PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

DF58 Series

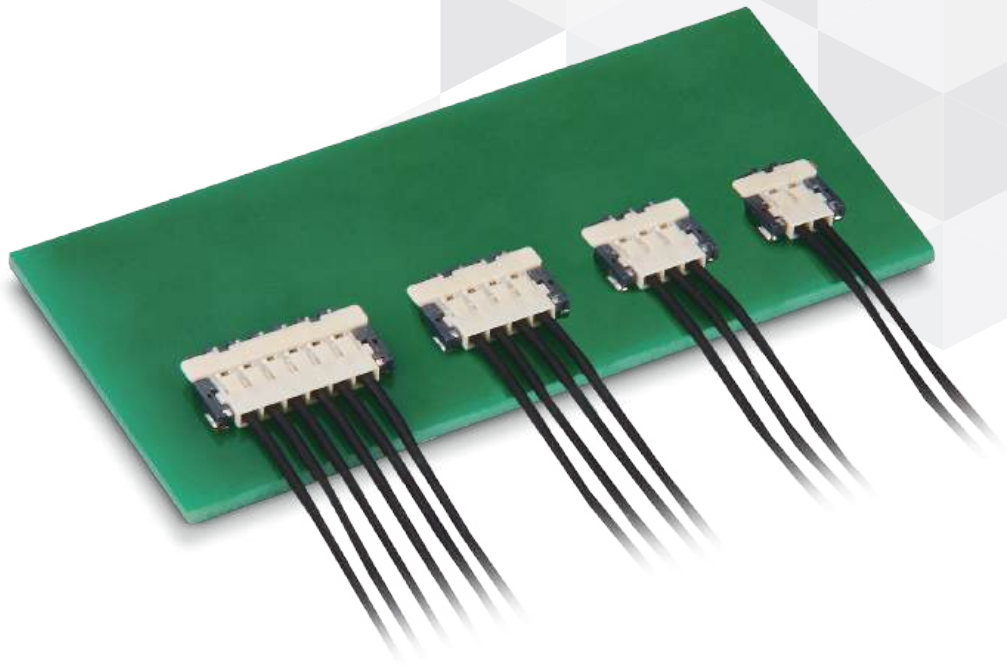
Small-Sized, Low Profile 1.0mm Height, Wire-to-Board Connectors for Power Supply

SnapBee™

Power Supply

Positive-Lock

Low Profile



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Product Page
https://www.hirose.com/en/product/series/DF58

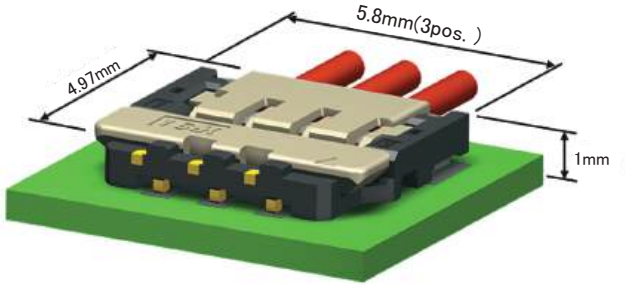
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Features

1. Small-sized, low profile connector

Low profile design of 1.0mm stacking height, the connector is suitable for small-sized devices.



2. Leveling of the vertical mating cable

Vertical insertion of the connector for mating enhances the assembly operation within device.

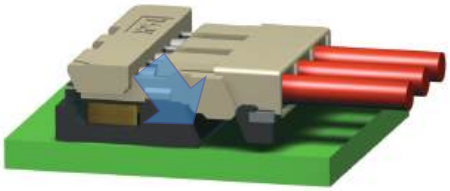
3. Proprietary ViSe Lock design

The cable side lock has been strengthened with our proprietary ViSe Lock mechanism*, preventing the cables from being easily disconnected due to tough routing or an excessive load.
(*ViSe Lock: Vertical-insertion Swing-extraction)*Patent pending

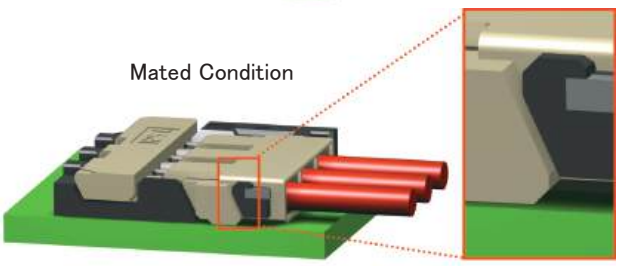
Vise Lock Structure Illustration

Although it feels like a vertical fit,
it is actually inserted diagonally to ensure a high retention force towards Vertical.

