

No. TD05-28-1019

Date May. 23, 2005

INSTRUCTION MANUAL
FOR
Fiberoptic Rotary Joint

Optical Component Engineering
Information Systems Group

Hitachi Cable, Ltd.

1. General

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

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, Adaptor type	EH3840252	EH4785826
8, 10, 12 ports, Adaptor type	EH3840253	
4, 6 ports, Pigtail type	EH3840250	

3. Install procedure

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, Adaptor type	EH4826916
8, 10, 12 ports, Adaptor type	EH4826917
4, 6 ports, Pigtail type	EH4826914

(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.

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, Adaptor type	215 +/- 1mm	EH4826916
8, 10, 12 ports, Adaptor type	224.5 +/- 1mm	EH4826917
4, 6 ports, Pigtail type	159.5 +/- 1mm	EH4826914

(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, Adaptor type	30.5 +/- 1mm	EH4826916
8, 10, 12 ports, Adaptor type	45 +/- 1mm	EH4826917
4, 6 ports, Pigtail type	30.5 +/- 1mm	EH4826914

5. Optical fiber cord with connectors

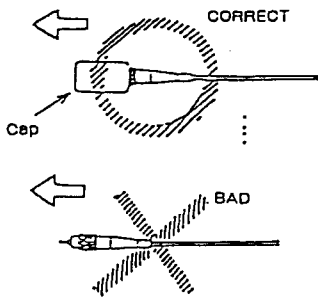
Handling manual for optical fiber cord with connectors is shown in figure 1.

Optical connectors polishing shall be PC (Physical contact).

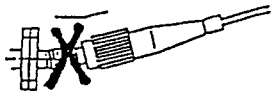
6. Others

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

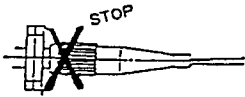
- End of document -



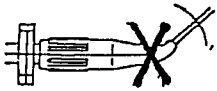
Handle a connector with a cap. When you find dusts on the endface of connector, the end face should be cleaned out with ethanol soaked gauze.



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



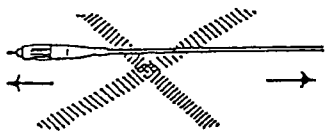
☆ Don't leave the locknut loose.
(Screw up.)



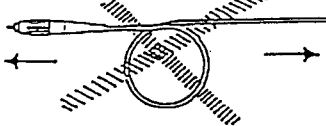
☆ Don't bend at the neck.



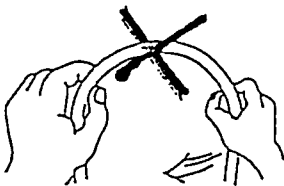
☆ Don't twist.



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



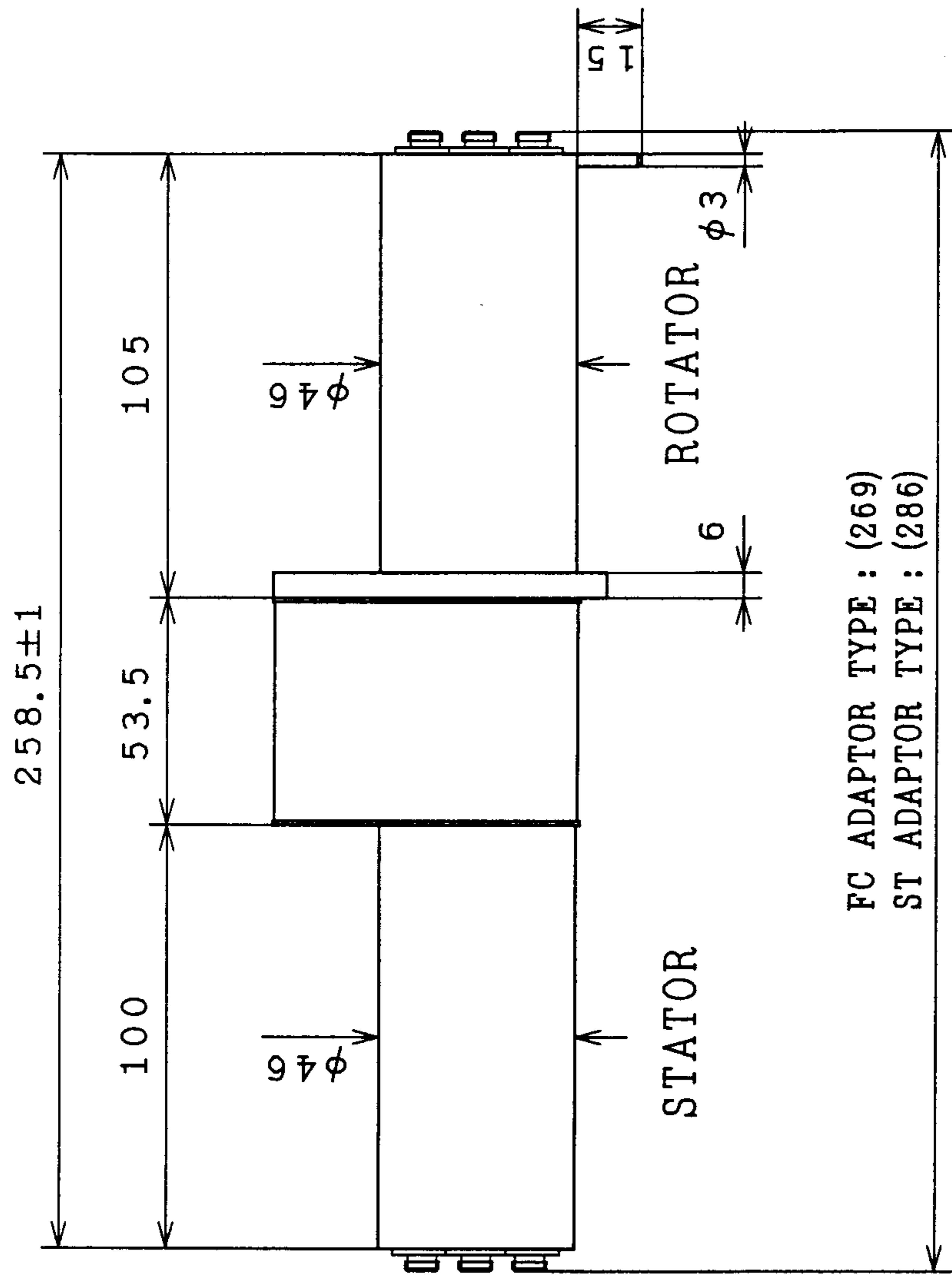
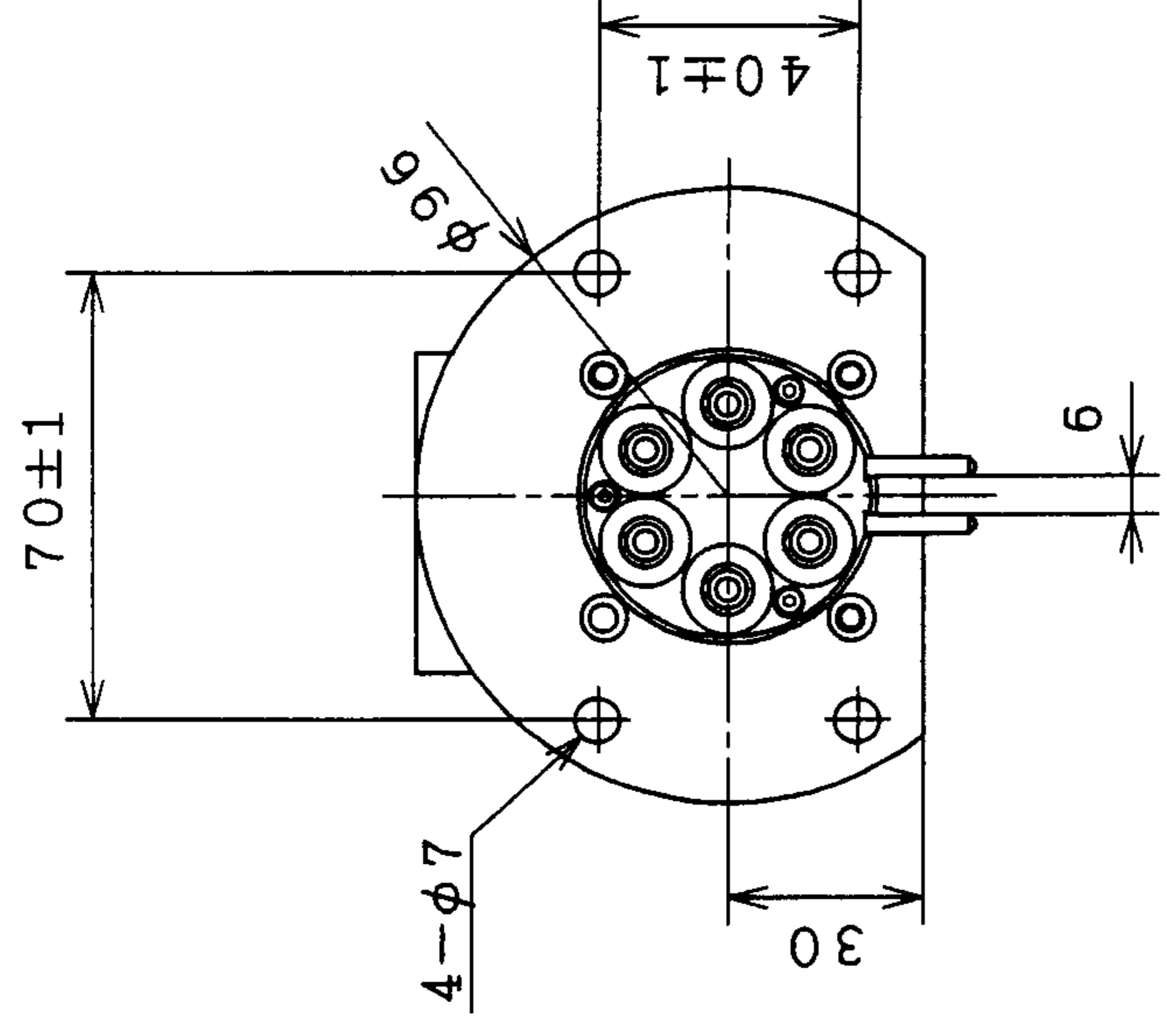
☆ Don't kink.



