

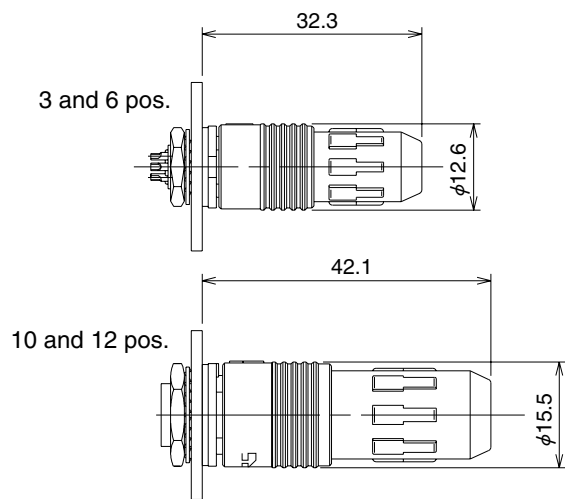
NEW

Miniature Waterproof Plastic Connectors

HR30 Series



Mated dimensions



■ Features

1. Miniature and compact design

The HR30 allows for a maximum outside diameter of 12.6mm in the 3 and 6 positions, and 15.5mm for the 10 and 12 position connectors. The compact design yields a mated length from the panel of only 32.3mm for the 3 and 6 position version and 42.1mm for the 10 and 12 position.

2. Water-tight connection

Meets the IP67 standard, when in the mated position.

3. Push-pull lock

Using Hirose's unique lock mechanism, the HR30 connector has a reliable, robust "push-pull" lock that is easy to operate.

4. Light-weight and corrosion free

Weight of the plug and receptacle is 6 grams for the 3 and 6 position connectors, and 9 grams for the 10 and 12 position connectors. In addition, the plastic housing will not corrode.

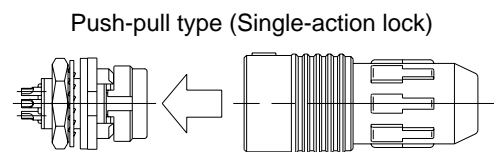
5. Positive alignment

Five guide keys align the plug and receptacle correctly when mating.

6. Indexing marks

Both the plug and receptacle have white indexing marks to facilitate correct alignment.

View of Locking Mechanism



■ Applications

Test and Measurement equipment, communication equipment, and other miniature electronic devices

■Product Specifications

Ratings	Rated Current	5A (3 pos.) 2A (6,10,12 pos.)	Operation Temperature Range	-25℃~+85℃
	Rated Voltage	AC100V,DC140V (3,6 pos.) AC30V,DC42V (10,12 pos.)	Storage Temperature Range	-25℃~+85℃

Item	Specification	Conditions
1.Contact resistance	5mΩ max. (3 pos.) 15mΩ max. (6, 10, and 12 pos.)	Measured at 1A DC
2.Insulation resistance	1000MΩ min.	Measured at 100 V DC
3.Withstand voltage	No flashover or insulation breakdown	300 V AC for one minute
4.Vibration	No electrical momentary disconnections of 10 μs max.	Tested for 10 cycles in each of 3 directions, 5 minutes per cycle, in a cycle of 10 to 55 to 10 Hz and 0.75 mm amplitude
5.Repetitive operation	Contact resistance 10mΩ min.(3 pos.) Contact resistance100mΩ min. (6, 10, and 12 pos.)	1000 times
6.Temperature cycle	Insulation resistance 100 MΩ min.	Five cycles of -55℃: 30 minutes → Room temperature: 10 to 15 minutes → +85℃: 30 minutes → Room temperature: 10 to 15 minutes
7.Humidity resistance	Insulation resistance 10MΩ min. (when humidity high) 100MΩ min. (when dry)	Temperature 40℃, humidity 90 to 95%, 96 hours
8.Waterproof performance	Water must not penetrate inside the connector.	While mated with a applicable connector, leave under water at a depth of 1 m for half hour.

