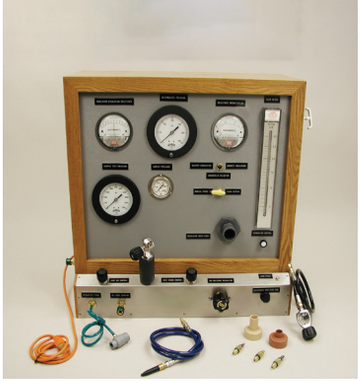
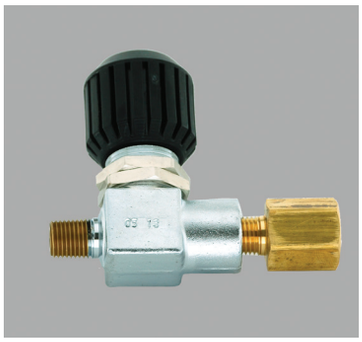
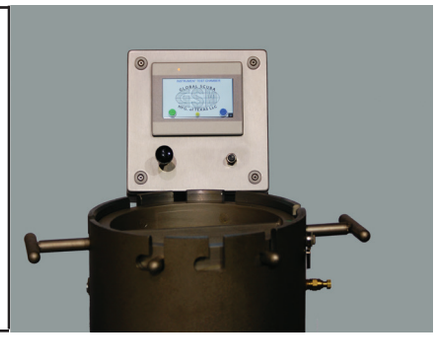




Test Equipment
Regulator Supplies
Tools
Service & Maintenance
Air Processing
Comp. Gas Supplies
Mixed Gas

2016 FULL LINE CATALOG

Products to Support Dive Shop Operations



GLOBAL SCUBA GSM MFG. of TEXAS LLC

ENGINEERING YOUR SUCCESS

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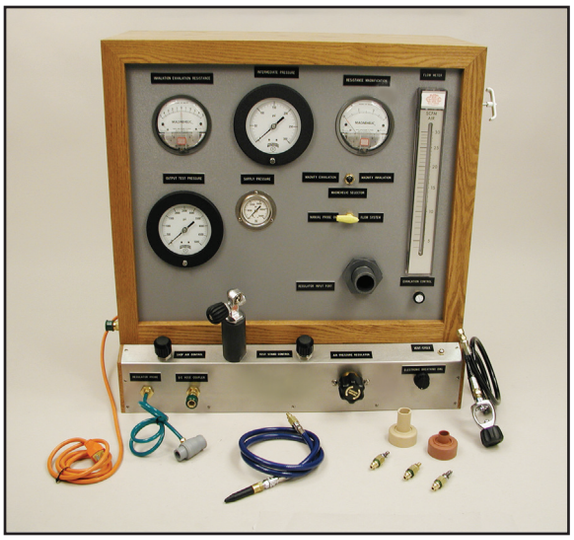
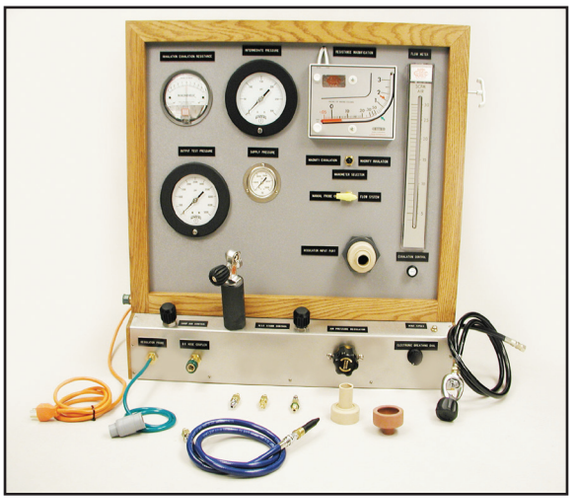
Only OX Part Numbers are oxygen compatible
All OX Part Numbers are colored green.

TEST EQUIPMENT - FLOWBENCHES





Compact Deluxe Flowbench

Our top-of-the-line analyzer which is capable of testing all functional parameters of modern scuba regulators including air flow rate. The unit is housed in a solid oak cabinet measuring 30” high x 30” wide x 15” deep (76 x 76 x 38 cm) with the instruments set in a 20” x 28” ABS plastic panel and the air controls mounted on a contoured, 5” x 29” stainless steel lower faceplate.

Compressed air enters the left side of the housing into the master regulator which can deliver any selected pressure to the test stand, thereby effectively simulating any desired scuba tank pressure. Whenever reduced pressure is required, the master regulator automatically vents the excess air upon adjustment. The test stand cylinder, where regulators are attached for checking, holds a scuba valve which can be easily converted between yoke and DIN-modes; this valve can also be removed at any time and replaced with malfunctioning or repaired scuba valves which need checking.

This user-friendly machine can quickly evaluate the following regulator functions: Air flow rates (up to 30 cu. ft./min.), inhalation / exhalation breathing efforts at both initiation and during air flow, first stage intermediate pressure, lockup repeatability and stability, and systemic air tightness. Air flow rates through tank valves or gas manifolds can also be determined. To aid in the fine tuning of today’s sensitive regulators, breathing effort readings can be examined on an expanded scale at the flip of a switch; values to 0.1” of water column can be achieved. No dismantling of regulators is required prior to testing: Air from the second stage is injected directly into the machine through a simple, rubber cup adapter which replaces the mouthpiece; first stage intermediate pressure is sampled through the BC hose.

Air flows are generated from the regulator by an electronically controlled vacuum-drive system activated by a simple rotary switch. As the vacuum drive is increased, the regulator progressively outputs greater air flows. The breathing effort that a diver would have to exert to achieve these flows is simultaneously displayed on a magnehelic gauge or liquid manometer. Relating regulator air flows to a diver’s underwater breathing requirements is then simple to do.

Flowbench Models #48250, 48251, and 48260 all contain a unique manual probe system which allow the technician to test-breathe any regulator while measuring the respiratory efforts involved. Thus the breathing performance of regulators can be tested by both mechanical simulation and human evaluation. Such double testing catches irritating problems like stiff mouthpieces, sluggish diaphragms or hesitation in air delivery that are often difficult to detect by machinery alone! A savvy repair person can often spot these non-hazardous, but annoying, functional quirks and eliminate them.

The importance of flow testing regulators for modern diving, especially TEK diving, cannot be over-emphasized. In an era where dives beyond 250 feet are common, one must know that all breathing equipment can function at operational depth. Excessively hard or restricted air delivery can be deadly. Several TEK dive accidents have already occurred from malfunctioning or jury-rigged equipment which could not produce needed air demands at depth. Periodic flowbench testing prior to deep dives allows one to know that air requirements from all system components can be met! **WITHOUT SUCH TESTING, NO DOCUMENTABLE STATEMENT CAN BE MADE ABOUT THE UNDERWATER PERFORMANCE OF DIVE REGULATORS OR OTHER SYSTEM COMPONENTS!**

48250... Compact Deluxe Flowbench / Double Magnehelic Our original standard unit, this bench has all the features listed in the “Specifications Section” which follows. It differs from #48251, our most popular model, in that it utilizes two Magnehelic dual-scale gauges to measure breathing efforts. Both gauges determine any single breathing effort, serving to double-check this critical physiological value, as well as double-check the proper function of each instrument itself. However, the second gauge has an expanded scale that yields a more accurate measurement.

48251... Compact Deluxe Flowbench / Manometer This unit is identical to #48250 in all aspects except that the expanded scale Magnehelic gauge has been replaced with a 0-3” inclined red oil manometer. The slow movement of the bright red fluid in the curved tube greatly enhances taking accurate breathing effort measurements. Technicians who are novices to flowbench operations find this instrument exceedingly easy to use with a minimum of practice. See general description of a “Flowbench Specifications” section for more data on the operational and physical properties of this apparatus.

48260... Compact Deluxe Flowbench / European Model - This unit is identical to #48250, except that the gauges are scaled in both kilopascals (kPa) and pounds per square inch (psi). kPa is convenient scientific unit equal to bars x 100. The vacuum drive is 220/240 VAC/50 cycles for operation on European current. See general description of a “Flowbench Specifications” section for more data on the operational and physical properties of this apparatus.

FLOWBENCH SPECIFICATIONS - Models 48250, 48251, 48260 Pressure Ratings: Up to 5,000 psi (34,475 kPa) inlet; Regulated output test pressures: 100 - 4,500 psi to Test Stand.
Air Supply: From air storage bank, industrial bottle, or scuba tank; 5-ft hose and yoke assembly provided.
Pressure Gauges: Inlet - 5,000 psi (34,475kPa) 2.5” face, 2% accuracy; Output - 5,000 psi, 4.5” face; 1% accuracy; Regulator Intermediate Pressure - 300 psi (2,068 kPa) 4.5” face, 1% accuracy.
Flowmeter: Floating ball type - 0 - 30 SCFM (Standard cu. ft. / min. or 840 liters / min.)
Breathing Effort Gauges: High effort mode - Dual scale (+ & -) 0 - 5 inches water column across 4” face; Expanded mode - 0 - 3 inches water column across 4” face or 0 - 3” red oil inclined manometer (#48251 only). European model #48260 - 1.5 kPa dual scale and 500 Pa expanded scale gauges respectively.
Shop Air: Supplied at 50 - 100 psi by a special integrated regulator to an outlet coupler; 4-ft hose and blowgun included.
Electrical: 110 VAC / 60 cycles or 220 / 240 VAC / 50 cycles (#48260)
Accessories: Instruction manual covers the installation, maintenance, and use; complete description of testing procedures and parameters included. All required adapters provided.
Shipping Weight: 90 lbs.

TEST EQUIPMENT - WORKSTATIONS

Workstations and Flowbenches are special machines for testing all the important functions of scuba regulators and tank valves. They essentially embody the necessary compressed air source, hand tools, and instrumentation into a single apparatus designed specifically to repair / evaluate dive equipment. Testing done on a Workstation yields results at sea level equivalent, whereas a Flowbench can simulate actual dives, providing information on regulator performance at depth! Besides elevating the efficiency and professionalism of any dive shop department, these devices are very practical for both classroom and sales demonstrations.

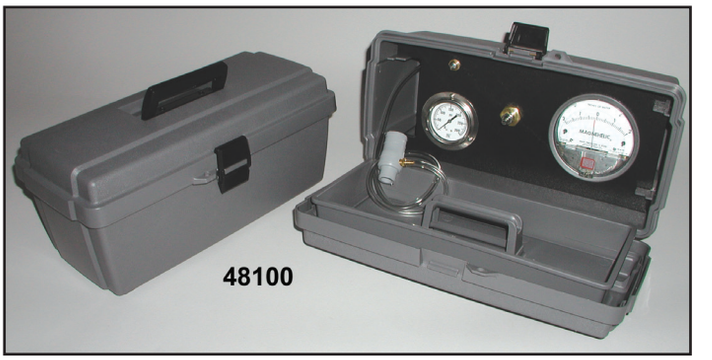
48400... <u>Standard Regulator/Valve Workstation</u> - Workstations are machines which provide controlled air pressure to a test stand where the functions of dive regulators can be checked at sea level conditions. Model #48400 is housed in a 22" high x 22" wide x 14" deep (56 x 56 x 36 cm) solid oak cabinet, instrumentation is set in a 20" x 15" ABS plastic panel, and the air pressure controls are mounted on a 6" x 7" x 21" stepped, stainless steel platform.

Air (up to 5,000 psi) enters the right side of the case into the master regulator which can deliver controlled pressure (up to 4,500 psi) to the test stand, a 2" diameter aluminum cylinder which holds a scuba valve. The Test Stand Valve is a convertible type; removing an insert in the valve's face changes it from YOKE to DIN mode. Thus regulators of either yoke or DIN mode can be readily accommodated. Here regulators can be tested at any desired pressure. The entire valve can also be removed and replaced with malfunctioning or repaired valves that require checking. Whenever reduced pressures are required, the master regulator will automatically vent the excess gas as its control knob is turned outward.

Regulators to be examined are yoked to the test stand valve; interstage pressure is transmitted to the instrumentation via an adapter coupled to the BC hose. Three adapters to accommodate the variety of BC hoses on today's market are provided. The following can then be evaluated: First stage intermediate pressure, lockup repeatability and stability, and systemic air tightness. A simple probe is then attached to the 2nd stage outlet and, while manual breathing is performed, the initial inhalation / exhalation effort (cracking resistance) can be read with high precision on a Magnehelic gauge. A unique "reading lock" device momentarily freezes the breathing effort readings on the gauge, so that values accurate to 0.1" of water column can be obtained!

For those dive shops who are not yet ready for a Flowbench or Workstation, GSMoT has a number of portable and desktop test instruments for scuba regulator and valve service. Certain apparatus such as #48105 and #48110 were designed as modules to work alone or in tandem. When used in unison, the modules create a mini-Workstation which may be purchased one piece at a time.

48100... <u>Portable Regulator Tester</u> This unique device can be used to test SCUBA regulators for inhalation / exhalation effort plus first stage intermediate pressure and lockup stability. All tests can be done without dismantling the regulator. To check intermediate staging pressure, merely attach the BC hose to the tester's inlet fitting, pressurize the regulator, and read the gauge. A push button vent allows rapid cycling of the first stage for repeated testing or depressurization after completion of testing. For measuring second stage breathing efforts, simply insert a special adapter into the mouthpiece and breathe on the unit. Inhalation / exhalation resistances in inches of water can be read directly from the 4.0", dual-scale (2.0"), Magnehelic gauge. Housed in a tackle-box like carrying case, the tester has a lift-out tray where parts and tools can be carried. This compact and portable device is ideal for field repairs, charter boat operations, classroom demonstrations, or small repair centers which do not require more elaborate equipment.



TEST EQUIPMENT - DESKTOPS & GAUGES

48155... Benchtop Breathing Effort Tester A simple, easy-to-use device for quickly testing the initial inhalation and exhalation effort of any regulator's second stage. Merely attach a special probe, perform a breathing cycle, and read a gauge! The probe will fit virtually all existing regulators; in many cases, removing the mouthpiece is not even necessary! Breathing efforts are read directly in inches of water resistance on a dual-scale, 4.5" Magnehelic gauge. When employed in tandem with a #48160 Benchtop Intermediate Pressure Tester, highly accurate regulator function parameters can be ascertained. Housed in a handsome, custom plexiglas housing. A must for every fledgling scuba repair department.

Special Note on Using #48155 & #48160 in unison: Initial Cracking Effort is perhaps the most critical physiologic parameter a dive technician must measure. This, of course, is the amount of respiratory work that a diver must exert each and every time he breathes to initiate air flow from the regulator. Some people measure this effort with a Magnehelic Gauge alone; others do it empirically by the sound or feel of the air flow. These methods are far less precise than using a Magnehelic Gauge (#48155) in conjunction with a Intermediate Pressure (IP) Tester (#48160). With the instruments side-by-side for easy viewing, put the probe from the Magnehelic into the regulator's mouthpiece. Inhale softly and slowly through the probe, watching the Intermediate Pressure Gauge (#48160) which has been attached to regulator's BC hose. The instant the IP gauge needle twitches or dips down, quickly read the Magnehelic Gauge. This procedure yields the most accurate measurements possible!

48160… Benchtop Intermediate Pressure Tester
Mounted in the same handsome Plexiglas housing with a canted front as is our #48155 Benchtop Breathing Effort Tester. Mounted in the case is a 4.0" pressure gauge (300 psi, 1% accuracy) as well as a common quick-coupler device for attaching a regulator's BC hose. In this manner, the scuba regulator's Intermediate Pressure can be examined for reliability, repeatability, and lockup. A simple pushbutton allows rapid cycling of the first stage for fast, multiple tests, while an overpressure relief valve protects the gauge from unexpected first stage failures or pressure surges. A series of coupler adapters permits the attachment of different brands of BC hoses. When used in tandem with a #48155 Breathing Effort Tester, the two instruments can check most of the critical functions of a dive regulator.

48101... Regulator Probe A 33" plastic tube and special rubber probe to use with Magnehelic Gauges for testing the initial breathing effort of dive regulators. The probe has two different sized ends: The small end will insert directly into many mouthpieces. If this fails, remove the mouthpiece and slip the large end over the bare flange.

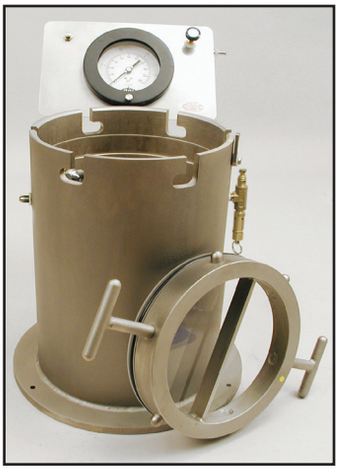
43300... Magnehelic Gauge / 5 inch Scale Considered the standard instrument for measuring the breathing effort of dive regulators, this Magnehelic Gauge has dual, 5-inch scales to sense both positive (exhalation) and negative (inhalation) pressures. Breathing resistance is measured in inches of water column, equivocally the respiratory effort required to draw water one inch up a straw! Used with #48101 probe (not included), this is an essential addition to the dive shop repair department.

43302... Magnehelic Gauge / 2-inch Scale - Same as #43300, except this gauge has a 2-inch dual scale. Used for more precise resistance measurements.

43275... Regulator Intermediate Pressure Quick-Tester
This 2.5" gauge attaches directly to the buoyancy compensator hose for fast checking the intermediate pressure of any regulator first stage without dismantling the unit. A manual bleeder vent allows easy cycling of the first stage to test the consistency of lockup. The regulator's second stage (or octopus) acts as an overpressure valve in case of serious staging failures. Great for field service, charter boats, and class demos.

Find us on the web at www.global-mfg.com

TEST EQUIPMENT - CHAMBERS



This apparatus, offered in five distinct versions, is the current industry standard for testing the water-tight integrity, accuracy, and overall function of depth gauges, watches, dive computers, and certain underwater photographic gear. It's also useful for classroom demonstrations related to diving physics and physiology. Each unit is fitted with an internal plastic bucket so that equipment is actually tested underwater. In fact, many modern instruments may be harmed if tested dry because pressurized air can be forced behind seals and diaphragms! As modern TEK diving becomes widespread, it's essential that related life-support instrumentation be tested on a regular basis.

All versions use a recently improved body style designated 300C: Its diameter is 10" inside with 11" of usable height; outside dimensions are 10.8" in diameter, 15" high, with a weight of 100 pounds. The steel alloy pipe body, with a 0.45" thick wall, has been plated inside and out with an industrial, electroless nickel finish. A steel ring that engages into the body by means of a cog and slot system contains a 1.0" thick, O-ring sealed, Plexiglas viewport reinforced by a narrow, transverse metal bar. This massive design is dictated by current test requirements for certain dive gear designed for greater depths and durations. Overtime, such testing places considerable stress and fatigue on the pressure vessel.

Pressure vessel 300C has enhanced strength and safety features over its predecessors: The number of cog and slots were increased from four to six. The viewport ring has been widened for greater lens support and the lens itself has been reinforced by a narrow, transverse metal bar. Although hydrotesting is not required, each unit undergoes multiple inspections and pressure tests to 300 psi (ca. 685 feet). All chambers possess two redundant overpressure relief valves: both set at each model's working pressure. Chambers can be pressurized from a scuba tank using the first stage of any dive regulator equipped with a standard BC hose (not supplied). [Various air supply regulators (#48322 / 48323) are available from GSMoT.] The BC hose mates to a fitting and inlet valve mounted on the stainless steel instrument / control panel that also holds a pushbutton bleeder and the Master Gauge. A manual drain and one relief valve are plumbed directly into the vessel body.

A unique feature of all GSMoT chambers is the Bulkhead Air Shunt, a fitting which penetrates the vessel wall and connects to a swivel inside the cavity. The threaded port of this swivel will accept the hose of any fully integrated dive computer which can then be submerged in the bucket and tested as follows: The outer end of the Bulkhead Air Shunt is connected by means of a special hose (GSMoT #48301) to any scuba tank; thus air can pass directly to the computer while this delivered pressure is monitored on an external gauge. After the computer is activated at full tank pressure, any lesser pressure can be obtained by turning off the tank and using a bleeder to vent down to the desired level. The chamber itself must be pressurized with a separate air tank as previously described. In this manner, integrated computers can be tested at virtually any combination of simulated depth and diver air supply! Another special adapter (GSMoT #48302) allows the testing of hoseless computers. The DC-300C pressure vessel is available with two distinct instrumentation packages with different depth ranges and accuracies.

*******NEW***** 48320-DRO... <u>Instrument Test Chamber with Digital Readout</u>**. Equipped with a high accuracy pressure transducer, this unit has less than - 0.25% accuracy on a range up to 450 feet of salt water. No more worries about converting units as the integral touch screen displays pressure/depth in the following units:

pounds per square inch (psi)	feet of fresh water
meters of fresh water	feet of sea water
meters of sea water	BAR
kilopascals	

The touch screen display shows date and time making it easy to record test data. A handy countdown timer is included. This can be very helpful for leak testing where a product has to be submerged at 'depth' for a given amount of time.

48300... <u>Depth Test Chamber</u> - Our simplest model. The Depth Test Chamber is primarily intended for evaluating equipment for water-tightness and pressure resistance. It can also be used for testing conventional analog instrumentation, but its master gauge is NOT accurate enough to match that of the newest generation of electronic dive gauges and decomputers. The 4.5" Master Gauge goes to 230 ft. of water depth with an accuracy of 1%(2.3 ft) The Bulkhead Air Shunt is present in the body, but its inner port is plugged. The internal swivel can be added if desired.

48305… <u>Extended Range Depth Test Chamber</u> - Identical to Model #48300, except its Master Gauge goes to 370 feet of fresh water with an accuracy of 3 – 4 feet.

48310... <u>Instrument Test Chamber</u> - It is specifically designed to test today's highly sophisticated dive instruments. It features a 4.5" Test Gauge with 1/4 of 1% accuracy to 300 feet of salt water (that's 0.75 ft!) The gauge is calibrated in both feet (300) and meters (90) of depth and has an anti-parallax mirror for obtaining highly accurate readings. Each unit is equipped with Bulkhead Air Shunt and Swivel as already described.

48320… <u>Extended range Instrument Test Chamber</u> - Identical to Model #48310, except its Master Gauge (GSMoT #48321) goes to 450 feet / 140 meters of salt water with an accuracy of about one foot (0.25%).

TEST EQUIPMENT - TANK CHECKERS AND EQUALIZERS

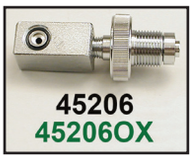
The products shown below are used to check the pressure within scuba tanks. Models for both DIN and Yoke tanks valves are offered. Most utilize a sealed, oil-filled, stainless-cased, 5000 psi pressure gauge for maximum environmental and shock resistance. All models have a standard screw-type bleeder. THESE PRODUCTS ARE NOT INTENDED FOR PURE OXYGEN / NITROX SERVICE. SPECIAL MODELS ARE AVAILABLE AS NOTED.

