

# AIR AND VACUUM VALVES

FOR LIQUIDS WITH  
SUSPENDED SOLIDS  
K-020 SERIES

## DESCRIPTION

The K-020 Air and Vacuum Valve discharges air during the filling or charging of the system and admits air to the system during system drainage.

The valve is specially designed to operate with liquids carrying solid particles.

The valve's unique design enables the separation of the liquid from the sealing mechanism and assures optimum working conditions.

## MAIN FEATURES

- The valve's unique design prevents any contact between liquids and the sealing mechanism by creating an air gap at the top of the valve. This air gap is guaranteed even under extreme conditions.
- Those features are achieved by:
  - The conical body shape: designed to maintain the maximum distance between the liquid and the sealing mechanism and still obtain minimum body length.
  - Independent spring-guided linkage between the lower float/rod assembly and the upper float sealing mechanism: allows free movement of the float and rod. Vibrations and movement of the lower float due to turbulence will not unseat the upper float sealing mechanism.
  - Funnel-shaped lower body: designed to ensure that residue matter will fall back into the system and be carried away by the main pipe.
- Flushing is possible while the valve is under pressure by opening the ball valve in the valve's lower part.
- All inner metal parts made of Stainless Steel SAE 316.



**Air and Vacuum Valve  
for Liquids with Suspended Solids**

K-020



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K020STST

## PRODUCT SELECTION

- Available with 3" and 4" ANSI flanges
- Body made of Steel DIN 37; also available in stainless steel.

## SPECIFICATIONS

- Working pressure range: 3 - 250 psi
- Testing Pressure: 360 psi
- Maximum working temperature: 140° F
- Maximum intermittent temperature: 194° F
- Valve coating: Fusion-bonded epoxy in accordance with standard DIN 30677-2

## K-020 SERIES FOR LIQUIDS WITH SUSPENDED SOLIDS

### OPERATION

The K-020 Air and Vacuum Valves discharge air at high flow rates during the filling of the system and admit air into the system at high flow rates during its drainage and at water column separation.

High velocity air will not blow the float shut. Water will lift the float which seals the valve.

At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will enter the system.

The smooth discharge of air prevents pressure surges and other hydraulic disturbances.

The intake of air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air entry is essential to efficiently drain the system.

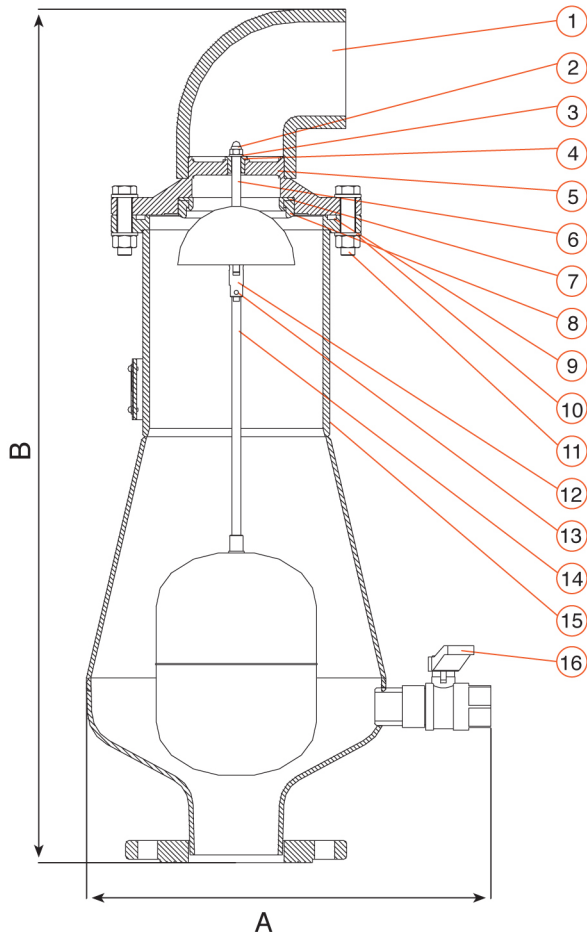
As the system starts to fill, the valve functions according to the following stages:

1. Air in the pipeline discharged by the valve.
2. When the liquid level reaches the valve's lower portion, the float is lifted, pushing the sealing mechanism to its sealing position.

