



CENTAUR SERIES C

CONTROL VALVE

Pressures to 740 PSIG
Temperatures to 800°F

- **Two Way, Single Port, Top Guided Globe Style**
- **Unbalanced, Flow to Open**
- **Pneumatic Actuator** - Compact multiple spring design, capable of accepting a wide range of positioners.
- **Class IV Shutoff** - Conforms to FCI 70-2 shutoff standards
- **Spring Loaded V Ring Packing** - Proven, self-adjusting design. Teflon/Graphite and high temperature options below
- **Standard "E Main Valve" Body** - For dependability and compatibility with existing regulator installations.

MODELS

- Type C1 - Cast Iron
- Type C2 - Carbon Steel

OPTIONS

- 36 or 60in² Pneumatic Actuator
- Braided Teflon/Graphite or High Temperature Graphite packing
- Positioners: Moore, PMV, Siemens, Eckart

APPLICABLE CODES

- Type C1 Meets or Exceeds ANSI B16.4 Class 250 Threaded or ANSI B16.1 Class 125 / 250 Flanged
- Type C2 Meets or Exceeds ANSI B16.34 Class 300 Threaded or ANSI B16.34 Class 150 / 300 Flanged
- ANSI/FCI 70-2 Class IV Seat Leakage

PLUG CHARACTERISTICS

- Modified Linear
- 50:1 Flow Rangeability

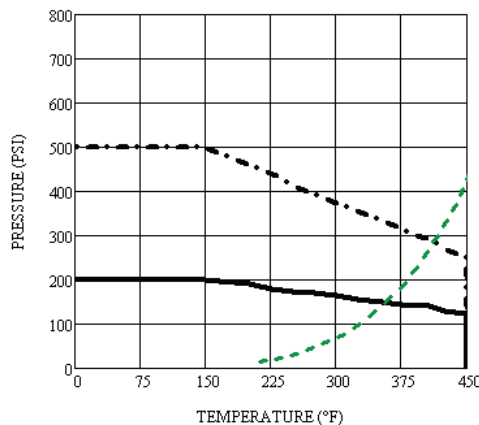
APPLICATIONS

- Process control systems for food, pulp and paper, chemical, petrochemical and refining, and other industries.
- HVAC systems
- Feed water and fuel system controls for boiler rooms
- Packaged (OEM) systems such as heat exchangers, water purification systems, metal cleaning and plating systems
- Upgrade regulator installations for greater rangeability.

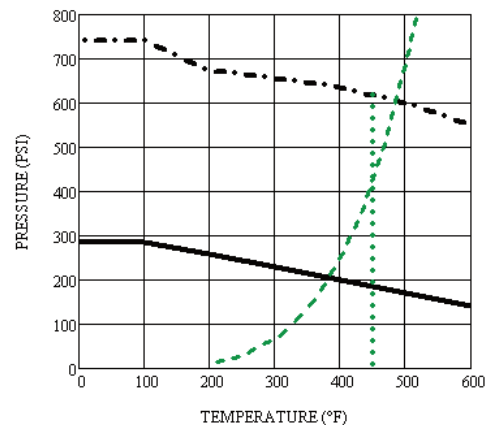
MAXIMUM RATED FLOW COEFFICIENTS (Cv)

Valve Size (in.)							
½	¾	1	1½	2	2½	3	4
4.9	8.6	15.2	31	57	85	122	174

PRESSURE / TEMPERATURE CHARTS



— C1 ASME B16.1 Class 125 CAST IRON
 - - C1 ASME B16.1 Class 250 CAST IRON
 ··· SATURATED STEAM



— C2 ASME B16.34 Class 150 STEEL
 - - C2 ASME B16.34 Class 300 STEEL
 ··· SATURATED STEAM
 ··· Standard Packing

