

Industrial All-plastic Rectangular Connector

CONNECTOR

# KN02 Series

MB-0337-1

December 2018

**RoHS Compliant**

The growing trend of automated production facilities is accelerating the implementation of robots and automated machines. Along with these growing trends, there are a lot of demands for connectors that are not only compact and lightweight, but capable of reducing the number of cables by combining multiple interfaces required to operate these equipment. To cater to these market requirements, JAE has developed the KN02 Series, an all-plastic hybrid-type rectangular connector.

The KN02 Series' all-plastic shell allows the connector to be lightweight while providing an enhanced shielding performance with metal plating on the outer plastic shell.

In addition, the outer shell adopts a one-touch locking mechanism that allows for superior unmating function while it remains reliable for use in shock and vibration environments.

The KN02 Series is an interface connector that can be used not only for diversely functional industrial equipment but also for a wide range of general factory automation related equipment.

## Applicable Market

Robotics, automation machine and other machine tools and various other industrial devices

## **Features**

All-plastic outer shell, light-weight and low-cost connector

EMI shielding with resin plating applied to outer shell and internal shielding components

Easy-to-operate, secure one-touch push locking structure

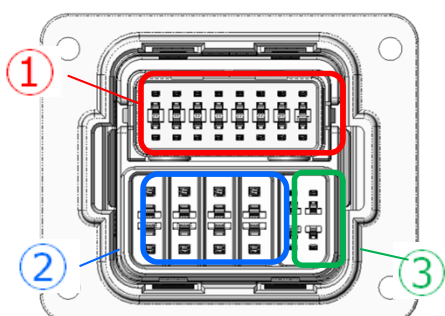
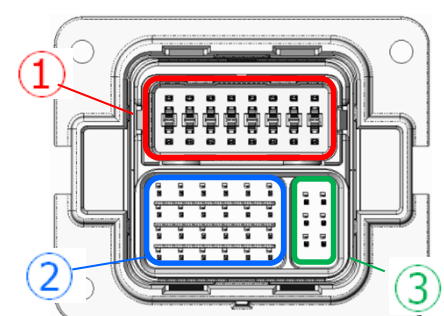
Arrangement of insulator blocks and insertion orientation allows for desired pin count and contact arrangement

Optional insulator with EMI shielding allows for a combination of power and signal lines within a single connector

Plug available in straight and right-angle types

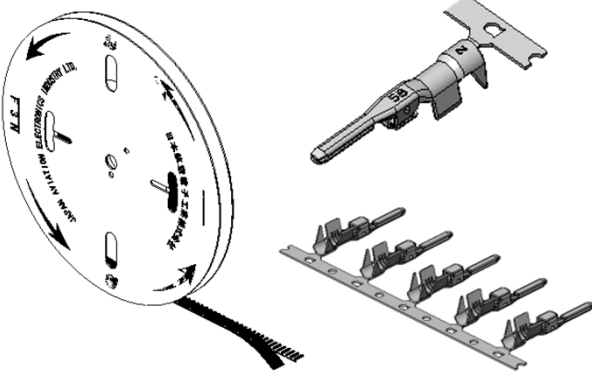
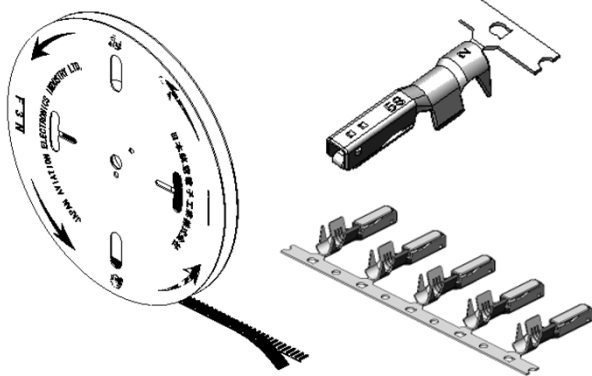
Eight different cable orientations for angle plug

