

## SMC TU0425B-500

# SMC TU Series Black Polyurethane Tubing User Manual

Model: TU0425B-500

## INTRODUCTION

This manual provides essential information for the proper use, installation, and maintenance of your SMC TU Series Black Polyurethane Tubing. Adhering to these guidelines will ensure optimal performance and longevity of the product.

## PRODUCT OVERVIEW AND FEATURES

### General Description

This SMC black, flexible polyurethane tubing is designed for water or compressed air applications. It features a low compression set and low gas permeability, making it suitable for various industrial uses where reliable fluid or air transfer is critical.

### Key Features

- **Material:** Polyurethane, ether-based for immunity to hydrolysis and resistance to fungus and microorganisms.
- **Resistance:** Resistant to chemicals, oil, weather, and abrasion.
- **Hardness:** Shore A Hardness rating of 95 for resistance to kinking and puncture.
- **Compatibility:** Compatible with one-touch, insert, self-align, and miniature fittings.
- **Operating Temperature:** -4 to +140 degrees F for air; 40 to 105 degrees F for water.
- **Dimensions:** 4mm Outside Diameter (OD), 2.5mm Inside Diameter (ID), 500m Length.

### Product Images



Figure 1: Close-up of SMC TU Series Black Polyurethane Tubing, highlighting its smooth texture and internal diameter.

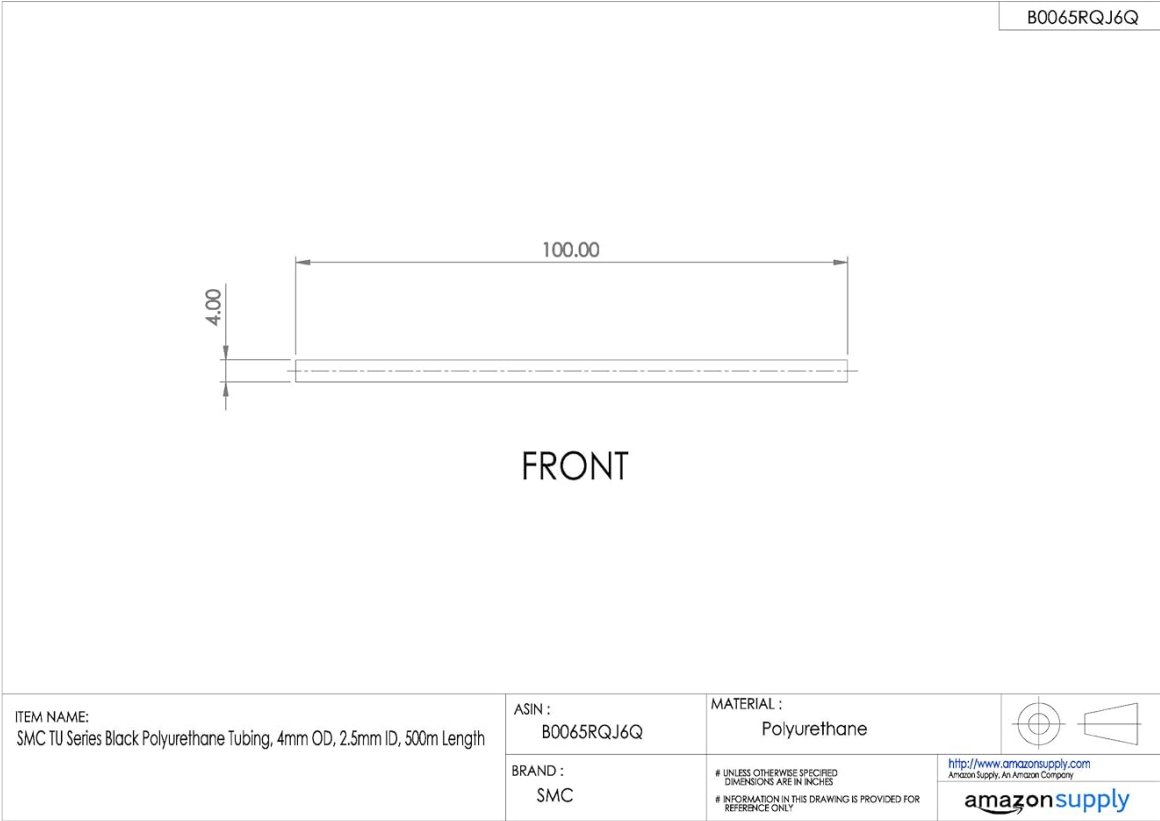


Figure 2: Front view technical drawing of the tubing, indicating key dimensions such as overall length and outer diameter.