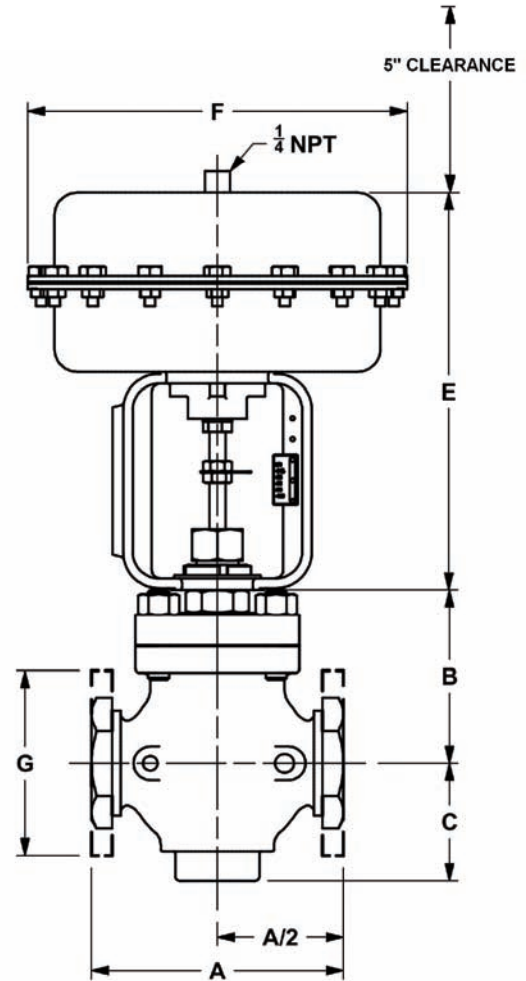
CENTAUR SERIES C CONTROL VALVE

SPECIFICATION

The valve shall be single seated, top guided compact pneumatic actuated globe style control valve. The actuator shall have all SS hardware with a maximum deadband of 0.3 PSIG. The valve trim shall be all stainless steel with replaceable threaded seats for easy maintenance. Standard packing shall be spring loaded PTFE v-rings. Optional graphite or high temperature packings available. The valve seat leakage shall conform to ANSI/FCI 70-2 Class IV for metal seats. The valve shall conform to NEMUR 4 for mounting of accessories.

MATERIALS OF CONSTRUCTION

Body, CI.....ASTM A126 CI. B
 Body, CS.....ASTM A216 WCB
 Stem.....316SS ASTM A582
 Disc.....420SS ASTM A743 CA-40
 Seat.....420SS ASTM A743 CA-40
 Gasket.....Non-Asbestos
 Packing.....PTFE V-Ring
 Packing, Hi-Temp.....PTFE/Graphite
 Yoke, Pneumatic.....DI ASTM A536/Epoxy
 Diaphragm.....Nitrile/Polyester
 Piston.....316SS ASTM A743 CF8
 Spring.....Music Wire ASTM A228
 Actuator HousingSteel SAE 1006-1008/Epoxy



CENTAUR SERIES C
CONTROL VALVE

DIMENSIONS inches(mm) AND WEIGHTS pounds(kg)

Size	A				B		C	E		F		G		Valve, Wt.			Act., Wt.	
	NPT	125 / 150	250	300	CI	CS		#36	#60	#36	#60	125 / 150	250 / 300	NPT	125 / 150	250 / 300	#36	#60
1/2 (12)	4 3/8 (111)	-	-	-	3 1/16 (78)	2 15/16 (75)	2 (51)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	-	-	6 (3)	-	-	17 (8)	30 (14)
3/4 (19)	4 3/4 (121)	-	-	-	3 5/16 (84)	3 3/16 (81)	2 1/8 (54)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	-	-	8 (4)	-	-	17 (8)	30 (14)
1 (25)	5 3/8 (137)	5 1/2 (140)	6 (152)	6 1/2 (165)	3 13/16 (96)	3 13/16 (96)	2 1/2 (64)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	4 1/4 (108)	4 7/8 (124)	10 (5)	13 (6)	18 (8)	17 (8)	30 (14)
1 1/2 (38)	7 1/4 (184)	6 7/8 (175)	7 3/8 (187)	8 (203)	4 9/16 (115)	4 1/2 (114)	3 (76)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	5 (127)	6 1/8 (155)	18 (8)	22 (10)	30 (14)	17 (8)	30 (14)
2 (51)	7 1/2 (191)	8 1/2 (216)	9 (229)	10 1/4 (260)	5 1/8 (130)	5 1/16 (128)	3 1/2 (89)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	6 (152)	6 1/2 (165)	27 (12)	38 (17)	43 (20)	17 (8)	30 (14)
2 1/2 (64)	-	9 3/8 (238)	10 (254)	11 1/4 (286)	5 3/8 (137)	5 3/8 (137)	3 13/16 (98)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	7 (178)	7 1/2 (191)	-	40 (18)	-	17 (8)	30 (14)
3 (76)	-	10 (254)	10 3/4 (273)	12 1/4 (311)	6 1/2 (165)	6 1/2 (165)	4 11/16 (119)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	7 1/2 (191)	8 1/4 (210)	-	61 (28)	-	17 (8)	30 (14)
4 (102)	-	11 7/8 (302)	12 1/2 (318)	12 1/2 (318)	7 7/16 (188)	7 7/16 (188)	6 1/2 (165)	9 7/8 (251)	11 7/8 (302)	9 1/4 (235)	11 1/4 (286)	9 (229)	10 (254)	-	115 (52)	-	17 (8)	30 (14)

*Weights are approximate.

