

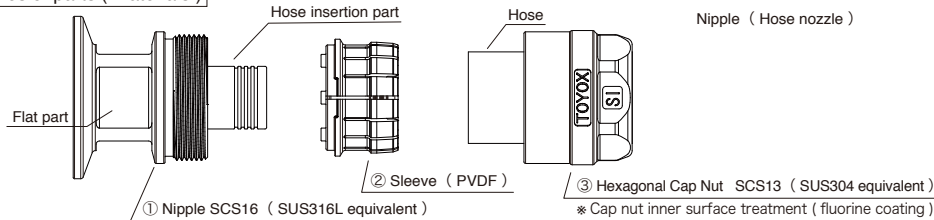
# TC3-FS type TOYOCONNECTOR® Handling Manual ( TOYOX silicone hose connector )

## Be sure to read this manual before using the connector.

**⚠ Warning :** A potentially hazardous situation which could result in death or serious injury.

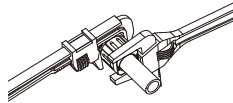
This is an explanation of the "correct use" of TOYOCONNECTOR.  
 Similar to individually sold hoses, please be aware of the restriction on use and follow the warnings below.  
 If you ignore the precautions, problems may occur due to the hose becoming detached or liquid leaking.

### Names of parts ( materials )



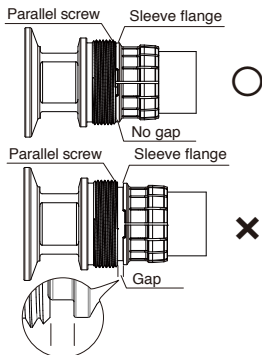
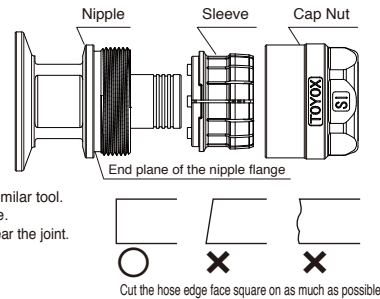
### ⚠ Before fitting

1. Cut a hose so the end of the hose will be perpendicular.
2. Please secure enough length of the hose so as to avoid bending stress on the hose near the connector.
3. Make sure that the hose is inserted completely into the root of the hose insertion part.
4. **⚠ Warning** When inserting TOYOCONNECTOR TC3-SS into hoses, never put grease on the surface of the hose insertion part. It would be a cause of hose being pulled out.
5. After checking the direction of the sleeve, tighten the nut.
6. **⚠ Warning** Tighten the hexagonal cap nut completely. If the nut becomes loose, the hose may become detached and liquid may leak. In addition, be careful of injuries caused by tools slipping during the fastening process.
7. Use an "Adjustable ( Power ) Wrench" for tightening the nuts. Do not use a " Pipe Wrench ". It may damage hexagonal cap nuts. In addition, be careful of injuries caused by tools slipping during the fastening process.
8. When tightening, use another monkey ( motor ) wrench to hold the flat part of the nipple in place as pictured in the diagram to the right.
9. **⚠ Warning** When tightening the cap nut, resin shavings ( or stringy substance ) may occur on rare occasions. Be sure to remove such prior to use.
10. Do not cut the hose insertion part or sleeve in place with a knife or the like.
11. After attaching the hose, make sure that the hose has not become detached and fluid does not leak at the connector.
12. Take care to avoid injury from the sharp edges of the connector.

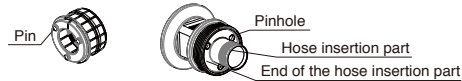


### How to attach a hose \* Installation method is common for each hose.

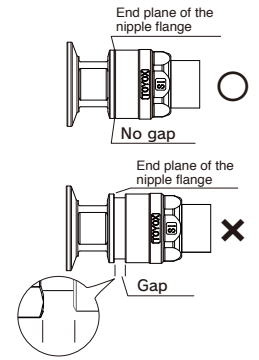
1. Removing the hexagonal cap nuts
  - ① Detach the cap nut and the sleeve from the nipple.
2. Deciding the hose length and aligning and cutting the hose
  - ① Adjust the hose length fitting the end of the hose to the end of the nipple flange. Pay attention not to cause any tension to the hose.
  - ⚠ Warning** Use a very sharp knife for cutting the hose.
    - If the cut surface is slanted, cut the end of the hose vertically to make a straight edge or the hose may become detached.
    - When any lint is left at the end of the hose, remove it with pliers or similar tool.
    - Make sure that no hose fragments and no lint is stuck in the hose.
    - Secure an adequate hose length to avoid bending stress on the hose near the joint.



3. Building in the joint
  - ① Pass the cap nut through the hose.
  - ② Pass the sleeve through the hose insertion part of the nipple to install.
    - ⚠ Warning** Confirm that the sleeve is at the end of the hose insertion part. At this time, confirm that the positions of the pin at the sleeve bottom and the pinhole at the end of the hose insertion part correspond to each other. ( If there is a space between the flange of the sleeve and nipple parallel screw part, the sleeve needs to be inserted all the way. Install the sleeve by matching the positions of the pin and the pinhole. )
  - ③ While holding down the sleeve in place so as not to slip, insert the hose deeply towards the nipple flange end surface. ( Upon inserting the hose, shake the sleeve back-and-forth to confirm there is no wobbling. The hose needs to be inserted all the way if wobbling remains. Insert the hose until there is no wobbling of the sleeve. )
  - ④ Tighten the cap nut with your hand well enough to make the nut stay there.



