

No. TD03-28-1001

Date Oct. 17, 2003

INSTRUCTION MANUAL

FOR

Fiberoptic Rotary Joint

**Optical Fiber Design Department
Information Systems Group**

Hitachi Cable, Ltd.

1. General

This instruction manual describes install procedure of multi-port Fiberoptic Rotary Joint (FRJ).

2. Construction

Construction of Fiberoptic Rotary Joint and connecting rod (accessory) are shown in Drawings listed in Table 1.

Table 1. List of Construction Drawings

Type (Port Number)	Drawing No.	
	Main body	Connecting rod
4, 6 ports	EH3840237	EH4785826
8, 10, 12 ports	EH3840236	

3. Install procedure

Example of FORJ and optical signal transmission cable installation is shown in figure 1.

- (a) Fix connecting rod to rotator shaft.
- (b) Fix FORJ to fixing hardware with four bolts (M6).
[Note] Head of connecting rod shall be seated between guide-pins of FORJ.
- (c) Connect optical connectors to FORJ of Rotator side and Stator side.
[Note] Before connecting optical connectors, ferrules shall be cleaned up with ethyl alcohol or appropriate kit.
[Note] In case optical connector is FC, rotation prevention key in connectors shall meet optical adapter groove. See attached

For details of install procedure, please refer to drawings listed in Table.2.

Table 2. List of Installed Position Drawings

Type (Port Number)	Drawing No.
4, 6 ports	EH4826902
8, 10, 12 ports	EH4826901

4. Handling

Below items shall be paid attention to carefully, because of the precision optical instrument.

- (a) Rotating axis
Keep the rotation axis to horizontally or vertically.
[Note] In case axis of rotating is vertical, fix optical fiber cord in certain interval (approximately 5 to 10cm) so as to release the load of optical fiber on connectors.

(b) Install environment

FORJ is delicate against rain drops and dust. They shall be stored in rain drops, and dust-proof case.

(c) Space for the optical fibers and connectors

Take a space for attach and/or detach of optical fibers and connectors. Required space is listed in Table 3.

Table 3. Required Space of FORJ to Shaft

Type (Port Number)	Required Space	Drawing No.
4, 6 ports	215 +/- 1mm	EH4826902
8, 10, 12 ports	224.5 +/- 1mm	EH4826901

(d) Do not shock and fall FORJ.

(e) Do not load axis of rotating with excessive force

Do not load axis of rotating with excessive force because optical system that is consist of prism and lens is aligned delicately.

(f) Fixing accuracy for connecting rod

Fixing accuracy for connecting rod shall be kept listed in Table 4 from axis of rotation. Connecting rod shall be screwed tightly.

Table 4. Fixing Accuracy for Connecting Rod from axis of rotation

Type (Port Number)	Required Accuracy	Drawing No.
4, 6 ports	30.5 +/- 1mm	EH4826902
8, 10, 12 ports	45 +/- 1mm	EH4826901

5. Optical fiber cord with connectors

Handling manual for optical fiber cord with connectors is shown in figure 2.

Optical connectors polishing shall be PC (Physical contact).

6. Others

All disputes arising out of or in connection with this instruction manual, including any question shall be resolved between Hitachi Cable, Ltd. and purchaser.

