APPLICATIONS:

This valve can be used to meter or control flow of liquids and/or gases on meter runs, flow lines, or may be used as a choke under low pressure drop conditions where freezing is not a problem.

Used any time a reference control point is required in 64ths of an inch opening.

FEATURES:

Compact design
O Ring sealed seat
Teflon packed stuffing box
Ball-in-Cone seat design
Easily adjusted
Large adjusting knob
Large adjusting screw

CERTIFICATIONS:

Canadian Registration Number (CRN):
0C15021.24567890NTY

STEM TRAVEL:

1" Meter Valve 1/2" maximum
2" Meter Valve 3/4" maximum

OPERATIONS:

Rotation of the adjusting knob raises or lowers the valve plug relative to the valve seat. Six full turns are required to fully open the valve. Opening is graduated in 64ths.

WORKING PRESSURE:

1" 4000 psig
2" 2000 and 4000 psig

MAXIMUM PRESSURE DROP:

1" All Sizes 4000 psig
2" 7/16" EP Seat 4000 psig
2" 5/8" EP Seat 3000 psig
2" 7/8" EP Seat 1500 psig

INNER VALVE SIZES:

1" Equal Percentage Seats 1/4", 1/2"
2" Equal Percentage Seats 7/16", 5/8" and 7/8"

CAPACITIES:

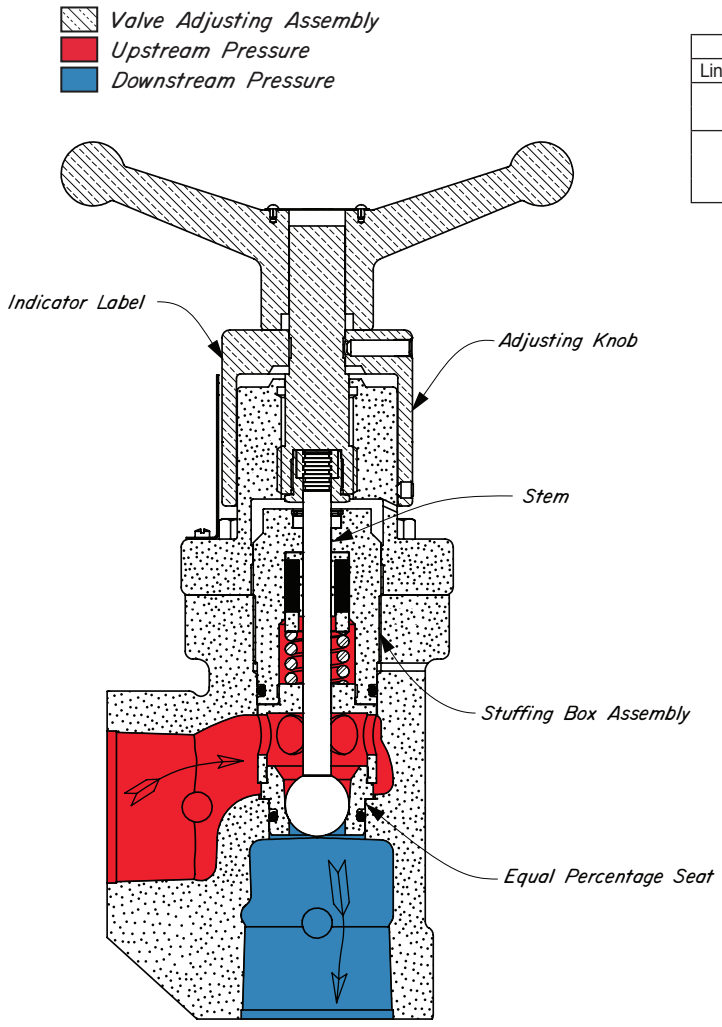
Refer to Table of Contents

INNER VALVE SPECIFICATIONS:

1" & 2" MV-Standard valve plug for 7/16" consists of a carbide ball rigidly connected to a 303 stainless steel stem. Standard valve plugs for 5/8" and 7/8" consist of a hardened high chrome alloy ball rigidly connected to a 303 stainless steel stem. Standard seats are made of heat treated tool steel.

Inner valves can be made from a wide selection of materials. Specify when ordering.

