Attachment 4

Aerospace Standard AS 1677

The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

SAE AS1677 REV. C

Issued 1980-12
Revised 2002-01

Superseding AS1677B

General Requirements for Noncertified Cargo/Baggage Containers

TABLE OF CONTENTS

TO PLACE A DOCUMENT ORDER: (724) 776-4970 FAX: (724) 776-0790 SAE WEB ADDRESS: http://www.sae.org

TABLE OF CONTENTS (Continued)

1. SCOPE:

This SAE Aerospace Standard (AS) covers the requirements for lower deck containers in wide body and standard body aircraft which do not require airworthiness certification under the condition of compartment restraint and/or, where applicable according to aircraft type, NAS3610 equivalent baseplate-restraint for these containers.

NOTE: IATA 50/0, “Requirements for interlining of ULDs”, should also be taken into account when designing and making equipment.

1.1 Purpose:

This document provides dimensional, structural, and environmental criteria for cargo/baggage containers tailored to meet the lower deck configuration of the wide and standard body aircraft. See AIR1869 for information relative to lower deck container configurations. The minimum essential criteria are identified by the use of the key word “shall”. Recommended criteria are identified by the use of the key word “should”, and while not mandatory, are considered to be of primary importance in providing serviceable, economical, and practical air transport containers. Deviation from recommended criteria should occur only after careful consideration, extensive testing, and thorough service evaluation have shown alternate methods to be satisfactory.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

ARP1334	Ground Equipment Requirements for Compatibility with Aircraft Unit Load Devices
AS1825	Methodology of Calculating Aircraft Cargo Volume
AIR1869	Wide-Body and Standard-Body Aircraft Lower Lobe Cargo Compartment ULD Capacities

2.2 ISO Publications:

Available from International Organization for Standardization, Case Postale 56, CH-1211 Geneve 20, Switzerland.

ISO 4116	Air Cargo Equipment - Ground Equipment Requirements for Compatibility with Aircraft Unit Load Devices
ISO 4118	Non-certified Lower-Deck Containers for Air Transport - Specification and Testing
ISO 11242	Aircraft - Pressure Equalization Requirements for Cargo Containers

2.3 IATA Publications:

Available from Publication Assistant, International Air Transport Association, 800 Place Victoria, P.O. Box 113, Montreal, Quebec, Canada H4Z 1M1.

IATA 40/0	Marking of Unit Load Devices
IATA 40/1	IATA Identification Code for Unit Load Devices
IATA 50/0	Requirements for Interlining of ULDs
IATA 50/7	General Specification for Non-Certified Aircraft Containers
IATA 80/2	Pressure Equalization Requirements for Aircraft and Shipping Containers

2.4 FAA Publications:

Available from Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591.

FAR/25.853 Compartment Interiors

2.5 JAA Publications:

Available from the Joint Aviation Authorities, Saturnusstraat 8-10, P.O. Box 3000, 2130 KA Hoofddorp, The Netherlands.

JAR/25.853 Compartment Interiors

3. DIMENSIONS AND RATINGS:

3.1 External contours, dimensions, and rating of applicable containers are shown in Table 1.

TABLE 1 - Ratings and Contour Dimensions of Noncertified Containers

Name of Container and Nominal Dimensions[2]	Rating (Maximum Gross Mass)[1]	Contours and External Dimensions	IATA/ATA Identification Code (IATA 40/1)[2]
Half-width contoured container, 2337 mm (92 in) wide, with base dimensions 1534 mm x 1562 mm (60.4 in x 61.5 in)	1588 kg (3500 lb)	Appendix A	DKC LD-1
Half-width contoured container, 2007 mm (79 in) wide, with base dimensions 1534 mm x 1562 mm (60.4 in x 61.5 in)	1588 kg (3500 lb)	Appendix B	DKE/DKN LD-3
Half-width rectangular container, with base dimensions 1534 mm x 1562 mm (60.4 in x 61.5 in)	1588 kg (3500 lb)	Appendix C	DKP LD-3
Full-width contoured container, 4064 mm (160 in) wide, with base dimensions 1534 mm x 3175 mm (60.4 in x 125 in)	3175 kg (7000 lb)	Appendix D	DLF LD-6
Full-width rectangular container, with base dimensions 1534 mm x 3175 mm (60.4 in x 125 in)	3175 kg (7000 lb)	Appendix E	DLP LD-11
Half-width contoured container, 1562 mm (61.5 in) wide, with base dimensions 1534 mm x 1194 mm (60.4 in x 47 in)	1225 kg (2700 lb)	Appendix F	DPE/DPN LD-2
Full-width contoured container, 3175 mm (125 in) wide, with base dimensions 1534 mm x 2438 mm (60.4 in x 96 in)	2449 kg (5400 lb)	Appendix G	DQF LD-8
Full-width rectangular container, with base dimensions 1534 mm x 2438 mm (60.4 in x 96 in)	2449 kg (5400 lb)	Appendix H	DQP LD-4
Full-width contoured container, 4064 mm (160 in) wide, with base dimensions 2235 mm x 3175 mm (88 in x 125 in)	4627 kg (10 200 lb)	Appendix J	DAF LD-26
Full-width contoured container, 4064 mm (160 in) wide, with base dimensions 2438 mm x 3175 mm (96 in x 125 in)	5103 kg (11 250 lb)	Appendix K	DMF
Low-height, full-width contoured container, 2438 mm (96 in) wide, with base dimensions 1534 mm x 1562 mm (60.4 in x 61.5 in)	1134 kg (2500 lb)	Appendix L	DKH LD-3-45W
Low-height, half-width contoured container, 2007 mm (79 in) wide, with base dimensions 1534 mm x 1562 mm (60.4 in x 61.5 in)	1134 kg (2500 lb)	Appendix M	DKG LD-3-45

NOTES:

[1] Actual maximum gross mass shall comply with the aircraft weight and balance manual.

[2] Carriage of noncertified ULDs in any cargo compartment must be allowed by each individual aircraft weight and balance manual.

4. BASIC CONTAINER CONFIGURATION:

4.1 The basic container shall consist of a complete enclosure (base, top, and sides) with access.

4.2 The structure shall be designed to provide the maximum usable internal volume available within the limit of structural design including access closures.

NOTE: Reference IATA 50/0 clause 1.7 for the maximum ULD contours.

4.3 Tare weight to be as light as possible, consistent with good design practice and serviceability.

5. REQUIREMENTS:

5.1 Basic Requirements for Design:

5.1.1 The maximum gross mass for the containers are shown in Table 1.

5.1.2 Robustness, reliability, and maintainability shall be major factors in the design, commensurate with planned service life.