- End of document -

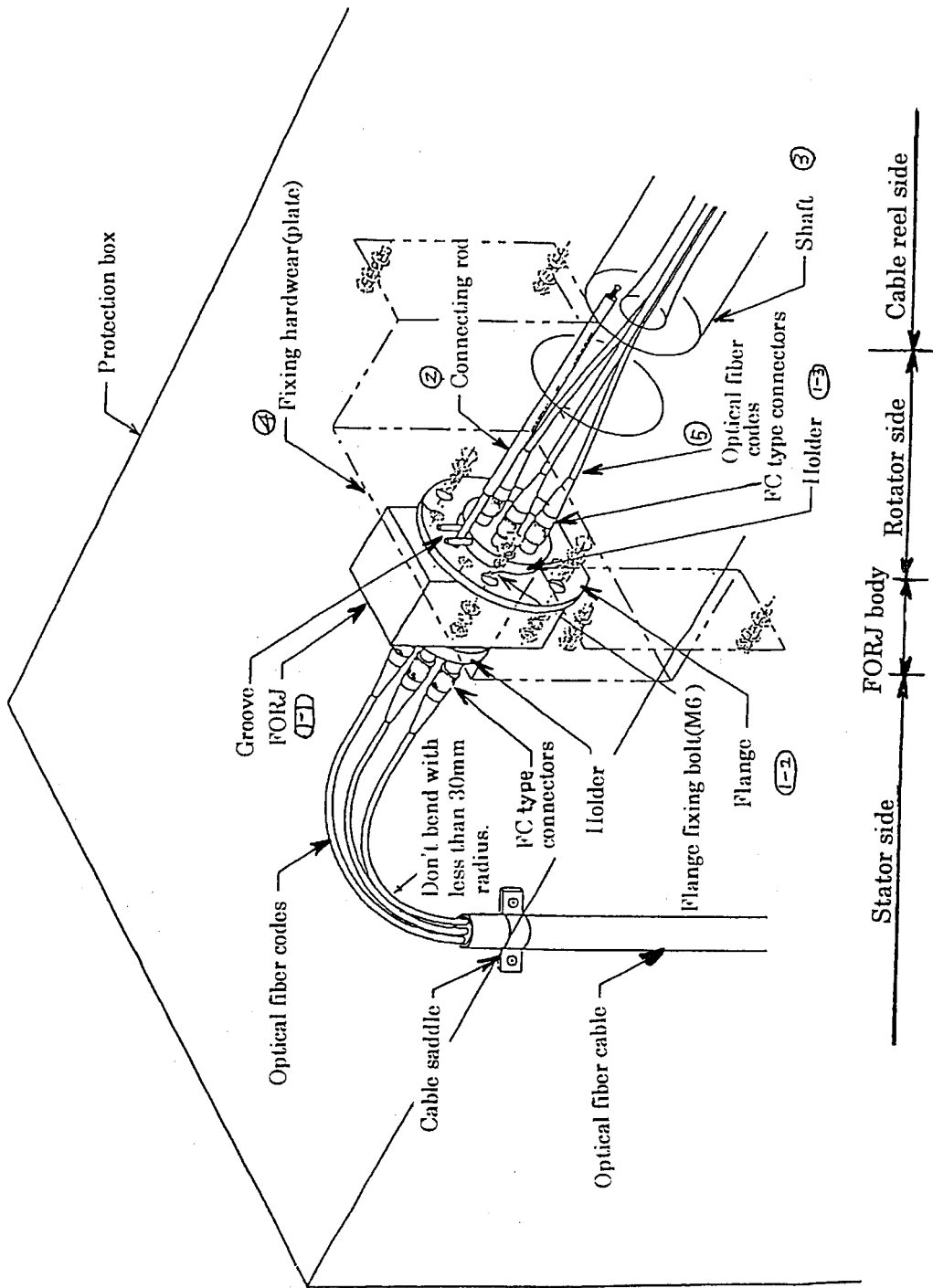


Fig.1 Example of FORJ and optical signal transmission cable installation

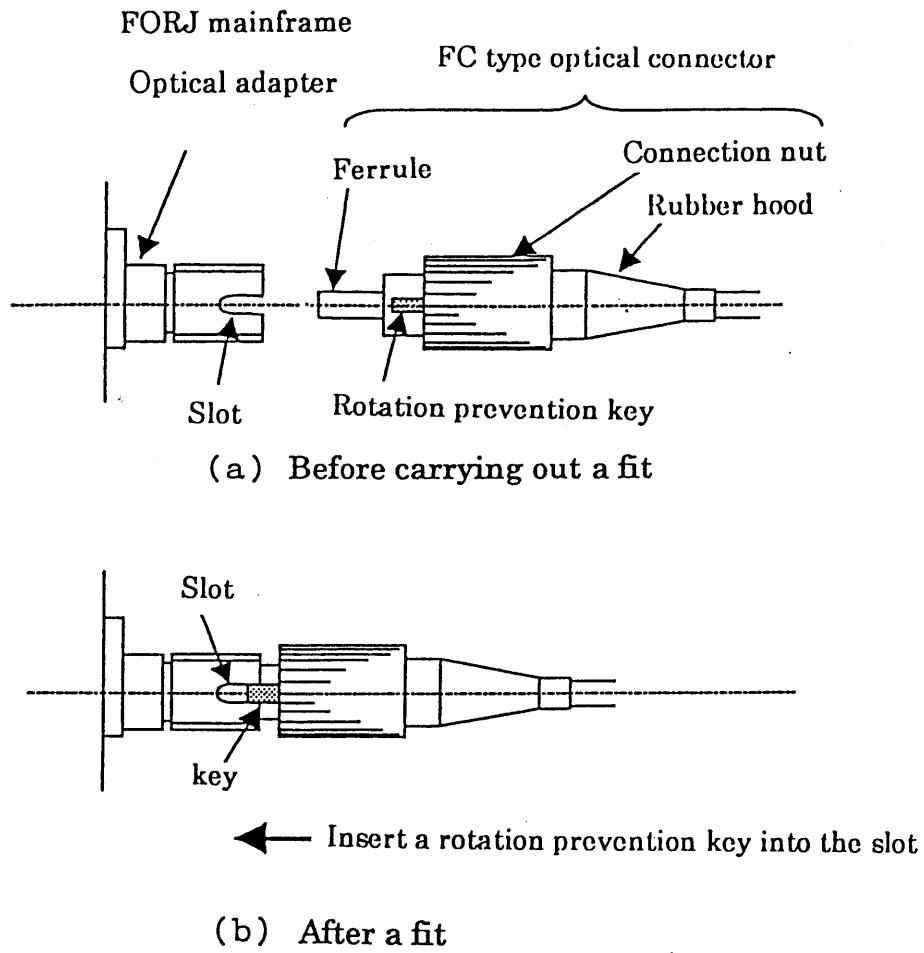
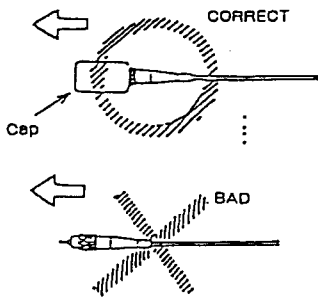
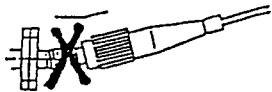


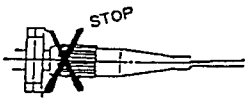
Fig.2 The connection technique of optical adapter and FC type connector



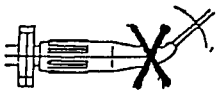
Handle a connector with a cap. When you find dusts on the endface of connector, the end face should be cleaned out with ethanol soaked gauze.



☆ Don't Insert obliquely.
(Insert straight.)



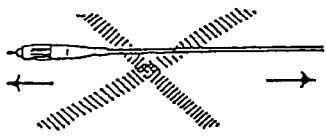
☆ Don't leave the locknut loose.
(Screw up.)



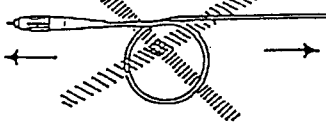
☆ Don't bend at the neck.



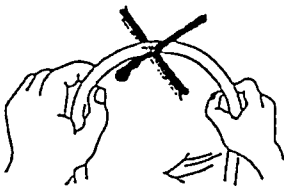
☆ Don't twist.



☆ Don't pull roughly.
Allowable tensile strength:
Less than 2.5kg(24.5N).



☆ Don't kink.

