

JIS

JAPANESE INDUSTRIAL STANDARD

**Outside locking elbow
hinge units**

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Outside locking elbow
hinge units

T 9220-1992

1. Scope This Japanese Industrial Standard specifies the outside locking elbow hinge units for adults consisting of a pair of locking hinge joint and free hinge joint (hereafter referred to as the "elbow hinge units").

Remarks 1. The cited standards in this Standard are as follows:

JIS B 0205 Metric coarse screw threads

JIS B 0207 Metric fine screw threads

2. The units and numerical values given in { } in this Standard are based on the traditional units and are appended for informative reference.

2. Definitions For the purpose of this Standard, the following definitions apply:

The names of parts of elbow hinge units are specified in the Attached Fig. 1.

- (1) lock device A device which locks the elbow hinge unit at a certain bending angle
- (2) lock cable A cable which actuates a lock device and which locks or un-locks elbow hinge units
- (3) locking hinge joint An elbow hinge unit having a lock device
- (4) free hinge joint A elbow hinge unit having no lock device
- (5) brachium connecting part A part connecting the prosthetic brachium with elbow hinge unit
- (6) brachium reinforcing plate An extension plate to reinforce the connection part between the brachium part and the elbow hinge unit
- (7) forearm connecting part A part connecting the elbow hinge unit and prosthetic forearm
- (8) stepless lock type A type where the elbow bending angle can be locked at any point over the entire mobile range
- (9) stepped lock type A type where the elbow bending angle can be locked at certain intervals of angle over the entire mobile range

3. Classification and symbol The classification and symbol shall be specified in Table 1.

Table 1

Classification	Structure	
	Single axis	Multiple axis
Stepless lock type	FSH	FPH
Stepped lock type	ASH	APH

4. Performance

4.1 General conditions The general conditions shall be specified as follows.

- (1) The elbow hinge units shall have the minimum bending angle of 5 degrees or over, and can bend the forearm connecting part smoothly around the joint in the range of 125 degrees or over.
- (2) The stepped locked type shall have five or more locking positions over the entire mobile range.
- (3) The lock device can be operated smoothly by pulling and releasing of a lock cable. The device locks and unlocks alternately.
- (4) Tension of lock cable and cable stroke distance required for operation of a lock device shall be specified in Table 2.

Table 2

Force required to unlock N (kgf)	At no-load	5 to 20 {0.5 to 2.0}
	At load	5 to 35 {0.5 to 3.5}
Cable stroke distance required to lock or unlock mm		1.5 to 10
Play of joint when locked mm	Extension direction	5 or under
	Lateral direction	7 or under

- (5) A lock device shall not unlock while the hand portion is operated.

4.2 Static strength The elbow hinge units shall be, when tested according to 9.2, free from excessive play, permanent deformation, breakage, malfunction, and other significant defects.

4.3 Durability The durability shall be specified as follows.

- (1) The elbow hinge units shall be, when tested according to 9.3, free from excessive play, permanent deformation, breakage, malfunction, noise, and other significant defects, and shall meet the requirements specified in Table 2.
- (2) After testing according to 9.3, and then according to 9.2.3, the elbow hinge units shall not be unlocked.

5. Shape and dimensions