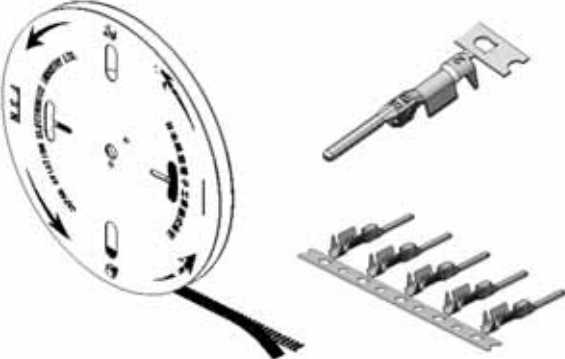
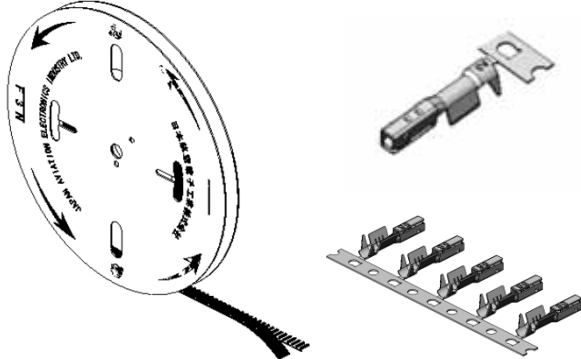
## General Specifications

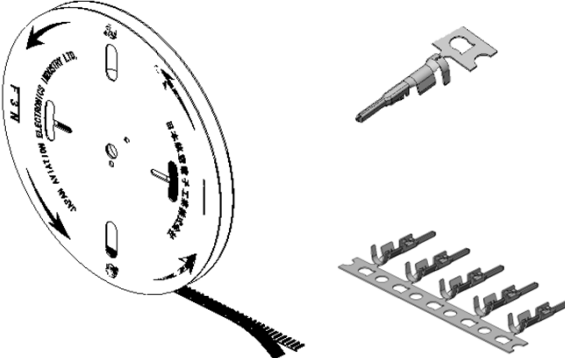
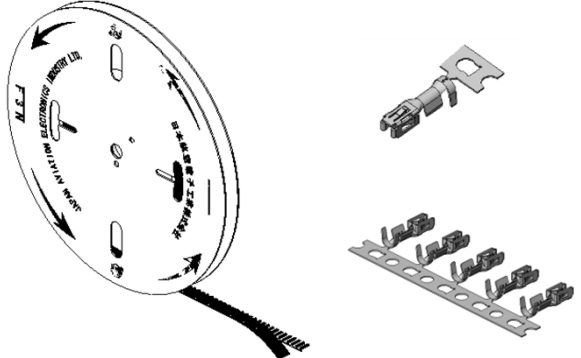
Insulator		Type I		Type II	
Arrangement					
Internal Insulator	Part Number	KN02S16PKS / KN02S16SKS		KN02S16PMS / KN02S16SMS	
	Number of Contacts	① 16 position		① 16 position	
	Rated Voltage	① 24VDC		① 24VDC	
	Rated Current	① 4A		① 2A	
	Withstanding Voltage	① 500VAC		① 500VAC	
Main Insulator	Part Number	KN02S12PGF / KN02S12SGF		KN02S30PMF / KN02S30SMF	
	Number of Contacts	② 8 position	③ 4 position	② 24 position	③ 6 position
	Rated Voltage	② 250VAC (II/3)	③ 24VDC	② 250VAC (II/2)	③ 24VDC
	Rated Current	② 13A	③ 4A	② 2A	③ 2A
	Withstanding Voltage	② 1500VAC	③ 500VAC	② 1500VAC	③ 500VAC
Insulation Resistance (Applied Voltage)		100MΩ min. (①③ 100VDC, ② 500VDC)		100MΩ min. (①③ 100VDC, ② 500VDC)	
Durability		30 cycles			
Cable Retention Force		100 N min.			
Operation Temperature Range		-10°C to + 85°C			
Standard Certification		TÜV (EN60521), cUL (UL1977)			