■Material

Item	Material	Finish	Remarks	
Plug	Insulator	PPS	Black	UL94V-0
		PBT	Black	UL94V-0
		Polyacetal	Natural	-----
	Gasket	SIR/CR	Red/Black	-----
	Contacts	Brass, phosphor bronze	Gold plating	-----
Spring	Stainless steel	-----	-----	
Receptacles	Insulator	PPS	Black	UL94V-0
	Gasket	CR	Black	-----
	Contacts	Brass, phosphor bronze	Gold plating	-----
	Hexagonal nut	Zinc alloy	Chromate	-----
Washer	Phosphor bronze	Nickel plating	-----	
Crimp contacts	Contacts	Phosphor bronze	Selective gold plating	-----
	Contacts	Phosphor bronze	Selective gold plating	-----

■Ordering information

Please use the below part numbering scheme as a guide but order using the part numbers listed on catalog Pages 3 to 6.

HR 3 0 - 6 P A - 6 S C

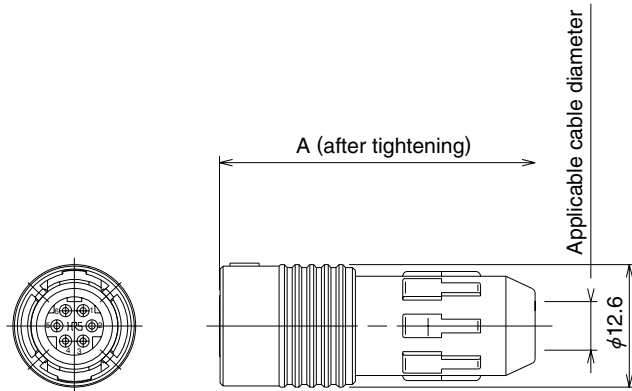
① ② ③ ④ ⑤ ⑥ ⑦

① Series name : HR30 Series	⑤ Number of Contacts : 3, 6, 10 and 12
② Shell size : Outside diameter of plug mating portion	⑥ Contact type S : Female contact P : Male contact
③ Connector type : P : Plug R : Receptacle J : Jack	⑦ Contact wiring type Blank : Solder C : Crimping
④ Variation Blank : Standard A : Fine wire	

■Plugs

●Solder Type

HR30-6P-6S

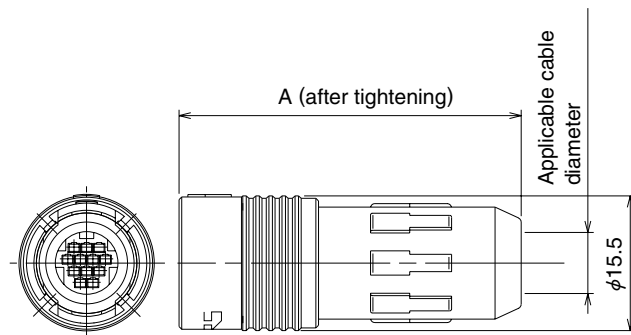


(The above represents one example.)

Part Number	CL No.	Weight	Applicable Cable Diameter	A	Remarks
HR30-6P-3S	130-0004-1	4g	φ4.2~5	29.8	Contact solder pot inner diameter 1.1 mm
HR30-6P-6S	130-0010-4			29.8	Contact solder pot inner diameter 0.8 mm
HR30-6P-6P	130-0009-5			30.3	Contact solder pot inner diameter 0.8 mm
HR30-6PA-3S	130-0021-0		φ3.5~4.3	29.8	Contact solder pot inner diameter 1.1 mm
HR30-6PA-6S	130-0019-9			29.8	Contact solder pot inner diameter 0.8 mm
HR30-6PA-6P	130-0020-8			30.3	Contact solder pot inner diameter 0.8 mm

●Crimp Type

HR30-7P-12SC



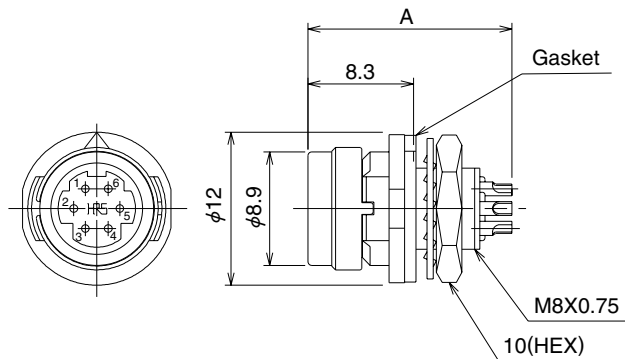
(The above represents one example.)

