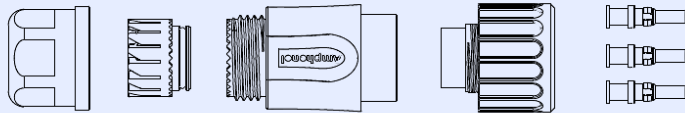


# eco|mate Aquarius 1/3 Bayonet Mounting Instructions

## Mounting instruction male & female Plugs

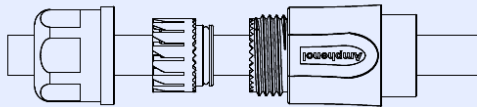
The connector kit usually includes two different sealings. Check the drawing for the accepted diameters of each and chose the correct one for assembling, Example:

DIMENSION #A	CABLE OD RANGE
7.0MM	4.0-5.5MM
8.8MM	5.0-8.8MM



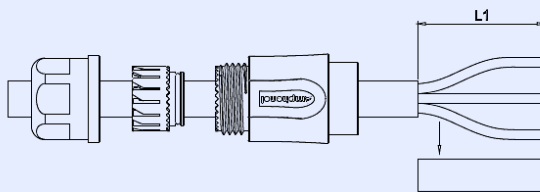
### Step 1

Slid cord grip on cable.



### Step 2

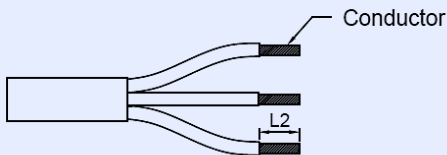
Strip the cable jacket. The stripping length refer to table 1.



Shell size	Contact type	L1 Stripping length (mm)
10	Pin	25~30
	Socket	35~40
12	Pin	30~35
	Socket	40~45
14	Pin	35~40
	Socket	40~45
16	Pin	35~40
	Socket	45~50
18	Pin	35~40
	Socket	45~50

### Step 3

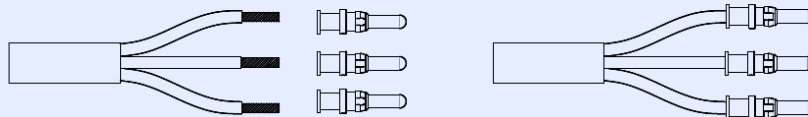
Strip the wires, the stripping refer to table 2.

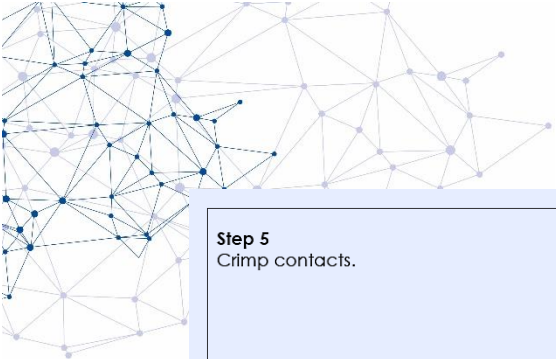


Contact size	L2 (mm) Stamping	L2 (mm) Machined
3.6mm	N/A	7.5~8.5
2.5mm	8.5~9.5	N/A
1.6mm	5.0~5.5	7.5~8.5
1.0mm	5.5~6.0	7.0~8.0

### Step 4

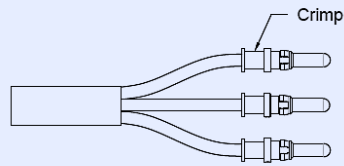
Assmeby contacts.



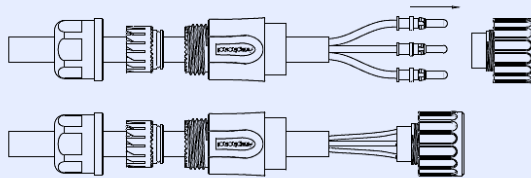


**Step 5**  
Crimp contacts.

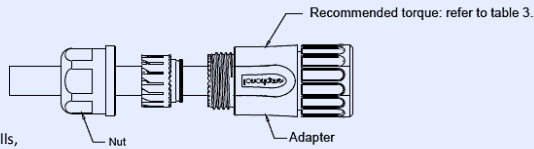
Please take note: Size 8 plugs and receptacles are pre-loaded with solder contacts. Wave soldering only, no high temperature processes



**Step 6**  
Assembly contacts into connector.



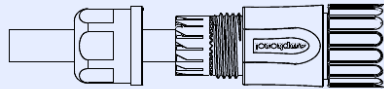
**Step 7**  
Assembly back shell.



