FCPLEXSW DSNU-25, DSNU-32

FCPLEXSW DSNU-25 and DSNU-32 Series Pneumatic Cylinder Instruction Manual

Model: DSNU-25, DSNU-32 Series

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of FCPLEXSW DSNU-25 and DSNU-32 series round mini stainless steel pneumatic cylinders. Please read this manual thoroughly before using the product to ensure proper function and to prevent damage or injury.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in serious injury or equipment damage.

- Ensure that all pneumatic connections are secure and leak-free before applying pressure.
- Always depressurize the system before performing any maintenance or adjustments.
- Do not exceed the maximum operating pressure specified for the cylinder.
- Wear appropriate personal protective equipment (PPE) when working with pneumatic systems.
- Keep hands and other body parts clear of moving cylinder parts during operation.
- Only qualified personnel should install, operate, or maintain this equipment.

3. Product Overview

The FCPLEXSW DSNU-25 and DSNU-32 series pneumatic cylinders are compact, round, and constructed from stainless steel, designed for various industrial automation applications. These single-acting or double-acting cylinders utilize compressed air to generate linear motion. They are available in multiple bore sizes (DSNU-25, DSNU-32) and stroke lengths to suit diverse operational requirements.

Figure 3.1: FCPLEXSW DSNU Series Pneumatic Cylinders. These cylinders are designed for linear motion applications using compressed air.

4. Setup and Installation

Proper installation is crucial for the performance and longevity of the pneumatic cylinder.

4.1 Mounting

Securely mount the cylinder using appropriate brackets or mounting accessories (not included) to a stable surface. Ensure the cylinder is aligned correctly with the intended direction of motion to prevent side loading on the piston rod, which can lead to premature wear or failure.

4.2 Pneumatic Connections

Connect the air supply lines to the cylinder's ports. For double-acting cylinders, two ports are present (one for extension, one for retraction). For single-acting cylinders, typically one port is used for extension, with a spring for retraction. Use thread sealant on all connections to prevent air leaks. Ensure the air supply is clean, dry, and regulated to the appropriate operating pressure.

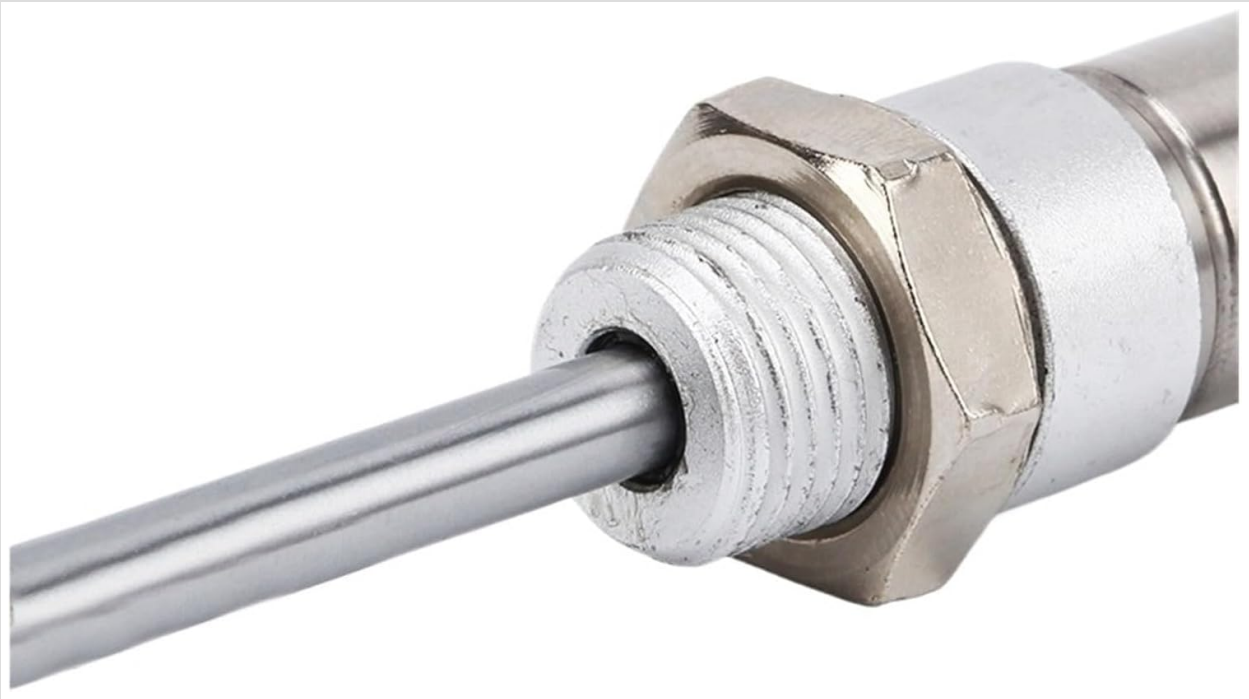

Figure 4.1: Threaded pneumatic connection point. Ensure proper sealing for leak-free operation.

