

JIS

JAPANESE INDUSTRIAL STANDARD

**F06 Type Connectors for
Optical Fiber Cords**

JIS C 5975—1990

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F 06 Type Connectors for Optical Fiber Cords

C 5975-1990

1. Scope

This Japanese Industrial Standard specifies, based on JIS C 5962, F 06 type connectors for optical fiber cords (hereafter referred to as "optical connectors") applicable to multicomponent glass multimode optical fibers, plastic cladding multimode optical fibers and all plastic multimode optical fibers which are mainly used in optical transmission lines between devices, between floors and in an area.

Remarks 1. F 06 type connectors are employing push-on engagement system of either lever-locking mechanism or friction-locking mechanism and also the following systems:

- (1) Optical engagement system: butt joint system
- (2) Mechanical engagement system: plug - adapter - plug system
- (3) Optical fiber array system: ferrule array (outside diameter $\varnothing$ 2.5 mm)

There are two kinds of mechanism for plugs i.e. lever locking and friction locking, and adapters are so constructed that they can be mated with plugs of the two kinds.

2. The units and numerical values given in { } in this Standard are based on the traditional unit system and are currently the criteria in force.

2. Definitions

For the main terms used in this Standard the definitions of JIS C 5962 apply, and the rest of the terms shall be as follows:

- (1) lever-locking mechanism Such a mechanism that the adapter and the plug are engaged and locked by insertion of the plug into the adapter, and they are separated by withdrawal of the plug while releasing the lock by pushing the lock lever attached to the plug.
- (2) friction-locking mechanism Such a mechanism that the adapter and the plug are engaged and locked by insertion of the plug into the adapter, and withdrawal of plug at the prescribed force or more releases the locking and separates them.

3. Structure of Type Designation

The structure of type designation shall be as specified in 3.1 of JIS C 5962.

4. Classification and Grading

4.1 Classification Optical connectors are classified as given in Table 1 (expressed by type designation).

Applicable Standards and Reference Standard: See page 30.

Table 1. Classification of Optical Connector

Type designation	Shape of optical connector	Shape of ferrule array	Grade	Type designation of applicable optical fiber cord (see JIS C 6820)	Shape and dimension
CNF 06 PAF 1	Adapter	F—F	I	—	Attached Fig. 1
CNF 06 PAFQ			Q		Attached Fig. 2
CNF 06 SPM 250 I 11 ⁽¹⁾	Plug	M	I	OFC 2.8-Y-CSI-200/250-H	Attached Fig. 3
CNF 06 SPM 250 I 12 ⁽²⁾					Attached Fig. 4
CNF 06 SPM 1.0 Q 51 ⁽³⁾			Q	OFC 2.2-PSI-980/1000	Attached Fig. 5

Notes ⁽¹⁾ Optical connectors with lever-locking mechanism applicable to multicomponent glass multimode optical fiber (see Attached Fig. 3).

⁽²⁾ Optical connectors with friction-locking mechanism applicable to multicomponent glass multimode optical fiber (see Attached Fig. 4).

⁽³⁾ Optical connectors with lever-locking mechanism applicable to all plastic multimode optical fiber (see Attached Fig. 5).

4.2 Grading Optical connectors are graded as follows:

(1) Adapter Adapters are graded as given in Table 2.

Table 2. Grading of Adapter

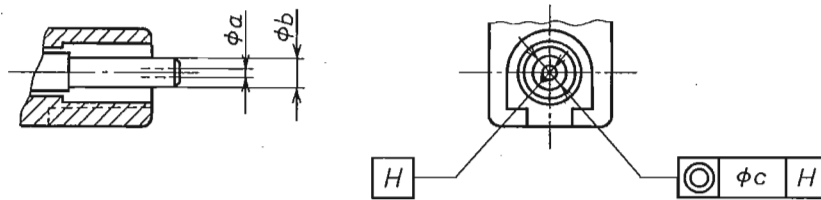
Grade	Insertion loss dB ⁽⁴⁾	
	OFC 2.8-Y-CSI-200/250-H	OFC 2.2-PSI-980/1000
I	2.0 max.	—
Q	—	3.0 max.

