

**NEW**



Half-pitch (1.27mm) Interface Connector

CONNECTOR

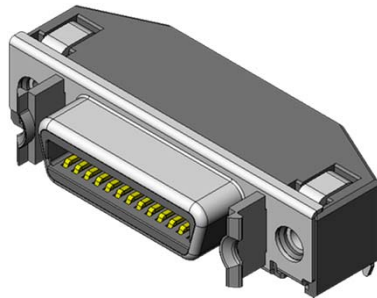
MB-0276-4

April 2015

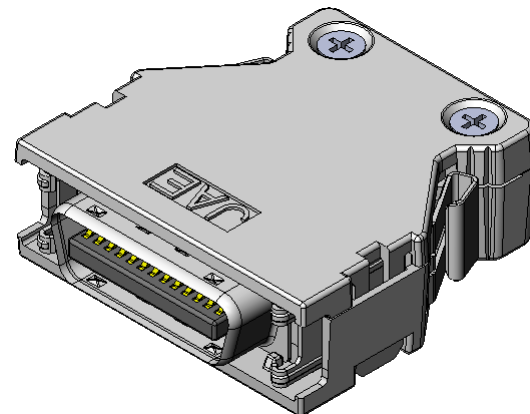
## DF02 Series

**RoHS Compliant**

Receptacle



Plug



### Outline

The DF02 Series is an interface connector compatible with the half-pitch (1.27mm) which is used as a standard in the industrial instrument market. The DF02 Series realizes light weight by using a resin-made hood and also has sufficient measures against EMI shielding with Ni plating. Furthermore, it has a superior operability by using a one-touch lock method.

### <Application>

FA equipment, semiconductor manufacturing equipment, communication devices, measuring instrument, broadcasting equipment, and others.

### Features

#### <Receptacle>

- Dual use specifications with one-touch lock and screw-lock.
- Structure that prevents short circuit by foreign substances by attaching a cover to the terminals.
- Improved resistance against twisting with a hook integrated with the shell.

#### <Plug>

- Miniaturization, weight and cost saving realized by using resin for hood material. Also it has sufficient measures against EMI shielding with Ni plating.
- Excellent workability with two-unit structure hood and superior reparability with latch lock method.
- Available in IDC type (28AWG to 30AWG) for labor-saving in termination works.
- Realizes to shorten working time with a structure that enables streamlining of the harness assembly processes such as the screw fixing work.

## General Specifications

Specification	
Rated Current	0.5A / 1pos.
Rated Voltage	AC250Vr.m.s
Contact Resistance	35m $\Omega$ max. (initial) Variance $\pm 25m \Omega$ max. (after test)
Insulation Resistance	Individual connector 100M $\Omega$ min. (initial) 10M $\Omega$ min. (after test)
Dielectric Withstanding Voltage	Individual connector AC500Vr.m.s (initial) AC300Vr.m.s (after test)
Operating Temperature	-20 Deg. C to +80 Deg. C

## Line-up

Item	Line-up	
	Receptacle	Plug
Pin Count Variation	14pos., 20 pos., 26 pos., 36 pos., 50 pos.,	14pos., 20 pos., 26 pos., 36 pos., 50 pos., 68pos.,
Termination Variation	Through-hole	Soldering (22AWG to 30AWG) IDC (28AWG, 30AWG)

## Materials and Finishes

Product	Part	Materials /Finishes	
Receptacle	Insulator	9TNY	
	Locator	9TNY	
	Lug	Steel / Ni Plating	
	Shell	Steel / Sn Plating	
	Nut	Brass / Ni Plating	
	Contact	Copper Alloy / Au plating on contact area	
Plug	Plug Individual Unit	Insulator	6-6NY
		Contact	Copper alloy / Au plating on contact area
		Shell	Steel / Ni plating
		Cover (Note 1)	PBT
	Hood	Hood A	ABS / Ni plating
		Hood B	ABS / Ni plating
		Lock Spring	Stainless Steel
		Nut	Steel / Ni plating
		Fixing Screw	Steel / Ni plating
	Clamp Plate	Clamp Plate	Steel / Ni plating

Note 1: A cover is not included in a soldering type plug individual unit.