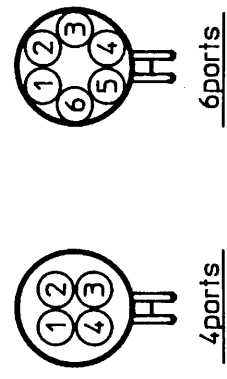
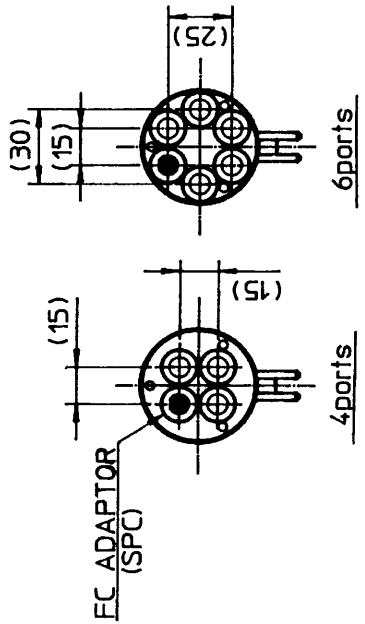
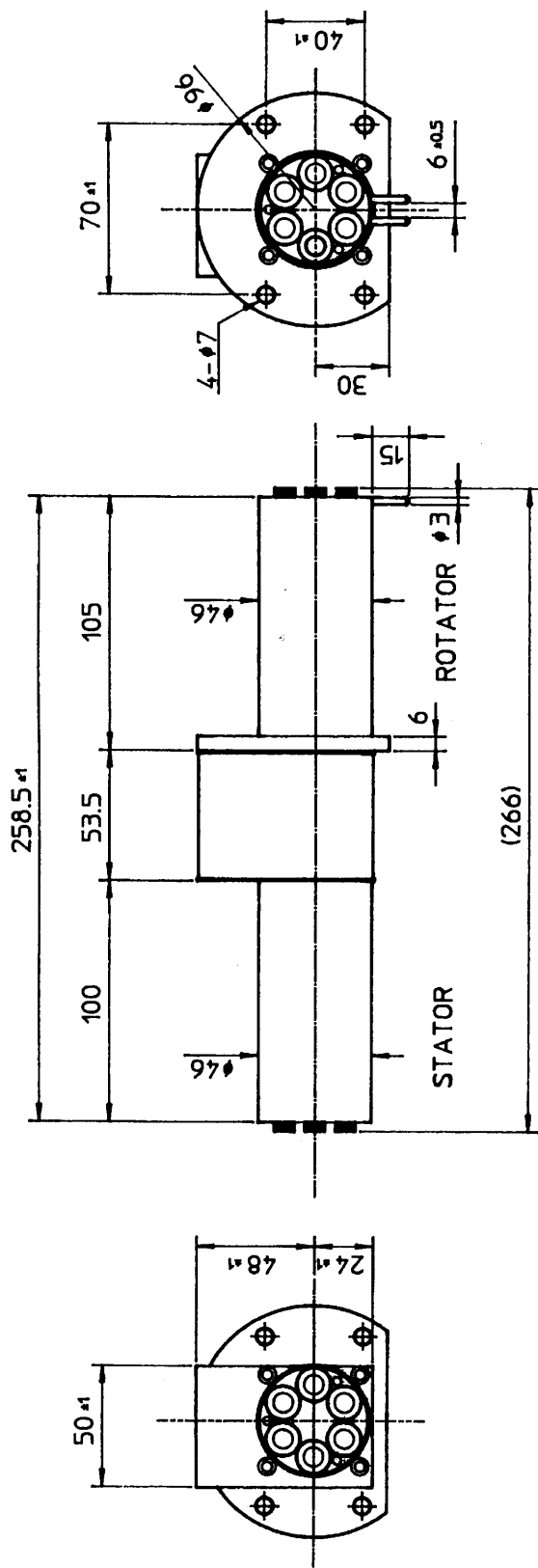


☆ Don't bend with less than
30mm radius.

Fig.3 Handling manual for optical fiber cord with connectors

EH 38 40237

MARK	REVISION	DATE	NAME	CHKD.



DWN.	CHKD.	APPD.	SCALE	3 Jun '03	REGD.	PROJ.	TITLE
							MULTI-PORT FIBEROPTIC ROTARY JOINT (4,6ports)

HITACHI
Hitachi Cable, Ltd.

