

MODEL NUMBERS

Research® Control Valves

<p>1. FIRST 4 DIGITS ARE BASE MODEL NUMBER AND DESIGNATE VALVE SIZE</p> <p>1001 - 1/4" VALVE 1002 - 1/2" VALVE 1003 - 3/4" VALVE 1004 - 1" VALVE 1005 - 1-1/2" VALVE 1007 - 2" VALVE</p> <p>2. NEXT 2 DIGITS DESIGNATE BODY TYPE</p> <p>GC - GLOBE CAST GB - GLOBE BARSTOCK AB - ANGLE BARSTOCK AH - ANGLE HIGH PRESSURE (UNION) GH - GLOBE HIGH PRESSURE (UNION) TC - THREE-WAY CAST TB - THREE-WAY BARSTOCK GS - GLOBE SANITARY AS - ANGLE SANITARY GE - GLOBE, EXTENDED (CBX,HAST-C BELLOW) GU-GLOBE CAST HIGH PRESSURE UNION</p>	<p>EG - EXTENSION NECK BONNET - GRAFOIL EV - EXTENSION NECK BONNET - CV RING HV - HEAVY DUTY GUIDE - CV RING PACKING HG - HEAVY DUTY GUIDE - GRAFOIL KV - H.D. GUIDED COOLING FIN - CV RING KG - H.D. GUIDED COOLING FIN - GRAFOIL MV - MEDIUM GUIDED TRIM W/CV RINGS DV - DOUBLE CV RINGS (PTFE) DK - DOUBLE CV RINGS (KALREZ) MU - MANUAL, UNION,DISK PACKING</p> <p>SANITARY BONNETS:</p> <p>YO - CLAMP TYPE WITH "O" RING UO - UNION TYPE WITH "O" RING YD - CLAMP TYPE WITH DOUBLE "O" RINGS UD - UNION TYPE WITH DOUBLE "O" RINGS YP - CLAMP TYPE WITH PURGE PORT AND DOUBLE "O" RINGS UP - UNION TYPE WITH PURGE PORT AND DOUBLE "O" RINGS YR - SANITARY CLAMP TYPE WITH ROLLING DIAPHRAGM YR - SANITARY CLAMP TYPE WITH ROLLING DIAPHRAGM</p>	<p>000 - LESS TRIM APS - "A" =% SOFT SEAT</p> <p>NOTE: THESE ARE JUST EXAMPLES OF HOW THE INNERVALVE MODEL NUMBER IS CONSTRUCTED. A COMPLETE LIST OF ALL THE INNERVALVES WOULD BE TOO LARGE TO LIST.</p>														
<p>3. NEXT DIGIT DESIGNATES BODY END FITTING</p> <p>N - NPT F - FLANGED (DOES NOT SPECIFY SIZE, RATING OR FACE FINISH) S - SOCKET WELD (DOES NOT SPECIFY SIZE) B - BUTT WELD (EXTENSION NIPPLES) [DOES NOT SPECIFY SIZE] T - TUBE FITTINGS (E.G., SWAGELOK, AE, ETC) W - WAFER (CLAMP BETWEEN FLANGES) Y - CLAMP TYPE (SANITARY) U - UNION TYPE (SANITARY)</p>	<p>6. NEXT 2 DIGITS DESIGNATE ACTUATOR TYPE</p> <p>OS - ATO STANDARD CS - ATC STANDARD OP - ATO-P WITH POSITIONER CP - ATC-P WITH POSITIONER OB-ATO WITH BUYOUT POSITIONER CB-ATC WITH BUYOUT POSITIONER OR - ATO REVERSIBLE CR - ATC REVERSIBLE O3 - ATO S/S TOPWORKS C3 - ATC S/S TOPWORKS OO - LESS TOPWORKS MN - MANUAL OE - EVA-1 SIGNAL TO OPEN CE - EVA -1 SIGNAL TO CLOSE O9 - EVA-100/200 SIGNAL TO OPEN C9 - EVA-100/200 SIGNAL TO CLOSE OH - ATO WITH HANDWHEEL CH - ATC WITH HANDWHEEL OT - ATO SIZE 35 (1.125" MOUNTING) WITHOUT POSITIONER CT - ATC SIZE 35 (1.125" MOUNTING) WITHOUT POSITIONER OW - ATO SIZE 35 (1.125" MOUNTING) WITH POSITIONER CW - ATC SIZE 35 (1.125" MOUNTING) WITH POSITIONER OZ - ATO SIZE 35 (1.0" MOUNTING) WITH POSITIONER [FOR BA-2500, BA-2030, ETC] CZ - ATC SIZE 35 (1.0" MOUNTING) WITH POSITIONER [FOR BA-2500, BA-2030, ETC]</p>	<p>8. NEXT 2 DIGITS DESIGNATE TRIM MATERIAL (NORMALLY SAME AS BODY MATERIAL)</p> <p>16-DIN 1.4462/Duplex 2205 17-DIN 1.4571 36 - 316 S/S 3L - 316L S/S ST - STELLITE (WITH 316 BASE MATERIAL) S6 - STELLITE - 416 