

# TC3-FG type TOYOCONNECTOR® Handling Manual

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

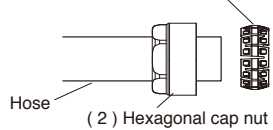
**Warning:** A potentially hazardous situation which could result in death or serious injury.

TOYOCONNECTOR is a hose joint dedicated for TOYOX hoses that has been developed for plant facility piping and embedded piping into machines. Be sure to read the following precautions to make full use of the hose features safely. If you ignore the precautions, problems may occur due to the hose becoming detached or liquid leaking.

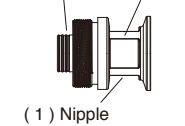
### Names of parts ( materials )

( 3 ) TC3-F type sleeve with packing

( The sleeve with the packing can face either direction. )



Hose nozzle Flat part



( 1 ) Nipple

### Materials : TC3-F type

Nipple : SCS16 ( SUS316L equivalent )

Cap nut : SCS13 ( SUS304 equivalent )

Packing : Silicone rubber

Sleeve : Polyacetal

※ Lubricant of nipples and ball head lock nut threaded portions : NSF " H1 " registered grease

### Before fitting

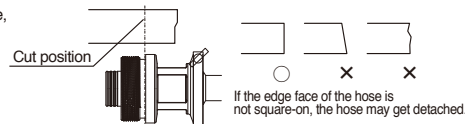
- When cutting a hose, please make sure that the edge face of the hose will become square-on.
- Make sure that the hose is inserted completely into the root of the nozzle.
- Warning** When inserting TOYOCONNECTOR TC3-F into hoses, never put grease on the surface of the nipples. It would be a cause of hose being pulled out.
- Warning** Tighten the hexagonal cap nut completely. If the nut becomes loose, the hose may become detached and liquid may leak. When tightening the nuts, please be careful not to get injured by slipping the " Adjustable ( Power ) Wrench ". Do not cut the hose nozzle or TC3-F type sleeve with packing in place with a knife or the like.
- After attaching the hose, make sure that the hose has not become detached and fluid does not leak at the connector.
- Use an " Adjustable ( Power ) Wrench " for tightening the nuts. Do not use a " Pipe Wrench ". It may damage hexagonal cap nuts.
- Caution** Lubricant ( extreme-pressure grease ) registered in NSF "H1", "Lubricant approved in locations in which there is a possibility of accidental contact with food products", is applied to nipples and ball head lock nut threaded portions.
- Take care to avoid injury from the sharp edges of the connector.

### How to attach a hose

- Removing the hexagonal cap nut  
Turn the hexagonal cap nut round and remove it from the nipple.
- Deciding the hose length and aligning and cutting the hose  
Fix the nipple to the pipe to which the hose is to be mounted. 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. When inserting the hose, please do not apply oil and the like to the nipple. It may cause the hose to detach.



( 2 ) Hexagonal cap nut ( 1 ) Nipple



If the edge face of the hose is not square-on, the hose may get detached.

### Appropriate hose insertion depth

TOYOCONNECTOR Code	mm
TC3-FG15	13
TC3-FG19	14
TC3-FG25	17

**Note** 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.

### Building in the joint

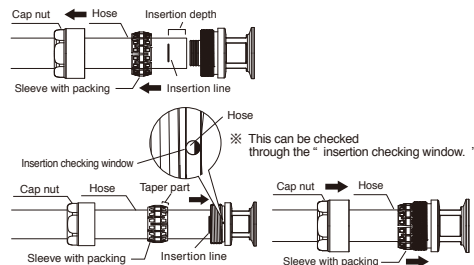
Remove the joint from the pipe before starting the assembling work. ( This makes it easier to do the work. )

Pass a hexagonal cap nut through the hose and put the TC3-F type sleeve with packing on the hose.

Insert the hose into the end of the hose nozzle of the nipple.

By drawing a line on the hose according to the " hose insertion depth " table right beforehand, you can insert the hose appropriately.