## Parts Configuration

### Contact

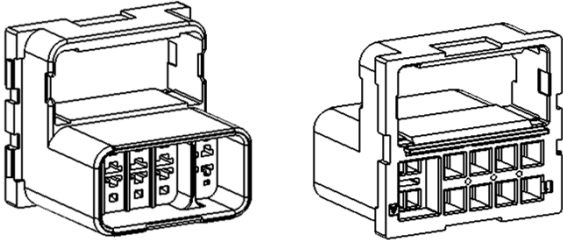
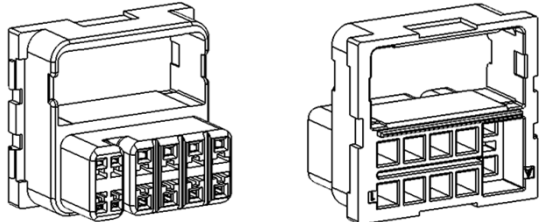
Pin Contact (Power)		Socket Contact (Power)	
HB01P25H2P1	SJ116700	HB01S25H2P1	SJ116702
HB01P25H3P1	SJ116699	HB01S25H3P1	SJ116701
			

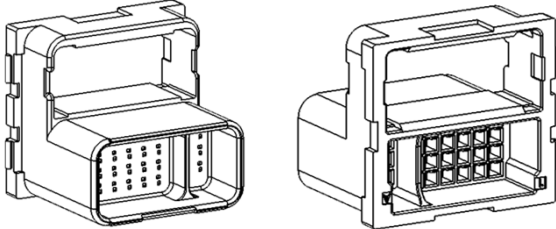
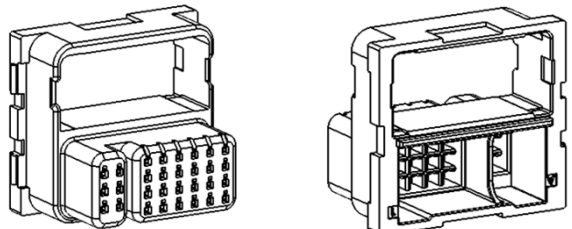
Pin Contact (Signal)		Socket Contact (Signal)	
HB01P06K4P2	SJ116696	HB01S06K4P2	SJ116698
HB01P06K4P1	SJ116695	HB01S06K4P1	SJ116697
HB01P06K5P1	SJ118793	HB01S06K5P1	SJ118794
			

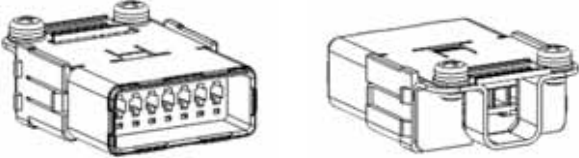
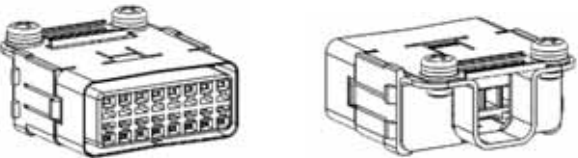
Pin Contact (Signal)		Socket Contact (Signal)	
HB03P12K5A1	SJ117820	HB03S12K5A1	SJ117822
HB03P12K6A1	SJ117819	HB03S12K6A1	SJ117821
			

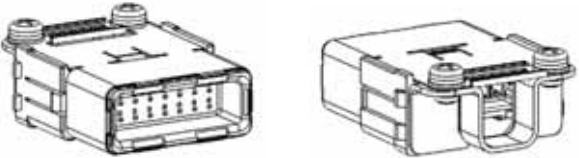
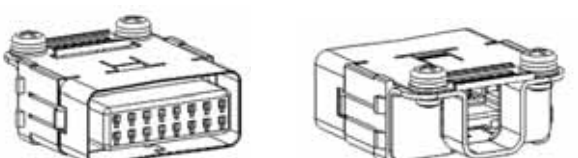
## Parts Configuration