Part Number	CL No.	Weight	Applicable Cable Diameter	A	Remarks
HR30-7P-10SC	130-0013-2	6g	φ6.2~7	39.8	Applicable crimp contact HR30-SC-211
HR30-7P-12SC	130-0014-5			39.8	Applicable crimp contact HR30-SC-211
HR30-8P-12PC	130-0015-8			39.8	Applicable crimp contact HR30-PC-211

■Receptacles

●Solder Type

HR30-6R-6P

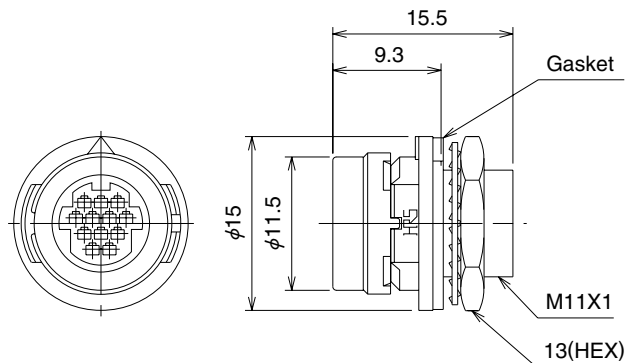


(The above represents one example.)

Part Number	CL No.	Weight	A	Remarks
HR30-6R-3P	130-1003-4	2g	16	Solder pot inner diameter 1.1 mm
HR30-6R-6P	130-1009-0		16	Solder pot inner diameter 0.8 mm
HR30-6R-6S	130-1008-8		18.4	Solder pot inner diameter 0.8 mm

●Crimp Type

HR30-7R-12PC



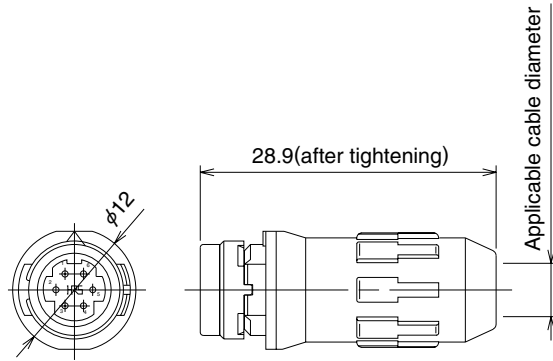
(The above represents one example.)

Part Number	CL No.	Weight	Remarks
HR30-7R-10PC	130-1012-5	3g	Applicable crimp contact HR30-PC-211
HR30-7R-12PC	130-1013-8		Applicable crimp contact HR30-PC-211
HR30-8R-12SC	130-1014-0		Applicable crimp contact HR30-SC-211

■Jacks

●Solder Type

HR30-6J-6P

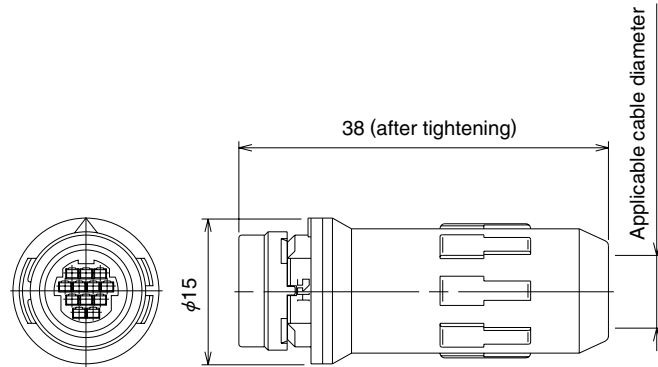


(The above represents one example.)

