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**Guidelines for older persons and
persons with disabilities—
Information and communications
equipment, software and services
—Part 5: Office equipment**

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Business Machine and Information System Industries Association (JBMIA) / Japanese Standards Association (JSA) with a draft based on the organization standard (JBMS-73) being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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JIS X 8341 series consists of the following parts under the general title “*Guidelines for older persons and persons with disabilities—Information and communications equipment, software and services*”:

Part 1: Common Guidelines

Part 2: Information Communication Equipment

Part 3: Web Content

Part 4: Telecommunication Equipment

Part 5: Office Equipment

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Guidelines for older persons and persons with disabilities—Information and communications equipment, software and services

—Part 5: Office equipment

Introduction With the progress of the information society, people will increasingly use information communication equipment, software, and services such as the Internet that are made possible by information communication technology. This Japanese Industrial Standard is established as the guidelines to ensure accessibility for information and communication required primarily by elderly persons, persons with disabilities and persons with temporary disabilities when they use office equipment.

1 Scope This part of **JIS X 8341** is intended to improve information accessibility required when primarily elderly persons, persons with disabilities and persons with temporary disabilities (hereafter referred to as elderly persons and persons with disabilities) use office equipment. This part of **JIS X 8341** specifies a guideline to be considered for planning, developing and designing office equipment.

NOTE : In this part of **JIS X 8341**, office equipment refers to copying machines, multifunction devices, and page printers used in office environment. Multifunction devices correspond to the definition in **JIS X 6910**.

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this part of **JIS X 8341**. The most recent editions of standards (including amendments) given below shall be applied.

JIS X 6910 *Information technology — Office equipment — Copying machines and Multi-function devices — Information to be included in specification sheets and related test methods*

JIS X 8341-1 *Guidelines for older persons and persons with disabilities — Information and communications equipment, software and services — Part 1: Common Guidelines*

3 Definitions For the purpose of this part of **JIS X 8341**, the definitions given in **JIS X 8341-1** and **JIS X 6910** are applied.

4 General principles

4.1 Basic policies The basic policies which shall be followed with respect to office equipment in order to ensure and improve information accessibility are as follows:

- a) During the planning, developing, and designing phases for office equipment, consideration shall be given to ensure that elderly persons and persons with disabilities are able to use the equipment.
- b) During the planning, developing and designing phases for office equipment, consideration shall be given to user needs, information accessibility shall be evaluated, and its evaluation result shall be reflected to the equipment.
- c) The safety of the provided information accessibility features shall be ensured.
- d) Even when information accessibility features are added, it shall not disrupt and disable any functions that were activated previously.

4.2 Basic requirements In order to ensure and improve the information accessibility of office equipment, the following basic requirements related to the physical abilities of users shall be considered (see **3.2** of **JIS X 8341-1**). However, this part of **JIS X 8341** does not require office equipment to comply with all the basic requirement, but does require that the office equipment complies with at least one of them.

NOTES 1 Two types of features may be used to satisfy the requirements: common functions and alternate functions.

a) Common functions: These functions are commonly used by a variety of users.

b) Alternate functions: These are used as alternatives to specific functions. For instance, voice-based functions used as an alternative to displaying would be considered an alternate function.

2 Two methods for providing functions are available: incorporation into main equipment and optional equipment.

- a) Office equipment shall be operable even when it is difficult to obtain information through vision.

NOTE : Since users with visual disabilities, colour blindness, reduced visual acuity due to aging, and other such conditions may have difficulty in locating the positions and functions of operable controls, keys, switches, and other objects, alternate methods shall be provided for users with limited vision and/or without vision.

Example 1 Auditory feedback as well as visual information are provided to notify users of an operating state or an error.

Example 2 The “5” key on a numeric keypad has a tactile label (nib) [see **4.1 b**) of **JIS S 0011**].

Example 3 Important keys for operations, such as Start key and Stop key, are shaped differently so that they can be identified by touch.

Example 4 Operable controls such as operation handles and guides are tactually discernible due to their unique shape on tactile marks (bumpy shapes, etc.).

Example 5 Power switches and other similar important keys are designed with some type of obstruction such as protective barrier around the keys or to be located in a recess so that they may not be pressed accidentally.

