International Transcription Services, Inc., 2100 M Street, NW, Suite 140, Washington, DC 20037. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center, 1919 M Street, NW, Room 239, Washington, DC 20554.

12. *Other requirements.* Comments and reply comments must also comply with § 1.49 and all other applicable sections of the Commission's rules. We also direct all interested parties to include the name of the filing party and the date of the filing on each page of their comments and reply comments.

13. Commenters may also file informal comments or an exact copy of formal comments electronically via the Internet at: <http:dettifoss.fcc.gov:8080/cgi-bin/ws.exe/beta/ecfs/upload.hts>. Only one copy of electronically filed comments must be submitted. Commenters must note on the subject line whether an electronic submission is an exact copy of formal comments. Commenters also must include their full name and U.S. Postal Service mailing address in their submissions. Further information on the process of submitting comments electronically is available at that location and at <http://www.fcc.gov/e-file>.

14. Parties are also asked to submit comments and reply comments on diskette. Such diskette submissions would be in addition to and not a substitute for the formal filing requirements addressed above. Parties submitting diskettes should submit them to: Ms. Terry Conway, Common Carrier Bureau, Industry Analysis Division, 2033 M Street, NW, Room 500, Washington, DC 20554. Such diskettes should be on a 3.5 inch diskette formatted in an IBM compatible format using WordPerfect 5.1 for Windows software. The diskette should be submitted in ''read only'' mode. The diskette should be clearly labeled with the party's name, proceeding, type of pleading (comment or reply comments) and date of submission. The diskette should be accompanied by a cover letter.

III. Ordering Clauses

15. Accordingly, *it is ordered*, pursuant to sections 1, 4(i), 7, 10, 11, 218 and 403 of the Communications Act of 1934, as amended, 47 U.S.C. sections 151, 154(i), 157, 160, 161, 218, 403, that notice is hereby given of the inquiry described above and that comment is sought on these issues.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

[FR Doc. 98–17079 Filed 6–26–98; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 572

[Docket No. NHTSA–98–3972]

RIN 2127–AG76

Anthropomorphic Test Dummy; Occupant Crash Protection

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

ACTION: Notice of proposed rulemaking.

SUMMARY: This document proposes to amend 49 CFR part 572 by adding design and performance specifications for a new, more advanced 6-year-old child dummy. The agency believes that the new dummy, part of the family of Hybrid III test dummies, is more representative of humans than the existing 6-year-old child dummy specified by the agency, and allows the assessment of more types of potential injuries. The new dummy is especially needed to evaluate the effects of air bag deployment on children, but would also provide greater and more useful information in a variety of environments to better evaluate child safety. Adding the dummy to part 572 would be the first step toward using the dummy to evaluate the safety of air bags for children. The issue of specifying use of the dummy in determining compliance with performance test requirements, e.g., as part of the agency's occupant protection standard and/or child restraint standard, will be addressed in future rulemakings.

DATES: Comments must be received by September 28, 1998.

ADDRESSES: Comments should refer to the docket number, and be submitted to: Docket Management, Room PL–401, 400 Seventh Street, S.W., Washington, D.C. 20590 (Docket hours are from 10 a.m. to 5 p.m.).

FOR FURTHER INFORMATION CONTACT: For nonlegal issues: Stan Backaitis, Office of Crashworthiness Standards (telephone: 202–366–4912). For legal issues: Edward Glancy, Office of the Chief Counsel (202–366–2992). Both can be reached at the National Highway Traffic Safety Administration, 400 Seventh St., S.W., Washington, D.C. 20590.

SUPPLEMENTARY INFORMATION:

On November 14, 1991, NHTSA published in the **Federal Register** (56 FR 57830) a final rule establishing specifications and performance criteria for a test dummy representing a 6-year-old child. The specifications and performance criteria were set forth as subpart I of 49 CFR part 572. The agency explained that adding the subpart I 6-year-old child dummy to part 572 was a possible first step toward using the dummy to test the compliance of booster seats and other types of child restraint systems as part of Safety Standard No. 213, *Child Restraint Systems.* The agency subsequently added the dummy to Standard No. 213 in a final rule published in the **Federal Register** (60 FR 35126) on July 6, 1995.

In these rulemakings, NHTSA recognized that a more advanced 6-year-old child dummy was under development, and the possible future desirability of adopting such a dummy. In commenting on the agency's proposal to add the subpart I dummy to Standard No. 213, the American Automobile Manufacturers Association (AAMA) suggested that the agency instead add a 6-year-old child dummy based on the 50th percentile male Hybrid III dummy. AAMA stated that this dummy had improved anthropometric emulation, more human-like response, and superior instrumentation capability.

NHTSA explained its decision to adopt the Subpart I 6-year-old child dummy, rather than a more advanced dummy, as follows:

> The issue of whether NHTSA should adopt the Hybrid III 6-year-old dummy instead of the (Subpart I) dummy was addressed in the NPRM and in the rule adopting the 6-year-old dummy specifications into part 572. NHTSA's position has been that, while the Hybrid III dummy might have potential advantages over the (Subpart I) dummy in the number of injury parameters the dummies can measure, rulemaking on the latter dummy should not be delayed pending assessment of the performance of the new dummy. NHTSA stated in the part 572 final rule:
>
> The (Subpart I) dummy's ability to measure HIC, chest acceleration and femur loads, and its ability to replicate the motions and excursions of a child in a crash are sufficient to provide valid assessment of the injury potential of child restraint systems in a reliable manner. Since the (Subpart I) dummy is ready now, and a final rule specifying the dummy will help improve safety, the agency believes it is appropriate to proceed with adding the dummy to part 572.
>
> Likewise, NHTSA believes rulemaking adopting use of a 6-year-old dummy in Standard 213 compliance tests should not be delayed pending evaluation of the suitability and availability of the dummy as a test

device. Such evaluation will be undertaken in the near future.

60 FR 35129–30.

While the desirability of a more advanced 6-year-old child dummy has been apparent for a number of years, the need for such a dummy has become more urgent with the emergence of the safety problems current air bags pose for out-of-position children. Experience in using the subpart I dummy has shown it to be adequate for the purpose of evaluating child restraints for the injury criteria and test conditions specified by Standard No. 213, but limited with respect to the types of injury risks it can measure, particularly in an air bag environment.

For example, the neck of the subpart I dummy is not of multi-segment design. Accordingly, it has less biofidelity in areas such as impact responses in flexion and extension motion. Since neck injury is one of the primary causes of fatalities to out-of-position children from air bags, biofidelity is needed in these areas to evaluate the effects of air bag deployment on children.

By contrast, the more advanced Hybrid III 6-year-old child dummy (hereafter referred to as the H-III6C dummy) incorporates improved biofidelity and extended measurement capability in many areas, including those discussed above. Because of the greater biofidelity and extended measurement capability of the H-III6C dummy, it can be used to evaluate the safety of children in a much wider array of environments than the Subpart I dummy, including assessing the effects of air bag deployment on out-of-position children. The agency notes that the H-III6C dummy is the only advanced 6-year-old child dummy that has been developed to date.