TANK PRESSURE CHECKERS

57220... Converto Tank Checker Used to check the pressure in tanks with either DIN or standard-yoke mode valves. Quickly switches between modes with the included #45188 converter. Service to 4,500 psi in DIN mode; 3,200 psi in yoke mode. Oil-filled gauge. (57225OX - Converto Tank Checker, O_2 Model, page 30)
57230.... Standard Economy Tank Checker Used to check the pressure in tanks with standard / yoke type valves. Uses vinyl covered, plastic-cased gauge and is intended largely for moderate indoor-outdoor applications. Service to 3,200 psi.
57231... Deluxe Heavy-Duty Tank Checker Used to check pressure in tanks with standard / yoke type valves. Has sealed, oil-filled gauge for constant, rugged usage such as in dive shops or on charter boats. Service to 3,200 psi.
57232… Deluxe Heavy-Duty DIN Tank Checker - Used to check pressure in tanks with a 300-bar DIN connection. Has sealed, oil-filled gauge for constant, rugged usage such as in dive shops or on charter boats. Service to 4,500 psi.
57235... Standard Economy DIN Tank Checker Used to check the pressure in tanks with DIN-mode valves. Uses vinyl covered, plastic-cased gauge and is intended for non-harsh conditions. Service to 4,500 psi.

45188... DIN / Yoke Converter - This hand-tite, screw on adapter converts a male 300-Bar DIN connection to a standard yoke filler. Useful on any DIN cross-over when equalization between DIN and YOKE valved tanks must be carried out. (45189OX - O_2/Nitrox version, see page 28)

45206... Deluxe SCUBA to DIN Fill Adapter - For filling DIN-valve tanks with a yoke-mode whip. The mating head swivels to allow better alignment of the fill hose and yoke. Because a yoke connection is still being used, recommended maximum fill pressure remains at 3,200 psi. (45206OX - O_2/Nitrox version, see page 28)



TANK EQUALIZERS

These air transfer devices, also called cross-overs, are used to equalize pressure between two dive cylinders. Each unit has a 2- foot, 5,000 psi service hose and a bleeder vent on one end. Both DIN and standard / yoke-mode types are offered. CAUTION: THESE PRODUCTS ARE NOT INTENDED FOR PURE OXYGEN / NITROX SERVICE! SPECIAL MODELS ARE OFFERED FOR THAT PURPOSE.

56140... DIN Equalizers (300 Bar) Used to equalize pressure between two scuba tanks with DIN-type valves. Service to 4,500 psi. (45345OX - O_2/Nitrox 3,200psi version, see page 30)
56145... Deluxe DIN Equalizers (300 Bar) Identical to Model #56140, except that a 5,000 psi gauge allows pressure monitoring. Service to 4,500 psi. (45346OX - O_2/Nitrox 3,200psi version, see page 30)
56150... Standard Yoke-Mode Equalizers Used to equalize pressure between two scuba tanks with conventional yoke-mode valves. Service to 3,200 psi. (45340OX - O_2/Nitrox version, see page 30)
56155... Deluxe Standard Yoke-Mode Equalizers Identical to Model #56150, except that a 5,000 psi gauge allows pressure monitoring. Service to 3,200 psi. (45341OX - O_2/Nitrox version, see page 30)
56160... Air Inflator Device Consists of an air chuck on a hose equipped with a scuba yoke. Used to inflate tires or inner tubes from dive tanks. Designed for medium pressures, air flow must be controlled by cautiously opening the tank valve.

REGULATOR HOSES - STOCK & CUSTOM

An extensive array of stock hoses are available for repairing, revamping, or updating regulator systems. High pressure (HP gauges / consoles) and low pressure (LP breathing or BC supply) hoses are offered in various lengths and colors. Inset photos will help you identify the different end fittings used on modern hoses.

Low Pressure Hose End Fittings

Standard Low Pressure Breathing Air Hoses are 5/16" ID while BC hoses are 1/4" ID. Breathing Air and BC hoses are rated to 400 psi working pressure. All hoses are black with an option of yellow available in 5/16" ID. All GSMoT Low Pressure Breathing Air and BC hoses are assembled and tested in house. Each hose is pressurized to 400 psi and checked for leaks. Non-standard fittings, such as 1/4 Female NPT are available. Please call to discuss your application. Consult the price list for all standard hose configurations and options.

High Pressure Gauge / Console Hoses are stocked in standard lengths and black in color. Custom length LP / HP hoses are available but have a 2-3 week lead time. Custom colors: orange, yellow, green (O_2 hose).

Standard sizes include:

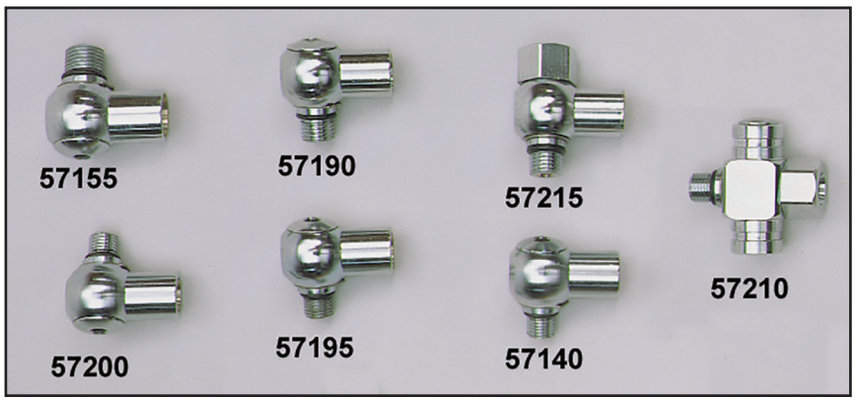
57136... Display / TEK hose, 6"
57120... Gauge / Console, 30"
57130... Gauge / Console, 36"
57135... Gauge / Console, 40"
57137... Gauge / Console, 42"
57139... Gauge / Console, 48"

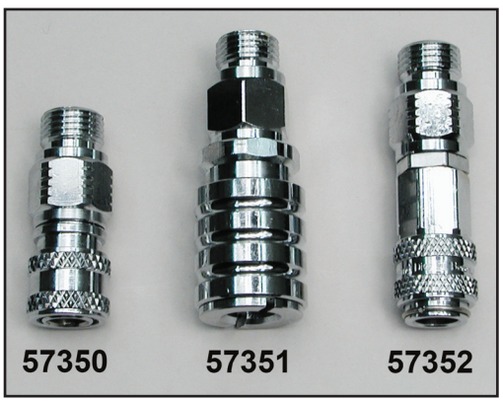
Gauge / Console Air Spools

57011... Standard Air Spool
57012... Shouldered Air Spool
57013... Bulletnose Air Spool

57075… Dry Suit Hose - 30" with large flange coupler for easy use with gloved hands

REGULATOR / CONSOLE HOSE SWIVELS





High Pressure (3,000 psi service)

57140... For the right-angle installation of older consoles / gauges with 3/8-24 threads
57190... For the right-angle installation of current consoles with 7/16-20 threads. Allows 90° installation of console.
57195... A 90° swivel with 3/8" inlet and 7/16" outlet; for putting current consoles on older model regulators.
57215... A 90° swivel with two 7/16-20 outlets for multiple consoles, gauges, or computer devices.

Low Pressure Swivels

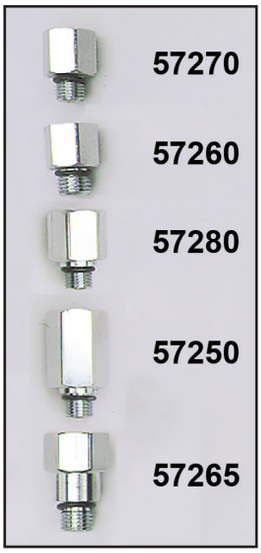
57155... A 90° swivel for right-angle installation of LP hoses with 1/2" male end fittings.
57200... A 90° swivel for right-angle installation of LP hoses with 3/8" male end fittings.
57210... 3-port swivel tee: Converts one 3/8" LP port to triple 3/8" LP outlet ports.

BC Hose Adapters - This adapter converts any regulator 2nd stage hose to a BC hose, thereby eliminating the need to stock replacement BC / drysuit hoses.

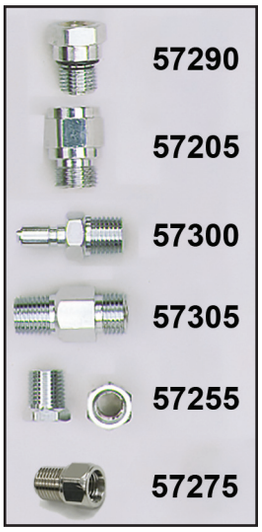
57350... Standard
57351... Mares / Scubapro
57352... US Divers / Apex / Zeagle

REGULATOR HOSE AND PORT ADAPTERS

GSMoT offers the industry's largest variety of regulator port adapters and hose converters for instrumentation installation and TEK diving applications. Reminder: The actual configuration of an adapter is a "mirror image" of its use. A 3/8" FEMALE port requires a 3/8" MALE adapter etc. In TEK diving operations where many fittings may get co-mingled, be sure that all adapter combinations can accommodate the intended flows and pressures.



<u>High Pressure Adapters</u> (3,000 psi service)
57260... <u>Simple bushing adapter</u> Converts 7/16-port to female 3/8
57265... <u>High pressure port (7/16") extender</u> Shims hoseless computer transducer out from regulator body.
57270... <u>Simple bushing adapter</u> Converts 3/8-port to female 7/16"
<u>Low Pressure Breathing Adapters</u>
57205... <u>Regulator hose union</u> Allows 2 hoses (3/8") to be mated.
57250... <u>TEK Adapter</u> Converts 3/8" LP port to 1/4" female NPT.
57255... <u>TEK Adapter</u> Converts 3/8" male end hose to 1/4" male NPT.
57275... <u>HP Hose Adapter</u> Converts thread on a pressure gauge / console hose to male 1/4" NPT, for use in ancillary applications.
57280... <u>Simple Bushing Adapter</u> Converts 3/8" port to female 1/2".
57290... <u>Simple Bushing Adapter</u> Converts 1/2" port to female 3/8"
57300... <u>BC coupler male stud to male 1/4" NPT</u> For putting air guns, tire inflators, etc. onto BC hoses.
57305... <u>TEK Adapter</u> Converts swivel end of hose to 1/4" male NPT.
57315... <u>TEK Adapter</u> Converts 3/8" body port to 1/4" male NPT.



57010... <u>Hose Service Kit</u> Contains most items needed to repair hose leaks or to make common adaptions: Has 10 each of the various O-rings used on scuba hoses and air gauges, five each of the three types of air spools used in gauge / consoles, two #57205 hose unions, and one each of #57260, #57270, #57280, and #57290 regulator port adapters. An applications guide is included. (See price list to reorder individual parts).

SERVICE & MAINTENANCE - LUBRICATION

42135OX... <u>Christolube 125</u> - This new aerospace lubricant is GSMoT's recommended replacement for Formula 8, Lox 8, or other synthetic materials commonly used on Nitrox / Oxygen tank valve threads where silicone grease CANNOT be used. This black, oxy-compatible grease, not to be confused with white Christolube 111, contains molybdenum disulfide, a highly effective additive to prevent thread seizures and dissimilar metal electrolysis, while still maintaining a high degree of lubricity. Sold in 2-oz. plastic jar.

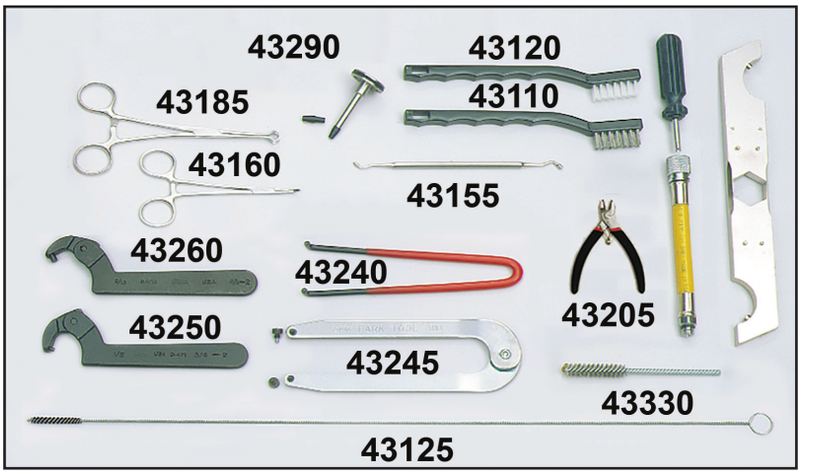
42145OX... <u>LOX-8 Oxygen-Compatible Paste Sealant</u> Various components of common scuba equipment such as DIN-fittings and regulator second stage inlets require thread sealants, but Locktites ARE NOT O_2 compatible. Instead, LOX-8 paste can be substituted to mildly freeze such threaded components. This greenish-colored fluorocarbon is fully O_2 compatible. 10 gm. jar.

42165OX... <u>Oxy-Safe Regulator Lubricant</u> - This synthetic lube is a perfluoropolyether, one of the most inert materials known. The brand is Christolube MCG111, NOT to be confused with Dow 111 silicone grease which is NOT O_2 compatible. Unlike other synthetic O_2 lubes, this one does NOT get viscous at low temperatures and works well in regulators used in cold waters. Use this grease in regulators or diving gear exposed to gas mixtures containing O_2 level of 23% or more. Navy approved, 2 oz. tube.

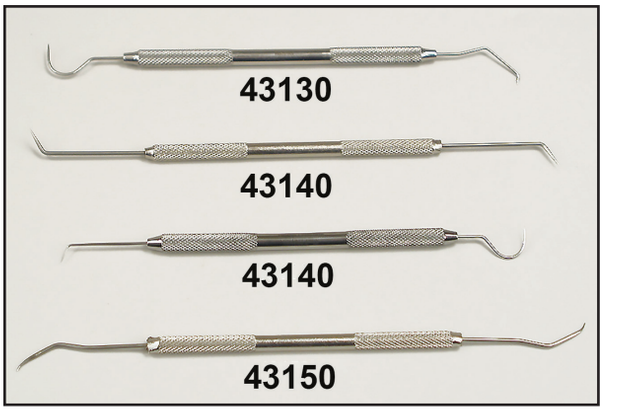
43210... <u>Dow 111 Silicone Grease</u> - A thick formulation with high wash-out resistance suitable for environmentalizing piston type regulators or lubricating other static (non-moving) parts. Dow 111 is also recommended by cylinder manufacturers to coat tank valve threads at each VIP to prevent electrolytic corrosion. Not recommended for moving parts due to its high viscosity. NOTE: NO silicone lubricant is suitable for Nitrox or pure oxygen applications.

43220... <u>Dow 7 Silicone Grease</u> - A grease with thin consistency for use on moving regulator / valve parts such as piston O-rings. NOTE: NO silicone lubricant is suitable for Nitrox or pure oxygen applications.

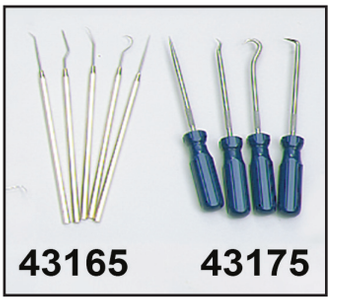
SERVICE & MAINTENANCE - REGULATOR TOOLS



43110... Metal Parts Brush - With toothbrush - like structure, this tool has a heavy plastic body with stainless steel bristles for cleaning small parts.
43120... Fiber Parts Brush - Like #43110, but with nylon bristles.
43125... Regulator Hose Brush - A special, small-diameter brush with a 30" handle for scrubbing the interior of regulator 2nd stage hoses.
43130... Probe #3 - A stainless steel pick with one large semi-loop end and one 45° curved end for probing / removing O-rings.
43140... Probe #5 - A stainless steel pick with two slightly spiral, angular ends. Great for extracting O-rings set in deep or recessed grooves.
43141... Probe #6 - A stainless steel pick with one large semi-loop end and one short, right angle hook for probing or removing O-rings.
43150... Probe #7 - A stainless steel pick with two, short right-angle hooks. Excellent for removing O-rings from deep channels or difficult insets.



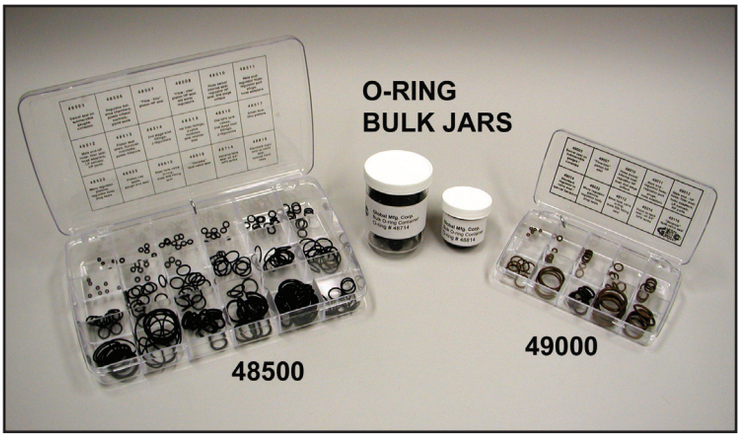
43155... O-Ring Insertion Tool - A special stainless tool with two bulbous, offset ends with one side ground flat. Handy for pushing / pulling O-rings into recessed grooves like those inside regulator bodies.
43160... Hemostat Pliers - A small, locking, long-nose pliers of stainless steel. This surgical tool is THE thing for replacing regulator exhaling valves without removing the exhaust tube; great for manipulating small parts like 2nd stage levers.
43165... O-Ring Tool Kit - Set of 5 stainless micro-probes for removing or pushing gaskets and O-rings. Each tool has a different shaped end such as a loop or hook.
43175... Macro-probe Set - Set of 4 robust probes with screw-driver style plastic handles. Each probe has a unique shaped tip useful for probing / removing large O-rings, gaskets, or valve seats.
43185... Poseidon 2nd Stage Tool - Unique pliers which can reach into the mouthpiece tube of the Poseidon 2nd stage and turn the adjusting cam which sets the activation effort. The tool grips the cam snugly and allows slow, stepped rotation of the knurled roller.
43240... Spanner Face Wrench - A "V" shaped wrench with hardened tips in each arm for engaging the detent holes in regulator high-pressure seat retainers, body end caps, or screw-out second stage cover plates.



43245... Heavy Duty Face Spanner - A robust model of #43240 with articulated arms and screw-in, replaceable tips. Tips are case-hardened for handling tough jobs like extracting hi-pressure seat retainers which have been frozen by salt-water encrustation. For replacement tip: Order **#43246**.
43250... 1/8" Cap Spanner Wrench - A wrench with an articulated, semi-circular arm containing an 1/8" pin for engaging / removing the piston caps on many regulators. Will handle caps from 3/4" to 2" in diameter.
43260... 3/16" Cap Spanner Wrench - Same as #43250, except that the detent pin is 3/16", which works best on caps with larger flood ports or detents.
43290... Regulator Piston Bullet - When piston regulators are repaired, the sharp-edged piston often accidentally cuts the hi-pressure chamber seal during reassembly. This plastic "bullet" is placed in the piston barrel where it serves to expand and protect the O-ring seal during the insertion process. Works on numerous regulators with flow-thru pistons.
43330... Regulator Air Barrel Reamer - A stainless steel brush used in an electric drill to clean / polish the inside of the second-stage air inlet barrels employed in such popular regulators as Dacor and Scubapro. Produces an excellent finish in this hard-to-reach place! A plastic tip on the end of the reamer prevents damage to the blind end of the barrel!
43340... Regulator Service Multi-Wrench - This unique tool will perform the tightening / loosening / removal operations on the following regulator parts: first stage piston caps, first stage yoke-retaining nuts or air-inlet bodies, detented hi-pressure seat retainers, detented body ports, detented second stage poppet chamber ports.

SERVICE & MAINTENANCE - O-RINGS

48500... **O-Ring Starter Kit** A kit containing 12 each of 18 different O-rings, that are commonly used for servicing scuba equipment. Kit comes as a compartmental plastic box with a guide that defines important uses for each seal. A great product for shops opening a service department, but unsure of just which O-rings to stock. Popular O-rings can be individually reordered as required.



49000OX... **Viton O-Ring Kit** A starter kit of popular, color-coded, oxy-compatible O-rings in a plastic compartment box. All GSMoT Viton O-rings are brown to prevent accidental mix-ups with the usual black, Buna N O-rings so plentiful in scuba repair departments. Kit has six each of 10 commonly used O-rings with an applications guide.

O-Rings in Bulk Pack Jars GSMoT now offers eight of the most popular "dive shop" O-rings in bulk-pack jars of 50 units each. The clear, screw top, plastic jars are reusable for general parts storage or O-ring refills.

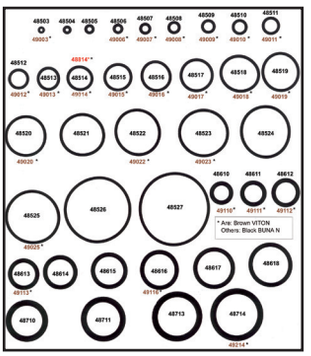
48312... Bulk Jar (50) O-ring #48612
48314... Bulk Jar (50) O-ring #48714
48316... Bulk Jar (50) O-ring #48616
48403... Bulk Jar (50) O-ring #48503
48410... Bulk Jar (50) O-ring #48510
48411... Bulk Jar (50) O-ring #48511
48412... Bulk Jar (50) O-ring #48512
48414... Bulk Jar (50) O-ring #48814

Application Guide to Common Scuba O-rings Note: Buna O-rings (black #48500 series) are used for normal air applications, whereas Vitons (brown #49000 series) are for oxygen, Nitrox, or specialty gas situations.

