



Quick Connector

QCH

Operation Manual

Surpass Industry Co., Ltd.

Before You Use

WARNING

Confirm the compatibility of the type of fluid to be used and the material of the part in contact with fluids before using this product.

Before using this product, carefully read this operation manual to learn the correct usage of this product.

Keep this manual at hand to see it any time you need.

Follow the correct usage of this product specified in this manual.

Comply with the statements of warning described in this manual.

The above instructions are mandatory. Neglecting these instructions may result in personal injury or accidents.

< Description of Operation Manual and Warning Labels >

The information described in this manual is subject to change without prior notice, due to improvements of product in performance and/or functionality.

The WARNING label instructing handling of socket must be labeled on an easily visible spot close to the socket-mounted place.

No parts of Operation Manual may be reproduced or utilized in any form or by any means.

Please download the electronic manual from our homepage in case that you lost this manual.

Every effort was made to ensure that all information included in Operation Manual were complete and accurate at the time of printing. However, if you have any point of doubt, errors, and omissions, please contact Surpass Industry.

<Call to:>

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○ Important Safety Instructions

About Marks Used

Warnings and cautionary notes are provided in this manual to ensure this product is used correctly and to prevent personal injury and property damage. The meanings of the WARNING and CAUTION symbols in this manual are as described below. Read and understand these notes before reading the rest of this manual.

In particular, fully understand and obey the instruction of **DANGER** mark.

 DANGER	This symbol indicates warnings against impending danger which, if not observed, may cause death or severe injury to the user.
 WARNING	This symbol indicates warnings which, if not observed, may cause death or severe injury to the user.
 CAUTION	This symbol indicates warnings which, if not observed, may physically impair the user or damage surrounding objects.
	Provides important notices and indications to operate the product correctly.

DANGER and WARNING Statements

Before use of this product, carefully read the statements of DANGER and WARNING marks and comply with them.

General Instructions on Mounting



DANGER This is Mandatory Rule!!

Whenever using this product for hazardous chemical fluids or solvents, wear anti-chemical protective gear (protective gloves, protective mask, and protective clothing) that completely protects your body. Exposure of chemical fluids may result in personal injury.



WARNING

Whenever connecting the connector, make sure that the paired female thread used for it is NPT or PT and then use the appropriate male thread. Using inappropriate male threads may result in personal injury due to leakage of chemical fluids.

Connecting the taper threads in the specified usage and procedures. Connecting the taper threads in the wrong usage or procedures may result in personal injury due to leakage of chemical fluids.

Instructions on Handling



WARNING

Do not damage the connecting part (wound with seal-tape) of plug and socket. Damage of product may result in personal injury due to leakage of chemical fluids.

Do not contact the connector to any rigid materials because it is made of resin materials. Damage of product caused by contact may result in personal injury due to leakage of chemical fluids.

Instructions on Mounting



DANGER This is Mandatory Rule!!

Release pressure from the piping before attaching/detaching the connector. A pressurized condition may cause spouting of chemicals, resulting in personal injury.

Always wear anti-chemical protective gear (protective gloves, protective mask, and protective clothing) that protects your entire body when attaching/detaching the connector. A contact with chemicals may cause personal injury.

Attach/detach the connector in a clean place with no dust. Degradation of sealing performance due to adhesion of dust may cause liquid leakage, resulting in personal injury.

Always attach/detach the connector at right angle to the surface of container. Attaching/detaching the connector at an angle may cause spouting of chemicals, resulting in personal injury.

Do not apply the connector to rotary joint or other rotary application. Lower tackiness caused by the wrong application may result in personal injury due to leakage of chemical fluids.

When the connector is connected, make sure that the connector is fully connected. The chemicals may splash and personal injury may be caused.

Use out of the operating pressure range may result in slip-off. Be sure to use within the operating pressure range.



- Apply operating fluid or pure water to the O-Ring of the socket (inner) or O-Ring sliding part of the plug (sealing part) when connecting the socket or plug to prevent the O-Ring from being damaged and to reduce the slide resistance (insertion load).
- Do not use abrasive compound or fluid that is easy to clot as they may impair normal function.

Instructions on Maintenance and Inspection



CAUTION

Surpass Industry is not be liable to any failure or leakage of the product due to O-Ring replacement and/or disassembly performed by any parties other than Surpass Industry.

When you need maintenance work, please call Surpass Industry.

1. Description

Fluoropolymers Quick Connector Series are the "one-touch" (instant lock) typed connectors for high-purity chemicals used in semi-conductor manufacturing process. These connectors have proven their reliability and convenience over many years. Also, repeated efforts to improve chemical-resistance, leak-resistance, and particle reduction for higher quality allow our connectors to be applied to various type chemicals.

