Power Connectors Size 1,5 (M40)

Product Overview

Technical Data

Power Connectors Size 1,5 (M 40)

Mechanical Data	Materials and Technical Data
Housing	Copper-Zinc alloy Die Cast
Housing surface	Nickel plated, other surface upon request
Inserts (for contacts)	Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0
Contacts	Brass Alloy
Contact surface at point of contact	Nickel and gold plated (0,25 µm Au)
Minimum mating cycles	> 500
Seals / O-Rings	Buna-N standard optional Viton® (Viton is a registered trademark of DuPont)
Temperature range	-40° C – 125° C (-40 °F – 257 °F)
Type of contacts	Crimp
Protection	IP 67 / IP 69 K per EN 60 529 (connected), NEMA 4x
Cable diameter range	13 – 28 mm (.51" – 1.10")

Electrical Data

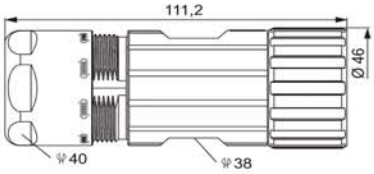
Number of positions	3 + 2 + PE		4 + 3 + PE	
Number of contacts	2	4	4	4
Contact-Ø [mm]	2	3,6	2	3,6
Nominal current [1] [A]	28	55	28	55
Nominal voltage [2] [V~] Degree of Protection 2 [3]	300	800	300	800
Nominal voltage [2] [V~] Degree of Protection 3 [3]	300	600	300	600
Test voltage (Breakdown voltage) [4] [V~]	2500	4000	2500	4000
Insulation resistance [mΩ]	$> 10^{13}$		$> 10^{13}$	
Max. contact resistance [mΩ]	3	1	3	1

[1], [2], [3], [4] See Technical Informations page 14

Standard delivery of M 40 (size 1.5) Power Connector include Contact Insert

Power Connectors Size 1,5 (M 40)

Straight Connector, Female Thread



Cable-Ø	Part Number
2 + 3 + PE, insert for sockets	
13 – 18 mm (.51 – .71")	7.710.623.000
17 – 24 mm (.67 – .97")	7.710.723.000
21 – 28 mm (.83 – 1.10")	7.710.823.000

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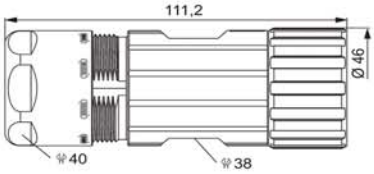
Straight Connector, Female Thread



Cable-Ø	Part Number
4 + 3 + PE, insert for sockets	
13 – 18 mm (.51 – .71")	7.710.643.000
17 – 24 mm (.67 – .97")	7.710.743.000
21 – 28 mm (.83 – 1.10")	7.710.843.000

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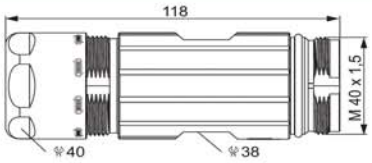
Straight Connector, Male Thread



Cable-Ø	Part Number
2 + 3 + PE, insert for pins	
13 – 18 mm (.51 – .71")	7.720.623.000
17 – 24 mm (.67 – .97")	7.720.723.000
21 – 28 mm (.83 – 1.10")	7.720.823.000

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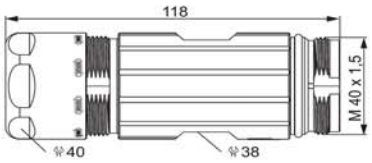
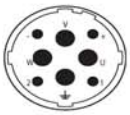
Straight Connector, Male Thread





Cable-Ø	Part Number
4 + 3 + PE, insert for pins	
13 – 18 mm (.51 – .71")	7.720.643.000
17 – 24 mm (.67 – .97")	7.720.743.000
21 – 28 mm (.83 – 1.10")	7.720.843.000

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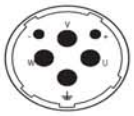
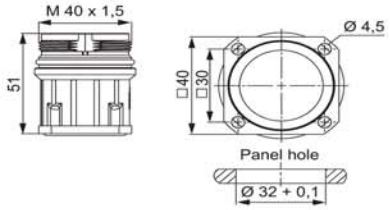
Power Connectors Size 1,5 (M 40)