The H–III6C dummy is part of a family of Hybrid III-type dummies. The first Hybrid III dummy was a 50th percentile male dummy. NHTSA has specified use of this dummy for compliance testing under Standard No. 208, *Occupant Crash Protection,* since 1986, initially on an optional basis, and more recently on a mandatory basis.

The need for a family of Hybrid III-type dummies having considerably improved biofidelity and anthropometry was recognized by the Centers for Disease Control and Prevention (CDC) in 1987 when it awarded a contract to Ohio State University under the title ''Development for Multi-sized Hybrid III Based Dummy Family.'' At that time, the funding covered only the development of a small female and a large male dummy. However, CDC provided additional funding in 1989 to develop a design foundation for a Hybrid III type 6-year-old child dummy.

Development of the H–III6C has continued since then under the guidance of the Hybrid III Dummy Family Task Force of SAE. NHTSA has also been involved with development of the dummy, initially as an observer in meetings of the SAE Task Force. As the development of the dummy approached maturity, the agency began to prefer the use of the dummy in its research programs, because of its advanced instrumentation capability and better biofidelity.

NHTSA began substantial use of the H–III6C dummy in late 1994. However, it found that inconsistencies in impact response and durability problems necessitated modifications. This prevented the agency from conducting an assessment of the dummy's capabilities as an objective and stable test tool and its ability to function in a variety of impact environments without structural deficiencies. The agency advised the SAE Task Force of its interest in seeing the dummy development accelerate and be brought to a quick conclusion because of the need to support air bag safety assessment and better evaluation of new child restraints. Subsequent testing of the dummy revealed additional problems requiring additional redesigns in the neck and thorax areas, which stretched the first availability of preproduction dummies into midsummer 1997. At that time, the agency began an extensive test and evaluation program of the dummy.

The agency has now completed its evaluation of the H–III6C dummy and has tentatively concluded that it is ready for incorporation into part 572. NHTSA is placing in the docket a technical report entitled ''Development and Evaluation of the Hybrid III 6-Year-Old Child Dummy.'' That report provides the technical information supporting this rulemaking.

Accordingly, the agency is proposing specifications and performance criteria for the H–III6C dummy. The specifications would consist of the following three items:

(1) A drawings and specifications package entitled ''Drawings and Specifications for the Hybrid III 6-Year-Old Dummy (May 1998)'';

(2) A user's manual entitled ''User's Manual for the Hybrid III 6-Year-Old Dummy [a date would be inserted in the final rule]''; and

(3) A document entitled ''Printout of Descriptions of Patterns and Molds for the Hybrid III 6-Year Old Dummy in Digital Form [a date would be inserted in the final rule]'';

These specifications are intended to ensure that the dummies are uniform in their construction and capable of uniform and repeatable response in the impact environment. The agency notes that the first item listed above, the drawings and specifications, will be available for inspection in NHTSA's docket. (Since this item is non-scannable, it cannot be placed in the DOT Dockets Management System (DMS). Instead a statement indicating where it may be viewed, i.e., in NHTSA's docket, will be placed in the DMS.) Copies may also be obtained from Reprographic Technologies, 9000 Virginia Manor Road, Beltsville, MD 20705; Telephone: (301) 210–5600.

The user's manual and digital descriptions of patterns and molds will not be available until the time of the final rule. The user's manual will be similar to the user's manual specified by part 572 for other dummies.

As with other dummies, NHTSA is proposing impact performance criteria to serve as calibration checks, and to further assure the kinematic uniformity of the dummy and the absence of damage from previous use. The tests address head, neck, thorax and femur impact responses and stiffness assessments of the lumbar spine-abdomen area to torso flexion motion.

The agency is proposing generic specifications for all of the dummy-based sensors. For most earlier dummies, the agency specified sensors by make and model. However, NHTSA believes that approach is unnecessarily restrictive.

The generic specifications that the agency is proposing include (1) the uniaxial piezoresistive accelerometer designated as SA572–S4, (2) force and moment transducers: upper neck SA572–S11, lumbar spine SA572–S12, anterior-superior iliac spine load cell SA572–S13, single axis femur load cell SA572–S10, and (3) the thorax-based chest deflection potentiometer SA572–51. The proposed specifications essentially reflect the characteristics of the sensors used in NHTSA's dummy evaluation series that are identified by make and model in the above referenced technical report ''Development and Evaluation of the Hybrid III 6-year-old Child Dummy.'' Specifications for these sensors are included in the drawing package. Interested persons are encouraged to comment on the adequacy of the proposed specifications; potential impact on the measured test data, including the comparability of data using sensors manufactured by different companies; and issues related to calibration assurance tests.

NHTSA notes that the H–III6C dummy is the first of several new dummies it will propose to add to part 572. Later this year, the agency plans to propose adding an advanced 3-year-old child dummy, the CRABI 12 month old child dummy, and the Hybrid III 5th percentile female adult dummy. The agency intends to use these dummies in its rulemaking for advanced air bags. All of these dummies could be specified for use in a variety of potential Standard No. 208 tests, including static out-of-position tests and/or various dynamic tests. The child dummies could also be specified for use in Standard No. 213 tests.

This notice only concerns the H–III6C dummy, and is only proposing to add the dummy to part 572. The issue of specifying the use of the H–III6C dummy as part of Standard No. 208 or Standard No. 213 will be addressed in future rulemakings However, since one of the primary purposes of adding the dummy to part 572 is to enable it to be specified for use in the Federal motor vehicle safety standards, NHTSA encourages commenters to address its suitability for the types of tests discussed above. The agency also encourages commenters to address the dummy's suitability with respect to measuring potential injury criteria.[1]

Rulemaking Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

NHTSA has considered the impact of this rulemaking action under Executive Order 12866 and the Department of Transportation's regulatory policies and procedures. This rulemaking document was not reviewed by the Office of Management and Budget under E.O. 12866, ''Regulatory Planning and Review.'' The rulemaking action has been determined not to be significant under the Department's regulatory policies and procedures.

This document proposes to amend 49 CFR part 572 by adding design and performance specifications for a new, more advanced 6-year old child dummy which the agency may later separately propose for use in the Federal motor vehicle safety standards. If this proposed rule becomes final, it would affect only those businesses which choose to manufacture or test with the dummy. It does not impose any requirements on anyone.

The cost of an uninstrumented H–III6C dummy is approximately $30,000. Instrumentation would add approximately $25,000 to $41,000 to the cost, depending on the amount of instrumentation.

Because the economic impacts of this proposal are so minimal, no further regulatory evaluation is necessary.

B. Regulatory Flexibility Act

NHTSA has considered the effects of this rulemaking action under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) I hereby certify that the proposed amendment would not have a significant economic impact on a substantial number of small entities. The proposed amendment would not impose or rescind any requirements for anyone. Therefore, it would not have a significant economic impact on a substantial number of small entities.

C. National Environmental Policy Act

NHTSA has analyzed this proposed amendment for the purposes of the National Environmental Policy Act and determined that it would not have any significant impact on the quality of the human environment.

