

Columbia

THE TOTAL SOLUTION

Conversion Kit Training Aid

**VFD Conversion – “SP” Style
Variable Frequency Drive
for Vibrator**



April 2010

VFD Vibrator Drive Technology

www.columbiamachine.com

Objective:

To give you a basic understanding and tools you'll need to better inform our customers on what these conversion kits have to offer.

Overview:

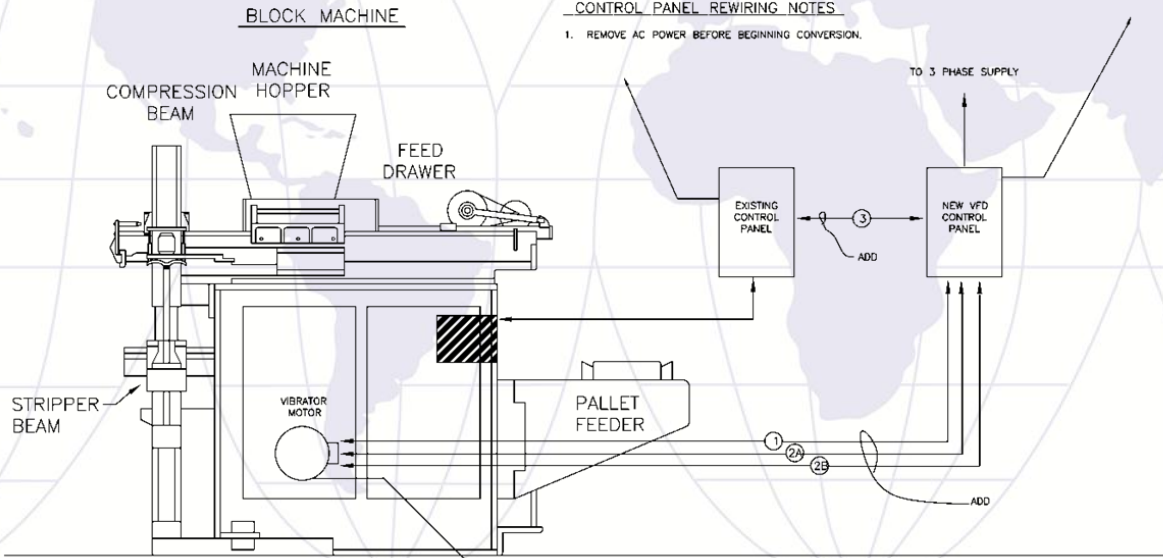
- Typical Layout
- Panel Installation
- Motor Installation - 16HF / CPM
- Control Panel Layout - Door/Inner Panel
- Control Panel Layout -
- Sold / Installation Sites
- Safety Guarding
- Questions / Recap

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

Wiring Layout

BLOCK MACHINE WIRING w/VFD
CONTROL CABLES



BLOCK MACHINE

CONTROL PANEL REWIRING NOTES

1. REMOVE AC POWER BEFORE BEGINNING CONVERSION.

NEW VFD CONTROL PANEL REWIRING NOTES

1. PANEL TO BE LOCATED WITHIN 30 FEET OF BLOCK MACHINE
2. DO NOT LOCATE IN DIRECT SUNLIGHT.
3. ALL CONDUIT ENTRIES TO HAVE SEALING WASHERS.
4. MAINTAIN LINE OF SIGHT BETWEEN VIBRATOR MOTOR AND VFD PANEL.
5. DO NOT OVER TIGHTEN MOTOR LEAD TERMINALS.

VIBRATOR MOTOR WIRING NOTES

1. MOTOR CABLE SHIELD MUST BE CONNECTED TO MOTOR GROUND AND VFD INNER PANEL
2. LOCKTITE BLOWER SHROUD BELTS.
3. DO NOT INSTALL MOTOR MOUNT AND MOTOR TOGETHER. INSTALL MOTOR MOUNT FIRST, THEN MOTOR.
4. PRE-WIRE MOTOR BEFORE INSTALL.

