

INCH-POUND

MIL-DTL-6019E  
4 February 2011  
SUPERSEDING  
MIL-DTL-6019D  
6 March 2002

## DETAIL SPECIFICATION

### GAGES, PRESSURE, DIAL INDICATING, LOW-PRESSURE OXYGEN

Inactive for new design after 9 March 1999.

This specification is approved for use by all departments and agencies of the Department of Defense.

#### 1. SCOPE

1.1 Scope. This specification covers low-pressure oxygen system pressure gages for aircraft use.

1.2 Classification. Low-pressure oxygen system pressure gages should be of the following types, as specified (see 6.2):

- Type I - regulator mounting low-pressure oxygen
- Type II - panel mounting low-pressure oxygen

1.3 Part or identifying number (PIN). The following PINs are specified as continuation of PINs from previous AN sheets.

- Type I - AN6026-1B
- Type II - AN6021-1B

Comments, suggestions, or questions on this document should be addressed to Defense Logistic Agency Aviation VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610 or emailed to [STDZNMGT@dla.mil](mailto:STDZNMGT@dla.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.daps.dla.mil>.

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## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of the documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

## FEDERAL SPECIFICATIONS

A-A-59503	- Nitrogen, Technical.
BB-O-925	- Oxygen, Technical, Gas and Liquid.

## FEDERAL STANDARDS

FED-STD-595/37875	- White, Flat or Lusterless.
FED-STD-595/31136	- Red, Flat or Lusterless.
FED-STD-595/37038	- Black, Flat or Lusterless.

## DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-G-81704	- Glass, Aircraft Instrument, Lighting Wedge and Cover.
MIL-PRF-5425	- Plastic Sheet, Acrylic, Heat Resistant.
MIL-S-7742	- Screw Threads, Standard, Optimum Selected Series: General Specification for.

## DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-130	- Identification Marking of U.S. Military Property.
MIL-STD-1916	- DoD Preferred Methods for Acceptance of Product.
MIL-STD-31000	- Technical Data Packages.
MS33638	- Cases, Instruments, Flange Mounted, Aircraft

(Unless otherwise indicated, copies of the above specifications and standards are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Electronic copies of the above specifications and standards may be obtained from <https://assist.daps.dla.mil/>.)

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2.3 Non-government standard. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents are those specified in the solicitation or contract (see 6.2).

## SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

SAE AS71051	- Pipe Threads, Taper, Aeronautical National Form, Symbol ANPT - Design and Inspection Standard.
SAE AIR4071	- Lubricants for Oxygen Use.

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001. Electronic copies of SAE standards may be obtained from <http://www.sae.org/>.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Materials.

3.2.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements and promotes economically advantageous life cycle costs.

3.2.2 Nonferrous. Nonferrous materials shall be used for all parts of the gage, except where ferrous materials are essential and do not come in direct contact with oxygen.

3.2.3 Nonmagnetic. Nonmagnetic materials shall be used for all parts of the instrument, except where magnetic materials are essential.

3.2.4 Metals. Metals shall be of the non-corrosive type unless suitably protected against corrosion during normal service life.

3.2.5 Lubrication. All lubrication shall be in accordance with SAE AIR4071.

3.3 Design. The gages shall be designed so that no parts will work loose in service. They shall be leak proof and shall be built to withstand without failure the strains, jars, vibrations, and other conditions incident to shipping, storage, installations, and service. Pivots, bearings, and gears shall neither bind nor shake, and shall be as near frictionless as practicable. The gages shall

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be designed so that minor repairs, such as replacement of cover glasses and pointers, can be easily made by the personnel of the operating units without the aid of special tools.