48503/49003OX… Air spool O-ring for dive consoles or submersible pressure gauges - internal swivel seal
48506/49006OX… Common seal in regulator first stage balancing mechanisms
48507/49007OX… Common hi-pressure seal on many regulator pistons
48508/49008OX... Hi-pressure seal on certain oversized pistons; various regulator & valve uses
48510/49010OX… Regulator hose swivel internal O-ring; valve stem seals; piston barrel seal; power inflator seal
48511/49011OX… Regulator hose, male end; regulator LP port plugs; various hose adapters; internal seal on many BC hoses
48512/ 49012OX… Console/pressure gauge hose; HP port plugs & adapters; DIN fitting internal seal; regulator filter seal
48515/49015OX… First stage seat seal; valve bonnet seals
48517- 48522 / 49017OX- 49022OX… Large piston O-ring on various regulators
48523- 48525 / 49023OX- 49025OX… Piston / swivel cap seal on various regulators
49110OX… Seal in quick couplers (GSMoT #45510 & 45515)
48611/49111OX… Mates regulator to valve in Australian valves; seal on helium gas nipples (GSMoT #45265)
48612/49112OX… Regulator to tank seal for older tanks (1970's & earlier); DIN fitting to tank seal
48616/49116OX… Tank to valve seals for hi-pressure tanks (3,500 psi +)
48714/49214OX… Common tank to valve seal (3/4-14 NPS neck thread)
48814/49014OX… Mates regulator to most tank valves

O-RING CONTROVERSY?? EPDM VERSUS VITON

GSMoT does not sell EPDM O-rings for oxygen applications. We consider EPDM (Ethylene-propylene-diene-methylene) a distinctly inferior polymer to Viton for hi-pressure oxygen applications. Several dive companies are using it in Nitrox equipment because it is inexpensive, has excellent resistance to salt water and abrasion, and yields no toxic byproducts if burned. However, the oxygen compatibility of EPDM is poor: its auto-ignition temperature is about 350° F (Viton is 800°F) and its oxygen index is only 25%, whereas at least 50% is recommended for most O_2 applications. Lastly, the heat of combustion of EPDM is threefold greater than that of Viton, meaning an EPDM fire is much more likely to set other components on fire, creating a "kindling chain" reaction. BOTTOM LINE: EPDM is an improvement over other nitrile seals for premixed Nitrox operations, but not for those involving hi-pressure pure oxygen such as partial pressure mixing or oxy-rich decompression media.



ORDERING O-RINGS

SEE OUR PRICE LIST FOR AN EXACT SIZING REFERENCE CHART AND PRICES. THIS CHART CAN BE USED TO DIRECTLY MATCH THE SIZE OF O-RINGS. GSMoT stocks most popular sizes of commonly used O-rings in both Buna N (black nitrile rubber) and Viton (oxy-compatible fluorocarbon rubber). They can be ordered singly in any quantity, in handy bulk jars of 50 each, or in kits containing a variety of commonly used O-rings. Technicians should be aware that certain scuba repairs might require O-rings of special hardness or composition, and substituting non-compliance types may lead to serious malfunctions. Always consult manufacturer's specifications / repair manuals in this regard. TechSupport can often advise you on O-ring selections and applications.

SERVICE & MAINTENANCE - ULTRASONICS

Perhaps the most effective way to clean small parts including those from scuba regulators / valves is by ultrasonics. This requires a special machine which generates high frequency vibrations (beyond the range of human hearing) within certain liquid solvents. Forceful bubble impulsions bombard virtually every surface of any material submerged in the liquid; this cavitation literally blasts the contaminants off the parts, producing a state of microscopic cleanliness! It silently removes grime, rust, oil, dyes and grease from metals, ceramics, glass, plastics, rubber and synthetic fibers. However, ultrasonics can be harmful to some composite materials and a few elastomers, so manufacturers' manuals should always be consulted with regard to compatibility. Because this process cleans so thoroughly, it's an approved method for oxygen cleaning.

Another virtue of ultrasonic cleaning is that the vibrations can be passed at undiminished strength from one liquid to another. Thus, if water is placed in the tank of the machine, the cleaning activity will be transmitted to any solvent contained in an auxiliary pan or vessel placed into the water. If one has extra pans of selected solvents, a single machine can utilize a variety of cleaning agents by merely exchanging pans! All GSMoT cleaners can employ this reciprocating pan system and we recommend it when acidic solvents must be used. (Each machine includes detailed instructions on ultrasonic cleaning).

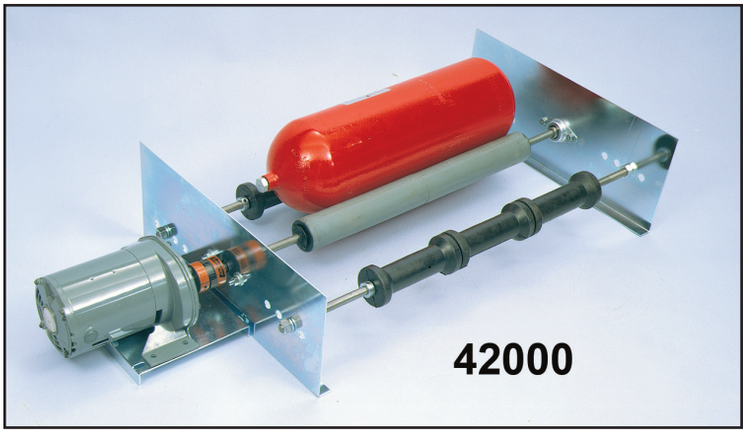
43050... Deluxe Ultrasonic Cleaner Model 2014 - This top of the line 110v, powerful (320 / watts) machine measures 12.5" x 8.2" x 9" overall with a blue / white vinyl-clad finish and a 9.4" x 5.4" x 4" stainless tank of 3.4 qt. capacity. Controls include automatic cavitation tuning, cycle timer, and a pilot light. The transducers of model 2014 are especially tuned to produce waves that penetrate into the small cavities and recesses of machine parts. The tank has a convenient drain plug, a stainless cover, and can hold several dismantled regulators or valves at one time. **(43052... Ultrasonic Cleaner Model 2014, 220 Volt, special order only!)**
43051... Stainless Steel Basket for 2014 - This metal mesh basket holds parts during ultrasonic cleaning and rinsing.
43055... Stainless Steel Pan for 2014 - This pan can hold the desired solvent in the interchangeable pan / solvent systems previously explained.
43070... Ultrasonic Cleaner Q-90 - This handsome 110v, rectangular shaped unit is 6.9" x 6.4" x 9" overall with a two qt. tank measuring 5.9" x 5.4" x 4". The tank of the Q-90 will easily hold large valve or regulator bodies. It develops 160 watts of cleaning power and has an automatic timer and pilot light. **(43072...Ultrasonic Cleaner Q-90, 220 Volt, special order only!)**
43071... Stainless Steel Basket for Q-90 - Like #43051, but smaller for the Q-90 unit.
43075... Stainless Steel Pan for Q-90 - Like #43055, but smaller to fit the Q-90 machine.
43090... Bur Tray - A small, cup-shaped tray with a handle for cleaning small parts.

GSMoT Hydrosonic Solvent - Most commercially available (and expensive) solvents for sonic cleaners were developed for use on jewelry, dental materials, or greasy bearings; they work poorly on salty scuba gear! GSMoT's solvent, based on a food-grade organic acid, was especially designed to remove the deposits which contaminate dive gear. It's formulated to proper strength, so no diluting or mixing is required. Will not harm cleaner pans. Ships HAZMAT at additional cost.
43101... Hydr. Solvent - Gal. **43103... Hydr. Solvent Case - 4 Gal.** **43104... Hydr. Solvent 5 gal. Jerrycan** *NEW*

ULTRASONIC OXY-CLEANING

Ultrasonics may be the simplest and most effective technique for oxygen-cleaning. It's easy: Use alkaline degreasers like GSMoT Special Cleaner diluted 1 to 25 (6 oz per gallon of water) in the ultrasonic machine. Add the "dirty" parts and energize for 15 minutes. Rinse with oil-free water, conduct shake / pH test, dry appropriately, and inspect with ultraviolet light or other approved methods. Extremely dirty materials may require pre-treatments prior to sonic cleaning.

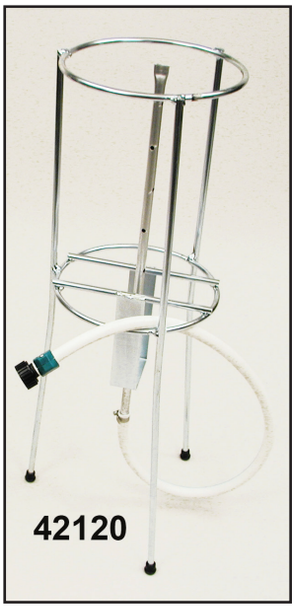
SERVICE & MAINTENANCE - TANKS & VALVES

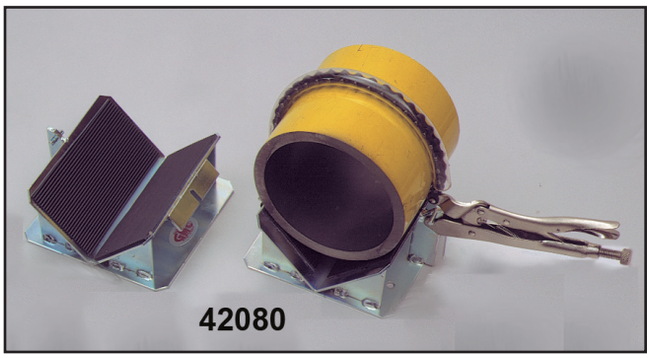


42000... Tank Tumbler This machine consists of two heavy gauge, plated steel end plates that support three parallel rubber rollers, the center one of which is rotated by a 60 rpm, 1/4-hp gearmotor. This apparatus allows two dive cylinders to be simultaneously tumbled at about 25 rpm. The semi-soft rollers will not deface or mark tanks, but still have excellent traction. The spacing between each roller axis is adjustable so tanks of different diameters can be accommodated. The parallel side rollers are offset in height from the central drive roller which also promotes handling tanks of varying size. The tumbler is easily assembled and can be anchored to a bench, floor, or fabricated frame. An exploded parts diagram / instructions are included or available at our website www.global-mfg.com. Electrical connections are not included. 110v motor only. (See Bulletins #42130 and #42125OX for information on tumbling operations. These bulletins can be ordered through our Customer Service Department at (512) 240-6644 or are available at www.global-mfg.com).

42030... Tank Dryer System This apparatus can hold two dive tanks in an inverted position so that they can be dried after tumbling by forced hot air. Includes two tank stands, an air delivery pipe with two outlet ports, and an industrial-grade heat gun. The latter is 115-volt, 10-amp unit with an adjustable 750° F heat element suitable for drying all scuba tanks. One outlet vent on the air manifold is interchangeable into a smaller diameter pipe for drying older steel cylinders with 1/2"-NGT openings. NOTE: Care must be exercised NOT to over-heat aluminum tanks during drying. Our dryer's design makes overheating unlikely, but 325° F or more can impair a tank's tensile strength. See dryer manual, tank manufacturer's specifications or GSMoT Bulletin #42130.
42035... Dryer Gun Element - Replacement 750° F element for our tank dryer heat gun.

42020... Tank Draining Stand A sturdy 3-legged steel frame holds all common size SCUBA cylinders in an inverted position so that after tumbling, media and cleaner can be drained from them into a receptacle. The stand will hold tanks up to 8.25 in diameter.
42120... Internal Tank Washer This device allows thorough internal washing of tumbled / dirty dive tanks with a minimum of handling. Consists of a modified tank stand (8.25" ID) with an adjustable, perforated metal tube which slips into any inverted tank placed in the stand; the tube can be connected to a water faucet by means of a short hose. Just set this entire assembly over a drain, attach the hose, turn on the water, and the internal sprinkler will flush the tank clean in a few minutes.



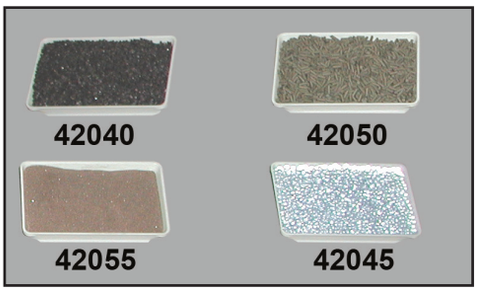


42080... Tank Vise Constructed of heavy, welded steel plates which have been chrome-plated, this V-shaped vise can be bench-mounted either vertically or horizontally. Tanks up to 8.5" in diameter are secured in the device with an adjustable chain vise-grip. A plastic tube to cover and pad the chain is also included.

TANK CLEANING PUBLICATIONS

GSMoT currently publishes the only comprehensive manuals on tank cleaning in the entire dive industry.
42130... TANK TUMBLING TIPS is presently the definitive manual on cleaning air tanks.
42125OX... CONVERTING DIVE TANKS FOR NITROX / O_2 SERVICE covers the preparation of new and used tanks for specialty gas applications. Both available at www.global-mfg.com.

SERVICE & MAINTENANCE - TANKS & VALVES



42040... Aluminum Oxide - Chips are small, hard, randomly-shaped abrasive particles which will loosen scale and rust from tank walls, thereby augmenting the action of solvent chemicals to remove / suspend internal contamination. This material can be used in steel or aluminum tanks with various adjunct solvents EXCEPT TANK ACID which will attack the chips and produce excessive gassing. Aluminum oxide has been successfully used for tank tumbling for 40 years. Use 25 - 35 lbs. per tank.

42045... Glass Beads - Beads are 4-5 mm clear glass balls which are employed whenever minimal cutting activity is required such as during oxy-cleaning for Nitrox usage or for removal of persistent internal tank odors. Will not remove heavy, gross contaminants. About 10 pounds are generally required per tank.

42050... Ceramic Media - Chips are cylindrical, cast resin pellets with a computer-designed shape for specific cutting activity. Each pellet (1/8" ID x 5/16" long) contains an abrasive agent which gives a very precise, predictable cleaning action. More tolerant of acid than aluminum oxide, ceramics are very useful for tumbling aluminum tanks or for oxygen-cleaning operations. Use 25 - 35 lbs. per tank.

42055... Tumbling Expeditor - A fine, sand-like abrasive grit which speeds the cleaning activity of normal media in STEEL tanks and usually shortens the tumbling process by several hours. Also enhances the cleaning of very dirty cylinders with pitted or concreted walls. Requires only 2-3 teaspoons of grit per tumble. Sold by the pound.

SERVICE & MAINTENANCE - CLEANING SOLUTIONS

42070... Acidic Tank Cleaner A blend of phosphoric acid and certain suspending agents, this acidic cleaner will expedite the removal of scale, oxides, concretions, and other stubborn contaminants from inside STEEL dive tanks. It's biodegradable and can be flushed down drain systems without harm. It has FDS, USDA, CDA, CDF approval and also meets many mil-spec requirements. The acid concentrate, when diluted to 5 - 10% strength for use, will speed the process so that only 1-3 hours will be required for completion. NOTE: Use this cleaner on STEEL TANKS ONLY; acids will attack aluminum models! See Bulletin #42130 for additional information - available at www.global-mfg.com. HAZMAT shipping required at additional cost.

42075OX... Oxy-Safe Citrate Tank Cleaner - Prior to Nitrox / O_2 usage, visibly dirty or rusty dive tanks require abrasive tumbling prior to any degreasing treatment. Tumbling with ceramic media and citric acid (citrate) cleaner usually gives excellent results. Citrates are widely used in the metal finishing and electronics industries for oxy-cleaning processes; they are completely non-toxic, unregulated substances. GSMoT cleaner is diluted 1 oz. per gallon of water for actual use.

42100OX... GSMoT Special Cleaner - This powerful BLUE-COLORED cleaner replaces GSMoT's older, GREEN liquid that was sufficiently caustic to be classified as hazardous for shipping, whereas our new one is NOT hazardous. Like the former solvent, this alkaline degreaser is biodegradable, nontoxic, nonvolatile and possesses high rinsability, a highly desirable property for oxygen cleaning. It's compatible with steel, stainless, brass, chrome, ceramics, galvanized metals as well as most rubber and plastic polymers. (In concentrated form, it can etch aluminum). Use this degreaser diluted with water as an adjunct in tank tumbling, for swabbing compressor oil spills, or for oxygen cleaning. Because of its high rinsability and negligible flash point, this solvent is very effective for oxygen cleaning by soaking, scrubbing, or ultrasonic methods.

42220OX... Oxy-Safe Rust Inhibitor - Also called Compound O, is used following the tumbling of steel tanks to prevent flash rust, a reddish film which often forms on the interior walls during drying of the cleaned cylinder. This chemical replaces Compound B, a popular anti-rust agent which is NOT oxygen compatible. Compound O can be used for both air and O_2 / Nitrox tanks.

42220OX... Oxy-Safe Rust Inhibitor - Gallon 42221OX... Oxy-Safe Rust Inhibitor - Quart

Regulator Cleaner Solvent - A biodegradable, acidic detergent which removes oxides, tarnish, rust, scale, oil, and salt-water encrustments from brass, iron, stainless and plastic parts. This solvent meets FDA, USDA, and various mil-spec requirements. The acid can be diluted to about 25% strength; at that concentration, most scuba parts will be cleaned by a 3-15 minute submersion, depending upon the degree of contamination. For heavy encrusted items, the cleaner can be applied full strength directly with a brush or swab. Rinse the finished parts with cold, then warm water and dry thoroughly. A metallic luster can be produced on many clean parts by wiping them with a towel. NOTE: This solvent is primarily a food grade acid, but protective gloves and glasses should be worn during its use, especially when applying it by hand in undiluted form. DO NOT USE IN ULTRASONIC CLEANING MACHINES; it can corrode / etch the tank or damage the circuitry. HAZMAT shipping required at additional cost.

43190... Regulator Cleaner Solvent - Quart **43191... Regulator Cleaner Solvent** - Gallon

SERVICE & MAINTENANCE - TANKS & VALVES

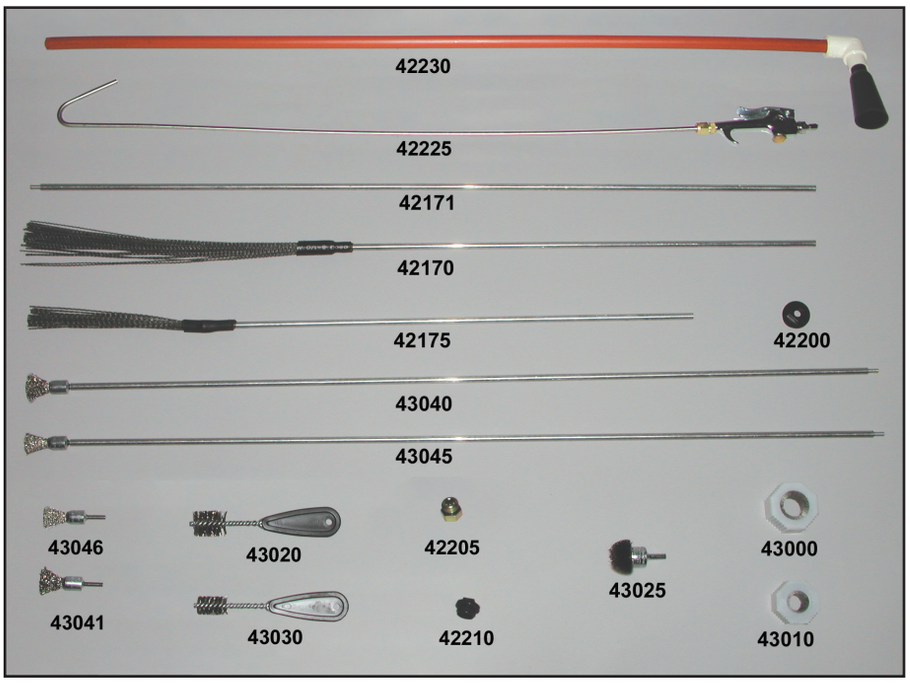
TANK CLEANING WHIPS

An essential device for LIGHTDUTY cleaning inside scuba tanks when tumbling is not needed, but deposits like flash rust or aluminum Bayerite should be removed. Minor contaminants in large cylinders which will not fit the tumbler machine can also be whipped out. The whip is a flexible "broom" consisting of strands of a space-age plastic, coated with a durable abrasive and crimped onto an aluminum rod. The whip can be spun by any 3/8-electric drill. NOTE: To prevent injury to the operator and /or whip, drill power MUST BE OFF when inserting or removing the whip from a tank! Also, DO NOT store the whip in any manner which folds or kinks the strands; subsequent strand fracture may occur.

42170... Whip for standard scuba tanks

42175... Whip for pony or other small tanks

42171... Whip Extender Rod - A 3-foot aluminum rod which screws onto the tank whip and lengthens it to about 70".



42200... Plastic Whip Guide - A threaded, plastic plug with a centralized hole through which the rod of the whip can pass. The plug's thread matches that of 3/4" NPS tanks, and when screwed into place, controls the angle of the whip to prevent damage to the strands while still achieving proper cleaning.

42225... Tank Purge Air Gun - Just the tool to remove congested media from a dive tank after tumbling. Snap this air gun onto any pressurized BC hose. Place the curved tube nozzle into the neck of the tank which is inverted over a catch pan, and inject a stream of air. The internal pressure created will quickly jet a slurry of liquid and media into the pan, emptying the cylinder in seconds.

42230... Tank Vacuum Attachment - Metal shavings, teflon tape, aluminum oxide powder, and metallic dust are difficult to remove from dive tanks because they electrostatically cling to the interior. These contaminants can usually be successfully vacuumed out using our special probe assembly which will mate to the 1-1/4" hose of any small "Shop Vacuum." The 35" long x 5/8" diameter tube will fit into all current dive tanks.

42205... Genesis Tank Plug - A metal plug with a 7/8 - 14 thread and O-ring seal. Plug Genesis and other DIN tanks during tumbling.

42210... Standard Tank Plug - A plastic, O-ring sealed plug for sealing common 3/4 - 14 tank threads during tumbling.

Valve Thread Brushes

Small circular stainless steel wire brushes used to quickly clean the threads of scuba tank valves.

43000... Valve Thread Brush for 3/4"-14 NPS valves

43010... Valve Thread Brush for 1/2" NGT & DIN valves

Tank Neck Thread Brushes

Cylindrical, plastic handled brushes with fine stainless steel wire for cleaning dive tank neck threads without harm to the threading.

43020... for 3/4" - 14 NPS neck threads

43030... for 1/2" NGT & DIN neck threads

43025... Tank Neck Thread Drill Brush - A small, cone-shaped stainless steel brush which can be used in any electric drill to safely and quickly clean tank neck threads and the O-ring groove.

TANK BOTTOM BRUSHES

Special, small stainless brushes for removing those stubborn deposits on the very bottom of dive tanks. Each brush screws onto a 3- foot aluminum rod which fits into any 3/8 electric drill. Each unit comes with the brush, extender rod, and a plastic guide sleeve to augment insertion through tank necks.

43040... Light-Duty Bottom Brush

43041... Light-Duty Brush - without Rod

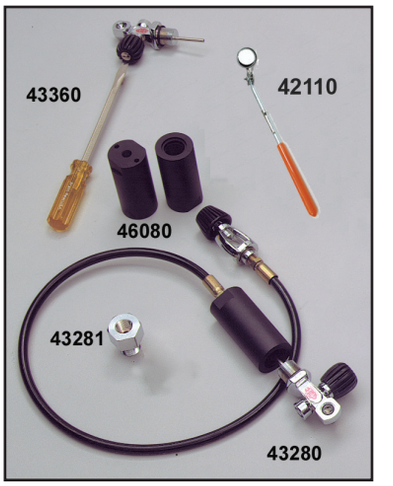
Fine wire for light rust spots in steel tanks or Bayerite deposits in aluminum models. Will not seriously damage the interior coating of aluminum tanks.

