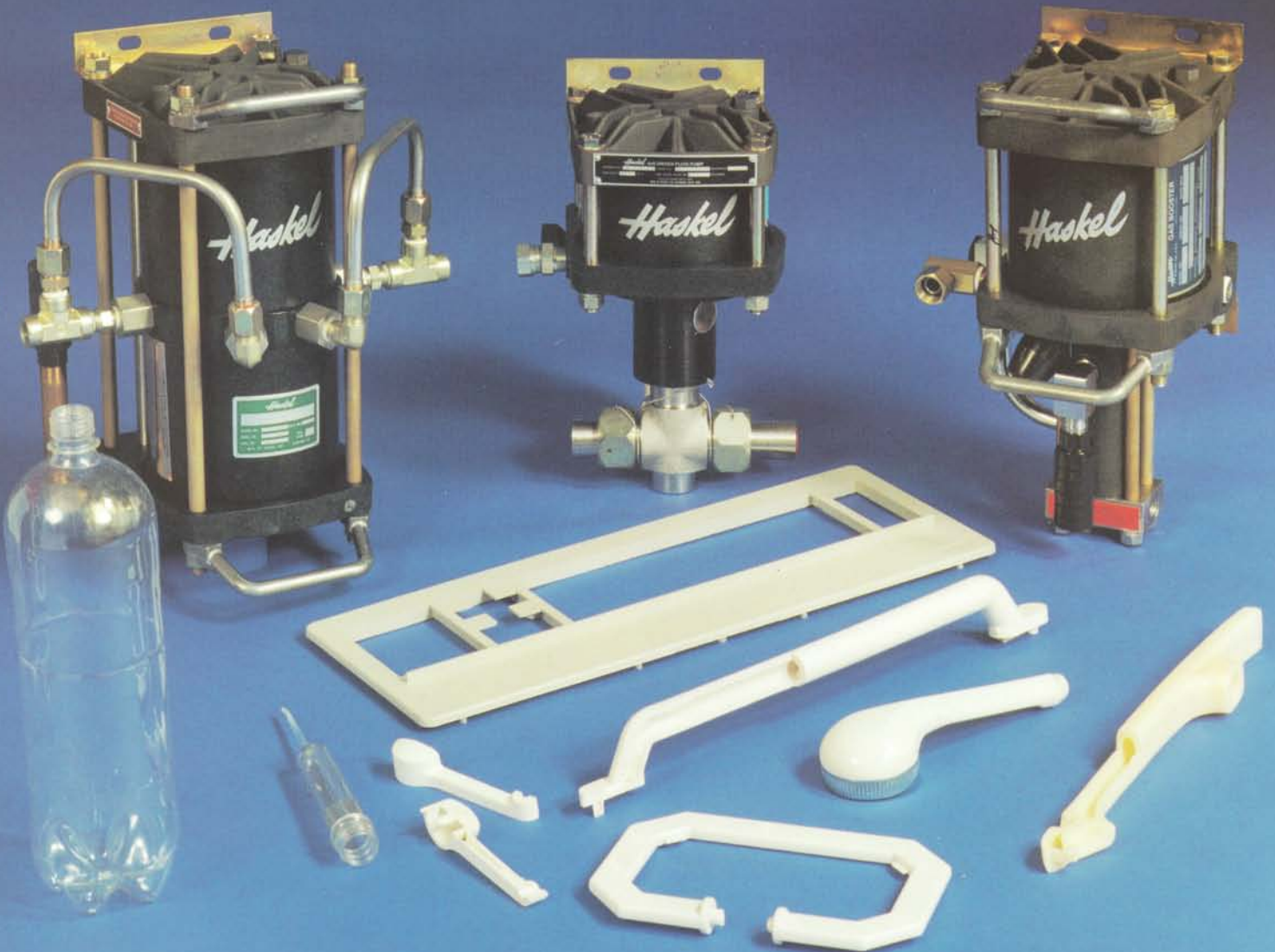


# Haskel®

INTERNATIONAL, INC.