### 3.4 Construction.

#### 3.4.1 Threads.

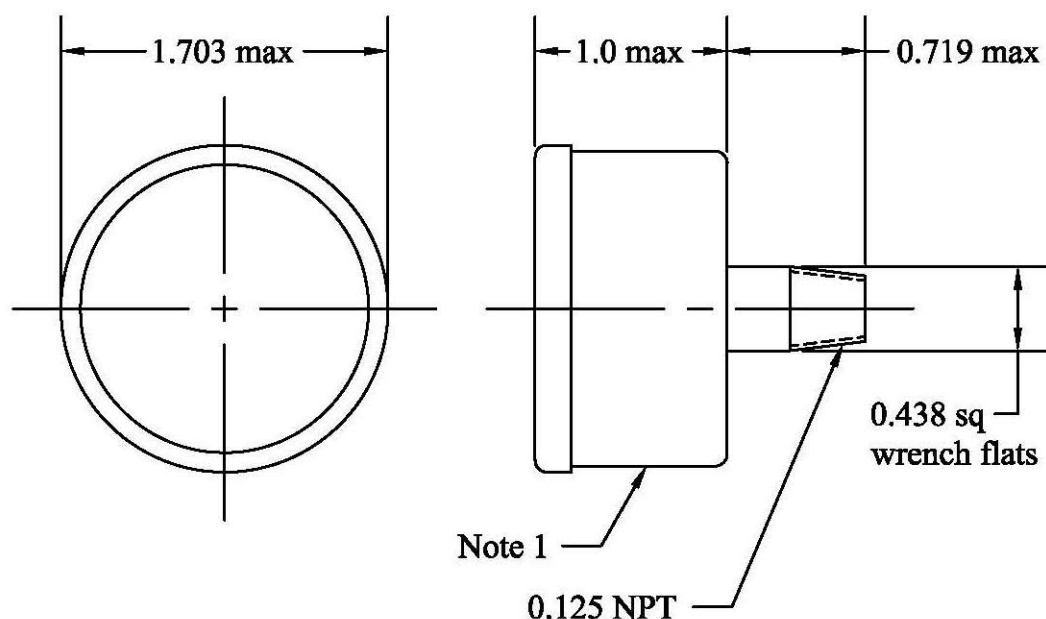
3.4.1.1 Screw threads. Screw threads shall conform to MIL-S-7742.

3.4.1.2 Pipe threads. Pipe threads shall conform to SAE AS71051.

3.4.2 Cases. The cases for both the type I and type II gages shall be rain tight, except for a small vent hole on the bottom or underside.

#### 3.4.2.1 Type I.

3.4.2.1.1 Case design. The case for type I gages shall be as specified in figure 1.



#### NOTES:

- 1 - Name plate location is optional on back or side of case.
- 2 - All dimensions in inches.

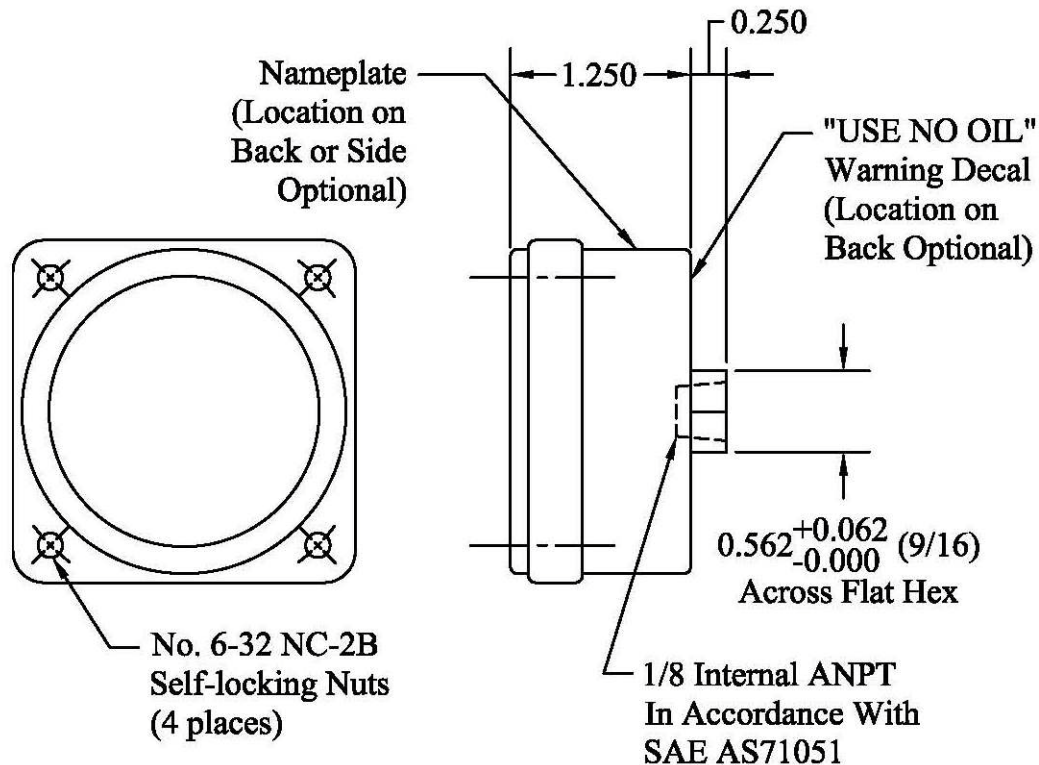
**FIGURE 1. AN6026-1B case details.**

3.4.2.1.2 Case material. The case shall be made of either a suitable ferrous or nonferrous low-density metal, and shall have a smooth surface with a durable dull black finish.

