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UNITS NOT FOR COMMERCIAL USE

Motorized Fresh Air Damper TMD520

Installation, Operation, & Maintenance

Installation, Operation, & Maintenance Manual

I. INTRODUCTION

TRION model TMD520 is a round damper with a 24 Vac, spring-return damper motor used to control circulating air in heating, cooling, and ventilating systems.

The damper is shipped as a powered open/spring closed damper. The damper can be field-converted to a power closed/spring open damper.

II. SPECIFICATIONS

IMPORTANT

The specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Frame: Galvanized steel spiral duct, crimped on downstream side.

Sizes: 5 in., 6 in., 8 in., 10 in., 12 in., 14 in., 16 in., 18 in., and 20 in. diameters.

Cap Covers: The TMD520 cover cap comes standard in plastic and is available in metal with #6 screws. See Fig 1.

Gauges: 24 Gauge frame, and 22 Gauge blade or 22 Gauge frame, and 20 Gauge blade.

Motor Electrical Rating: 24 Vac, 60 Hz, 6VA.

Motor Electrical Connection: 4 in. leadwire.

Motor Nominal Angular Rotation: 90°.

Motor Torque: Minimum 60 in.-oz. (423 milli-newton meters) output torque available when motor is energized and device is at the spring return initial start position.

Nominal Motor Timing at 77°F (25°C) Ambient:

Energized at rated load: 30 seconds.

De-energized (spring return): 10 seconds.

Motor Ambient Temperature Rating: 40° to 140°F (5° to 60°C).

Leakage: Less than 1% at 1/2 in. wc.

Pressure Drop: Maximum at full open: 0.0329 in. wc at 800 ft/min.

Maximum Static Pressure: 1 in. wc for all models except 0.3 in. wc for TMD520.

Motor Shaft Rotation Direction: Clockwise, when energized and viewed from the base or shaft end.

Motor Mounting Means: Direct connection to damper shaft.

Motor Mounting Position: Multi-position.

Motor Dimensions: See Fig. 2.

III. FEATURES

- Adjustable damper position range stops.
- Single-blade damper.
- Galvanized steel.
- Shipped as power open/spring closed.
- Can be field-converted to power close/spring open.
- Blade closes off tightly against gasket for minimal leakage.
- Rated to operate up to 1 in. wc.
- Male (crimped) and female (uncrimped) ends to connect to any rigid or flexible round duct.

IV. APPLICATIONS

- Apartments complexes
- Condominiums
- Single family residences

V. VARIATIONS

The following variations are available at additional cost:

- Custom sizes and gauges (consult factory)
- Fresh air ventilation control systems

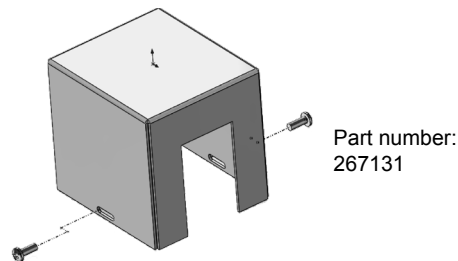


Figure 1. Metal cap option.

VI. DIMENSIONAL DETAILS

	A	B	C	D
in	3.5	2.75	3	*
mm	88.9	69.85	76.2	*

*Diameter is derived from the part number - see sizes on page 2. The length is equal to the diameter plus 2 in.

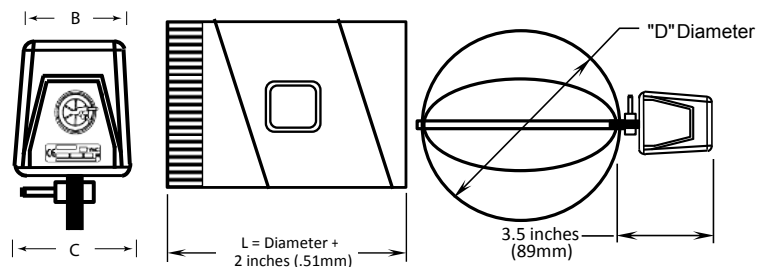


Figure 2. Motor dimensions in inches (mm)

VII. ORDERING INFORMATION

When purchasing replacement and modernization products from your TRION wholesaler or distributor, refer to the TRION Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

TRION Indoor Air Quality
101 McNeill Road
Sanford, NC 27330
P: 800.884.0002
F: 800.458.2379
E: customerservice@trioniaq.com
W: www.trioniaq.com

VIII. INSTALLATION

Before Installing this Product...

1. Read all instructions before installing this product. Failure to follow the instructions can damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. Install the product in an area that is easily accessible for checkout and service.
5. After completing installation, use these instructions to check out the product operation.

Installing the Round Damper

1. Insert the crimped end of the TMD into the uncrimped end of the rigid round duct and secure with rigid sheet metal screws (not provided). When using flexible duct, slip the duct over the end of the TMD and secure it with duct straps (not provided).
2. When installing the damper in a horizontal application, make sure the motor actuator is located on the side or top of the damper. Do not locate the motor on the bottom of the damper. The damper can be mounted in a vertical duct.
3. Check and verify that the air flow indicator is pointing in the direction of the air flow duct.

