



A Teledyne Fluid Systems, Hyson Products nitrogen cushion offers many advantages over the traditional air cushion.

**1. Cost**

A nitrogen cushion often costs half as much as an air cushion. It does not have the added expenses that can be incurred with an air cushion (i.e., an air compressor, an expansion tank, etc.). A nitrogen cushion can also cost less to maintain.

The nitrogen cylinders in cushions are field repairable in a matter of minutes. Seal kits are inexpensive.

**2. Consistent pressure**

A nitrogen cushion applies the same force with every stroke, since it is a closed system with no outside feeds or hose connections. Air cushions are subject to leakage and form fluctuation depending on the demands for air in other areas of the plant. Any pressure change in the cushion will affect the quality of the part.

**3. Constant force**

Nitrogen cushions can be designed with nearly constant force throughout the stroke. For example, in a drawing operation, constant force is critical to control the flow of material between the draw ring and binder ring. Many times constant force is difficult to achieve with an air cushion since pressure build-up is controlled by the air valves and expansion tanks attached to the cushion.

**4. More force in less area**

Because nitrogen cylinders are more compact than air cylinders, a nitrogen cushion can provide much greater tonnage in a smaller area than an air cushion.

**5. Versatility**

Nitrogen cushions can provide options not readily available with air cushions. For example, nitrogen cushions can be equipped with scrap chutes so that slugs can drop directly through the bolster and cushion to an awaiting scrap conveyor or bin.

Nitrogen cushions can be easily designed to have inner and outer pressure pads with independent controls. This type of cushion is very helpful for multiple forms in the same die.

**Additional features of nitrogen cushions from Teledyne Fluid Systems, Hyson Products.**

- Each cushion has a control panel for easy pressure adjustment.
- The pin plates are guided to assure proper travel without binding.
- All cushions have stops to protect the nitrogen cylinders against over-travel of the cushion.
- Most larger cushions have a hardened replaceable wear plate to prevent pitting caused by transfer pins.