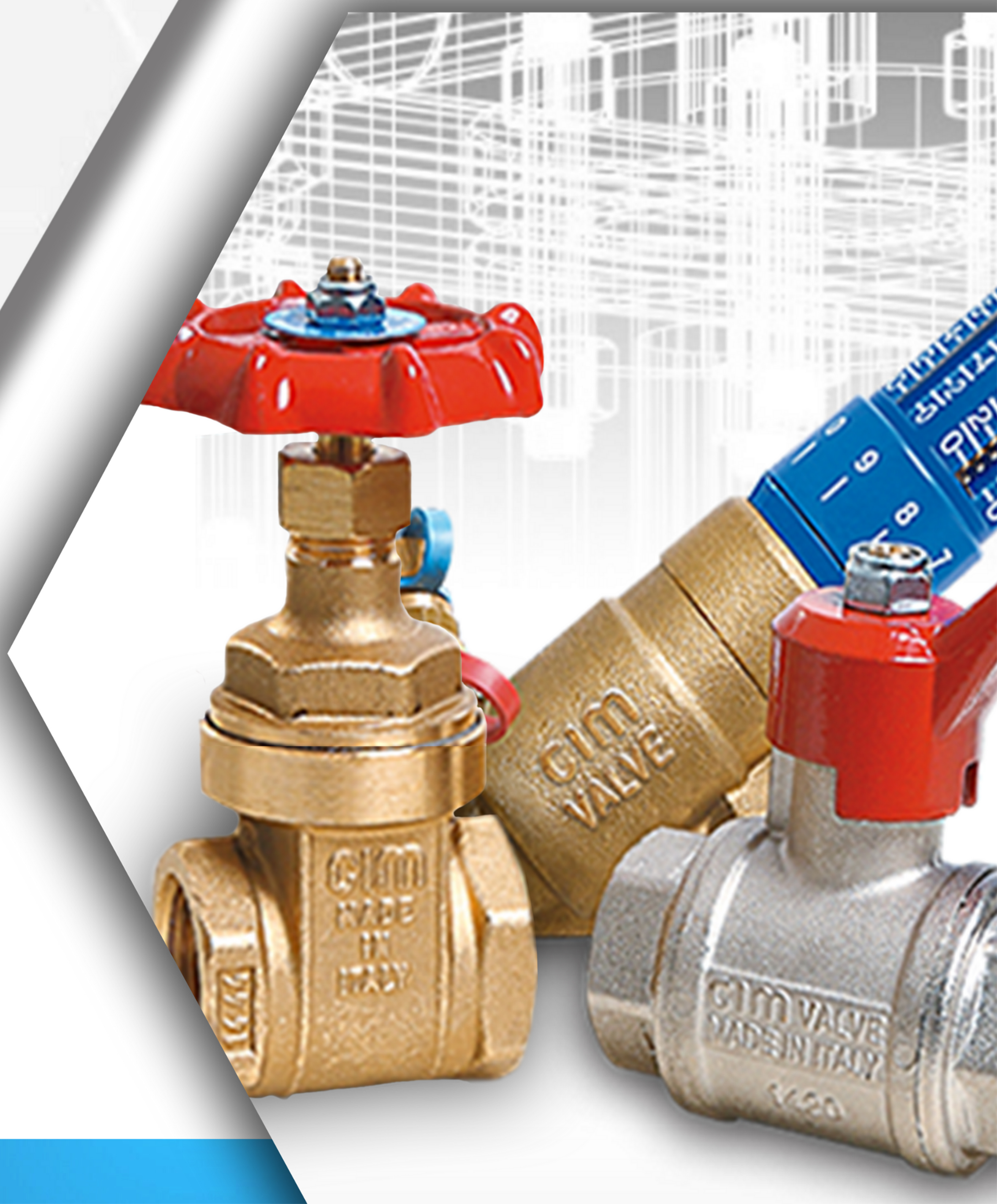
VALVES

valve cimberio®

technological solutions



TYVAL
INDUSTRIAL SUPPLY CORPORATION

www.tyval.com.ph

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INTRODUCTION

WHO IS CIMBERIO?

A worldwide leader in the production of brass components and valves for plumbing systems, heating and air conditioning and gas and water distribution networks. Able to strongly believe in Italy and in the "Made in Italy" brand but at the same time to grow in the world until assuming our current international size. Able to face difficult economic times with our heads held high and to take advantage of them to grow larger, invest more and become stronger. Able to look around and live by respecting the world that we live in, convinced of leaving our children a better environment than what we were given.

Our today's challenges have also imposed another value on us called *Excellence*, since we believe that the only way to face moments of crisis is to "do things even better". To excel every day in everything and for everyone, always try to do better and offer the best. For future challenges require maximum attention to *Sustainability*, which means total respect for our surrounding environment, the need to leave our children a better world than what we found, and the ability to make the company even more sound and focused on the future. We wanted to summarize our values and we created a symbol and a name. Deriving from the acronym of the words Innovation, Excellence and Sustainability which are intended to be our guidelines in our voyage towards tomorrow, and which can be pronounced as "Yes". Because for us "Yes" is not just a response, but its also an actual lifestyle, a way (or rather, the way) to confront problems. When presented any question, any request, any need, at Cimberio we are used to answering: yes.

PN 40 — CIM 011 - Mini Ball Valve – F / F

MATERIALS
*EN 12165-CW617N-M
Brass Alloy
Chrome Plated

THREAD: ISO 228

DIMENSIONS

DN	1/4"	3/8"	1/2"
Φ mm	7	7	9
Grms.	**120**	**100**	**150**
A	43	43	43
B	34	34	35
C	44,5	45	51,5
D	13	13	13
D1	13	13	13
CH	21	21	25

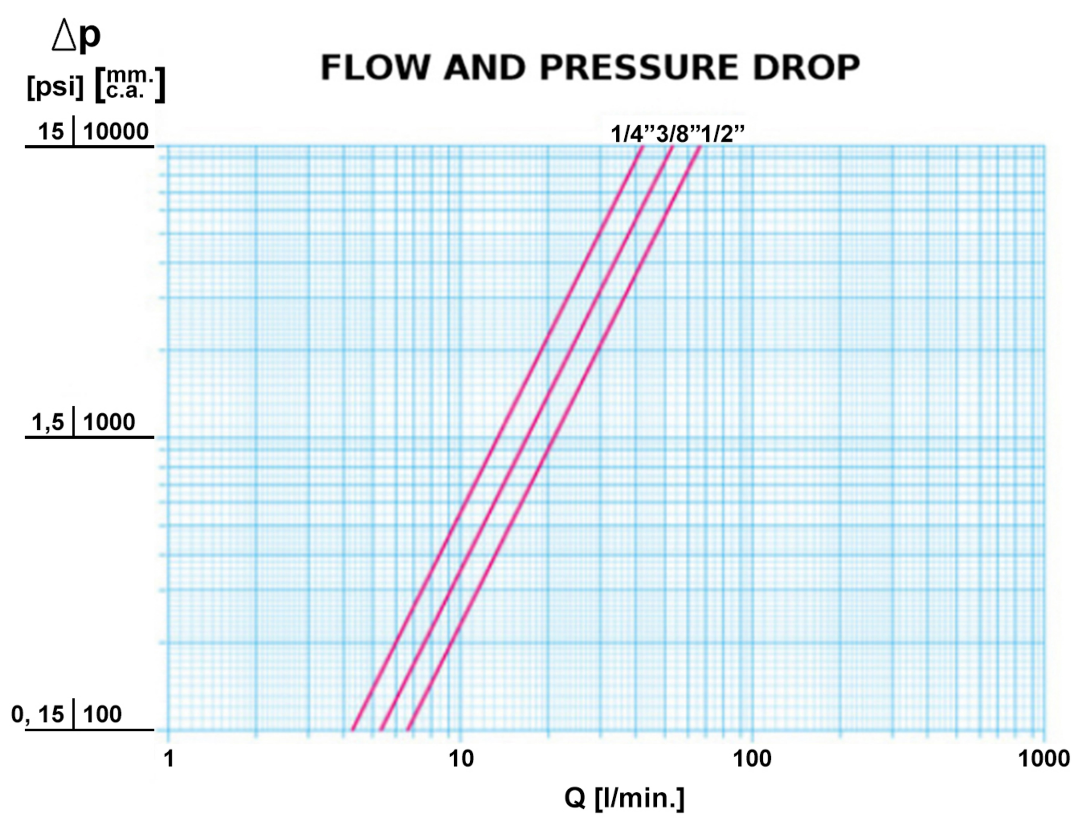
Upon request: ANSI B.1.20.1 - NPT

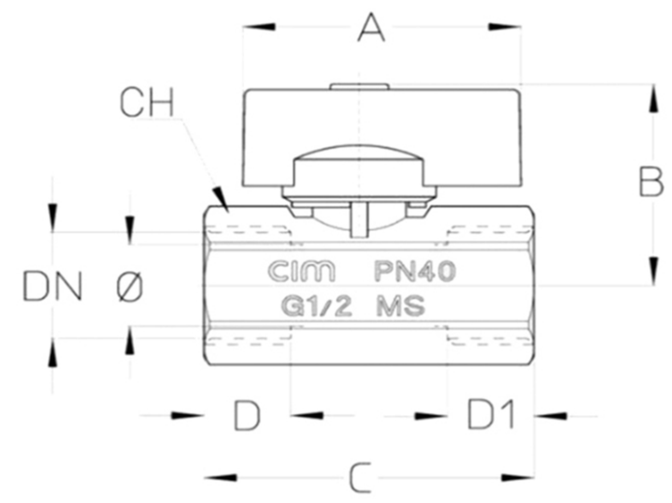
TECHNICAL CHARACTERISTICS

KV CM CS MT			
DN	1/4"	3/8"	1/2"
Ø mm	7	7	9
KV	2,6	3,2	4
CM	1	1	1,5
CS	1,5	1,5	2
MT	6	6	9

KV = Capacity in m^3/h at pressure drop of 1 bar
CM = Operating torque in Nm.
CS = Starting torque in Nm.
MT = Stem breaking torque in Nm.

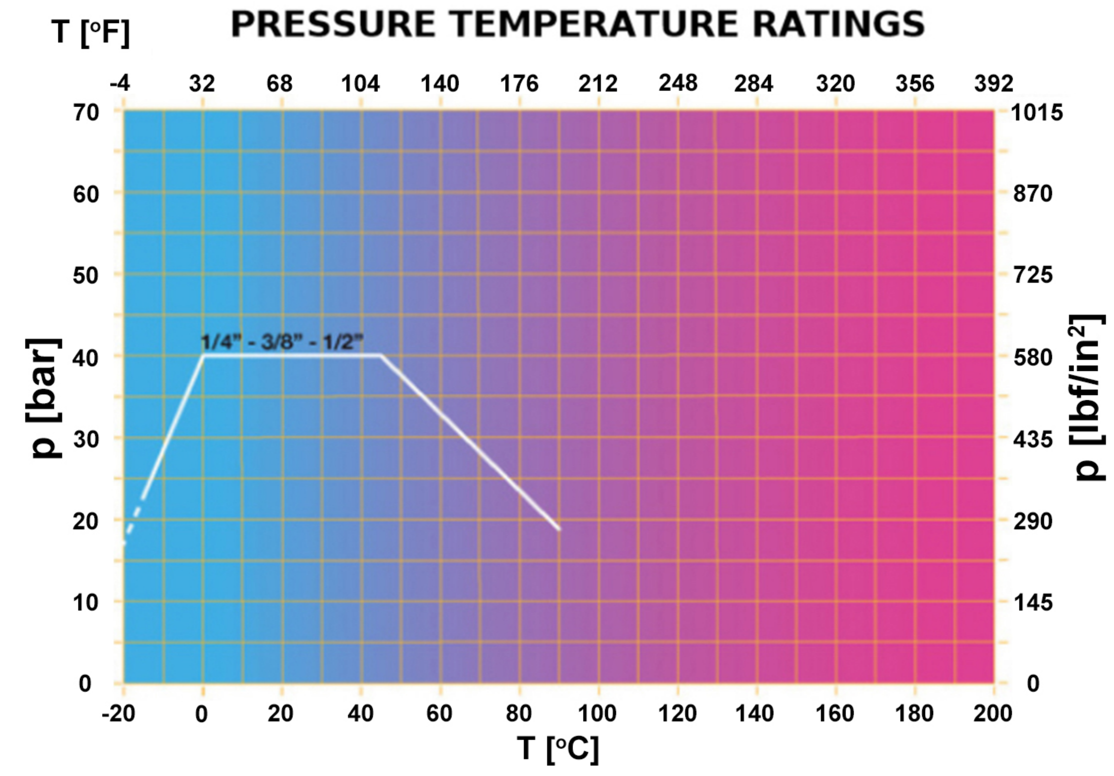
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 40 — CIM 012 - Mini Ball Valve – M / F

MATERIALS
*EN 12165-CW617N-M
Brass Alloy
Chrome Plated

THREAD: ISO 228

DIMENSIONS

DN	1/4"	3/8"	1/2"
Φ mm	7	7	9
Grms.	**100**	**100**	**140**
A	37	37	37
B	34	34	35
C	49	50	54
D	12	13,5	13
D1	13	13	13
CH	21	21	25

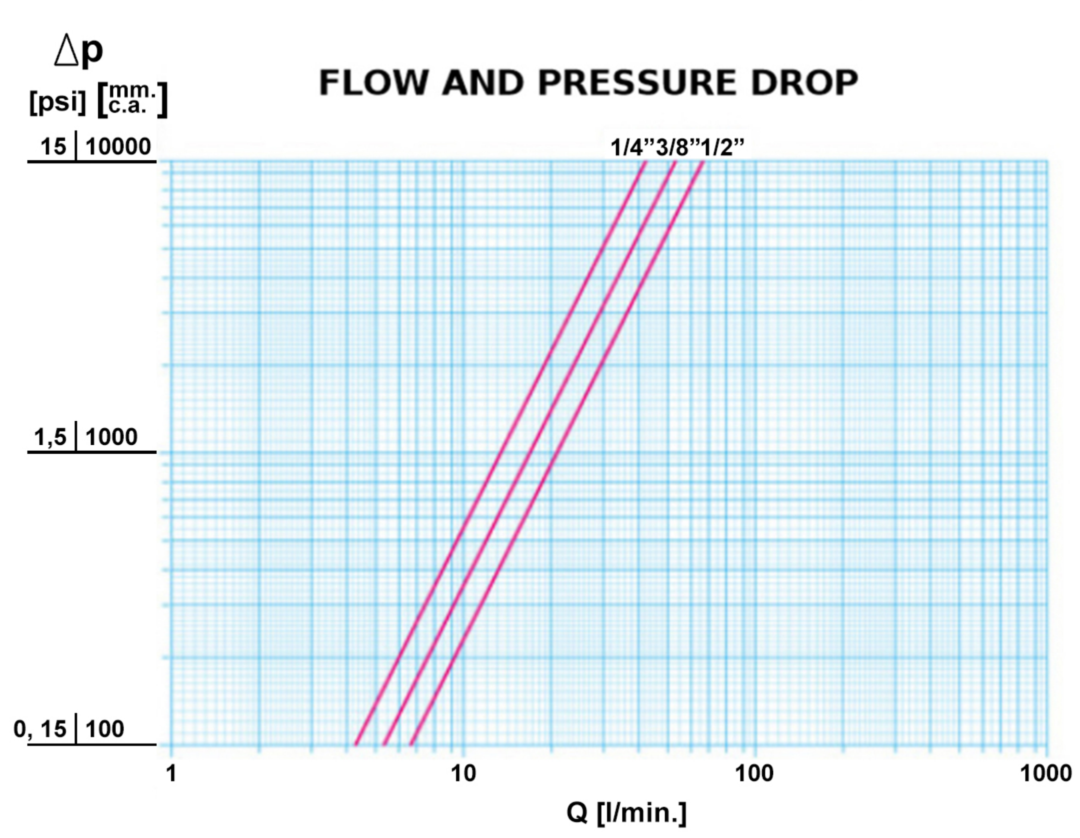
Upon request: ANSI B.1.20.1 - NPT

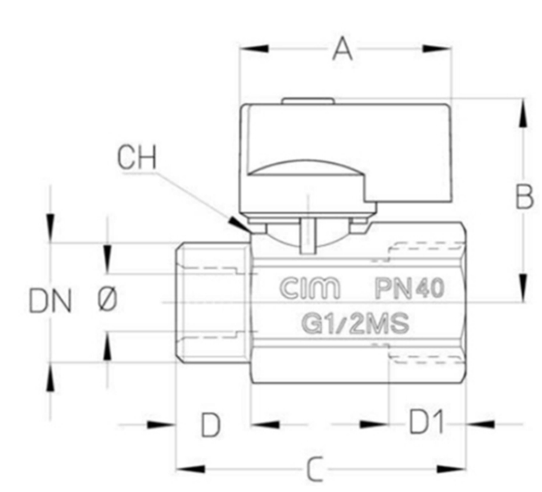
TECHNICAL CHARACTERISTICS

KV CM CS MT			
DN	1/4"	3/8"	1/2"
Ø mm	7	7	9
KV	2,6	3,2	4
CM	1	1	1,5
CS	1,5	1,5	2
MT	6	6	9

KV = Capacity in m^3/h at pressure drop of 1 bar
CM = Operating torque in Nm.
CS = Starting torque in Nm.
MT = Stem breaking torque in Nm.

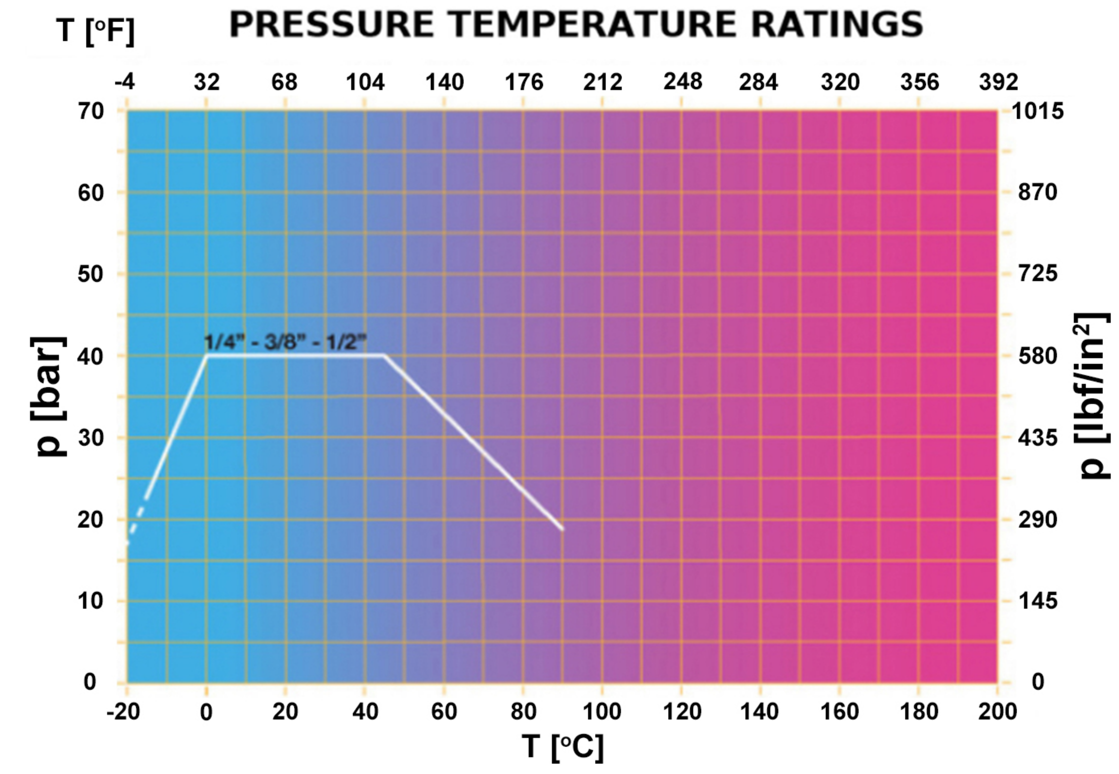
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

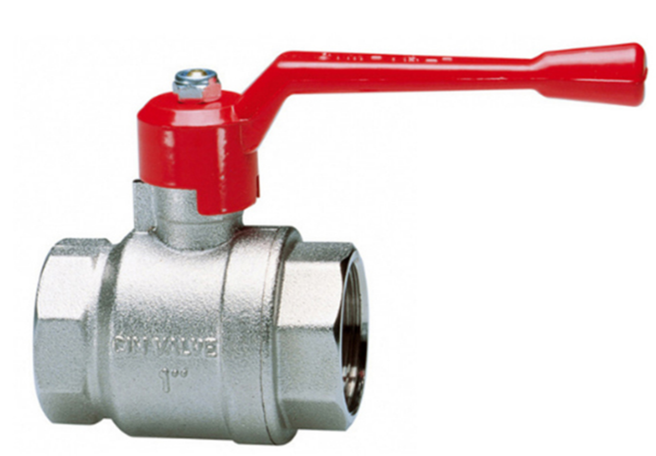
PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 80 — CIM 14 - Ball Valve - Aluminum Handle

MATERIALS
*EN 12165-CW617N-M
Brass Alloy
Chrome Plated



THREAD: ISO 228

DIMENSIONS

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2"	3"	4"
mm.	10	10	15	20	25	32	40	50	60	72	94
Grms.	**115**	**120**	**200**	**320**	**480**	**785**	**1165**	**1660**	**3100**	**4250**	**7100**
A	65	65	80	100	100	120	150	150	240	240	240
B	33	33	57	62	66	79	100	107	137,5	146,5	161,5
C	45	47	52	57	68	81	95,5	112	133	150	177
D	11,5	12,5	12,5	12,5	14	17,5	18	20	23	25	29
CH	18	20	25	31	38	47	54	66	82	96	123

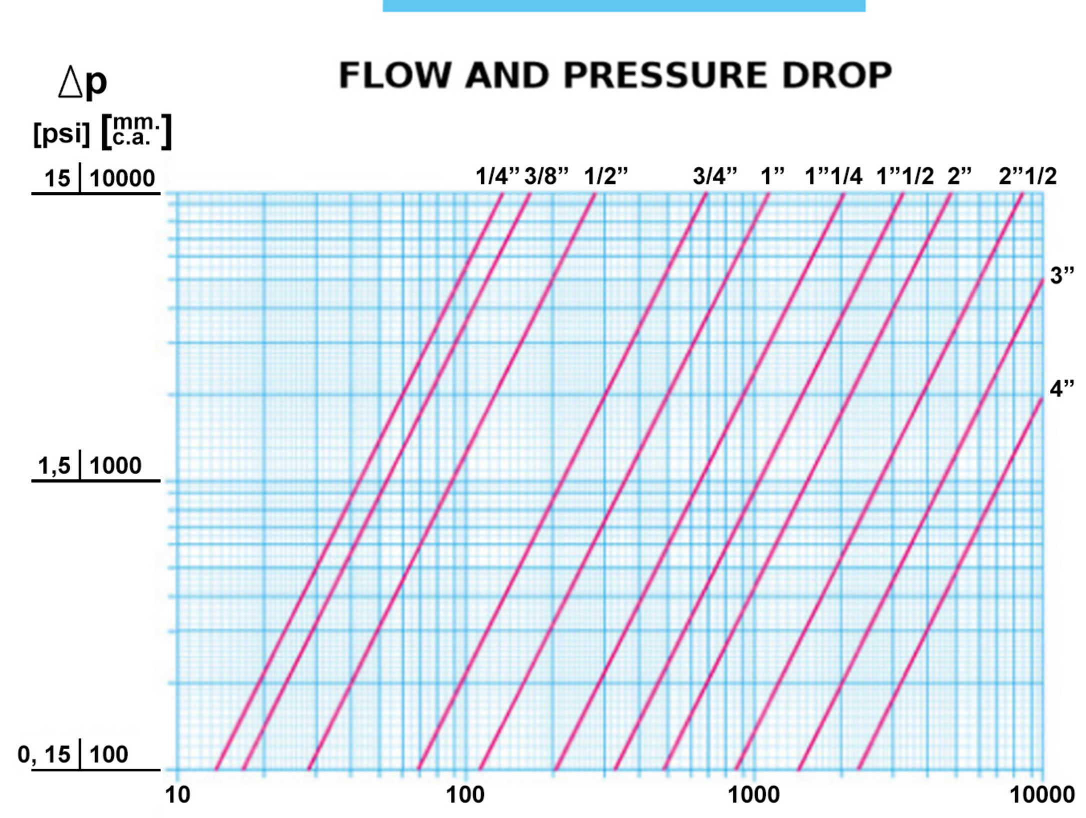
Upon request: ANSI B.1.20.1 - NPT

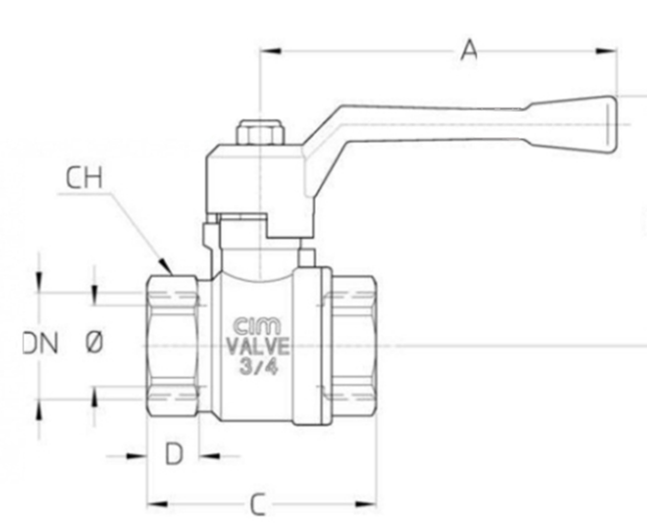
TECHNICAL CHARACTERISTICS

KV											
DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2"	3"	4"
mm	10	10	15	20	25	32	40	50	60	72	94
KV	8	10	17	41	68	123	198	290	460	748	1225
CM	1	1	3	5	6	7	10	13	15	19	20
CM	2	2	6	10	12	14	20	26	30	38	58
MT	10	10	10	24	24	45	90	90	280	280	550

KV = Capacity in m^3/h at pressure drop of 1 bar
CM = Operating torque in Nm.
CS = Starting torque in Nm.
MT = Stem breaking torque in Nm.