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

Columbia

THE TOTAL SOLUTION

Typical VFD Panel Installation



VFD Vibrator Drive Technology

www.columbiamachine.com

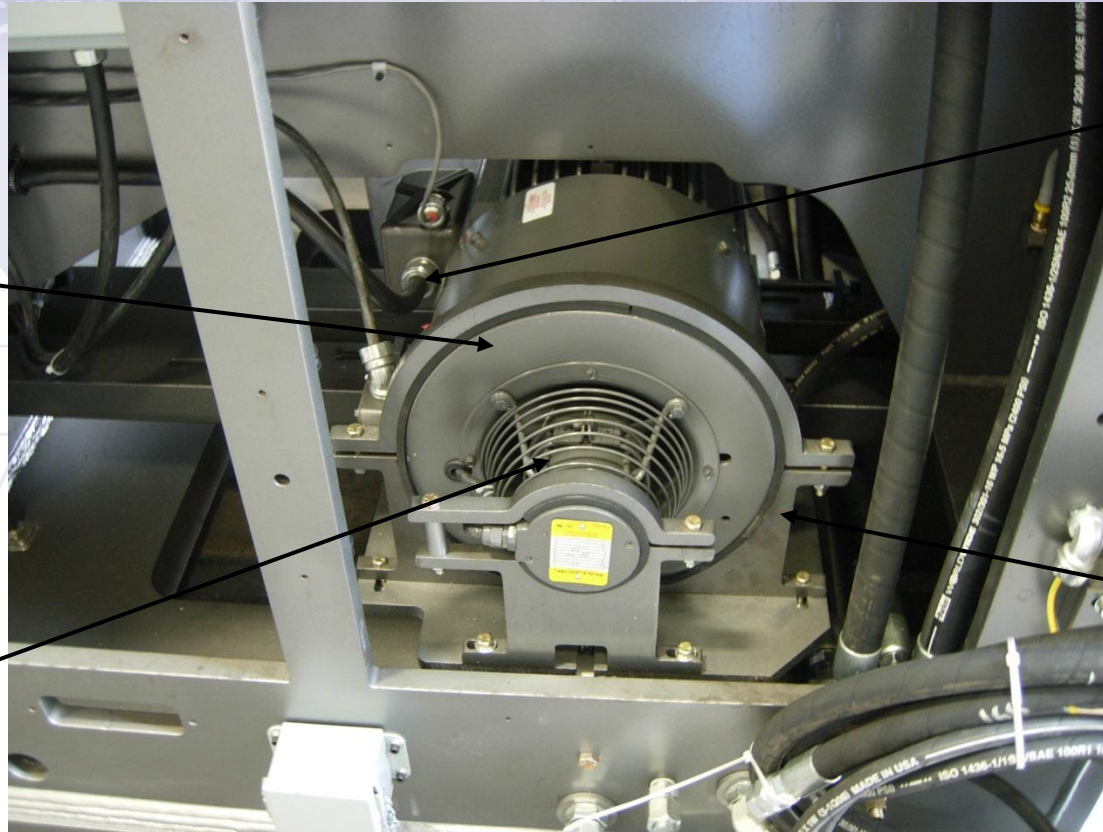
Columbia

THE TOTAL SOLUTION

VFD Motor Installation on 16HF

Vibrator
Motor

Blower
Motor



Shielded
Cable

Vibration
Dampening
Mount

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

www.columbiamachine.com

Columbia

THE TOTAL SOLUTION

VFD Motor Installation on CPM



VFD Vibrator Drive Technology

www.columbiamachine.com

Columbia

THE TOTAL SOLUTION

VFD Control Panel

Free-Standing enclosure designed to be anchored to the floor for support. (picture shown is for Floor Model machines).

