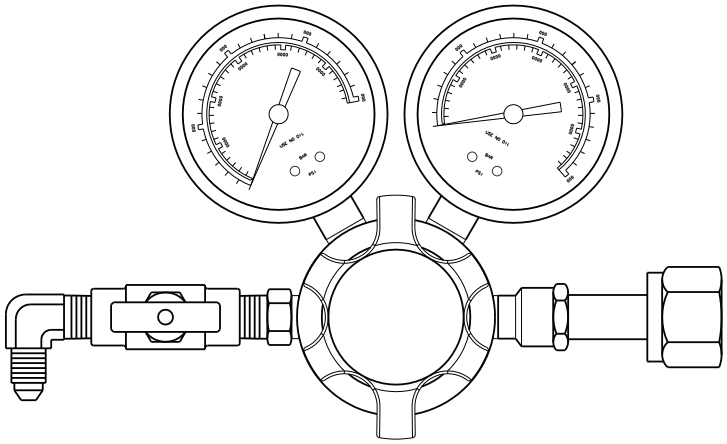
OPERATION & SERVICE MANUAL



Model: 20-4502-6000
Oxygen Regulator

CE

08/2009 - Rev. 05

Tronair, Inc.
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REVISION	DATE	TEXT AFFECTED
03	03/2008	Modified 4.0 Assembly
04	07/2008	Modified 3.1 General Safety Requirements Modified 6.0 Maintenance
05	08/2009	Modified Appendices/Additional Documents

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This product can not be modified without the written approval of Tronair, Inc. Any modifications done without written approval voids all warranties and releases Tronair, Inc., it suppliers, distributors, employees, or financial institutions from any liability from consequences that may occur. Only Tronair OEM replacement parts shall be used.

1.0 GENERAL DESCRIPTION

The oxygen regulator is designed to deliver pressure regulated oxygen from a single supply source. The oxygen regulator is a non-venting regulator.

2.0 SPECIFICATIONS/FEATURES

Dimensions:
- Length: 6.25 in (15.9 cm)
- Width: 9.25 in (23.5 cm)
- Height: 5.5 in (14 cm)

Weight: 10 lbs (4.5 kg)
Maximum Pressures:
- Inlet: 3000 psi (207 bar)
- Outlet: 2500 psi (172 bar)

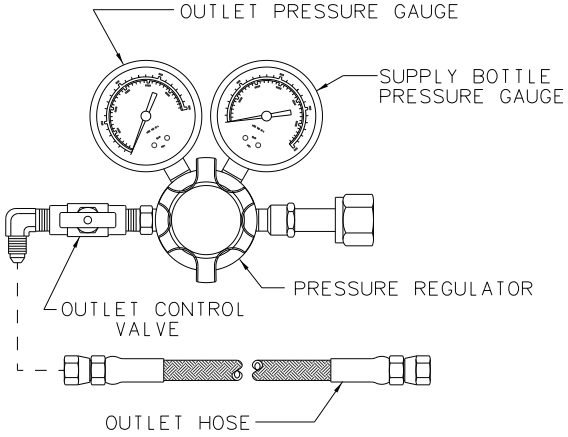
Bottle Connections: CGA-540 fittings
Output Hoses: #4 x 15 foot (4.6 m) with JIC fittings
Temperature Range: 0º to 200ºF (17.7º to 93.3º C)

3.0 SAFETY

The operation, maintenance, and trouble shooting of this oxygen regulator requires practices and procedures which ensure personal safety and the safety of others. Therefore, this equipment is to be operated and maintained only by qualified persons in accordance with this manual and all applicable local codes.

Safety instructions specifically pertaining to this regulator appear throughout this manual highlighted by the signal words **WARNING** and **CAUTION** which identify different levels of hazard.

Reference illustration for component identification.



WARNING!

Denote practices which if not carefully followed, could result in serious injury and/or death

CAUTION!

Denote practices which if not carefully followed, could result in minor personal injury or damage to this equipment.

WARNING!

TO AVOID SERIOUS INJURY OR DEATH OBSERVE THE FOLLOWING:

1. **All components used in the oxygen system must be clean, dry, and free of all contamination per SAE SPEC AIR 1176.**
2. **DO NOT use this equipment with nitrogen or gas other than oxygen.**
3. **DO NOT exceed 3000 psi (207 bars) inlet pressure.**
4. **Servicing and maintenance of the system should only be done by trained and qualified personnel using approved procedures.**
5. **It is mandatory that this instruction manual be read and understood by all persons operating this oxygen manifold.**

General: Information presented in this manual pertains to equipment specifications, installation, operation, maintenance, and trouble shooting which should be read, understood, and followed for the safe and effective use of this equipment.

Training: Read this entire manual prior to operation of the unit. All personnel using this oxygen regulator should understand and follow this manual and receive training. Tronair encourages our customers to call Tronair to discuss any operating or testing requirements at: 419-866-6301 or 800-426-6301.

