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**Ships and marine technology —  
Determination of the shaft power of  
ship propulsion systems by measuring  
the shaft distortion —**

Part 3:  
**Elastic vibration method**

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Published in Switzerland

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## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 2, *Marine environment protection*.

A list of all parts in the ISO 20083 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Selecting the optimum rating of a ship's main engines is important for ship owners, because it greatly affects the expenses of operations, maintenance and management as well as the ship's construction cost.

Measuring the output of the ship's main engine is important for confirming the ship efficiency, as well as for assessing the possible deterioration of the propulsion equipment or the accumulation of fouling on the hull over time. There are many methods of measuring an engine's output: (1) measuring the distortion of the shaft, (2) determining the fuel consumption, and (3) observing engine indicators such as cylinder pressure gauges.

Among these methods, ISO 20083 addresses the shaft distortion measurement with a shaft power meter, a method commonly used as the principal measurement of engine power output.

The purposes of shaft power measurement are:

- to provide a measurement of the ship's main engine output;
- to provide information regarding the ship's most efficient speed;
- to select optimum engine operational characteristics;
- to estimate maintenance and repair costs; and
- to monitor heavy propeller running.

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