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3.4.2.2 Type II.

3.4.2.2.1 Case design. The case for type II gages shall be in accordance with MS33638, nominal 2 inch size and as specified in figure 2. The case shall be of a durable construction in order to prevent damage to the gage mechanism under conditions incident to shipping, storage, installation, and service.



Dimensions in inches. Tolerances:  $\pm 0.031$  unless noted.

FIGURE 2. AN6021-1B case details.

3.4.2.2.2 Case material. The case shall be made of either nonferrous low-density metal or a synthetic material and shall have a smooth surface with a durable dull black finish. The synthetic material shall be of the thermal setting type, composed of a suitable filler and phenol condensation product binder.

3.4.3 Bosses. Bosses shall be in accordance with figure 1 for type I gages and figure 2 for type II gages. Wrench flats shall be provided on the sides of the boss.

3.4.4 Operating mechanism. The indicating and the pressure elements shall comprise a unit distinct from the case. This unit shall be sufficiently rugged in order that small distortions of the case will not affect the accuracy of the indications.

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3.4.4.1 Mechanism adjustment. The mechanism shall be provided with a means to adjust or correct the indications, in case this becomes necessary during the service of the gage. Adjustment shall require no special tools. The operating mechanism and dial shall be capable of being easily removed from the case as a unit in order to facilitate adjustment of the gage.

3.4.4.2 Pointer adjustment. The pointer shall be light and sufficiently rigid to prevent oscillation under vibration and shall be free to swing beyond either end of the range without being engaged by a mechanical stop. Suitable stops shall be incorporated within the mechanism to prevent the sector from being disengaged from the pinion. The pointer shall be firmly attached to the mechanism, yet shall be readily adjustable.

3.4.4.3 Overpressure stop. An overpressure stop shall be provided on the gage, designed in such a manner as to restrain the mechanism rather than the pointer. The overpressure stop shall allow pointer travel beyond full scale to  $525 \pm 25$  pounds per square inch (psi). When extreme overpressure occurs, the stop shall not allow the pointer to move beyond the bottom center of the dial.

3.4.4.4 Hair springs. The hair springs shall be made from phosphor bronze.

3.4.4.5 Surge-pressure restriction. A restriction of 0.020-inch diameter shall be provided between the gage connection and gage mechanism.

3.4.5 Dial. The dial shall be fastened securely upon the frame of the mechanism by at least two screws in such a manner that it will not loosen or turn when the gage is vibrated.

3.4.5.1 Dial to cover glass distance. The distance between the dial and inside of the cover glass shall be the minimum practicable and shall not exceed 0.125 inch.

3.4.5.2 Face. The dials shall be as shown in figure 3 and table I for type I gages and figure 4 and table II for type II gages. The faces shall be sufficiently durable to withstand usage encountered in service.

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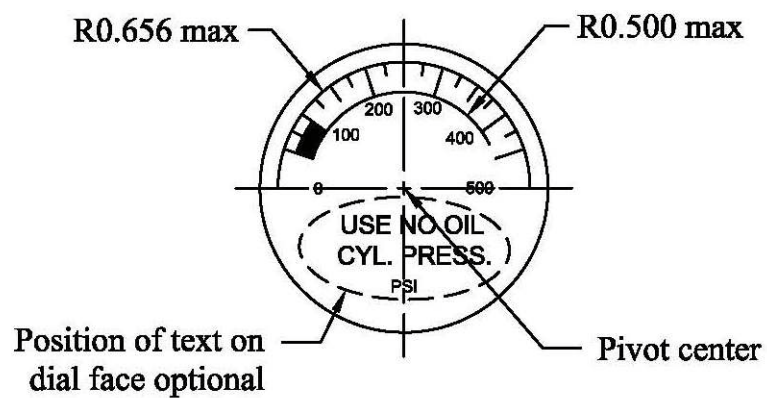


FIGURE 3. AN6026-1B dial detail.