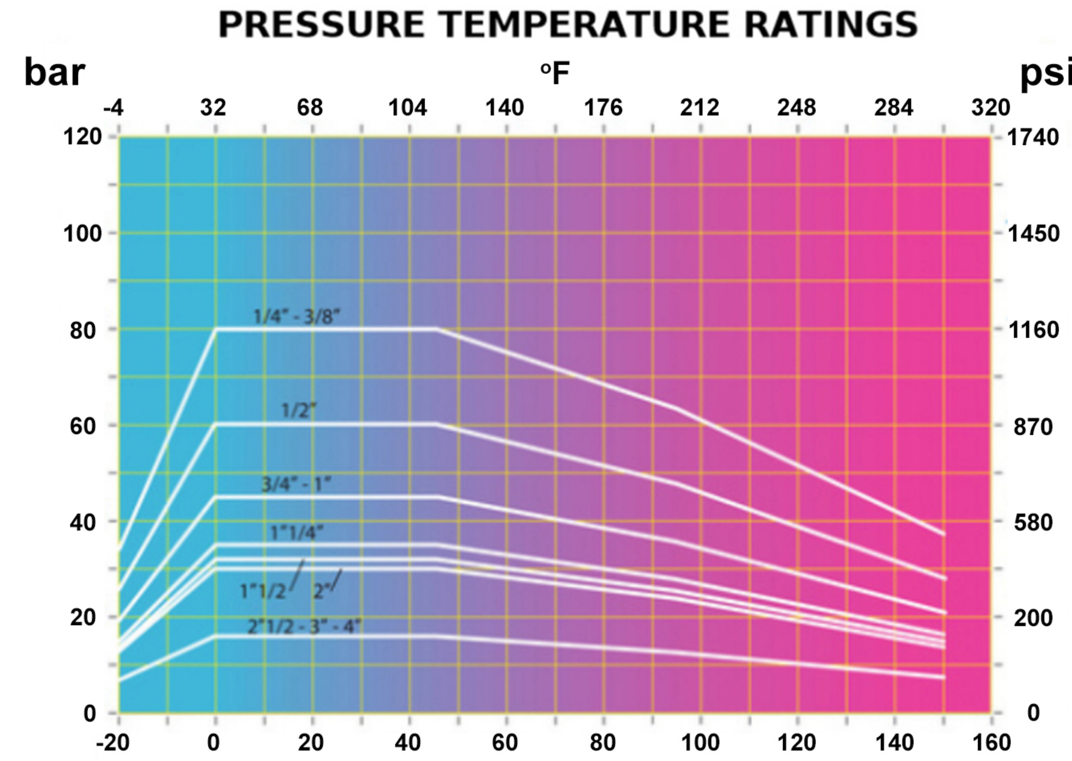
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 80 CIM 14M- Ball Valve - Metal Handle

TECHNICAL CHARACTERISTICS

KV											
DN	1/4''	3/8''	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2''	3''	4''
mm	10	10	15	20	25	32	40	50	60	72	94
KV	8	10	17	41	68	123	198	290	460	748	1225
CM	1	1	3	5	6	7	10	13	15	19	20
CM	2	2	6	10	12	14	20	26	30	38	58
MT	10	10	10	24	24	45	90	90	280	280	550

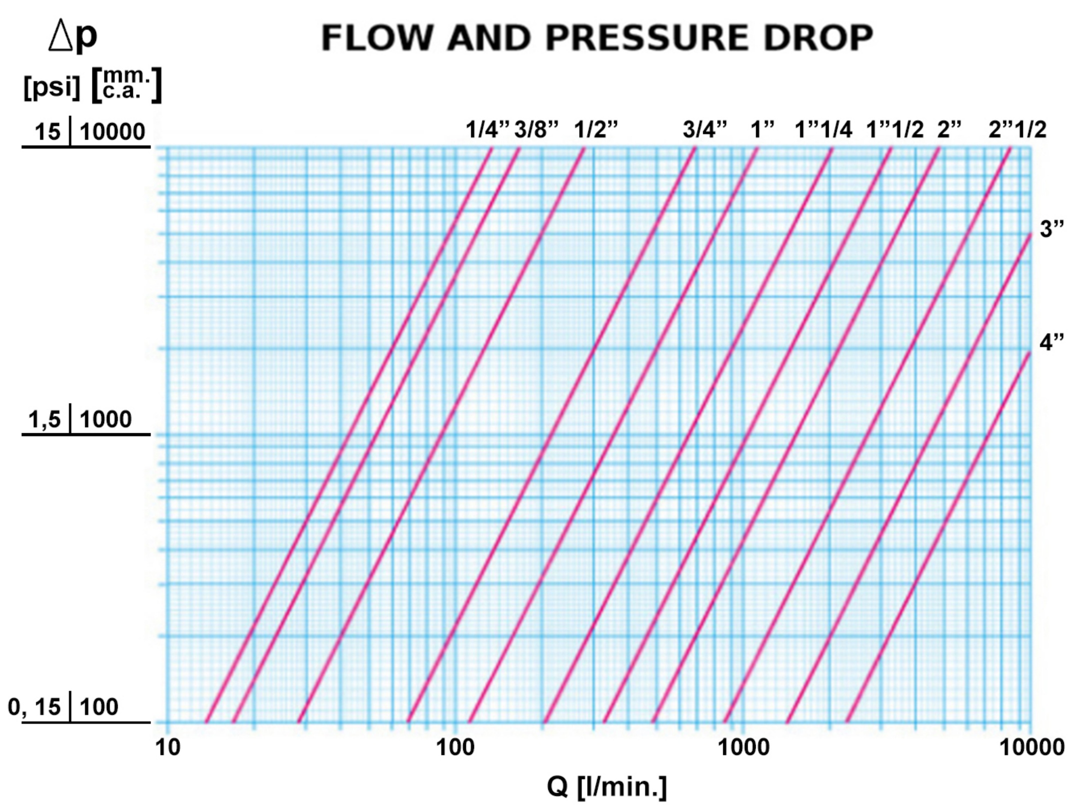
KV = Capacity in m³/h
at pressure drop of 1 bar
CS = Starting torque in Nm.
CM = Operating torque in Nm.
MT = Stem breaking torque in Nm.

DIMENSIONS

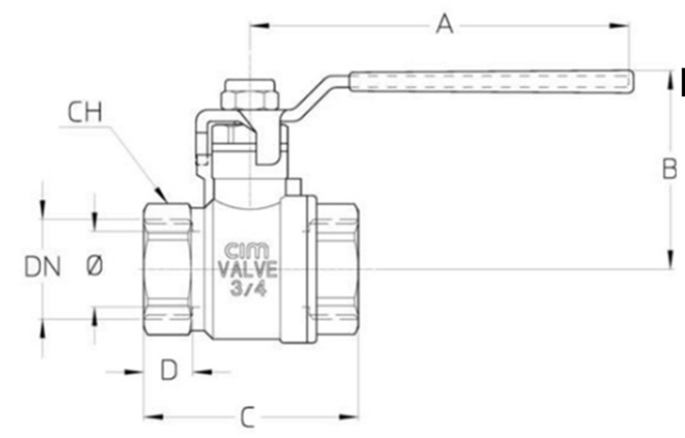
DN	1/4''	3/8''	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2''	3''	4''
mm.	10	10	15	20	25	32	40	50	60	72	94
Grms.	**115**	**120**	**200**	**350**	**500**	**780**	**1215**	**1765**	**3300**	**4350**	**7250**
A	65	65	80	100	100	120	150	150	240	240	240
B	33	33	46	53	57	66	80	87	121	130	145
C	45	47	52	57	68	81	95,5	112	133	150	177
D	11,5	12,5	12,5	12,5	14	17	18	20	23	25	29
CH	18	20	25	31	38	47	54	66	82	96	123

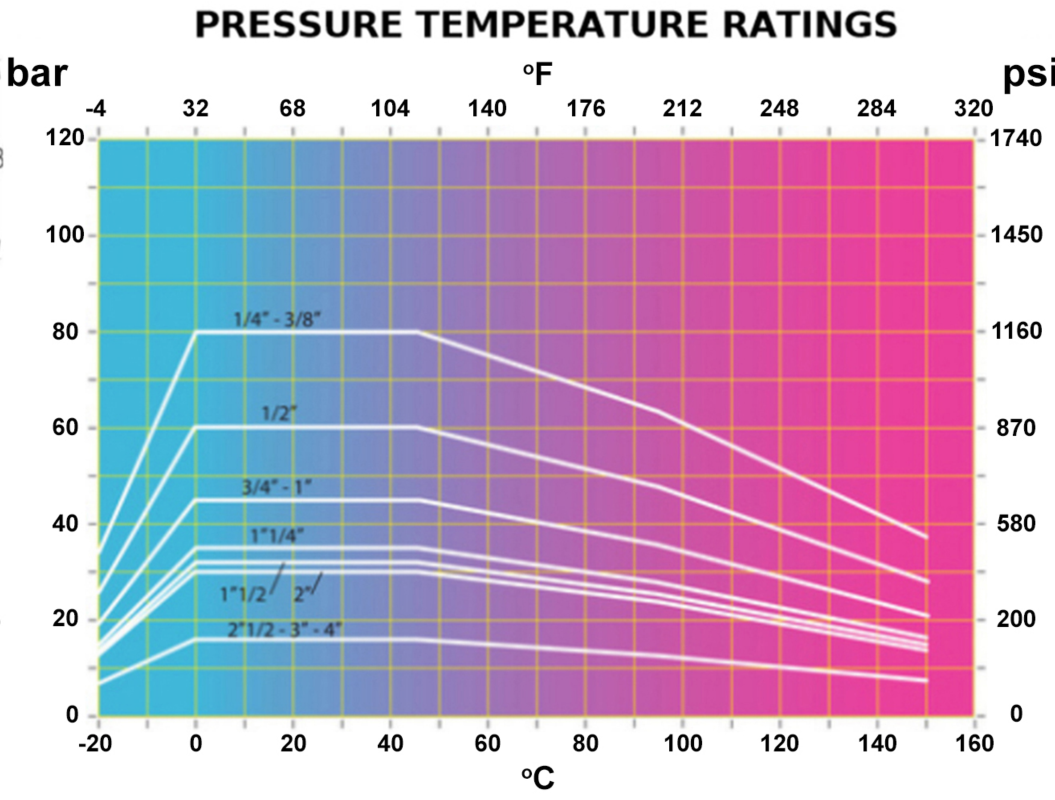
Upon request: ANSI B.1.20.1 - NPT

THREAD: ISO 228



Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c





Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

MATERIALS
*EN 12165-CW617N-M
Brass Alloy
Chrome Plated

PN 16 CIM 34 - Faucet - Hose Bibb

TECHNICAL CHARACTERISTICS

KV CM CS MT				
DN	3/8''	1/2''	3/4''	1''
Ø mm	10	10	12	15
KV	1,8	2	4,3	5.4
CM	1	1	1	3
CS	2	2	2	6
MT	10	10	10	10

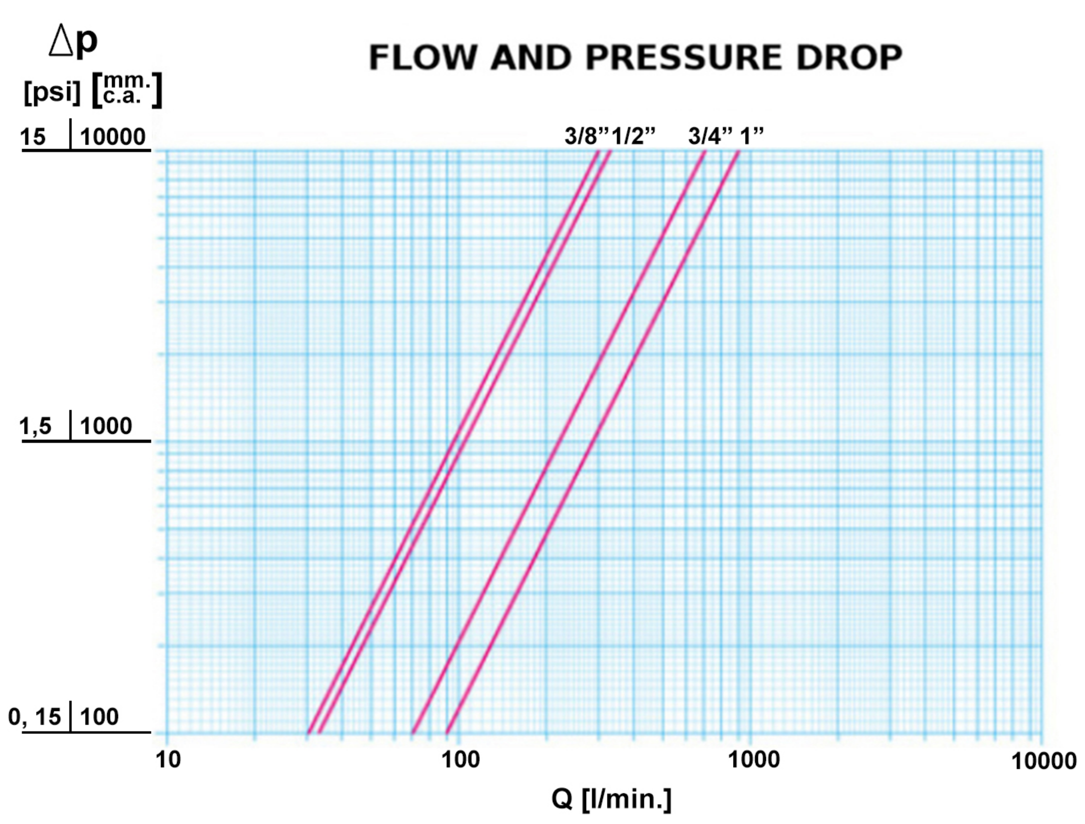
KV = Capacity in m³/h
at pressure drop of 1 bar
CM = Operating torque in Nm.
CS = Starting torque in Nm.
MT = Stem breaking torque in Nm.

DIMENSIONS

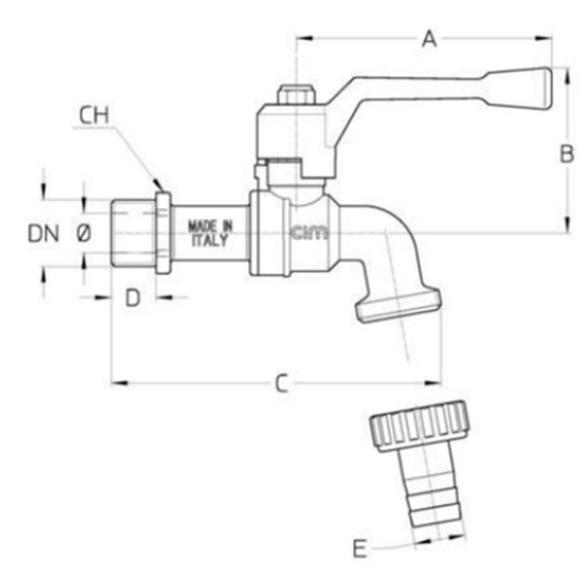
DN	3/8"	1/2"	3/4"	1"
Φ mm	10	10	12	15
Grms.	**255**	**265**	**350**	**545**
A	80	80	80	100
B	52	52	53	55
C	98	106	115	131
D	9	14	16	15
E	14	16	22	28
CH	23	23	29	36

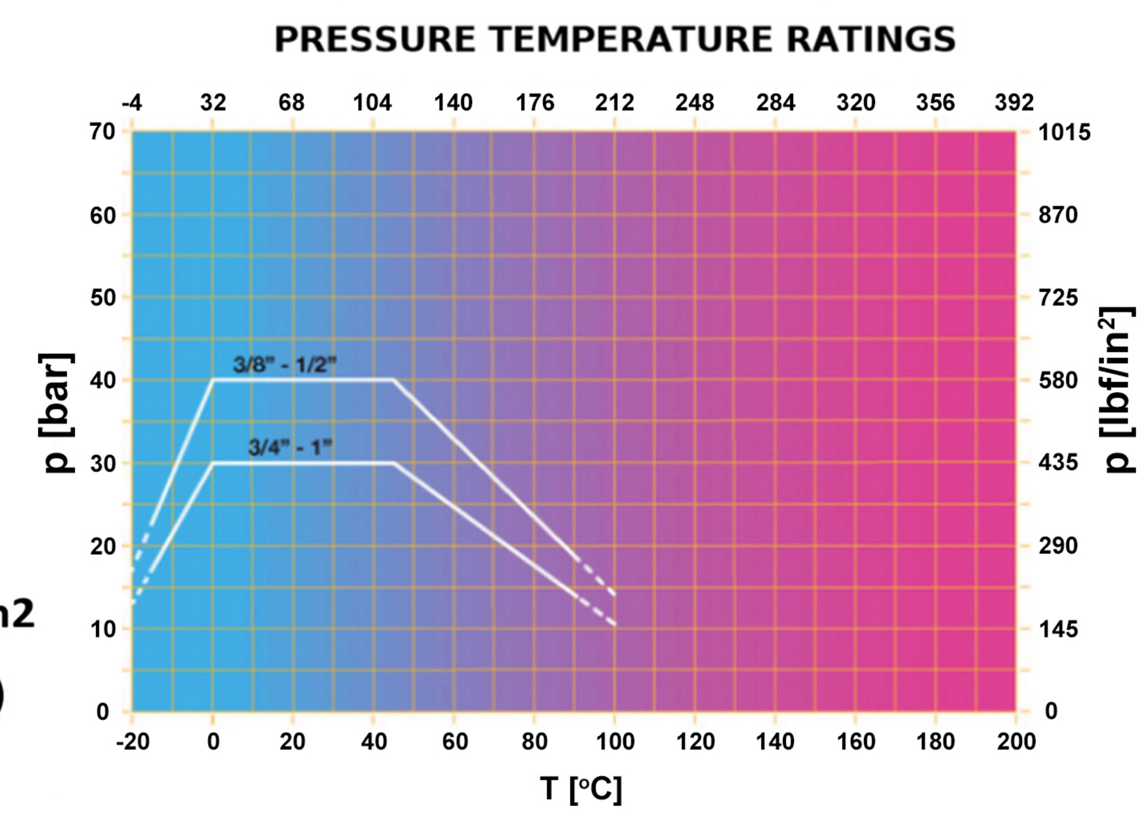
Upon request: ANSI B.1.20.1 - NPT

THREAD: ISO 228



Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c





Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

MATERIALS
*EN 12165-CW617N-DW
Brass Alloy
Chrome Plated

PN 16 CIM 36 - Faucet - Plain Bibb

TECHNICAL CHARACTERISTICS

KV CM CS MT				
DN	3/8''	1/2''	3/4''	1''
Ø mm	10	10	12	15
KV	1,8	2	4,3	5.4
CM	1	1	1	3
CS	2	2	2	6
MT	10	10	10	10

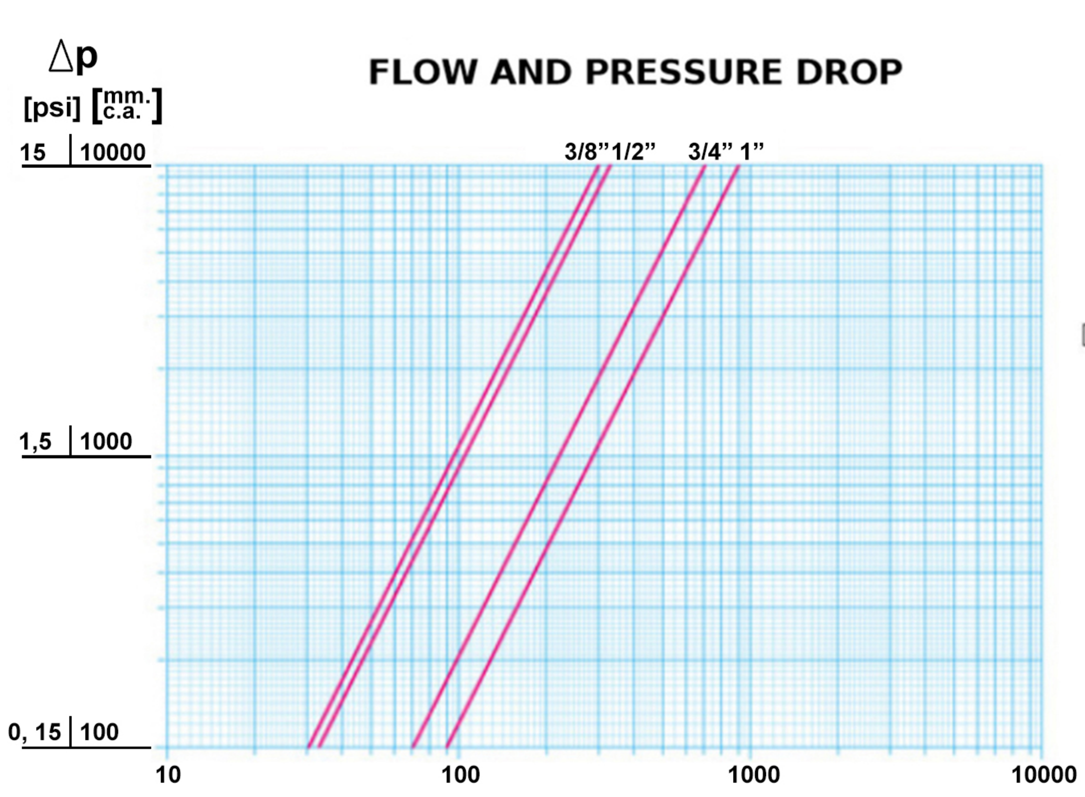
KV = Capacity in m³/h
at pressure drop of 1 bar
CM = Operating torque in Nm.
CS = Starting torque in Nm.
MT = Stem breaking torque in Nm.