2. Application

Containers for high-purity semi-conductor chemicals
 Semi-conductor manufacturing equipment
 Biochemistry, physics and chemistry equipment
 Pure water equipment
 Medical equipment
 Environmental equipment



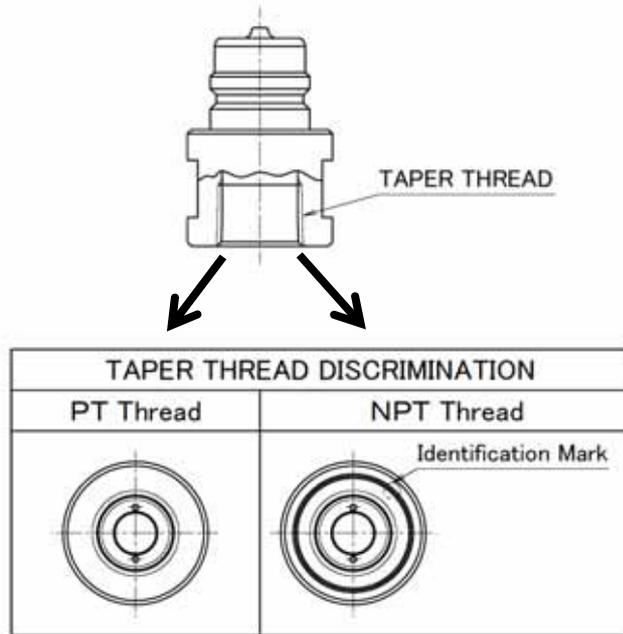
Do not use abrasive compound or fluid that is easy to clot as they may impair normal function.

3. Specification

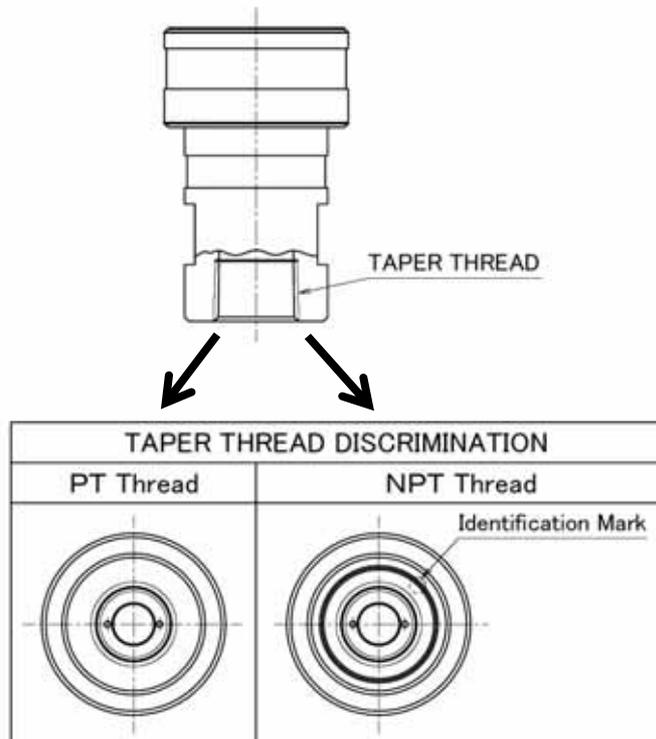
Operating Fluid Pressure	: 0 ~ 450 kPa (65.25 psi)
Withstanding Pressure	: 550 kPa (79.75 psi)
Operating Environmental Temperature	: 5 ~ 60 (41 ~ 140 °F)
Operating Fluid Temperature	: 5 ~ 70 (41 ~ 158 °F)
Wetted parts	: PCTFE, PTFE, PFA, O RING (Depends on the material.)

4. Outside Dimensions

PLUG



SOCKET



5. Mounting



DANGER This is Mandatory Rule!!

Whenever using this product for hazardous chemical fluids or solvents, wear anti-chemical protective gear (protective gloves, protective mask, and protective clothing) that completely protects your body. Exposure of chemical fluids may result in personal injury.

5-1 Unpacking

Carefully unpack the package not to damage the plug and socket.

5-2 Where to Mount

Mount the connector in the place where the bending or tensile stress can not be produced.

Mount the connector in the place where excessive vibration or shock can not be produced.

5-3 Connecting the Taper Threads

Wind the paired male thread for the female thread of connector with PTFE seal-tape three or four times.

WARNING

Whenever connecting the connector, make sure that the paired female thread used for it is NPT or PT and then use the appropriate male thread. Using inappropriate male threads may result in personal injury due to leakage of chemical fluids.

Connecting the taper threads in the specified usage and procedures. Connecting the taper threads in the wrong usage or procedures may result in personal injury due to leakage of chemical fluids.



