

ICS 21.200

JB

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

JB/T 9050.2-2024

**General technical requirement - Part 2: The determination
method for contact spot
(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 is Part 2 of JB/T 9050 Cylindrical reduction gear units. JB/T 9050 has
already published the following parts.

- Part 1.General technical requirement;
- Part 2.The determination method for contact spot.

This document replaces JB/T 9050.2-1999 The determination method for contact spot
of cylindrical gear. Compared with JB/T 9050.2-1999, apart from editorial changes, the
main technical changes are as follows.

- a) The operator training has been added (see Chapter 6);
- b) The acceptance criteria for contact patterns have been revised (see 7.2; see 6.2

of the 1999 edition);

c) The calculation method and illustration for contact patterns have been added (see 7.6).

1 Scope

This document describes the measurement and calculation methods for the contact patterns of a cylindrical gear reducer.

This document applies to the measurement and evaluation of the contact pattern of gear pairs in involute external meshing cylindrical gear reducers with a normal module of not less than 1 mm.

2 Normative references

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

JB/T 9050.1-2015 Cylindrical reduction gear units - Part 1.General technical requirement

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 contact pattern

The contact and polishing marks distributed on the tooth surface, which are left by the assembled gear pair operated under slight braking.

3.2 slight braking

The minimum braking torque (i.e., damping torque) required to prevent disengagement of the gear pair during operation.

3.3 no-load running

The assembled reducer is run-in at its rated speed without load.

3.4 load running

The reducer is installed on a running-in test bench equipped with a loading device, and a certain load is applied for running-in as needed for testing.

3.5 climbing engagement

Under no-load or loaded conditions, the engagement is achieved by rotating the input shaft of the assembled reducer manually or with a lever.

4.1 The assembled reducer is placed on a test bench with load running-in for the measurement of the contact patterns, or the measurement is carried out on the assembly platform.

4.2 When contact patterns are measured by using the coloring method, CT-1, CT-2 (a

special thin film coating) or other thin film coatings that meet the requirements for gear contact accuracy testing shall be used.

5.1 Slight braking gloss method

The steps for the slight braking gloss method are as follows. clean the inner cavity of the assembled reducer, apply a slight braking torque of no more than 10% of the rated load to the output shaft end, and run it in both forward and reverse directions for no less than 30 minutes each under the condition of not exceeding the rated speed, so that the contact and polishing marks on the working tooth surfaces on both sides are fully displayed.

5.2 No-load running gloss method

The steps for the no-load running-in gloss method are as follows. clean the inner cavity of the assembled reducer and run it in both forward and reverse directions for no less than 30 minutes each under no load and without exceeding the rated speed, so that the

contact and polishing marks on the working tooth surfaces on both sides are fully displayed.

5.3 Loading running gloss method

The steps for the loading running gloss method are as follows. clean the inner cavity of