







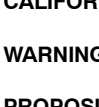


For Proportional Standard 180 SCFH (85 LPM) Gas Mixers 299-006-1C, 299-006-3C, 299-011-1C and 299-014-1C

1. Safety Symbol Definitions

	<p>DANGER! – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.</p> <p>DANGER ! - Indique une situation dangereuse qui, si elle n'est pas évitée, entraînera la mort ou des blessures graves. Les éventuels risques sont représentés par les symboles joints ou expliqués dans le texte.</p> <p>Fsafe1 2013-10</p>		<p>Have only trained and qualified persons install, operate, or service this unit. Read the safety information at the beginning of these instructions and in each section. Call your distributor if you do not understand the directions.</p> <p>Ne confiez l'installation, l'exploitation ou l'entretien de cet appareil qu'à des personnes compétentes et qualifiées. Lire les directives de sécurité au début de ces instructions et dans chaque section. Appeler votre distributeur si vous ne comprenez pas les directives. Lire le(s) manuel(s) d'utilisateur pour des renseignements sur la SÉCURITÉ DE SOUDAGE et les champs électromagnétiques.</p> <p>Oxysafe2 2013-10</p>
	<p>Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.</p> <p>Indique une situation dangereuse qui, si elle n'est pas évitée, entraînera la mort ou des blessures graves. Les éventuels risques sont représentés par les symboles joints ou expliqués dans le texte.</p> <p>Fsafe2 2013-10</p>		<p>Cylinders contain gas under high pressure and can explode if damaged. Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, and sparks. Always secure cylinder to running gear, wall, or other stationary support.</p> <p>Les bouteilles contiennent du gaz sous pression et elles peuvent exploser si elles sont endommagées. Protégez les bouteilles de gaz comprimé contre la chaleur excessive, les chocs, les dommages physiques, le laitier, les flammes nues et les étincelles. Fixez toujours la bouteille au train roulant, au mur ou à un autre support fixe.</p> <p>Oxysafe1 2015-09</p>
<p>NOTICE</p> <p>AVIS</p> 	<p>Indicates statements not related to personal injury.</p> <p>Signale des consignes non associées aux dommages corporels.</p> <p>Indicates special instructions.</p> <p>Fournit des instructions spéciales.</p> <p>Fsafe3 2013-10</p>		<p>Welding sparks can cause fire or explosion. Move flammables away. Do not weld on closed tanks or barrels, or on containers that have held combustibles – they can explode. Clean tanks or barrels properly.</p> <p>Les étincelles de soudure peuvent provoquer un incendie ou une explosion. Ne pas souder de cuves ou de tonneaux, au risque qu'ils explosent. Nettoyer soigneusement les cuves ou tonneaux.</p> <p>Oxysafe4 2013-10</p>
	<p>Arc rays can burn eyes and skin – wear a welding helmet with correct filter, and cover exposed skin with non-flammable clothing.</p> <p>Le rayonnement de l'arc peut provoquer des brûlures au niveau des yeux ou de la peau – porter un casque protecteur muni d'un écran de filtre approprié et porter des vêtements non inflammables pour protéger toutes parties exposées.</p> <p>Fsafe11 2018-01</p>		<p>Build-up of gas can injure or kill. Shut off compressed gas supply when not in use. Always ventilate confined spaces or use approved air-supplied respirator.</p> <p>L'accumulation de gaz peut blesser ou tuer. Après utilisation, fermer l'alimentation de gaz sous pression. Toujours aérer les espaces confinés ou utiliser un respirateur alimenté en air, d'un modèle approuvé.</p> <p>Oxysafe3 2013-10</p>
	<p>Wear safety glasses with side shields.</p> <p>Porter des lunettes de sécurité avec écrans latéraux.</p> <p>Fsafe8 2013-10</p>		
<p>CALIFORNIA PROPOSITION 65 WARNINGS</p> <p>WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov</p> <p>PROPOSITION CALIFORNIENNE 65 AVERTISSEMENTS</p> <p>AVERTISSEMENT : cancer et troubles de la reproduction – www.P65Warnings.ca.gov.</p> <p>Fsafe26 2018-01</p>			

2. Safety Precautions – Read Before Using



⚠ Do not use this equipment unless you are trained in its proper use or are under competent supervision. Follow the procedures described in this booklet every time you use the equipment. Failure to follow these instructions may cause fire, explosion, asphyxiation, property damage, or personal injury. This equipment must be used in accordance with all Federal, State, and local regulations as well as DOT (Department of Transportation) and CGA (Compressed Gas Association) regulations. Contact your gas supplier for more information on the proper use of compressed gases.

