



**VAV FLOOR "SWIRL" DIFFUSER WITH ACTUATOR**  
**UNDERFLOOR AIR DISTRIBUTION SYSTEMS**  
**ALUMINUM • VAV • COOLING ONLY**  
**MODEL: ANFD-VAV • SIZE 8 AND 10**

**DESCRIPTION:**

The Nailor ANFD-VAV aluminum floor diffuser with actuator is designed for use in raised access floor air distribution systems, where the floor cavity is used as a pressurized supply air plenum. An integral modulating actuator provides variable air volume control in cooling applications for precise zone temperature control. The ANFD-VAV core design produces a low velocity helical "swirl" discharge air pattern. The design achieves high induction rates of room air which optimizes mixing for maximum comfort conditions.

**FEATURES:**

- **Meets all the requirements of NFPA 90A.**
- Complete assembly including actuator is UL tested and classified in accordance with UL standard 2043.
- Diffuser & components constructed of cast aluminum.
- Available in 8" (203) and 10" (254) dia. nominal sizes. Low profile design.
- Dust/dirt collection basket catches anything that might fall through diffuser face. Removable for cleaning.
- Variable volume flow regulator damper, features visual open/closed indication and includes built in end stops.
- Compact 24 VAC direct drive proportional actuator.
- Minimum and maximum airflow limits are achieved by limiting the range of the control signal.
- Actuator features two RJ12 ports for simple interconnection using modular plenum rated cables. Multiple units can be 'daisy-chained' together.
- Optional thermostat, thermostat cable and power supply modules are available (see next page).
- Low pressure drop core/damper assembly design.
- Architecturally pleasing face design compliments contemporary decor and lies flush with trim ring flange.
- Rugged trim ring design secures carpet and prevents edges from fraying.
- Unique adjustable mounting clamp design adapts to any floor panel thickness and provides simple and secure installation. Permits installation from above the floor without removal of the floor panel or carpet.
- A PVC ribbed Press Fit Gasket is also available as a "labor saving" mounting option.
- Standard finish is GRT Gray or BKT Black Textured baked enamel.

**SELECTION:**

1. Mounting:
  - MC Mounting Clamps (standard)
  - PFG Press Fit Gasket (optional)
2. Actuator Cable:
  - 12 12 ft. long (standard)
  - 20 20 ft. long (optional)
3. Finish:
  - GRT Gray     BKT Black
  - SP Special (custom color by architect) Specify \_\_\_\_\_.
4. Special Features:
  - \_\_\_\_\_.

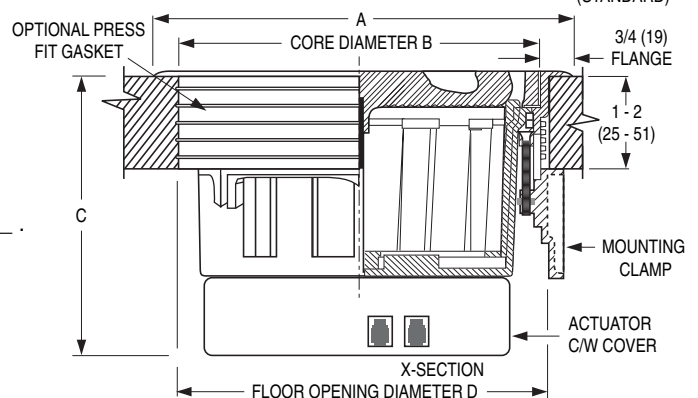
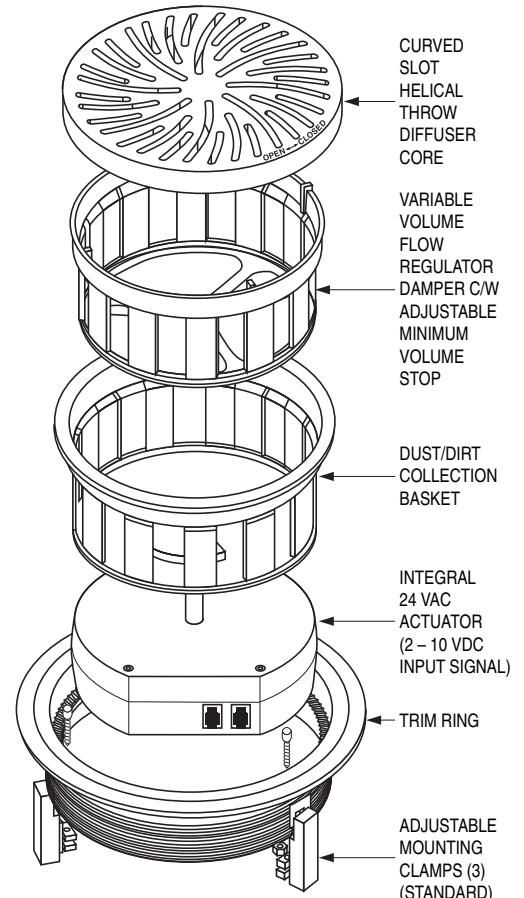
**Precision Floor Opening Diameter**

