

SPECIFICATION

for

4 PORT FIBEROPTIC ROTARY JOINT FOR ALL PLASTIC OPTICAL FIBER

( HRJ-4ET-R )

1. General

This specification covers the 4 ports fiberoptic rotary joint for all plastic optical fiber.

2. Scope of our supply

The scope of supply of our multiport fiberoptic rotary joint is composed of the following parts as shown in Table-1.

Table - 1

No.	Description	Q'ty
1	4 port fiberoptic rotary joint as per drawing No. EH3791387	1 pc.
2	Connecting rod as per drawing No. EH4785826.	1 pc.

Note 1 : The typical mounting example of the multiport fiberoptic rotary joint with other related components are shown in the drawing No. EH4788287.

Note 2 : Other related components such as fiberoptic cord with F07 connector, etc shall be out of our scope supply and they shall be prepared by you. In case you also require fiberoptic cords with F07 connectors, please contact us.

3. Properties

Properties of the 4 port fiberoptic rotary joint are shown in Table - 2.

Table - 2

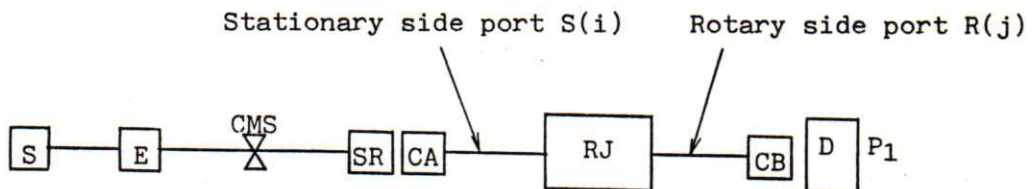
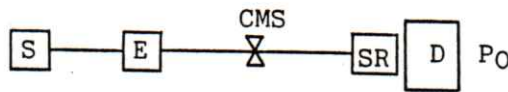
No.	Description	Properties
1	Available fiberoptic ports	4 ports
2	Operating wavelength	$\lambda = 0.66\mu\text{m}$
3	Insertion loss	$\leq 15$ dB including optical fiber loss
4	Insertion loss variation due to rotation	$\leq 3.0$ dB
5	Cross-talk	$\geq 40$ dB
6	Operating temperature	0 ~ +50°C
7	Rotation speed	Max. 400 min <sup>-1</sup>
8	Durations	Max. 10 <sup>7</sup> rotations
9	Net weight	Approx. 1.5kg

IMPOTANT : This fiberoptic rotary joint is applicable for the following fiber and connector.

- 1) Fiber type : OFC4.4-PSI-980/1000 (All Plastic Multimode Optical Fiber) in accordance with JIS C 6820.
- 2) Connector type : FO7 type connector in accordance with JIS C 5976 (CNF O7SPM1.0 N42)

#### 4. Testing method

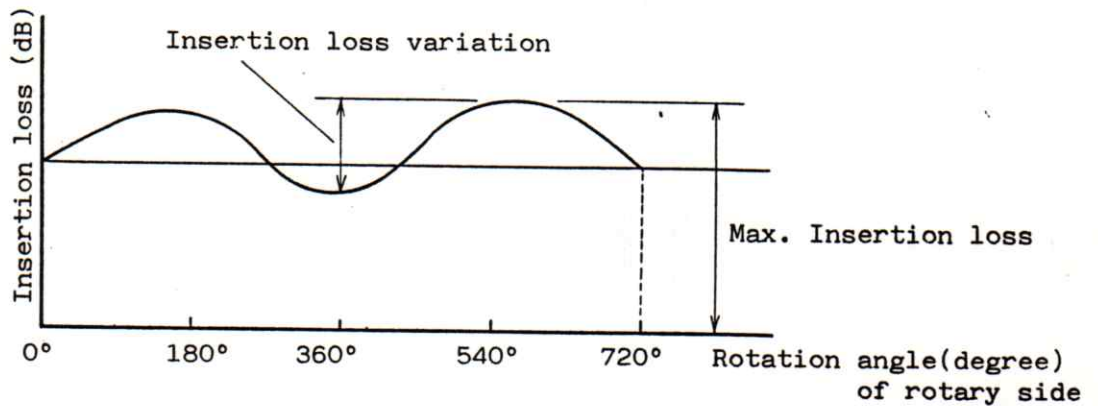
4.1 Insertion loss shall be measured in accordance with JIS C 5961 method 3.



