
Prosthetics — Geometrical aspects of lower limb prosthetic adapters

*Prothèses — Aspects géométriques des adaptateurs de prothèses de
membres inférieurs*

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Published in Switzerland

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Foreword

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This document was prepared by Technical Committee ISO/TC 168, *Prosthetics and orthotics*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Prosthetics — Geometrical aspects of lower limb prosthetic adapters

1 Scope

This document specifies dimensions of the adult modular systems adapters used in lower limb prosthetic.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 10328, *Prosthetics — Structural testing of lower-limb prostheses — Requirements and test methods*

ISO 22523, *External limb prostheses and external orthoses — Requirements and test methods*

ISO 22675, *Prosthetics — Testing of ankle-foot devices and foot units — Requirements and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

modular connector

adapter used in lower limb prosthetic assembly

3.2

convex connector

connecting part of the modular adapter with an inverted pyramid

3.3

concave connector

receiving part of the modular adapter with a pyramid receiver

4 Geometrical aspects of mating connectors (adapters)

4.1 General

Concave: Pyramid receiver

Convex: Pyramid connector

If a modular connector is used as an adjustable connector between prosthetic components, weaknesses of the connection can occur if the contact area of the convex and concave surfaces does not establish the largest possible diameter.

Two measures are supporting the essential contact condition:

- a) the radius, including tolerances, of the convex dome shall be larger than the radius of the concave dome;
- b) the concave surface is designed as an outer ring that is limited in its width. Closer to the pyramid receiver, a sufficient recess prevents any further contact between the concave and convex surface.

NOTE Examples of different manufacturers who show that a radius of 25,00 mm is used for the critical dimension connecting the concave and convex dome. The outer diameter of the ring-shaped concave contact area is limited by the intended angular range of adjustment of the modular connection. The inner diameter of that ring provides sufficient width of the contact surface to ensure defined contact area and prevent possible failures in the connection.

4.2 Convex connector

The convex connector outline is shown in [Figure 1](#). [Table 1](#) lists the convex connector dimension and tolerance.

Table 1 — Convex connector geometry

Dimension ID	Description	Dimension	Tolerance
D_1	Pyramid connector dome radius	25,00 mm	Min. 25,00 mm – Max. 25,60 mm

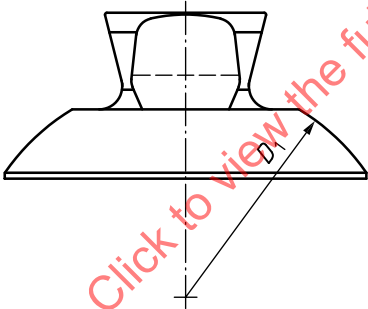


Figure 1 — Convex connector outline

4.3 Concave connector

The concave connector outline is shown in [Figure 2](#). [Table 2](#) lists the concave connector dimension and tolerance.

Table 2 — Concave connector geometry

Dimension ID	Description	Dimension	Tolerance
D_1	Pyramid receiver dome radius	24,70 mm	Min. 24,40 mm – Max. 24,99 mm

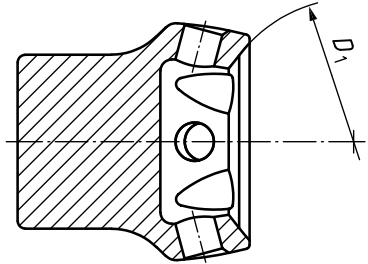


Figure 2 — Concave connector outline