- The female thread can be used for tubing. As the paired male thread, use the taper male.
 - Use the male thread that is made of materials such as PTFE, PCTFE, PFA, PE, and PP, but not made of rigid materials like metal.
 - Whenever using the female thread, wind it with PTFE seal-tape three or four times and tighten it.
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6. Mounting Procedures

**DANGER**

This is Mandatory Rule!!

Release pressure from the piping before attaching/detaching the connector. A pressurized condition may cause spouting of chemicals, resulting in personal injury.

Always wear anti-chemical protective gear (protective gloves, protective mask, and protective clothing) that protects your entire body when attaching/detaching the connector. A contact with chemicals may cause personal injury.

Attach/detach the connector in a clean place with no dust. Degradation of sealing performance due to adhesion of dust may cause liquid leakage, resulting in personal injury.

Always attach/detach the connector at right angle to the surface of container. Attaching/detaching the connector at an angle may cause spouting of chemicals, resulting in personal injury.

Do not apply the connector to rotary joint or other rotary application. Lower tackiness caused by the wrong application may result in personal injury due to leakage of chemical fluids.

When the connector is connected, make sure that the connector is fully connected. The chemicals may splash and personal injury may be caused.

Use out of the operating pressure range may result in slip-off. Be sure to use within the operating pressure range.



- Apply operating fluid or pure water to the O-Ring of the socket (inner) or O-Ring sliding part of the plug (sealing part) when connecting the socket or plug to prevent the O-Ring from being damaged and to reduce the slide resistance (insertion load).
 - Do not use abrasive compound or fluid that is easy to clot as they may impair normal function.
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6-1 Connecting Procedures

Before connecting the connector, make sure that the pressure in tube is not pressurized.



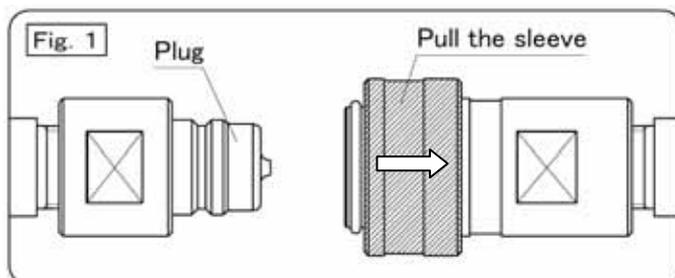
DANGER This is Mandatory Rule!!

Release pressure from the piping before attaching the connector. A pressurized condition may cause spouting of chemicals, resulting in personal injury. Connect the tube without any moment or tension to bend the joint portion.

Pull the socket sleeve by hand. (See Fig. 1 and photo.)

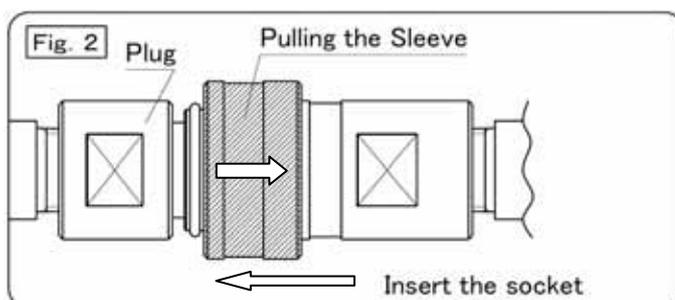


- Whenever connecting the socket, pull the sleeve by hand. Pulling sleeve allows socket connection.
- Apply operating fluid or pure water to the O-Ring of the socket (inner) or O-Ring sliding part of the plug (sealing part) when connecting the socket or plug to prevent the O-Ring from being damaged and to reduce the slide resistance (insertion load).



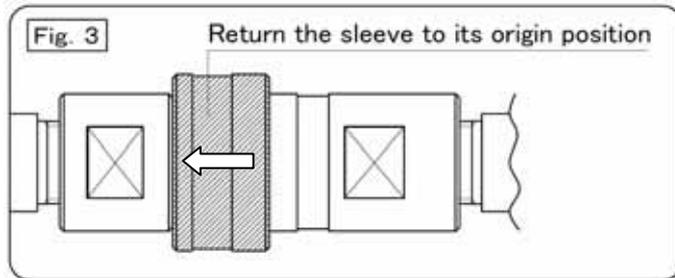
Insert the socket into the plug by pulling the socket sleeve until the head of socket reaches the plug.

(See Fig. 2 and photo.)

