

# International Standard



# 8667

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## Commercial vehicles and buses — Cross-tooth gearbox flanges, type T

*Véhicules utilitaires et autobus — Brides de boîtes de vitesses à dents croisées, type T*

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Descriptors : road vehicles, commercial road vehicles, buses (vehicles), gear boxes, flanges, dimensions, designation.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8667 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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# Commercial vehicles and buses — Cross-tooth gearbox flanges, type T

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## 1 Scope and field of application

This International Standard specifies the nominal dimensions and tolerances which affect interchangeability between cross-tooth gearbox flanges, type T, and mating parts used on commercial vehicles and buses.

Dimensions and tolerances of the mating parts, other than those occurring at the interface of the two flanges, are left to the discretion of the manufacturer of that component.

## 2 References

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 7646, *Commercial vehicles and buses — Gearbox flanges — Type A.*

ISO 7647, *Commercial vehicles and buses — Gearbox flanges — Type S.*

## 3 Dimensions and tolerances

Nominal dimensions and tolerances which affect the interchangeability of type T gearbox flanges shall be as shown in the table and figure.

Where the flange is formed by forging, an additional groove either side of the driving teeth is permissible. In this case the additional grooves do not form part of the drive.

## 4 Designation

Gearbox flanges meeting the requirements of this International Standard shall be identified by a certain number of elements, to be given in the following order:

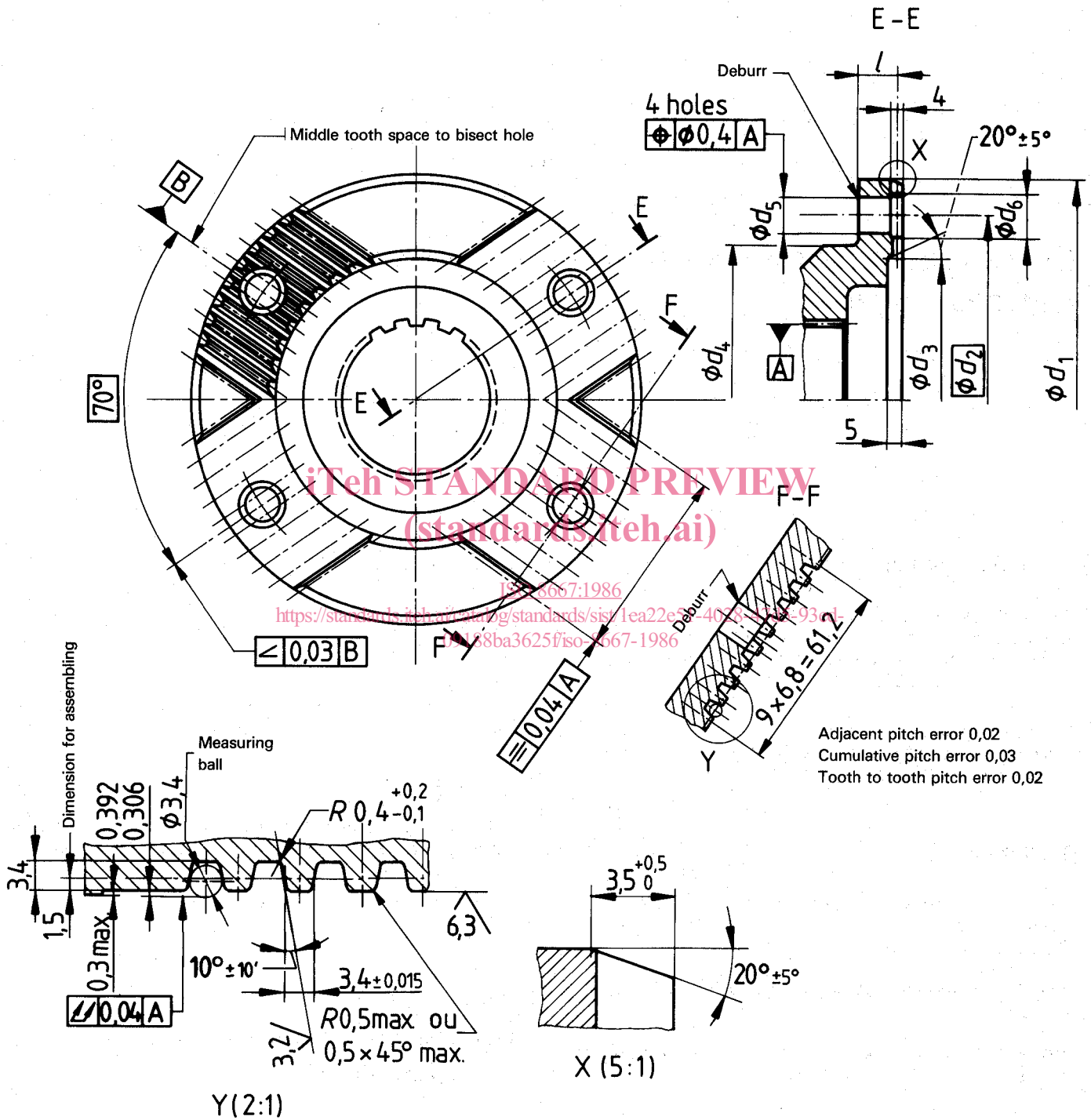
- a) reference to this International Standard;
- b) type T;
- c) size code.

*Example:*

Designation of a type T gearbox flange of size code 1:

**Flange ISO 8667 - T1**

Dimensions in millimetres, surface roughness values in micrometres



Figure

Table

Size code	$d_1$ $\pm 0,5$	$d_2$	$d_3$ $\pm 0,5$	$d_4$ 0 -0,2	$l$ 0 -0,5	$d_5$ +0,2 0	$d_6$ $\pm 0,2$
1	150	130	95	111	12	13	15
2	165	140	105	121	12	13	15
3	180	150	105	128	14	15	17
4	200	165	125	143	16	15	17

## NOTE

Gearbox flanges of types A and S, as specified in ISO 7646 and ISO 7647 respectively, are designed for force-locking (friction) torque transmission, their capacity for transmission being determined by the size of the flange and the bolts. As static or dynamic torque loads increase, however, a point is reached when these are inadequate, and there is a need for form-locking components.

Increasing problems are being encountered with the flange joint in the assembly of drive shafts for heavy lorries, as power tools cannot be used because of space limitations, and because the large bolts, M16 type, have to be tightened steadily to a torque loading of about 300 N·m for example.

With special vehicles it may also be necessary to replace the engine, transmission units or axles in the shortest possible time, but this can be impracticable with a conventional flange joint which has, for example, ten M16 bolts.

This form-locking flange joint has been developed to avoid the need to increase the size of the flange or bolts while achieving the required performance or to simplify assembly.

Initially, a flange joint with spiral bevel-type teeth was developed but this is expensive to manufacture. The flange joint specified in this International Standard overcomes the problems described above. It requires only four bolts which are smaller than comparable flanges of conventional construction, and the alignment of the drive shaft is not dependent on them. The drive shaft flange and the transmission flange centre themselves through the groups of teeth which intersect at 70° which improves alignment, and play, which occurs in conventional joints, is eliminated. As the drive is transmitted through the teeth, the axial force which arises under torque loading, which must be carried by the bolts, is relatively low. A further feature is that jamming between flanges during dismantling is prevented.

The teeth can be produced on a universal milling machine with special cutters for short production runs, while for mass production the use of a surface broaching machine is envisaged. The simple tooth form can be measured easily, thus ensuring interchangeability between components made by different manufacturers.

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