5.1.3 The center of gravity of the load can vary laterally and longitudinally. See 5.10.3.1 for details.

5.1.4 Stacking capability is not required.

5.2 Materials:

5.2.1 The materials and processes selected shall be capable of accepting extremely hard usage for a cost related life. Materials shall ensure no deterioration in strength when subject to normal environmental conditions.

5.2.2 Materials used shall be flame resistant in accordance with FAR/JAR 25.853.

5.3 Environmental Criteria:

5.3.1 Insofar as atmospheric conditions may affect the performance of the container or any part thereof, it should be taken into account that during transportation, these conditions range from +71.1 to -53.9 °C (+160 to -65 °F) with relative humidity from 20 to 85%. These are the mean temperature and humidity figures worldwide without taking into account extremes in temperature such as those experienced in arctic, sub-polar, or desert regions. This, however, is not a test requirement.

5.3.2 All components of the container shall be protected against deterioration or loss of strength in service due to weathering, corrosion, abrasion, or other causes where the type of material used requires such protection.

5.4 Base:

5.4.1 The base shall be smooth and free from rough or sharp edges which may be hazardous to personnel, cargo, airplane, ramp, and terminal handling equipment. The base shall be structurally attached to, and an integral part of, the container assembly. The construction shall be designed for strength and durability to withstand harsh treatment during its service life. It shall have a high resistance to impact and wear. Where attachment of the container box to the base is required, this shall be accomplished by the use of normal hand tools.

5.4.2 Care must be exercised in the design and construction of the base to ensure that flatness of the lower surface and edge members can be maintained in service and is of adequate strength to minimizing bowing, to provide for the ease of conveyance.

5.4.3 All base edges, corners, and restraint space shall have dimensions as shown in Figure 1.

5.4.4 The base design shall provide for support and ease of movement at the equally distributed rating on minimum conveyor systems as defined in ARP1334.

5.4.5 Where optional forklift capability is provided, the minimum forklift entry size should be 102 mm (4 in) high by 305 mm (12 in) wide, with chamfered protected edges.

5.4.6 Where provided, there shall be forklift entries at least on the two long sides, although three-way entry is preferred on K-size units.

5.4.7 On L-size units, the distance between the inner edges of the optional forklift entries shall be not less than 813 mm (32 in), and on K-size unit not less than 355 mm (14 in).

5.5 Body:

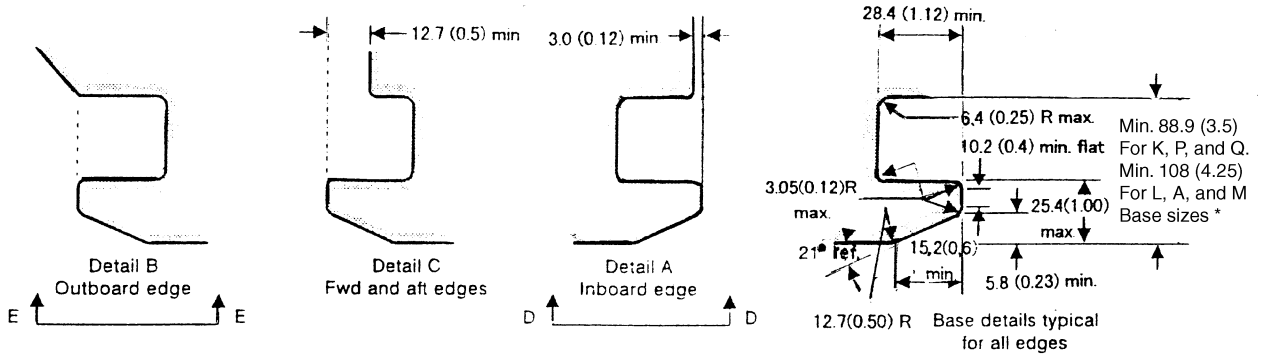
5.5.1 It is essential that the container integrity is maintained throughout its transportation because the container interfaces directly with the aircraft system. Imposed loads shall be sustained by the base and the body. The materials and methods of construction must, therefore, be adequate for this task.

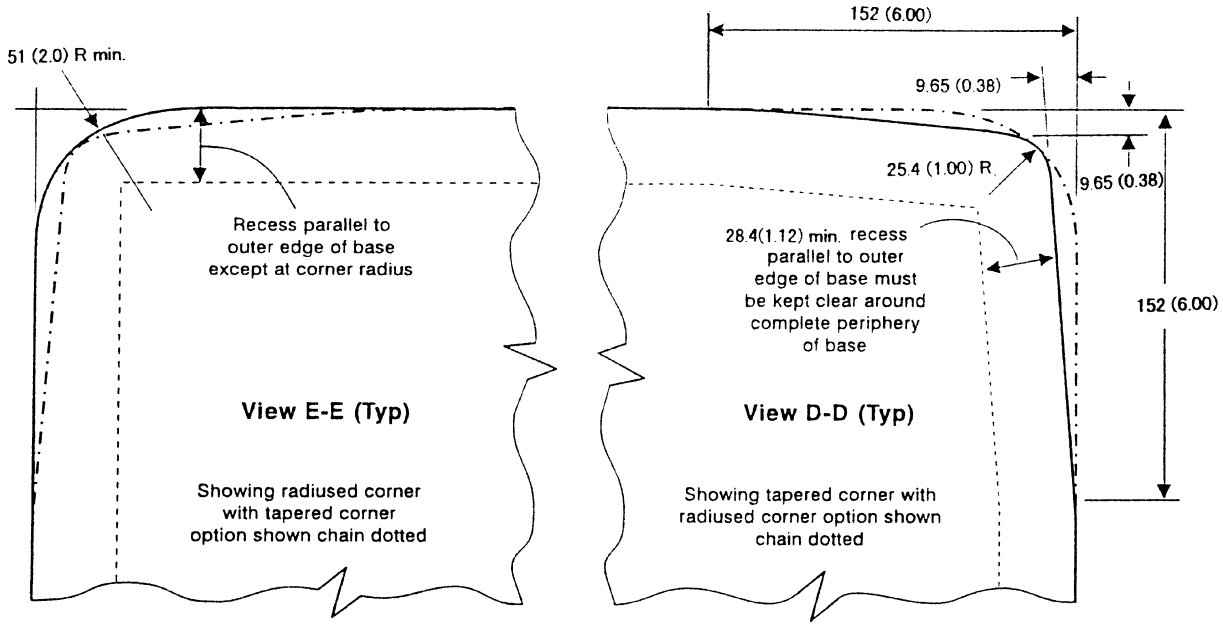
5.5.2 The sides, roof, and access closure shall be of a minimum weight commensurate with maximum stability during both ground handling and air transportation.

5.5.3 The roof shall be flush such that any protrusions do not cause damage in contact with the aircraft cargo compartment ceiling. The top of the container shall be self-draining and designed for easy snow clearance.