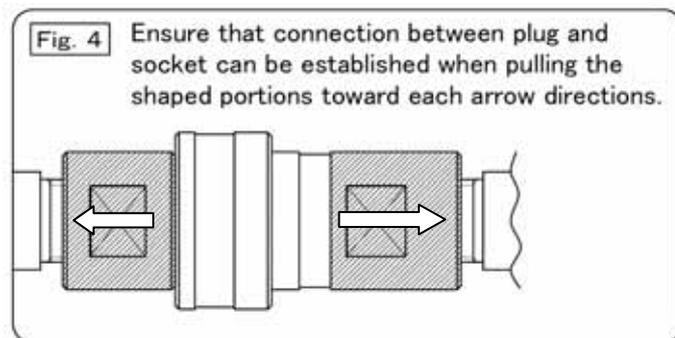


Return the socket sleeve to its origin position.

(See Fig. 3 and photo.)



Make sure that the socket has been securely connected to the plug. (See Fig. 4 and photo.)



6-2 Fluid Transport

Before fluid transport operation, make sure that connection between plug and socket has been successfully completed.

6-3 Disconnecting Procedures

Keep the pressure in tube non-pressurized (not pressurized condition).



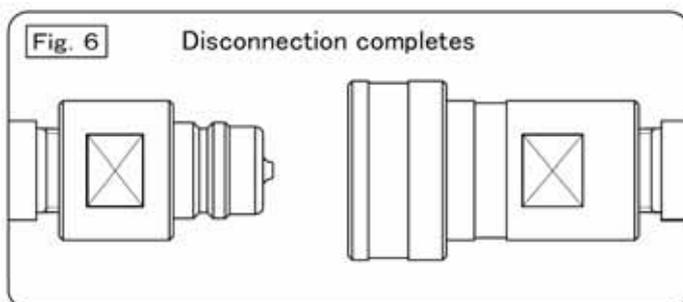
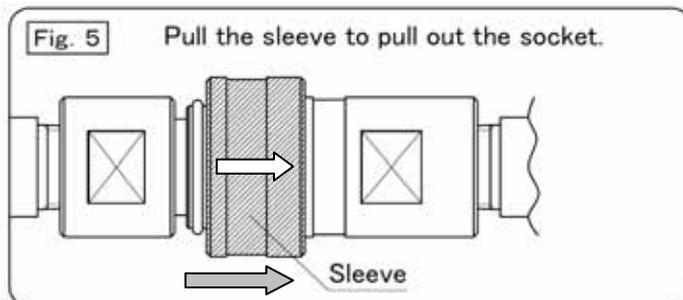
DANGER This is Mandatory Rule!!

Release pressure from the piping before detaching the connector. A pressurized condition may cause spouting of chemicals, resulting in personal injury.

Connect the tube without any moment or tension to bend the joint portion.

Pull out the socket by pulling the socket sleeve.

(See Fig. 5, Fig. 6 and photo.)



7. Maintenance and Inspection

CAUTION

Surpass Industry is not be liable to any failure or leakage of the product due to O-Ring replacement and/or disassembly performed by any parties other than Surpass Industry.

When you need maintenance work, please call Surpass Industry.

7-1 Periodic Inspection

You are recommended to appropriately perform the periodic inspections depending on your product usage (at least once a year). If you find any deterioration of products, please call Surpass Industry.

7-2 Daily Inspections

Before starting operation and after completing operation, perform the daily inspections checking the following points against product. Whenever any abnormalities detected, you must take an appropriate correcting action.

Can you see any foreign particles, dust, or dirt on the product?

Can you find any leakage from tubes or connector joints?

8. Troubleshooting

Trouble Condition	Checking Points	Correcting Action
Fails to connect.	Do you pull the socket sleeve? Are the plug and the socket matched in size?	Connect the socket by pulling the sleeve. Use the plug and the socket in same size.
Flow fails to fluids.	Is the socket securely connected? Is the pressure in tube pressurized?	Push the socket into the innermost part of the plug. Pressurize the pressure in tube appropriately.
Fails to disconnect.	Is the pressure in tube pressurized? Do you pull the socket sleeve by hand?	Keep the pressure in tube non-pressurized. Pull the socket by pulling the sleeve.

Notify your nearest sales office for problems not listed above.

9. Warranty

The warranty runs for one year after the day when Surpass Industry products are delivered from Surpass factory in Japan. In case Surpass Industry should agree in writing that the defects in performance or material were caused by faulty design or workmanship of Surpass Industry, replacement products will be supplied free of charge. This warranty shall not be applied to any defects caused by misuse, alteration, neglectful treatment, and neglect of our recommendations or instructions.

In addition, we are not be liable to any direct or consequential loss, damage, and personal injury due to an unauthorized usage in combination with other products and an improper usage outside of the specifications. Our product warranty shall be limited to replacement of product.

Replacement with expense to the purchaser shall be applied to the followings:

- Any defective products caused by usage that is not described in the Instruction Manual.

- Any defective products caused by neglectful treatment.

- Any defective products caused by decomposition, alteration, and improper adjustment or repair.

- Any defects of products caused by acts of God including natural disaster or fires.

- Consumables and accessories.

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