

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

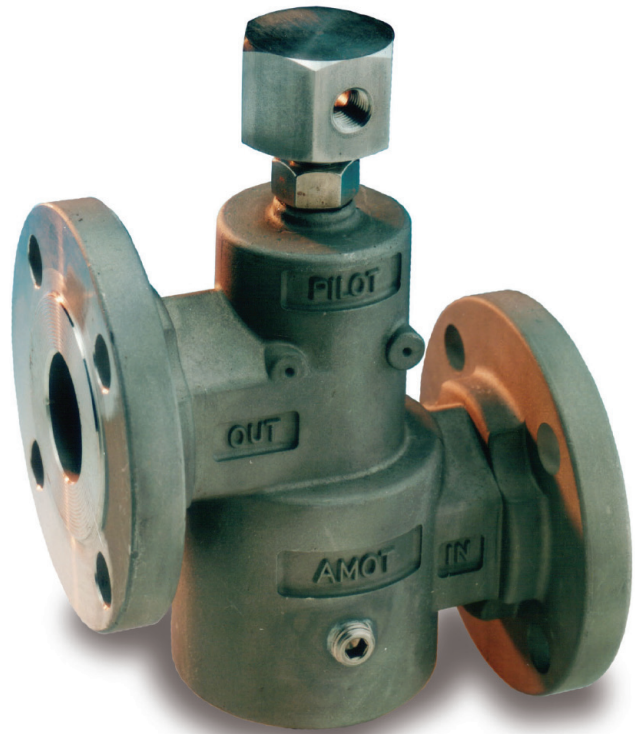
- Starting air/gas valve
- Vented fuel gas valve
- Control valve

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

High Pressure Control Valve - Model 4418F

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

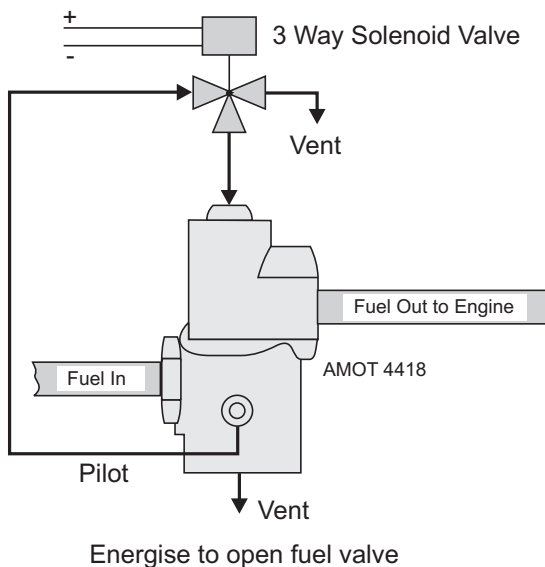
When Pilot Pressure is applied to the PILOT port, IN Port is open to the OUT Port; the VENT Port is closed. When pilot pressure is removed, the IN

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

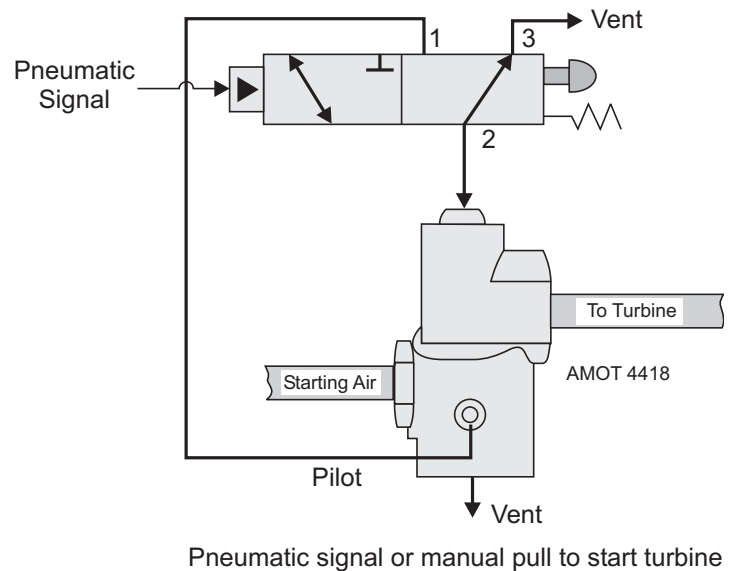
When used on a fuel gas system, the fuel intake manifold is vented causing quick shutdown of the engine.

Applications

Fuel valve for turbine or engine



Starting air for turbine or engine



High Pressure Control Valve - Model 4418F

Specification

Body materials	Stainless steel			
Standard internals	Stainless steel			
Optional internals	Aluminum			
Seals	Viton			
Operating temperature	From -29°C to 204°C		(From -20°F to 400°F)	
Valve pressure rating	From 13 bar to 50 bar		(From 195 psi to 720 psi)	
Max. working pressure	50 bar		(720 psi)	
Pilot pressure (standard)	30 PSI (2.1 Kg/cm ²) to 150 PSI (10.5 Kg/cm ²) Dependent on process working pressure			
Flow coefficient	IN to OUT	1"	Kv = 15.5	Cv = 18
		1½"	Kv = 28.5	Cv = 33
		2"	Kv = 29.4	Cv = 34
	OUT to VENT (all)		Kv = 1.7	Cv = 2.0
Close Time*	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
Weight	3.6 (8)	7.72 (17)	4.1 (9)	10.4 (23)

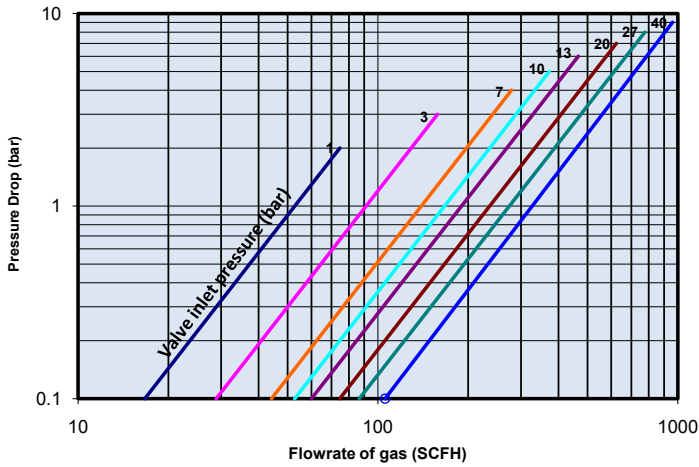
Operating temperature and pressure ratings

Temperature		ANSI Class 150 flange		ANSI Class 150 flange		ANSI Class 300 flange		ANSI Class 600 flange		NPT & BSP				DIN ND 40	
		Aluminum spool		SS Spool		SS Spool		SS Spool		Aluminum Spool		SS Spool		SS 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	19	275	50	720	50	720	19	275	50	720	40	580
93	200	16	235	16	235	43	620	43	620	17	240	43	620	34	500
149	300	15	215	15	215	39	560	39	560	15	215	39	560	31	445
204	400	13	195	13	195	36	515	36	515	13	195	36	515	28	410

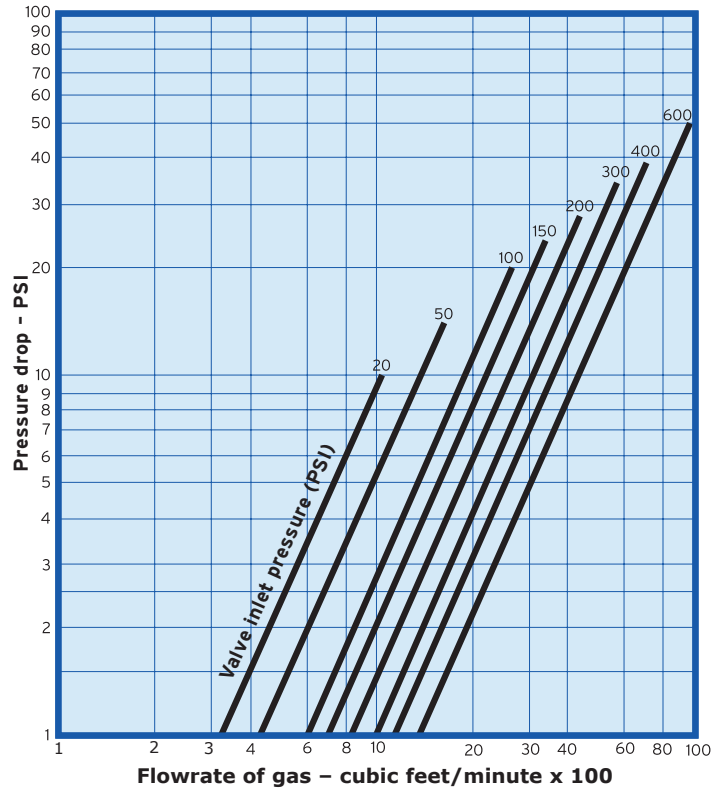
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Valve characteristics