Dimensions:

Floor Models

Height = 60"

Width = 42"

Depth = 18"

CPM Models

Height = 72"

Width = 48"

Depth = 18"

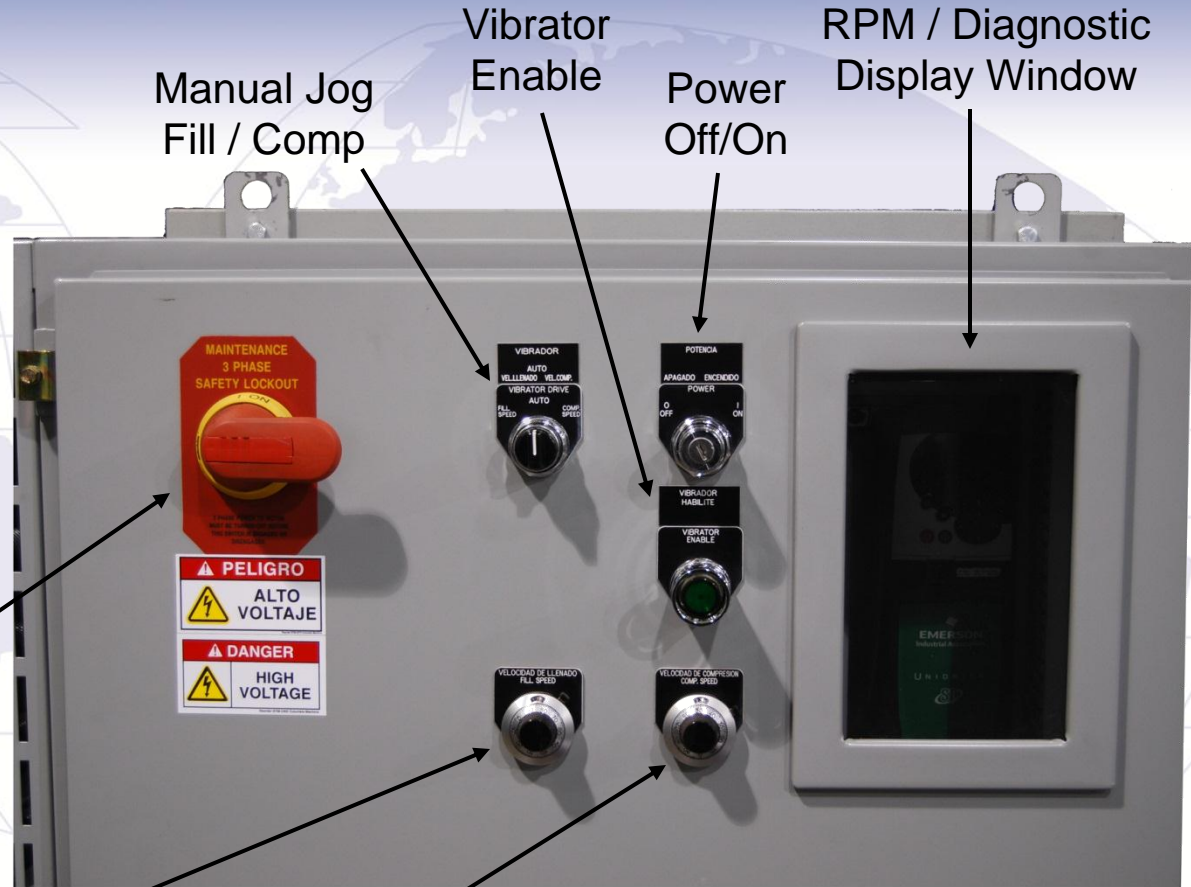


VFD Vibrator Drive Technology

www.columbiamachine.com

VFD Control Panel

Component layout and description



3 Phase Safety Lockout

Fill Speed Dial

Comp. Speed Dial

VFD Vibrator Drive Technology

Columbia

THE TOTAL SOLUTION

VFD Control Panel



VFD Vibrator Drive Technology

www.columbiamachine.com

Columbia

THE TOTAL SOLUTION

VFD Control Panel



L.E.D. Display

Control Keys

Program Keys

Control Pod



VFD Vibrator Drive Technology

www.columbiamachine.com



THE TOTAL SOLUTION

VFD Testimonial

“Installing the VFD on the vibrator was like getting a new machine. Our 1981 model 16 runs better than ever and we can now make a greater variety of products on this machine. If anyone is considering putting one of these on their machine, have them call me...I'll sell it for you!”

