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uxcell Copper Tee Pipe Fitting (18mm / 0.71 inch)

uxcell Copper Tee Pipe Fitting Instruction Manual

Model: 18mm / 0.71 inch Copper Tee Pipe Fitting

1. Product Overview

The uxcell Copper Tee Pipe Fitting is a high-quality, durable connector designed for various plumbing and fluid transfer applications. Crafted from thick copper, it offers excellent corrosion resistance, high-temperature and high-pressure tolerance, and efficient heat dissipation. Its tee-shaped design allows for branching a pipeline into three directions, making it an essential component in complex piping systems.

This fitting is specifically engineered for sweat solder connections, ensuring a strong and reliable bond between copper pipes. Its robust construction ensures a long service life with minimal maintenance.

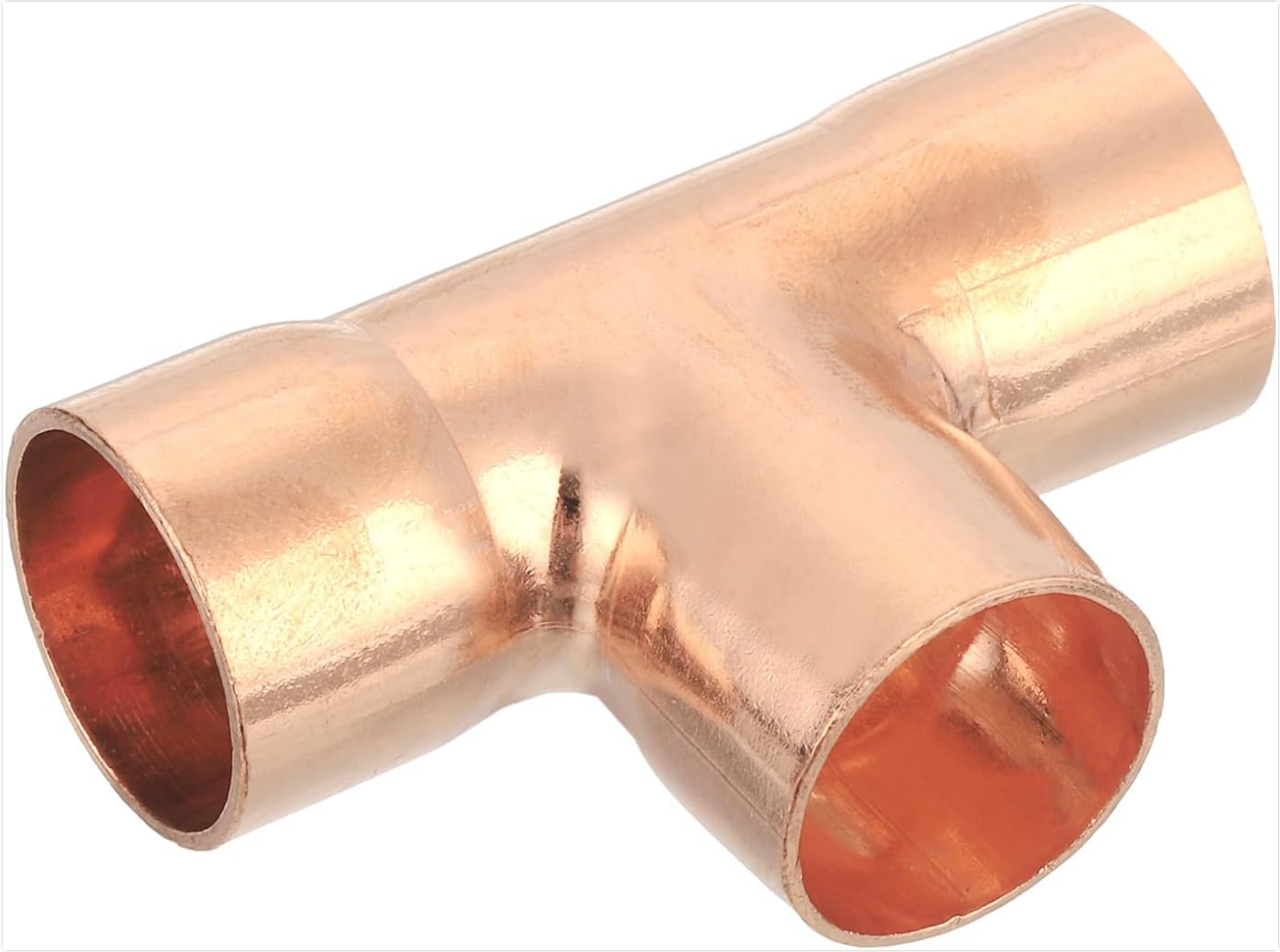


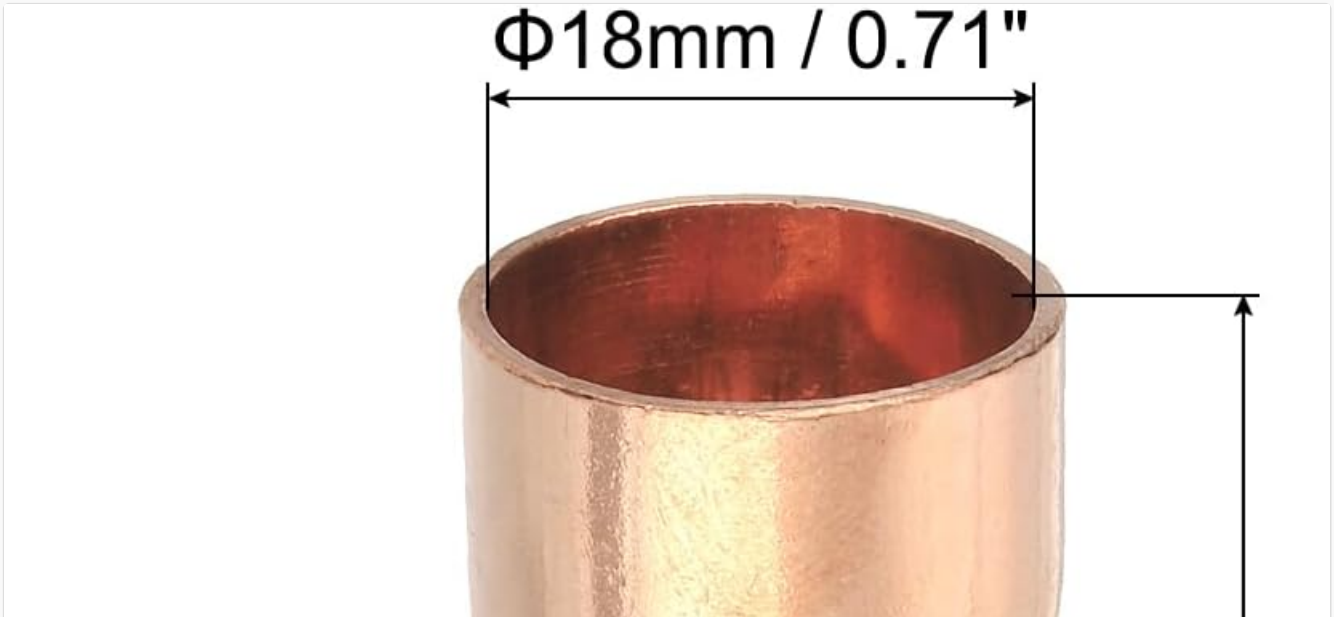
Figure 1.1: The uxcell Copper Tee Pipe Fitting.

2. Product Features

- **Premium Material:** Constructed from thick copper, ensuring a good surface finish, uniform density, and extended durability.
- **High Performance:** Exhibits excellent corrosion resistance and can withstand high temperatures and pressures, making it suitable for demanding environments.
- **Efficient Heat Dissipation:** Copper's inherent properties allow for rapid heat transfer, beneficial in certain applications.
- **Easy Installation:** Designed for straightforward sweat solder connections between copper pipes, simplifying the installation process.
- **Wide Application:** Primarily used in HVAC air conditioning units, refrigeration hydraulic systems, ground water supply pipes, and general plumbing installations.
- **Low Maintenance:** Copper pipe fittings are known for their durability and require minimal upkeep over their lifespan.

3. Specifications

Attribute	Value
Brand	uxcell
Material	Copper
Inner Diameter	18mm / 0.71 inch
Thickness	1mm / 0.04 inch
Overall Size (Length x Width)	54.5mm x 37mm / 2.15 inch x 1.46 inch
Product Dimensions (L x W x H)	14 x 10 x 2 cm
Item Weight	40 g
Color	Copper Tone



