



SLOVENSKI STANDARD SIST-TS CEN/TS 14993:2005

01-maj-2005

A Yb'UbY'YbchY'fl_Ygcbj]LnU_ca V]b]fUb'dfYj cn!'A Yb'UbY'YbchY'fl_Ygcbj]LnU
g_UX]y Yb'Y'h]dU5`% +%!'A YfYznU hYj YnU_cbgf]i]fUb'Y]b'dfYg_i yUb'Y

Swap bodies for combined transport - Stackable swap bodies type A 1371 - Dimensions, design requirements and testing

Wechselbehälter für den kombinierten Verkehr - Stapelbare Wechselbehälter Typ A 1371 - Abmessungen, Konstruktionsanforderungen und Prüfung

Caisses mobiles pour transport combiné - Caisse gerbable de type A 1371 - Dimensions, exigences de conception et essais

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Ta slovenski standard je istoveten z: **CEN/TS 14993:2005**

ICS:

55.180.10 X^ } æ ^} •\ ä [} c b ^!ã General purpose containers

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TECHNICAL SPECIFICATION
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**Swap bodies for combined transport - Stackable swap bodies
type A 1371 - Dimensions, design requirements and testing**

Caisses mobiles pour transport combiné - Caisse gerbable
de type A 1371 - Dimensions, exigences de conception et
essais

Wechselbehälter für den kombinierten Verkehr - Stapelbare
Wechselbehälter Typ A 1371 - Abmessungen,
Konstruktionsanforderungen und Prüfung

This Technical Specification (CEN/TS) was approved by CEN on 19 December 2004 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (CEN/TS 14993:2005) has been prepared by Technical Committee CEN/TC 119 “Swap bodies for combined goods transport”, the secretariat of which is held by DIN.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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CEN/TS 14993:2005 (E)**1 Scope**

This document specifies dimensions, design requirements and testing requirements of stackable swap bodies type A 1371 which are suitable for domestic and European multimodal conveyance by road, rail, short sea and coastal sea transport (including Ro/Ro or ferry transport) and inland waterways.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 452:1995, *Swap bodies — Swap bodies of Class A — Dimensions and general requirements.*

EN 13044, *Swap bodies — Coding, identification and marking.*

ISO 1161, *Series 1 freight containers — Corner fittings — Specification.*

3 Definitions

For the purpose of this document, the following terms and definitions apply:

3.1**Rating**

maximum gross mass, R , of a swap body that is the maximum value for operation and the minimum value for design.

3.2**Tare**

mass, T , of an empty swap body.

3.3**Payload**

maximum mass, P , of the freight carried in a swap body. $P = R - T$.

NOTE – R , P and T , by definition, are in units of mass. Where test requirements are based on the gravitational forces derived from these values, those forces, which are inertial forces, are indicated thus:

R_g , P_g , T_g

The units of which are in Newton or multiples thereof. The word "load", when used to describe a physical quantity to which units may be ascribed implies mass. The word "loading", for example as in "internal loading", implies force.

4 Dimensions and Rating

The dimensions of the stackable swap body A 1371 and the rating shall be in compliance with Table 1 and the following figures.

Table 1 - Dimensions and rating

Dimensions in mm

Type	External length	Internal length	External width ^a	Internal width	d1 - d2 d2 - d1 d3 - d4 d4 - d3 d5 - d6 d6 - d5 d7 - d8 d8 - d7	External height ^b	Rating R (kg)
A 1371	13716 ⁰ -10	13550 min.	2500 ⁵⁰ -5	2430 min.	19 max.	2900 max.	32500 to 34000
<p>^a A maximum width of 2550 mm is permitted according to EC Directive No. 96/53/EC. For certain trades a width of 2500 mm might be preferable.</p> <p>^b The International Union of Railways code for categories UIC 596-6 shall be taken into consideration to assure transportation without hindrance on the main railway lines of continental Europe.</p>							

The stackable swap body complies with European directive 96/53/EC. The front corners of the swap body shall be chamfered to stay within the maximum dimensions as stated by 96/53/EC.