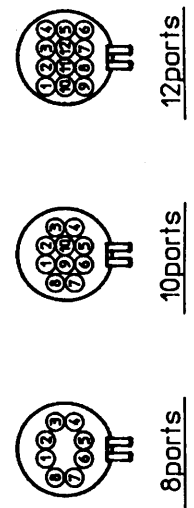
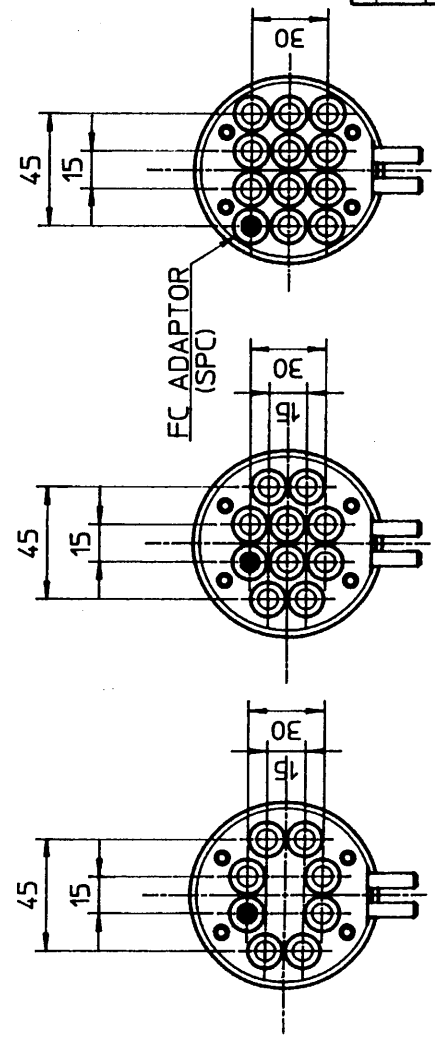
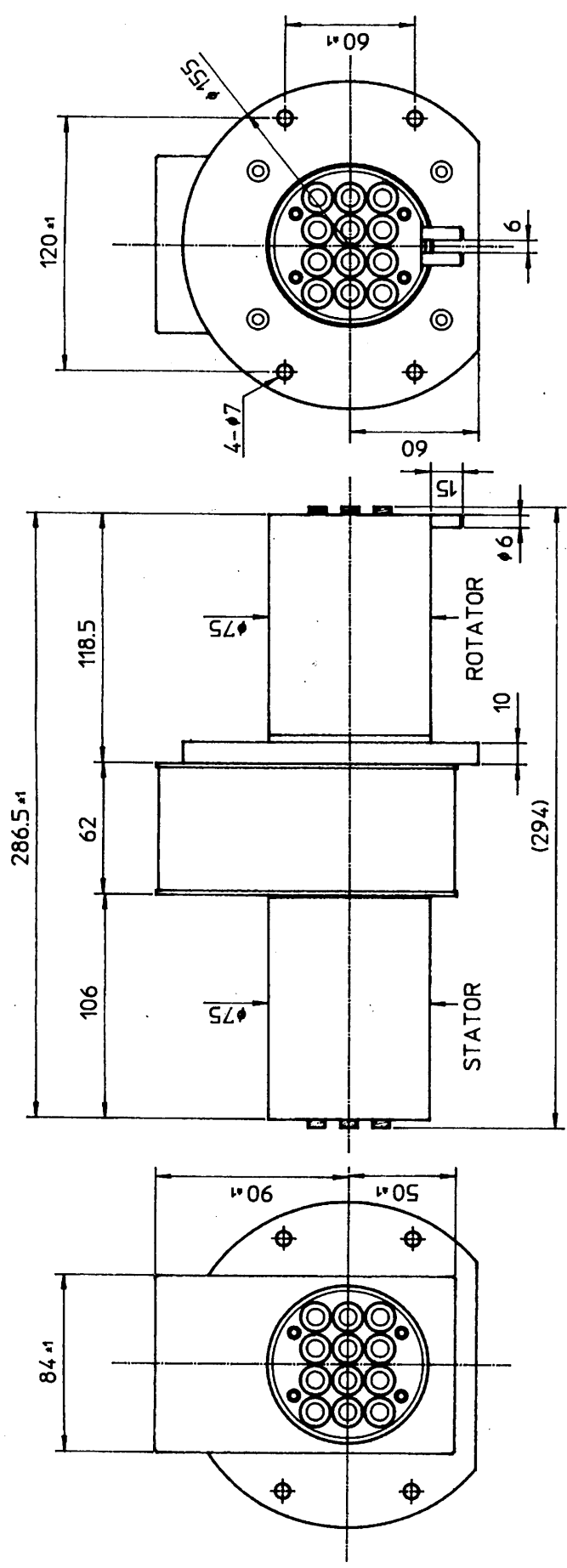
EH 3840237

REV.