3.0 SAFETY *(continued)*

3.1 GENERAL SAFETY REQUIREMENTS

Pressures: Gasses under pressure are a potential hazard in the form of stored energy. Accidents can occur when this energy is improperly handled. Be sure that all equipment used is compatible and designed to control the pressures encountered.

Oxygen: Oxygen is an oxidizing gas and is chemically stable and nonflammable; however, oxygen does support combustion. High concentrations can accelerate the combustion of flammable materials up to and including an explosion. It is important to understand that spontaneous combustion of organic materials can occur in oxygen rich atmospheres.

Handling: Oxygen handling must be done with care to avoid any association with hydrocarbons, especially where fuels and lubricants are present in aircraft service areas. It is imperative that oxygen systems be handled properly. Be sure to keep all protective caps in position on equipment as long as possible, and replace them immediately after using the regulator.

Velocity: Oxygen flowing at a high velocity in a piping system can propel any foreign material particles with such force that the impact friction can raise the particles temperature to a possible ignition point. It is therefore imperative that a high degree of cleanliness be maintained in the oxygen system at all times.

Oxygen Servicing: The following list contains additional general safety precautions that should be adhered to during the servicing process. However, always refer to the manufacturer's procedure for the airplane being serviced.

1. Always ground the system to be serviced and the servicing equipment before connecting the filler adapter.
2. Close the oxygen bottle manual shutoff valve.
3. Ensure that all aircraft electrical power is off. Do not operate electrical switches, or connect or disconnect ground power generators during the oxygen charging operation.
4. Do not service the oxygen system if fueling or other flammable fluid servicing is in process.
5. Do not charge the system too fast. Rapid charging can create a dangerous overheating condition.

SAE AIRCRAFT OXYGEN SPECIFICATION INFORMATION
For more information concerning specific SAE aircraft oxygen equipment specifications, contact:
Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001

4.0 ASSEMBLY

Unpacking: This oxygen regulator system has been thoroughly cleaned, inspected, and tested prior to packaging and shipment. After opening the shipping container and removing the regulator, inspect it thoroughly for shipping damage.

Apply Serial number tag, with lanyard, to hose and regulator assembly.

Oxygen equipment should be kept clean, dry, and free from contaminants. It is imperative that all installation, inspection, maintenance, testing, and servicing of oxygen system components be done by trained and qualified personnel using approved procedures.

5.0 OPERATION

WARNING!

If there are any differences between the following instructions and the aircraft If maintenance manual, the aircraft maintenance manual will take precedence.

1. Close outlet control valve and back off pressure regulator.
2. Connect outlet hose loosely to aircraft oxygen service fitting.

WARNING!

Be sure outlet hose is engaged sufficiently prior to purging in order to prevent disengagement and whipping of hose end.

3. Slowly open the bottle control valve and adjust the pressure regulator to approximately 75 psi (5.2 bar).
4. Slowly open outlet control valve sufficiently to purge hose. Close outlet control valve.
5. Securely tighten outlet hose fitting at aircraft.
6. Adjust pressure regulator to desired pressure.
7. Open outlet control valve to service aircraft in accordance with aircraft maintenance recommendations.
8. After aircraft service completion, close oxygen bottle shutoff valve.
9. Close outlet control valve and back off pressure regulator.
10. Bleed down outlet hose by slowly loosening outlet hose fitting at aircraft. Disconnect and properly store outlet hose.

6.0 MAINTENANCE

All maintenance performed on this unit shall be conducted in accordance with all applicable codes governing the handling, operation, installation and trouble shooting for high pressure oxygen operation. Maintenance is only to be done by qualified persons.

OXYGEN COMPONENTS:

WARNING!

OXYGEN EQUIPMENT IS NOT FIELD OR CUSTOMER SERVICEABLE!

OEM repair or replacement is recommended.

- The gauges on this unit should be inspected and calibrated annually to ANSI grade B accuracy, to maintain and ensure accuracy.
- Manifold inlet hoses should be inspected weekly for signs of cracking or kinking, replace as necessary.
- Inspect oxygen manifold output hose prior to each use for signs of cracking or kinking, replace as necessary.

7.0 STORAGE

Store the unit in a clean, dry area when not in use.

Be sure that all openings are capped and the unit is covered with a lint free covering for the duration of the unit storage to ensure complete oxygen system cleanliness for future aircraft system recharging.