5.5.4 There shall be no intrusions between the base edges, as defined in Figure 1 base details typical for all edges, and the container box in depth of 28 mm (1.12 in) from the base edges.

5.5.5 To facilitate repair and assembly, component parts shall be readily removable with hand tools and shall be interchangeable.





The height of outboard edge and notes Dimensions in millimeters (inches)

Size	Base size	Recess Height *	Width	Contoured	Rectangular
K	1534 x 1562 (60.4 x 61.5)	88.9 (3.5) min.	Half – width	DKC, DKE, DKN, DKG	DKP
			Full – width	DKH	
L	1534 x 3175 (60.4 x 125)	108 (4.25) min.	Full – width	DLF	DLP
P	1534 x 1194 (60.4 x 47)	88.9 (3.5) min	Half – width	DPE, DPN	
Q	1534 x 2438 (60.4 x 96)	88.9 (3.5) min.	Full – width	DQF	DQP
A	2235 x 3175 (88 x 125)	108 (4.25) min.	Full – width	DAF	
M	2438 x 3175 (96 x 125)	108 (4.25) min.	Full – width	DMF	

* 88.9 (3.5) minimum for base size code K, P and Q and 108 (4.25) minimum for base size code L, A and M

NOTE: Figure 1 shows Tapered Container Base, Rounded Container Base also available as Option.

FIGURE 1 - Details of the Container Base

5.5.6 Any gussets in the door opening shall be the minimum consistent with the strength and/or deflection requirements.

5.5.7 The minimum height dimension of the unit load devices is 1600 mm (63 in) except low height containers.

5.6 Access Closures:

5.6.1 Closures shall be designed to avoid finger-pinching hazards and be of sufficient strength to contain the load during air and ground transportation.

5.6.2 The access closures shall have a minimum number of securing devices to sustain the handling loads at maximum gross mass without unlocking. These devices are required to secure the access closures in a positive position. They should be so located that they cannot damage, or become damaged by adjacent container. No tools shall be required to operate the closures or the securing devices.

5.6.3 Positive means should be considered to restrain the access closure(s) in the open position.

5.7 Tie-Down Fittings:

5.7.1 Securing points may be provided around the base at the sidewall joints spaced approximately 508mm (20 in) apart. Each of these points shall be capable of reacting an omnidirectional load of 890 daN (2000 lb).

5.8 Door Handles, Straps, or Hand Holds:

5.8.1 Handles, straps, or hand holds shall be provided on each door for handling door and for manual movement of the container.

5.8.2 These devices shall withstand a 445 daN (1000 lb) pull in any direction and shall be suitable for gripping with gloved hand.

5.8.3 They shall be designed so they can cause no damage to adjacent units.

5.9 Placard Holder:

5.9.1 To accept destination cards 210 mm by 149 mm (8-1/4 in by 5-7/8 in) placard holders shall be provided.

5.10 Testing and Performance:

5.10.1 Bridging and Cresting:

5.10.1.1 The container loaded to its maximum gross mass shall be capable of traversing from one item of handling equipment to another when there exists a height difference up to 150 mm (6 in) at the junction. At the point where the container balances on the end of the higher surface, the entire load is supported by one row of rollers per ARP1334. Upon completion of the test, the container shall show neither permanent deformation nor abnormality that will render it unsuitable for use, and those dimensional requirements affecting handling and interchange shall be met.

5.10.2 Pressure Equalization and Rapid Decompression:

5.10.2.1 For normal flight conditions, a minimum vent area of 5 cm^2/m^3 (0.02 in^2/ft^3) of container internal volume should be provided if the door seal venting area is not sufficient.

5.10.2.2 For rapid decompression in the event of emergency, a minimum decompression vent area of 100 cm^2/m^3 (0.45 in^2/ft^3) of container internal volume to become open in a duration of less than 0.2s when submitted to a maximum pressure differential from inside of 14 kPa (2 lb/in^2), if the access closure seal area is not sufficient to fulfill this venting requirement. If the specific design requires a “blowout” device to achieve the required vent area, the “blowout” device must remain attached to the container after activation.

5.10.2.3 Above vent area shall be adequately protected from cargo load shift to ensure that the maximum area is maintained during emergency operations.

NOTE: See ISO 11242 for the pressure equalization requirements.

5.10.3 Impact Loads:

5.10.3.1 The container loaded to its maximum gross mass with the minimum CG (Center of Gravity) height of 864 mm (34 in) for low height container i.e., DKH and DKG, height of 635 mm (25 in), longitudinal eccentricity within 10% its base length, and lateral eccentricity within 10% of the base width, will be impacted at the base of the unit at the rate of 0.3 m/s (1 ft/s) against a vertical rigid solid bar 51 mm (2 in) high and on each side of the base of the unit to be tested.

5.10.3.2 The impact test shall consist of at least 50 test impacts on each side of the container base in accordance with 5.10.3.1. 25% of these impacts will be initiated with the container at 15° offset to the leading edge in the direction of travel, an additional 25% of these would be on the other corner.

5.10.3.3 On the completion of these tests, the container shall not discharge its contents and the permanent set of the container shall not exceed 19 mm (0.75 in) from the top of the container to the maximum vertical center of the gravity and decreasing linearly to 3 mm (0.12 in) at the base.

5.10.4 Rain Test:

5.10.4.1 The container is to be designed to prevent the ingress of water such as might be experienced in heavy driving rain. It shall be demonstrated that in these conditions cargo will be undamaged by water ingress.

6. CUSTOMS REQUIREMENTS:

6.1 It is recommended that provisions be made for closing and sealing the container to meet customs clearance and security requirements.

7. ADDITIONAL DESIGN OPTIONS:

7.1 The following may be added as design options required by a particular customer:

a. Knock-down capability
b. Component and subassembly interchangeability
c. Shelf capability

8. MARKINGS:

8.1 All containers covered by this document shall be marked in accordance with the following information:

a. Name and address of the manufacturer
b. The actual tare weight of the container to the nearest kilograms and pounds
c. The maximum gross weight in kilograms and pounds
d. The serial number or date of manufacture or both

The letter size shall be large enough to insure good readability and shall not be less than 25 mm (1in) high for the maximum gross weight and tare weight.

8.2 The following additional markings should also be included. The manufacturing part number and date manufactured letter sizes should be large enough to insure good readability. The ID code shall be not less than 100 mm (4 in) high and shall be located at the top of on the outboard and inboard panels at the height of not less than 1150 mm (45 in) for the low height container i.e., DKH and DKG, may reduce this dimension to 890 mm (35 in) as well as optionally on both sides of the container.

a. ID Code _____
b. Mfg. Part No. _____
c. Date Mfg. _____

NOTE: The ID code is an international unit marking system consisting of:

1) 3 digits (alpha) for the type and code size
2) 5 digits (numeric) for individual serial number
3) 2 digits (alpha) for owner code (airline and non-airline)

ID codes are assigned by the ULD Registrar, International Air Transport Association (IATA), 800 Place Victoria, P.O. Box 113, Montreal, Quebec, Canada H4Z 1M1.