Note ⁽⁴⁾ The value when connected with the master optical connector is shown.

(2) Plug Plugs are graded as given in Table 3.

Table 3. Grading of Plug

Grade	Insertion loss dB ⁽⁴⁾		Dimensions of ferrule mm		
	OFC 2.8-Y-CSI-200/250-H	OFC 2.2-PSI-980/1000	Tolerances on dimension <i>a</i>	Dimension <i>b</i>	Dimension <i>c</i>
I	2.0 max.	—	+0.015 0	2.5 _{-0.01} ⁰	0.015 max.
Q	—	3.0 max.	±0.02	2.5 _{-0.02} ⁰	0.1 max.



5. Construction

In this optical connector set the adapter serves as the reference of engagement, and the plug has two kinds of construction i.e. lever locking and friction locking. The construction, shapes and dimensions of the engaging parts of optical connectors shall be as shown in Fig. 1, Fig. 2 and Fig. 3. The dimensions of individual connector shall be as given in Attached Figures 1 to 5 as specified in Table 1. If dimensions of the same part are specified in Fig. 1, Fig. 2 or Fig. 3 and Attached Figures 1 to 5, Attached Figures 1 to 5 precede.

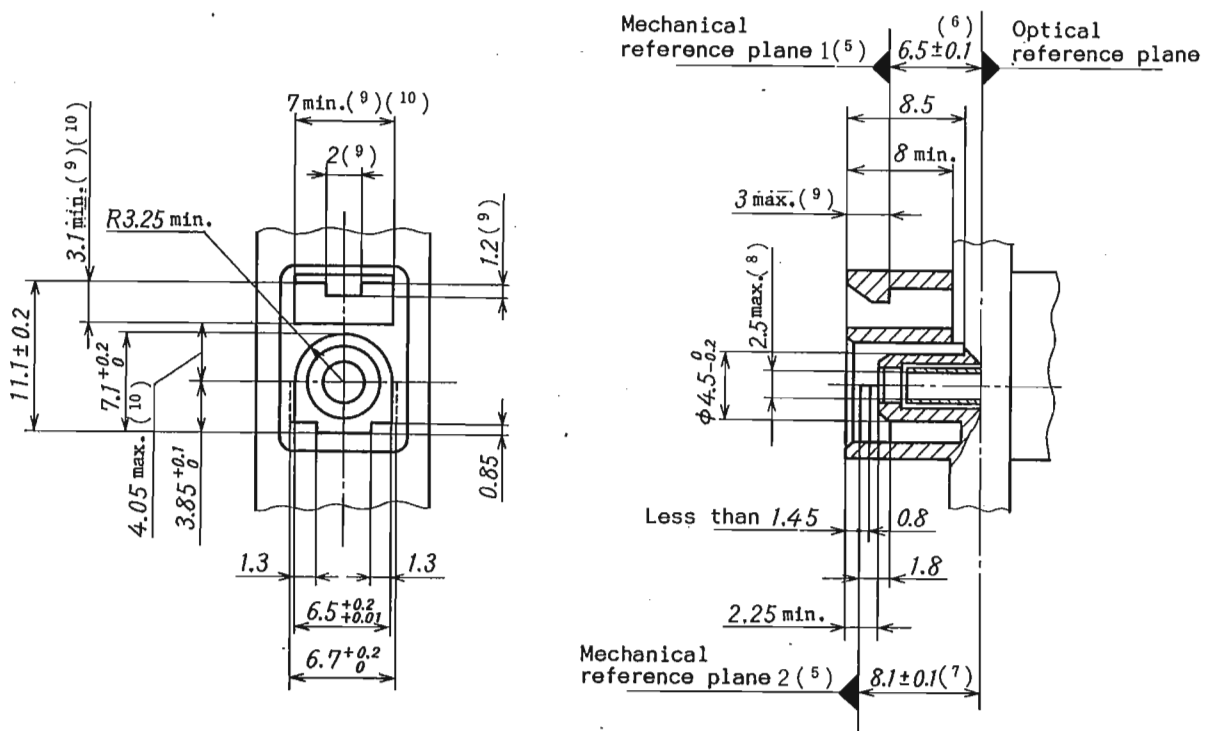
The dimensions of metal parts are those after surface treatment.