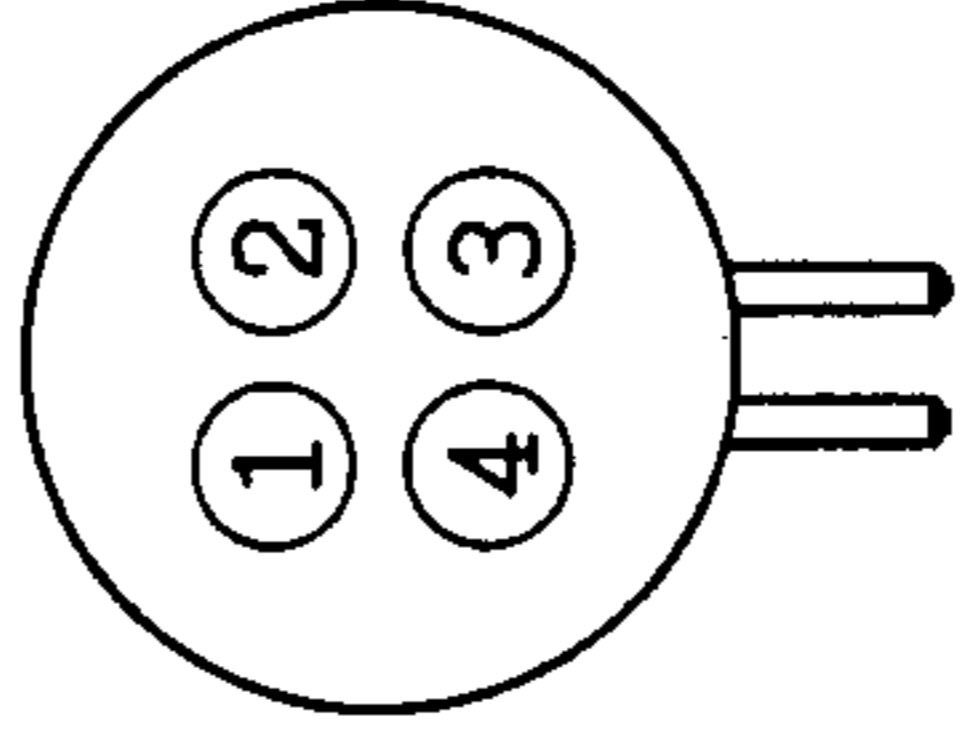
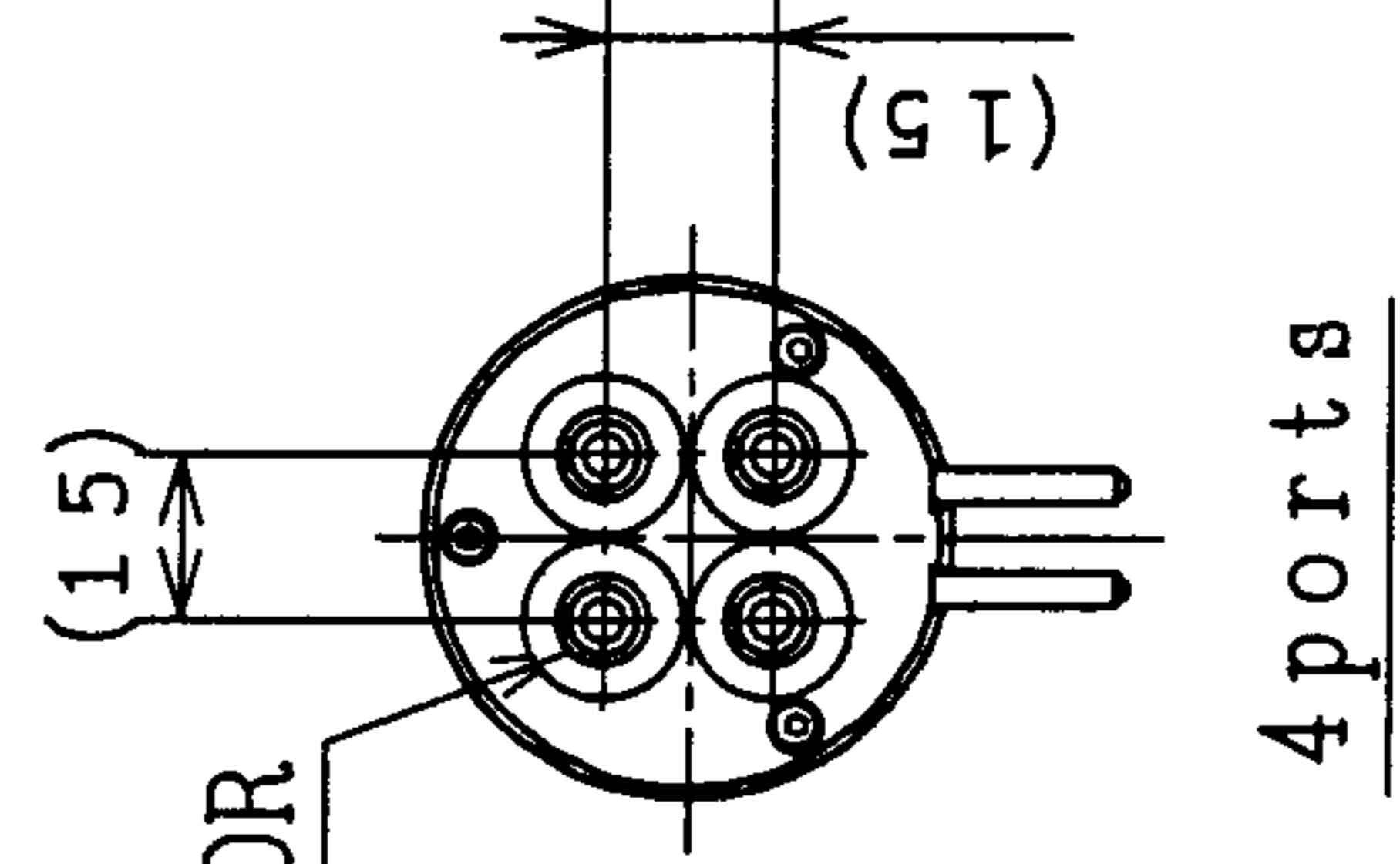
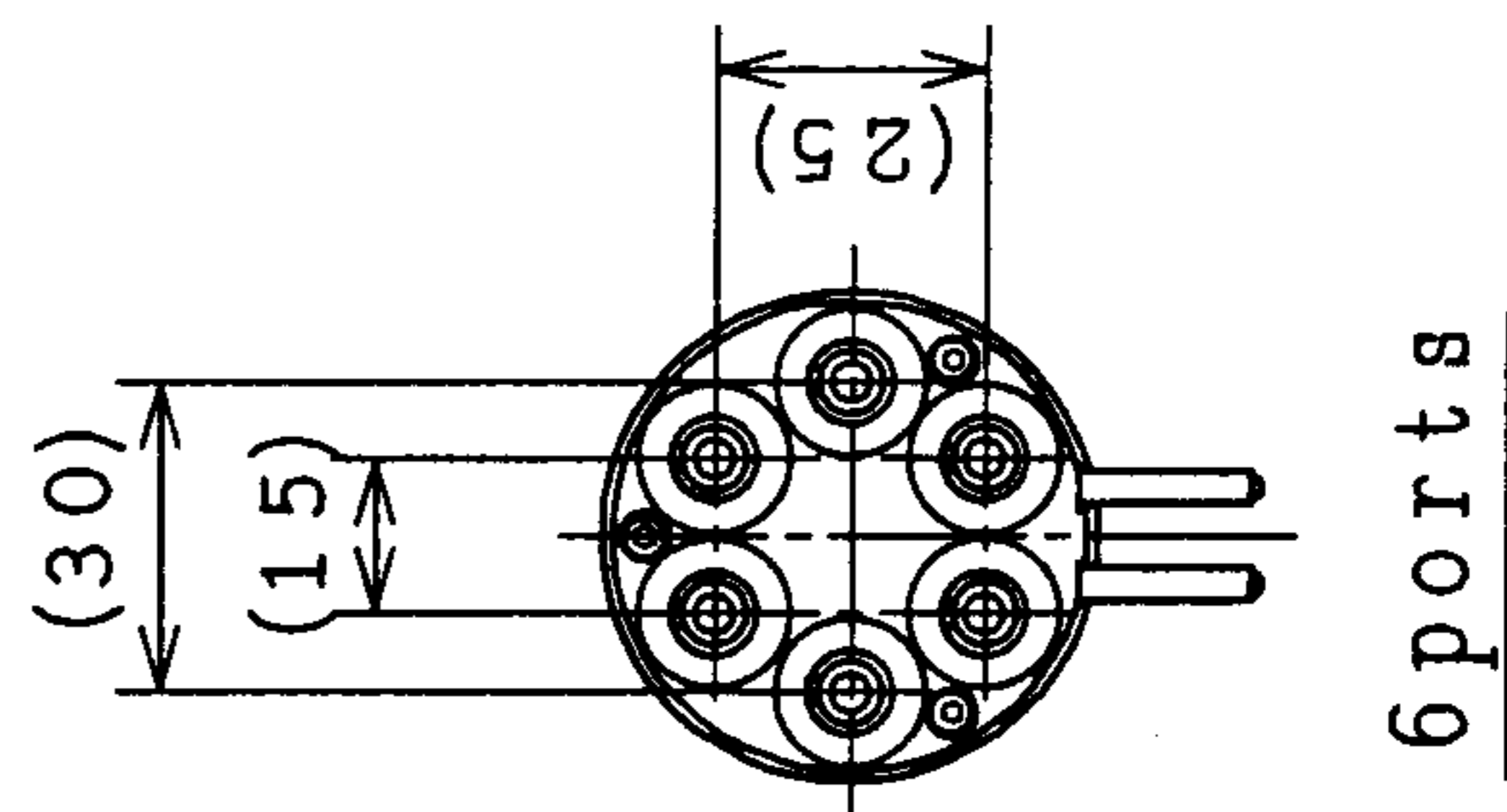
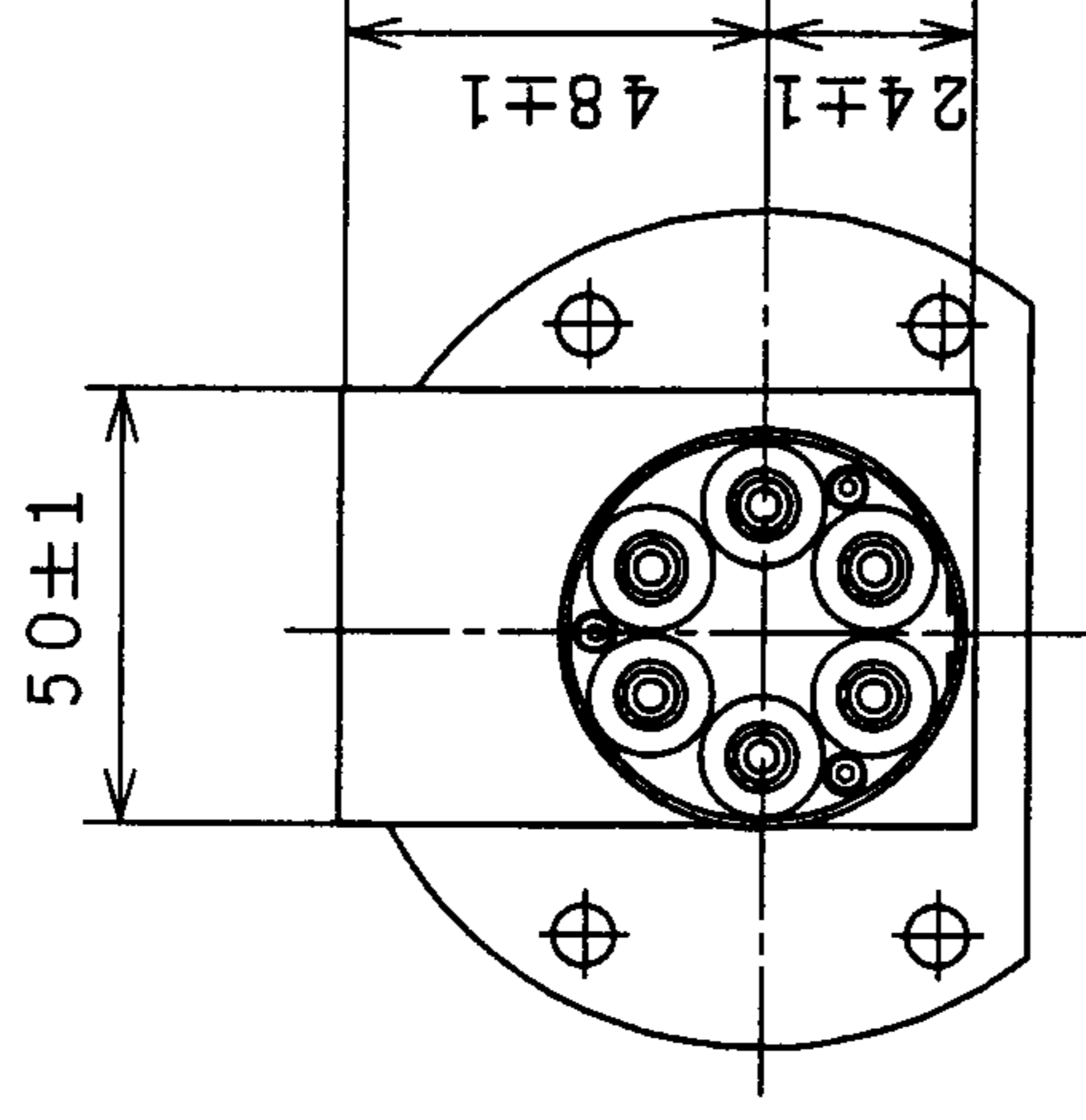
☆ Don't bend with less than
30mm radius.

