

Specialty Gases and Equipment

***Nor* LAB**
A DIVISION OF NORCO, INC.



ISO 9001:2008
CERTIFIED
Quality Management System

NorLAB

A DIVISION OF NORCO, INC.

Norlab, the Specialty Gas Division of Norco, Inc., has been producing and distributing calibration mixtures and pure specialty gases in refillable and nonrefillable cylinders since the late 1970s. We offer a complete line of products, including pure gases to levels of 99.9999% purity, multi-component hydrocarbon mixtures, environmental, industrial hygiene, medical and special application mixes as well as compatible gas control equipment.

Our gas blending capabilities include mixtures produced gravimetrically (primary standard) with analytical accuracies to $\pm 0.02\%$ absolute, as well as certified and unanalyzed mixes produced to less stringent tolerances. We can also provide NIST traceability certification.

Norlab offers a complete line of specialty gas control equipment and accessories: fixed-flow, multi-flow and pressure demand regulators and calibration kits for industrial hygiene instrument calibration; a dual cylinder transport bag; and pressure-reducing regulators in brass, aluminum or stainless steel for reactive and non-reactive gas control applications. We also supply manifolds, gas filters, fine metering valves and cylinder changeover regulators.

Our personnel know and understand the unique needs and requirements of the specialty gas customer. Our staff has in excess of 100 years of combined experience in this industry.

To further ensure confidence in Norlab's products, our quality program received ISO 9002 registration in January, 1996. For further information, or the name of your nearest Norlab distributor, contact us:

(800) 657-6672

Fax: (208) 331-3038

E-mail: norlabcs@norco-inc.com

Website: www.norlab-gas.com



A WIDE VARIETY OF GASES FOR ANY APPLICATION

Pure and Rare Gases

Acetylene, 99.6%
Air, Ultrapure, HCF, Zero
Argon, 99.998% - 99.9999%
Helium, 99.995% - 99.9999%
Hydrogen, 99.99% - 99.9999%
Krypton, 99.9985+%
Methane, 99.0% - 99.99%
Neon, 99.9988+%
Nitrogen, 99.998% - 99.9999%
Oxygen, 99.99% - 99.999%
Sulfur Hexafluoride, 99.9%
Xenon, 99.9985%

Special Application Mixtures

Laser Mixes
Flame Ionization Mixes
Nuclear Counter Mixes (P-10)
Electron Capture Mixes (P-5)
Leak Detection Mixes
Boiler Efficiency Mixes

Industrial Hygiene Mixtures

Non-Reactive

Carbon Dioxide in Nitrogen
Carbon Monoxide in Air
Hexane in Air or Nitrogen
HCFCs in Air or Nitrogen
Isobutylene in Air
Methane in Air
Methane, Carbon Monoxide in Air
Oxygen in Nitrogen

Reactive

Ammonia in Air or Nitrogen
Chlorine in Nitrogen
Ethylene Oxide in Nitrogen
Hydrogen Sulfide Quad Mixtures
Nitric Oxide in Nitrogen
Nitrogen Dioxide in Air or Nitrogen
Sulfur Dioxide in Air or Nitrogen

Hydrocarbon Mixtures

Natural Gas Standards
Transformer Oil Standards
Butane Standards
Ethylene Standards
1,3 Butadiene Standards

Medical Mixtures

Blood Gas Mixtures
Lung Diffusion Mixtures
Anaerobic Mixtures
Sterilant Gas Mixtures
Helium/Oxygen Mixtures

Environmental Mixtures

EPA Protocols

Carbon Dioxide in Air or Nitrogen
Carbon Monoxide in Air or Nitrogen
Nitric Oxide in Nitrogen
Sulfur Dioxide, Nitric Oxide in Nitrogen

VOC Mixtures

Acetone in Nitrogen
Benzene in Nitrogen
BTEX Mixes
Carbon Tetrachloride in Nitrogen
MEK in Nitrogen
Styrene in Nitrogen
Toluene in Nitrogen
Xylene in Nitrogen

NorLAB
A DIVISION OF NORCO, INC.

www.norlab-gas.com

NONREFILLABLE STEEL CYLINDERS



The Convenient and Cost-Efficient Way to Handle Calibration Gas Mixtures

These smaller-sized, lightweight cylinders require no deposit or monthly rental charge. They are easier to handle, less expensive to ship, and use very little space. They also eliminate over-purchasing when only small quantities are necessary. These steel cylinders are recommended for non-reactive gas mixtures and pure gases such as argon, helium and nitrogen. They combine a convenient, portable size with a wide range of capacities to handle any field calibration requirement.