Paul Orsina, Owner
Westbrook Concrete Block
Westbrook, CT

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

www.columbiamachine.com

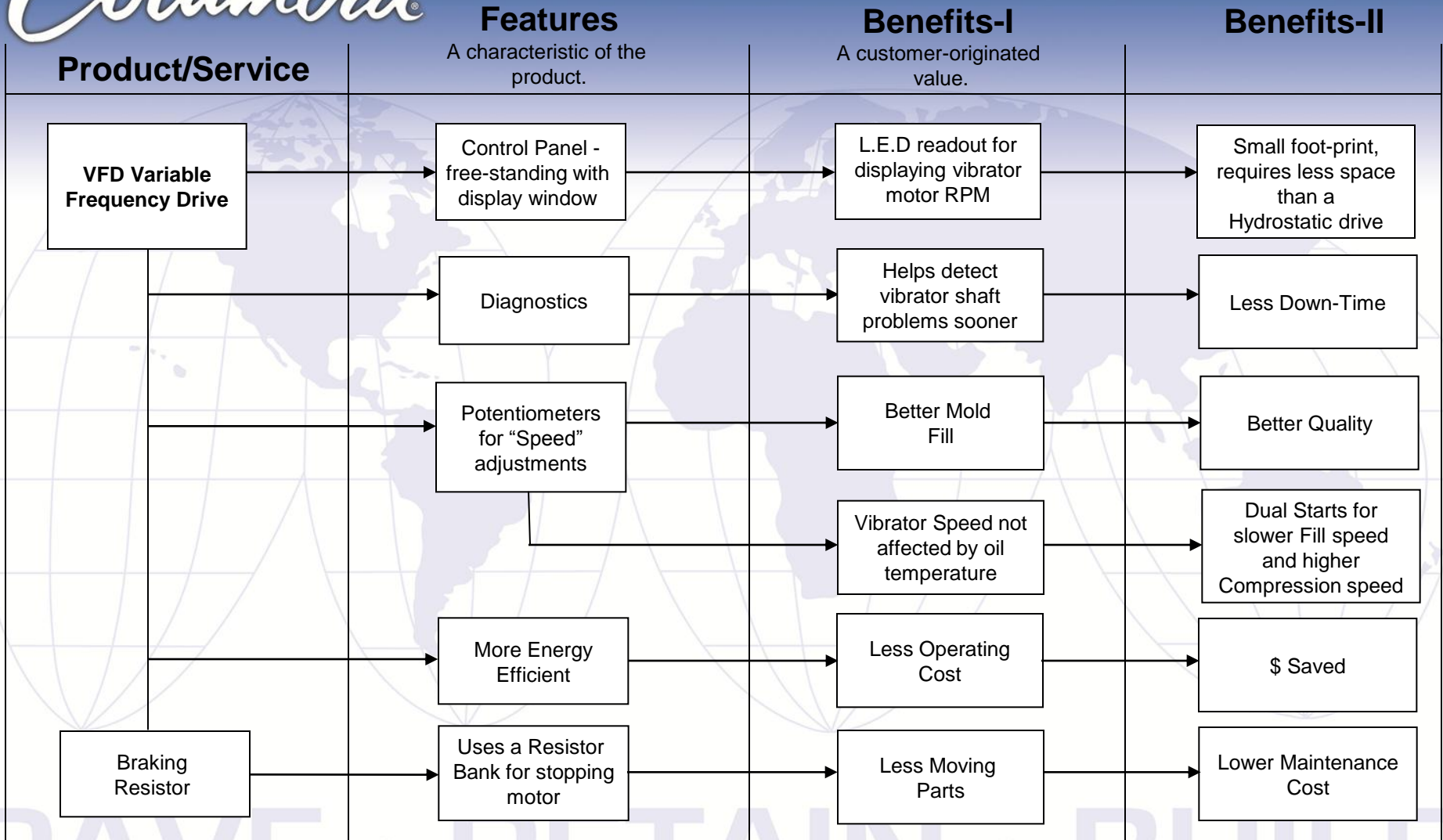
Kit Includes:

- Machine Wiring Diagrams
- Installation Instructions
- Set-up Manual
- Parts List:
 - VFD Control Panel w/Braking Resistor
 - VFD Motor w/mount
 - Belt, Poly V
 - Pulley/Sheave
 - Fan Motor
 - Cable, shielded



PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology



VFD Vibrator Drive Technology

Columbia

THE TOTAL SOLUTION

Cutsheet

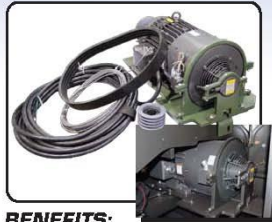
THE TOTAL SOLUTION

Columbia

Upgrade Your Vibrator Drive

Our Variable Frequency Drive (VFD)* replaces current vibrator drives, whether across the line starter, air-clutch/brake drive or hydrostatic drive, to a VFD controlled drive motor. This gives you better control of the mold fill and product density. Through the use of two speed control settings, fill & compression speeds, independent vibrator speed controls for fill cycle and compression cycle (0 - 3000 RPM). This can be adjusted to match the material and mold configuration used on each individual product. This control results in quicker fill times, more uniform fill throughout the mold, less tendency for material to migrate within mold cavities during the fill cycle, and quicker compression cycle. Order Kit 328.164 xxx.

Ask us about other VFD applications for other equipment.



BENEFITS:

- Better Mold Fill
- Higher Quality Products
- Virtually Maintenance Free
- LED Display For Motor RPM
- Potentiometers For Speed Adjustment
- Energy Efficient, Less Power Consumption
- Reduces Operating Costs

For more information on Columbia's Conversion Kits please visit www.columbiemachine.com or call us at **1-360-694-1501** x573

www.columbiemachine.com

VFD Vibrator Drive Technology

www.columbiemachine.com

VFD Vibrator Drive

Sold / Installation Sites to date: **2/2010**

<u>Customer</u>	<u>Location</u>	<u>Installed</u>
➤ Biermans Conc.	Bermuda	2/2006
➤ Besblock	England	9/2007
➤ Central Oregon	Prineville, OR	1/2008
➤ The Shaw Group	Canada	2/2010

1st VFD installed in December 2001, to date there are approximately (86) VFD conversions installed, on CPM, M22HF, M16HF, 1600, M21, and Pit Model machines. In 2003 new machines sold with VFD's as standard. Today, there are approximately (130) machines (new and retrofitted) using the VFD.

VFD Vibrator Drive Technology

Safety Guarding

On all conversions, upgrades or retrofits, we are required to quote safety guarding (see photo).

If the customer elects not to purchase the safety guarding, they will be asked to sign an agreement letter stating that they decline purchase of safety guarding. This signed document will be put into the customers file.



PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

Columbia

THE TOTAL SOLUTION



Questions?

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

www.columbiamachine.com

Recap

1. The VFD Vibrator Conversion replaces;
- a) Air/Clutch Brake vibrator drive.
 - b) Electric vibrator with DC brake.
 - c) Hydrostatic Vibrator drive.
 - d) All of the above

2. The VFD Vibrator drive reduces energy cost.
- True
 False

3. Benefits of the VFD drive are;
- a) Dual Speed settings, "Fill/Compression".
 - b) Vibrator speed not affected by temperature.
 - c) Less machine vibration.
 - d) All of the above
 - e) None of the above

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

Columbia

THE TOTAL SOLUTION



**End of Slide
Show**

PAVE • RETAIN • BUILD

VFD Vibrator Drive Technology

www.columbiamachine.com