Type	Part Number	Panel Connector, Male Thread, Front Mounting
2+3+PE, insert for pins 4 holes Ø 4,5 mm (.18")	7.740.023.000	

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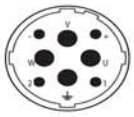
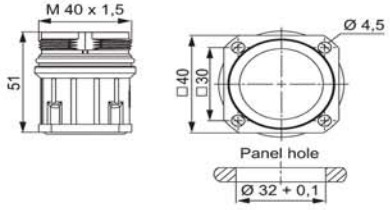
Type	Part Number	Panel Connector, Male Thread, Front Mounting
4+3+PE, insert for pins 4 holes Ø 4,5 mm (.18")	7.740.043.000	

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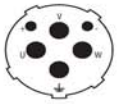
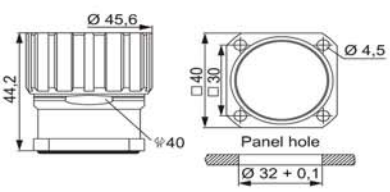
Type	Part Number	Panel Connector with knurled Nut, Front Mounting
2+3+PE, insert for sockets 4 holes Ø 4,5 mm (.18")	7.744.023.000	

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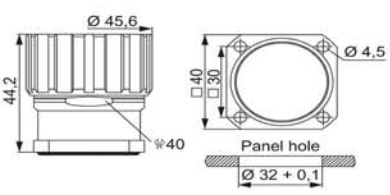
Type	Part Number	Panel Connector with knurled Nut, Front Mounting
4+3+PE, insert for sockets 4 holes Ø 4,5 mm (.18")	7.744.043.000	

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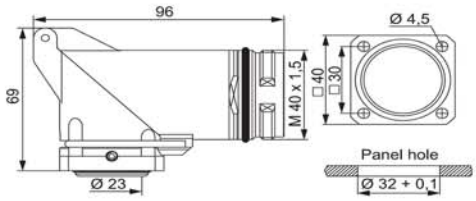
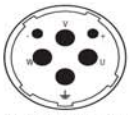
Power Connectors Size 1,5 (M 40)

Right Angle Panel Connector, Male Thread, rotating

Type	Part Number
2 + 3 + PE, insert for pins 4 holes Ø 4,5 mm (.18")	7.743.023.000





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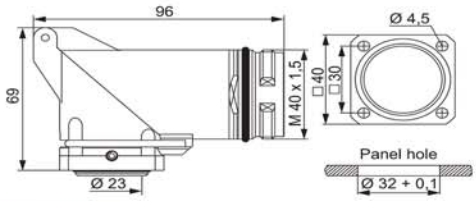
Right Angle Panel Connector, Male Thread, rotating

Type	Part Number
4 + 3 + PE, insert for pins 4 holes Ø 4,5 mm (.18")	7.743.043.000



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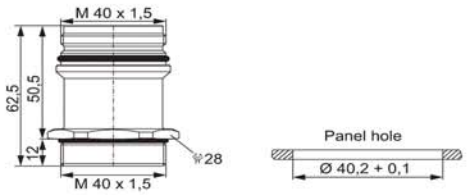
Panel Connector, Male Thread, Single Hole Mounting

Type	Part Number
Front mounting, 2 + 3 + PE, insert for pins Thread M 40 x 1,5	7.742.023.000



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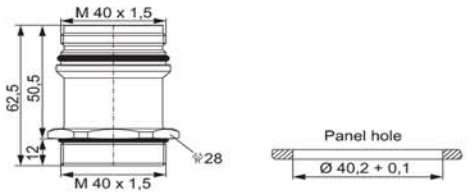
Panel Connector, Male Thread, Single Hole Mounting

Type	Part Number
Front mounting, 4 + 3 + PE, insert for pins Thread M 40 x 1,5	7.742.043.000



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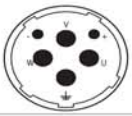
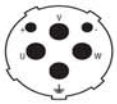
Power Connectors Size 1,5 (M 40) / Required Contacts