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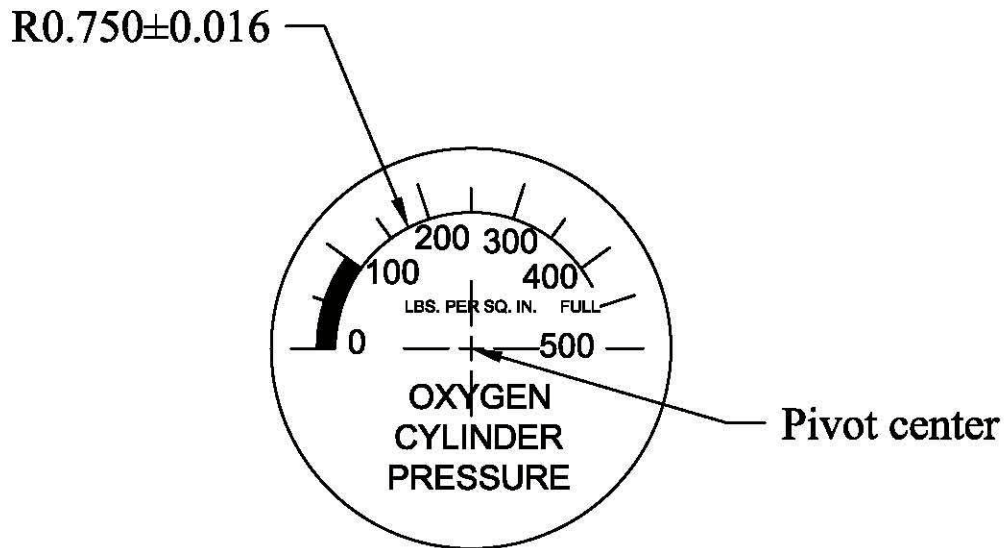
TABLE I. Details of type I gage.

Marking	Height or length (inch)	Width of line or graduation (inch $\pm 0.005$ )	Material or finish
Numerals 0, 100, 200, 300, 400, and 500	0.062	0.016	White equivalent to color chip 37875*
Graduations at 50, 75, 125, 175, 225, 275, 325, 375, and 425	0.062	0.016	White equivalent to color chip 37875*
Graduations at 150, 250, and 350	0.094	0.016	White equivalent to color chip 37875*
Lettering "psi"	0.062	0.016	White equivalent to color chip 37875*
Graduation at 450	0.156	0.031	Red equivalent to color chip 31136*
Graduations at 0, 100, 200, 300, 400, and 500	0.156 including arc	0.031	White equivalent to color chip 37875*
Arc from 50 to 100		0.094	White equivalent to color chip 37875*
Arc from 100 to 425		0.031	White equivalent to color chip 37875*
Lettering "Cyl Press"	0.094	0.021	White equivalent to color chip 37875*
Shaded part of pointer			White equivalent to color chip 37875*
Background of dial			Black equivalent to color chip 37038*
Unshaded part of pointer			Black equivalent to color chip 37038*

\*Color chips are identified in FED-STD-595.



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Dial marking dimensions and colors are given in table II.

FIGURE 4. AN6021-1B dial details.

TABLE II. Details of type II gage.

Marking	Height or length (inch)	Width of line or graduation (inch ±0.005)	Material or finish
Numerals 0, 100, 200, 300, 400, and 500	0.125	0.025	White equivalent to color chip 37875*
Graduations at 0 and 100	0.125 above arc	0.031	White equivalent to color chip 37875*
Graduations at 200, 300, 400, and 500	0.188 min. above arc	0.031	White equivalent to color chip 37875*
Graduation at 50	0.062 above arc	0.031	White equivalent to color chip 37875*
Graduations at 150, 250, and 350	0.125 above arc	0.031	White equivalent to color chip 37875*
Arc from 0 to 100		0.094	White equivalent to color chip 37875*
Arc from 100 to 425		0.031	White equivalent to color chip 37875*
Lettering "Oxygen cyl pressure"	0.125	0.021	White equivalent to color chip 37875*

