

# INTERNATIONAL STANDARD

**ISO**  
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## **Road vehicles — Metric starter motor pinions —**

### **Part 2:**

Pinions with 20° pressure angle

*Véhicules routiers — Pignons de démarreurs à module métrique —  
Partie 2: Pignons à angle de pression de 20°*



Reference number  
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## 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9457-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 15, *Interchangeability of components of commercial vehicles and buses*.

ISO 9457 consists of the following parts, under the general title *Road vehicles — Metric starter motor pinions*:

- Part 1: *Currently used pinions*
- Part 2: *Pinions with 20 degree pressure angle*

Annex A of this part of ISO 9457 is for information only.

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# Road vehicles — Metric starter motor pinions —

## Part 2:

Pinions with 20° pressure angle

### 1 Scope

This part of ISO 9457 specifies the metric modules, number of teeth and other tooth characteristics which are necessary to ensure interchangeability of starter motor pinions with a pressure angle of 20°, used on starter motors for reciprocating internal combustion engines for road vehicles.

### 2 Specified starter pinions

Table 1 shows the specified combinations between the metric modules and the number of teeth.

**Table 1 — Combinations between metric modules and number of teeth**

Module $m$	Number of teeth, $z$							Pressure angle $\alpha$
	8 1)	9	10	11	12	13	15	
2,25	×	×	×	×	—	—	—	20°
2,5	×	×	×	×	×	—	—	
3,0	—	×	×	×	×	—	—	
4,0	—	—	×	×	×	×	×	
1) Care shall be taken regarding the contact ratio and hence the noise that eight-tooth pinions can generate.								

### 3 Dimensions

Detailed tooth dimensions and the inspection value  $W_2$  (base tangent length) of the starter motor pinions specified in table 1 are given in table 3.

The tooth dimensions specified in table 3 are calculated by using the values for the tooth proportions  $h_a/m$  given in table 2,  $h_f/m$  of 1,167 and a maximum tool radius of  $\rho_{fp}$ , expressed in millimetres, of 0,3 $m$ .

If necessary, a radius may be inserted between  $d'_{a, \min}$  and  $d_a$ .

NOTE 1 The symbols used, which are in accordance with ISO 701[2], are illustrated in figure 1.