	Type of Contact	Contact Arrangement, Mating View
Insert for pins 2 + 3 + PE	2 x crimp pins 2 mm 4 x crimp pins 3,6 mm	
Insert for sockets 2 + 3 + PE	2 x crimp sockets 2 mm 4 x crimp sockets 3,6 mm	
Insert for pins 4 + 3 + PE	4 x crimp pins 2 mm 4 x crimp pins 3,6 mm	
Insert for sockets 4 + 3 + PE	4 x crimp sockets 2 mm 4 x crimp sockets 3,6 mm	

Power Connectors Size 1,5 (M 40) / Contacts

Contacts	Type of Contact	Crimp Range	Part Number
	Crimp pin 2 mm, machined	1 – 4 mm² (AWG 17 – 12)	7.015.952.001
	Crimp socket 2 mm, machined	1 – 4 mm² (AWG 17 – 12)	7.015.952.002
	Crimp pin 3,6 mm, machined	1,5 – 4 mm² (AWG 16 – 12)	7.015.953.601
	Crimp socket 3,6 mm, machined	1,5 – 4 mm² (AWG 16 – 12)	7.015.953.602
	Crimp pin 3,6 mm, machined	6 mm² (AWG 10)	7.015.953.611
	Crimp socket 3,6 mm, machined	6 mm² (AWG 10)	7.015.953.612
	Crimp pin 3,6 mm, machined	10 mm² (AWG 8)	7.015.953.621
	Crimp socket 3,6 mm, machined	10 mm² (AWG 8)	7.015.953.622

For appropriate setting of crimp tool see page 148

Power Connectors Size 1,5 (M 40) / Contacts

Type	Part Number	Contacts
Crimp pin 3,6 mm, machined ....16 mm² (AWG 6)	7.015.953.631	
Crimp socket 3,6 mm, machined..16 mm² (AWG 6)	7.015.953.632	

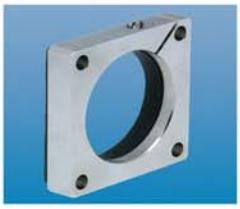
Crimp Tool Settings see page 144

For appropriate setting of crimp tool see page 148

Power Connectors Size 1,5 (M40) / Accessories

Accessories	Type	Part Number
	Plastic protective cap for connectors with female thread	7.000.900.152
	Plastic protective cap for connectors with male thread	7.000.900.151
	Brass protective cap for connectors with female thread	7.015.900.103
	Brass protective cap for connectors with male thread	7.015.900.102
	Brass protective cap with rope for connectors with female thread	7.015.9S1.003
	Brass protective cap with rope for connectors with male thread	7.015.9S1.002

Power Connectors Size 1,5 (M 40) / Accessories

Type	Part Number	Accessories
Adaptor flange for Straight Connectors	7.010.900.129	
Adapter for Conduit Fittings Snapflex 25 DN 23 Snapflex 32 DN 29	 7.010.900.214 7.010.900.215 7.010.900.216 7.010.900.217	
Crimp tool for manual crimping of machined crimp contacts up to 10 mm² (AWG 8) for power connectors See page 140 / 141 for crimp tool instructions and page 144 for proper setting	7.000.900.902	
Crimp tool for manual crimping of machined crimp contacts 16 mm² (AWG 6) See page 142 / 143 for crimp tool instructions and page 144 for proper setting	7.000.900.903	

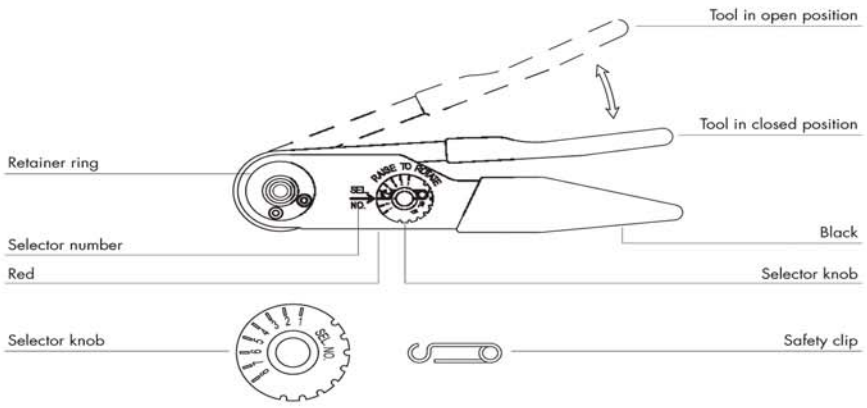
Crimp Tool for Power Connectors Size 1,5 (M40)

Crimp Tool	Type	Part Number
	Crimp tool	7.000.900.902

Application
The four indent crimp tool 7.000.900.902 has been developed for optimal crimping of machined contacts with diameters from 1 to 10 mm² (18 through 8 AWG).

