

Code Ident
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NWC 2419
17 July 1986

NAVAL WEAPONS CENTER

CRITICAL ITEM PRODUCT FABRICATION

SPECIFICATION

FOR

BSU-85/B AIR INFLATABLE RETARDER

This specification consists of pages i to ii
and pages 1 through 45 inclusive.

Approved:

By direction

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SPECIFICATION

FOR

BSU-85/B AIR INFLATABLE RETARDER

1. SCOPE

1.1 Scope. This specification establishes the requirements for manufacture and acceptance of the BSU-85/B Air Inflatable Retarder critical item, referred to herein as the "retarder".

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

Military

MIL-A-8591

Airborne Stores, Suspension
Equipment and Aircraft-Store
Interface (Carriage Phase); General
Design Criteria for.

MIL-STD-105

Sampling Procedures and Tables for
Inspection by Attributes.

STANDARDS

Military

| | |
|------------------|---|
| MIL-STD-130 | Identification Marking of U.S. Military Property. |
| MIL-STD-810 | Environmental Test Methods and Engineering Guidelines. |
| MIL-STD-1168 | Ammunition Lot Numbering. |
| MIL-STD-1235 | Single and Multiple Continuous Sampling Procedures and Tables for Inspection by Attributes. |
| MIL-STD-1323-320 | Palletizing Procedures. |
| MIL-STD-1520 | Corrective Action and Disposition System for Nonconforming Material. |
| MIL-STD-45662 | Calibration System Requirements. |

DRAWINGS

Naval Air Systems Command
(Code Ident 30003)

| | |
|-----------|---|
| 1320AS194 | Interface Gauge. |
| 1634AS100 | Fin, Retarder, Air Inflatable, BSU-85/B. |
| 1634AS300 | Shipping and Storage Container Fin CNU-419/E. |

2.1.2 Other Government documents. The following other Government documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DOCUMENTS

| | |
|--------|---|
| AD 464 | Quality Assurance Provisions on Drawings; Preparation and Use of. |
|--------|---|

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

3. REQUIREMENTS

3.1 Item description. The BSU-85/B Air Inflatable Retarder (Drawing 1634AS100) shall consist of a low-drag stabilizer structure assembly (Drawing 1634AS200), a deployable retarder assembly (Drawing 1634AS510), and a lanyard assembly (Drawing 1634AS410).

3.1.1 Government furnished property list. Unless otherwise specified in the contract or purchase order (see 6.2.1), the Government shall provide the following:

- a. MK 3 Mod 0 steel pallets in accordance with MIL-STD-1323-320 (one pallet per six retarders ordered).
- b. One special interface gauge (Drawing 1320AS194).

3.2 Characteristics.

3.2.1 Performance.

3.2.1.1 Latch release force. With a preload of 10 pounds $\pm 1/4$ pound applied to the aft cover, the pull force required to extract both the safety latch pin and the lanyard clip shall be not less than 30 pounds and not greater than 55 pounds.

3.2.1.2 Cover release. When the safety latch pin and lanyard clip are both released in accordance with 3.2.1.1, the aft cover shall be completely released from the latches and the retainers such that both compression springs (Drawing 809214) are compression-free.

3.2.1.3 Retarder extraction. Following the release and aft movement of the cover in accordance with 3.2.1.2, the fabric retarder shall be able to be extracted until the burble fence is completely out of the canister using forces no greater than 25 pounds.

3.2.1.4 Deployment times (see 6.4). At altitudes from surface to 7000 feet mean sea level (MSL), the retarder shall meet all of the requirements specified in Table I and remain inflated throughout each bomb trajectory.

TABLE I. Deployment times.

| Release airspeed, KCAS | Maximum deployment time, sec |
|------------------------|------------------------------|
| 250 | 1.00 |
| 300 | 0.80 |
| 400 | 0.65 |
| 500 | 0.50 |
| 600 | 0.43 |
| 650 | 0.40 |

3.2.1.4.1 Reliability. The retarder shall meet the requirements of 3.2.1.4 with a reliability of 0.95, demonstrated at a 90-percent confidence level.

3.2.2 Environmental conditions. After an unpackaged retarder is exposed to the environments specified in 3.2.2.1 through 3.2.2.9, the retarder shall be capable of meeting the following requirements:

- a. The retarder shall not exhibit any structural damage or broken parts.
- b. The following items shall remain intact and shall be securely attached to the canister: safety latch (Drawing 809210); latch (Drawing 809212); aft cover assembly (Drawing 809218); lanyard assembly (Drawing 1634AS410); wedges (Drawing 1634AS220); and fins and doublers (Drawing 1634AS210).
- c. The retarder shall not exhibit any cracks in welds joining the ring to the forward half cones (Drawing 1634AS210), and the bulkhead (Drawing 809201) to the forward half cones and aft housing (Drawing 809253).
- d. With a preload of 10 pounds applied to the aft cover, the force required to extract the lanyard assembly and release the latch mechanism shall be no greater than 65 pounds. Upon release of the latch mechanism, the aft cover shall be released completely and the force required to extract the fabric retarder shall be no greater than the forces shown in Table II.

TABLE II. Extraction force requirement.

| Force (pounds) | Cover displacement (inches) |
|----------------|-----------------------------|
| 10 | 3 |
| 20 | 5 |
| 30 | 7 |
| 40 | 12 |
| 50 | 20 |

3.2.2.1 Temperature and humidity. The retarder shall show no detrimental effects and shall meet the performance requirements specified herein after exposure to humidity cycling conditions with temperatures ranging from -80 to 160°F and relative humidity from 95 to 100 percent for a minimum of 240 hours.

3.2.2.2 Mechanical shock. The retarder shall show no detrimental effects and shall meet the performance requirements specified herein after subjection to 18 shocks (three in each direction of three orthogonal axes) of 20 g amplitude with a terminal sawtooth waveform of 11 ms duration.

3.2.2.3 Random vibration. The retarder shall withstand random vibration in accordance with the power spectral density of Figure 1, for not less than 1 hour in each of three orthogonal axes.

3.2.2.4 Salt fog. The retarder shall show no detrimental effects when exposed to salt laden air with 5 percent concentration for a minimum of 48 hours.

3.2.2.5 Rain. The retarder shall show no detrimental effects and shall meet the performance requirements specified herein after exposure to rain conditions with a maximum rate of rainfall of 5 in/hr and a wind velocity of 40 mph for a minimum of 15 minutes.

3.2.2.6 Acceleration. The retarder shall withstand acceleration forces defined in Figure 2.

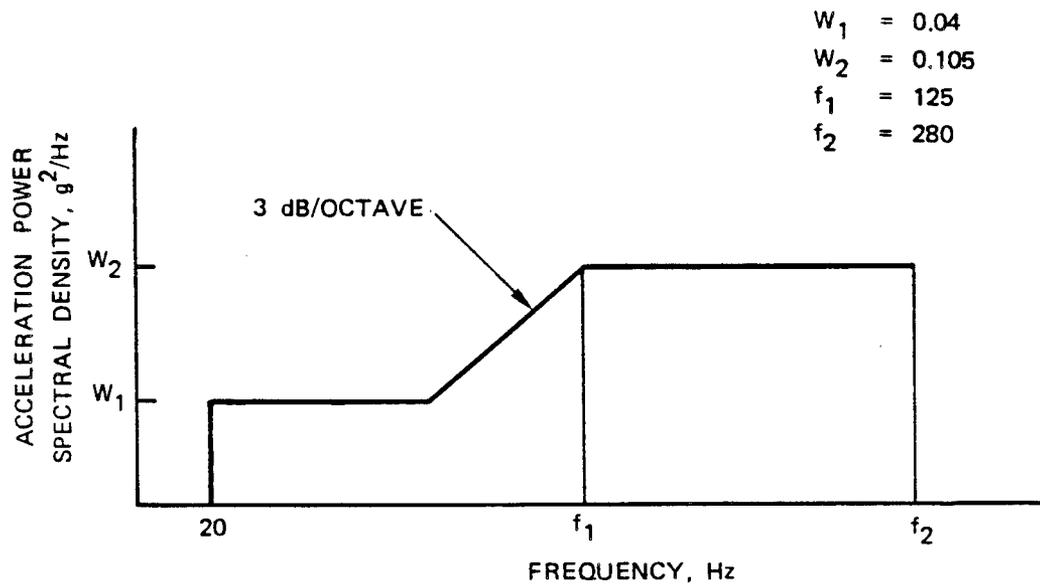


FIGURE 1. Vibration spectrum.