⚠ Do not use this equipment with gases and pressures other than those for which it is intended. Inspect all equipment before use. Do not use damaged, defective, or improperly adjusted equipment. Do not use if grease or oil is present on equipment or if equipment is damaged. Have equipment cleaned/repared by a qualified person.

⚠ Inspect equipment before use. Do not use if grease or oil is present on equipment or if equipment is damaged. Have equipment cleaned/repared by a qualified person.

⚠ Use an approved oil-free leak detection fluid to locate possible leaks. PTFE tape is an acceptable pipe thread sealant. If other sealing materials are preferred, those materials must be compatible with the gas that is being used in the system.

Check every connection and joint from the cylinder valve to the torch tip with an approved leak detection solution. If leaks are detected, eliminate them before proceeding. If leaks cannot be eliminated, do not put the equipment into service until it has been repaired or replaced.

⚠ Do not mix oxygen with a fuel gas (such as hydrogen) or a mixed-gas explosion could result.

⚠ Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.

⚠ Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders.

⚠ Store compressed gas and oxygen cylinders in separate locations.

⚠ Store empty cylinders with valves closed and caps in place.

⚠ Use only correct compressed gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition. Do not use compressed gas cylinder unless an approved gas regulator is attached to the gas valve.

3. Introduction

The Miller Proportional Gas Mixer is a non-electrical device used to mix or blend two individual gases at infinitely variable proportions. Gases are mixed by adjusting a single control dial. The mixer also provides flow control for rates up to 180 SCFH (85 lpm) by the adjustment of the flow rate dial.

4. Specifications

Dimensions (W x D x H): 5-3/8 x 7-3/8 x 10-1/8 in. (137 x 187 x 257 mm)

Weight: 8 lb (3.6 kg)

Case Material: Painted Aluminum

Inlet Filters: 60 Micron Nominal (Mixer Protection Only)

 Gas mixer accuracy is $\pm 2\%$ of full scale.

Stock Number	Gases	Adjustment % Range	Flow Range	Inlet Connections	Outlet Connection	Required Inlet Pressures	Outlet Pressure Without Flow	Conversion Chart
299-006-1C	Argon CO ₂	0-100% 100-0%	10-180 SCFH 4.8-85 lpm	5/8-18 RH Internal 5/8-18 RH Internal	5/8-18 RH Internal	105-115 psig 7.3-7.9 bar 724-793 kPa	50 psig 3.5 bar 344.7 kPa	Ar/He Ar/O ₂ CO ₂ /O ₂
299-006-3C	Argon Helium	0-100% 100-0%	10-180 SCFH 4.8-85 lpm	5/8-18 RH Internal 5/8-18 RH Internal	5/8-18 RH Internal	105-115 psig 7.3-7.9 bar 724-793 kPa	50 psig 3.5 bar 344.7 kPa	Ar/CO ₂ Ar/O ₂ CO ₂ /O ₂
299-011-1C	Argon Hydrogen	50-100% 50-0%	10-180 SCFH 4.8-85 lpm	5/8-18 RH Internal 9/16-18 LH External	5/8-18 RH Internal	105-115 psig 7.3-7.9 bar 724-793 kPa	50 psig 3.5 bar 344.7 kPa	Ar/He N/H ₂ Ar/O ₂ Ar/CO ₂
299-014-1C	Argon Oxygen	80-100% 20-0%	10-180 SCFH 4.8-85 lpm	5/8-18 RH Internal 5/8-18 RH Internal	5/8-18 RH Internal	105-115 psig 7.3-7.9 bar 724-793 kPa	50 psig 3.5 bar 344.7 kPa	Ar/CO ₂ Ar/H ₂ Ar/He N/H ₂

5. Installation Guidelines



Due to the varying requirements of each individual installation, detailed step-by-step instructions which adequately describe all installations are not provided. The following instructions briefly describe general installations and should be followed in all applications.

A gas supply must be supplied to both gas connections at the back of the mixer before any gas will flow through the mixer.

The maximum flow capacity of the mixer is 180 SCFH (85 lpm). To properly maintain the flow capacity of the mixed gases, maintain inlet gas pressure between a minimum level of 105 psig (724 kPa) and

a maximum level of 115 psig (793 kPa).