D. Executive Order 12612 (Federalism)

The agency has analyzed this proposed amendment in accordance with the principles and criteria set forth in Executive Order 12612. NHTSA has determined that the proposed amendment does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Request for Comments

Interested persons are invited to submit comments on this proposal. Two copies should be submitted.

All comments must not exceed 15 pages in length (49 CFR 553.21). Necessary attachments may be appended to these submissions without regard to the 15-page limit. This limitation is intended to encourage commenters to detail their primary arguments in a concise fashion.

If a commenter wishes to submit certain information under a claim of confidentiality, three copies of the complete submission, including purportedly confidential business information, should be submitted to the Chief Counsel, NHTSA, at the street address given above, and two copies from which the purportedly confidential information has been deleted should be submitted to the Docket Section. A request for confidentiality should be accompanied by a cover letter setting forth the information specified in the agency's confidential business information regulation. 49 CFR part 512.

All comments received by NHTSA before the close of business on the comment closing date indicated above will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Comments received too late for consideration in regard to this action will be considered as suggestions for further rulemaking action. Comments will be available for inspection in the docket. The NHTSA will continue to file relevant information as it becomes available in the docket after the closing date, and recommends that interested persons continue to examine the docket for new material.

Those persons desiring to be notified upon receipt of their comments in the rules docket should enclose a self-addressed, stamped postcard in the envelope with their comments. Upon receiving the comments, the docket supervisor will return the postcard by mail.

List of Subjects in 49 CFR Part 572

Motor vehicle safety.

In consideration of the foregoing, NHTSA proposes to amend 49 CFR part 572 as follows:

PART 572—ANTHROPOMORPHIC TEST DUMMIES

1. The authority citation for part 572 would continue to read as follows:

Authority: 15 U.S.C. 1392, 1407; delegation of authority at 49 CFR 1.50.

2. 49 CFR part 572 would be amended by adding a new subpart N, consisting of §§ 572.120–572.129, to read as follows:

Subpart N—Hybrid III 6-Year-Old Child

Sec.

Subpart N—Hybrid III 6-Year-Old Child

§ 572.120 Incorporation by reference.

(a) The following materials are hereby incorporated in this subpart N by reference:

(1) A drawings and specifications package entitled ''Drawings and

[1] For information concerning potential injury criteria, see NHTSA Event Report, ''Techniques for Developing Child Dummy Protection Reference Values,'' Docket No. NHTSA–1996–1772–70, and SAE Human Biomechanics and Simulation Standards Committee comments concerning that report, Docket No. NHTSA–1996–1772–94.

Specifications for the Hybrid III 6-Year-Old Dummy (May 1998)'';

(2) A user's manual entitled ''User's Manual for the Hybrid III 6-Year-Old Dummy [a date will be inserted in the final rule]'';

(3) A document entitled ''Printout of Descriptions of Patterns and Molds for the Hybrid III 6-Year Old Dummy in Digital Form [a date will be inserted in the final rule]'';

(4) SAE Recommended Practice J211, Rev. Mar95 ''Instrumentation for Impact Tests'';

(5) SAE J1733 of 1994–12, ''Sign Convention for Vehicle Crash Testing.''

(6) The Director of the Federal Register approved those materials incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the materials may be inspected at NHTSA's Docket Section, 400 Seventh Street S.W., room 5109, Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

(b) The incorporated materials are available as follows:

(1) The drawings and specifications package referred to in paragraph (a)(1) of this section and the user's manual referred to in paragraph (a)(2) of this section are available from Reprographic Technologies, 9000 Virginia Manor Road, Beltsville, MD 20705 (301) 210–5600.

(2) The printout of the descriptions of patterns and molds for the Hybrid III 6-Year Old Dummy in digital form referred to in paragraph (a)(1)(3) of this section is available from NHTSA's Docket Section.

(3) The SAE materials referred to in paragraphs (a)(4) and (a)(5) of this section are available from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

§ 572.121 General description.

(a)(1) The Hybrid III 6-year-old dummy consists of the components and assemblies that are described by ''Drawings and Specifications for the Hybrid III 6-Year-Old Dummy (May 1998).'' The complete assembly of the dummy is shown in drawing 127–0000. The component assemblies, and their drawing numbers, are listed in the following Table A:

TABLE A

Component assembly	Drawing No.
Head Assembly	127–1000
Neck Assembly	127–1015
Upper Torso Assembly	127–2000
Lower Torso Assembly	127–3000
Leg Assembly	127–4000

TABLE A—Continued

Component assembly	Drawing No.
Arm Assembly	127–5000

(2) These drawings, and all other drawings referred to in this subpart by the term ''drawing'' followed by a number, are contained in ''Drawings and Specifications for the Hybrid III 6-Year-Old Dummy (May 1998).''

(b) Disassembly, inspection, and assembly procedures are set forth in ''User's Manual for the Hybrid III 6-Year-Old Dummy [a date will be inserted in the final rule]'';

(c) The patterns and molds are described by ''Printout of Descriptions of Patterns and Molds for the Hybrid III 6-Year-Old Dummy in Digital Form [a date will be inserted in the final rule]'';

(d) Adjacent segments are joined in a manner such that except for contacts existing under static conditions, there is no contact between metallic elements throughout the range of motion or under simulated crash impact conditions.

(e) The structural properties of the dummy are such that the dummy conforms to this Part in every respect both before and after its use in any test similar to those specified in Standard No. 208, *Occupant Crash Protection* and Standard No. 213, *Child Restraint Systems.*

§ 572.122 Head assembly and test procedure.

(a) Head assembly. The head consists of the assembly shown in drawing 127–1000, six axis neck transducer structural replacement (drawing 78051–383X), head to neck pivot pin (drawing 78051–339) and 3 accelerometers (drawing SA–572 S4) mounted in conformance to drawing 127–1550.

(b) When the head assembly in paragraph (a) of this section is dropped from a height of 376.0+/−1.0 mm (14.8+/−0.04 in) in accordance with paragraph (c) of this section the peak resultant acceleration at the location of the accelerometers at the head CG shall not be less than 245 G and more than 300 G. The resultant acceleration vs. time history curve shall be unimodal; oscillations occurring after the main pulse are less than 10 percent of the peak resultant acceleration. The lateral acceleration shall not exceed 15 g's (zero to peak).

(c) Head test procedure. The test procedure for the head is as follows:

(1) Soak the head assembly in a controlled environment with a temperature from 18.9 to 25.6 °C (66 to 78 °F) and a relative humidity from 10 to 70 percent for at least four hours prior to a test.

(2) Prior to the test, clean the impact surface of the skin and the impact surface of the steel plate with isopropyl alcohol, trichloroethane, or an equivalent. The skin of the head must be clean and dry for testing.

(3) Suspend the head assembly as shown in Figure N1. The lowest point on the forehead is 376.0+/−1.0 mm (14.8 +/−0.04 in) from the impact surface and the head is oriented to an incline of 62 +/−1 deg. between the plane of the lower surface of the six axis transducer or its structural replacement and the plane of the impact surface. The 1.57 mm (0.062 in.) diameter holes located on either side of the dummy's head are used to ensure that the head is level with respect to the impact surface.

