

The Difference Between Single And Two Stage Regulators

Single Stage

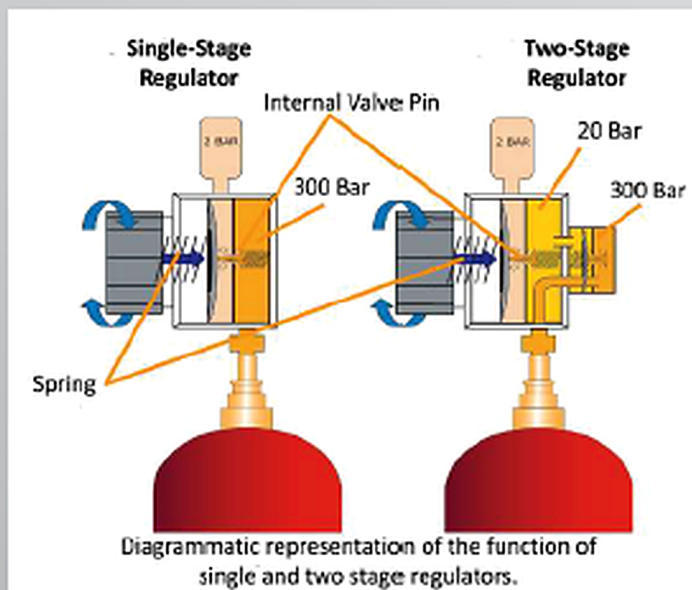
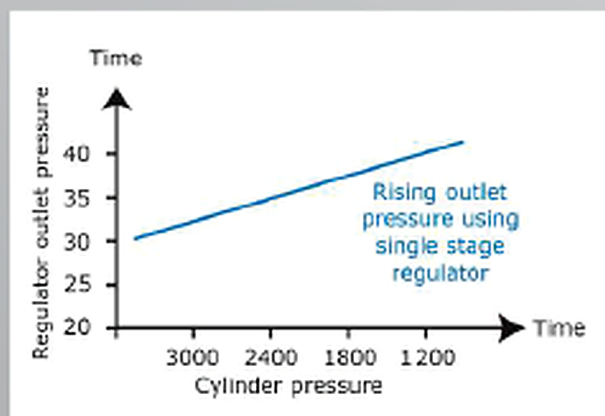
High-pressure gas from the supply enters into the regulator through the inlet valve. The gas then enters the body of the regulator, which is controlled by the needle valve. The pressure rises, which pushes the diaphragm, closing the inlet valve to which it is attached, and preventing any more gas from entering the regulator. The outlet side is fitted with a pressure gauge. As gas is drawn from the outlet side, the pressure inside the regulator body falls. The diaphragm is pushed back by the spring and the valve opens, letting more gas in from the supply until equilibrium is reached between the outlet pressure and the spring. The outlet pressure, therefore, depends on the spring force, which can be adjusted using an adjustment handle or knob.

The outlet pressure and the inlet pressure hold the diaphragm/valve assembly in the closed position against the force of the large spring. If the supply pressure falls, it is as if the large spring compression is increased allowing more gas and higher pressure to build in the outlet chamber until an equilibrium pressure is reached. Thus, if the supply pressure falls, the outlet pressure will increase, provided the outlet pressure remains below the falling supply pressure. This is the cause of end-of-tank dump where the supply is provided by a pressurised gas tank. With a single-stage regulator, when the supply tank gets low, the lower inlet pressure causes the outlet pressure to climb. If the spring compression is not adjusted to compensate, the valves can remain open and allow the tank to rapidly dump its remaining contents. In other words, the lower the supply pressure, the lower the pressure differential the regulator can achieve for a given spring setting.

Two Stage

Two-stage regulators are two single-stage regulators in one that operates to reduce the pressure progressively in two stages. The first stage, which is preset, reduces the pressure of the supply gas to an intermediate stage; gas at that pressure passes into the second stage. The gas now emerges at a pressure (working pressure) set by the pressure adjusting control knob attached to the diaphragm. Two-stage regulators have two safety valves so that if there is any excess pressure there will be no explosion. A major objection to the single-stage regulator is the need for frequent torque adjustment. If the supply pressure falls, the outlet pressure increases, necessitating torque adjustment. In the two-stage regulator, there is automatic compensation for any drop in the supply pressure. Single-stage regulators may be used with pipelines and cylinders. Two-stage regulators are used with cylinders and manifolds. Two-staged regulators are recommended for applications that require a constant outlet pressure for the life of a gas cylinder.

