

Insulation hoses, fittings, and the fill tube: Smooth, gradual transitions are important to the free flow of insulation.

3.6 INSULATION BLOWERS AND HOSES

The quality and ease of a wall dense packing job depends on the blowing equipment and the skills of the installers. Dense packing requires experienced installers and good equipment, kept in good working order.

3.6.1 Inexpensive Blowers

Manufacturers make a variety of inexpensive blowers for small contractors and for hardware dealers to rent to do-it-yourselfers. If these blowers are maintained, they can do an adequate job on easy insulation-blowing projects.

Some inexpensive insulation machines use a single control for both the feed and the air. This control strategy isn't as good as being able to control the feed in the air separately. Also, the agitator may merely stir the insulation, resulting in inefficient insulation flow.

3.6.2 Professional Blowers

For professionals who often insulate closed cavities, modern air-lock machines are essential. Either electricity or fuel engines power these professional blowing machines. You can stop insulation from entering the tube by shutting down the agitator. The blowing air continues to empty the hose. This independent control is an advantage in achieving the correct density and complete coverage in every closed building cavity, while minimizing spillage.

3.6.3 Main Parts of Insulation Blowers

Installers should be familiar with the main parts of insulation-blowing machines. Blowing machines require periodic maintenance, especially to the airlock's vane seals, which wear out with use.

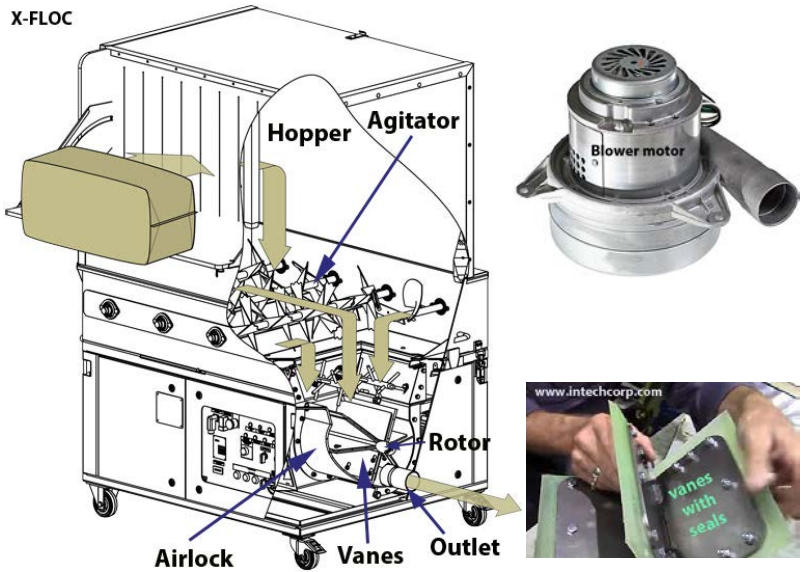
Blower Motors

Blowers move air through the airlock, forcing insulation through the airlock into the blower hose. The blowing machine should match the power of the machine's blower or blowers to the typical jobs that the insulation contractor does. Wet spray fibrous insulation requires more blower power than dry applications. Long hose lengths also demand more blower power to maintain efficient installation rates (bags per hour).

Agitators or Augers

Agitators or augers break up the compressed insulation into small clumps and individual fibers. The agitators of some blowing machines actively force the insulation into the airlock. This feature has an advantage over agitators and hoppers that depend on gravity to fill the airlock.

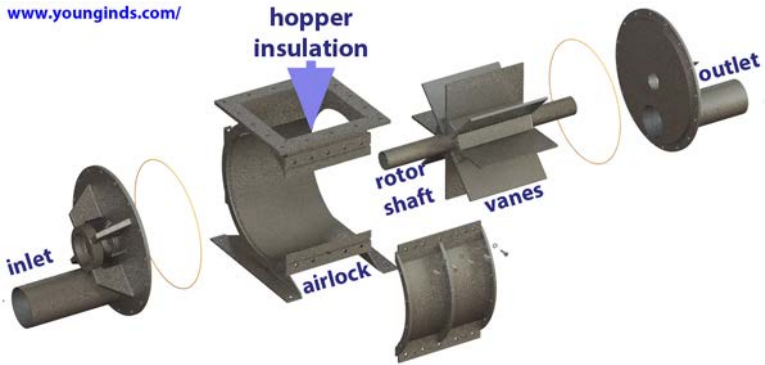
X-FLOC



Airlocks

The airlock is a cylinder with a rotor that drives a set of rotating vanes. The vanes seal tightly to the cylinder and lock the blower's air pressure away from the atmosphere outside the airlock. Insulation fills the triangular area between vanes and rotates until it reaches the outlet, where the blower forces it into the blower hose.

The airlock's size determines how many bags per hour that the machine blows. The agitator, along with gravity, must keep the airlock full of insulation for the machine to provide efficient operation.



Feed gates

Feed gates regulate the flow of the insulation into the airlock. They determine the amount of area that the insulation moves through to get inside the airlock. The area created by the feed gate varies, depending on the type of insulation and insulation job.

Remotes

There are two types of remotes: remotes with cords and cordless remotes. Remotes control the blower and the agitator. The better machines allow the insulation installer to control the blower and the agitator independently by remote control.

3.6.4 Operating the Insulation Blowing Machines

Perform these important steps before and during insulation-blowing.

- ✓ Verify that the electrical source can provide the ampere draw of the insulation machine.
- ✓ Measure the pressure created by a blowing machine by connecting the hose to a fitting attached to a pressure gauge. Close the feed gate, and turn the air to the highest setting. For cellulose, the blowing machine should develop at least 2.9 pounds per square inch (psi) or 80 inches of

water (IWC) of pressure for dense-packed cellulose.

Dense-packed fiberglass may require up to 4.0 psi or 110 IWC, depending on the type of fiberglass and the design of the blowing machine.

- ✓ Verify that you're blowing the correct density of fibrous insulation by using the bag's weight or the manufacturer's coverage tables.
- ✓ Control the agitator and the blower separately, if you can, to achieve adequate coverage and density, and also to minimize spillage.

Important Note: Dense-packed fibrous insulation can reduce air leakage and convection in closed building cavities. However, don't use dense-packed fibrous as a substitute for the air-sealing techniques described throughout this guide.

Blower pressure gauge: For blowing closed cavities, blower pressure should be at least 80 IWC or 2.9 psi. Measure the pressure with maximum air, feed gate closed, and agitator on.