Combinations

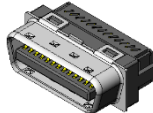
Receptacle

Angle Type

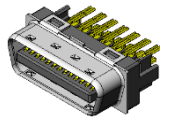


Plug Individual Unit

IDC Connection Type

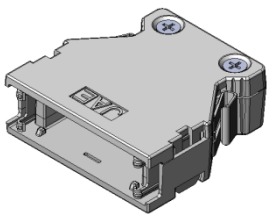


Soldering Connection Type



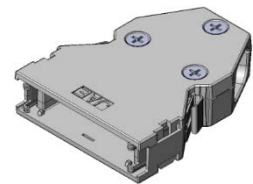
Hood

Straight Short

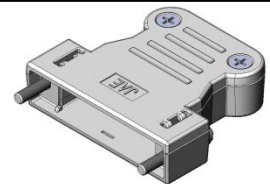
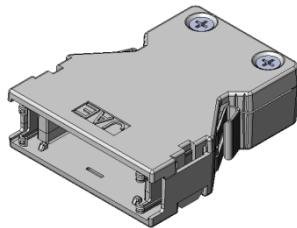


Angle Long  
Angle Long / Thick cable Compatible Type

Straight Long  
Straight Long / Thick Cable Compatible Type

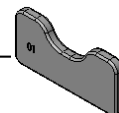


Straight Long  
Screw Lock



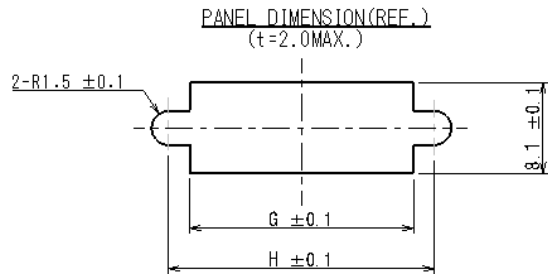
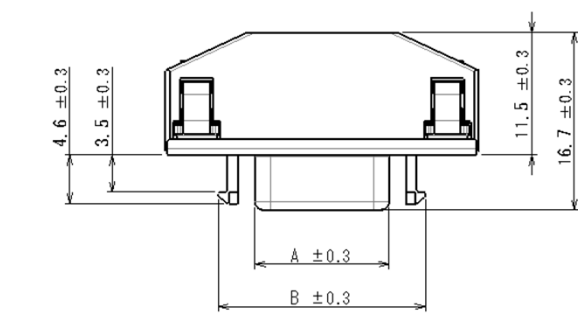
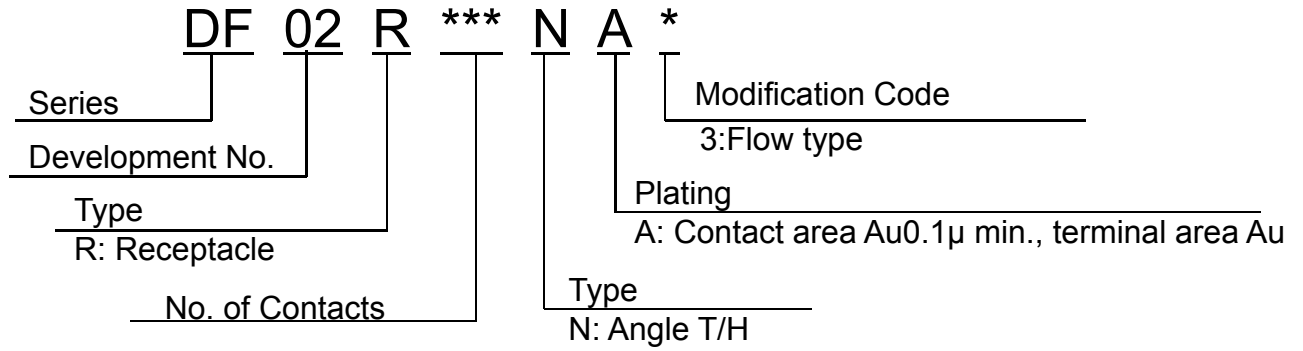
Clamp Plate

Clamp Plate

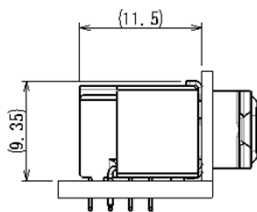
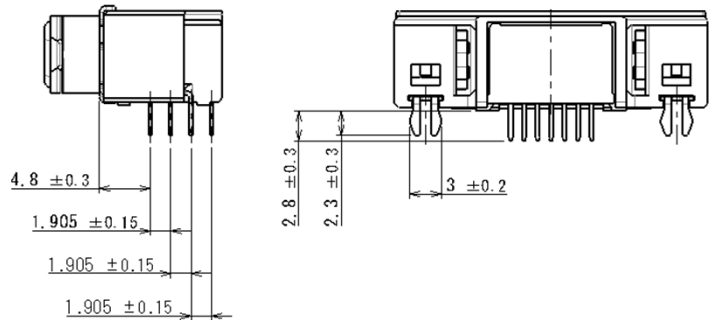
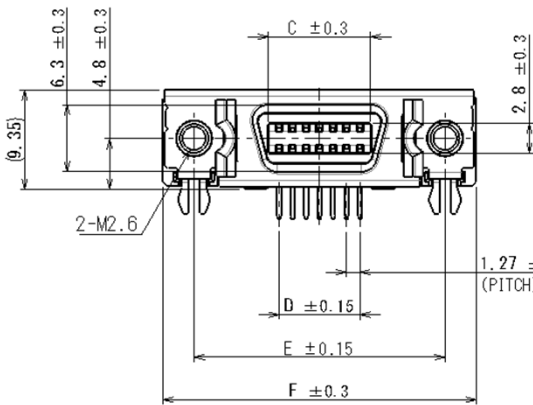


Note: When using soldering connection type plug individual unit we recommend connection with straight long, straight long / thick cable compatible type, angle long, and angle long/ thick cable compatible type.