CENTAUR ORDERING CODE

CODE SELECTION CHART

Model	Orifice	Size	Connections	Trim	Packing	Bench Range	Positioner	Positioner Set	Accessories	Inlet Pressure							
C	1	T	D	9	1	1	R	C	A	A	0	1	0	1	1	2	3
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CENTAUR SERIES C CONTROL VALVE

Model - Position 1 & 2 C1 = Cast Iron C2 = Carbon Steel
Orifice - Position 3 T = Full
Size - Position 4 C = 1/2" D = 3/4" E = 1" G = 1-1/2" H = 2" J = 2-1/2" K = 3" L = 4"

Connections - Position 5 1 = 125/150# FLG 3 = 250/300# FLG 9 = Threaded NPT
Trim - Position 6 1 = Metal
Packing - Position 6 1 = V-Ring 2 = Graphite 3 = Hi Temp

Bench Range - Position 8 & 9 AA = None DD = 3-10 Dir 36 DE = 3-6 Dir 36 RC = 5-15 Rev 36 RD = 8-15 Rev 36 RE = 10-15 Rev 36 DF = 3-10 Dir 60 DG = 3-11 Dir 60 DH = 3-8 Dir 60 RG = 8-15 Rev 60 RH = 10-15 Rev 60 RK = 20-60 Rev 60 RQ = 12-15 Rev 60 RT = 22-30 Rev 60
Positioner - Position 10 & 11 AA = None EI = Eckhardt I/P EP = Eckhardt P MI = Moore I/P MP = Moore P MS = Siemens Smart w/ "HART" Bus MT = Siemens Smart w/ "Profibus" 4P = PMV P4 P 5I = PMV P5 I/P 5P = PMV P5 P

Positioner Set - Position 12 & 13 1 = None 2 = 3-15 / 4-20 mA 3 = 3-9 / 4-12 mA* 4 = 9-15 / 12-20 mA* * = Split Range
Accessories - Position 14 & 15 01 = None 02 = Limit Switch 03 = Posit. Transm. 04 = SS Tubing

Inlet Pressure - Position 16, 17 & 18 ----- = Actual Inlet



CENTAUR SHUTOFF & CV TABLES

ACTUATOR SHUTOFF TABLE

Port Size	Orifice	Travel	Actuator Size	Bench Range	Actuator Code	Reverse Shutoff			Bench Range	Actuator Code	Direct Shutoff		
						3-15	0-20	0-30			3-15	0-20	0-30
1/2	T	3/4	36	5-15	RC	85	325	-	3-10	DD	350	740	-
				8-15	RD	190	450	-	3-5	DE	650	740	-
				10-15	RE	440	675	-	-	-	-	-	-
3/4	T	3/4	36	8-15	RD	300	450	-	3-10	DD	175	400	-
				10-15	RE	350	575	-	3-5	DE	375	650	-
			60	8-15	RG	300	650	-	3-11	DG	200	650	-
				10-15	RH	510	740	-	3-8	DH	650	740	-
				12-15	RQ	740	-	-	-	-	-	-	-
1	T	3/4	36	8-15	RD	155	225	-	3-10	DD	175	315	-
				10-15	RE	225	330	-	3-5	DE	325	475	-
			60	8-15	RG	240	400	-	3-11	DG	175	400	-
				10-15	RH	390	525	-	3-8	DH	350	600	-
				12-15	RQ	425	600	-	-	-	-	-	-
1-1/2	T	3/4	36	-	-	-	-	-	3-10	DD	85	160	-
				10-15	RE	90	150	-	3-5	DE	135	205	-
			60	8-15	RG	100	175	-	3-11	DG	85	200	-
				10-15	RH	150	225	-	3-8	DH	175	300	-
				12-15	RQ	195	285	-	-	-	-	-	-
				22-30	RT	-	-	450	-	-	-	-	-
2	T	3/4	60	12-15	RQ	115	150	-	3-11	DG	45	80	-
				22-30	RT	-	-	200	3-8	DH	100	150	-
2-1/2	T	3/4	60	10-15	RH	75	100	100	3-8	DH	70	125	200
				12-15	RQ	90	125	125	-	-	-	-	-
				22-30	RT	-	-	175	-	-	-	-	-
3	T	3/4	60	10-15	RH	40	60	-	3-8	DH	40	65	100
				12-15	RQ	60	80	-	-	-	-	-	
				22-30	RT	-	-	110	-	-	-	-	
4	T	3/4	60	12-15	RQ	20	32	-	3-8	DH	10	15	25
				22-30	RT	-	-	50	-	-	-	-	

