



**KOMBAT K1 CONTROL VALVE**

# KOMBAT SERIES K CONTROL VALVE

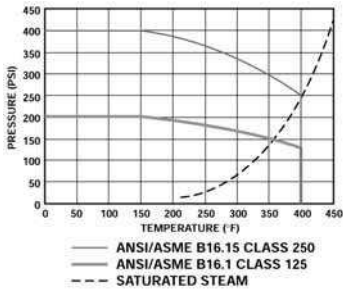
SIZES 1/2" – 4"  
ANSI Class 125/250

- **Shutoff to 400 PSI without Positioner** for broad range of applications.
- **Ultra Compact Multi-spring Pneumatic Actuator** installs in tight spaces.
- **3–15 lb. Spring Ranges** in durable epoxy coated pneumatic actuators accommodate most standard input devices.
- **Powerful Electric Actuator** accepts a wide variety of signals while providing highest shutoff in it's class.
- **Live Loaded V ring Packing Assembly** is self adjusting.
- **Stainless Steel Valve Plugs & Seat Rings** resist wear and corrosion
- **Optional 3-Way Body** for mixing or diverting

## APPLICATION DATA

- Process control systems for food, pulp and paper, chemical, petrochemical & other industries
- HVAC systems
- Feed water and fuel system controls in boiler rooms
- Packaged systems (OEM) such as heat exchangers, water purification systems & vaporizer, metal cleaning and plating
- Mixing or diverting applications

## PRESSURE/TEMPERATURE CHART



## MODELS

- Type K1 — Single Seat Bronze w/union ends & Pneumatic Actuator
- Type K3 — 3-Way Bronze w/union ends & Pneumatic Actuator
- Type K4 — Single Seat Flanged Cast Iron w/Pneumatic Actuator
- Type K5 — Same as K1 w/Electric Actuator, fail closed
- Type K6 — Same as K1 w/Electric Actuator, fail open
- Type K7 — Same as K3 w/Electric Actuator

## OPTIONS

- 36 or 60 sq. in. Pneumatic Actuator
- Electric Actuator

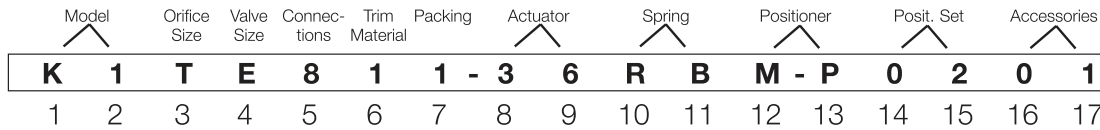
## APPLICABLE CODES

- Meets or exceeds ANSI B16.15 Class 250 or ANSI B16.1 Class 125
- ANSI/FCI 70-2 Class IV Seat Leakage

## PLUG CHARACTERISTICS

Modified Equal Percent, 30:1 flow rangeability

## KOMBAT SERIES K VALVE ORDERING CODE



**Model -**  
Position 1 & 2  
K1 = Bronze, Pneumatic  
K3 = Bronze, 3 Way, Pneumatic  
K4 = Cast Iron, Pneumatic  
K5 = Bronze, Electric, FC  
K6 = Bronze, Electric, FO  
K7 = Bronze, 3 Way, Electric

**Orifice Size -**  
Position 3  
A  
B  
C  
E  
T

**Valve Size -**  
Position 4  
C = 1/2  
D = 3/4  
E = 1  
F = 1 1/4  
G = 1 1/2  
H = 2  
J = 2 1/2  
K = 3  
M = 4

**Connections -**  
Position 5  
2 = 125 Flg  
8 = Unions

**Trim Material -**  
Position 6  
1 = Metal

**Packing -**  
Position 7  
1 = V-ring

**Actuator -**  
Position 8 & 9  
**K1, K3, K4 only**  
01 = None  
36 = 36 sq. in.  
60 = 60 sq. in.  
**K5, K6, K7 only**  
90 = 0-10vDC  
91 = 4-20mA  
92 = 0-135ohm