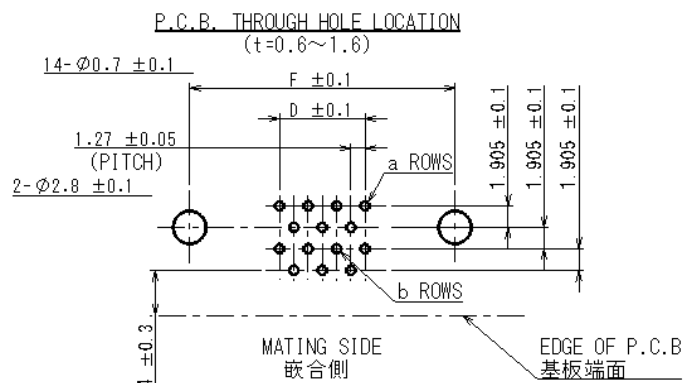
[Receptacle]



<Panel Attachment Dimensions>



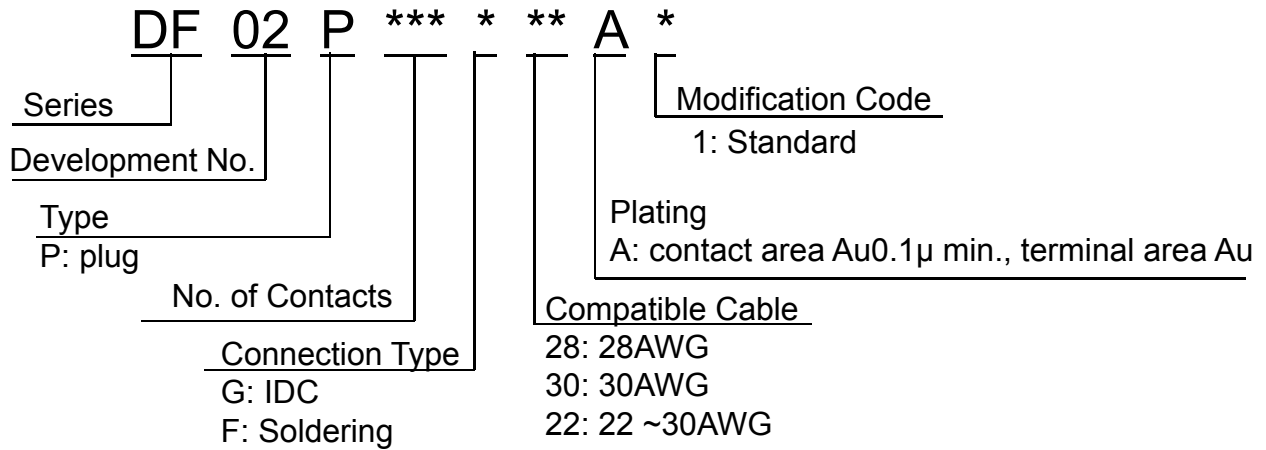
<When attached to board>



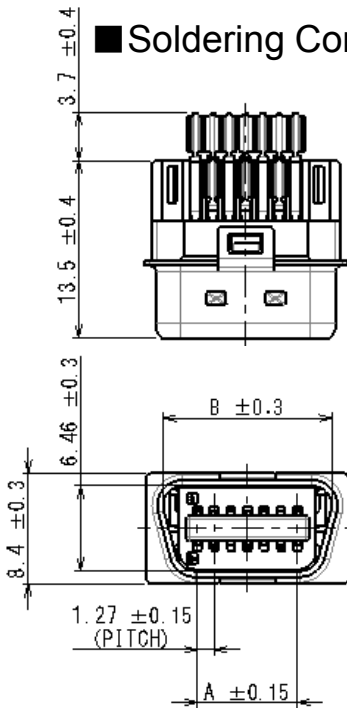
<Applicable Board Dimensions>

No. of Contacts	Part Number	Drawing	A	B	C	D	E	F	G	H
14	DF02R014NA3	SJ116104	12.64	19.5	9.6	7.62	23.64	29.5	19.9	23.64
20	DF02R020NA3	SJ116105	16.45	23.4	13.4	11.43	27.45	33.4	23.8	27.45
26	DF02R026NA3	SJ116111	20.26	27.2	17.2	15.24	31.26	37.2	27.6	31.26
36	DF02R036NA3	SJ116106	26.61	33.5	23.6	21.59	37.61	43.5	33.9	37.61
50	DF02R050NA3	SJ116112	35.5	42.4	32.5	30.48	46.5	52.4	42.8	46.5