CENTAUR SERIES C CONTROL VALVE

ACTUATOR SELECTION

- Select 'Reverse' for air to open, fail closed and 'Direct' for air to close, fail open applications.
- For optimum installed span, select actuator code with shutoff pressure greater than, but closest to valve inlet pressure.
Example: For a Centaur 1" valve inlet pressure of 200psi. Recommended 'Reverse' acting actuator code would be 'RE' and require a 3-15psi signal for actuation.
- NOTE: Do not exceed 60psi air signal to actuator.

Cv TABLE

SIZE	PERCENT OF TRAVEL										
	5	10	20	30	40	50	60	70	80	90	100
1/2	0.20	0.32	1.25	2.0	2.5	2.9	3.4	4.0	4.4	4.7	4.9
3/4	0.7	1.6	3.6	4.8	5.3	5.8	6.4	7	7.7	8.2	8.6
1	1.7	2.1	3.3	6.1	10.0	12.2	13.6	14.6	15	15.1	15.2
1-1/2	2.5	5.9	13.5	19.6	24	27	29	30	30	31	31
2	4.7	9.7	21	32	40	46	51	54	55	56	57
2-1/2	5.00	10.5	25	39	52	63	72	80	82	84	85
3	7.7	15.0	32	49	69	86	97	108	118	121	122
4	7.3	16.0	37	59	81	100	121	139	155	166	174

PRESSURE RECOVERY FACTOR

For Gas: $X_T=0.7$ - For Liquid: $F_L=0.9$

CENTAUR SATURATED STEAM CAPACITY TABLE

(LBS./HR.)

CENTAUR SERIES C
CONTROL VALVE

Pressure (PSI)		SIZE							
P1	P2	1/2	3/4	1	1-1/2	2	2-1/2	3	4
10	5	151	265	468	954	1754	2615	3754	5354
	3	170	298	527	1075	1977	2948	4231	6035
15	10	167	294	519	1059	1946	2903	4166	5942
	7	199	350	618	1261	2319	3458	4964	7080
	5	214	375	663	1352	2487	3708	5322	7590
20	15	182	320	565	1153	2120	3161	4537	6471
	10	237	415	734	1497	2753	4106	5893	8404
	7	255	448	792	1616	2972	4432	6361	9072
30	22	254	445	787	1606	2952	4403	6319	9013
	17	303	531	939	1915	3521	5250	7535	10747
	10	339	595	1052	2145	3944	5882	8442	12041
40	25	360	632	1117	2278	4189	6247	8966	12788
	20	393	689	1218	2484	4567	6810	9775	13941
	3-0	427	749	1323	2698	4962	7399	10620	15146
50	35	399	700	1237	2524	4640	6920	9932	14165
	30	439	771	1363	2780	5111	7622	10940	15603
	25	468	821	1450	2958	5439	8110	11641	16602
	6-0	501	879	1553	3168	5825	8686	12467	17780
60	45	434	762	1346	2746	5048	7528	10805	15410
	40	481	845	1494	3046	5601	8352	11988	17097
	35	516	906	1602	3267	6007	8957	12856	18336
	9-0	575	1008	1782	3635	6684	9967	14306	20403
75	55	537	943	1667	3400	6252	9323	13382	19085
	50	581	1020	1802	3676	6759	10079	14467	20633
	45	615	1079	1907	3889	7151	10664	15306	21830
	14-0	684	1201	2123	4329	7960	11871	17038	24300
100	75	674	1183	2090	4263	7838	11688	16776	23926
	60	786	1380	2439	4975	9148	13642	19580	27925
	22-0	865	1518	2684	5473	10064	15007	21540	30720
125	100	758	1330	2351	4795	8816	13147	18870	26913
	75	961	1687	2981	6080	11179	16671	23927	34126
	30-0	1050	1842	3256	6641	12211	18210	26136	37276
150	125	825	1447	2558	5217	9593	14305	20531	29282
	100	1066	1870	3305	6741	12395	18483	26529	37836
	38-0	1221	2143	3788	7725	14203	21181	30400	43358
175	150	889	1561	2758	5625	10343	15424	22138	31574
	125	1164	2043	3612	7366	13544	20197	28988	41343
	100	1312	2302	4069	8299	15260	22756	32661	46582
	46-0	1397	2452	4334	8839	16252	24235	34784	49610
200	150	1253	2200	3888	7930	14581	21744	31209	44512
	125	1429	2507	4432	9038	16619	24782	35570	50731
	54-0	1571	2757	4873	9938	18274	27250	39112	55783
225	175	1337	2346	4146	8456	15548	23185	33278	47462
	150	1537	2697	4767	9721	17875	26656	38258	54565
	63-0	1745	3063	5413	11041	20300	30272	43450	61969
250	200	1413	2481	4384	8942	16442	24518	35191	50190
	175	1636	2871	5075	10351	19032	28381	40735	58097
	150	1779	3123	5520	11258	20700	30868	44305	63190
	71-0	1917	3365	5947	12128	22300	33255	47730	68074