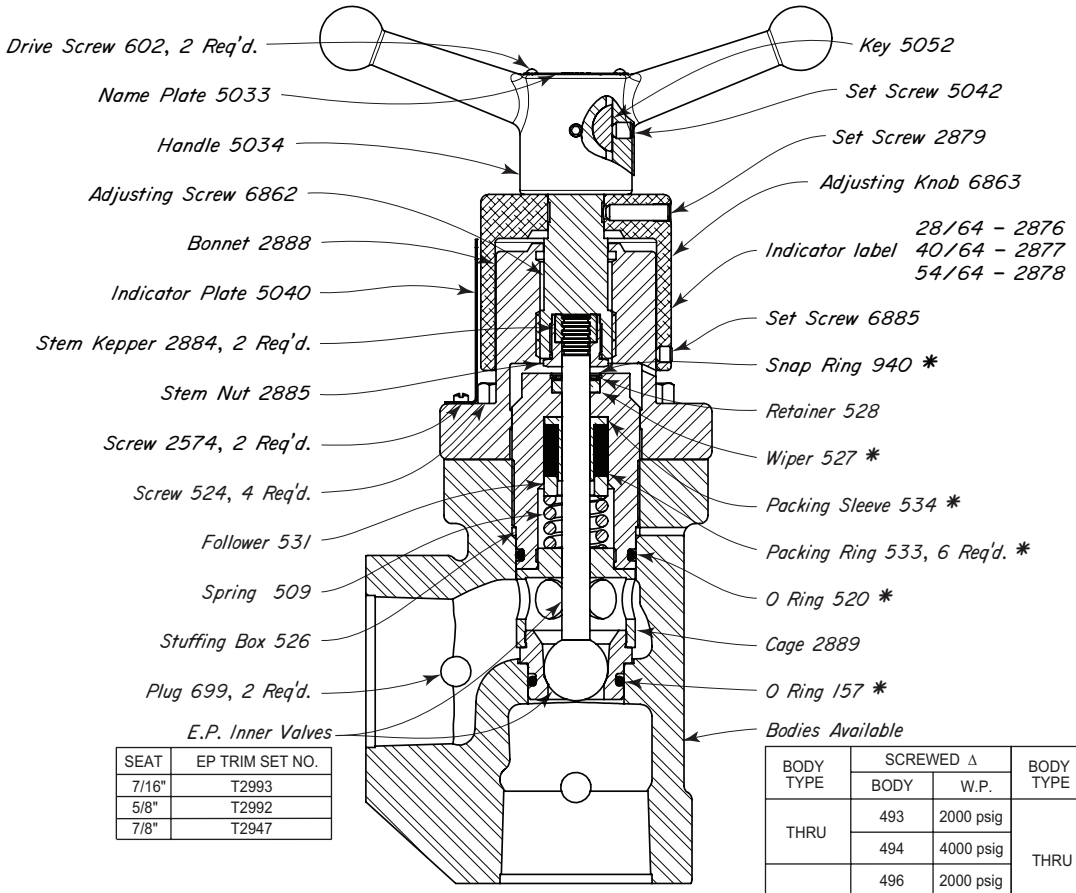
Cf & Cv VALUES				
Line Size	Flow Characteristic	Trim Size	Cf	Cv
1"	Equal Percentage	1/4"	0.66	1.99
		1/2"	0.78	6.49
2"	Equal Percentage	7/16"	0.60	5.44
		5/8"	0.58	10.76
		7/8"	0.66	17.40





Kimray is an ISO 9001- certified manufacturer.

2" METERING VALVE
STEEL



SEAT	EP TRIM SET NO.
7/16"	T2993
5/8"	T2992
7/8"	T2947

BODY TYPE	SCREWED Δ		BODY TYPE	FLANGED	
	BODY	W.P.		BODY	ANSI CLASS
THRU	493	2000 psig	THRU	4510	150 RF
				4511	300 RTJ
	494	4000 psig		4512	300 RF
				4513	600 RF
ANGLE	496	2000 psig		4514	600 RTJ
				4515	1500 RTJ
	497	4000 psig		4516	1500 RF
				4230	2500 RF

THRU VALVES AVAILABLE:

CAT. NO.	INNER VALVE	VALVE	MAX W.P.	KIT
EEJ	1/4"	2200 SMVT 1/4 IV	2000	RSE
EEL	7/16"	2200 SMVT 7/16 IV	2000	RSE
EEN	5/8"	2200 SMVT 5/8 IV	2000	RSE
EEP	7/8"	2200 SMVT 7/8 IV	2000	RSE
EET	5/8"	2400 SMVT 5/8 IV	4000	RSE
EEW	7/8"	2400 SMVT 7/8 IV	4000	RSE
MAQ	7/16"	2500 FMVT 2500RTJ[a]	6170	RSE

All standard Metering Valves have a Cat. No. Seats, stems, cages, stuffing boxes and valve bodies are available in 316 stainless steel. Inner valves can be made from a wide selection of materials. Specify when ordering.

*These are recommended spare parts and are stocked as repair kits.

ANGLE VALVES AVAILABLE:

CAT. NO.	INNER VALVE	VALVE	MAX W.P.	KIT
EEK	7/16"	2200 SMVA 7/16 IV	2000	RSE
EEM	5/8"	2200 SMVA 5/8 IV	2000	RSE
EEO	7/8"	2200 SMVA 7/8 IV	2000	RSE
EES	5/8"	2400 SMVA 5/8 IV	4000	RSE
EEV	7/8"	2400 SMVA 7/8 IV	4000	RSE

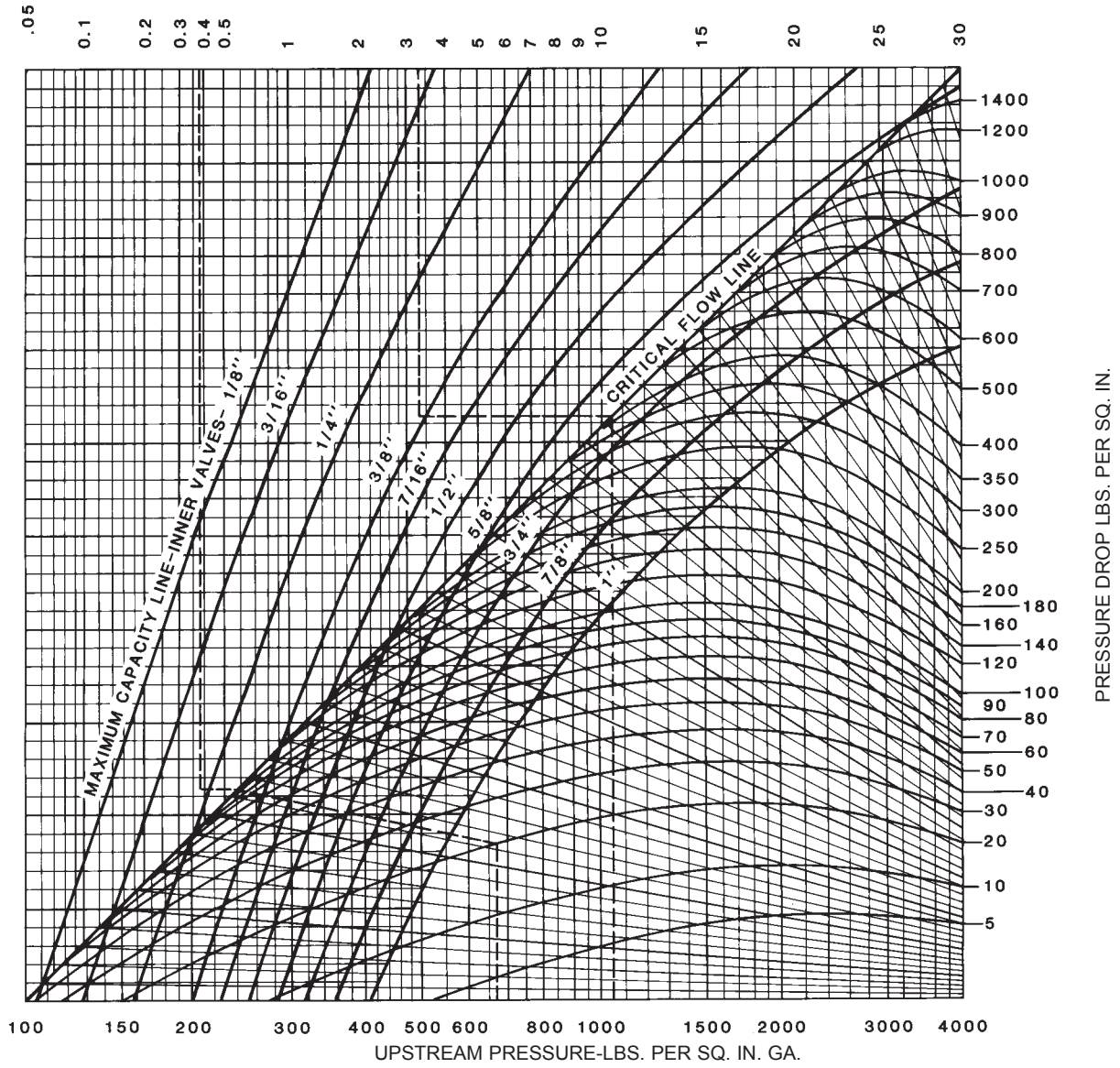
Flanged and socket weld bodies are available. All bodies are available with a 1/4" NPT tapped hole upstream and downstream. Specify when ordering.