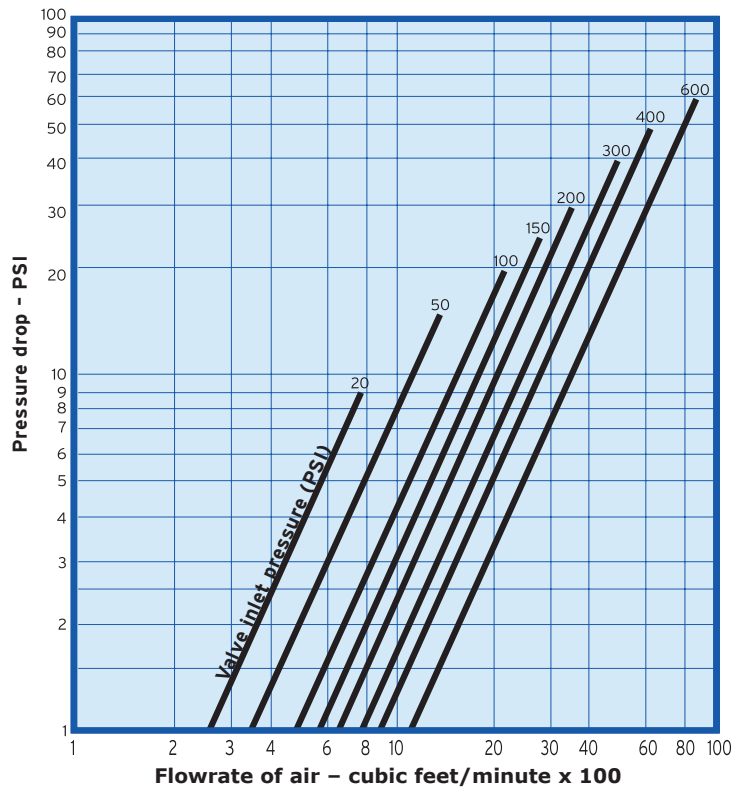
Pressure drop for natural gas



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)

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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									Model & Revision Level
	4418F								4418F
Valve size and type									Size
		1							1"
		2							1 1/2"
		3							2"
		4							1"
		5							1 1/2"
		6							2"
		A							1"
		B							1 1/2"
		C							2"
		D							1"
		E							1 1/2"
	F							2"	
Connections									In and out ports
		A							NPT threaded
		B							BSP (PL) threaded
		C							DIN ND40 flanged
		E							ANSI 300 lb. RF flanged
		J							ANSI 150 lb. RF flanged
	K							ANSI 600 lb. RF flanged	
Internal materials & approvals									Spool component
		2							Aluminum ⁽¹⁾
		4							Stainless steel
		6							Aluminum ⁽¹⁾ (2-way vented)
	8							Stainless steel (2-way vented)	
Pilot pressure									Pilot pressure
		X							30 to 150 PSIG
Proximity switch options									Position indicators
		O							None
		E							Open
		F							Closed
		G							Open/closed
		H							Open
		J							Closed
		K							Open/closed
		P							Open
		Q							Closed
	R							Open/closed	
Pilot options									Pilot options ⁽³⁾
		00							None (for manual operation use AMOT 4057 series)
		02							Versa 3-way, QE solenoid, SS, UL/CSA, 24VDC, pressure regulator
		03							Versa 3-way, QE solenoid, SS, UL/CSA, 120VDC, pressure regulator
		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, pressure regulator
		07							Versa 3-way, QE solenoid, SS, ATEX, 115VDC, pressure regulator
		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, pressure regulator
		11							Versa 4-way solenoid, SS, UL/CSA, 120VDC, pressure regulator
		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

(1) Do not use aluminum above 240 psig (16.55 bar) @ 200°F (94°C).