## PLASTICS INDUSTRY

APPLICATIONS FOR HASKEL PRODUCTS



OUR PRODUCTS ARE BACKED BY OUTSTANDING TECHNICAL SUPPORT, AN EXCELLENT REPUTATION FOR RELIABILITY AND WORLDWIDE DISTRIBUTION



CERT. NO. Q 5225





## Gas Injection Technology

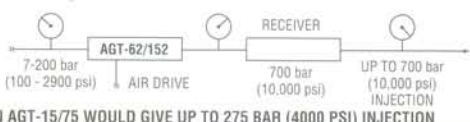
- Haskel Gas Boosters offer a fast, efficient, economical method of pressurizing Nitrogen gas for injection into the polymer melt.
- They provide continuous supply to the molding machine to pressures up to 600 bar (8700 psi) or above.
- Nitrogen supply can be from:
  - Gas Cylinders – 200 bar - 7 bar (2900 - 100 psi)
  - Nitrogen Generator – 7 bar (100 psi)
  - Liquid Nitrogen with evaporator – 7 bar (100 psi)
- Haskel boosters will take supply from these sources without outlet pressure reduction.
- Haskel Boosters can be air or hydraulically driven:
  - Air drive provides flows up to 425 NI/min (15 Scfm)
  - Hydraulic drive provides flows up to 1130 NI/min (40 Scfm)

### AIR DRIVE

#### 1. LOW PRESSURE N<sub>2</sub> SUPPLY



#### 2. BOTTLE N<sub>2</sub> SUPPLY



### HYDRAULIC DRIVE

#### 1. LOW PRESSURE AND N<sub>2</sub> BOTTLE SUPPLY



## Haskel in the Plastics Industry

Haskel manufactures one of the world's largest ranges of high-pressure pumps used either as bare product or incorporated into power packs and systems for gas injection and blow molding. Some examples of applications are shown and more is available on request. Our technical sales engineers can also help with

## GAS BOOSTERS

### Blowing Agent Metering System

Direct gas foaming can give expanded polypropylene (EPP) a performance edge over expanding polystyrene (EPS) which opens up many new applications in packaging and insulation materials. The EPP foaming process offers material with higher resistance (up to 130°C), microwave capability, improved stability and durability, smooth surface and excellent recycling properties. Haskel's gas metering systems meet all of the process demands.

- Haskel air driven pumps and boosters are used for injection of:
  - CO<sub>2</sub>
  - N<sub>2</sub>
  - Butane
  - Pentane
 as blowing agents used in polypropylene production.
- Haskel systems can pump the blowing agent either in gaseous or liquid form and controls flow from bulk storage to the injection point.
- Haskel's complete intrinsically safe systems provide blowing agent control through all stages and comprises:
  - Pressurization unit for up to 400 bar (5800 psi)
    - Gas booster for gas injection
    - Pump for liquid injection
  - System pressure control
  - Closed loop mass flow control
  - Injection pressure control

liquid pumps, gas boosters and air amplifiers. These products are being used for a variety of plastics manufacturing processes, such as gas injection molding, along with basic product details. More detailed technical literature is available on product choice and packaged systems.

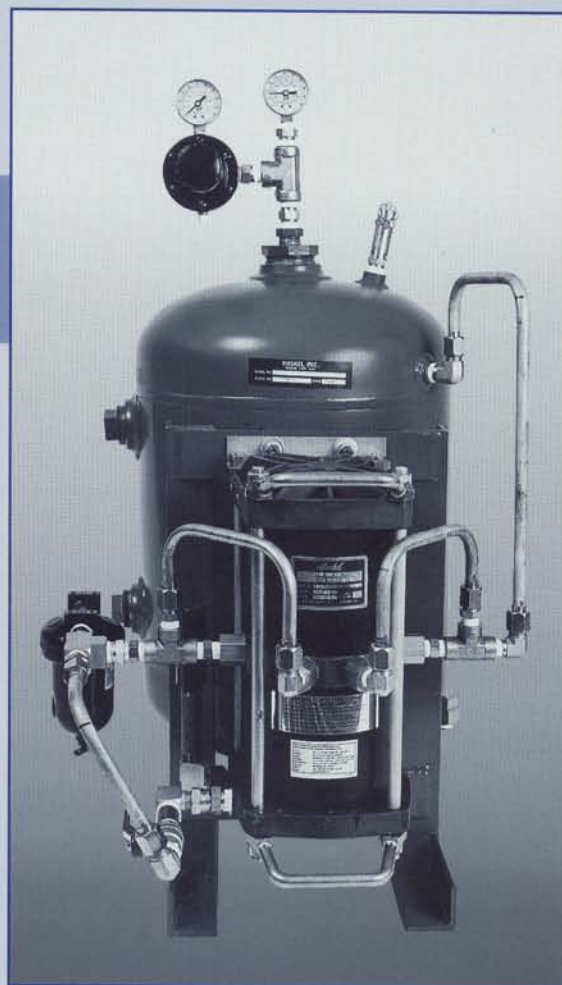
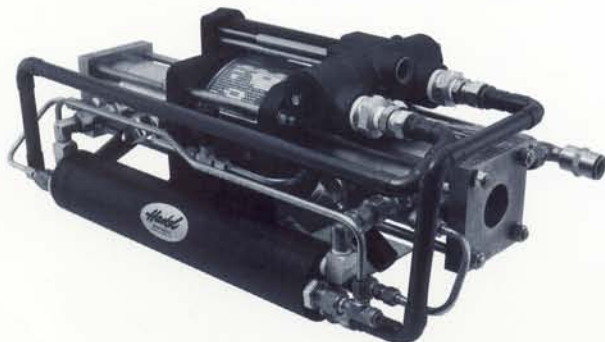
## AIR AMPLIFIERS