For dimensions, refer to Table of Contents. Flanged dimensions available upon request.

[a]For working pressure vs. working temperature see ASME B16.34;
For flanges & flanged fittings see ASME B16.5.

Kimray is an ISO 9001- certified manufacturer.

VOLUME-MILLIONS CU. FT. PER 24 HOURS - 65 SP. GR. AT 14.4 & 60°



Gas capacities are based on pressures taken immediately upstream from the valve in a wide open position. Indicated volumes have been corrected for supercompressibility.

HOW TO USE CHART: PRESSURE DROP LESS THAN CRITICAL FLOW with: UPSTREAM PRESSURE 670 pounds gauge; PRESSURE DROP 20 pounds; VOLUME 380,000 Cu. Ft. per 24 hours.

Locate 670 at bottom of chart. Project a vertical line to intersect the 20 pound PRESSURE DROP line, and using sloping GUIDE LINES, project this point to the CRITICAL FLOWLINE. A horizontal line drawn through this point intersects all INNER VALVE lines at the maximum capacity is 0.43 millions of 430,000 Std. Cu. Ft. per 24 hours. A 3/8" is 0.78 and a 1/2" is 1.43. Select the inner valve size for the desired over-capacity.

CRITICAL FLOW with: UPSTREAM PRESSURE 1050 pounds gauge. PRESSURE DROP 600 pounds. VOLUME 3.3 millions per 24 hours.