Part Number	CL No.	Weight	Applicable Cable Diameter	Remarks
HR30-6J-6P	130-2009-6	3g	$\phi 4.2 \sim 5$	Contact solder pot inner diameter 0.8 mm
HR30-6JA-6P	130-2018-7		$\phi 3.5 \sim 4.3$	Contact solder pot inner diameter 0.8 mm

●Crimp Type

HR30-7J-12PC



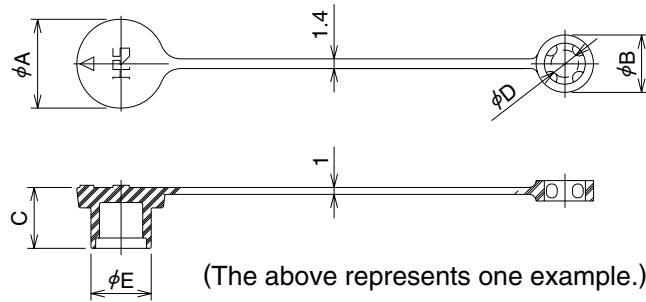
(The above represents one example.)

Part Number	CL No.	Weight	Applicable Cable Diameter	Remarks
HR30-7J-10PC	130-2015-9	5g	$\phi 6.2 \sim 7$	Applicable crimp contact HR30-PC-211
HR30-7J-12PC	130-2017-4			Applicable crimp contact HR30-PC-211
HR30-8J-12SC	130-2016-1			Applicable crimp contact HR30-SC-211

■ Caps

● For Plugs

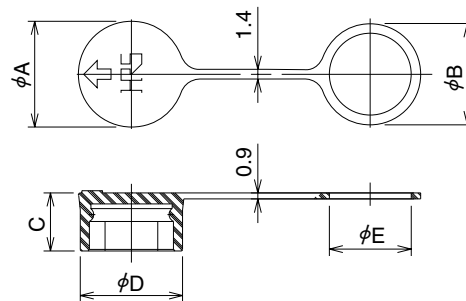
HR30-6P-C



Part Number	CL No.	Weight	Part No. of connector	A	B	C	D	E
HR30-6P-C	130-3000-7	1g	HR30-6P-3S	13	8.4	8.4	4	8.8
			HR30-6P-6S					
			HR30-6P-6P					
			HR30-6PA-3S					
			HR30-6PA-6S					
HR30-6PA-6P								
HR30-7P-C	130-3004-8	2g	HR30-7P-10SC	16	10.4	10.5	4	11.4
HR30-7P-12SC								
HR30-8P-C	130-3003-5		HR30-8P-12PC					

● For Receptacle

HR30-6R-C

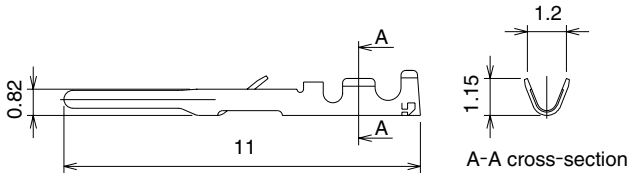


Part Number	CL No.	Weight	Part No. of connector	A	B	C	D	E
HR30-6R-C	130-3001-0	1g	HR30-6R-3P	12.6	11.8	7.5	12.1	9.1
			HR30-6R-6P					
			HR30-6R-6S					
HR30-7R-C	130-3002-2		HR30-7R-10PC	15.5	14.8	8.5	15	12.1
			HR30-7R-12PC					
			HR30-8R-12SC					

Note : When using these caps, do not use the gasket that is normally supplied with the receptacle. The "B" portion of the receptacle cap will serve as the gasket.

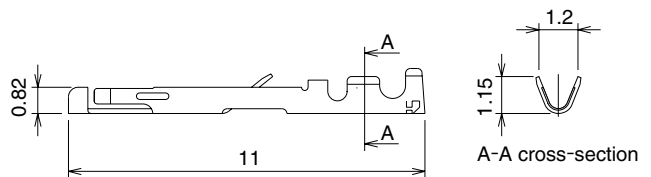
■ Crimp Contacts

Male contact



(The above represents one example.)

