

DISCOVERING THE WORLD  
OF POSSIBILITIES WITH  
**BELT-O-MATIC**  
DRYERS AND COOLERS



**WE PUT AIR TO WORK**

TM

# BELT-O-MATIC *ADVANTAGE*

## VERSATILE:

The Belt-O-Matic is a horizontal, continuous flow, conveyor type system. The Belt-O-Matic is available in all heat, heat and cool, and all cool models. Sizes range from the R&D scale to high-end production models.



*Dan Norris - Vice-President  
Lee Norris - President  
Aaron Norris - Sales Manager*

Airflow patterns include air up, air down, and recycling air up, air down. Airflow patterns can be positive or negative. Models may be combined for multiple stage units. Construction ranges from carbon steel to complete food grade.

## ADAPTABLE:

The Belt-O-Matic can dry, cool, heat, and roast a wide variety of products including:

- ♦ Fruits
- ♦ Vegetables
- ♦ Extrusions
- ♦ Waste & By-Products
- ♦ Spices
- ♦ Wood Chips
- ♦ Nuts
- ♦ Specialty Grains
- ♦ Seeds
- ♦ Feed Products
- ♦ Petfood
- ♦ And Much More

Most products with an identifiable shape or form can be dried or cooled. The Belt-O-Matic is adaptable because of its design. The product is carried on a conveyor belt and never damaged. Air passes through the product as it is dried and/or cooled.

## SIMPLISTIC:

The Belt-O-Matic is easy to install and operate. A straightforward airflow pattern makes it easy to understand. Its sturdy construction and use of basic mass-produced components make it easy to repair and find replacement parts, no matter where you are located in the world. Units are tested and typically shipped 100% assembled.

## CONTROLLABLE:

The Belt-O-Matic can easily control: product resident time, air temperature, product depth, and air volume. These controls will allow you to determine the correct quality of the dried and/or cooled product.

## AIRFLOW:

The Belt-O-Matic's unique advantage is its use of airflow. Air is vital to proper drying and cooling. It is the vehicle that carries moisture and heat away from the product. The bottom air chamber design produces an even airflow pattern like none other on the market. The result is consistent end moisture with little or no airflow adjustments required.

The use of vane axial fans will produce more air at less horsepower than other widely used fans. Usable air can easily be identified and recycled for better efficiency. This equals better product quality at less cost. Recycling the cooling air in heat and cool models produces a wise cost advantage.

## COST EFFECTIVE:

The Belt-O-Matic is designed to operate cost efficiently without sacrificing quality. Designed for low maintenance, easy installation, durable construction, and long life, Belt-O-Matic will prove to increase your bottom line with less capital expenditure.

## WORLD WIDE DISTRIBUTION

We offer sales and service worldwide through suppliers and dealers. Our export managers, Lee Haspl and Linda Markwardt are highly qualified to work with you. They can provide complete proforma invoices, documentation, and shipping anywhere in the world.

### Overseas Contact:

Lee Haspl or Linda Markwardt  
5654 Pennwall Street  
Madison, WI 53711 U.S.A.  
Ph# 608-271-1887  
Fax# 608-276-8575  
E-mail: aw-bnw@mailbag.com



**"OVER 500 UNITS SOLD WORLDWIDE"**



# BELT-O-MATIC SINGLE STAGE DRYERS AND COOLERS

## TECHNICAL SPECIFICATIONS

MODEL	TYPE	#. OF WEBS	WEB WIDTH/LENGTH	EFFECTIVE SQ. FT. AREA	WEB DRIVE HP.	FAN SIZE FAN HP.	MAX. C.F.M. AVAILABLE	MAX. BURNER BTU/HR	*MAX. POUNDS WATER EVAPORATION
123C	all cool	1	2' x 12'	20	3/4	24" - 3	3,000	N/A	N/A
123B	all heat, heat/cool	1	2' x 12'	20	3/4	24" - 3	3,000	1 M.	120
123B-2	all heat	2	2' x 12'	40	(2) - 3/4	24" - 3	3,000	1 M.	200
205C	all cool	1	6' x 12'	60	3/4	28" - 5	10,000	N/A	N/A
205B	all heat, heat/cool	1	6' x 12'	60	3/4	28" - 5	10,000	2 M.	300
207B-2	all heat	2	6' x 12'	120	(2) - 3/4	34" - 7.5	13,000	2 M.	600
207B-2X	heat/cool	2	6' x 12' & 6' x 18'	156	(2) - 3/4	34" - 7.5	13,000	2 M.	700
207C-2	all cool	2	6' x 12'	120	(2) - 3/4	34" - 7.5	13,000	N/A	N/A
320B	all heat, heat/cool	1	6' x 24'	132	3/4	38" - 20	20,000	3 M.	1,200
320C	all cool	1	6' x 24'	132	3/4	38" - 20	20,000	N/A	N/A
320B-2	all heat	2	6' x 24'	264	(2) - 3/4	38" - 20	20,000	3 M.	2,000
320B-2X	heat/cool	2	6' x 24' & 6' x 30'	300	(2) - 3/4	38" - 20	20,000	3 M.	2,200
320C-2	all cool	2	6' x 24'	264	(2) - 3/4	38" - 20	20,000	N/A	N/A
430B	all heat, heat/cool	1	6' x 36'	204	3/4	38" - 30	30,000	4 M.	1,800
430C	all cool	1	6' x 36'	204	3/4	38" - 30	30,000	N/A	N/A
430B-1.66	heat/cool	2	6' x 24' & 6' x 36'	336	(2) - 3/4	38" - 30	30,000	4 M.	2,800
430B-2	all heat	2	6' x 36'	408	(2) - 3/4	38" - 30	30,000	4 M.	3,200
430C-2	all cool	2	6' x 36'	408	(2) - 3/4	38" - 30	30,000	N/A	N/A
430B-2X	heat/cool	2	6' x 36' & 6' x 39'	426	(2) - 3/4	38" - 30	30,000	4 M.	3,400
540B	all heat, heat/cool	1	8' x 36'	272	2	38" - 40	40,000	5 M.	2,400
540C	all cool	1	8' x 36'	272	2	38" - 40	40,000	N/A	N/A
540B-1.66	heat/cool	2	8' x 24' & 8' x 36'	448	(2) - 2	38" - 40	40,000	5 M.	3,400
540B-2	all heat	2	8' x 36'	544	(2) - 2	38" - 40	40,000	5 M.	4,000
540C-2	all cool	2	8' x 36'	544	(2) - 2	38" - 40	40,000	N/A	N/A
540B-2X	heat/cool	2	8' x 36' & 8' x 39'	568	(2) - 2	38" - 40	40,000	5 M.	4,200
440B-X2	all heat	2	6' x 39'	456	(2) - 3/4	38" - 40	40,000	5 M.	3,400
450B-X3	all heat	3	6' x 39'	684	(3) - 3/4	38" - 50	50,000	6 M.	4,200
460B-X4	all heat	4	6' x 39'	912	(4) - 3/4	38" - 60	60,000	7 M.	4,800
540B-X2	all heat	2	6' x 39'	608	(2) - 2	38" - 40	40,000	5 M.	4,000
550B-X3	all heat	3	6' x 39'	912	(3) - 2	38" - 50	50,000	6 M.	5,000
560B-X4	all heat	4	6' x 39'	1,216	(4) - 2	38" - 60	60,000	7 M.	6,000

