

# SGA Datasheet

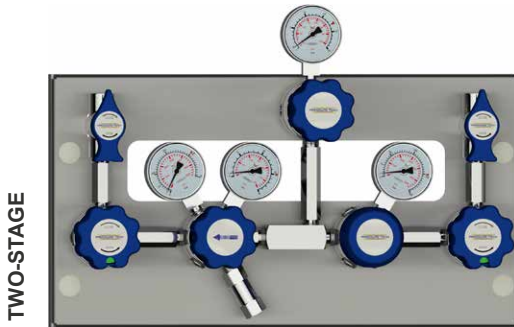
SPECIALITY GAS SEMI-AUTOMATIC CHANGEOVER MANIFOLD

**PRESSURE TECH**

Gas  
  Liquid  
  Diaphragm  
  Piston  
  Self-Venting  
  Non-Venting  
 Max Inlet: 300 bar (4,350 psi)  
 Max Outlet: 50 bar (725 psi)  
 Cv 0.1



SINGLE-STAGE



TWO-STAGE

## INTRODUCING THE SGA...

The SGA is a versatile semi-automatic changeover manifold assembly, suitable for a wide range of gas mixtures up to Grade 6 purity. It is designed to reduce the incoming gas supply from two separate cylinders, each with a maximum inlet pressure of 300 bar (4,350 psi), to a safe and usable outlet pressure.

The SGA ensures uninterrupted gas flow by automatically switching from the primary supply cylinder to the secondary cylinder once the primary cylinder is fully depleted. This automatic changeover is achieved through a controlled differential in the set pressures of the two integrated pressure regulators.

For applications requiring enhanced outlet pressure stability, the installation of a second-stage pressure regulator is recommended.

Once an empty cylinder has been replaced, the lever should be rotated towards the active cylinder to reset the system.

The SGA assembly comprises pressure regulators, a relief valve, upstream shut-off valves, inlet and outlet pressure gauges, and optional purge valves to facilitate the safe changeover of process gases.

## FEATURES AND BENEFITS

### 1 FOR HIGH PURITY GAS $\geq 6.0$

Ensures the materials, design, and internal surface finish do not contaminate high purity gases.

### 2 UNINTERRUPTED GAS SUPPLY

Automatically switches to the adjacent full cylinder.

### 3 VISUAL SUPPLY INDICATOR

Lever indicates which gas cylinder is currently active.

### 4 SECOND-STAGE LETDOWN OPTION

Minimises fluctuations in outlet pressure as cylinder pressure drops.

## STANDARD MATERIALS OF CONSTRUCTION

PART	MATERIALS
Body and Bonnet	ASTM A479 316/316L Stainless Steel (UNS S31600/S31603)
	Chrome Plated Brass CW614N (UNS C38500)
Main Valve Pin	Hastelloy C276® (UNS N10276)
Soft Seat	PCTFE (Kel-F)
Valve Spring	Inconel® X750 (UNS N07750)
Diaphragm	Hastelloy C22® (UNS N06022)
Handwheel	Anodised Aluminium
O-Rings	FKM/FPM (Viton)
Loading Spring	Spring Steel Grade 80 BS 1449
Filter	100 Microns

Note: Pressure regulator rating may be limited by connection type, Cv and/or seat material. Contact the office for specific pressure or temperature requirements.

## SPECIFICATIONS

Max. Inlet	300 bar (4,350 psi)
Max. Outlet	Single-Stage: Up to 50 bar (725 psi) Two-Stage: Up to 14 bar (203 psi)
Cv	0.1
Design Proof Pressure	150% max. working pressure
Seat Leakage	$< 1 \times 10^{-6}$ mbar L/s (Helium)
External Leakage	$< 1 \times 10^{-9}$ mbar L/s (Helium)
Purity	$\geq 6.0$
Min/Max Temperatures	-25°C to +70°C (-13°F to 158°F)
Weights	Single-Stage: Up to 6.4kg (14.1lbs) Two-Stage: Up to 7.6kg (16.76lbs)
Dimensions	See page 2

Note: Unless otherwise requested, the relief valve's set pressure will be 120% of the regulator's nominal outlet set pressure.