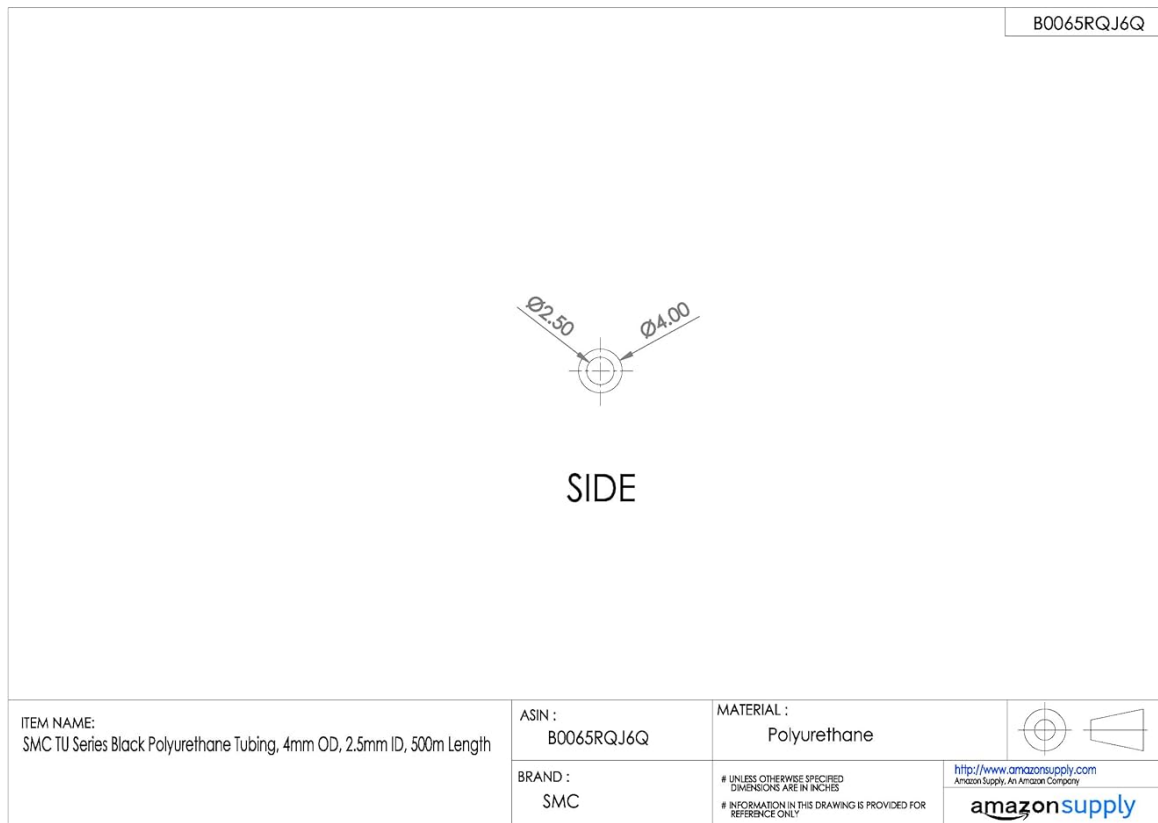


Figure 3: Side view technical drawing of the tubing, illustrating both the outer and inner diameters.

## SETUP

### Preparation

Before installation, ensure the tubing is free from kinks, cuts, or any damage. Unroll the required length carefully to avoid stress on the material. Allow the tubing to relax at room temperature if it has been stored in cold conditions, to improve flexibility.

### Cutting and Connection

Cut the tubing squarely using a sharp tube cutter to ensure a clean, burr-free end. This is crucial for proper sealing with fittings and to prevent leaks. The tubing is compatible with various fittings, including one-touch, insert, self-align, and miniature types. Ensure fittings are clean and correctly sized for 4mm OD and 2.5mm ID tubing. For optimal performance, insert the tubing fully into the fitting until it bottoms out. A slight tug can confirm a secure connection. Avoid over-tightening or applying excessive force that could deform the tubing.

