

## *Rubber & Tire*

# BONITRON

*Rubber Mixing*

*Cutters*

*Balancing*

*Conveyors*

*Calendaring*

*+More!*

- *Enhance AC drive and process reliability.*
- *Maximize uptime with Bonitron UPDs.*
- *Save energy with Line Regen.*
- *Reduce cost, wiring, component count with Common DC Bus*

## **Products**

*Braking Resistors*

*Braking Transistors*

*Power Supplies*

*Sharing Diodes*

*Line Regeneration*

## Typical Applications

- \* Tires are made using a variety of blending, extrusion, calendaring, cutting, and assembly.
- \* For Winding and Lifting Applications; use Bonitron's Line Regen's, Braking Resistors and Transistors.
- \* Multiple motors in a system can share braking components and reduce wiring by utilizing a Bonitron Common DC Bus.
- \* Keep your critical machines running in a power loss event by utilizing Bonitron's UPD System.



### Tire Treading Machine

**3-Phase Power Supply**  
M3713

**UPD Ride-Thru System**  
S3460  
S3534

**Braking Transistors**  
M3575T  
M34675T



### Rubber Mixer

**Braking Resistors**  
M3575R

**Combo Units**  
M3452C



## Cutters



When a load is lowered, the motor acts as a brake, generating electrical energy which is dissipated by regen or transistor/resistor units. An overvoltage fault in this situation would drop the load if there is no mechanical backup.

### Line Regeneration

- M3545
- M3645

### Braking Transistors

- M3452
- M3675T
- M3575T

### Braking Resistors

- M3775R

This is a mechanical process by which rubber is pressed into textiles (cloth, fabric, tire cord) forming composite sheets. Quick sudden stops are needed.

## Calendaring



### UPD Ride-Thru

- M3460R

### Braking Transistors

- M3452
- M3675T
- M3575T

### 3-Phase Power Supplies

- M3713

## Balancing



Manufacturers spin each tire up to an exact speed, precisely detect each irregularity and grind off small amounts of rubber until the tire is perfect. All this has to be done within seconds for each tire in order to keep pace with the manufacturing line.

### Braking Transistors

- M3452
- M3675T
- M3575T

### Braking Resistors

- M3775R

Motors are required to stop and start repeatedly. A regenerative brake allows for precise control of the system.

## Storage Retrieval System



### Line Regeneration

- M3545
- M3645

### Braking Transistors

- M3452
- M3675T
- M3575T

### Braking Resistors

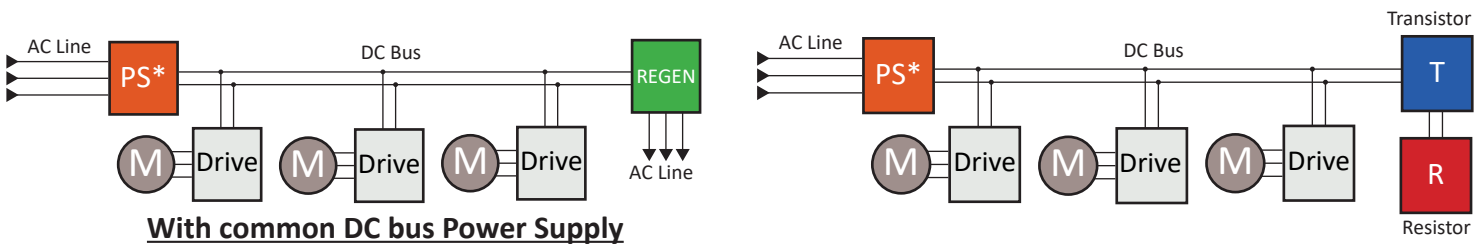
- M3775R



## Common DC Bus

M3712, M3713

Tire manufacturing applications that require the use of multiple electric motors in a system can benefit from the use of a common DC bus. Using a common bus power supply can **reduce the amount of wiring as well as the number of components** in a system. Sharing components in linked drives results in a reduction of maintenance and footprint of the systems. This can be achieved with either a common bus power supply or with diode sharing. In a system with multiple motors, there could be some motors regenerating while others are motoring. The common bus allows the regenerating drives to share power with the motoring drives and reduces the amount of power needed from the grid. If the drives are creating a net surplus of energy, a single line regen or braking unit can be installed to dissipate the excess energy. This can be achieved with either a common bus power supply or with diode sharing.



## Undervoltage Solutions

Bonitron Undervoltage Ride-Thru Solutions, also known as Uninterruptible Power for Drives, include a DC Voltage Regulator (M3534) that monitors the drive. If the drive voltage sags or disappears, the Voltage Regulator becomes active and provides power to the DC bus. This allows critical processes to never see the disturbance and can continue operating at full power. Thanks to Bonitron's parallel connection, very low standby power and long product life can be expected.

## Overvoltage Solutions

Whether you use a transistor and resistor or a regen is dependent on the application and a cost benefit analysis. Using a transistor and resistor combination is typically less expensive on the front end, but it has a larger footprint and extra energy must be expended to cool the room housing the resistors. A regen costs more up front but saves on operating costs and can ultimately pay for itself over time. The regen also has a smaller footprint and requires significantly less cooling of the control room. Each is suited to different applications and Bonitron will work with you to find the best solution for your application.

### Braking Transistor

M3452  
M3575T  
M3675T

### Braking Resistor

Case Resistors  
M3575R  
M3775R

### Line Regeneration

M3545  
M3645