43045... Heavy-Duty Bottom Brush

43046...Heavy-Duty Brush - without Rod

Heavier, stiffer wire for bottom flash rust or other deposits in STEEL tanks. Not recommended for aluminum models.

SERVICE & MAINTENANCE - TANKS & VALVES



46080... Valve / Regulator Test Stand Machined from hi-strength aluminum alloy, this 2”-diameter, anodized cylinder is drilled and tapped to accept O-ring sealed scuba valves (3/4-14 NPS). The bottom has a 1/4” NPTF air inlet port and two 1/4-20 bolt holes for mounting to any bench top. Used to test repaired valves, or with an installed valve makes a great bench top workstation for fixing / testing regulators!

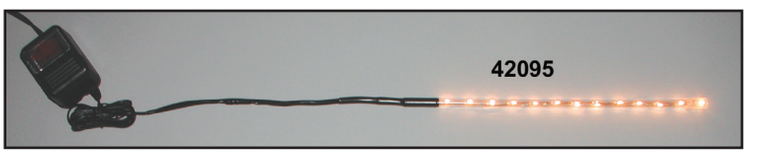
43280... Valve Function Tester An internally threaded, 2” diameter cylinder of hi-tensile, anodized aluminum; the inner threads are 3/4-14 NPS which will accept the standard, O-ring sealed scuba valve. A 3-foot (5,000 psi service) hose attached to the base of the stand has a scuba yoke on its free end for attachment to any tank. To test a valve, screw it into the cylinder, turn on the air, and submerge the cylinder / valve in water. Any leaks will be apparent, and all valve functions can be tested with or without an attached regulator. NOTE: Always hold the assembly securely and pressurize it slowly to prevent any hose whiplash. It can also be clamped into any vise.

43281... Genesis DIN Valve Adapter An O-ring sealed adapter for the test stand used on our #43280 Valve Tester or #46080 Test Stand, it converts the large tank thread to a 7/8 - 14 hydraulic port thread which is used on DIN (Genesis-Type) hi-pressure cylinder valves. Also allows DIN valves to be used / tested in our Valve Tester or Workstations and Flowbenches.

43360... Valve Stem Nut Tool The on / off handle and J-valve arm on virtually all scuba tank valves are retained by a special slotted nut. #43360 is a large, wideblade screw-driver with a notched tip for removing that nut. Even nuts frozen by salt water can be freed with this tool.

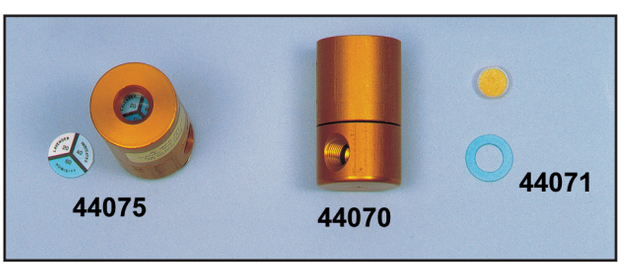
42110... Tank Inspection Swivel Mirror - A 7/8” diameter magnifying mirror with handle used to inspect the inner neck of aluminum tanks for cracks or imperfections… a procedure which is now a standard part of the yearly VIP. A ball joint between the mirror and handle allow the viewing angle to be adjusted.

42095... Deluxe Tank Internal Inspection Light -
An array of 12 hi-intensity, miniature bulbs housed within a 14” clear plastic tube which will slip into even narrownecked tanks. The end of the tube is sleeved to focus the end for illuminating pits or cracks. Powered by a step-down, 110v transformer, the light operates at only 18v to mitigate the chance of electric shock from metal tanks. Life expectancy of the bulbs can be years, but the loss of any single bulb will not short out the entire array.



AIR PROCESSING - SUPPLIES & HARDWARE

44070... Colorimetric Air Quality Monitor
This simple device fits into the air train immediately after the desiccant filter where it monitors air quality by means of obvious color changes in parchment sensor disks which can be seen through a plastic viewport. It can also determine the longevity of the filter media. When a color change indicates that the moisture level in the processed air is too high, the desiccant needs changing. If compressor running time to that point has been tracked (manually or by hourmeter), then the normal life expectancy of chemicals in running hours is known. By subtracting a few hours from that value and changing your chemicals a little early, a safety margin can be maintained on your air quality. An additional colored sensor detects unsafe levels of carbon monoxide. Since the longevity of filtrants can be affected by many environmental and mechanical factors, this monitor can catch any unexpected shifts in air quality caused by unpredictable / aberrant conditions. Specifications: Flow / pressure rating - 50 cfm to 5,000 psi; Connections - 1/4 NPTF bottom ports; Replaceable Sensors: Blue outer ring changes to pink at relative humidity of 40%. Yellow central disk becomes coal black at 50 ppm carbon monoxide. Seals: Monitor screws open / closed and seals on an O-ring.



Replacement sensors:
44071... Kit of One each CO disk and humidity detector ring.
44073... Humidity detector ring only
44077... CO disk only

44075... Colorimetric Moisture Level Monitor Similar to #44070, this unit utilizes a 3-phase sensor disk which progressively changes shades of blue as the humidity increases. Humidity levels of 20%, 40%, and 60% are detected; desiccants should be renewed as the 40% segment begins to fade. Since this model does not sense carbon monoxide, use this device where the chance of carbon monoxide in the intake air is low; also use it to maintain very low dew points in air used for cold water diving or deep TEK diving. **(Replacement sensor disk: Order #44076).**

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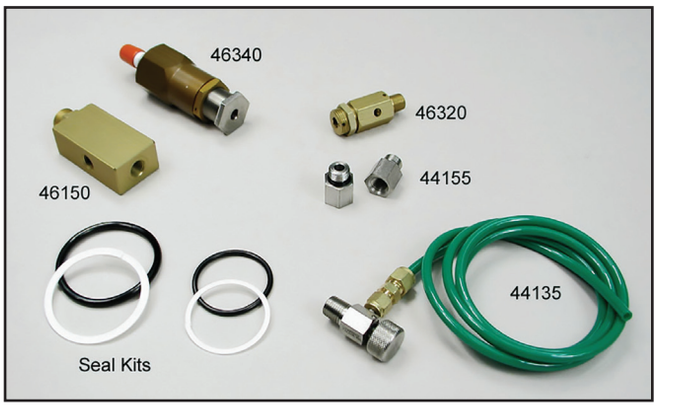
AIR PROCESSING - SUPPLIES & HARDWARE



44135... Drain Assembly Kit for #44130 / 44160 or other appliances requiring a sludge drain. Valve with 1/4" NPTM inlet and six feet of plastic tube that run to a collection vessel or other depository.
44155... Tower Port Adapter - Adapts #6 hydraulic, O-ring ports to common 1/4 NPTF. (Stainless steel).

Tower Seal Kits - Consists of one O-ring and one Teflon wiper ring. (Choose #44154 for filter towers #44140/44150/44160) (#44133 for #44130 separator)

46150... Priority Back Pressure Valve - Prudent dive shops strive to maintain a low dew point in their scuba air and also achieve maximum life expectancy from expensive filter cartridges. However, air must be 99% dry before entering the chemical filters or neither objective will be met! To accomplish this, an after-separator and a priority valve are required. The latter unit is an adjustable check valve which holds about 1700 psi of back-pressure on the filter system at all times. This raises the density of the air, increases the efficiency of the separator (100% or more), and thereby lengthens the life of the filter chemicals. The process is called pressure-drying. Preset at approximately 1,700 psi. One inlet, 2 outlets - 1/4 NPTF.
46320... Standard Relief Valve - Adjustable "pop-off" valve which can be calibrated from 300 to 5,500 psi. Anodized aluminum for 6,000 psi service. 1/4" NPTM inlet. Used to protect filters, separators, storage vessels or compressor interstages. Comes uncalibrated with instructions.
46340… Floater Relief Valve - A gently-opening pop-off valve producing a slowly increasing flow rate to use as a safety overpressure device where repeated openings occur. Designed for heavy frequent service to 7,000 psi. 1/4" NPTM inlet. Can be calibrated from 400 to 6,500 psi; comes uncalibrated with instructions.

AIR PROCESSING - CHEMICALS

Modern scuba air filtration systems utilize disposable, prepacked chemical cartridges. Some dive shops with older systems still prefer to repack their STEEL filter towers with bulk chemicals or to use repackable stainless liners within ALUMINUM towers. Aluminum housings should NEVER be free-packed because filter chemicals can react corrosively with the metal walls and weaken the tower. Repacking with bulk filtrants can be economical, although it is messy and time consuming when compared to throw-away cartridges. Also, free-packing must be done in a discrete manner and order, or the filtration process will fail. GSMoT offers the bulk chemicals for air filtration and our TECH Department can advise you on the techniques required (512) 240-6644 or techsupport@Global-mfg.com

44010... Activated Alumina Type A Type A porous aluminum oxide is a historically popular desiccant for SCUBA air because it is nontoxic, long lasting, compositionally stable, simple to handle, and has high absorption capacity. Primarily used to remove moisture, it also has limited ability to absorb other gases and liquids. GSMoT alumina is formulated as 1/8" diameter spheres. Type A has absorbing power which approaches that of molecular sieve. Packaged in a 1 gal, 6.75 lb. bottle.

44040... Steam Activated Carbon A specialized form of charcoal, this final filtering agent removes tastes and odors from the air. It absorbs oil and water vapor, chlorine, nitrous oxide, and small amounts of carbon monoxide and dioxide. NOTE: Activated carbon should be the final chemical in the filtration train and must always be preceded by the desiccants. When damp, the effectiveness of charcoal is reduced and it may even release previously absorbed contaminants. Also, wet activated carbon of even high quality may form small amounts of sulfuric acid which in time can do serious internal damage to a filter housing! Packaged in a 1 gallon, 3.75 lb. bottle.

44050... Molecular Sieve 13X Molecular sieves, a group of space age chemicals known as zeolites, have outstanding filtration abilities. Their chemical structure is a narrow, rigid, and uniform cystalline lattice which has such precise pore size that it restricts movement of substances on the basis of molecular size! Small molecules, like water, can enter the lattice, but are trapped therein, thus the name "molecular sieve". Molecular sieves are highly effective filtrants for moisture, nitrogen oxide, oil vapor, and limited amounts of carbon monoxide and dioxide. Variety 13X is the best formulation for processing divers' air because it is designed to trap water vapor. Packaged in 1 gal., 6.5 lb. bottles.

AIR PROCESSING - FILTERS & TOWERS

The compressed air utilized for SCUBA diving should meet the rigorous OSHA standards for Grade E*.
Permitted levels of contaminants:Carbon Monoxide - 10 ppm Carbon Dioxide - 1000 ppm Oil Vapor-hydrocarbons - 5 mg / M3
Water Vapor: Not specified, but a dew point of at least -50° F should be maintained for diving air. For very cold water diving, even lower dew points may be needed to prevent regulator freeze-ups.
***Grade E air is NOT acceptable for preparation of Nitrox**. To mix with pure oxygen, air containing NO MORE THAN 0.1mg / M3 hydrocarbons must be used (modified Grade E). See Footnote.

In well maintained compressor systems, the water / oil vapors are largely removed by mechanical separators and any residual contaminants are filtered out chemically in a final step. GSMoT stocks a variety of specialized hardware and chemicals for successful processing of diving gas. Dive shops occasionally need to replace worn out filters or improve / revamp existing systems. GSMoT manufactures a line of filter towers which utilize disposable cartridges; also available are after-separator columns, back-pressure regulators, and various other complementary accessories for do-it-yourself repairs. Our towers are constructed from hi-tensile 7075 aluminum for 5,000 psi service. Each has a black, hard-anodized outer finish with easy-to-open, screw off, O-ring sealed end caps. Air enters and leaves the housing via #6 hydraulic ports on each side of the base cap. Each port has a stainless adapter to convert the #6 port to 1/4 NPTF. Any unit can be mounted on a bracket or angle bar via two 3/8-16 bolt holes tapped in its base.

44300... <u>Tall Repackable Stainless Canister</u> Some diving operations prefer to repack filters whenever possible from economical, bulk-purchased chemicals. Aluminum towers cannot be free-packed with chemicals without serious corrosion occurring inside the housing! Disposable cartridges are factory-sealed and should not be repacked. GSMoT offers a stainless steel canister which can be repacked indefinitely with chemicals purchased in bulk. The unit fits only GSMoT #44150 tower and those using the Mako seal system. Includes complete instructions on the repacking process. For replacement pads, plates, and shields for canister, order kit #44301.

44305… <u>Bauer Tower Converter</u> A stainless steel insert that fits into the base of a Bauer Filter Tower and converts its double O-ring mating system into the more common single O-ring type. Converted Bauer towers can use Mako-style cartridges that are less expensive and easier to procure. The GSMoT Repackable Canister (#44300) can also be used. **Disposable Filter Cartridges:** GSMoT offers a series of throw-away filter cartridges which will fit a variety of popular air systems as well as our own towers. Most columns have a discrete mating coupling and the corresponding filter cartridge must be compatible with that connection. Filters must also contain the appropriate chemicals to accomplish intended purposes. See the GSMoT price list for further information, stock numbers, and a cross-reference chart on the filters offered. Our TECH department can assist you on finding the correct filter for your system.

44140... <u>Short Filter Tower</u> - This 3.75” x 16” tower uses a 10” disposable chemical cartridge to cleanse the compressed air. The screw-off end caps make replacing the cartridges a swift, simple task. Each tower will process about 12,000 cu. ft. of air per cartridge. Select the cartridge with the desired filtrants from the cross-reference chart in the GSMoT price list.

44150... <u>Tall Filter Tower</u> - A taller version (33”) of our #44140 which will treat about 22,000 cu. ft. of air per 27” cartridge. Select the cartridge with the desired filtrants from the cross-reference chart in the GSMoT price list.

44160... <u>Purifier Combination Tower</u> - A 3.75” x 24” column containing BOTH a coalescer and a chemical filter. A single filtration device for use on small compressors (10 cfm or less) or to bolster existing systems in certain applications. See price list to select filter cartridges; drain valve NOT included (see #44135).

44130... <u>After Separator</u> - Also called a coalescer, this 3.75” x 11” tower fits between the compressor and chemical towers to mechanically dry the air to about 99%. A manual vent on the bottom of the column allows the oil / water sludge to be periodically drained off. Without adequate after separation, the effectiveness of the chemical filters will be impaired and expensive cartridges will be rapidly expended! 6,000 psi service. Drain valve NOT included (see #44135).

HYPER-FILTRATION AND NITROX PREPARATION

With the widespread popularity of Nitrox diving, numerous dive shops are mixing air with pure oxygen to produce saleable “enriched air” mixtures. For safe blending, compressed air with purity greater than normal Grade E must be used. Known as “Oxygen Compatible Air” or OCA, this gas is permitted to contain no more than 0.1 mg / M^3 of hydrocarbon contaminants, whereas Grade E scuba air can have 50 times that amount (5 mg / M^3). Some dive shops are able to produce OCA with their regular filtration systems if the compressor, lubricant, moisture separators and filters function absolutely flawlessly. Many other air systems cannot achieve air of this purity under any circumstances. Most shops producing Nitrox obtain OCA (also called Modified Grade E) by a technique called Hyper-Filtration. This involves passing your normal Grade E scuba air through a special, additional chemical filter called a Hyper-Filter.This consists of a special tower(s) containing “circulating cartridges” with high purity chemicals which can remove even trace hydrocarbons. To assure complete purification, these filters also control the pressure and flow rate at which the air passes through the system. Even those shops able to produce OCA by normal processing often prefer to hyper-filter because these devices provide a safety backup for unseen system failures which could unexpectedly create a non-OCA status. See page 31 for Hyper-Filters and related products.

AIR PROCESSING - LUBRICANTS

Compressor Lubricants

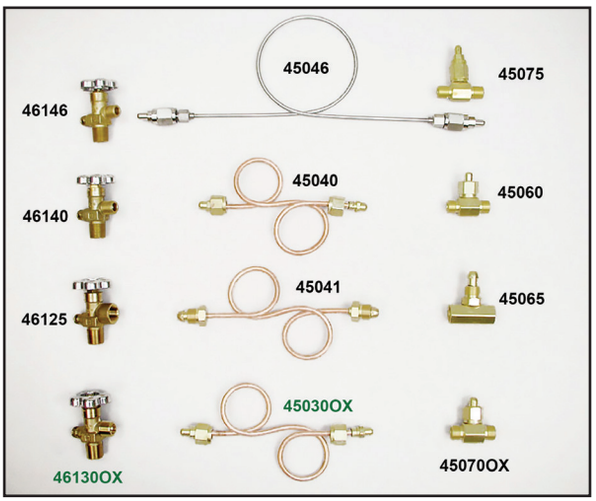
44080… CF-500 Blended Semi-Synthetic Oil As in the automotive industry, blended oils are now impacting the dive industry. A step up from pure petroleum lubes, this product has a high viscosity index and flash point, low carbon formation, and high lubricity. An improved oil for older compressors not suited for full synthetics. Also a fine break-in oil. Gallon Bottle.

44085… CF-1000 Synthetic Oil Within the class of diester-based lubricants, this broad-spectrum product is a field-proven, equivalent substitute for such oils as the original Anderol 500 & 750, Chemlube 501 & 751, and other popular oils for breathing air compressors. Diester oils are so stable and oxidation-resistant that once-a-year oil changes have become commonplace. Carbon residues from these lubes are minimal and easily removed. Their high flash point (around 500° F) prevents explosive accidents. Because of its viscosity characteristics, this oil is suitable for use in both new and older machines and is recommended worldwide by various compressor manufacturers. Gallon bottle.

44095… CF-2000 Synthetic Oil A fairly new lubricant in the diving world, this polyalphaolefin-based oil has become very popular for Nitrox production because of its high resistance to oxidative breakdown. Synthesized with food-grade components complying with FDA H-1 specifications, this translucent fluid has very low volatility, high hydrolytic resistance, no toxicity, and a high flash point. It has seen wide spread use in modern compressors, especially for Nitrox continuous blending operations. Like most synthetics, it has an extended shelf life. Gallon bottle.

44100… CF-8000 Synthetic Oil The latest state-of-the-art product, this triester-based oil was developed specifically for severe, high temperature conditions commonly endured by breathing air compressors. This product incorporates all the great features of diester based oils, as well as the highest flash point, thermal resistance, and self-cooling characteristics available. Recommended wherever severe operating conditions are encountered. Gallon bottle.

COMPRESSED GAS HARDWARE - AIR STATION



Storage Cylinder Valves GSMoT stocks heavy brass industrial valves for the gas cylinders commonly used by dive shops in storage banks. Each valve has a specific CGA outlet, burst disk assembly, and 3/4" NGT inlet thread. When ordering valves, you must specify the service pressure of the cylinder to get the proper, federally required, safety disk! See price list for spare industrial safety burst assemblies (disk, washer and cap) or valve rebuild kits. (Sherwood valves only). **SEE PRICELIST FOR BURST DISKS ASSEMBLIES FOR INDUSTRIAL VALVES. THESE ITEMS ARE NOT PICTURED OR LISTED IN THE CATALOG.**

46130OX... Oxygen Valve - with CGA 540 outlet - (3,000 psi service)
46140... Std. Air Valve - with CGA 346 outlet - (3,000 psi service)
46145... Hi-Pres. Air Valve - with CGA 347 outlet - (6,000 psi svc)

CGA Manifold Tees and Pigtails To join a series of commercial gas cylinders of the same CGA type, MANIFOLD TEES and PIGTAILS are needed. These are usually made of brass and copper, although stainless steel is sometimes needed at high pressures or in marine environments. Tees attach directly to the CGA tank valve, thereby providing two extra CGA outlets to interconnect two additional cylinders. Interconnections are made with a PIGTAIL, a metal, looped tube (or hose) with CGA nuts on each end. Loop construction permits spacing adjustments between cylinders and also absorbs sonic vibrations during compressing operations. Pigtails can interconnect tees or go directly to a compatible CGA tank valve.

45030OX... Oxygen Pigtail - CGA 540 (brass) 3,000psi - A pigtail with a CGA 540 nut and tailpiece assy at each end.
45040... Standard Air Pigtail - CGA 346 (brass) 3,000psi - A pigtail with a CGA346 nut & tailpiece assy at each end.
45060... Air Manifold Tee - CGA 346 (brass) 3,000psi - A manifold tee that connects to a CGA 346 storage valve and allows the connection of a CGA 346 pigtail or nut and tailpiece to each side.
45065... Inert Gas Tee - CGA 580 (brass) 3,000 psi - A manifold tee that connects to a CGA 580 storage valve and allows the connection of a CGA 580 pigtail or nut and tailpiece to each side. For inert gas (Helium / Argon).
45070OX... Oxygen Manifold Tee - CGA 540 (brass) 3,000 psi - A manifold tee that connects to a CGA 540 storage valve and allows the connection of a CGA 540 pigtail or nut and tailpiece to each side. For oxygen to 3000 psi.

COMPRESSED GAS HARDWARE - CGA ADAPTERS

GSMoT offers a complete line of fittings for manifolding gas storage cylinders into cascade systems. Industrial / medical gases each have prescribed CGA (Compressed Gas Association) fittings to prevent accidental mixing and maintain commensurate pressure ratings. Each CGA fitting has a specific shape and thread which will mate only to a matching fitting. Each matched fitting system is designated by a CGA number. All commercial gas cylinders have specific CGA outlets on their valves, and a corresponding adapter / fitting is needed to mate with it. Direct valve connections require a nut and nipple (also called a tailpiece), to achieve a gas-tight seal. Occasionally, thread adapters are required to convert CGA connections to more practical threading systems. Special converters are also used to interconnect CGA outlets where gases and pressures are compatible. GSMoT offers a variety of CGA nut / nipple connectors, as well as CGA thread adapters and converters.

CGA Nut & Nipples - These two-piece adapters fit respective CGA valve outlets and convert that connection to male 1/4" NPT thread. Wrenchtite models must be tightened with a wrench, whereas handtite versions do not, and seal with an O-ring or plastic gasket. Most types are heavy-duty brass, but stainless steel can be used for very high pressure or for severe marine applications. Most tailpieces contain an internal filter to prevent dangerous particles from entering the gas stream.

CGA 346 Standard Breathing Air to 3,000 psi

45005... Air Handtite Nut & Nipple - CGA 346 handtite nut / tailpiece without an internal filter for breathing air to 3,000 psi. (Order **#45001** for replacement seal).
45200... Air Nut & Nipple - Wrenchtite CGA 346 brass nut / tailpiece with internal filter for breathing air to 3,000 psi.
45009... Adapter - CGA 346 (air) to 1/4" female NPT 3,000 psi service.
45011... Adapter - CGA 346 (air) to 1/4" male NPT 3,000 psi service.
45313OX... Converts CGA 346 (air) to CGA 540 (O_2). Allows oxygen control devices to handle clean breathing air 3,000 psi service.