Fig.1 Handling manual for optical fiber cord with connectors

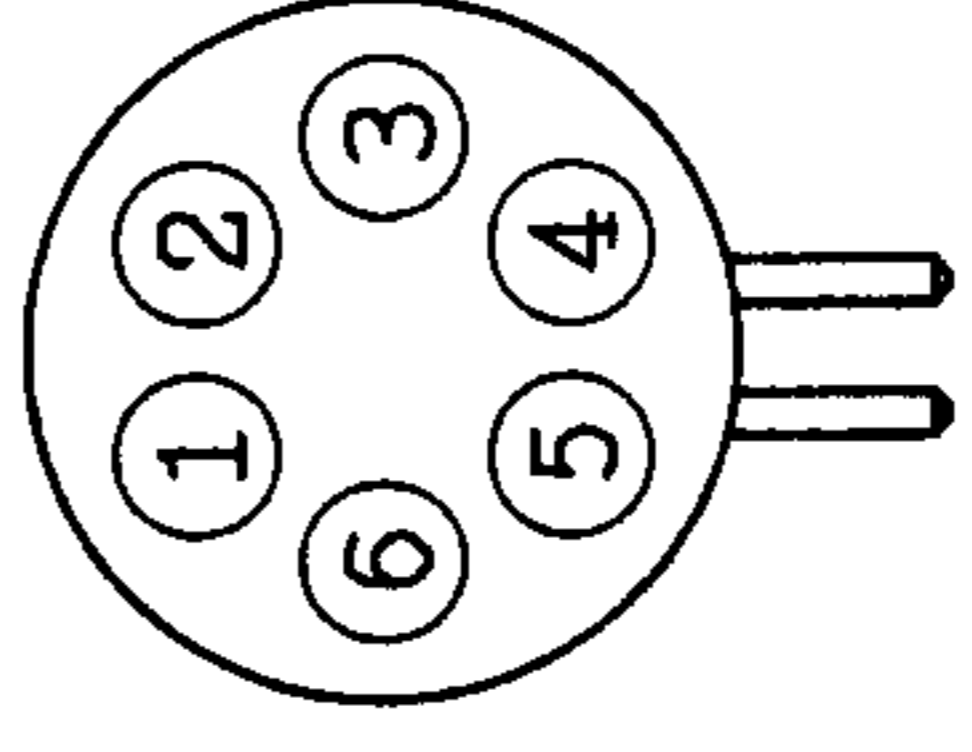
MARK	REVISION	DATE	NAME	CHKD.



