

## Proportional Gas Mixers Typical Applications

- Weld and purge with a variety of gases
- Accurate TIG and MIG weld shielding
- Mixed gases for the foundry industry
- Accurate mixing of gases for the aerospace industry
- Laboratory applications
- Gas mixtures for plasma arc cutting machines
- Controlling the atmosphere in heat treat ovens
- Mixtures are maintained with any selection
- Mixture accuracy is unaffected when inlet pressure remains within specified limits
- Reduced set-up time eliminates the need for premixed gases
- Easy operation, training and supervision
- **Requires no electricity**

### Eliminates stocking and handling premixed gases

Various welding jobs require different mixes for the best performance. On-site mixing of gases with Smith's proportional gas mixers eliminates inventorying and handling of costly premixed gases. Individual gases can be mixed for specific welding or other industrial requirements resulting in improved performance. Controlling the mixture of gases will result in lower cost and better controlled welds.

### Reduces Set-up Time

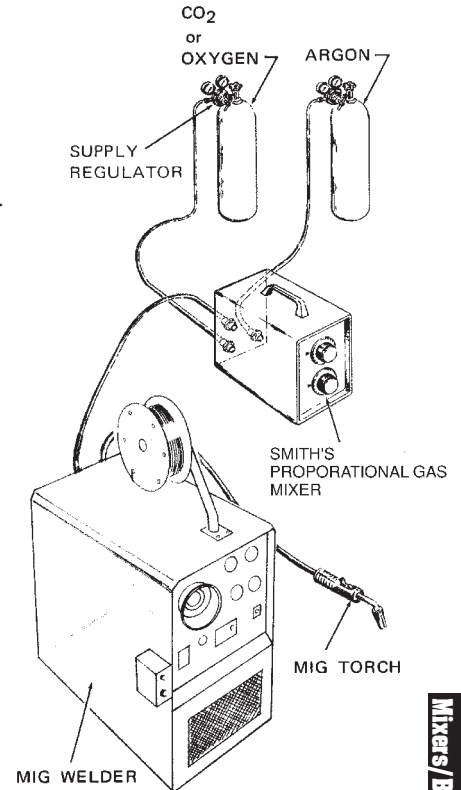
No need to change cylinders, regulators, flowmeters or hoses when changing from one range of mixed gas to another. Just turn the dial for whatever mixture you need. No critical adjustment of flowmeters or complex calculations needed to achieve proper mixture rates.

### Accurate — No Gas Separation!

Premixed gases may separate (stratify) into the individual gases within the cylinder. Smith's proportional gas mixer eliminates gas stratification to always gives you an accurate mixture.

### Easy Operation, Training & Supervision in Welding Applications

Whether you are using a single welder or a manifold system supplying many welders, operation is simple and easy to use. Ideal for training all personnel regarding shielded gas mixtures because they can see the effect of various gas mixtures on weld appearance, quality and penetration. Supervisors can easily note at a glance if the operator is using specified gas mixture.



### Three Series of Mixers Available:

#### 2-Gas Mixers in Standard and High Capacity Models and 3-Gas Standard Models

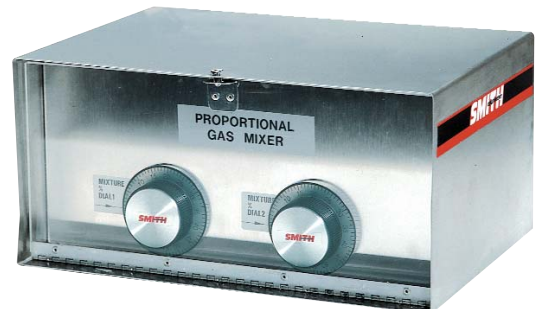
The standard 2-gas series provides flows up to 180 SCFH and is suitable for most applications. The high capacity two-gas series provides flows up to 700 SCFH and is designed primarily for large manifold systems with station flowmeters in the welding industry. It is ideal for other industrial applications requiring high flow rates. The standard three-gas series provides flows up to 180 SCFH.