Nominal Size	Mounting	D
8 (203)	MC	8 1/4 (210)
	PFG	8 3/8 (213)
10 (254)	MC	10 7/16 (265)
	PFG	10 9/16 (268)

Tolerance: +/- 1/32 (0.8).



**NAILOR INDUSTRIES INC.**  
**FLOOR DIFFUSER**  
\*AS TO HEAT RELEASE RATE AND SMOKE OPTICAL DENSITY ONLY\*  
**R21545**                      **25KU**



**Dimensional Data**

Nominal Size	A	B	C
8 (203)	9 5/16 (237)	7 3/4 (197)	6 1/8 (156)
10 (254)	11 1/2 (292)	9 15/16 (252)	7 3/8 (187)

**SCHEDULE TYPE:** \_\_\_\_\_

**PROJECT:** \_\_\_\_\_

**ENGINEER:** \_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_

Page 1 of 2  
 Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
2 - 10 - 11	NFD	6 - 26 - 09	ANFD-VAV-1



# VAV FLOOR "SWIRL" DIFFUSER CONTROL DIAGRAM

## UNDERFLOOR AIR DISTRIBUTION SYSTEMS

### ALUMINUM • VAV • COOLING ONLY

#### MODEL: ANFD-VAV • SIZE 8 AND 10

#### DESCRIPTION:

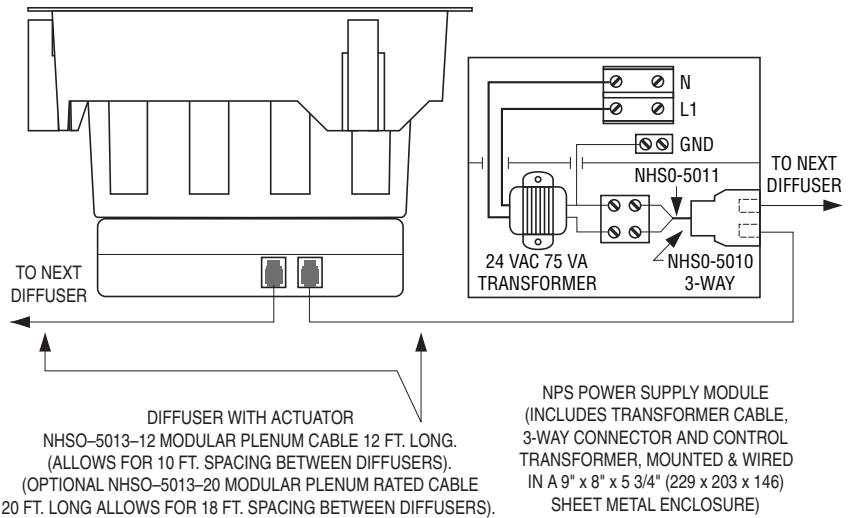
The Nailor ANFD-VAV aluminum floor diffuser is designed to provide VAV control in cooling applications. Advanced micro-computer electronics and P+I control algorithms provide precise temperature control.