The units listed above are our standard models. Custom modifications of specifications are available to meet your particular needs. Call us for engineering consultation and cost quotation. Because of wide variations in product moisture, consistency, particle size, product density, temperature, humidity, and others, we cannot guarantee any capacity as listed above. Specifications are subject to change without notice, due to continual product development. \*Maximum evaporation capacity in pounds of water per hour, at 240°F and full airflow. This capacity will vary in direct relation to maximum allowable airflow and air temperature on any specific product.

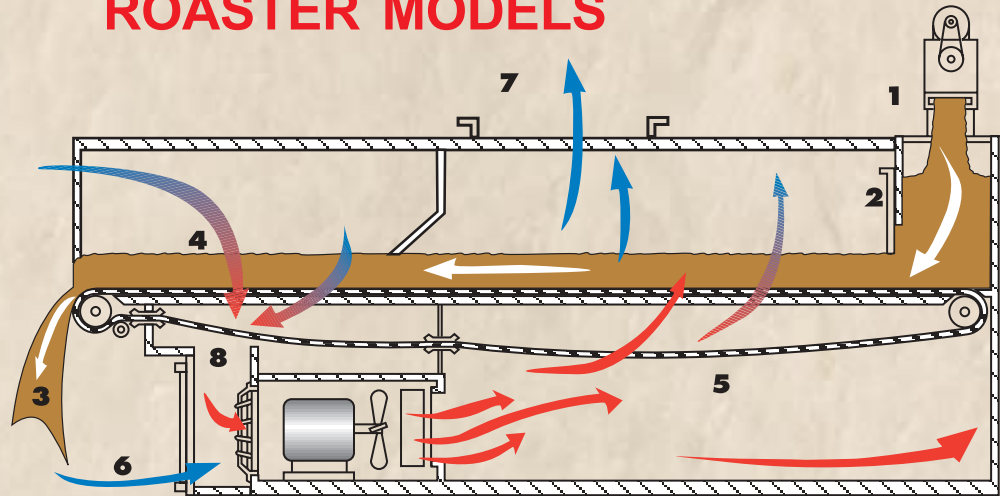
***“A MODEL FOR EVERY NEED”***

# BELT-O.

## STANDARD MODELS

### SINGLE STAGE, SINGLE AND MULTIPLE PASS CONVEYOR DRYER, DRYER/COOLER, OR ROASTER MODELS

MODEL	SIZE
123B	2' x 12'
205B	6' x 12'
320B	6' x 24'
430B	6' x 36'
540B	8' x 36'



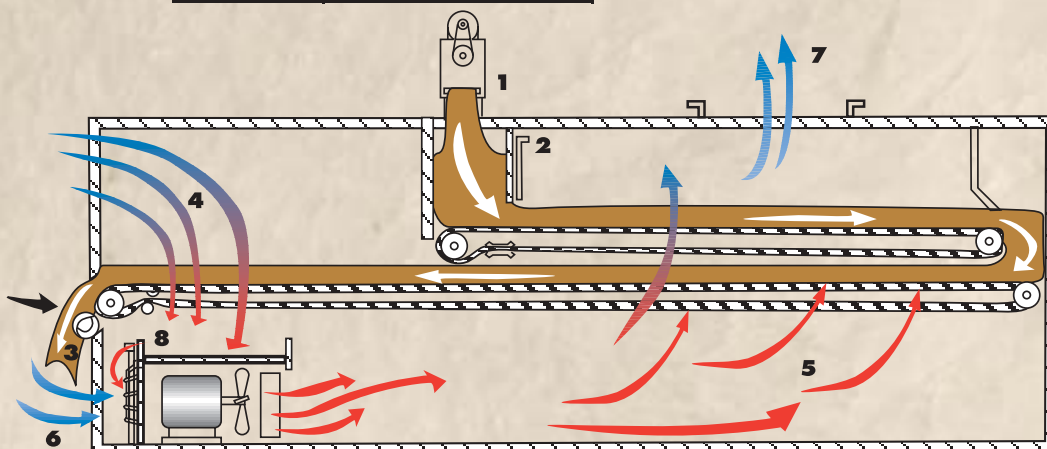
Model 320B

MODEL	SIZE
207B-2X	6' x 12' & 6' x 18'
320B-2X	6' x 24' & 6' x 30'
430B-1.66	6' x 24' & 6' x 36'
430B-2X	6' x 36' & 6' x 39'
540B-1.66	8' x 24' & 8' x 36'
540B-2X	8' x 36' & 8' x 39'