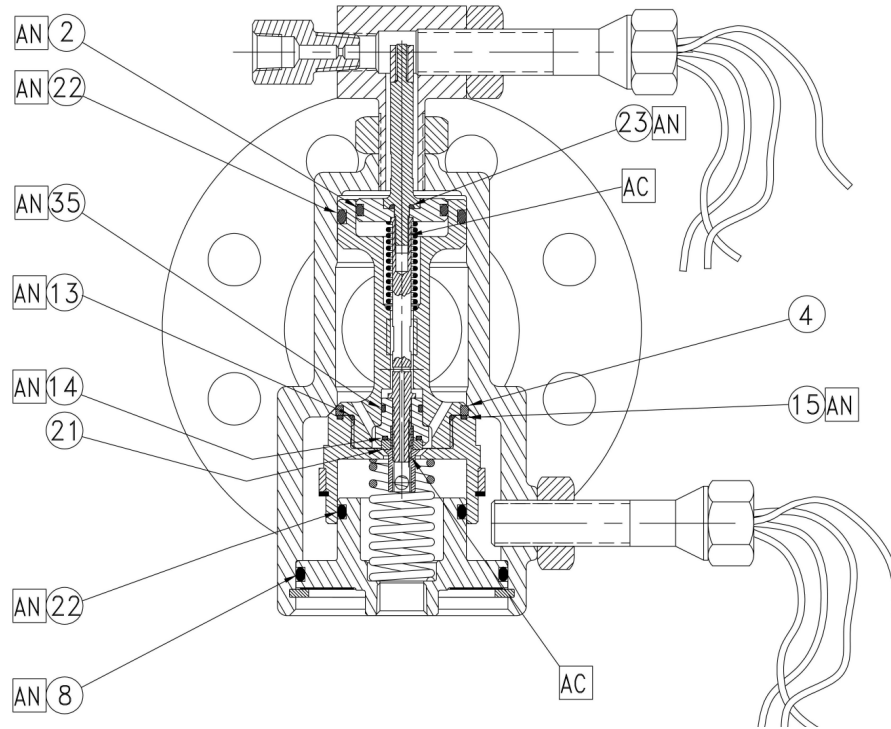
(2) Not available with aluminum spool

(3) All accessories include SS tubing & fittings mounted on valve

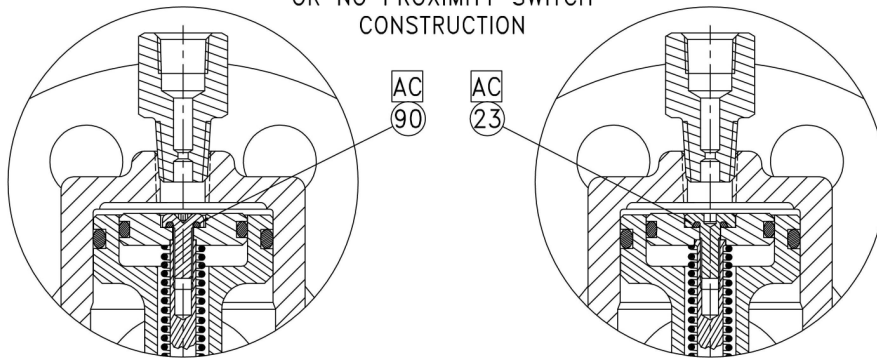
High Pressure Control Valve - Model 4418F