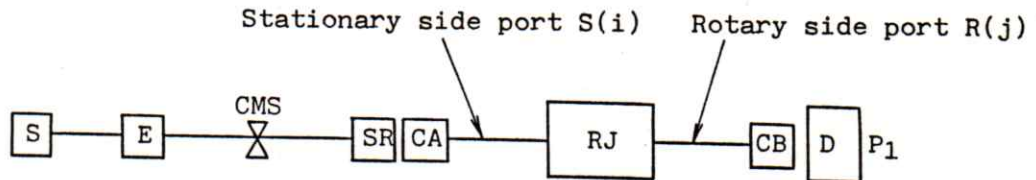
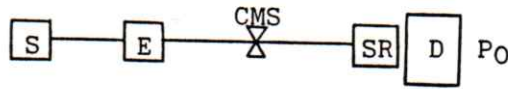
$$\text{Insertion loss (dB)} = -10 \log \frac{P_1(j)}{P_0(i)}$$

where  $i=j=1 \sim n$

4.2 Insertion loss variation due to rotation is shown in Fig.1.



4.3 Cross-talk shall be measured in accordance with IEC 874-1(2) 27.2.



$$\text{Cross-talk (dB)} = -10 \log \frac{P_1(j)}{P_0(i)}$$

where  $i \neq j$ ,  $i=1 \sim n$ ,  $j=1 \sim n$

#### 4.4 Designation

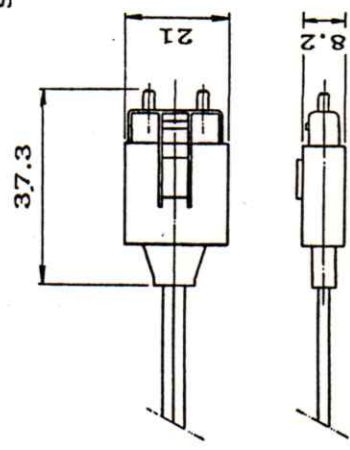
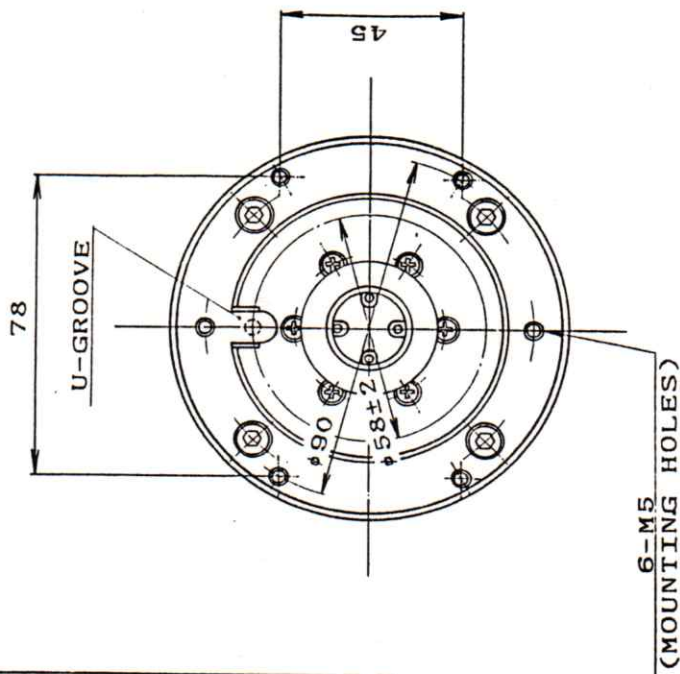