17 Liter Cylinder

Contents: 17 liters (0.6 cu. ft.)
 Pressure: 240 PSIG
 Outlet: CGA 600
 Weight: 1.1 lbs.
 Dimensions: 3" x 10 3/4"
 D.O.T. Specs: 39NRC
 Regulator: 400 Series



58 Liter Steel Cylinder

Contents: 58 liters (2.0 cu. ft.)
 Pressure: 1000 PSIG
 Outlet: C-10 (5/8"-18 UNF)
 Weight: 1.5 lbs.
 Dimensions: 3.25" x 8"
 D.O.T. Specs: 39 NRC
 Regulator: 500 Series
 6000 Series
 8000 Series



34 Liter Cylinder

Contents: 34 liters (1.2 cu. ft.)
 Pressure: 500 PSIG
 Outlet: CGA 600
 Weight: 1.4 lbs
 Dimensions: 3" x 10 3/4"
 D.O.T. Specs: 39 NRC
 Regulator: 400 Series



103 Liter Cylinder

Contents: 103 liters (3.6 cu. ft.)
 Pressure: 1000 PSIG
 Outlet: C-10 5/8"-18 UNF
 Weight: 2.3 lbs.
 Dimensions: 3 1/4" x 13 2/3"
 D.O.T. Specs: 39 NRC
 Regulator: 500 Series
 6000 Series
 8000 Series

221 Liter Cylinder

Contents: 221 liters (7.5 cu. ft.)
 Pressure: 260 PSIG
 Outlet: CGA 165 (1/4" SAE flare 45°)
 Weight: 6.3 lbs.
 Dimensions: 9" x 16 1/2"
 D.O.T. specs: 39 NRC
 Regulator: 700 Series



550 Liter Cylinder

Contents: 550 liters (19.5 cu. ft.)
 Pressure: 2200 PSIG
 Outlet: Varies with the gas
 Weight: 12.9 lbs.
 Dimensions: 4 1/6" x 20 1/2"
 D.O.T. Specs: E8990 NRC
 Regulator: 6000 Series
 900 Series
 HP Series



PORTABLE REACTIVE GAS CYLINDERS



Offering Mixture Stability in a Lightweight, Portable Package

These compact, lightweight aluminum cylinders are recommended for gas mixtures that are not stable in steel cylinders. Typical components blended in these packages include ammonia, chlorine, hydrogen sulfide, nitric oxide, nitrogen dioxide and sulfur dioxide. They are available in capacities from 11 liters (0.4 cu. ft.) to 116 liters (4.0 cu. ft.) and are conveniently transported in a Norlab carrying case or bag.

Bump Gas Cylinder

Used for Industrial Hygiene Bump Gas Mixtures

Contents: 11 liters (.4 cu. ft.)
 Pressure: 140 PSIG
 Outlet: Trigger-style aerosol
 Weight: 0.3 lbs
 Dimensions: 2 7/8" x 12"
 D.O.T. specs: 39 NRC



29 Liter

Contents: 29 liters (1.0 cu. ft.)
 Pressure: 500 PSIG
 Outlet: C-10 5/8" - 18 UNF
 Weight: .8 lbs.
 Dimensions: 2 7/8" x 11 1/2"
 D.O.T. Specs: 39 NRC
 Regulator: 500 series
 6000 series
 8000 series



Chlorine Cylinder (58 Liter)

Contents: 58 liters (2.0 cu. ft.)
 Pressure: 500 PSIG
 Outlet: C-10 5/8" - 18 UNF
 Weight: 1.6 lbs.
 Dimensions: 3 1/2" x 14 1/2"
 D.O.T. Specs: 39NRC
 Regulator: 517SS (0.5 ltr./min.)
 518SS (1.0 ltr./min.)