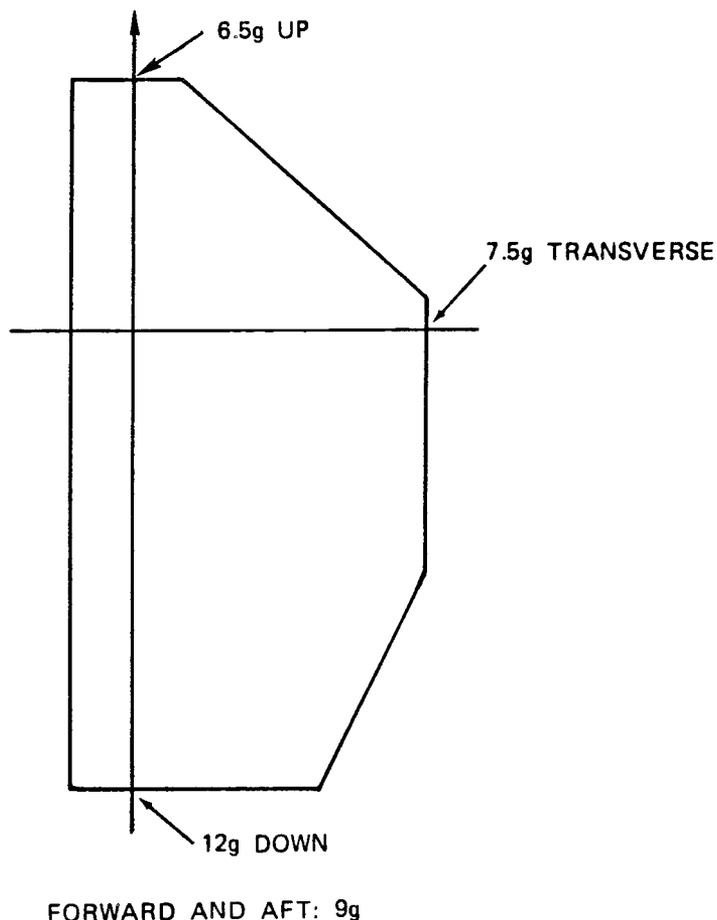


FIGURE 2. Acceleration forces for wing mounted BSU-85/B.

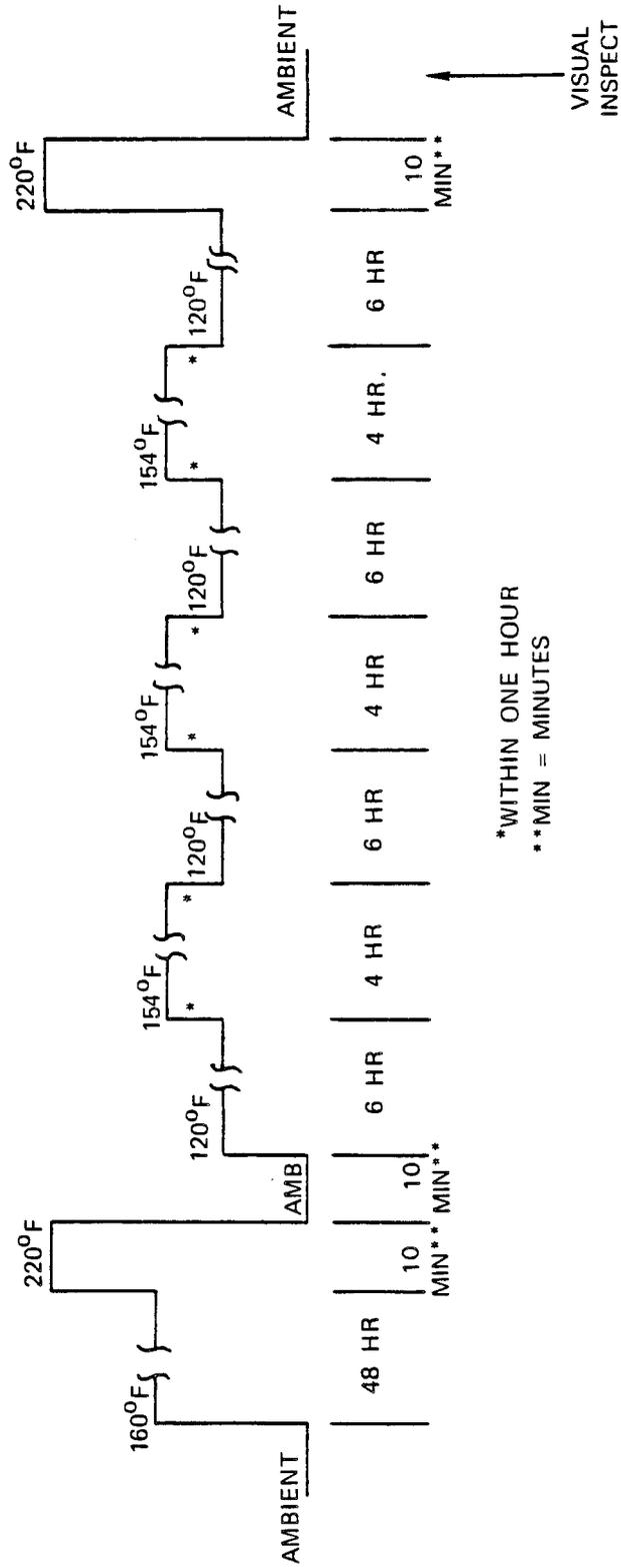
3.2.2.7 High temperature. The retarder shall show no detrimental effects after high temperature cycling as shown in Figure 3.

3.2.2.8 Altitude. The retarder shall show no detrimental effects after subjection to a pressure altitude of 50,000 feet.

3.2.2.9 Temperature shock. The retarder shall withstand temperature extremes of -65 and 160°F for a minimum of 4 hours at each extreme as shown in Figure 4.

3.3 Design and construction.

3.3.1 Production drawings. The retarder shall meet all of the requirements of and be fabricated and assembled in accordance with Drawing 1634AS100 and all associated documents.



*WITHIN ONE HOUR
 **MIN = MINUTES

FIGURE 3. High temperature.

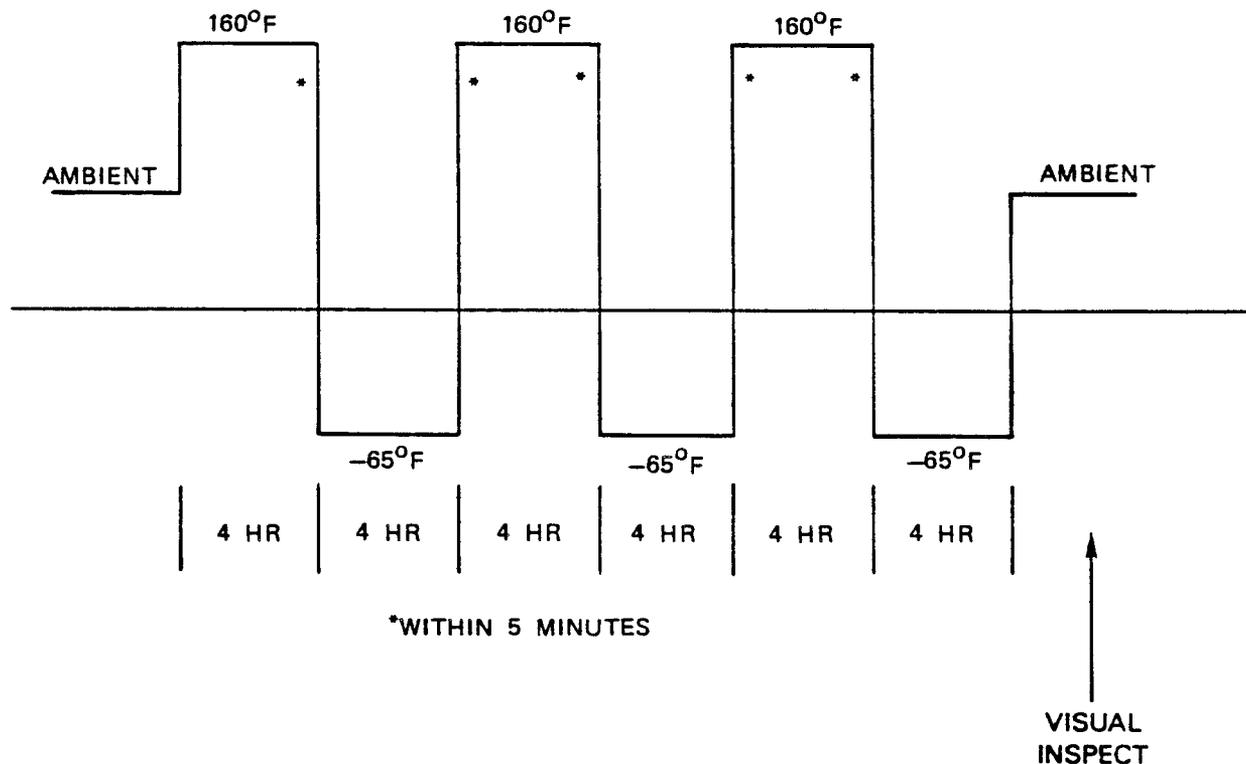


FIGURE 4. Temperature shock.