## OPERATING CONDITIONS

### Temperature Range

- **For Air Applications:** -4°F to +140°F (-20°C to +60°C)
- **For Water Applications:** 40°F to +105°F (+4°C to +40°C)

Operating outside these temperature ranges may compromise the tubing's integrity and performance.

### Maximum Pressure

The tubing is rated for a maximum pressure of 115 PSI (Pound per Square Inch). Do not exceed this pressure rating to prevent tubing rupture or failure.

## Suitable Applications

This polyurethane tubing is suitable for use in a wide variety of industries and applications, including but not limited to:

- Automotive systems
- Food and beverage processing
- Material handling equipment
- Medical and pharmaceutical devices
- Packaging machinery
- General fluid and air transfer systems

## MAINTENANCE

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### Regular Inspection

Periodically inspect the tubing for any signs of wear, abrasion, kinking, or discoloration. Pay close attention to areas near fittings or where the tubing is subject to movement or stress. Replace any tubing that shows signs of degradation.

### Cleaning

Clean the exterior of the tubing as needed using a mild detergent and water. Avoid harsh chemicals or abrasive cleaners that could damage the polyurethane material or affect its properties.

### Storage

When not in use, store the tubing in a cool, dry place away from direct sunlight, UV radiation, and extreme temperatures to preserve its material integrity and flexibility. Keep it away from sharp objects or heavy loads that could cause damage.

## TROUBLESHOOTING

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### Kinking or Collapse

If the tubing kinks or collapses, check for:

- **Excessive Bending Radius:** Ensure the tubing is not bent beyond its minimum bend radius. Reroute if necessary.
- **External Pressure:** Verify no external objects are compressing the tubing.
- **Vacuum Conditions:** Ensure the application does not create excessive vacuum that could cause collapse.

### Leaks at Fittings

If leaks occur at connection points:

- **Improper Cut:** Verify the tubing was cut squarely and cleanly. Recut if necessary.
- **Incomplete Insertion:** Ensure the tubing is fully inserted into the fitting until it bottoms out.
- **Damage:** Check for damage to the tubing end or the fitting's sealing mechanism. Replace damaged components.

- **Incompatibility:** Ensure the fitting is compatible with the tubing's dimensions (4mm OD, 2.5mm ID).

### Reduced Flow

If flow is restricted:

- **Internal Blockages:** Inspect the tubing for internal blockages or severe kinks.
- **Connected Components:** Check connected components (e.g., valves, filters) for obstructions.

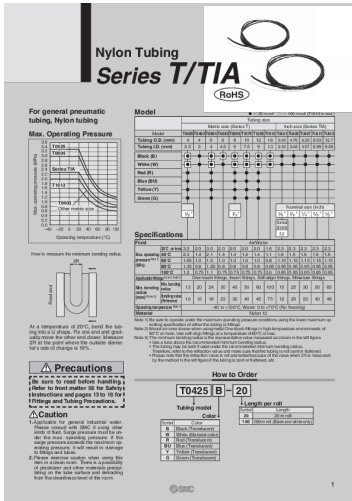
### SPECIFICATIONS

Attribute	Value
Brand	SMC
Model Number	TU0425B-500
Material	Polyurethane
Color	Black
Outside Diameter	4 Millimeters
Inside Diameter	2.5 Millimeters
Length	500 Meters
Maximum Pressure	115 Pound per Square Inch
Item Weight	12.6 Pounds
Manufacturer	SMC Corporation of America
Date First Available	November 8, 2011

### WARRANTY AND SUPPORT

For specific warranty information, technical support, or inquiries regarding this product, please contact SMC Corporation of America directly or refer to their official website. Keep your purchase records, including the ASIN (B0065RQJ6Q) and model number (TU0425B-500), readily available when seeking support.

Manufacturer: [SMC Corporation of America](#)

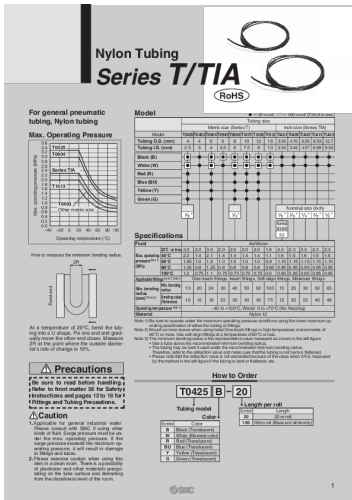


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