- Example 6 An end corner reference is provided on the document setting position, so that users can place a document on the original platen glass by touch.
- Example 7 The lines indicating the maximum capacity of documents that can be loaded into the automatic document feeder's document tray, and the maximum capacity of sheets of paper that can be loaded into the paper feed tray or paper cassette, are tactile as well as visible.
- Example 8 Auditory signals, such as input, invalid input, and base point tones are used for key operation feedbacks.
- Example 9 The office equipment has an auditory signal at the base point position when using toggle keys.
- Example 10 Black and white reversed screen display is provided so that the display is easier to view for users with low vision.
- Example 11 A magnified view of information on the display is provided.
- Example 12 Display methods whereby providing information in one location is through a change in colour only are not used.
- Example 13 Operation using voice recognition or voice guidance is provided.
- b) Office equipment shall be operable without user hearing.
- NOTE : In the case where information is only provided auditorily, this information may be lost due to hearing impairments, noisy environments, or environments where sound is forbidden. For this reason, alternate methods are to be provided to users with limited hearing and/or without hearing.
- Example 1 Visual information such as screen display as well as auditory information are provided to notify users of an operating status or equipment error.
- Example 2 Notification of the facsimile function's reception, paper/supply, paper jam, and other issues is provided with visual information, such as light blinking indication or status indication on a screen, as well as auditory information.
- c) Office equipment shall be operable even when operation through speech is difficult.
- When the information use and operation by speech is a main function, alternate methods not requiring speech shall be provided.
- Example : Equipment operated by voice recognition is operable through key input as well.
- d) Office equipment shall be operable irrespective of physique.
- Example 1 The display is set in a legible position and the operable controls are set in a position where input operations through keys entries and other methods are possible, regardless of differences in height of users.
- Example 2 The position and angle of operable controls are adjustable for users. For instance, an angle of the control panel is adjustable.

Example 3 The main operable controls of office equipment are designed in positions to allow operation by as many users as possible.

Example 4 Removing copy (sheets) from the copy-receiving tray is easy regardless of user's physique.

- e) Office equipment shall be operable or usable for people who do not have significant physical strength or fine motor control.

The mechanically operable controls of equipment shall be easy to operate without excessive force or the need for delicate operations.

NOTE : Since a required force varies depending on the shape and size of an operable control; the shape, size, and force required for operable controls shall be considered from a comprehensive standpoint.

Example 1 Operable controls do not require tight grasping, pinching, or twisting of the wrist.

Example 2 The paper feed tray and automatic document feeder are designed with springs, levers, electric motors, or other methods to reduce the operational power required for opening and closing.

Example 3 The paper guide or the document guide is easy to align with the paper or document, even if users lacks physical strength or control capability.

- f) Office equipment shall be operable by persons with lower body impairments.

Example 1 The office equipment is operable by persons with limited movements in legs, arms, fingers, or artificial limbs.

Example 2 Users can operate the equipment without crouching.

Example 3 The office equipment has handles that can be used to support users.

Example 4 The office equipment is operable with one hand, considering users who use crutches and other such aids.

Example 5 The office equipment is operable by remote control as well as the control panel.

- g) Office equipment shall be operable from a seated position such as from a wheelchair.

NOTE : The display of office equipment shall be placed at a legible position, and the operable controls shall be placed in a position that can be reached with the hands, so that those who use wheelchairs can operate the office equipment from a seated position. Otherwise, alternate methods shall be provided.

Example 1 The control panel is in the front of the main unit.

Example 2 The control panel's angle is adjustable to users.

Example 3 The operable controls and scanner is separable from the paper output (or printing) portion of the device.

Example 4 For desktop office equipment where the office equipment is placed on a desk 700 mm above the floor, the operable controls are within the reach of users and at a distance from which they are legible.

- Example 5 For office equipment located on the floor, the paper feed tray or at least one paper cassette is positioned 380 mm or higher above the floor.
- Example 6 Wheelchair user can stop the automatic document feeder or platen cover when opening and closing at any position.
- Example 7 Users can operate the office equipment from wheelchair alongside the office equipment with one hand only, and simultaneous operations with two hands are not required.
- Example 8 The office equipment is operable with remote control devices as well as the main body's control panel.
- Example 9 Automatic document feeder trays and other such trays are transparently coloured so that documents are visible through the trays.
- h) Office equipment shall be operable with either hand.
- NOTE : Office equipment shall be operable with one hand and/or shall not require two hands control, such as operations requiring users to operate a lever with one hand while supporting an object with the other hand.
- Example 1 Operable controls are operable with either hand, left or right.
- Example 2 Input operations do not require multiple keys to be pressed simultaneously.
- Example 3 The automatic document feeder can stop at any users desired position, so that users can set a document on the original platen glass with one hand.
- Example 4 Paper guide and document guide are set with one hand easily.
- i) Office equipment shall be operable with limited mobility in the arms, legs, fingers, or with artificial limbs.
- NOTE : Even when muscular weakness, paralysis, trembling hands, involuntary movements, and other causes make it difficult for users to accurately press control such as buttons, keys, and switches, the office equipment shall be operable with one hand, without requiring simultaneous combination operations.
- Example 1 Operable controls do not require tight grasping, pinching, or twisting of the wrist.
- Example 2 The main operation keys are designed as large as possible, with the surface of keys shaped concavely.
- Example 3 The start key has a key guard in order to prevent inadvertent operation.
- Example 4 The input parts of the touch screen use technology that recognize operations with artificial hands or the like.
- Example 5 The areas surrounding operable controls is left vacant, with space roughly equivalent to the size of a fist.

4.3 Recommended requirements The following requirements are recommended for ensuring and improving the information accessibility of office equipment: