

ICS 43.040

QC

**AUTOMOTIVE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

QC/T 1222.2-2025

**Automobile engines - Inspection method for surface treatment
of piston rings - Part 2: PVD coating
(English Translation)**

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020

"Directives for standardization - Part 1. Rules for the structure and drafting of standardizing documents".

This document replaces QC/T 268-1999 "Extreme deviation for undeclared tolerance size of processing parts for automobile cold stamping". Compared with QC/T 268-1999, in addition to structural adjustments and editorial modifications, the main technical changes are as follows.

a) ADD normative references (see Chapter 2);
 b) DELETE the terms and definitions of "punching dimensions", directly quoting the terms and definitions defined in GB/T 15055 (see Chapter 3; Chapter 2 of the

1999 edition);

c) DELETE the limit deviation provisions of holes and shafts without dimension indications in Table 1; CHANGE "basic dimensions" to "nominal dimensions", adding the tolerance grading (see 4.1; Table 1 of the 1999 edition);

d) CHANGE the "punching angle without tolerance indication" to "punching angle without tolerance indication" (see 4.2; 3.4 of the 1999 edition);

e) CHANGE some values of the angle limit deviation in Table 3 (see 4.2.2; Table 3

of the 1999 edition);

f) CHANGE the "bending angle without tolerance indication" to "bending angle without tolerance dimension indication" (see 5.2; 4.3 of the 1999 edition);

g) CHANGE the key "angle short side length mm" in Table 6 to "angle short side length L/mm" (see 5.2.2; Table 6 of the 1999 edition);

h) ADD the grading for the limit deviation of the hole spacing without tolerance indications affected by warpage (see 7.4.2);

i) CHANGE "T minimum" to "Tmin"; CHANGE "T nominal" to "T" (see 6.5; 5.5 of the **1999 edition**).

Please note that some contents of this document may involve patents. The issuing agency of this document does not assume the responsibility of identifying patents.

This document was proposed by AND shall be under the jurisdiction of the National Automobile Standardization Technical Committee (SAC/TC 114).

Drafting organizations of this document. Dongfeng Motor Group Co., Ltd., Pan Asia Automotive Technology Center Co., Ltd., Beijing Automotive Off-road Vehicle Research Institute Co., Ltd.

1 Scope

This document specifies the permissible automobile cold stamping variations in dimensions without tolerance indication in the drawings of automotive product parts.

This document is applicable to the permissible automobile cold stamping variations in dimensions without tolerance indication in the drawings of automotive product parts.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, for dated references, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies to this document.

GB/T 15055 Permissible stamping variations in dimensions without tolerance

indication

3 Terms and definitions

The terms and definitions defined in GB/T 15055 apply to this document.

4 Limit deviations of dimensions without tolerance

indications for flat stamping

4.1 Limit deviations of dimensions without tolerance indications for flat stamping

punching length L and diameter D/d

4.1.1 See Figure 1 for the flat stamping punching length L , diameter D/d , punching arc

radius R .

Figure 1

4.1.4 When the value of the internal and external corner radius r (see Figure 1) formed

by the two punching edges is not indicated on the drawing, r shall not be greater than 70% of the nominal material thickness.

5.1 Limit deviation of dimension bending length L and curling diameter d without tolerance

5.1.1 Bending length L and curling diameter d are as shown in Figure 3.

Figure 3

5.2.2 Limit deviation of bending angle without tolerance indication shall be as specified

in Table 6.

Table 6

6.1 Limit deviation of drawing diameter d without tolerance indication

The limit deviation of drawing diameter d_1 (Figure 1C)] without tolerance indication shall be enlarged by 1 grade, according to the "Basic dimension" column in Table 1.

6.3 The limit deviation of the height of the reinforcing rib and reinforcing dimple
without tolerance indications

6.3.1 The height h of the reinforcing rib and reinforcing dimple is as shown in Figure

6.

Figure 6

6.3.2 The limit deviation of the height h of the reinforcing rib and reinforcing dimple

without tolerance indication shall be in accordance with Table 8

6.4 The limit deviation of the arc radius of the formed part without tolerance
indication

The limit deviation of the arc radius r of the formed part (see Figures 3, 5, 6) without tolerance indication shall be in accordance with Table 9.

7 Limit deviations of hole edge distance, hole center distance, hole group distance of stamped parts without tolerance indications

7.1 Limit deviations of punching distance to edge of strip, flat strip and other
profiles without tolerance indications

7.1.2 Limit deviations of punching distance to edge of strip, flat strip and other profiles

without tolerance indications shall be specified in Table 10.

7.2 Limit deviation of center distance of holes connected to the same part without

tolerance indication

7.3 Limit deviation of center distance of holes connected to different parts without

tolerance indication