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Dimensions in millimetres

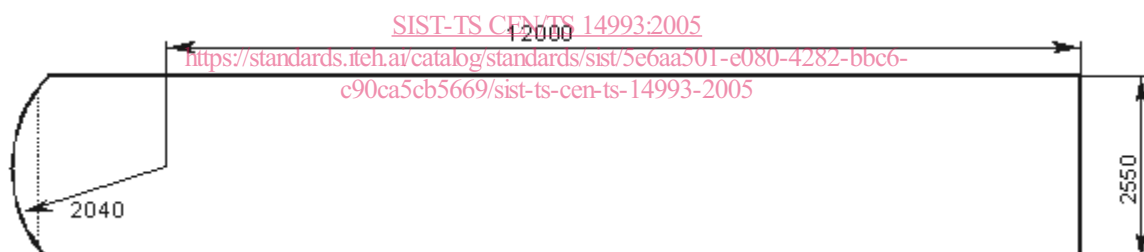


Figure 1 — Maximum dimensions according to 96/53/EC

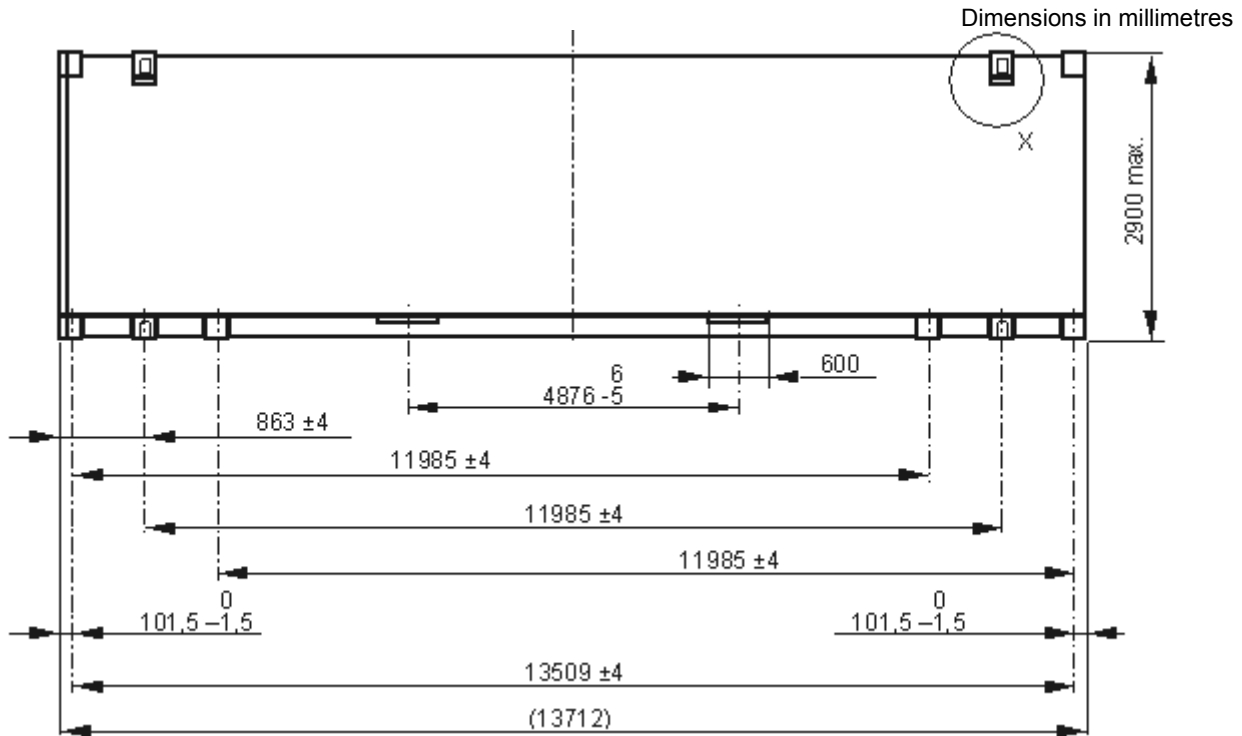
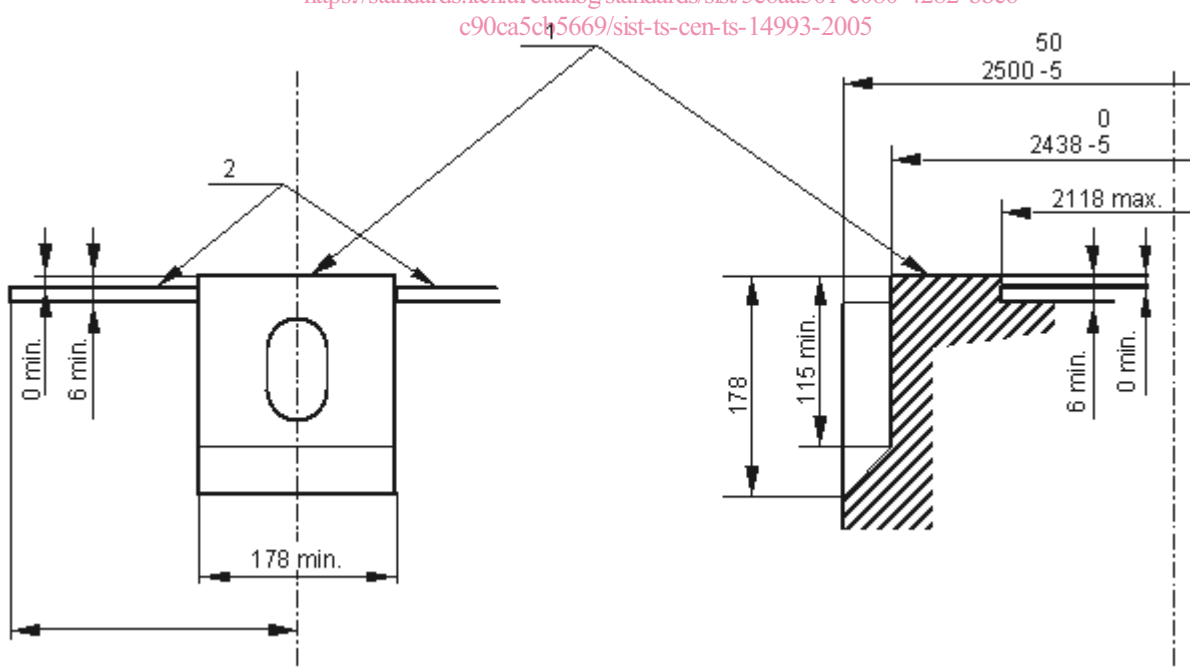