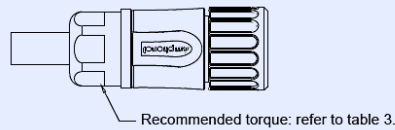
Info: In case you want to use the Ecomate RM 90° Backshells, the thread should be equipped with an additional o-ring

Shell size	Adapter tightening torque range (N.m)	Nut tightening torque range (N.m)
10	1.5-1.7	1.0-1.2
12	2.0-2.2	2.5-2.7
14	2.8-3.0	2.5-2.7
16	2.8-3.0	3.0-3.2
18	4.3-4.5	3.0-3.2

**Step 8**  
Push the seal ring into the back shell.



**Step 9**  
Assembly end nut, complete the installation.



**Colored Coding Rings**



**Colored Coding Rings:**

Placed between cable plug/backshell and directly onto the receptacle

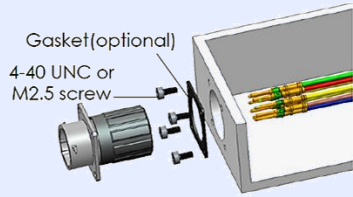
- Red: RTS\*CCRR
- Green: RTS\*CCRG
- Yellow: RTS\*CCRY

\* = shell size 8/10/12/14/16/18

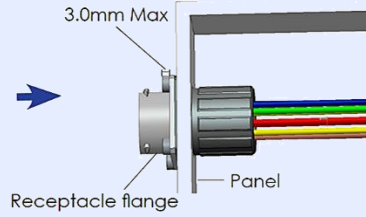


## Mounting instruction Square Flange Receptacles

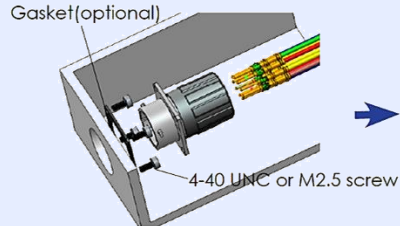
### Front mounting : Crimp



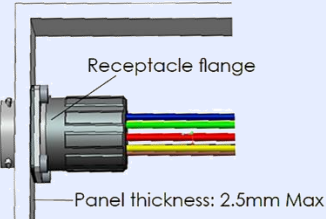
### After mounting



### Rear mounting : Crimp version



### After mounting

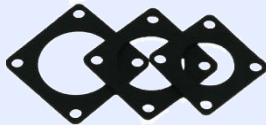


#### Mounting Instruction:

1. Check drawings for panel cutout dimensions
2. Strip wires and crimp on the contacts
3. Insert the wired contacts into the connector
4. Place gasket and receptacle in right position
5. Fix the receptacle with screws

#### Square Flange sealing:

- Has to be ordered separately
- Rear mounting: RTFD\*B
- Front mounting: RTFD\*B1

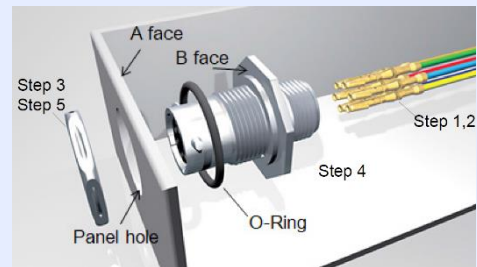


Shell size	Tightening Torque (Nm)	Gasket Compression Distance (mm)
Size 8	0.35~0.45	0.30~0.45
Size 10		
Size 12		
Size 14		
Size 16	0.40~0.50	0.40~0.50
Size 18		

## Mounting instruction Jam Nut Receptacles

#### Mounting Instruction:

1. Check drawings for panel cutout dimensions
2. Strip wires and crimp the contacts
  - For PCB contacts wave soldering only, no high temperatures processes, see drawing for pin layout
3. Insert the wired contacts into the connector
4. Remove the nut from the connector
5. Lead the connector through the cut out, make sure the o-ring is placed between panel (A face) and flange (B face)
6. Assemble the nut from the front side



Shell size	Tightening Torque (Nm)	Max. panel thickness (mm)	Jam Nut wrench size (mm)
8	1.0~1.5	3.18	N/A
10	2.0~3.0	3.18	22.2
12	3.0~4.0	3.18	27.0
14	4.0~5.0	3.18	30.2
16	4.0~5.0	3.18	33.3
18	4.0~5.0	3.18	36.5