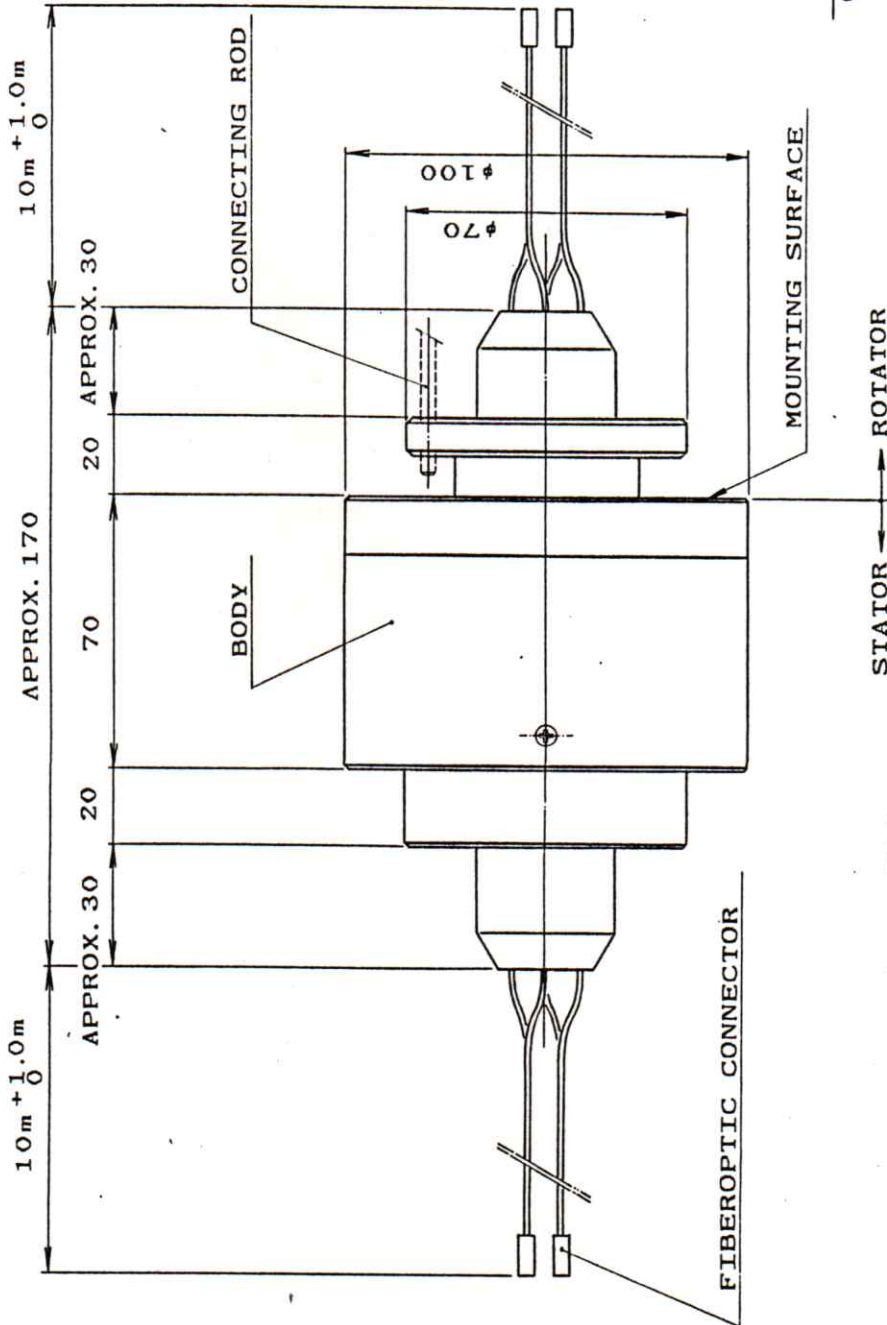
<b>S</b>	: Light source
<b>E</b>	: Excitation system
<b>CMS</b>	: Cladding mode stripper
<b>SR</b>	: Standard reference connector (F07 type)
<b>D</b>	: Detector
<b>CA</b>	: Connector (F07 type)
<b>S(i)</b>	: i-th port of stationary side
<b>R(j)</b>	: j-th port of rotary side
<b>P<sub>0</sub>=P<sub>0</sub>(i)</b>	: Input power into S(i) port.
<b>P<sub>1</sub>(j)</b>	: Output power from R(j) port

#### 5. Packing

The multiport fiberoptic rotary joint shall be packed in wooden box or carton box suitable for export.

