		1		1
14	O-ring (Viton)	1		1			
14	O-ring (Buna N)		1		1		
15	O-ring (Viton)	1		1		1	
15	O-ring (Buna N)		1		1		1
21	PTFE vent seal	1	1	1	1	1	1
22	O-ring (Viton)	2		2		2	
22	O-ring (Buna N)		2		2		2
23	O-ring (Viton)	1					
23	O-ring (Buna N)		1				
28	Self sealing screw (Viton)			1			
28	Self sealing screw (Buna N)				1		
35	O-ring (Viton)	1		1			
35	O-ring (Buna N)		1		1		
AN	Krytox GPL206 grease	1	1	1	1	1	1
AC	LOCTITE 242 (thread locker)	1	1	1	1	1	1
-	Form 949A Instr.	1	1	1	1	1	1

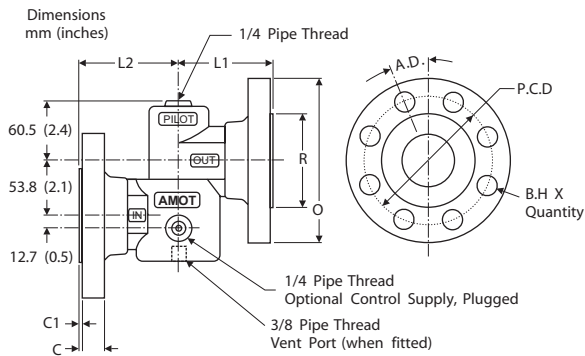
# High Pressure Control Valve - Model 4418F

## Valve dimensions

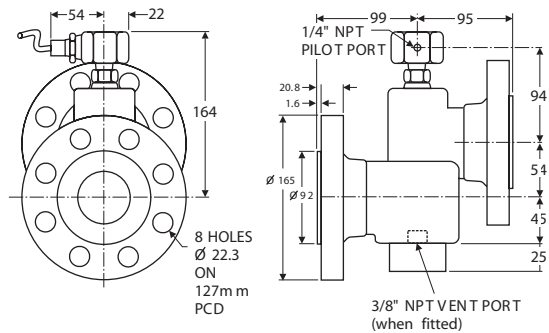
### Threaded Valves



### Flanged Valves



### Valve showing solenoid



## Flange connections

### Dimensions in mm (inches)

	ANSI 1-1/2" 150lb	ANSI 1-1/2" 300lb	1-1/2" ND40	ANSI 2" 150lb	ANSI 2" 300 lb	2" ND40
L1	79.2 (3.12)	82.6 (3.25)	91.3 (3.59)	91.0 (3.62)	95.3 (3.75)	95.3 (3.75)
L2	82.6 (3.25)	85.9 (3.38)	94.6 (3.72)	95.3 (3.75)	98.6 (3.88)	98.6 (3.88)
Flange diameter (O)	127.0 (5.00)	155.4 (6.12)	150.0 (5.9)	152.4 (6.00)	165.1 (6.50)	165.1 (6.50)
Flange thickness (C)	19.1 (0.75)	20.6 (0.81)	18.0 (5.9)	19.1 (0.75)	22.4 (0.88)	22.0 (0.87)
Raised face thickness (C)	1.6 (0.062)	1.6 (0.062)	3.0 (0.12)	1.6 (0.062)	1.6 (0.062)	3.0 (0.12)
Bolt hole size	15.7 (0.62)	22.4 (0.88)	18.0 (0.7)	19.1 (0.75)	19.1 (0.75)	18.0 (0.71)
Bolt hole quantity	4X	4X	4X	4X	8X	4X
PCD	98.6 (3.88)	114.3 (4.50)	110.0 (4.3)	120.7 (4.75)	127.0 (5.00)	125.0 (4.92)
R	73.2 (2.88)	73.2 (2.88)	88.0 (3.5)	91.9 (3.62)	91.9 (3.62)	102.0 (4.02)
AD	45°	45°	45°	45°	22.5°	45°

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