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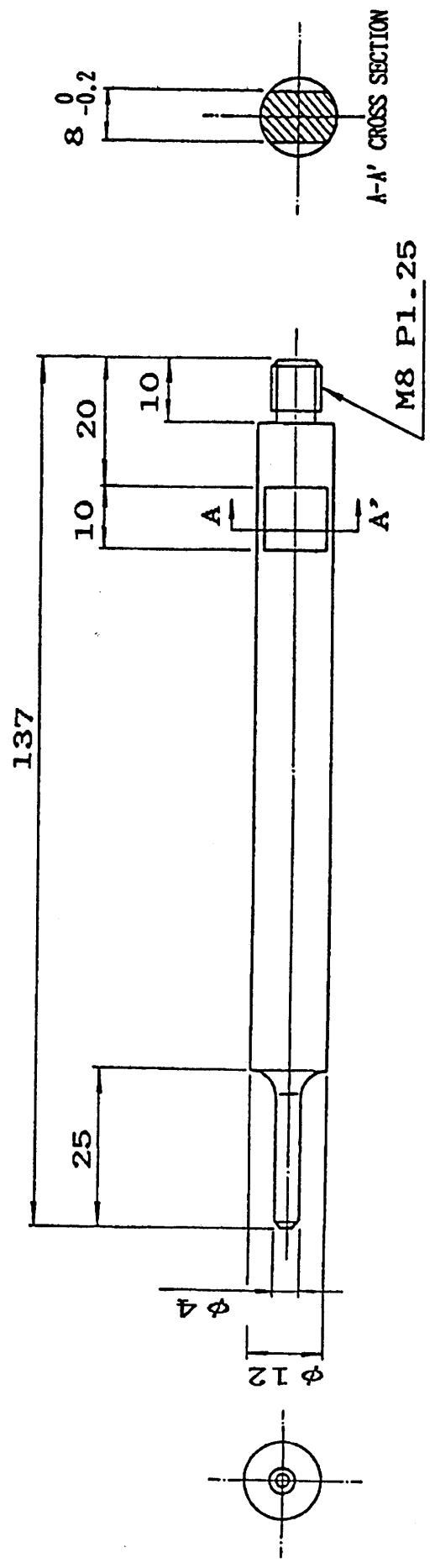
EH 3840236

MARK	REVISION	DATE	NAME	CHKD.



DWN.	Y. Okada	20 May '03	TITLE	MULTIPOINT FIBEROPTIC ROTARY JOINT (8-12ports)	REV.	
CHKD.	T. Kumagaya	REGD. PROJ.				
APPD.	T. Kumagaya					
SCALE	1/2					
HITACHI Hitachi Cable, Ltd.			EH 3840236			

MARK	REVISION	DATE	NAME	CHKD.



MATERIAL : STAINLESS STEEL

Unit: mm

REGD.	DWN. <i>K. Nakano</i>	16. Jul. '90	TITLE	REV.
	CHKD. <i>D. Aikawa</i>	RPOJ.	CONNECTING ROD	
	APPD. <i>J. Koyama</i>			
	SCALE <i>N.T.J</i>			
			HITACHI	
			<small>Hitachi Cable, Ltd.</small>	
			EH 4785826	

