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Major amblyoscopes

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Health, Labour and Welfare, through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standards submitted by Japan Medical-optical Equipment Industrial Association (JMOIA)/Japanese Standards Association(JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently JIS T 7307 : 1988 is replaced with this Standard.

This revision has been made based on ISO 10944: 1998 *Ophthalmic instruments —Synoptophores* for the purpose of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

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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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Major amblyoscopes

Introduction This Japanese Industrial Standard has been prepared based on the first edition of ISO 10944 *Ophthalmic instruments—Synoptophores* published in 1998 with some modifications of the technical contents.

The portions underlined with dots are the matters modified from the original International Standard. A list of modifications with the explanations is given in annex (informative).

1 Scope This Standard specifies the major amblyoscopes, hereafter referred to as “amblyoscopes”, to be used for the examination of eye position and both-eyes visual function and the correctional training for the both-eyes visual function abnormality.

Remarks : The International Standard corresponding to this Standard is as follows.

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.

ISO 10944:1998 *Ophthalmic instruments—Synoptophores* (MOD)

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. If the indication of the year of publication is given to these referred standards, only the edition of the indicated year constitutes the provision of this Standard but the revision and amendment made thereafter do not apply. The normative references without the indication of the year of publication apply only to the most recent edition (including amendments).

JIS B 7122 *Galilean binoculars*

JIS B 7507 *Vernier, dial and digital callipers*

JIS T 0601-1 *Medical electrical equipment—Part 1: General requirements for safety*

Remarks : IEC 60601-1:1988 *Medical electrical equipment—Part 1 : General requirements for safety*, Amendment 1 : 1993 and Amendment 2 : 1995 are equivalent to the said standard.

3 Definitions The definitions shall be as given in the following:

- a) binocular vision function the function of unified vision of both eyes
- b) **visual chart for simultaneous vision** the visual chart for examining the ability to perceive simultaneously the two kinds of different figures which have been imaged on the right and left retinas separately

- c) **visual chart for image unification** the visual chart for examining the ability to perceive the similar figures which have been imaged on the right and left retinas separately as a single figure by uniting them
- d) **visual chart for stereoscopic vision** the visual chart for examining the ability to perceive three dimensions and perspective through the parallax of the right and left retinas

4 Service conditions The service conditions shall be in accordance with clause 10 of JIS T 0601-1.

5 Performances

5.1 Mechanism performances The mechanism performances, when subjected to the test in accordance with testing methods specified in 8.1, shall be as given in the following:

- a) **Distance range between pupils** The distance between the pupils shall be capable of adjusting in the range of at least 45 mm to 75 mm, and the minimum graduation shall be 2 mm or under. In addition, the tolerances of respective graduations shall be ± 0.5 mm.
- b) **Horizontal rotating range of lens-barrel** The lens-barrels of right and left shall be rotatable respectively by 40° to inside and 40° or over to outside, and the minimum graduation shall be 2° or under. In addition, the tolerances of respective graduations shall be $\pm 1^\circ$.
- c) **Vertical rotating range of lens-barrel** The lens-barrels of right and left shall be rotatable respectively by 20° or over in angle of elevation and 20° or over in angle of depression, and the minimum graduation shall be 2° or under. In addition, the tolerances of respective graduations shall be $\pm 1^\circ$.
- d) **Swivelling ranges of visual chart** The swivelling ranges of the lens-barrels of right and left shall respectively be 20° or over in inner side and 20° or over in outer side, and the minimum graduation shall be 2° or under. In addition, the tolerances of respective scales shall be $\pm 1^\circ$.
- e) **Parallelism of right and left optical axes** The parallelism of optical axes of right and left lens-barrels shall be $\pm 10'$ in up and down directions and $\pm 20'$ in inside and outside directions, and be $\pm 20'$ in swivelling direction.
- f) **Height of chin rest** The height of the chin rest, which is the distance from its upper face to the centre of ocular, shall be adjustable in the range of at least from 90 mm to 125 mm.

5.2 Safety The safety, when subjected to the tests in accordance with the methods specified in 8.2, shall conform to the corresponding items prescribed in JIS T 0601-1.