Above markings are shown in the ULD Technical Manual 40/0 of the IATA Document.

PREPARED UNDER THE JURISDICTION OF
SAE SUBCOMMITTEE AGE-2A, CARGO HANDLING OF
COMMITTEE AGE-2, AIR CARGO AND AIRCRAFT GROUND EQUIPMENT SYSTEMS

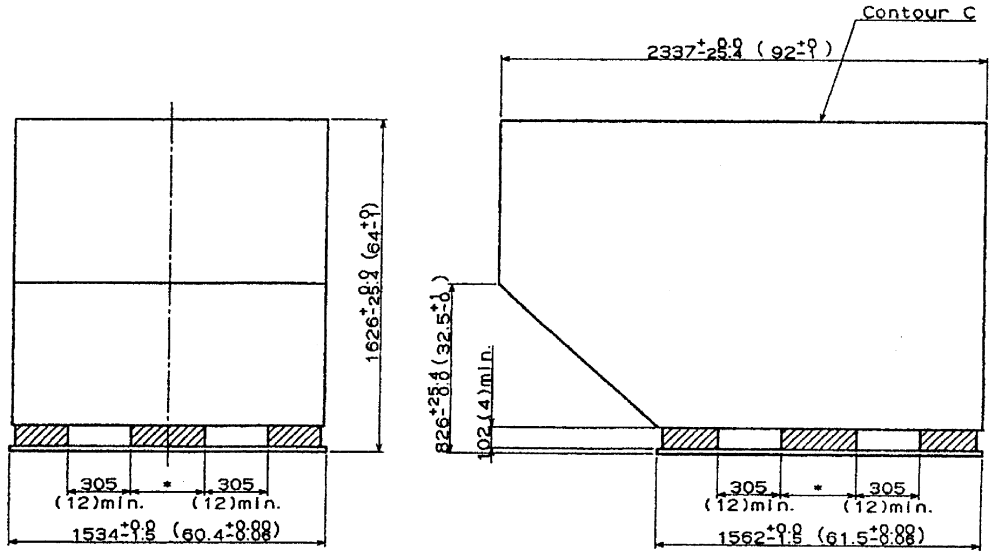
APPENDIX A

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
HALF-WIDTH CONTOURED CONTAINERS OF CODE DKC (LD-1)

A.1 DIMENSIONS:

Dimensions are given in Figure A1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 Dimensions denoted by "*" should be identical.

3 The centerline of the optional forklift entry should be located toward the outboard side by 156 mm (6.15 in) to accommodate the natural CG deviation. See 5.4.5 and 5.4.6.

4 The height of container, i.e. $1626^{+0.0/-25.4}$ ($64^{+0/-1}$), should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

FIGURE A1 - Dimensions of Half-Width Contoured Containers of Code DKC (LD-1)

A.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on at least the two long sides. Although three-way entry is preferred. The forklift pockets should be protected. If possible, and at least chamfers are recommended.

A.3 ACCESS CLOSURES:

A.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

A.3.2 The closures should have lockings and custom sealings.

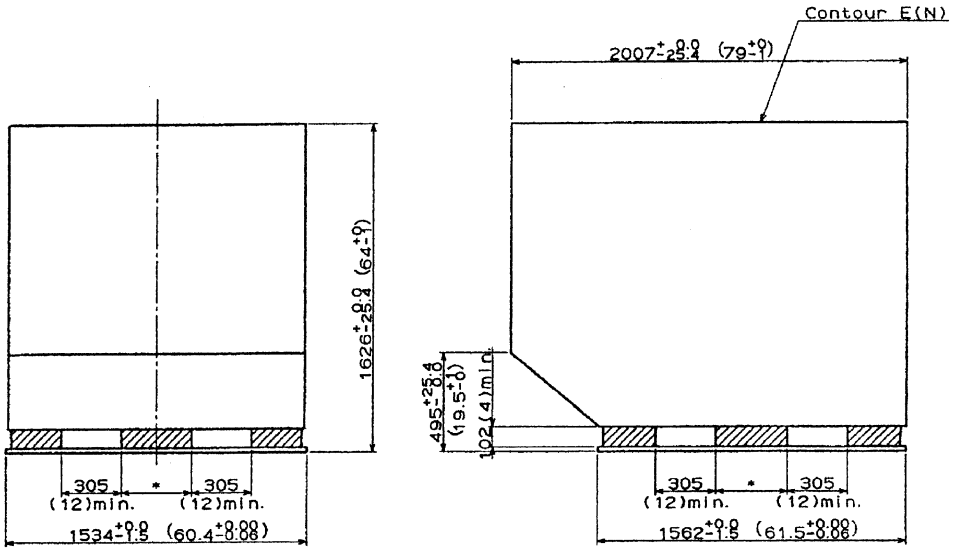
APPENDIX B

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR HALF-WIDTH CONTOURED CONTAINERS OF CODE DKE AND DKN (LD-3)

B.1 DIMENSIONS:

Dimensions are given in Figure B1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 Dimensions denoted by "*" should be identical.

3 The centerline of the optional forklift entry should be located toward outboard side by 102 mm (4 in) to accommodate the natural CG deviation. See 5.4.5 and 5.4.6.

4 The height of container, i.e. $1626^{+0.0/-25.4}$ $(64^{+0/-1})$, should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

5 The code of DKE shows for the container without forklift pockets and DKN shows for the container with forklift pockets.

FIGURE B1 - Dimensions of Half-Width Contoured Containers of Code DKE and DKN (LD-3)

B.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on at least the two long sides. Although three-way entry is preferred. The forklift pockets should be protected. If possible, and at least chamfers are recommended.

B.3 ACCESS CLOSURES:

B.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

B.3.2 The closures should have lockings and custom sealings.