- ⑤ Secure the hexagonal part of the nipple with another monkey ( motor ) wrench and tighten the hexagonal cap nut completely. Tightening the nipple without securing it may cause the nipple to turn at the same time and break the thread for the piping. ( Do not use a pipe wrench. It may damage the parts. )
  - ⚠ Warning** Gap parts may cause fluid leak or may cause the hose to detach.
  - ⚠ Warning** When tightening the cap nut, resin shavings ( or stringy substance ) may occur on rare occasions. Be sure to remove such prior to use.
- ⑥ Fasten the pipes using a store-bought sanitary clamp. Fit the hose to the piping without a twist.
4. Cleaning inside the Piping ... Be sure to perform.
  - ① Connect piping before cleaning inside the piping.
  - ② After cleaning, make sure that the hexagonal cap nut is not gap. If it is gap, retighten it.



### ⚠ Notes for use

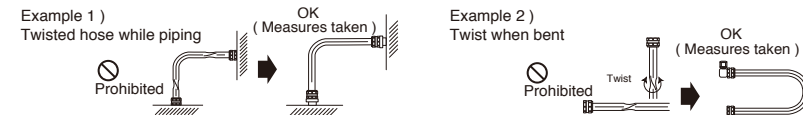
1. TOYOCONNECTOR is a connector dedicated to TOYOX hose. No guarantee will be provided for TC3-FS that are connected with hoses other than TOYOX Hoses because the performance of such TC3-FS may not be fully performed or maintained. \* Hose compatibility depends on the connector. Confirm through the catalog or the homepage.
2. Maximum operating temperature for the connectors is 140°C. Please read the instruction manual "warning when using hose" ( maximum operating temperature ) for the compatible hose, and do not exceed the maximum operating temperature of 140°C nor the maximum operating temperature for the compatible hose within its operating pressure range.
3. Hoses usable under negative pressures may not be applicable depending on applications and conditions ( temperature, movement, etc. ).
4. Do not use a hose that is extremely bent near a connector. The bend radius of a hose should be larger than its minimum bend radius.
5. **⚠ Warning** Do not assemble or disassemble the connector while fluid is in the hose because the hose may become loose and the liquid will leak.
6. Perform periodic inspections to make sure that the hose does not become detached and the fluid does not leak at the connection during use period of the hose.
7. **⚠ Warning** Never use TC3-FS for the below applications.
  - Connector damage, hose rupture, and hose detachment may occur.
    - For piping such as electromagnetic valve piping, which would put impact pressure on the piping.
    - Where vibration or impact will be applied to the connector.
    - Application where the maximum operating temperature exceeds 140°C.
    - Where constant tensile stress may be applied to the hoses
    - In a way that may cause static buildup ( There is a danger of electrical shocks. )
8. Before using TC3-FS, make certain to sterilize and disinfect inside the hoses. ( The hoses do not go through sterilization procedures before shipping. )
9. Do not allow anything other than the inner surface of the couplings or hose to come in contact with fluids, because the fluids may permeate the hose reinforcement layer or remain inside the couplings, and bacteria may propagate ( attach to the parts ) or the hose may deteriorate. Also, dust and hose fragments ( reinforcement material ) to the outer surface may be mixed in.
10. When cleaning TC3-FS, do not rub their surfaces with a hard brush or other things because doing so may damage the surfaces, and bacteria may propagate ( attach to the parts ). Be sure to remove such prior to use.
11. Please store away from direct sunlight and in a low temperature / humidity condition. Further, please avoid foreign substance or dust from entering the connector when storing.
12. Products should be disposed of in accordance with the requirements of the local region.

### ⚠ Notes for Connector Reuse and Hose Replacement

- ⚠ Warning** When replacing a hose or disassembling a joint, wait until the joint is cooled down to the room temperature. If not, you may get burned or the joint may get damaged.
  1. When re-using TOYOCONNECTOR, please confirm that each part is intact before use. Please make sure to replace the sleeve.
  2. Before replacing a hose, always make sure to remove the fluid and dirt on the connector surface. Fluid and dirt remaining on connector may possibly cause fluid leakage and hose loosening.
  3. When reusing a TOYOCONNECTOR, please be sure to use a new hose.
  4. When replacing hoses, do not damage nipples with a cutter or other items because doing so will be a cause of fluid leakage.
  5. Remove foreign materials such as dirt and dusts from a hexagon cap nut, screws, etc with a soft brush.
  6. If the sleeve causes a crack, damage, deformation or discoloration, immediately replace the sleeve with a new one or full performance such as working pressure may not be achieved.
  7. The duration of using a TC3-FS type TOYOCONNECTOR varies with the use condition and so forth. However, after it is removed five times or so, you should replace it with a new one.

### ⚠ Warning

1. The material used for the TOYOCONNECTOR flow pass ( inner surface ) is SCS16 ( SUS316L equivalent ) . Phenomena such as corrosion or fluid leaks may occur depending on the type of fluid. Before use, be sure to check data ( refer to data on chemical resistance in the catalog or on the homepage ) or make inquiries to the toll-free number. Please also make similar checks for fluid contact with the outer surface of joints.
2. Do not use hoses when they are twisted. Partially twisted hoses are also a danger as they may cause internal structural damage leading to a " Burst ". Follow the examples below to take preventative measures.



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