(4) Drop the head assembly from the specified height by means that ensures a smooth, instant release onto a rigidly supported flat horizontal steel plate which is 50.4 mm (2 in) thick and 610 mm (24 in) square. The impact surface shall be clean, dry and have a micro finish of not less than 203.2×10^{-6} mm (8 micro inches) (RMS) and not more than 2032.0×10^{-6} mm (80 micro inches) (RMS).

(5) Allow at least 2 hours between successive tests on the same head.

§ 572.123 Neck assembly and test procedure.

(a) The neck assembly consists of the assembly of components shown in drawing 127–1015.

(b) Neck assembly. When the head-neck assembly, consisting of the head shown in drawing 127–1000, neck shown in drawing 127–1015, pivot pin 78051–339, bib simulator shown in drawing 127–1025, neck bracket shown in drawing 127–8221, six axis neck transducer shown in drawing SA–572 S11, neck mounting adapter TE–2208–001, and either three accelerometers as shown in drawing SA572S4 installed in the head assembly as specified in section 572.122 or their equivalent, is tested according to the test procedure in paragraph (c) of this section, it shall have the following characteristics:

(1) Flexion. Plane D referenced in Figure N2, shall rotate in the direction of preimpact flight with respect to the pendulum's longitudinal centerline between 74 degrees and 92 degrees. During this rotation interval, the moment measured by the neck transducer (drawing SA–572 S11) about the occipital condyles shall not be less than 27Nm (19.9 ft-lb) and not more than 33 Nm (24.3 ft-lb). The moment shall be calculated by the following formula: Moment (Nm) = My − (0.01778m)×(Fx). The positive

moment shall decay for the first time to 5 Nm between 103 ms and 123 ms.

(2) Extension. Plane D referenced in Figure N3, shall rotate in the direction of preimpact flight with respect to the pendulum's longitudinal centerline between 94 degrees and during this rotation interval, the moment measured by the neck transducer (drawing S–572 S11) about the occipital condyles shall not be more than −19 Nm (−14 ft-lb) and not less than −24 Nm (−17.7ft-lb). The moment shall be calculated by the following formula: Moment (Nm) = My−(0.01778m)×(Fx). The negative moment shall decay for the first time to −5 Nm between 127 ms and 147 ms.

(3) Time-zero is defined as the time of initial contact between the pendulum striker plate and the honeycomb material.

(c) Test Procedure (1) Soak the neck assembly in a controlled environment at a temperature between 20.6 to 22.2°C (69 to 72 F) and a relative humidity from 10 to 70 percent for at least four hours prior to a test.

(2) Torque the jam nut (drawing 9000341) on the neck cable (drawing 127–1016) to 0.23 Nm (2 in-lbs).

(3) Mount the head-neck assembly defined in paragraph (b) of this section, on the pendulum so the midsagittal plane of the head is vertical and coincides with the plane of motion of the pendulum as shown in Figure N2 for flexion and Figure N3 for extension tests.

(4) Release the pendulum and allow it to fall freely from a height to achieve an impact velocity of 4.95+/−0.12 m/s (16.2 +/−0.4 ft/s) for flexion and 4.3 +/−0.12 m/s (14.10+/−0.40 ft/s) for extension tests, measured by an accelerometer at the center of the pendulum at the instant of contact with the honey comb.

(i) Time-zero is defined as the time of initial contact between the pendulum striker plate and the honeycomb material. All data channels should be at the zero level at this time.

(ii) Stop the pendulum from the initial velocity with an acceleration vs. time pulse which meets the velocity change as specified below. Integrate the pendulum acceleration data channel to obtain the velocity vs. time curve:

	Pendulum pulse			
Time	Flexion		Extension	
ms	m/s	ft/s	m/s	ft/s
10	1.2–1.6	3.9–5.3	1.0–1.4	3.3–4.6
20	2.4–3.4	7.9–11.2	2.2–3.0	7.2–9.8
30	3.8–5.0	12.5–16.4	3.2–4.2	10.5–13.8

§ 572.124 Thorax assembly and test procedure.

(a) *Thorax (Upper Torso) Assembly.* The thorax consists of the part of the torso assembly shown in drawing 127–2000.

(b) *Thorax assembly.* When the anterior surface of the thorax of a completely assembled dummy (drawing 127–0000) is impacted by a test probe conforming to § 572.127(a) at 6.71 +/−0.12 m/s (22.0 +/−0.4 ft/s) according to the test procedure in paragraph (c) of this section,

(1) The peak force measured by the probe in accordance with § 572.127 shall not be less than 1150 N (258 lbs) and not more than 1300 N (292 lbs) and the maximum sternum displacement relative to the spine is not less than 38.0 mm (1.50 in) and not more than 44.0 mm (1.7 in) as measured with chest deflection transducer (drawing 127–8050), and

(2) The internal hysteresis of the ribcage in each impact as determined by the plot of force vs. deflection in paragraph (b)(1) of this section shall be not less than 69 percent but not more than 85 percent.

(c) *Test procedure.* (1) Soak the dummy in a controlled environment at a temperature between 20.6 to 22.2°C (69 to 72 F) and a relative humidity from 10 to 70 percent for at least four hours prior to a test.

(2) Seat and orient the dummy, that wears light weight cotton stretch short sleeve shirt and above the knee pants on a seating surface without back support as shown in Figure N4, with the limbs extended horizontally and forward, parallel to the midsagittal plane, the midsagittal plane vertical within +/−1 degree and the ribs level in the anterior-poster and lateral directions within +/−0.5 degrees.

(3) Establish the impact point at the chest midsagittal plane so that the impact point of the longitudinal centerline of the probe coincides with the midsagittal plane of the dummy within +/−2.5 mm (0.1 in.) and is 12.7 +/−1.1 mm (0.5+/−0.04 in.) below the horizontal centerline of the No. 3 rib and is within 0.5 degrees of a horizontal line in the dummy's midsagittal plane.

(4) Adjust the dummy so that the tangent plane at the surface on the ribs immediately adjacent to the designated impact point is vertical and parallel to the face of the test probe.

(5) Impact the thorax with the test probe so that at the moment of contact the probe's longitudinal center line falls within 2 degrees of a horizontal line in the dummy's midsagittal plane.

(6) Guide the test probe during impact so that there is no significant lateral, vertical or rotational movement.

(7) Allow at least 30 minutes between successive tests.

§ 572.125 Lumbar spine, abdomen, and pelvis assembly and test procedure.

(a) Upper/lower torso assembly. The test objective is to determine the stiffness effects of the lumbar spine (drawing 127–3002) and abdominal insert (drawing 127–8210) on resistance to articulation between the upper torso assembly (drawing 127–2000) and the lower the torso assembly (drawing 127–3000).

(b) When the upper torso assembly of a seated dummy is subjected to a force continuously applied at the head to neck pivot pin level through a rigidly attached adaptor bracket as shown in Figure N5, according to the test procedure set out in paragraph (c) of this section, the lumbar spine-abdomen assembly shall:

(1) Flex by an amount that permits the upper torso assembly to translate in angular motion until the instrument cavity mating surface at the back of the thoracic spine is at 45 degrees relative to the vertical transverse plane at which time the force level applied perpendicular to the thoracic spine box mating surface is not less than 33 pounds and not more than 45 pounds, and

(2) Upon removal of the force the torso assembly returns to within 8 degrees of its initial position.