### Insulator

Pin Insulator 12 Position (8 Pos./ 4 Pos.)		Socket Insulator 12 Position (8 Pos./ 4 Pos.)	
KN02S12PGF	SJ118725	KN02S12SGF	SJ118726
			

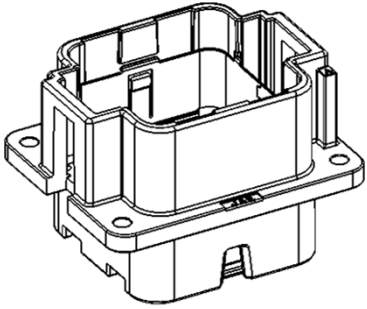
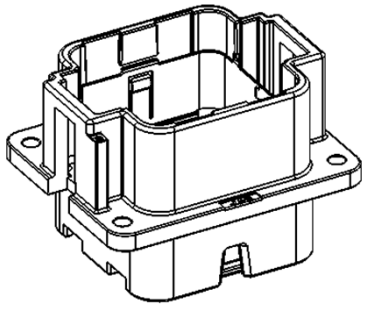
Pin Insulator 30 Position (24 Pos./ 6 Pos.)		Socket Insulator 30 Position (24 Pos./ 6 Pos.)	
KN02S30PMF	SJ118729	KN02S30SMF	SJ118730
			

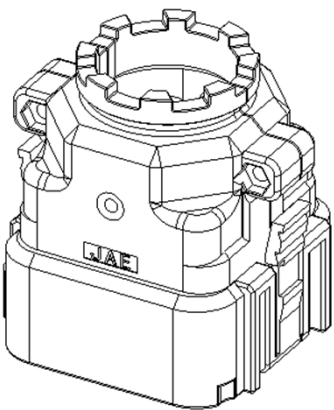
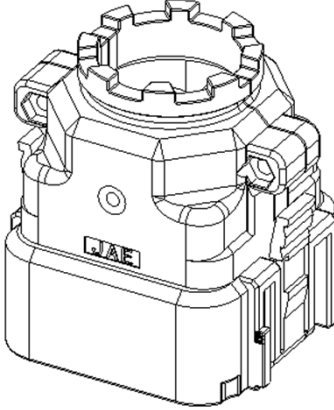
Pin Insulator 16 Position (with shield)		Socket Insulator 16 Position (with shield)	
KN02S16PKS	SJ118727	KN02S16SKS	SJ118728
			

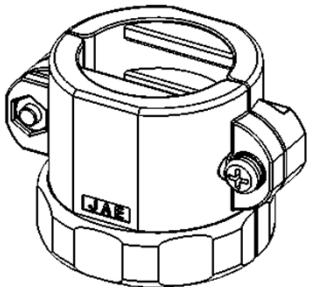
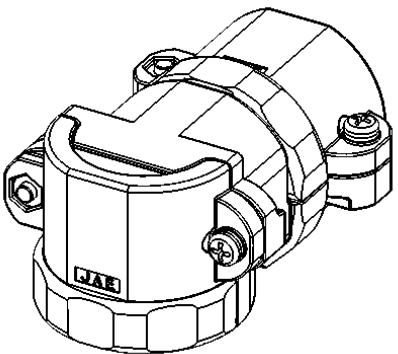
Pin Insulator 16 Position (with shield)		Socket Insulator 16 Position (with shield)	
KN02S16PMS	SJ118731	KN02S16SMS	SJ118732
			