How to Crimp
The reference table indicates the correct locator position to be selected and the crimp depth to be adjusted for the contact to be crimped. The contact is then inserted through the access hole of the tool on the opposite side of the locator. The contact is held in place by closing the handles to the first lock-in position thus preventing the contact from falling out of the tool and facilitating insertion of the wire into the contact.
The precision ratchet assures consistently accurate crimping every time by forcing the tool to be closed all the way completing the crimping cycle before the tool can be opened again.

Exchange of the Locator
The locator can be exchanged by removing the socket head cap screw with a socket wrench. Then it can be disassembled from the hex head screw by turning it counter-clockwise.



Crimp Tool for Power Connectors Size 1,5 (M 40)

Crimp Tool

Setting Up Instructions
1. Tool must be in open position
2. Place selected single position head assembly onto retainer ring with alignment pin in alignment pin hole
3. After single position head is seated against retainer ring, tighten socket head screws with 9/64 inch socket head screw key
4. Refer to dataplate on single position head. From the proper wire size column, determine the selector number that corresponds with the contact being used
5. Remove spring clip lock wire from selector knob. Raise selector knob and rotate until selector number is in line with index mark. Replace spring clip lock wire (optional)

Crimping Instructions
1. Insert contact and prepared wire through the indenter opening into positioner
2. Squeeze handles together until ratchet releases. Handle will return to open position. Remove crimped contact and wire

Removing Single Position Head
Loosen socket head screws until threads are disengaged from retainer ring and remove with a straightlifting motion

Gaging Instructions
The correct function of the crimp tool has to be checked with a gage (item no. 7.010.900.117).

„GO"-Gaging (green)
Operate tool to fully closed position. Maintain firm hand pressure on the tool handles. Insert „GO" gage end. Gage must pass freely between indenter tips.

„NO-GO"-Gaging (red)
Operate tool to fully closed position. Maintain firm hand pressure on the tool handles. Insert „NO-GO" gage end. The „NO-GO" gage may partially enter the indenter opening, but must not pass completely through the opening.

Care of Tool
There is virtually no maintenance required. However, it is a good practice to keep intenter tips free of residual color band deposits and other debris. A small wire brush may be used for this purpose.

We strongly recommend that you:
1. Do not immerse tools in cleaning solution
2. Do not spray oil into tool to lubricate
3. Do not attempt to disassemble tool or make repairs

This is a precision crimp tool and should be handled as such.

Crimp Tool for Power Connectors Size 1,5 (M 40)

Crimp Tool	Type	Part Number
	Crimp tool for contacts 16 mm² (AWG 6)	7.000.900.903

Application
The hand crimp tool 7.000.900.903 has been developed for optimal crimping of a large variety of connectors and terminals by using different interchangeable crimping dies.

Operation
- Select crimp insert and install in tool
- Insert and align crimp contact in tool
- Compress tool until contact is held in place
- Insert conductor into contact
- Fully compress tool (tool will reopen automatically)
- Remove crimped conductor from tool

Crimp Tool for Power Connectors Size 1,5 (M40)

Crimp Tool

Adjustment of crimp force and height
Crimp force adjustment is done in the factory (120 – 180 N when unloaded). Tool frame and jaws are connected that way, an optimal crimping result will be obtained based on the hand force indicated above. In case the result (e.g. crimp height, pull-out force, etc.) does not meet the requirements of the plug manufacturer, the following reasons can be considered:

a) Normal wear of tool
Readjustment possible

b) Worn dies
Dies have to be replaced

The quality personnel is authorized to control and readjust these parameters as described below:
- Unscrew the set screw by means of a screw driver
- Rotating the adjustment wheel anticlockwise, the crimp force increases and the crimp height decreases (+)
- Rotating the adjustment wheel lockwise, the crimp force decreases and the crimp height increases (-)
- When readjusting the hand force shall not exceed 180 N
- Before using the tool, the operator has to check the adjustment wheel being firmly secured by the set screw

Maintenance
Keep the tool clean and properly stored when not in service. The joints need to be regularly oiled and the circlips securing the bolts have to be always in place. Never use abrasives or hard material to clean the jaws. Please contact the manufacturer when the tool needs to be repaired or in case of readjustment problems.