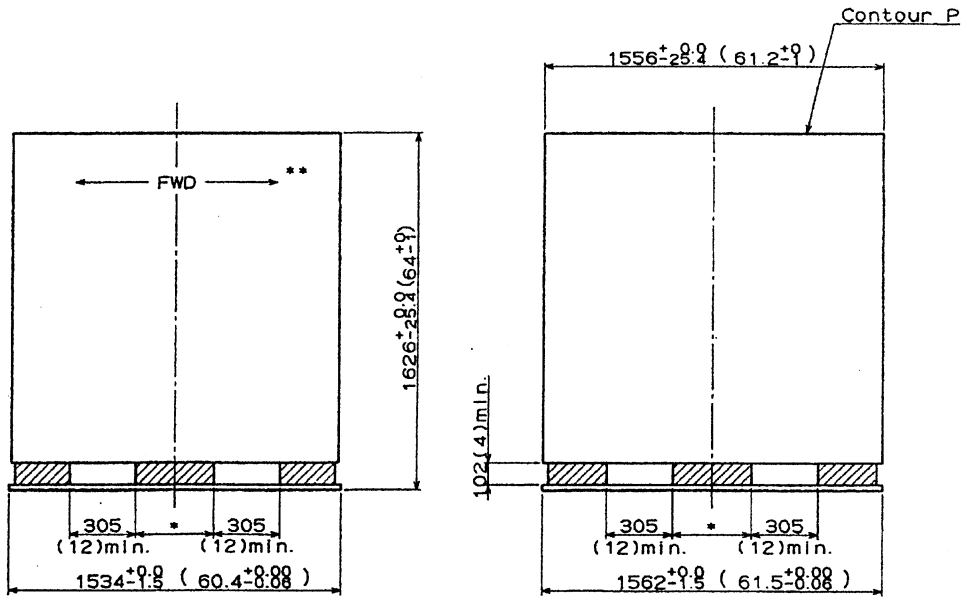
APPENDIX C

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
HALF-WIDTH RECTANGULAR CONTAINERS OF CODE DKP (LD-3)

C.1 DIMENSIONS:

Dimensions are given in Figure C1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 Dimensions denoted by "*" should be identical.

3 The height of container, i.e. $1626^{+0.0/-25.4}$ ($64^{+0/-1}$), should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

4 ** Marking in accordance with C.4.

FIGURE C1 - Dimensions of Half-Width Rectangular Containers of Code DKP (LD-3)

C.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on at least the two long sides. Although four-way entry is preferred. The forklift pockets should be protected. If possible, and at least chamfers are recommended.

C.3 ACCESS CLOSURES:

C.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

C.3.2 The closures should have lockings and custom sealings.

C.4 MARKING:

Both inboard and outboard panels shall be marked to indicate clearly the sides of the container that shall face forwards in the aircraft as shown in Figure C1.

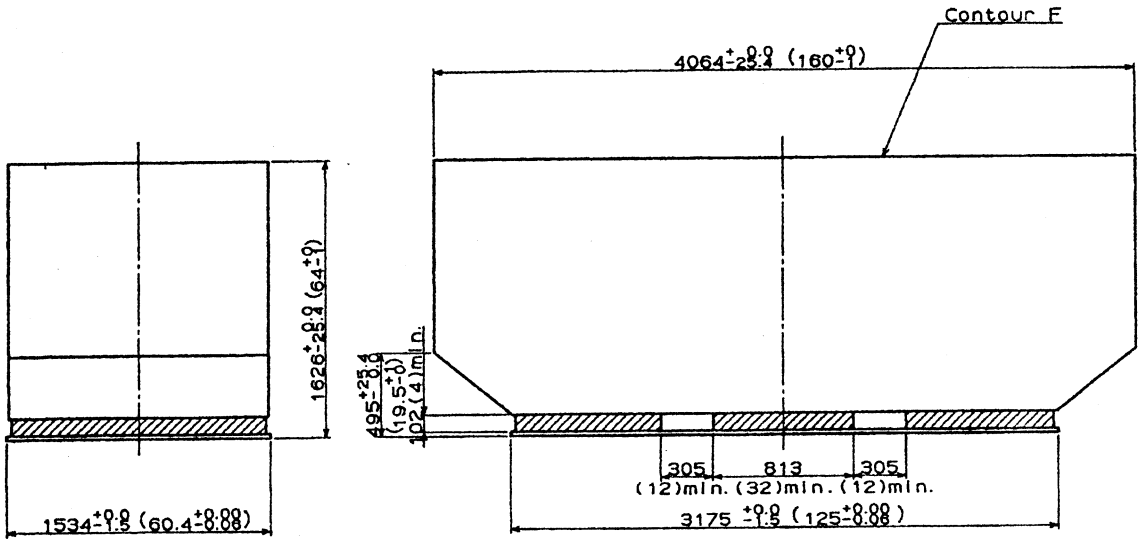
APPENDIX D

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
FULL-WIDTH CONTOURED CONTAINERS OF CODE DLF (LD-6)

D.1 DIMENSIONS:

Dimensions are given in Figure D1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 The height of container, i.e. $1626^{+0.0/-25.4}$ ($64^{+0/-1}$), should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

FIGURE D1 - Dimensions of Full-Width Contoured Containers of Code DLF (LD-6)

D.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on the two long sides. The forklift pockets should be protected. If possible, and at least chamfers are recommended. See 5.4.5, 5.4.6, and 5.4.7.

D.3 ACCESS CLOSURES:

D.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

D.3.2 The closures should have lockings and custom sealings.

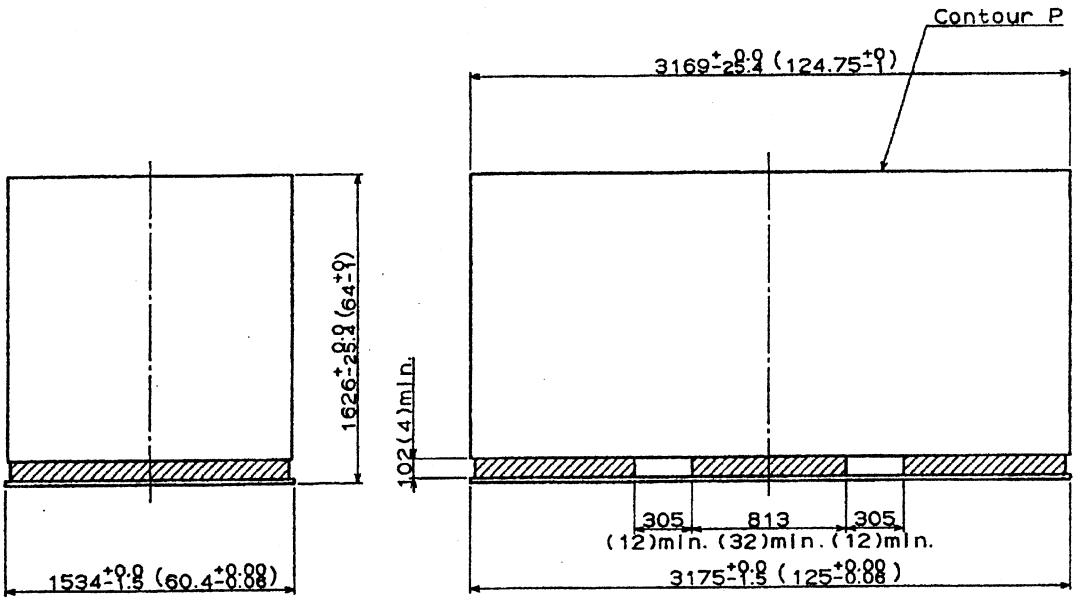
APPENDIX E

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
FULL-WIDTH RECTANGULAR CONTAINERS OF CODE DLP (LD-11)

E.1 DIMENSIONS:

Dimensions are given in Figure E1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 The height of container, i.e. $1626^{+0.0-25.4}$ ($64^{+0/-1}$), should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

FIGURE E1 - Dimensions of Full-Width Rectangular Containers of Code DLP (LD-11)

E.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on the two long sides. The forklift pockets should be protected. If possible, and at least chamfers are recommended. See 5.4.5, 5.4.6, and 5.4.7.

