

## **Why the Nol-Tec Pneumatic Blender Is “Unique”**

The pneumatic blending cone provided by Nol-Tec Systems, Inc. is usually mounted into the bottom of the discharge cone of a vertical cylindrical vessel. It is designed to use “pulses” of compressed air (or other gas) to blend various powdered or granular bulk solid materials into a homogenized mixture.

There are a few design features incorporated into the Nol-Tec blender design, which makes it “unique” as compared to other pneumatic blender designs. These include:

The pressure of compressed gas required to achieve proper blending varies greatly, depending upon the characteristics of the material being handled, the batch size, and the amount of time allowed in the customer’s process to blend. However, as a general rule, the blend pressure will be between 20 PSI and 70 PSI. This differentiates the Nol-Tec design from those pneumatic blenders, which require much higher pressures to work properly.

The design of the Nol-Tec blending cone is such that there are no “ledges” inside of the blending vessel upon which material can be retained. Thus, no material is left inside of the blender after batch discharge. Material cross contamination between batches is thus greatly reduced.

The Nol-Tec blend cone uses a combination of material fluidization, along with dynamic material movement to ensure proper blending. This is as compared to those pneumatic blenders, which rely solely upon fluidization of the product. The design is especially useful when handling materials that vary in bulk density and particle size.

After blending is completed, the material outlet valve on the Nol-Tec blender can be completely opened and closed at any time during discharge. This is especially important if the blended product may have a tendency to segregate during discharge. By simply closing the discharge valve, and pulsing the blend cone a few times, segregation during discharge is minimized or eliminated. Many pneumatic blend cones do not have this ability. Once their discharge valve is opened, the entire contents of the blending hopper must be discharged.

Since the outlet valve on the Nol-Tec pneumatic blender can be opened or closed without affecting batch blending integrity, the unit can be used as a single ingredient “homogenizer” in continuous manufacturing processes. Most often this is done to reduce product variations as may occur in the manufacturing process. Most other pneumatic blenders do not have this ability.

Maintenance with the Nol-Tec blender cone is very quick and easy. If one of the blending pistons should ever fail, it can be removed and replaced without having to take the entire blend cone assembly apart or removing it from the blending bin. Removal is a simple matter of disconnecting the air line and removing four small bolts. We know of no other pneumatic blenders that have this design feature.

The positive manifold pressure design of the Nol-Tec blend cone nearly eliminates the possibility of material “back-feed” from the blend bin into the air supply manifold. Many other pneumatic blenders (that do not use this design) experience material back feeding problems regularly.

The amount of time required to blend a given batch in the Nol-Tec pneumatic blender is usually far less than that of a conventional mechanical blender, and is also less than that of most other pneumatic blenders.

The blending action seen in the Nol-Tec pneumatic blender is especially suited to the handling of abrasive products, or those, which require gentle blending. Many other mechanical and pneumatic blenders are not as well suited for use with these conditions.

## 为何 Nol-Tec 气力混合器是独一无二的(译文)

Nol-Tec 系统公司提供的气力混合锥头通常安装于垂直的圆柱形压力容器的卸料锥底部。利用压缩空气或其他气体的脉冲将不同的颗粒或粉状物料均匀混合。

一些独特的设计用于 Nol-Tec 的气力混合器，使其区别于其他的气力混合装置，成为独一无二的产品。其中包括：

根据处理的物料的不同性质，批次大小，以及客户生产流程可用于混合的时间多少，应用于气力混合的压缩气体的压力变化巨大。但是，根据气力混合的普遍原则，压力设置合理范围应该由 20PSIG 至 70PSIG。这使得 Nol-Tec 的气力混合器可以与其他应用更高压力气体的设备区分开来。

Nol-Tec 气力混合锥头与压力容器是“无边界”结合，以避免物料在连接处的存留。因此，降低了批次卸料后，物料残留的可能性。同时，大大减少了不同混合批次之间物料交叉污染的风险。

Nol-Tec 的气力混合锥头应用一种使物料极易流态化的内部结构，结合动态化的物料运动，确保了物料真正适当的混合。此处可与其他的单纯依赖物料本身的流态化的气力混合装置区别开来。该设计特别适用于堆密度和颗粒尺寸变化巨大的物料。

混合结束之后的卸料过程中，Nol-Tec 的卸料阀可以随时完全打开或完全关闭。这对那些卸料过程中存在可能离析的风险的混合物料是非常重要的。只需要简单的关闭卸料阀，适当的对混合锥头再施加几次脉冲充气，离析的风险将降至最低或完全消除掉。许多气力混合设备并无此功能，一旦卸料阀门被开启，混合料仓内的所有物料必须一次性被清空干净，离析就不可避免。

由于 Nol-Tec 的卸料阀门可以随时开关，而对批次混合的完整性毫无影响，由此可用于连续生产过程中，同种物料的均一化处理。这可以大大降低生产过程中，产品品质变化巨大的几率。而许多其它的气力混合设备就无此功能。

Nol-Tec 的气力混合锥头的维护是非常快速和简单的。如果混合头喷嘴中的某一个出现问题，可被单独取出并维护更换，而无需将整个混合锥头由混合容器底部取下进行维护。整个拆除过程被简化为断开气体管线，拧下四个螺丝而已。据我们了解，并无其他的气力混合设备具备此设计特性。

主动型的多路通的特殊压力设计使 Nol-Tec 的气力混合器避免了物料由混合容器反吹向气体管线的风险。其他很多不使用此设计的气力混合装置都不可避免地遇到此类麻烦。

Nol-Tec 的气力混合器完成一次设定的混合，所需时间远远少于普通的机械混合设备，和极大多数其他的气力混合设备。

Nol-Tec 的气力混合器非常适用于磨蚀性强的物料，或那些需要轻柔混合的物料。许多其它的机械混合设备或气力混合设备就很难做到这点。