Product availability and specifications contained herein are subject to change without notice. Consult local distributor or factory for potential revisions and/or service related issues. Pressure Tech Ltd support with product selection recommendations only - it is the users responsibility to ensure the product is suitable for their specific application requirements.



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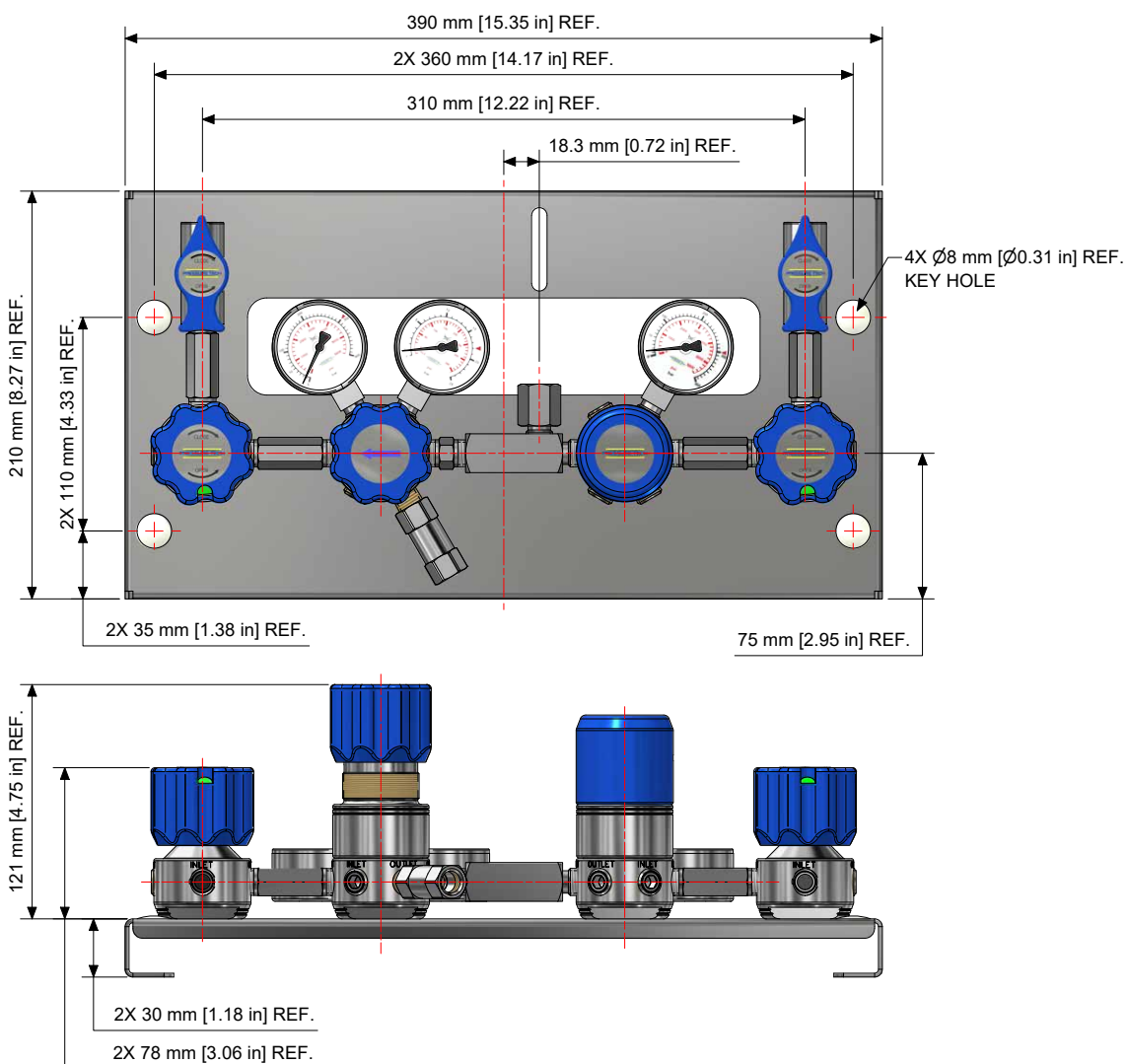
● Gas ● Liquid | ● Diaphragm ● Piston | ● Self-Venting ● Non-Venting | Max Inlet: 300 bar (4,350 psi) | Max Outlet: 50 bar (725 psi) | Cv 0.1