Crimp Tool for Power Connectors Size 1,5 (M 40)

Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.902)

Part Number	Contact	Cross Section mm²	AWG	Crimp Tool Setting mm	Locator Setting
7.015.952.001	Crimp pin 2 mm	1	17	2	3
		1,5	16	3	3
		2,5	14	4	3
		4	12	4	3
7.015.952.002	Crimp socket 2 mm	1	17	2	1
		1,5	16	3	1
		2,5	14	4	1
		4	12	4	1
7.015.953.601	Crimp pin 3,6 mm	1,5	16	3	2
		2,5	14	4	2
		4	12	5	2
7.015.953.602	Crimp socket 3,6 mm	1,5	16	3	4
		2,5	14	4	4
		4	12	5	4
7.015.953.611	Crimp pin 3,6 mm	6	10	5	2
7.015.953.612	Crimp socket 3,6 mm	6	10	5	4
7.015.953.621	Crimp pin 3,6 mm	10	8	7	2
7.015.953.622	Crimp socket 3,6 mm	10	8	7	4

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.

Assembly information see page 148

Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.903)

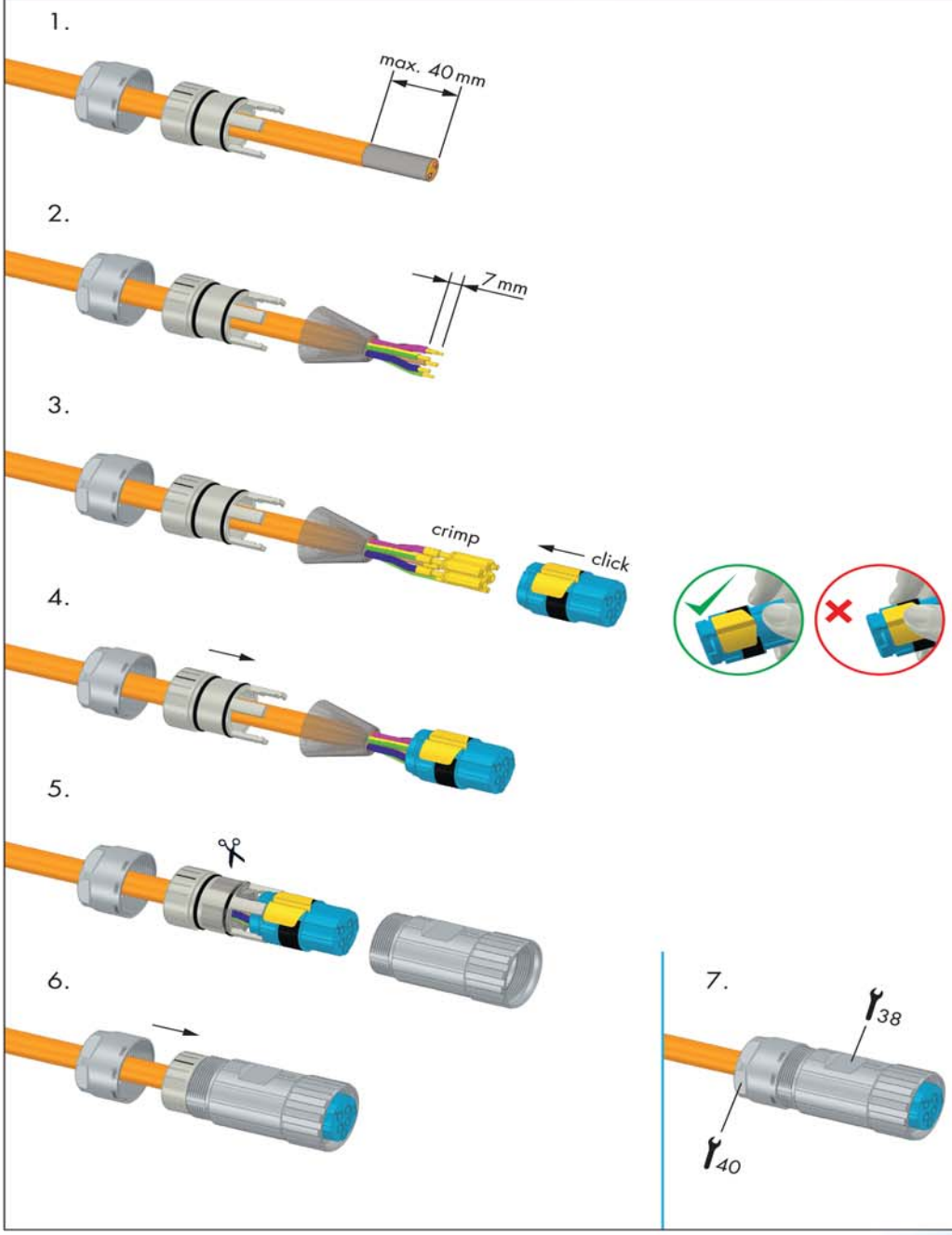
Part Number	Crimp Contact	Cross Section mm²	AWG	Crimp Tool Setting
7.015.953.631	Crimp pin 3,6 mm	16	6	die 16
7.015.953.632	Crimp socket 3,6 mm	16	6	die 16