S/S HB - HASTELLOY B (ALLOY B) HC - HASTELLOY C (ALLOY C) H2 - HASTELLOY C-22 HG - HASTELLOY G 3T - 316 S/S - TEFLON 3K - 316 S/S - KEL-F TC - TUNGSTEN CARBIDE S3 - STELLITE - 316 S/S S2 - STELLITE - CARP. 20 SB - STELLITE - HAST. B SC - STELLITE - HAST. C TA - TANTALUM TI - TITANIUM KY - KYNAR PC - PVC NI - NICKEL MN - MONEL 37 - 347 S/S S4 - STELLITE & 304 C2 - CARPENTER 20 (ALLOY 20) TS - TITANIUM NITRIDE COATED STELLITE SP - STELLITE & PHOSPHOR BRONZE (P TRIM) ZR - ZIRCONIUM</p> <p>NOTE: "X" IN ANY SPACE DENOTES "SPECIAL"</p>														
<p>4. NEXT 2 DIGITS DESIGNATE THE BODY-BONNET MATERIAL</p> <p>16-DIN 1.4462/Duplex 2205 17-DIN 1.4571/1.4581 36 - 316 S/S 3L - 316L S/S 34 - 304 S/S 37 - 347 S/S BR - BRASS OR BRONZE CS - CARBON STEEL MN - MONEL C2 - CARPENTER 20 (ALLOY 20) HB - HASTELLOY B (ALLOY B) HC - HASTELLOY C (ALLOY C) H2 - HASTELLOY C-22 HG - HASTELLOY G IN - INCONEL TI - TITANIUM TA - TANTALUM NI - NICKEL KY - KYNAR PC - PVC ZR - ZIRCONIUM</p>	<p>7. NEXT 3 DIGITS DESIGNATE TRIM SIZE & CHARACTERISTIC</p> <p>"EXAMPLES ONLY"</p> <table border="0"> <tr> <td>ALN - "A" LINEAR</td> <td>ELN-"E" LINEAR</td> </tr> <tr> <td>BEP - "B" =%</td> <td>FEP-"F" =%</td> </tr> <tr> <td>CLN - "C" LINEAR</td> <td>GLN-"G" LINEAR</td> </tr> <tr> <td>DEP - "D" =%</td> <td>HEP-"H" =%</td> </tr> <tr> <td>60L - 6.0 LINEAR</td> <td>45L - 4.5 LINEAR</td> </tr> <tr> <td>50P = 5.0 =%</td> <td>35P = 3.5 =%</td> </tr> <tr> <td>P01 - "P-1"</td> <td>P15 - "P-15"</td> </tr> </table> <p>AQO - "A" QUICK OPEN - METAL TO METAL AQS - "A" QUICK OPEN - SOFT SEAT ALS - "A" LINEAR SOFT SEAT</p>	ALN - "A" LINEAR	ELN-"E" LINEAR	BEP - "B" =%	FEP-"F" =%	CLN - "C" LINEAR	GLN-"G" LINEAR	DEP - "D" =%	HEP-"H" =%	60L - 6.0 LINEAR	45L - 4.5 LINEAR	50P = 5.0 =%	35P = 3.5 =%	P01 - "P-1"	P15 - "P-15"	<p>ADDITIONAL MODEL NUMBERS</p> <p>1000 PARTS 1006 REPAIRS 1011 1/4" TRIM 1012 1/2" TRIM 1013 3/4" TRIM 1014 1" TRIM 1015 1-1/2" TRIM 1016 "P" TRIM 1017 TOPWORKS</p> <p>EXAMPLE: 1002 GC N 36 SV OS ALN 36 1002 - 1/2" VALVE GC - GLOBE CAST N - NPT 36 - 316 S/S SV - STD BONNET - CV RING PACKING OS - ATO STANDARD ALN - "A" LINEAR 36 - 316 S/S</p>
ALN - "A" LINEAR	ELN-"E" LINEAR															
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P01 - "P-1"	P15 - "P-15"															
<p>5. NEXT 2 DIGITS DESIGNATE BONNET STYLE AND PACKING</p> <p>SV - STANDARD BONNET - CV RING PACKING SK - STANDARD BONNET - KALREZ CV RINGS SG - STANDARD BONNET - GRAFOIL PACKING SR - STANDARD BONNET - REVERSED CV RING CV - COOLING FIN BONNET - CV RING PACKING CG - COOLING FIN BONNET - GRAFOIL PACKING CK - COOLING FIN BONNET - KALREZ CV RINGS CM - COOLING FIN - MEDIUM GUIDED (PACKING NOT SPECIFIED, ASSUMES PTFE) BV - BELLOW BONNET - CV RING PACKING BG - BELLOW BONNET - GRAFOIL PACKING</p>	<p>QUESTIONS? Call: (918) 836-8411 941481 2-03</p>	<p>QUESTIONS? Call: (918) 836-8411 941481 2-03</p> <p>Badger Meter, Inc.</p>														