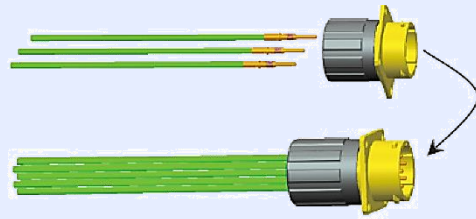
## Endcaps & Sealing Plugs

### Mounting Instruction:

- Endcap versions are shipped pre-assembled.
- For mounting please insert the wired contacts vertically through the sealing pillow into the contact cavities
- In case the contact is difficult to assemble it can be soaked in industrial alcohol to improve the slide in
- Red sealing pillow = standard wire diameter,  
Green sealing pillow = reduced wire diameters



Plug part numbers:  
 $\varnothing$ 1,60mm: AT13-204-2005  
 $\varnothing$ 1,88mm: MS27488-16-2  
 $\varnothing$ 3,10mm: A114017



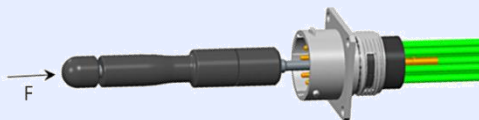
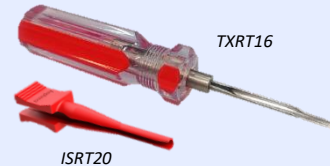
### Sealing Plugs:

- In case your application does not require to use all pins within the layout, the empty positions need to be sealed
- Therefore please equip the connector cavity with a unwired contact and insert the dedicated sealing plug into the sealing pillow
- Sealing plugs can not be used for mechanical coding

## Installing & Removing contacts

### Tools for installing contacts:

- Usually no tools are needed to insert the contacts into the connector cavities
- The assembly fixtures ISRT20 (for 1mm contacts, 28-24AWG) and TXRT16 (for 1,6mm contacts) can help to insert the contacts smoothly
- When the contact is fully inserted with a slight click sound, gently pull it back to ensure that it is properly mated



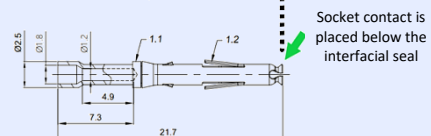
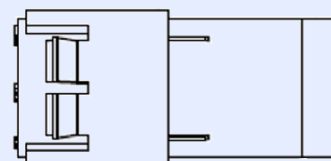
Tool part numbers:  
 QXRT20 / QXRT16 / QXRT16-Coax / QXRT125 / QXRT08

### Tools for removing contacts:

- Extraction tools have to be used when removing assembled contacts from the connector, otherwise the contacts/cavities could get damaged
- For removing the contacts insert the tool from the front, push the handle & pull out the contacts with slight force

### Removing 1mm socket contacts:

- In case 1mm socket contacts should get removed you may face the problem that the extraction tools' sleeve doesn't fit into the contact cavity
- The diameter seems reduced due to interfacial seals which protect the contacts from being exposed and making them finger touch safe
- The seal is flexible enough to use the extraction tool, Isopropyl alcohol can be used on the tool to reduce friction



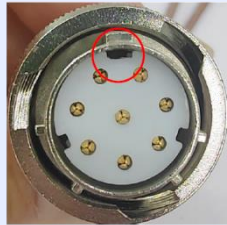
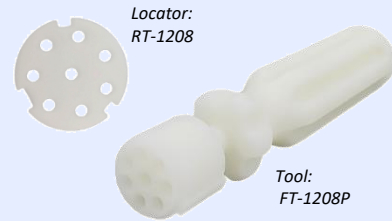
### Removing contacts from endcap versions:

1. Disassemble the endcap components
2. Insert the extraction tool into the mating face of the connector and pull out the contacts
3. Use the same tool to contract the claws of the contacts and lead the contact through the sealing pillow
4. Assemble the endcaps components, consider the correct gap alignment on the sleeve part, torque around 1,0 Nm
5. Equip the connector for final assembly

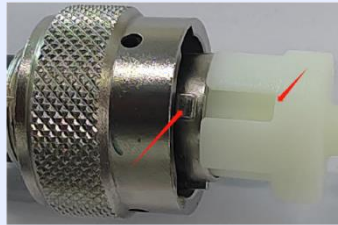
## Contact Locator for pin contacts (example Ecomate RM)

### Installing "contact locators"

- Contacts locators are not necessary but recommended to ensure the contact position stability of sensitive pin contacts
- The contact locator is intended to stay in place, it has no effect on the functionality of the connector
- On the right you can see the needed part number for shell size 12 - 8pin as an example