3.3.2 Standards of manufacture.

3.3.2.1 Product cleanliness. All parts and assemblies shall be free of dirt, chips, grease, oil, flux, residues, chemical deposits, or other foreign matter. Cleaning processes and cleaning agents shall not damage or contaminate parts or assemblies.

3.3.3 Identification and marking. The retarder shall be identified and marked in accordance with MIL-STD-130.

3.3.3.1 Lot identification. Lot numbering of the stabilizer/retarder (Drawing 1634AS100) and retarder assembly (Drawing 1634AS510) shall be in accordance with MIL-STD-1168.

3.4 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.4 and 6.3). The first article sample shall be manufactured in accordance with 3.3 and 3.5, using the same materials, equipment, processes, and procedures as will be used in production. If retarders or stabilizer structures from more than one manufacturing facility are to be used, an additional sample shall be furnished for each retarder or stabilizer source, unless otherwise specified in the contract (see 6.2.1).

3.5 Workmanship. The retarder shall be fabricated and finished as specified herein.

3.5.1 Metal parts and assemblies. All parts and assemblies shall conform to the applicable engineering drawings. Parts and assemblies shall be sound, of uniform quality and condition and free from seams, cracks, nicks, warp, obstructions, inclusions, scratches, dents, scrapes, gouges, holes, voids, porous areas, distortions, laps, pits, rust, corrosion, or other injurious defects or blemishes.

3.5.2 Fabric sewn parts and assemblies. All fabric sewn parts and assemblies shall conform dimensionally to the applicable engineering drawing with pattern construction of the proper size and proper orientation of the warp and fill threads. The sewn seams shall be properly fabricated with regard to the matching of the seam centerlines, seam fold lines, and seam sole lines. All sewn lines shall have the proper edge distance, row spacing and backstitching. There shall be no visible evidence of a dull, bent, or snagged needle, skipped stitches, or improper thread tension. Machine stitching shall be uniform, with the proper stitch formation, proper number of stitches per inch, and proper thread size.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility of inspection. Unless otherwise specified in the contract or purchase order (see 6.2.1), the contractor shall be responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the contractor may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure that supplies and services conform to prescribed requirements.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspections (see 4.4).
- b. Quality conformance inspections (see 4.5).
- c. Lot acceptance (see 4.5.1).

4.3 Inspection conditions.

4.3.1 Calibration and maintenance. All test equipment shall be calibrated and maintained in accordance with a system meeting the provisions of MIL-STD-45662.

4.3.2 Documentation.

4.3.2.1 Test plans and test reports. Unless otherwise specified in the contract or purchase order (see 6.2.2), test plans shall be approved by the contracting agency prior to commencement of testing and at the conclusion of testing, the contractor shall prepare a test report.

4.4 First article inspections. When specified in the contract or purchase order (see 6.3), a first article sample of 81 units (or quantities as specified in the contract) shall be subjected to the inspections specified in Table III, in the sequence shown (see Figure 5). Any unit which does not meet the specified requirements of Section 3 shall be counted as a failure.

4.5 Quality conformance inspections. Quality conformance inspections shall be performed as specified in Table IV to verify compliance with the requirements of Sections 3 and 5.

TABLE III. First article inspection quantities.

| Requirement | Test method | No. of sample units |
|------------------------------|--------------------|---------------------|
| 3.2.1.1, 3.2.1.2, 3.2.1.3 | 4.5.1.1 4.5.1.2 | 13 |
| 3.2.2 | 4.6 | 4 |
| 3.2.1.4, 3.2.1.4.1 | 4.7 | 77* |

* The following multilevel, binomial test plan may be used for the requirements of 3.2.1.4 and 3.2.1.4.1:

- a. 45 units tested: No failures-accept
- b. 77 units tested: (One) failure-accept
(Two) failures-reject

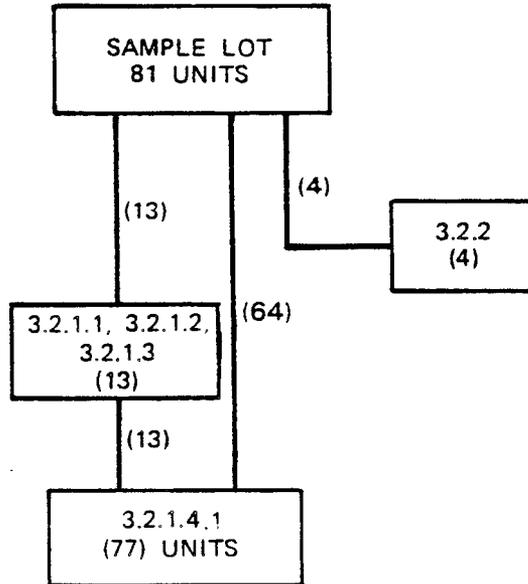


FIGURE 5. Flow diagram of first article inspection.

4.5.1 Lot acceptance tests. From each lot of items submitted for acceptance which have passed the examinations of 4.5.2.1, 4.5.2.2, and 4.8, a sample shall be selected in accordance with MIL-STD-105 for testing in accordance with the acceptance tests specified in Table IV. The AQL shall be 1.0. If any selected item fails to meet the requirements of 3.2.1.1, 3.2.1.2, or 3.2.1.3 the entire lot shall be inspected 100 percent for the failed requirement. After being tested and accepted, the sample items shall be repacked. A sample of the repacked items shall be randomly selected in accordance with Table V and tested in accordance with Table IV. After retest and acceptance, the retested items shall be repacked and returned to the lot. Failure to meet the requirements of Table IV shall cause rejection of the repacked units. Rejected units may be reworked (see 6.4) to meet requirements of Table IV and upon passing may be returned to the lot.

TABLE IV. Quality conformance inspections.

| Requirement | Test method | Type of verification | | |
|-------------|-------------|----------------------|-----|----------------|
| | | First article | QCI | Lot acceptance |
| 3.1 | N/A | N/A | N/A | N/A |
| 3.1.1 | N/A | N/A | N/A | N/A |
| 3.2.1.1 | 4.5.1.1 | X | N/A | X |
| 3.2.1.2 | 4.5.1.1 | X | N/A | X |
| 3.2.1.3 | 4.5.1.2 | X | N/A | X |
| 3.2.1.4 | 4.7 | X | N/A | N/A |
| 3.2.1.4.1 | 4.7 | X | N/A | N/A |
| 3.2.2 | 4.6 | X | N/A | N/A |
| 3.2.2.1 | 4.6 | X | N/A | N/A |
| 3.2.2.2 | 4.6 | X | N/A | N/A |
| 3.2.2.3 | 4.6 | X | N/A | N/A |
| 3.2.2.4 | 4.6 | X | N/A | N/A |
| 3.2.2.5 | 4.6 | X | N/A | N/A |
| 3.2.2.6 | 4.6 | X | N/A | N/A |
| 3.2.2.7 | 4.6 | X | N/A | N/A |
| 3.2.2.8 | 4.6 | X | N/A | N/A |
| 3.2.2.9 | 4.6 | X | N/A | N/A |
| 3.3.1 | 4.5.2 | X | X | N/A |
| 3.3.2.1 | 4.8 | X | X | N/A |
| 3.3.3 | 4.8 | X | X | N/A |
| 3.3.3.1 | 4.8 | X | X | N/A |
| 3.4 | 4.4 | X | N/A | N/A |
| 3.5 | 4.8 | X | X | N/A |
| 3.5.1 | 4.8 | X | X | N/A |
| 3.5.2 | 4.8 | X | X | N/A |
| 5.1 | 4.9 | N/A | X | N/A |

TABLE V. Verification of repacking.

| Sample size | Number of retests |
|-------------|-------------------|
| 1-25 | 1 |
| 26-50 | 2 |
| 51-75 | 3 |
| 76-100 | 4 |

4.5.1.1 Latches and cover release test. The unit shall be installed on a suitable test fixture as shown in Figure 6 with the aft cover assembly up. A test yoke assembly (see Figure 7) which has a method of measuring pull force shall be attached to the safety pin and lanyard clip. The following test shall be performed:

CAUTION: DO NOT DISTURB THE LANYARD ASSEMBLY OF THE TEST UNIT.