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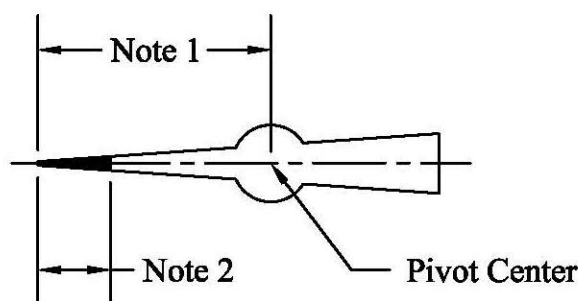
Shaded part of pointer			White equivalent to color chip 37875*
Graduation at 450	0.188 min.	0.031	Red equivalent to color chip 31136*
Lettering "Full"	0.062	0.016	White equivalent to color chip 37875*
Lettering "psi"	0.062	0.016	
Background of dial			Black equivalent to color chip 37038*
Unshaded part of pointer			Black equivalent to color chip 37038*

\*Color chips are identified in FED-STD-595.

3.4.5.2.1 Markings. Markings shall be sufficiently durable to withstand usage encountered in service.

3.4.5.2.2 Numerals. Numerals shall distinctly indicate the graduation to which each applies. Any confusion resulting in doubt as to which graduation the numeral applies shall be cause for rejection. When several numerals are used in one group, the space between the numerals shall be approximately 0.015 inch.

3.4.6 Pointers. The pointer for the type I gage shall be as shown in figure 5. The pointer for the type II shall be as shown in figure 6.

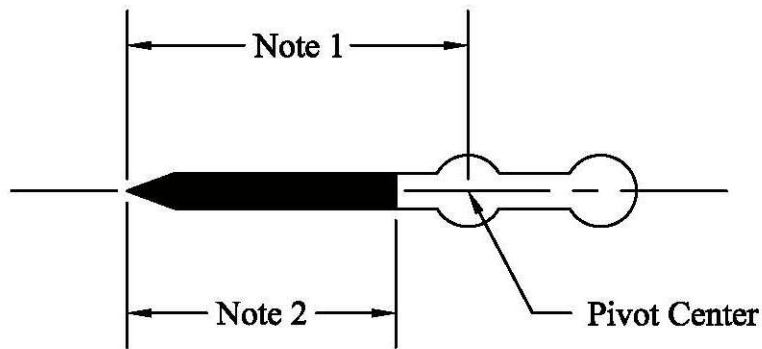


**Notes:**

- 1 - length shall be such to overlap 1/5 of the shortest graduation  $\pm 0.016$ .
- 2 - white tip shall be at least twice the length of the arc overlap but shall not extend onto any center boss.
- 3 - pointer shape is optional.
- 4 - thickness shall be not less than 0.010.
- 5 - all dimensions are in inches.

FIGURE 5. AN6026-1B pointer detail.

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**Notes:**

- 1 - length shall be such to overlap 1/5 of the shortest graduation  $\pm 0.016$ .
- 2 - white tip shall be at least twice the length of the arc overlap but shall not extend onto any center boss.
- 3 - Pointer shape is optional.
- 4 - thickness shall be not less than 0.010.
- 5 - all dimensions are in inches.

**FIGURE 6. AN6021-1B pointer detail.**

3.4.7 Cover glass. The cover glass shall be clear and free from flaws that will affect the readability of the gage.

3.4.7.1 Type I. The cover glass for the type I gage shall be fabricated from 0.100-inch plastic conforming to finish A of MIL-PRF-5425.

3.4.7.2 Type II. The cover glass for the type II gage shall conform to MIL-G-81704. Physical size and tolerances shall be as specified in the contract (see 6.2).

3.4.8 Snap rings. Snap rings, or any other means suitable to the procuring activity, shall be used to hold the cover glass in the case. Means shall be provided to permit easy removal of the cover glass without breakage.

3.4.9 Mounting nuts (type II only). Each mounting lug shall be fitted with a self-locking threaded nut, as specified on the applicable drawing.

3.4.10 Contractor-furnished equipment (type II only). The contractor shall furnish sufficient mounting screws for installing the type II gage. The screws shall be No. 6-32 roundhead, brass machine screws of sufficient length for mounting on a panel 0.188 inch thick. They shall have a durable dull black finish.

3.5 Interchangeability. All parts having the same manufacturer's part number shall be directly and completely interchangeable with each other with respect to installation and

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performance. Changes in manufacturer's part numbers shall be governed by the drawing number requirements of MIL-STD-31000.

3.6 Finish. Protective coatings and finishes that will crack, chip, or scale during normal service life or owing to extremes of atmospheric conditions, shall not be used.