#### CONTROL FEATURES:

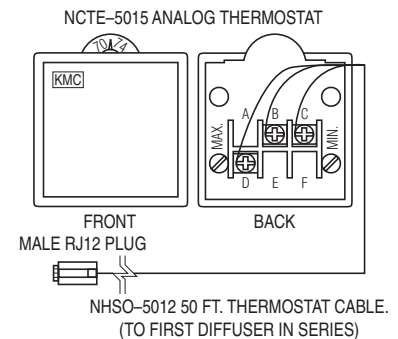
- Fast connection/wiring between units with RJ12 (phone jack) connections. Allows units to be quickly installed or relocated.
- Compact direct-drive 24 VAC actuator utilizes a 2 – 10 VDC control signal for precise airflow control.
- Standard 12 ft. modular plenum rated cables, for interconnection between diffusers, allows diffusers to be spaced on 10 ft. intervals (20 ft. cables optional).
- Power supply modules allow connection of up to 12 units on each line voltage connection (6 diffusers on each side) (8 units total or 4 on each side with opt. 20 ft. cables).
- Each thermostat can control a maximum of 3 power supplies.
- Minimum and maximum airflow limits are adjusted underneath the thermostat cover.

#### ACCESSORIES:

1. Thermostat
  - NCTE-5015-10 °F Scale
  - NCTE-5015-11 °C Scale
2. Cables:
  - NHSO-5012 50 ft. Thermostat Cable
3. Power Supply (includes NHSO-5011 transformer cable, NHSO-5010 3-way connector and transformer mounted & wired in a sheetmetal enclosure):
  - NPS-120 120 Volt Supply Voltage
  - NPS-277 277 Volt Supply Voltage
  - NPS-240 240 Volt Supply Voltage
  - NPS-480 480 Volt Supply Voltage
4. Special Features:  \_\_\_\_\_



**DETAIL A**



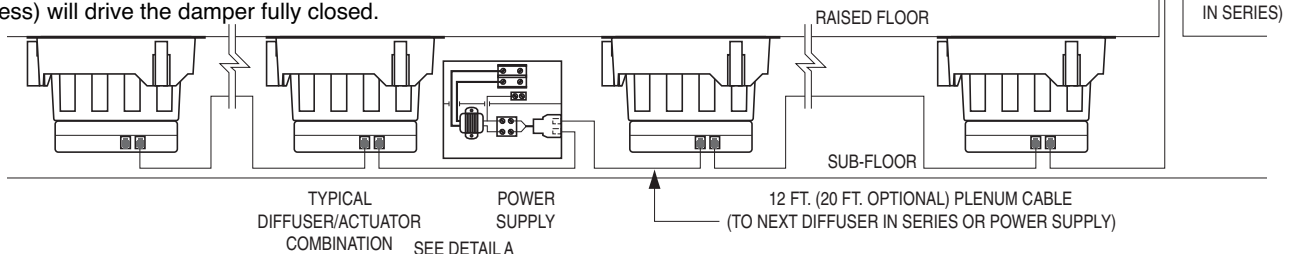
**DETAIL B**

#### SYSTEM OVERVIEW (SIDE VIEW):

A maximum of six actuators can be daisy chained on each side of a power supply module (4 actuators with optional 20 ft. cables). This allows a maximum of twelve actuators per power supply (8 actuators total with optional 20 ft. cables). Each thermostat can handle up to three power supply/actuator sub-systems for a total of up to thirty-six diffusers per thermostat, (24 diffusers with optional 20 ft. cables).

#### CONNECTION TO DDC CONTROLS:

The standard thermostat provides a direct acting 2 – 10 VDC control signal (Terminal D) to the actuator (Terminal B is Common). These wires can be connected to another signal source for control by the BMS. A 10 VDC signal will drive the damper fully open to provide maximum airflow. Similarly a 2 VDC signal (or less) will drive the damper fully closed.



#### SCHEDULE TYPE:

#### PROJECT:

#### ENGINEER:

#### CONTRACTOR:

Page 2 of 2  
Dimensions are in inches (mm).

#### DATE

#### B SERIES

#### SUPERSEDES

#### DRAWING NO.

2 - 10 - 11

NFD

6 - 26 - 09

ANFD-VAV-1