## Parts Configuration

### Outer Shell

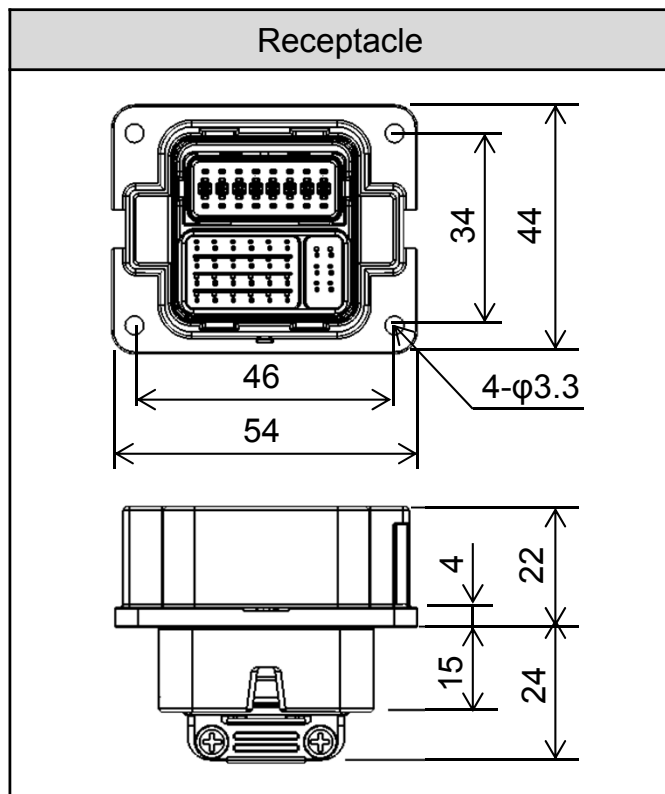
Shell-A		Shell-B	
KN02AS-SHL-A	SJ118719	KN02AS-SHL-B	SJ118721
			

Hood-A		Hood-B	
KN02S-HOOD-A	SJ118720	KN02S-HOOD-B	SJ118722
			

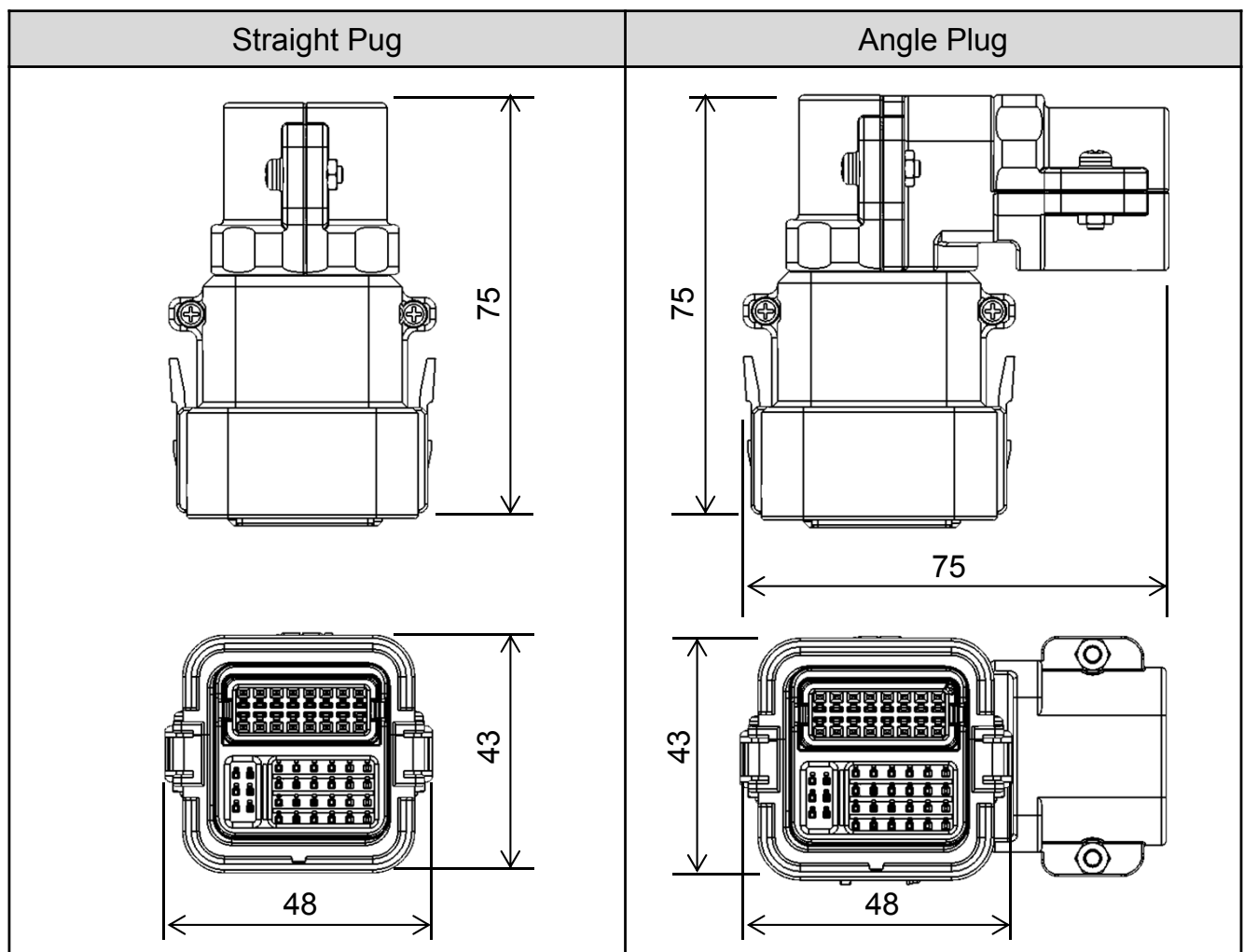
Gland Nut		Endbell	
KN02S-GNT-19	SJ118723	KN02S-EBL-19	SJ118724
			