Female contact



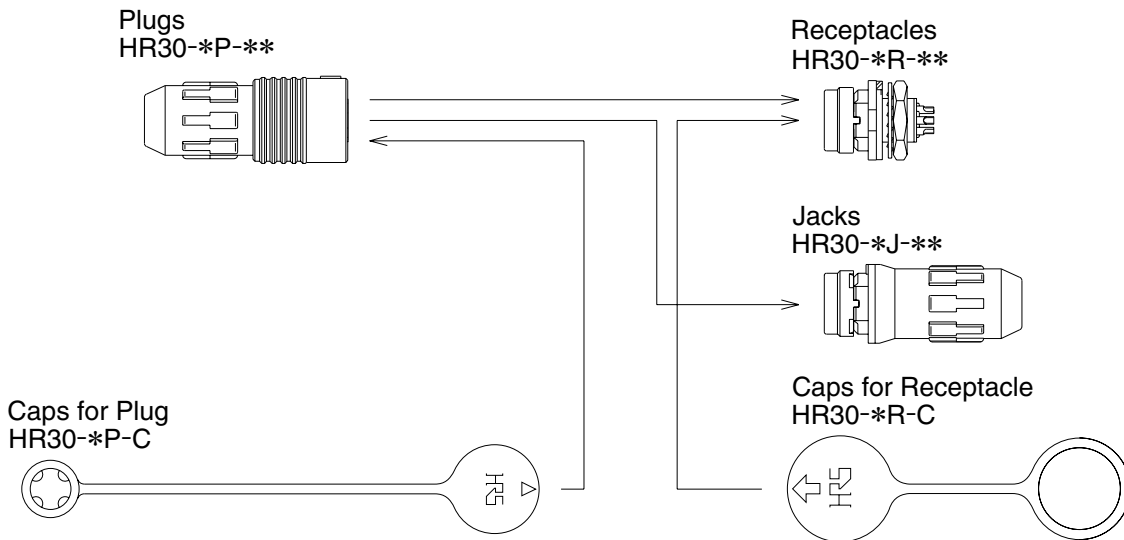
(The above represents one example.)

Part Number	CL No.	Weight	Packaging type
HR30-PC-111	130-0022-3	0.03g/1per pin	100pcs/bag
HR30-PC-211	130-0016-0	0.03g/1per pin	10,000pcs/reel

Part Number	CL No.	Weight	Packaging type
HR30-SC-111	130-0023-6	0.03g/1 pin	100pcs/bag
HR30-SC-211	130-0017-3	0.03g/1 pin	10,000pcs/reel

Note 1 : Use wire of size AWG 26 to 30 with a jacket diameter of 1 mm max.

◆ Connector Combinations



Note 1 : When selecting connectors, be sure to make combinations that take into account the shell size, contact count and gender of the contacts.

Note 2 : Crimp contacts are not included. Please order applicable contacts separately.

Note 3 : When using the protective caps for the receptacles, do not use the gaskets normally supplied with the receptacle. The end opposite the cap will serve as the gasket.

◆ Applicable Jigs

● Wiring Jigs

Part Number	CL No.	Applicable Connectors
HR30-6P-3S-T01	150-0220-1	HR30-6P-3S HR30-6PA-3S
HR30-6P-6S-T01	150-0214-9	HR30-6P-6S HR30-6PA-6S
HR30-6P-6P-T01	150-0221-4	HR30-6P-6P HR30-6PA-6P
HR30-7P-10SC-T01	150-0228-3	HR30-7P-10SC
HR30-7P-12SC-T01	150-0223-0	HR30-7P-12SC
HR30-8P-12PC-T01	150-0227-0	HR30-8P-12PC
HR30-6R-3P-T01	150-0225-5	HR30-6R-3P
HR30-6R-6P-T01	150-0218-0	HR30-6R-6P HR30-6J-6P HR30-6JA-6P
HR30-6R-6S-T01	150-0222-7	HR30-6R-6S
HR30-7J-10PC-T01	150-0231-8	HR30-7J-10PC
HR30-7J-12PC-T01	150-0230-5	HR30-7J-12PC
HR30-8J-12SC-T01	150-0226-8	HR30-8J-12SC

Note : The use of the wiring jigs will facilitate the soldering and tightening operations for the HR30.

● Tightening collar for back shell

Part Number	CL No.	Applicable Connectors
HR30-6P-T02	150-0216-4	For 3 and 6 pos,
HR30-8P-T02	150-0224-2	For 10 and 12 pos,

Note : The back shell tightening collar is used by passing the cable through and tightening the back shell to the specified torque.