#### FEATURES:

- ◆ Recycles heat from cool section in dryer/cooler models
- ◆ Adjustable product depth
- ◆ Carries product to eliminate mechanical damage
- ◆ Variable airflow for proper airflow selection
- ◆ Conveyor carried on rollers for higher load capabilities
- ◆ Recycled exhaust air for improved efficiency
- ◆ Air up or air down configurations
- ◆ Dries and cools a wide variety of products
- ◆ Available with or without exhaust cyclone and fan or exhaust fan

#### FUNCTIONS:

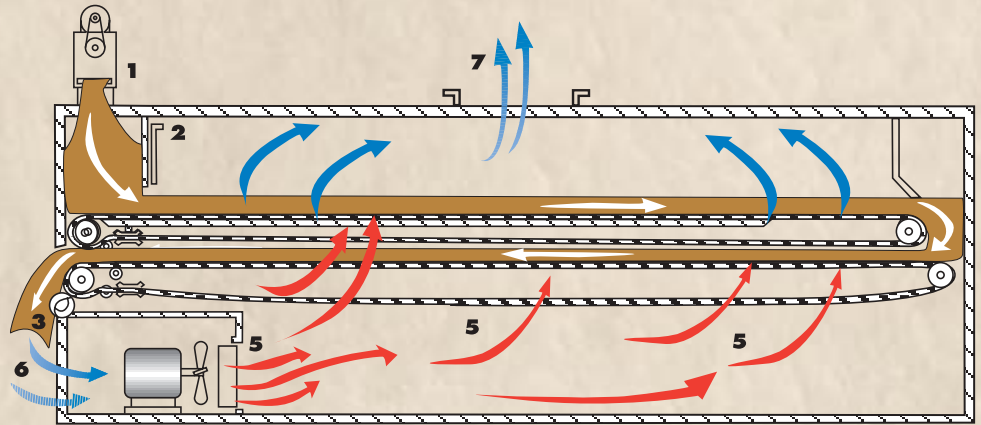


- 1 - Wet Product In
- 2 - Depth Adjustment
- 3 - Dry Cool Product
- 4 - Cooling Air
- 5 - Heating Air
- 6 - Fresh Air Intake
- 7 - Exhaust Air
- 8 - Recycling Air

# MATIC *STANDARD MODELS*

## SINGLE STAGE, MULTIPLE PASS CONVEYOR DRYERS

MODEL	SIZE
123B-2	2' x 12' - 2 WEBS
207B-2	6' x 12' - 2 WEBS
320B-2	6' x 24' - 2 WEBS
430B-2	6' x 36' - 2 WEBS
540B-2	8' x 36' - 2 WEBS
440B-X2	6' x 39' - 2 WEBS
450B-X3	6' x 39' - 3 WEBS
460B-X4	6' x 39' - 4 WEBS
540B-X2	8' x 39' - 2 WEBS
550B-X3	8' x 39' - 3 WEBS
560B-X4	8' x 39' - 4 WEBS



### ADDITIONAL FEATURES:

- ♦ Two pass design gives you double air to product contact
- ♦ Mixes product at drop
- ♦ Increased depth on second pass to accommodate shrinkage, improve efficiency, and increase resident time
- ♦ Multiple pass design increases drying area without depleting floor space

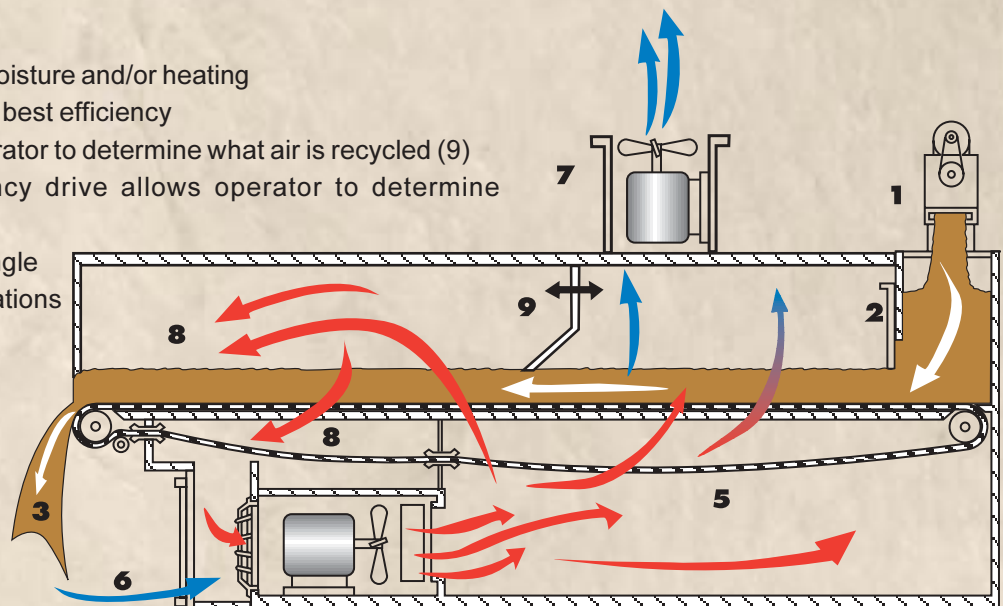


Model 207B-2

## RECYCLE HEAT MODELS

### FEATURES:

- ♦ Applications with low-end moisture and/or heating
- ♦ Recycles only usable air for best efficiency
- ♦ Adjustable plate allows operator to determine what air is recycled (9)
- ♦ Exhaust fan with frequency drive allows operator to determine correct exhaust air volume
- ♦ Available in single pass, single or multiple stage configurations



