

NWPC Series



Waterproof equivalent to IP-X6

Safety standard certified products available

RoHS

Overview

- Waterproof connectors based on NCS Series.
- Shell treated by brass + chrome plating.
- Robust and highly resistant to salt damage to make these connectors suitable for a wide variety of fields including civil engineering and construction machines , emergency power supply systems and ships.

Feature

RoHS	RoHS Directive compliant
Waterproof	Waterproof connector 【 Waterproof function equivalent to IP-X6 when coupled 】
Lock method	Thread lock
Features of mechanism/ material	<ul style="list-style-type: none"> ○ Shell of brass treated by chrome plating to offer superior corrosion resistance. ○ Cable draw-out part provided with cable clamp to ensure firm cable holding (Size 14 excluded).
Standards	<ul style="list-style-type: none"> ○ < CSA NRTL/C > standard certified connectors available. (CSA : C22.2 No.182.3 UL : 1977) <p><small>Note: The specifications of safety standard certified products are slightly different from those of standard products. For the rated voltage, current and cable conductor cross sectional area, refer to A List of Standards Acquired (p.129).</small></p>
Cable termination	Soldering

Characteristics

Insulation resistance , Withstand voltage , Contact resistance , Waterproof p.60



The pin contact type has an **exposed electrode**. If it is used on the [power supply] side, it may cause **electric shock** or **short-circuit accidents**. To prevent such accidents, use the socket contact type on the [power supply] side and the pin contact type on the [equipment] side.

[When inserting or extracting the connector, do not turn the connector body.]

NWPC Series

Product No. designation

NWPC - 25 ■ - P M □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Series designation
- ② Shell size
- ③ Number of contacts
- ④ Shell shape
- ⑤ Contact shape < Pin (male) contact : M, Socket (female) contact : F >
The S Type of NWPC Series in all shapes of PF, RM, AdM, etc. is indicated simply by P, R, Ad, etc. with the contact shape symbol omitted.
- ⑥ Symbol indicating cable packing size. 《 Plug & adapter require symbol to be specified. 》
- ⑦ Additional symbol (-CH) 《 Required only for Shell size 16 》
- ⑧ Safety standard specification (< CSA NRTL/C >)
 《 Required only when safety standard is to be specified. 》 For applicable products, see p.129.

Cable termination : Soldering

Material and Finish

	Material	Finish
Shell	Brass	Chrome plating Partially Tin-cobalt plating (Shell size 16 only)
Insulator	Synthetic resin	—
Contact	Copper alloy	Shell size 14 , 16 , 25 , 30 : Nickel plating Shell size 40 , 44 , 50 , 54 , 60 , 64 : Silver plating Shell size 30 (Number of contacts 7H , 13) : Gold plating
Packing	Synthetic rubber	—

Operating temperature range

-40°C to +85°C

Exclusive tools (optional) : Contact wrench, soldering iron tip set

The contacts of rated current 80 A or over are constructed for removal from the insulator.
 For soldering, remove the contact with a contact wrench.

《 Types of contact wrenches 》



80A Contact Wrench

Used for:

NCS · NWPC-502 / 542
 NCS · NWPC-503 / 543
 NCS · NWPC-604 / 644

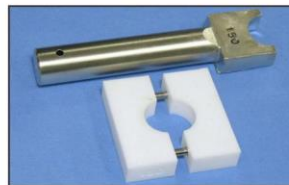


150A Contact Wrench

Used for:

NCS · NWPC-602 / 642
 NCS · NWPC-603 / 643

《 Soldering iron tip set 》



Usable soldering iron 200 W
 Iron tip inserting diameter ϕ 16 mm or over
 Iron tip temperature setting 420°C to 450°C

Set name * A set of iron tip and heat insulator.

For 80A contact → SS80-KB

For 150A contact → SS150-KB

They are also available individually.

For 80A contact

【 Iron tip → SS80-K 】 【 Heat insulator → SS80-B 】

For 150A contact

【 Iron tip → SS150-K 】 【 Heat insulator → SS150-B 】

【 80A Contact Wrench, 150A Contact Wrench 】

One tool is usable for installation and removal of a male and female contact.

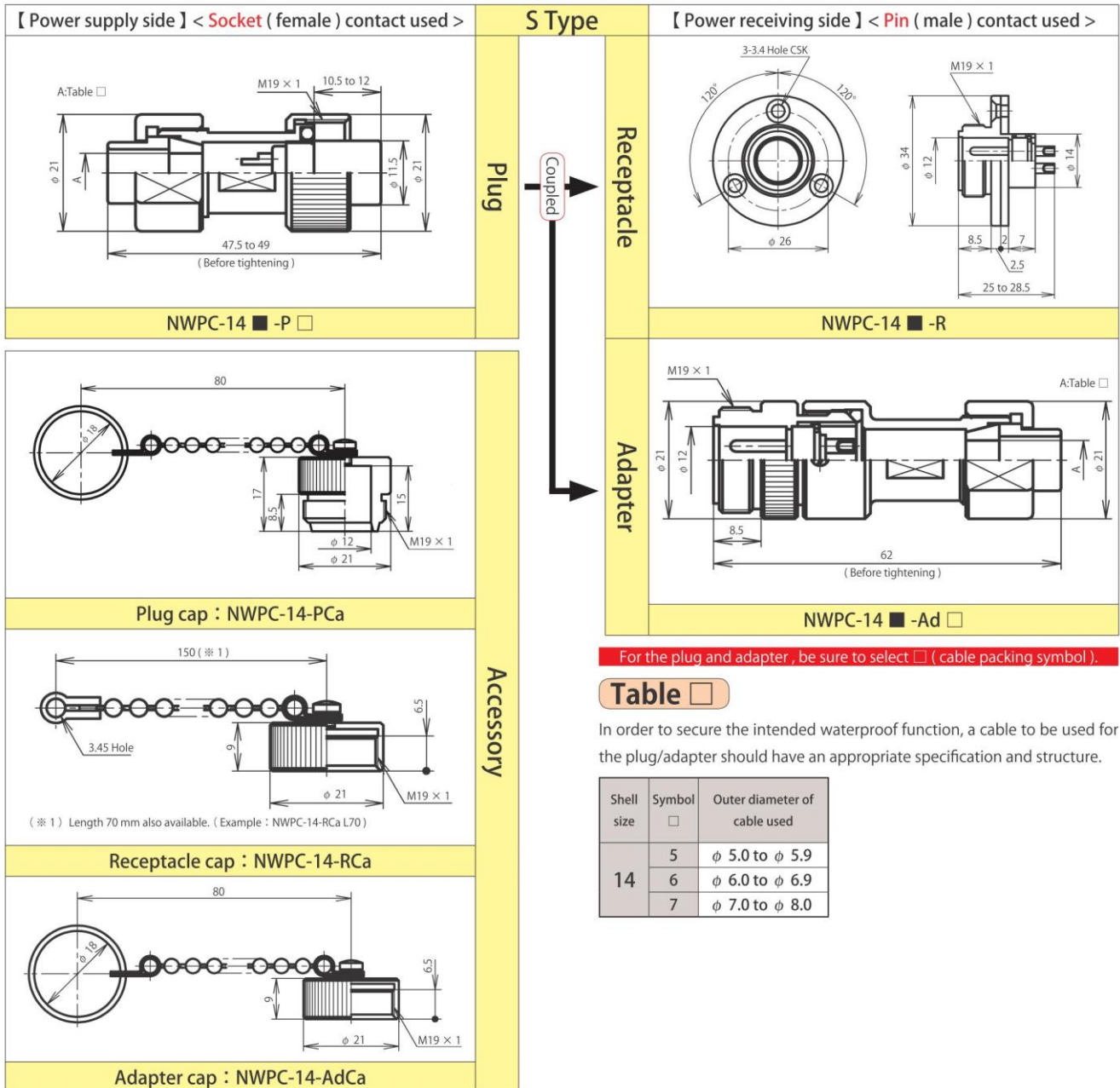
NWPC Series Characteristics

Shell size	Contact	Insulation resistance (M Ω)		contact resistance (m Ω)		Withstand voltage (V r.m.s.)					
		S Type	G Type	S Type	G Type	S Type	G Type				
		Number of contacts ↓									
14	1	DC 500V	—	3	—	1,000	—				
	2	2,000 min.	—	max.	—	—	—				
16	1	DC 500V 2,000 min.	—	3 max.	—	1,000	—				
	2		DC 500V		3		1,000				
	3		2,000 min.		max.		—				
	4		—		—		—				
25	2	DC 1,000V 2,000 min.	DC 1,000V 2,000 min.	3 max.	3 max.	2,000	2,000				
	3					—	—				
	4					—	—				
	5					—	—				
	6					—	1,800	1,800			
	7					—	—	—			
	8					—	—	—			
30	2	DC 1,000V 2,000 min.	DC 1,000V 2,000 min.	3 max.	3 max.	2,000	2,000				
	3					—	—				
	4					—	—				
	5					—	1,800	1,800			
	6					—	—	—			
	7					—	—	—			
	8					—	—	—			
	7H					DC 500V	—	—	1,500	—	
	13					2,000 min.	—	—	—	—	
40 (S Type)	2	DC 1,000V 2,000 min.	DC 1,000V 2,000 min.	3 max.	3 max.	2,500	2,500				
	3					—	—				
	4					—	—				
	5					—	—				
	6					—	2,000	2,000			
	44 (G Type)					8	—	—	—	—	—
						10	—	—	—	—	—
12		—	—	—	—	—					
16		—	—	—	—	—					
20		—	—	—	—	—					

