3D Printer PTFE Tube Pneumatic Fittings (PC4-M6 / PC4-M10) Product Manual

I. Product Overview

This product set includes two specifications of quick pneumatic fittings, specifically designed for connecting PTFE tubes with a 4mm outer diameter in 3D printers. The PC4-M6 model is made of brass, while the PC4-M10 model is made of stainless steel. Both provide a fast, reliable, and airtight connection solution for filament feed paths using 1.75mm filament. They are widely used in critical locations such as extruder inlets/outlets and hotend connections, serving as essential accessories for ensuring smooth material feeding and enhancing printing stability.

II. Product Specifications & Model Comparison

Feature	PC4-M6 Pneumatic Fitting	PC4-M10 Pneumatic Fitting
Body Material	Brass	Stainless Steel
Thread	Metric M6 external (male) thread	Metric M10 external (male) thread
Thread Length	Approx. 3mm	Approx. 6mm
Compatible Tube I.D.	For 1.75mm filament (PLA, ABS, etc.)	For 1.75mm filament (PLA, ABS, etc.)
Compatible Tube O.D.	4mm	4mm
Key Attributes	Cost-effective,good thermal conductivity & corrosion resistance	Higher structural strength, excellent oxidation & rust resistance

III. Installation & Operation Steps

Preparation

Ensure the 3D printer is completely powered off and the relevant line is depressurized before any operation.

Use a dedicated tube cutter to cut the PTFE tube, ensuring the end is perfectly square, clean, and burr-free.

Select the correct fitting model (PC4-M6 or PC4-M10) based on the thread size of your equipment's port.

Mounting the Fitting to Equipment

Align the threaded end (M6 or M10) of the fitting with the threaded port on your equipment (e.g., on the extruder or heat block).

Start by hand-tightening to ensure proper thread alignment.

Use an appropriate wrench (e.g., open-end wrench) on the fitting's base flats to tighten it moderately. Overtightening may damage the equipment's threads or crush the fitting's internal seal.

Connecting the PTFE Tube

Firmly push the prepared 4mm OD PTFE tube straight into the quick-connect port at the bottom of the fitting (usually the end with a colored release collet).

A audible or tactile "click" indicates the internal locking mechanism has engaged with the tube.

Gently pull on the tube to confirm it is securely locked in place.

Disconnecting the Tube (Correct Procedure)

You MUST first firmly press the colored release collet at the tail of the fitting all the way down.

While holding the collet depressed, pull the tube out straight and easily.

NEVER pull the tube out by force without pressing the release collet, as this will permanently damage the internal locking teeth.

IV. Usage Limitations

Tubing Diameter Limitation: Both models are strictly for use with tubing having a 4.0mm Outer Diameter ONLY. Using tubing of other sizes will result in loose connections, leaks, or inability to insert.

Pressure & Environmental Limitation:

Suitable for low-pressure applications like 3D printer filament feeding. Not intended for industrial high-pressure pneumatic or hydraulic systems.

Operating temperature is limited by the internal O-ring. Avoid prolonged exposure to environments above 80° C (e.g., adjacent to an insufficiently cooled hotend).

Compatibility Limitation:

Ensure the thread on your equipment's port exactly matches the fitting's thread (M6 or M10). Imperial threads are not compatible.

While compatible with 1.75mm filament, if used with flexible filaments (e.g., TPU), check for excessive bends in the tube path to avoid high resistance.

Media Limitation: Primarily designed for conveying air and plastic filament. For use with other liquids or chemicals, confirm seal material compatibility in advance.

V. Important Notes

Safety First: All installation and removal must be performed with the system depressurized and powered off to prevent component ejection or injury from accidental activation.

Tube End Quality is Critical: An uneven tube end is the leading cause of increased feeding resistance, damage to the internal seal, and slow leaks. Always use a proper cutting tool.

Thread Sealing Recommendation: When installing the fitting into a metal threaded port, it is advised to wrap 1-2 loops of PTFE tape or apply a small amount of thread sealant to the threads to enhance the seal and prevent seizing. Avoid allowing sealing material to enter the air passage.

Differentiating Materials & Applications:

PC4-M6 (Brass): Commonly used at locations sensitive to weight and cost, such as extruder outlets.

PC4-M10 (Stainless Steel): Due to its higher strength, it is more suitable for environments requiring greater clamping force or better corrosion resistance.

Regular Maintenance: It is recommended to periodically check (e.g., every few months) that fittings are not loose and that the locking function works properly. Clean any accumulated dust.