**"DESIGNED TO MEET YOUR PRODUCT AND SPACE NEEDS"**



# BELT-O-MATIC COOLERS

## PRESSURE COOLERS

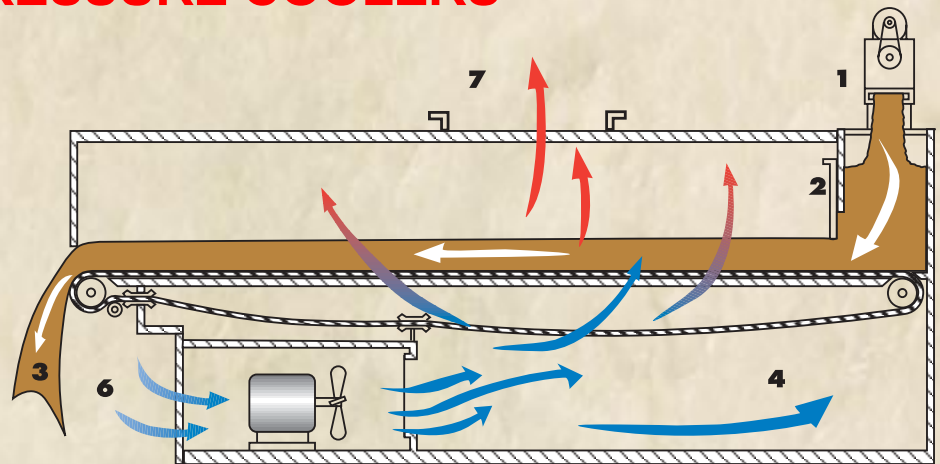
### FEATURES:

- ♦ Air up, single or multiple pass, pressure bottom air chamber
- ♦ Adjustable depth of product
- ♦ Carries product to eliminate mechanical damage
- ♦ Variable airflow for proper airflow selection
- ♦ Conveyor carried on rollers for higher bed load capabilities
- ♦ Available with or without exhaust cyclone and fan or exhaust fan
- ♦ Used to air cool a wide variety of

products

### FUNCTIONS:

- |                      |                        |                     |
|----------------------|------------------------|---------------------|
| 1 - Heat Product In  | 5 - Heated Exhaust Air | 10 - Rotary Airlock |
| 2 - Depth Adjustment | 6 - Fresh Air Intake   | 11 - Leg Stand      |
| 3 - Cool Product Out | 7 - Exhaust Air Out    | 12 - Rain Cap       |
| 4 - Cooling Air      | 8 - Fines Discharge    | 13 - Cyclone Fan    |



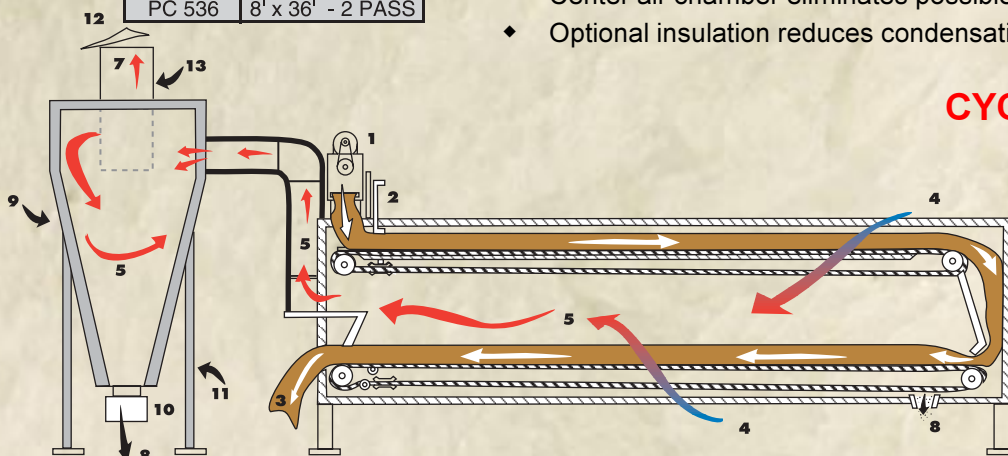
MODEL	SIZE
123C	2' x 12'
205C	6' x 12'
207C-2	6' x 12' - 2 pass
320C	6' x 24'
320C-2	6' x 24' - 2 pass
430C	6' x 36'
430C-2	6' x 36' - 2 pass
540C	8' x 36'
540C-2	8' x 36' - 2 pass

## VACUUM COOLERS AND CYCLONES

### VACUUM COOLER FEATURES:

- ♦ Air up and air down, single or two pass, negative air cooler
- ♦ Adjustable depth and airflow selection to compensate for varying air quantities
- ♦ Available with or without exhaust cyclone and fan or exhaust fan
- ♦ Center air chamber eliminates possible contamination in top cover
- ♦ Optional insulation reduces condensation on cooler inner sidewall

MODEL	SIZE
PC 212	6' x 12'
PC 312	6' x 12' - 2 PASS
PC 324	6' x 24' - 2 PASS
PC 436	6' x 36' - 2 PASS
PC 536	8' x 36' - 2 PASS



### CYCLONE FEATURES:

- ♦ Total negative system, high efficiency style
- ♦ Adjustable pitch axial fan, more air at less horsepower
- ♦ Silencers available for sensitive areas
- ♦ Wide variety of diameters available