**2 Gas**  
10-180 SCFH/5-85 LPM



**2 Gas**  
20-700 SCFH/9-330 LPM



**3 Gas**  
10-180 SCFH/5-85 LPM

Gas Mixers/Blenders

## Proportional Standard 2-Gas Mixers



**Standard Two Gas Mixer  
180 SCFH/85 LPM**

### STANDARD 2-GAS MIXER - 180 SCFH/85 LPM

Stock No.	Gases	Adjustment % Range	Required Inlet Pressure/ Gas PSIG/Bar	Outlet Pressure Without Flow PSIG/Bar*
<b>299-006-1B</b>	Argon	0-100%	105 - 115	45 / 3.1
	CO <sub>2</sub>	100-0%	7.3 - 7.9	
<b>299-006-3B</b>	Argon	0-100%	105 - 115	45 / 3.1
	Helium	100-0%	7.3 - 7.9	
<b>299-011-1B</b>	Argon	50-100%	105 - 115	50 / 3.5
	Hydrogen	50-0%	7.3 - 7.9	

All gases used with the mixers must be compatible with Buna-N, Copolymer Acetal, Nylon and Polyethylene.

\* **NOTE:** outlet pressure, factory set at no flow.



### Series 30™ Mixer Inlet Regulators

- 30-150-580 - Nitrogen
- 30-100-320 - CO<sub>2</sub>
- 30-100-350 - Hydrogen
- 30-100-540 - Oxygen

**Replacement Mixer  
Inlet Filters: Part # 3291**

SPECIFICATIONS	
Flow Rate	10-180 SCFH 4.8-85.7 LPM
Flow Rate Subdivisions	10 SCFH 4.8 LPM
Inlet & Outlet Connections	5/8"-18 RH Internal
Inlet Filters, Mixer protection only	60 Micron Nominal PN: 3291
Case Material	304 Stainless Steel
Weight	8 lbs. / 3.5kg
Size (WxDxH)	5-1/4" x 10" x 6-1/4" (133mm x 254mm x 165mm)

## High Capacity 2-Gas Mixers

### HIGH CAPACITY 2-GAS MIXER - 700 SCFH/330 LPM

SPECIFICATIONS	
Flow Rate	20-700 SCFH / 9.4-330 LPM
Inlet Connection	1/4" FNPT
Outlet Connection	1/2" FNPT
Inlet Filters, mixer protection only PN: 8203	60 Micron Nominal
Case Material	304 Stainless steel
Weight	17 lbs. - 7.5kg
Size (WxDxH)	14" x 11" x 7" (356mm x 279mm x 179mm)



**High Capacity Two Gas Mixer  
700 SCFH/330 LPM**

### HIGH CAPACITY 2-GAS MIXERS - 700 SCFH/330 LPM

Stock No.	Gases	Adjustment % Range	Required Inlet Pressure/ Gas PSIG/Bar	Outlet Pressure Without Flow PSIG/Bar*
<b>299-016-1B</b>	Argon	0-100%	105 - 115	50 / 3.45
	CO <sub>2</sub>	100-0%	7.3 - 7.9	
<b>299-016-16B</b>	Argon	50-100%	105 - 115	50 / 3.45
	Hydrogen	50-0%	7.3 - 7.9	

**Replacement Mixer  
Inlet Filters: Part # 8203**

\* Factory Set At No Flow.



## Standard 3-Gas Mixers



**Three Gas Mixer - 180 SCFH/85 LPM**

SPECIFICATIONS	
Flow Rate	10-180 SCFH / 4.7-85.7 LPM
Inlet & Outlet Connections	5/8"-18 RH Internal
Inlet Filters, Mixer protection only PN: 3291	60 Micron Nominal
Case Material	304 Stainless Steel
Weight	17 lbs. - 7.5kg
Size (WxDxH)	14" x 11" x 7" (356mm x 279mm x 179mm)

### STANDARD 3-GAS MIXERS - 180 SCFH/85 LPM

Stock No.	Gases	Adjustment % Range	Required Inlet Pressure/ Gas PSIG/Bar	Outlet Pressure Without Flow PSIG/Bar*
<b>299-039B</b>	Argon	85-100%	105-115 7.3-7.9	50 / 3.45
	Oxygen	0-15%		
	CO <sub>2</sub>	0-15%		
<b>299-042B</b>	Argon	50-100%	105-115 7.3-7.9	50 / 3.45
	Helium	0-50%		
	Oxygen	0-15%		

\* Factory Set At No Flow

### NOTE:

Mixers and blenders may be shipped to Smith Equipment for recalibration, reconditioning and gas mix certification.

Contact Smith customer service via email at [smith@smithequipment.com](mailto:smith@smithequipment.com) to obtain information on costs and return goods instructions.