## CLEANLINESS STANDARDS & SURFACE FINISH

All components are precision-cleaned to meet stringent cleanliness levels of 1mg/m<sup>2</sup>, in accordance with ASTM G93/G93M, ASTM F331-13, and ISO 15001:2011. Brass products are electroplated as standard to enhance durability and corrosion resistance.

## DRAWINGS AND INSTALLATION DIMENSIONS

Dimensions shown for standard configurations only – please contact the office for other options.



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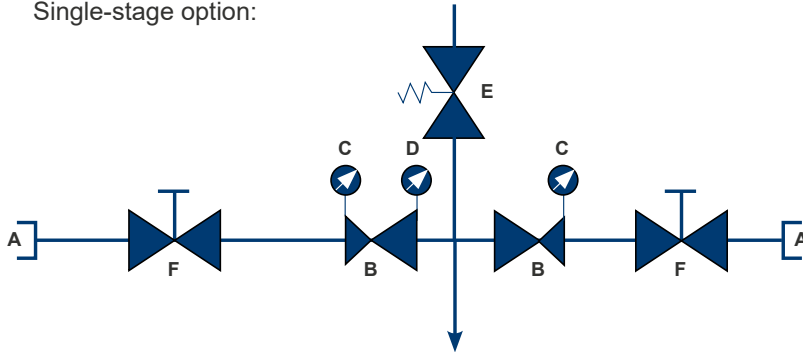
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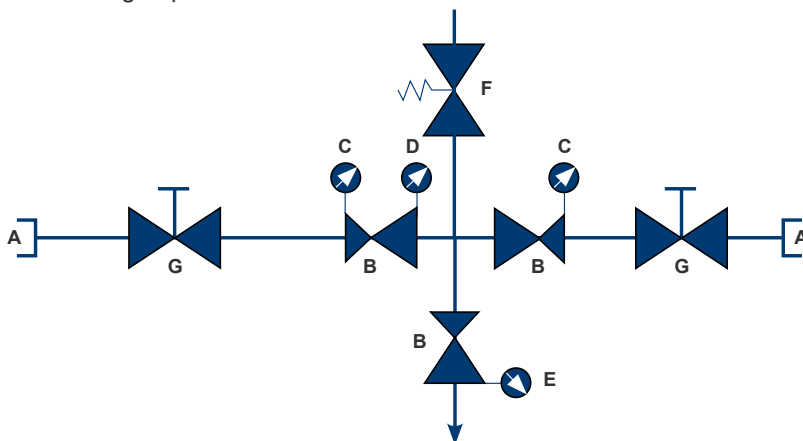
## P&ID

Single-stage option:



- A: Inlet connection
- B: Pressure regulator
- C: Inlet pressure gauge
- D: Outlet pressure gauge
- E: Relief valve
- F: Upstream shut-off valve

Two-stage option:



- A: Inlet connection
- B: Pressure regulator
- C: Inlet pressure gauge
- D: Intermediate pressure gauge
- E: Outlet pressure gauge
- F: Relief valve
- G: Upstream shut-off valve

## FLOW CURVE

The flow charts for line pressure regulators have been generated in accordance with ISO 2503 which requires the upstream pressure to be approximately twice that of the downstream pressure.