**"USED TO AIR COOL A WIDE VARIETY OF PRODUCTS"**

# BELT-O-MATIC TWO STAGE DEHYDRATORS

## TECHNICAL SPECIFICATIONS

MODEL	TYPE	# OF CONVEYOR	WEB WIDTH/LENGTH	EFFECTIVE SQ. FT. AREA	FAN SIZE FAN HP.	MAXIMUM C.F.M. AVAILABLE	MAXIMUM BURNER BTU/HR	MAXIMUM POUNDS WATER EVAPORATION
2-20-2.5	all heat	2	2' x 30'	104	45	17,000	2 M.	1,000
6-33-2.5	all heat	2	6' x 49'	520	240	85,000	10 M.	3,300
6-33-2+2	all heat	3	6' x 49'	620	280	125,000	15 M.	5,000
6-33+33-2	all heat	4	6' x 66'	792	360	155,000	20 M.	6,000
8-50-2.5	all heat	2	8' x 84'	1,040	470	170,000	20 M.	7,000
8-50-2+2	all heat	3	8' x 84'	1,300	580	255,000	30 M.	10,100
8-50-50-2	all heat	4	8' x 100'	1,600	720	340,000	30 M.	14,000
12-50-2.5	all heat	2	12' x 84'	1,600	720	300,000	30 M.	13,000
12-50-2+2	all heat	3	12' x 84'	2,000	900	400,000	35 M.	17,000
12-50+50-2	all heat	4	12' x 100'	2,400	1,080	510,000	36 M.	21,000
12-75+75-2	all heat	4	12' x 150'	3,600	1,620	765,000	54 M.	31,500

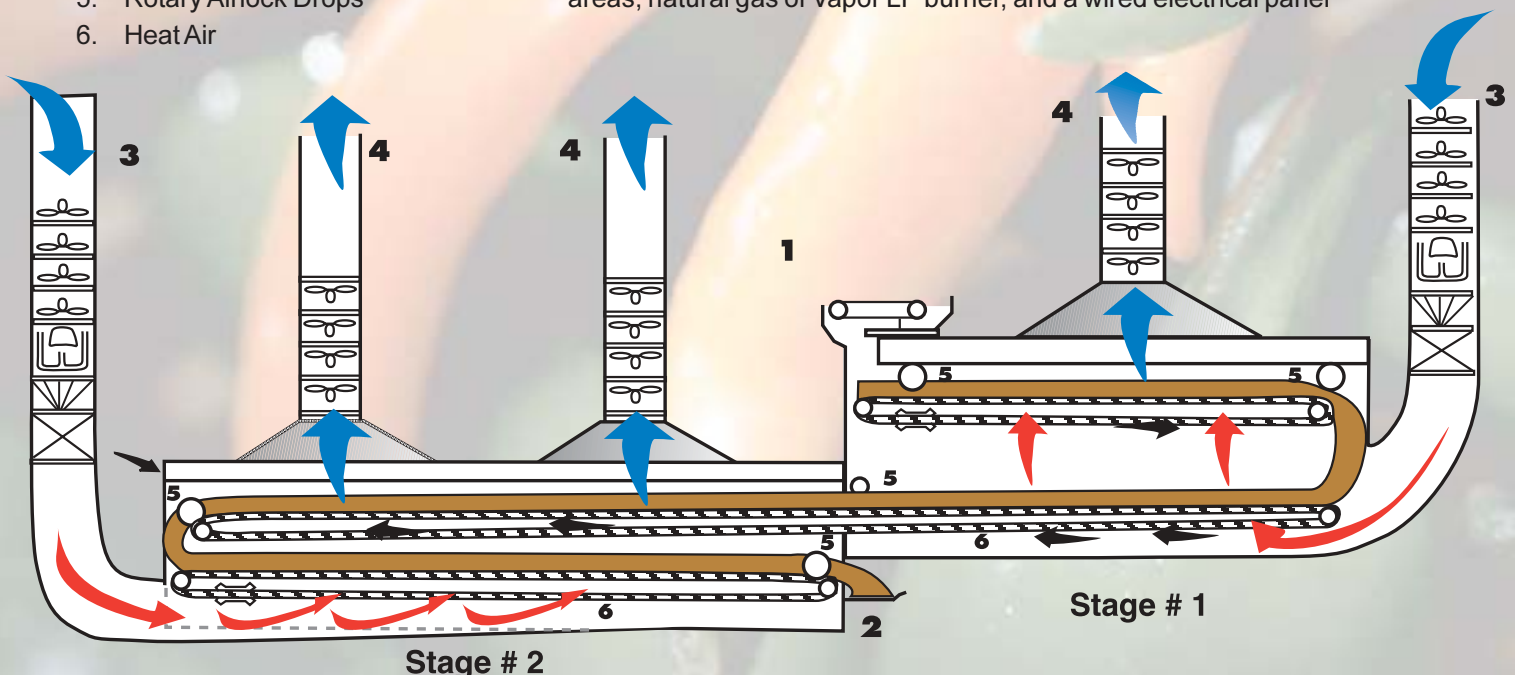
The units listed above are our standard models. Custom modifications of specifications are available to meet your particular needs. Call us for engineering consultation and cost quotation. Because of wide variations in product moisture, consistency, particle size, product density, temperature, humidity, and others, we cannot guarantee any capacity as listed above. Specifications are subject to change without notice, due to continual product development. \*Maximum evaporation capacity in pounds of water per hour, at 240°F and full airflow. This capacity will vary in direct relation to maximum allowable airflow and air temperature on any specific product.

