

# ISO 20816-9:2020 (E)

## Mechanical vibration — Measurement and evaluation of machine vibration — Part 9: Gear units

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	General
4.1	System considered
4.2	Effects of the system
4.3	Housing or shaft measurements
5	Instrumentation
5.1	Type
5.1.1	General instrumentation requirements
5.1.2	Shaft measurement instrumentation
5.1.3	Housing measurement instrumentation
5.2	Measurement frequency range
5.3	Permissible errors
5.4	Calibration
6	Vibration measurements
6.1	Shaft measurements
6.2	Housing measurements
6.3	Units of measurement
7	Test conditions
7.1	General
7.2	Arrangement of the test system
7.2.1	Manufacturer's shop test
7.2.2	On-site acceptance tests
7.2.3	In-service monitoring
7.3	Test conditions
8	Evaluation criteria
8.1	General
8.2	Evaluation zones
8.3	Acceptance criteria
8.4	Vibration evaluation zone boundaries
8.5	Classifications
9	Test report
9.1	General
9.2	Manufacturer
9.3	Operating data
9.4	Description of the arrangement
9.5	Measuring equipment
9.6	Test measurements and results
9.7	Acceptance test approval

**Annex A (informative) Rating curves for vibration displacement and velocity measurements**

- A.1 General**
- A.2 Vibration amplitude curves**
  - A.2.1 General**
  - A.2.2 Instrument settings**
  - A.2.3 Overall value**
  - A.2.4 Rating of measured shaft displacements**
  - A.2.5 Rating of measured housing vibration**
- A.3 Subjective vibration rating assessments**
  - A.3.1 General**
  - A.3.2 Example**

**Annex B (informative) Effects of the system**

- B.1 General**
- B.2 Typical factors influencing the system**
  - B.2.1 General**
  - B.2.2 Prime mover vibration sources**
  - B.2.3 Load characteristics**
  - B.2.4 Assembly considerations**
  - B.2.5 Torsional characteristics of the system**
  - B.2.6 Lateral characteristics of the system**
  - B.2.7 Load and speed**
- B.3 Responsibility**

**Annex C (informative) Vibration instruments and characteristics considerations**

- C.1 General**
- C.2 Instruments for measuring housing and shaft vibrations**
- C.3 Seismic measurement of housing vibration**
- C.4 Shaft displacement measurement**

Page count: 19