# Suggested Specifications

# Single Duct Terminal Units – Exhaust

# 30X SERIES

## Model 30X • Exhaust • Basic Unit

**1.** Furnish and install **Nailor 30X Series Single Duct Variable Volume Exhaust Terminal Units** of the sizes and capabilities as indicated on the drawings. Units shall be pressure independent with DDC, analog electronic or pneumatic or controls. Units shall reset to any flow between minimum and the maximum cataloged airflow as allowed by the specific controller.

**2.** The entire exhaust terminal unit shall be designed and built as a single unit. The units shall be provided with a variable air volume damper that controls the air quantity in response to a control signal. The units shall also include all options such as attenuators and access doors. Exhaust units shall feature a venturi valve inlet with integrated flow sensor for optimized airflow performance and reduced pressure drop. The space limitations shall be reviewed carefully to insure that all units will fit into the space allowed.

**3.** Unit casing shall be 22 ga. (.86) galvanized steel with rectangular inlet and outlet connections, configured for slip and drive connections. Basic valve assembly shall not exceed 30" (762) in length. Casing leakage downstream of the damper shall not exceed 1% @ 1" w.g. (250 Pa). High side leakage shall not exceed 2% @ 3" w.g. (746 Pa).

**4.** Damper assemblies of 16 ga. (1.6) galvanized steel shall be multiple opposed blade construction arranged to close at 45 degrees from full open to minimize air turbulence and provide near linear operation. Damper blades shall be fitted with flexible seals for tight closure and minimized sound generation. Damper blades shall be screwed through the shaft to insure that no slippage occurs. Blade shafts shall pivot on corrosion free Celcon® bearings. In the fully closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3" w.g. (746 Pa) inlet static pressure as rated by ASHRAE Standard 130.

**5.** The terminal unit shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed 0.37" w.g. (92 Pa) at 2000 fpm (10.2 m/s) inlet velocity for unit sizes 4 through 16. (The sequence of operations should be described here, if not part of the temperature controls specifications.) Gauge tap ports shall be supplied in the piping between the flow pick up and the controller.

**6.** Each unit shall be constructed with single point electrical connections. All electrical components shall be ETL or UL listed or recognized and installed in accordance with the National Electrical Code. All electrical components shall be installed in a control box. The entire assembly shall be ETL listed and so labeled.

**7.** Each unit shall be internally lined with ¾" (19) dual density fiberglass insulation. Edges shall be sealed against airflow erosion. Units shall meet NFPA 90A and UL 181 standards.

**8.** All sound data shall be compiled in an independent laboratory and in accordance with the latest version of AHRI Standard 880 and ANSI/ASHRAE Standard 130. All units shall be AHRI certified and bear the AHRI certification label.

**9.** The unit shall be capable of being changed from Right Hand to Left Hand configuration by flipping the unit over. No controls, field adjustments, nor field re-assembly shall be required to accomplish this. The unit shall be listed by UL or ETL under UL 1995 to operate in either orientation.

OPTIONSAttenuator:

**(Add the following paragraph to 30X Series:)**

**10.** Attenuator section shall be 36" (914) long and constructed of 22 ga. (.86) galvanized steel. Inlet and discharge shall be rectangular and configured for slip and drive connections. Each attenuator section shall be internally lined with ¾" (19) dual density fiberglass insulation. Edges shall be sealed against airflow erosion. Units shall meet NFPA 90A and UL 181 standards.

# 30HQX SERIES

## Model 30HQX •Hospital Grade • Dissipative Silencer

1. Furnish and install **Nailor Model 30HQX Single Duct Variable Volume Exhaust Terminal Units** of the sizes and capabilities as indicated on the drawings. Units shall be pressure independent with DDC controls. Units shall reset to any flow between minimum and the maximum cataloged airflow as allowed by the specific controller.

2. The entire terminal unit shall be designed and built as a single unit. The units shall be provided with a variable air volume damper that controls the air quantity in response to a control signal. The units shall also include dissipative silencers and access doors. Exhaust units shall feature a venturi valve inlet with integrated flow sensor for optimized airflow performance and reduced pressure drop. The space limitations shall be reviewed carefully to insure that all units will fit into the space allowed.

3. Unit casing shall be 22 ga. (0.86) galvanized steel with rectangular inlet and outlet connections, configured for slip and drive connections. Casing leakage downstream of the damper shall not exceed 1% @ 1" w.g. (250 Pa). High side leakage shall not exceed 2% @ 3" w.g. (746 Pa).

4. Damper assemblies of 16 ga. (1.61) galvanized steel shall be multiple opposed blade construction arranged to close at 45 degrees from full open to minimize air turbulence and provide near linear operation. Damper blades shall be fitted with flexible seals for tight closure and minimized sound generation. Damper blades shall be screwed through the shaft to insure that no slippage occurs. Blade shafts shall pivot on corrosion free Celcon® bearings. In the fully closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3" w.g. (746 Pa) inlet static pressure as rated by ASHRAE Standard 130.

5. The terminal unit shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed 0.40" w.g. (100 Pa) at 2000 fpm (10.2 m/s) inlet velocity for unit sizes 4 through 16. (The sequence of operations should be described here, if not part of the temperature controls specifications.) Gauge tap ports shall be supplied in the piping between the flow pick up and the controller.

6. Each unit shall be constructed with single point electrical connections. All electrical components shall be ETL or UL listed or recognized and installed in accordance with the National Electrical Code. All electrical components shall be installed in a control box. The entire assembly shall be ETL listed and so labeled.

7. Each section shall be internally lined with 13/16" (21) thick, 4 lb. density fiberglass insulation with a reinforced aluminum FSK facing. Units shall meet NFPA 90A and UL 181 standards.

8. All sound data shall be compiled in an independent laboratory and in accordance with the latest version of AHRI Standard 880 and ANSI/ASHRAE Standard 130. All units shall be AHRI certified and bear the AHRI certification label.

9. The unit shall be capable of being changed from Right Hand to Left Hand configuration by flipping the unit over. No controls, field adjustments, nor field re-assembly shall be required to accomplish this. The unit shall be listed by UL or ETL under UL 1995 to operate in either orientation.

10. Silencer sections shall contain a unit casing constructed of 22 ga. (.86) galvanized steel. Inlet and discharge shall be rectangular and configured for slip and drive connections. Each silencer section shall be internally lined with 13/16" (21) thick, 4 lb./cu. ft. (64 kg/m³) density fiberglass insulation with a reinforced aluminum FSK facing, placed inside the top and bottom sides of the silencer, thereby eliminating the requirement for field wrapping with thermal insulation. The silencer baffles shall be filled with fiberglass absorption media and encapsulated by 22 ga. (.86) perforated coated steel baffles. A mylar liner shall separate the fiberglass from the perforated baffle with an acoustical spacer and isolate the fiberglass from the airstream. The perforated metal baffles shall be rigidly fastened to the casing of the silencer. Units shall meet NFPA 90A and UL 181 standards.