This can be checked through the " insertion checking window. "



※ This can be checked through the " insertion checking window. "

Figure 1



※ Fit the sleeve with the packing attached. If the packing comes off from the sleeve or becomes twisted, refit the packing with its outer circumferential grooves facing outwards to the recessed part of the sleeve as shown in figure .

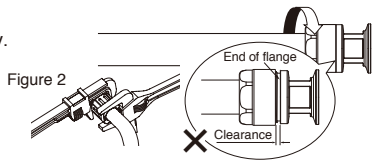
As shown in Fig. 2, secure the flat part of the nipple with another

" monkey ( motor ) wrench, " and tighten the hexagonal cap nut completely.

**Caution** When fastening the unit, there rarely may be cases when resin or metal dust ( or stringy shavings ) is generated.

**Warning** Tighten the hexagonal cap nut completely until it touches the flange of the nipple to prevent the hose from becoming detached and the fluid from leaking.

Figure 2



- Fasten the hose to the pipe using a commercially available sanitary clamp. Mount the hose onto the pipe, making sure that the hose is not twisted.
- Clean the inside of the pipe without a failure ( every time after a pipe is connected. ) After cleaning, make sure that the hexagonal cap nut is not loose. If it is loose, retighten it.

### Notes for use

- TOYOCONNECTOR 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.
- Use TOYOCONNECTOR within the operating temperature and pressure ranges of the applicable hose.
- Do not fully bend the hose near the joint. Do not bend the hose beyond the minimum bending radius.
- 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.
- Do not use the hose where there is vibration or shock. It may cause the connector to break or the hose to become detached.
- Perform periodic inspections to make sure that the hose does not become detached and the fluid does not leak at loose connection during use period of the hose.
- 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, hose fragments (reinforcement material) and ink adhering to the outer surface may be mixed in.
- Warning** Never use TC3-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
  - 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. )
- Before using TC3-F, make certain to sterilize and disinfect inside the hoses. ( The hoses do not go through sterilization procedures before shipping. )
- When cleaning TC3-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 ).
- Warning** Products should be disposed of in accordance with the requirements of the local region.

### Notes for Connector Reuse and Hose Replacement

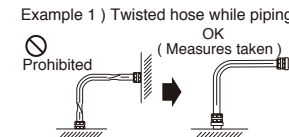
**Caution** This connector should not be disassembled for cleaning on a daily basis.

**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.

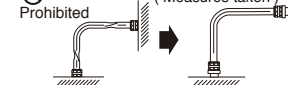
- When you reuse TOYOCONNECTOR, a replacement TC3-F type sleeve with packing is required. Please make sure to apply commercially available lubricant ( extreme-pressure grease ) to the nipple and ball head lock nut threaded portion before fastening. Use of a lubricant ( grease ) registered with NSF " H1 " approved for use in areas that may accidentally come into contact with food " is recommended. When applying the lubricant, please use a brush or similar tool and uniformly rub a sufficient amount of lubricant into the troughs of the threads. Please make sure that the lubricant does not adhere to any locations aside from threaded portions. Otherwise, it may cause the hose to disconnect. Please contact us if you have any questions.
- Please make sure to use a brand-new hose.
- 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.
- The service life of a joint varies with its use condition and other factors, but it is a good practice to replace it with a new one after it is removed five times or so.
- Do not hit the joint with a hammer or some other tools.

### Warning

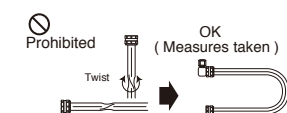
- The material used for the TOYOCONNECTOR flow pass ( inner surface ) is SCS16 ( SUS316L equivalent ) . Phenomena such as corrosion or fluid leaks may occur depending on the type of fluid. Before use, be sure to check data ( refer to data on chemical resistance in the catalog or on the homepage ) or make inquiries to the toll-free number. Please also make similar checks for fluid contact with the outer surface of joints.
- 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.



Example 1 ) Twisted hose while piping



Example 2 ) Twist when bent



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