CGA 347 High Pressure Breathing Air to 5,500 psi

45019... Hi-pressure Air Handtite Nut & Nipple - CGA 347 handtite stainless nut tailpiece (no filter) for breathing air to 5,500 psi. (Order **#45016** for replacement seal).
45135... Hi-pressure Air Nut & Nipple - Wrenchtite CGA 347 heavy-duty brass nut / tailpiece with internal filter for breathingair from 3,000 -5,500 psi.
45014... Adapts CGA 347 (hp air) to 1/4" FNPT 6,000 psi service. Brass
45238... Adapts CGA 347 (hp air(to 1/4" FNPT 6,000 psi service. S/S
45239... Adapts CGA 347 (hp air) to 1/4" MNPT 6,000 psi service. S/S

CGA 540 Oxygen

45110OX... Oxygen Handtite Nut & Nipple - CGA 540 handtite nut / brass tail piece (no filter) for oxygen to 3,000 psi. (Order #45111OX for replacement seal).
45211OX... Oxygen Nut & Nipple - Wrenchtite CGA 540 brass nut / tailpiece with internal filter for pressures to 3,000 psi.
45212OX... Medical Oxygen Handtite Nut & Nipple - CGA 540 handtite nut / chromed brass tailpiece with replaceable internal filter for pressures to 2,700 psi (#49011OX Viton O-ring for replacement seal).
45012OX... Adapts CGA 540 (oxygen) to 1/4" male NPT 3,000 psi service.
45013OX... Adapts CGA 540 (oxygen) to 1/4" female NPT 3,000 psi service.
45526OX... Converts CGA 540 outlet to British Bullnose outlet. Allows British apparatus to use CGA 540 O_2 tanks 3,000 psi service.
45527OX... Converts British Bullnose outlet to CGA 540 (O_2). Allows CGA 540 devices to be used on British O_2 tanks 3,000 psi service.

CGA 580 Inert Gas (Helium/Argon)

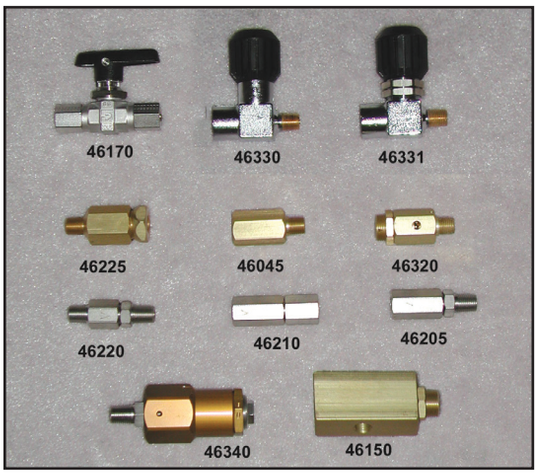
45265OX... Inert Gas Handtite Nut & Nipple - CGA 580 handtite nut / brass tailpiece with internal filter for helium / argon to pressures of 3,000 psi. (Order #49111OX O-ring for replacement seal).
45270OX... Inert Gas Nut & Nipple - CGA 580 wrenchtite brass nut / tailpiece with internal filter for helium / argon to pressures of 3,000 psi.
45007... Adapts CGA 580 (helium / argon) to 1/4" male NPT 3,000 psi service.
45008... Adapts CGA 580 (helium / argon) to 1/4" female NPT 3,000 psi service.
45312OX... Converts CGA 580 (helium / argon) outlet to CGA 540 (O_2). Allow oxygen control devices to handle clean inert gases 3,000 psi service.
45275OX... Mixed Gas Nut & Nipple - CGA 590 brass nut / tailpiece with internal filter for premixed dive gases such as heliox.
45525OX... Bullnose Nut & Nipple - British oxygen tanks have an outlet which differs from CGA types and requires a nut & nipple called a Bullnose Adapter to convert that connection to common 1/4" male NPT.

Find us on the web at www.global-mfg.com

COMPRESSED GAS HARDWARE - VALVES

GSMoT stocks a variety of valves for gas control applications at various pressure ranges. Control of some gases such as oxygen demand special consideration and certain valves are NEVER O_2 compatible. Engineering questions should be directed only to our TEK department at (512) 240-6644 or techsupport@Global-mfg.com.

PRESSURE RELIEF VALVES



These special valves are used to protect pressure sensitive components or to relieve pressure at some prescribed level in compressed air systems. Standard relief valves are designed for sudden, intermittent, and sporadic service, whereas "floater valves" activate slowly and are employed where frequent and prolonged valve openings may regularly occur.

46320... **Standard Relief Valve** - Adjustable "popoff" valve which can be calibrated from 300 to 5,500 psi. Anodized aluminum for 6,000 psi service. 1/4" NPTM inlet. Used to protect filters, separators, storage vessels or compressor interstages. Comes uncalibrated with instructions.

46321... **Repair Kit for 46320**

46340... **Floater Relief Valve** - Made of anodized aluminum and stainless for 7,000 psi service. 1/4" NPTM inlet. Can be calibrated from 400 to 6,500 psi. Slow, gentle activation mechanism quickly reduces pressure during frequent, repeated openings. Reseats to an air tight status. Used as an "active" safety valve during compressing or tank filling operations. Comes uncalibrated with instructions.

46330... **Line / Filler Valve** - The most popular and rugged valve available for controlling directional air flow in compressor lines or scuba filler whips. Used same internal parts as many scuba valves. Chrome brass body for 6,000 psi service. 1/4 NPTM out / F in. For rebuild kit: Order **#46332**. (46333OX - O_2/Nitrox version, see page 33)

46331... **Panel Mount Line Valve** - Same as #46330, but with threaded neck to install in 1" hole in control panels. For rebuild kit: Order **#46332**. (46334OX - O_2/Nitrox version, see page 33)

46045... **Flow Fuse** - A small safety device that can arrest the air flow in lines or systems (such as scuba filling whips) if that apparatus should fail (hose rupture, O-ring failure. etc.). The flow is reduced to 10%, so personnel can shut down the system with minimal risk and air loss. 1/4" female NPT inlet, male outlet.

Priority Back-Pressure Valves - Placed after the final filter, priority BP valves are crucial to the production of dry scuba air and increased longevity for your chemical filters. To achieve low dew points, the mechanical separators must remove more than 99% of the water vapor present, a process called "pressure drying". By holding a back-pressure of about 1,700 psi on the system, the air density in the separators is increased which significantly enhances their efficiency. Since more water is now removed mechanically, the life the chemical filters is greatly extended. Maintained pressure on the filters and compressor does not harm either device.

46150... **Standard Priority Valve** - A small anodized aluminum valve preset at about 1,700 psi for most scuba air operations. Installed in systems at the outlet port of the final filter. One inlet port, two outlets, all 1/4" NPTF. 6,000 psi rating. Rebuild kit: #46151.

BALL VALVES

46170... **Stainless Steel Ball Valve** - Excellent air control valve (5,000 psi) for compressor lines, scuba fill whips, or air distribution panels. Only 1/4 turn is required to open valve, but precise control can still be maintained. Unlike most valves, air can flow either way through the orifice without harming it. A real time-saver on fill whips. 1/4" NPTF ports. Very easy to rebuild: (Order kit #46171).

CHECK VALVES

These special devices create one-way gas flow in compressor lines, filter systems, and gas distribution panels. Brass types are suitable for pressures to 3,000 psi; stainless models for 5,000 psi service. These are NOT suitable for O_2 / Nitrox use.

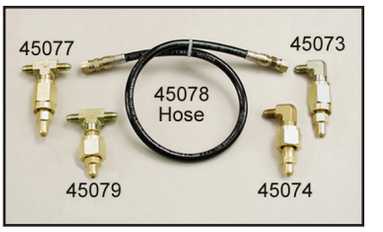
46205... **SS Check Valve** - 1/4" NPT ports, female inlet, male outlet (45282OX - O_2/Nitrox version, see page 33)

46210... **SS Check Valve** - 1/4" NPTF ports (45280OX - O_2/Nitrox version, see page 33)

46220... **SS Check Valve** - 1/4" NPTM ports (45281OX - O_2/Nitrox version, see page 33)

46215... **SS Check Valves Rebuild Kit** (46215OX - O_2/Nitrox version, see page 33)

46225… **Reversible Anodized Aluminum Check Valve** – Special 1/4" NPT check valve with a reversible internal poppet. Can be set to be M in / F out or M out / F in. This valve is NOT suitable for O_2 / Nitrox service, even if properly cleaned.



Economy Air Manifold Elbows A terminal connector used when manifolding tank valves with JIC tees (45077 / 45079) and hose pigtails (45078). Consists of JIC elbow with respective brass CGA nut & nipple.

45073… CGA 347 (4500 psi) **45074…** CGA 346 (3000 psi)

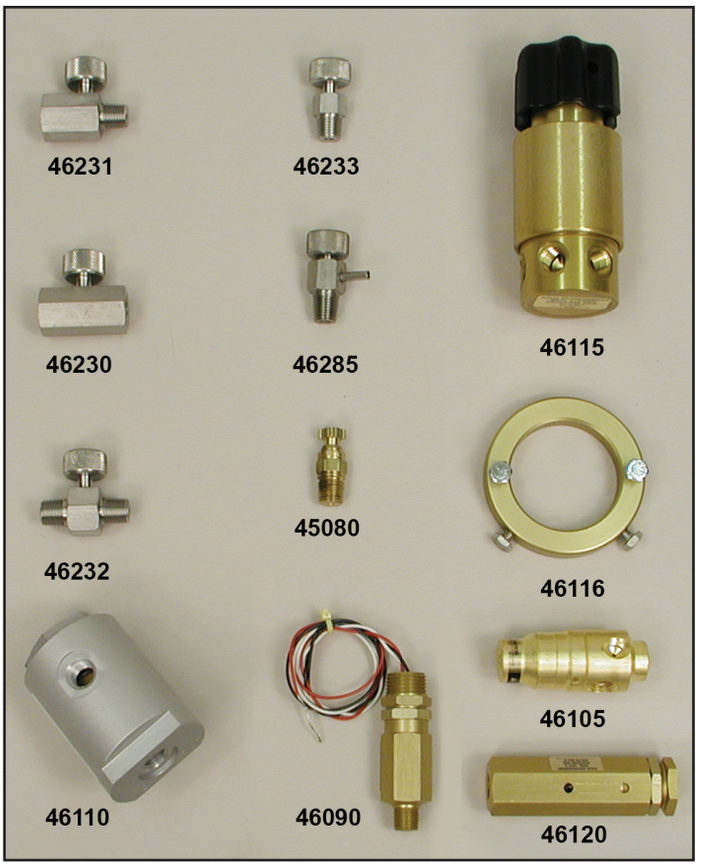
Economy Air Manifold Tees Steel JIC compression tees with brass CGA brass nut & nipples for connecting air storage tanks. Interconnect tees with 45078 pigtail hose.

45077… CGA 347 (4500 psi) **45079…** CGA 346 (3000 psi)

45078… Pigtail Hose 2-foot hose with #4 female JIC ends to interconnect economy manifold tees & elbows. 5,000 psi service

COMPRESSED GAS HARDWARE - CONTROLS

The creation of scuba air stations requires a variety of high pressure fittings and components as well as certain specialized control hardware. GSMoT stocks a great selection of these materials. CAUTION: THESE COMPONENTS ARE FOR AIR SYSTEMS AND ARE NOT INTENDED FOR USE WITH PURE OXYGEN OR NITROX.



46090... Compressor Control Switch - This pressure activated switch (6,000 psi) can be used to control the shutoff (or startup) pressure of most compressors. The device can be adjusted to select the desired cutoff point and must be wired into compressor's 110 volt electrical control circuitry.

46100... Low Pressure Line Regulator - This small piston regulator can reduce high pressure (3,000 psi service) to 100 psi for supplying shop air or other handy uses. 1/4" NPTF end ports.

46105… Utility Gas Regulator - A small, compact regulator suitable for use on air, helium, argon, or oxygen. 3,200 psi service, preset 100 psi out. 1/4" NPTF inlet/outlet with 1/8" NPTF HP gauge port.

46115... Air Control Regulator - Used to control air to flowbenches / scuba air stations / and air distribution panels. 6,000 psi duty. Adjustable air control from 100 to 5500 psi with high flows. Self-venting when pressure is reduced. 2-inlet and 2-outlet ports, all 1/4" NPTF. (For rebuild kit: Order **#46117**). (45395OX - O_2/Nitrox version, see page 33)

46116... Panel Mounting Ring - Heavy aluminum ring with 4 set-screws to panel mount #46115 regulator through 1-7/8" hole.

46120… In-Line Air Supply Regulator - Cylindrical regulator for 6,000 psi air service with adjustable 100 – 300 psi outlet pressure. 1/4" NPTF end ports. Safety relief valve activates if outlet pressure exceeds 300 psi.

In-Line Bleeders and Drain Vents - Air stations often require different types of in-line bleeders or vents to drain pressure. GSMoT offers such bleeders with various combinations of threading, and made from both aluminum and stainless steel. Most have pressure ratings of at least 5,000 psi.

45080... Brass Drain Vent - Rated for 2,500 psi, this inexpensive vent has 1/4" male NPT base threads. Non-replaceable,molded seat.

46230… Stainless Female In-Line Bleeder - 6,000 psi rated bleeder with a large control knob and replaceable Teflon seat. Female 1/4" NPT ports. (45366OX - O_2/Nitrox version, see page 33)

46231… Stainless M/F In-Line Bleeder - Same as #46230, except with male / female 1/4" NPT ports. (45365OX - O_2/Nitrox version, see page 33)

46232… Stainless Male In-Line Bleeder - Same as #46230, except with male 1/4" NPT ports. (45367OX - O_2/Nitrox version, see page 33)

46233… Stainless Drain Vent - Compact 6,000 psi bleeder with 1/4" NPTM base thread. (45360OX - O_2/Nitrox version, see page 33)

46235… Replaceable Teflon Seat - Small cylindrical seat for all stainless in-line bleeders, drain vents, and petcocks.

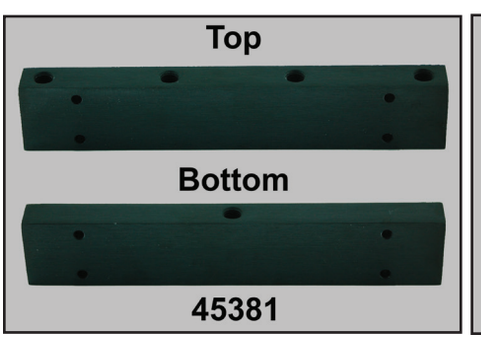
46285… Petcock Hi-Pressure Drain - Identical to #46233 vent, but with a spigot tube for attaching a drain line. Use on air purifiers, separator towers, or other moisture or liquid drains. Only "OX part numbers" are oxygen-compatible.

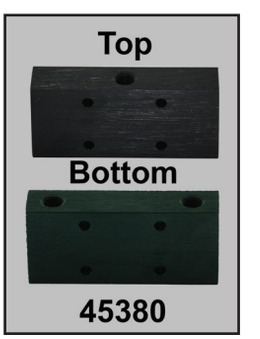
45386... Brass Manifold Block, 10-Port A heavy-duty, 10+ inch block machined from nominal 1.5" hexagonal brass bar stock. Has 10 interconnected, 1/4" NPT female outlet ports: 3 on top, 3 on the bottom (120° offset), and two at each end. For mounting, each bar has two 1/4-20 bolt holes on the underside to attach to a #45217 Bracket. Use this manifold to control or distribute air to and from your compressor and storage banks. Also useful for tank charging where multiple whips from the air source are required. FOR AIR USE ONLY. (45388OX - O_2/Nitrox version, see page 33)

45217... Manifold Mounting Bracket
A two-piece, adjustable SS bracket for wall-mounting GSMoT manifold blocks (#45386 or #45388OX). Engages the two 1/4 - 20 bolt holes so that the assembly can be screwed / bolted to a wall or other retaining structure. Slots allow some to-and-fro adjustment of the bar.

45380… Flat Manifold Block 5 port - This anodized aluminum block (1" x 4" x 2") has five 1/4" female NPT ports: 1 on each end, 1 on top, and 2 on the bottom. Four small holes through the body permit easy mounting with bolts / screws. 5,000 psi service. NOT SUITABLE FOR OXYGEN SERVICE

45381… Flat Manifold Block 7 port A longer (12") version of our popular 5-port, anodized aluminum manifold block (#45380), but with seven female NPT ports. Commonly used for air station junctions or distribution control. All ports are interconnected and transverse holes though the metal body allow for easy mounting to any surface. NOT SUITABLE FOR OXYGEN SERVICE.





COMPRESSED GAS HARDWARE - AIR GAUGES

Dive shop air systems usually contain a number of pressure gauges. GSMoT stocks a selection of instruments with different pressure ranges, dial sizes, and mounting styles. Most of these gauges have an accuracy of 1-2% of full scale. **CAUTION: THESE GAUGES ARE NOT INTENDED FOR USE WITH PURE O_2 / NITROX WITHOUT FURTHER MODIFICATION AND ARE NOT SUITABLE FOR GAS MIXING PROCEDURES. SPECIAL TYPES ARE OFFERED FOR THAT PURPOSE (page 33).**

46000... Panel Pressure Gauge, 5,000 psi - A 2.5" stainless-cased unit for panel-mounting. 1/4" NPTM back connection. Order **46005** for 0-300 psi version.

46001… Gauge Snubber - When placed in-line with any gauge, this device prevents surging and oscillation of the needle caused by compressors and booster pumps in some applications. M/F 1/4" NPT connections.

46025... Miniature Pressure Gauge, 5,000 psi - A 1.5" stainless-cased unit for use on SCBA units or pressure monitoring applications. 1/8" NPTM bottom back mount.

46010... Large Panel Gauge, 300 psi - A 4.5" dial unit (6.25" overall diameter) with a lift off front cover. For recessed panel mounting by three screws / bolts through edge flange. Lower back 1/4" NPTM inlet. Used for regulator / valve workstations or air station applications. Order **46030** for 0-5,000 psi version.

46038… 3.5" Gauge with Wall Flange - A sleek gauge with a stainless flanged case for wall mounting. 5,000 psi. 1/4" NPTM bottom inlet.

48315... Salt Water Instrument Test Gauge - The same gauge which is used on the GSMoT #48310 Instrument Test Chamber, this 4.5" gauge has better than 1-foot accuracy. Calibrated in both feet of sea water (300) and meters (90), this instrument also has an anti-parallax mirror band to enhance precise readings. Used for instrument testing.

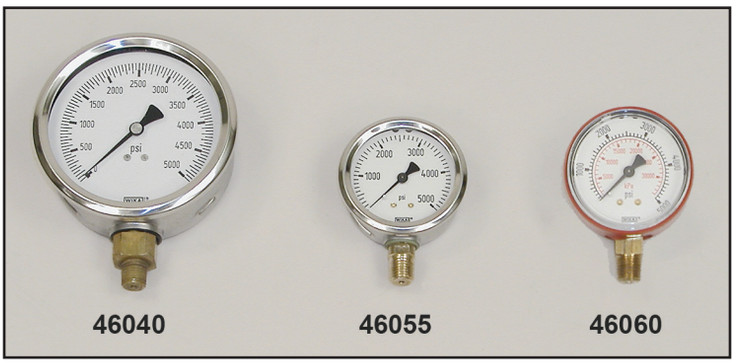
48321… Salt Water Instrument Test Gauge - The same gauge which is used on the GSMoT #48320 Instrument Test Chamber, this 4.5" gauge has 0.25% accuracy. Calibrated in both feet of sea water (450) and meters (140), this instrument also has an anti-parallax mirror band to enhance precise readings. Used for instrument testing.

46040... Large Sealed Pressure Gauge, 5,000 psi

A sealed, 4.0" stainless case protects this gauge from harsh environments. 1/4" NPTM bottom stem mount.

46055... Sealed Pressure Gauge, 5,000 psi - A sealed, 2.5" stainless case protects this gauge from harsh environments. 1/4" NPTM bottom stem mount. (45306OX - O_2/Nitrox version, see page 34)

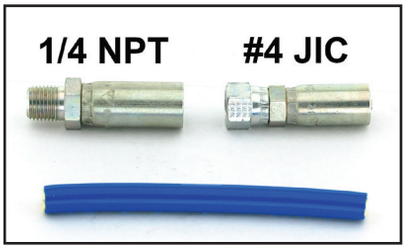
Order **46020** for 0-300 psi version
Order **46085** for 0-6,000 psi version
Order **46086** for 0-7,500 psi version
Order **46087** for 0-350 bar version.



46060... Economy Pressure Gauge, 5,000 psi - A 2.5" plastic cased unit for general testing applications. Red vinyl rubber cover. 1/4" NPTM bottom stem mount. Order **46015** for 0-300 psi version.

46065... Liquid-Filled Gauge, 5,000 psi - A 2.5" sealed, stainless case is filled with oil to protect the mechanism from environmental and physical hazards like salt water, knocks, and vibrations! 1/4" NPTM bottom stem mount

CUSTOM THERMOPLASTIC AIR HOSES - GSMoT offers 2 sizes of thermoplastic hose for compressed air applications to 6,000 psi with a burst of over 20,000 psi! Select 3/16" ID for fill whips and other uses where good flexibility and moderate flow rates (below 50 CFM) are required. Pick 1/4" ID where severe / outdoor duty, long interconnections, or high flow rates (+50 CFM) are involved. Hoses have two fitting options: 1/4 male NPT rigid or #4 female JIC swivel. All hoses are built to order. See pricelist for detailed ordering instructions.



Stainless Steel Tubing

GSMoT offers seamless stainless tube suitable for 5,000 psi service applications. Useful for gas delivery lines in scuba air systems and control panels. When OXY-CLEANED, it's also suitable for oxygen / Nitrox use. Sold by the foot and shipped in a large coil, although straight lengths to five feet can be sent. Longest continuous length is 20 ft.

46270... 1/4" OD Stainless tube

46275... 1/8" OD Stainless tube

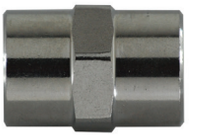
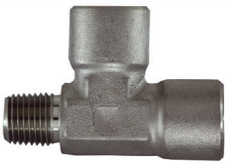
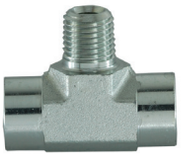
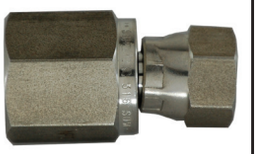
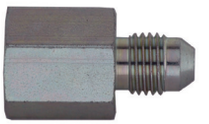
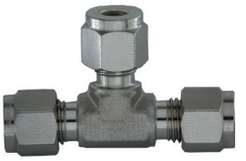
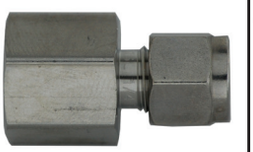
COMPRESSED GAS HARDWARE - HIGH PRESSURE FITTINGS

GSMoT offers a wide selection of high pressure fittings for modern air and mixed-gas stations. Most fittings are available in plated carbon steel, stainless steel and brass. Service Pressures: 5,000 psi for steel / stainless. 3,000 psi for brass. Other brass fittings carry service pressure ratings from 150 psi to 3,000 psi. All GSMoT brass fittings are rated for 3,000 psi service! For oxygen / Nitrox service, use brass or stainless, but NEVER carbon steel (rusts). Threads: All fittings are 1/4" NPT or #4 JIC unless otherwise noted. Please note the new part numbering system. Each fitting type has the same unique part number with a suffix denoting the material type (B) Brass, (S) Steel and (SS) Stainless Steel.