Shell size	Contact	Insulation resistance (M Ω)		contact resistance (m Ω)		Withstand voltage (V r.m.s.)					
		S Type	G Type	S Type	G Type	S Type	G Type				
		Number of contacts ↓									
50 (S Type)	2	DC 1,000V	DC 1,000V	1	1	3,000	3,000				
	3	5,000 min.	5,000 min.	max.	max.	—	—				
	4	—	—	—	—	2,500	2,500				
	54 (G Type)	8	DC 1,000V 2,000 min.	DC 1,000V 2,000 min.	3 max.	3 max.	2,000	2,000			
		10					—	—			
		15					—	—			
25		—					1,800	1,800			
60	2	DC 1,000V 5,000 min.	—	1 max.	—	3,000	—				
	3					—	—				
	4					—	—				
	10					DC 1,000V 2,000 min.	DC 1,000V 2,000 min.	3 max.	3 max.	2,500	2,000
	15									—	—
	30									—	—
	32									—	—
	40					—	—	—	—	—	
64	2	—	DC 1,000V 5,000 min.	—	1 max.	—	3,000				
	3					—	—				
	4					—	—				

■ includes safety standard compliant products.

(Waterproof) No trace of water exposure after being submerged 5 cm below water for 24 hours in the coupled state in its normal state of use.



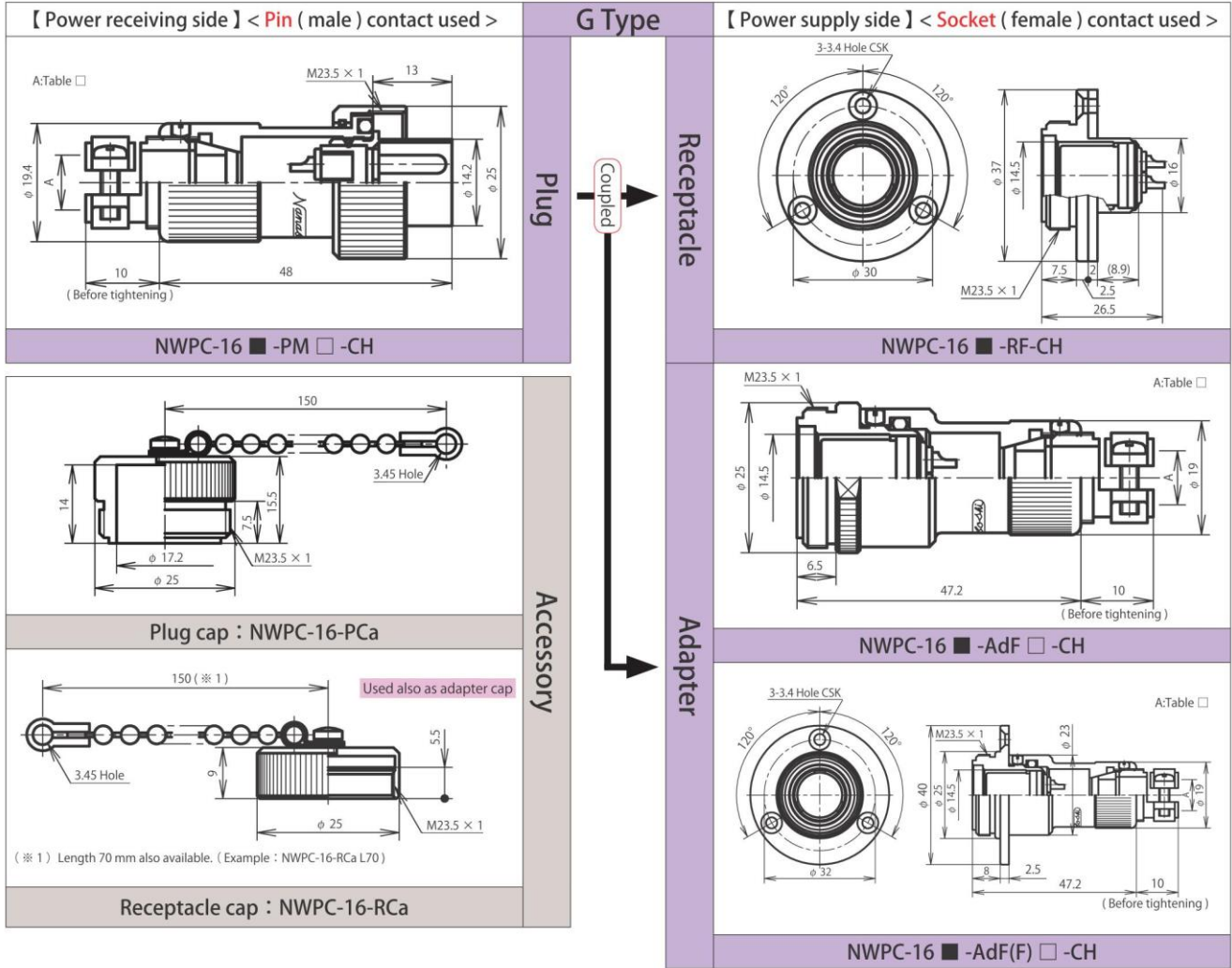
■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	1	2
14	Contact arrangement <When viewed from the pin (male) contact coupling side>		
	Safety standard	—	
	Rating	125V 5A	
	Limit operating voltage (Note-1)	200V	
	Withstand voltage (V r.m.s.)	1,000	
Wire size (mm ²)	0.75		

Note-1 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 16

16



"-CH" is an additional symbol of renewed products. They are interchangeable with products before renewal.

For the plug and adapter, be sure to select □ (cable packing symbol).

Table □

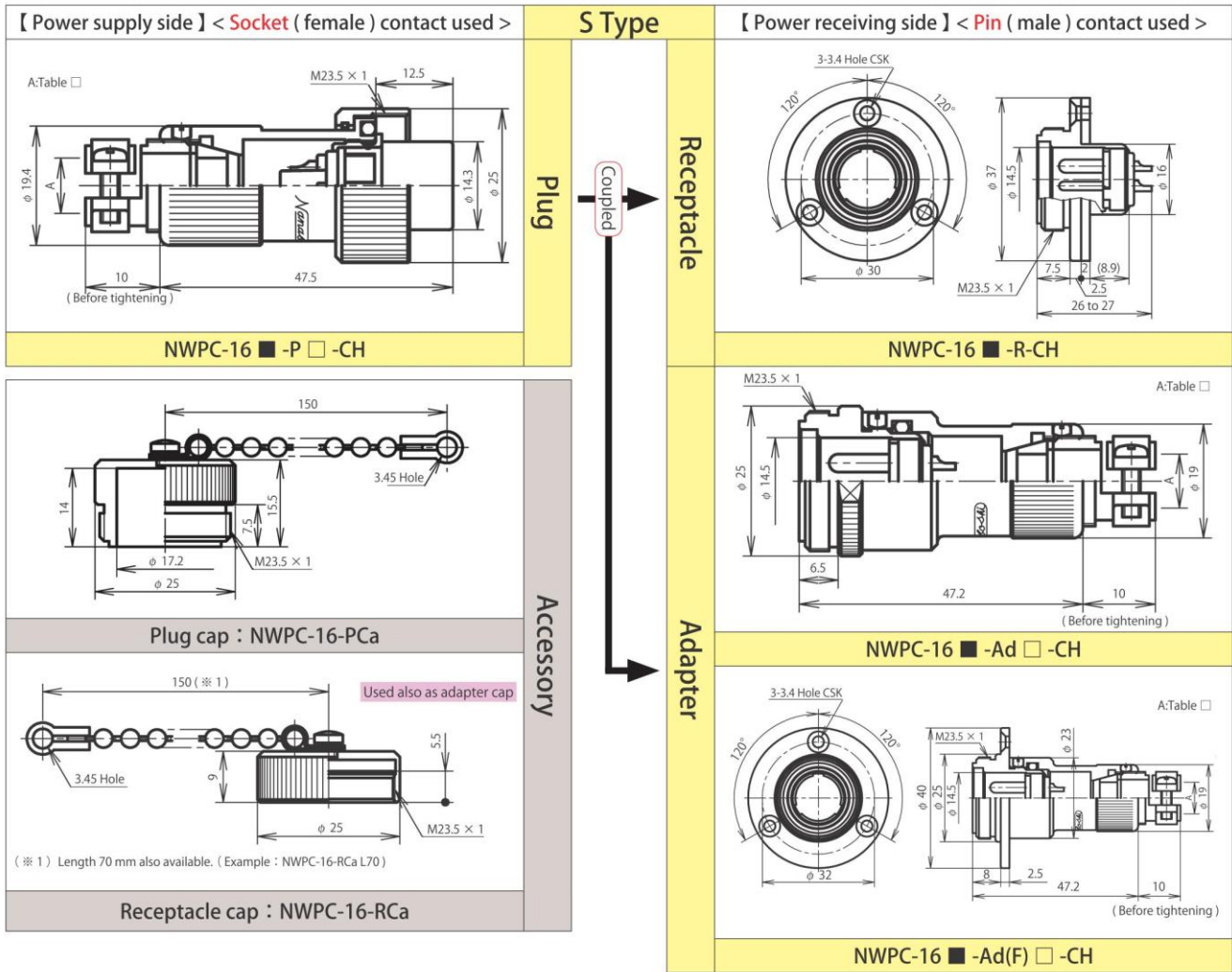
In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol □	Outer diameter of cable used
16	5	$\phi 4.5$ to $\phi 6.0$
	7	$\phi 6.1$ to $\phi 8.0$
	9	$\phi 8.1$ to $\phi 10.0$

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3
16	Contact arrangement <When viewed from the pin (male) contact coupling side>		
	Rating	125V 5A	
	Limit operating voltage (Note-1)	200V	
	Withstand voltage (V r.m.s.)	1,000	
	Wire size (mm ²)	0.75	

Note-1 : For the limit operating voltage, see p.131.