58 Liter

Contents: 58 liters (2.0 cu. ft.)
 Pressure: 500 PSIG
 Outlet: C-10 5/8" - 18 UNF
 Weight: 1.6 lbs.
 Dimensions: 3 1/2" x 14 1/2"
 D.O.T. Specs: 39 NRC
 Regulator: 500 Series
 6000 Series
 8000 Series



76 Liter

Contents: 76 liters (2.6 cu. ft.)
 Pressure: 500 PSIG
 Outlet: C-10 5/8" - 18 UNF
 Weight: 1.75 lbs.
 Dimensions: 4" x 16 1/4"
 D.O.T. Specs: 39 NRC
 Regulator: 500 series
 6000 series
 8000 series

76 Liter

Contents: 76 liters (2.6 cu. ft.)
 Pressure: 500 PSIG
 Outlet: CGA 170
 Weight: 1.75 lbs.
 Dimensions: 4" x 16 1/4"
 D.O.T. Specs: 39 NRC
 Regulator: 900 Series



116 Liter

Contents: 116 liters (4 cu. ft.)
 Pressure: 1000 PSIG
 Outlet: C-10 5/8" - 18 UNF
 Weight: 2.2 lbs.
 Dimensions: 14 1/4" x 3 5/8"
 D.O.T. Specs: 3AL 1800
 Regulator: 500 Series
 6000 Series
 8000 Series

NorLAB
 A DIVISION OF NORCO, INC.

REGULATORS AND ACCESSORIES

Calibration Kits and Cases

Norlab offers custom calibration kits for your portable cylinders. Our two, three, or four-bottle cases provide a safe and convenient method for transporting and storing your Norlab calibration standards. Add a fixed-flow, multiflow or pressure reduction regulator and your calibration kit is complete. We have also introduced a "hands-free" carrying bag to accommodate two cylinders. Carry it over the shoulder or on a belt around your waist.



Calibration Kits

Empty Cases

500A	Case to hold 4 ea. 17 liter or 34 liter cylinders
500B	Case to hold 1 ea. 58/103 liter cylinder and 2 ea. 17/34 liter cylinders
500C	Case to hold 3 ea. 58/103 liter cylinders
500D	Case to hold 2 ea. 17 liter or 34 liter cylinders
505	Case to hold 2 ea. 58/103 liter cylinders

Supplemental Accessories

CTB100	Dual cylinder transport bag
TY2002	Tygon tubing
FEP	Teflon FEP tubing (for chlorine)



Dual Cylinder Bag

Preset Flow Regulators

Flow Control and Pressure Reducing Regulators

The 400 Series single-stage, piston-style regulators are designed to deliver a preset flow of non-corrosive gases in the 17 liter or 34 liter non-refillable cylinders with CGA 600 inlets. Each regulator comes with a cylinder pressure gauge.

Part Numbers	Flow Rate
NLB 411	1.5 LPM Air
NLB 413	0.25 LPM Air
NLB 414	0.3 LPM Air
NLB 417	0.5 LPM Air
NLB 418	1.0 LPM Air



400 Series

Maximum inlet pressure:

500 PSIG

Inlet fitting:

CGA 600

Outlet fitting:

3/16" hose barb

Temperature operating range:

0-140°F

The 500 Series regulators are single-stage, piston-style, regulators designed to deliver a preset flow of non-reactive and low-level reactive (less than 100 PPM)* gas mixtures from 58 liter and 103 liter non-refillable cylinders having a 5/8"-18 UNF (C-10) inlet connection.

*Low-level reactive gases slowly react with the "wetted" brass parts of the 500 Series regulators. In order to minimize loss of calibration accuracy, the regulator must be removed from the cylinder after each use. Norlab's 6000 Series regulator is recommended for extended use with reactive calibration gas mixtures.

Part Numbers	Flow Rate
NLB 511	1.5 LPM Air
NLB 512	2.5 LPM Air
NLB 513	0.25 LPM Air
NLB 516	0.3 LPM Air
NLB 517	0.5 LPM Air
NLB 518	1.0 LPM Air



500 Series

Maximum inlet pressure:

1000 PSIG

Inlet fitting:

5/8"-18 UNF (C-10)

Outlet fitting:

3/16" hosebarb

Temperature operating range:

0-140°F



517TR Series

Norlab's trigger control regulator allows both bump and calibration testing and controlled or continuous delivery. The 517TR series regulators are available in several flow rates.

Part Numbers	Flow Rate
NLB 517TR	0.5 LPM Air
NLB 518TR	1.0 LPM Air

Maximum inlet pressure:

500 PSIG

Inlet fitting:

CGA 1000

Outlet fitting:

3/16" hose barb

Temperature operating range:

0-140°F

Available in stainless steel for chlorine mixtures:

NLB517 SS and NLB 518 SS

NorLAB
A DIVISION OF NORCO, INC.