The Chart shows the characteristic of a single stage regulator



FabMaster Elite Series Regulator / Flowmeter

Key Features:

- Regulator / flowmeter integral compact unit
- Manufactured under BS EN ISO 9001
- Conforms to BS EN ISO 13918
- Polycarbonate calibrated flow tube (LPM)



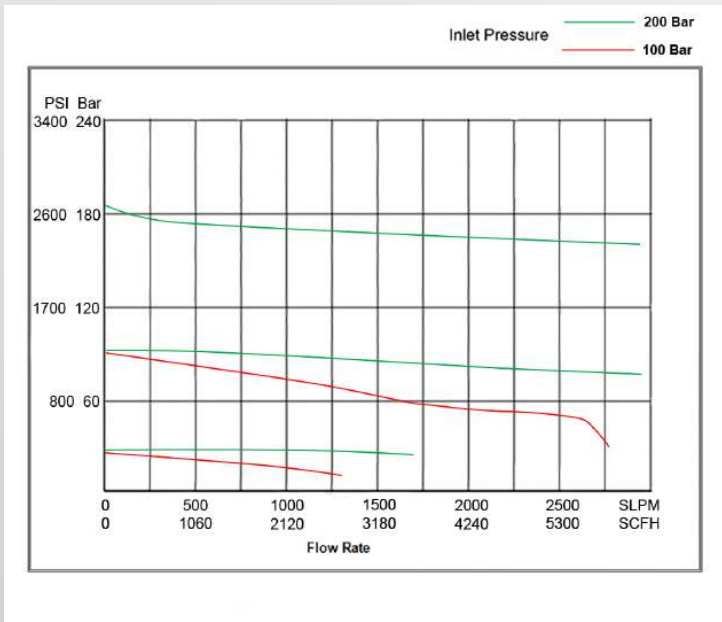
Model	Product Number	Inlet Connection
FabMaster Elite Series Regulator / Flowmeter	HLRF992 HLRF580	CGA992 CGA580

Single Stage Regulators



- 2 years warranty
- 300 bar service.
- Manufactured under BS EN ISO 9001.
- Conforms to BS EN ISO 2503.
- Alloy Bonnet for high strength.
- High contrast, easy to read gauges.
- Made in Britain.
- Available in bottom or side entry

FabMaster Elite Single Stage Regulator



Model	Part Number	Outlet
Oxygen		
Single Stage Indicator Oxygen Regulator	HL050007	10 Bar
Single Stage Plugged Oxygen Regulator	HL050001	10 Bar
Single Stage 2 Gauge Oxygen Regulator	HL050071	5 Bar
	HL050072	10 Bar
Single Stage 2 Gauge Oxygen Hand Tight Nevoc Regulator	HL050151	10 Bar
Single Stage Oxygen Spanner Tight Regulator	HL050158	10 Bar
Fuel Gas		
Single Stage 2 Gauge Acetylene Regulator	HL050073	1.5 Bar
Single Stage 2 Gauge Propane Regulator	HL050178	2 Bar
	HL050076	4 bar
Single stage 2 Gauge Hydrogen Regulator	HL050123	10 Bar
Single Stage Plugged Propane Regulator	HL050004	2 Bar
	HL050005	4 Bar
Single Stage Plugged Acetylene Regulator	HL050002	1.5 Bar
Inert		
Single Stage Pre-Set 1 Gauge Argon Regulator	HL050033	2 Bar
Single Stage 2 Gauge Argon Regulator	HL050075	10 Bar
Single Stage 2 Gauge Nitrogen Regulator	HL050075NIT	10 Bar
Single Stage 2 Gauge Argon Regulator	HL050074	35LPM
Single Stage 2 Gauge Helium Regulator	HL050126	10 Bar
Single Stage 2 Gauge CO2 Regulator	HL050075CO2	10 Bar
Single Stage Plugged Argon Regulator	HL050094	10 Bar
Single Stage Argon Nevoc Spanner Tight Regulator	HL050036	10 Bar
Single Stage Argon Nevoc Spanner Tight Regulator	HL050037	CFH
Single Stage Argon Nevoc Hand Tight Regulator	HL050311	CFH
Single Stage Argon Nevoc Hand Tight Regulator	HL050038	10 Bar