**[Plug Individual Unit]**



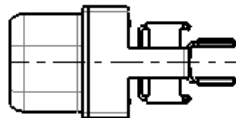
**■ Soldering Connection Type**



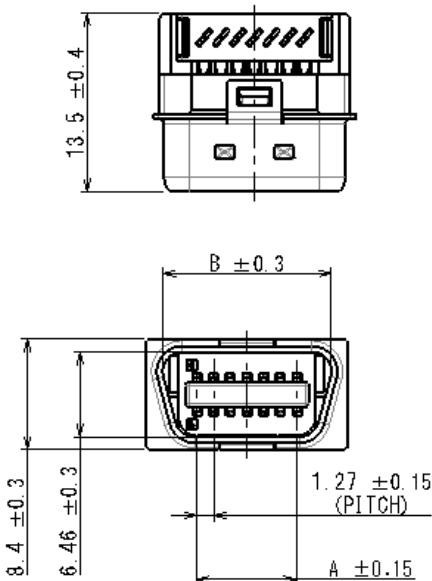
No. of Contacts	Part Number	Drawing	A	B
14	DF02P014F22A1	SJ114740	7.62	12.84
20	DF02P020F22A1	SJ114741	11.43	16.65
26	DF02P026F22A1	SJ114250	15.24	20.46
36	DF02P036F22A1	SJ114035	21.59	26.81
50	DF02P050F22A1	SJ114251	30.48	35.7

**Applicable Cable**

Applicable Cable: 22~30AWG equivalent  
 Applicable Outer Dia: φ1.1 max.  
 Recommended Sheath: PVC



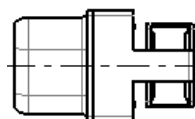
**■ IDC Connection Type**



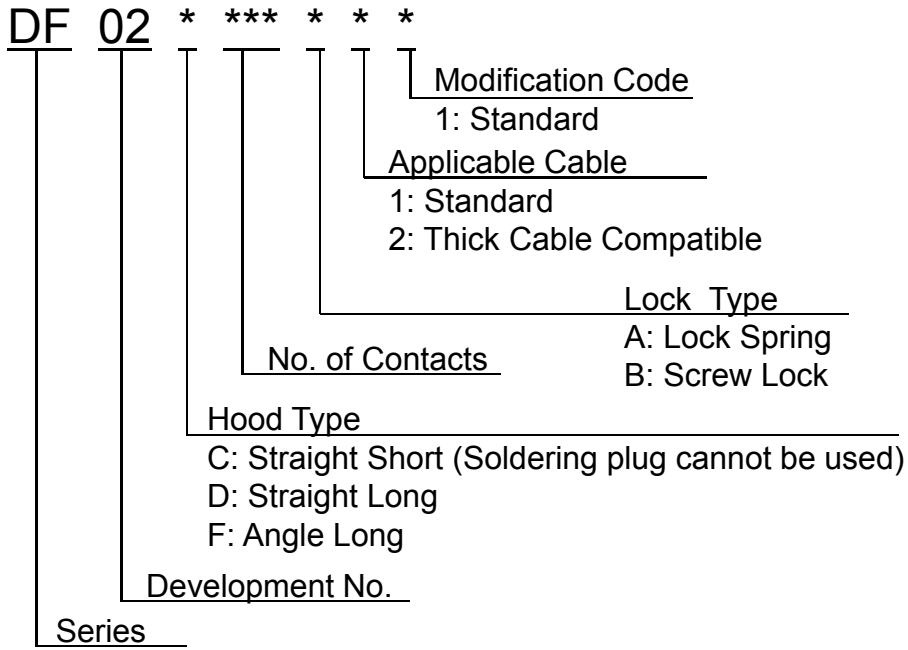
Applicable Wire	No. of Contacts	Part Number	Drawing	A	B
For 28AWG	14	DF02P014G28A1	SJ114156	7.62	12.84
	20	DF02P020G28A1	SJ114157	11.43	16.65
	26	DF02P026G28A1	SJ114034	15.24	20.46
	36	DF02P036G28A1	SJ114158	21.59	26.81
	50	DF02P050G28A1	SJ114159	30.48	35.7
For 30AWG	14	DF02P014G30A1	SJ114032	7.62	12.84
	50	DF02P050G30A1	SJ114033	30.48	35.7

**Applicable Cable**

- 28 AWG IDC Connection Type  
 Applicable Outer Dia.: φ0.51~ φ0.64  
 - 30 AWG IDC Connection Type  
 Applicable Outer Dia.: φ0.51~ φ0.64  
 Recommended Sheath: PVC