Before Mating



Mated Condition



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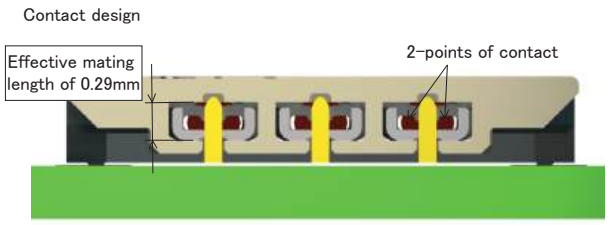
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4.High current capability up the maximum of 3.0A (2pos.: When 28AWG is used)

By adopting high conductivity material and lowering contact resistance through optimized contact force, high-current capability is achieved in spite of its small size.

5. Highly reliable contact design

Effective mating length of 0.29mm is achieved in spite of low profile 1.0mm stacking height. The 2-point clipping contact stabilizes contact resistance.



Cross sectional view of contact face

6. Halogen-free

The connector does not contain chlorine or bromine exceeding the standard value.
*As defined by IEC 61249-2-21 Br-900ppm max, Cl-900ppm max, Br+Cl-1,500ppm max

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Product Specifications

Rated Current（Note 1）		28 AWG	30 AWG	Operating temperature range（Note 1） Operating humidity range（Note 2）	-55 to +85℃ 20 to +80%
	2 Pos.	3.0A	2.5A		
	3 Pos.	2.5A	2.0A		
	4 Pos.	2.0A	1.5A		
	6 Pos.				
Rated Voltage	100V AC/DC			Storage temperature range（Note 3） Storage humidity range（Note 3）	-10 to +60℃ 40 to +70%

Item	Specifi cation	Conditions
Insulation Resistance	100MΩ min.	100V DC
Withstanding Voltage	No flashover or insulation breakdown	500V AC for 1 min.
Contact Resistance	10mΩ max.	20mV Max., 1mA (DC or 1000Hz)
Vibration Resistance	No electrical discontinuity of 1μs.	10 cycles in each of three directions at frequency 10 to 55Hz, half amplitude 0.75mm
Shock Resistance	No electrical discontinuity of 1μs.	Accelerated velocity: 490m/s^2, 11ms, half-sine wave in 3 directions, 3 times for each direction
Humidity Resistance	Contact resistance: 20mΩ max., Insulation resistance: 100MΩ min.	96 hours at temperature of +40± 2℃ and humidity of 90 to 95%
Temperature Cycle	Contact resistance: 20mΩ max., Insulation resistance: 100MΩ min.	-55℃ → +5 to +35℃ → +85℃ → +5 to +35℃ Times: 30 minutes → 2 to 3 minutes → 30 minutes → 2 to 3 minute, 5 cycles
Mating Durability	Contact resistance: 20mΩ max.,	10 times
Solder Heat Resistance	No dissolution of the resin part affecting performance.	Reflow: See recommended temperature profile Manual soldering: 350± 10℃ C for 3 seconds

Note 1: Includes temperature rise caused by current flow.
Note 2: Use in environments without condensation.
Note 3: The storage condition refers to long-term storage of the product on the shelf before assembly.
Please use the operating temperature and humidity range for non-energized state after board mounting or temporary storage such as pre-assembly and during shipping.