Service kits

Model 4418F, 2-way vented



2-WAY VENTED WITH OPEN
OR NO PROXIMITY SWITCH
CONSTRUCTION



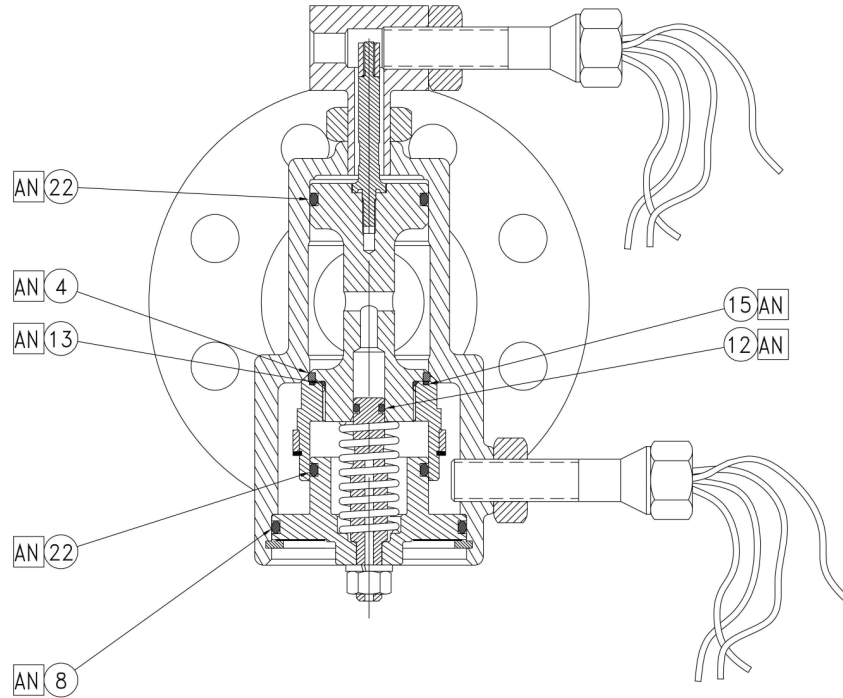
SELF SEALING SCREW WITH
POZI DRIVE

SELF SEALING SCREW WITH
HEX DRIVE

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Service kits

Model 4418F, 2-way



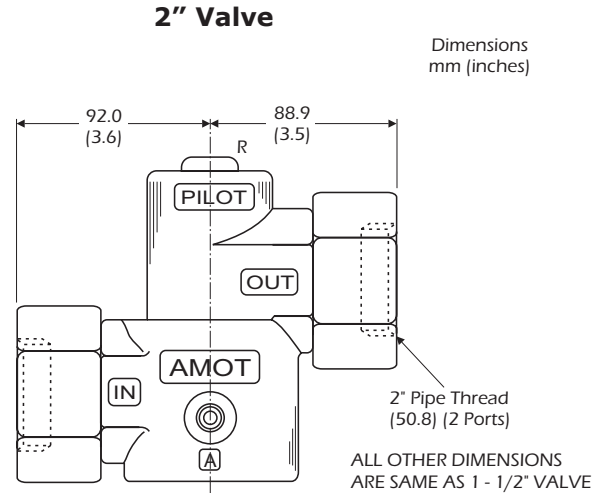
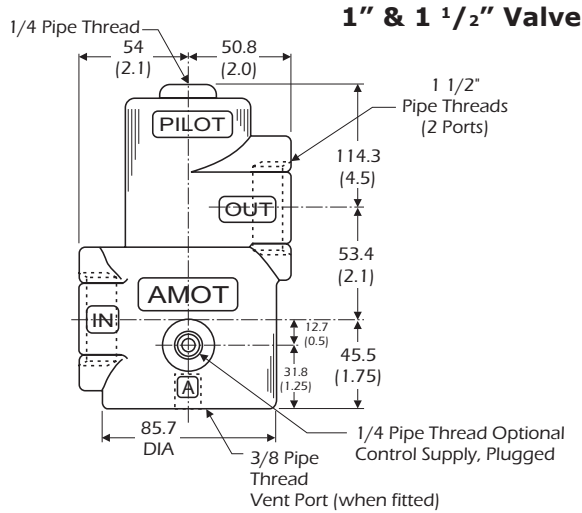
Service kit for seals

		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: 81050X001	Viton Kit: 81050X003	Viton Kit: 81050X005
Item no.	Description	Qty	Qty	Qty
2	O-ring	1	1	
4	PTFE main seal	1	1	1
8	O-ring	1	1	1
12	O-ring			1
13	O-ring	1	1	1
14	O-ring	1	1	
15	O-ring	1	1	1
21	PTFE vent seal	1	1	1
22	O-ring	2	2	2
23	O-ring	1	1	
90	O-ring		1	
35	O-ring	1	1	
40	Operation and Maintenance Manual	1	1	1
AN	Krytox GPL206 grease	1	1	1
AC	LOCTITE thread locker	1	1	1

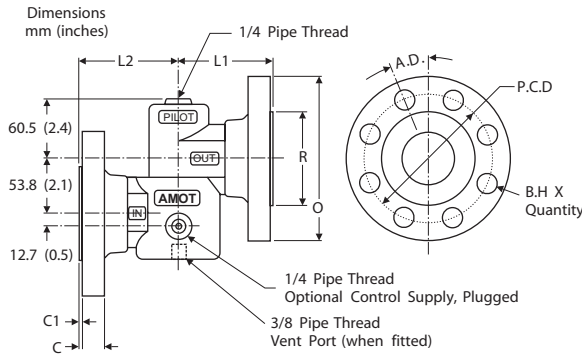
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Valve dimensions

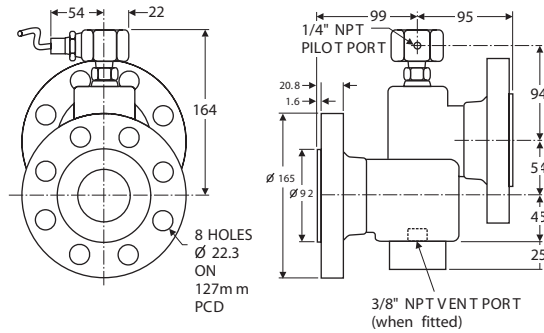
Threaded Valves



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 (C1)	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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