**Spring -**  
Position 10 & 11  
**All except K4**  
DA = Dir 36  
DC = Dir 36  
DD = Dir 36  
DG = Dir 60  
FM = Dir 36  
RA = Rev 36  
RB = Rev 36  
RC = Rev 36  
RD = Rev 36  
RE = Rev 36  
DF = Dir 60  
DG = Dir 60  
RG = Rev 60  
**K4 only**  
DH = Dir 60  
RH = Rev 60  
RQ = Rev 60  
RT = Rev 60

**Positioner -**  
Position 12 & 13  
A = None  
MI = Moore I/P  
MP = Moore P  
4P = PMV P4 P  
5I = PMV P5 I/P  
5P = PMV P5 P

**Positioner Set**  
Position 14 & 15  
01 = None  
02 = 8-15/4-20 mA  
03 = 3-9/4-12 mA  
04 = 9-15/12-20 mA

**Accessories -**  
Position 16 & 17  
01 = None  
02 = Limit Switch, Mechanical  
03 = Limit Switch, Proximity Sw.  
04 = Feedback Potentiometer 1K  
05 = Feedback 4-20mA Posit. Tra

# KOMBAT SERIES K CONTROL VALVE

## SPECIFICATION

Valve shall be pneumatically or electrically actuated, have a bronze or cast iron body and meet ANSI B16.15 Class 250 or ANSI B16.1 Class 125 accommodating pressures to 400 PSIG. Guiding shall be low friction utilizing spring loaded self adjusting chevron type teflon packing, burnished stem and double guided stainless steel monolithic disc assembly. Valve trim shall be erosion resistant stainless steel with a modified equal percent flow characteristic capable of exceeding ANSI/FCI 70-2 Class IV shut off. Valve connections shall be female NPT with integral galvanized cast iron unions or flanged. Pneumatic actuator shall be 36 sq. in. or 60 sq. in. and have a high thrust multi spring diaphragm. Actuator components shall be stainless steel and epoxy coated. Fixed 3-15 pound springs shall be utilized to accommodate standard controller outputs without a positioner. The electric actuator shall accept 0-10 VDC, 4-20 mA or 0-135 ohm input signal. Spring shall return to initial position on loss of signal. Actuator shall have manual override. It shall close to 400 psi. Enclosure shall meet NEMA 1.

## MATERIALS OF CONSTRUCTION

Body K1, K3, K5, K6, K7 .....Bronze ASTM B62  
 K4 .....Cast Iron ASTM A126 CL B  
 Bonnet K4 .....DI ASTM A536 65-45-12  
 Seat K1, K3, K5, K6, K7 .....303 SS ASTM A276  
 K4 .....420 SS ASTM A743  
 Plug/Stem Assy K1, K3, K5, K6, K7 .....303 SS ASTM A276  
 Plug K4 .....420 SS ASTM A743  
 Stem .....303SS ASTM A582  
 Stem Guide - Body K1, K3, K5, K6, K7 ...301 SS/Monel/Brass  
 Live Loaded Packing .....PTFE/302 SS Spring/Viton O-Ring  
 Actuator Casing K1, K3, K4 ...Steel SAE 1006 - 1008/Epoxy  
 K5, K6, K7 .....Powder Coated Aluminum  
 Actuator Spring K1, K3, K4 .....Music Wire ASTM A228  
 Diaphragm K1, K3, K4 .....Nitrile/Polyester  
 Yoke K1, K3, K4 .....D Iron ASTM A536/Epoxy  
 K5, K6, K7 .....Powder Coated Aluminum

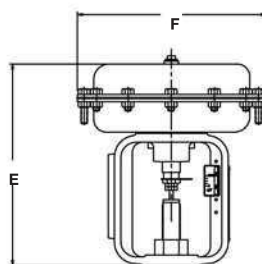
## MAXIMUM RATED FLOW COEFFICIENTS\* (Cv)

VALVE	VALVE SIZE								
	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
2-WAY	5.2	7	11	20	25	30	71	94	146
3-WAY	5.4	6.4	8.7	19.5	24	34	—	—	—

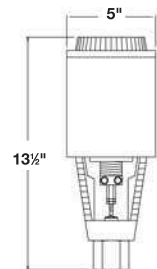
\*See Flow Characteristic Chart on following pages.