Figure 2 — Side view of swap body A.1371
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Dimensions in millimetres



Key

- 1 Upper level of the top intermediate fittings
- 2 Doubler plate

Figure 3 — Detail X of Figure 2

Dimensions in millimetres

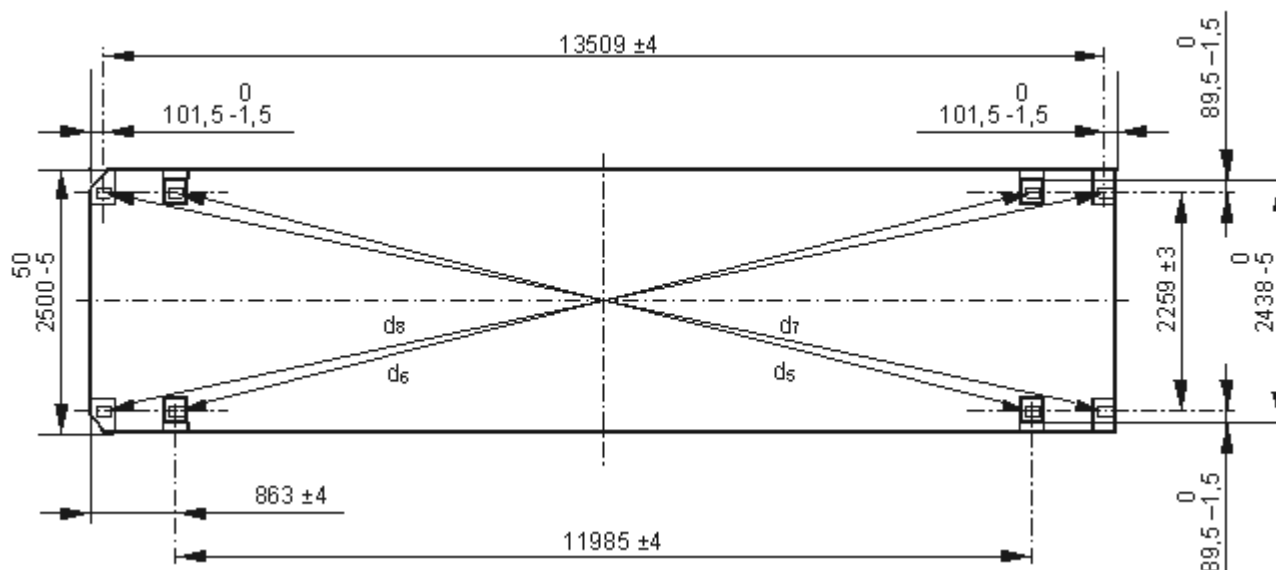


Figure 4 — Top view of swap body type A 1371

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Dimensions in millimetres

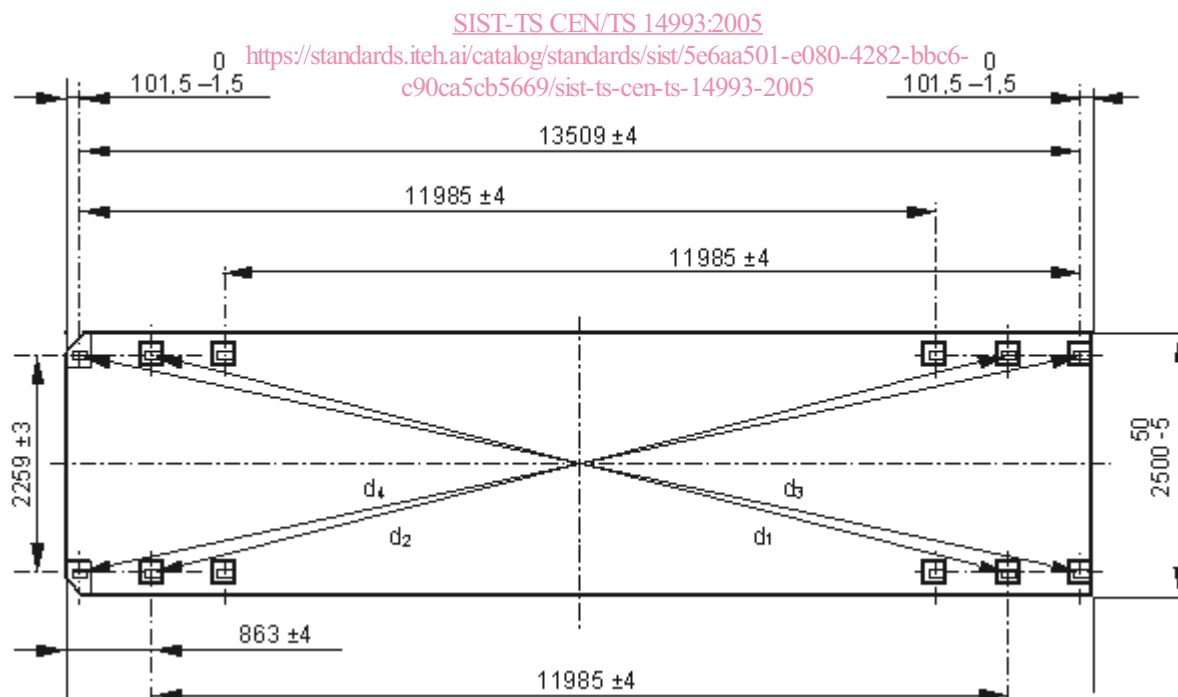


Figure 5 — Bottom view of swap body type A 1371

CEN/TS 14993:2005 (E)**5 Design requirements****5.1 General**

Stackable swap bodies shall be capable of fulfilling the following requirements.

The swap body shall be capable of withstanding the loads and loadings detailed in Clause 6.

The strength requirements for swap bodies are given in diagrammatic form in Annex A (these requirements are applicable to all swap bodies except where otherwise stated). They apply to swap bodies as complete units.

As the effects of loads encountered under any dynamic operating condition should only approach, but not exceed, the effects of the corresponding test loads, it is implicit that the capabilities of swap bodies indicated in Annex A and demonstrated by the tests described in Clause 6 shall not be exceeded in any mode of operation.

Any closure in a swap body that, if unsecured, could lead to a hazardous situation, shall be provided with an adequate securing system having external indication of the positive securement of that closure in the appropriate operating position.

In particular, doors should be capable of being securely fastened in the open and closed position.

Any removable roof or roof section shall be fitted with locking devices such that an observer at ground level can check (when the swap body is on a rail or highway carrying vehicle) that its roof is secured.

All closed swap bodies and all open swap bodies fitted with covers that were designed for them, shall be weatherproof as required by test No. 12 (see 6.13).

5.2 Top and bottom fittings

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Stackable swap bodies A 1371 shall be equipped with top and bottom corner fittings located in the corner posts and four intermediate top fittings and four intermediate bottom fittings with the positioning as specified for 1A ISO containers (see Figure 2). Side apertures of the bottom corner fittings shall not allow to insert ISO twistlocks or other lifting devices.

The strength requirements for all corner fittings and intermediate fittings are given in ISO 1161.

Additionally stackable swap bodies shall be equipped with four supplementary bottom fittings located in the bottom. The length between the centres of the bottom apertures in these supplementary fittings and the bottom corner fittings will be 11 985 mm. Side apertures of the supplementary fittings shall not allow to insert ISO twistlocks or other lifting devices.

The bottom corner fittings located on the front shall be provided with additional apertures at the front side. The dimensions of the additional apertures shall comply with ISO 1161. The position in vertical direction shall comply with ISO 1161. The width between the centres of apertures shall be 2092^{+3}_{-3} mm.

