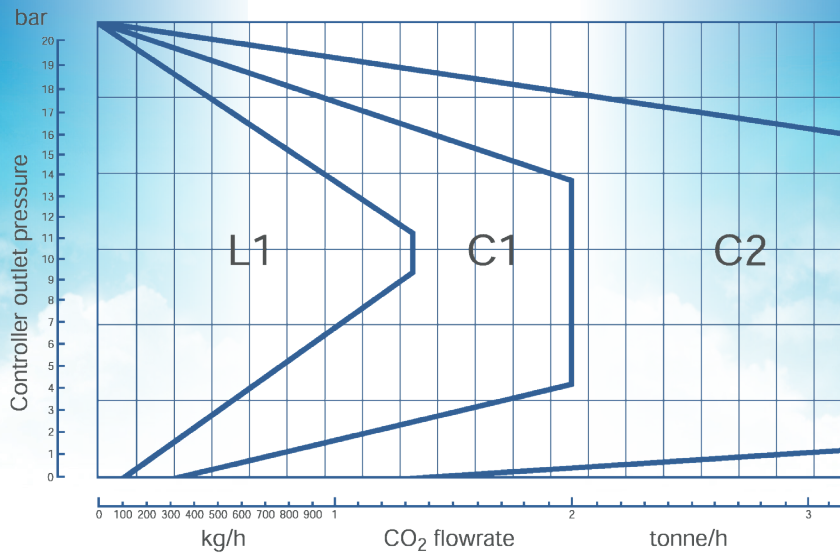


# Pressure Control for CO<sub>2</sub>

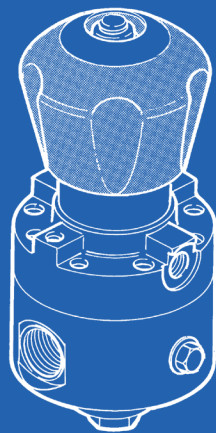
## Pressure Controller Flow Sizing Chart



A range of pressure control valves are available for gaseous CO<sub>2</sub> use in high flow applications.

The CO<sub>2</sub> source can be a bulk liquid CO<sub>2</sub> storage tank, a high pressure tank or manifold of cylinders.

Inlet pressures of up to 86 bar and outlet pressures up to 65 bar are available.



## Choosing your pressure controller

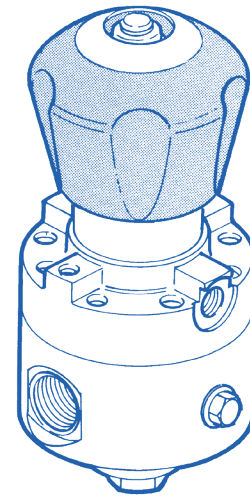
The pressure control valves are also available built into single or dual reducing valve stations incorporating isolating valves, filters and gauges.

The pressure control flow sizing chart above is useful to decide which pressure controller is suitable for any given application.

# L Type Pressure Control Valve

The L type pressure control valves are designed for gas flow rates of 70 kg/h to 500 kg/h, with CO<sub>2</sub> from a low pressure bulk storage tank (model L1) or from a high pressure tank or manifold of cylinders (model L2). The outlet pressure is normally in the range 0 - 5 bar. Alternative springs and diaphragms are available to give pressure ranges 5 - 10 bar and 10 - 31 bar.

The pressure control valves are spring loaded and manually adjustable, giving a continuously smooth flow of gas at the set pressure. The controller incorporates a safety relief device; should the outlet pressure rise above the set pressure, the diaphragm will lift and vent excess pressure through a relief port in the valve body.