- It is recommended to keep valve outlet velocity below 30,000 ft./min.
- Capacities are based on maximum Cv.



CENTAUR AIR CAPACITY TABLE

(SCFH)

Pressure (PSI)		SIZE							
P1	P2	1/2	3/4	1	1-1/2	2	2-1/2	3	4
10	5	2924	5132	9070	18499	34014	50723	72802	103833
	3	3307	5805	10260	20924	38474	57373	82348	117447
15	10	3266	5732	10131	20661	37990	56651	81311	115969
	7	3908	6859	12123	24725	45462	67794	97304	138778
	5	4203	7377	13039	26593	48896	72915	104655	149262
20	15	3576	6276	11092	22622	41595	62028	89028	126974
	10	4673	8201	14495	29562	54356	81058	116342	165930
	7	5065	8890	15712	32044	58919	87862	126108	179859
30	22	5039	8844	15631	31880	58618	87413	125463	178939
	17	6038	10597	18729	38198	70235	104737	150328	214403
	10	6819	11968	21153	43140	79322	118288	169777	242142
40	25	7243	12711	22467	45820	84250	125636	180325	257184
	20	7930	13919	24600	50172	92251	137567	197449	281608
	3-0	8786	15420	27254	55583	102202	152406	218747	311984
50	35	8066	14156	25020	51028	93826	139916	200820	286416
	30	8916	15648	27657	56406	103713	154660	221983	316599
	25	9523	16714	29542	60250	110782	165201	237112	338175
	6-0	10395	18244	32245	65762	120918	180316	258806	369117
60	45	8815	15472	27345	55770	102546	152919	219484	313034
	40	9809	17216	30427	62056	114103	170154	244220	348314
	35	10553	18521	32735	66762	122756	183057	262741	374729
	9-0	12025	21105	37301	76075	139880	208593	299393	427003
75	55	11020	19341	34185	69718	128192	191163	274376	391323
	50	11943	20961	37048	75558	138929	207175	297357	424100
	45	12669	22236	39300	80152	147376	219771	315436	449885
	14-0	14411	25293	44703	91171	167638	249986	358804	511737
100	75	13971	24520	43338	88386	162516	242348	347841	496101
	60	16404	28791	50886	103781	190823	284561	408428	582513
	22-0	18427	32342	57162	116581	214358	319657	458802	654357
125	100	15748	27639	48851	99630	183191	273180	392094	559215
	75	20131	35332	62447	127359	234176	349209	501218	714852
	30-0	22444	39391	69621	141990	261078	389328	558800	796976
150	125	17349	30449	53816	109756	201810	300945	431944	616051
	100	22564	39601	69993	142749	262474	391408	561786	801235
	38-0	26460	46440	82080	167399	307799	458998	658797	939596
175	150	18816	33024	58368	119039	218879	326398	468477	668156
	125	24773	43479	76847	156728	288177	429737	616799	879697
	100	28091	49303	87141	177721	326777	487299	699417	997529
	46-0	30476	53489	94538	192809	354519	528669	758795	1082216
200	150	26810	47054	83166	169614	311871	465071	667514	952028
	125	30721	53919	95298	194358	357367	532916	764891	1090910
	54-0	34493	60538	106997	218218	401239	598339	858793	1224836
225	175	28708	50386	89055	181625	333955	498003	714781	1019441
	150	33159	58198	102862	209784	385732	575214	825602	1177498
	63-0	38500	67571	119428	243570	447854	667853	958566	1367135
250	200	30493	53518	94590	192913	354711	528955	759206	1082802
	175	35442	62204	109941	224222	412279	614803	882423	1258537
	150	38726	67967	120128	244999	450482	671771	964189	1375154
	71-0	42515	74619	131884	268974	494566	737510	1058544	1509727

- It is recommended to keep valve outlet velocity below 30,000 ft./min.
- Capacities are based on maximum Cv.