FC ADAPTOR TYPE : (269)
ST ADAPTOR TYPE : (286)



4 ports



6 ports

(Unit: mm)

DWN.	<i>Y. Matsuda</i>	29 MAR.'04	T I T L E
CHKD.	<i>Z. Dan</i>	REGD. PROJ.	MULTIPOINT FIBEROPTIC ROTARY JOINT (4~6ports)
APPD.	<i>J. Kusagai</i>		
SCALE	N.T.S.		

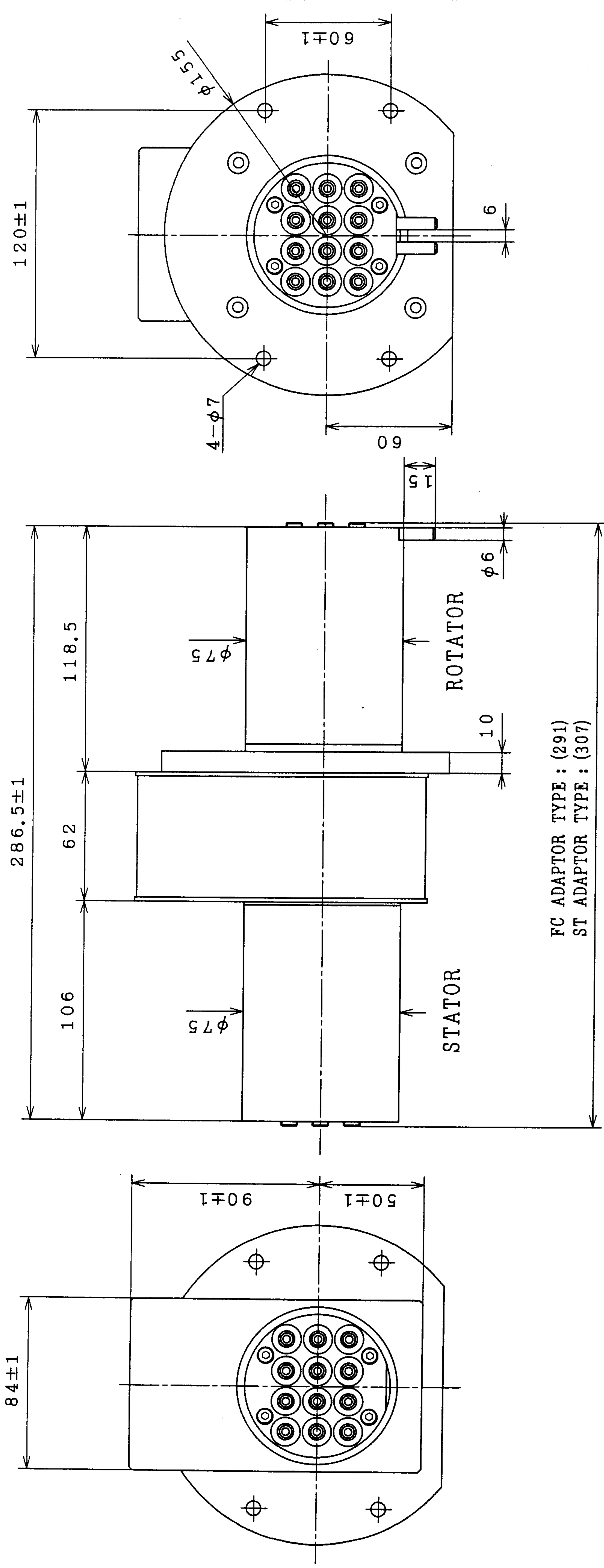
HITACHI
Hitachi Cable, Ltd.