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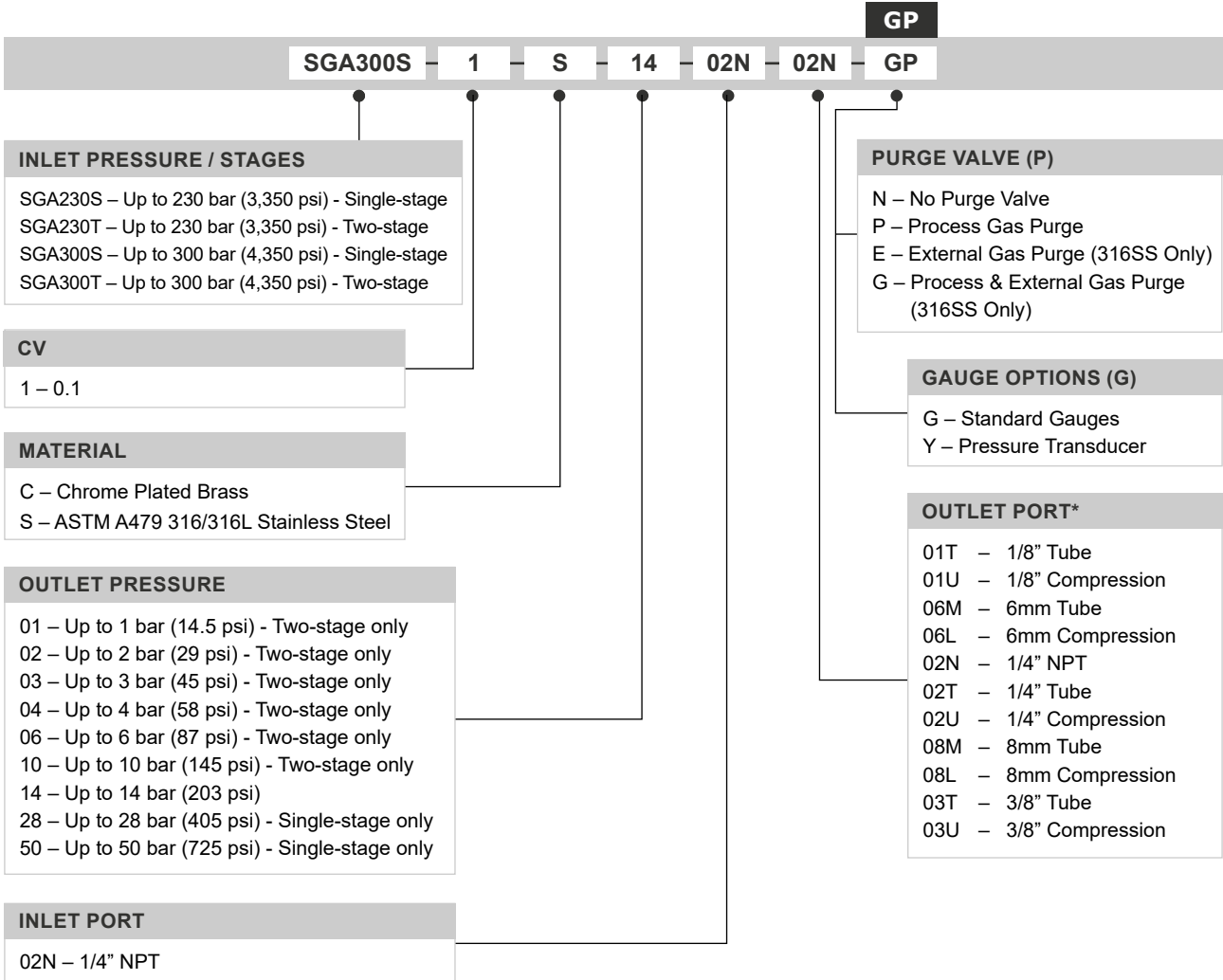
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## ORDERING INFORMATION

To build a Pressure Tech part number, simply combine the characters identified below in sequence:



**TRADEMARKS:** Inconel® is a registered trademark of Inco Alloys International  
 Hastelloy® is a registered trademark of Haynes International, Inc

\* Other options available

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