### FUNCTIONS:

1. Wet Product In
2. Dry Product Out
3. Fresh Air Intake
4. Exhaust Air Out
5. Rotary Airlock Drops
6. Heat Air

### FEATURES:

- ◆ Multiple fan configuration for improved airflow selection and control
- ◆ Multiple pass design provides several mixes
- ◆ Standard features; 304 SS interior contact, insulated, rotary drop airlocks, finger stirrers, belt wiper spreader, 24" depth clearance, belt wash down areas, natural gas or vapor LP burner, and a wired electrical panel

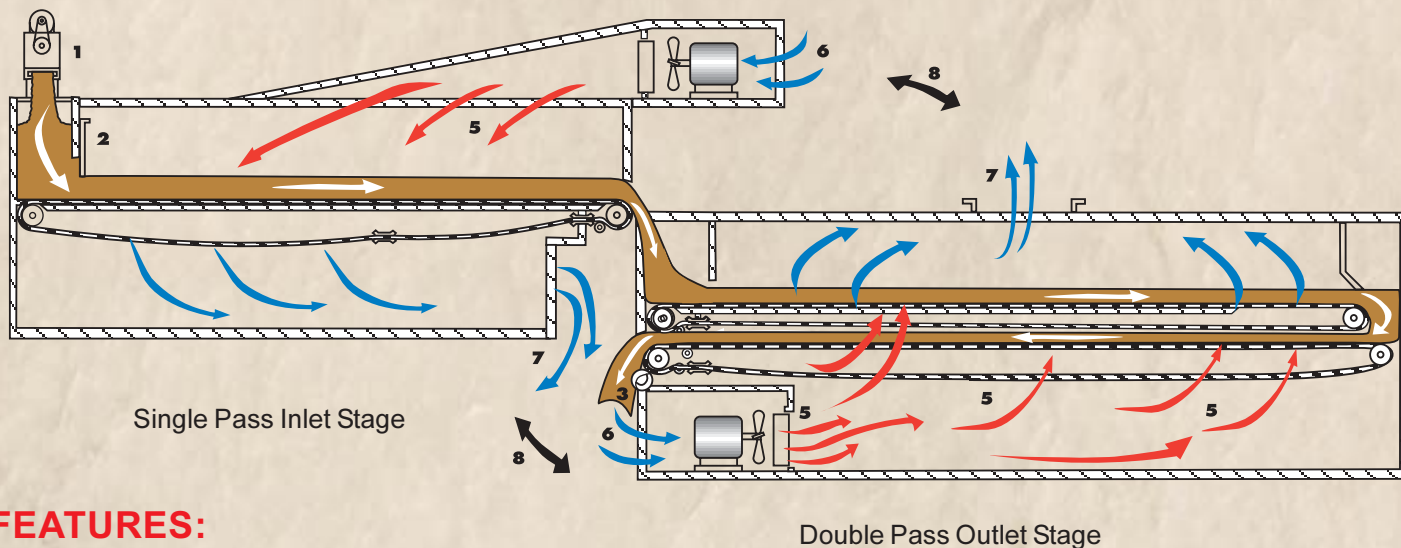


**“TOTAL CONTROL OF AIRFLOW, RESIDENT TIME, DEPTH, AND TEMPERATURE”** 7

# BELT-O.

CUSTOM MODELS

## CUSTOM BUILT, MULTIPLE PASS, MULTIPLE STAGE DRYERS

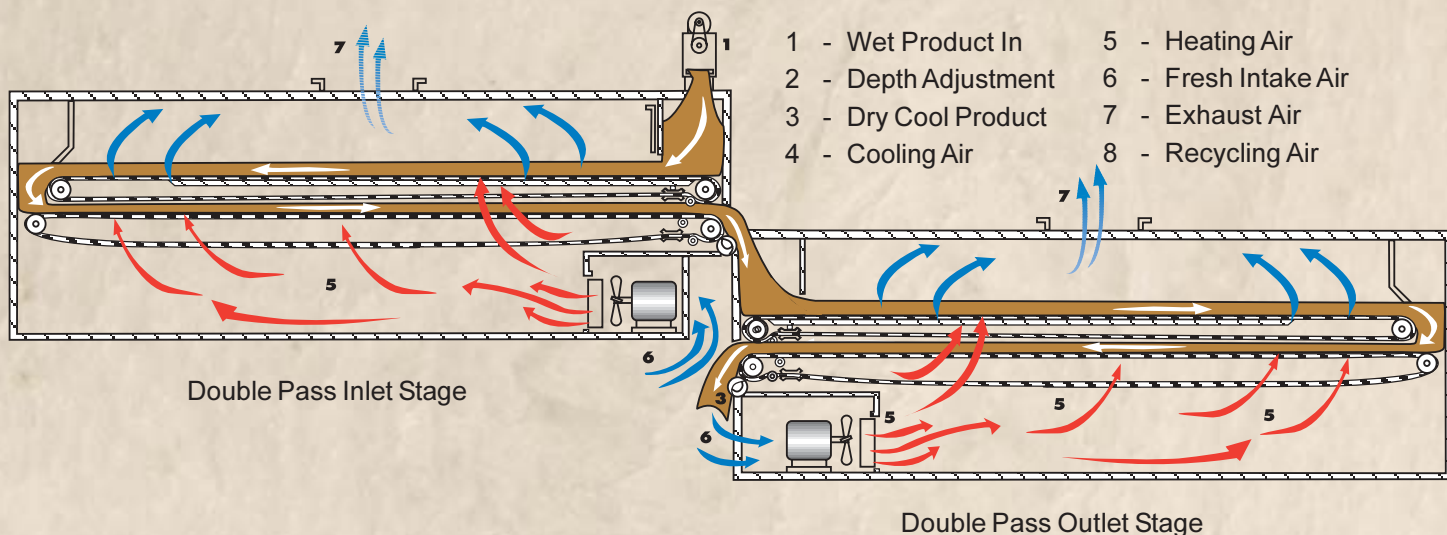


### FEATURES:

- ◆ Combine single stage models to produce a custom, multiple stage model to fit your needs. Select models from page #3 technical chart
- ◆ Gentle handling features for delicate products
- ◆ Adaptable to a wide variety of food and specialty applications
- ◆ Several optional features available to meet your processing needs
- ◆ Multiple mixes for better uniformity and minimal sticking
- ◆ Multiple controls allow the operator to adjust airflow, depth, time, and temperature at various stages in the drying process. This will meet multiple product requirements
- ◆ Models can be air up or air down at any stage to match product requirements



### FUNCTIONS:



**"A DRYING METHOD THAT IS RELIABLE"**



# -MATIC *FOOD GRADE DESIGN*

## SANITARY FEATURES AVAILABLE:

- ♦ Food grade stainless steel construction available inside and outside
- ♦ Reverse end drive system removes conveyor belt drive from product stream at the load end
- ♦ Continuous belt cleaning and wash down areas
- ♦ No internal ledges to catch product
- ♦ Access doors to all areas for inspecting and cleaning
- ♦ Few internal parts reduces contamination
- ♦ Tubular steel structure
- ♦ Belt can be continuous or periodically cleaned by brush, steam, bath, or air



*Model 540B 1.66 Inlet Stage - Custom built cherry dryer*

## CONVEYOR BELTS:

- ♦ Three standard types available:
  - CB2-120-96-18 (Balance weave for 1/4" or smaller products)
  - B-60-48-16 (Balance weave for 1/8" or larger products)
  - Solid tray (For sticky and plugging products)
- ♦ Available in 304 SS and galvanized wire
- ♦ Common and popular belt in a wide variety of industries
- ♦ Easy to service and clean



## ADDITIONAL SANITARY FEATURES:

- ♦ 304 SS wash down motors
- ♦ Epoxy coated wash down gear reducers
- ♦ Wash down bearings
- ♦ Food grade rubber lagging
- ♦ Epoxy paint

**LE & UNIQUE TO YOUR PRODUCTION"**

# BELT-O-MATIC

## DRYING/STEEPING SYSTEM

### PROCESS

The Belt-O-Matic Drying/Steeping (D.S.) system was developed to improve quality and increase drying capacity in the peanut industry. Quality is improved through better moisture consistency of the kernel and less stress on the nut while reducing molds and aflatoxins. The drying/steeping method reduces the drying time while increasing the drying capacity.

Short exposures to heat allows the external surface to dry without placing internal stress on the product. Therefore, higher temperatures can be used to lessen drying time without damaging the quality. Steeping time is required after the heat exposure to allow time for the moisture to migrate from the inside to the outside. The moisture consistency of individual pieces is increased through long steeping times, several drying/steeping cycles, and several product mixes.

### FUNCTIONS:

- A - Wet Product Inlet
- B - Drying Section
- C - Heating Air
- D - Recycled Air
- E - Fresh Intake Air
- F - Steeping Section (no air)
- G - Cooling Section
- H - Cooling Air
- I - Dry/Cool Product Outlet
- J - Bucket Elevator
- K - Elevator Outlet
- L - Vibrator Spreader
- M - Cleaner

### APPROACH:

The Belt-O-Matic D.S. system can be either a batch or continuous flow method. The D.S. system incorporates alternating drying and steeping sections. One drying and one steeping section constitutes one cycle. The number of drying/steeping cycles will depend on the amount of moisture that needs to be removed. The air velocity, resident time, product depth, air temperature, and product temperature can be controlled.

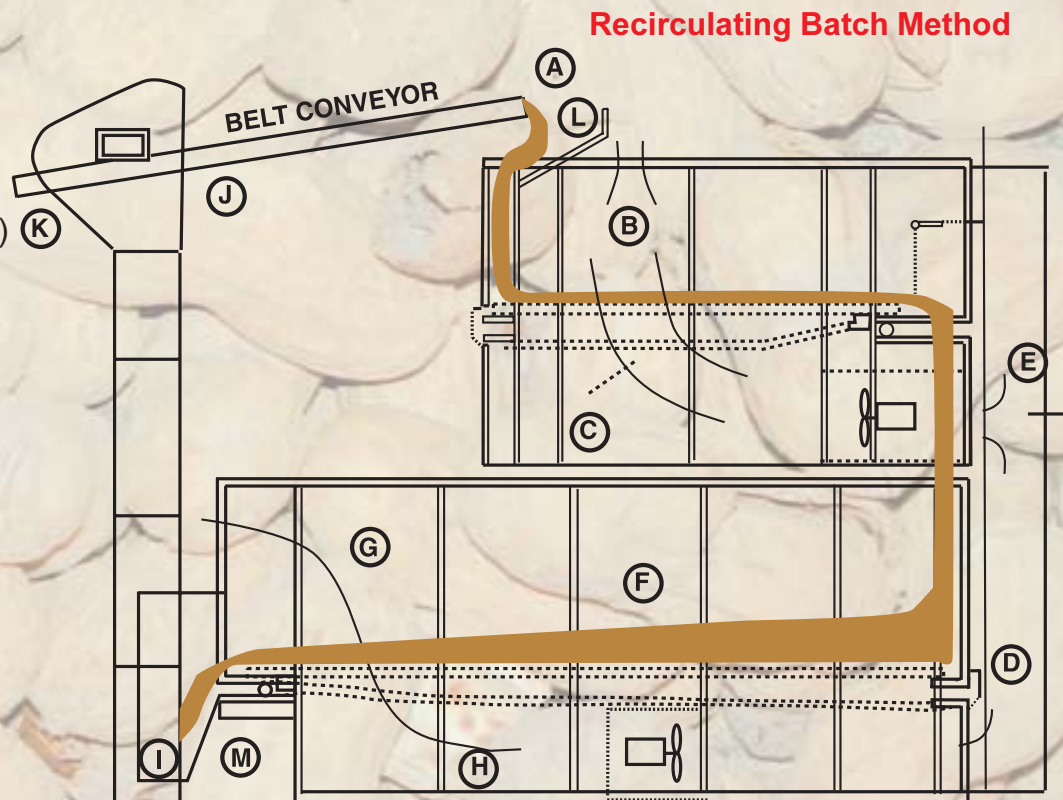
### ADVANTAGES:

Our Goal is to save you:

- ◆ Repair & Maintenance
- ◆ Investment Dollars
- ◆ Labor
- ◆ Fuel

Our Goal is to give you:

- ◆ Better Grade Product
- ◆ Higher Capacity



U.S. Patent Number 5,675,910



# **-MATIC** *RESEARCH PROGRAMS*

## **ON-SITE R&D PROGRAM**

We can help you in the research and development of new and existing products. Several dryer models are available for you to rent and conduct testing. New dryers are added often to the R&D fleet. This popular program has given many customers the data they need before they make capital expenditure. The R&D program enables you to interpret production, investment costs, manufacturing capabilities, and test the market.