Gas  
Mixers/Blenders



# Gas Blenders

## Proportional

### PROPORTIONAL GAS BLENDERS

For Controlled and Modified  
Atmospheric Packaging of Food Products

#### FEATURE BENEFITS

- Select from a variety of gas percentages to meet your packaging needs
- Mixtures are maintained with any selected proportion with no gas separation
- Mixture accuracy is unaffected when inlet pressure remains within specified limits
- Reduced set-up time eliminates the need for premixed gases
- Ideal for mixture development for food packaging
- Laboratory and research applications
- Easy to operate

#### Eliminates The Need For Premixed Gases

Blending of gases eliminates the percent variations found with premixed gases. Lower cost individual gases can be blended to specific percentages for the product being packaged. Controlling the blended gases will result in lower cost and more flexibility in your packaging process.

#### Reduced Set-Up Time

On-site blending of gases eliminates the need to change cylinders, regulators, flowmeters, and hoses when changing from one mixture percentage to another. Changing the percentage setting is accomplished by the simple movement of a dial.

#### Eliminates Gas Separation

Blending of gas just prior to use eliminates gas stratification or separation that can occur when pre-mixed cylinders are allowed to stand for periods of time before use.

#### Automatic Shutdown

If any one of the incoming gases falls below a certain pressure level the Blender will automatically shut down. This eliminates the possibility of operating with only one gas.

#### Easy Installation and Operation

Smith's Gas Blender require no electrical connections. It is a completely mechanical device that is adjusted by simply turning a dial. This makes quick and easy percent mixture changes possible.

#### Tamper Resistant

Smith Blenders have a transparent Lexan™ door to protect the dial from accidental movement. This also allows the operator to monitor the setting.

**NOTE:** The pictures in this catalog depict examples of food products that may be packaged using the CAP/MAP process. Not all of the food products shown were packaged using these processes or the Smith blender.



Two Gas Blender - 700 SCFH



## Proportional - 2-Gas Blender - 700 SCFH/330 LPM

SPECIFICATIONS		
Inlet Pressure	Minimum 105 PSIG	7.23 Bar
	Maximum 115 PSIG	7.92 Bar
Outlet Pressure, Factory Set At No Flow	80 PSIG	5.5 Bar
Flow Rate	20-700 SCFH	9.4-330 LPM
Inlet Connection	1/4" NPT	
Outlet Connection	1/2" NPT	
Inlet Filters, Blender Protection Only PN: 8203	60 Micron Nominal	
Case Material	304 Stainless Steel	
Weight	17 lbs. / 7.5kg	
Size (W x D x H)	14" x 11" x 7" (356mm x 279mm x 179mm)	



**Two Gas Blender  
700 SCFH/330 LPM**

**With Automatic Shutdown Feature**

### TWO GAS BLENDER WITH AUTOMATIC SHUTDOWN 700 SCFH/330 LPM

Stock No.	Gases	Adjustment %Range	Required Inlet Pressure/ Gas	Outlet Pressure Without Flow
<b>299-029F</b>	Nitrogen CO <sub>2</sub>	0-100% 100-0%	105 to 115 PSIG 7.3 - 7.9 Bar	80 PSIG 5.5 Bar

## Proportional - 3-Gas Blenders - 180 SCFH/85 LPM

SPECIFICATIONS		
Inlet Pressure	Minimum 105 PSIG	7.23 Bar
	Maximum 115 PSIG	7.92 Bar
Outlet Pressure, Factory Set At No Flow	50 PSIG	3.45 Bar
Flow Rate	10-180 SCFH	4.8-85.7 LPM
Inlet and Outlet Connections	3/8" NPT RH Internal	
Inlet Filters, Blender Protection Only PN: 3291	60 Micron Nominal	
Case Material	304 Stainless Steel	
Weight	17 lbs. / 7.5kg	
Size (W x D x H)	14" x 11" x 7" (356mm x 279mm x 179mm)	



**Three Gas Blender  
180 SCFH/85 LPM**

**With Automatic Shutdown Feature**

### THREE GAS BLENDERS WITH AUTOMATIC SHUTDOWN 180 SCFH/85 LPM

Stock No.	Gases	Adjustment %Range	Required Inlet Pressure/ Gas	Outlet Pressure Without Flow
<b>299-037F</b>	Nitrogen Oxygen CO <sub>2</sub>	0-100% 100-0% 100-0%	105 to 115 PSIG 7.3 - 7.9 Bar	50 PSIG 3.45 Bar