

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ADDENDUM 2
TO
ISO
RECOMMENDATION
R 1122-1969

GLOSSARY OF GEARS
GEOMETRICAL DEFINITIONS
WORM GEARS

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FOREWORD

Addendum 2 (originally Draft No. 1415) to ISO Recommendation R 1122-1969 was drawn up by Technical Committee ISO/TC 60, *Gears*.

It was approved in August 1968 by the Member Bodies of the following countries :

Australia	Italy	Sweden
Belgium	Japan	Switzerland
Chile	Netherlands	Thailand
Czechoslovakia	New Zealand	Turkey
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Germany
Hungary

Addendum 2 – March 1972 – to ISO Recommendation R 1122-1969

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WORM GEARS

INTRODUCTION

This Addendum constitutes the fourth and last section of the “Geometrical definitions”, of the International Vocabulary of Gears, the first three chapters of which are already the subject of ISO Recommendation R 1122.

SCOPE

This Addendum deals with worm gears which are gear pairs with non-parallel non-intersecting axes comprising a worm of cylindrical or toric form and a mating wheel, with *line contact* between flanks near to the line of centres (as opposed to crossed helical gear pairs which are gear pairs with point contact).

Except for terms and definitions associated with double enveloping worm gears (4.1.2.4 to 4.1.2.6), it is devoted to the terms appropriate to the case which occurs most frequently, that of *cylindrical worm* gear pairs with a shaft angle of 90° .

4. WORM GEAR PAIRS

4.1 General

4.1.1 Toric surfaces and lines*

4.1.1.1 Toroid. Solid of revolution generated by the rotation of a circle around an axis external to this circle and situated in its plane.

4.1.1.2 Generant of the toroid. One of the two circles of intersection of the toroid with a plane containing its axis.

4.1.1.3 Mid-plane of the toroid. Plane of symmetry of the toroid, perpendicular to its axis.

4.1.1.4 Middle circle of the toroid. Circle described in the mid-plane of the toroid by the centre of its generant.

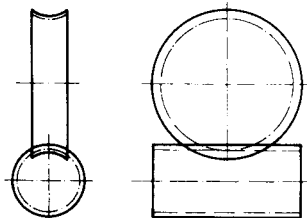
4.1.1.5 Inner circle of the toroid. The smaller of the two circles of intersection of the toroid and its mid-plane.

4.1.2 Terminology for worm gear pairs and their wheels

4.1.2.1 (Cylindrical) worm.** Cylindrical helical gear with one or more threads.

4.1.2.2 (Cylindrical) wormwheel.** Gear with flanks in such a way as to ensure curved line contact with the flanks of a worm forming with it a gear pair with non-parallel, non-intersecting axes.

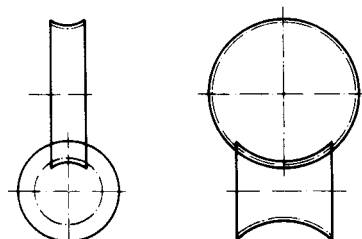
4.1.2.3 (Cylindrical) worm gear pair.** Gear pair with non-parallel, non-intersecting axes consisting of a worm and a mating wormwheel.



4.1.2.4 Enveloping worm. Gear with one or more helical threads having as tip and root surfaces portions of toroids co-axial with the gear and with the radius of the mid-circle equal to the centre distance of the gear pair with non-parallel, non-intersecting axes to which the worm is intended.

4.1.2.5 Enveloping wormwheel. Gear with flanks generated so as to ensure a curved line contact with the flanks of an enveloping worm forming with it a gear pair with non-parallel, non-intersecting axes.

4.1.2.6 Double enveloping worm gear pair. Gear pair with non-parallel, non-intersecting axes consisting of an enveloping worm and the mating enveloping wormwheel.



* For the other geometrical surfaces or lines see section 1, clause 14.

** The adjective "cylindrical" may be understood, except when expressly contrasted with "enveloping". (See clauses 4.1.2.4 to 4.1.2.6.)