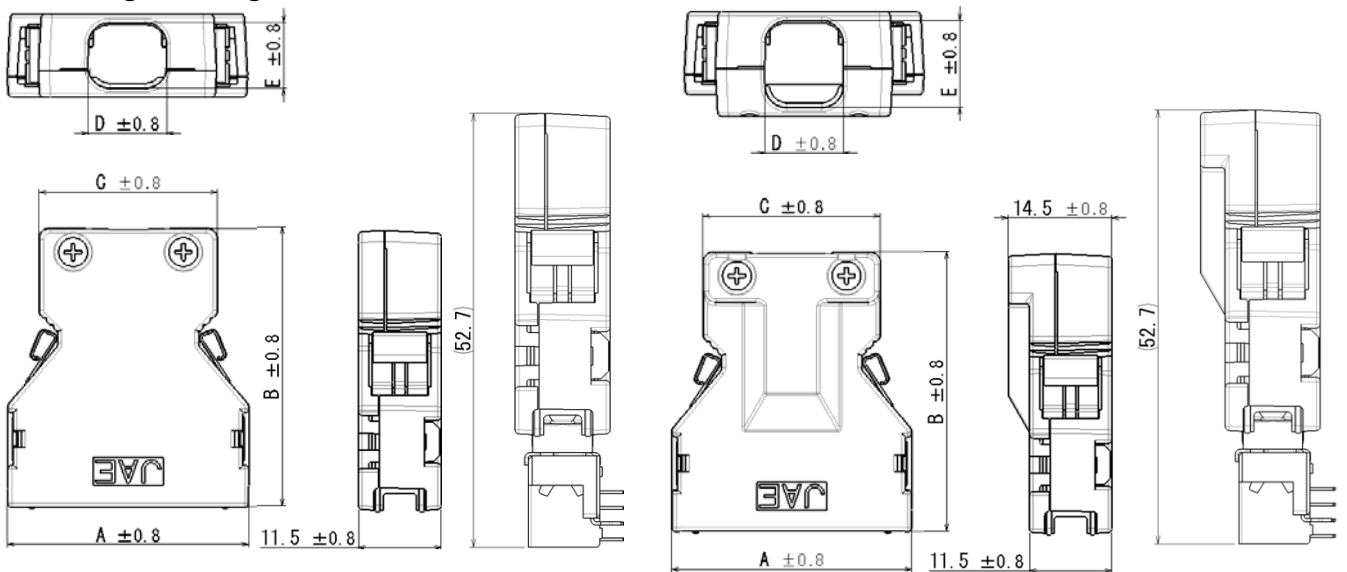


[Hood]



■ Straight Short  
■ Straight Long

■ Straight Long / Thick Cable Compatible Type

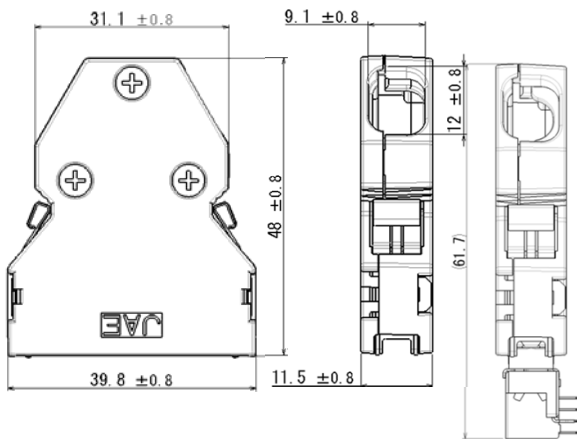


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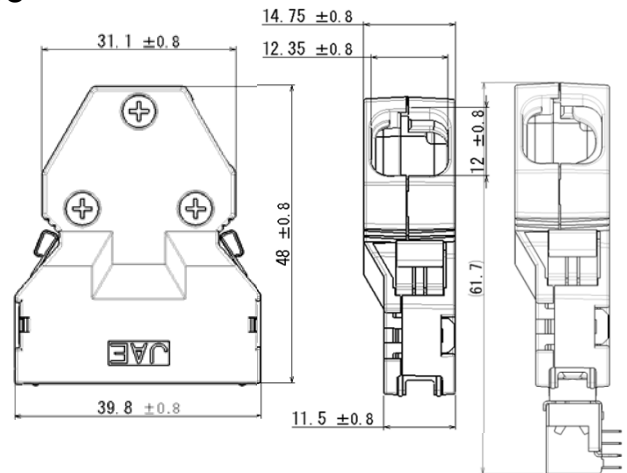
Type	No. of Contacts	Part Number	Drawing	A	B	C	D	E
Straight Short	14	DF02C014A11	SJ114040	25.8	32	19.9	9.0	9.1
	26	DF02C026A11	SJ114041	33.5	32	24.8	9.5	9.1
	36	DF02C036A11	SJ114245	39.8	32	31.1	10.0	9.1
	50	DF02C050A11	SJ114042	48.7	32	40.0	11.5	9.15
	68	DF02C068A11	SJ114247	60.1	32	51.4	12.0	9.15
Straight Long	14	DF02D014A11	SJ114742	25.8	39	19.9	10.0	9.1
	20	DF02D020A11	SJ114243	29.7	39	22.0	11.0	9.1
	26	DF02D026A11	SJ114252	33.5	39	24.8	11.0	9.1
	50	DF02D050A11	SJ114254	48.7	39	40.0	11.5	9.15
Straight Long / Thick Wire Compatible Type	26	DF02D026A21	SJ114160	33.5	39	24.8	11.0	12.0
	50	DF02D050A21	SJ114162	48.7	39	40.0	11.5	12.4