Using a suitable bracket and cable assembly, apply an extraction force of 10 pounds to the aft cover. Pull the lanyard clip aft (up) to remove all slack from the lanyard assembly and remove the safing pin and flag assembly from the latch depressor. Apply an extraction force on the test fixture yoke assembly until the safety latch pin has been extracted. Measure the force required. Continue to apply an extraction force on the test yoke until the lanyard clip has been extracted. Measure the force required. If the forces required to extract the safety latch pin or the lanyard clip do not meet the requirements of 3.2.1.1, the item shall be rejected. Following extraction of the lanyard clip, if the cover has not moved aft sufficiently for both springs to be compression free in accordance with 3.2.1.2, the item shall be rejected.

4.5.1.2 Retarder extraction test. Following the latches and cover release test (4.5.1.1), with the retarder remaining on the test fixture (see Figure 6) and the cover restrained in its original position with the springs compressed, the extraction force on the aft cover shall be increased to 25 pounds. When the cover restraint is removed, the item shall be rejected if the fabric retarder is not extracted until the burble fence is out of the canister in accordance with 3.2.1.3.

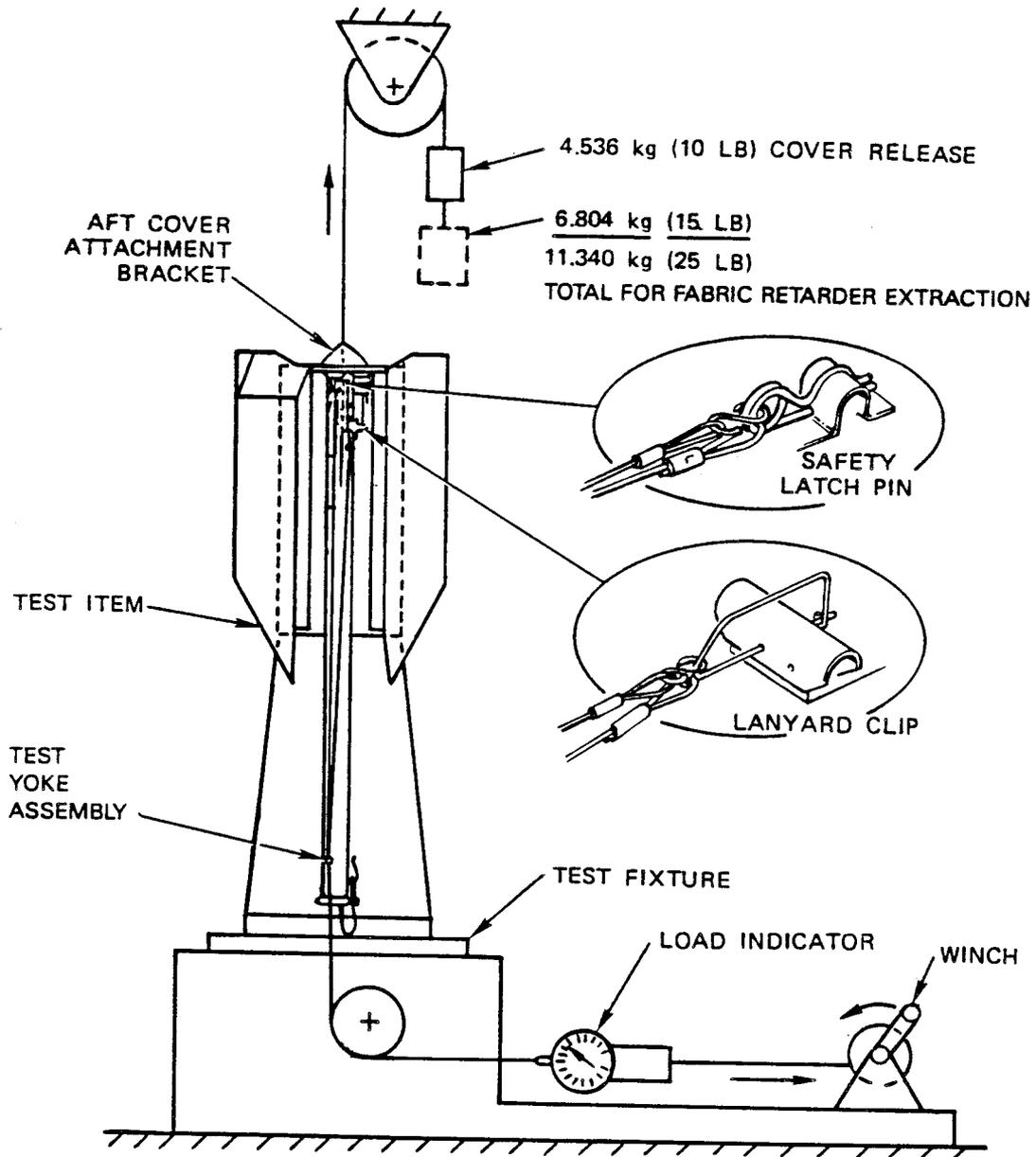


FIGURE 6. Acceptance test.

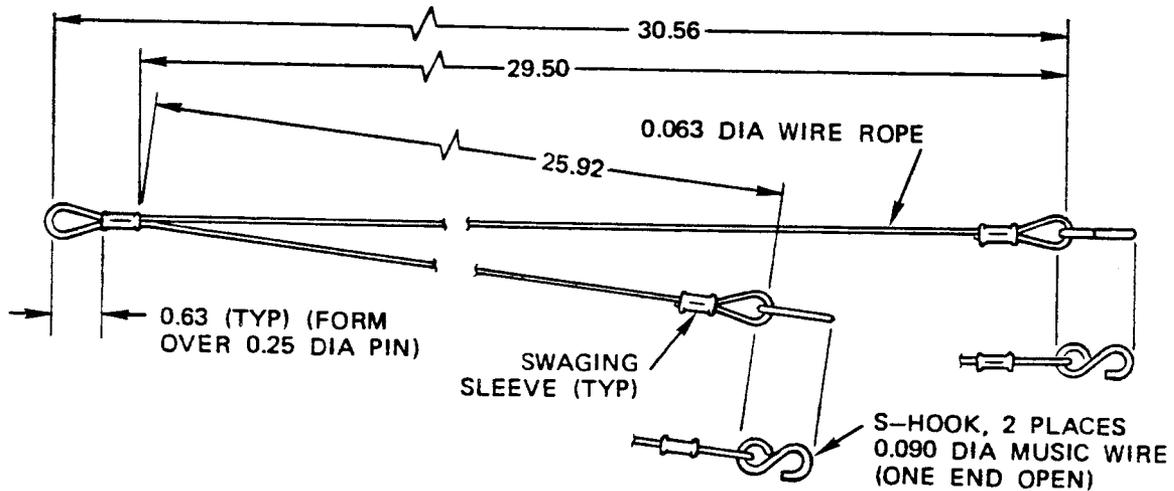


FIGURE 7. Test yoke assembly.

4.5.2 Classification of characteristics.

4.5.2.1 Air Force drawings. Applicable BSU-49/B and/or BSU-50/B Air Force drawings which are common to the BSU-85/B shall have examinations conducted in accordance with this paragraph. Unless otherwise specified herein, examinations to verify the requirements of 3.3.1 and 3.5 shall be performed on inspection lots of components, subassemblies, and assemblies formed in accordance with MIL-STD-105, general inspection level II, single sampling plan, normal inspection except that continuous sampling plans in accordance with MIL-STD-1235 may be used if approved by the contracting agency. The Acceptable Quality Levels (AQL) shall apply to individual characteristics in accordance with classification of characteristics listed in the Appendix. Critical characteristics shall be inspected 100 percent. Under "Inspection Method" the designation of "Gauge" shall not preclude the use of standard measuring instruments (SMI) when the characteristic to be measured can be verified with standard inspection techniques. When magnetic particle inspection is specified, detection of a crack shall make 100 percent lot inspection mandatory. Cracked parts must be rejected.

