

**MAGUIRE®****VBD Series**

Vacuum Dryers

# Dry Up to 1000 lb/hr in 1/6 the Time with Half the Energy

That's right... **Maguire Vacuum Dryers** are proven to dry polymers in a fraction of the time and with 60% less energy than desiccant dryers.

*..and leave it to Maguire to improve on a great thing:*

- Improved design obsoletes moving canisters and minimizes moving parts.
- Continuous batch drying process.
- -40° dew point air is bled into vacuum and retention hoppers.
- Vertical design minimizes footprint.
- Double-insulation on all vessels guarantees no heat loss.
- Reduced Maintenance – no desiccant to change – no filters to clean.
- Faster drying improves production planning.
- “No stress” material drying – means no material degradation.
- Process temperatures from 160°F (70°C) up to 350°F (180°C).
- Vacuum take-off or gravity feed material discharge available.
- Backed by same 5-year warranty as all Maguire products.

The VBD-150 offers the same fast and economical drying as the VBD-1000. It is mounted on a rigid frame with a footprint of only 5.5 sq. ft. Large casters allow it to be quickly moved around the plant.



The vacuum vessel and retention hopper are easily removed for cleaning.



VBD-150



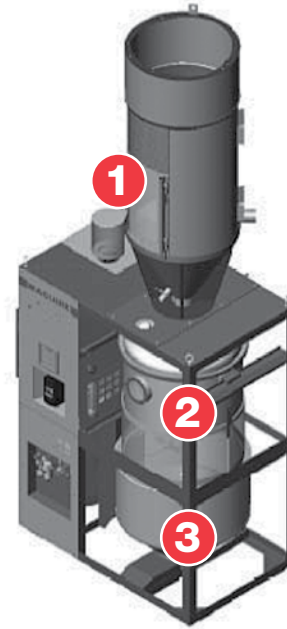
VBD-1000

# VBD Vacuum Dryers utilize a 3-stage continuous batch drying process

**Stage 1** – Material in the heating hopper is brought to set point by means of a centrifugal blower through a heating element. The requested heating temperature is adjusted on the control panel.

**Stage 2** – Upon reaching the desired set point, heated material is discharged from the heating hopper into the vacuum vessel. The vacuum is brought to 700mm Hg and held to a 20mm Hg differential for the set cycle time. The vacuum cycle typically lasts about 15 - 20 minutes so you have ready-to-process material in 30 - 40 minutes.

**Stage 3** – The dried material is discharged into an insulated retention / take-off hopper for consumption. A positive pressure heated dry air purge is maintained on the material.



## VBD Controller

### Simple is better – no confusing icons – only two screens to monitor

#### *The controller is a Motorola micro-processor*

- Four buttons provide access for setting operation mode, adjusting dryer parameters and many additional program functions.
- Alarms are shown on the display and signaled by an alarm light and horn with silence function.
- Reports can be generated via a USB port to either a memory stick or printer.
- Program updates via flash memory using a standard USB memory device.

A second 4 digit 1" LED display is used for Set and Actual Temperature.

Control panel power - powers the control panel to "ON" (main power must be "ON"). Also used to exit or cancel out of any menu option.

"ENTER" selects the highlighted menu option.

"SELECT" button toggles the display between four different screens of information.

"CHANGE" buttons navigate menus and make adjustments. Also used to silence the alarm.

A four line twenty-character backlit display shows mode of operation, temperature, elapsed cycle time, vacuum level and much more.



# VBD System Components

Vacuum Generator:  
Maintains vacuum at 700mm Hg ± 20mm Hg to ensure that moisture is drawn out of the polymer. (Location back side of the enclosure).



Heating Hopper: Insulated stainless steel hopper for drying temperatures up to 350°F (175°C).

Alarm light.

Variable Frequency Drive:  
Used to optimize blower speed. (Optional on VBD-150).



Insulated Vacuum Vessel with cleanout port.



High Efficiency Centrifugal Blower.

Insulated Retention Hopper for dried material.

Mezzanine mount is standard. (Optional floor-mount sub-frame assembly is shown with 2 fork lift pockets).

Coalescing Filters:  
Removes moisture from compressed air supply.

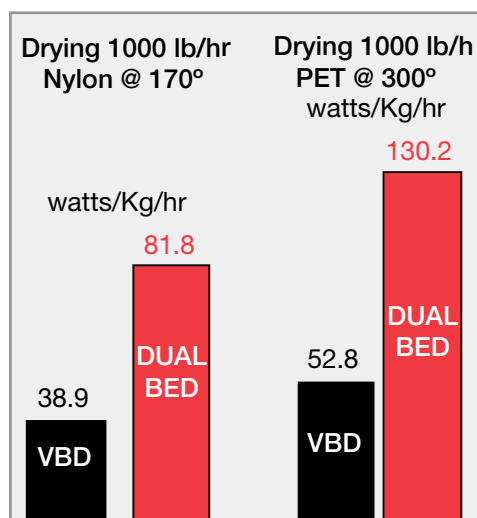


Dry Air Membrane:  
Provides dry air purge for vacuum vessel and dry air blanket of the retention hopper.