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Materials / Finish

Item	Component	Material	Color/Finish	Remarks
Header	Insulator	LCP	Black	UL94V-0
	Contact	Copper alloy	Tin Plating	-
Crimping Socket	Insulator	LCP	Natural	UL94V-0
Crimp Terminal	Contact	Copper alloy	Tin Plating	-

Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

■ Header

DF 58 - # P - 1.2 V
① ② ③ ④ ⑤

① Series Name	DF58	④ Contact Pitch	1.2mm
② No. of Pos.	2, 3, 4, 6	⑤ Termination Type	V: Straight SMT
③ Connector Type	P: Header		

■ Crimp Socket

DF 58 - # S - 1.2 C
① ② ③ ④ ⑤

① Series Name	DF58	④ Contact Pitch	1.2mm
② No. of Pos.	2, 3, 4, 6	⑤ Termination Type	C: Crimp Socket
③ Connector Type	S: Socket		

■ Crimp Contact

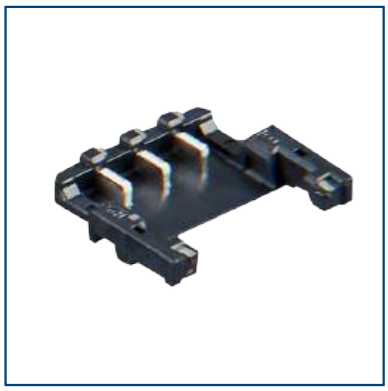
DF 58 - 2830 SCF
① ②

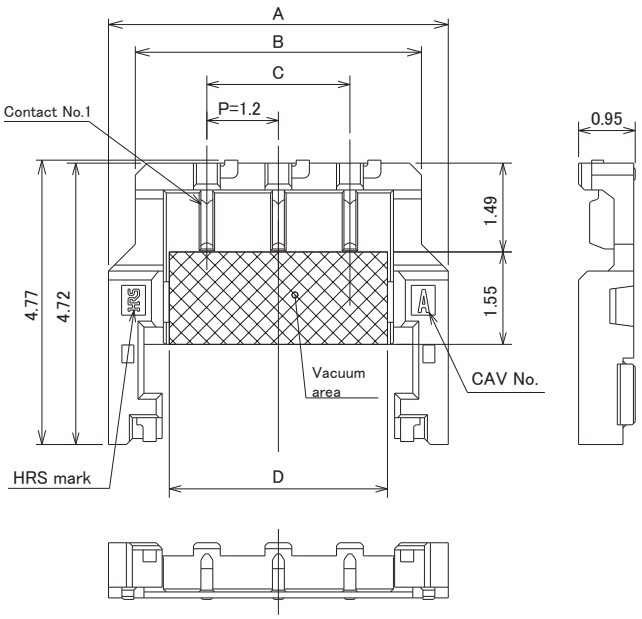
① Applicable Wire Size	2830: 28 to 30AWG	② Packaging	SCF: Female Crimp Contact / Reel

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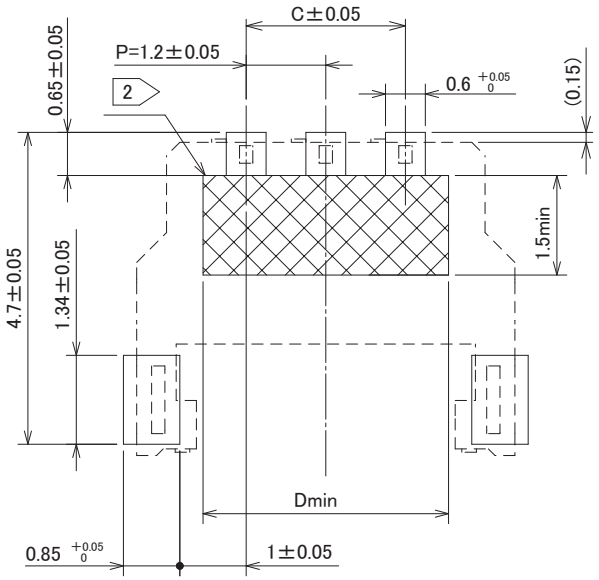
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Header (SMT)





■Recommended PCB layout (t=1mm)



Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit
DF58-2P-1.2V(21)	CL0666-1001-0-21	2	4.5	3.6	1.2	2.5	6,000pcs per reel
DF58-3P-1.2V(21)	CL0666-1002-0-21	3	5.7	4.8	2.4	3.7	
DF58-4P-1.2V(21)	CL0666-1003-0-21	4	6.9	6.0	3.6	4.9	
DF58-6P-1.2V(21)	CL0666-1005-0-21	6	9.3	8.4	6.0	7.3	