1. Pre-assemble the pin locator into the pin contacts (Align the main key with the main keyslot)



2. Press the pin locator into the connector with the assembly tool (consider key alignment)



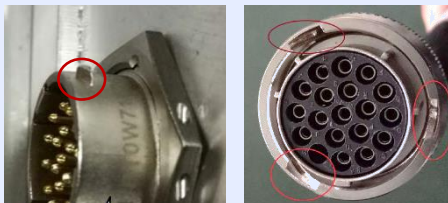
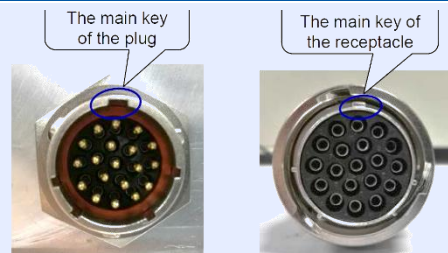
3. The pin locator is completely pushed to the bottom of the connector

## General Mating Advice (example Ecomate RM)

### 1. Key Alignment:

Align the main keys of the plug and receptacle before mating. Otherwise, below abnormal conditions may be caused:

- The connector cannot be inserted → need to be aligned again
- If the main key is not aligned before turning the closing nut on the plug, the pin contacts of the receptacle could be damaged



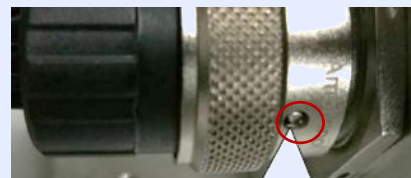
### 2. Turning the Closing Nut:

After the main key is aligned, turn the closing nut on the plug. When the stuck-point on the receptacle (left picture) is located at the plug's grooves (right pictures), push the plug horizontally towards the receptacle. Do not tilt during this process.

- There is a lot of resistance when pushing the plug → please push the connector horizontally
- In case the pin contacts touch the edge of the socket contact, the contact may crack and fall off. Double check their condition and replace connector and contacts if needed.

### 3. Closing and open the connection:

- Press the plug towards the receptacle and tighten the closing nut clockwise to close the connection. After mating the stuck-point can be seen at the round holes of the receptacle. Please consider, if the stuck-point are not fully inserted, it is not properly assembled.
- If you need to open the connection, press the plug towards the receptacle and unfasten the closing nut counterclockwise.



ecomate® Contacts - Machined, Crimp  
(Plating Options - Replace "x" in part number with appropriate Symbol from chart below.)

Size 20 (1.0mm), 7.5A				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
MP18W23x	MS18W23x	20 - 18AWG	0.50 - 0.75 mm <sup>2</sup>	Yes
MP20W23x	MS20W23x	22 - 20AWG	0.34 - 0.50 mm <sup>2</sup>	Yes
MP24W23x	MS24W23x	26 - 24AWG	0.13 - 0.25 mm <sup>2</sup>	Yes
MP28W23x	MS28W23x	30 - 28AWG	0.05 - 0.08 mm <sup>2</sup>	Yes
Size 16 (1.6mm), 13A				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
MP14M23x	MS14M23x	16 - 14AWG	1.5 - 2.5 mm <sup>2</sup>	Yes
MP16M23x	MS16M23x	18 - 16AWG	0.75 - 1.50 mm <sup>2</sup>	Yes
MP20M23x	MS20M23x	22 - 20AWG	0.34 - 0.50 mm <sup>2</sup>	Yes
MP24M23x	MS24M23x	26 - 24AWG	0.14 - 0.25 mm <sup>2</sup>	Yes
MP28M23x	MS28M23x	30 - 28AWG	0.14 - 0.05 mm <sup>2</sup>	Yes
Size 12 (2.5mm), 35A				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
MP10B23x	MS10B23x	12-10AWG	4.0 - 6.0 mm <sup>2</sup>	Yes
Size 8 (3.6mm), 45A - For use with 1403 Layout Only				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
MP10A23x-10	MS10A23x-10	8AWG	10mm <sup>2</sup>	No
MP10A23x-63	MS10A23x-63	12 - 10AWG	4.0 - 6.0 mm <sup>2</sup>	No
-	MS10A23x-63W	12 - 10AWG	4.0 - 6.0 mm <sup>2</sup>	Yes
MP10A23xL	-	12 - 10AWG	3.0 - 6.0 mm <sup>2</sup>	Yes
MP10A23x-25	MS10A23x-25	16 - 14AWG	1.5 - 2.5 mm <sup>2</sup>	No
-	MS10A23x-25W	16 - 14AWG	1.5 - 2.5 mm <sup>2</sup>	Yes
Size 8 (3.6mm), 45A - For use with 1604 Layout Only				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
MP10A23x	MS10S23x	12 - 10AWG	3.0 - 6.0 mm <sup>2</sup>	Yes

ecomate® Contacts - Stamped & Formed, Crimped  
(Plating Options - Replace "x" in part number with appropriate Symbol from chart below.)

