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Methods for model tests of hydraulic turbine and reversible pump-turbine

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act in response to a proposal for revision of Japanese Industrial Standard with a draft being attached, submitted by Japanese Standards Association (JSA), an accredited standards development organization. This edition replaces the previous edition (**JIS B 8103** : 1989), which has been technically revised.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister is not responsible for identifying any of such patent rights, published patent application or utility model rights.

Methods for model tests of hydraulic turbine and reversible pump-turbine

Introduction

This Japanese Industrial Standard has been prepared based on IEC 60193 : 2019, Edition 3, with some modifications of the technical contents.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JF. Annex JA to Annex JE are unique to JIS and not given in the corresponding International Standard.

1 Scope

This Standard specifies methods for model tests to be carried out on model hydraulic turbines and model reversible pump-turbines for acceptance tests on prototype hydraulic turbines and prototype reversible pump-turbines.

The acceptance test in this Standard refers to the efficiency test (including runaway speed test) and cavitation tests carried out on models to determine if the hydraulic performance data agreed between the interested parties has been satisfied.

This Standard is also applicable to tests for other purposes than acceptance tests.

Hydraulic turbines include reaction turbines and impulse turbines, and reversible pump-turbines include storage pumps. Reaction turbines, impulse turbines, reversible pump-turbines and storage pumps are sometimes collectively referred to as “turbines”. Similarly, the runner of a hydraulic turbine or the impeller of a pump may also be collectively referred to as a runner.

This Standard is concerned with neither the structural details of the models nor the mechanical properties of their components, so long as these do not affect model performance or the relationship between model and prototype performances.

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 60193 : 2019 *Hydraulic turbines, storage pumps and pump-turbines — Model acceptance tests* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21-1.

2 Normative references

Part or all of the provisions of the following standards, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the