4.5.2.2 Navy drawings. Unless otherwise specified herein, examinations to verify the requirements of 3.3.1 and 3.5 shall be performed on inspection lots of components, subassemblies, and assemblies in accordance with AD 464 (see Appendix).

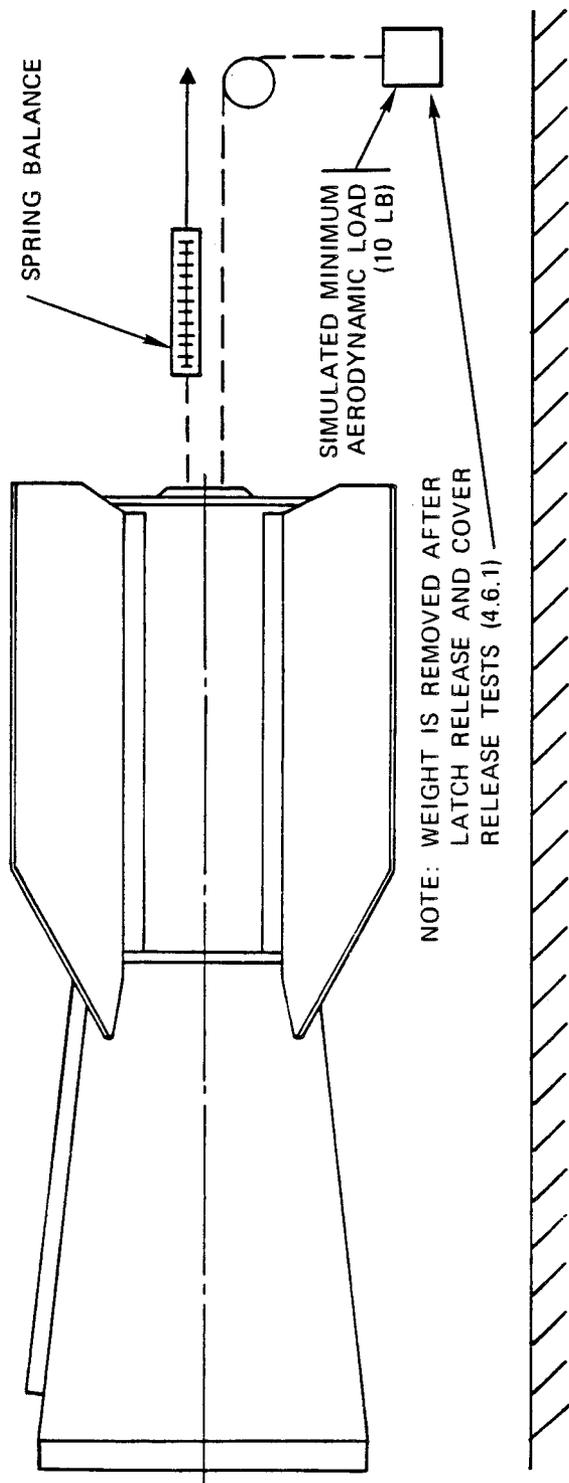


FIGURE 8. Post environmental extraction test fixture.

4.5.3 Certificate of compliance. At the time each completed lot of the item is submitted to the Government for acceptance, the contractor shall have available the following information accompanied by a certificate which attests that the information provided is correct and applicable to the items of the lot being submitted.

- a. A statement that the items of the lot comply with all quality assurance provisions of the approved current written description of the system.
- b. Results obtained for all inspections performed.
- c. Drawings, specification number, and date, with identification and date of changes, deviations and waivers.
- d. Certificates of compliance on all material purchased by the contractor when such material is controlled by specifications referenced in any of the contractual documents.
- e. Date submitted.

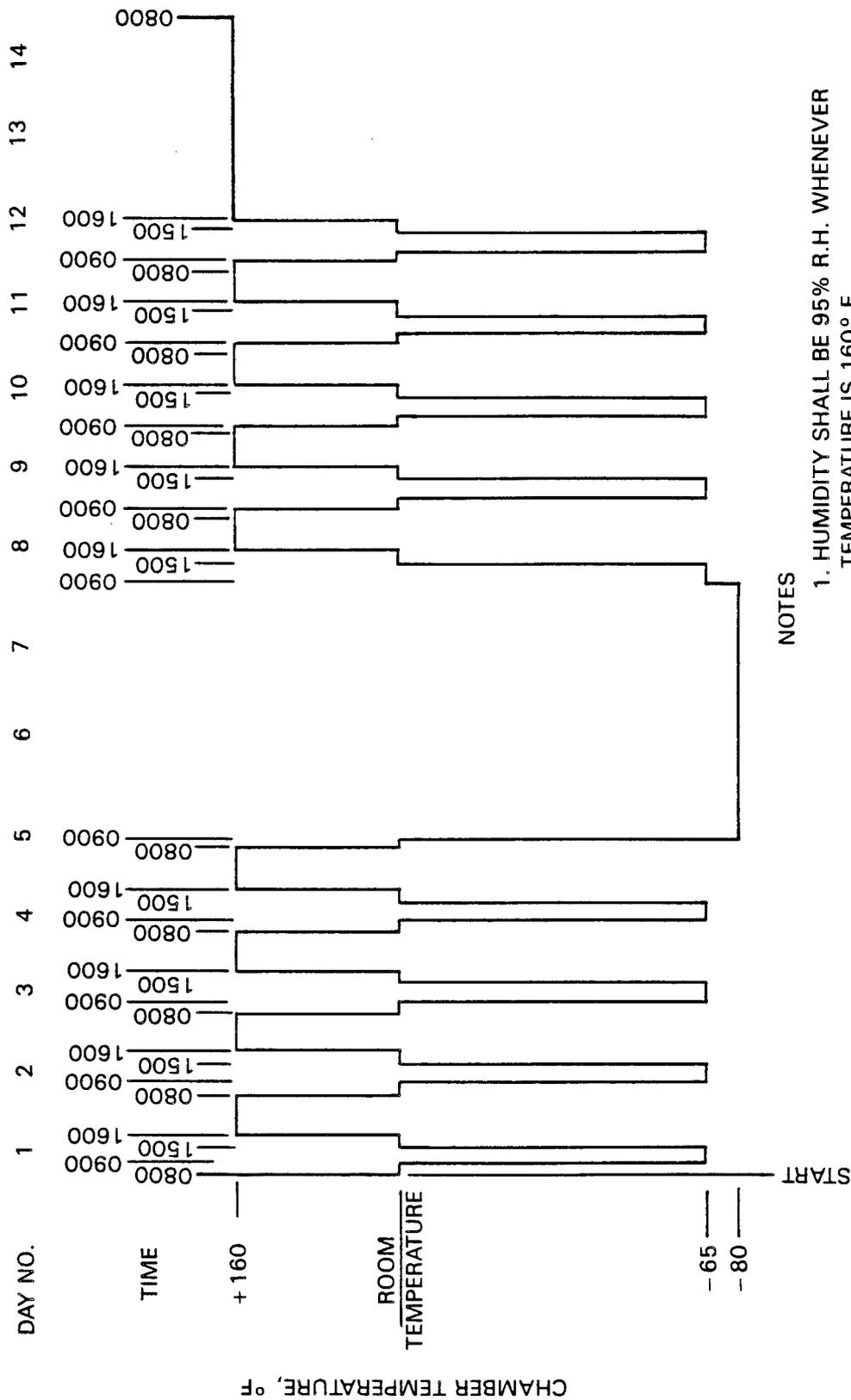
The certificate shall be signed by a responsible agent of the certifying organization. The initial certificate submitted shall be substantiated by evidence of the agent's authority to bind his principle. Substantiation of the agents authority shall not be required with subsequent certificates unless, during the course of the contract, this authority is vested in another agent of the certifying organization.