High Pressure Pipe Fittings - National Pipe Thread (NPT) fittings are the most common type found in scuba gas systems. With Teflon tape, these tapered threads seal by metal-to-metal friction. Sizing is determined by inside bore diameter, NOT by outside dimensions.

JIC Adapters - Pneumatic hose systems often use end fittings consisting of a swiveling compression cap (JIC) which mates to a dome-shaped pipe fitting, thereby adapting a hose to 1/4" NPT. Swivel caps allow the hose to be properly aligned before the cap is tightened to form an air-tight joint. JIC's can be detached whenever necessary.

Reusable Compression Fittings - Tubes must often be joined together or adapted to other system components. Compression fittings employ a nut and ferrule which crimp onto the tube forming a detachable union that is stronger than the tube itself. Some fittings also adapt the tube to a 1/4" pipe thread (NPT).

 1/8 FNPT to 1/4 MNPT 67210B 67210S 67210SS	 Hex Head Plug 67220B 67220S 67220SS	 Male Hex Nipple 67230B 67230S 67230SS	 Street Elbow 67240B 67240S 67240SS	 Female Hex Coupling 67250B 67250S 67250SS
 Female Tee 67260B 67260S 67260SS	 Female Cross 67270B 67270S 67270SS	 1/4 FNPT to 1/8 MNPT 67280B 67280S 67280SS	 Male Elbow 67290B 67290S 67290SS	 Female Elbow 67300B 67300S 67300SS
 Street Tee 67310B 67310S 67310SS	 Male Branch Tee 67320B 67320S 67320SS	 JICF to FNPT 67085S 67085SS	 JIC Male Union 67090S 67090SS	 JIC M/F Elbow 67160S 67160SS
 JICM to MNPT Straight 67170S 67170SS	 JICM to MNPT Elbow 67180S 67180SS	 JICM to FNPT Straight 67190S 67190SS	 JICM to FNPT Elbow 67200S 67200SS	 Tube Union 67000S 67300SS
 Tube Elbow 67020S 67020SS	 Tube Tee 67030S 67030SS	 Tube to 1/4 MNPT 67040S 67040SS	 Tube to 1/4 FNPT 67050S 67050SS	 Tube - 1/4 MNPT Street Tee 67060S 67060SS
 Tube - 1/4 MNPT Branch Tee 67070S 67070SS	 Nut / Ferrule Set 67080S 67080SS	 Tube - 1/4 FNPT Branch Tee 67340S 67340SS	 Tube to 1/4 MNPT Elbow 67350S 67350SS	 Tube to 1/4 FNPT Elbow 67360S 67360SS

Many of the brass and SS fittings can be cleaned for Nitrox/Oxygen use. Call for more information.
Pictures for reference only. Actual fittings may vary slightly, but will fully function as intended.

COMPRESSED GAS HARDWARE - AIR FILLER WHIPS

GSMoT produces scuba filler whips in two configurations: In-line and right-angle, which refers to the position of the air-entry port relative to the long axis of the filler body. In-line whips, which contain air-entry ports that are parallel to the hose, filler body, and tank attachment fitting have been the industry mainstay for 50 years. Each comes with a line valve and a 5-foot hose rated for 6,000 psi service and 20,000 psi burst. **CAUTION: THESE WHIPS ARE NOT INTENDED TO BE USED WITH PURE OXYGEN / NITROX. OTHER PRODUCTS ARE OFFERED FOR THAT PURPOSE.**

45145... Standard Yoke Filler Whip An industry icon, this device has a chromed-brass block, bleeder screw, and yoke tank attachment. 3,200 psi service.

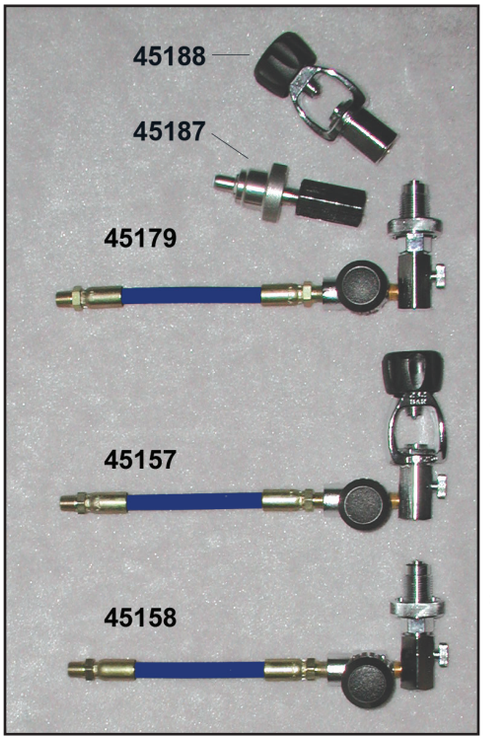
45150... Deluxe Yoke Filler Whip Identical to #45145, except that a gauge is installed in the filler body opposite the bleeder. For rugged service, a 2.5" stainless-cased, liquid-filled 5,000 psi gauge is used. Popular whip for portable or small marine on-board compressors. 3,200 psi service.

45151... Deluxe DIN Filler Whip Identical to #45150, except that the bleeder block has a 300-Bar DIN fitting for filling to 4,500 psi.

45175... Hi-Pressure SCBA Filler Whip A special whip for filling hi-pressure fire / rescue (SCBA) packs to 4,500 psi. The handtite stainless steel connector will accommodate both CGA 347 and 346 SCBA tanks, whereas CGA 346 whips can charge only 346 units. (Order **#45016** for replacement tip seal).

45180... Standard DIN Filler Whip This filler apparatus has a common 300-Bar DIN fitting on the chromed-brass bleeder block for filling DIN scuba tanks to 4,500 psi.

45195... DIN / Yoke Converto Filler Whip A whip that can charge tanks with either DIN or yoke mode valves, this unit is identical to #45180, but also includes a #45188 converter. This adapter screws quickly onto the whip's DIN fitting, thus converting it into the yoke mode. Therefore, this whip can be changed from DIN to yoke (or vice versa) in only a few moments. Yoke service to 3,200 psi; 4,500 psi in DIN mode.



In recent years, whips that have the filler attachment set at right angles to the hose and line valve have become quite popular. This configuration prevents excessive bending or straining of the whip hose and improves the handling of dive tanks which must be submerged in water cooling vessels or filled with BC's / packs in place.

45157... Right Angle Yoke Filler Whip The bleeder block of this filler attachment is installed at 90 degrees to the line valve and hose, creating a right-angle version of our #45145 In-Line Whip.

45158... Right-Angle DIN Filler Whip Identical to #45157, except that the bleeder block has a 300-Bar DIN fitting for service to 4,500 psi. Essentially a right-angle version of our #45180 DIN In-Line Whip.

45179... Deluxe Universal Filler Whip This apparatus will fill virtually any type of air tank brought into the dive shop, including those with yoke or DIN scuba valves, as well as SCBA fire / rescue packs. Consists of a #45158 Right-Angle DIN Filler Whip with two special adapters which can be screwed onto the DIN fitting within seconds: A #45188 Converter changes the DIN fitting into yoke mode, whereas a #45187 Converter switches it into a hi-pressure, handtite SCBA filler. This latter mode will fill both CGA 346 and 347 type SCBA packs. In yoke mode the service rating is 3,200 psi, while in DIN or SCBA modes it is 4,500 psi.

COMPRESSED GAS HARDWARE - TANK FILLING

GSMoT manufactures and distributes a large number of filling devices and related hardware for charging tanks with both DIN and YOKE-mode valves. In general, yoke systems are for 3,200 psi service, whereas DIN types rate at 4,500 psi. For more details see the section on "Filler Whips" on page 25.

CAUTION: THESE PRODUCTS ARE NOT INTENDED FOR PURE OXYGEN / NITROX APPLICATIONS WITHOUT CERTAIN MODIFICATIONS INDICATED BY OX PART NUMBERS

45026... Right Angle Filler, Yoke Mode - A chromed-brass yoke block with bleeder in which air enters at a right angle to the long axis of the block. Angular arrangement improves handling of cylinders when they must be placed in water, cooling tanks or filled with BC's or packs in place. 1/4" NPTF inlet. 3,200 psi service. (45026OX - O_2/Nitrox version)

45027... Right-Angle Filler, DIN Mode - Identical to #45026, except 300-Bar DIN mode. 4,500 psi service. (45027OX - O_2/Nitrox version)

45050... Standard Yoke Filler - The common chromed-brass yoke block and bleeder used on most scuba filling apparatus. In-line air entry, 1/4" NPTF port. 3,200 psi service. (45050OX - O_2/Nitrox version)

45055... Ported Standard Yoke Filler - Identical to #45050, except with a 1/4" NPTF gauge port in the body opposite the bleeder screw. (45055OX - O_2/Nitrox version)

45059... Ported DIN Filler - Identical to #45055, except with a 300-Bar DIN fitting for 4,500 psi service. (45059OX - O_2/Nitrox version)

45183... Standard DIN Filler - A conventional chromed-brass bleeder block, with a 300-Bar DIN fitting. In-line air entry with a 1/4" NPTF port. 4,500 psi service. (45183OX - O_2/Nitrox version)

45056... Ported Standard Yoke Filler w/ Gauge - Identical to #45055, except a stainless-cased, liquid-filled 5,000 psi gauge is installed in the accessory port.

45058... Ported Standard DIN Filler w/ Gauge - Identical to #45056, except a with a 300-Bar DIN fitting.

45090... Yoke and Flange Assembly - A scuba yoke & screw with a special chromed-brass flange nut that mates to any scuba tank valve. Air outlet port from the nut is 1/4" NPTF. Used for making cross-overs, custom manifolds, and various air takeoff devices. 3,200 psi. (45090OX - O_2/Nitrox version)

45015... Hi-Pressure SCBA Filler Converter - Direct jump adapters from scuba yokes to 4,500 psi SCBA (CGA 347) breathing air packs are unsafe because the working pressure involved is beyond the point of yoke distortion and O-ring extrusion. Install #45015 (1/4" NPTF inlet) on your filler at the line valve to convert the whip to a 4,500 psi SCBA filler. Stainless handtite wheel with soft-seal nipple. (Order **#45016** for replacement tip seal).

46330... Standard Line Valve - This rugged valve has been the industry standard for scuba fillers and compressed air systems for 35 years. A heavy chromed-brass body with a 1/4" NPTF inlet and NPTM outlet. Uses many of the same parts found in scuba valves. 6,000 psi rating. Rebuild kit for air valves: **Order #46332**. (46333OX - O_2/Nitrox version)

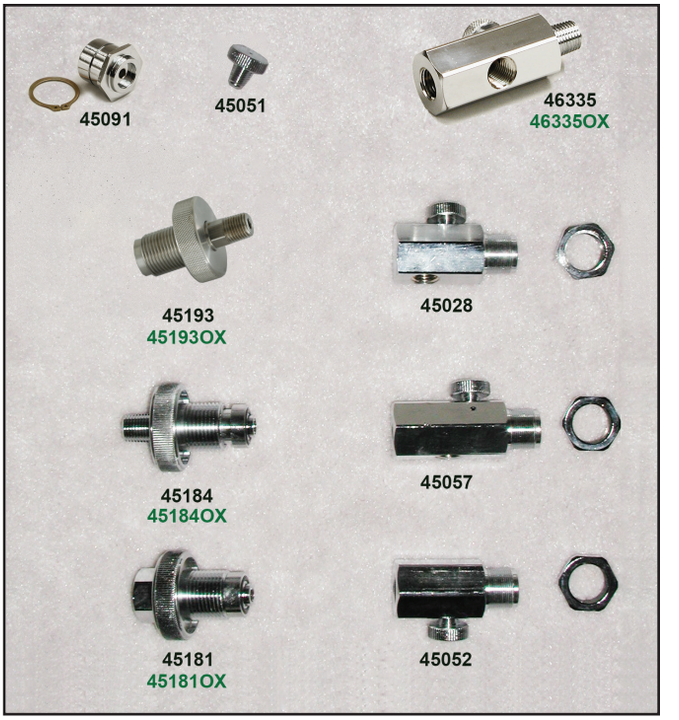
46331... Panel Line Valve - Identical to #46330, but with a threaded neck and two jam nuts to panel-mount through a one inch hole. Rebuild kit for air valves: **Order #46332**. (46334OX - O_2/Nitrox version)

45093... Yoke Assembly & Retainer Nut - A standard scuba yoke & screw for use on bleeder blocks, scuba regulators, cross-over devices, etc. Whenever practical, replace any old retainer nut with a new one since they warp from pressure stressing. 3,200 psi service.

COMPRESSED GAS HARDWARE- ADAPTERS

SCUBA FILLER COMPONENTS **Scuba tank filling hardware wears out from age and pressure stressing, so it must be occasionally replaced or revamped. A wide selection of repair components for this purpose is offered, including various specialty devices.**

CAUTION: THESE PRODUCTS ARE NOT INTENDED FOR PURE OXYGEN / NITROX APPLICATIONS WITHOUT CERTAIN MODIFICATIONS INDICATED BY OX PART NUMBERS



45028… Replacement Right-Angle Bleeder Block Only Chromed-brass block, bleeder screw, and yoke retainer nut. Block attaches at 90° to the line valve and hose via a 1/4" NPTF port. It will also accept the GSMoT #45181 DIN fitting.

45051… Replacement Bleeder Screw Only - A replacement bleeder screw (3/8-24 thread) with a nylon seat for the standard bleeder blocks used on filler whips, tank pressure checkers, and crossovers.

45052… Replacement Bleeder Block Only - Common inline block, bleeder, and yoke retainer nut used on filler whips and other scuba devices. Also accepts the #45181 DIN fitting, to create a DIN filler.

45057… Replacement Ported Bleeder Block - Same as #45052, but the block also has a 1/4" NPTF port in it.

45091… Flange Nut & Retainer Clip - One side of this adapter has a machined flange which mates to the O-ring groove on any scuba tank valve; the other side is ported 1/4" NPTF. Used with scuba yoke to get air from scuba tanks for accessory applications. 3,200 psi duty.

45181… DIN Fitting Only - A 300-Bar (4,500 psi) fitting with a fine internal thread to mate to most common bleeder blocks. External thread mates to many DIN tank valves. Converts DIN filler whips to yoke mode. (45181OX - O_2/Nitrox version)

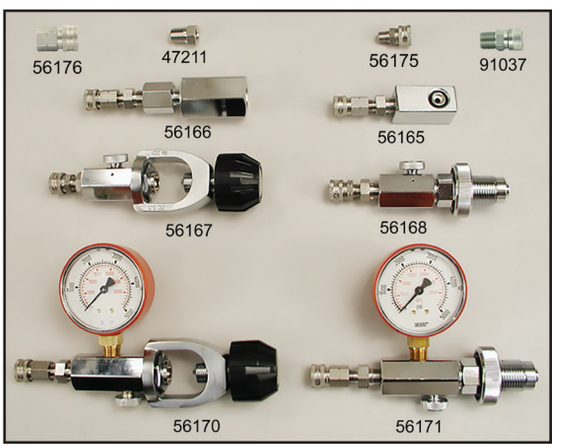
45184… DIN to Male Pipe Thread Adapter Brass - A 300-Bar (4,500 psi) DIN-thread handwheel with a mating DIN-tailpiece that has a 1/4" NPTM on its free end. Converts a DIN valve port to common male NPT. (45184OX - O_2/Nitrox version)

45193… DIN to Male Pipe Thread Adapter Stainless Steel - A 300-Bar (4,500 psi) DIN-thread handwheel with a mating DIN-tailpiece that has a 1/4" NPTM on its free end. Converts a DIN valve port to male NPT. (45193OX - O_2/Nitrox version)

46335… In Line Ported Bleeder - A special chromed-brass body with a 1/4" female NPT side accessory port positioned opposite a standard bleeder screw. End ports are male & female 1/4" NPT. 4,500 psi service. (46335OX - O_2/Nitrox version)

COMPRESSED GAS HARDWARE- PAINTBALL

Paintball enthusiasts have discovered that dive shop air is cheaper and more readily available for recharging their gun bottles than is nitrogen or carbon dioxide. GSMoT sells the special adapters required for filling most paintball tanks.



47211… Converter Bushing Reducer 1/4" MNPT to 1/8" FNPT, S/S

56165… Paintball Fill Adapter, Yoke Mode Mates to any scuba tank filler whip (yoke mode) and allows recharging of small paintball tanks. Consists of a stainless-quick coupler to engage the tank and a metering element to govern the fill rate into the small vessel. 3,200 psi service.

56166… Paintball Fill Adapter, DIN Mode Identical to #56165, except the whip adapter will connect to a 300-Bar DIN fitting for filling to 4,500 psi.

56167… Paintball Scuba Tank Transfiller, Yoke Mode Paintballers often buy / rent scuba tanks to transfill their small paintball bottles. #56167 mates to any conventional scuba tank, while the quick coupler on the other end attaches to the paintball tank. A bleeder screw allows depressurization after transfilling has been completed. 3,200 psi service. Order **#56168** for 300-Bar/4,500 psi DIN version.

56170… Deluxe Paintball Transfiller, Yoke Mode Identical to #56167, except that a 5,000 psi gauge is installed in the bleeder block so that transfill pressures can be monitored. 3,200 psi service. Order **#56171** for 300-Bar/4,500 psi DIN version.

56175… Male Paintball Coupler A steel quick coupler for most paintball tanks. 1/8" NPT male threads. 4,500 psi service.

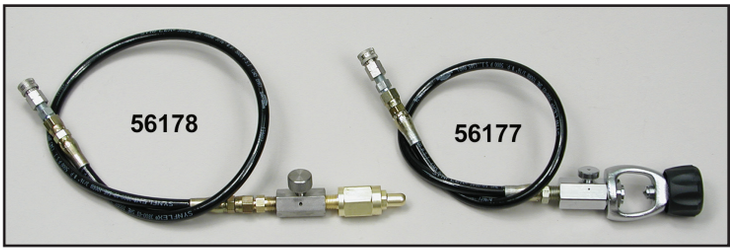
56176… Female Paintball Coupler Identical to #56175, but thread is 1/8" female NPT.

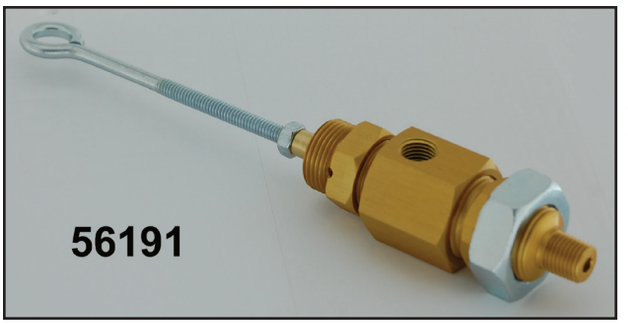
91037… Male Paintball Coupler A steel quick coupler for paintball tanks. 1/4" NPT male threads. 4,500 psi service.

COMPRESSED GAS HARDWARE- PAINTBALL

56177… Scuba to Paintball Transfiller w/ Hose A 3-foot hose with a paintball coupler on one end and a scuba yoke & bleeder attachment on the other. For filling paintball tanks from scuba cylinders secured in car trunk or truck bed.

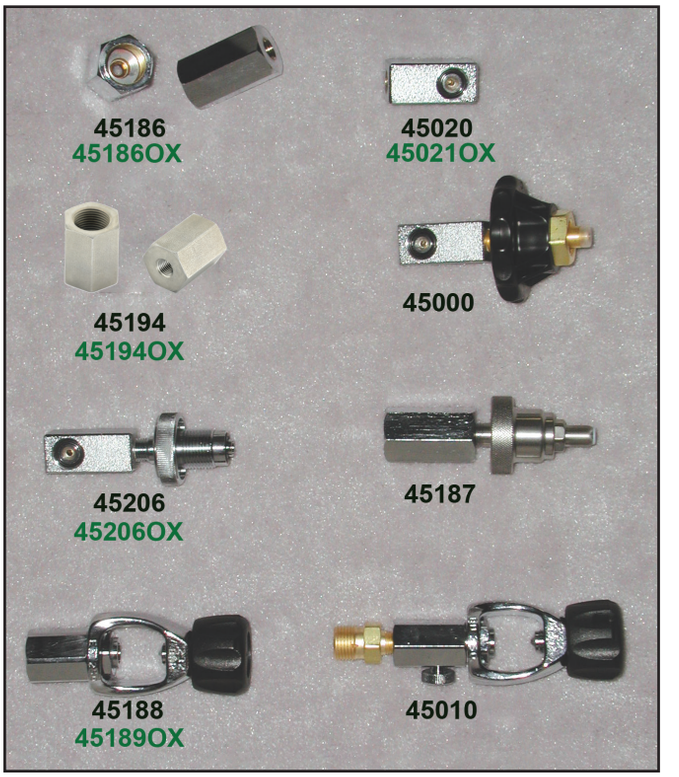
56178… CGA 347 Air to Paintball Transfiller w/ Hose A 3-foot hose with a paintball coupler on one end and a CGA 347 nut/nipple/ bleeder on the other. For filling paintball tanks from commercial cylinders of hi-pressure air (4,500 psi).





56191… Quick fill valve A handy toggle valve for quick fills of small paintball tanks. Simply pull the handle to open the valve with a spring return to close. 1/4 male NPT input connection with a female 1/4 NPT output connection. Rated for 6,000 psi service with an orifice size of 0.07" (Cv 0.05). A great addition to our transfiller hoses.

COMPRESSED GAS HARDWARE - TANK FILLING ADAPTERS



45000... Scuba to SCBA Adapter - A handy jump adapter for filling a SCBA (firefighter, medical emergency unit) with a standard scuba filling whip. Has a handtite wheel and Teflon-seal nipple, so no wrench is needed. CGA 346 / 347 (3,000 psi) for MSA, Scott, Survivair, etc. tanks. (Replacement tip seal: Order **#45001**).

45010... SCBA to Scuba Adapter - The reverse adapter of #45000. Fire departments equipped with a CGA 346 filler whip can fill scuba tanks (3,200 psi) using this adapter. Consists of scuba yoke, bleeder block, and CGA 346 / 347 adapter.