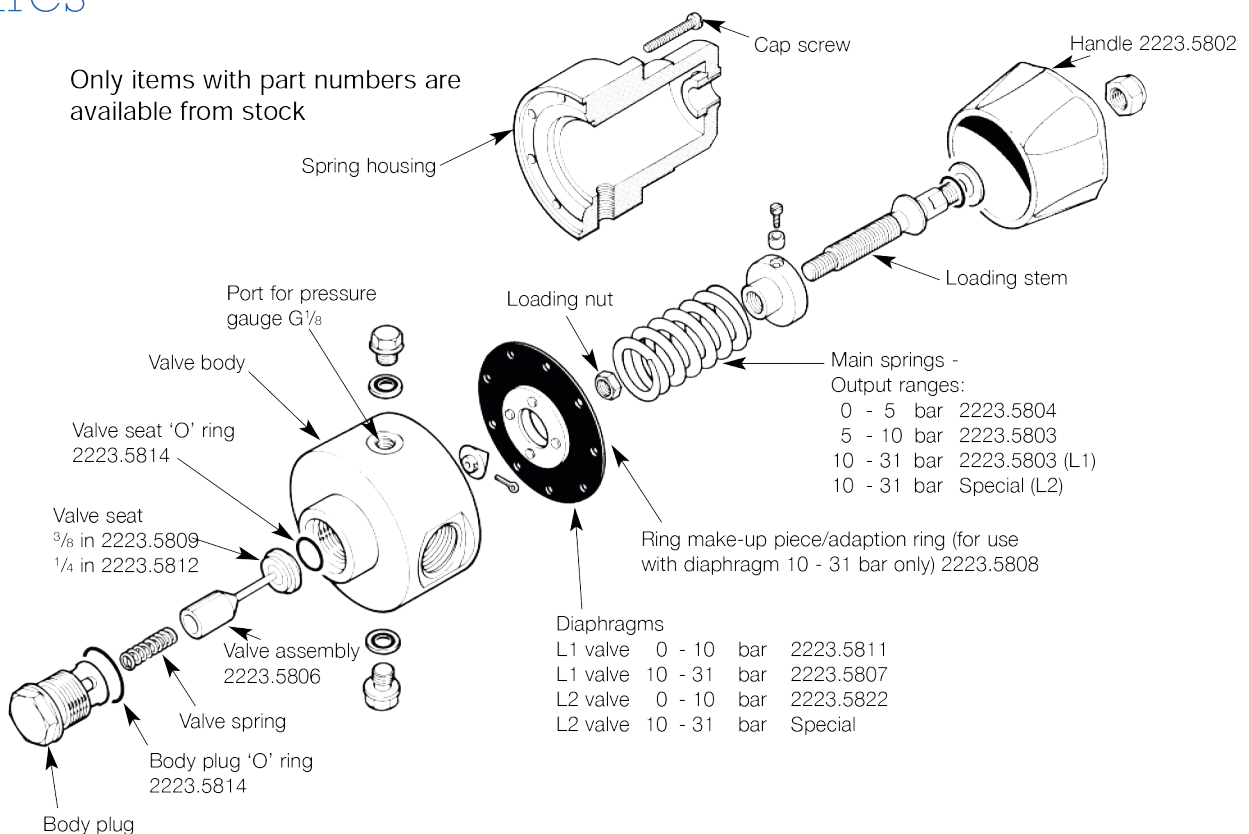


L Type Pressure Control Valve

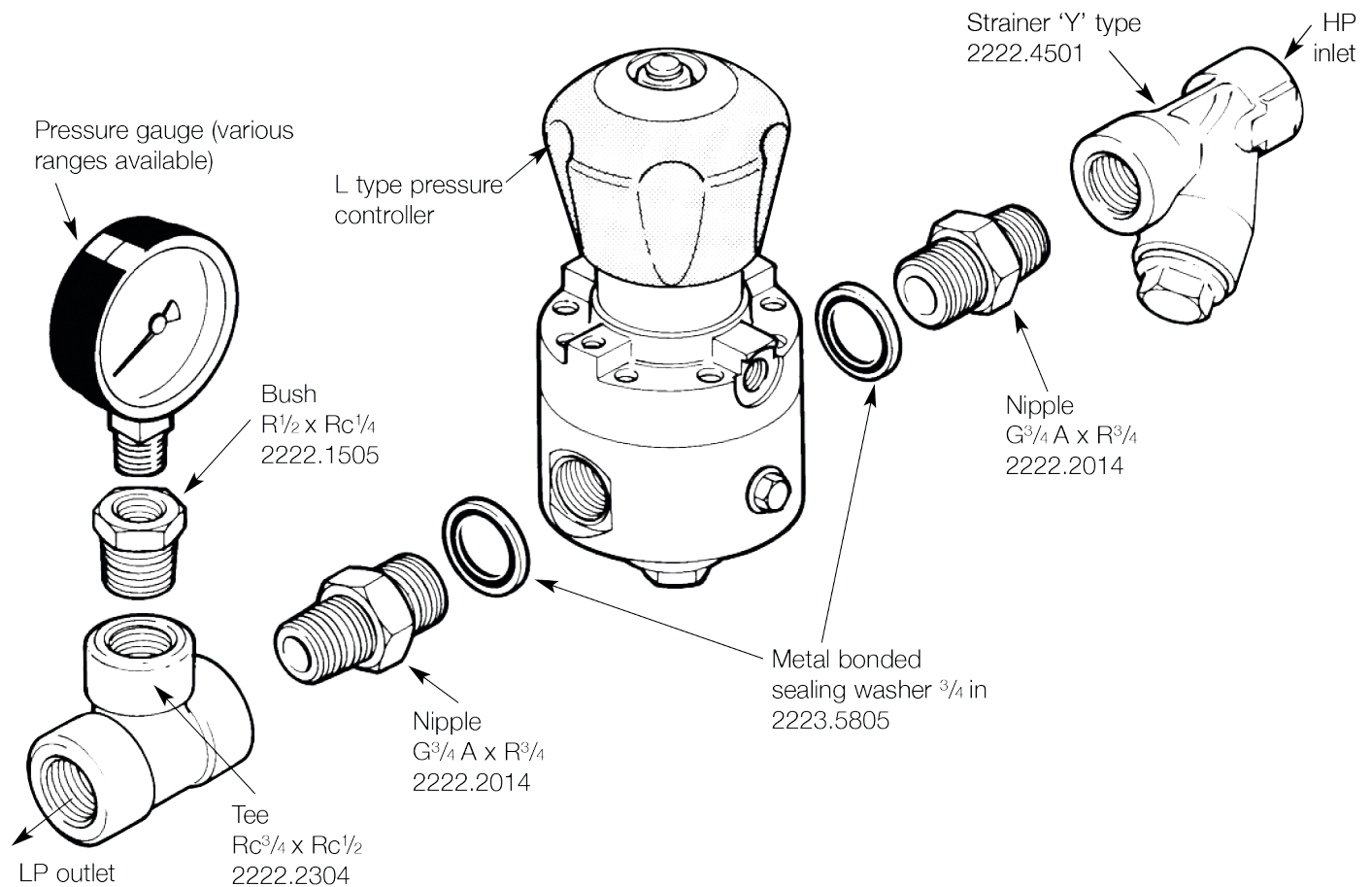
## Part Numbers

Pressure Controller		Pressure Range (bar)	Spring Part No.	Diaphragm Part No.	Valve Seat	
Model	Part No.				Size (inch)	Part No.
L1	2223.5801	0.3-5	2223.5804	2223.5811	3/8	2223.5809
		5-10	2223.5803	2223.5811		
		10-31	2223.5803	2223.5807 + Ring 2223.5808		
L2	2223.5821	0.3-5	2223.5804	2223.5822	1/4	2223.5812
		5-10	2223.5803	2223.5822		
		10-31	Special	Special		

