

DRAFT AMENDMENT

ISO 21940-14:2012/DAM 1

ISO/TC 108/SC 2

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Mechanical vibration — Rotor balancing —

Part 14: Procedures for assessing balance errors

AMENDMENT 1

Vibrations mécaniques — Équilibrage des rotors —

Partie 14: Modes opératoires d'évaluation des erreurs d'équilibrage

AMENDEMENT 1

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This document was prepared by Technical Committee ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 2, *Measurement and evaluation of mechanical vibration and shock as applied to machines, vehicles and structures*.

A list of all parts in the ISO 21940 series can be found on the ISO website.

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Introduction

After publication of ISO 21940-11:2016 Mechanical vibration — Rotor balancing — Part 11: Procedures and tolerances for rotors with rigid behaviour, the technical content of ISO 21940-14:2012, Clause 7, is not in line with the newer ISO 21940-11:2016, Clause 10, which describes how an unbalance measurement of a rotor shall be compared with a given unbalance tolerance with due consideration of the measurement uncertainty. However, whether, or not, this comparison results in acceptance of the rotor's state of unbalance shall always be agreed upon between the parties involved and is not a matter of standardization.

To bring ISO 21940-14:2012 in line with the statements defined in ISO 21940-11:2016 it is proposed to replace ISO 21940-14:2012, Clause 7, with a due reference to ISO 21940-11:2016, Clause 10.

The process of balancing requires the quantity “unbalance” to be measured, which includes both the magnitude and the angle of the unbalance vector. As with all measured values, magnitude and angle need to be supplemented by a specification of the measurement error.

The scope of ISO 21940-14:2012 announces the right derivation of measurement errors for unbalance measurements. The assessment of an unbalance measurement requires considering these identified errors for deciding how true an unbalance measurement really is, respectively whether an unbalance tolerance is met.

ISO 21940-14:2012, Clause 7 “Acceptance criteria”, gives some advices, but extending the range for acceptance which is not advisable any longer.

Due to that reason, it was decided to write ISO 21940-11:2016, Clause 10. Actually, the right place for these new statements would be ISO 21940-14. Unfortunately, any change of ISO 21940-14:2012, Clause 7, would have further impact on other subclauses of ISO 21940-14.

Therefore ISO 21940-14:2012 requires a complete reworking which takes a significant amount of time. In the meantime, ISO 21940-11:2016, Clause 10, can give some advice to make decisions how true an unbalance measurement really is, accepting that the term “measurement error” is not defined at that place.

Mechanical vibration — Rotor balancing —

Part 14: Procedures for assessing balance errors

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Clause 2, Add the following reference.

ISO 21940-11:2016, *Mechanical vibration — Rotor balancing — Part 11: Procedures and tolerances for rotors with rigid behaviour*

Clause 6, Replace the 3rd paragraph with the following.

Formula (3) is based upon the assumption that all of the uncorrected errors fall in the same angular direction and that their absolute numeric values should be summed.

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Clause 7, Replace this clause with the following.

7 Accounting for measurement errors in the balance quality verification process

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Such an assessment of an unbalance measurement requires considering these identified errors for deciding whether an unbalance tolerance is met. Such an assessment shall be carried out in accordance with ISO 21940-11:2016, Clause 10.

Whether, or not, this comparison results in acceptance of the rotor's state of unbalance shall be agreed upon between the parties involved and is not a matter of standardization.