45020... Converter Block - A rectangular, chromed-plated brass block containing an O-ring sealed regulator port identical to that of any scuba valve. Air inlet port in the base of the block is 1/4" NPTF. Used for various jump adapters and TEK diving applications. 3,200 psi service. (45021OX - O_2/Nitrox version)

45186... 300 Bar DIN to 1/4" NPTF Adapter Brass An adapter with a female DIN 300-Bar port on one end opposite a 1/4" NPTF female pipe thread port. Used for various tank filling converters and TEK-dive applications. (45186OX - O_2/Nitrox version)

45194… 300 Bar DIN to 1/4" NPTF Adapter Stainless Steel An adapter with a female DIN 300-Bar port on one end opposite a 1/4" NPTF female pipe thread port. Used for various tank filling converters and TEK-dive applications. (45194OX - O_2/Nitrox version)

45187... DIN to SCBA CGA 347 Adapter - Since 300-Bar DIN systems and CGA 347 breathing air packs both operate at 4,350 psi, direct connections from scuba DIN to SCBA CGA 347 can be made. #45187 allows filling hi-pressure (and regular CGA 346) SCBA units directly from a DIN scuba filler whip.

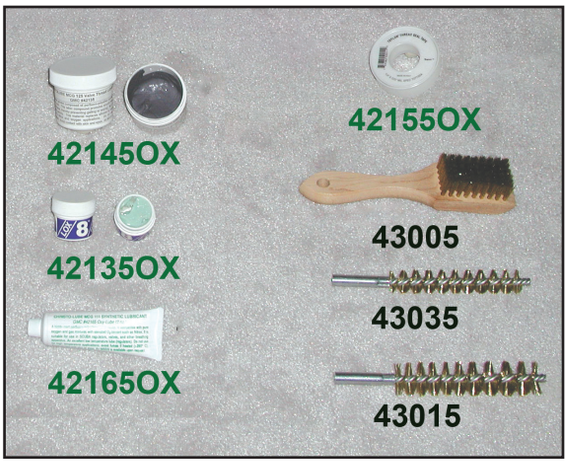
45188... DIN to Scuba Adapter - A threaded body with a standard, heavy-duty yoke and screw which will thread onto any DIN fitting, thus converting the DIN mode back to the conventional scuba yoking system. Practical in dive shops for temporarily converting DIN-filler whips back to the more popular yoke mode. Conversion only takes seconds. 3,200 psi service. (45189OX - O_2/Nitrox version)

45206... Deluxe SCUBA to DIN Fill Adapter - For filling DIN-valve tanks with a yoke-mode whip, this adapter has an advantage over the # 45185 because the mating head swivels to allow better alignment of the fill hose and yoke. Because a yoke connection is still being used, recommended maximum fill pressure remains at 3,200 psi. (46206OX - O_2/Nitrox version)

45194... 300 Bar DIN to 1/4" NPTF Adapter SS An adapter with a female DIN 300-Bar port on one end opposite a 1/4" NPT female pipe thread port. Used for various tank filling converters and TEK-dive applications. (45194OX - O_2/Nitrox version)

MIXED GAS / O_2 EQUIPMENT - SERVICE SUPPLIES

Tank & Valve Brushes



GSMoT has three brass brushes for cleaning the tank and valve threads of cylinders used for specialty gases. Brass, a non-sparking metal, is excellent for this job because any metal particles accidentally left by the brush would be benign in nature. Tank Neck Thread Brushes are cylindrical in shape for use in any small electric drill. Valve Thread Brush #43005 is a manual model with a wooden handle.

43005... Valve Thread Brush
43015... Tank Neck Thread Brush, 3/4" NPS
43035... Tank Neck Thread Brush, 1/2" NGT

42135OX… Christolube 125 - This new aerospace lubricant is GSMoT's recommended replacement for Formula 8, Lox 8, or other synthetic materials commonly used on Nitrox / oxygen tank valve threads where silicone grease CANNOT be used. This black, oxy-compatible grease, not to be confused with white Christolube 111, contains molybdenum disulfide, a highly effective additive to prevent thread seizures and dissimilar metal electrolysis, while still maintaining a high degree of lubricity. Sold in 2-oz. plastic jar.

42145OX... LOX-8 Thread Paste - Dive gear like DIN fittings and regulator components sometimes require locking thread sealants, but normal compounds like Locktites are NOT oxy compatible. For such operations, use LOX-8 paste, a thick greenish fluorocarbon sealant. 10 gm jar.

42155OX... Teflon Tape / O_2 - Compatible - Not all teflon tape is oxy-compatible, GSMoT tape meets military specs for the manufacture and composition of oxy-safe material. A special 1/4" wide version for use on the 1/4" NPT fittings so common in scuba air stations.

42165OX... Oxy - Compatible Regulator Lubricant - For Nitrox / O_2 applications, oxy-compatible lubricants must be used inside regulators or valves. One of the best fluorocarbon greases is Christolube which is fully compatible with pure O_2 and retains high lubricity even in ice water environments.
Navy-approved. 2 oz. tube.

45375OX... Oxy-Safe Leak Detector Fluid - When hunting gas leaks in Nitrox / O_2 systems with liquid detectors, oxy-compatible chemicals should be used. This preparation of diethanolamine is safe for such procedures. 4 oz bottle.(not shown)

MIXED GAS / O_2 TANK PREPERATION

42045... Glass Beads - When oxy-cleaning tanks by tumbling, removal of hydrocarbons which may form ionic bonds to the tank walls is enhanced by using glass beads with a degreaser solvent. Beads have minimal impact on the walls, leave no sediment, and are easy to clean for reuse. About 10 pounds of these 4-5 mm. beads per tank works nicely.

42050... Ceramic Media - This tumbling material consists of polygonal-shaped cast resins containing an abrasive agent. Due to its chemical stability and precise cutting action, it's the medium of choice for Nitrox cleaning and should be dedicated to that purpose. (See Page 26 for more details).

42075OX... Oxy-Safe Citrate Tank Cleaner - Prior to Nitrox / O_2 usage, visibly dirty or rusty dive tanks require abrasive tumbling prior to any degreasing treatment. Tumbling with ceramic media and citric acid (citrate) cleaner usually gives excellent results. Citrates are widely used in the metal finishing and electronics industries for oxy-cleaning processes; they are completely non-toxic, unregulated substances. GSMoT cleaner is diluted 1 oz. per gallon of water for actual use.

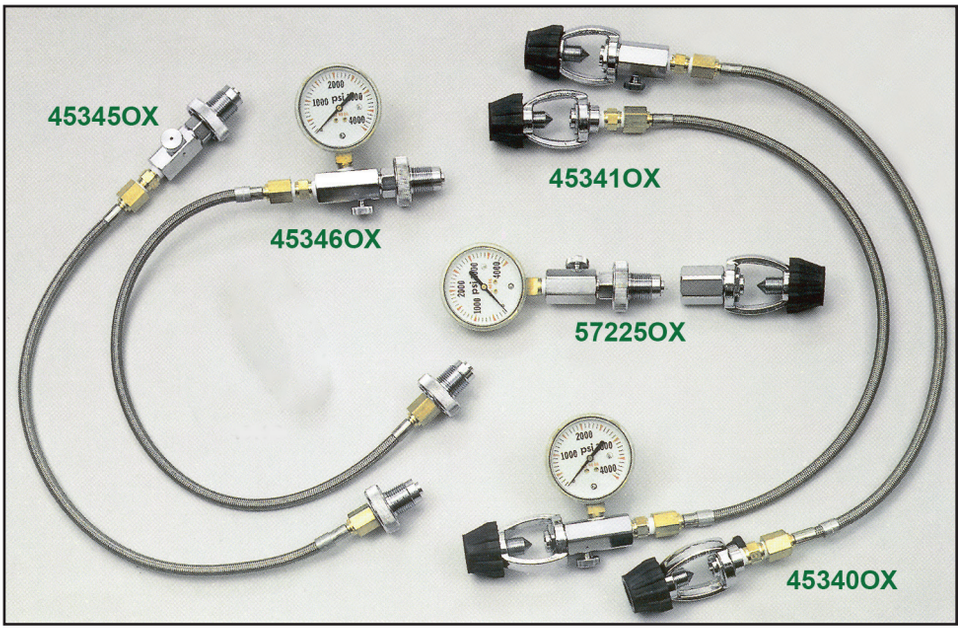
42100OX... GSMoT Special Cleaner - This new, powerful BLUE-COLORED cleaner replaces GSMoT's older, GREEN liquid that was sufficiently caustic to be classified as a shipping HAZMAT material, whereas this new one is NOT. Like the former solvent, this alkaline degreaser is biodegradable, nontoxic, nonvolatile and possesses high rinsablity, a highly desirable property for oxygen cleaning. It's compatible with steel, stainless, brass, chrome, ceramics and galvanized metals as well as most rubber and plastic polymers. (In concentrated form, it can etch aluminum). Use this degreaser diluted with water as an adjunct in tank tumbling, for swabbing compressor oil spills, or for oxygen cleaning. Because of its high rinsibility and negligible flash point, this solvent is very effective for oxygen cleaning by soaking, scrubbing, tumbling, or ultrasonic methods. Oxy-Safe Rust Inhibitor - Freshly cleaned steel tanks often form flash rust, a reddish deposit on the inside during the final drying process. To eliminate this pesky contaminant, use this diluted Oxy-Safe Rust Inhibitor (also called Compound O) rinse prior to drying. NOTE: The rust-preventive called Compound B, popular for AIR tanks, is NOT oxy-compatible.

42220OX... Oxy-Safe Rust Inhibitor Freshly cleaned steel tanks often form flash rust, a reddish deposit on the inside during the final drying process. To eliminate this pesky contaminant, use this diluted Oxy-Safe Rust Inhibitor (also called Compound O) rinse prior to drying. NOTE: The rust-preventive called Compound B, popular for AIR tanks, is NOT oxy-compatible.

42220OX... Oxy-Safe Rust Inhibitor- Gallon **42221OX... Oxy-Safe Rust Inhibitor** - Quart

NITROX / O_2 TANK EQUALIZERS & PRESSURE CHECKERS

Used to check the pressure within scuba tanks or to equalize the pressure between 2 cylinders containing Nitrox / O_2. Equalizers have 2-foot teflon-lined / stainless steel braided hose and bleeder vent. Models for both yoke and DIN tank valves are offered. Delivered oxy-clean. 3,200 psi service.



45340OX... Nitrox / O_2 Yoke- Mode Equalizer - Used to interconnect two yoke-mode scuba tanks for pressure equalization.

45341OX... Deluxe Nitrox / O_2 Yoke-Mode Equalizer - Identical to #45340OX, except that the bleeder block has a 4,000 psi oxy-clean gauge to monitor pressure transfer.

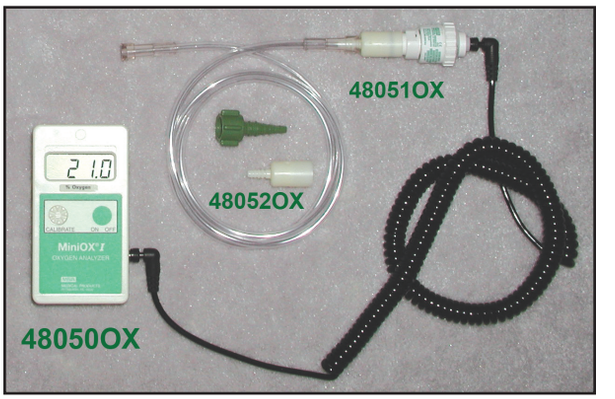
45345OX... Nitrox / O_2 DIN Equalizer Used to interconnect two DIN-mode scuba tanks for pressure equalization.

45346OX... Deluxe Nitrox / O_2 Equalizer - Identical to #45345OX, except that the bleeder block contains a 4,000 psi oxy-clean gauge to monitor pressure transfer.

57225OX... Converto Tank Checker - O_2 Model - Convertible tester checks tanks with either DIN or yoke mode valves. Delivered oxy-clean with a 4,000 psi gauge. Only "OX part numbers" are oxygen-compatible.

MIXED GAS / O_2 EQUIPMENT - GAS ANALYZING

OXYGEN ANALYSES - All custom gas mixtures must be analyzed for oxygen content. This demands an accurate oxygen analyzer and a metering apparatus to deliver sampled gas to the instrument at proper flow rate and pressure. If common analyzers are backpressured as little as 3 psi, significantly erroneous results can occur. Most GSMoT metering devices contain a pressure-reducing regulator and a flow-controlling element. Deluxe models provide gauges to visually monitor both pressure and flow rate. Simpler units that utilize one's dive regulator as a pressure reducer are also offered. All products are delivered oxy-clean.



48050OX... Mini-Ox 1 Oxygen Analyzer - One of the most popular and reliable O_2 analyzers with a long history of successful use in diving. A very compact and portable unit, powered by a 9v battery, it measures only 4-5/8" x 2-1/2" x 1-1/2" and is simple to calibrate and operate. Uses a hi-tech, galvanic fuel sensor for O_2 detection, with the results displayed on an LCD readout with an accuracy of 1%. Comes with a hookup kit for gas delivery.

48051OX... Replacement O_2 Sensor for Mini-Ox - The sensor on all current oxygen testers have a life-expectancy from 1 to 2 years depending on use, storage, and design. When the analyzer will no longer calibrate properly, the sensor must be replaced.

48052OX... Mini-Ox Hookup Kit - A special adapter and gas delivery tube for attaching Mini-Ox units to gas metering devices. The adapter slips over the sensor so that sampled gas can flow over the sensor's surface, while the excess is vented to the atmosphere. Kit provided with each GSMoT Mini-Ox. Kit includes flared gas-delivery tubing, O_2 sensor adapter, and flow device barbed adapter.

45520OX... Wall-Mounted Adjustable Metering Device - An automatic gas delivery device which mounts to any wall and will measure tank pressure while flowing gas mixtures from that tank to an analyzer. Flowmeter is easy to read from a distance and rates can be adjusted from 0.5 – 8.0 liters/minute. A 6-foot hose with yoke connection allows a group of tanks to be tested without clumsy hand-held equipment. A line bleeder assures that a fresh gas sample is obtained from each tank. Works with any O_2 analyzer. 3,400 psi service. Order **45521OX** for DIN version.

45530DOX... BASIC FLOW SELECTOR METERING DEVICE A compact, regulator combined with a flow selector from 0.5 to 4.0 LPM to deliver gas directly from a yoke scuba tank to an oxygen analyzer at nearly atmospheric conditions. For DIN connection, order 45531DOX.

45532DOX... DELUXE SELECTOR METERING DEVICE A compact, regulator combined with a flow selector from 0.5 to 4.0 LPM to deliver gas directly from a yoke scuba tank to an oxygen analyzer at nearly atmospheric conditions. This unit also include a 0-5,000 psi Nitrox/O_2 clean gauge to verify tank pressure when analyzing. For DIN connection, order 45533DOX.

MIXED GAS / O_2 EQUIPMENT - HYPER-FILTER

HYPER-FILTRATION FOR NITROX PREPARATION With the widespread popularity of Nitrox diving, numerous dive shops are mixing air with pure oxygen to produce saleable "enriched air" mixtures. For safe blending, compressed air of purity greater than normal Grade E must be used. Known as "Oxygen Compatible Air" or OCA, this gas is permitted to have no more than 0.1 mg / M3 of hydrocarbon contaminants, whereas Grade E scuba air can contain 50 times that amount (5 mg / M3). Some dive shops are able to produce OCA with their regular processing systems if the compressor, lubricant, moisture separators and filters all function absolutely flawlessly. Many other air systems cannot achieve air of this purity under any circumstances. To routinely obtain OCA, most shops reprocess their Grade E air by passing it through an additional special filter known as a Hyper-Filter, which are described below .

HYPER-FIITER SYSTEMS

These special hi-tensile aluminum towers will accept ONLY specific Hyper-Filter cartridges which actually "recirculate" the gas through high-purity chemicals that remove even trace level hydrocarbons. These super-filtration systems also control the pressure and flow rate at which the gas moves through the chemicals, thereby assuring complete removal of finite contaminants. Each Hyper-Filter System consists of the tower(s) with filter cartridge(s) plus pressure-controlling priority regulator, flow governor, gauge and check valves, all mounted on an aluminum base plate. Double and single tower systems are available. This apparatus not only produces OCA, but also serves as a safety backup in case of an unforeseen compressor / filter failure which releases dangerously high levels of hydrocarbon-contaminated air!

44350... Double Tower Hyper-Filter System - Consists of two tall towers (3.75 x 33"), two cartridges, and associated hardware mounted on a metal plate. A filter block with an inlet valve allows isolation of the system when not in use. Will accommodate air flow rates up to 12 cu ft. / minute and will process about 40,000 cu. ft. of OCA per cartridge set. Designed for permanent installation in a dive shop. 5,000 psi service.

44351... Hyper-Dry Cartridge for Tower #1 of above system
44352... Hyper-Clean Cartridge for Tower #2 of above system
44353... Hyper-Process Cartridge for single tower unit.

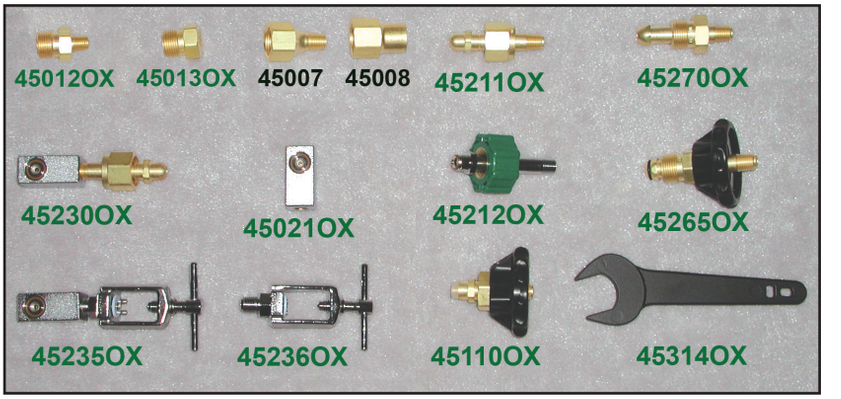
44355... Single Tower Portable Hyper-Filter System - Composed of a single tower (3.75 x 24"), filter cartridge, and associated hardware mounted on metal plate. Air enters the top of the filter and exits at the filter block / priority valve on the base plate. A carrying handle on the top of the tower allows this filter to be used "in the field" as well as in the dive shop (Weighs 25 lbs.). Accommodates air flow rates up to 6-8 cu. ft. / minute and will process up to 7,000 cu. ft. of OCA.

MIXED GAS / O_2 EQUIPMENT - ADAPTERS

Specialty Gas Adapters

These devices allow the interconnection of CGA gas outlet ports for cylinder charging or special diving applications. Each fitting has a CGA male outlet thread (same as a CGA tank valve outlet thread) on one end and NPT on the other. All are brass with a 3,000 psi rating.

45007... Converts CGA 580 outlet (inert gas) to 1/4" NPTM
45008... Converts CGA 580 outlet (inert gas) to 1/4" NPTF
45012OX... Converts CGA 540 outlet (O_2) to 1/4" NPTM
45013OX... Converts CGA 540 outlet (O_2) to 1/4" NPTF



45021OX... Scuba Port Converter, Oxygen-Clean
A rectangular, chrome-plated brass block with an O-ring sealed regulator port, identical to that on a scuba tank valve. Gas inlet port in the bottom of the block is ported female 1/4" NPT. Used for special adaptions and TEK rigs. 3,200 psi service. Delivered oxy-clean.

CGA Nut & Nipple Adapters - These two-piece adapters fit respective CGA valve outlets and convert them to male 1/4" NPT. Wrenchtite models must be tightened with a wrench, whereas handtite versions do not, and seal with an O-ring or plastic gasket. All nipples, also called tailpieces, are heavy brass, rated for 3,000 psi, and contain an internal particle filter, except where noted.

45110OX... Oxygen Handtite Nut & Nipple - A large plastic handwheel with a 2.5" tailpiece containing a soft-seal tip, but NO internal filter. (Replacement tip: Order #**45111OX**).

45211OX... Oxygen Wrenchtite Nut & Nipple - Standard brass CGA 540 nut with 3" filter nipple.

45212OX... Medical Oxygen Handtite Nut & Nipple - Green CGA 540 handtite nut with a 3" chromed-brass nipple with a replaceable internal filter and O-ring seal tip. 2,700 psi service. (Replacement Viton seal: Order O-ring #**49011OX**).

45265OX... Inert Gas Handtite Nut & Nipple - A large plastic handwheel with a 3" filter tailpiece (CGA 580) containing an O-ring seal tip. (Replacement O-ring: Order #**49111OX**).

45270OX... Inert Gas Wrenchtite Nut & Nipple - Standard helium / argon CGA 580 nut and 3" filter tailpiece.

45314OX... Oxygen / CGA Nut Wrench - A special, flat wrench with a non-sparking, Teflon coating, used to tighten CGA nut connections, especially oxygen.

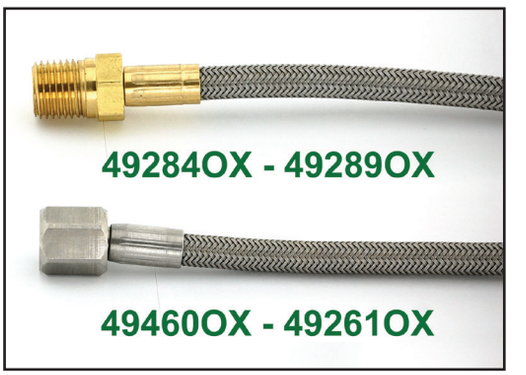
45230OX... Oxygen to Scuba Regulator Adapter - Today oxygen breathing is used for topside emergency situations as well as for in-water shallow decompression during certain advanced diving. This adapter fits CGA 540 oxygen valves and provides an O-ring flange port for the attachment of an oxy-clean scuba regulator.

45235OX... Medical Oxygen To Scuba Regulator Adapter - Similar to #45230OX, except it adapts a tank with 2-pin medical O_2 valve (CGA 870) for use with an oxygen dive regulator. Also serves as a filling adapter when charging small medical bottles with GSMoT transfillers from blending stations or commercial cylinders.

45236OX... Oxygen Yoke - A CGA 870 medical oxygen, 2-pin yoke with a 1/4" NPTM inlet. For adaptations involving medical oxygen tanks and other specialty equipment. For replacement washer: Order #**45237OX**.

Oxygen Pressure Hose - It is UNSAFE to use standard thermoplastic air hoses for pure oxygen / oxy-rich mixtures! Teflon-core hoses with stainless steel braid reinforcement and brass end fittings should be utilized for such gases. Our hoses have a 3,000 psi working pressure with a 12,000 psi burst. End fittings are male 1/4" NPT. Please note: New hoses have MALE NPT end fittings while the old style hoses had FEMALE NPT Fittings.

49284OX... 2 ft. **49285OX...** 3 ft. **49286OX...** 4 ft.
49287OX... 5 ft. **49288OX...** 6 ft. **49289OX...** 8 ft.