"-CH" is an additional symbol of renewed products. They are interchangeable with products before renewal.

For the plug and adapter, be sure to select □ (cable packing symbol).

Table □

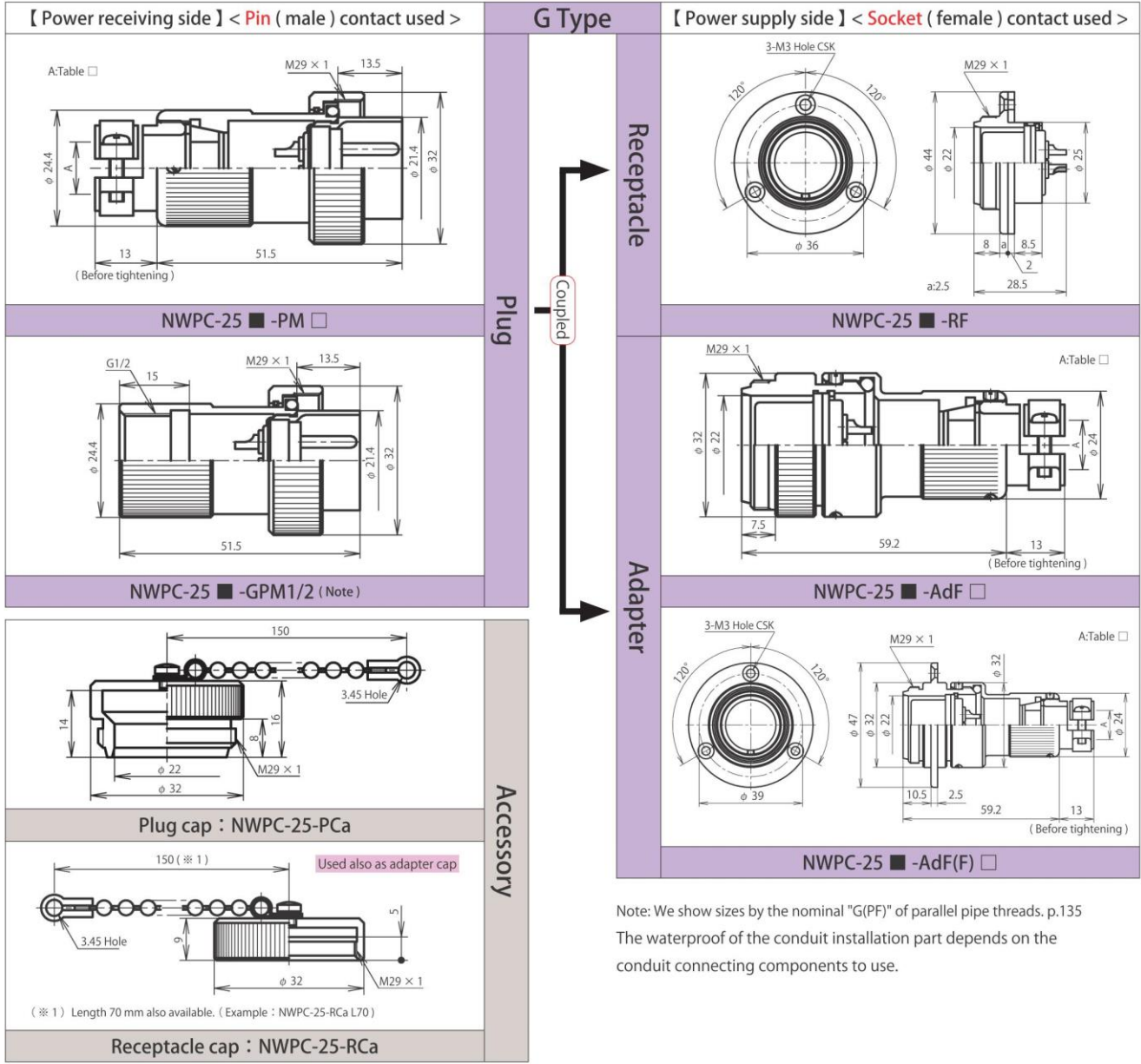
In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol □	Outer diameter of cable used
16	5	φ 4.5 to φ 6.0
	7	φ 6.1 to φ 8.0
	9	φ 8.1 to φ 10.0

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	1	2	3	4
16	Contact arrangement <When viewed from the pin (male) contact coupling side>				
	Rating	125V 10A	125V 5A		
	Limit operating voltage (Note-1)	200V			
	Withstand voltage (V r.m.s.)	1,000			
	Wire size (mm ²)	1.25	0.75		

Note-1 : For the limit operating voltage, see p.131.



Note: We show sizes by the nominal "G(PF)" of parallel pipe threads. p.135
 The waterproof of the conduit installation part depends on the conduit connecting components to use.

For the plug and adapter, be sure to select (cable packing symbol).

Table

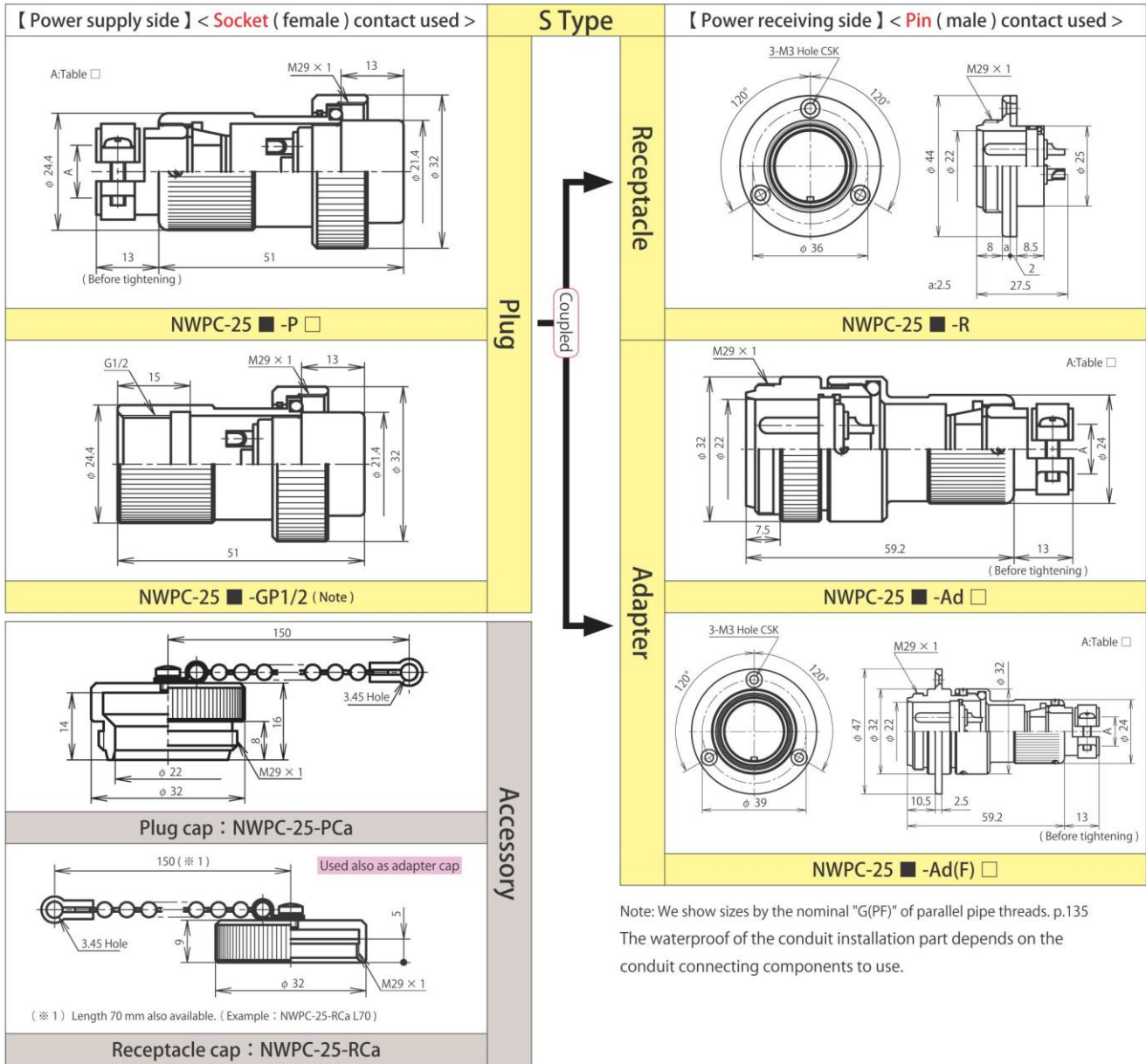
Shell size	Symbol <input type="checkbox"/>	Outer diameter of cable used
25	7	φ 6.5 to φ 8.0
	9	φ 8.1 to φ 10.0
	11	φ 10.1 to φ 12.0
	13	φ 12.1 to φ 14.0

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4	5	6	7
25	Contact arrangement <When viewed from the pin (male) contact coupling side>						
	Rating	250V 10A				250V 5A	
	Limit operating voltage (Note-1)	400V				300V	
	Withstand voltage (V r.m.s.)	2,000				1,800	
	Wire size (mm ²)	2				1.25	

Note-1 : For the limit operating voltage, see p.131.