IX. WIRING

CAUTION

Personal Electrical Shock Hazard.
Can cause electrical shock or equipment damage.
Disconnect power before beginning installation.

The damper motor has a 24Vac, 50/60 cycle, 6 VA rating. The spring-return TMD damper requires 24Vac to the two motor leads to power the damper. The damper then returns to its normal position when power is removed.

NOTE: Multiple dampers can be wired in parallel.

Changing a Motor

Tools required: 2mm hex driver, 3mm hex driver, small regular screwdriver.

1. Disconnect the motor wiring.
2. Loosen the large socket head, 3mm, set screw located between the duct pipe and the motor coupling.
3. Remove the motor.
4. Ensure damper blade is held in the proper position with the set screw pointing toward the indicating position on the label.
5. Attach new motor to the coupling; be sure the standoff on motor is positioned in the grommet on the duct pipe and the set screw is aligned with the motor shaft hole.
6. Tighten the set screw.
7. Reconnect wiring, verify proper damper travel operation.

Changing TMD Power Closed to Power Open

1. Remove power to motor (damper blade in open position)
2. Loosen 3mm socket head cap set screw and remove motor.
3. Loosen 2mm set screw and remove damper travel limit collar, move to opposite end of damper shaft leaving loose at this time.
4. Pinch and push grommet (with hole) to remove, use screwdriver carefully if needed.
5. Push out plastic plug.
6. Exchange the positions of the grommet and the plug to opposite side of duct pipe.
7. Manually place damper blade in closed position.
8. Add collar and 2mm set screw, place motor on opposite side of damper. (This should now have the grommet with the hole.)
9. Tighten the cap screw. (Make sure the blade is in the closed position.)
10. Adjust damper travel limit collar with 2mm set screw to desired open position with screw against the motor support leg, then tighten screw.
11. Reconnect wiring, verify proper damper travel operation.

Changing TMD Power Closed to Spring Open (Factory Default)

1. Disconnect the motor wiring (damper blade in closed position).
2. Loosen 3mm socket head cap set screw and remove motor.
3. Loosen 2mm set screw and remove damper travel limit collar, move to opposite end of damper shaft leaving loose at this time.

4. Pinch and push grommet (with hole) to remove, use screwdriver carefully if needed.
5. Push out plastic plug.
6. Exchange the positions of the grommet and the plug to opposite side of duct pipe.
7. Manually place damper blade to open position.
8. Place motor on opposite side of damper. (This side should now have the grommet with the hole.)
9. Tighten the 3mm set screw. (Make sure the blade is held in the open position.)
10. Adjust damper travel limit collar with 2mm set screw to desired open position with screw against the motor support leg, then tighten screw.
11. Reconnect wiring, verify proper damper travel operation.

Adjusting a Motor

1. When viewed on end, the lower lever collar is normally positioned to the extreme left. This position provides complete shutoff when the damper is closed.
2. To prevent complete closure of the damper, loosen (do not remove) the 2mm set screw on the bottom of the motor and move the upper lever to the left until the desired position is reached. Tighten the set screw in the desired position.
3. The 2mm set screw is normally positioned to the left to allow the damper to fully open 90° when energized. To restrict the air flow in the open position, loosen (do not remove) the set screw and move the level to the right until the desired position is reached. Tighten the set screw. In the extreme right position, the damper should open approximately 50° with the power off.

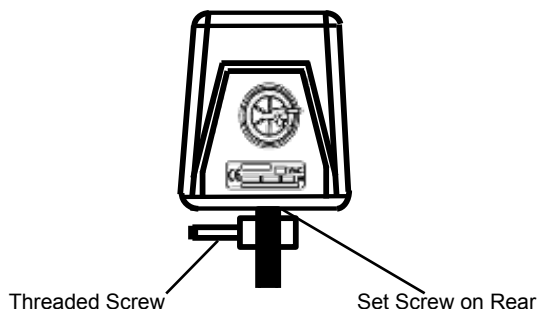


Figure 3. Airflow adjustment.

X. VERIFY PROPER OPERATION

⚠ CAUTION

Possible equipment damage.
Do not manually open or close the damper as this can damage the actuator.

To check out the TMD:

1. With 24 Vac applied to the motor leads, observe the motor powering the damper to the open position.
2. When energized, verify that the actuator connection coupling rotates in a counterclockwise direction (as viewed from the operator base end) and that the damper shaft turns with the coupling.
3. With power removed, observe the damper returning to the normally-closed position.

NOTE: To remove power, disconnect one wire from the motor.

4. If the motor does not operate smoothly and without hesitation throughout the complete opening and closing stroke, examine the damper and the shaft for free rotation within the duct.
5. If the full opening and closing is not achieved, check the lower adjustment lever.

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Indoor Air Quality

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