# Dimensions

Unit: mm



Note: Dimensions are for reference only.  
For details please refer to drawings of each individual product.



Part Number and Drawing Number
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**Insulator**

Type	Part Number	Drawing Number	Number of Contacts	Contact Type	Remarks
Pin	KN02S12PGF	SJ118725	12 Position (8 Pos./ 4 Pos.)	Power / Signal	
	KN02S30PMF	SJ118729	30 Position (24 Pos./ 6 Pos.)	Power / Signal	
	KN02S16PKS	SJ118727	16 Position	Signal	With shield
	KN02S16PMS	SJ118731	16 Position	Signal	With shield
Socket	KN02S12SGF	SJ118726	12 Position (8 Pos./ 4 Pos.)	Power / Signal	
	KN02S30SMF	SJ118730	30 Position (24 Pos./ 6 Pos.)	Power / Signal	
	KN02S16SKS	SJ118728	16 Position	Signal	With shield
	KN02S16SMS	SJ118732	16 Position	Signal	With shield

**Contact**

Type	Part Number	Drawing Number	Contact Size / Type		Supply
Pin	HB01P25H2P1	SJ116700	#14	Power	Reel (2500 pcs.)
	HB01P25H3P1	SJ116699	#17	Power	Reel (2500 pcs.)
	HB01P06K4P2	SJ116696	#19	Signal	Reel (6000 pcs.)
	HB01P06K4P1	SJ116695	#22	Signal	Reel (6000 pcs.)
	HB01P06K5P1	SJ118793	#26	Signal	Reel (6000 pcs.)
	HB03P12K5A1	SJ117820	#24	Signal	Reel (12000 pcs.)
	HB03P12K6A1	SJ117819	#28	Signal	Reel (12000 pcs.)
Socket	HB01S25H2P1	SJ116702	#14	Power	Reel (2500 pcs.)
	HB01S25H3P1	SJ116701	#17	Power	Reel (2500 pcs.)
	HB01S06K4P2	SJ116698	#19	Signal	Reel (6000 pcs.)
	HB01S06K4P1	SJ116697	#22	Signal	Reel (6000 pcs.)
	HB01S06K5P1	SJ118794	#26	Signal	Reel (6000 pcs.)
	HB03S12K5A1	SJ117822	#24	Signal	Reel (12000 pcs.)
	HB03S12K6A1	SJ117821	#28	Signal	Reel (12000 pcs.)