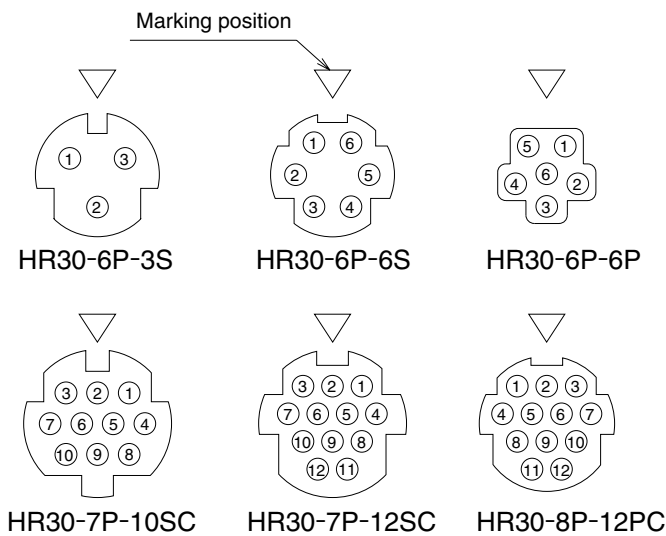


■Applicable Jigs

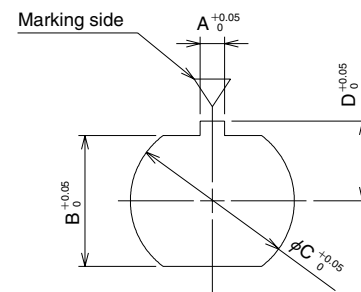
Type	Item	Part Number	CL No.	Applicable contact	Applicable wire
Manual	Manual crimping tool	HT-102/HR30-1	150-0229-6	HR30-SC-111	AWG#26~#30
				HR30-PC-111	
Automatic	Automatic crimping machine	CM-105	901-0005-4	—	—
	Applicator	AP105-HR30-1	901-2015-9	HR30-SC-211 HR30-PC-211	AWG#26~#30
Extraction tool	HR30-TP	150-0219-2	HR30-SC-111	—	
			HR30-SC-211	—	
			HR30-PC-111	—	
			HR30-PC-211	—	



◆Contact Configuration and Panel Cutouts



Contact Configuration



	A	B	C	D	Panel Thickness
3,6 pos	1.25	6.45	8.05	3.95	0.7~2
10,12 pos	1.35	9.25	11.05	5.45	0.7~3

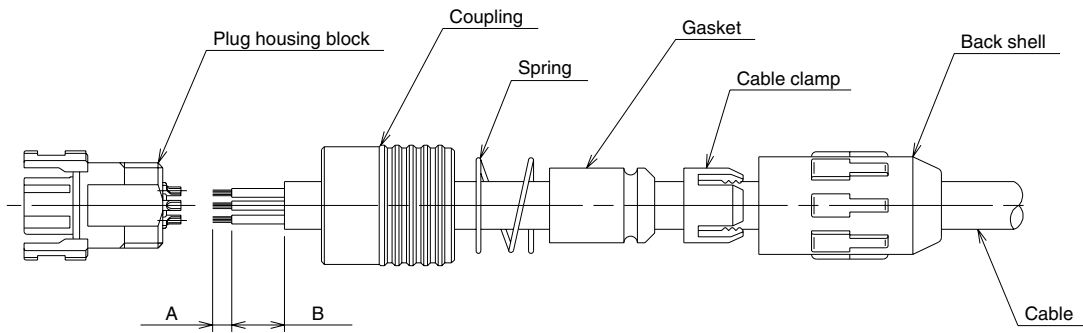
Panel cutout Dimensions

- Notes
- The contact configuration depicts a view from the wiring side.
 - Mounting to the panel is accomplished by tightening the hexagonal nut from the rear side of the panel.
The recommended tightening torque of the hexagonal nuts is 0.5 N·m for 3 and 6 pos., and 0.8 N·m for 10 and 12 pos.
Note that application of Loctite 271 and Primer Loctite 7649 manufactured by Henkel Japan Ltd. are recommended to prevent loosening.