E.3 ACCESS CLOSURES:

E.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

E.3.2 The closures should have lockings and custom sealings.

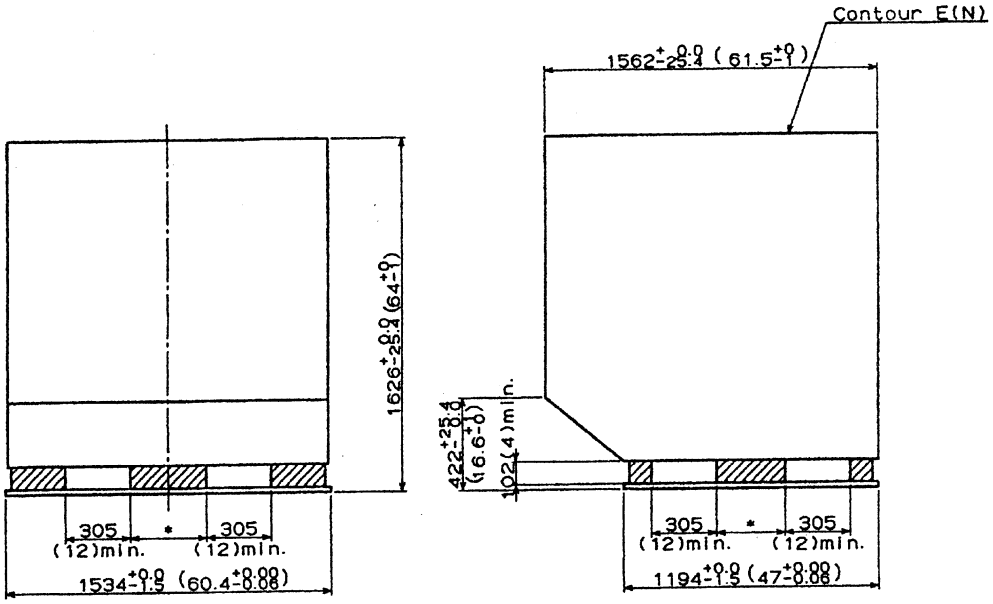
APPENDIX F

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
HALF-WIDTH CONTOURED CONTAINERS OF CODE DPE AND DPN (LD-2)

F.1 DIMENSIONS:

Dimensions are given in Figure F1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 Dimensions denoted by "*" should be identical.

4 The height of container, i.e. 1626 $^{+0.0/-25.4}(64^{+0/-1})$, should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

5 The code of DPE shows for the container without forklift pockets and DPN shows for the container with forklift pockets.

FIGURE F1 - Dimensions of Half-Width Contoured Containers of Code DPE and DPN (LD-2)

F.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on at least the two long sides. Although three-way entry is preferred. The forklift pockets should be protected. If possible, and at least chamfers are recommended.

F.3 ACCESS CLOSURES:

F.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

F.3.2 The closures should have lockings and custom sealings.

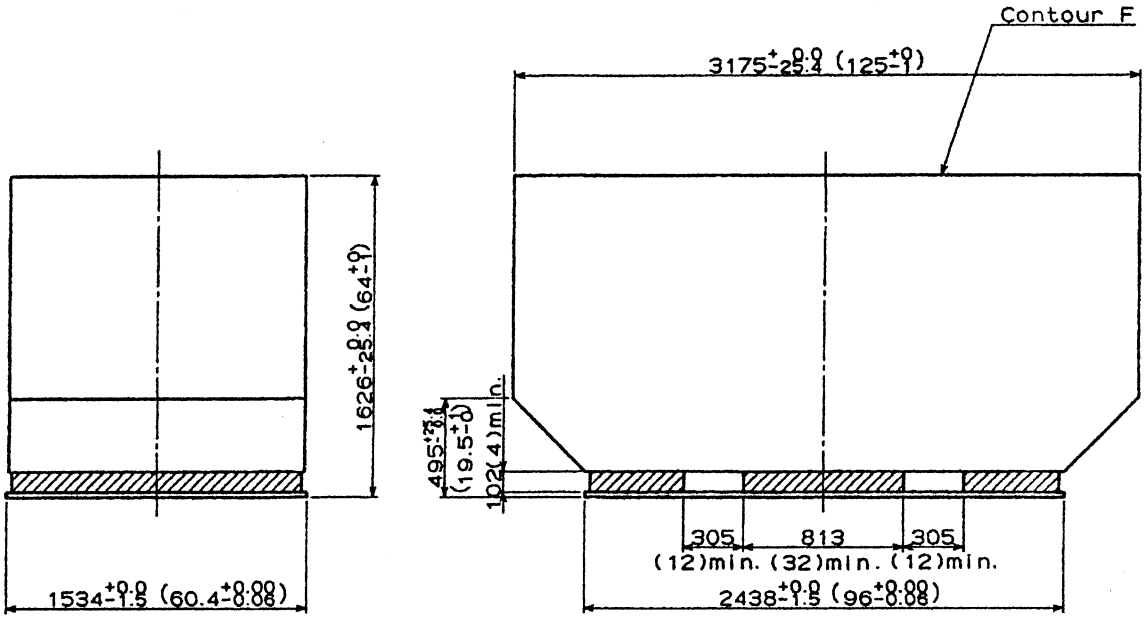
APPENDIX G

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
FULL-WIDTH CONTOURED CONTAINERS OF CODE DQF (LD-8)

G.1 DIMENSIONS:

Dimensions are given in Figure G1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 The height of container, i.e. 1626 $^{+0.0/-25.4}(64^{+0/-1})$, should be kept close to maximum height, i.e. 1626 (64), within the range of allowance.

FIGURE G1 - Dimensions of Full-Width Contoured Containers of Code DQF (LD-8)

G.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on the two long sides. The forklift pockets should be protected. If possible, and at least chamfers are recommended. See 5.4.5 and 5.4.6.

G.3 ACCESS CLOSURES:

G.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

G.3.2 The closures should have lockings and custom sealings.

