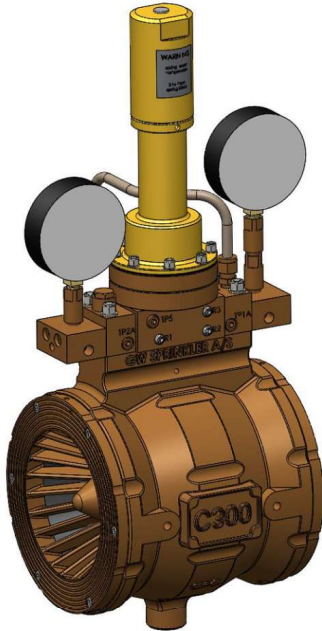


MODEL C300

PRESSURE REDUCING VALVE



PART NUMBER			
	Ni Al Bronze	Super Duplex	Titanium
3"	CV64.515.14FM	CV64.515.16FM	CV64.515.17FM
4"	CV64.516.14FM	CV64.516.16FM	CV64.516.17FM
6"	CV64.517.14FM	CV64.517.16FM	CV64.517.17FM
8"	CV64.518.14FM	CV64.518.16FM	CV64.518.17FM
10"	CV64.519.14FM	CV64.519.16FM	CV64.519.17FM
12"	CV64.520.14	CV64.520.16	CV64.520.17



Note:
12" valves are not FM approved.

Function: This valve is typically fitted into a fire water main to provide a regulated downstream pressure to a pre-set value, irrespective of the flow rate and up-stream pressure conditions. Installation can be either horizontally or vertically. The GW C-300 deluge valve is "self-powered" – and utilizes the system upstream (inlet) pressure to regulate. The valve principle is "elastomeric sleeve type" where the annular valve orifice is adjustable by expansion/contraction of the rubber flow sleeve.

Operation: Pressure regulation is accomplished by the pilot control valve which will feed or drain water to/from the sleeve cavity, to open or close the flow orifice as required, when sensing the downstream pressure and comparing it to the pre-set pilot pressure. The regulating speed is adjustable via restrictors controlling the in and out flow to the sleeve cavity, thus preventing water hammer and damage to downstream pipework and components.

Installation: Horizontally or vertically.
Fits between ANSI /ASME B16.5 Class 150 or 300 lbs. flanges

Design: The GW C-300 deluge valve is developed and designed for maximum reliability when installed and operated in the harshest on-shore and off-shore environments. To prevent any malfunctioning due to components seizing, sticking or corroding, the number of moving mechanical parts has been reduced to a minimum, and the few moving parts present are ALL 100% isolated (i.e. no water contact) from the flow media. The only moving components in contact with the flow media are the elastomeric parts. A strainer is fitted in the inlet of the valve center block to prevent any debris from entering the hydraulic pilot regulating system.

MODEL C300

PRESSURE REDUCING VALVE

Pressure Reduction: The GW C-300 valve is designed to handle large pressure reductions, and minimize the effects of cavitation and noise. The multi finger construction of the water passageways through the valve, in combination with the conical shaped core, ensures that the pressure is reduced at multiple sites, which avoids large cavitation concentrations and resultant noise and valve damage. The exiting cone in the valve outlet ensures that the cavitation stays longer in the water flow stream thus reducing concentrated damage to valve internals and pipework walls.

Material: All materials used in the valve have been rigorously selected to ensure durability when installed and operated in the heavy-duty applications the valve is designed for. All wetted parts are as standard in the material Nickel Aluminum Bronze and piping in CuNi 90/10.

Finish: Natural (metallic, non-painted surface).

Approval:



The GW C-300 Pressure Regulating valve is FM Approved to FM Class 1362: "Approval Standard for Pressure Reducing Valves", with below pilot limitations:

Pilot

Limitations:

Regulated Pressure (set pressure)		Upstream Pressure min. / max.				Deluge Valve
Bar	PSI	Bar		PSI		Size
3	44	4	11	116	160	3 – 4 – 6 – 8 – 10"
4	58	5	12	131	174	3 – 4 – 6 – 8 – 10"
5	73	6	13	145	189	3 – 4 – 6 – 8 – 10"
6	87	7	14	160	203	3 – 4 – 6 – 8 – 10"
7	102	8	15	174	218	3 – 4 – 6 – 8 – 10"
8	116	9	16	189	232	3 – 4 – 6 – 8 – 10"
9	131	10	17	203	247	3 – 4 – 6 – 8 – 10"
10	145	11	18	218	261	3 – 4 – 6 – 8 – 10"
11	160	12	19	232	276	3 – 4 – 6 – 8 – 10"
12	174	13	20	247	290	3 – 4 – 6 – 8 – 10"

Specials: Client specified solutions can be accommodated on request – e.g. special instrumentation, special fittings, surface treatment, pressure setting. Consult GW for options.