[Specifi cation number]
(21) : Tin plated, Embossed tape

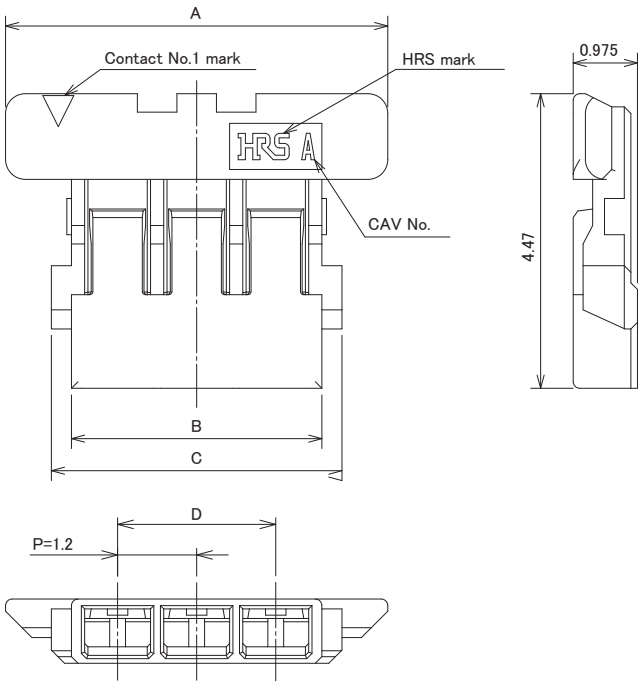
Note: ⊠ The crossed-hatched area is a no conductive trace area.

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Crimp Socket





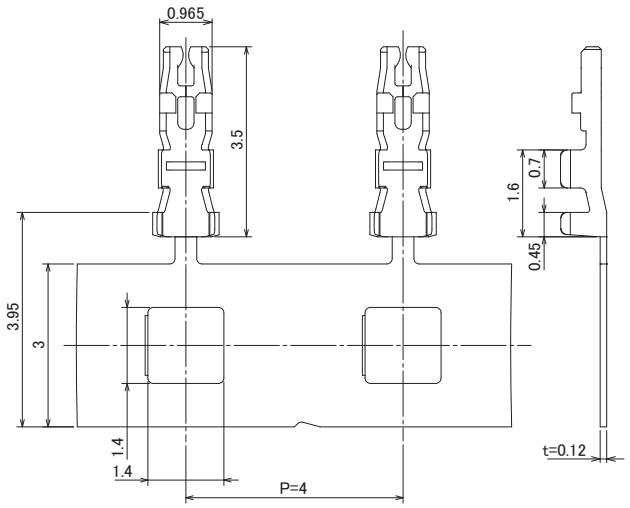
Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit
DF58-2S-1.2C	CL0666-1006-0	2	4.6	2.6	3.21	1.2	1,000pcs per bag
DF58-3S-1.2C	CL0666-1007-0	3	5.8	3.8	4.41	2.4	
DF58-4S-1.2C	CL0666-1008-0	4	7.0	5.0	5.61	3.6	
DF58-6S-1.2C	CL0666-1010-0	6	9.4	7.4	8.01	6.0	

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Crimp Contact



Unit : mm

Part No.	HRS No.	Finish	Type	Purchase Unit
DF58-2830SCF	CL0666-1011-0	Tin plated	Reel Contact	4,000pcs per reel

Applicable Wire (Tin Plated Annealed Copper Wire)

Unit : mm

Wire Size (Stranded Wire Structure	Jacket Diameter	Recommended Wire	Strip Length
28 AWG（7／φ0.127mm）	φ0.5 to 0.6mm	UL1571（Micro Cable）	1.0 to 1.4mm
30 AWG（7／φ0.102mm）			

Note: For applicable cable other than those listed above, refer to Crimp Condition Table. Crimp Condition Table is available from Part No. link.
(If you are using a cable that is not listed in Crimp Condition Table, please contact a Hirose sales representative.)
Note: The strip length is a reference value. Please make adjustments so finished crimps will meet the specified values. Refer to the crimping quality standards for details.