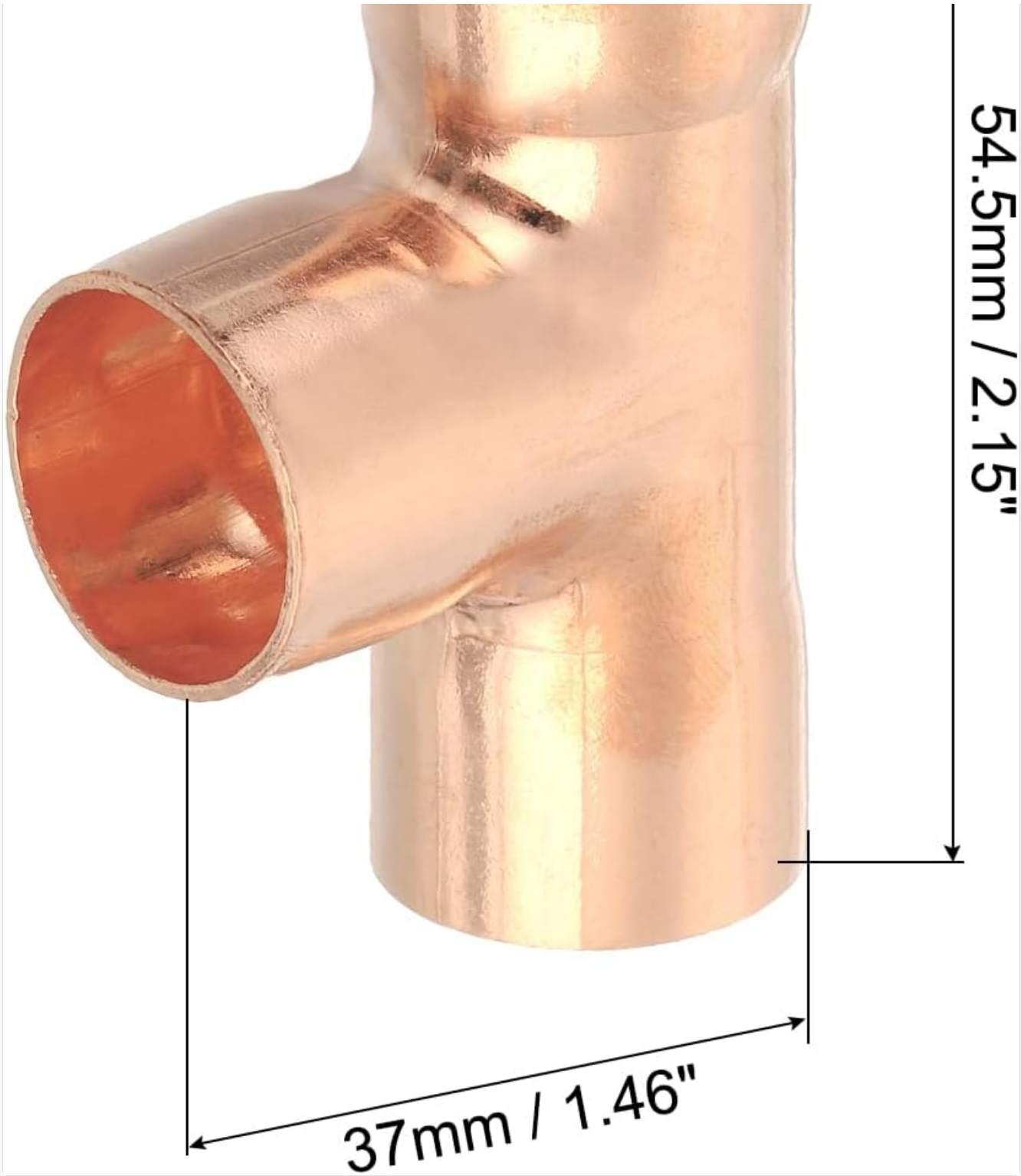


Figure 3.1: Dimensions of the Copper Tee Pipe Fitting.

4. Setup and Installation

Installing the uxcell Copper Tee Pipe Fitting typically involves sweat soldering, a common method for joining copper pipes. Proper preparation and technique are crucial for a leak-free connection.