When internal pressure falls below atmospheric pressure (negative pressure):

1. The floats will immediately drop down, opening the air and vacuum orifice.
2. Air will enter the system.

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### MATERIAL SPECIFICATIONS

NO.	PART	MATERIAL
1	Discharge Outlet	PVC* Stainless Steel SAE 316**
2	Crown Nut	Stainless Steel SAE 316
3	Washer	Stainless Steel SAE 316
4	Bushing	Teflon
5	Cover	Cast Iron ASTM A48* Stainless Steel SAE 316**
6	Stem + Spherical Flap	Stainless Steel SAE 316
7	Orifice Seat	Stainless Steel SAE 316
8	Orifice Seal	E.P.D.M.*, Viton**
9	O-Ring	BUNA-N*, Viton**
10	Bolt	Stainless Steel SAE 316
11	Nut	Stainless Steel SAE 316
12	Joint	Stainless Steel SAE 316
13	Pin	Stainless Steel SAE 316
14	Stem + Float	Stainless Steel SAE 316
15	Body	Steel DIN St.37* Stainless Steel SAE 316**
16	Ball Valve 1"	Stainless Steel SAE 316

\* 65K020

\*\* 65K020ST

### DIMENSIONS AND WEIGHTS

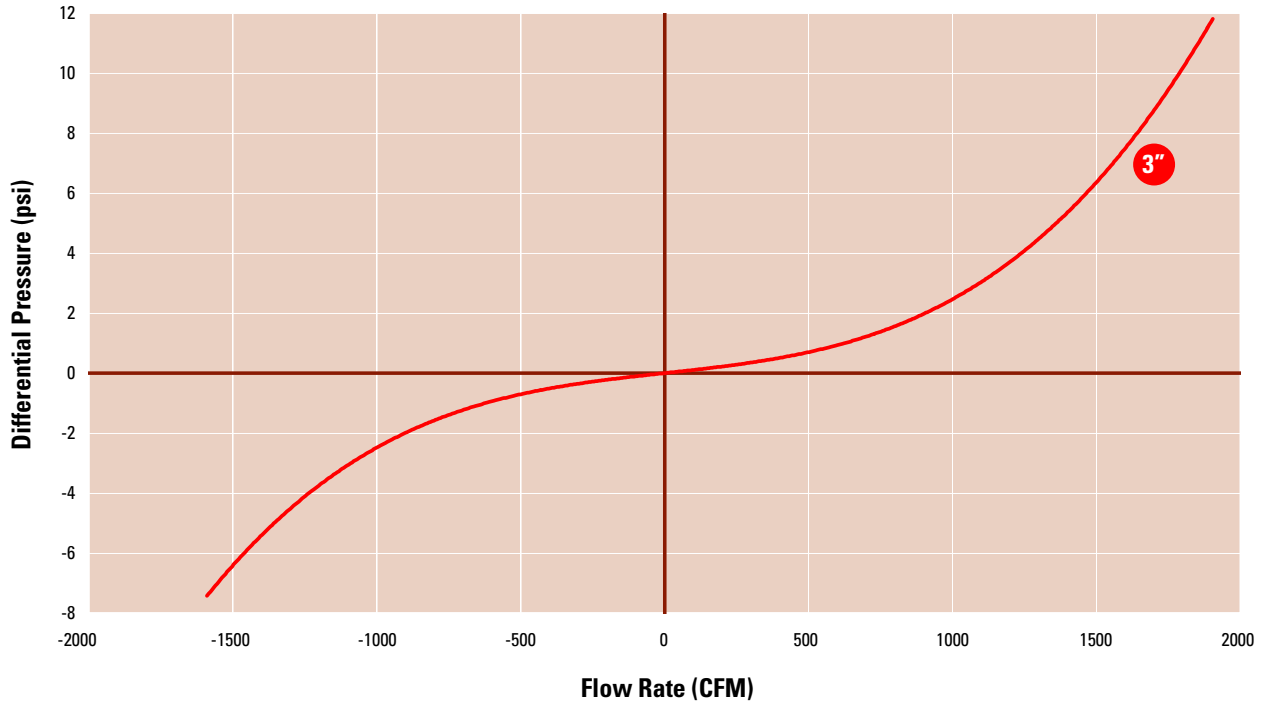
SIZE	DIMENSIONS		WEIGHT (LBS.)		ORIFICE AREA (IN <sup>2</sup> ) AIR & VACUUM
	A	B	STEEL	ST. ST	
3"	16.8	30.7	53.7	56.0	7.79
4"	16.8	30.7	57.3	59.3	7.79

### MODEL NUMBER AND FLANGE TYPE

MODEL NUMBER	SIZE	CONNECTION	PSI
65K0203	3"	150 lb. Flg.	250
65K0204	4"	150 lb. Flg.	250
65K0203STST	3"	150 lb. Flg.	250
65K0204STST	4"	150 lb. Flg.	250

# K-020 SERIES FOR LIQUIDS WITH SUSPENDED SOLIDS

**K-020 AIR & VACUUM FLOW RATE**



**DISCHARGE FLOW RATE (CFM)**

SIZE	DIFFERENTIAL PRESSURE (PSI)						
	0	2	4	6	8	10	12
3" & 4"	0	914	1,257	1,479	1,650	1,791	1,913

**INTAKE FLOW RATE (CFM)**

SIZE	DIFFERENTIAL PRESSURE (PSI)							
	-8	-7	-6	-5	-4	-3	-2	0
3" & 4"	-1,667	-1,574	-1,472	-1,359	-1,233	-1,085	-904	0



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