When using carbon dioxide (CO₂), special considerations must be given to the withdrawal rate of the CO₂ from the cylinder. High volume requirements or high flow rates may cause the CO₂ regulator to freeze up. (The flow of CO₂ will be prevented because of ice in the orifices.) Carbon dioxide regulator freeze up may occur under the following conditions:

- Continuous flow rates are greater than 60 SCFH (28.31 lpm).
- Regulator outlet pressure is less than 75 psig (517 kPa).
- The dew point of the carbon dioxide gas does not meet welding grade requirements.

The maximum continuous withdrawal rate from a 50 lb (22.67 kg) cylinder at room temperature is 35 SCFH (16.51 lpm) or 4 lb (1.81 kg) per hour. If the withdrawal rate is to be in excess of 35 SCFH (16.51 lpm), manifolding of several CO₂ cylinders may be necessary.

To determine total required flow rates for multiple welders or manifold-pipeline installations, consider the number of welders, duty cycle, and flow rate per welder. For example: 10 welders at 30 SCFH (14.15 lpm) per welder operating at a 50% duty cycle requires a 150 SCFH (70.79 lpm) flow rate ($10 \times 30 \times 0.5 = 150$ SCFH) ($10 \times 14.15 \times 0.5 = 70.79$ lpm).

6. Attaching Regulators To Cylinders



Tools Needed:



⚠ Do not use this equipment with gases and pressures other than those for which it is intended.

⚠ Open oxygen cylinder valves slowly. Opening an oxygen cylinder valve quickly can cause a fire or explosion. Be sure regulator adjusting handle is in the full out (off) position before opening an oxygen cylinder valve.

⚠ Do not stand in front of or behind the regulator when opening the cylinder valve.

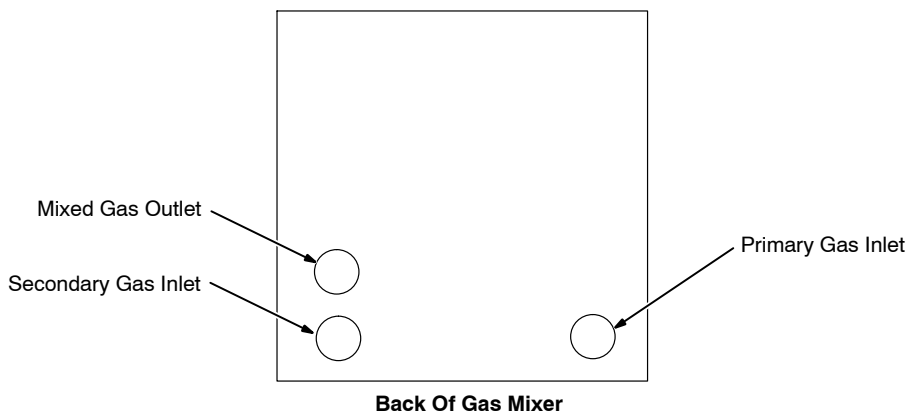
Securely fasten cylinders to prevent tipping.

Remove the valve protective cap from the cylinder.

Slightly open the cylinder valve (allowing gas to pass through) and close it quickly. This will clean the connecting orifice of any foreign material.

Attach the inlet connection of the correct regulator (for the gas used) to the cylinder and tighten firmly with a wrench.

7. Attaching Hoses To Regulators And Gas Mixer



Use only industrial grade hoses designed and approved for the pressure being used.

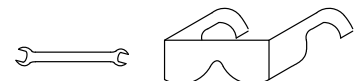
Connect hoses to the outlet connections of the regulators and tighten firmly with a wrench.

Attach the hoses to the corresponding Primary and Secondary Gas Inlet connections located on the back of the mixer.