Note: We show sizes by the nominal "G(PF)" of parallel pipe threads. p.135
The waterproof of the conduit installation part depends on the conduit connecting components to use.

For the plug and adapter, be sure to select (cable packing symbol).

Table

Shell size	Symbol <input type="checkbox"/>	Outer diameter of cable used
25	7	ϕ 6.5 to ϕ 8.0
	9	ϕ 8.1 to ϕ 10.0
	11	ϕ 10.1 to ϕ 12.0
	13	ϕ 12.1 to ϕ 14.0

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4	5	6	7	8	
25	Contact arrangement <When viewed from the pin (male) contact coupling side>								
	Rating	250V 10A						250V 5A	
	Limit operating voltage (Note-1)	400V				300V			
	Withstand voltage (V r.m.s.)	2,000				1,800			
	Wire size (mm ²)	2						1.25	

Note-1 : For the limit operating voltage, see p.131.

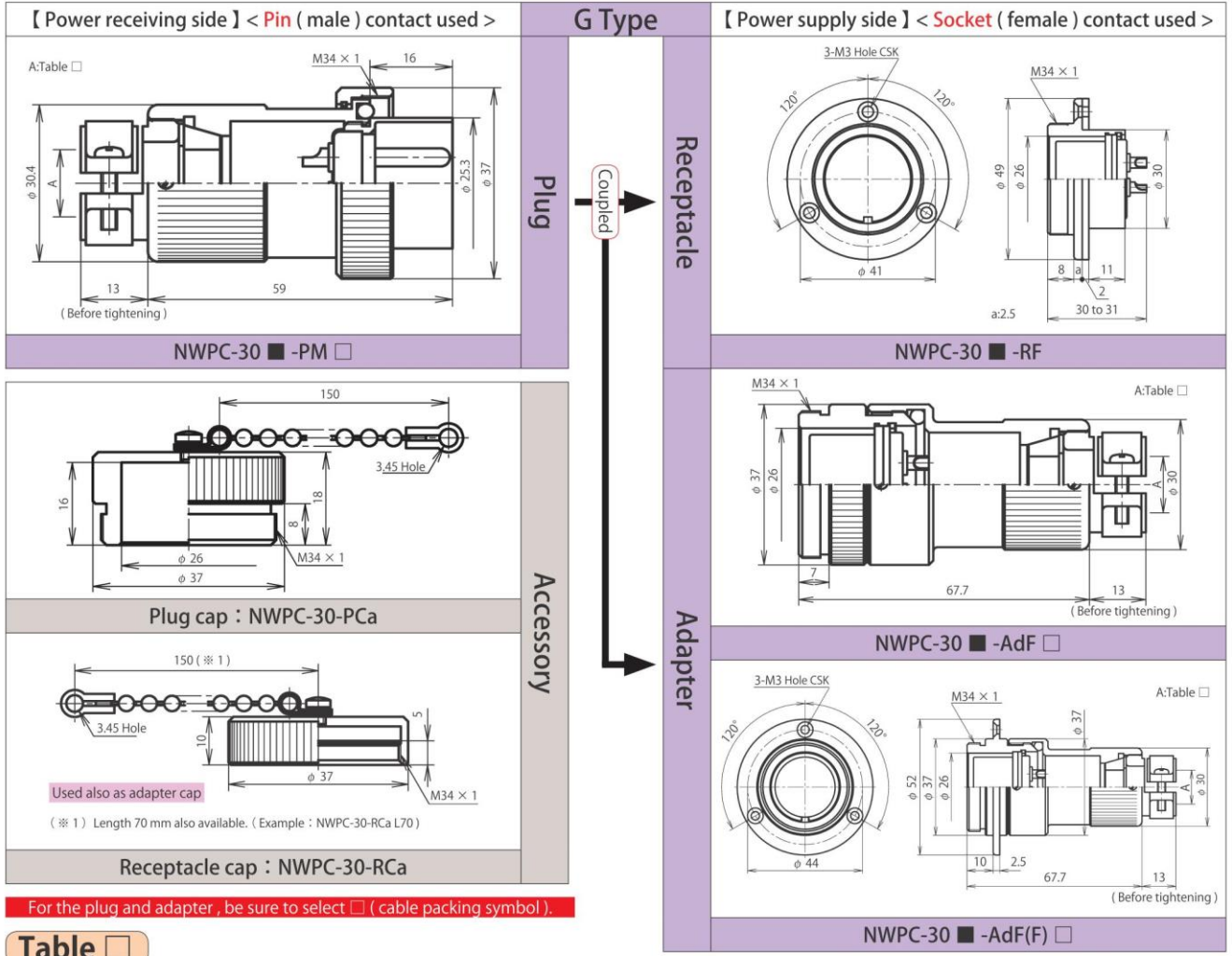


Table \square

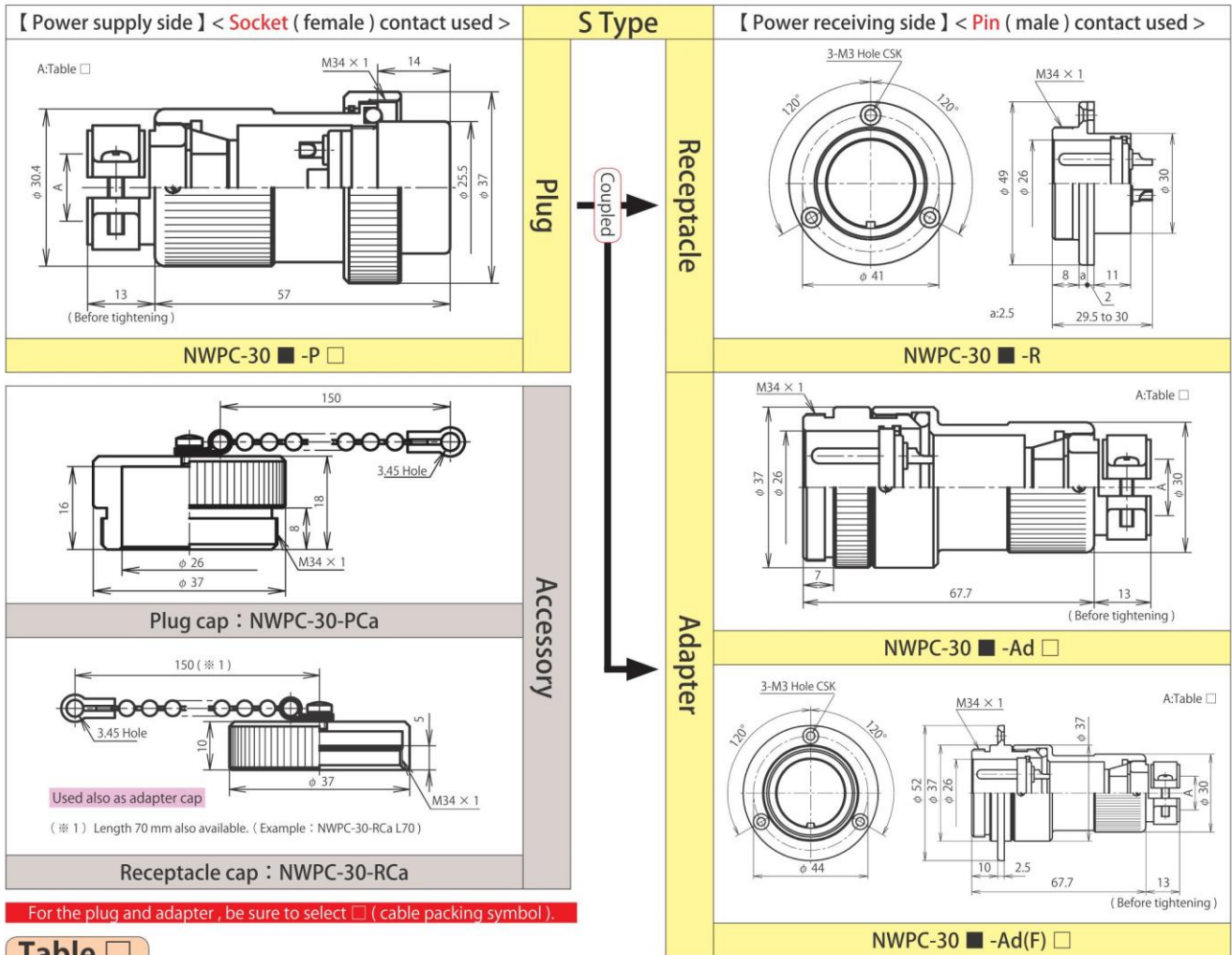
Shell size	Symbol \square	Outer diameter of cable used
30	9	ϕ 8.0 to ϕ 10.0
	11	ϕ 10.1 to ϕ 12.0
	13	ϕ 12.1 to ϕ 14.0
	15	ϕ 14.1 to ϕ 16.4
	17	ϕ 16.5 to ϕ 18.0

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

\blacksquare indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4	5	6	8
30	Contact arrangement <When viewed from the pin (male) contact coupling side>						
	Rating	250V 15A			250V 10A		250V 5A
	Limit operating voltage (Note-1)	400V				—	300V
	Withstand voltage (V r.m.s.)	2,000			1,800		
	Wire size (mm ²)	2					1.25

Note-1 : For the limit operating voltage, see p.131.