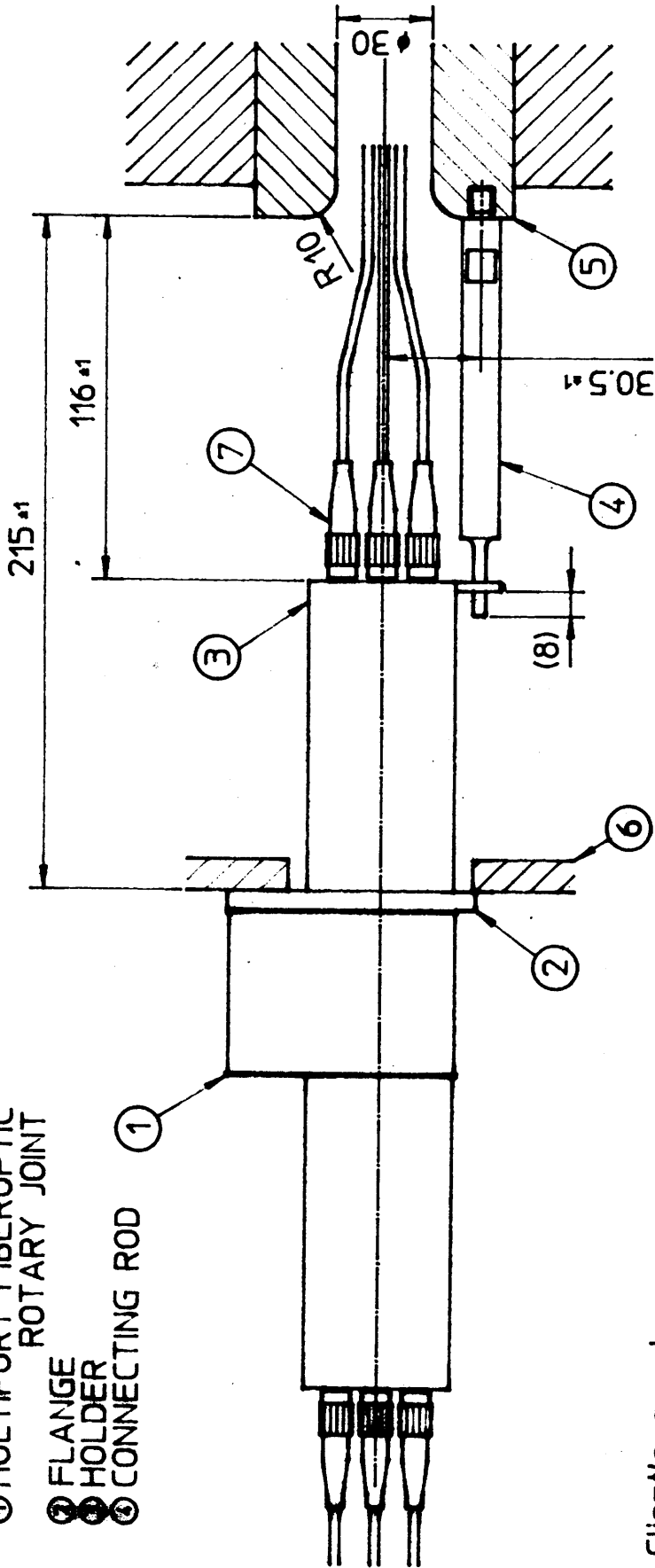
MARK	REVISION	DATE	NAME	CHKD.
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Hachi's scope of supply