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.

Assembly information see page 148

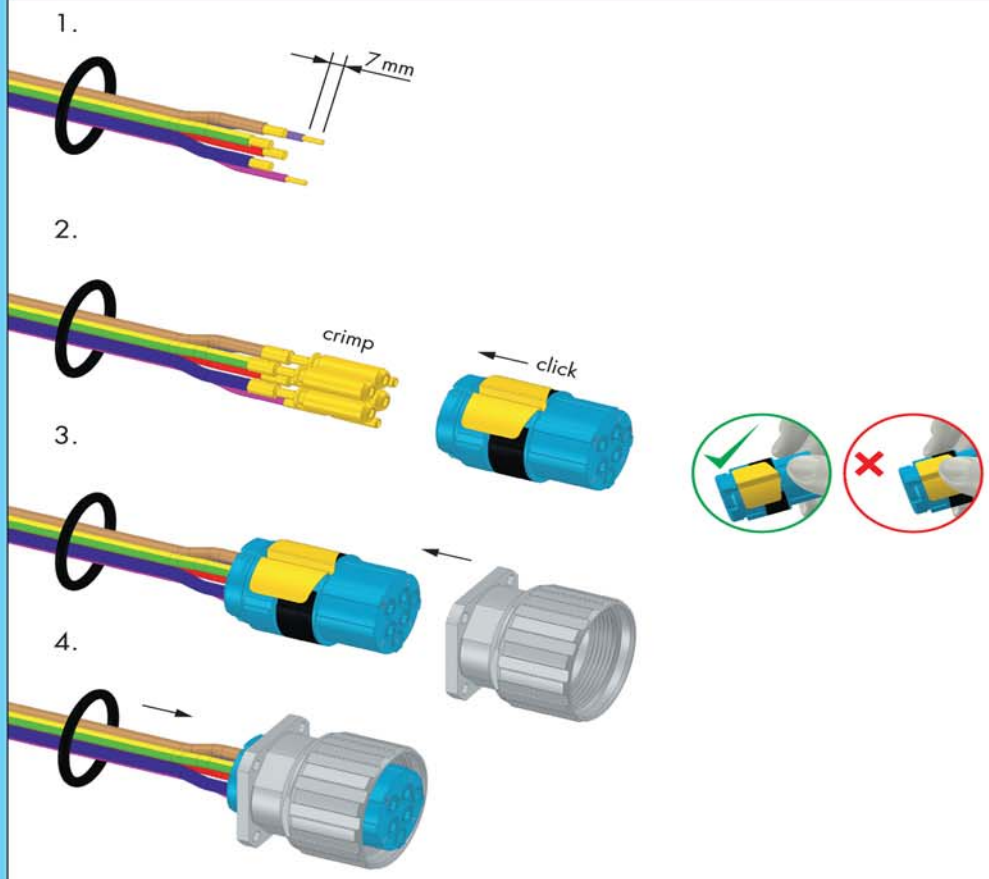
Power Connectors Size 1,5 (M40) / Assembly Instructions