Weights: (in kilograms, approximate)

	80mm (3")	100mm (4")	150mm (6")	200mm (8")	250mm (10")	300mm (12")
Ni.Al.Bronze	20	25	44	63	103	180
Super Duplex	21	27	48	68	108	187
Titanium	12	14	26	37	61	106

MODEL C300

PRESSURE REDUCING VALVE

Maintenance: Every 3 year the valve should be disassembled, inspected and the elastomeric components replaced – i.e. replace the elastomeric sleeve, diaphragms and seals in service and those held unused as spare stock. Spares should be used within a two year shelf life to provide a 3 year “in service” life (5 year total life).
The “in service” life of the elastomeric sleeve can be extended annually to a maximum “in service” period of 5 years from the date of first installation or 6 years from manufacture, whichever is the sooner, provided that a “maximum extension test” (see IOM manual no. 6470442) to fully stretch the flow control sleeve within the deluge valve body, is performed.

Spare Parts: Refer to data sheet no.: DV070 1001 - GW C-300 General Spares Schedule

Pressure data:

	Min.	Max.	Note
Design pressure		20 bar	
Recommended operating pressure	1 to 8 bar above valve set-pressure		
Regulated pressure (outlet pressure) – std.	3 bar	7 bar	(blue spring) standard
Set-pressure (factory setting) – standard.		4 bar	(or to specification)
Regulated pressure (outlet pressure) – high	7 bar	12 bar	(silver spring) optional
Regulated pressure (outlet pressure) – high	Set-pressure in excess of 12 bar – consult GW.		
Inlet pressure to achieve fully open valve	4 bar		

Materials:

	Valve		
	Ni.Al.Bronze	Super Duplex	Titanium
Wetted parts	Ni.Al.Bronze to UNS C95800, UNS C63000	SuperDuplex Cr.25 to ASTM A890, UNS J92205	Titanium (unalloyed) to ASTM B367, B348 UNS R50400 – Gr.2
Non-wetted parts	Gun Metal to UNS C93200, St.Steel to UNS S31600 /03	Gun Metal (NiSn plated) UNS C93200, St.Steel to UNS S31600 /03	Gun Metal (NiSn plated) UNS C93200, St.Steel to UNS S31600 /03
Pipes	Cupronickel CuNi 9010, UNS C70600	Titanium (unalloyed) to ASTM B338, UNS R50400 – Gr.2	Titanium (unalloyed) to ASTM B338, UNS R50400 – Gr.2
Compress fittings	Ni.Al.Bronze to UNS C63000	SuperDuplex Cr.25 to UNS S32750	Titanium (unalloyed) to ASTM B348 UNS R50400 – Gr.2
Flow Ctrl. Sleeve	Natural Rubber	Natural Rubber	Natural Rubber

Material certification to EN10204 3.1, and PMI-test (Positive Material Identification) on request.

MODEL C300

PRESSURE REDUCING VALVE

Pressure loss:

	80mm (3")	100mm (4")	150mm (6")	200mm (8")	250mm (10")	300mm (12")
Cv	240	430	880	1790	2060	2990
Kv	206	370	757	1540	1770	2570
Friction loss @ 50% of max. flow (bar)	0,11	0,32	0,11	0,19	0,36	-

Cv: Flow coefficient (imperial) = flow rate (US gal/min) across valve @ 1 psi head loss.

Kv: Flow factor (metric) = flow rate (m³/hr.) across valve @ 1 bar head loss.

Testing: Every valve is factory tested - i.e. static body & seat pressure test + functional flow test. An individual test report is issued for each valve.

Set-pressure: For pilot operated pressure reducing valves the SET-pressure is the outlet residual pressure for which the pilot regulator of the valve has been adjusted and is expected to maintain, regardless of changing flow rate and varying inlet pressures.

Pressure Relief Valve: Per FM Standard 1362, an FM approved pressure relief valve of ½", or greater, shall be supplied with (and installed downstream of) each pressure reducing valve. This serves as a failsafe to relieve downstream pressure if necessary. A Zurn Wilkins, Model P4000A – or equivalent FM approved pressure relief valve, is supplied with each GW C-300 Pressure Reducing Valve. The adjustable pressure relief valve setting shall be 1 bar (14,5 psi) higher than the GW C-300 valve set pressure.

Pressure Gauges: Per FM Standard 1362, a position indicator must be provided with FM approved pressure reducing valves. This can be accomplished by fitting the valve with upstream and downstream pressure gauges. The GW C-300 Pressure Reducing Valve is fitted with a Gauge Block on the upstream and downstream side of the Center Block. Each Gauge Block provides 3 off ¼" NPT female ports for connection of pressure gauge, pressure switch etc. All 3 ports can be blocked by a central restrictor, for safe in-service removal of connected instruments. An FM approved pressure gauge is fitted to each Gauge Block (2 off) to monitor upstream and downstream pressure.

Environment: The GW C-300 Pressure Reducing valves shall be installed in such way to avoid physical damage and exposure to freezing temperatures.

Service: If required, GW Sprinkler A/S can undertake a full overhaul/refurbishment of your GW C-300 deluge valve at the factory in Denmark. This will include complete dismantling of the valve, glass blast cleaning of corroded parts, assessment of wear/corrosion, replacement of elastomeric parts, replacement of corroded/damaged parts (in dialogue with customer) static pressure test, functional test, set-pressure adjustment, full test report.