EH3840252

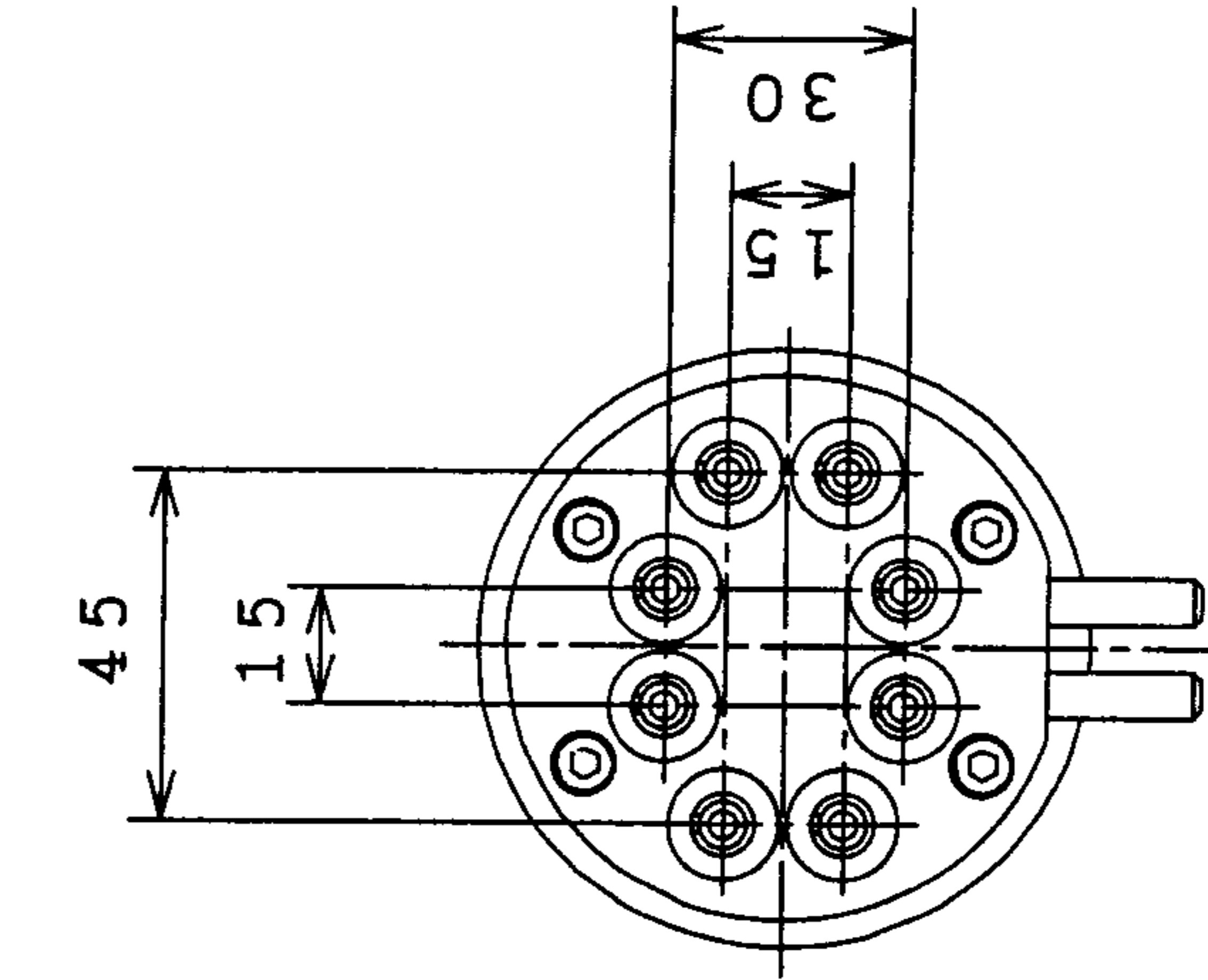
REV.	
------	--

EH3840253

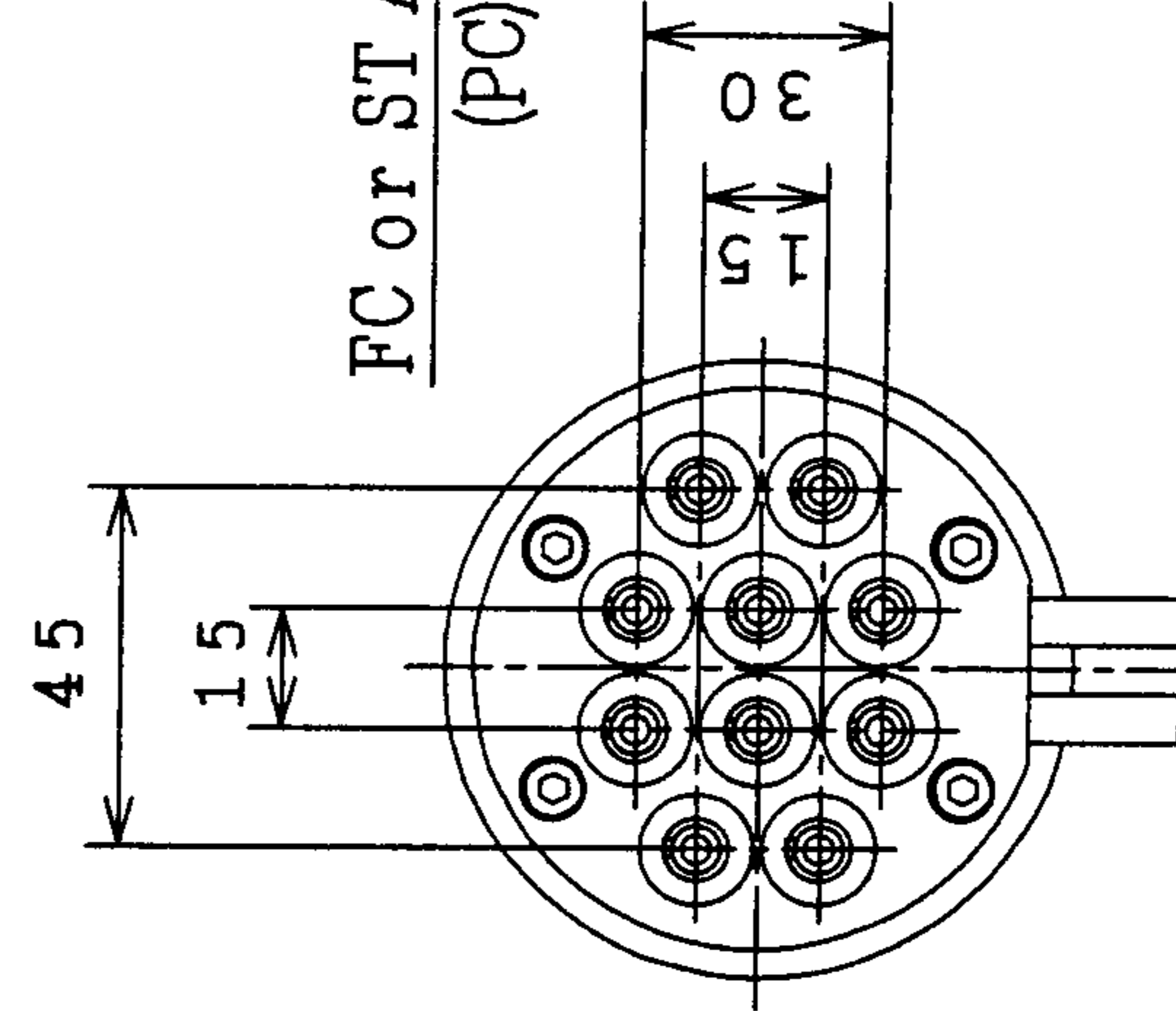
MARK	REVISION	DATE	NAME	CHKD.



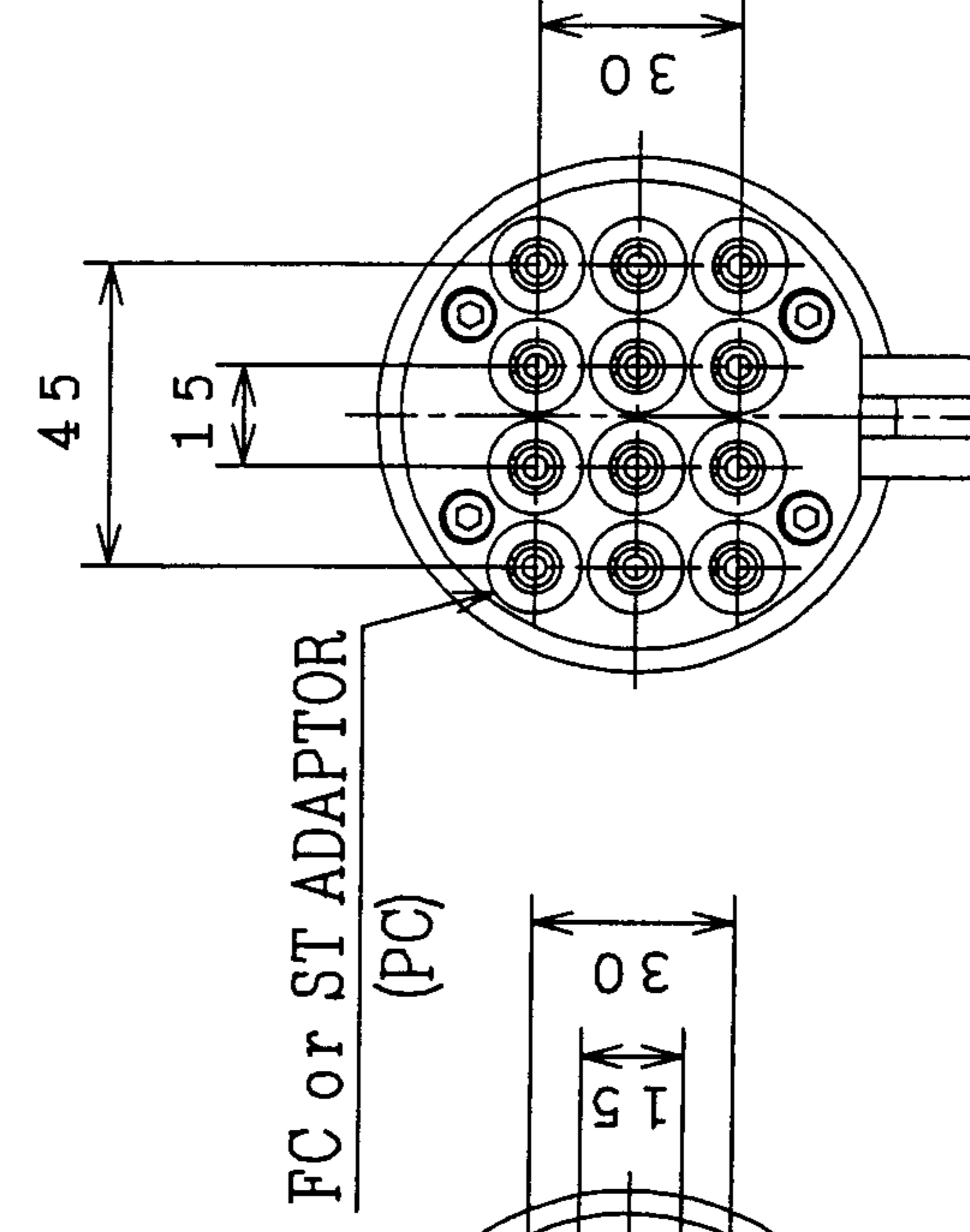
FC ADAPTOR TYPE : (291)
ST ADAPTOR TYPE : (307)