DIMENSIONS

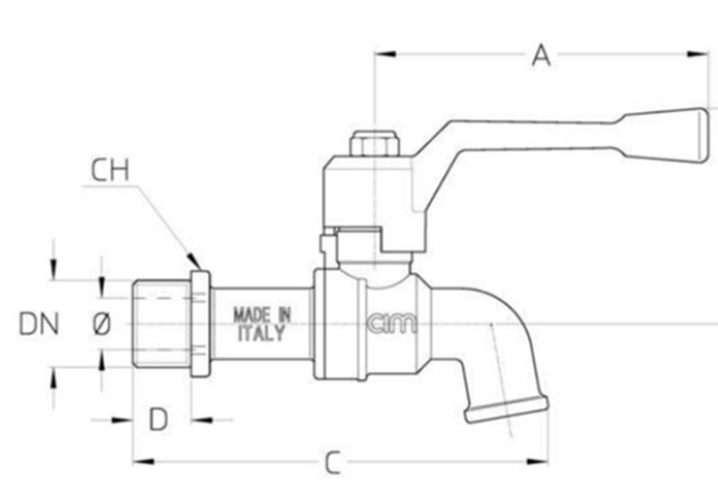
DN	3/8"	1/2"	3/4"	1"
Φ mm	10	10	12	15
Grms.	**225**	**230**	**265**	**370**
A	80	80	80	100
B	52	52	53	55,5
C	95	100	108	120
D	9	14	16	15
CH	21	23	28,5	35,5

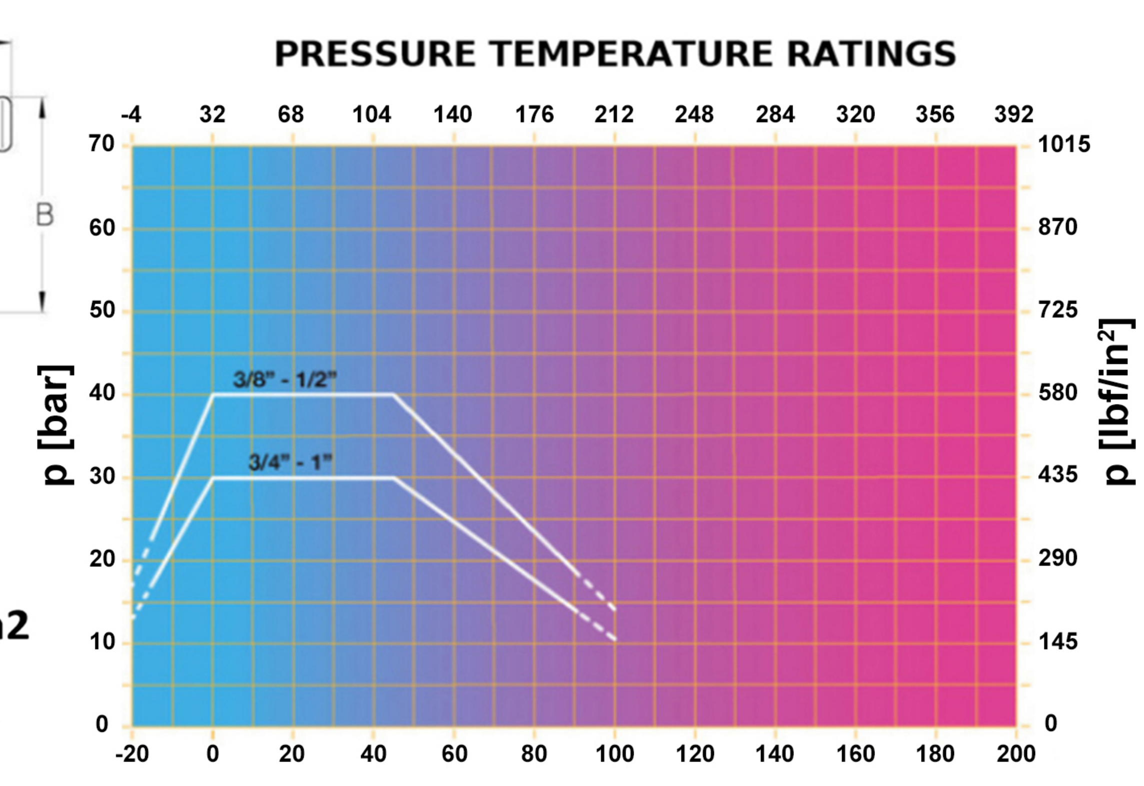
Upon request: ANSI B.1.20.1 - NPT

THREAD: ISO 228



Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c





Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

MATERIALS
*EN 12165-CW617N-DW
Brass Alloy
Chrome Plated

cimberio valve

PN 20 CIM 30 - Spring Loaded Check Valve

MATERIALS
*Standard EN 12165-CW617N-M
Brass Alloy
Chrome Plated

THREAD: ISO 228

DIMENSIONS

DN	3/8''	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
Grms.	**210**	**160**	**240**	**380**	**600**	**920**	**1360**	**2505**	**3440**	**5115**
B	55,5	55,5	62	72	82	96	109	129	141	146
C	35	35	42	50	60	70	83	103	123	160
D	13	14	14,5	17	18	22	23	29	28	30
CH	25	25	31	39	48	55	67	88	100	123

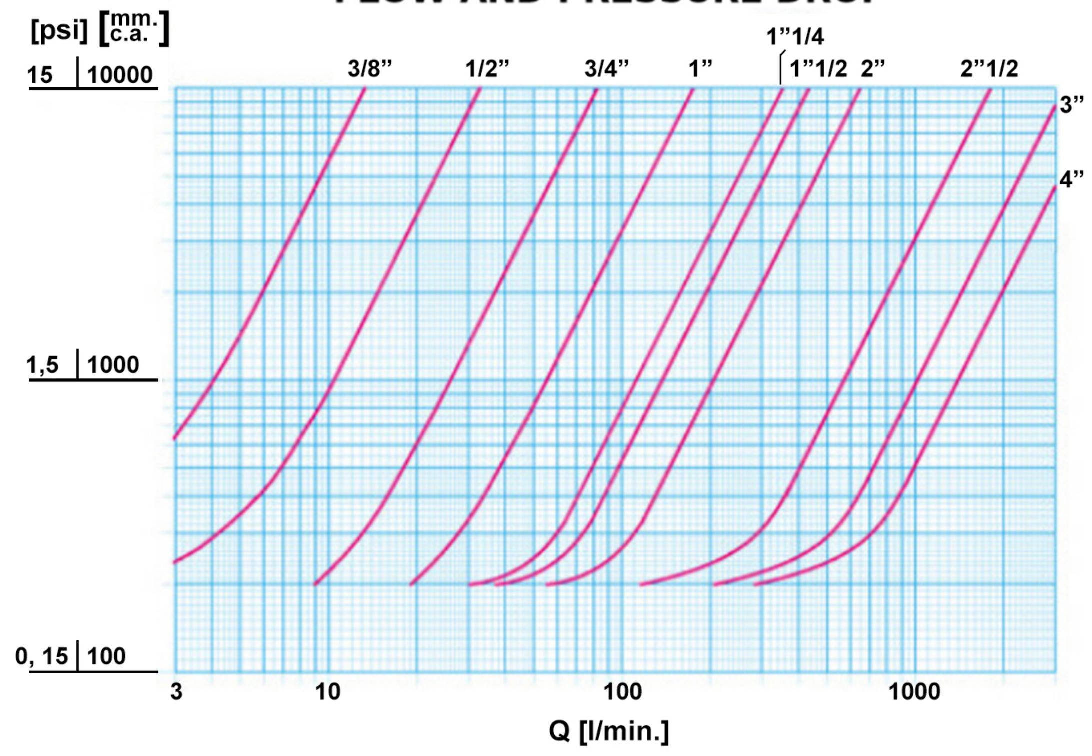
Upon request: ANSI B.1.20.1 - NPT

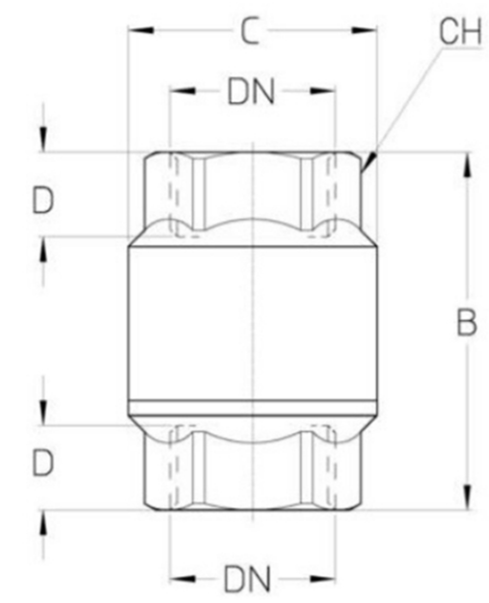
TECHNICAL CHARACTERISTICS

KV										
DN	3/8''	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
KV	0,8	2,0	5,0	10,4	21	26	38	108	192	264

KV = Flow rate in m³/h with a pressure drop of 1 bar

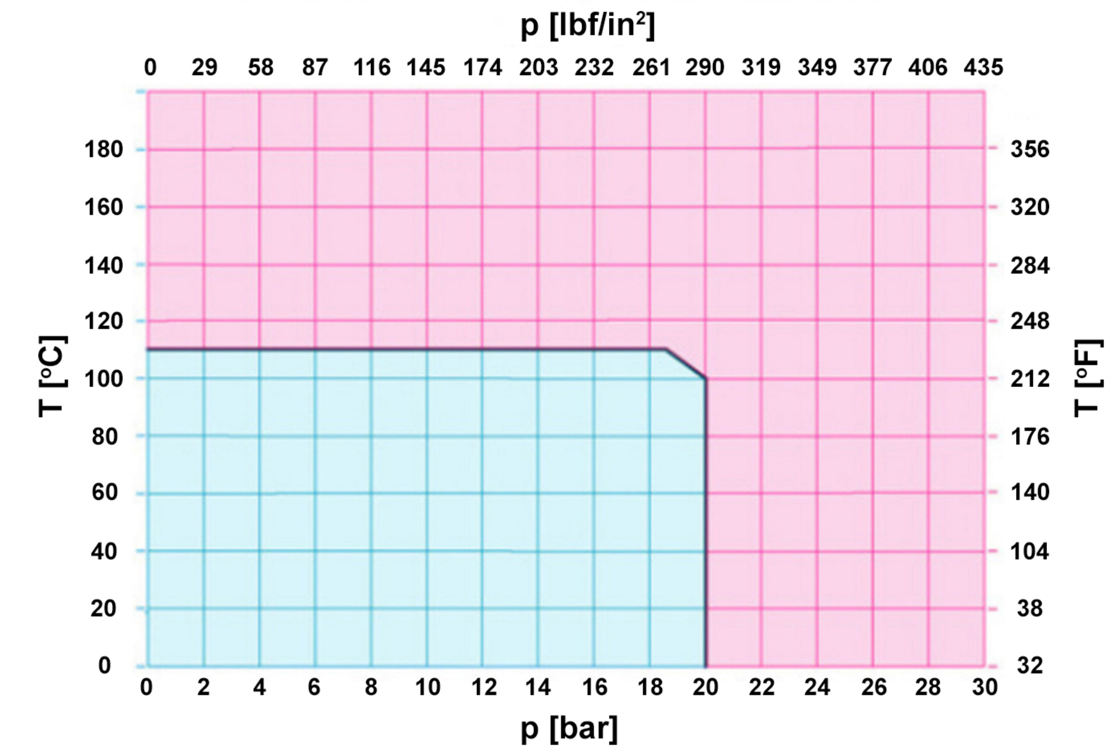
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 16 CIM 32- In-line Check

MATERIALS
*Standard EN 12165-CW617N-M
Brass Alloy
Chrome Plated

THREAD: ISO 228

DIMENSIONS

DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''
mm.	15	20	25	32	40	50
Grms.	**50**	**90**	**160**	**260**	**360**	**745**
B	33	38	44	49	57	75
D	13,5	13,5	15	17	19	22
D1	14,5	14,5	15,5	17	19	20
CH	25	31	38	47	54	66

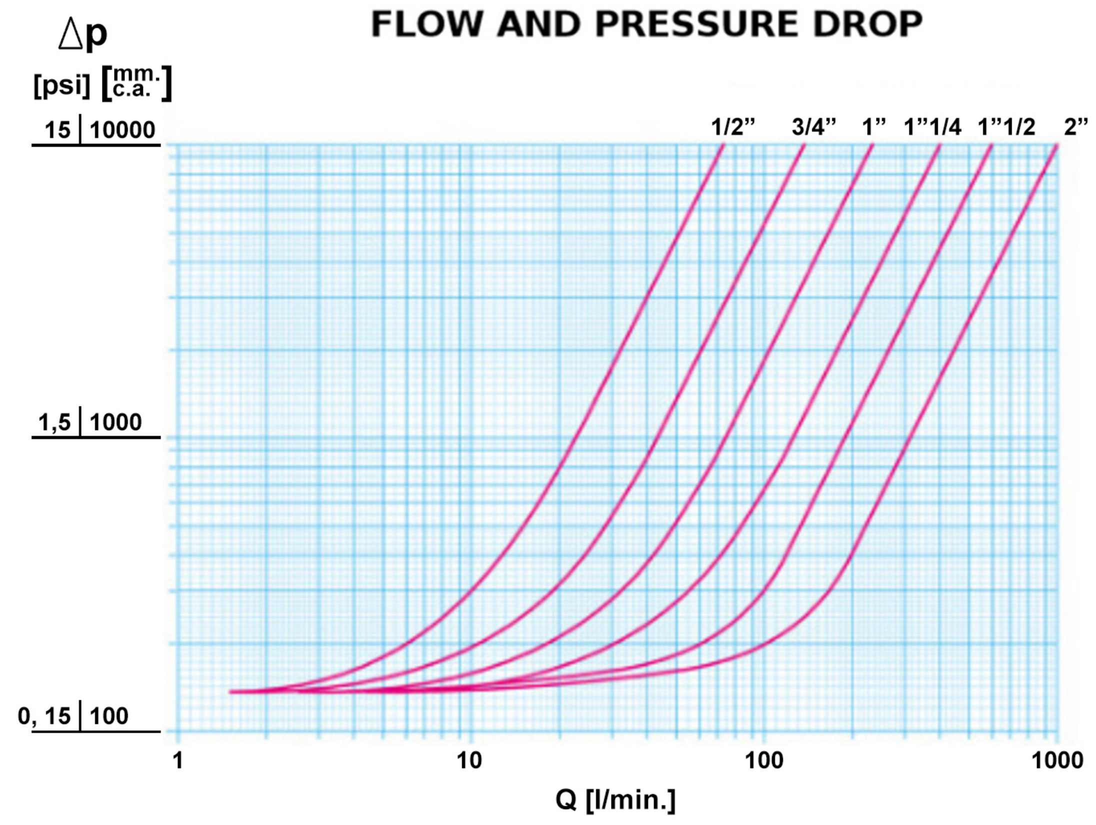
Upon request: ANSI B.1.20.1 - NPT

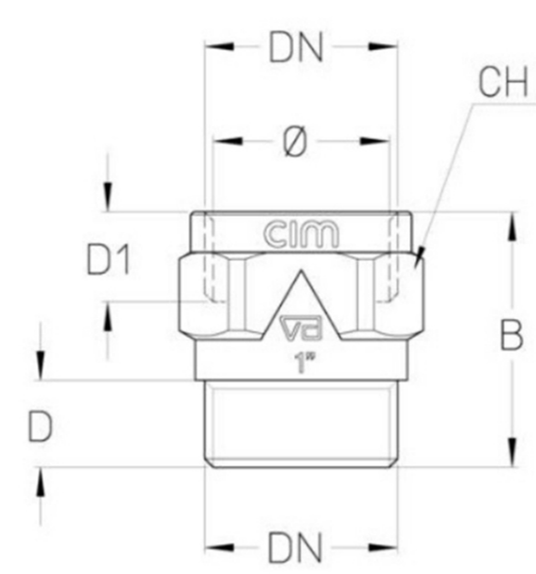
TECHNICAL CHARACTERISTICS

KV						
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''
KV	4,5	8,1	13,8	24	36	60

KV = Flow rate in m³/h with a pressure drop of 1 bar

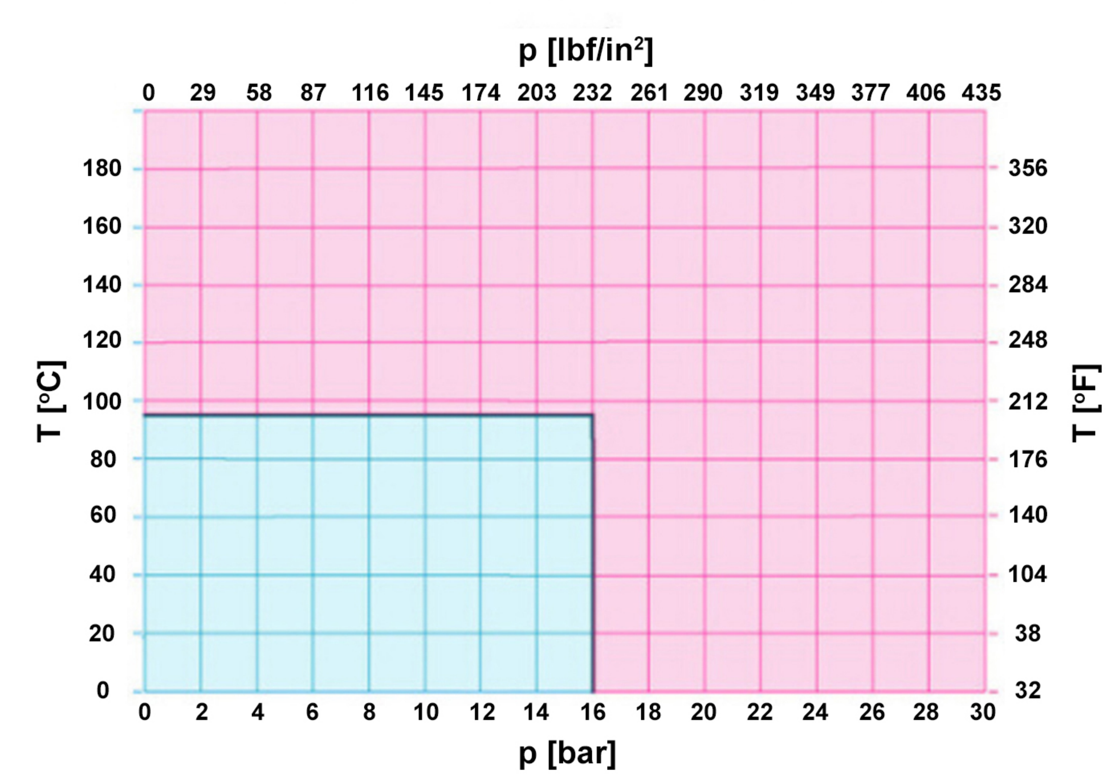
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 20 CIM 30A - Foot Valve - Spring

MATERIALS
*Standard EN 12165-CW617N-M
Brass Alloy
Chrome Plated

THREAD: ISO 228

DIMENSIONS

DN	½''	¾''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
Grms.	**165**	**270**	**415**	**620**	**960**	**1375**	**2600**	**3615**	**5310**
B	99	109,5	121	134	163	192	213	240	261
C	35	42	50	60	70	83	103	123	160
D	12	14,5	17	17	22	22	27	26	30
CH	25	31	39	48	55	67	88	100	123

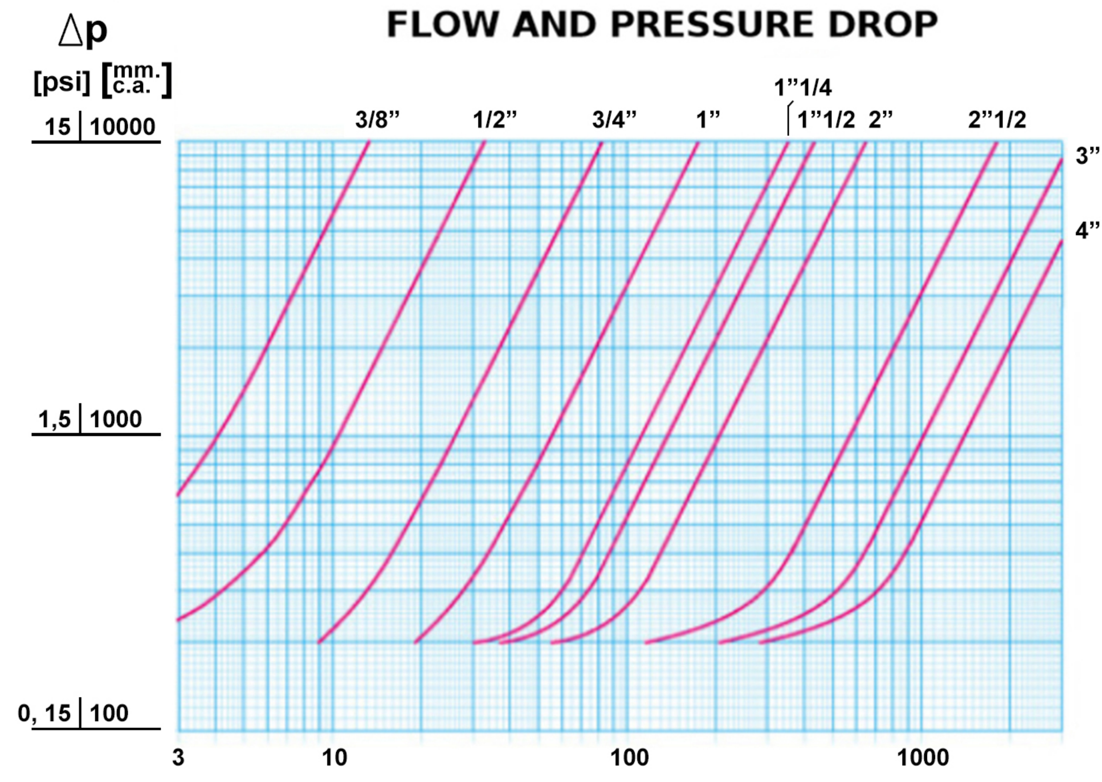
Upon request: ANSI B.1.20.1 - NPT

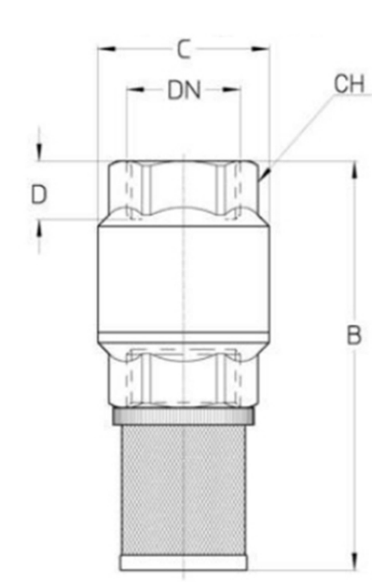
TECHNICAL CHARACTERISTICS

KV										
DN	3/8''	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
KV	0,8	2,0	5,0	10,4	21	26	38	108	192	264

KV = Flow rate in m³/h with a pressure drop of 1 bar

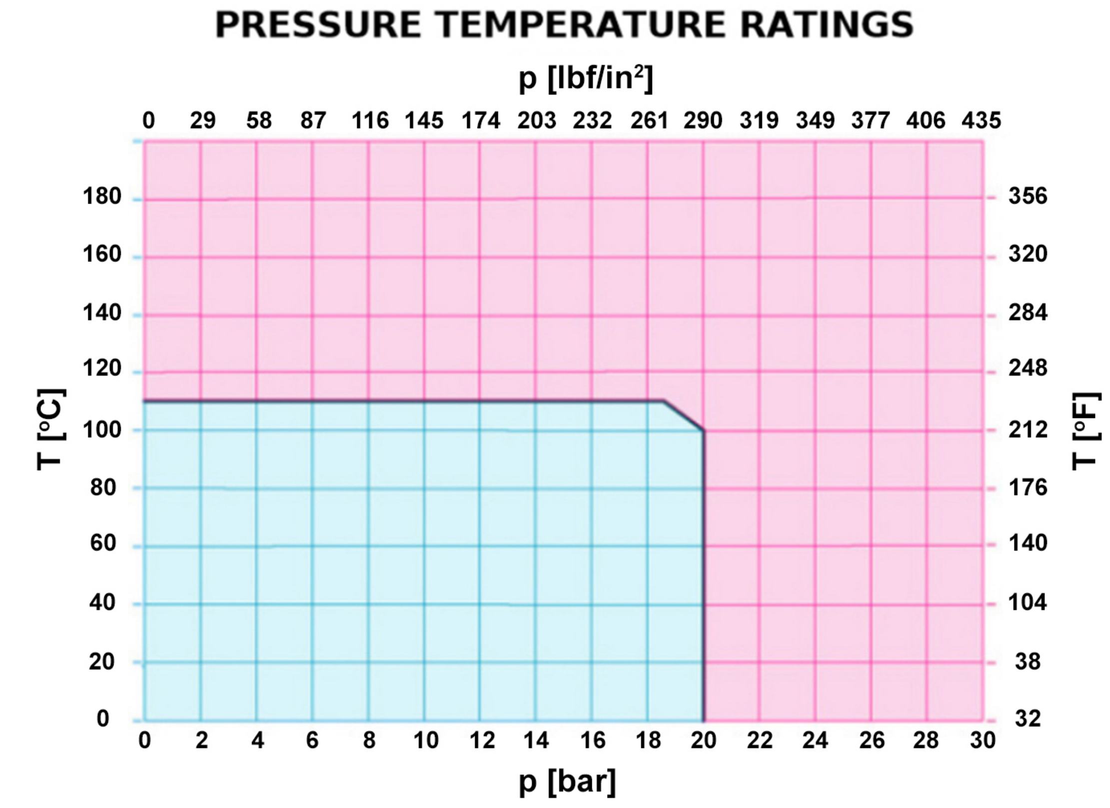
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 16 CIM 95 - Foot Valve - Non-spring