The construction and shape of the part for which no dimension is specified are exemplified as an informative reference.

The tolerances on the part for which dimensional tolerances are not specified shall be as specified in 4.1 of JIS C 5962.

Fig. 1. Engaging Part of Optical Connector (Adapter)

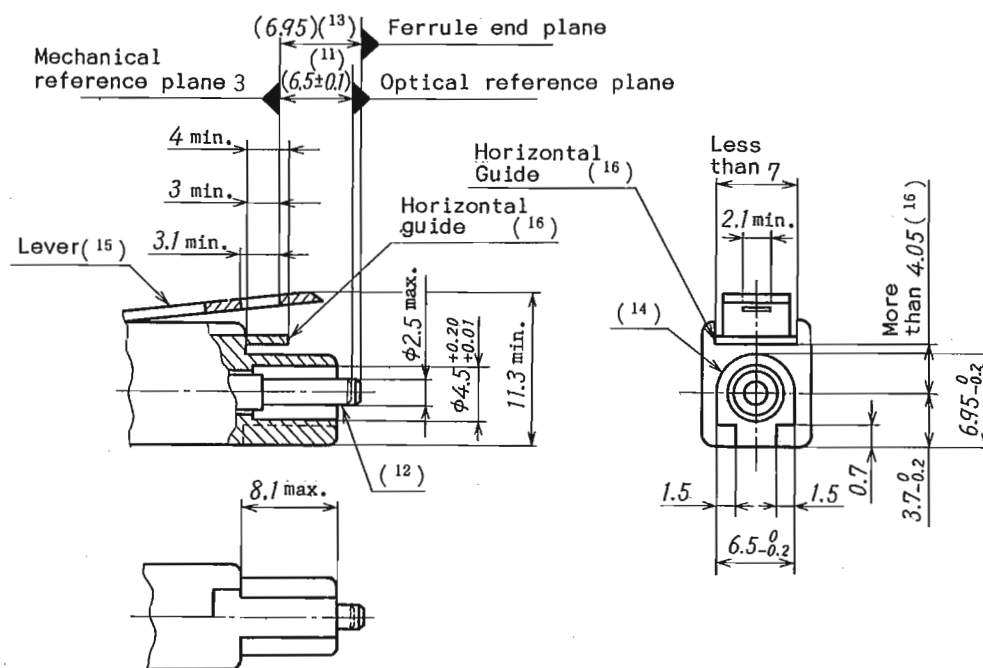
Unit: mm



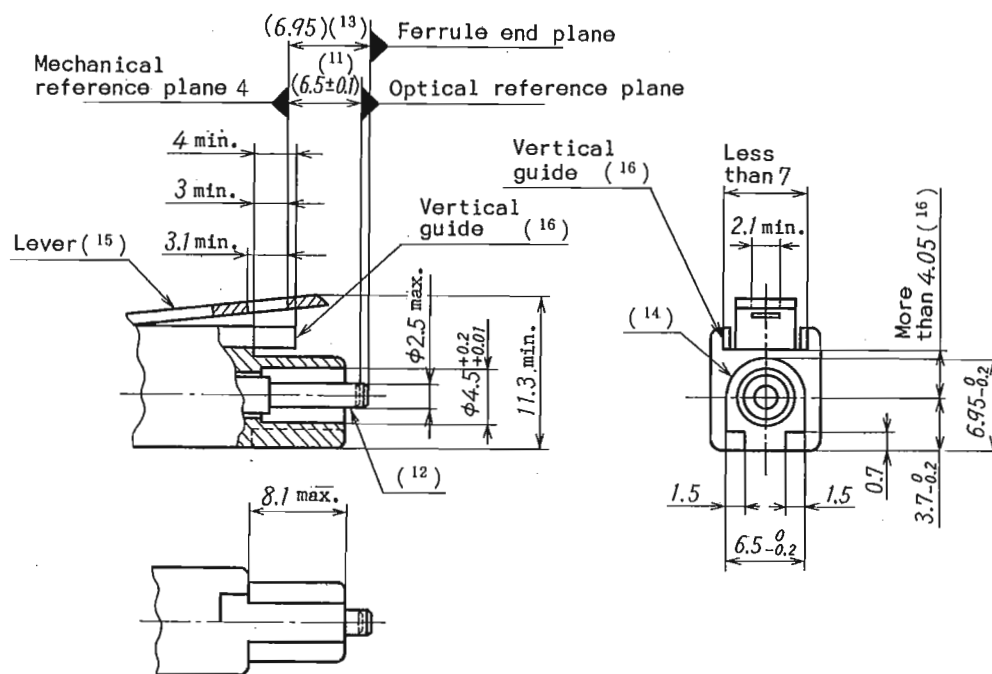
- Notes (5) Mechanical reference plane 1 corresponds to mechanical reference planes 3 and 4 of engaging part of plug (see Fig. 2) and mechanical reference plane 2 corresponds to mechanical reference plane 5 of engaging part of plug (see Fig. 3).
- (6) This dimension is the distance from the mechanical reference plane 1 to the ferrule end plane in adapter under optically connected state engaged with the plug, and is not the subject of measurement.
- (7) This dimension is the distance from the mechanical reference plane 2 to the ferrule end plane in adapter under optically connected state engaged with the plug, and is not the subject of measurement.
- (8) This dimension is that when an elastic sleeve is used, and shall be larger than $\phi 2.5$ when a non-elastic sleeve is used.
- (9) The portion represented by these dimensions is a component which receives the lever of plug for locking, and corresponds to the mechanism described in note (15) of the plug.
- (10) The portion represented by these dimensions corresponds to the guides described in note (16) or note (21).

Fig. 2. Engaging Part of Optical Connector (Plug) Lever-Locking Mechanism

Unit: mm



Horizontal Guide Type



Vertical Guide Type

- Notes (¹⁷) This dimension is the designed distance from mechanical reference plane 5 to the ferrule end plane under optically connected state engaged with the mate optical connector and is not the subject of measurement.
