

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 all types of polymers in a fraction of the time and with 50% 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 constantly bled into vacuum and retention hoppers.
- Vertical design minimizes footprint.
- No heat loss is guaranteed with 4" double-insulation on all vessels.
- 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 up to 350°F. (175°C)
- Vacuum take-off or gravity feed material discharge available.
- Backed by same 5-year warranty as all Maguire products.

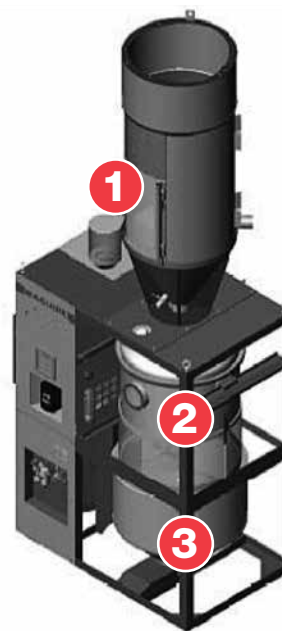
**VBD-1000****VBD-1000 installed
on mezzanine**

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 40 Kw heating element. The requested heating temperature is adjusted on the control panel and the cycle lasts 45 minutes (60 minutes for PET).

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 75mm Hg absolute pressure and held to a 20mm Hg differential for the set cycle time. The vacuum cycle typically lasts for about 20 minutes so you have ready-to-process material in 65 - 80 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 four line twenty-character backlit display shows mode of operation, temperature, elapsed cycle time, vacuum level and much more.

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

VBD System Components

Vacuum Generator:
Maintains vacuum at 70mm 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.



Insulated Vacuum Vessel with cleanout port.

Insulated Retention Hopper for dried material.



10 Hp. High Efficiency Centrifugal Blower.

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.



Energy usage comparison with dual-desiccant bed dryer

Dual Bed Dryer vs. Maguire VBD-1000 Vacuum Dryer

	Dual Bed	VBD
Drying 1000 lb/hr (454 kg/hour) of nylon at 170°F (77°C):	watts/Kg/hr	watts/Kg/hr
– Electrical consumption only	81.8	30.8
– Compressed air generation electrical requirement for 9.8 SCFM	_____	8.1
TOTAL True Energy Consumption @ 170°F (77°C)	81.8	38.9

VBD ENERGY SAVINGS 53%

Drying 1000 lb/hr (454 kg/hour) of Polycarbonate at 250°F (121°C):

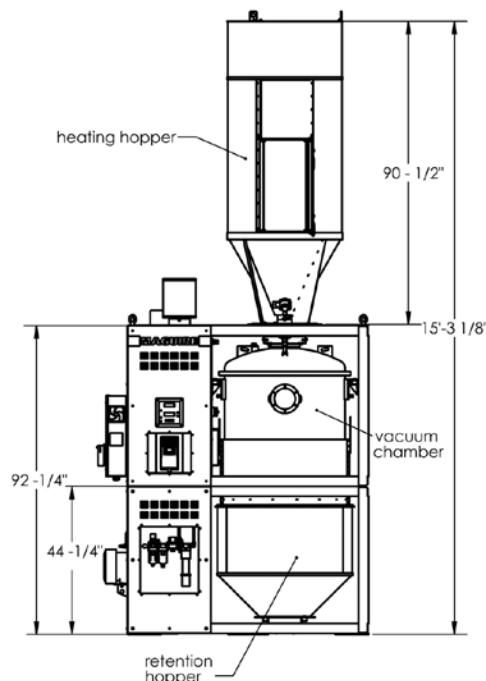
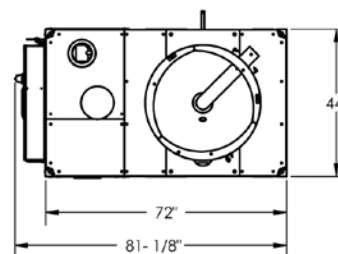
Dual Bed VBD

TOTAL True Energy Consumption @ 250°F (121°C)	120.3	53.4
---	-------	------

VBD ENERGY SAVINGS 56%

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, and 1.0 HP being 746 watts of power.

Model	VBD-1000	
	U.S.	Metric
Maximum Throughput	up to 1000 lb./hr.	up to 455 Kg
Heating Hopper Volume	1200 lb. (26 ft ³)	544 Kg (735 L)
Vacuum Vessel Volume	400 lb. (10.5 ft ³)	180 Kg (297 L)
Retention Hopper Volume	400 lb. (10.5 ft ³)	180 Kg (297 L)
Max. Temperature	370°F	185°C
Power Supply	480V/3ph/60Hz 100 A Service	480V/3ph/60Hz 100 A Service
Process Heater	40 KW	40 KW
Blower	10 HP, 600 scfm	7.5 KW, 16990 L/min
Compressed Air Pressure	80 psi	5.5 bar
Compressed Air Usage	168 ft ³ /hr.	4757 L/hr
Product Weight	2500 lb.	1135 Kg



Maguire - USA
 11 Crozerville Road
 Aston, PA 19014
 Toll free: 888-459-2412
 Tel: 610-459-4300
 Fax: 610-459-2700
 E-mail: info@maguire.com
 www.maguire.com

Maguire Canada
 299 Basaltic Road, Unit 1
 Vaughan,
 Ontario L4K 4W8
 Toll free: 866-441-8409
 E-mail: info@maguirecanada.com
 www.maguirecanada.com

Maguire Europe
 Tame Park, Tamworth
 Staffordshire
 B775DY UK
 Tel: + 44 1827 265 850
 Fax: + 44 1827 265 855
 E-mail: info@maguire-europe.com
 www.maguire.com

Maguire Italia
 Padova - Italia
 Tel: +39 049 970 5429
 Fax: +39 049 971 1838
 E-mail: italia@maguire-europe.com
 E-mail: info@maguire-europe.com
 www.maguire.com

Maguire Products Asia Pte Ltd.
 15 Changi North Street 1
 #01-15, I-Lofts
 Singapore, 4989765
 Tel: (+65) 6848-7117
 Fax: (+65) 6542-8577
 E-mail: magasia@maguire-products.com.sg
 www.maguire.com

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.