Exhaust Canopy Information and Installation Instructions
For NU-NR797 Negative Pressure Recirculating Isolator

General

The NU-NR797 Negative Pressure Recirculating Isolator exhausts roughly 5% of its total volume to maintain the Isolators’ negative pressure. It is strongly recommended, per OSHA, NIOSH and ASHP, that this Isolator exhaust volume be exhausted to the outside. The exhaust system should be dedicated and treated as containing hazards and identified as such. Use applicable federal, state and local codes as well as, NFPA and ANSI/AIHI Z 9.5 for exhausting references.

NuAire recommends the use of a canopy transition. Canopy transitions, sometimes referred to as a thimble or air gap exhaust transition, provide an air gap between the exhaust efflux of the Isolator and the transition. The air gap essentially insulates the Isolator from potential variations of airflow in the plant exhaust system, particularly if multiple items are connected to the same exhaust blower system. NuAire employs a one-inch air gap with recommended minimum airflow through the gap of 175 LFPM (0.89 m/s) nominally 200 LFPM (1.016 m/s). The characteristics of Canopy Transitions are as follows:

- Preserves Isolator pressure in a simple dependable manner.
- Has a removable front service panel to permit exhaust HEPA filter integrity checks.
- Simplifies exhaust system design.
- Should be used with an adjustable exhaust system or damper to balance airflow and limit the loss of conditional air from the room.
- Provides a safety operational tolerance range for exhaust system fluctuations ranging from no exhaust to 15% above total CFM required (Isolator exhaust CFM plus air gap CFM).

For the above reasons, NuAire recommends the NU-916-797 (6” (152mm) diameter collar) exhaust canopy transition for use on the NU-NR797-400/600 Negative Pressure Recirculating Isolator.
Performance Specifications

To apply the exhaust canopy transition to Isolator and design the exhaust system properly, additional information required is given in table 1. The table is expressed in nominal values meaning where the systems should be set up to run. However, due to field variables, NuAire suggests sizing the exhaust systems with excess capability. A 10% increase over nominal CFM capacity and using a static pressure requirement of 0.3” (7mm) H₂O will assure the exhaust canopy transition operates properly.

Table 1
NU-916-797 Exhaust Flow Volume

<table>
<thead>
<tr>
<th>NuAire Isolator Model</th>
<th>Nominal Exhaust CFM @ -0.1” w.g. CMH</th>
<th>Air Gap Area Ft.²(m²)</th>
<th>Air Gap CFM (CMH)</th>
<th>Total Nominal CFM (CMH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NU-NR797-400</td>
<td>23 (39)</td>
<td>.208 (.019)</td>
<td>42 (71)</td>
<td>65 (110)</td>
</tr>
<tr>
<td>NU-NR797-600</td>
<td>33 (56)</td>
<td>.208 (.019)</td>
<td>42 (71)</td>
<td>75 (127)</td>
</tr>
</tbody>
</table>

Installation

NuAire Exhaust Canopy transitions are installed over the Isolators exhaust HEPA filter. A stud pattern on top of the Isolators exhaust filter chamber corresponds to the hole pattern on the transition. Acorn nuts, washers and lockwashers are the hardwire provided as the fastening technique. Refer to the attached drawings.

Certification

The certification of the Isolator with the exhaust canopy transition is accomplished in a two-step process. The first step would be to adjust the exhaust volume with the Isolator running so the air gap velocity is set between 175 to 225 fpm. The air gap velocity can be measured with a thermoanemometer taking several readings at the center point of the air gap.

The second step would then be to adjust the Isolator exhaust impeller to achieve the –0.10 ± .02” w.g. nominal workzone negative pressure. Once the Isolator negative pressure is set, a smoke test should always be used to verify performance of the canopy to be sure all the exhaust air is contained and there is a negative or inward flow of air into the canopy air gap.

If any questions arise, please contact NuAire Technical Service Department.
INSTALLATION PROCEDURE:

1. Place transition on cabinet and fasten with hardware provided.
2. Attach exhaust duct to transition.
3. Apply 1/4" bead of silicon RTV (Dow Corning 732) around inside edge of exhaust duct.
4. Press fit exhaust duct onto transition ring. Additional use of duct tape may be required depending upon transition.

CAUTION: Do not drill or use mechanical fasteners that will drop metal particle upon the HEPA filter just below the attachment area.