**Outer Shell**

Type	Part Number	Drawing Number	Remarks
Shell	KN02AS-SHL-A	SJ118719	A: Mating Key Type
	KN02AS-SHL-B	SJ118721	B: Mating Key Type
Hood	KN02S-HOOD-A	SJ118720	A: Mating Key Type
	KN02S-HOOD-B	SJ118722	B: Mating Key Type
Gland Nut	KN02S-GNT-19	SJ118723	
Endbell	KN02S-EBL-19	SJ118724	

## Crimping Tool

**Semi-Automatic Crimping Tool (Applicator)**

Contact	Applicable wire size	Applicable wire outer diameter	Applicable Tool	Tool Handling Instructions
HB01*25H2P1	AWG#14 ~ #16	φ2.1 ~ φ2.8	3502-HB01M-2	T703540
HB01*25H3P1	AWG#17 ~ #19	φ1.6 ~ φ2.3		
HB01*06K4P2	AWG#19 ~ #21	φ1.2 ~ φ1.8	3502-HB01S-2	T703542
HB01*06K4P1	AWG#22 ~ #24	φ0.9 ~ φ1.5		
HB03*12K5A1	AWG#24 ~ #26	φ0.9 ~ φ1.5	3502-HB03-2	T703556
HB03*12K6A1	AWG#26 ~ #30	φ0.6 ~ φ1.2		

Note) The “\*” in the Part Number will stand for P: Pin, S: Socket

**Hand Crimping Tool**

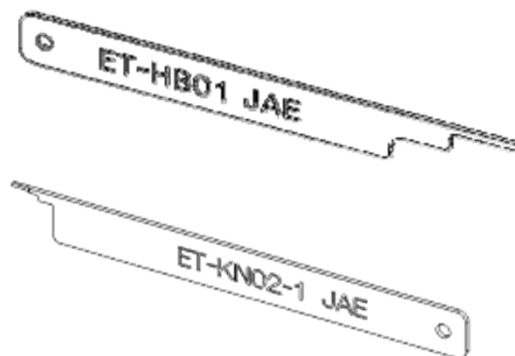
Contact	Applicable wire size	Applicable wire outer diameter	Applicable Tool	Tool Handling Instructions
HB01*25H2P1	AWG#14 ~ #16	φ2.1 ~ φ2.8	CT170-23B-HB01M	T700423
HB01*25H3P1	AWG#17 ~ #19	φ1.6 ~ φ2.3		
HB01*06K4P2	AWG#19 ~ #21	φ1.2 ~ φ1.8	CT150-19C-HB01S	T700429
HB01*06K4P1	AWG#22 ~ #24	φ0.9 ~ φ1.5		
HB03P12K5A1	AWG#24 ~ #26	φ0.9 ~ φ1.5	CT150-19B-HB03J	T700424
HB03P12K6A1	AWG#26 ~ #30	φ0.6 ~ φ1.2		
HB03S12K5A1	AWG#24 ~ #26	φ0.9 ~ φ1.5	CT150-19-HB03J	T700424
HB03S12K6A1	AWG#26 ~ #30	φ0.6 ~ φ1.2		

Note) The “\*” in the Part Number will stand for P: Pin, S: Socket

## Extraction Tool

**Contact Extraction Tool**

Contact	Extraction Tool
HB01*25H2P1	ET-HB01
HB01*25H3P1	
HB01*06K4P2	
HB01*06K4P1	
HB03*12K5A1	ET-KN02-1
HB03*12K6A1	



Note) The “\*” in the Part Number will stand for P: Pin, S: Socket



## Technical Documents

Specifications: JACS-50125

Handling Instructions: JAHL-50125

**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.

**Japan Aviation Electronics Industry, Limited**

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