

MODEL 356-10

Multi-Zone Damper • 10" Deep • Straight Blades • One-Tier Construction • Galvanized Steel

Standard Materials and Construction

- FRAME:** 16 GA. galvanized steel channel, 1" x 10" x 1", four sides.
- DECK DIVIDERS:** 16 GA. galvanized steel tube, 1" x 8½", insulated.
- BLADES:** 16 GA. galvanized steel, formed to fit the shafts and to add straightness and strength. The standard blade/zone width is 6".
- SHAFTS:** ½" dia. plated steel shaft, continuous across all three decks and extends 6" at the "drive" side. Hot and cold deck blades ride on .845" O.D. galvanized steel tubes, over the ½" dia. shaft. Hot and cold decks are spring loaded to the closed position.
- SPRINGS:** Torsion springs are accessible at both sides of the damper, factory set at optimum torque.
- BEARINGS:** Each zone segment contains a blade in each of the three decks. All blades ride on sintered bronze, oil impregnated bearings. The blades are provided with thrust bearings to all the shafts to operate in the vertical position.
- SEALS:** All blade ends are sealed at the jambs and deck dividers with neoprene foam seals. All blade edges are sealed using flexible edge seals.
- DUCT CLEATS:** Galvanized steel "S" cleats are provided between all zones on the discharge side of the damper.
- LINKAGE:** All blades will be inter-locked on the extended shaft (actuator) side of the damper. The linkage rod will then be cut in the field to arrange zones as needed.

Options

- Flange frames greater than 1".
- Hole pattern in frame flanges.
- Deck dividers thicker than 1.0".
- Zones factory arranged -
 - A.) Using the available 6" standard blades (as shown).
 - B.) Using combinations of other sizes to fit the zone size requirements.
- Drive shafts extended both sides of dampers.
- Insulated frame.

Notes

1. This damper, mounted on the discharge of air-handling units, distributes conditioned air to numerous zones with a building.
2. Each zone can be sized for a specific CFM volume.
3. Each zone is controlled by a single actuator.
4. Heated and cooled air are never discharged simultaneously.

Sequence of Rotation

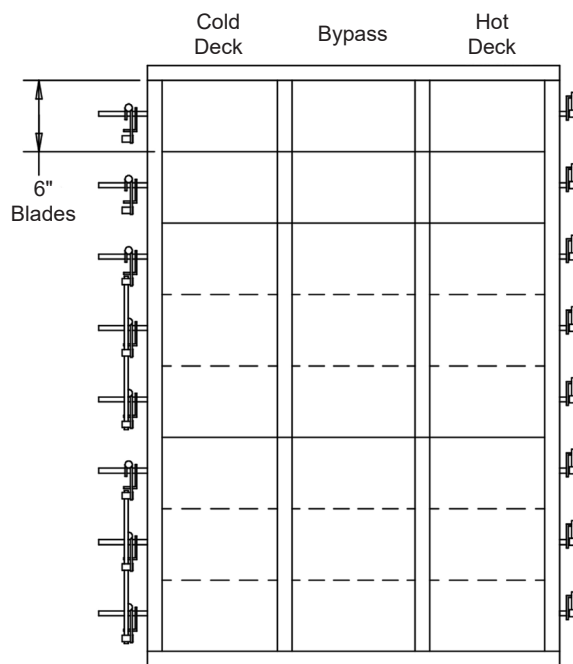
The by-pass is attached to the full length ½" diameter shaft. The hot deck and cold deck blades are mounted on (hollow) shafts that ride on bearings supported on the ½" shaft. They are spring loaded to the closed position and are opened by levers attached to the ½" shaft.

A full sequence of control occurs during 90° of rotation by the ½" diameter shaft. The sequence given below is the clockwise rotation, facing the shaft end. The same description applies from either side of the damper.

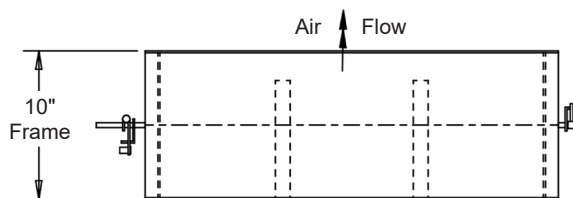
| Point of Rotation | Description |
|-------------------|---|
| 0 Degrees | The near deck is open. The bypass deck is closed. The far deck is closed. |
| 0 to 45 Degrees | The near deck closes as the bypass deck opens. |
| 45 Degrees | The near deck is closed. The bypass deck is open. The far deck is closed. |

| Point of Rotation | Description |
|-------------------|---|
| 45 to 90 Degrees | The bypass deck closes as the far deck opens. |
| 90 Degrees | The near deck is closed. The bypass deck is closed. The far deck is open. |

This is the normal position for all shafts when no rotational forces are applied. It is also the position the blades would be in when the temperature of the zone is at a set point.



Not to scale.



Shown: A typical assembly with 8 shafts linked to provide 4 zones