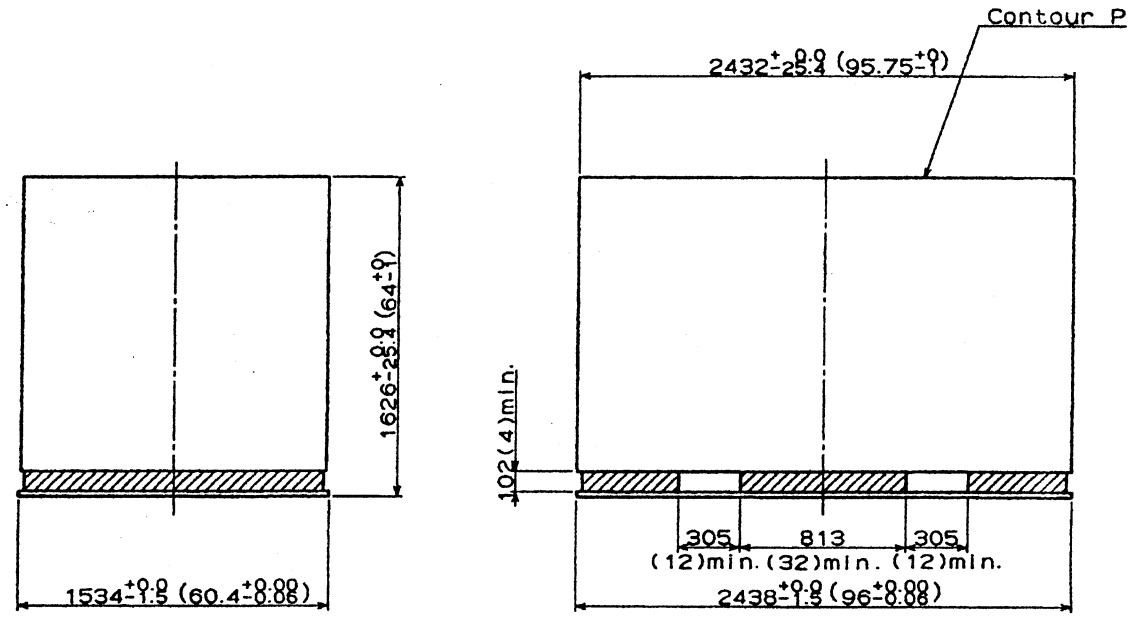
APPENDIX H

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
FULL-WIDTH RECTANGULAR CONTAINERS OF CODE DQP (LD-4)

H.1 DIMENSIONS:

Dimensions are given in Figure H1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 The height of container, i.e. $1626^{+0.0/-25.4}$ $(64^{+0/-1})$, should be kept close to maximum height i.e. 1626 (64), within the range of allowance.

FIGURE H1 - Dimensions of Full-Width Rectangular Containers of Code DQP (LD-4)

H.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on the two long sides. The forklift pockets should be protected. If possible, and at least chamfers are recommended. See 5.4.5 and 5.4.6.

H.3 ACCESS CLOSURES:

H.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

H.3.2 The closures should have lockings and custom sealings.

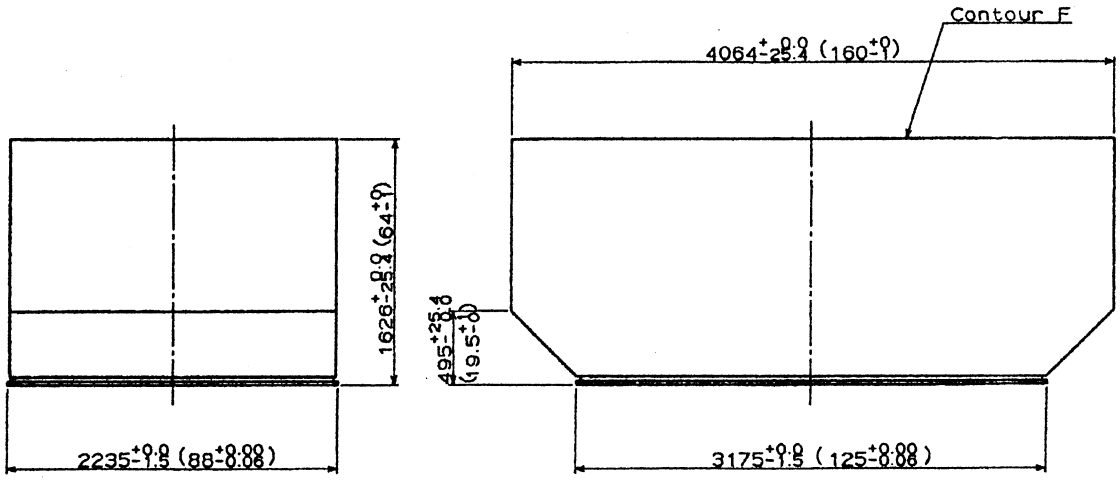
APPENDIX J

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
FULL-WIDTH CONTOURED CONTAINERS OF CODE DAF (LD-26)

J.1 DIMENSIONS:

Dimensions are given in Figure J1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 The height of container, i.e. $1626^{+0.0/-25.4}$ ($64^{+0/-1}$), should be kept close to minimum height, i.e. 1600 (63), within the range of allowance.

FIGURE J1 - Dimensions of Full-Width Contoured Containers of Code DAF (LD-26)

J.2 ACCESS CLOSURES:

J.2.1 It is suggested that access closures be provided on one long side for maximum loadability.

J.2.2 The closures should have lockings and custom sealings.

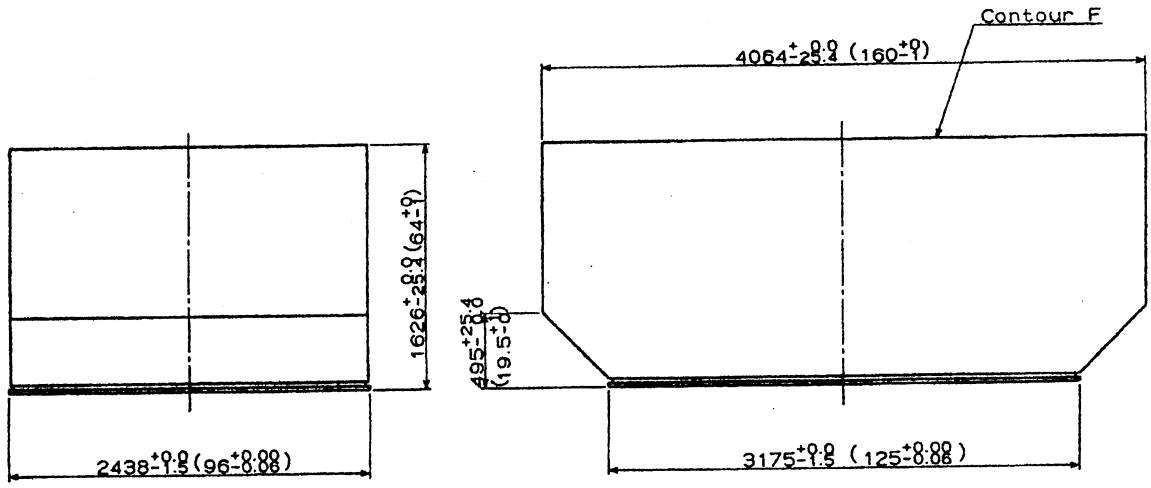
APPENDIX K

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR
FULL-WIDTH CONTOURED CONTAINERS OF CODE DMF

K.1 DIMENSIONS:

Dimensions are given in Figure K1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 The height of container, i.e. 1626 $^{+0.0/-25.4}$(64$^{+0/-1}$), should be kept close to minimum height, i.e. 1600 (63), within the range of allowance.