TECHNICAL CHARACTERISTICS

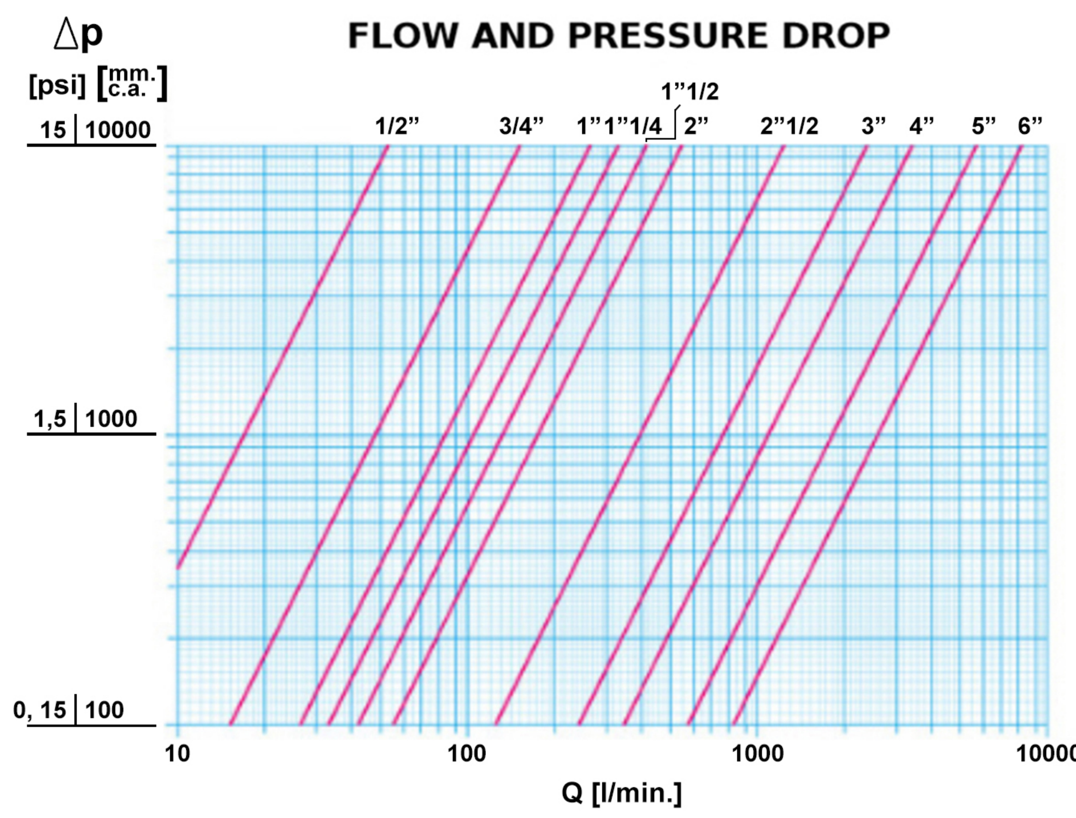
KV											
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''	5''	6''
KV	3,2	9	16	20	25	33	74	145	207	342	492

KV = Flow rate in m^3/h with a pressure drop of 1 bar

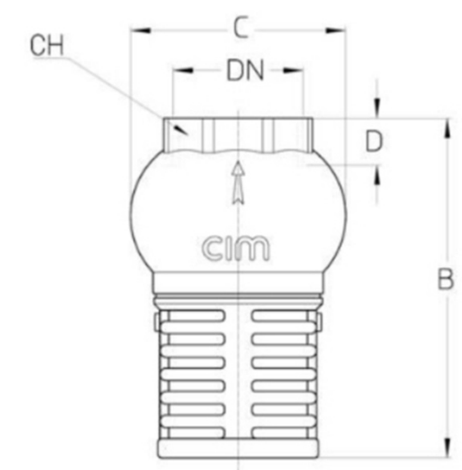
DIMENSIONS

DN	½''	¾''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''	5''	6''
Grms.	**185**	**270**	**390**	**505**	**640**	**1040**	**1895**	**2440**	**4920**	**11905**	**15220**
B	63,5	75	87	96,5	105	117,5	146	159,5	207,5	287,5	334,5
C	39	46	55	64	69	87	108	126	167	200	235
D	11,5	11,5	12	14	14	15,5	17	17,5	19,5	21,5	25
CH	27	33,5	38	48	55	68	85	98	128	160	185

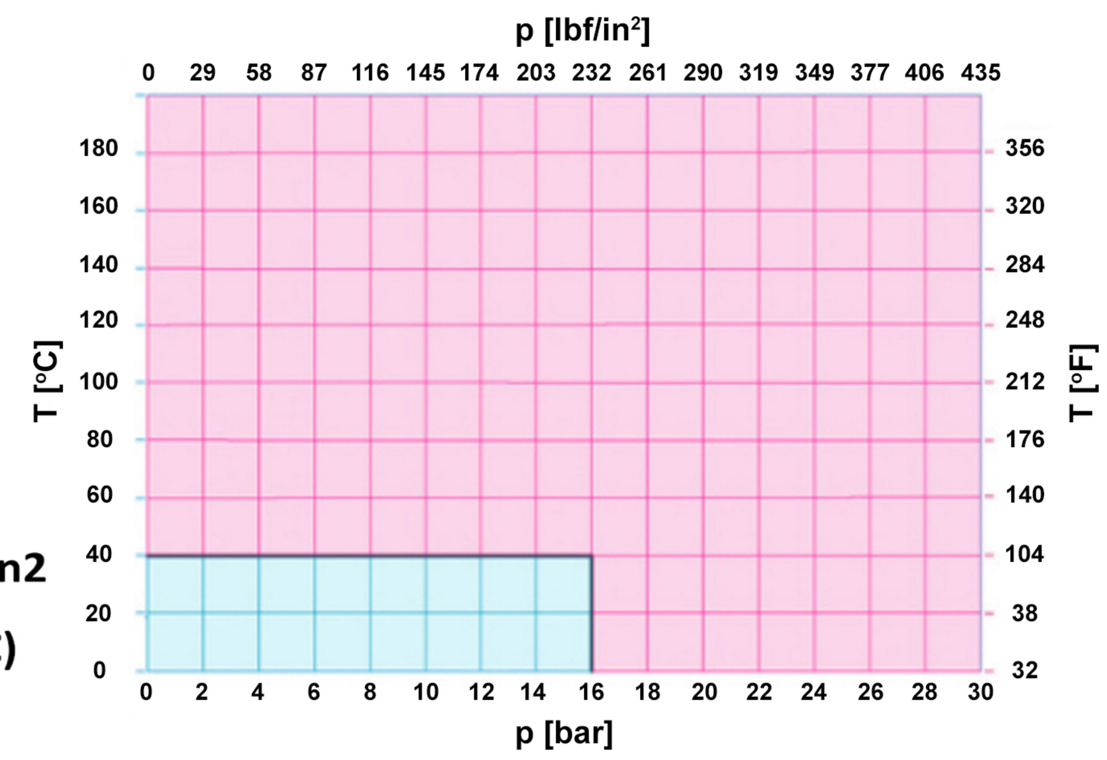
THREAD: ISO 228



Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)



MATERIALS
*Standard EN 12165-CW617N-M
Brass Alloy

PN 16 CIM 50 - Gate Valve

TECHNICAL CHARACTERISTICS

KV									
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
KV	12	29	51	68	138	222	366	624	1065

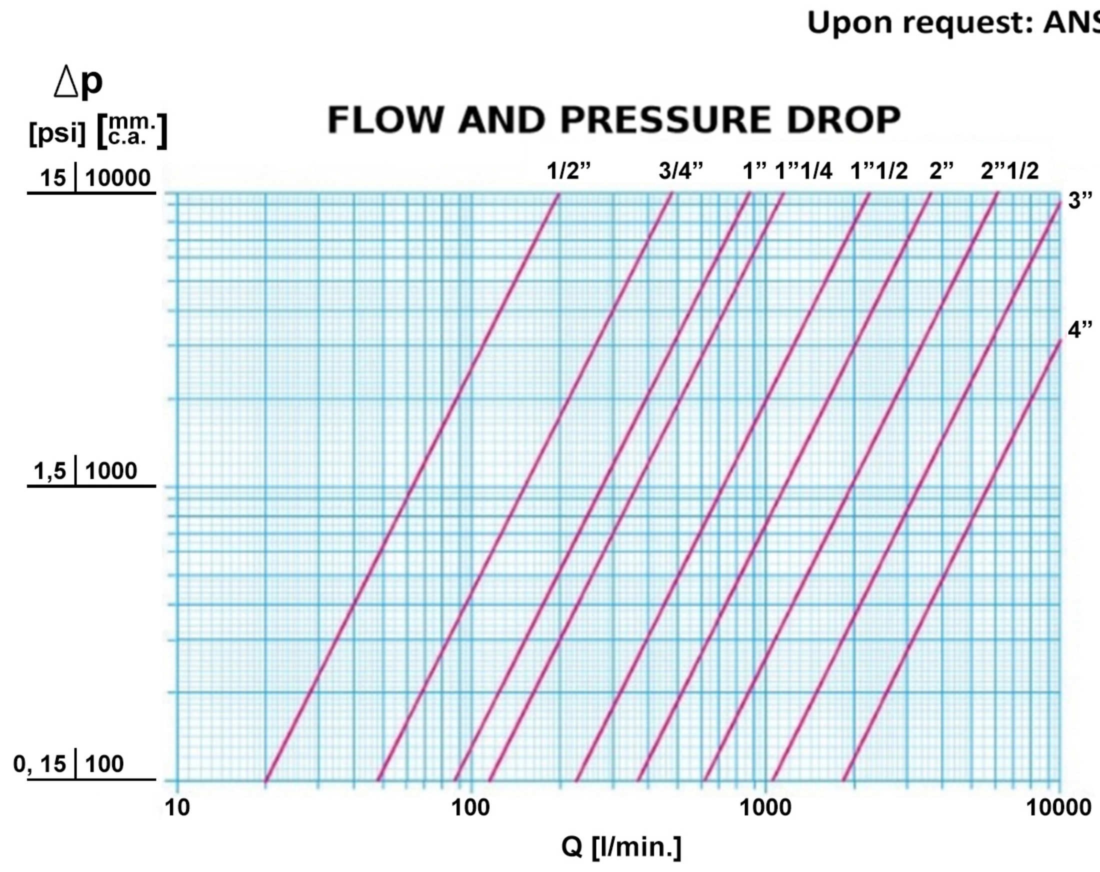
KV = Flow rate in m^3/h with a pressure drop of 1 bar

DIMENSIONS

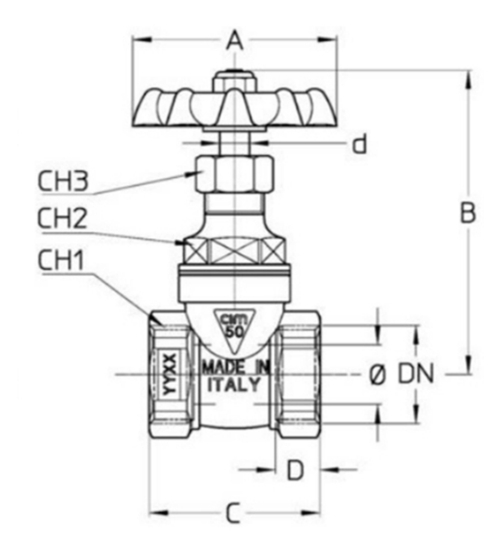
DN	½''	¾''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
mm.	13	16	23	28	33	45	59	68	85
Grms.	**210**	**255**	**365**	**510**	**695**	**1120**	**2065**	**2835**	**4960**
A	50	55	60	65	65	80	110	110	120
B	79	82,5	95,5	102,5	115,5	139	181,5	201	239,5
C	42	46	50	55	60	67	69	77	91
D	11,5	12	14	16	17	18	14,5	19	21
CH1	25	31	37	47	54	68	85	97	125
CH2	24	24	30	32	32	45	55	66	88
CH3	18	18	18	18	21	23	30	30	33
d	9	9	9	9	8	10	13	13	14

Upon request: ANSI B.1.20.1 - NPT

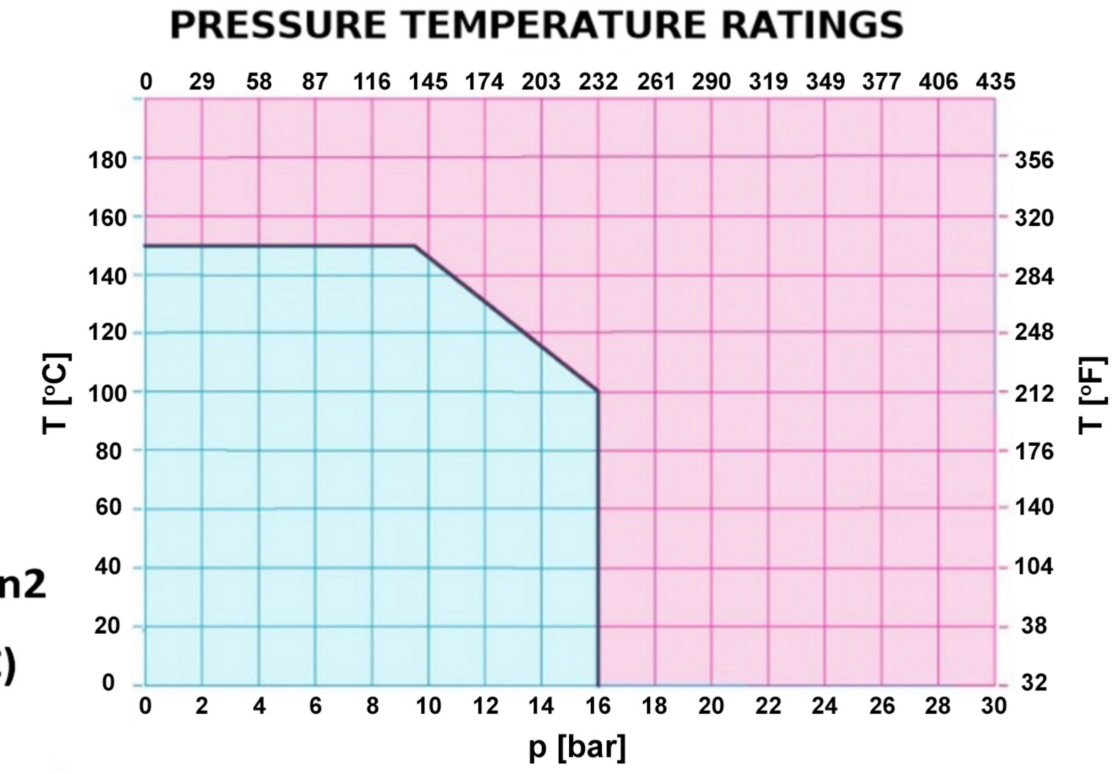
THREAD: ISO 228



Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

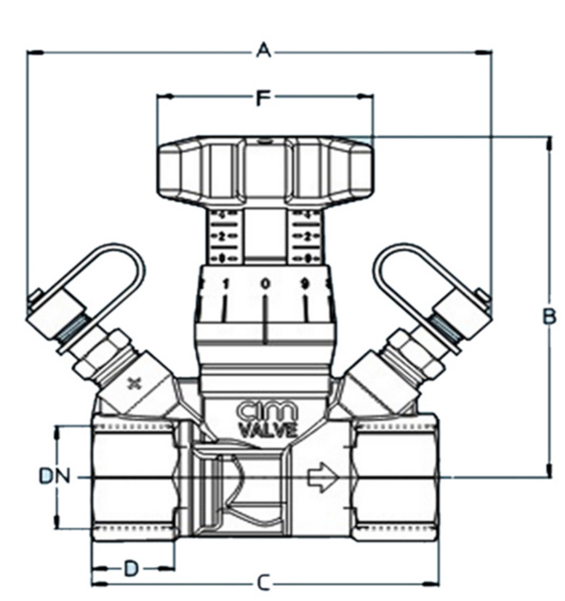


MATERIALS
*Standard EN 12165-CW617N-DW
Brass Alloy

PN 25 CIM 787 - Balancing Valve

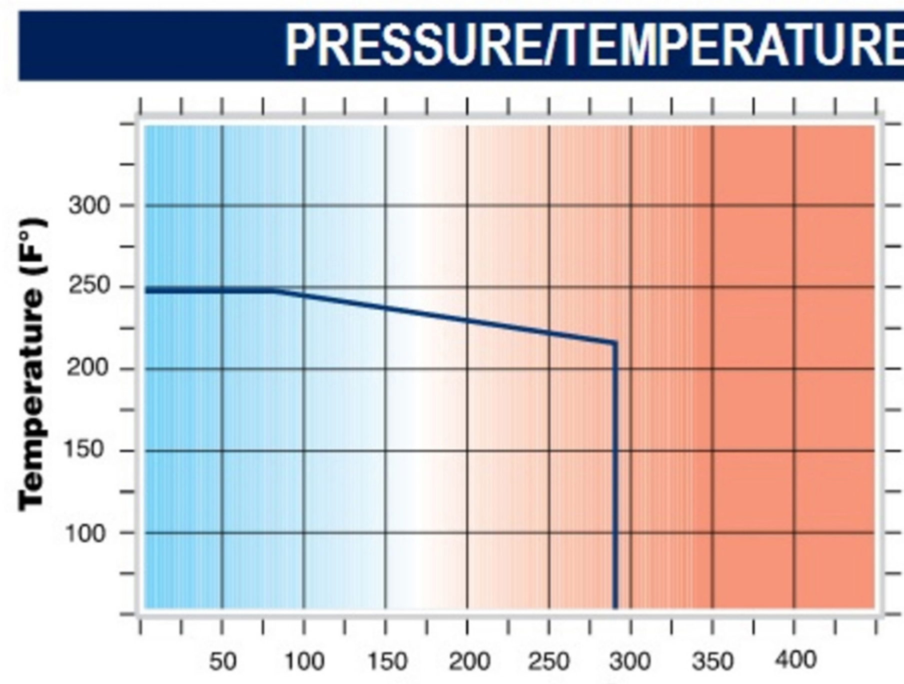
DIMENSIONS

DN	½''	¾''	1''	1''1/4	1''1/2	2''
Grms.	**380**	**440**	**535**	**960**	**1120**	**1350**
A	106	107	107	123	128	132
B	87,5	89,5	91,5	99	99	100
C	75	80	87	108	115	124
D	16	19	21	22,5	23	26,5
F	50	50	50	500	50	50



THREAD: ANSI B.1.20.1 - NPT

PRESSURE/TEMPERATURE RATINGS



Working Pressure:
290 PSI

Maximum Operating Temperature:
Working Limit for Fluids
14° F – 248° F

Test Pressures:
According to ISO 5208

CV

CV: Capacity in "U.S. gal/min" at pressure drop of "1 PSI"

Element: Water - Temperature: 59.9° F

787.1 SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
CV	2.02	3.32	4.72	7.75	12.03	17.41

MATERIALS
*Standard EN 12165-CW602N-M
Brass Alloy

cimberio valve

MATERIALS
*Standard
EN 1982-CW602N-M
Brass Alloy

PN 25 CIM 778 - Thermostatic Balancing Valve

THREAD: ISO 228

DIMENSIONS

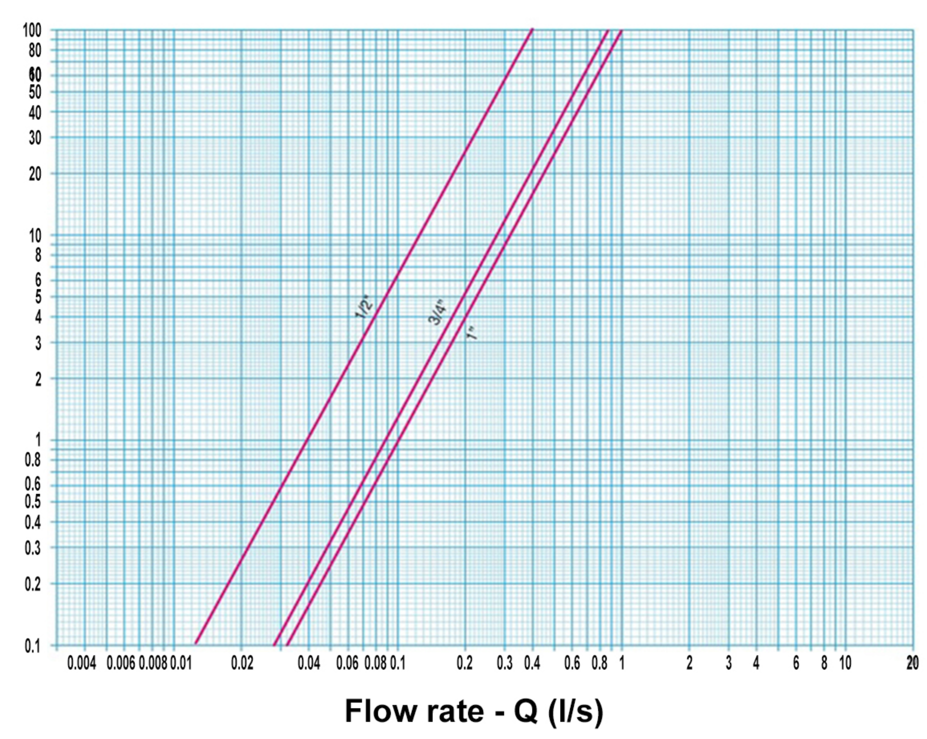
DN	1/2''	3/4''	1''
Grms.	**455**	**515**	**620**
B	73	75	77
C	77	80	87
D	17	18,5	21
CH	25	31	38

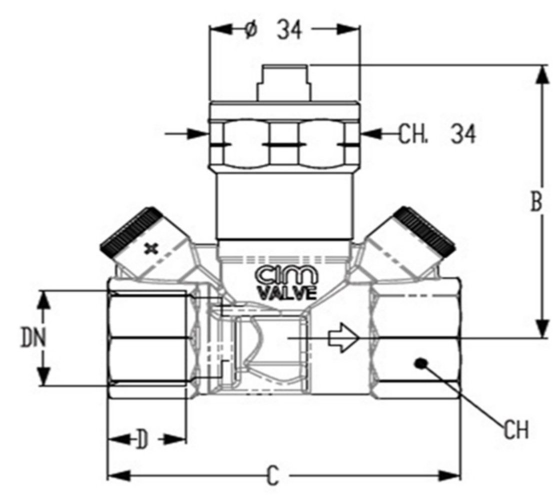
TECHNICAL CHARACTERISTICS

	KV		
DN	1/2''	3/4''	1''
KV	1,5	3,1	3,6
KVmin	0,25	0,25	0,25
KVnom (dt=5K)	0,6	0,7	0,8
KVdis	0,5	0,5	0,5

KV = Flow rate in m^3/h with a pressure drop of 1 bar

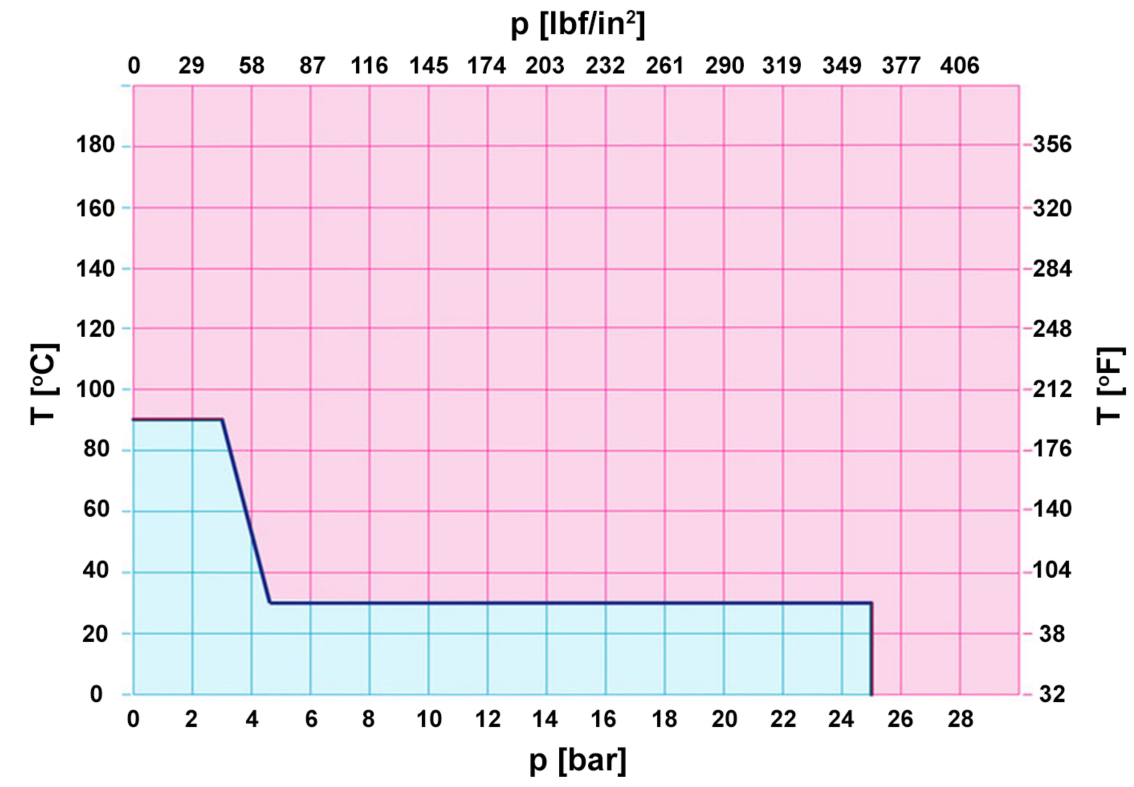
FLOW AND PRESSURE DROP





Notes:
1 l/s = 3.6 m3/h
1 m3/h = 0.278 l/s
1 kPa = approx. 100 mm
1 bar = 100 kPa