## Spares



# Typical Installation



# Specification

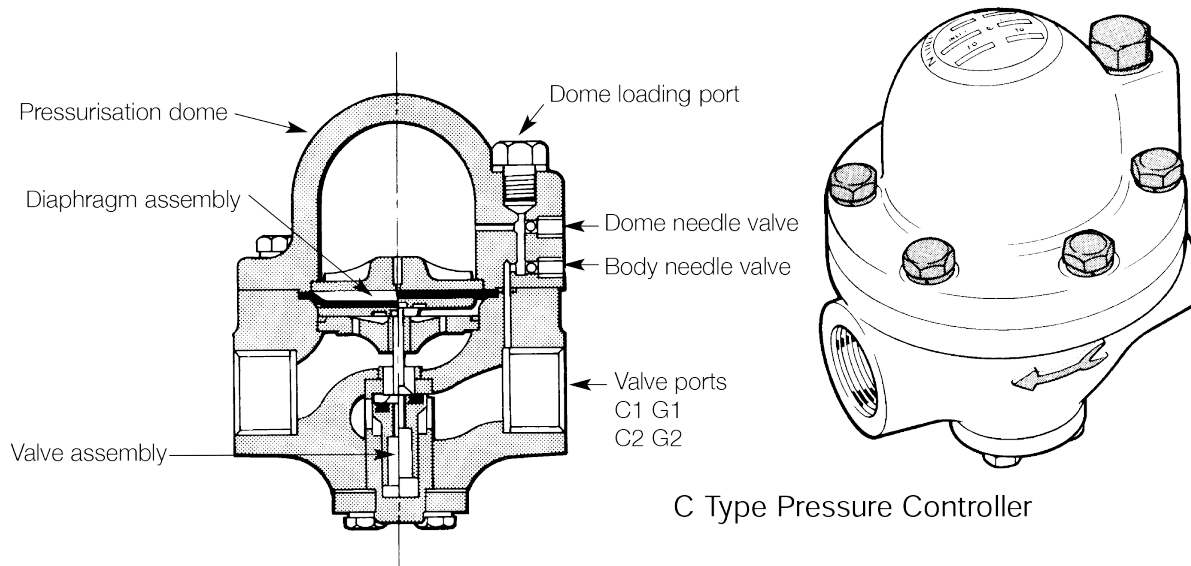
Flow rate (kg/h)		70 to 500
Maximum inlet pressure (bar)	L1: L2:	41 86
Threaded ports	Inlet & Outlet: Relief Outlet: Pressure Gauge:	G $\frac{3}{4}$ G $\frac{1}{4}$ G $\frac{1}{8}$ (supplied plugged)
Materials	Body: Springs, Valve Seat & Assembly: Diaphragm, 'O' Rings & Seals:	Aluminium alloy Stainless steel Synthetic rubber
Working temperature		-10°C to 60°C
Dimensions (mm)	Height: Width port to port:	197 83
Net weight (kg)		1.8
Part No.	L1: L2:	2223.5801 2223.5821

# C Type Pressure Controller

The C type pressure controllers are designed for CO<sub>2</sub> gas flow rates of 0.5 te/h to 3 te/h. The C1 and C2 controllers are dome-loaded types, operated by a control pressure in the dome being balanced against the main pressure under the diaphragm. The outlet pressure is fully variable between 1 - 65 bar simply by changing the pressure in the dome.

The outlet set pressure can be fixed or adjustable. For a fixed set pressure, the dome is charged by means of both the body and dome needle valves, taking gas from the controller inlet port. Alternatively, it may be charged using an external gas supply through the dome loading port with the body needle valve kept closed.

The pressure in the dome is then vented down to set the required outlet pressure. For an adjustable outlet pressure, a loading pressure regulator is needed to control the pressure in the dome. The regulator should be connected to the dome loading port which has a G<sup>1</sup>/<sub>4</sub> thread. The dome loading port is sealed with a plug on despatch. Ensure that adequate relief valve protection is provided downstream to protect piping/equipment from excessive pressure in the event of regulator failure.