8.0 GUARANTEES/LIMITATION OF LIABILITY

Tronair products are warranted to be free of manufacturing or material defects for a period of one year after shipment to the original customer. This is solely limited to the repair or replacement of defective components. This warranty does not cover the following items:

a) Parts required for normal maintenance
b) Parts covered by a component manufacturers warranty
c) Replacement parts have a 90-day warranty from date of shipment

If you have a problem that may require service, contact Tronair immediately. Do not attempt to repair or disassemble a product without first contacting Tronair, any action may affect warranty coverage. When you contact Tronair be prepared to provide the following information:

a) Product Model Number
b) Product Serial Number
c) Description of the problem

If warranty coverage is approved, either replacement parts will be sent or the product will have to be returned to Tronair for repairs. If the product is to be returned, a Return Material Authorization (RMA) number will be issued for reference purposes on any shipping documents. Failure to obtain a RMA in advance of returning an item will result in a service fee. A decision on the extent of warranty coverage on returned products is reserved pending inspection at Tronair. Any shipments to Tronair must be shipped freight prepaid. Freight costs on shipments to customers will be paid by Tronair on any warranty claims only. Any unauthorized modification of the Tronair products or use of the Tronair products in violation of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately void any warranty, express or implied.

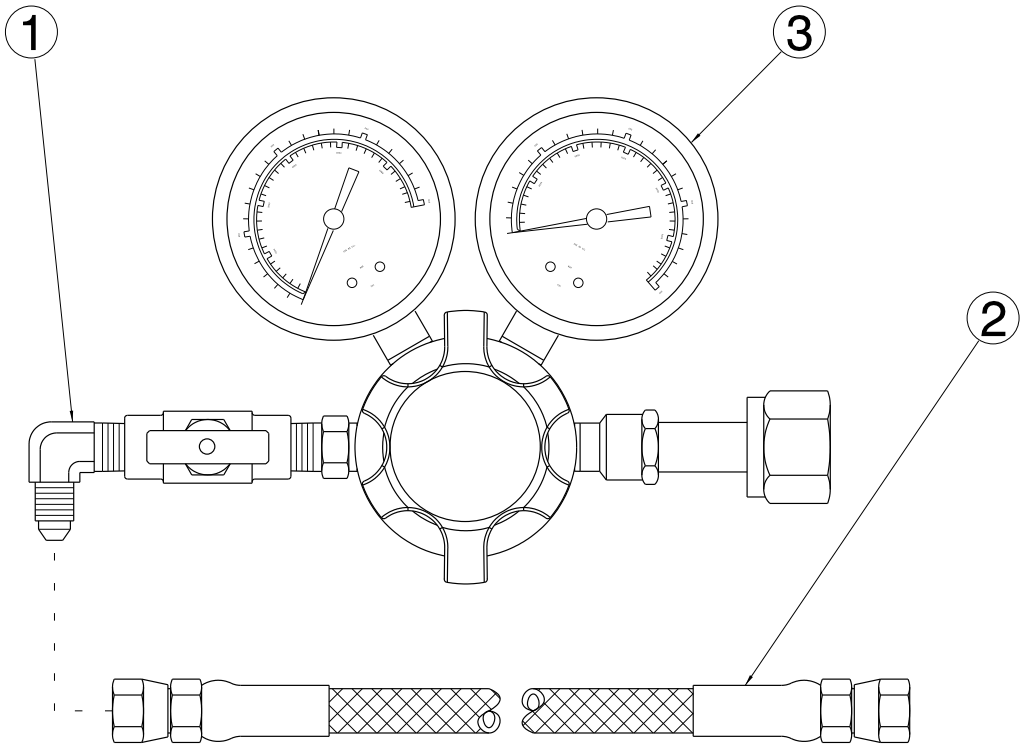
The obligations of Tronair expressly stated herein are in lieu of all other warranties or conditions expressed or implied. **Any unauthorized modification of the Tronair products or use of the Tronair products in violations of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately *void any warranty, express or implied* and Tronair *disclaims any and all liability for injury (WITHOUT LIMITATION and including DEATH), loss or damage arising from or relating to such misuse*.**

9.0 APPENDICES

APPENDIX I Declaration of Conformity

Additional Documents:
Oxygen Cleaned Certification
Smith Manual

Parts List



Item	Part Number	Description	Qty
♦ 1	Z-5561	Assembly, Oxygen Regulator	1
2	TF-1043-14*180.0	Assembly, Hose	1
3	PC-1150	Gauge, Oxygen Replacement	1

♦ ***OEM repair or replacement is recommended. Annual OEM gauge certification is recommended (must be returned as complete assembly).***

NOTE: If return to OEM is not possible, repairs and cleaning must be performed by trained, qualified personnel in accordance with SAE SPEC AIR 1176 (refer to Sections 3.0 and 3.1 of this manual for more information on SAE SPEC AIR 1176.

TRONAIR®

APPENDIX I

Declaration of Conformity

DECLARATION of CONFORMITY

The design, development and manufacture is in accordance with European Community guidelines

Oxygen Regulator
20-4502-6000

Relevant provisions complied with by the machinery:
2006/42/EC

Relevant standards complied with by the machinery:
EN ISO 12100-1
CGA G-4.1 - 2004
SAE ARP 1176
SAE ARP 1532

Identification of person empowered to sign on behalf of the Manufacturer:

Patrick Finch

Quality Assurance Representative

Tronair, Inc.
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Swanton, OH 43558

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