For the plug and adapter , be sure to select □ (cable packing symbol).

Table □

Shell size	Symbol □	Outer diameter of cable used
30	9	φ 8.0 to φ 10.0
	11	φ 10.1 to φ 12.0
	13	φ 12.1 to φ 14.0
	15	φ 14.1 to φ 16.4
	17	φ 16.5 to φ 18.0

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

[] : Gold plating contact

Shell size	Number of Contacts	2	3	4	5	6	7	7H	8	13
30	Contact arrangement <When viewed from the pin (male) contact coupling side>									
	Rating	250V 15A						250V[7A]	250V 10A	250V[5A]
	Limit operating voltage (Note-1)	400V						—	300V	—
	Withstand voltage (V r.m.s.)	2,000			1,800			1,500	1,800	1,500
	Wire size (mm ²)	3.5		2		1.25		2	1.25	

Note-1 : For the limit operating voltage, see p.131.

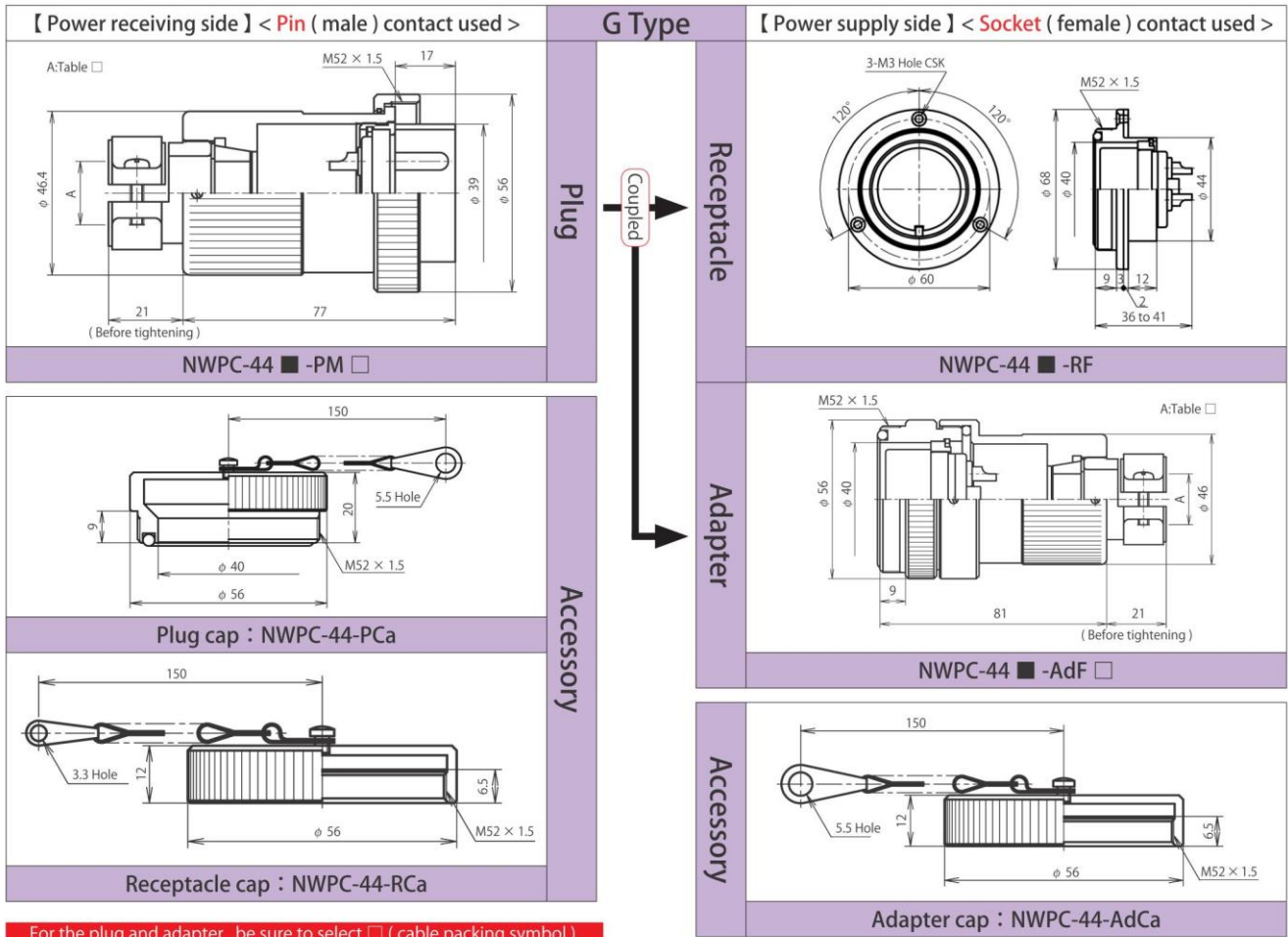


Table □

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

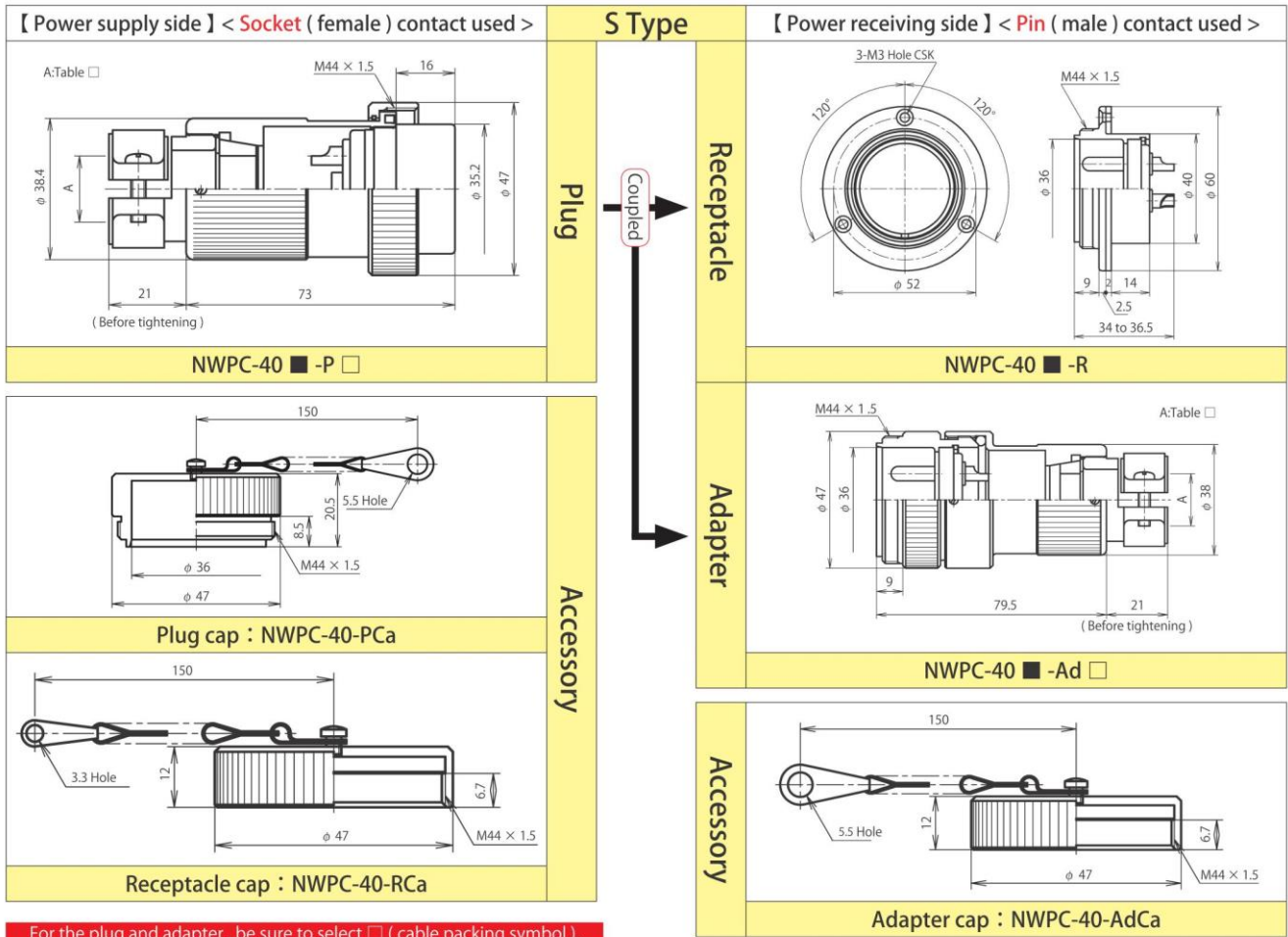
Shell size	Symbol □	Outer diameter of cable used
44	12	φ 11.0 to φ 13.0
	14	φ 13.1 to φ 15.0
	16	φ 15.1 to φ 17.0
	18	φ 17.1 to φ 19.0
	20	φ 19.1 to φ 21.5
	23	φ 21.6 to φ 23.0