Tools

Type	Part No.	HRS No.	Applicable Contact
Applicator	AP105-DF58-2830S	CL0901-4649-0	DF58-2830SCF
Press	CM-105C	CL0901-0001-0	
Hand Tool	HT307/DF58-2830HC	CL0902-4671-0	
Extraction Tool	DF-C-PO（B）	CL0550-0179-2	

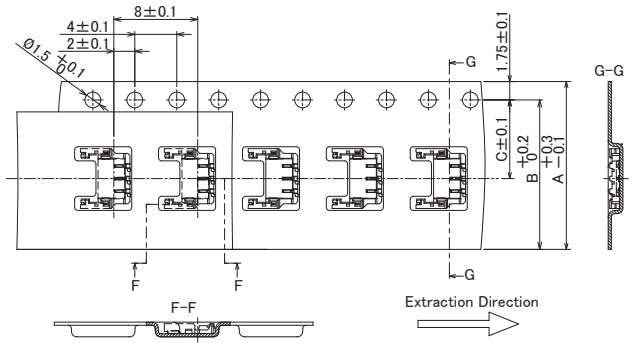
Note: Issues with non-Hirose specified tools are outside the scope of warranty.

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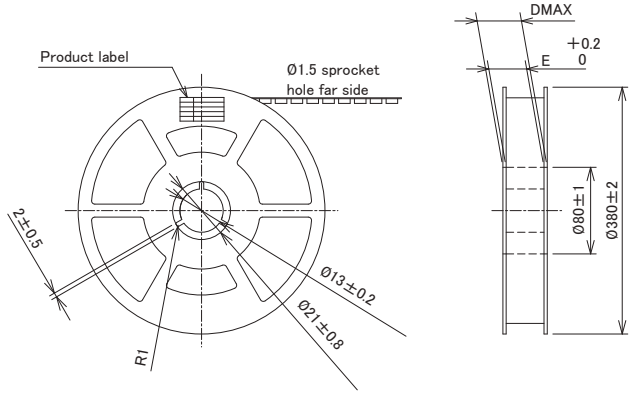
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Packaging Specifications

●Embossed Carrier Tape Dimensions



●Reel Dimensions



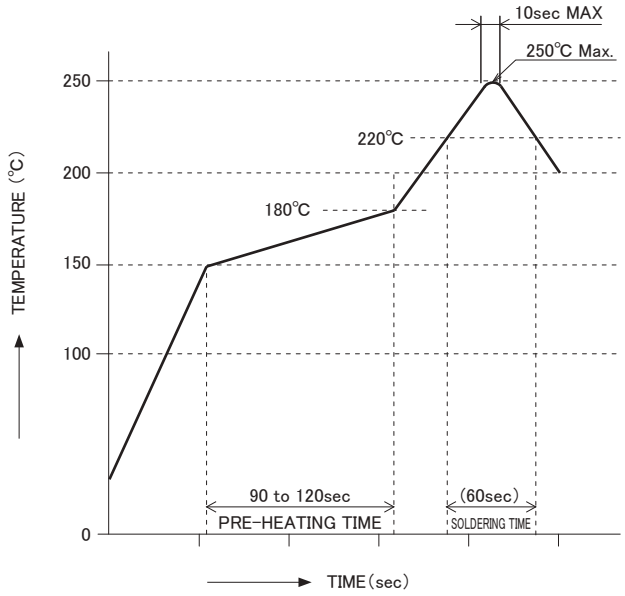
Unit : mm

Part No.	A	B	C	D	E
DF58-2P-1.2V(21)	16	14.25	7.5	22.4	16.4
DF58-3P-1.2V(21)					
DF58-4P-1.2V(21)	24	22.25	11.5	30.4	24.4
DF58-6P-1.2V(21)					