4.3 Piston Rod Connection

Attach the load to the piston rod using the threaded end. Ensure the connection is secure and allows for free, unhindered movement of the rod throughout its stroke. Avoid applying excessive torque that could damage the rod or its threads.

Figure 4.2: Piston rod end with threaded connection and locking nut for attaching loads.

5. Operating Instructions

Once installed, the pneumatic cylinder is controlled by directing compressed air to its ports using a control valve (e.g., 3-way for single-acting, 4-way or 5-way for double-acting).

- **Air Pressure:** Apply the recommended operating pressure. Typically, pneumatic cylinders operate between 0.1 MPa (1 bar) and 1.0 MPa (10 bar). Refer to the specifications for your specific model.
- **Cylinder Extension:** For double-acting cylinders, apply air pressure to the extension port to extend the piston rod.
- **Cylinder Retraction:** For double-acting cylinders, apply air pressure to the retraction port to retract the piston rod. For single-acting cylinders, releasing pressure from the extension port allows the internal spring to retract the rod.
- **Speed Control:** The speed of the cylinder can be adjusted by regulating the airflow using flow control valves installed in the air lines.

6. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your pneumatic cylinder.

- **Inspect for Leaks:** Periodically check all pneumatic connections and cylinder seals for air leaks. Leaks can reduce efficiency and cause premature wear.
- **Check for Wear:** Inspect the piston rod for scratches, dents, or excessive wear. Also, check the rod seal for signs of damage or leakage.
- **Lubrication:** These cylinders are typically pre-lubricated for life. If external lubrication is required due to specific operating conditions or system design, use a non-detergent, non-acidic pneumatic lubricant

compatible with the cylinder's seals. Consult a pneumatic specialist if unsure.

- **Cleanliness:** Ensure the operating environment is clean to prevent contaminants from entering the cylinder, which can damage seals and internal components.
- **Air Quality:** Maintain a clean and dry air supply. Use air filters and dryers in your pneumatic system to prevent moisture and particulate matter from reaching the cylinder.

7. Troubleshooting

Refer to the following table for common issues and their potential solutions.

Problem	Possible Cause	Solution
Cylinder does not move or moves slowly.	Insufficient air pressure; Air leak; Obstruction in air line; Excessive load; Damaged seals.	Check air supply and regulator setting; Inspect connections for leaks; Clear air lines; Reduce load; Inspect and replace seals if necessary.
Air leaks from cylinder body or rod seal.	Damaged seals; Loose connections.	Replace damaged seals; Tighten connections.
Erratic or jerky movement.	Inconsistent air pressure; Contaminated air; Misalignment.	Check air supply stability; Improve air filtration; Realign cylinder and load.

8. Specifications

Feature	Detail
Brand	FCPLEXSW
Model Series	DSNU-25, DSNU-32
Cylinder Type	Round Mini Pneumatic Cylinder
Material	Stainless Steel
Bore Sizes (Nominal)	25mm (DSNU-25), 32mm (DSNU-32)
Stroke Lengths (Available)	10mm, 15mm, 20mm, 25mm, 30mm, 40mm, 50mm, 60mm, 80mm, 100mm, 125mm, 160mm, 200mm
Operating Medium	Filtered, lubricated or non-lubricated compressed air
Operating Pressure	Typically 0.1 - 1.0 MPa (1 - 10 bar)
Operating Temperature	Typically -20°C to +70°C (depending on seal material)
Item Weight (example for 50mm stroke DSNU-32)	1.76 ounces (approx. 50g)
Package Dimensions (example)	1.18 x 0.79 x 0.39 inches
Assembly Required	No (product itself, but installation requires assembly)
Number of Pieces	1 (per cylinder)

Feature	Detail

9. Warranty and Support

For warranty information or technical support, please refer to the FCPLEXSW official website or contact your authorized dealer. Keep your purchase receipt for warranty claims.