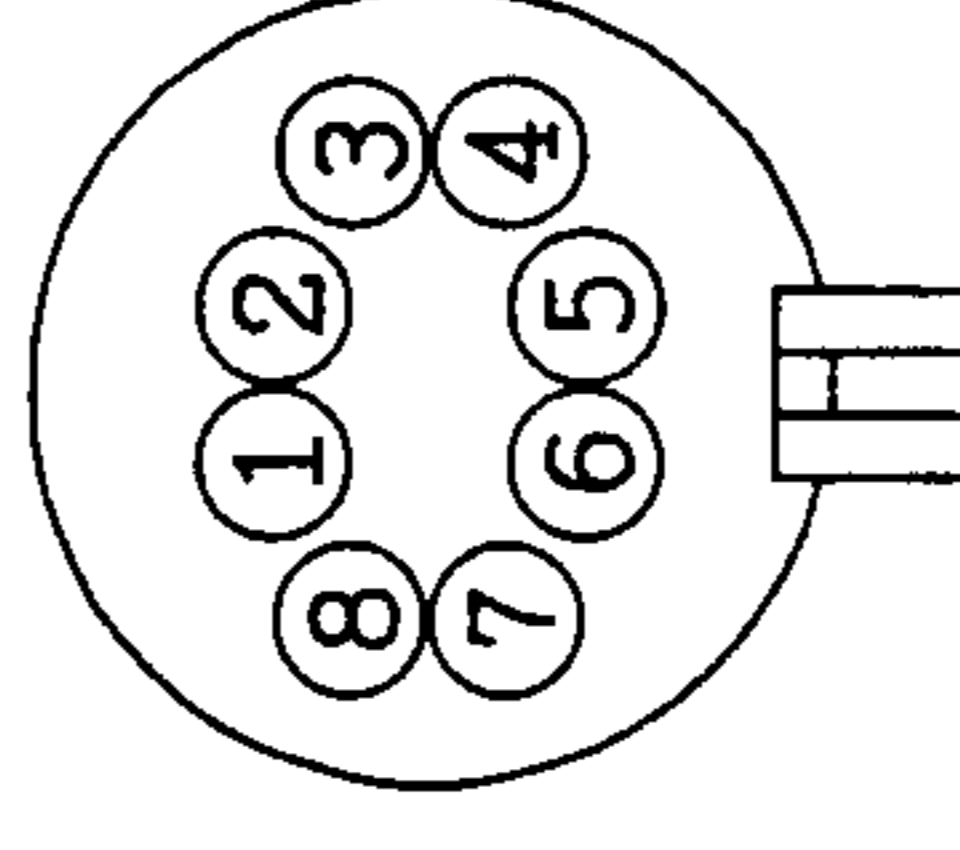
8 ports



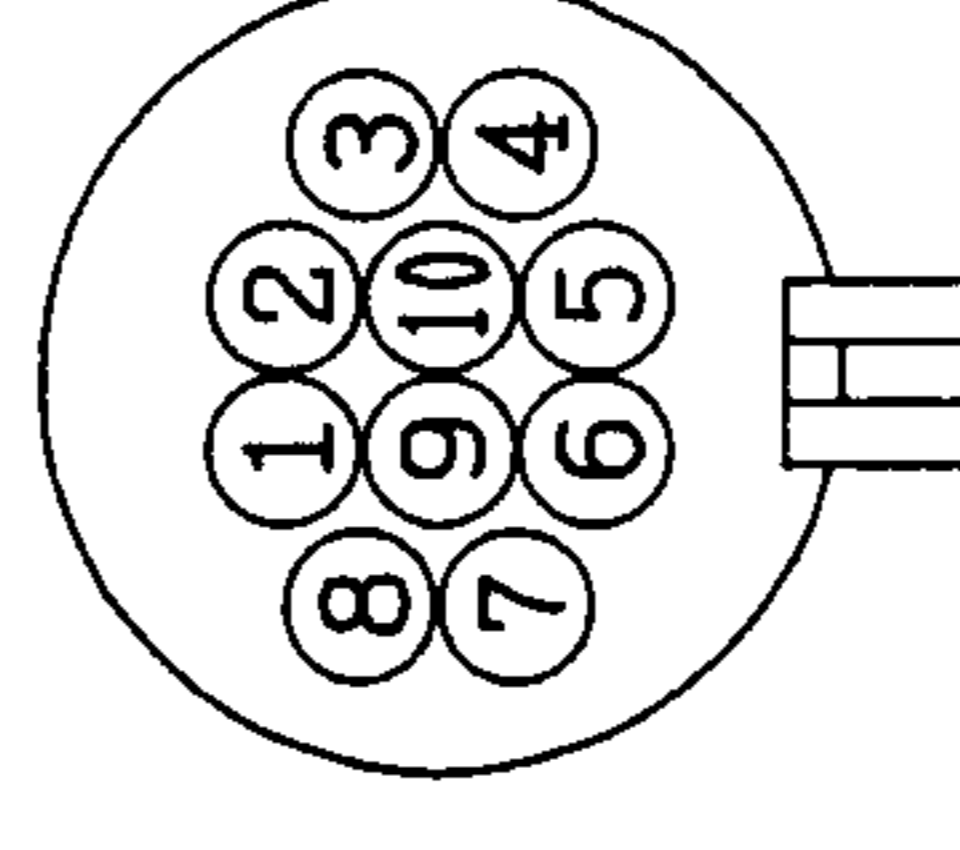
10 ports



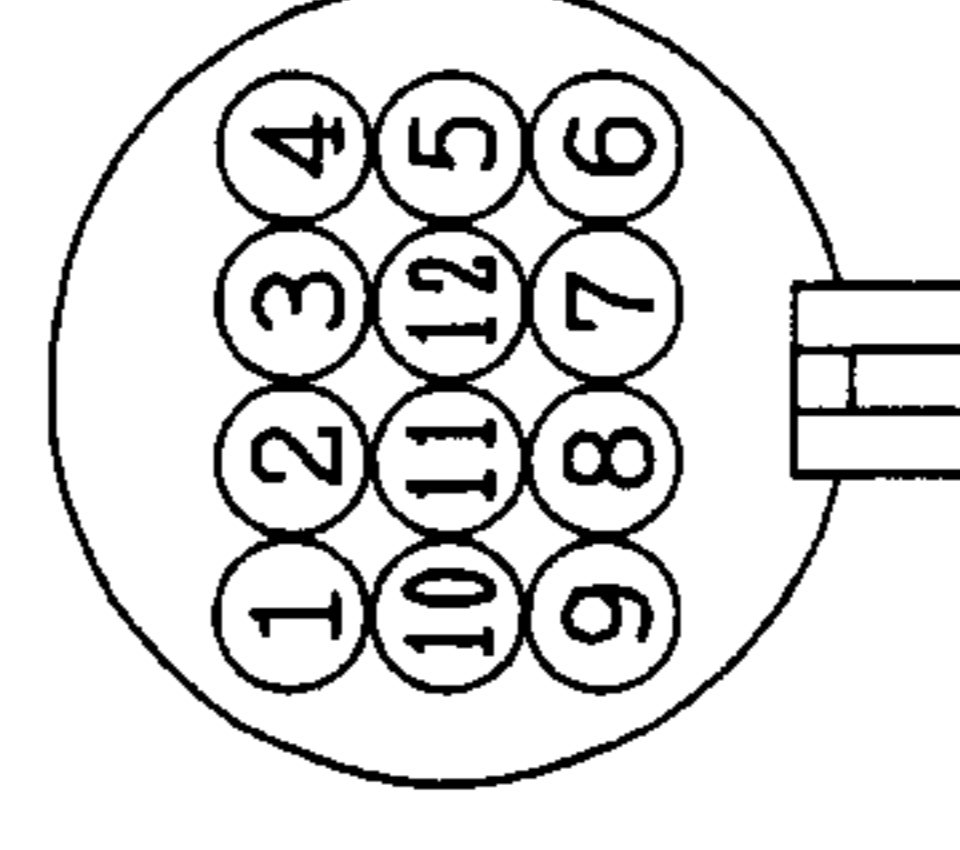
12 ports



8 ports



10 ports



12 ports

(Unit : mm)

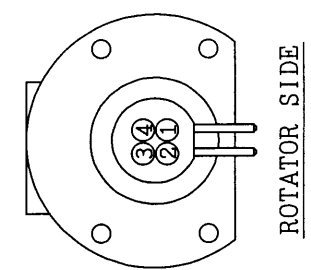
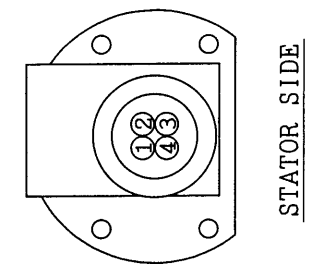
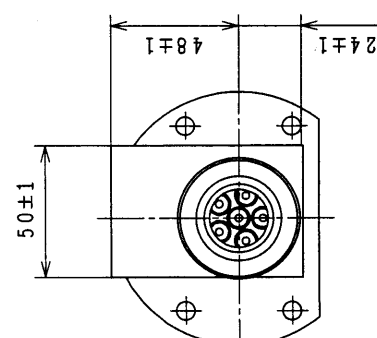
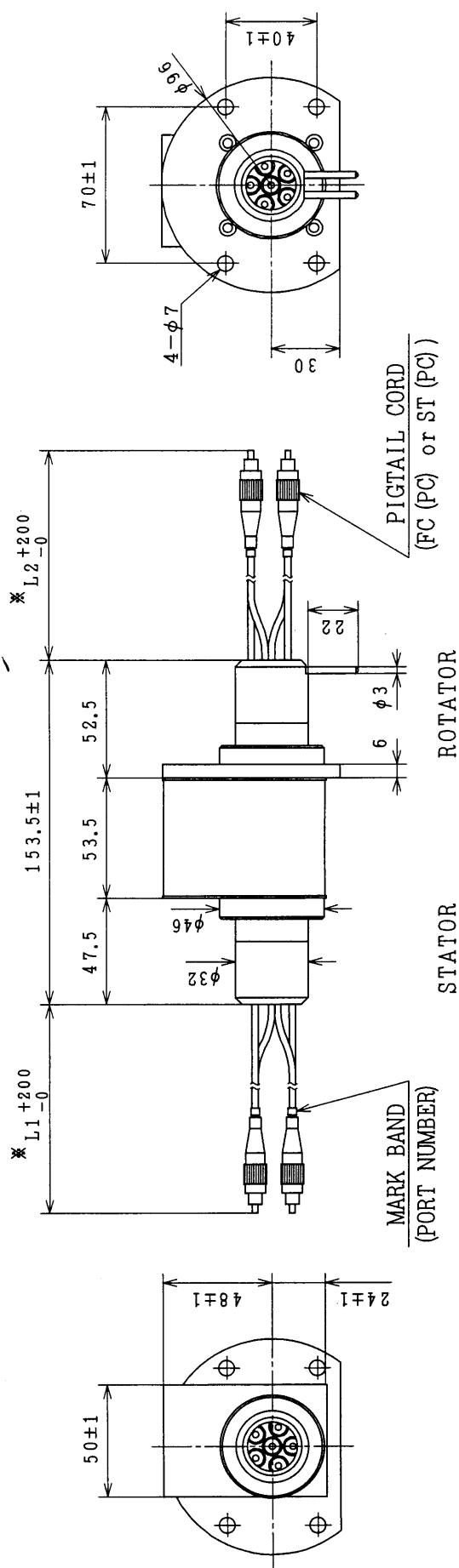
DWN.	<i>Y. Matsuda</i>	29 MAR. '04	T I T L E
CHKD.	<i>K. San</i>	REGD. PROJ.	MULTIPOINT FIBEROPTIC ROTARY JOINT (8~12ports)
APPD.	<i>T. Kumagai</i>		
SCALE	N.T.S.		