4.1. Required Tools and Materials:

- Copper pipes of compatible inner diameter (18mm / 0.71 inch)
- Propane torch or MAPP gas torch
- Lead-free solder
- Flux (water-soluble or petroleum-based)

- Wire brush or abrasive cloth for cleaning pipes
- Pipe cutter
- Deburring tool
- Heat shield or fire-resistant mat
- Safety glasses and gloves

4.2. Installation Steps:

1. **Cut and Clean Pipes:** Cut copper pipes to the desired length using a pipe cutter. Ensure cuts are straight. Deburr the inside and outside edges of the cut pipes to remove any sharp burrs that could obstruct flow or damage the fitting.
2. **Clean Surfaces:** Thoroughly clean the outside surface of the pipe ends and the inside surface of the fitting's sockets using a wire brush or abrasive cloth until the copper is bright and shiny. This removes oxides and contaminants, ensuring proper solder adhesion.
3. **Apply Flux:** Apply a thin, even coat of flux to the cleaned outside surface of the pipe ends and the inside surface of the fitting's sockets. Flux helps clean the metal further during heating and allows the solder to flow smoothly.
4. **Assemble Joint:** Insert the fluxed pipe ends fully into the fitting's sockets. Twist the pipe slightly to ensure even distribution of the flux.
5. **Heat Joint:** Using a propane or MAPP gas torch, evenly heat the fitting around the joint. Keep the flame moving to avoid overheating one spot. The goal is to heat the fitting and pipe sufficiently so that the solder melts when touched to the joint, not directly by the flame.
6. **Apply Solder:** Once the joint reaches the correct temperature (solder will melt on contact), touch the lead-free solder to the seam where the pipe enters the fitting. The solder should be drawn into the joint by capillary action, flowing around the entire circumference. Continue feeding solder until a small bead forms around the joint.
7. **Cool and Clean:** Remove the heat and allow the joint to cool naturally. Do not quench with water, as this can weaken the joint. Once cool, wipe away any excess flux residue with a damp cloth.



Figure 4.1: Illustrative image of a copper fitting being installed.

5. Operating Principles

The uxcell Copper Tee Pipe Fitting is a passive component designed to facilitate the flow of fluids within a piping system. It does not have moving parts or require power for operation. Its function is to create a secure, leak-proof junction that allows a single pipeline to branch into two additional directions, or to combine two flows into one, depending on the system design.

Once properly installed, the fitting maintains the integrity of the fluid path, ensuring efficient and uninterrupted flow through the system. Its robust copper construction ensures long-term performance under specified pressure and temperature conditions.



Figure 5.1: Copper pipes and fittings in an installed system.

6. Maintenance

Copper pipe fittings, including the uxcell Copper Tee, are known for their low maintenance requirements due to the inherent durability and corrosion resistance of copper. However, periodic inspection can help ensure the longevity and continued performance of your plumbing system.

6.1. General Maintenance Tips:

- **Visual Inspection:** Periodically inspect all visible copper joints for any signs of corrosion, discoloration, or leaks. Early detection of issues can prevent larger problems.
- **Check for Leaks:** Even small drips can indicate a problem. If a leak is detected at a joint, it may require re-soldering or replacement.
- **Environmental Factors:** Ensure the environment around the fittings is not excessively corrosive or subject to extreme physical stress, which could prematurely degrade the material.

- **Cleaning:** If the exterior of the fitting becomes tarnished, it can be cleaned with a mild copper cleaner, though this is primarily for aesthetic purposes and does not affect performance.

No specific lubrication or routine servicing is required for this type of fitting.

7. Troubleshooting

While copper tee fittings are generally reliable, issues can arise, most commonly related to installation. Here are some common problems and their potential solutions:

7.1. Common Issues and Solutions:

- **Leak at the Joint:**
  - **Cause:** Insufficient solder, improper heating during soldering, unclean surfaces before soldering, or movement during cooling.
  - **Solution:** Drain the system, clean the joint area thoroughly, reapply flux, reheat the joint, and apply more solder. Ensure the joint is fully saturated and allow it to cool undisturbed. In severe cases, the fitting may need to be cut out and replaced.
- **Solder Not Flowing:**
  - **Cause:** Insufficient heat, unclean surfaces, or incorrect flux application.
  - **Solution:** Ensure the joint is heated evenly and sufficiently. The solder should melt when touched to the joint, not the flame. Re-clean and re-flux if necessary.
- **Corrosion Around Joint:**
  - **Cause:** Residual flux not cleaned after soldering, or exposure to corrosive chemicals.
  - **Solution:** Clean the area thoroughly with water and a brush to remove any flux residue. For external corrosion, clean with a mild abrasive and consider applying a protective coating if the environment is harsh.

If you encounter persistent issues or are unsure about a repair, it is recommended to consult a qualified plumber or HVAC professional.

8. Warranty and Support

Specific warranty information for the uxcell Copper Tee Pipe Fitting is not provided in the product details. For any warranty claims or technical support, please refer to the seller or manufacturer's official website, uxcell, or contact their customer service directly. It is advisable to retain your proof of purchase for any potential claims.
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