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performance**

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japan Clock and Watch Association (JCWA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS B 7023**:2014), which has been technically revised.

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Divers' watches — Classification and performance

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 6425** : 2018, Edition 4, with some modifications of the technical contents including salt water resistance and resistance to thermal shock.

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 JA.

1 Scope

This Standard specifies the classification and performance of divers' watches for use in deep diving that requires control of time (hereafter referred to as divers' watches).

It applies to divers' watches designed to withstand diving in water at depths of at least 100 m and equipped with a measuring system for indicating the diving time which is visible in darkness.

It does not apply to watches used in skin diving.

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

ISO 6425 : 2018 *Horology — Divers' watches* (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

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 7001 *Watches and clocks — Test methods*

JIS B 7010 *Parts of watches and clocks — Nomenclature*

JIS B 7021 *Water resistant watches for general use — Classification and water resistibility*

NOTE Corresponding International Standard : ISO 22810 *Horology — Water-resistant watches*

JIS B 7024 *Horology — Magnetic resistant watches — Classification and performance*

NOTE Corresponding International Standard : ISO 764 *Horology — Magnetic*

resistant watches

JIS B 7027 *Shock-resistant wrist watches — Impact performance and test methods*

NOTE Corresponding International Standard : ISO 1413 *Horology — Shock-resistant wrist watches*

JIS Z 2371 *Methods of salt spray testing*

NOTE Corresponding International Standard : ISO 9227 *Corrosion tests in artificial atmospheres — Salt spray tests*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS B 7010**, and the following apply.

3.1

divers' watch

watch designed to withstand diving in water at depths of at least 100 m and equipped with a system for time control

3.2

SCUBA diving

mode of underwater diving in which a diver uses a self-contained underwater breathing apparatus (SCUBA) to breathe underwater

3.3

saturation diving

deep sea diving technique that allows divers to reduce the risk of decompression sickness when they work at deep diving for long periods of time by having their bodies be saturated with high pressure gas mixture comprised of oxygen and an inert gas such as helium

3.4

divers' watch for saturation diving

diver's watch designed to withstand saturation diving

3.5

diving time indicator

device used to measure the diving time

3.6

resistance at a water overpressure

ability to resist water penetration when the watch is under water pressure

3.7

reliability under water

ability to resist water penetration when the watch is immersed in water

3.8

water-resistance of crowns and other setting devices

ability to resist water penetration when strain is applied to crowns and other setting devices

3.9

resistance to thermal shock

ability to resist water penetration when sudden change of temperature occurs in water

3.10

resistance to atmospheres containing a helium gas

ability to function normally when the watch is exposed for a long period of time to a high-pressure gas mixture primarily comprised of helium

4 Classification

Divers' watches are classified as follows.

- a) **Type 1 divers' watch**, used for SCUBA diving at depths of 100 m, 150 m and 200 m.
- b) **Type 2 divers' watch**, used for saturation diving at depths of 200 m or over at increments of 100 m.

It is also called a divers' watch for saturation diving.

5 Requirements

5.1 General

Divers' watches shall satisfy the requirements specified in **5.2** to **5.11**. Type 1 divers' watches are exempt from the requirement in **5.11**.

5.2 Diving time indicator

The divers' watch shall be equipped with a diving time indicator, for example a rotating bezel or a digital display, satisfying the following requirements.

- a) It shall be protected against inadvertent rotation or malfunction.
- b) It shall allow the reading of the diving time with a resolution of 1 min or better over at least 60 min.

For analogue displays, the markings indicating every 5 min shall be clearly indicated.

5.3 Legibility

5.3.1 In the light

When the divers' watch is tested in accordance with **6.5.1**, the diving time indicator shall be legible with a minimum lighting of 50 lx.

5.3.2 In the dark

When the divers' watch is tested in accordance with **6.5.1**, the following items shall be clearly visible and readable on the divers' watch.

- a) Time (the minute indicator shall be clearly distinguishable from the hour indicator)
- b) Elapsed or remaining time by the diving time indicator
- c) For analogue displays, the markings indicating every 5 min
- d) The indication that the watch is running (movement of the seconds hand, blinking of the seconds colon, etc.)
- e) In the case of battery-powered watch, the battery end-of-life indication

5.4 Magnetic resistance properties

When tested in accordance with **JIS B 7024**, the divers' watch shall comply with the requirements of Class 1.

5.5 Resistance to thermal shock

When tested in accordance with **6.5.2**, the divers' watch shall be free from fogging of the internal surface of the glass and shall function normally.

5.6 Salt water resistance

When the divers' watch is tested in accordance with **6.5.3**, the case and other attachments shall not show important changes and the moving parts shall continue to function normally.

5.7 Shock-resistance properties (without bracelet)

When tested in accordance with Clause 5 of **JIS B 7027**, the divers' watch shall comply with the requirements of Clause 4 of **JIS B 7027**. For the third shock, the same divers' watch that has undergone the first and second shocks shall be used.

5.8 Water-resistance

5.8.1 Operation in water and reliability under water

When the divers' watch is tested in accordance with **6.5.4.1**, the internal surface of the glass shall not fog and the diving time indicator, switch of the internal lighting or other mechanisms that are required to function under water shall function normally.

5.8.2 Water-resistance of crowns and other setting devices (when under strain)

When the divers' watch is tested in accordance with **6.5.4.2**, it shall be free from fogging of the internal surface of the glass and shall function normally.

The above requirement also applies to watches with push-pieces for setting function.

5.8.3 Operability of functional devices at a water overpressure (crown and other setting devices)