FIGURE K1 - Dimensions of Full-Width Contoured Containers of Code DMF

K.2 ACCESS CLOSURES:

K.2.1 It is suggested that access closures be provided on one long side for maximum loadability.

K.2.2 The closures should have lockings and custom sealings.

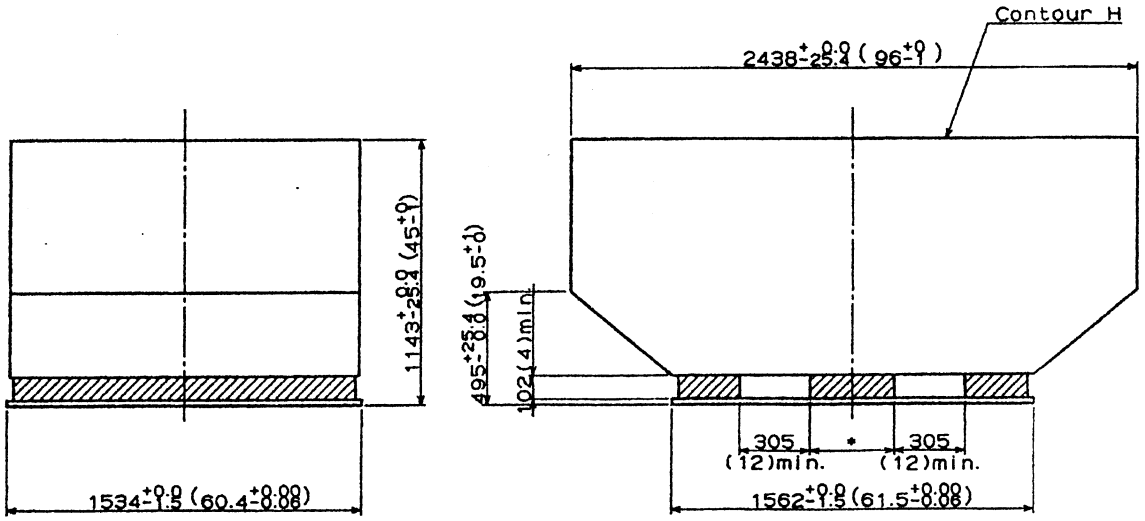
APPENDIX L

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR LOW-HEIGHT
FULL-WIDTH CONTOURED CONTAINERS OF CODE DKH (LD-3-45W)

L.1 DIMENSIONS:

Dimensions are given in Figure L1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

FIGURE L1 - Dimensions of Low-Height Full-Width Contoured Containers of Code DKH (LD-3-45W)

L.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on at least the two long sides. The forklift pockets should be protected. If possible, and at least chamfers are recommended.

L.3 ACCESS CLOSURES:

L.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

L.3.2 The closures should have lockings and custom sealings.

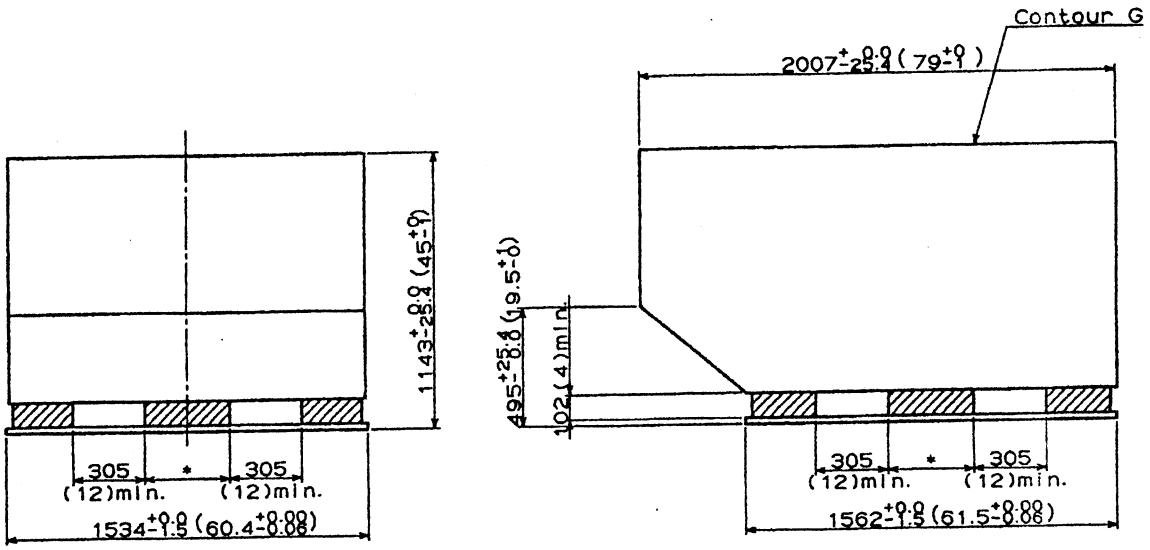
APPENDIX M

(NORMATIVE)

DIMENSIONS AND DESIGN REQUIREMENTS FOR LOW-HEIGHT
HALF-WIDTH CONTOURED CONTAINERS OF CODE DKG (LD-3-45)

M.1 DIMENSIONS:

Dimensions are given in Figure M1.



Dimensions in millimeters (inches)

NOTES:

1 Aircraft restraint space is shown in Figure 1.

2 Dimensions denoted by "*" should be identical.

3 The centerline of the optional forklift entry should be located toward outboard side by 102 mm (4 in) to accommodate the natural CG deviation. See 5.4.5 and 5.4.6.

FIGURE M1 - Dimensions of Low-Height Half-Width Contoured Containers of Code DKG (LD-3-45)

M.2 FORKLIFT ENTRY (OPTIONAL):

If required, forklift entry shall be provided on at least the two long sides. Although three-way entry is preferred. The forklift pockets should be protected. If possible, and at least chamfers are recommended.

M.3 ACCESS CLOSURES:

M.3.1 It is suggested that access closures be provided on one long side for maximum loadability.

M.3.2 The closures should have lockings and custom sealings.