4.6 Environmental tests. The four units selected in accordance with 4.4 shall be subjected to the environmental test sequences of Table VI, with one unit allocated to each of the sequences. Following each test sequence, the unit shall be inspected for compliance with 3.2.2. Any damage which resulted from failure to comply with 3.3.1 or 3.2.2 shall be cause for rejection. After all environmental tests are performed and after completion of final inspection, the items shall be subjected to the static function test of 4.6.1.

4.6.1 Static function test. The unit shall be installed on a suitable test fixture (see Figure 8) in the horizontal position. Using a suitable bracket and cable assembly, a preload force of 10 pounds shall be applied to the aft cover. The lanyard clip shall be pulled aft to remove all slack from the lanyard. The safing pin and flag shall be removed. An extraction force shall be applied to the lanyard assembly until the safety latch pin and lanyard clip are extracted. If the extraction forces required to remove the safety latch pin and lanyard clip do not meet the requirements of 3.2.2.d, the item shall be rejected. Following extraction of the safety latch pin and lanyard clip, the fabric retarder shall be fully extracted. During extraction of the fabric retarder, the extraction forces shall be measured with a spring balance, as shown in Figure 8. The cover and fabric retarder shall be supported during the extraction test to minimize snagging of any friction between the fabric retarder folds and the aft lip of the canister. If extraction forces are greater than the forces listed in Table II, the item shall be rejected.

TABLE VI. Environmental tests.

| Sequence | Condition | Test method | Remarks |
|----------|------------------------|---|--|
| A | Temperature & humidity | MIL-STD-810, Method 507.2, Procedure II | 10 days see Figure 9 |
| | Shock | MIL-STD-810, Method 516.3, Procedure I, Fig. 516.3-4 | P = 20 g, D = 11 ms 18 shocks total |
| | Vibration | MIL-STD-810, Method 514.3, Category 7A, Fig. 514.3-30 | $f_1 = 125$ Hz, $f_2 = 280$ Hz $W_1 = 0.04$ g ² /Hz, $W_2 = 0.105$ g ² /Hz 60 min/axis; see Figure 1. |
| B | Salt fog | MIL-STD-810, Method 509.2, Procedure I | 48 hours |
| | Rain | MIL-STD-810, Method 506.2, Procedure I | 40 mph wind ON at 5 min, OFF at 20 min; 5 in/hr for 5 min, 2 in/hr for 15 min. Four directions perpendicular and parallel to centerline. |
| | Acceleration | MIL-A-8591, Fig A-3 Flight and catapult for aircraft | See Figure 2 |
| | High temperature | MIL-STD-810, Method 501.2, Procedure II | Altered in accordance with Figure 3. |
| C | Temperature & humidity | MIL-STD-810, Method 507.2, Procedure II | 10 days see Figure 9 |
| | Shock | MIL-STD-810, Method 516.3, Procedure I, Fig. 516.3-4 | P = 20 g, D = 11 ms 18 shocks total |
| D | Altitude | MIL-STD-810, Method 500.2, Procedure II | Altered to 50,000 feet at -65°F for 1 hour. The rate of pressure change shall be the maximum obtainable by the chamber. |
| | Temperature shock | MIL-STD-810, Method 503.2 | Altered in accordance with Figure 4. |
| | Vibration | MIL-STD-810, Method 514.3, Category 7A, Fig. 514.3-30 | $f_1 = 125$ Hz, $f_2 = 280$ Hz $W_1 = 0.04$ g ² /Hz, $W_2 = 0.105$ g ² /Hz 60 min/axis; see Figure 1. |



NOTES

1. HUMIDITY SHALL BE 95% R.H. WHENEVER TEMPERATURE IS 160° F
2. CHANGES SHALL BE MADE WITHIN 15 MINUTES OF THE TIMES INDICATED

FIGURE 9. Temperature and humidity cycle - two chamber method.

4.7 Verification of deployment times. To determine conformance with 3.2.1.4, flight tests will be performed by the Government in accordance with a Government furnished Test Plan unless otherwise specified in the contract or purchase order (see 6.2.1). All units will be released in the high drag mode with the shear link of the lanyard system secured to the aircraft or bomb rack with a retention force of not less than 220 pounds. Releases from the aircraft will be made at altitudes from surface to 7000 feet MSL, at airspeeds from 250 KCAS to the maximum allowable for each aircraft. Release angles will be restricted to the range +2 to -45 degrees.

4.8 Visual examination. The retarder shall be visually examined to verify that marking and workmanship meet the requirements of 3.3.2, 3.3.3, and 3.5.

4.9 Preservation and packaging. Examination shall be made to ascertain that packaging is in accordance with Section 5.

5. PACKAGING.

5.1 Preservation and packaging. Unless otherwise specified in the contract or purchase order (see 6.2.1), each unit shall be delivered to the Government in contractor-furnished CNU-419/E shipping containers (Drawing 1634AS300) unitized on Mk 3 Mod 0 metal pallets in accordance with MIL-STD-1323-320.

6. NOTES.

6.1 Intended use. The BSU-85/B Air Inflatable Retarder shall be used as a tail fin for the Mk 83, 1000-pound, general purpose (GP) bomb, permitting deployment of the bomb at supersonic speeds in either the high-drag or low-drag configuration from tactical or strategic aircraft.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Government furnished property list, if other than as specified in 3.1.1 and quantity of pallets.
- c. Additional first article sample (see 3.4).
- d. Responsibility for inspection, if other than as specified in 4.1.

- e. Responsibility for flight tests, if other than as specified in 4.7.
- f. Preservation and packaging, if other than as specified in 5.1.

6.2.2 Data requirements. When this specification is used in an acquisition and data are to be delivered, the data requirements identified below should be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DOD FAR Supplement, Part 27, Sub-Part 27.410-6 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data specified below should be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs.

| <u>Paragraph no.</u> | <u>Data requirement title</u> | <u>Applicable DID no.</u> | <u>Option</u> |
|----------------------|-------------------------------|---------------------------|---------------|
| 4.3.2.1 | Test plan | DI-T-5204 | --- |
| 4.3.2.1 | Test report | DI-T-2072 | --- |
| 4.6 | Environmental test report | DI-R-7127 | --- |

(Data item descriptions related to this specification, and identified in Section 6, will be approved and listed as such in DOD 5000.19L, Vol. II, AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.3 First article. When a first article inspection is required, the items should be a first article sample. The first article should consist of 81 units (or sample quantities as specified in the contract). The contracting officer should include specific instructions in acquisition documents regarding arrangement for examinations, approval of first article test results and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.4 Definitions.

- a. Deployment time is considered as the time from first movement of the aft cover until full retarder deployment.
- b. The term rework shall be interpreted as defined in MIL-STD-1520.

Preparing activity:
Naval Weapons Center
China Lake, CA 93555

APPENDIX
CLASSIFICATION OF CHARACTERISTICS

10.1 Classification of characteristics for the Air Force and Navy drawings are listed in Tables 10-I and 10-II, respectively (see 4.5.2.1 and 4.5.2.2).

TABLE 10-I. Classification of characteristics - Air Force.

