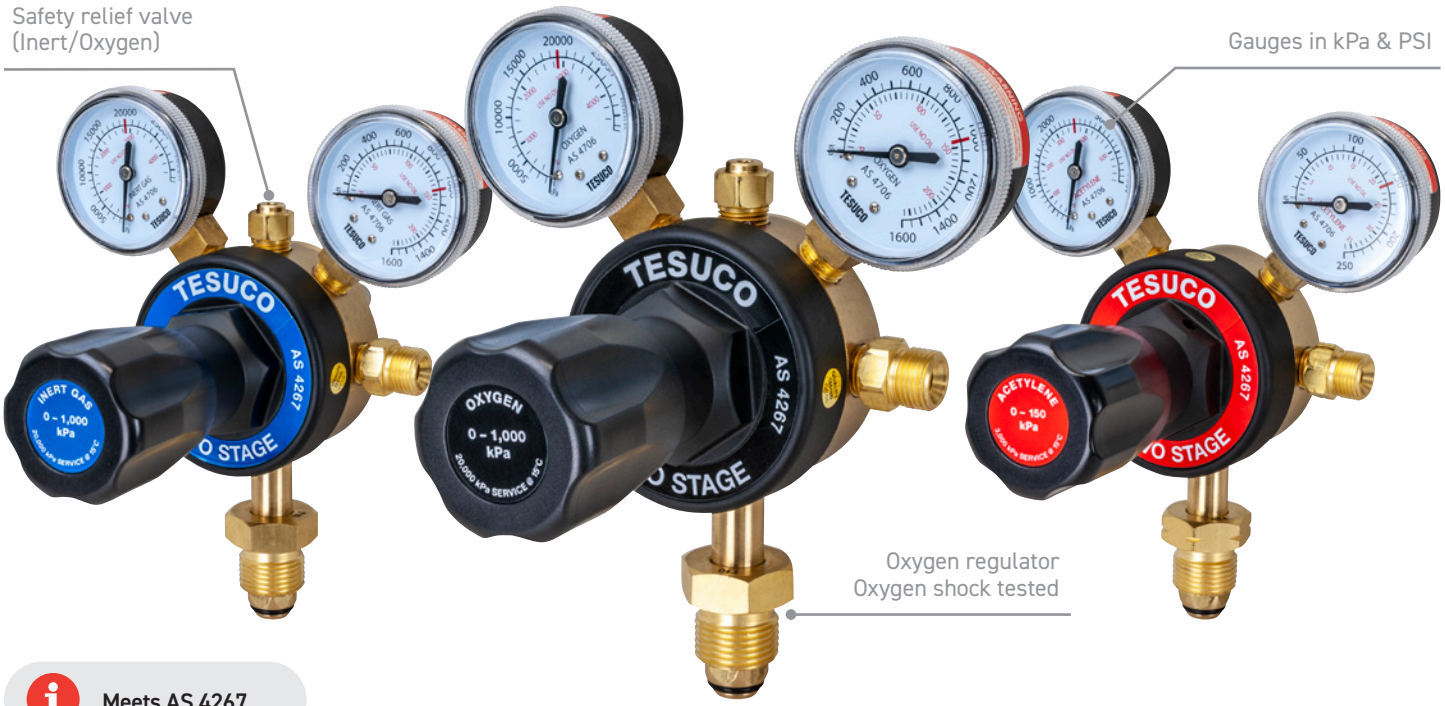
Industrial Gas Equipment
Two Stage Regulators

TESUCO TECHNICAL SUPPLIES COMPANY
HOSPITALITY
GAS SAFETY
INDUSTRIAL
SCIENTIFIC
MEDICAL

Introducing a New Range of High Quality, High Performance, Two Stage Regulators

For Oxygen, Acetylene, Nitrogen, Inert Gases, Hydrogen & CO_2



Meets AS 4267

GAS	PART NO	INLET PRESSURE	OUTLET PRESSURE	BOTTOM ENTRY	SIDE ENTRY	SAFETY RELIEF VALVE FITTED	INLET CONNECTION
Oxygen	RT2BOX10	20,000	1,000	✓		✓	Type 10
Acetylene	RT2BAC1.5	3,000	150	✓			Type 20
Nitrogen	RT2BNI10	20,000	1,000	✓		✓	Type 50
Inert Gas	RT2BIG10	20,000	1,000	✓		✓	Type 10
Hydrogen	RT2BHY10	20,000	1,000	✓		✓	Type 20
CO_2	RT2BCD10	20,000	1,000	✓		✓	Type 30
Oxygen	RT2SOX10	20,000	1,000		✓	✓	Type 10
Acetylene	RT2SAC1.5	3,000	150		✓		Type 20
Nitrogen	RT2SNI10	20,000	1,000		✓	✓	Type 50
Inert Gas	RT2SIG10	20,000	1,000		✓	✓	Type 10
Hydrogen	RT2SHY10	20,000	1,000		✓	✓	Type 20
CO_2	RT2SCD10	20,000	1,000		✓	✓	Type 30

Phone +61 2 9737 9937 Email sales@tesuco.com.au Website tesuco.com.au

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What is a Two Stage Regulator?