(c) Test procedure.

(1) Assemble the upper and the lower thorax including the loading adaptor bracket, and attach them to the fixture

in a seated posture as shown in Figure N5.

(2) Secure the pelvis at the pelvis instrument cavity rear face at the by threading four ¼ in cap screws into the available threaded attachment holes. Tighten the mountings so that the test material is rigidly affixed to the test fixture and pelvic-lumbar joining surface is horizontal.

(3) Attach the loading adapter bracket to the spine of the dummy and the pull cable and load cell as shown in Figure N5.

(4) Flex the thorax forward 40 degrees and then rearward as necessary to allow the torso to return to its initial position without external assistance.

(5)(i) Apply a forward force in the midsagittal plane through the adaptor bracket as shown in Figure N5 at any upper torso deflection rate between 0.5 and 1.5 degrees per second, up to 45 degrees of flexion, at which time the applied force is perpendicular to the thoracic spine box instrumentation cavity mating surface.

(ii) Continue to apply a force sufficient to maintain 45 degrees of flexion for 10 seconds, and record the highest applied force during the 10 seconds period.

(iii) Release all force as rapidly as possible, and measure the return angle 3 minutes after the release.

§ 572.126 Knees and knee impact test procedure.

(a) The knee assembly is part of the leg assembly shown in drawing 127–4000.

(b) Knee assembly. When the knee assembly, consisting of the knee cap shown in drawing 127–4013–1 (left) –2 (right), knee flesh shown in drawing 127–4011, lower leg shown in drawing 127–4014, the foot assembly shown in drawing 127–4030–1 (left) –2 (right), and femur load transducer shown in drawing SA–572 S10 or its structural replacement (drawing 127–4007), is tested according to the test procedure in § 572.127(c), the peak resistance force as measured with the test probe mounted accelerometer is not less than 1.8 kN (441 lbs) and not more than 2.8 kN (617 lbs).

(c) Test Procedure.

(1) Soak the knee assembly in a controlled environment at a temperature between 18.9 to 25.6 C (66 to 78 F) and a relative humidity from 10 to 70 percent for at least four hours prior to a test.

(2) Mount the test material and secure it to a rigid test fixture as shown in Figure N6. No contact is permitted between any part of the foot and tibia and any exterior surface.

(3) Align the test probe so that throughout its stroke and at contact with the knee it is within 2 deg. of horizontal and collinear with the longitudinal centerline of the femur.

(4) Guide the pendulum so that there is no significant lateral vertical or rotational movement at time zero.

(5) The test probe velocity at the time of contact is 2.1+/−0.03 m/s (6.9+/−0.1 ft/s).

(6) Time-zero is defined as the time of initial contact between the impactor and the knee.

§ 572.127 Test conditions and instrumentation.

(a) The test probe for thoracic impacts is a 101.6 +/−0.25 mm (4.00 +/−0.01 in.) diameter cylinder that weighs 2.86 +/−.02 kg (6.3 +/−0.05 lb) including instrumentation. Its impacting end has a flat right angle face that is rigid and has an edge radius of 12.7 mm (0.5 in.). The test probe has an accelerometer mounted on the end opposite from impact with its sensitive axis collinear with the longitudinal centerline of the cylinder.

(b) The test probe for knee impact tests is a 76.2 +/−0.2 mm (3.0 +/−0.01 in.) diameter cylinder that weighs .82 +/−.01 kg (1.8 +/−0.02 lb) including instrumentation. Its impacting end has a flat right angle face that is rigid and has an edge radius of 12.7 mm (0.5 in.) max. The test probe has an accelerometer mounted on the end opposite from impact with its sensitive axis collinear to the longitudinal centerline of the cylinder.

(c) Head accelerometers shall have dimensions, response characteristics, and sensitive mass locations specified in drawing SA–572 S4 or equivalent and be mounted in the head as shown in drawing 127–0000 sheet 3.

(d) The neck force/moment transducer shall have the dimensions, response characteristics, and sensitive axis locations specified in drawing SA–572 S11 or its equivalent and be mounted in the head-neck assembly as shown in drawing 127–0000 sheet 3.

(e) The thorax accelerometers shall have the dimensions, response characteristics, and sensitive mass locations specified in drawing SA–572 S4, or its equivalent and are mounted in the torso assembly in triaxial configuration at T4, and in uniaxial for-and-aft oriented configuration on the most anterior ends of ribs #1 and #6 and at the spine box at the levels of #1 and #6 ribs as shown in drawing 127–2000.

(f) The chest deflection transducer shall have the dimensions and response characteristics specified in drawing 127–8050 or equivalent and be mounted in the upper torso assembly as shown in drawing 127–2000.

(g) The optional lumbar spine force-moment transducer shall have the dimensions, response characteristics, and sensitive axis locations specified in drawing SA–572 S12 or its equivalent and be mounted in the lower torso assembly as shown in drawing 127–3000 as a replacement for lumbar adaptor 127–3005.

(h) The optional iliac spine force transducers shall have the dimensions and response characteristics specified in drawing SA–572 S13 or equivalent and be mounted in the torso assembly as shown in drawing 127–3000 as a replacement for A.S.I.S. load cell replacement 127–3015–1 (left) and –2 (right).

(i) The optional pelvis accelerometers shall have the dimensions, response characteristics, and sensitive mass locations specified in drawing SA–572 S4, or its equivalent and be mounted in the torso assembly in triaxial configuration in the pelvis bone as shown in drawing 127–3550.

(j) The femur force transducer shall have the dimensions and response characteristics specified in drawing SA–572 S10 or its equivalent and be mounted in the leg assembly as shown in drawing 127–4001.

(k) The outputs of acceleration and force-sensing devices installed in the dummy and in the test apparatus specified by this part are recorded in individual data channels that conform to the requirements of SAE Recommended Practice J211, Rev. Mar95 ''Instrumentation for Impact Tests,'' with channel classes as follows:

(1) Head acceleration—Class 1000.

(2) Neck:

(i) Forces—Class 1000.

(ii) Moments—Class 600.

(iii) Pendulum acceleration—Class 180.

(3) Thorax:

(i) Rib acceleration—Class 1000.

(ii) Spine and pendulum accelerations—Class 180.

(iii) Sternum deflection—Class 600.

(4) Lumbar:

(i) Forces—Class 1000.

(ii) Moments—Class 1000.

(5) Pelvis accelerations -Class 1000.

(6) Femur forces—Class 600.

(l) Coordinate signs for instrumentation polarity conform to the Sign Convention For Vehicle Crash Testing, Surface Vehicle Information Report, SAE J1733, 1994–12.

(m) The mountings for sensing devices shall have no resonance frequency within range of 3 times the frequency range of the applicable channel class.

(n) Limb joints are set at lg, barely restraining the weight of the limb when it is extended horizontally. The force required to move a limb segment shall not exceed 2G throughout the range of limb motion.