■ Angle Long



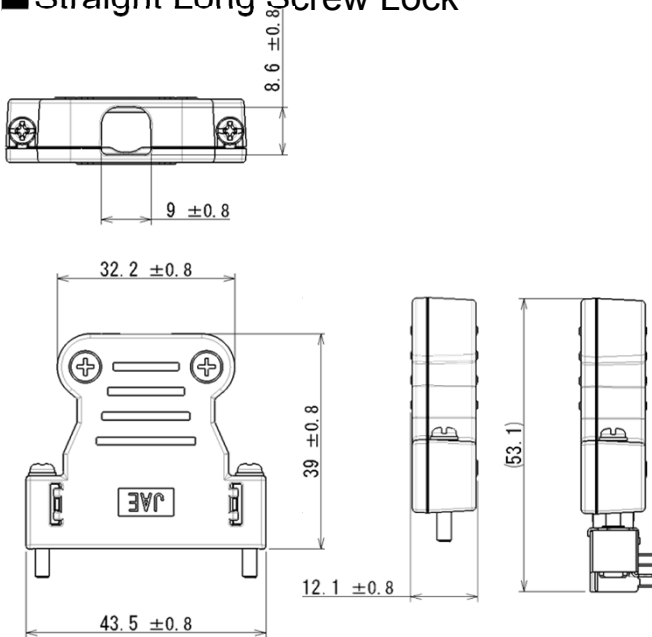
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■ Angle Long / Thick Cable Compatible Type



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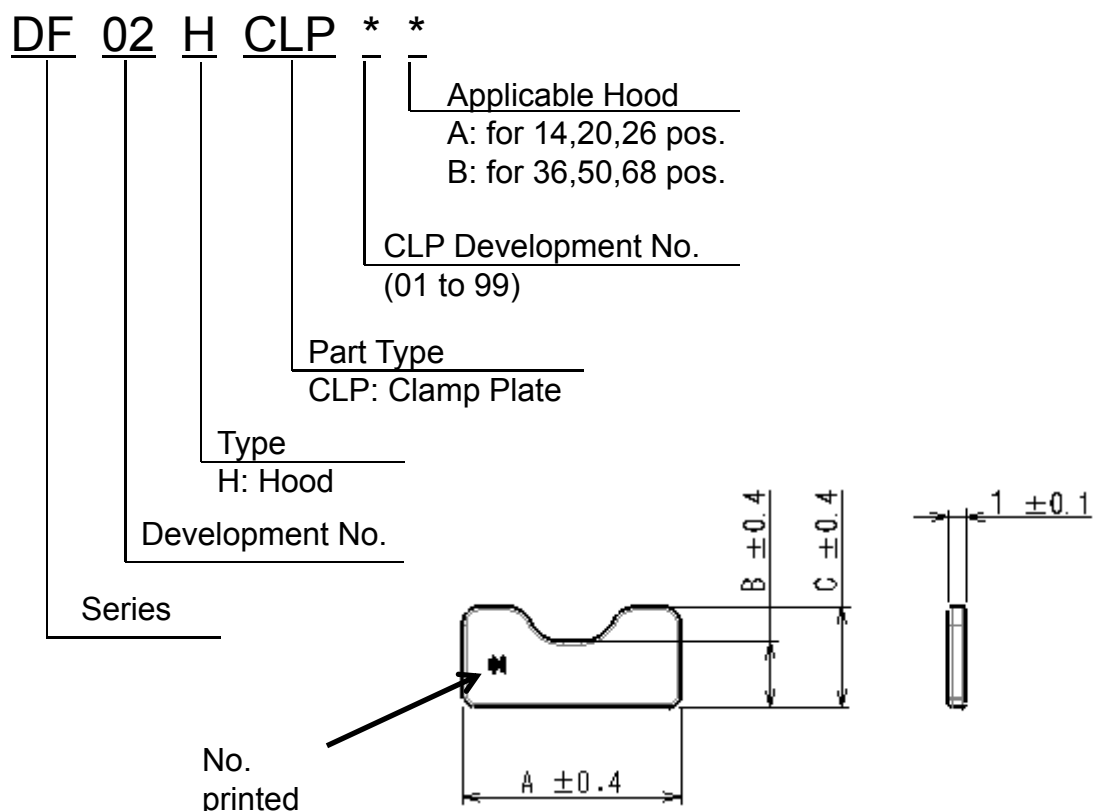
■ Straight Long Screw Lock