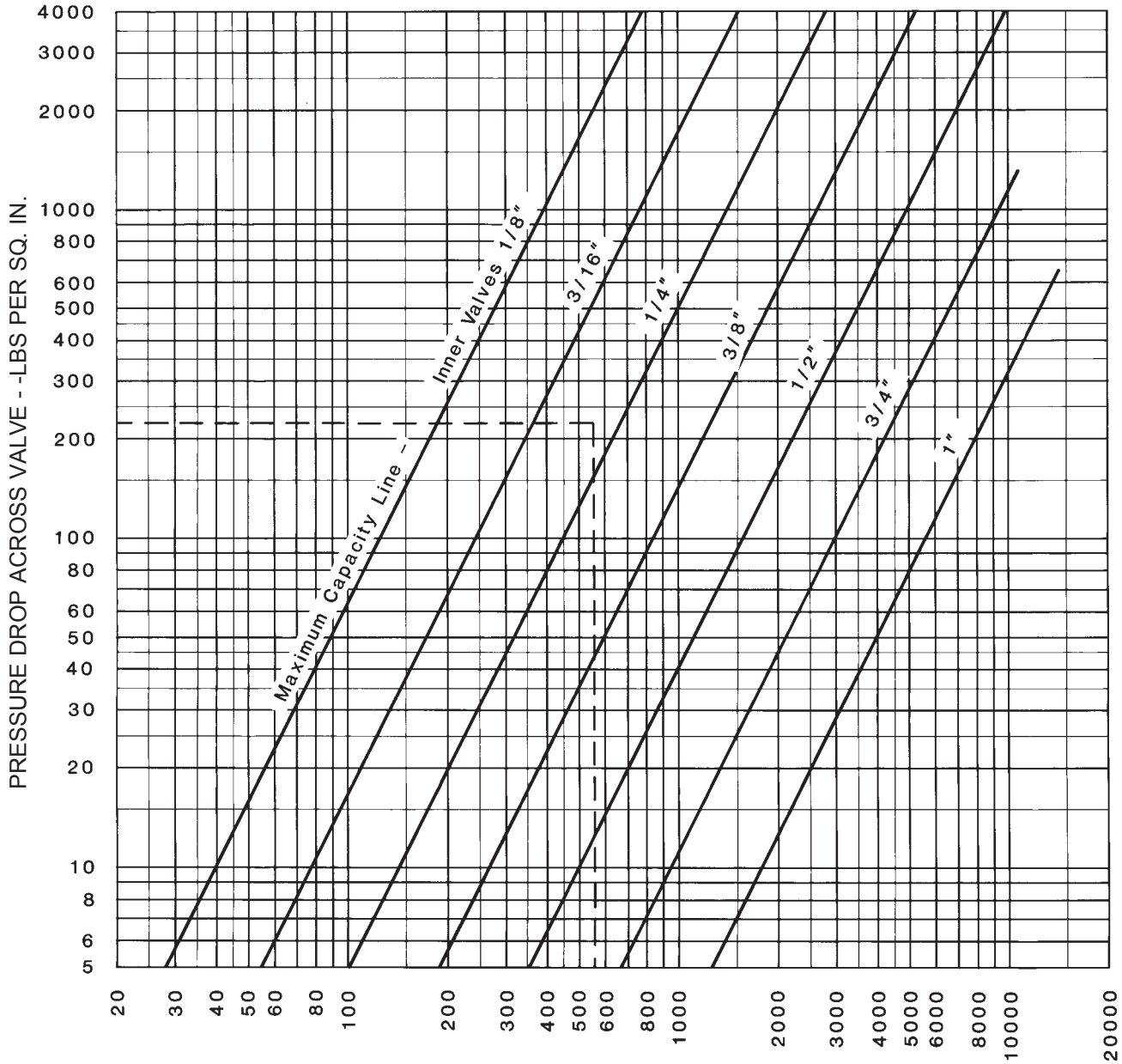
Locate1050 at bottom of chart. Project a vertical line to intersect the CRITICAL FLOW LINE. A horizontal line drawn through this point intersects all INNER VALVE LINES at the maximum capacity of each for the above conditions. A 3/8" inner valve maximum capacity is 3.4 millions and a 1/2" is y6.4 millions. Select the inner valve size for the desired over-capacity.

*For Gravity correction multiply above capacities by √.65/G; where G equals specific gravity of gas.

See Liquid Capacity Chart for maximum pressure drops on large inner valves.

Flow rates are for steady flow conditions over a 24-hour period. Corrections should be made to deal; with intermittent flow conditions.

STEADY FLOW RATE - BARRELS WATER PER 24 HOURS



A good rule to follow when sizing liquid valves discharging from any kind of accumulator is to assume a volume at least twice that expected under steady flow conditions.

HOW TO USE CHART: Assume that it is desired to handle 275 barrels of water per day under steady flow conditions with a 225 psig pressure drop across the valve. Using the rule above we will use a volume of 550 barrels. The intersection of the 550 barrel line and the 225 psig pressure drop line lies between the 3/16" and 1/4" inner valve lines. Since the inner valve lines indicated maximum capacities, we must therefore select the 1/4" inner valve size to handle this volume.

*For gravity correction multiply above capacities by 1/√G; where G equals specific gravity of flowing liquid.

MAXIMUM PRESSURE DROP for LARGE INNER VALVES

1" CONTROL VALVES			2" CONTROL VALVES		
I.V.	THROTTLE	RELIEF	I.V.	THROTTLE	RELIEF
1/2"	1200	2400	1"	650	1300
3/8"	1850	3700	3/4"	1350	2700

Above values are for valves furnished with standard springs for 20 psig diaphragm pressure.