(o) Performance tests of the same component, segment, assembly, or fully assembled dummy are separated in time by period of not less than 30 minutes unless otherwise noted.

(p) Surfaces of dummy components are not painted except as specified in this part or in drawings subtended by this part.

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Figures to Subpart N

Figure N1

HEAD DROP TEST SET-UP SPECIFICATIONS

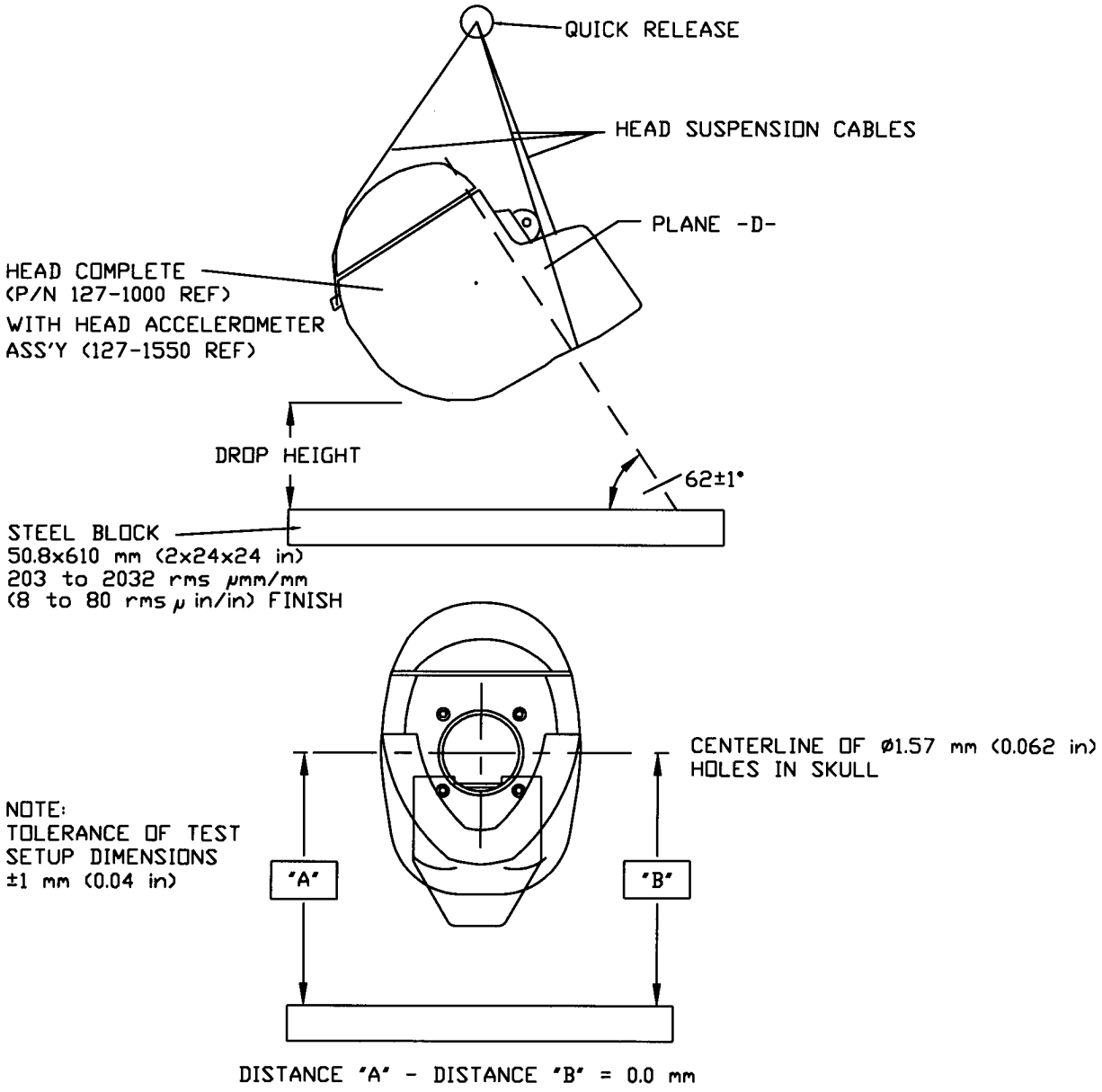
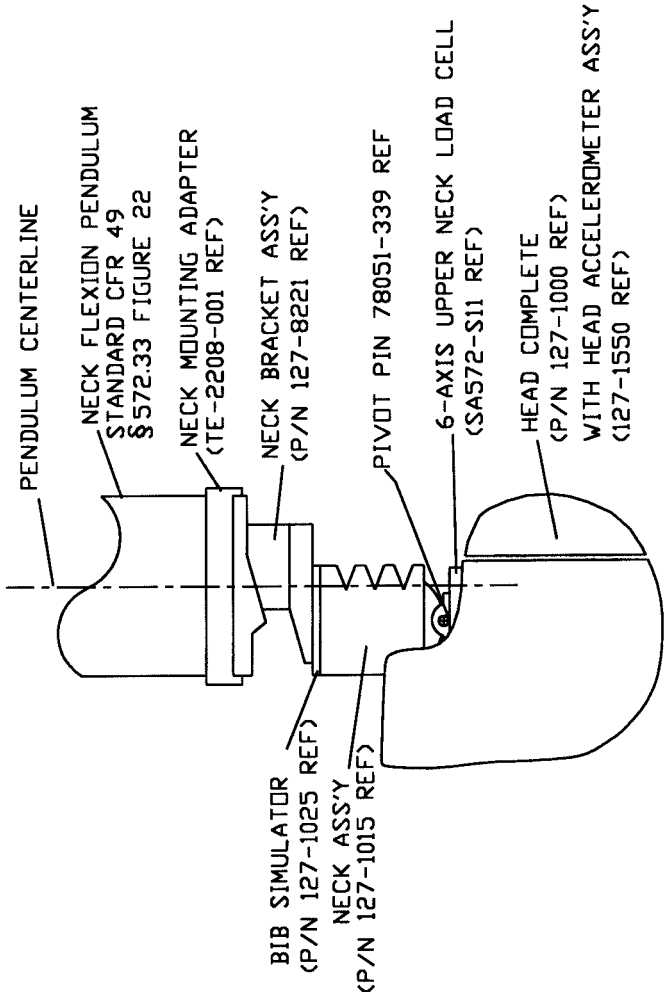