HITACHI
Hitachi Cable, Ltd.

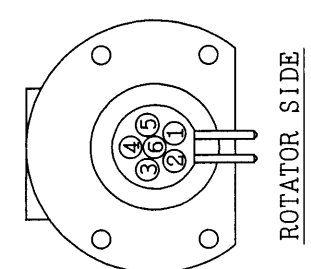
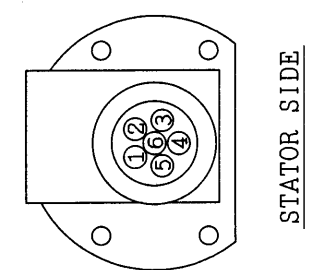
EH3840253

REV.

MARK	REVISION	DATE	NAME	CHKD.



4 PORTS



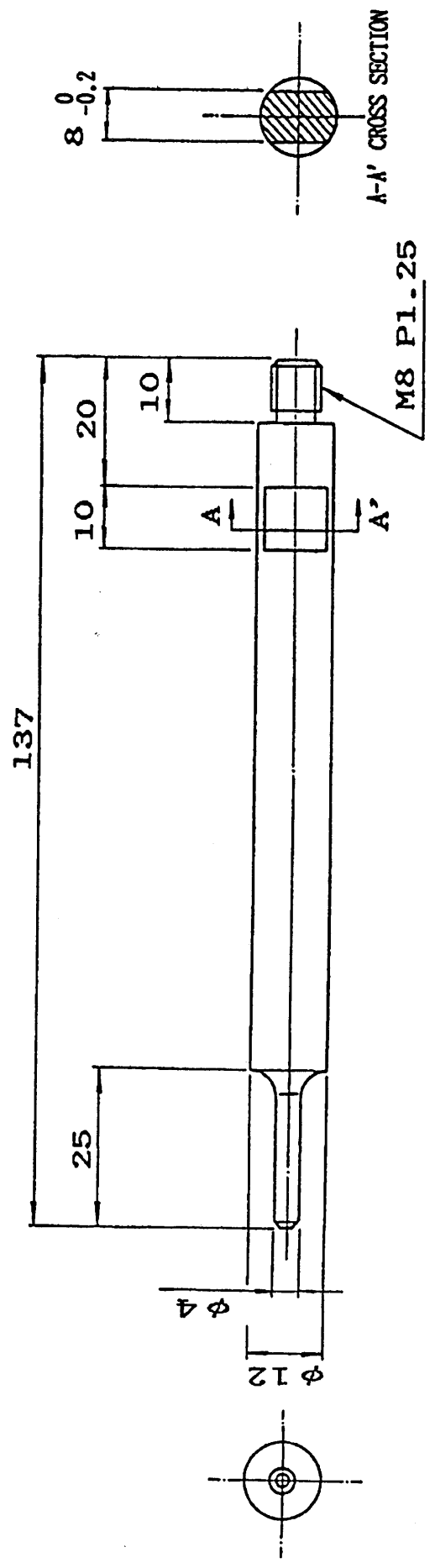
6 PORTS

(Unit:mm)

Note) L1,L2=Pigtail cord length to be specified in order.
 (standard = 1000mm, maximum = 5000mm)

DWN.	<i>G. Matsuda</i>	24 MAR.'04	T I T L E
CHKD.	<i>R. Ohno</i>	REGD. PROJ.	MULTIPOINT FIBEROPTIC
APPD.	<i>T. Kumagai</i>		ROTARY JOINT
SCALE	N.T.S.		(4~6PORTS)
HITACHI Hitachi Cable, Ltd.			REV. EH3840250

MARK	REVISION	DATE	NAME	CHKD.



MATERIAL : STAINLESS STEEL

Unit: mm

REGD.	DWN. <i>K. Nakano</i>	16. Jul. '99	TITLE	REV.
	CHKD. <i>D. Aisawa</i>	RPOJ.	CONNECTING ROD	
	APPD. <i>J. Koyama</i>			
	SCALE <i>N.T.J</i>			
			HITACHI	
			Hitachi Cable, Ltd.	
			EH 4785826	

MARK	REVISION	DATE	NAME	CHKD.