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Type	No. of Contacts	Part Number	Drawing
Angle Long	36	DF02F036A11	SJ114043
Angle Long / Thick Wire Compatible Type	36	DF02F036A21	SJ114161
Straight Long Screw Lock	36	DF02D036B11	SJ115090

[Clamp Plate]



No.	Part Number	Drawing	A	B	C	Applicable Hood	
						14, 20, 26 pos.	36, 50, 68 pos.
01	DF02HCLP01A	SJ114550	12.2	3.7	5.65	Yes	No
02	DF02HCLP02A	SJ114551	12.2	4.3	5.75	Yes	No
03	DF02HCLP03B	SJ114552	14.2	1.15	4.75	No	Yes
04	DF02HCLP04B	SJ114553	14.2	5	6.15	No	Yes
05	DF02HCLP05A	SJ114554	12.2	4.65	5.65	Yes	No
06	DF02HCLP06B	SJ114555	14.2	3.6	5.55	No	Yes
07	DF02HCLP07B	SJ114556	14.2	3.05	5	No	Yes
08	DF02HCLP08B	SJ114557	14.2	2.35	4.3	No	Yes
09	DF02HCLP09B	SJ114558	14.2	1.15	3.1	No	Yes
10	DF02HCLP10A	SJ114669	12.2	3.45	5.4	Yes	No
11	DF02HCLP11A	SJ114739	12.2	2	3.95	Yes	No
12	DF02HCLP12B	SJ115091	14.2	4	5.95	No	Yes

Yes: Applicable  
No: Not applicable

**Applicable Cable**

Please refer to handling instruction JAHL-30303 regarding applicable cable for clamp plate.



## [Plug Combinations and Part Numbers]

Specification						Part Number			
No. of Contacts	Lock Structure	Type	Connection	Applicable Cable	Total Cable Dia.	Plug	Hood	Clamp Plate	Applicable Processed Outer Dia. (For reference)
14	Lock Spring	Straight	IDC	AWG 28	φ6.5 ~ 8.0	DF02P014G28A1	DF02C014A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
14	Lock Spring	Straight	IDC	AWG 30	φ6.5 ~ 8.0	DF02P014G30A1	DF02C014A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
14	Lock Spring	Straight	Soldering	AWG22 ~ 30	φ6.5 ~ 9.0	DF02C014A11	DF02D014A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
								DF02HCLP10A	φ8.5 ~ 9.0
20	Lock Spring	Straight	IDC	AWG 28	φ6.5 ~ 9.0	DF02P020G28A1	DF02D020A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
								DF02HCLP10A	φ8.5 ~ 9.0
20	Lock Spring	Straight	Soldering	AWG22 ~ 30	φ6.5 ~ 9.0	DF02P020F22A1	DF02D020A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
								DF02HCLP10A	φ8.5 ~ 9.0
26	Lock Spring	Straight	IDC	AWG 28	φ6.5 ~ 8.0	DF02P026G28A1	DF02C026A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
26	Lock Spring	Straight	Soldering	AWG22 ~ 30	φ6.5 ~ 9.0	DF02P026F22A1	DF02D026A11	DF02HCLP05A	φ6.5 ~ 7.0
								DF02HCLP02A	φ7.0 ~ 7.5
								DF02HCLP01A	φ7.5 ~ 8.0
								DF02HCLP10A	φ8.5 ~ 9.0
26	Lock Spring	Straight	Soldering	AWG22 ~ 30	For thick cable	DF02P026F22A1	DF02D026A21	Please contact us.	
36	Lock Spring	Straight	IDC	AWG 28	φ6.0 ~ 8.5	DF02P036G28A1	DF02C036A11	DF02HCLP04B	φ6.0 ~ 6.5
								DF02HCLP12B	φ7.5 ~ 8.0
								DF02HCLP06B	φ8.0 ~ 8.5
36	Lock Spring	Angle	Soldering	AWG22 ~ 30	φ6.0 ~ 10.5	DF02P036F22A1	DF02F036A11	DF02HCLP04B	φ6.0 ~ 6.5
								DF02HCLP12B	φ7.5 ~ 8.0
								DF02HCLP06B	φ8.5 ~ 9.0
								DF02HCLP07B	φ9.0 ~ 9.5
								DF02HCLP08B	φ10.0 ~ 10.5
36	Screw Lock	Straight	Soldering	AWG22 ~ 30	φ5.5 ~ 8.0	DF02P036F22A1	DF02D036B11	DF02HCLP04B	φ5.5 ~ 6.0
								DF02HCLP12B	φ7.0 ~ 7.5
								DF02HCLP06B	φ7.5 ~ 8.0
36	Lock Spring	Straight	Soldering	AWG22 ~ 30	For thick cable	DF02P036F22A1	DF02F036A21	Please contact us.	
50	Lock Spring	Straight	IDC	AWG 28	φ6.0 ~ 10.5	DF02P050G28A1	DF02C050A11	DF02HCLP04B	φ6.0 ~ 6.5
								DF02HCLP12B	φ7.5 ~ 8.0
								DF02HCLP06B	φ8.0 ~ 8.5
								DF02HCLP07B	φ9.0 ~ 9.5
								DF02HCLP08B	φ10.0 ~ 10.5
50	Lock Spring	Straight	IDC	AWG 30	φ6.0 ~ 10.5	DF02P050G30A1	DF02C050A11	DF02HCLP04B	φ6.0 ~ 6.5
								DF02HCLP12B	φ7.5 ~ 8.0
								DF02HCLP06B	φ8.0 ~ 8.5
								DF02HCLP07B	φ9.0 ~ 9.5
								DF02HCLP08B	φ10.0 ~ 10.5
50	Lock Spring	Straight	Soldering	AWG22 ~ 30	φ6.0 ~ 10.5	DF02P050F22A1	DF02D050A11	DF02HCLP04B	φ6.0 ~ 6.5
								DF02HCLP12B	φ7.5 ~ 8.0
								DF02HCLP06B	φ8.0 ~ 8.5
								DF02HCLP07B	φ9.0 ~ 9.5
								DF02HCLP08B	φ10.0 ~ 10.5
50	Lock Spring	Straight	Soldering	AWG22 ~ 30	For thick cable	DF02P050F22A1	DF02D050A21	Please contact us.	
68	Lock Spring	Straight	IDC	AWG 28	φ6.0 ~ 10.5	DF02P068G28A1	DF02C068A11	DF02HCLP04B	φ6.0 ~ 6.5
								DF02HCLP12B	φ7.5 ~ 8.0
								DF02HCLP06B	φ8.0 ~ 8.5
								DF02HCLP07B	φ9.0 ~ 9.5
								DF02HCLP08B	φ10.0 ~ 10.5