- END OF SPECIFICATION -

MARK	REVISION	DATE	NAME	CHKD.



DWN. <i>K. Nakano</i>	29. Aug. '91	TITLE	UNIT : mm
CHKD. <i>T. Ishikawa</i>	REGD. PROJ.	MULTI PORT FIBEROPTIC ROTARY JOINT	
APPD. <i>Y. Yamada</i>		FOR ALL PLASTIC OPTICAL FIBER (HRJ-4ET-R)	
SCALE: N.T.S.			

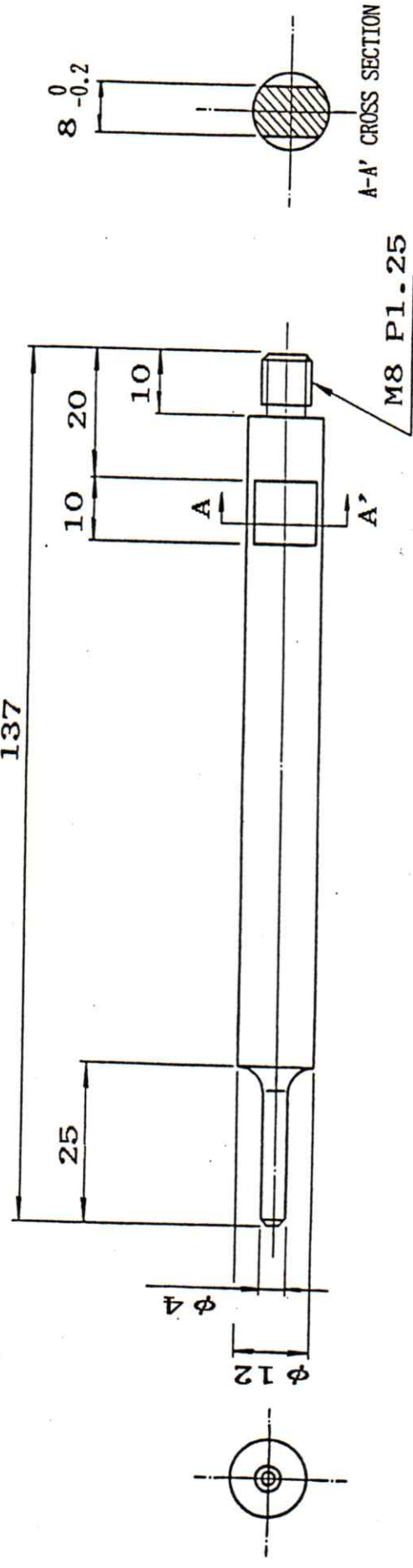
**HITACHI**  
Hitachi Cable, Ltd.

**EH3791387**

REV.

MARK	REVISION	DATE	NAME	CHKD.