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4	5	6	8	10	12	16	20
44	Contact arrangement <When viewed from the pin (male) contact coupling side>										
	Rating	250V 30A			250V 20A			250V 3pcs=10A 7pcs= 5A	250V 3pcs=10A 9pcs= 5A	250V 3pcs=10A 13pcs= 5A	250V 5A
	Limit operating voltage (Note-1)	500V			400V			300V			
	Withstand voltage (V r.m.s.)	2,500			2,000			1,800			
	Wire size (mm ²)	5.5			5.5			3pcs=2 7pcs=1.25	3pcs=2 9pcs=1.25	3pcs=2 13pcs=1.25	1.25

Note-1 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 40



For the plug and adapter, be sure to select □ (cable packing symbol).

Table □

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol □	Outer diameter of cable used
40	12	$\phi 11.0$ to $\phi 13.0$
	14	$\phi 13.1$ to $\phi 15.0$
	16	$\phi 15.1$ to $\phi 17.0$
	18	$\phi 17.1$ to $\phi 19.0$
	20	$\phi 19.1$ to $\phi 21.5$
	23	$\phi 21.6$ to $\phi 23.0$

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4	5	6	8	10	12	16	20
40	Contact arrangement <When viewed from the pin (male) contact coupling side>										
	Rating	250V 30A			250V 20A			250V 3pcs=10A 7pcs= 5A	250V 3pcs=10A 9pcs= 5A	250V 3pcs=10A 13pcs= 5A	250V 5A
	Limit operating voltage (Note-1)	500V			400V			300V			
	Withstand voltage (V r.m.s.)	2,500			2,000			1,800			
	Wire size (mm ²)	5.5			5.5			3pcs=2 7pcs=1.25	3pcs=2 9pcs=1.25	3pcs=2 13pcs=1.25	1.25

Note-1 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 54

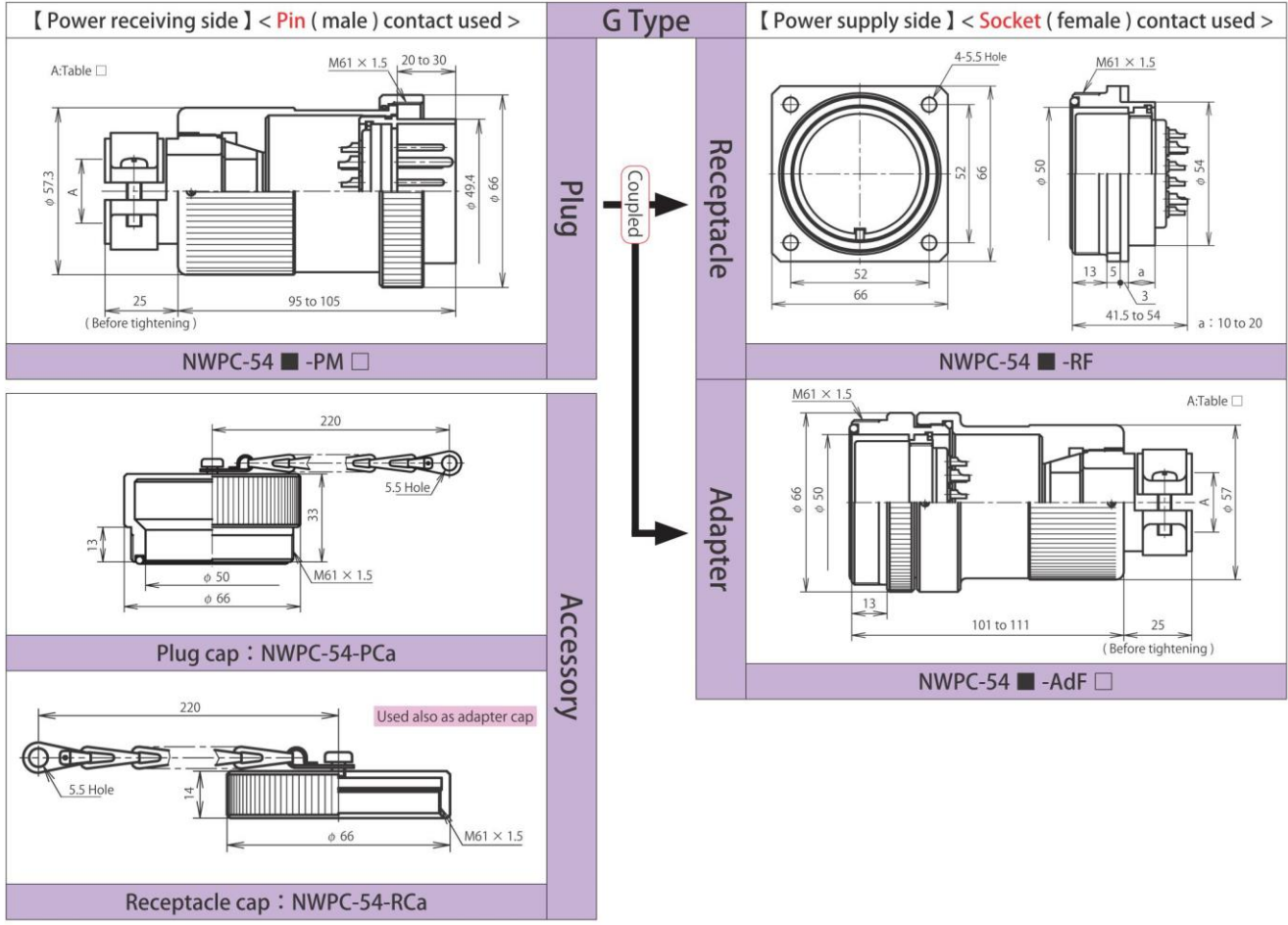


Table □

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol □	Outer diameter of cable used
54	16	φ 15.0 to φ 17.0
	18	φ 17.1 to φ 19.0
	20	φ 19.1 to φ 21.0
	22	φ 21.1 to φ 23.0
	24	φ 23.1 to φ 25.5
	27	φ 25.6 to φ 28.0

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

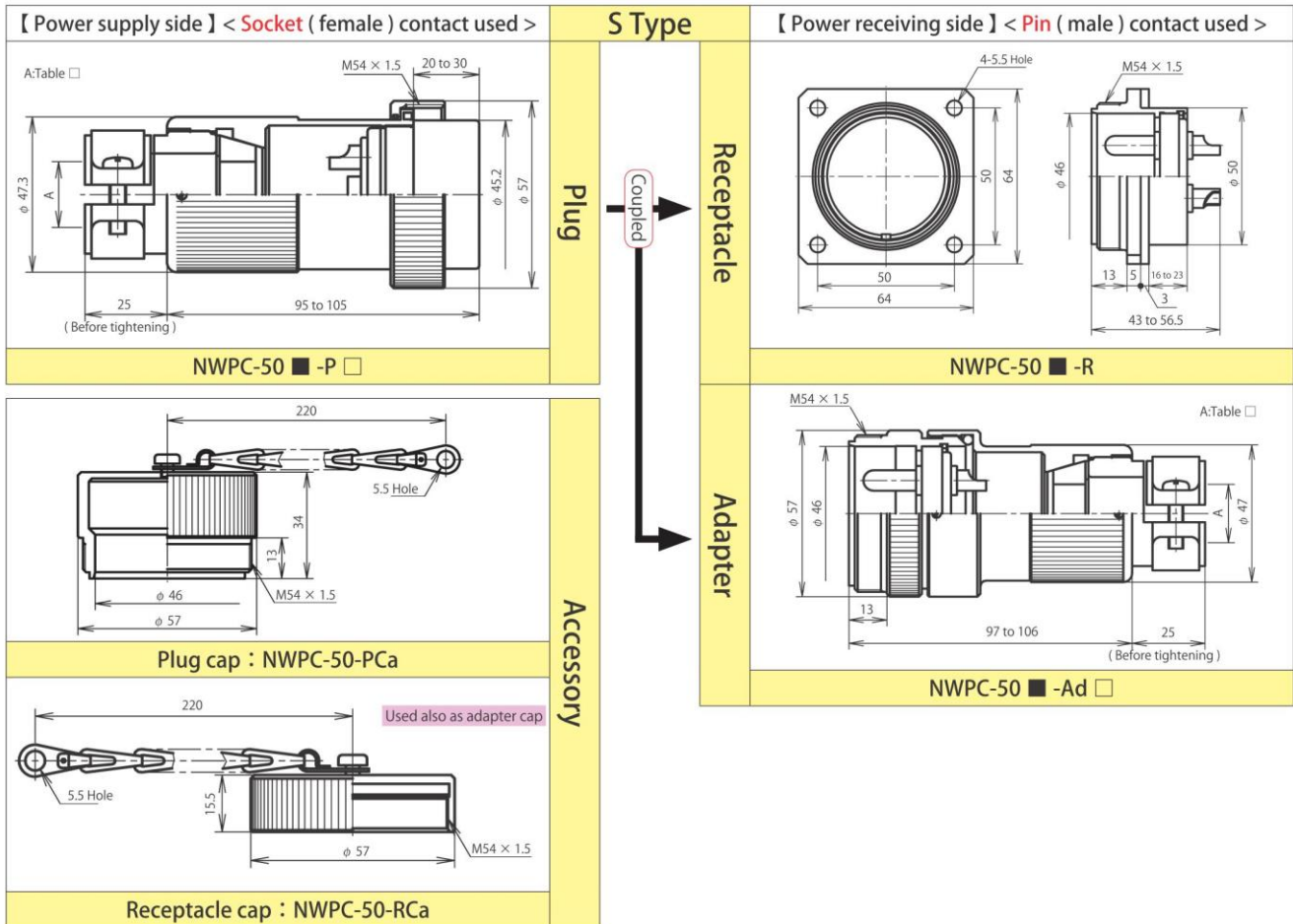
Shell size	Number of Contacts	2	3	4	8	10	15	25
54	Contact arrangement <When viewed from the pin (male) contact coupling side>							
	Rating	500V 80A	250V 50A	250V 25A	250V 20A	250V 15A	250V 15A	250V 4pcs=15A 21pcs= 5A
	Limit operating voltage (Note-1)	600V	500V	400V	300V			
	Withstand voltage (V r.m.s.)	3,000	2,500	2,000				1,800
	Wire size (mm ²)	30	14	3.5				4pcs=3.5 21pcs=2