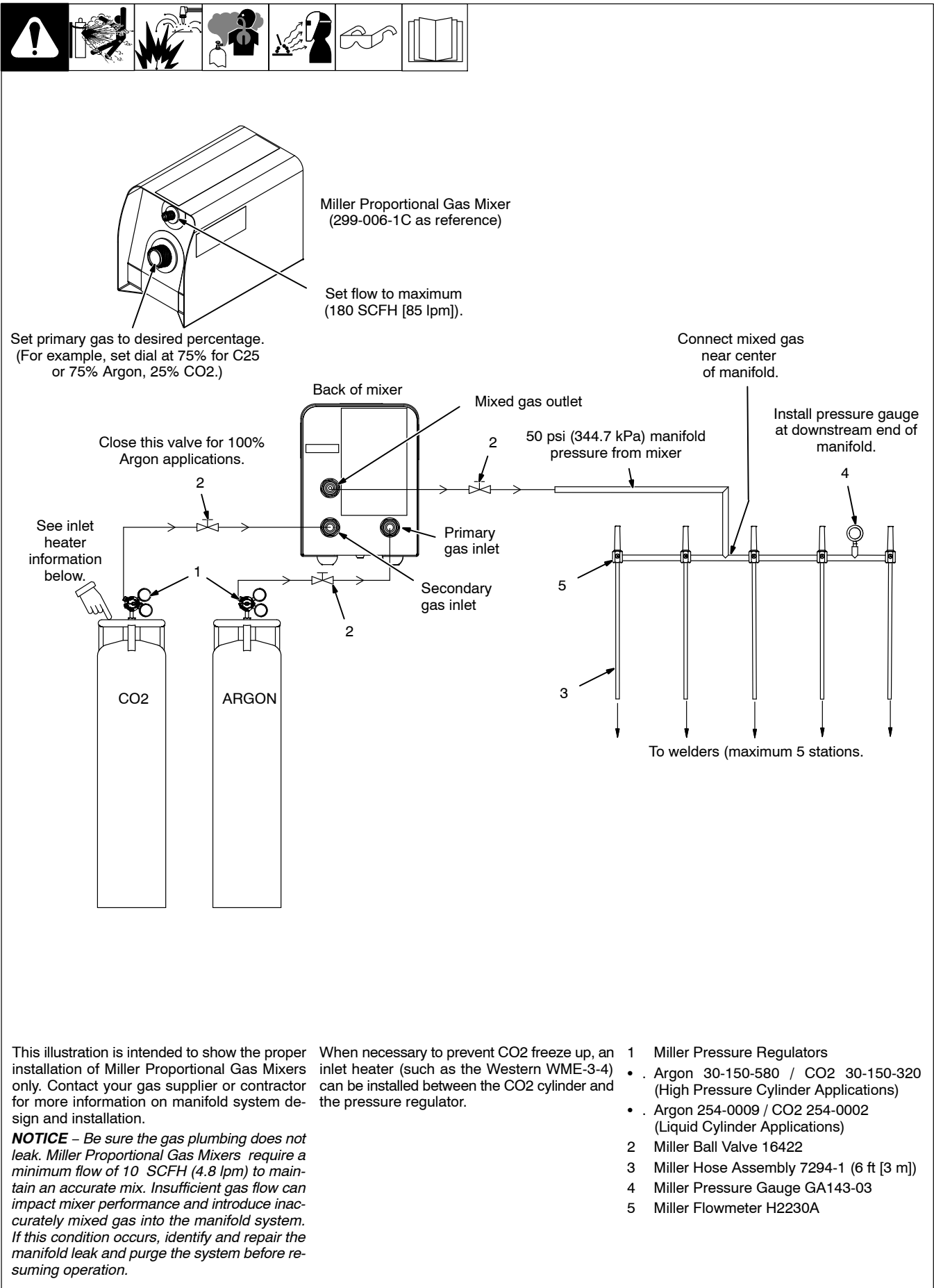
The primary gas is the gas indicated by the mixed percentage on the front dial.

Attach the hose to the 5/8-18 RH Mixed Gas outlet connection.