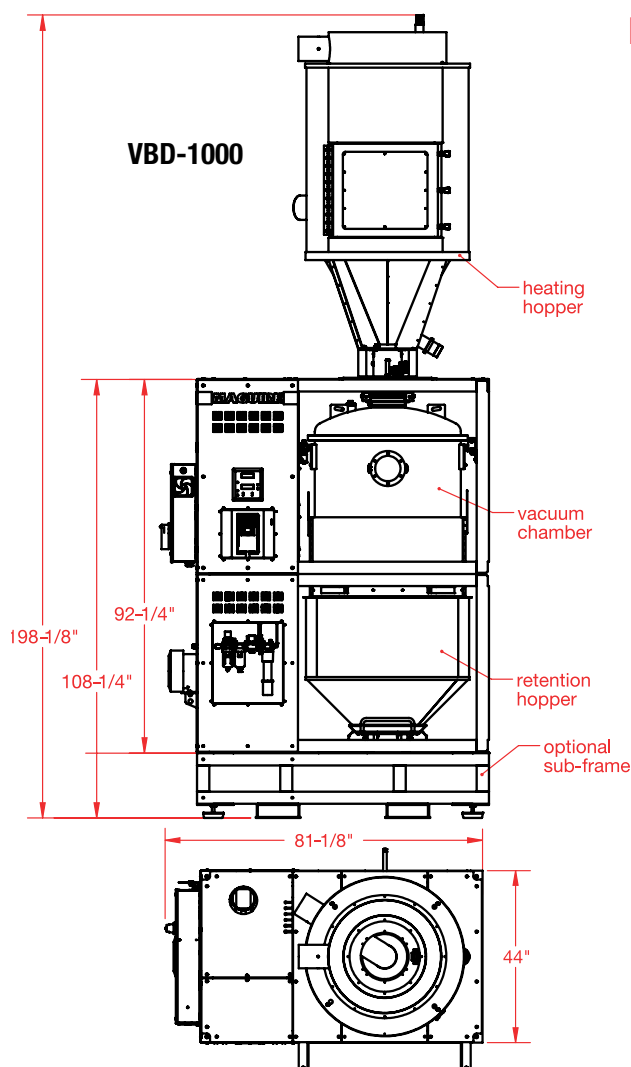
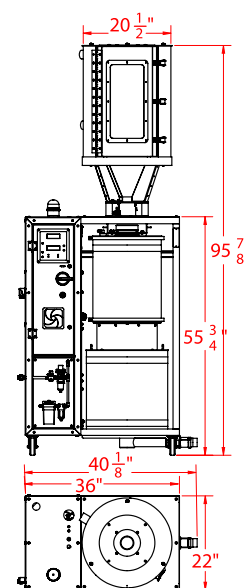
Model	VBD-150		VBD-1000	
	U.S.	Metric	U.S.	Metric
Maximum Throughput	up to 200 lb/hr	up to 90 Kg/hr	up to 1000 lb/hr	up to 455 Kg/hr
Heating Hopper Volume	2 ft <sup>3</sup>	56 L	26 ft <sup>3</sup>	735 L
Vacuum Vessel Volume	1 ft <sup>3</sup>	28 L	10.5 ft <sup>3</sup>	297 L
Retention Hopper Volume	1.3 ft <sup>3</sup>	37 L	10.5 ft <sup>3</sup>	297 L
Max. Temperature	370°F	185°C	370°F	185°C
Power Supply	240, 480, 575V/3ph/60Hz 20 A Service	400V/3ph/50Hz 15 A Service	480V/3ph/60Hz 60 A Service	400V/3ph/50Hz 100 A Service
Process Heater	6 KW	6 KW	35 KW	35 KW
Blower	1.1 HP, 105 scfm	.75 KW, 2973 L/min	10 HP, 600 scfm	7.5 KW, 16990 L/min
Compressed Air Pressure	80 psi	5.5 bar	80 psi	5.5 bar
Compressed Air Usage	4.0 scfm	113 L/hr	20 scfm	560 L/hr
Product Weight	501 lb	228 Kg	2500 lb	1135 Kg

### Energy Usage Comparison VBD vs. Dual Bed



Note: "Compressed air generation electrical requirement" is the amount of electrical energy required to make the amount of compressed air that the unit consumes. It is based on 4 SCFM requiring 1.0 HP (1.0 HP being 746 watts of power).

#### VBD-150



#### VBD-150 Options:

- 1 cu. ft. (28.3 l) heating hopper extension - Part# as8170-41 (Adds 12" / 305 mm to overall height)
- 12 lb high temperature vacuum loader - Part # NVL-12T

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#### 5-Year Warranty

Maguire Products offers one of the most comprehensive warranties in the plastics industry. We warrant all Maguire equipment to be free from defects in material and workmanship for 5 years from the date of delivery. In addition, we are committed to satisfying our customers in whatever manner is deemed most expedient to overcome any problems they may have in connection with Maguire equipment.