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

MATERIALS
*Standard
EN 1982-CC754S
Brass Alloy

PN 16 CIM 80 - Swing Check - Brass Disc

THREAD: ISO 228

DIMENSIONS

DN	½''	¾''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
Grms.	**245**	**350**	**500**	**740**	**900**	**1500**	**2250**	**3300**	**5850**
B	42,5	46	53	61	62,5	70	84	90	113
C	52	62	70	84	87	106	120,5	136	170
D	9	11	14	15,5	15,5	17	19	15,5	22,5
CH	28	34	41	50	57	70	85	100	127
CH1	21	26	32	37	42	52	65	75	89

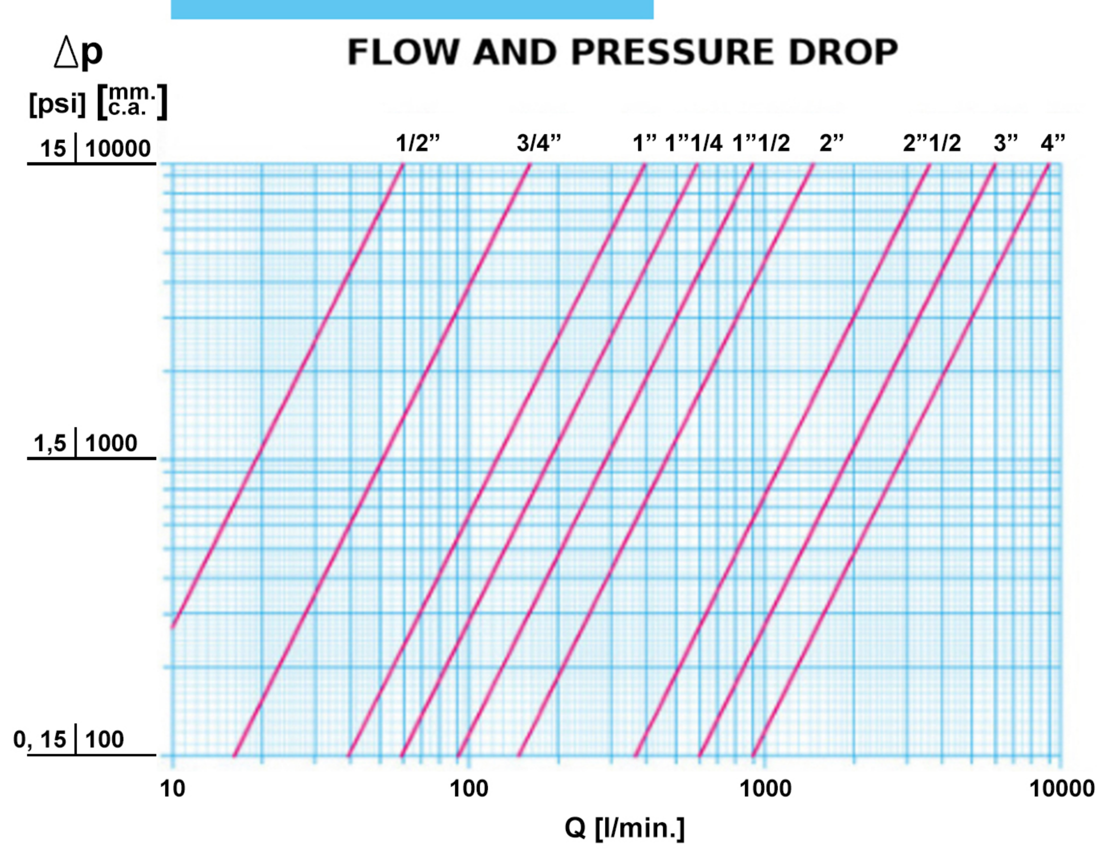
Upon request: ANSI B.1.20.1 - NPT

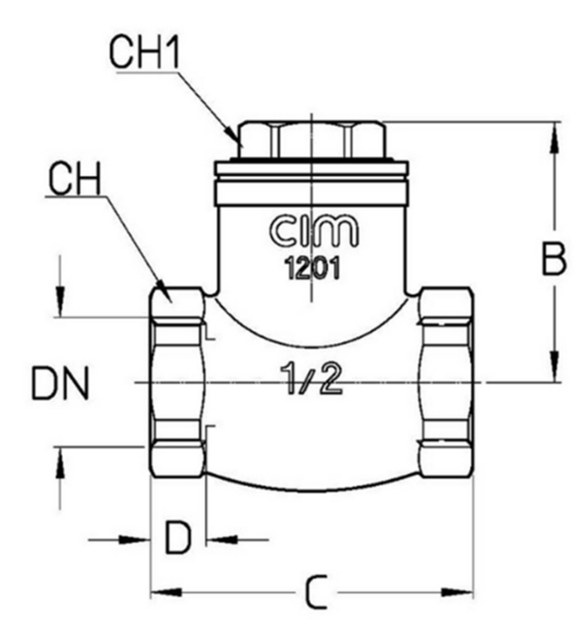
TECHNICAL CHARACTERISTICS

	KV								
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
KV	3,6	9,5	23	35	56	86	222	360	540

KV = Flow rate in m^3/h with a pressure drop of 1 bar

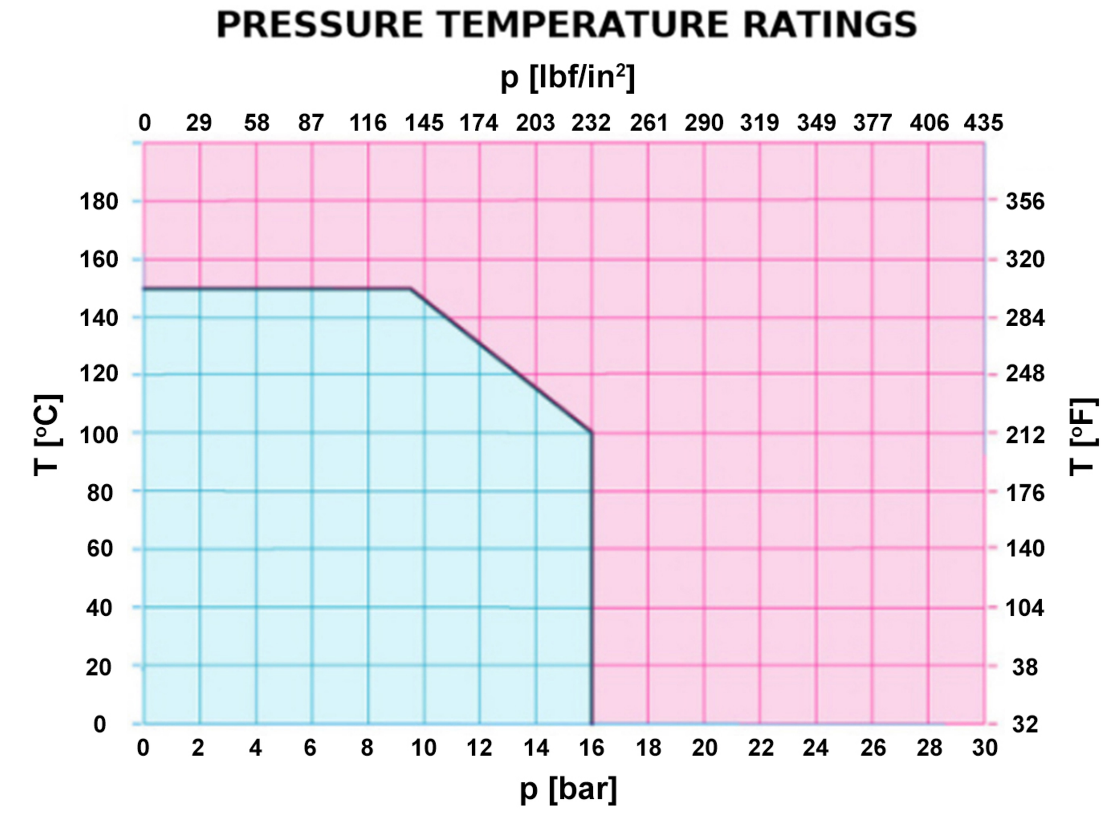
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

MATERIALS
*Standard
EN 1982-CC754S
Brass Alloy

PN 16 CIM 80A - Swing Check - Rubber Seat

THREAD: ISO 228

DIMENSIONS

DN	½''	¾''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
Grms.	**245**	**350**	**500**	**740**	**900**	**1500**	**2250**	**3300**	**5850**
B	42,5	46	53	61	62,5	70	80	90	113
C	52	62	70	84	87	106	120,5	136	170
D	9	11	14	15,5	15,5	17	19	15,5	22,5
CH	28	34	41	50	57	70	85	100	127
CH1	21	26	32	37	42	52	65	75	89

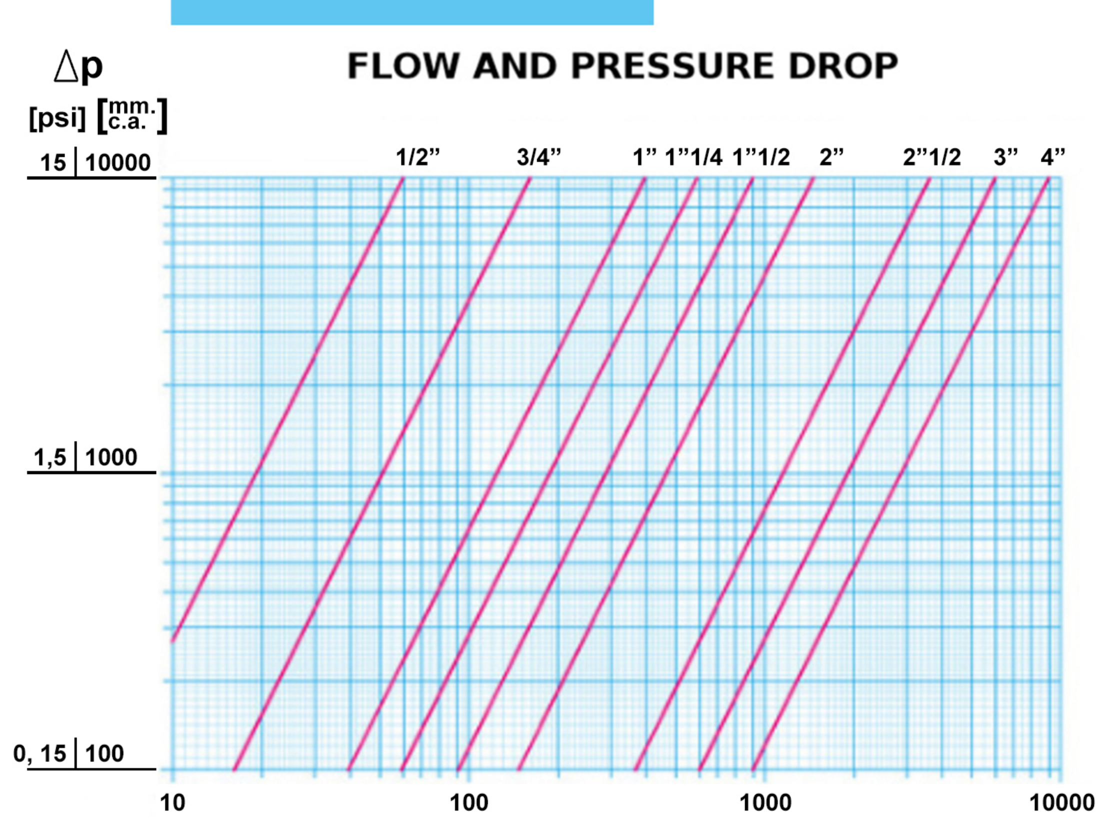
Upon request: ANSI B.1.20.1 - NPT

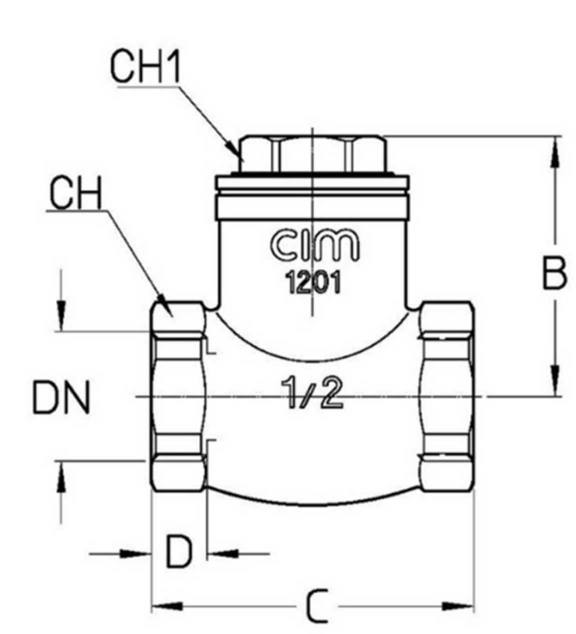
TECHNICAL CHARACTERISTICS

	KV								
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
KV	3,6	9,5	23	35	56	86	222	360	540

KV = Flow rate in m^3/h with a pressure drop of 1 bar

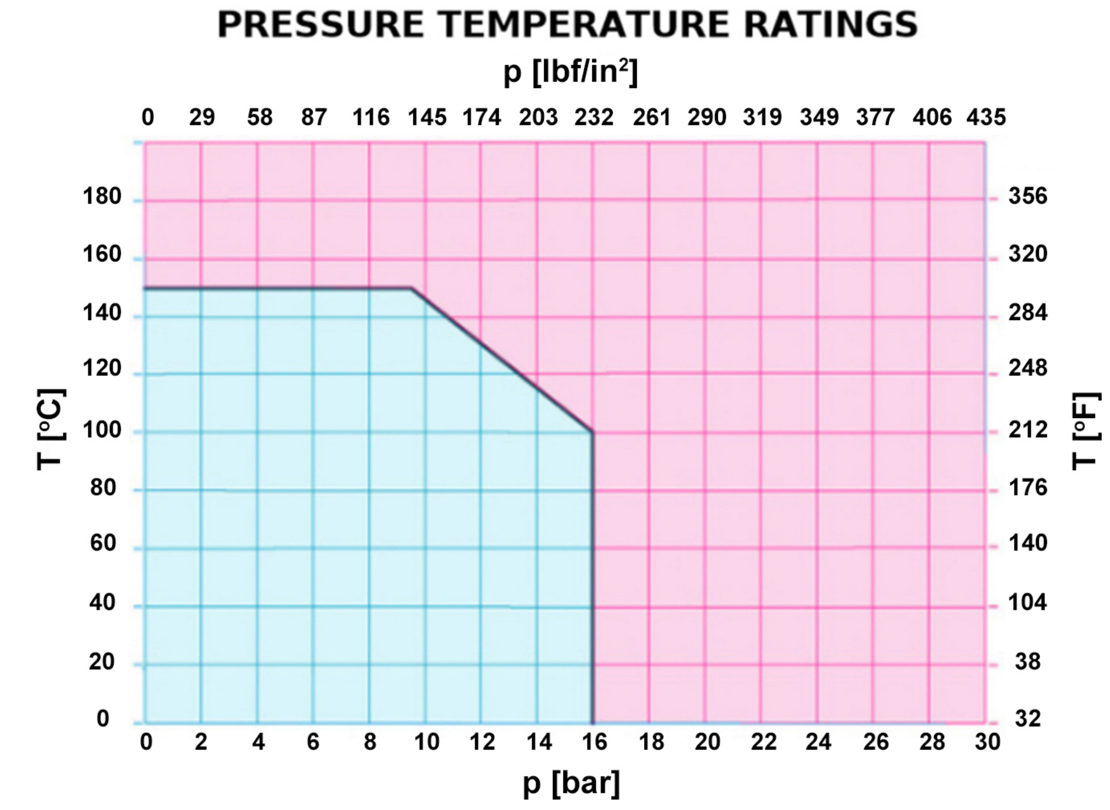
FLOW AND PRESSURE DROP





Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c

PRESSURE TEMPERATURE RATINGS



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PN 20 CIM 81 - Globe Valve - PTFE

TECHNICAL CHARACTERISTICS

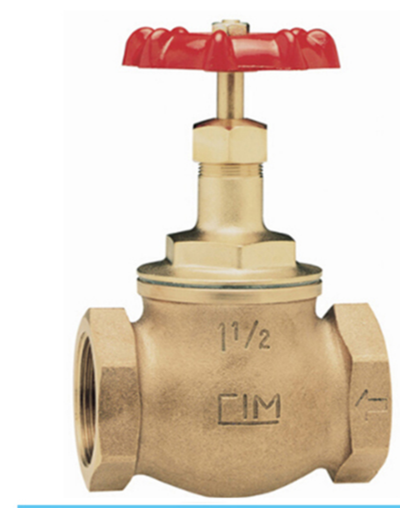
KV							
DN	3/8''	1/2''	3/4''	1''	1''1/4	1''1/2	2''
KV	1,4	1,9	5,8	9	11	16	22

KV = Flow rate in m³/h with a pressure drop of 1 bar

DIMENSIONS

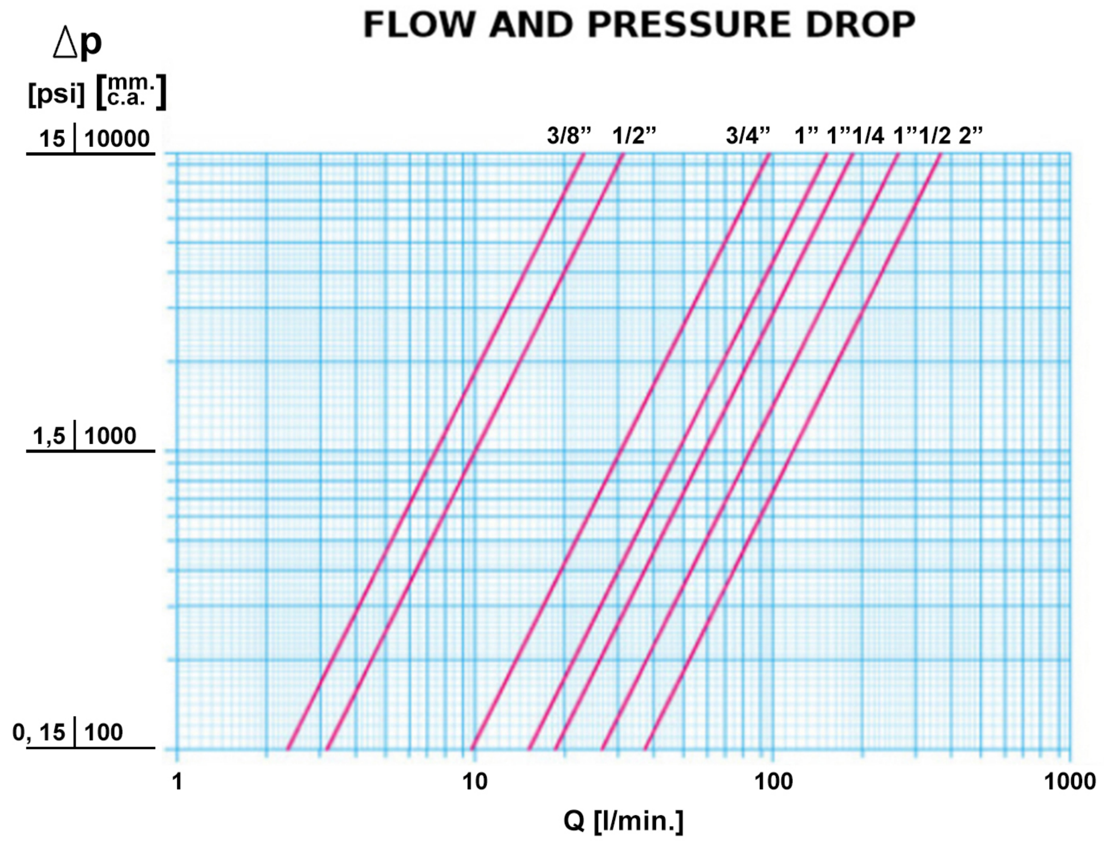
DN	3/8''	½''	¾''	1''	1''1/4	1''1/2	2''
Grms.	**320**	**380**	**620**	**900**	**1130**	**1640**	**3000**
A	55	55	60	65	75	80	90
B	87,5	88	98,5	112,5	132	138,5	154
C	58	60	70	84	92	107	126
D	11	12	12	14	17	19	17,5
CH	25	29	35	44	52	59	72
CH1	23	23	28	33	37	45	54
CH2	18	18	21	23	25	27	33

Upon request: ANSI B.1.20.1 - NPT

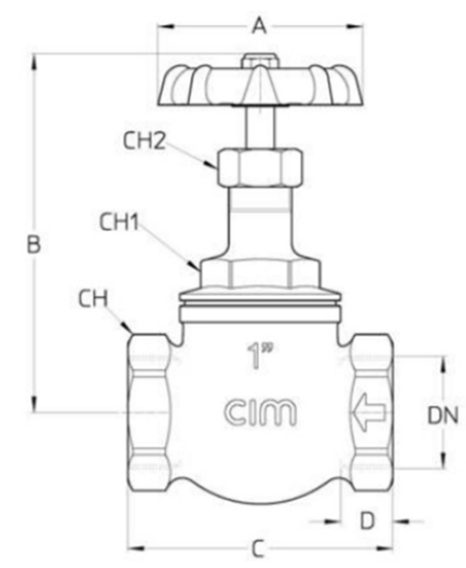


THREAD: ISO 228

FLOW AND PRESSURE DROP

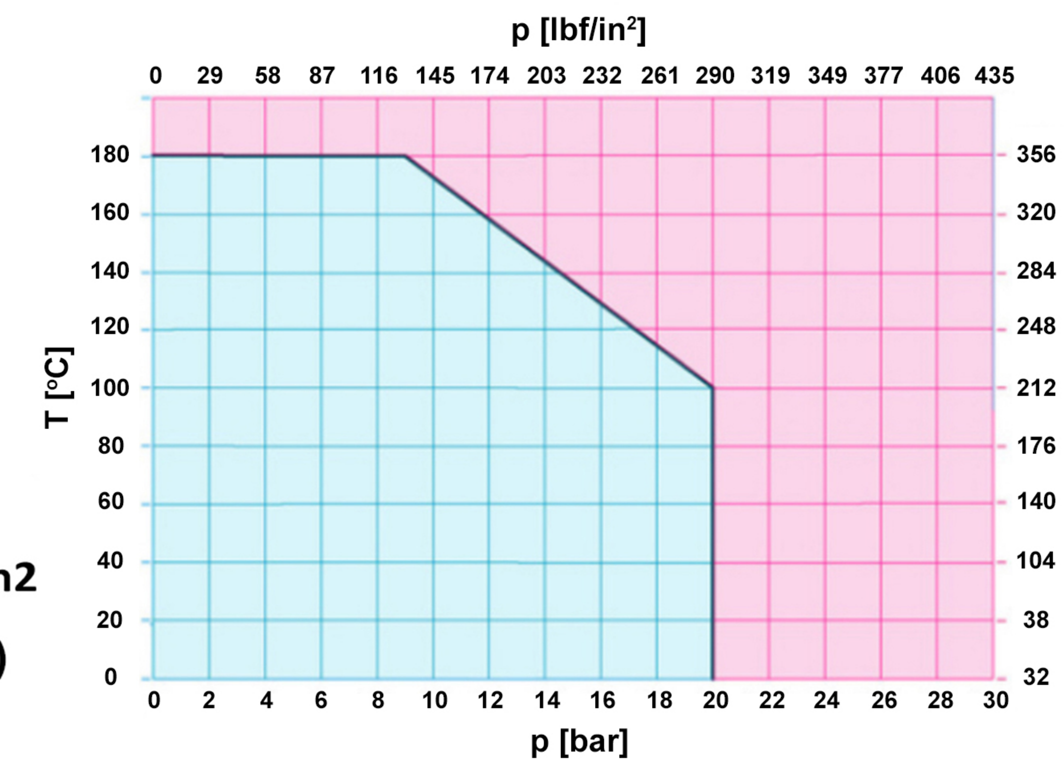


Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PRESSURE TEMPERATURE RATINGS