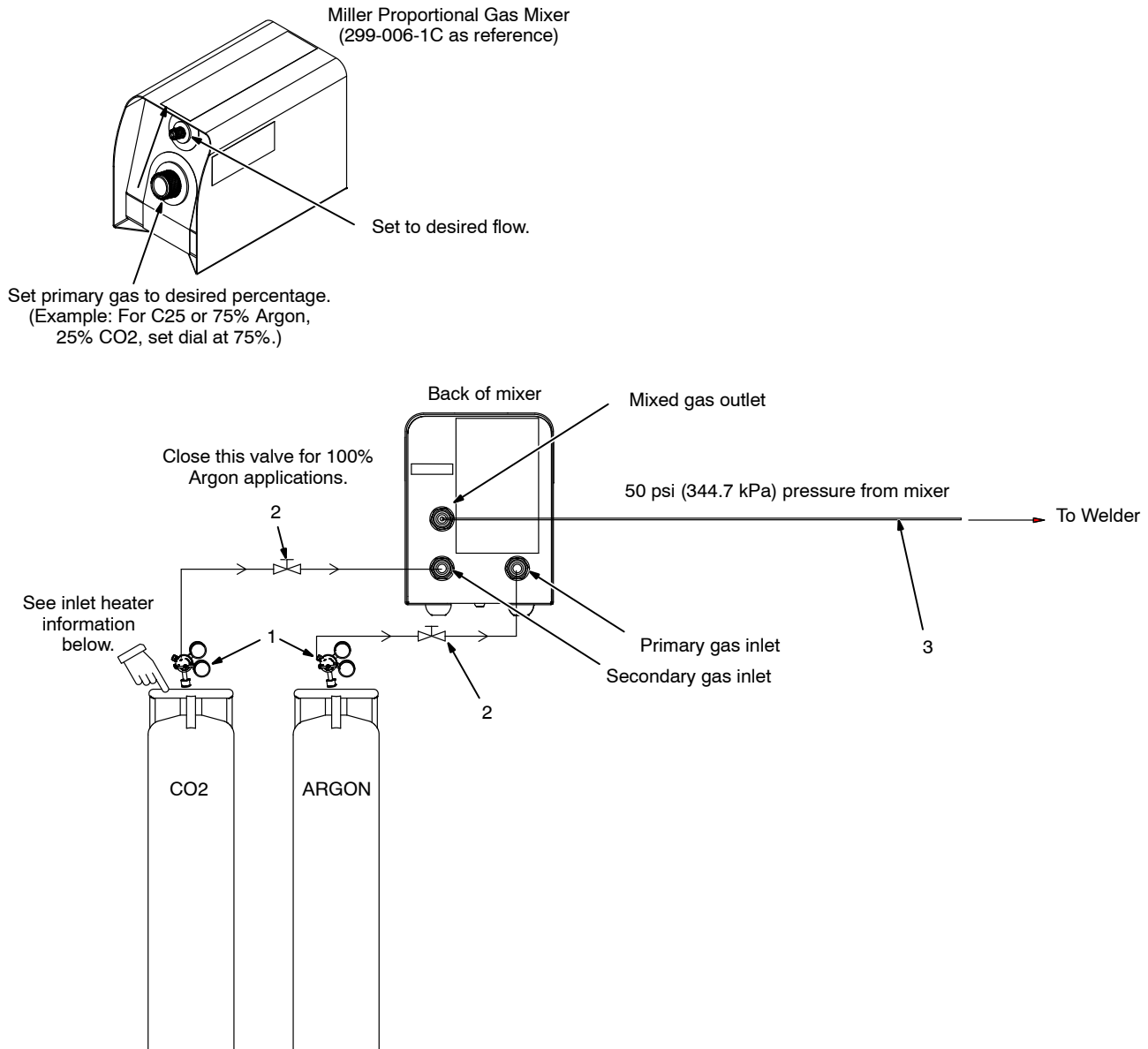
Tools Needed:



8. Typical Multi-Station Gas Mixer Installation



9. Typical Single-Station Gas Mixer Installation



This illustration is intended to show the proper installation of Miller Proportional Gas Mixers only. Contact your gas supplier or contractor for more information on manifold system design and installation.


NOTICE – Be sure gas plumbing does not leak. Miller Proportional Gas Mixers require a minimum flow of 10 SCFH (4.8 lpm) to maintain an accurate mix. Insufficient gas

flow can impact mixer performance and introduce inaccurately mixed gas into the system. If this condition occurs, identify and repair the leak and purge the system before resuming operation.

When necessary to prevent CO₂ freeze up, an inlet heater (such as the Western WME-3-4) can be installed between the CO₂ cylinder and the pressure regulator.

- 1 Miller Pressure Regulators
 - Argon 30-150-580 / CO₂ 30-150-320 (High Pressure Cylinder Applications)
 - Argon 254-0009 / CO₂ 254-0002 (Liquid Cylinder Applications)
- 2 Miller Ball Valve 16422
- 3 Miller Hose Assembly 7294-1 (6 ft [3 m])

10. Activating The Secondary Gas



NOTICE – To prevent damage to internal parts of the mixer, always activate the secondary gas first.

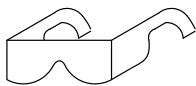
The first cylinder you will activate is for the secondary gas.

Turn the pressure adjusting handle on the regulator counterclockwise until all spring load is released or the adjusting handle reaches the mechanical stop.

Do not stand in front of or behind the regulator when opening the cylinder valve.

Rotate Flow SCFH control on front of mixer to zero (0) position.

Slowly open the cylinder valve until maximum tank pressure is indicated on the high pressure regulator gauge.

Tools Needed: 


Fully open the cylinder valve.

Set the mixture percentage dial located on front of mixer to zero (0) or lowest setting.

Rotate regulator pressure adjusting handle (clockwise) until the low pressure secondary gas cylinder gauge reads 105 psig (724 kPa).

The secondary gas is now activated.

11. Activating The Primary Gas



NOTICE – To prevent damage to internal parts of the mixer, always activate the secondary gas first (see Section 10).

