Precautions to ensure safe usage

The precautions given below are intended to ensure safe and correct use of the products.
Note that certain restrictions apply to use of these products. Failure to observe these could result in injury or property damage.

⚠ Warning	A potentially hazardous situation which could result in death or serious injury.
⚠ Caution	A dangerous situation which could result in minor or medium injury and/or in which only property damage is foreseen.

Note: See the terminology glosses on our website for words marked with a ※.

TOYOCONNECTOR TC3-CS Stainless Steel (TOYOX Hose Dedicated Coupling)

① Notes for installation

1. When cutting a hose, make sure that the edge face of the hose is cut perpendicularly.
2. Make sure that the hose is inserted completely to the root of the nozzle.
3. ⚠Warning When inserting hoses, never apply oil, etc., to the surface of the nipples.
   It may cause the hose to become disconnected.
4. ⚠Warning Fasten the cap nut until there are no gaps. When used in a state where there are gaps,
   trouble due to fluid leakage or hose disconnection will occur.
   As well, be careful to avoid injury due to wrench slips when fastening nuts.
5. Do not use a blade to cut the hose nozzle or sleeve with TC3-CS gasket.
6. After installing, confirm that before use that there is no fluid leakage or hose disconnection from the coupling area.
7. Use a monkey wrench for tightening. Do not use a pipe wrench. It will damage the cap nut.
8. Take care to avoid injury from the sharp edges of the coupling.
9. Be careful that incompatible chemicals do not adhere to the rubber components used in the couplings.

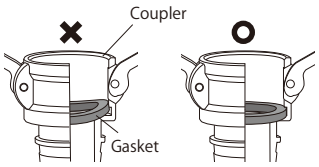
② Notes for connecting couplings

1. Select the main unit and gasket materials suitable for the fluid used.
2. Chemicals which are dangerous when permeating (active gases) should not be used in gaseous form.
3. Use the products within their intended working pressure range.
4. Do not apply external force (e.g. impact) to the body and cam arm. This may cause damage.
5. Avoid pulling or dragging the hoses on the floor. Doing so may cause the cam arms to catch against an object and unlock.
6. Avoid applying loads on joints. This may cause fluid spills.
7. We recommend using couplers and adapters made of the same material when connecting fittings.
   Using couplers and adapters made of different materials may lead to corrosion (electrical corrosion).
8. Dismantle the coupler connection only after confirming that there is no residual pressure or materials.
9. To avoid burns during use with high-temperature fluids, avoid direct contact with the coupling.
10. Wear gloves and safety shoes to prevent injury during installation and operation.
11. When vertically installing the coupler, position it on the lower side of the adaptor.
12. High fluid flow rates may result in cavitation that abrades or damages the inner surface of the coupler. Perform inspections at the appropriate intervals.
13. When connecting the coupler, chip dust may transpire due to cam arm tightening. Remove chip dust before use.

③ Notes for safe usage

1. TOYOCONNECTOR is a coupling dedicated for the above TOYOX Hoses. TOYOX is not liable for any damages caused by use with any other hose including those produced by TOYOX as well as those by other manufacturers, as full performance may not be achieved or maintained.
2. Use within the operating temperature and pressure ranges of the applicable hose.
3. Do not use a hose that is extremely bent near a coupling.
   The bending radius of a hose should be larger than its ※3 minimum bending radius.
4. ⚠Warning Do not attempt assembly or disassembly of couplings while fluid is running through the hose.
   This may cause fluid leakage or hose disconnection.
5. Do not use in locations subject to vibration or impact. This may cause coupling damage or hose disconnection.
6. Perform periodic inspections during and before use to make sure that hose disconnection from the coupling and fluid leakage do not take place.
7. 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.
8. ⚠Warning Do not use for piping in the applications below. This may cause hose rupture, or hose disconnection.
   - For piping such as solenoid valve piping, which would put impact pressure on the piping
   - Where the maximum operating temperature is exceeded
   - In a way that may cause static buildup (electric shock hazard)
   - Where vibration or impact will be applied to the coupling
   - Where constant tensile stress may be applied to the hoses
9. Before use, be sure to disinfect and sterilize the interior of the hose. (Sterilization is not carried out at shipping)
10. Do not rub the surface with a hard brush, etc., when washing it. The surface could be damaged, causing germs to accumulate.
11. Disposal should be in accordance with the requirements of the local region.

④ Notes for gaskets



1. Before using the coupler, check to confirm that the gasket fits into the coupler groove. (See figure to the right)
2. Foreign matter adhering to the gasket seat can make it hard to close the cam arms and may lead to spills.
   Inspect and remove any foreign matter.
3. Because fluorine resin type gaskets using fluorine resin (PTFE and FEP) lack elasticity, they may leak depending on conditions of use.
4. Assess the force required to close the cam arms when connecting or disconnecting the couplers.
   If the force required is too low, the gasket seal may be compromised. In this case, we recommend replacing the gasket.
   ※ If closing the cam arms feels too easy even after replacing the gasket, the main unit may be damaged. If so, replace the main unit.

⑤ Notes for inspections

1. Startup inspections: Before starting operations, check to confirm that the fittings are free of abnormalities and that the cam arms are fully closed.
2. Regular inspection: During periods in use, be sure to perform regular inspections.

What to do if an abnormality is found

If you observe signs of abnormalities like those below during startup inspections or periodic inspections, stop using the product immediately. Replace with a new product.

1. The main unit or any of the components show large scratches, cracks, deformation, or projecting pins.
   (The service life of the main unit, cam arms, and gaskets depends on materials and usage conditions. We recommend replacement at periodic intervals.)
2. Closing the cam arms feels too easy when connecting or disconnecting couplers.

⑥ Notes for the reuse of couplings and replacement of hoses

⚠Caution This coupling is not designed for regular disassembly cleaning.

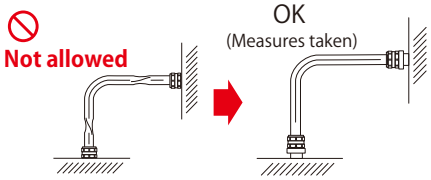
⚠Warning Hose replacement and coupling disassembly must be performed after the coupling is cooled to room temperature.
There is a risk of burns or damage to the couplings.

1. When reusing TOYOCONNECTOR, replace the sleeve with TC3-CS gasket with a new one.
2. Please make sure to use a brand-new hose.
3. Before replacing a hose, always make sure to remove the fluid and dirt on the coupling surface.
   This may cause fluid leakage or hose disconnection.
4. While it may vary according to conditions of use, consider five disassemblies a rough guideline for replacing with a new coupling.
5. Do not hit the coupling with a hammer or similar tool.

⑦ Warning

1. The fluid path (interior) of TOYOCONNECTOR uses SCS 14 (SUS 316 equivalent) material.
   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 website) or make inquiries to the toll-free number.
   As well, make similar checks for fluid contact with the outer surface of couplings.
2. Do not install or use twisted hoses. Twisted hoses are dangerous because they deform their interior structures and cause hose ruptures. Fix twisted hoses appropriately as shown in the following examples.

Example 1: Hose twisted when it is installed



Example 2: Hose twisted when it is bent