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RESEARCH® & SERIES 9000 VALVES

Badger Meter, Inc.



RCV

RESEARCH CONTROL VALVES

GASES-Volume-ISA

Date: 15-Mar-11

Customer:

Reference:

Item: 1

Tag:

	Max	Norm	Min
Inlet Pressure-P1 psia	55.300	55.300	55.300
Outlet Pressure-P2 psia	43.700	43.700	43.700
Pressure Drop-DP psia	11.600	11.600	11.600
Flowrate- scfh	127.490	3.610	2.920
Specific Gravity-SG	0.9669	0.9669	0.9669
Temperature. °F	77.0	77.0	77.0
Specific heat ratio-k	1.4	1.4	1.4
XsubT	0.807	0.807	0.807
Z	0.99	0.99	0.99
X-calculated	0.20976492	0.20976492	0.209764919
Y-calculated	0.91335608	0.91335608	0.913356085
Constant	1360	1360	1360
Cv-CALC	0.09187578	0.00260155	0.002104301
DP at Choked Flow-psia	44.63	44.63	44.63
Suggested Trim	TRIM H	CV= 0.13	
% Open-LinearTrim	70.7%	2.0%	1.6%
% Open-Equal % Trim	91.4%	10.5%	8.5%
May Selected Trim	G	CV= 0.2	
% Open-LinearTrim	45.9%	1.3%	1.1%
% Open-Equal % Trim	80.8%	6.8%	5.5%
Max Flow-choked-Trim G-scfh	277.526891		
May Selected Trim	I	CV= 0.08	
% Open-LinearTrim	114.8%	3.3%	2.6%
% Open-Equal % Trim	103.4%	17.0%	13.8%
Max Flow-choked-Trim I-scfh	111.010756		



RESEARCH® & SERIES 9000 VALVES
Badger Meter, Inc.

Valve Materials & Cv Selection Sheet



Date: 15 Mar 2011

	Customer Reference	
	Item	1
No	Tag	
1	Model Number	1001-GC-N-36-SV-OB-HLN-36
2	Body Type	807
3	Body Size	1/4"
4	Body Configuration	Globe Cast
5	End Connections	1/4" NPT-F
6	Body / Bonnet Material	316SST
7	Bonnet Type	Std. Bonnet
8	Packing	TFE Packing
9	Trim Size / Innervalve (Code)	H
10	Flow Characteristics	LINEAR
11	Trim Max Cv	0.13
12	Trim / Seat Material	316SST
13	Actuator Type	754
14	Actuator Action	Air To Open (Air Failure Close)
15	Handwheel	Nil
16	Positioner / Type	Siemens Sipart PS-2 digital I/P Positioner with EEx ib IIC T6 and HART module
17	I/P Transducer / Type	Nil
18	Input Signal / Output Signal	4 To 20 mA DC / 3 To 15 PSI
19	Air Regulator	Nil
20	Gauges	Nil
21	Tubing Material	SST
22	Fittings Material	SST
23	Solenoid / Type	Nil
24	Solenoid Voltage	Nil
25	Limit Switches / Type	Nil
26	Accessories Mounting Works	Badger factory
27	Leaking Class / Certificate Req.	Class IV / See 2@