Turn the pressure adjusting handle on the regulator counterclockwise until all spring load is released or the adjusting handle reaches the mechanical stop.

Do not stand in front of or behind the regulator when opening the cylinder valve.

Rotate Flow SCFH control on front of mixer to zero (0) position.

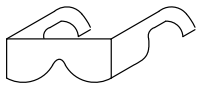
Slowly open the cylinder valve until maximum tank pressure is indicated on the high pressure regulator gauge.

Fully open the cylinder valve.

Set the mixture percentage dial located on front of mixer to zero (0) or lowest setting.

Rotate regulator pressure adjusting handle (clockwise) until the low pressure primary gas cylinder gauge reads 105 psig (724 kPa).

The primary gas is now activated.

Tools Needed: 

Use an approved oil-free leak detection fluid to locate possible leaks. PTFE tape is an acceptable pipe thread sealant. If other sealing materials are preferred, those materials must be compatible with the gas that is being used in the system.

Adjust the mixed gas mixture percentage by turning the dial located on the front of the mixer.

For example, setting the dial at 75 provides a mixture of 75% primary gas and 25% secondary gas.

The unit is now ready for operation.

12. Troubleshooting

Trouble	Remedy
No primary pressure.	Check cylinder valves, cylinder content, regulator and/or supply hose. Pressure should be 105–115 psig (724–793 kPa).
No or low secondary pressure.	Check cylinder valves, cylinder content, regulator and/or supply hose. Pressure should be 105–115 psig (724–793 kPa).
CO2 regulator “freezes up.”	Check for low or no CO2 regulator outlet pressure. A heated regulator, two-stage regulator with heat exchanger, or an individual CO2 cylinder outlet heater may be required. Also check for moisture in gas, and gas withdrawal rate.
Inlet filter plugged.	Remove inlet hose from Inlet fittings and visually check filters inside fittings for contamination. If filters are contaminated and not easily cleaned, contact Factory Authorized Service Agent.
Proportional gas mixer does not function properly.	<p>Verify that both primary and secondary gas pressure are present at the gas mixer. For example, to use 100 percent secondary gas the mixer still needs primary gas pressure to function properly.</p> <p>Contact Factory Authorized Service Agent to return unit to factory for service (see Section 13).</p>

13. Service Information

The Proportional Gas Mixer has been engineered, manufactured, and quality tested for years of trouble-free service. Repair and recalibration is recommended after five years of service, but may be required more frequently if operated in unusual conditions. Unforeseen special operating conditions, misuse, or abuse could cause the mixer to malfunction. Consequently, the troubleshooting information in Section 12 is primarily intended to help the user determine if the problem is with the mixer, or related to an improper installation or faulty associated equipment. If the gas mixer is determined to be malfunctioning, make arrangements to return the unit to the factory for service.

If the mixer requires factory servicing, please contact a local distributor for a Returned Goods Authorization number. Include the following information with any unit returned for service.

- Name and address of the company where the unit will be returned after service
- A brief explanation of the problem or the work to be performed
- The length of time the mixer has been in service
- The Return Goods Authorization number (obtained from your distributor)

14. Using The Gas Conversion Tables (See Section 15 For Conversion Tables)

 The table shown below is for reference only. See the gas mixer conversion tables in Section 15 for specific values.

Some proportional gas mixers feature conversion tables found on the top of the mixer cabinet. The tables provide information needed to use the mixers with alternative gases. To use, find the desired gases and percentage of primary gas (the first of the two gases listed) in the conversion table. Then, turn the mixture control dial to the corresponding dial setting, which is given in the first column of the conversion table.

For example, in the example shown below, if a 4% concentration of argon is desired when using an argon/helium (Ar/He) mixture, set the dial to 12.0.

Gas Options (Primary/Secondary)			
Ar/CO ₂	Ar/He	Ar/O ₂	CO ₂ /O ₂
Mixture Control Setting	Percent Primary Gas		
0.0	0.0	0.0	0.0
2.0	0.6	1.7	1.6
4.0	1.2	3.4	3.2
6.0	1.9	5.1	4.9
8.0	2.6	6.9	6.6
10.0	3.2	8.6	8.2
12.0	4.0	10.4	10.0