C Type Pressure Controller

## Specification

	C1	C2
<b>Maximum gas inlet pressure (bar)</b>	69	69
<b>Outlet pressure range (bar)</b>	1-65	1-65
<b>Inlet and outlet ports</b>	G1	G2
<b>Dome loading port</b>	G <sup>1</sup> / <sub>4</sub>	G <sup>1</sup> / <sub>4</sub>
<b>Internal valve orifice (mm)</b>	13	25
<b>Materials -</b> Body: Valve seat and trim: Valve pad, diaphragm and seals:	Meehanite Stainless steel Synthetic rubber	
<b>Dimensions -</b> Height (mm): Width (mm) port to port:	168 127	267 227
<b>Gross weight (kg)</b>	6	20
<b>Valve part no.</b>	2223.5831	2223.5841
<b>Spares kit part no.</b>	2223.5832	2223.5842

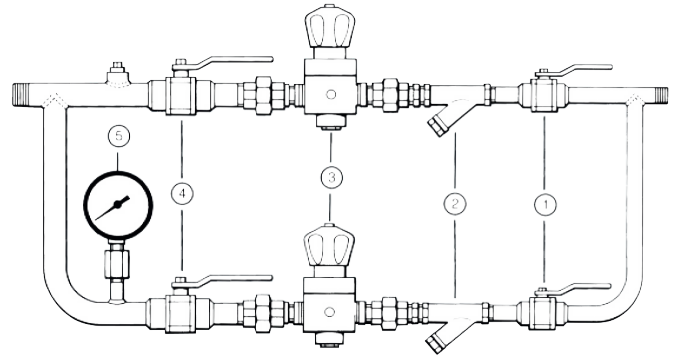
# Dual Reducing Valve Station (DRVS)

The DRVS is designed to reduce the primary carbon dioxide gas pressure from a bulk tank and CO<sub>2</sub> vaporiser. The arrangement allows the gas to flow continuously to the plant, without interruption, even when one side of the station is being overhauled.

The DRVS with L1 pressure controllers (nominal capacity 0.5 tonne/h) comprises:

1. 2 x ball valves ¾ in n.b. for gas input isolation
2. 2 x strainers Y type, with 100 mesh screen, for protecting the pressure controllers from swarf and grit
3. 2 x L1 type pressure controllers for reducing the gas pressure to 0-5 bar, 5-10 bar and 10-31 bar pressure range also available
4. 2 x ball valves 1 in n.b. for gas output isolation
5. 1 x pressure gauge 100 mm diameter, 0 -17 bar.

The pressure controllers are union-mounted to facilitate easy removal for servicing. The screen in the strainers and the seats and seals in the ball valves can be removed for cleaning or renewal simply and easily without dismantling any pipework. There is a Rc½ connection on the output side of the assembly to take a relief valve. A correctly sized relief valve must be fitted to ensure there is adequate protection for downstream piping/equipment.



Nominal capacity (kg/h)	500
Maximum inlet pressure (bar)	41
Outlet pressure range (bar)	0-5 standard 5-10 optional 10-31 optional
Inlet connection	R¾
Outlet connection	R1
Length (mm)	1225
Height (mm)	584
Depth (mm)	127
Unpacked weight (kg)	19
Part No.	2223.5701

Also available to special order:

	Part No.
<b>Single reducing valve station</b> (with one L1 pressure controller, omitting by-pass arrangement):	2223.5702
<b>Dual reducing valve station</b> with C1 pressure controllers (nominal capacity 1 tonne/h):	2223.5705
<b>Dual reducing valve station</b> with C2 pressure controllers (nominal capacity 2 tonne/h):	2223.5706

Contact us

**Air Liquide**

**Tel:** 0800 637737

**Email:** [genenq.aluk@airliquide.com](mailto:genenq.aluk@airliquide.com)

[www.industry.airliquide.co.uk](http://www.industry.airliquide.co.uk)



The world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with approximately 66,000 employees and serves more than 3 million customers and patients.