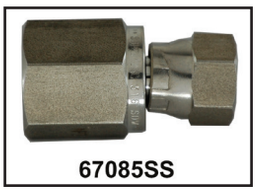


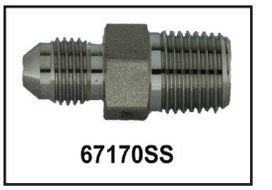
67085SS-OX... Adapter FJIC to NPTF Convert the male NPT hose end to a female #4 JIC swivel. Stainless Steel

Oxygen High Pressure Hose - With a thicker Teflon-core and an extra stainless steel overbraid, GSMoT hi-pressure oxygen / mixed hose is related for 5,000 psi service. Female #4 JIC fittings on each end.

45460OX... 5 ft. **45461OX...** 18"

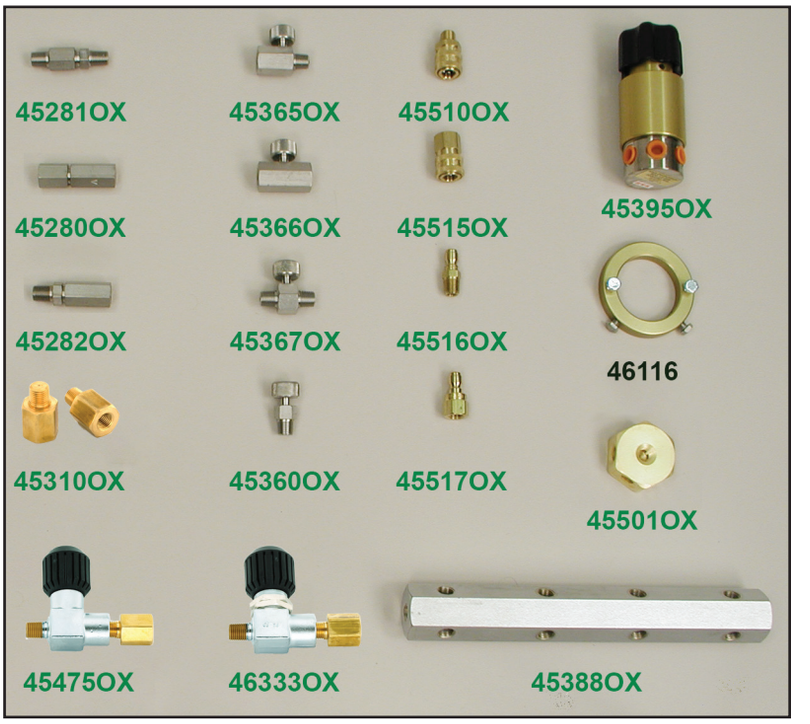
67170SS-OX... JIC to NPTM adapter Convert the #4 JIC female to a 1/4 male NPT.


67085SS


67170SS

MIXED GAS / O_2 EQUIPMENT - CONTROL HARDWARE

Handling, processing, or mixing Nitrox or pure oxygen requires special equipment which is BOTH oxygen-compatible and oxygen clean. Most such equipment will be made from brass or stainless steel with softgoods of O_2 compatible polymers like Teflon or Kel- F. Many devices suitable for air cannot be used safely in high O_2-environments. GSMoT offers a good selection of hardware for oxygen-related applications. Each item is delivered oxy-clean.



45310OX... **Metering Orifice Only** - A heavy brass body with an internal pinhole orifice which can govern gas flow rates. Useful for controlling the flow of a reactive gas like oxygen in long delivery lines or in transfiller devices where compressive heating form "fast fills" can be dangerous. When combined with a suitable valve, this device will permit precise metering of a gas into any pressure vessel. For example, with a supply pressure of 1,500 psi upstream, the orifice delivers about 8 cu. ft. of gas per minute which would fill a 80 cu.ft. tank to 3,000 psi in 10 minutes, a charging rate of 300 psi per minute. Now combine this orifice with a compatible valve for further control, and the standard fill rate for mixing (50 - 60 psi / minute) is easy to achieve. This degree of precision control would be difficult to maintain with either the orifice or valve alone. Male / female 1/4" NPT ports. 4,500 psi service.

Oxygen Check Valves - All stainless construction with Teflon & Viton inner seals and a special lubricant; offered in three different 1/4" NPT threading configurations. 5,000 psi service.
45280OX... Double female ports
45281OX... Double male ports
45282OX... Female in, male out

46333OX... **Oxygen Line Valve Only** - A special oxy-clean version of the common line valve (#46330) with an oxygen-tolerant Kel-F seat. Directional flow must be maintained (1/4" NPTF inlet and NPTM outlet) in oxygen valves to prevent hazardous frictional heating caused by reverse flux. 6,000 psi service. Order **46334OX** for panel mount version thru 1" hole.

Metering Valves and Orifices -Transfer of oxygen for safe mixing requires low charging rates (50 - 70 psi / minute) into dive tanks. This can be difficult to achieve with normal tank or line valves which are really high flow devices. GSMoT offers two types of special valves that can meter O_2 and other "clean gases": Precision Metering Valves and Gas Flow Controllers. Metering valves have needle-like stems and seats which provide a wide range of flow with precise, but adjustable, metering. However, these valves are sensitive to rough handling / over-tightening and must be operated like precision instruments. Gas Flow Controllers combine a common scuba filler line valve (O_2-version) with a pin-hole metering orifice which magnifies the valve's control function and gives excellent metering with rugged handling characteristics. However, fixed metering orifices are not adjustable, thus filling rates will decrease significantly as the supply of flow within a predetermined pressure range. Only "OX part numbers" are oxygen-compatible.

45370OX... **Stainless Metering Valve** - 1/4" NPTM ports, 5,000 psi service.
45475OX... **Flow Controller -** O_2 line valve with metering orifice: 1/4" NPT female inlet, male outlet; 5,000 psi service. Order #45476OX for panel mount version thru 1 inch hole.

Bleeders and Vent-Drains - Like air, oxygen lines must occasionally be drained or purged; oxygen-clean and compatible hardware should be used for this purpose. GSMoT products have all-stainless bodies, 1/4" NPT ports, and replaceable Teflon seats. (Replacement seat: Order **#46235**). 5,000 psi service.
45360OX... **Stainless Vent Drain** - For depressurizing manifolds or other components. Male 1/4" NPT basal thread.
45365OX... **Stainless In-Line Bleeder** Male / Female Ports - In-line configuration with 1/4" NPT ports on each end.
45366OX... **Stainless In-Line Bleeder** Female Ports - Like #45365OX, but with all female NPT ports.
45367OX... **Stainless In-Line Bleeder** Male Ports - Like #45365OX, but with all male NPT ports.

Nitrox / Oxygen Manifold Blocks Creating diving mixtures from raw gases often requires a mixing vessel, or plenum, which can be the tank itself augmented with a manifold to interconnect various system components. Oxy-clean versions of our air manifolds (#45386/ 45384) work well for this purpose. GSMoT offers a long block and a compact style with multiple 1/4" NPTF ports and associated mounting brackets.
45388OX… **O_2-Clean Hexagonal Manifold** - 10+ inch long with 10 ports (see p. 39 for details)
45217**…** Bracket for #45388OX (see p. 39 for details)
45501OX... **Gas Junction Block** - A small, 2.0" hexagonal brass block with 7-ports; one dead center and one on each face of the hex. All ports 1/4" NPTF. 3,000 psi service. Delivered oxy-clean. Used as a compact junction point for gas supply hoses, filler whips, or for TEK diving applications.
45395OX... **High Pressure Blending Regulator** - This special regulator can control intermediate and final "end pressures" during gas mixing operations. Simply dial in the desired set pressure on the regulator and the gas input to your mixing system will be arrested automatically at that point. Unit will self-vent whenever pressure is reduced with the control knob. Can be used with oxygen, OCA air, or helium. Four 1/4" NPTF ports: 2-inlet, 2-outlet, one each for a main line and a gauge. Pressure ratings: 6,000 psi in - 4,000 psi out. Delivered oxy-clean. Can be panel-mounted with the included bracket. NOTE: Regulators control pressure, but NOT flow. Control valves or metering orifices must still be used for that purpose. Panel Mounting Ring: Order **#46116**.

Breathing Gas Quick-Couplers - Quick disconnects are very popular for rapid switching of supply hoses during gas mixing operations and for various TEK diving applications. GSMoT offers a special, hi-pressure brass coupler capable of 5,000 psi service. Straight-through (no check valve) configuration with 1/4" NPT ports. Suitable for mixed gas applications, including pure oxygen. Has only one simple Viton, O-ring seal (Replacement: Order **#49110OX**). All couplers and mating studs are delivered oxy-clean.
45510OX... Quick Coupler, Male NPT - Coupler unit only
45516OX... Coupler Mating Stud, Male NPT -Brass stud only
45515OX... Quick Coupler, Female NPT - Coupler unit only
45517OX... Coupler Mating Stud, Female NPT Port- Brass stud only

MIXED GAS / O_2 EQUIPMENT - GAUGES

Preparation of diving gas mixtures requires the use of special gauges which are more precise than normal process gauges. Nitrox / Trimix certification agencies all agree that instruments with 0.25% accuracy (1/4 of 1%) must be used to routinely get correct mixtures. GSMoT offers several mixing gauges with test-gauge accuracy, as well as oxy-clean process gauges (1-3% accuracy) for general applications. **All models delivered oxy-clean.**

46001OX… **Gauge Snubber** - When placed in-line with any gauge, this device prevents surging and oscillation of the needle caused by compressors and booster pumps in some applications. M/F 1/4" NPT connections.

45298OX... **Analog Mixing Gauge (0.25% accuracy)** - Some dive shops still prefer large analog wall gauges for gas mixing stations. #45298 has a 6"- diameter face-dial, and a stainless case with a wall-mount flange. Each unit has a knife-edge adjustable pointer for zero mark resetting, as well as a mirror-band which aids taking accurate readings by mitigating parallax. 1/4" NPTM bottom stem inlet. 5,000 psi range.

45305OX… **Dwyer Digital Mixing Gauge** - A new entry to the gas mixing genre: This O-ring sealed gauge with a rugged anodized aluminum case features 0.25% accuracy, selectable pressure scale (5,000 PSI or 350 BARS), automatic zeroing, and 2,000 operating hours on two AAA batteries! 1/4" male NPT bottom stem mount. GSMoT sells a custom-production model that eliminates certain troublesome functions such as unstable zeroing, 2-minute auto shutoff and peak value memory, all of which interfere with conventional blending operations.

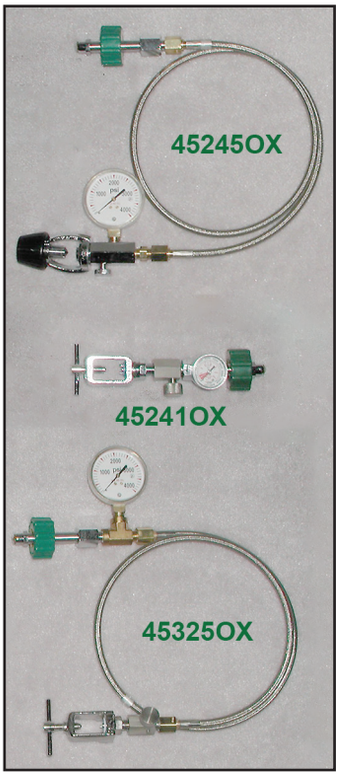
45306OX... **Standard Sealed Process Gauge, 5,000 psi** - A 2.5" dial gauge with a sealed, stainless steel case and a 1/4" NPTM bottom stem mount. 2% accuracy. For general "clean gas" applications.

45307OX... **Large Sealed Process Gauge, 5,000 psi** - A 4.0" dial gauge with a sealed, stainless steel case and a 1/4" NPTM bottom stem mount. 1% accuracy. For general "clean gas" applications.

45335OX... **Standard Oxygen Process Gauge, 4,000 psi** - A 2.5" dial gauge with a pressed brass case and a 1/4" NPTM bottom stem mount. 2% accuracy. For general oxygen pressure monitoring.

45436OX... **Miniature Oxygen Process Gauge, 4,000 psi** - A 1.5" dial gauge with a stainless case and a 1/8" NPTM bottom back mount. For general oxygen pressure monitoring. 2-3% accuracy.

MIXED GAS / O_2 EQUIPMENT - PURE GAS TRANSFER



OXYGEN TRANSFILLERS - These devices are used to transfer pure oxygen from large commercial cylinders into scuba tanks or small medical O_2 bottles. GSMoT transfillers have a 4-foot hose with stainless steel braid over a Teflon core and a CGA 540 green handwheel nut and nipple on one end. The opposite end has a bleeder block and scuba yoke (or DIN) to attach to dive cylinders or a CGA 870 yoke to connect to medical O_2 bottles. Each O_2 nipple contains a replaceable, internal filter to prevent sparking particles from entering the gas stream and an O-ring seated tip (#49011OX Viton seal). Each transfiller also contains a metering orifice to govern the rate of gas transfer, since speedy oxygen compression is dangerous. 2,700 psi rated service. CAUTION: Transferring oxygen requires special procedures and preparations!

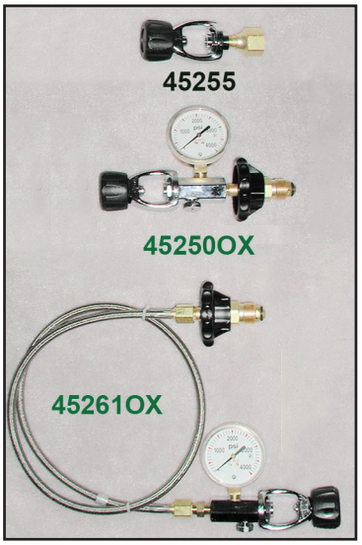
45241OX... **Compact Medical Oxygen Transfiller** - A short, chromed-brass transfiller for charging small oxygen bottles with CGA 870, 2-pin medical valves. Has all the features of our hosed transfillers, including the metering orifice, plus a small 4,000 psi gauge to monitor contents pressure. Heavyduty construction can easily support the weight of small gas tanks.

45245OX... **Deluxe Oxygen to Scuba Transfiller** - A gas transfer device to put pure O_2 from commercial tanks into conventional yoke-mode, oxy-clean scuba tanks with a 4,000 psi oxygen gauge installed in the bleeder block to monitor transfill pressures. NOTE: This device is NOT Intended for gas mixing purposes; it has only limited flow control, no check valve to prevent cross-gassing, and its gauge is NOT sufficiently accurate to routinely achieve correct mixtures. Order **45248OX** for DIN version.

45325OX... **Medical Oxygen Transfiller** - Identical to our other hosed transfillers, except this model has a 2-pin, O_2 - yoke on one end for charging tanks with CGA 870 medical oxygen valves.

MIXED GAS / O_2 EQUIPMENT - PURE GAS TRANSFER

INERT GAS TRANSFILLERS -Modern TEK diving often employs such inert gases as helium or argon. GSMoT produces a number of transfilling devices for handling these gases. They possess the same Teflon-core hoses with stainless overbraid and filler hardware used on our O_2 units, but the handwheel and mating nipple is CGA 580. No metering orifice is required. 3,000 psi service.



45250OX... Compact Argon to Scuba Transfiller - A short (10") transfiller to put argon from industrial tanks into small, ponysized scuba tanks (yoke mode). Has a 4,000 psi gauge installed in the bleeder block to monitor transfer pressure. Heavy-duty construction can easily support the weight of small gas tanks during filling operations. Be sure to label these tanks properly so they cannot be confused with breathing gas bottles. Order **#45251** for DIN version.

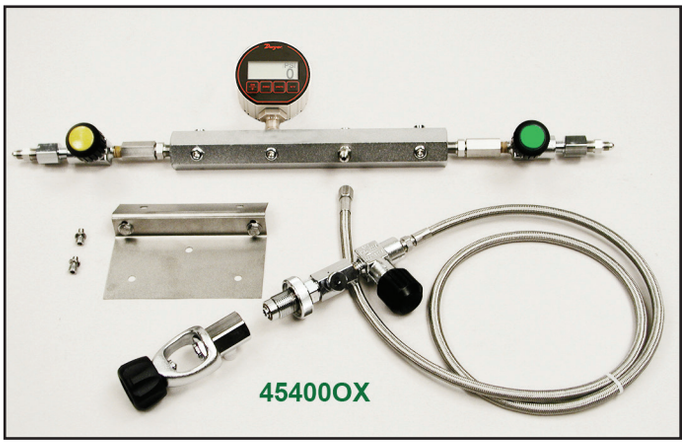
45255... Commercial Argon to Scuba Adapter - This converter (CGA 580 to scuba yoke) allows industrial gas companies to adapt their argon whips to fill scuba tanks. 3,000 psi service.

45261OX... Deluxe Inert Gas to Scuba Transfiller - Identical to #45260OX, except that a 4,000 psi gauge is installed in the bleeder block to monitor pressure during transfilllng. NOTE: This device is NOT Intended for gas mixing purposes; it has only limited flow control, no check valve to prevent cross-gassing, and its gauge is NOT sufficiently accurate to routinely achieve correct mixtures. Order **#45264OX** for DIN version.

MIXED GAS / O_2 EQUIPMENT - MIXERS AND MANIFOLDS

Partial Pressure Gas Blending Equipment - The chief advantage of partial pressure blending is that virtually every gas mixture known to diving can be prepared by this technology. The techniques are fairly simple and easy to master, as is the essential equipment. The downside of partial pressure mixing is the time and labor required to mix a single unit, as well as the meticulous nature of the process itself. Fortunately, if cylinders are interconnected, multiple tanks of the same mixture can be produced simultaneously. GSMoT offers a number of different mixing devices, ranging from portable units for small dive teams or shops with only modest demands, to various manifold and semi-automated systems for busy shops where a large numbers of tanks must be prepared. All GSMoT equipment can make Nitrox, Trimixes, and deco-blends. To ensure proper function and oxy-cleanliness, most GSMoT mixing apparatuses are built and tested to order.

45400OX... Standard Gas Mixing Manifold This blending bar system consists of several basic components including a 10-port (1/4" NPTF), brass hexagonal bar equipped with two inlet Flow Controllers with check valves. This bar can be mounted on a wall or other suitable retaining structure with the included detachable bracket (#45217). Installed in one upper port of the bar is a Digital Pressure Gauge which is the master mixing instrument. Gases (oxygen and OCA air) respectively enter the end ports of the manifold through the Flow Controllers which consist of a conventional line valve (oxygen version) and a metering orifice which work conjunctively to precisely control the incoming gas. With these Controllers, the permissible O_2 charging rates of 50 - 70 psi / minute into the dive cylinder can easily be achieved and maintained manually. The check valves prevent any cross-leakage of the respective gases. The Digital Gauge (5,000 psi) is environmentally resistant, battery powered, and has 0.25% accuracy.



Included with the Mixing Manifold is one 5-foot Mixed Gas Whip (**#45350OX**) that has a Teflon-core hose (stainless steel overbraid) and an oxy-line valve with a DIN-mode bleeder block. Also Included is a **#45189OX** Converter to switch the DIN-fitting to yoke-mode, so that tanks with either DIN or yoke-mode valves can be charged. Extra ports in the bar are plugged, but these can be reopened at any time to add extra filler whips or other gas-control / monitoring devices. For example, an extra Flow Controller Module for helium (**#45414OX**) can be added to a spare port which then allows this system to make Trimixes. Not included are the Gas Supply Connectors to deliver needed gases to the mixing bar. **#45400OX** was designed to fill up to three dive tanks at one time. Because metering orifices are not adjustable, the inflow of gas is affected by decreasing supply pressures.

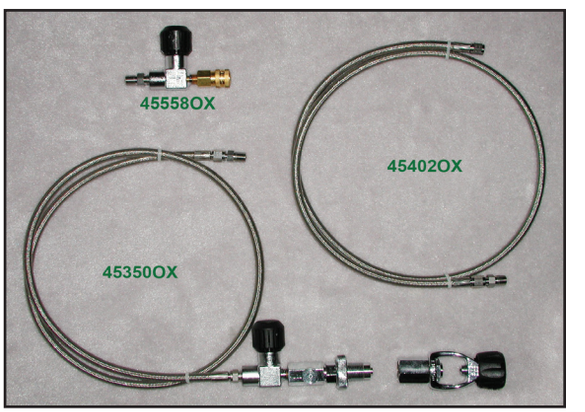
MIXED GAS / O_2 EQUIPMENT - MIXERS AND MANIFOLDS

45555OX... **NEW!!! ECOMONY BLENDER** This is a simplified device for the partial pressure blending of single tanks of Nitrox, Trimix, or decompression mixes. The product consists of a 300 bar, DIN-mode gas-mixing whip (5-foot hose) with a stainless steel Metering Valve, a Digital Gauge (with 0.25% accuracy and a protective rubber cover), and a check valve to prevent resurgence of scuba tank gas. The supply end of the Blender is equipped with a quick coupler, so that the unit can be readily switched from one supply gas to another. The needle valve is also included on the supply end. This will allow for hook ups to 6,000 psi inlet pressure without worries of overpressurizing the mixing hose. Included are Gas Supply Connectors for inputting both pure oxygen (CGA 540) and Oxygen Compatible Air (OCA). This latter adapter allows the unit to be attached to any air station filler whip (yoke-mode) that can provide OCA. Various accessories are available to increase the versatility of the Blender:

45189OX... Converts the DIN-mode filler to yoke mode
45557OX... A helium Gas Supply Connector for blending Trimix
45556OX... An adapter to connect the Blender to a DIN-mode air station whip
45558OX... A valve and coupler assembly that installs in the outlet port of most Hyper-Filters, providing an attachment point for the Blender to receive OCA. (See below picture).
45559OX... A Gas Supply Pressure Quick Tester to swiftly ascertain the available supply gas pressure prior to mixing.

GAS BLENDING - SUPPLY CONNECTORS & WHIPS

45350OX... **Mixed Gas Filler Whip** A 5-foot, Teflon-core hose (stainless steel overbraid) for 4,500 psi service, attached to a line valve (oxygen version) and chromed-brass bleeder block with a DIN fitting. Included is a **45189OX** Converter which quickly switches the DIN mode to yoke. Rated for 3,200 psi service in yoke mode; 4,500 psi with DIN. JIC free end with male NPT adapter included.



45358OX... **Hyper-Filter Outlet Connector** For attaching the GSMoT Economy Mixer (**#45555OX**) to the outlet port of any Hyper-Filter or to adapt those outlets for quick-disconnect operation. Consists of a rugged O_2 line valve(1/4" NPTM adapted inlet) and a Quick-Coupler (**#45517OX**) outlet. 5,000 psi service.

45402OX... **Hyper-Air Supply Connector** For connecting Hyper-Filters to Gas Mixing Manifolds or other apparatus. Consists of a 5-foot, Teflon core hose (stainless steel overbraid) with #4 JIC female ends. Included is an adapter to convert the Hyper-Filter's NPT port to JIC.

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