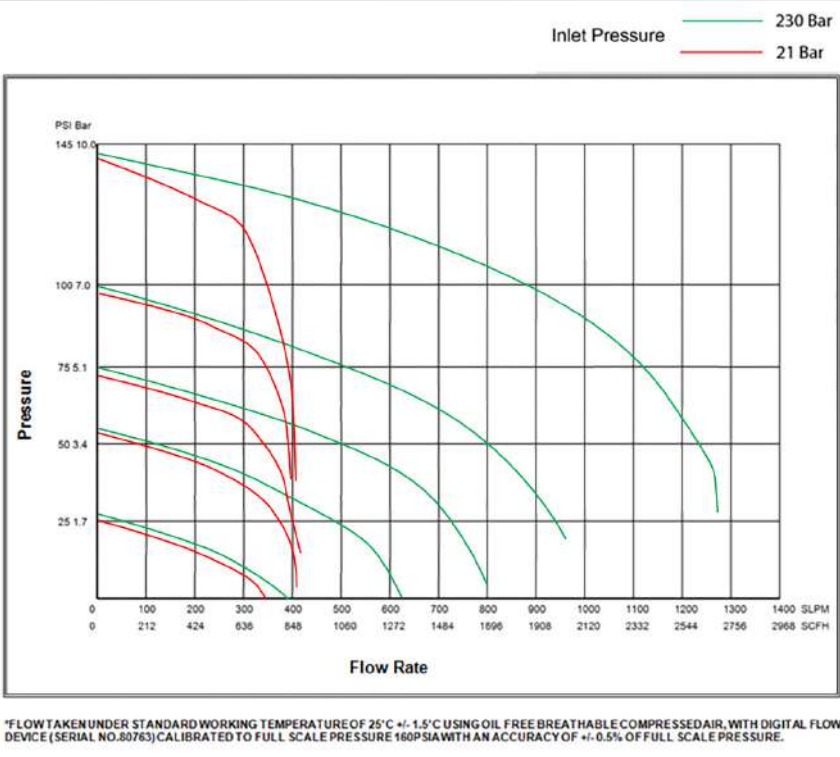


Two Stage Regulators



- 2 years warranty
- 300 Bar Service
- Available in bottom and side entry.
- High contrast, easy to read gauges.
- Alloy bonnet for high strength.
- Manufactured under BS EN ISO 9001.
- Conforms to BS EN ISO 2503.
- Made in Britain

FabMaster Elite Two Stage Regulator



Model	Part Number	Outlet
Oxygen		
Two Stage 2 Gauge Oxygen Regulator	HL060002 HL060003	5 Bar 10 Bar
Two Stage Oxygen Nevoc Hand Tight Regulator	HL060157	10 Bar
Two Stage Regulator 2 Gauge Oxygen Nevoc Spanner Tight Regulator	HL060058	10 Bar
Fuel Gas		
Two Stage 2 Gauge Acetylene Regulator	HL060004	1.5 Bar
Two Stage 2 Gauge Propane Regulator	HL060024	5 Bar
Two Stage 2 Gauge Hydrogen Regulator	HL060017 HL060019	5 Bar 10 Bar
Inert		
Two Stage 2 Gauge Argon Regulator	HL060009 HL060010	5 Bar 10 Bar
Two Stage 2 Gauge Helium Regulator	HL060015 HL060016	5 Bar 10 Bar
Two Stage 2 Gauge Nitrogen Regulator	HL060021 HL060022	5 Bar 10 Bar
Two Stage 2 Gauge Nitrogen Nevoc Spanner Type Regulator	HL060068	10 Bar
Two Stage 2 Gauge Helium Nevoc Spanner Type Regulator	HL060059	10 Bar
Two Stage Argon Nevoc Spanner Tight Regulator	HL060010SENEV	10 Bar
Two Stage Argon Nevoc Hand Tight Regulator	HL060118	35L