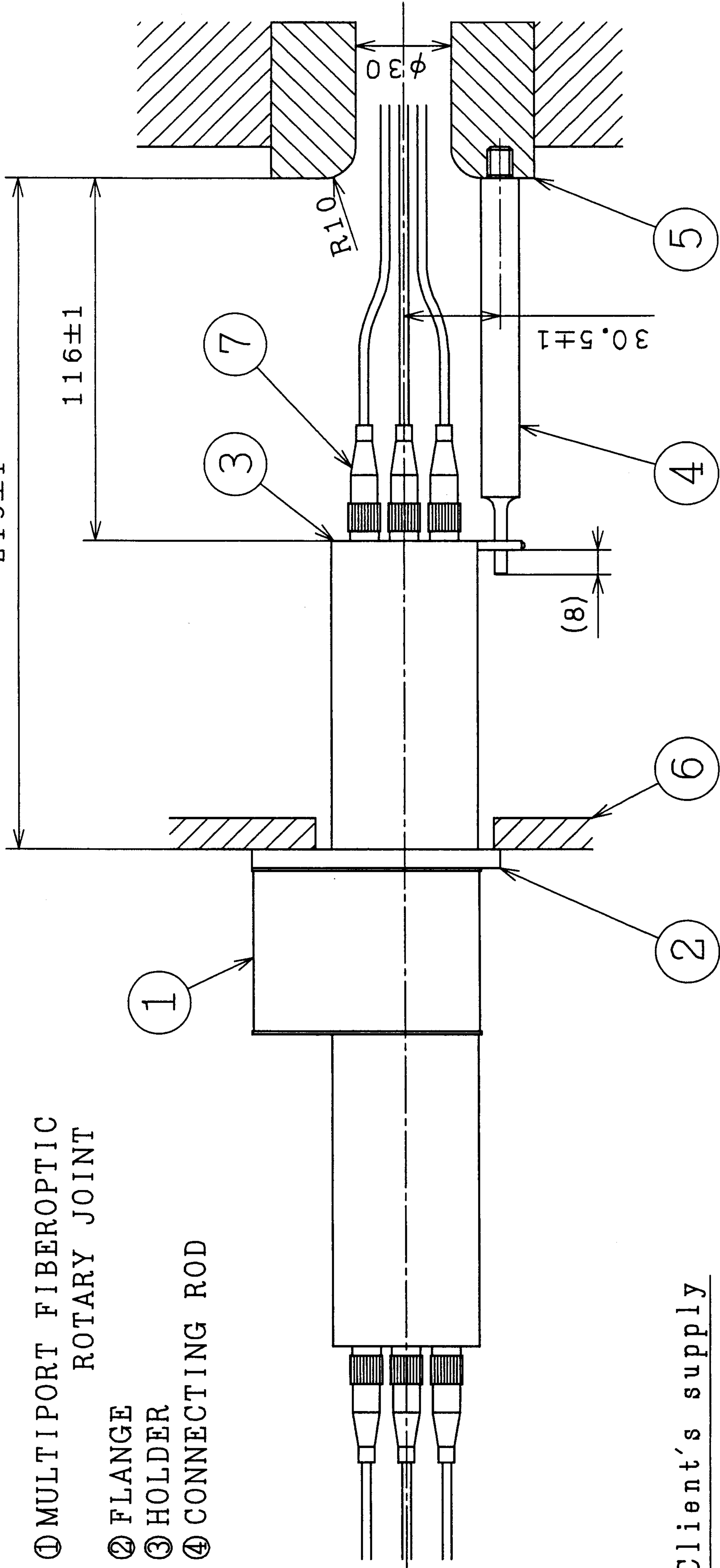
Hitachi's scope of supply

① MULTIPORT FIBEROPTIC
ROTARY JOINT

② FLANGE

③ HOLDER

④ CONNECTING ROD



Client's supply

⑤ SHAFT

⑥ FIXING HARDWEAR

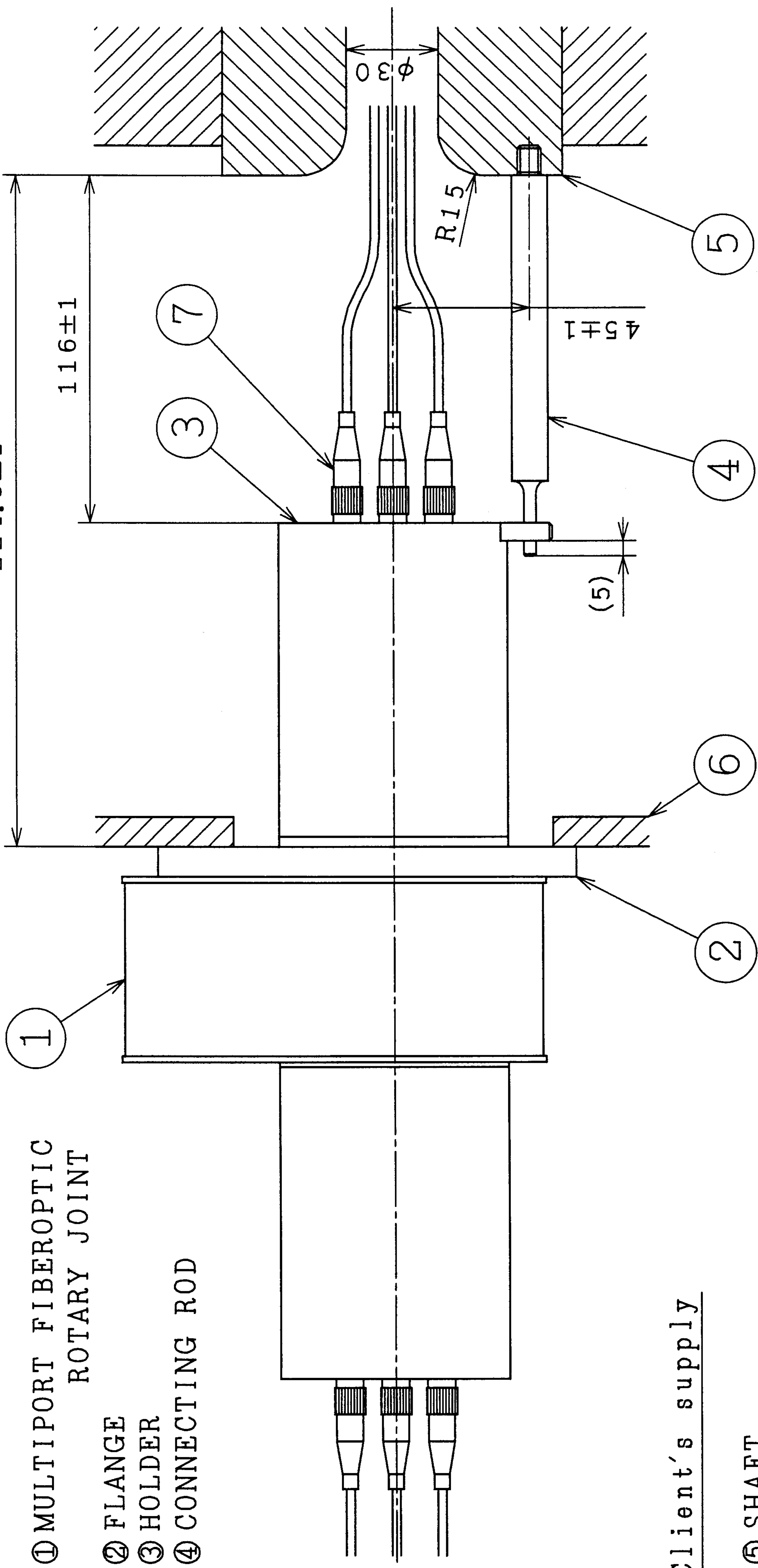
⑦ OPTICAL FIBER CODE
(FC (PC) or ST (PC))

(Unit : mm)

REGD.	DWN.	<i>Y. Matsuda</i>	29 MAR '04	TITLE	HITACHI <small>HITACHI Cable, Ltd.</small> EH4826916	REV.
CHKD.	<i>Z. Dang</i>	PROJ.	INSTALLATION METHOD OF			
APPD.	<i>T. Kumagai</i>		MULTIPORT FIBEROPTIC			
SCALE	N.T.S.		ROTARY JOINT (4~6 ports)			

MARK	REVISION	DATE	NAME	CHKD.

Hitachi's scope of supply



Client's supply

- ⑤ SHAFT
- ⑥ FIXING HARDWEAR
- ⑦ OPTICAL FIBER CODE
(FC (PC) or ST (PC))

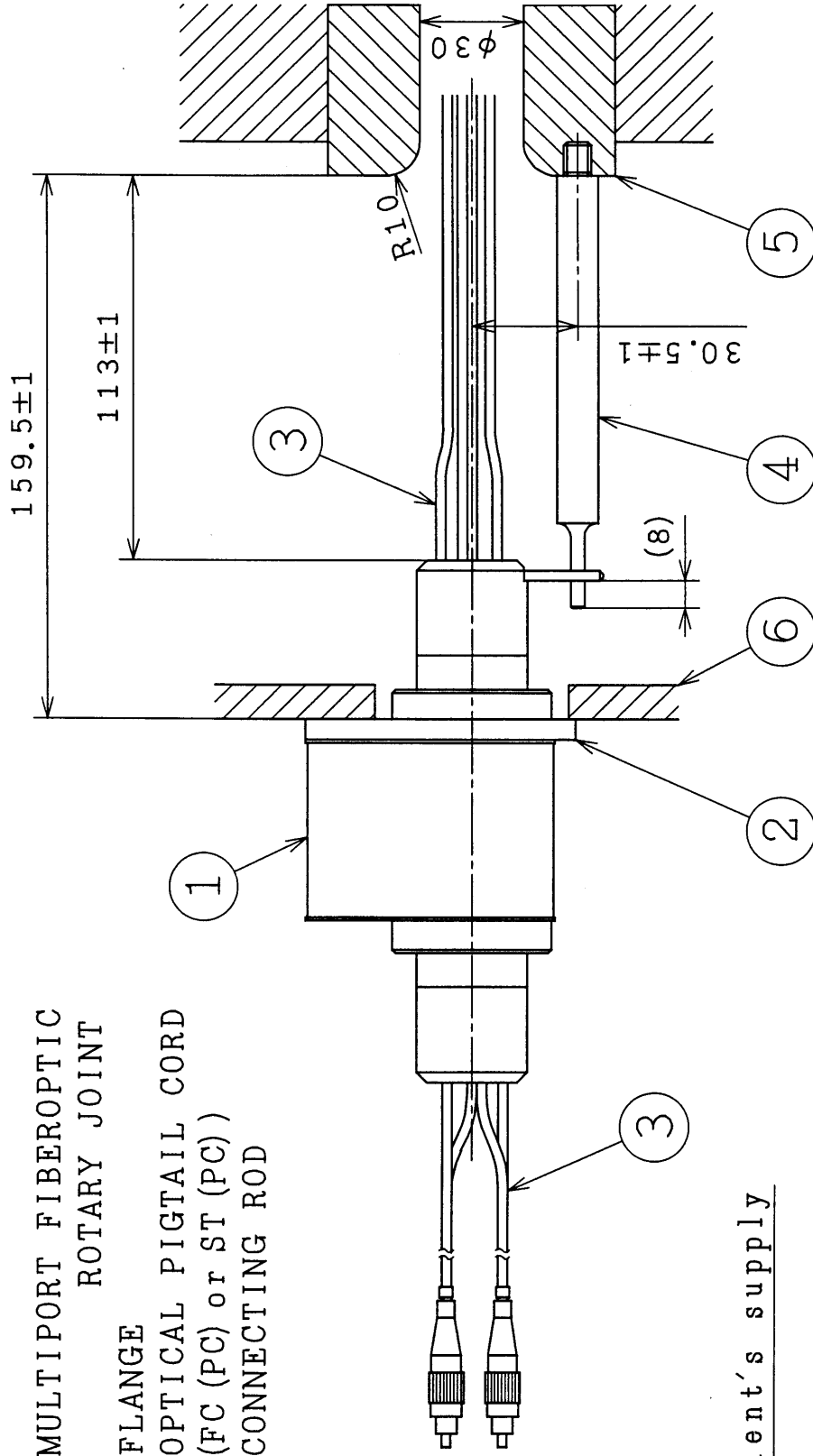
(Unit : mm)

REGD.	DWN.	<i>J. Matsuda</i>	29 MAR '04	TITLE	HITACHI Hitachi Cable, Ltd. EH4826917	REV.
CHKD.	<i>Z. Yam</i>	PROJ.	INSTALLATION METHOD OF			
APPD.	<i>J. Kumagai</i>		MULTIPOINT FIBEROPTIC			
SCALE	N.T.S.		ROTARY JOINT (8~12ports)			

MARK	REVISION	DATE	NAME	CHKD.

Hitachi's scope of supply

- ① MULTIPORT FIBEROPTIC ROTARY JOINT
- ② FLANGE
- ③ OPTICAL PIGTAIL CORD (FC (PC) or ST (PC))
- ④ CONNECTING ROD



Client's supply

- ⑤ SHAFT
- ⑥ FIXING HARDWEAR

(Unit:mm)

REGD. DWN.	<i>Y. Matsuda</i>	24 MAR '04	TITLE	HITACHI	REV.
CHKD.	<i>R. Shim</i>	PROJ.	INSTALLATION METHOD OF	<small>HITACHI Cable, Ltd.</small>	
APPD.	<i>J. Kumagai</i>		MULTIPORT FIBEROPTIC	EH4826914	
SCALE	N.T.S.		ROTARY JOINT (4~6PORTS)		