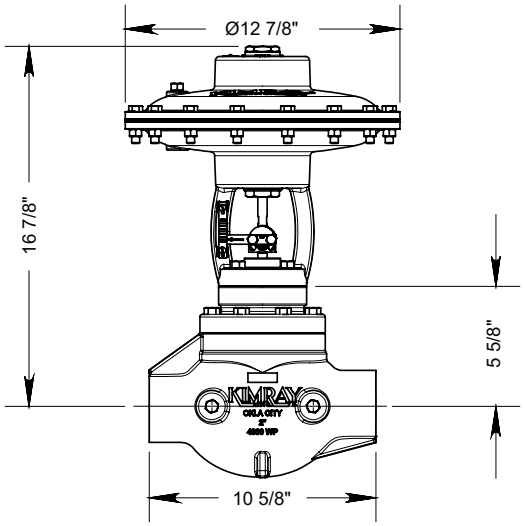
NOTE: Flow rates are for steady flow conditions over a 24-hour period. Corrections should be made to deal with intermittent flow conditions.

VALVE	FLOW CHARACTERISTIC	MATERIAL	INNER VALVE SIZE				
			1/8”	3/16”	1/4”	3/8”	1/2”
1" SMA & 1" SMT	LINEAR FLOW	TOOL STEEL*[a]	T2842	T2841	T2840	T2838	T2839
		17-4PH[d]	T2842PH	T2841PH	T2840PH	T2838PH	T2839PH
		316SS[c]	T2842SS6	T2841SS6	T2840SS6	T2838SS6	T2839SS6
	SNAP	CARB. INSERT	T2856	T2855	T2854	T2853	T5307
	EQUAL PERCENTAGE	TOOL STEEL*	T6400		T4730[a]		T4732[a]
		316SS[c]	T6400SS6		T4730SS6		T4732SS6
		ZIRCONIA			T4730ZR		T4732ZR
1" SMS	LINEAR FLOW	TOOL STEEL*[a]			T1202	T1234	T1977
		316SS[c]			T1202SS6	T1234SS6	T1977SS6
	SNAP	CARB. INSERT[a]			T1463	T1462	T5325
1" MV	EQUAL PERCENTAGE	TOOL STEEL*[a]			T4730MV		T4732MV
		316SS[c]			T4730SS6MV		T4732SS6MV
		ZIRCONIA			T4730ZRMV		T4732ZRMV
VALVE	FLOW CHARACTERISTIC	MATERIAL	INNER VALVE SIZE				
			1/4"	3/8"	1/2"	3/4"	1"
2" SMA & 2" SMT	LINEAR FLOW	TOOL STEEL*	T2895[a]	T2896[a]	T2897[a]	T2898[b]	T2899[b]
		17-4PH[d]	T2895PH	T2896PH	T2897PH	T2898PH	T2899PH
		316SS[c]		T2896SS6	T2897SS6	T2898SS6	T2899SS6
		ZIRCONIA					T2899ZR
		440C				T2898440C	T2899440C
		CARB BALL				T2898CB	T2899CB
	SNAP	CARB INSERT	T2890	T2891	T2892	T4690	T4691
		ZIRCONIA		T2891ZR		T4690ZR	
VALVE	FLOW CHARACTERISTIC	MATERIAL	INNER VALVE SIZES				
			1/4"	7/16"	5/8"	7/8"	1”
2" SMA & 2" SMT	EQUAL PERCENTAGE	TOOL STEEL*	T6404	T2993[a]	T2992[b]	T2947[b]	
		17-4PH[d]	T6404PH	T2993PH	T2992PH	T2947PH	
		316SS[c]	T6404SS6	T2993SS6	T2992SS6	T2947SS6	
		ZIRCONIA		T2993ZR	T2992ZR	T2947ZR	
		CARB BALL				T2947CB	
2" MV	EQUAL PERCENTAGE	TOOL STEEL*[a]	T6404MV	T2993MV	T2992MV	T2947MV	
		17-4PH[d]				T2947PHMV	
		316SS[c]	T6404S6MV	T2993S6MV	T2992S6MV	T2947S6MV	
		ZIRCONIA		T2993ZRMV	T2992ZRMV	T2947ZRMV	