IDC Tool
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● Bench Manual IDC Tool: Standard type

Applicable Wire		No. of Contacts	Process			
			Wiring, Cutting, IDC			
AWG	Outer Dia.		Hand-press	Applicator	Attachment	
		Tool Part No. / Handling Instruction	Tool Part No. / Handling Instruction	Tool Part No.	Handling Instruction	
28	φ0.58	14	CP110-3 /T707039	MT250-TX20A-2B /T704064	AT214-DF02-1	T704064-01
		20			AT220-DF02-1	
		26			AT226-DF02-1	
		36			AT236-DF02-1	
		50			AT250-DF02-1	
		68			AT268-DF02-1	
30	φ0.51	14		AT214-DF02-2		
		50		AT250-DF02-2		

● Bench Manual IDC Tool: Simplified type

Applicable Wire		No. of Contacts	Process			
			Wiring	Cutting	IDC	
AWG	Outer Dia.		Tool Part No. / Handling Instruction	Tool Part No. / Handling Instruction	Hand-press Tool Part No. / Handling Instruction	Attachment Tool Part No. / Handling Instruction
28	φ0.51 ~ φ0.64	14	AR-DF02-1 /T759106	CC-DF02-1 /T751069	CP110-3 /T707039	MT-DF02-1 /T704197
		20				
		26				
		36				
		50				
		68				
30		14				
		50				

Note) There are two types of bench manual IDC tool, standard type and simplified type. Simplified type is applicable to wide range of outer cable diameter (φ0.51~φ0.64) and the attachment parts are common to all pin counts.

Please contact our Product Marketing Division for further information.

Technical Documents
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	Technical Document No. (Contents of Documents)
Specification	JACS-30303
Handling Instruction	JAHL-30303

**Notice:**

1. The values specified in this brochure are only for reference. The products and their specifications are subject to change without notice. Contact our sales staff for further information before considering or ordering any of our products. For purchase, a product specification must be agreed upon.

2. Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of JAE's products to the equipment.

3. The products presented in this brochure are designed for the uses recommended below. We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:

(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:

Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.

(ii) We may separately give you our support with a quality assurance program that you specify, when you think of a use such as :

Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.

(2) Recommended applications include:

Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc

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\* The specifications in this brochure are subject to change without notice. Please contact JAE for information.