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 809197 - Packaging Procedure | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Note 1 - wrinkle free | Visual |
| 102 | Nine convolutions each side folded as shown on drawing | Visual |
| 103 | Inlets folded forward and positioned as shown on drawing | Visual |
| 104 | Meridian straps located as shown on drawing | Visual |
| Minor: | AQL 2.5 | |
| 201 | Excess burble fence material directed aft | Visual |
| 202 | Workmanship | Visual |
| Drawing 809201 - Canister Structure (Bulkhead) | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 118 | -11 bulkhead - cutout, break sharp edges all around | Visual |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|---|--|-------------------|
| Drawing 809201 - Canister Structure (Bulkhead) (Continued) | | |
| 119 | -11 bulkhead - cutout length dimension | Gauge |
| 120 | -11 bulkhead - cutout width | Gauge |
| 121 | -11 bulkhead - cutout location from centerline | Gauge |
| 126 | -11 bulkhead - note 10, no cracks | Magnetic particle |
| Major | Sample as noted | |
| 127 | Note 22 - material thickness | Gauge |
| <p>The last bulkhead from each shift of 8 hours or less, from one continuous production run, from each set of production dies, and from one lot of material shall be inspected for material thickness in the required area. If the sample bulkhead fails the inspection, then all the bulkheads produced by the respective die since the last inspection shall be rejected.</p> | | |
| Minor: | AQL 2.5 | Visual |
| 201 | Workmanship | |
| Drawing 809204 - Retainer | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Note 2 - heat treat | Hardness test |
| 102 | Note 3 - no cracks | Magnetic particle |
| Minor: | AQL 2.5 | |
| 201 | Length between end tangs | Gauge |
| 202 | Workmanship | Visual |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--------------------------------|-----------------------------------|-------------------|
| Drawing 809205 - Pin, Retarder | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Overall length | Gauge |
| 102 | Note 2 - heat treat | Hardness test |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |
| Drawing 809210 - Safety Latch | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Diameter, 2 holes in line | Gauge |
| 102 | Location, 2 holes in line | Gauge |
| 103 | Height dimension of hook face end | Gauge |
| 104 | Hook face angle | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|---|---|-------------------|
| Drawing 809210 - Safety Latch (Continued) | | |
| 105 | Note 2 - heat treat | Hardness test |
| 106 | Curvature end height dimension | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Note 4 - no cracks | Magnetic particle |
| 202 | Workmanship | Visual |
| Drawing 809211 - Aft Cover | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Radial dimension to latch tang | Gauge |
| 102 | Radial dimension to bottom tang | Gauge |
| 103 | Location of point "H" | Gauge |
| 104 | Diameter and position, 2 holes bottom tang | Gauge |
| 105 | Radial dimension to safety tang | Gauge |
| 106 | Hole diameter and position, safety latch tang | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--|---|-------------------|
| Drawing 809211 - Aft Cover (Continued) | | |
| 107 | Angle of latch tang | Gauge |
| 108 | Note 6 - warning stencil | Visual |
| 109 | Angle of bottom tang | Gauge |
| 110 | Rim deflection dimension at horizontal centerline | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Note 3 - no cracks | Magnetic particle |
| 202 | Workmanship | Visual |
| Drawing 809212 - Latch | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Height dimension of hook face end | Gauge |
| 102 | Angle of hook face | Gauge |
| 103 | Curvature end height dimension | Gauge |
| 104 | Overall length (flat) | Gauge |
| 105 | Large hole diameter and position | Gauge |
| 106 | Small hole diameter and position | Gauge |
| 107 | Small hole distance from edge | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--------------------------------------|---------------------------------|-------------------|
| Drawing 809212 - Latch (Continued) | | |
| 108 | Note 9 - heat treat | Hardness test |
| 109 | Note 5 - deburr holes | Visual |
| 110 | Angle from datum A | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Note 4 - no cracks | Magnetic particle |
| 202 | Workmanship | Visual |
| Drawing 809214 - Spring, Compression | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Spring load | Gauge |
| 102 | Note 2 - "V" bend axis position | Visual |
| Minor: | AQL 2.5 | |
| 201 | "V" bend angle | Gauge |
| 202 | Half loop gap dimension | Gauge |
| 203 | Workmanship | Visual |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|-------------------------------------|---|-------------------|
| Drawing 809216 - "D" Ring, Inlet | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Dimension of large radius | Gauge |
| 102 | Dimension from centerline to bottom inner surface | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |
| Drawing 809218 - Aft Cover Assembly | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Note 1 - position of gasket | Visual |
| 102 | Note 2 - bonding of gasket | Visual |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |
| Drawing 809219 - Retainer | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Hook face end height dimension | Gauge |
| 102 | Hook face angle | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|---------------------------------------|--|-------------------|
| Drawing 809219 - Retainer (Continued) | | |
| Minor: | AQL 2.5 | |
| 201 | Note 2 - no cracks | Magnetic Particle |
| 202 | Workmanship | Visual |
| Drawing 809223 - Depressor | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Diameter & position, 2 holes bracket end | Gauge |
| 102 | Note 2 - heat treat | Hardness test |
| 103 | Note 3 - no cracks | Magnetic particle |
| 104 | Length dimension | Gauge |
| 105 | Hook clearance height | Gauge |
| 106 | Diameter and position, 4 holes, hook end | Gauge |
| 107 | Hook hole location vertically | Gauge |
| 108 | Note 8 - deburr hook holes | Visual |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|-----------------------------------|------------------------------------|-------------------|
| Drawing 809226 - Clip, Lanyard | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Free end dimension | Gauge |
| 102 | Overall center to center dimension | Gauge |
| 103 | Wire diameter | SMI |
| 104 | Hook length dimension | Gauge |
| 105 | End square and free of burrs | Visual |
| Minor: | | |
| 201 | Loop diameter, 2 places | Gauge |
| 202 | Hook leg angle | Gauge |
| 203 | Workmanship | Visual |
| Drawing 809230 - Retarder Lanyard | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Overall length | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Note 3 - proof test | Pull test |
| 202 | Workmanship | Visual |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|---|--|-------------------|
| Drawing 809247 - Retarder Assembly | | |
| At the start of production in a new facility or when a break in production greater than 6 months has occurred, the following inspection shall be accomplished on each unit of the first 100 units. Thereafter, with the concurrence of the contracting agency, sample inspections may be established in accordance with the AQL as noted. | | |
| Critical: | 100 percent | |
| 1 | Note 40 - presence of both splices after retarder assy is complete | Visual |
| Major: | 100 percent | |
| 101 | Note 6 - identification | Visual |
| Major: | AQL 0.40 | |
| 102 | Note 5 - alternate warp direction | Visual |
| 103 | Note 29 - urethane (blue) coating on seams | Visual |
| 104 | Note 25 - burble fence match to envelope gore | Gauge |
| 105 | Note 26 - inlet sole line match to envelope gore | Gauge |
| 106 | Note 27 - pattern match to template | Gauge |
| 107 | Note 22 - orifice reinforcement location | Gauge |
| 108 | -30 meridian strap - extension | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 809247 - Retarder Assembly (Continued) | | |
| 109 | -01 envelope gore - overall length | Gauge |
| 110 | -01 envelope gore - warp direction | Visual |
| 111 | -30 meridian strap - splice sewing length | Gauge |
| 112 | -30 meridian strap - buffer location | Gauge |
| 113 | -30 meridian strap - splice sewing edge distance | Gauge |
| 114 | -30 meridian strap - overall length | Gauge |
| 115 | -07 end closure pattern - overall diameter | Gauge |
| 116 | -03 burble fence pattern - warp direction | Visual |
| 117 | -05 inlet pattern - warp direction | Visual |
| 118 | -47 check valve pattern - warp direction | Visual |
| 119 | -45 apex reinforcement - overall length | Gauge |
| 120 | -45 apex reinforcement - sewing edge distance | Gauge |
| 121 | Sewing edge distance (view F) | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 809247 - Retarder Assembly (Continued) | | |
| 122 | Sewing row spacing (view F) | Gauge |
| 123 | Seam width (view F) | Gauge |
| 124 | Seam width (view C) | Gauge |
| 125 | Sewing edge distance (view C) | Gauge |
| 126 | Sewing row spacing (view C) | Gauge |
| 127 | Sewing edge distance (section B-B) | Gauge |
| 128 | Sewing row spacing (section D-D) | Gauge |
| 129 | Sewing edge distance (section D-D) | Gauge |
| 130 | Seam width (section D-D) | Gauge |
| 131 | Sewing location (section P-P) | Gauge |
| 132 | Sewing edge distance (section K-K) | Gauge |
| 133 | Sewing row spacing (section K-K) | Gauge |
| 134 | Seam width (section K-K) | Gauge |
| 135 | -23 gusset location (view S) | Visual |
| 136 | Box stitch through meridian crossover (view Y) | Visual |
| 137 | Sewing row spacing, aft seam (view E) | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--|---|-------------------|
| Drawing 809247 - Retarder Assembly (Continued) | | |
| 138 | Sewing row spacing, forward seam (view E) | Gauge |
| 139 | Sewing length, 2 point, reinforcement aft end (view AD-AD) | Gauge |
| 140 | Sewing length, 2 point, aft intersect of meridian and burble fence (view AD-AD) | Gauge |
| 141 | Sewing length, 2 point, forward intersect of meridian and burble fence (view AC-AC) | Gauge |
| 142 | Sewing length, 2 point, reinforcement forward end (view AC-AC) | Gauge |
| 143 | Side sewing, edge distance (view W-W) | Gauge |
| 144 | Corner sewing, edge distance (view W-W) | Gauge |
| 145 | Center front sewing, edge distance forward valve (view W-W) | Gauge |
| 146 | Sewing edge distance (section AE-AE) or serged edge (alternate section AE-AE) | Gauge Visual |
| 147 | Forward valve, location (view W-W) | Gauge |
| 148 | Aft valve, location (view W-W) | Gauge |
| 149 | Aft valve, center front (view W-W) sewing, edge distance | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 809247 - Retarder Assembly (Continued) | | |
| 150 | Corner sewing, length (view W-W) | Gauge |
| 151 | Side sewing, length (view W-W) | Gauge |
| 152 | -43 web, sewing length forward valve (view W-W) | Gauge |
| 153 | -43 web, sewing length aft valve (view W-W) | Gauge |
| 154 | -43 web, sewing length at envelope body (view W-W) | Gauge |
| 155 | -27 becket, formed length | Gauge |
| 156 | "D" ring ends swaged in sleeve | Visual |
| 157 | "V" reinforcement, location | Gauge |
| 158 | "V" reinforcement, sewing length | Gauge |
| 159 | "D" ring, corner hand sewing | Visual |
| 160 | -25 restraint line, formed length (view V) | Gauge |
| 161 | -25 restraint line (formed) sewing length (view V) | Gauge |
| 162 | Sewing edge distance (section H-H) | Gauge |
| 163 | Seam width (section H-H) | Gauge |
| 164 | Sewing row spacing (section H-H) | Gauge |
| 165 | -27 becket, formed, apex location | Gauge |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|---|---|-------------------|
| Drawing 809247 - Retarder Assembly (Continued) | | |
| 166 | Box sewing length, aft intersect of burble fence and envelope gore seam (section U-U) | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |
| Drawing 809253 - Canister Structure (Aft Housing) | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 109 | -30 aft housing - weld location and grind flush | Visual |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |
| Drawing 809249 - Ring Assembly | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Edge radius | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |

TABLE 10-I. Classification of characteristics
- Air Force (Continued).

| Classification | Characteristics | Inspection method |
|---|--|-------------------|
| Drawing 809257 - Ring, Pull | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Material condition | Hardness test |
| Minor: | AQL 2.5 | |
| 201 | Workmanship | Visual |
| TABLE 10-II. <u>Classification of characteristics - Navy.</u> | | |
| Classification | Characteristics | Inspection method |
| Drawing 1634AS100 - Fin, Retarder, Air Inflatable, BSU-85/B | | |
| Critical | 100 percent | |
| 1 | Note 3A - retainer pins engaged | Visual |
| 2 | Note 3B - latch closed, pins installed | Visual |
| 3 | Note 3C - safety latch closed, pin installed | Visual |
| Major: | 100 percent | |
| 101 | Note 2 - identification | Visual |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 1634AS100 - Fin, Retarder, Air Inflatable, BSU-85/B (Continued) | | |
| Major: | AQL 0.65 | |
| 102 | (View A-A) - latch overlap | Gauge |
| 103 | (View B-B) - safety latch gap | Gauge |
| 104 | (View E-E) - aft cover gasket seal | Visual |
| Minor: | AQL 2.5 | |
| 201 | Note 4 finish | |
| Drawing 1634AS200 - Stabilizer Structure Assembly | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Retainer lip dimension from centerline extension of OD | Gauge |
| 102 | Diameter in latch area | Gauge |
| 103 | Retainer lip location (horizontally) | Gauge |
| 104 | Dowel pin locations, 2 dowel pins | Gauge |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|---|--|-------------------|
| Drawing 1634AS200 - Stabilizer Structure Assembly (Continued) | | |
| 105 | Safety latch location angle (view E-E) | Gauge |
| 106 | Safety latch location (horizontal) (view B-B) | Gauge |
| 107 | Latch location | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Spring pin extension dimension | Gauge |
| 202 | Note 10 - finish | Visual |
| 203 | Note 1 - Workmanship | Visual |
| Drawing 1634AS201 - Cover, Fuze Access | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Dimension left edge to hole | Gauge |
| 102 | Dimension of cover radius | Gauge |
| 103 | Dimension of cover radius | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Note 1 - Workmanship | Visual |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 1634AS210 - Canister Structure | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Canister alignment | Gauge |
| 102 | Alignment of fins | Gauge |
| 103 | Fin angle from vertical centerline (view B-B) | Gauge |
| 104 | Bracket location (horizontal) | Gauge |
| 105 | Bracket location (vertical) | Gauge |
| 106 | Angular spacing of fins (view B-B) | Gauge |
| 107 | Overall length | Gauge |
| 108 | Note 14 - ring clearance diameter | Gauge |
| 109 | Fin span | Gauge |
| 110 | 8009253-30 aft housing - outside diameter at final assembly (view B-B) | Gauge |
| 111 | -2 half cone - dimension cut-out edge to hole | Gauge |
| 112 | -5 channel - bolt hole location | Gauge |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|--|--------------------------------------|-------------------|
| Drawing 1634AS210 - Canister Structure (Continued) | | |
| 113 | -1 ring - machined inside diameter | Gauge |
| 114 | -1 ring - thickness | Gauge |
| 115 | -1 ring - thread size - tapped holes | Gauge |
| 116 | -1 ring - location of tapped holes | Gauge |
| 117 | -1 ring - weld location | Visual |
| 118 | -4 Fin - height dimension | Gauge |
| Major: | 5 percent sample (minimum) | |
| 119 | Bulkhead weld | Visual |
| 120 | Forward ring weld | Visual |
| Minor: | AQL 2.5 | |
| 201 | Half cone - weld location | Visual |
| 202 | Note 1 - Workmanship | Visual |
| Drawing 1634AS220 - Wedge, Fin | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Width dimension | Gauge |
| 102 | Thickness dimension | Gauge |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|--|---|-------------------|
| Drawing 1634AS220 - Wedge, Fin (Continued) | | |
| Minor: | AQL 2.5 | |
| 201 | Hole location from top | Gauge |
| 202 | Hole location from right edge | Gauge |
| 203 | Note 1 - Workmanship | Visual |
| Drawing 1634AS400 - Lanyard Installation | | |
| Critical | 100 percent | |
| 1 | Note 4 - verify proper lanyard routing | Visual |
| Major: | AQL 0.65 | |
| 101 | Note 3 - solid film lubricant on lanyard clip | Visual |
| Minor: | AQL 2.5 | |
| 201 | Note 2 - torque on nut | Torque wrench |
| 202 | Note 1 - Workmanship | Visual |
| Drawing 1634AS410 - Lanyard Assembly | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Overall length dimension | Gauge |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|--|--|-------------------|
| Drawing 1634AS410 - Lanyard Assembly (Continued) | | |
| 102 | Yoke length (to pin, safety) | Gauge |
| 103 | Difference between Yoke End Loops | Gauge |
| Minor: | AQL 2.5 | |
| 201 | Note 2 - proof test | Pull test |
| 202 | Note 1 - workmanship | Visual |
| Drawing 1634AS420 - Swivel Assembly | | |
| Critical | None | |
| Major: | AQL 0.65, double sampling plan | |
| 101 | Note 3 - swivel rotation | Visual |
| 102 | Note 4 - shear test | Pull test |
| Drawing 1634AS500 - Retarder Installation | | |
| Critical | 100 percent | |
| 1 | Meridian straps attached to bulkhead with pins | Visual |
| Major: | AQL 0.65 | |
| 101 | Note 4 - packaging | Visual |
| 102 | Note 6 - meridian strap orientation | Visual |

TABLE 10-II. Classification of characteristics - Navy.
(Continued)

| Classification | Characteristics | Inspection method |
|---|---|-------------------|
| Drawing 1634AS500 - Retarder Installation (Continued) | | |
| 103 | Note 5 - lanyard wire, yellow showing | Visual |
| 104 | Note 3 - aft cover and meridian strap orientation | Visual |
| 105 | Retainers - locked position | Visual |
| Minor: | AQL 2.5 | |
| 201 | Note 9 - boots bonded to bulkhead | Visual |
| 202 | Note 11 - torque nuts | Torque Wrench |
| 203 | Note 8 - lubricant | Visual |
| 204 | Note 1 - Workmanship | Visual |
| Drawing 1634AS510 - Retarder Assembly | | |
| Critical | None | |
| Major: | AQL 0.65 | |
| 101 | Lanyard assembly attached | Visual |
| Minor: | AQL 2.5 | |
| 201 | Note 1 - Workmanship | Visual |