3.7 Dimensions. Type I gages shall conform to the dimensions shown in figures 1, 3, and 5. Type II gages shall conform to the dimensions shown figures 2, 4, and 6.

3.8 Weight.

3.8.1 Type I. The maximum weight of the type I gage shall not exceed 0.18 pound.

3.8.2 Type II. The maximum weight of the type II gage shall not exceed 0.33 pound.

3.9 Performance.

3.9.1 High temperature. The gage shall function properly at a temperature of 160 °F (see 4.4.2.1).

3.9.2 Low temperature. The gage shall function properly to a temperature as low as -65 °F (see 4.4.2.2).

3.9.2.1 Vibration. The gage shall be capable of operating while being vibrated at a double amplitude of 0.18 to 0.20 inch at a frequency varying from 500 to 2,500 cycles per minute (cpm) while being maintained at a temperature of -65 °F (see 4.4.2.2).

3.9.3 Seasoning. The gage shall function satisfactorily after being subjected to the seasoning test (see 4.4.2.3).

3.9.4 Overpressure. The gage shall function satisfactorily after being subjected to the overpressure test (see 4.4.2.4).

3.9.5 Cold resistance. The pointer shall move smoothly through the range without damage to the gage while being exposed to a temperature of -85 °F (see 4.4.3.1).

3.9.6 Sand and dust. The gage shall function satisfactorily after being subjected to the sand and dust test (see 4.4.3.3).

3.9.7 Humidity. The gage shall function satisfactorily after being subjected to the humidity cycling test (see 4.4.3.4).

3.9.8 Leaks. The gage shall not leak after completion of all the above performance tests.

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3.9.9 Mounting nuts. The nuts for the type II gage shall not pull from the case when subjected to an axial load of 25 pounds applied in such a manner as to tend to pull the nut out of the lug toward the rear of the case.

3.9.10 Mounting lugs. The mounting lugs for the type II gage shall withstand a load of 175 pounds for 1 minute without damage.

3.10 Identification of product.

3.10.1 Nameplates.

3.10.1.1 Type I. The nameplate for the type I gage shall conform to MIL-STD-130. It shall be securely attached to the instrument case and contain the following information:

AN6026-1B  
Manufacturer's name or trademark

3.10.1.2 Type II. The nameplate for the type II gage shall conform to MIL-STD-130. It shall be securely attached to the instrument case and contain the following information:

AN6021-1B  
Manufacturer's name or trademark

3.10.2 Warning note (type II only). A decalcomania or other suitable material marked with 0.125-inch high letters reading "USE NO OIL" shall be attached to the case.

4. VERIFICATION

4.1 Classification of inspections. The inspection and testing of the gages shall be classified as follows:

- a. First article inspection (see 4.3).
- b. Conformance inspection (see 4.4).

4.2 Test conditions.

4.2.1 Atmospheric pressure and temperature. Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of Hg and a temperature of 77 °F. When tests are made with ambient pressure or temperature substantially different from the above values, proper allowance shall be made for the difference from the specified conditions.

4.2.2 Gas. The high-pressure gas used in the testing of the gages shall be oxygen conforming to type I, grade A of BB-O-925, or water-pumped nitrogen conforming to A-A-59503, or water-pumped air equivalent in dryness to nitrogen in accordance with A-A-59503.

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4.2.3 Tapping. Unless otherwise specified, the instrument shall be tested in normal vertical operating position and shall be lightly tapped before a test reading is taken.

4.2.4 Vibration. Whenever vibration is specified, it shall be at any desired frequency between 300 and 3,000 cpm and at a double amplitude of 0.018 to 0.020 inch.

4.3 First article inspection. When a first article inspection is required, it shall undergo all of the tests specified in 4.4. The presence of any defect shall be cause for rejection of the first article.

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-STD-1916 and shall consist of individual tests (see 4.4.1) for each gage produced, as well as sampling plan A tests (see 4.4.2) or sampling plan B tests (see 4.4.3) as specified (see 6.2).

4.4.1 Individual tests. Each gage shall be subjected to the following tests.

4.4.1.1 Examination of product. Each gage shall be examined to determine conformance with this specification with respect to materials, design, construction, and workmanship.

4.4.1.2 Leaks. Following completion of all the sampling tests, the gage shall be subjected to a pressure of at least 500 psi. This pressure shall be locked in the gage and the supply disconnected as close to the gage as practicable. The hand shall then be observed for deviation from the original pressure setting. Any drop of pressure that can be attributed to leaks in the gage will be cause for rejection.