MATERIALS
*Standard
EN 1982-CC491K
Bronze Alloy

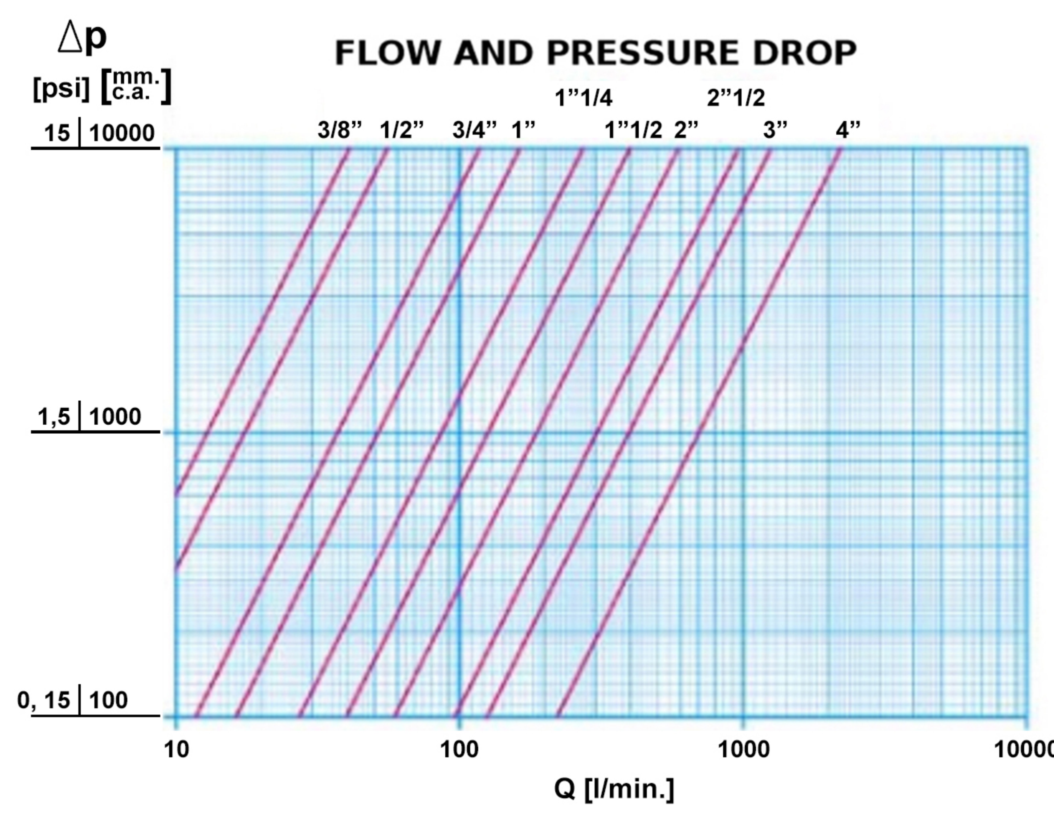
PN 20 CIM 74A - Y-Strainer

DIMENSIONS

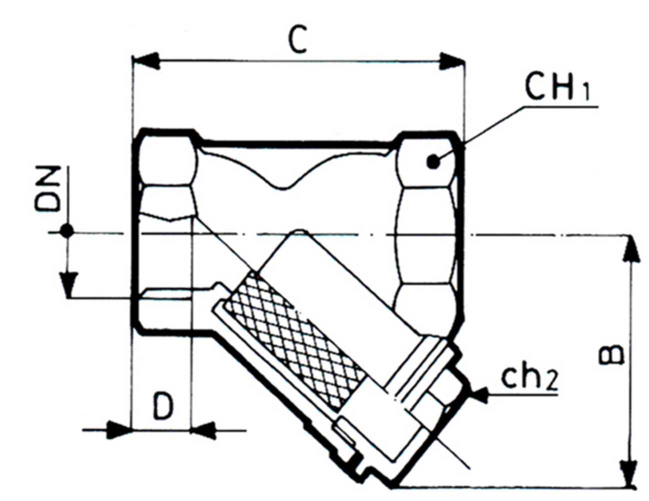
DN	3/8''	½''	¾''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
Grms.	**190**	**230**	**315**	**480**	**765**	**935**	**1710**	**2750**	**4235**	**7040**
B	38	40	46	58	70	80	100	115	136	167
C	56	59	67	76	92	100	125	147	175	217
D	11	11	12	14	15	15	18	21	24	24
CH1	23	28	34	42	52	56	70	88	103	129
CH2	18	18	22	28	34	39	55	65	75	85

THREAD: ISO 228

FLOW AND PRESSURE DROP

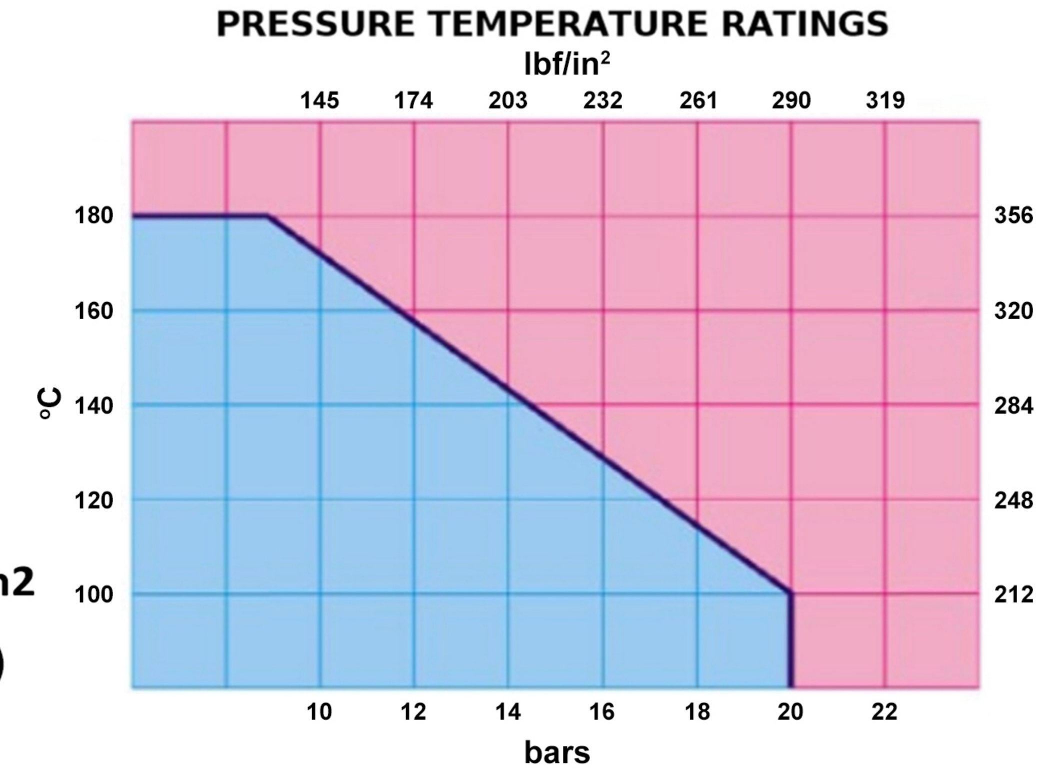


Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PRESSURE TEMPERATURE RATINGS



MATERIALS
Bronze Alloy

PN 16 CIM 75 - Bronze Globe Valve Metal To Metal Seating

TECHNICAL CHARACTERISTICS

KV									
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
KV	2,3	4,8	7	11	17	25	57	72	120

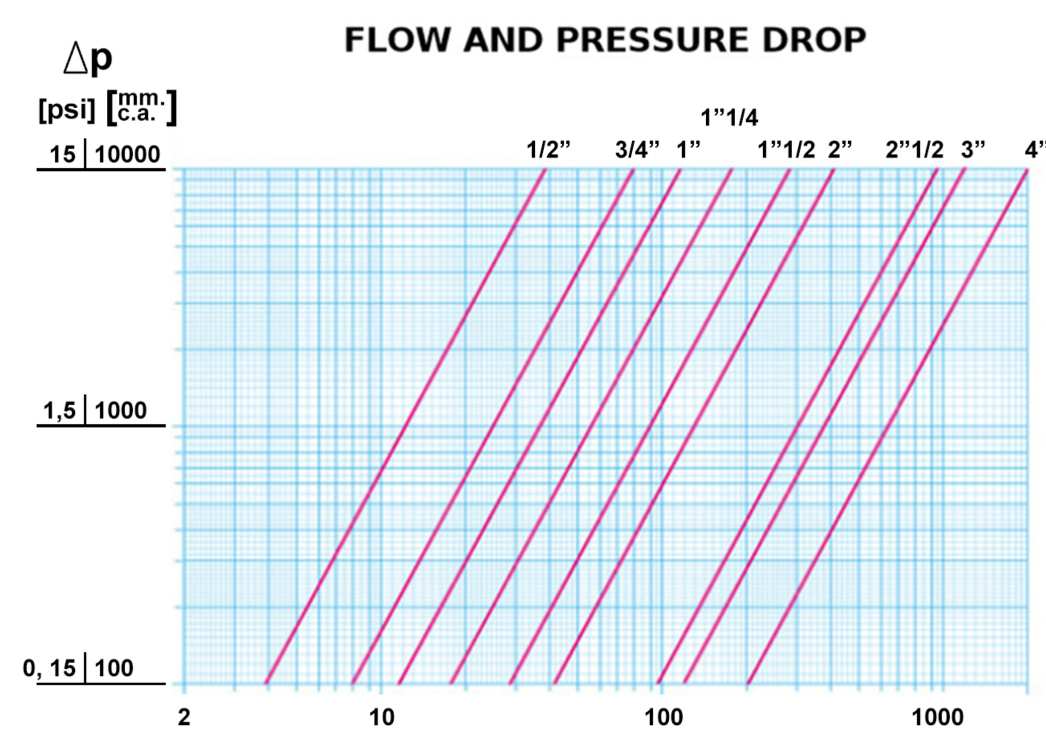
KV = Flow rate in m³/h with a pressure drop of 1 bar

DIMENSIONS

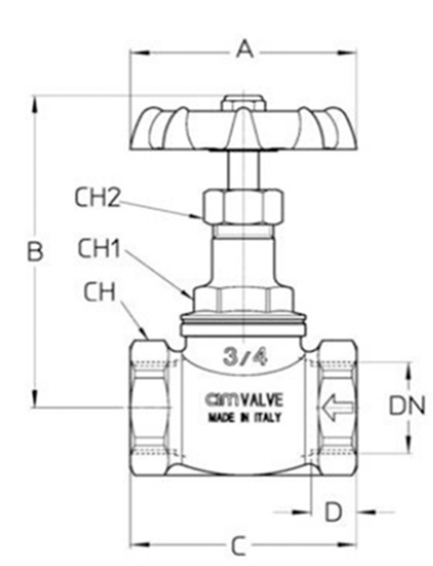
DN	1/2''	3/4''	1''	1''1/4	1''1/2	2''	2''1/2	3''	4''
Grms.	**295**	**440**	**635**	**980**	**1280**	**1900**	**3930**	**5055**	**10500**
A	55	60	65	65	75	80	120	120	175
B	78	89	100	116	130	143,5	200	223	280
C	50	60	70	84	90	110	135	148	190
D	11	12	14,5	15,5	16	18	23,5	24	23
CH	27	35	42	51	58	70	88	100	129
CH1	23	23	28	33	37	45	55	63	80
CH2	18	18	21	23	25	27	37	39	50

THREAD: ISO 228

FLOW AND PRESSURE DROP

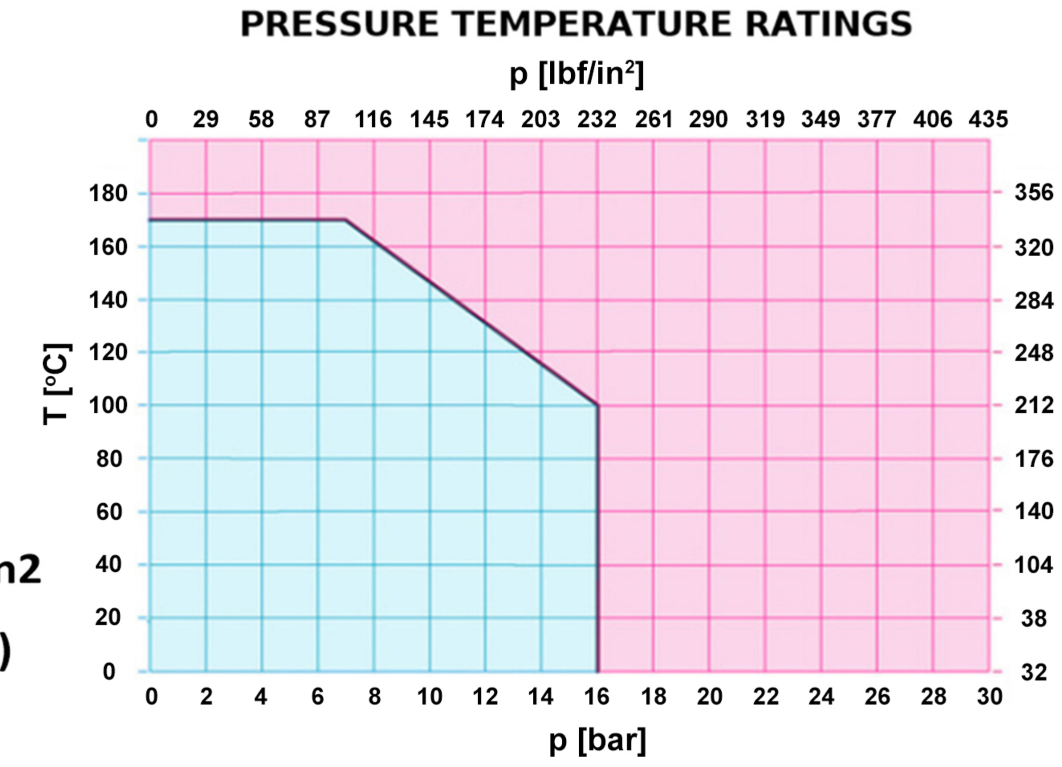


Notes:
1 l/min = 0,06 m3/h
1 m3/h = 16,67 l/min
1 bar = 10.000 mm w.c
1 psi = 690 mm w.c



Notes:
1 bar = 14,5 psi
1 bar = 14, 5 lbf/in2
°C = 5/9 x (°F-32)
°F = 32 + (9/5 x °C)

PRESSURE TEMPERATURE RATINGS



MATERIALS
*Standard
EN 1982-CC491K
Bronze Alloy

cimberio

AMERICAN NATIONAL STANDARDS INSTITUTE

DIN

STEEL FLANGE DIMENSIONS (in millimeter)

ANSI 150 PSI

Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	HS
0.5	88.9	11.1	1.6	35.0	60.4	4	15.9	12.7	47.6	15.9
0.75	98.5	12.7	1.6	42.9	69.8	4	15.9	12.7	52.4	15.9
1	108.0	14.3	1.6	50.8	79.2	4	15.9	12.7	55.6	17.5
1.25	117.5	15.9	1.6	63.5	88.9	4	15.9	12.7	57.1	20.6
1.5	127.0	17.5	1.6	73.0	98.5	4	15.9	12.7	61.9	22.2
2	152.4	19.5	1.6	91.9	120.6	4	19.05	15.85	63.5	25.4
2.5	177.8	22.4	1.6	104.6	139.7	4	19.05	15.85	69.8	28.6
3	190.5	23.8	1.6	127.0	152.4	4	19.05	15.85	69.8	30.2
3.5	215.9	23.8	1.6	139.7	177.8	8	19.05	15.85	71.4	31.7
4	228.6	23.8	1.6	157.2	190.5	8	19.05	15.85	76.2	33.3
5	254.0	23.8	1.6	185.7	215.9	8	22.2	19	88.9	36.5
6	279.4	25.4	1.6	215.9	241.3	8	22.2	19	88.9	39.7
8	342.9	28.6	1.6	269.7	298.5	8	22.2	19	101.6	44.4
10	406.4	30.2	1.6	323.8	361.9	12	25.4	22.2	101.6	49.2
12	482.6	31.8	1.6	381.0	431.8	12	25.4	22.2	114.3	55.6
14	533.4	35.0	1.6	412.7	476.2	12	28.6	25.4	127.0	57.1
16	596.9	36.5	1.6	469.9	539.7	16	28.6	25.4	127.0	63.5
18	635.0	39.7	1.6	533.4	577.8	16	31.7	28.5	139.7	68.3
20	698.5	42.9	1.6	584.2	635.0	20	31.7	28.5	144.5	73.0
22	749.3	46.0	1.6	641.2	692.1	20	34.9	31.7	149.2	79.4
24	812.8	47.6	1.6	692.1	749.3	20	34.9	31.7	152.4	82.5
26	809.9	50.8	1.6	742.9	806.4	24	34.9	31.7	127.0	85.7
28	927.1	52.4	1.6	793.7	863.6	28	34.9	31.7	128.6	87.3
30	954.2	54.0	1.6	857.2	914.4	28	34.9	31.7	130.2	88.9
32	1060.4	57.1	1.6	908.0	977.9	28	41.3	38.1	133.35	92.1
34	1111.2	58.7	1.6	958.8	1028.7	32	41.3	38.1	134.9	93.7
36	1168.4	60.3	1.6	1022.3	1085.8	32	41.3	38.1	136.5	95.2
42	1346.2	66.7	1.6	1193.8	1257.3	36	41.3	38.1	142.9	101.6

ANSI 300 PSI

Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	HS
0.5	95.2	14.3	1.6	34.9	66.5	4	15.9	12.7	52.4	22.2
0.75	117.5	15.9	1.6	42.9	82.5	4	19.05	15.85	57.1	25.4
1	123.8	17.5	1.6	50.8	88.9	4	19.05	15.85	61.9	27.0
1.25	133.35	19.05	1.6	63.5	98.4	4	19.05	15.85	65.1	27.0
1.5	155.4	20.6	1.6	73.0	114.3	4	22.2	19	68.3	30.2
2	165.1	22.4	1.6	92.1	127.0	8	19.05	15.85	69.8	33.3
2.5	190.5	25.4	1.6	104.8	149.4	8	22.2	19	76.2	38.1
3	209.6	28.6	1.6	127.0	168.1	8	22.2	19	79.4	42.9
3.5	228.6	30.2	1.6	139.7	184.2	8	22.2	19	81.0	44.4
4	254.0	31.7	1.6	157.2	200.1	8	22.2	19	85.7	47.6
5	279.4	35.1	1.6	185.7	235.0	8	22.2	19	98.4	50.8
6	317.5	36.5	1.6	215.9	269.7	12	22.2	19	98.4	52.4
8	381.0	41.2	1.6	269.9	330.2	12	25.4	22.2	111.1	61.9
10	444.5	47.8	1.6	323.8	387.3	16	26.6	23.4	117.5	66.7
12	520.7	50.8	1.6	381.0	450.8	16	31.7	28.5	130.2	73.0
14	584.2	54.0	1.6	412.7	514.3	20	31.7	28.5	142.9	76.2
16	647.7	57.1	1.6	469.9	571.5	20	34.9	31.7	146.05	82.5
18	711.2	60.5	1.6	533.4	628.6	24	34.9	31.7	158.75	88.9
20	774.7	63.5	1.6	587.4	685.8	24	34.9	31.7	161.9	95.2
22	838.2	66.7	1.6	641.2	742.9	24	41.3	38.1	165.1	101.6
24	914.4	69.9	1.6	692.1	812.8	24	41.3	38.1	168.3	106.4
26	971.5	79.4	1.6	743.3	876.3	28	44.4	41.2	184.15	184.15
28	1035.0	85.7	1.6	800.1	939.8	28	44.4	41.2	196.85	196.85
30	1092.2	92.1	1.6	857.2	996.9	28	47.6	44.4	209.55	209.55
32	1149.3	98.4	1.6	914.4	1054.1	28	50.8	47.6	222.25	222.25
34	1206.5	101.6	1.6	965.2	1104.9	28	50.8	47.6	231.8	231.8
36	1270.0	104.8	1.6	1022.3	1168.4	32	54.0	50.8	241.3	241.3
42	1447.8	117.5	1.6	1193.8	1339.8	36	54.0	50.8	276.2	276.2

ANSI 600 PSI

Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	HS
0.5	95.2	14.3	6.35	44.4	67.3	4	15.9	12.7	52.4	22.2
0.75	117.3	15.8	6.35	52.3	82.6	4	19.05	15.85	57.1	25.4
1	124.0	17.5	6.35	57.1	88.9	4	19.05	15.85	61.9	27.0
1.25	133.35	20.6	6.35	63.5	98.6	4	19.05	15.85	66.7	28.6
1.5	155.4	22.4	6.35	73.2	114.3	4	22.2	19	69.8	31.7
2	165.1	25.4	6.35	92.1	127.0	8	19.05	15.85	73.0	36.5
2.5	190.5	28.4	6.35	104.8	149.4	8	22.2	19	79.4	41.3
3	209.6	31.7	6.35	127.0	168.1	8	22.2	19	12.5	49.2
3.5	228.6	34.9	6.35	139.7	184.1	8	25.4	22.2	85.7	49.2
4	273.05	38.1	6.35	157.2	215.9	8	25.4	22.2	101.6	54.0
5	330.2	44.4	6.35	185.7	266.7	8	28.6	25.4	114.3	60.3
6	355.6	47.8	6.35	215.9	292.1	12	28.6	25.4	117.5	66.7
8	419.1	55.6	6.35	269.7	349.3	12	31.7	28.5	133.35	76.2
10	508.0	63.5	6.35	323.8	431.8	16	34.9	31.7	152.4	85.7
12	558.8	66.7	6.35	381.0	489.0	20	34.9	31.7	155.6	92.1
14	603.2	69.8	6.35	412.7	527.1	20	38.1	34.9	165.1	93.7
16	685.8	76.2	6.35	469.9	603.3	20	41.3	38.1	177.8	106.4
18	743.0	82.6	6.35	533.4	654.1	20	44.4	41.2	184.15	117.5
20	812.8	88.9	6.35	584.2	723.9	24	44.4	41.2	190.5	122.0
22	869.9	95.2	6.35	641.2	838.2	24	47.6	44.4	196.8	133.35
24	939.8	101.6	6.35	692.1	—	24	50.8	47.6	203.2	139.7
26	1016.0	107.8	6.35	749.3	—	28	50.8	47.6	222.25	222.25
28	1073.1	111.1	6.35	800.1	—	28	54.0	47.6	234.95	234.95
30	1130.3	114.3	6.35	857.2	—	28	54.0	47.6	247.65	247.65
32	1193.8	117.5	6.35	914.4	—	28	60.3	57.1	260.35	260.35
34	1244.6	120.6	6.35	965.2	—	28	60.3	57.1	269.9	269.9
36	1314.4	123.8	6.35	1022.3	—	28	66.7	63.5	282.6	282.6

ANSI 900 PSI

Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	HS
0.5	120.7	22.4	6.35	34.9	82.5	4	22.2	19	60.3	31.7
0.75	130.0	25.4	6.35	42.9	88.9	4	22.2	19	69.8	34.9
1	149.3	28.5	6.35	50.8	101.6	4	25.4	22.2	73.0	41.3
1.25	158.7	73.0	6.35	63.5	111.1	4	25.4	22.2	73.0	41.3
1.5	177.8	31.7	6.35	73.0	124.0	4	28.6	25.4	82.5	44.4
2	215.9	38.1	6.35	92.1	165.1	8	24.5	21.3	101.6	57.1
2.5	244.3	41.2	6.35	104.8	190.5	8	28.6	25.4	104.8	63.5
3	241.3	38.1	6.35	127.0	190.5	8	25.4	22.2	101.6	54.0
—	—	—	—	—	—	—	—	—	—	—
4	292.1	44.4	6.35	157.2	234.9	8	31.7	28.5	114.3	69.8
5	349.2	50.8	6.35	185.7	279.4	8	34.9	31.7	127.0	79.4
6	381.0	55.6	6.35	213.9	317.5	12	31.7	28.5	139.7	85.7
8	469.9	63.5	6.35	269.9	393.7	12	38.1	34.9	161.9	101.6
10	546.1	69.8	6.35	323.8	469.9	16	38.1	34.9	184.15	107.9
12	609.6	79.3	6.35	381.0	533.4	20	38.1	34.9	200.0	117.5
14	641.3	85.9	6.35	412.7	558.8	20	41.3	38.1	212.7	130.2
16	704.8	88.9	6.35	469.8	616.0	20	44.4	41.2	215.9	133.35
18	787.4	101.6	6.35	533.4	685.8	20	50.8	47.6	228.6	152.4
20	857.2	107.9	6.35	584.2	749.3	20	54	50.8	247.65	158.75
—	—	—	—	—	—	—	—	—	—	—
24	1041.4	139.7	6.35	692.1	901.7	20	66.7	63.5	292.1	203.2
26	1085.0	139.7	6.35	749.3	952.5	20	73.0	69.8	285.7	285.7
28	1168.4	142.9	6.35	800.1	1022.3	20	79.4	76.2	296.4	296.4
30	1231.9	149.2	6.35	857.2	1065.8	20	79.4	76.2	311.1	311.1
32	1314.4	158.75	6.35	914.4	1155.7	20	85.7	82.5	330.2	330.2
34	1397.0	165.1	6.35	965.2	1225.5	20	92.1	88.9	349.2	349.2
36	1460.5	171.45	6.35	1022.3	1289	20	92.1	88.9	361.9	361.9