CENTAUR SERIES C CONTROL VALVE



CENTAUR WATER CAPACITY TABLE

(G.P.M.)

Pressure (PSI)		SIZE							
P1	P2	1/2	3/4	1	1-1/2	2	2-1/2	3	4
10	5	11.0	19.2	34.0	69.3	127	190	273	389
	3	13.0	22.8	40.2	82.0	151	225	323	460
15	10	11.0	19.2	34.0	69.3	127	190	273	389
	7	13.9	24.3	43.0	87.7	161	240	345	492
	4	16.3	28.5	50.4	102.8	189	282	405	577
20	15	11.0	19.2	34.0	69.3	127	190	273	389
	10	15.5	27.2	48.1	98.0	180	269	386	550
	5	19.0	33.3	58.9	120	221	329	473	674
30	25	11.0	19.2	34.0	69.3	127	190	273	389
	20	15.5	27.2	48.1	98.0	180	269	386	550
	6	24.0	42.1	74.5	152	279	416	598	852
40	25	19.0	33.3	58.9	120	221	329	473	674
	20	21.9	38.5	68.0	139	255	380	546	778
	8	27.7	48.6	86.0	175	322	481	690	984
50	35	19.0	33.3	58.9	120	221	329	473	674
	30	21.9	38.5	68.0	139	255	380	546	778
	25	24.5	43.0	76.0	155	285	425	610	870
	10	31.0	54.4	96.1	196	360	538	772	1100
60	45	19.0	33.3	58.9	120	221	329	473	674
	40	21.9	38.5	68.0	139	255	380	546	778
	35	24.5	43.0	76.0	155	285	425	610	870
	12	33.9	59.6	105.3	215	395	589	845	1206
75	55	21.9	38.5	68.0	139	255	380	546	778
	50	24.5	43.0	76.0	155	285	425	610	870
	45	26.8	47.1	83.3	170	312	466	668	953
	15	38.0	66.6	118	240	442	658	945	1348
100	75	24.5	43.0	76.0	155	285	425	610	870
	60	31.0	54.4	96.1	196	360	538	772	1100
	20	43.8	76.9	136	277	510	760	1091	1556
125	100	24.5	43.0	76.0	155	285	425	610	870
	75	34.6	60.8	107.5	219	403	601	863	1230
	25	49.0	86.0	152	310	570	850	1220	1740
150	125	24.5	43.0	76.0	155	285	425	610	870
	100	34.6	60.8	107.5	219	403	601	863	1230
	30	53.7	94.2	167	340	624	931	1336	1906
175	150	24.5	43.0	76.0	155	285	425	610	870
	125	34.6	60.8	107.5	219	403	601	863	1230
	100	42.4	74.5	132	268	494	736	1057	1507
	35	58.0	102	180	367	674	1006	1444	2059
200	150	34.6	60.8	107.5	219	403	601	863	1230
	125	42.4	74.5	132	268	494	736	1057	1507
	85	62.0	109	192	392	721	1075	1543	2201
225	175	34.6	60.8	107.5	219	403	601	863	1230
	150	42.4	74.5	132	268	494	736	1057	1507
	45	65.7	115	204	416	765	1140	1637	2334
250	200	34.6	60.8	107	219	403	601	863	1230
	175	42.4	74.5	132	268	494	736	1057	1507
	150	49.0	86.0	152	310	570	850	1220	1740
	50	69.3	122	215	438	806	1202	1725	2461
300	250	34.6	60.8	107	219	403	601	863	1230
	200	49.0	86.0	152	310	570	850	1220	1740
	60	75.9	133	235	480	883	1317	1890	2696
400	350	34.6	60.8	107	219	403	601	863	1230
	300	49.0	86.0	152	310	570	850	1220	1740
	80	87.7	154	272	555	1020	1521	2182	3113

- It is recommended to keep valve outlet velocity below 30,000 ft./min.
- Capacities are based on maximum Cv.



CENTAUR SERIES C CONTROL VALVE