Size 20 (1.0mm), 5A				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
SP20W2x	SS20W2x	22 - 18AWG	0.34 - 0.75 mm <sup>2</sup>	Yes
SP24W2x	SS24W2x	26 - 24AWG	0.13 - 0.25 mm <sup>2</sup>	Yes
SP28W2x	SS28W2x	30 - 28AWG	0.05 - 0.08 mm <sup>2</sup>	Yes
Size 16 (1.6mm), 13A				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
SP14M2x	SS14M2x	16 - 14AWG	1.5 - 2.5 mm <sup>2</sup>	Yes
SP16M2x	SS16M2x	18 - 16AWG	0.75 - 1.50 mm <sup>2</sup>	Yes
SP20M2x	SS20M2x	22 - 20AWG	0.34 - 0.50 mm <sup>2</sup>	Yes
SP24M2x	SS24M2x	26 - 24AWG	0.14 - 0.25 mm <sup>2</sup>	Yes
Size 12 (2.5mm), 23A				
Part Number		Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Use with Endcap
Pin	Socket			
SP12A1T	SS12A1T	14 - 12AWG	2.5 - 3.5 mm <sup>2</sup>	Yes

Plating Options - Replace "x" in part number with appropriate Symbol			
Symbol	Plating	Symbol	Plating
T	Tin Plating Over Nickel	G5	Gold Plating (Thickness 5µ")
S	Silver Plating Over Nickel	G10	Gold Plating (Thickness 10µ")
F	Gold Flash Plating	G15	Gold Plating (Thickness 15µ")
		G30	Gold Plating (Thickness 30µ")

ecomate® Contacts - RADSOK® Crimp, Flat Tail or Screw Tail

Part Number	Part Number	Contact Size (AWG)	Contact Size (mm)	Wire Range (AWG)	Wire Range (mm <sup>2</sup> )	Insert Arrangement	Type	Amperage
MP6ARS8S	MS6ARS8S	8AWG	3.6 mm	8AWG	10 - 16 mm <sup>2</sup>	12-1 and 20-3	Crimp	86A
HP25BCS	HS25BCS	4AWG	6 mm	4AWG	20 - 25 mm <sup>2</sup>	14-1	Crimp	120A
HPBHS	N/A	4AWG	6 mm	N/A	N/A	14-1	Flat Tail	120A
HPBSS	N/A	4AWG	6 mm	N/A	N/A	14-1	Screw Tail	120A
HP25CCS	HS25CCS	1/0 AWG	8 mm	4AWG	20 - 25 mm <sup>2</sup>	16-1	Crimp	120A
HP35CCS	HS35CCS	1/0 AWG	8 mm	2AWG	30 - 35 mm <sup>2</sup>	16-1	Crimp	130A
HP50SSC	HS50CCS	1/0 AWG	8 mm	4AWG	20 - 25 mm <sup>2</sup>	16-1	Crimp	180A
HPCHS	N/A	1/0 AWG	8 mm	N/A	N/A	16-1	Flat Tail	180A
HPCSS	N/A	1/0 AWG	8 mm	N/A	N/A	16-1	Screw Tail	180A
HP25DCS	HS25DCS	3/0 AWG	10 mm	4AWG	20 - 25 mm <sup>2</sup>	20-1	Crimp	120A
HP35DCS	HS35DCS	3/0 AWG	10 mm	4AWG	30 - 35 mm <sup>2</sup>	20-1	Crimp	130A
HP50DCS	HS50DCS	3/0 AWG	10 mm	2AWG	40 - 50 mm <sup>2</sup>	20-1	Crimp	180A
HP70DCS	HS70DCS	3/0 AWG	10 mm	2/0 AWG	60 - 70 mm <sup>2</sup>	20-1	Crimp	250A
HP95DCS	HS95DCS	3/0 AWG	10 mm	3/0 AWG	85 - 95 mm <sup>2</sup>	20-1	Crimp	300A

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