### Injection Blow Moldings

- Haskel amplifiers offer a fast and efficient method of blow molding small plastic containers (i.e., PET bottles) from 1 ml to 1.5 litre sizes.
- They are available in a wide range of sizes, pressure and flow rates and can be driven by air or hydraulics, depending upon the application requirements.
- They will boost standard plant air supply to storage pressure and volume required to blow mold product in the cavity mold.
- They operate on simple drive to output ratios of from 2:1 to 15:1.

Typically:

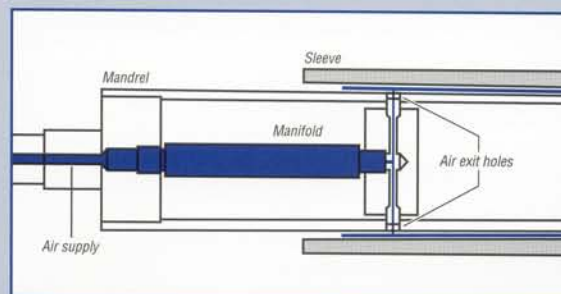
MODEL	SUPPLY PRESSURE bar/psi	OUTLET PRESSURE bar/psi	FLOW RATE NI/min/Scfm
AAD-2	6/90	12/175	370/13
8AGD-2.8	6/90	15/220	1130/40
8AGD-5	6/90	30/435	450/16



## Air Sleeves

### Plastic Printing Air Sleeve Fitting and Removal

Offset litho and rotary letterpress methods are used to print plastic films and wallpapers. Tapered print cylinders can be "floated" onto the printing mandrel using compressed air from the normal shop air line which has been boosted by a Haskel air amplifier. This ensures a tight fit for accurate print register and also avoids the need for a costly high-pressure compressor yet achieves the same result at a fraction of the cost using readily available air supply.





## LIQUID PUMPS

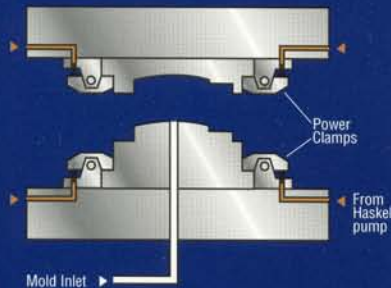
### Chemical Injection

Haskel air driven or electric liquid pumps are ideal for injection and metering of accurately dosed dyes and colors. Liquid pressures of up to 690 bar (10,000 psi) and injection rates of between 0.5 - 250 litres per day can be accommodated within the range. Bare pumps with integral pneumatic timers or fully engineered skids can be provided.



### Power Clamping

Many molding and injection processes require power clamping. Haskel air driven pumps are capable of holding high pressures indefinitely without consuming power and have established themselves as the most reliable hydraulic pumps to use for many types of machine tool, molding and injection equipment clamping applications.



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For further information on Haskel products, visit our website at: [www.haskel.com](http://www.haskel.com)

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