ANSI 1500 PSI

Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	HS
0.5	120.6	22.4	6.35	34.9	82.5	4	22.2	19	60.3	31.7
0.75	130.2	25.4	6.35	42.9	88.9	4	22.2	19	69.8	34.9
1	149.4	28.5	6.35	50.8	101.6	4	25.4	22.2	73.0	41.3
1.25	158.75	28.6	6.35	63.5	111.1	4	25.4	22.2	73.0	41.3
1.5	177.8	31.8	6.35	73.0	124.0	4	28.6	25.4	82.5	44.4
2	215.9	38.1	6.35	92.1	165.1	8	25.4	22.2	101.6	57.1
2.5	244.3	41.2	6.35	104.6	190.5	8	28.6	25.4	104.8	63.5
3	266.7	47.8	6.35	127.0	203.2	8	31.7	28.5	117.5	73.0
—	—	—	—	—	—	—	—	—	—	—
4	311.1	53.8	6.35	157.2	241.3	8	34.0	30.8	123.8	90.5
5	374.6	73.2	6.35	185.7	292.1	8	41.3	38.1	155.6	104.8
6	393.7	82.6	6.35	215.9	317.5	12	—	—	171.45	119.1
8	482.6	91.9	6.35	269.9	393.7	12	44.4	41.2	212.7	142.9
10	584.2	107.9	6.35	323.0	482.6	12	50.8	47.6	254.0	—
12	673.1	124.0	6.35	381.0	571.5	16	54.0	50.8	282.5	181.0
14	749.3	133.4	6.35	412.7	635.0	16	60.3	57.1	298.4	—
16	825.5	146.1	6.35	489.9	704.8	16	66.7	63.5	311.1	—
18	914.4	162.1	6.35	533.4	774.7	16	73.0	69.8	327.0	—
20	984.2	177.8	6.35	584.2	831.8	16	79.4	76.2	355.6	—
—	—	—	—	—	—	—	—	—	—	—
24	1168.4	203.2	6.35	692.1	990.6	16	92.1	88.9	406.4	—

ANSI 2500 PSI

Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	HS
0.5	133.35	30.2	6.35	34.9	88.9	4	22.2	19	73.0	39.7
0.75	139.7	31.7	6.35	42.9	95.2	4	22.2	19	79.4	42.9
1	158.75	34.9	6.35	50.8	107.9	4	25.4	22.2	88.9	47.6
1.25	184.15	38.1	6.35	63.5	130.2	4	28.6	25.4	95.2	52.4
1.5	203.2	44.4	6.35	73.0	146.05	4	31.7	28.6	111.1	60.3
2	234.95	50.8	6.35	92.1	171.45	8	28.6	31.7	127.1	69.8
2.5	266.7	57.1	6.35	104.8	196.85	8	31.7	28.6	142.9	79.4
3	304.8	66.7	6.35	127.0	228.6	8	34.9	31.7	168.3	92.1
—	—	—	—	—	—	—	—	—	—	—
4	355.6	76.2	6.35	157.2	273.05	8	41.3	38.1	190.05	107.9
5	419.1	92.1	6.35	185.7	323.8	8	47.6	44.4	228.6	130.2
6	482.6	107.9	6.35	215.9	368.3	8	54.0	52.8	273.05	152.4
8	552.4	127.0	6.35	269.9	438.1	12	54.0	52.8	317.5	177.8
10	673.1	165.1	6.35	323.8	539.7	12	66.7	63.5	419.1	228.6
12	762.0	184.15	6.35	381.0	619.1	12	73.0	69.8	463.5	254.9

DIN 6 / DIN 10

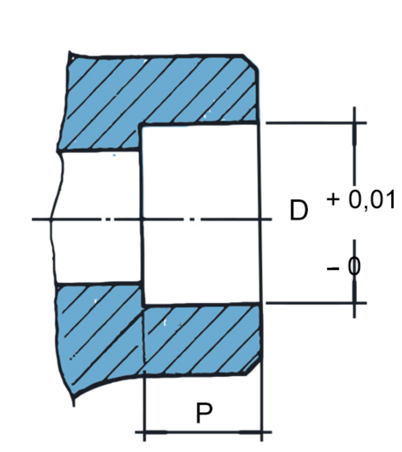
	DIN 6									DIN 10								
Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	B	C	RF	RØ	E	No.	HØ	BØ	H
10	75	12	2	35	50	4	11.5	10	28	—	—	—	—	—	—	—	—	—
15	80	12	2	40	55	4	11.5	10	30	—	—	—	—	—	—	—	—	—
20	90	14	2	50	65	4	11.5	10	32	—	—	—	—	—	—	—	—	—
25	100	14	2	60	75	4	11.5	10	35	—	—	—	—	—	—	—	—	—
32	120	14	2	70	90	4	14	12	35	—	—	—	—	—	—	—	—	—
40	130	14	3	80	100	4	14	12	38	—	—	—	—	—	—	—	—	—
50	140	14	3	90	110	4	14	12	38	—	—	—	—	—	—	—	—	—
65	160	14	3	110	130	4	14	12	38	—	—	—	—	—	—	—	—	—
80	180	16	3	128	150	4	18	16	42	—	—	—	—	—	—	—	—	—
100	210	16	3	148	170	4	18	16	45	—	—	—	—	—	—	—	—	—
125	240	18	3	178	200	8	18	16	48	—	—	—	—	—	—	—	—	—
150	265	18	3	202	225	8	18	16	48	—	—	—	—	—	—	—	—	—
200	320	20	3	258	280	8	18	16	55	340	24	3	268	295	8	23	20	62
250	375	22	3	312	335	12	18	16	60	395	26	3	320	350	12	23	20	68
300	440	22	4	365	395	12	23	20	62	445	26	4	370	400	12	23	20	68
350	490	22	4	415	445	12	23	20	62	505	26	4	430	460	16	23	20	68
400	540	22	4	465	495	16	23	20	65	565	26	4	482	515	16	27	24	72
500	645	24	4	570	600	20	23	20	68	670	28	4	585	620	20	27	24	75
600	755	24	5	670	705	20	27	24	70	780	28	5	685	725	20	30	27	80
700	860	24	5	775	810	24	27	24	70	895	30	5	800	840	24	30	27	80
800	975	24	5	880	920	24	30	27	70	1015	32	5	905	950	24	33	30	90
900	1075	26	5	980	1020	24	30	27	70	1115	34	5	1005	1050	28	33	30	95
1000	1175	26	5	1080	1120	28	30	27	70	1230	34	5	1110	1160	28	36	33	95
1200	1405	28	5	1295	1340	32	33	30	90	1455	38	5	1330	1380	32	39	36	115
1400	1630	32	5	1510	1560	36	36	33	90	1675	42	5	1535	1590	36	42	39	120
1600	1830	34	5	1710	1760	40	36	33	90	1915	46	5	1760	1820	40	48	45	130
1800	2045	36	5	1920	1970	44	39	36	100	2115	50	5	1960	2020	44	48	45	140
2000	2265	38	5	2125	2180	48	42	39	110	2325	54	5	2170	2230	48	48	45	150
2200	2475	42	6	2335	2390	52	42	39	115	2550	58	6	2370	2440	52	56	52	160
2400	2685	44	6	2545	2600	56	42	39	125	2760	62	6	2570	2650	56	56	52	170
2600	2905	46	6	2750	2810	60	48	45	130	2960	66	6	2780	2850	60	56	52	180
2800	3115	48	6	2960	3020	64	48	45	135	3180	70	6	3000	3070	64	56	52	190
3000	3315	50	6	3160	3220	68	48	45	140	3405	74	6	3210	3290	68	62	56	200
3200	3525	54	6	3370	3430	72	48	45	150									
3400	3735	56	6	3580	3640	76	48	45	160									
3600	3970	60	6	3790	3860	80	56	52	165									

DIN 16 / DIN 25

	DIN 16									DIN 25								
Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	B	C	RF	RØ	E	No.	HØ	BØ	H
10	90	14	2	40	60	4	14	12	35	—	—	—	—	—	—	—	—	—
15	95	14	2	40	65	4	14	12	35	—	—	—	—	—	—	—	—	—
20	105	16	2	58	75	4	14	12	38	—	—	—	—	—	—	—	—	—
25	115	16	2	68	85	4	14	12	38	—	—	—	—	—	—	—	—	—
32	140	16	2	78	100	4	18	16	40	—	—	—	—	—	—	—	—	—
40	150	16	3	88	110	4	18	16	42	—	—	—	—	—	—	—	—	—
50	165	18	3	102	125	4	18	16	45	—	—	—	—	—	—	—	—	—
65	185	18	3	122	145	4	18	16	45	—	—	—	—	—	—	—	—	—
80	200	20	3	138	160	4/8	18	16	50	—	—	—	—	—	—	—	—	—
100	220	20	3	158	180	8	18	16	52	—	—	—	—	—	—	—	—	—
125	250	22	3	188	210	8	18	16	55	—	—	—	—	—	—	—	—	—
150	285	22	3	212	240	8	23	20	55	—	—	—	—	—	—	—	—	—
200	340	24	3	268	295	12	23	20	62	360	30	3	278	310	12	27	24	80
250	405	26	3	320	355	12	27	24	70	425	32	3	335	370	12	30	27	88
300	460	28	4	378	410	12	27	24	78	485	34	4	395	430	16	30	27	92
350	520	30	4	438	470	16	27	24	82	555	38	4	450	490	16	33	30	100
400	580	32	4	490	525	16	30	27	85	620	40	4	505	550	16	36	33	110
500	715	34	4	610	650	20	33	30	90	730	44	4	615	660	20	36	33	125
600	840	36	5	725	770	20	36	33	95	845	46	5	720	770	20	39	36	125
700	910	36	5	795	840	24	36	33	100	960	46	5	820	875	24	42	39	125
800	1025	38	5	900	950	24	39	36	105	1085	50	5	930	990	24	48	45	135
900	1125	40	5	1000	1050	28	39	36	110	1185	54	5	1030	1090	28	48	45	145
1000	1255	42	5	1115	1170	28	42	39	120	1320	58	5	1140	1210	28	56	52	155
1200	1485	48	5	1330	1390	32	48	45	130									
1400	1685	48	5	1530	1590	36	48	45	145									
1600	1930	58	5	1750	1820	40	56	52	160									
1800	2130	62	5	1950	2020	44	56	52	170									
2000	2345	66	5	2150	2230	48	62	56	180									

DIN 40

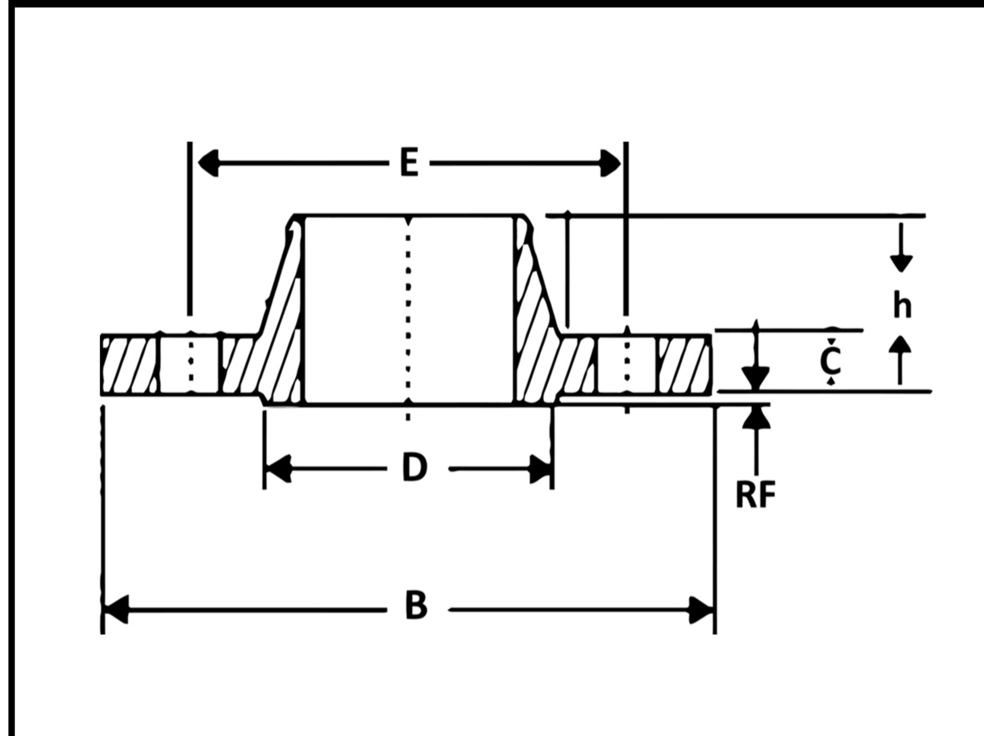
Ø	B	C	RF	RØ	E	No.	HØ	BØ	H
10	90	16	2	40	60	4	14	12	35
15	95	16	2	45	65	4	14	12	38
20	105	18	2	58	75	4	14	12	40
25	115	18	2	68	85	4	14	12	40
32	140	18	2	78	100	4	18	16	42
40	150	18	3	88	110	4	18	16	45
50	165	20	3	102	125	4	18	16	48
65	185	22	3	122	145	8	18	16	52
80	200	24	3	138	160	8	18	16	58
100	235	24	3	162	190	8	23	20	65
125	270	26	3	188	220	8	27	24	68
150	300	28	3	218	250	8	27	24	75
200	375	34	3	285	320	12	30	27	88
250	450	38	3	345	385	12	33	30	105
300	515	42	4	410	450	16	33	30	115
350	580	46	4	460	510	16	36	33	125
400	660	50	4	535	585	16	39	36	135
500	755	52	4	615	670	20	42	39	140

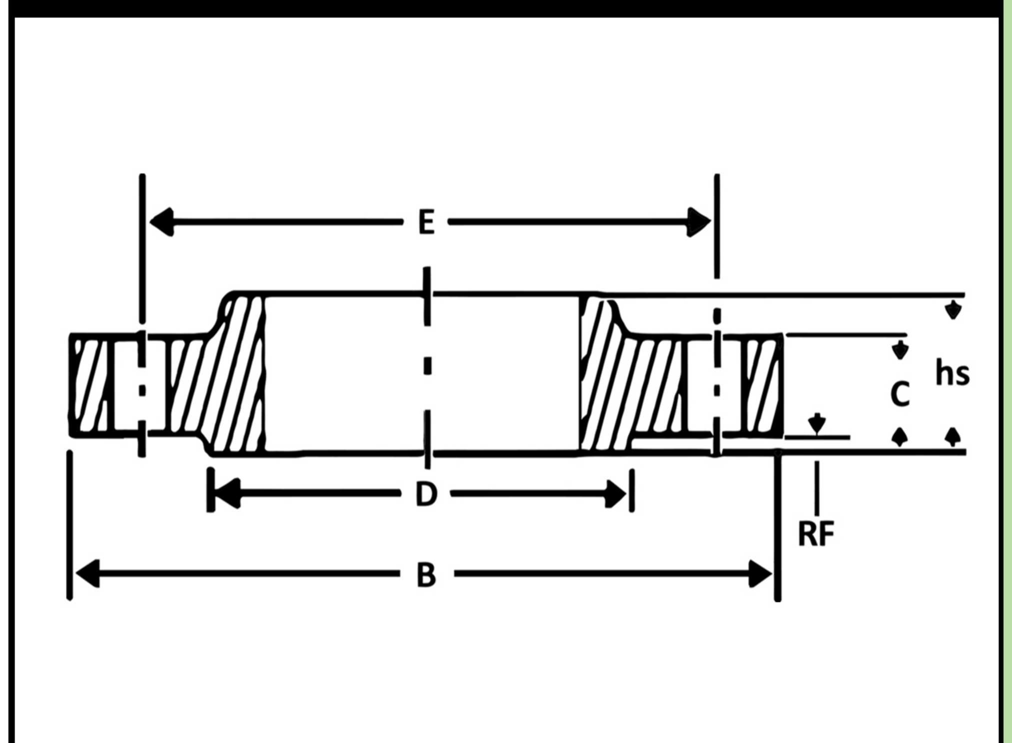


SOCKET WELD - ANSI B16.11

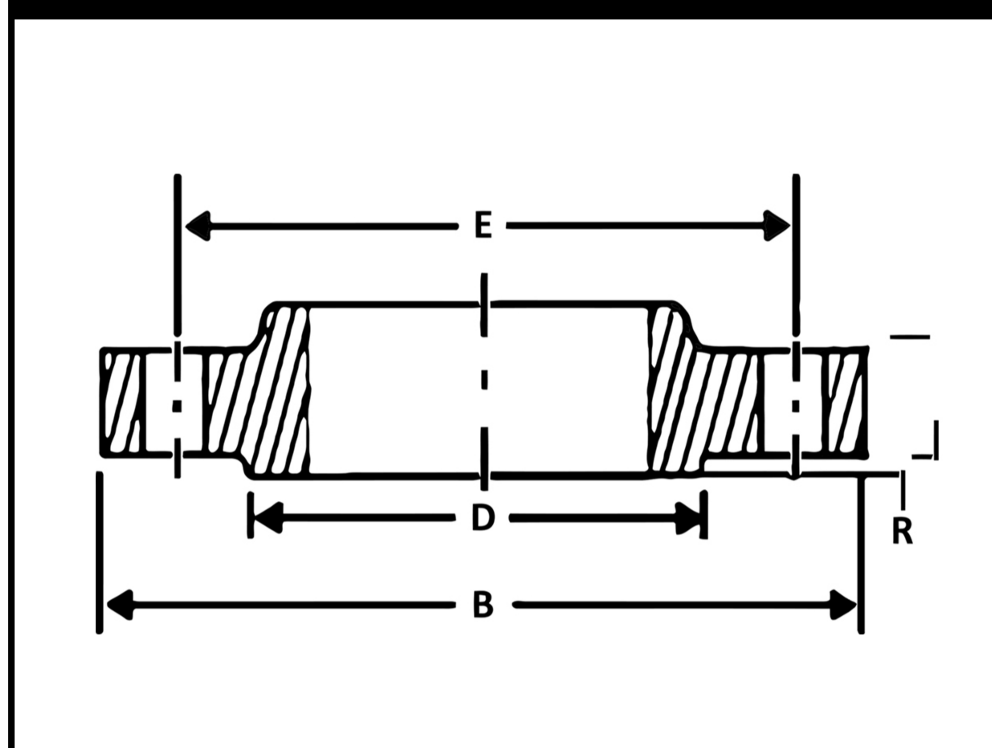
SIZE inch / mm	1/4 / 6	3/8 / 10	1/2 / 15	3/4 / 20	1 / 25	1.1/4 / 32	1.1/2 / 40	2 / 50
D	14,10	17,53	21,72	27,05	33,78	42,54	48,64	61,11
P min.	9,6	9,6	9,6	12,7	12,7	12,7	12,7	15,8

TECHNICAL DRAWING

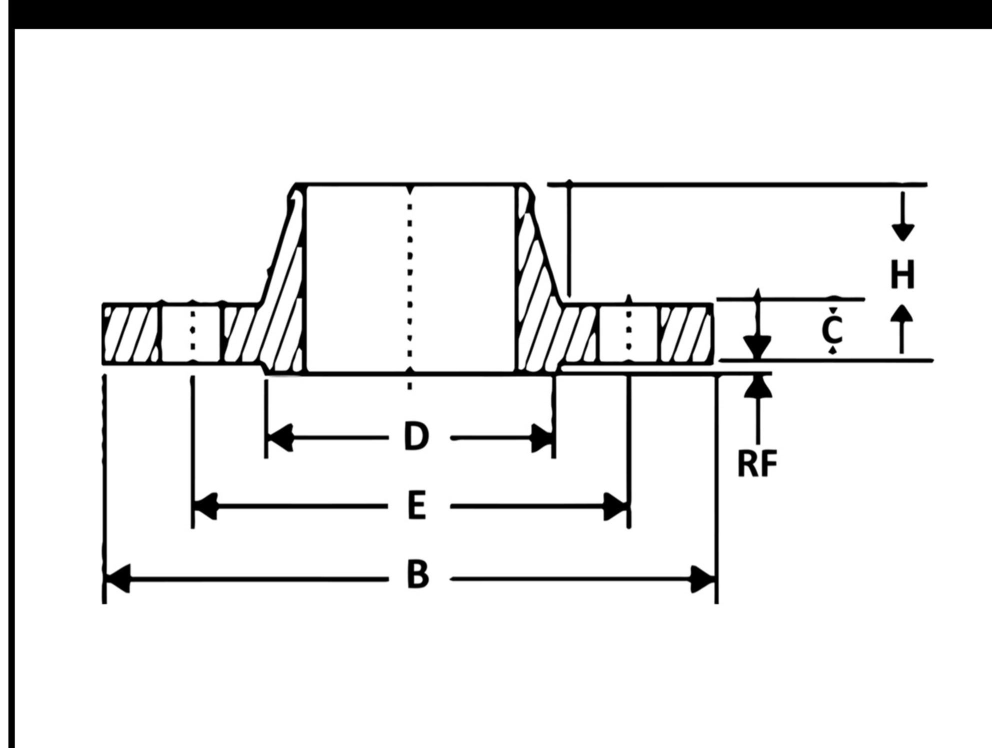




ANSI



JIS



DIN

JIS 5K									JIS 10K							
Ø	B	C	RF	RØ	E	No.	HØ	BØ	B	C	RF	RØ	E	No.	HØ	BØ
10	75	9	1	42	55	4	12	10	90	12	1	48	65	4	15	12
15	80	9	1	48	60	4	12	10	95	12	1	52	70	4	15	12
20	85	10	1	52	65	4	12	10	100	14	1	58	75	4	15	12
25	95	10	1	62	75	4	12	10	125	14	1	70	90	4	19	16
32	115	12	2	72	90	4	15	12	135	16	1	80	100	4	19	16
40	120	12	2	78	95	4	15	12	140	16	1	85	105	4	19	16
50	130	14	2	88	105	4	15	12	155	16	2	100	120	4	19	16
65	155	14	2	112	130	4	15	12	175	18	2	120	140	4	19	16
80	180	14	2	125	145	4	19	16	185	18	2	130	150	8	19	16
100	200	16	2	145	165	8	19	16	210	18	2	155	175	8	19	16
125	235	16	2	180	200	8	19	16	250	20	2	185	210	8	23	20
150	265	18	2	210	230	8	19	16	280	22	2	215	240	8	23	20
200	320	20	2	255	280	8	23	20	330	22	2	265	290	12	23	20
250	385	22	2	320	345	12	23	20	400	24	2	325	355	12	25	22
300	430	22	3	365	390	12	23	20	445	24	3	370	400	16	25	22
350	480	24	3	405	435	12	25	22	490	26	3	415	445	16	25	22
400	540	24	3	465	495	16	25	22	560	28	3	475	510	16	27	24
450	605	24	3	525	555	16	25	22	620	30	3	530	565	20	27	24
500	655	24	3	575	605	20	25	22	675	30	3	585	620	20	27	24
550	720	26	3	630	665	20	27	24	745	32	3	640	680	20	33	30
600	770	26	3	680	715	20	27	24	795	32	3	690	730	24	33	30
650	825	26	3	735	770	24	27	24	845	34	3	740	780	24	33	30
700	875	26	3	785	820	24	27	24	905	34	3	800	840	24	33	30
750	945	28	3	840	880	24	33	30	970	36	3	855	900	24	33	30
800	995	28	3	890	930	24	33	30	1020	36	3	905	950	28	33	30
900	1095	30	3	990	1030	24	33	30	1120	38	3	1005	1050	28	33	30
1000	1195	32	3	1090	1130	28	33	30	1235	40	3	1110	1160	28	39	36
1200	1420	34	3	1305	1350	32	33	30	1465	44	3	1325	1380	32	39	36
1350	1575	34	3	1460	1505	32	33	30	1630	48	3	1480	1540	36	45	42
1500	1730	36	3	1615	1660	36	33	30	1795	50	3	1635	1700	40	45	42