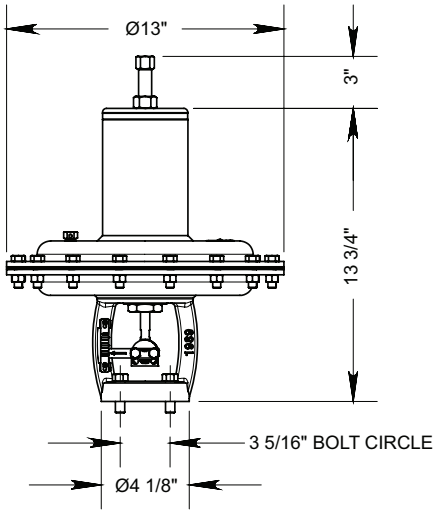
[a]Carbide ball rigidly connected to a 303SS stem
[b]Hardened high chrome alloy ball connected to a 303SS stem
[c]One piece 316SS steel stem
[d]One piece 17-4 PH SS steel stem
*Seat and Plug furnished with Standard HPCV

2" HPCV DIMENSIONS

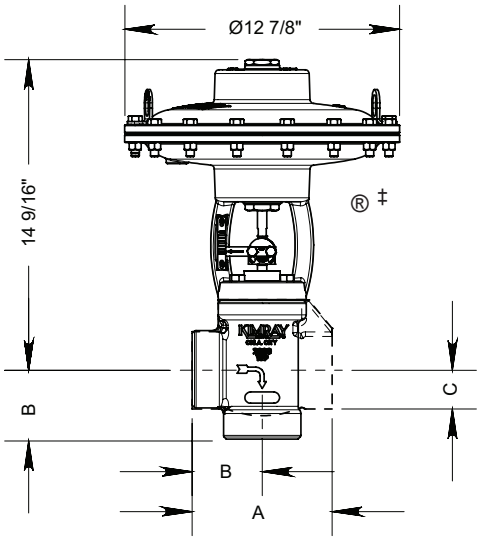
2" HPCV PB



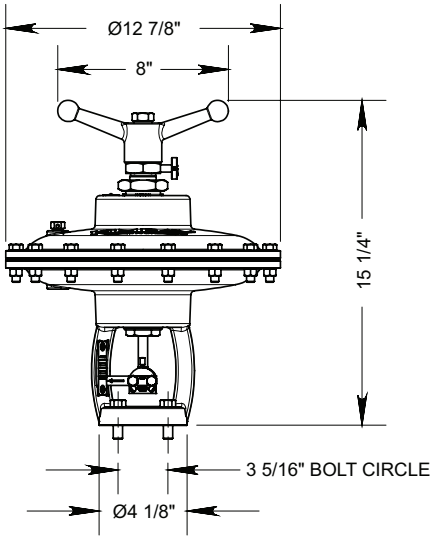
2" -65 TOPWORKS



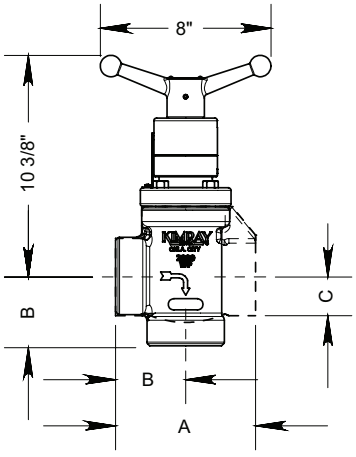
2" HPCV



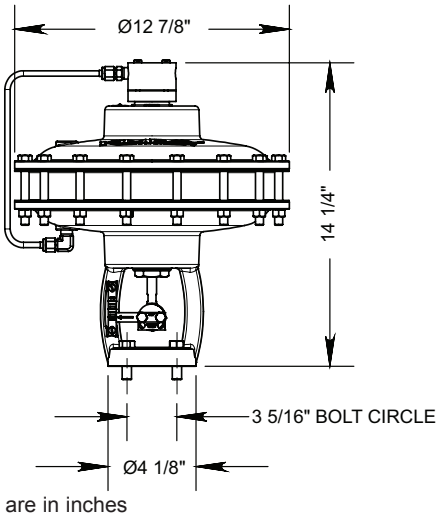
2" MVP TOPWORKS



2" SMVA/T TOPWORKS



2" PVP TOPWORKS



MODEL NO.	A	B	C
2200	6 9/16"	3 9/32"	1 13/16"
2400	6 9/16"	3 9/32"	2 1/16"

All dimensions are in inches
Flanged body dimensions available on request.

‡ Configuration of High Pressure Control Valve is a trademark of Kimray, Inc.