

# TOYOCONNECTOR®-F Handling Manual

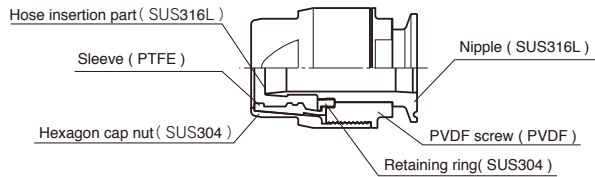
※ Be sure to read this manual before using the connector.

Connectors designed especially for the use with TOYOSILICONE Hoses · TOYOSILICONE-S Hoses · HYBRID TOYOSILICONE Hoses

**⚠ 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 )**

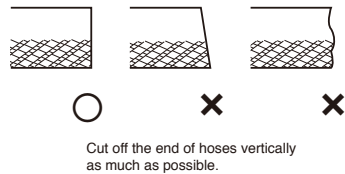
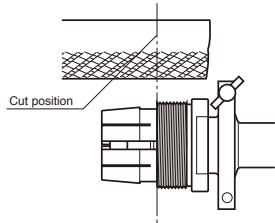
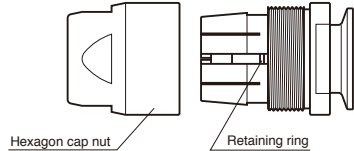


**⚠ Before fitting**

1. When cutting a hose, please make sure that the edge face of the hose will become square-on.
2. Make sure that the hose is inserted completely into the root of the hose insertion part.
3. **⚠ Warning** When inserting TOYOCONNECTOR TCFS into hoses, never put grease on the surface of the hose insertion part. It would be a cause of hose being pulled out.
4. **⚠ Warning** Tighten the hexagonal cap nut completely. If the nut becomes loose, the hose may become detached and liquid may leak.
5. Do not cut the hose insertion part or sleeve in place with a knife or the like.
6. After attaching the hose, make sure that the hose has not become detached and fluid does not leak at the connector.
7. Use an " Adjustable ( Power ) Wrench " for tightening the nuts. Do not use a " Pipe Wrench ". It may damage hexagonal cap nuts.
8. Take care to avoid injury from the sharp edges of the connector.

**□ How to attach a hose**

1. Removing the hexagonal cap nut.
  - ① Turn the hexagonal cap nut round and remove it from the nipple.
    - ⚠ Note** Please confirm that the ring clamp and nipple are not gap. ( If loosened, retighten them. The ring clamp has a left-hand screw. )
2. Deciding the hose length and aligning and cutting the hose.
  - ① Fix the nipple to the pipe to which the hose is to be mounted.
  - ② Then, adjusting the hose length, cut the hose so that the edge face of the hose will become square-on. Please make sure that the hose is not pulled.

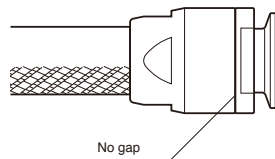


Adjust the length of the hose by aligning the end of the PVDF screw with the end of the hose.

- ⚠ Note** · Use a sharp cutter blade to cut hoses.
- If hoses are cut diagonally, they may detach. So please cut the end of hoses vertically.
- If threads or hose debris is sticking out from the edge face of the hose, remove it with a nipper or the like.
- Make sure that no hose debris or threads will get into the hose.
- Make sure that the hose length is sufficient enough to prevent the bending stress of the hose from being applied near the joint.

3. Building in the joint

- ① Remove the joint from the pipe before starting the assembling work. ( This makes it easier to do the work. )
- ② Insert the hose into the end of the ring clamp. If the hose is not inserted sufficiently, liquid leakage or hose disconnection may occur.
- ③ Tighten the hexagon cap nut and the PVDF screw three to five threads by hand.
  - ⚠ Note** · Be careful not to damage screw threads.
- ④ Please tighten the cap nuts and PVDF screw parts using a tool such as an adjustable wrench available on the market.
  - ⚠ Note** · Tighten sufficiently so that there will be no gap between the hexagon cap nut and PVDF screw.
  - If tightened insufficiently, liquid leakage or hose disconnection may occur.
- ⑤ Fasten the hose to the pipe using a commercially available sanitary clamp.



4. Cleaning the inside of hoses ( Make certain you clean the inside of hoses. )

- ① Clean the inside of hoses after connecting each hose.
- ② After cleaning, confirm that nuts for the connectors are not loose. If the nuts are loose, retighten them.

**⚠ Notes for use**

1. TOYOCONNECTOR-F is a hose joint used only for the following TOYOX hoses. TOYOX is not liable for any damages caused by using TOYOCONNECTOR with any other hose including those produced by TOYOX as well as those by other manufactures as full performance may not be achieved or maintained. ※ Hose compatibility depends on the connector. Confirm through the catalog or the homepage.
2. Use TOYOCONNECTOR within the operating temperature and pressure ranges of the applicable hose. However, use TOYOSILICONE Hose or TOYOSILICONE-S Hose within temperature range of 140°C or below, and use HYBRID TOYOSILICONE Hose within temperature range of 130°C or below. Use the hoses within pressure range of 0.5MPa or below. Do not use TOYOSILICONE Hoses under negative pressure.
3. In the case of the use of the negative pressure TOYOX's hoses may not be applicable for use according to use or conditions ( temperature, movement, etc. ). For electric discharge / plasma, evaporation, or other use, please exercise caution because the extraction of plasticizers and others from TOYOX's hoses is expected. Please refer to the range of vacuum pressures as a guideline for the use of a negative pressure.
4. When using TOYOCONNECTOR-F, do not bend hoses sharply near the connectors because the inner tube may rupture.
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. Do not use the hose where there is vibration or shock. It may cause the connector to break or the hose to become detached.
7. 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.
8. 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.
9. **⚠ Warning** Never use TOYOCONNECTOR-F for the below applications. Hoses may rupture or become loose.
  - 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
  - Using the hose above the operating temperature limit ( 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. )
10. Before using TOYOCONNECTOR-F, make certain to sterilize and disinfect inside the hoses. ( The hoses do not go through sterilization procedures before shipping. )
11. When cleaning TOYOCONNECTOR-F, 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 ).
12. **⚠ Warning** Products should be disposed of in accordance with the requirements of the local region.

**⚠ Notes for Connector Reuse and Hose Replacement**

- ⚠ Note** This connector should not be disassembled for cleaning on a daily basis.
  - ⚠ 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. After disassembling the joint ( by removing the hexagon cap nuts ), please make sure to use a new hose. Also, the sleeve needs be replaced about once every five times the joint is disassembled, which may vary with the use and other conditions.
  2. When replacing hoses, do not damage nipples with a cutter or other items because doing so will be a cause of fluid leakage.
  3. 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.
  4. Confirm whether there is any gap between the hexagon cap nut and PVDF screw.
  5. When sleeves or PVDF screws are cracked, broken, deformed, or discolored, replace them immediately with new ones. Otherwise their performance may be impaired, e.g. they may not be able to withstand their working pressure.
  6. Please do not hit a joint with a hammer and the likes.

**⚠ Warning**

1. The material used for the TOYOCONNECTOR-F flow pass ( inner surface ) is SUS316L . 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. Perform a similar check for the contact of fluid onto the outer side of the joint.
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.