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Operating Precaution

Recommended Temperature Profile	 [Applicable Conditions] 1. Peak Temperature: 250℃ Max. 2. Heated Area: 220℃ Min., for less than 60 seconds. 3. Pre-heating Area: 150 to 180℃, 90 to 120 sec. 4. Number of Times: No more than 2 times. [Note 1] Measurement is conducted at the contact lead part. Soldering results may change depending on conditions such as solder paste type, manufacturer, PCB size, and other soldering materials. Please determine all mounting conditions before use. [Note 2] This temperature profile is our recommended value.
Recommended Hand Solder Conditions	Soldering iron temperature: 350 ± 10℃, soldering time : within 3 sec Max.
Recommended Screen Thickness, Aperture Opening Rate (Pattern Area Ratio)	Thickness 0.1mm, aperture opening rate: 100%
PCB Warpage	A maximum of 0.02mm at the center of connector, as measured from either end of the connector.
Cleaning Condition	IPA cleaning is allowed. (Cleaning is not recommended due to potential changes in mating action and other variables. Please contact us if you use other cleaning agents.)
Precautions	■ Please note that any mating operation of the connector when not mounted on the board may cause damage or deformation of the contacts. ■ Do not apply flux at the time of hand soldering, as it may result in flux rise. ■ The housing color may have slight variations depending on the production lot. This color variation does not affect performance. Black spots may appear on the mold resin but this does not affect the product quality. ■ Please refer to "Product Guidelines (Mating/Unmating Operation Instruction Manual)"for handling points during mating.

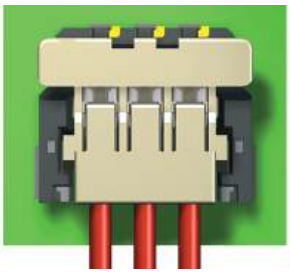
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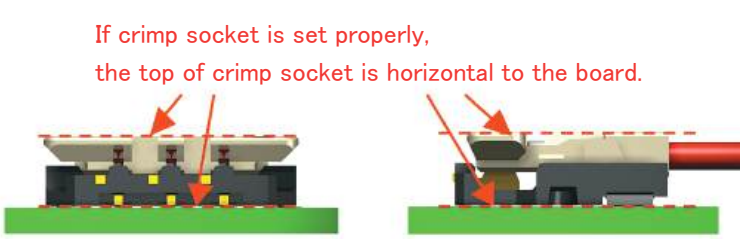
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Insertion and removal operation method

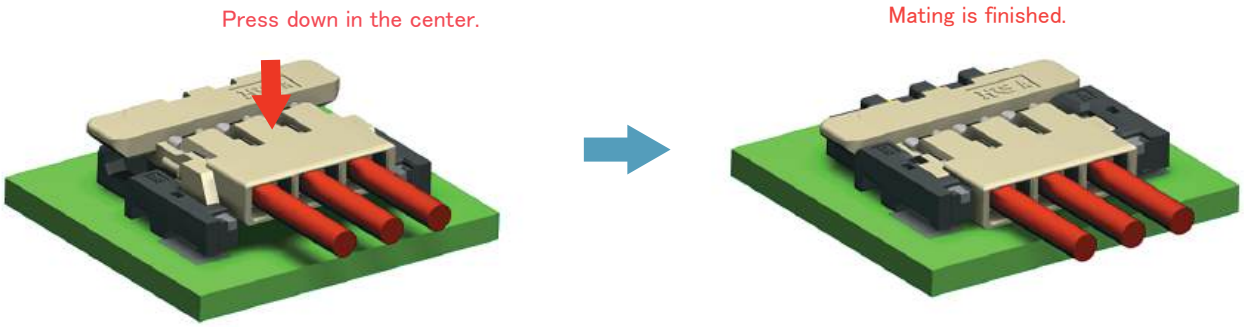
【Mating】

(1) Crimp Socket set
Set crimp socket according to the outline of the header.

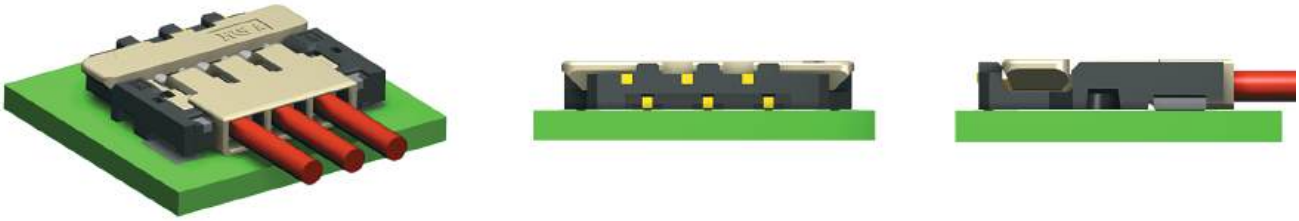




(2) Insertion
Press the center of crimp socket to complete the mating.