137

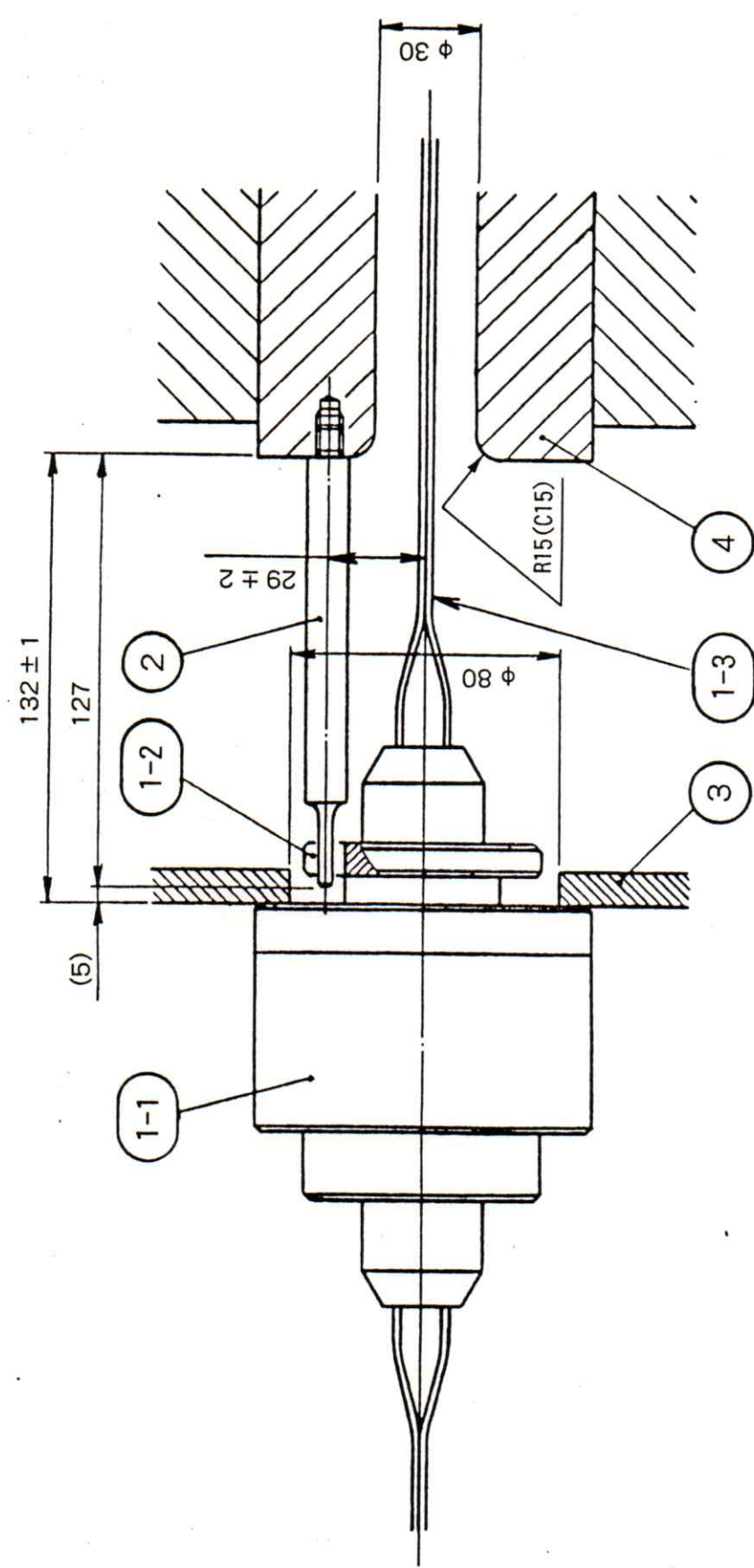


MATERIAL : STAINLESS STEEL

Unit : mm

REGD.	DWN. <i>X. Nishizawa</i>	16 Jul '90	TITLE	CONNECTING ROD	REV.
CHKD.	<i>D. Aoyama</i>	RPOJ.			
APPD.	<i>H. Koyama</i>				
SCALE	N.T.S.				
			<b>HITACHI</b> Hitachi Cable, Ltd.		
			EH 478582.6		

MARK	REVISION	DATE	NAME	CHKD.



Hitachi's Scope of Supply  
 (1-1) Multiport Fiberoptic Rotary Joint  
 for Polymer Optical Fiber

- (1-2) Holder
  - (1-3) Polymer Optical Fiber
  - (2) Connecting Rod
- Client's Supply
- (3) Shaft
  - (4) Fixing Hardware

REGD.	DWN. <i>K. Nakano</i>	Feb. 6 '91	TITLE	Installation Method of Multiport Fiberoptic Rotary Joint for Polymer Optical Fiber	REV.
7.FEB. 1991	CHKD. <i>R. Sakurai</i>	RPOJ.	HITACHI Hitachi Cable, Ltd.		
SCALE	APPD. <i>S. Koyama</i>	SCALE	EH	4788287	