15. Gas Mixer Conversion Tables

Gas Mixer 299-006-1C			
Ar/CO2	Ar/He	Ar/O2	CO2/O2
Percent Primary Gas			
0.0	0.0	0.0	0.0
2.0	0.6	1.7	1.6
4.0	1.2	3.4	3.2
6.0	1.9	5.1	4.9
8.0	2.6	6.9	6.6
10.0	3.2	8.6	8.2
12.0	4.0	10.4	10.0
14.0	4.7	12.2	11.7
16.0	5.4	13.9	13.4
18.0	6.3	15.8	15.2
20.0	7.0	17.5	16.9
22.0	7.9	19.4	18.7
24.0	8.7	21.2	20.4
26.0	9.6	23.1	22.2
28.0	10.5	24.9	24.0
30.0	11.5	26.8	25.8
32.0	12.4	28.7	27.7
34.0	13.5	30.5	29.5
36.0	14.6	32.4	31.3
38.0	15.6	34.3	33.2
40.0	16.8	36.3	35.2
42.0	17.9	38.2	37.0
44.0	19.2	40.1	39.0
46.0	20.5	42.1	40.9
48.0	21.8	44.0	42.8
50.0	23.2	46.0	44.8
52.0	24.8	48.2	46.9
54.0	26.2	50.0	48.8
56.0	27.8	52.0	50.8
58.0	29.5	54.1	52.9
60.0	31.2	56.1	54.9
62.0	33.1	58.2	57.0
64.0	34.9	60.2	59.0
66.0	37.0	62.3	61.2
68.0	39.2	64.5	63.4
70.0	41.4	66.6	65.5
72.0	43.7	68.6	67.6
74.0	46.3	70.8	69.8
76.0	48.9	73.0	72.1
78.0	51.8	75.2	74.2
80.0	54.7	77.4	76.5
82.0	58.0	79.5	78.7
84.0	61.4	81.8	81.0
86.0	65.0	84.0	83.3
88.0	69.0	86.2	85.6
90.0	73.2	88.5	88.0
92.0	77.7	90.7	90.3
94.0	82.6	93.1	92.7
96.0	87.9	95.4	95.2
98.0	93.6	97.6	97.5
100.0	100.0	100.0	100.0

Gas Mixer 299-006-3C			
Ar/He	Ar/CO2	Ar/O2	CO2/O2
Percent Primary Gas			
0.0	0.0	0.0	0.0
2.0	6.4	5.5	5.3
4.0	12.2	10.6	10.2
6.0	17.4	15.2	14.6
8.0	22.2	19.6	18.8
10.0	26.8	23.8	22.9
12.0	31.1	27.8	26.8
14.0	35.1	31.5	30.5
16.0	38.7	35.0	33.9
18.0	42.1	38.3	37.1
20.0	45.3	41.4	40.2
22.0	48.3	44.3	43.2
24.0	51.1	47.1	45.9
26.0	53.7	49.7	48.5
28.0	56.3	52.3	51.1
30.0	58.7	54.8	53.6
32.0	60.9	57.0	55.8
34.0	63.0	59.2	58.0
36.0	65.0	61.3	60.2
38.0	67.0	63.3	62.2
40.0	68.8	65.3	64.2
42.0	70.5	67.0	66.0
44.0	72.2	68.9	67.9
46.0	73.8	70.6	69.6
48.0	75.3	72.3	71.3
50.0	76.8	73.8	72.8
52.0	78.1	75.3	74.4
54.0	79.6	76.9	76.0
56.0	80.9	78.3	77.5
58.0	82.0	79.5	78.7
60.0	83.2	80.8	80.0
62.0	84.3	82.1	81.4
64.0	85.5	83.4	82.7
66.0	86.5	84.6	83.9
68.0	87.5	85.7	85.1
70.0	88.5	86.8	86.2
72.0	89.4	87.8	87.3
74.0	90.4	89.0	88.5
76.0	91.3	89.9	89.5
78.0	92.2	90.9	90.5
80.0	93.0	91.8	91.5
82.0	93.8	92.8	92.4
84.0	94.6	93.7	93.4
86.0	95.3	94.5	94.3
88.0	96.0	95.4	95.2
90.0	96.7	96.1	95.9
92.0	97.4	97.0	96.9
94.0	98.1	97.7	97.6
96.0	98.8	98.5	98.4
98.0	99.4	99.3	99.3
100.0	100.0	100.0	100.0