Two Stage regulators incorporate all components and features of a single-stage regulator. In addition, however, they also contain a second pressure adjusting spring; diaphragm; and valve and seat assembly, known as the "1st Stage". The first stage is not adjustable being "pre-set" at the factory. The "2nd stage" then performs in a manner similar to that of a single stage regulator, except that the inlet pressure to the second stage is lower and relatively constant.

Why use a Two Stage Regulator?

Because of the two step pressure reduction, final delivery pressure of a two stage regulator is constant and shows little effect from changes in cylinder pressure.

Finer Outlet Pressure Control

Due to the lower inlet pressure to the pressure control area of the regulator, the outlet pressure is more accurate and easier to control.

Steady Outlet Pressure

Due to this "two step" process there is constant delivery pressure over the life of the cylinder, which is demonstrated in the two graphs. This results in no pressure rise as the cylinder empties and reduces any pressure surge.

Reduced "Freezing" Effect

Gas when going from a compressed, high pressure state to a much lower pressure through a small orifice (seat valve), reduces in temperature rapidly. This "freezing" effect is more pronounced at high flow and more so with some gases. The two stage regulator, delivers the gas to the seat valve in the second stage at a much lower pressure, thus reducing the freezing effect.

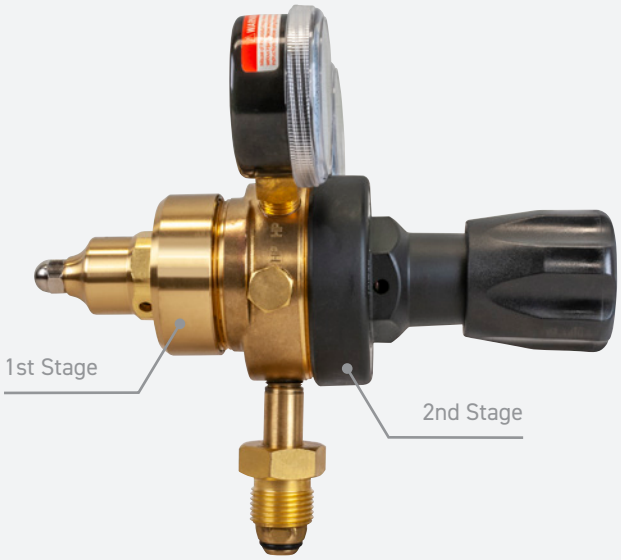
Reduced "Surge" Effect

Gas in a single stage regulator coming from a highly compressed state at high pressure, produces a surge of gas at the outlet every time the seat valve opens. This is much less in a two stage regulator as the inlet pressure to the second or control stage of the regulator is at a much lower pressure.

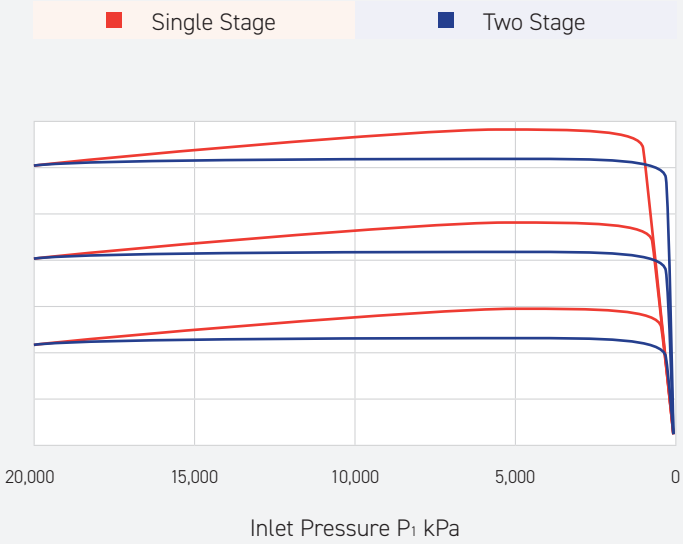
For example, the pressure in a single stage regulator may be going from 20,000 kPa in the cylinder to a 300 kPa working pressure.
In a two stage regulator it would be say 2,000 kPa from the first stage to a working pressure of 300 kPa, reducing the pressure "surge" accordingly.

Two Stage Regulators Give:

- ☑ Finer pressure control
- ☑ Stable outlet pressure
- ☑ Reduced freezing effect
- ☑ Reduced surge



Single Stage v Two Stage



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Phone +61 2 9737 9937 Email sales@tesuco.com.au Website tesuco.com.au