Figure N2

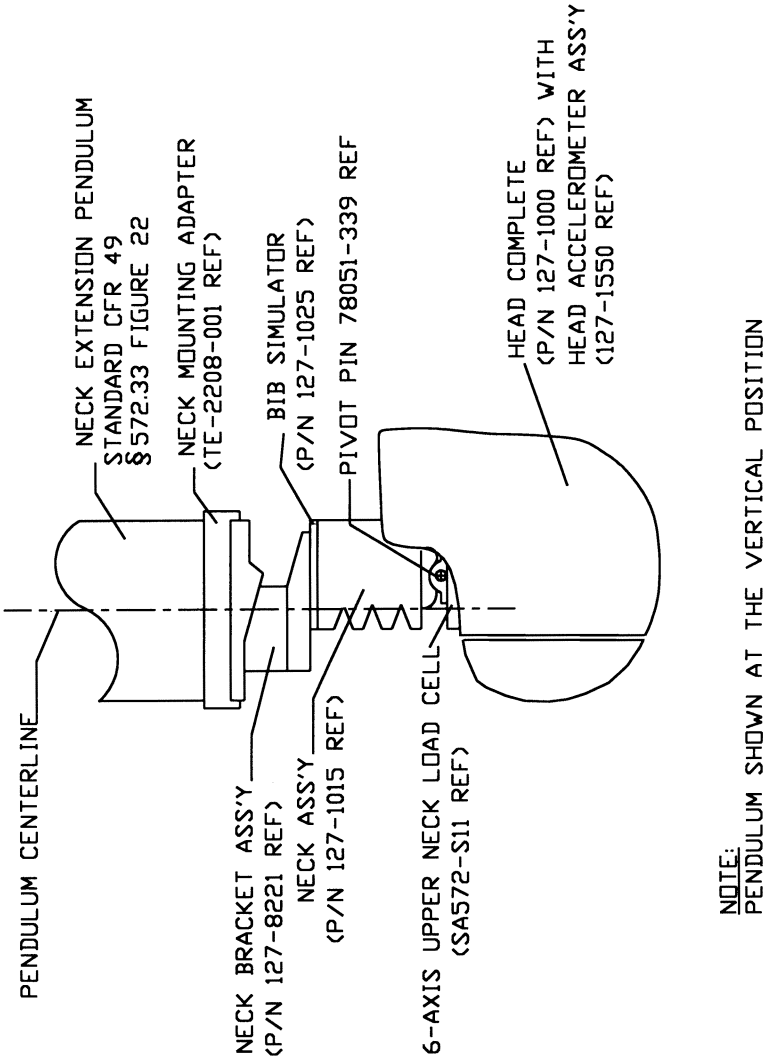
NECK FLEXION TEST SET-UP SPECIFICATIONS



NOTE:
PENDULUM SHOWN AT THE VERTICAL POSITION

Figure N3

NECK EXTENSION TEST SET-UP SPECIFICATIONS



NOTE:
PENDULUM SHOWN AT THE VERTICAL POSITION

Figure N4

THORAX IMPACT TEST SET-UP SPECIFICATIONS

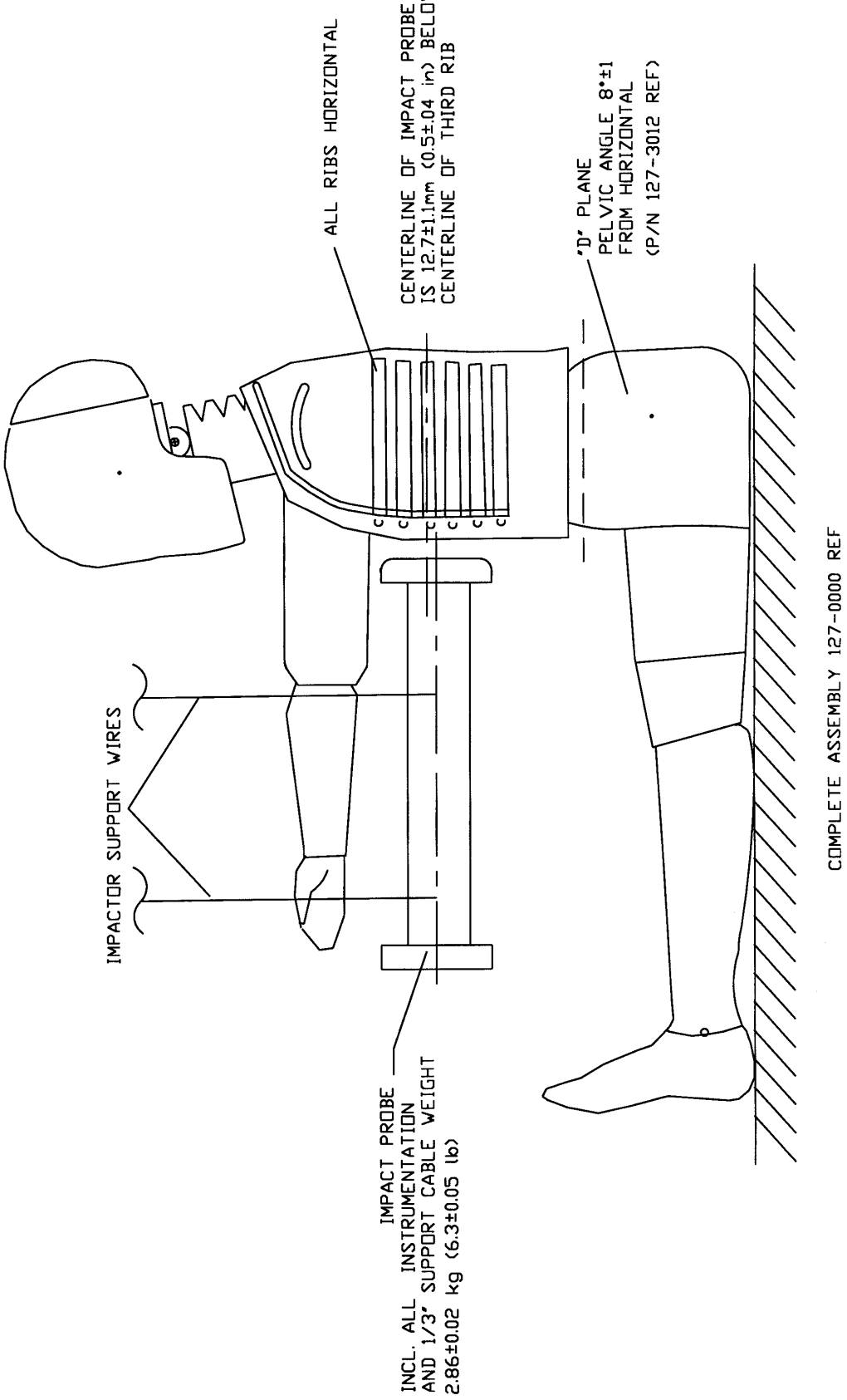


Figure N5