Straight Connector, Female Thread / Male Threaded Connector



Power Connectors Size 1,5 (M 40) / Assembly Instructions

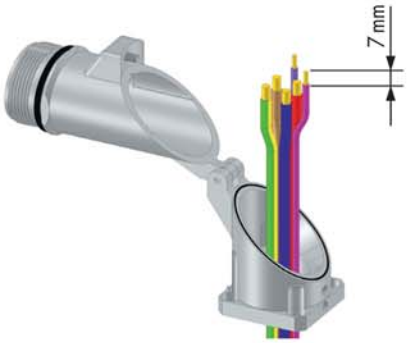
Panel Connector



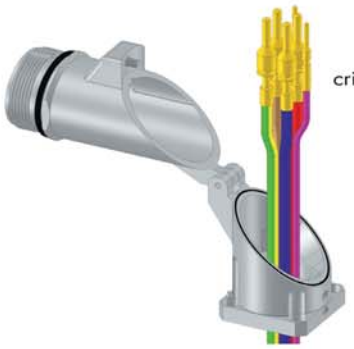
Power Connectors Size 1,5 (M40) / Assembly Instructions

Right Angle Panel Connector

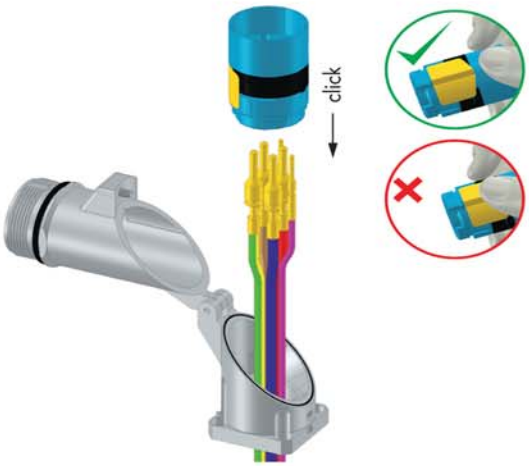
1.



2.



3.



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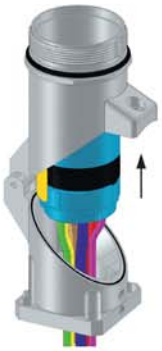

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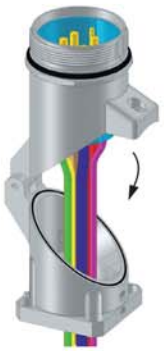
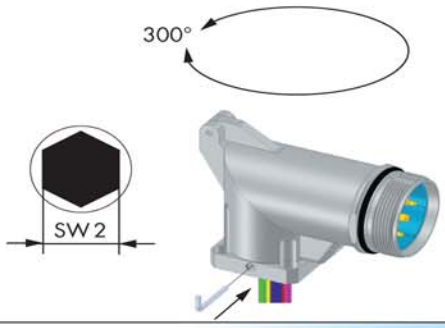


6.

7.



Crimping, Assembly and Disassembly

Crimping, Assembly and Disassembly

Crimping
- Strip wire ends 7 mm (.28")
- Dial appropriate setting of crimp tool (page 144)
- Push crimp contact into opening of crimping tool
- Insert stripped wire into the funnel shaped end of the crimp contact
- Squeeze handles of crimping tool together connect contact to wire

Assembly
- Remove crimped assembly and pull on wire to test connection
- Push into desired position of insert
  Note: It is recommended to assemble the large contacts first.

Disassembly of Contacts from Insert
A small screwdriver is needed to remove the contacts from the insert.

- Release the white ring by a screwdriver out of the insert
- Move the misplaced contacts out of the insert
- Enter the ring back into the insert
- Push the contacts back into insert

Shielding
- Assemble strain relief insert with insert
- Fold stranding of the shield back over the first O-Ring of the strain relief insert
- Cut back the overextending braid

⚠ The stranding of the shield is not allowed to touch the second O-Ring. Otherwise the assembly may not be proof.