Note-1 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 50

NWPC

50



For the plug and adapter, be sure to select □ (cable packing symbol).

Table □

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

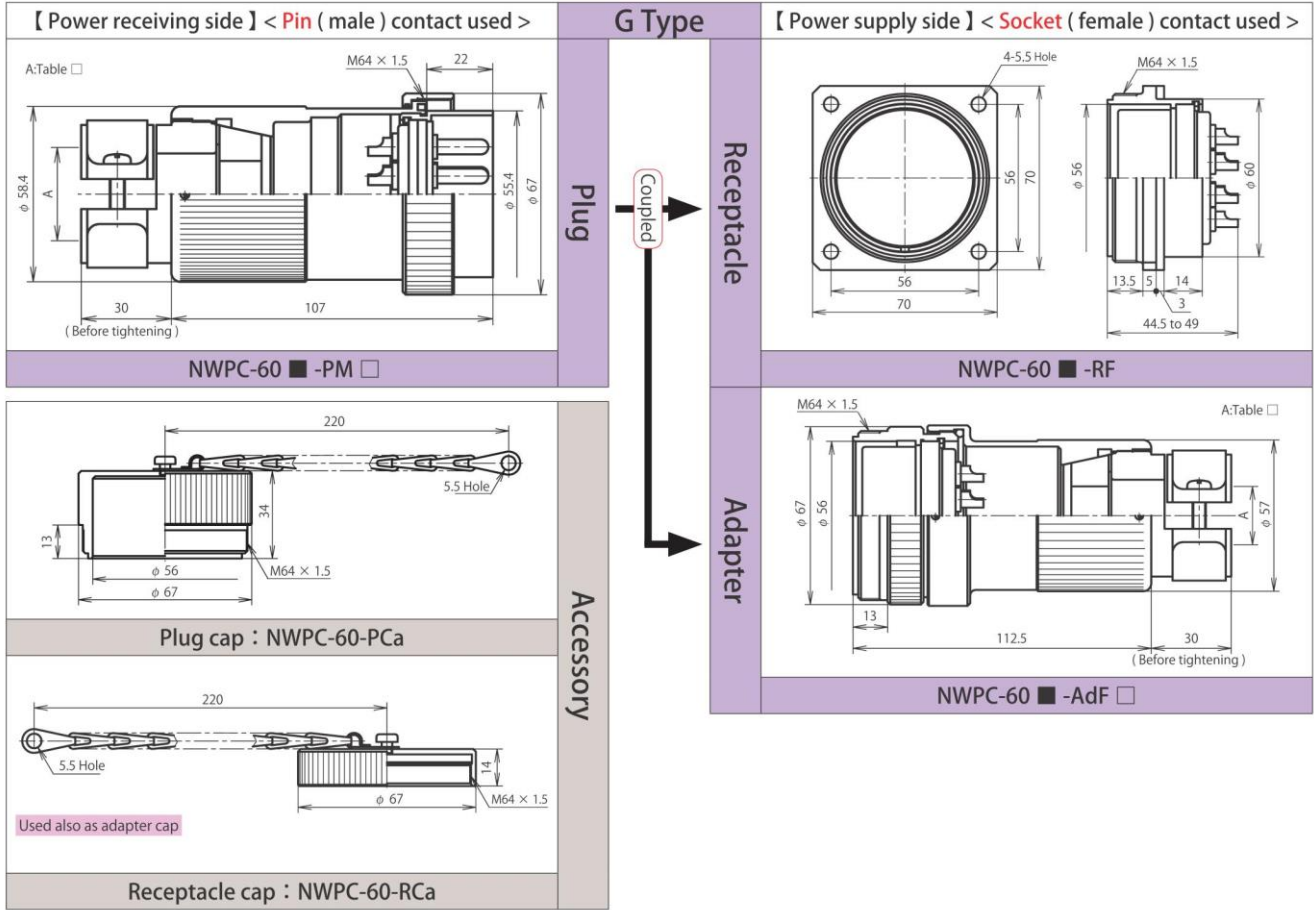
Shell size	Symbol □	Outer diameter of cable used
50	16	$\phi 15.0$ to $\phi 17.0$
	18	$\phi 17.1$ to $\phi 19.0$
	20	$\phi 19.1$ to $\phi 21.0$
	22	$\phi 21.1$ to $\phi 23.0$
	24	$\phi 23.1$ to $\phi 25.5$
	27	$\phi 25.6$ to $\phi 28.0$

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4	8	10	15	25
50	Contact arrangement <When viewed from the pin (male) contact coupling side>							
	Rating	500V 80A	250V 50A	250V 25A	250V 20A	250V 15A	250V	4pcs=15A 21pcs= 5A
	Limit operating voltage (Note-1)	600V	500V	400V	300V			
	Withstand voltage (V r.m.s.)	3,000	2,500	2,000				1,800
	Wire size (mm ²)	30	14	3.5				4pcs=3.5 21pcs=2

Note-1 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 60



For the plug and adapter, be sure to select □ (cable packing symbol).

Table □

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol □	Outer diameter of cable used
60	22	$\phi 21.0$ to $\phi 23.0$
	24	$\phi 23.1$ to $\phi 25.0$
	26	$\phi 25.1$ to $\phi 27.0$
	28	$\phi 27.1$ to $\phi 29.5$
	31	$\phi 29.6$ to $\phi 32.0$
	33	$\phi 32.1$ to $\phi 34.0$
	35	$\phi 34.1$ to $\phi 36.0$
37	$\phi 36.1$ to $\phi 38.0$	

2-, 3- and 4-core types are available in Shell size 64.