REGULATORS AND ACCESSORIES CONTINUED

Multiflow Regulators



6000 Series

The 6000 Series regulators are for use with 58 liter and 103 liter non-refillable cylinders having a C-10 (5/8"-18 UNF) inlet connection. They may also be configured for use on returnable cylinders having pressures to 2400 PSIG. These aluminum-bodied, single-stage, piston-style regulators have eight flow settings from 0.1 LPM to 7 LPM. They are compatible with non-reactive as well as reactive gas mixtures like hydrogen sulfide, nitric oxide and ammonia. 1000 PSI gauges

are used for non-refillable cylinders and 3000 PSI gauges are used for refillable cylinders.

Part Numbers	Gauge Material and Pressure	Inlet Fitting
NLB-6-CGA*	Brass 3000 PSI	CGA 590,580,350
NLB-6-CGA*	S.S. 3000 PSI	CGA 660,330
NLB-6-C10	0-1200 PSI	C-10

*The appropriate Compressed Gas Association valve number will be determined by the specific pure gas or gas mixture (e.g. 6-330 for mixtures containing hydrogen sulfide).



8000 Series

The 8000 Series regulators are used for calibration of instruments that draw the gas mixture with an internal pump. Constructed of stainless steel and aluminum, they are compatible with reactive and non-reactive gas mixtures. They supply flows of 0.1 LPM to 3.0 LPM, and are suitable for use with high pressure refillable cylinders as well as nonrefillables.

Part Numbers	Inlet Fitting	Cylinder
8C10	C-10	58/103 liter
8580	CGA 580	Refillable
8590	CGA 590	Refillable
8330	CGA 330	Refillable
8660	CGA 660	Refillable

NorLab carries a full line of pressure reducing regulators to accommodate any gas delivery requirement. We offer single stage and dual stage regulators constructed of brass, aluminum or stainless steel, compatible with returnable cylinders having pressures to 6000 PSIG. For help in selecting the proper regulator for your gas requirement, contact our Customer Service Department at (800) 657-6672.

Pressure Reducing Regulator



700 Series

The 700 Series regulators are for use with Norlab's 221 liter cylinders. Their miniature size and lightweight construction make them ideal for use with these nonrefillable cylinders.

Specifications

Maximum inlet pressure:	400 PSIG
Operating temperature range:	35°F-150°F
Inlet fitting:	CGA 165
Outlet fitting:	1/4" NPTF
Delivery pressure range:	0-25 PSIG

Material of Construction

Body:	Brass
Diaphragm:	Viton
Seat:	Acetol
Seal:	Viton
Bonnet:	Acetal

Cylinder Devalving Tools



CGA 600: Fits on 17 or 34 liter steel cylinders.



CGA C-10: Fits on 29, 58, 76, or 103 liter disposable cylinders.

PRESSURE REDUCING REGULATORS

HP 720 Series



The HP 720 Series regulators are designed to control high-purity, non-corrosive gases. The internal materials of construction will not contaminate the gas stream and they are resistant to inboard diffusion of atmospheric contaminants. The HP270 Series is available in either single-stage (HP721) or two-stage (HP722) brass barstock with

optional diffusion-resistant diaphragm outlet valves.

HP 721/722 MODELS

Specifications

Body: Brass bar stock

Diaphragm: 316L stainless steel

Seat: PTFE Teflon

Seals: PTFE Teflon

Delivery Ranges

0-15 PSIG

0-50 PSIG

0-125 PSIG

0-250 PSIG

0-500 PSIG

HP 740 Series



The HP 740 Series regulators are designed to control corrosive gases that are not compatible with brass. They are available in either single-stage (HP741) or two-stage (HP742) stainless steel barstock with optional diffusion-resistant diaphragm outlet valves.

HP 741/742 MODELS

Specifications

Body: 316L stainless steel bar stock

Diaphragm: 316L stainless steel

Seat: PTFE Teflon

Seals: PTFE Teflon

Delivery Ranges

0-15 PSIG

0-50 PSIG

0-125 PSIG

0-250 PSIG

0-500 PSIG

NorLAB
A DIVISION OF NORCO, INC.

898 West Gowen Rd. • Boise, Idaho 83705

(800) 657-6672 • FAX (208) 331-3038

www.norlab-gas.com

— DISTRIBUTED BY —



www.pem-controls.com

"Powered by People, Driven by Dedication"

Toll Free 1-877-736-2462



ISO 9001:2008
CERTIFIED
Quality Management System

1 - 8 0 0 - 6 5 7 - 6 6 7 2