◆ Assembly Procedures

Simplified Diagram (Work Details)

1

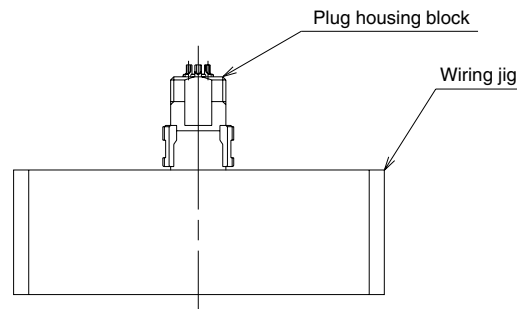


	A	B
3 and 6 Pos.	About 2 mm	5.5 mm max.
10 and 12 Pos.	$2_{-0.5}^0$ mm	15~20

Starting with the back shell, pass the back shell, cable clamp, gasket, spring, and coupling pieces in this order, onto the cable.

Note: When processing the termination, take care not to damage the jacket or conductors of the lead wire.

2



(Solder Type)

Attach the wiring jig to the Plug housing block, then after pre-soldering, perform the solder wiring for 3 to 4 seconds with a soldering iron tip temperature of $280 \pm 10^\circ\text{C}$.

Note: Pre-solder evenly so that the conductor outside diameter of the cable lead wire is also less than 0.7 mm, for 6pos. and 1.0mm for 3pos. then perform the solder wiring so as not to create solder blobs or cold solder joints.

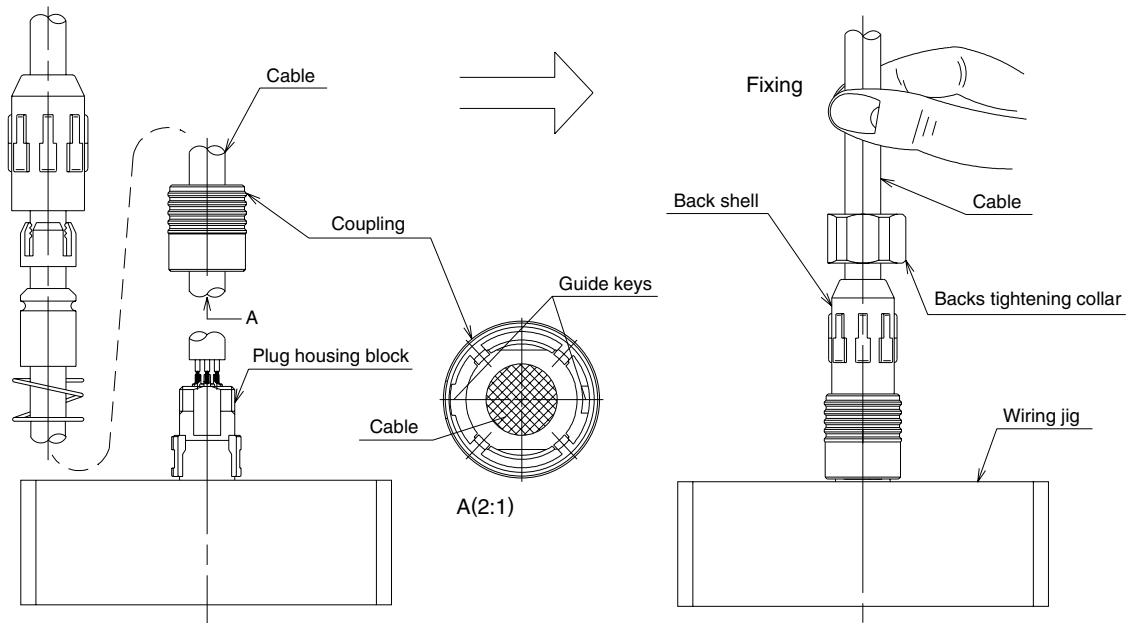
Also check that the soldering portion of wire and contact is well soldered.

(Crimp Type)

Use the correct die/applicator to crimp the terminal contact to the end of the cable lead wire. Insert the crimped contact into the plug housing terminal hole.

Note: After inserting the crimp contact, lightly pull on the lead wire to check that the crimp contact holds securely to the Plug housing contact hole.