- (¹⁸) The ferrule shall be so constructed that it can move to the left in this figure against the elastic force.
- (¹⁹) This dimension is the minimum necessary dimension after mirror finishing of ferrule end plane and is not the subject of measurement.
- (²⁰) This portion can be inserted into the portion of R 3,25 min. of the adapter.
- (²¹) This guide shall be so constructed that it can be inserted into the portion described in Note (¹⁰) of the adapter. Horizontal guide type shall be employed.

6. Performances

The performances shall be as given in Table 4.

Table 4. Performances

Number	Item	Test method (JIS C 5961)	Conditions to be employed	Performances
1	Fitting	4.3	—	To be engaged without mechanical abnormalities
2	Insertion loss	5.1	Kind of optical fiber cord used: as given in Table 1. Kind of optical source: multicomponent glass multimode optical fiber: I. all plastic multimode optical fiber: K Measuring method: method 1 or method 3 (for plug) method 4 (for adapter)	As specified in Table 2 and Table 3.
3	Resistance to vibration	6.1	Initial measurement item: insertion loss Test method: endurance test by sweeping Severity: frequency range 10 to 55 Hz amplitude (zero to peak) 0.75 mm number of sweeping cycles 24 Test conditions: 24 cycles on each of three axes including axis of fitting (72 cycles in total) Final measurement items: insertion loss and mechanical damage	Insertion loss (initially measured value): as specified in Table 2 and Table 3. Insertion loss (finally measured value): as specified in Table 5. Mechanical damage: no detrimental damage such as deformation, crack or loosening.