Gas Mixer 299-011-1C				
Ar/H2	Ar/He	N/H2	Ar/O2	Ar/CO2
Percent Primary Gas				
50.0	58.6	54.4	80.0	82.4
51.0	59.5	55.4	80.6	82.9
52.0	60.5	56.4	81.2	83.5
53.0	61.4	57.4	81.8	84.0
54.0	62.4	58.3	82.4	84.6
55.0	63.4	59.4	83.0	85.1
56.0	64.3	60.3	83.6	85.6
57.0	65.3	61.3	84.1	86.1
58.0	66.1	62.3	84.6	86.6
59.0	67.0	63.2	85.2	87.1
60.0	68.0	64.2	85.7	87.5
61.0	68.8	65.1	86.2	88.0
62.0	69.8	66.1	86.7	88.4
63.0	70.7	67.1	87.2	88.9
64.0	71.5	67.9	87.6	89.2
65.0	72.4	69.0	88.1	89.7
66.0	73.3	69.8	88.6	90.1
67.0	74.1	70.8	89.0	90.5
68.0	75.0	71.7	89.4	90.9
69.0	75.9	72.7	89.9	91.2
70.0	76.8	73.7	90.3	91.6
71.0	77.6	74.6	90.7	92.0
72.0	78.4	75.4	91.1	92.3
73.0	79.3	76.4	91.5	92.7
74.0	80.1	77.3	91.9	93.0
75.0	81.0	78.2	92.3	93.4
76.0	81.7	79.0	92.6	93.7
77.0	82.6	80.0	93.0	94.0
78.0	83.3	80.9	93.4	94.3
79.0	84.3	81.9	93.8	94.7
80.0	85.1	82.8	94.1	95.0
81.0	85.9	83.7	94.5	95.3
82.0	86.7	84.6	94.8	95.6
83.0	87.3	85.3	95.1	95.8
84.0	88.1	86.2	95.4	96.1
85.0	89.0	87.2	95.8	96.4
86.0	89.6	87.9	96.1	96.6
87.0	90.5	89.0	96.4	96.9
88.0	91.2	89.7	96.7	97.2
89.0	91.9	90.5	97.0	97.4
90.0	92.8	91.6	97.3	97.7
91.0	93.5	92.4	97.6	98.0
92.0	94.3	93.3	97.9	98.2
93.0	95.0	94.1	98.2	98.4
94.0	95.8	95.0	98.5	98.7
95.0	96.5	95.9	98.7	98.9
96.0	97.0	96.5	98.9	99.1
97.0	97.8	97.4	99.2	99.3
98.0	98.6	98.4	99.5	99.6
99.0	99.4	99.3	99.8	99.8
100.0	100.0	100.0	100.0	100.0

Gas Mixer 299-014-1C				
Ar/O2	Ar/CO2	Ar/H2	Ar/He	N/H2
Percent Primary Gas				
80.0	82.4	50.0	58.6	54.4
80.5	82.8	50.8	59.3	55.2
81.0	83.3	51.6	60.1	56.0
81.5	83.8	52.5	61.0	56.9
82.0	84.2	53.3	61.7	57.7
82.5	84.7	54.2	62.6	58.6
83.0	85.1	55.0	63.4	59.4
83.5	85.6	55.9	64.2	60.2
84.0	86.0	56.8	65.0	61.1
84.5	86.5	57.8	65.9	62.0
85.0	86.9	58.6	66.7	62.9
85.5	87.4	59.6	67.6	63.8
86.0	87.8	60.6	68.5	64.7
86.5	88.3	61.6	69.4	65.7
87.0	88.7	62.6	70.3	66.7
87.5	89.1	63.7	71.2	67.7
88.0	89.6	64.7	72.2	68.7
88.5	90.0	65.8	73.1	69.7
89.0	90.5	67.0	74.1	70.8
89.5	90.9	68.2	75.2	71.9
90.0	91.3	69.2	76.1	72.9
90.5	91.8	70.5	77.2	74.0
91.0	92.2	71.6	78.1	75.1
91.5	92.7	73.0	79.3	76.4
92.0	93.1	74.2	80.3	77.5
92.5	93.5	75.5	81.3	78.6
93.0	93.9	76.8	82.4	79.8
93.5	94.4	78.2	83.5	81.1
94.0	94.8	79.6	84.7	82.4
94.5	95.3	81.1	85.9	83.7
95.0	95.7	82.6	87.1	85.0
95.5	96.2	84.3	88.3	86.5
96.0	96.5	85.6	89.4	87.7
96.5	97.0	87.4	90.7	89.2
97.0	97.4	88.9	91.9	90.5
97.5	97.9	90.8	93.3	92.2
98.0	98.3	92.4	94.5	93.6
98.5	98.7	94.1	95.8	95.0
99.0	99.2	96.2	97.3	96.8
99.5	99.6	98.1	98.6	98.4
100.0	100.0	100.0	100.0	100.0