3



	HEX
3 and 6 Pos.	16
10 and 12 Pos.	18

Align the coupling guide with the wired Plug housing block and insert.

Then, assemble the spring, gasket, cable clamp, and back shell in that order.

Use the cable tightening collar to tighten the back shell to the specified torque.

Use the back shell tightening collar to tighten the back shell to the specified torque.

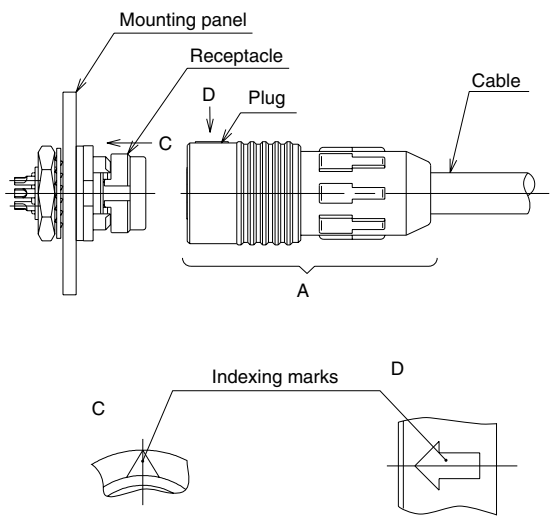
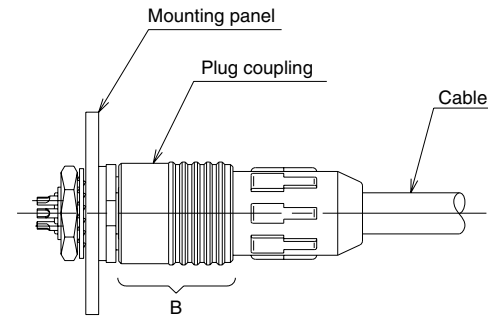
0.5 N.m for the 3 and 6 position connectors.

0.8 N.m for the 10 and 12 position connectors.

Note : An application of Loctite 271 and Primer Loctite 7649 manufactured by Henkel Japan Ltd. are recommended to prevent loosening.

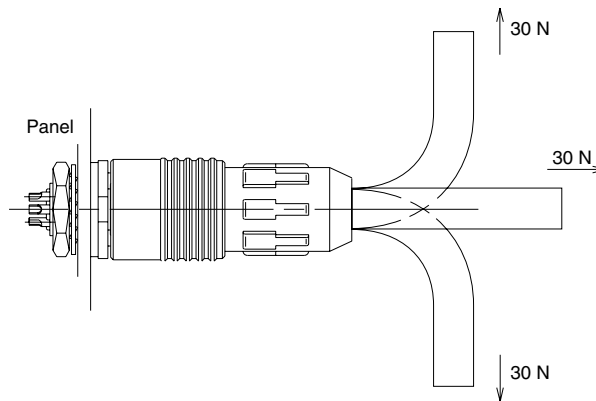
Make sure to hold the cable from turning when tightening the back shell. Failure to do so may result in damage to the soldered or crimped lead wires where they attach to the plug-housing block.

◆ General usage notes

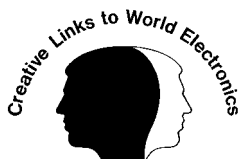
1. Mating	2. Un-mating
	
<p>When mounting, smooth mating will be achieved by holding plug portion A and aligning the index marking of the plug with that of the receptacle and then pushing the plug straight on.</p>	<p>When removing the plug from its connected condition, hold the mating portion B of the plug and pull straight off for easy removal.</p>

◆ Precautions for use

1. Make sure that the power of the circuit has been switched off before mating the connector.
2. After the connector has been mated, do not allow a force of 30 N or more to be applied to the cable as indicated by the arrows in the diagram below. Excessive force will damage the connector.



3. To maintain the waterproof performance and the cable clamp force, use a cable that is within the range of applicable cable diameter. Note that performance will also change depending on the construction of the cable and that the cable should be checked before use.
4. Use the specified tightening torque for connector assembly and mounting to the equipment. Insufficient or excessive torque will result in sub-optimum connector performance.



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