① MULTI-PORT FIBEROPTIC ROTARY JOINT

② FLANGE HOLDER

③ CONNECTING ROD



Client's supply

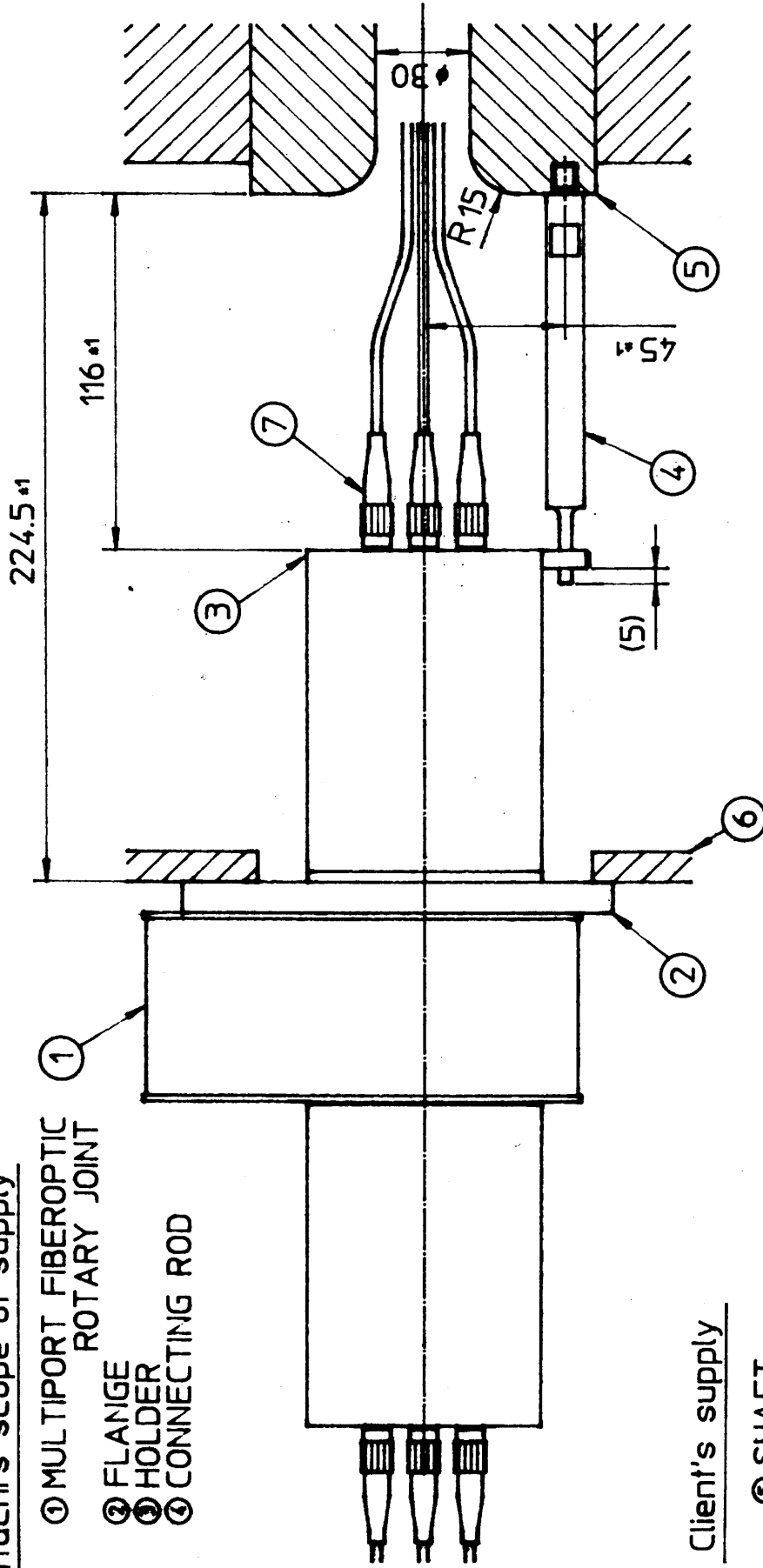
④ SHAFT
 ⑤ FIXING HARDWEAR
 ⑥ OPTICAL FIBER CODE (FC/SPC)

REGD.	DWN. W. Shimizu	20 May '03	TITLE	REV.
CHKD. T. Kumagai	RPOJ.	(4-ports)	HITACHI Hitachi Cable, Ltd.	
APPD. T. Kumagai		INSTALLATION METHOD OF MULTI-PORT FIBEROPTIC ROTARY JOINT		
SCALE 1/2				EH 4826902

MARK	REVISION	DATE	NAME	CHKD.

Hachi's scope of supply

- ① MULTI PORT FIBEROPTIC ROTARY JOINT
- ② FLANGE
- ③ HOLDER
- ④ CONNECTING ROD



Client's supply

- ⑤ SHAFT
- ⑥ FIXING HARDWEAR
- ⑦ OPTICAL FIBER CODE (FC/SPC)

REGD.	DWN. <i>Y. Okumachi</i>	20 May '03	TITLE	REV.
CHKD. <i>T. Kumagai</i>	RPOJ.		(8-12part/e)	HITACHI Hitachi Cable, Ltd.
APPD. <i>T. Kumagai</i>			INSTALLATION METHOD OF	
SCALE 1/2			MULTI PORT FIBEROPTIC	
			ROTARY JOINT	
				EH 4826901