5.3 Roof of the swap body

The "roof of the swap body" means the highest level of the cover of the swap body, for example the level of the top of a soft cover.

The roof of the swap body shall be in a plane located

- 6 mm.

below the plane of the upper faces of the top fittings.

However, if reinforced zones or protection plates are provided to afford protection to the roof in the vicinity of the top corner fittings, such plates and their securements shall not protrude above the plane of the upper faces of the top corner fittings.

5.4 Base structure

5.4.1 General

5.4.1.1 The base structure shall be designed to withstand all forces, particularly lateral forces, induced by the cargo in service. This is particularly important where provisions are made for securement of cargo to the base structure of the swap body.

5.4.1.2 Stackable swap bodies A 1371 shall be equipped with a base structure as specified in Annex B.

5.4.1.3 The lower faces of the load transfer areas, including those of the end transverse members, shall be in one plane located

- $12,5 \begin{matrix} +5 \\ -1,5 \end{matrix} \text{ mm}$

above the plane of the bottom faces of the bottom corner fittings and intermediate fittings. Apart from the bottom corner fittings, bottom intermediate fittings and bottom side rails, no part of the swap body shall project below this plane.

However, protection plates may be provided in the vicinity of the bottom corner fittings to afford protection to the understructure.

The bottom surface of such protection plates shall be at least 5 mm above the lower faces of the bottom corner fittings of the swap body.

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5.4.2 Maximum deflection

For stackable swap bodies A 1371 under dynamic conditions, or the static equivalent thereof, with the swap body having a load uniformly distributed over the floor in such a way that the combined mass of the swap body and test load is equal to $1,8R$, no part of the base of the swap body shall deflect more than 6 mm below the base plane (bottom faces of the lower corner fittings).

5.4.3 Gooseneck tunnels

Gooseneck tunnels shall be provided for swap bodies with a height of more than 2 770 mm. The dimensional requirements are specified in Annex C. In addition all other parts of the base structure shall be as specified in 5.4.

5.5 End structure

The lateral deflection of the top of the swap body with respect to the bottom of the swap body, at the time it is under full transverse rigidity test conditions, shall not cause the sum of the changes in length of the two diagonals to exceed 60 mm.

5.6 Side structure

The longitudinal deflection of the top of the swap body with respect to the bottom of the swap body, at the time it is under full longitudinal rigidity test conditions, shall not exceed 25 mm.

CEN/TS 14993:2005 (E)**5.7 Walls**

Where openings are provided in end or sidewalls, the ability of these walls to withstand tests Nos. 5 and 6 shall not be impaired.

5.8 Optional features**5.8.1 Grappler arms or similar devices**

Fixtures for handling swap bodies A 1371 by means of grappler arms or similar devices may be provided as optional features. The grappler arm lifting devices, where provided, shall meet the requirements of EN 452.

5.8.2 Cargo securing devices

Cargo securing devices may be provided as optional features. The requirements for such devices are specified in EN 452:1995 Annex B.

5.8.3 Landing pads

The corner fittings of the swap body may be replaced by landing pads. The lower face of the landing pads in the bottom shall be in one plane with the bottom faces of the bottom intermediate fittings. The landing pads in the bottom shall be provided with apertures at the bottom side. The dimensions of the apertures shall comply with ISO 1161. The upper face of the landing pads at the top shall be in one plane with the upper face of the intermediate top fittings. The landing pads at the top shall be provided with apertures at the top side. The dimensions of the apertures shall comply with ISO 1161.

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6 Testing

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6.1 General

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6.1.1 Unless otherwise stated, swap bodies complying with the design requirements specified in Clause 5 shall, in addition, be capable of withstanding the tests specified in 6.2 to 6.15, as applicable.

Swap bodies shall be tested in the condition in which they are designed to be operated. Also, swap bodies equipped with removable structural items shall be tested with these items in position. It is recommended that the test for weatherproofness (test No. 12) be carried out last.

6.1.2 The test loads or loadings within the swap body shall be uniformly distributed.

6.1.3 The test load or loading specified in all of the following tests are the minimum requirements.

6.2 Test No. 1—Stacking**6.2.1 General**

This test shall be carried out to prove the ability of a fully loaded stackable swap body to support a superimposed mass of swap bodies, taking into account conditions aboard ships at sea and the relative eccentricities between superimposed swap bodies.

Table 2 specifies the forces to be applied as a test to each pair of top fittings and the superimposed mass that the test force represents for four alternative stacking configurations:

Test 1A: Swap body supported by bottom corner fittings and test force applied to top corner fittings;