*Model 123B is a research and development sized dryer/cooler seen in many research and university facilities.*

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***“ WITH SEVERAL DECADES EXPERIENCE  
IN THE DRYING/COOLING FIELD. . .  
. . . WE CAN HELP YOU IN RESEARCH AND  
DEVELOPMENT ”***

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## **IN HOUSE R&D PROGRAM**

We offer in-house test drying of products. Our research department will conduct testing of your product in our laboratory free of charge and acquire all relevant data. Product can be shipped to our factory for testing. As always the customer is welcome to attend.



*B.N.W. Industries in-house test drying facility*

## **TECHNICAL HELP**

With several decades of experience in the drying and cooling field, we are available for consultation. If assistance is needed, the Belt-o-matic personal service support team is readily available by phone or e-mail. Personal service is as important as the product we make. B.N.W. Industries is ready to help meet your drying and/or cooling needs. Call us today and let us discuss Belt-o-matic's many possibilities and advantages for you.

Technical Support contact us at:

B.N.W. Industries  
7930 N 700 E  
Tippecanoe, IN 46570  
Ph# 574-353-7855  
Fax# 574-353-8152  
E-mail: [sales@belt-o-matic.com](mailto:sales@belt-o-matic.com)

Ship test products to:

B.N.W. Industries  
7930 N 700 E  
Tippecanoe, IN 46539

***“ PERSONAL SERVICE IS AS IMPORTANT AS THE PRODUCT WE MAKE ”***



# BELT-O-MATIC

## SATISFIED CUSTOMERS

### STANDARD EQUIPMENT:

(Subject to change)

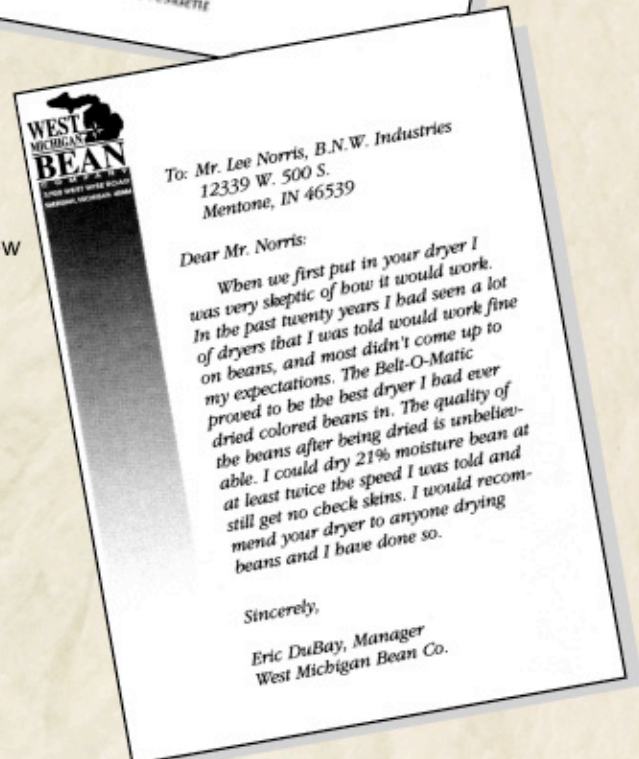
- Electric panel with main disconnect (3 phase, high or low voltage, 50 or 60 cycle), Thermometers
- All motors with thermal overload protection, TEFC
- Hollow bore gear reducers
- Tubular construction, carbon steel
- High limit safety switch(es)
- Adjustable pitch vane axial fan, aluminum
- AC inverter for each conveyor drive
- Woven wire conveyor belt with roller rack
- V-style bottom air chamber
- Inlet hopper with adjustable leveling gate
- 2" to 12" of product depth
- Internal conveyor drive roller with rubber lagging and auger idle pulley

### Dryer additional features:

- Insulation
- Natural or vapor LP gas gun style burner with gas adjustment
- Modulating gas valve, safety valves, pressure gauges, and adjustable orifice
- Fireeye flame monitor, ignition transformer, and airflow safety switch

### Options:

- Product spreaders, oscillating tube, belt wiper, rotary beater
- Auto fines clean out systems
- Frequency drives on fans
- Product discharge conveyor or auger
- UL approved electric panel, PLC integration
- Food grade construction
- Removable top cover
- Heavy gauge sheet metal construction (GII design)
- Fine weave belt, solid tray belt
- Stirring equipment, rotary airlocks
- Alternate fuel sources (steam, oil, etc..)
- Removed fan and burner systems, steel fan blade
- Reverse end conveyor drives with wash down area
- Multiple doors (to customer specs)
- Fan silencers
- Cyclone systems and exhaust fans
- High heat applications



Manufactured By:

## B.N.W. INDUSTRIES

Division of Lee Norris Construction and Grain  
7930 N 700 E

Tiptecanoe, IN 46570 USA

Ph# 574-353-7855

Fax# 574-353-8152

E-mail: [sales@belt-o-matic.com](mailto:sales@belt-o-matic.com)

Web site: [www.belt-o-matic.com](http://www.belt-o-matic.com)