## K1, K4, K5 & K6 DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

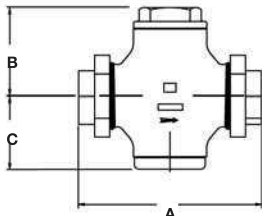
Size	A	B	C	Weight		
				K1, K4	K1, K4	K5, K6
				36 in <sup>2</sup>	60 in <sup>2</sup>	
1/2-3/4 (15)-(20)	5 1/2 (140)	11 1/16 (43)	1 1/16 (30)	21 (9.5)	—	13 (6)
1 (25)	7 7/16 (183)	2 7/8 (74)	2 5/16 (58)	25 1/2 (11.6)	39 (17)	17 1/2 (8)
1 1/4-1 1/2 (32)-(40)	8 7/8 (226)	3 3/8 (79)	2 7/8 (74)	31 1/2 (14.3)	45 (20)	23 1/2 (11)
2 (50)	8 7/8 (226)	3 3/8 (79)	2 7/8 (74)	33 3/8 (15.2)	47 (21)	25 1/2 (12)
2 1/2 (65)	9 7/8 (238)	5 1/4 (133)	3 3/8 (118)	—	72 (33)	—
3 (80)	10 (254)	6 3/8 (155)	4 3/8 (136)	—	84 (39)	—
4 (100)	11 7/8 (302)	7 1/4 (181)	6 1/2 (187)	—	145 (66)	—



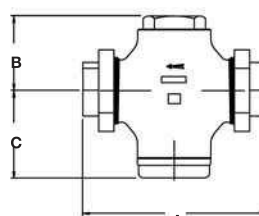
K1, K3, K4 ACTUATOR



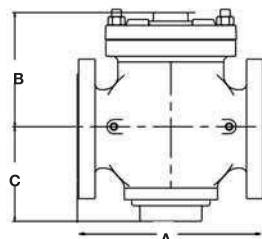
K5, K6, K7 ACTUATOR



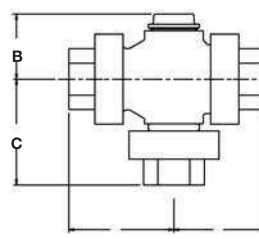
K1, K5 1/2" - 2"



K6 1/2" - 2"



K4 2 1/2" - 4"



K3, K7 1/2" - 2"

## PNEUMATIC ACTUATOR DIMENSIONS inches (mm)

Size	E		F	
	36 in <sup>2</sup>	60 in <sup>2</sup>	36 in <sup>2</sup>	60 in <sup>2</sup>
1/2-3/4 (15)-(20)	9 7/8 (251)	—	9 3/4 (235)	—
1 (25)	9 7/8 (251)	11 1/4 (298)	9 3/4 (235)	11 1/4 (286)
1 1/4-1 1/2 (32)-(40)	9 7/8 (251)	11 1/4 (298)	9 3/4 (235)	11 1/4 (286)
2 (50)	9 7/8 (251)	11 1/4 (298)	9 3/4 (235)	11 1/4 (286)
2 1/2 (65)	—	11 1/4 (302)	—	11 1/4 (286)
3 (80)	—	11 1/4 (302)	—	11 1/4 (286)
4 (100)	—	11 1/4 (302)	—	11 1/4 (286)

## K3, K7 DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

Size	A	B	C	D	Weight	
					36 in <sup>2</sup>	60 in <sup>2</sup>
1/2-3/4 (15)-(20)	3 3/8 (92)	3 3/16 (84)	4 1/8 (105)	2 7/8 (73)	28 (13)	—
1 (25)	3 3/8 (92)	3 3/16 (84)	4 1/8 (105)	2 7/8 (73)	28 (13)	—
1 1/4 (32)	4 1/16 (119)	4 1/8 (105)	4 1/16 (119)	3 3/8 (79)	35 (16)	48 (22)
1 1/2 (40)	4 1/16 (119)	4 1/8 (105)	4 1/16 (119)	3 3/8 (79)	37 (17)	50 (23)
2 (50)	4 7/8 (124)	4 3/8 (106)	4 5/8 (125)	3 3/8 (79)	42 (19)	55 (25)

Control Tip: Pair with Airmaster Pneumatic Temperature Controller for local temperature control. SEE PAGE 79.

Control Tip: Install with Model 65A Air Filter Regulator to convert plant air to instrument quality air. SEE PAGE 169.

KOMBAT SERIES K  
CONTROL VALVES