4.4.1.3 Scale error at room temperature. The gage shall be tested for scale error at the points on the scale indicated by an asterisk in table III, and shall not exceed the corresponding tolerances. Tests shall be made by subjecting the gage to the pressures required to produce these readings, first with pressures increasing, then with pressures decreasing. With the pressures increasing, the pressure shall be brought up to, but shall not exceed, the pressures required to give the desired readings. With the pressures decreasing, the pressure shall be brought down to, but shall not fall below, the pressure required to give the desired readings. At the discretion of the procuring activity, gages may be tested for scale error at any additional point or points on the scale.

TABLE III. Scale error at room temperature.

Test pressure (psi)	Tolerance ( $\pm$ ) (psi)
0*	10
50	10
100*	15
150	15
200*	25
250	25
300*	25
350	25

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400*	25
450	25
500	25

\*Test points.

4.4.1.4 Friction. The gage shall be tested for friction at all points indicated by an asterisk in table III, beginning with the second asterisk point, and the specified tolerances shall not be exceeded. The pressure shall be increased in order to bring the pointer approximately to the desired reading and then held constant while two readings are taken, the first before the gage is tapped, and the second after the gage is tapped. The pointer shall move smoothly while the pressure is varied uniformly without vibration of the gage. This test may be combined with the test for scale error at room temperature.

4.4.2 Sampling plan A tests. Sampling plan A tests are in addition to the individual tests and shall include the tests specified in 4.4.2.1 through 4.4.2.4. Unless otherwise specified (see 6.2), the manufacturer, in accordance with MIL-STD-1916, shall select the type of sampling plan (attribute, variable, or continuous). The sample size shall be selected in accordance with verification level I of MIL-STD-1916.

4.4.2.1 High temperature operation. The gages shall be subjected to a temperature of 160 °F for a period of 3 hours. The gages shall be subjected to the individual tests specified in 4.4.1, while at the high temperature. The readings observed for the scale error at room temperature and friction tests shall not differ from the individual test readings by more than  $\pm 25$  psi.

4.4.2.2 Vibration and low temperature. The gages shall be subjected to a temperature of -65 °F and subjected to vibration for a period of 3 hours on a suitably designed vibration stand, duplicating as nearly as practicable an actual installation. The vibration shall be in any plane with respect to the instrument with a double amplitude of from 0.018 to 0.020 inch and frequency of 500 to 2,500 cpm. After the 3-hour period of vibration, and while the gages are still being vibrated at the specified temperature, they shall be tested for scale errors as described in the scale error at room temperature test specified in 4.4.1.3. The readings shall not differ from the individual test readings by more than  $\pm 25$  psi.

4.4.2.3 Seasoning. The gage shall be subjected to 300 applications of pressure from 0 to 500 psi. Not less than 1 hour later, the gage shall be tested for scale error and friction as specified in 4.4.1.3 and 4.4.1.4. The readings obtained after the applications of the differential pressure shall not differ from those obtained in the individual tests by more than  $\pm 10$  psi.

4.4.2.4 Overpressure. The gage shall be subjected to a pressure of at least 1,000 psi for a period of 10 minutes. Not less than 1 hour after the release of the overpressure, the gage shall be subjected to the individual tests specified in 4.4.1. The readings obtained in the scale error at room temperature and friction tests shall not differ from those obtained in the original individual tests by more than  $\pm 25$  psi.

4.4.3 Sampling plan B tests. Sampling plan B tests are in addition to the individual and sampling plan A tests and shall include the tests specified in 4.4.3.1 through 4.4.3.6. Unless

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otherwise specified (see 6.2), the manufacturer, in accordance with MIL-STD-1916, shall select the type of sampling plan (attribute, variable, or continuous). The sample size shall be selected in accordance with verification level I of MIL-STD-1916.

4.4.3.1 Low temperature and cold resistance. The gages shall be placed in a chamber maintained at a temperature of  $-85^{\circ}\text{F}$  for a period of 48 hours. At the end of this period, and while still at that temperature, the gages shall be tested for operation to determine that the pointers move smoothly throughout the entire range of travel and to determine that no component parts have been damaged. The temperature shall then be raised to  $-65^{\circ}\text{F}$  for a period of not less than 24 hours, after which time and while at this temperature, the gages shall be tested for scale error and friction as specified in 4.4.1.3 and 4.4.1.4. The readings obtained shall not differ from those obtained in the individual tests by more than  $\pm 50$  psi. Following the return to room temperature, the gages shall be subjected to the individual tests specified in 4.4.1.