LUMBAR-SPINE FLEXION TEST SET-UP SPECIFICATIONS

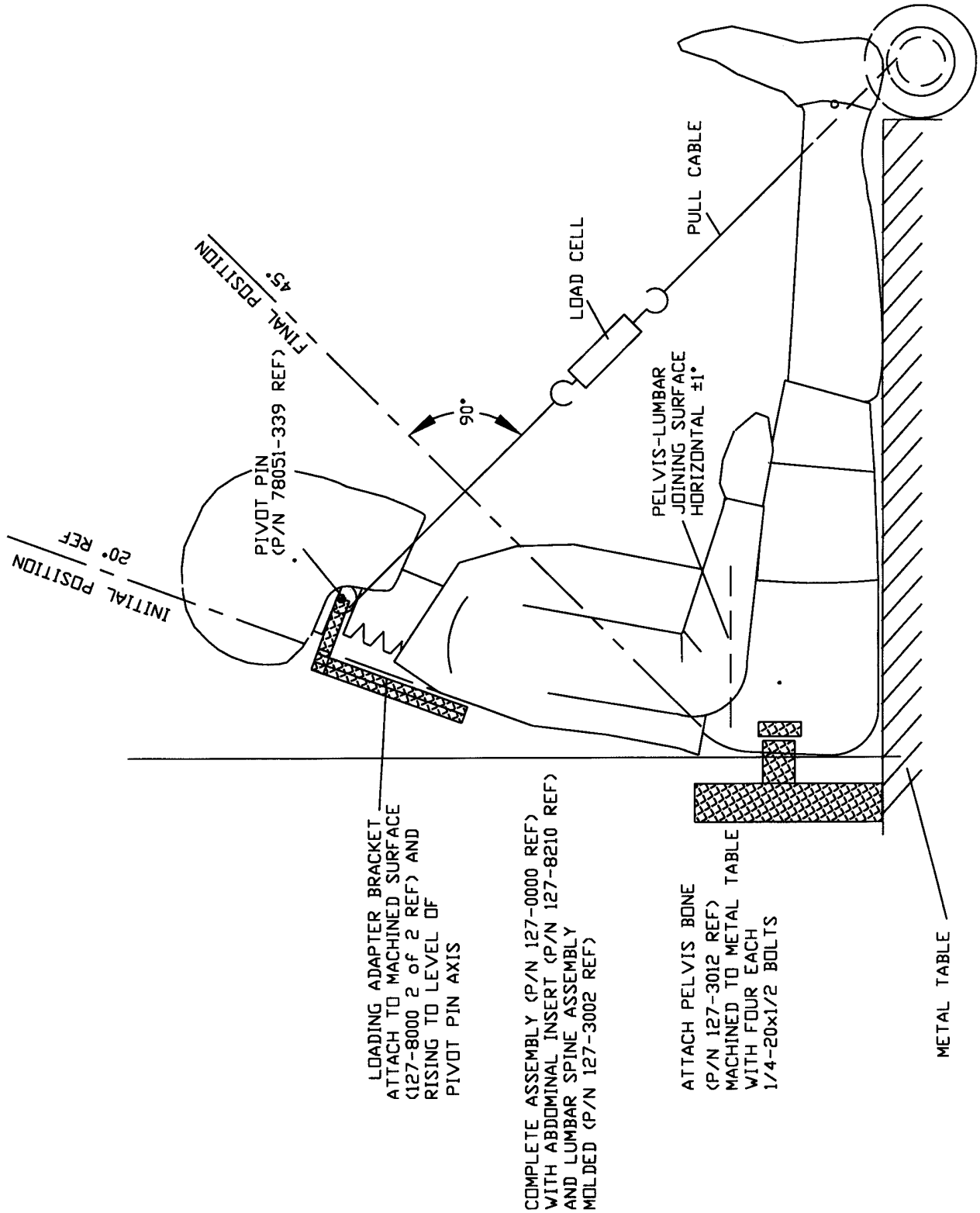
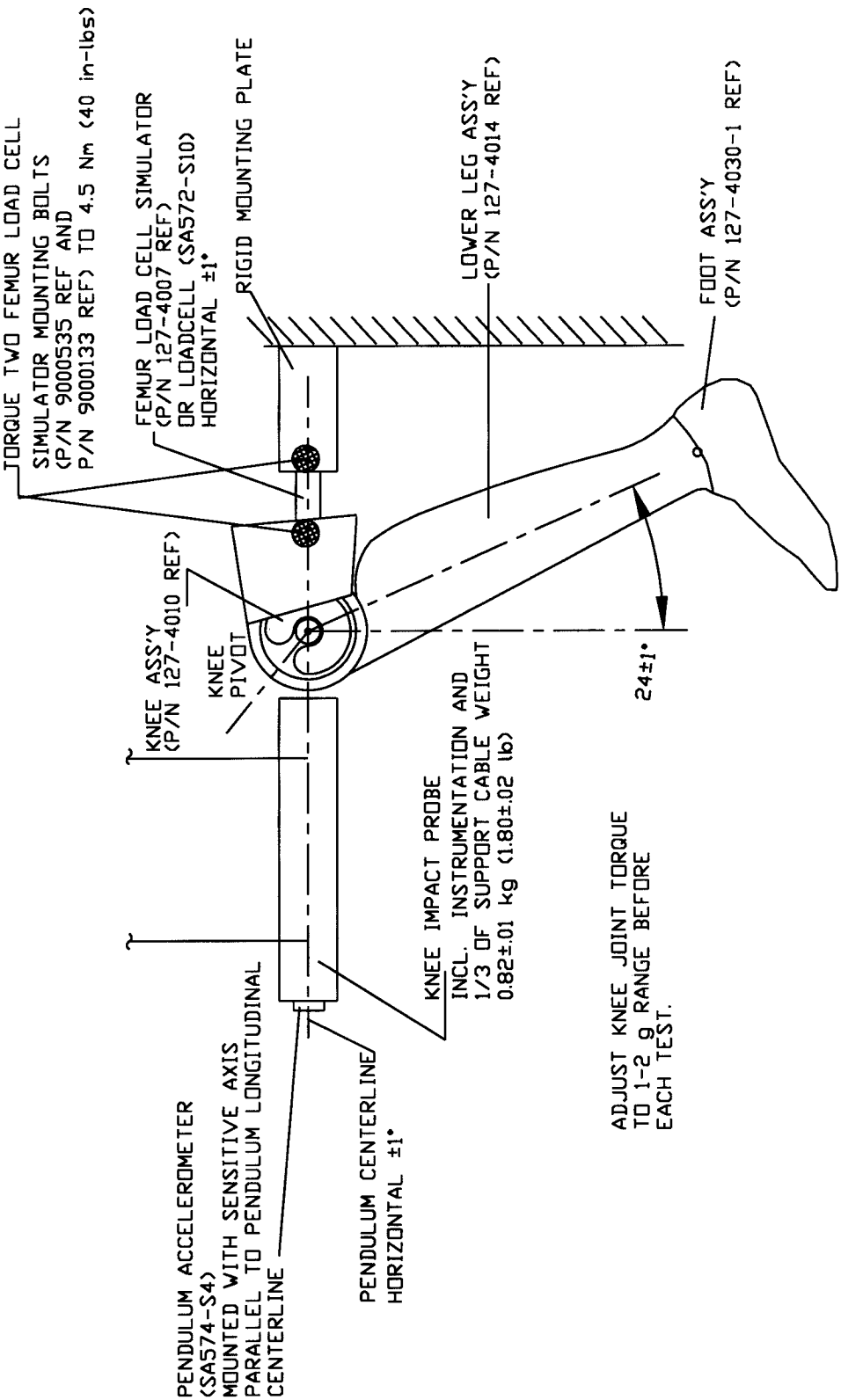


Figure N6

KNEE IMPACT TEST SET-UP SPECIFICATIONS



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L. Robert Shelton,

Associate Administrator for Safety Performance Standards.

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