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

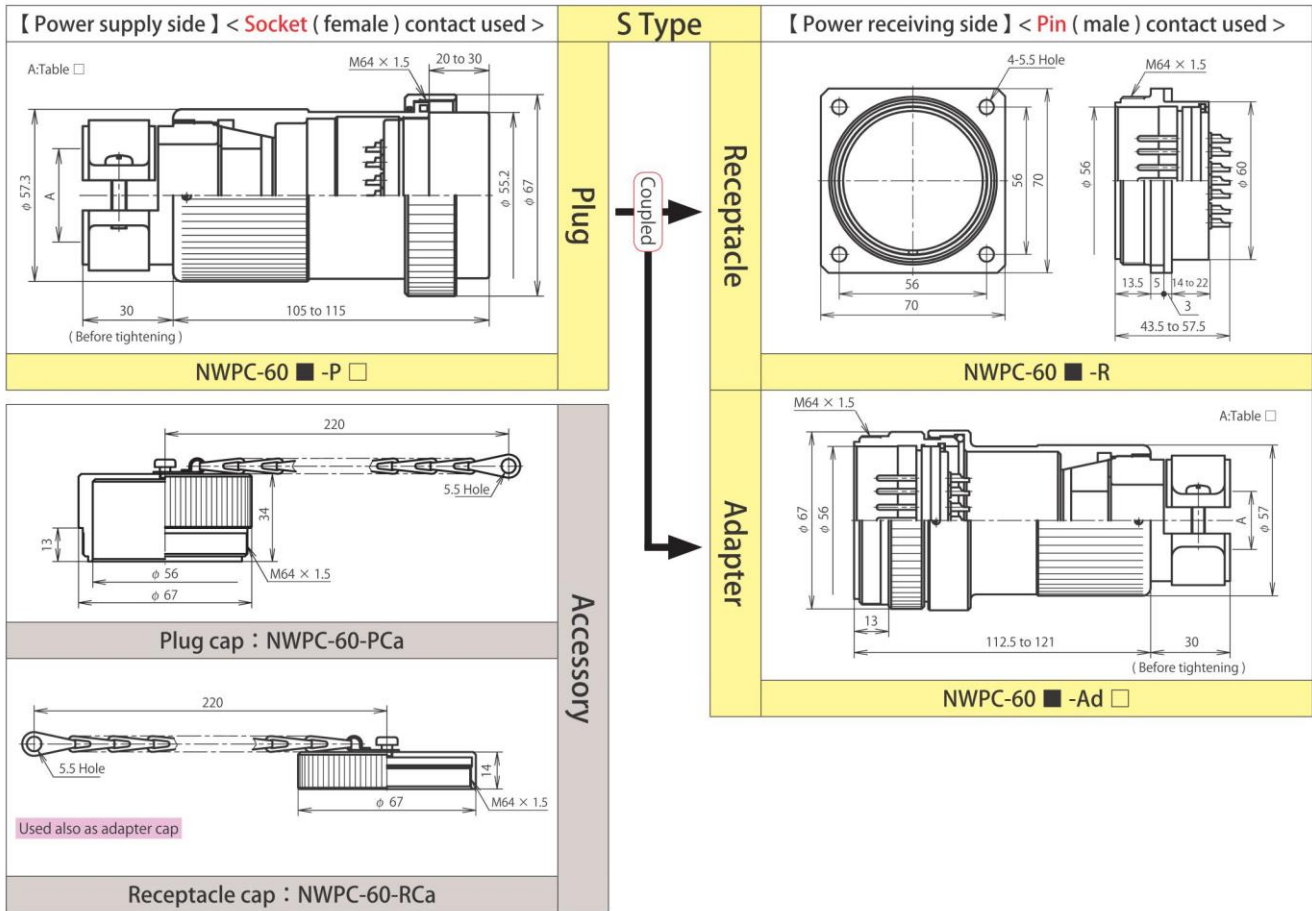
Shell size	Number of Contacts	10	15	30	32
60	Contact arrangement <When viewed from the pin (male) contact coupling side>				
	Safety standard	—			
	Rating	250V 30A	250V 15A	250V 5A	250V 3pcs=15A 29pcs= 5A
	Limit operating voltage (Note-1)	300V			
	Withstand voltage (V r.m.s.)	2,000		1,500	
	Wire size (mm ²)	8	3.5	2	3pcs=3.5 29pcs=2

Note-1 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 60

NWPC

60



For the plug and adapter, be sure to select □ (cable packing symbol).

Table □

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol □	Outer diameter of cable used
60	22	φ 21.0 to φ 23.0
	24	φ 23.1 to φ 25.0
	26	φ 25.1 to φ 27.0
	28	φ 27.1 to φ 29.5
	31	φ 29.6 to φ 32.0
	33	φ 32.1 to φ 34.0
	35	φ 34.1 to φ 36.0
37	φ 36.1 to φ 38.0	

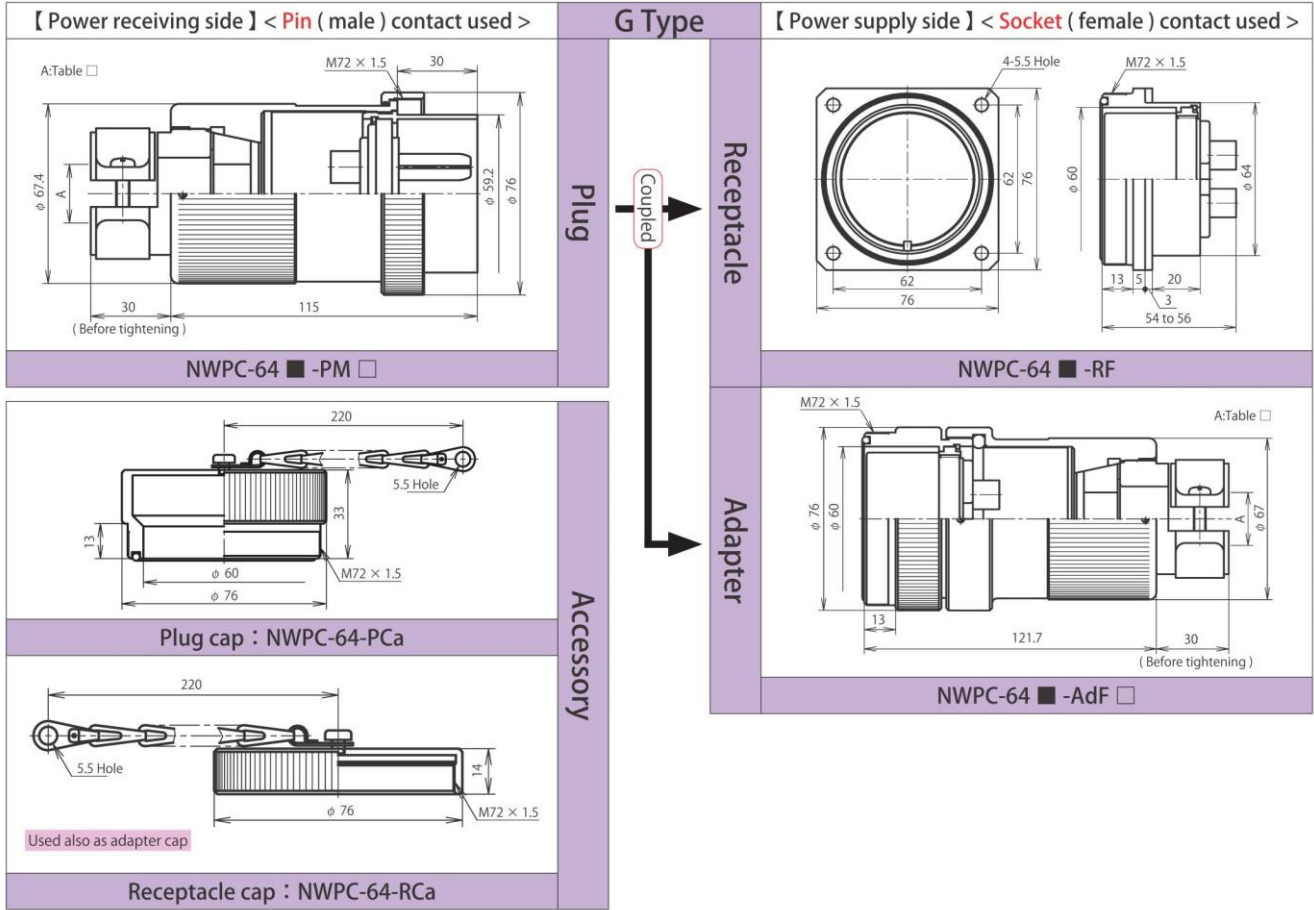
■ indicates the number of contacts.

The conductor cross sectional area is less than the following value. However, for safety standard certified products, use a cable having a value shown on p.129.

Shell size	Number of Contacts	2	3	4	10	15	30	32	40	
60	Contact arrangement <When viewed from the pin (male) contact coupling side>									
	Safety standard (Note-1)	—				CSA NRTL/C		—	CSA NRTL/C	
	Rating	500V 150A		500V 80A	250V 30A	250V 15A	250V 5A	250V 3pcs=15A 29pcs= 5A	250V 5A	
	Limit operating voltage (Note-2)	600V				300V				
	Withstand voltage (V r.m.s.)	3,000				2,500		1,800		
	Wire size (mm ²)	50		30	8	3.5	2	3pcs=3.5 29pcs=2	2	

Note-1 : Specified separately. For safety standards, see p.129. (The rated voltage of standard certified products is 265 V.) Note-2 : For the limit operating voltage, see p.131.

NWPC Series Shell Size 64



For the plug and adapter, be sure to select (cable packing symbol).

Table

In order to secure the intended waterproof function, a cable to be used for the plug/adapter should have an appropriate specification and structure.

Shell size	Symbol <input type="checkbox"/>	Outer diameter of cable used
64	22	φ 21.0 to φ 23.0
	24	φ 23.1 to φ 25.0
	26	φ 25.1 to φ 27.0
	28	φ 27.1 to φ 29.5
	31	φ 29.6 to φ 32.0
	33	φ 32.1 to φ 34.0
	35	φ 34.1 to φ 36.0
37	φ 36.1 to φ 38.0	

■ indicates the number of contacts. The conductor cross sectional area is less than the following value.

Shell size	Number of Contacts	2	3	4
64	Contact arrangement <When viewed from the pin (male) contact coupling side>			
	Rating	500V 150A	500V 80A	
	Limit operating voltage (Note-1)	600V		
	Withstand voltage (V r.m.s.)	3,000		
	Wire size (mm ²)	50	30	

Note-1 : For the limit operating voltage, see p.131.