4.4.3.2 High temperature. The gages shall be subjected to a temperature of  $160^{\circ}\text{F}$  for a period of 24 hours. The gages shall then be subjected to the scale error at room temperature test specified in 4.4.1.3 while at high temperature and the readings observed shall not exceed the individual test readings by more than  $\pm 25$  psi. Following return to room temperature, the gages shall be subjected to the individual tests specified in 4.4.1. The gages shall then be examined for deterioration or damage caused by the high temperature exposure.

4.4.3.3 Sand and dust. The gages shall be mounted in any position and subjected to a sand spray for a period of 4 hours. The sand stream shall not directly impinge upon the gages, and the flow of sand shall be approximately 2.5 pounds per hour. Four pounds of foundry molding sand, or equivalent, which has passed through 150-mesh screen, shall be used. The ambient temperature in the chamber shall be maintained at a temperature of  $160^{\circ}\text{F}$ . Each gage shall not contain more than 1 gram of sand at the end of the test.

4.4.3.4 Humidity cycling. One complete sample gage, mounted with the dial in a vertical position, shall be subjected to the following humidity cycling test. At the completion of the test, the gage shall be examined for collection of moisture in the interior of the case, for corrosion of metal parts, or for any other damage. A second sample gage, with case removed, shall be subjected to the humidity cycling and inspection for the same features shall be conducted with the exception of collection of moisture within the case. The gage shall then be placed in a chamber and kept for 6 hours at a temperature of  $150^{\circ}\text{F}$  and relative humidity of 95 percent. After the required time, the chamber shall be shut off and the gage shall be allowed to cool to room temperature for 18 hours in this atmosphere in which the humidity rises to 100 percent as the temperature decreases. Precaution shall be taken to prevent dripping on the gage. The complete procedure shall be performed 15 times. The scale error at room temperature test specified in 4.4.1.3 shall again be performed at the completion of the cycles and the change in indication shall not exceed the initial scale error at room temperature test by more than  $\pm 25$  psi. There shall be no excessive corrosion of any of the components.

4.4.3.5 Mounting nuts. Each attached mounting nut of the completely assembled type II case shall have an axial load of 25 pounds applied in order to tend to pull the nut out of the lug toward the rear of the case. There shall be no loosening of the nut. A torque of 10 pound-inches



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shall then be applied and the rotation of the nut shall be limited by contact between a flat of the insert nut and the case.

4.4.3.6 Mounting lugs. The type II gage case, with the mechanism and cover glass removed, shall be so mounted in a suitable testing machine with the diameter of the case in a horizontal plane that the mounting lugs receive no added support. A suitable pin shall be inserted through the hole in the mounting nut and attached to a pull strap in the machine. A load of 175 pounds shall be applied to each lug for a period of 1 minute along the mounting hole axis and toward the front of the case. There shall be no fracture.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the inventory control point's packaging activity within the military department or defense agency, or within the military department's system command. Packaging data retrieval is available from the managing military department's or defense agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The pressure gage covered by this specification is intended for use in indicating the pressure in cylinders installed in low-pressure oxygen systems in aircraft.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type of gage (see 1.2).
- c. Specific issue of individual documents referenced (see 2.2.1 and 2.3).
- d. When a first article is required (see 3.1).
- e. Physical size and tolerance of cover glass (see 3.4.7.2).
- f. Required sampling plan tests A or B (see 4.4).
- g. Government specified sampling plan per MIL-STD-1916, if required (see 4.4.2 and 4.4.3).
- h. Packaging requirements (see 5.1).

6.3 Cross references. Parts with the above PINs are interchangeable as follows:

AN6026-1B, -1A and -1  
AN6021-1B, -1A and -1

MIL-DTL-6019E

6.4 Subject term (key word) listing.

bosses  
case  
face  
pointer  
scale  
AN6021  
AN6026

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army – AV  
Navy – AS  
Air Force – 99  
DLA – GS

Preparing activity:

DLA – GS1  
(Project 6685-2010-003)

Reviewers:

Army – MI  
Air Force – 71

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at <https://assist.daps.dla.mil/>.