JIS 16K									JIS 20K							
Ø	B	C	RF	RØ	E	No.	HØ	BØ	B	C	RF	RØ	E	No.	HØ	BØ
10	90	12	1	48	65	4	15	12	90	14	1	48	65	4	15	12
15	95	12	1	52	70	4	15	12	95	14	1	52	70	4	15	12
20	100	14	1	58	75	4	15	12	100	16	1	58	75	4	15	12
25	125	14	1	70	90	4	19	16	125	16	1	70	90	4	19	16
32	135	16	2	80	100	4	19	16	135	18	2	80	100	4	19	16
40	140	16	2	85	105	4	19	16	140	18	2	85	105	4	19	16
50	155	16	2	100	120	8	19	16	155	18	2	100	120	8	19	16
65	175	18	2	120	140	8	19	16	175	20	2	120	140	8	19	16
80	200	20	2	135	160	8	23	20	200	22	2	135	160	8	23	20
100	225	22	2	160	185	8	23	20	225	24	2	160	185	8	23	20
125	270	22	2	195	225	8	25	22	270	26	2	195	225	8	25	22
150	305	24	2	230	260	12	25	22	305	28	2	230	260	12	25	22
200	350	26	2	275	305	12	25	22	350	30	2	275	305	12	25	22
250	430	28	2	345	380	12	27	24	430	34	2	345	380	12	27	24
300	480	30	3	395	430	16	27	24	480	36	3	395	430	16	27	24
350	540	34	3	440	480	16	33	30	540	40	3	440	480	16	33	30
400	605	38	3	495	540	16	33	30	605	46	3	495	540	16	33	30
450	675	40	3	560	605	20	33	30	675	48	3	560	605	20	33	30
500	730	42	3	615	660	20	33	30	730	50	3	615	660	20	33	30
550	795	44	3	670	720	20	39	36	795	52	3	670	720	20	39	36
600	845	46	3	720	770	24	39	36	845	54	3	720	770	24	39	36

JIS 30K									JIS 40K								JIS 63K									
Ø	B	C	RF	RØ	E	No.	HØ	BØ	B	C	RF	RØ	E	No.	HØ	BØ	Ø	B	C	RF	RØ	E	No.	HØ	BØ
10	110	16	1	52	75	4	19	16	110	18	1	52	75	4	19	16	10	115	22	1	52	80	4	19	16
15	115	18	1	55	80	4	19	16	115	20	1	55	80	4	19	16	15	120	22	1	55	85	4	19	16
20	120	18	1	60	85	4	19	16	120	20	1	60	85	4	19	16	20	135	24	1	60	95	4	23	20
25	130	20	1	70	95	4	19	16	130	22	1	70	95	4	19	16	25	140	26	1	70	100	4	23	20
32	140	22	2	80	105	4	19	16	140	24	2	80	105	4	19	16	32	150	28	2	80	110	4	23	20
40	160	22	2	90	120	4	23	20	160	24	2	90	120	4	23	20	40	175	30	2	90	130	4	25	22
50	165	22	2	105	130	8	19	16	165	26	2	105	130	8	19	16	50	185	32	2	105	145	8	23	20
65	200	26	2	130	160	8	23	20	200	30	2	130	160	8	23	20	65	220	36	2	130	175	8	25	22
80	210	28	2	140	170	8	23	20	210	32	2	140	170	8	23	20	80	230	38	2	140	185	8	25	22
100	240	32	2	160	195	8	25	22	250	36	2	165	205	8	25	22	100	270	42	2	165	220	8	27	24
125	275	36	2	195	230	8	25	22	300	40	2	200	250	8	27	24	125	325	48	2	200	265	8	33	30
150	325	38	2	235	275	12	27	24	355	44	2	240	295	12	33	30	150	365	52	2	240	305	12	33	30
200	370	42	2	280	320	12	27	24	405	50	2	290	345	12	33	30	200	425	58	2	290	360	12	33	30
250	450	48	2	345	390	12	33	30	475	56	2	355	410	12	33	30	250	500	66	2	355	430	12	39	36
300	515	52	3	405	450	16	33	30	540	60	3	410	470	16	39	36	300	560	74	3	410	485	16	39	36
350	560	54	3	450	495	16	33	30	585	64	3	455	515	16	39	36	350	615	78	3	455	530	16	39	36
400	630	60	3	510	560	16	39	36	645	70	3	515	570	16	39	36	400	680	86	3	515	590	16	46	42

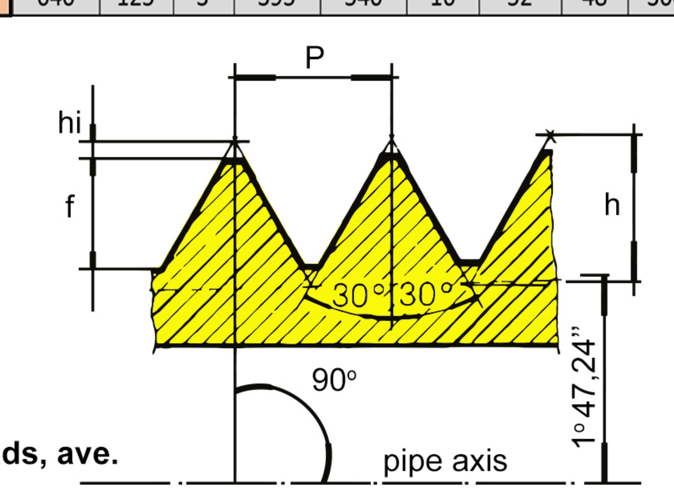
DIN 64										DIN 100										DIN 160									
Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	B	C	RF	RØ	E	No.	HØ	BØ	H
10	—	—	—	—	—	—	—	—	—	10	100	20	2	40	70	4	14	12	45	100	20	2	40	70	4	14	12	45
15	—	—	—	—	—	—	—	—	—	15	105	20	2	45	75	4	14	12	45	105	20	2	45	75	4	14	12	45
20	—	—	—	—	—	—	—	—	—	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	25	140	24	2	65	100	4	18	16	58	140	24	2	65	100	4	8	16	58
32	—	—	—	—	—	—	—	—	—	32	155	24	2	75	110	4	23	20	60	—	—	—	—	—	—	—	—	—
40	—	—	—	—	—	—	—	—	—	40	170	26	3	85	125	4	23	20	62	170	28	3	85	125	4	23	20	64
50	180	26	3	95	135	4	23	20	62	50	195	28	3	95	145	4	27	24	68	195	30	3	95	145	4	27	24	75
65	205	26	3	120	160	8	23	20	68	65	220	30	3	120	170	4	27	24	76	220	34	3	105	170	8	27	24	82
80	215	28	3	130	170	8	23	20	72	80	230	32	3	130	180	8	27	24	78	230	36	3	125	180	8	27	24	86
100	250	30	3	160	200	8	27	24	78	100	265	36	3	160	210	8	30	27	90	265	40	3	145	210	8	30	27	100
125	295	34	3	185	240	8	30	27	88	125	315	40	3	185	250	8	33	30	105	315	44	3	185	250	8	33	30	115
150	345	36	3	215	280	8	33	30	95	150	355	44	3	215	290	12	33	30	115	355	50	3	215	290	12	33	30	128
200	415	42	3	270	340	12	36	33	110	200	430	52	3	270	360	12	36	33	130	430	60	3	260	360	12	36	33	140
250	470	46	3	325	400	12	36	33	125	250	505	60	3	325	430	12	39	36	157	515	68	3	325	430	12	40	39	155
300	530	52	4	375	460	16	36	33	140	300	585	68	4	375	500	16	42	39	170	585	78	4	375	500	16	40	39	175
350	600	56	4	435	525	16	39	36	150	350	655	74	4	435	560	16	48	45	189									
400	670	60	4	485	585	16	42	39	160																			

DIN 250										DIN 320								
Ø	B	C	RF	RØ	E	No.	HØ	BØ	H	B	C	RF	RØ	E	No.	HØ	BØ	H
10	—	—	—	—	—	—	—	—	—	125	24	2	40	85	4	18	16	58
15	130	26	2	45	90	4	18	16	60	130	26	2	45	90	4	18	16	60
20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	150	28	2	65	105	4	23	20	60	160	34	2	65	115	4	23	20	78
32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
40	185	34	3	85	135	4	27	24	80	195	38	3	85	145	4	27	24	88
50	200	38	3	95	150	8	27	24	85	210	42	3	95	160	8	27	24	100
65	230	42	3	105	180	8	27	24	95	255	51	3	115	200	8	30	27	120
80	255	46	3	130	200	8	30	27	102	275	55	3	130	220	8	30	27	130
100	300	54	3	160	235	8	33	30	120	335	65	3	180	265	8	36	33	145
125	340	60	3	185	275	12	33	30	140	380	75	3	205	310	12	36	33	175
150	390	68	3	215	320	12	36	33	160	425	84	3	245	350	12	39	36	195
200	485	82	3	300	400	12	42	39	190	525	103	3	300	440	16	42	39	235
250	585	100	3	350	490	16	48	45	215	640	125	3	395	540	16	52	48	300

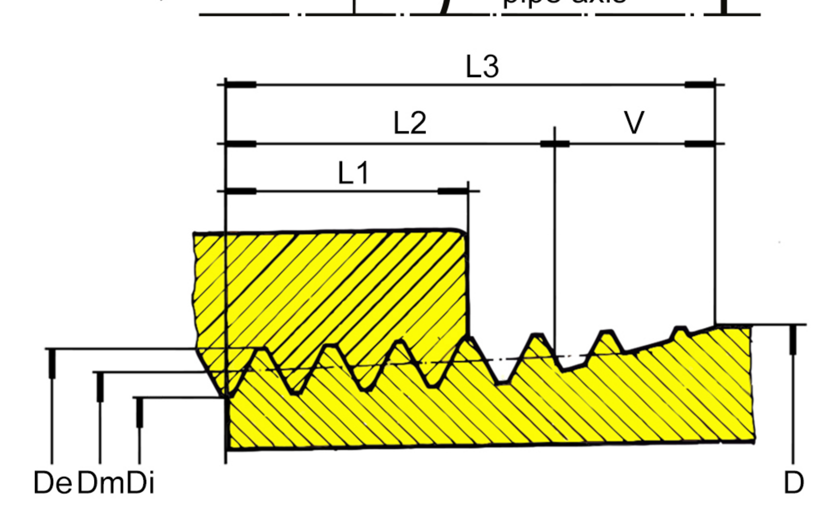
NATIONAL PIPE THREAD (NPT - TAPERED) ANSI B1.20.1

DIMENSIONS IN mm.

NOMINAL PIPE SIZE	O.D OF PIPE	THREADS PER INCH	PITCH OF THREAD	O.D. AT BEGINNING OF THREADS	PITCH DIA. AT BEGINNING OF EXT. THRD.	ROOT DIA. AT BEGINNING OF EXT. THRD.	HANDTIGHT ENGAGEMENT	EFFECTIVE THREAD EXT. LENGTH	OVERALL LENGTH EXT. THREAD
	D	N	P	D1	E	D2	L1	L2	L3
1/8	10.29	27	0.940	9.982	9.233	6.484	4.572	6.703	9.967
1/4	13.72	18	1.412	13.259	12.126	10.998	5.080	10.206	15.103
3/8	17.14	18	1.412	16.662	15.545	14.427	6.096	10.358	15.255
1/2	21.34	14	1.814	20.726	19.263	17.805	8.128	13.556	19.850
3/4	26.67	14	1.814	26.035	24.580	23.139	8.611	13.861	20.155
1	33.40	11.1/2	2.210	32.588	30.825	29.058	10.160	17.343	25.006
1.1/4	42.16	11.1/2	2.210	41.326	39.550	37.795	10.668	17.953	25.616
1.1/2	48.26	11.1/2	2.210	47.396	45.621	43.866	10.668	18.377	26.040
2	60.32	11.1/2	2.210	59.411	57.633	55.855	11.074	19.215	26.878



Pitch = P
h = 0.866 P
f = 0.800 P
h1 = 0.033 P
v = 3.5 threads, ave.



DIN

CARBON STEEL PIPE (SEAMLESS / WELDED)

DIMENSION AND WEIGHT

JIS G3454 STPG38/JIS G3456 STPT38/JIS G3455 STS38, ETC. (LENGTH:5.5M)

N.B		O.D	SCH 20		SCH 30		SCH 40			SCH 60			SCH 80			SCH 100		SCH 120		SCH 160	
			THICK	WEIGHT	THICK	WEIGHT	THICK	WEIGHT	kg/5.5	THICK	WEIGHT	kg/5.5	THICK	WEIGHT	kg/5.5	THICK	WEIGHT	THICK	WEIGHT	THICK	WEIGHT
(A)	(B)	mm	mm	kg/m	mm	kg/m	mm	kg/m	PIECE	mm	kg/m	PIECE	mm	kg/m	PIECE	mm	kg/m	mm	kg/m	mm	kg/m
6	1/8″	10.5	–	–	–	–	1.7	0.369	2.03	2.2	0.450	2.48	2.4	0.479	2.63	–	–	–	–	–	–
8	¼″	13.8	–	–	–	–	2.2	0.629	3.46	2.4	0.675	3.71	3.0	0.799	4.39	–	–	–	–	–	–
10	3/8″	17.3	–	–	–	–	2.3	0.851	4.68	2.8	1.00	5.5	3.2	1.11	6.11	–	–	–	–	–	–
15	½″	21.7	–	–	–	–	2.8	1.31	7.21	3.2	1.46	8.03	3.7	1.64	9.02	–	–	–	–	4.7	1.97
20	¾″	27.2	–	–	–	–	2.9	1.74	9.57	3.4	2.00	11	3.9	2.24	12.3	–	–	–	–	5.5	2.94
25	1″	34.0	–	–	–	–	3.4	2.57	14.1	3.9	2.89	15.9	4.5	3.27	18.0	–	–	–	–	6.4	4.36
32	1¼″	42.7	–	–	–	–	3.6	3.47	19.1	4.5	4.24	23.3	4.9	4.57	25.1	–	–	–	–	6.4	5.73
40	1½″	48.6	–	–	–	–	3.7	4.1	22.6	4.5	4.89	26.9	5.1	5.47	30.1	–	–	–	–	7.1	7.27
50	2″	60.5	3.2	4.52	–	–	3.9	5.44	29.9	4.9	6.72	37	5.5	7.46	41.0	–	–	–	–	8.7	11.1
65	2½″	76.3	4.5	7.97	–	–	5.2	9.12	50.2	6.0	10.4	57.2	7.0	12.0	66.0	–	–	–	–	9.5	15.6
80	3″	89.1	4.5	9.39	–	–	5.5	11.3	62.2	6.6	13.4	73.7	7.6	15.3	84.2	–	–	–	–	11.1	21.4
90	3½″	101.6	4.5	10.8	–	–	5.7	13.5	74.3	7.0	16.3	89.7	8.1	18.7	103.	–	–	–	–	12.7	27.8
100	4″	114.3	4.9	13.2	–	–	6.0	16	88	7.1	18.8	103	8.6	22.4	123.	–	–	11.1	28.2	13.5	33.6
125	5″	139.8	5.1	16.9	–	–	6.6	21.7	119	8.1	26.3	145	9.5	30.5	168.	–	–	12.7	39.8	15.9	48.6
150	6″	165.2	5.5	21.7	–	–	7.1	27.7	152	9.3	35.8	197	11.0	41.8	230.	–	–	14.3	53.2	18.2	66.1
200	8″	216.3	6.4	33.1	7.0	36.1	8.2	42.1	232	10.3	52.3	288	12.7	63.8	351.	15.1	74.9	18.2	88.9	23.0	110.
250	10″	267.4	6.4	41.2	7.8	49.9	9.3	59.2	326	12.7	79.8	439	15.1	93.9	516.	18.2	112.	21.4	130.	28.6	169.
300	12″	318.5	6.4	49.3	8.4	64.2	10.3	78.3	431	14.3	107.	589	17.4	129.	710.	21.4	157.	25.4	184.	33.3	235.
350	14″	355.6	7.9	67.7	9.5	81.1	11.1	94.3	519	15.1	127.	699	19.0	158.	869.	23.8	195.	27.8	225.	35.7	282.
400	16″	406.4	7.9	77.6	9.5	93.0	12.7	123	677	16.7	160.	880	21.4	203.	1117.	26.2	246.	30.9	286.	40.5	365.
450	18″	457.2	7.9	87.5	11.1	122.0	14.3	156	858	19.0	205.	1128	23.8	254.	1397.	29.4	310.	34.9	363.	45.2	459.
500	20″	508.0	9.5	117.0	12.7	155.0	15.1	184	1012	20.6	248.	1364	26.2	311.	1711.	32.5	381.	38.1	441.	50.0	565.

JIS G3452 SGP-E

N.B		O.D	THICK	WEIGHT	PIECE
(A)	(B)	mm	mm	kg/m	5.5m
6	1/8"	10.5	2.0	0.419	2.30
8	1/4"	13.8	2.3	0.652	3.59
10	3/8"	17.3	2.3	0.851	4.68
15	1/2"	21.7	2.8	1.31	7.20
20	3/4"	27.2	2.8	1.68	9.24
25	1"	34.0	3.2	2.43	13.4
32	1 1/4"	42.7	3.5	3.38	18.6
40	1 1/2"	48.6	3.5	3.89	21.4
50	2"	60.5	3.8	5.31	29.2
65	2 1/2"	76.3	4.2	7.47	41.1
80	3"	89.1	4.2	8.79	48.3
90	3" 1/2"	101.6	4.2	10.1	55.6
100	4"	114.3	4.5	12.2	67.1
125	5"	139.8	4.5	15.0	82.5
150	6"	165.2	5.0	19.8	109.
200	8"	216.3	5.8	30.1	166.
250	10"	267.4	6.6	42.4	233.
300	12"	318.5	6.9	53.0	292.
350	14"	355.6	7.9	67.7	372.
400	16"	406.4	7.9	77.6	427.
450	18"	457.2	7.9	87.5	481.
500	20"	508.0	7.9	97.4	536.

ASTM A53/A120. (ANSI -B36. 10)

N.B	OUTSIDE DIAMETER		SCH 20				STD				SCH 40				XS				SCH 80				XXS				SCH 160			
			THICK		WEIGHT		THICK		WEIGHT		THICK		WEIGHT		THICK		WEIGHT		THICK		WEIGHT		THICK		WEIGHT		THICK		WEIGHT	
	inch	mm	inch	mm	kg/lt	kg/m	inch	mm	kg/lt	kg/m	inch	mm	kg/lt	kg/m	inch	mm	kg/lt	kg/m	inch	mm	kg/lt	kg/m	inch	mm	kg/lt	kg/m	inch	mm	kg/lt	kg/m
1/8"	0.405	10.3	–	–	–	–	0.068	1.73	0.11	0.36	0.068	1.73	0.11	0.36	0.095	2.41	0.14	0.46	0.095	2.41	0.14	0.46	–	–	–	–	–	–	–	–
1/4"	0.540	13.7	–	–	–	–	0.088	2.24	0.19	0.63	0.088	2.24	0.19	0.63	0.119	3.02	0.25	0.80	0.119	3.02	0.25	0.80	–	–	–	–	–	–	–	–
3/8"	0.675	17.1	–	–	–	–	0.091	2.31	0.26	0.85	0.091	2.31	0.26	0.85	0.126	3.20	0.34	1.10	0.126	3.20	0.34	1.10	–	–	–	–	–	–	–	–
1/2"	0.840	21.3	–	–	–	–	0.109	2.77	0.39	1.27	0.109	2.77	0.39	1.27	0.147	3.73	0.49	1.62	0.147	3.73	0.49	1.62	0.294	7.47	0.78	2.55	0.188	4.78	0.59	1.95
3/4"	1.050	26.7	–	–	–	–	0.113	2.87	0.51	1.68	0.113	2.87	0.51	1.68	0.154	3.91	0.67	2.19	0.154	3.91	0.67	2.19	0.308	7.82	1.11	3.63	0.219	5.56	0.88	2.89
1"	1.315	33.4	–	–	–	–	0.133	3.38	0.76	2.50	0.133	3.38	0.76	2.50	0.179	4.55	0.99	3.23	0.179	4.55	0.99	3.23	0.358	9.09	1.66	5.45	0.250	6.35	1.29	4.23
1 1/4"	1.660	42.2	–	–	–	–	0.140	3.56	1.03	3.38	0.140	3.56	1.03	3.38	0.191	4.85	1.36	4.47	0.191	4.85	1.36	4.47	0.382	9.70	2.37	7.76	0.250	6.35	1.71	5.60
1 1/2"	1.900	48.3	–	–	–	–	0.145	3.68	1.23	4.05	0.145	3.68	1.23	4.05	0.200	5.08	1.65	5.41	0.200	5.08	1.65	5.41	0.400	10.16	2.91	9.55	0.281	7.14	2.21	7.24
2"	2.375	60.3	–	–	–	–	0.154	3.91	1.66	5.44	0.154	3.91	1.66	5.44	0.218	5.54	2.28	7.48	0.218	5.54	2.28	7.48	0.436	11.07	4.10	13.45	0.344	8.74	3.39	11.11
2 1/2"	2.875	73.0	–	–	–	–	0.203	5.16	2.63	8.62	0.203	5.16	2.63	8.62	0.276	7.01	3.48	11.41	0.276	7.01	3.48	11.41	0.552	14.02	6.22	20.41	0.375	9.53	4.54	14.91
3"	3.500	88.9	–	–	–	–	0.216	5.49	3.44	11.29	0.216	5.49	3.44	11.29	0.300	7.62	4.65	15.27	0.300	7.62	4.65	15.27	0.600	15.24	8.44	27.67	0.438	11.13	6.50	21.33
3 1/2"	4.000	101.6	–	–	–	–	0.226	5.74	4.14	13.57	0.226	5.74	4.14	13.57	0.318	8.08	5.68	18.63	0.318	8.08	5.68	18.63	–	–	–	–	–	–	–	–
4"	4.500	114.3	–	–	–	–	0.237	6.02	4.90	16.07	0.237	6.02	4.90	16.07	0.337	8.56	6.80	22.31	0.337	8.56	6.80	22.31	0.674	17.12	12.50	41.02	0.531	13.49	10.22	33.53
5"	5.563	141.3	–	–	–	–	0.258	6.55	6.64	21.78	0.258	6.55	6.64	21.78	0.375	9.53	9.45	31.0	0.375	9.53	9.45	31.0	0.750	19.05	17.50	57.42	0.625	15.88	14.96	49.09
6"	6.625	168.3	–	–	–	–	0.280	7.11	8.61	28.26	0.280	7.11	8.61	28.26	0.432	10.97	12.97	42.56	0.432	10.97	12.97	42.56	0.864	21.95	24.13	79.2	0.719	18.26	20.59	67.55
8"	8.625	219.1	0.250	6.35	10.15	33.31	0.322	8.18	12.97	42.55	0.322	8.18	12.97	42.55	0.500	12.7	19.70	64.64	0.500	12.7	19.70	64.64	0.875	22.23	32.89	107.9	0.906	23.01	33.92	111.3
10"	10.750	273.0	0.250	6.35	12.73	41.75	0.365	9.27	18.38	60.29	0.365	9.27	18.38	60.29	0.500	12.7	24.85	81.52	0.594	15.09	29.25	95.97	1.000	25.4	47.27	155.1	1.125	28.58	52.52	172.3
12"	12.750	323.8	0.250	6.35	15.15	49.71	0.375	9.53	22.51	73.86	0.406	10.31	24.29	79.70	0.500	12.7	29.70	97.43	0.688	17.48	40.23	132.0	1.000	25.4	56.97	186.9	1.312	33.32	72.76	238.7
14"	14.000	355.6	0.312	7.92	20.70	67.90	0.375	9.53	24.79	81.33	0.438	11.13	28.82	94.55	0.500	12.7	32.74	107.4	0.750	19.05	48.19	158.1	–	–	–	–	1.406	35.71	85.9	281.7
16"	16.000	406.4	0.312	7.92	23.72	77.83	0.375	9.53	28.43	93.27	0.500	12.7	37.58	123.3	0.500	12.7	37.58	123.3	0.844	21.44	62.03	203.58	–	–	–	–	1.594	40.49	111.4	365.4
18"	18.000	457.2	0.312	7.92	26.75	87.75	0.375	9.53	32.06	105.2	0.562	14.27	47.52	155.9	0.500	12.7	42.43	139.2	0.938	23.83	77.63	254.7	–	–	–	–	1.781	45.24	140.1	459.6
20"	20.000	508.0	0.375	9.53	35.69	117.1	0.375	9.53	35.69	117.1	0.594	15.09	55.90	183.4	0.500	12.7	47.27	155.1	1.031	26.19	94.85	311.2	–	–	–	–	1.969	50.01	172.2	564.8
24"	24.000	609.6	0.375	9.53	42.98	141.0	0.375	9.53	42.98	141.0	0.688	17.48	77.78	255.2	0.500	12.7	56.97	186.9	1.219	30.96	134.66	441.8	–	–	–	–	2.344	59.54	246.2	807.6

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