MODEL C300

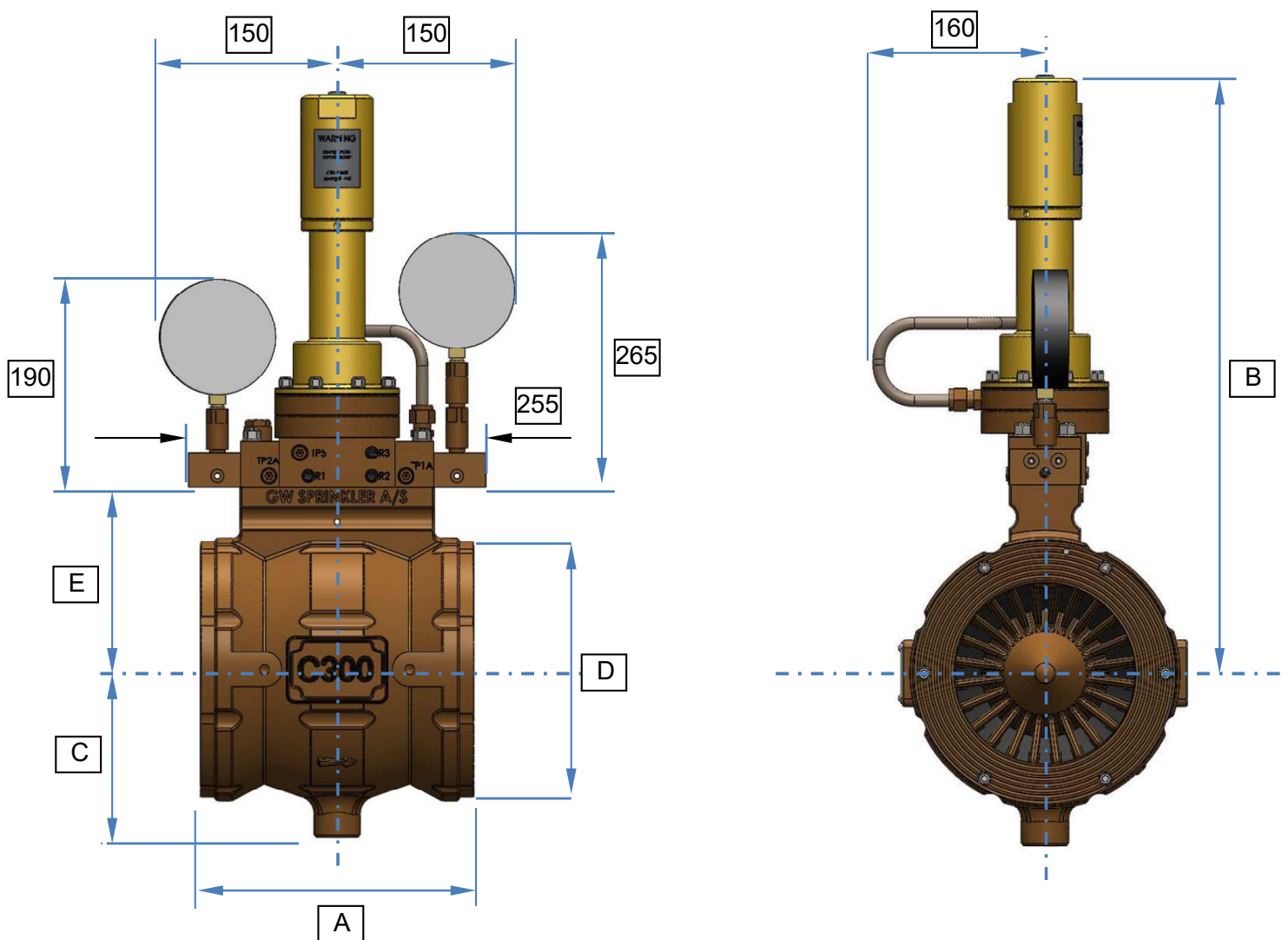
PRESSURE REDUCING VALVE

All dimensions in mm.

	A	B *)	C	D **)	E
80 (3")	167	405	112	128	105
100 (4")	167	427	132	161	127
150 (6")	237	459	162	222	158
200 (8")	304	487	184	295	187
250 (10")	350	522	217	336	222
300 (12")	440	560	248	406	260

*) SET at 4 bar (blue spring)

**) Fitment: Wafer fits between ANSI/ASME B16.5 Class 150 or 300 lbs. flanges using full length studs, nuts and washers. Gasket to ANSI B16.21 RF.



MODEL C300

PRESSURE REDUCING VALVE

P & ID:

Port	Description	Size
R1	Inlet Restrictor (close)	
R2	Jacket Restrictor	
R3	Outlet Restrictor (open)	
TP1	Exhaust to open valve	1/4" NPT
TP2	Plugged	1/4" NPT
TP3	Plugged	1/4" NPT
TP4	Plugged	1/4" NPT
	DRAIN	1/2" NPT
	Gauge Block Ports	1/4" NPT

R = Restrictor (needle valve)

TP = Terminal Port

IO&M manual: 64 70442