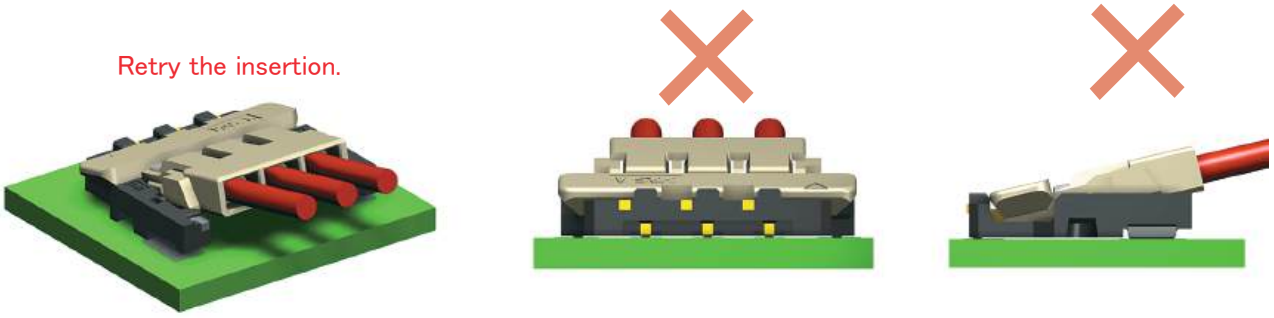
(3) Checking the mated state
Check that crimp socket is securely mated. If one side of the crimp socket floats or is mated at an angle, remove the crimp socket and re-engage it.



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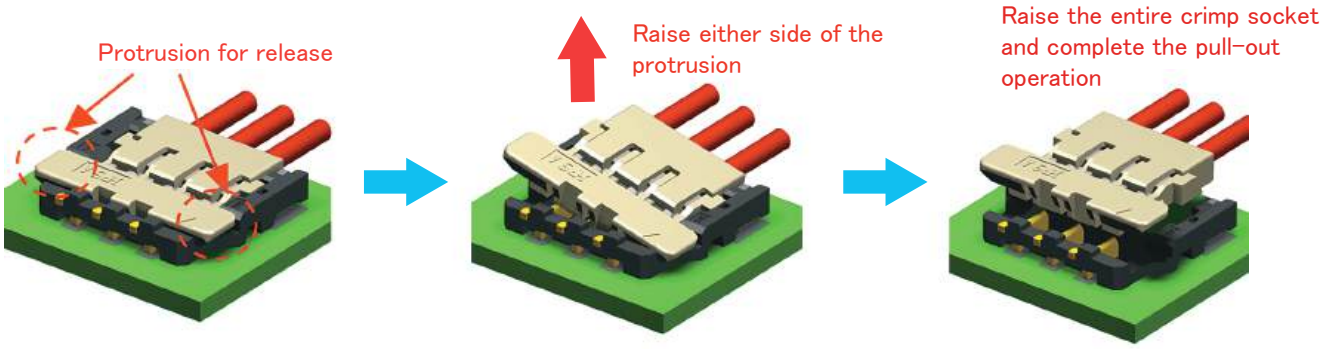
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If the connector is inserted when crimp socket is not set properly, only the simple lock on the opposite side of the cable may be inserted as shown in the figure below. In this case, once unmate and reengage. Forcibly engaging the connector will lower retention force.



【Pull-out operation】

To remove the lock, first hook your claw to either the left or right of crimp socket release protrusion and lift the protrusion to release the simple lock. Then lift the entire crimp socket to complete the operation.



When removing the cable, use the protrusion to release the engagement. If the cable is pulled out by force, disconnection or connector broken may occur.



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While taking into consideration

Specifications mentioned in this catalog are reference values.
When considering to order or use this product, please review the Drawing and Product Specifications sheets.
Use an appropriate cable when using the connector in combination with cables.
If considering usage of a non-specified cable, please contact your sales representative.
If assembly process is done by jigs & tools which are not identified by Hirose, the warranty of the product may be affected.
If considering usage for below mentioned applications, please contact your sales representative.
In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/defense etc. Hirose must review before assurance of reliability can be given.

HIROSE ELECTRIC CO.,LTD. 2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
https://www.hirose.com

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