

## “VDU® Energy Savings” offering in 3 Steps

### Step #1: VDU® Control System

Demag Plastics Group’s aftermarket sales service team will change the existing control system components and install a new, state-of-the-art, control system on your machine.

The custom retrofit package includes the following:

- Exchange of the complete control system including control modules, operator terminal and logic CPU
- Installation of the new system
- Machine control software and screens tailored for your machine
- Machine startup and training on your system by the OEM experts

VDU® Retrofit pays off with less cost for spare parts and long-term safety

After upgrading your machine to the control system, you will benefit from a fully guaranteed spare parts supply. Two advantages for you: spare parts are delivered at short notice and you can rely on long-term availability of all components, because Demag guarantees the availability of all components for 10 years. Moreover, you reduce the risk of machine downtimes, and in case of damage, you save money because of the low price of spare parts and their short delivery times.

### VDU® – A Cutting Edge Closed Loop Process Control System

The VDU® was designed specifically for Van Dorn machines by the OEM experts. It is more than a retrofit control; it is a control fitted for your machine. Our knowledge and experience of the intricacies of your machine have been built in to this control. The heart of the control is the Compact Industrial PC (CIPC) computer. This powerful, PC-based controller fits in the palm of your hands. Its single processor architecture offers superior performance for processing both logic and screen display. The single CPU design eliminates communication overhead and bottlenecks found in many multi-processor systems and, at the same time, increases system reliability while reducing overall component counts.

Matched with a 15”, XGA high resolution screen, this system provides an HMI that is both easy to use and pleasing to view. With a layout based on the award winning Pathfinder® series of controls, the VDU® simplifies the task of learning a new system. Setup and machine data are displayed on familiar screens. A reduced number of setpoints and screens helps to make new and existing tool setup easy. Finally, the high technology, compact size control modules have been designed specifically for machine control. The high speed communication bus with integrated RISC I/O processor is capable of accessing 30 million I/O points per second. That results in precise and repeatable machine control with a full system scan time in less than a half millisecond. With nearly unlimited expandability, the VDU® provides unparalleled control of your machine.



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### VDU® Standard Features

The VDU® control includes all of the standard features that you expect from a top of the line machine control system. Built-in features include:

- Closed loop injection control profile with up to 10 steps, selectable intrusion feature
- Cut-off selection by time, position, system pressure, cavity pressure or melt pressure with selectable override (blocked cavity detection)
- Closed loop pack and hold profile with up to 5 steps
- Coordinated closed loop recovery with selectable 5-step screw speed and 5-step back pressure profiles
- “Drag-n-Drop” setting of all profiles
- Real-time trace of the entire injection process
- Selectable two-stage low pressure close with try-again circuit
- Sprue break with selectable stacking mold feature\*
- Programmable auto-purge
- Standard single core system with selectable set, pull and unscrew modes\*
- Optional independent and sequential multi-core sequences\*
- Programmable ejector sequence with tip stroke and hold selections, support for mold ejectors
- 16-channel selectable process monitoring with programmable tolerance alarms, graphical and tabular display
- Data logging with export to Excel
- Auto-tune barrel temperature control with graphical monitoring
- Production data system with programmable end of production
- Internal and USB mold and calibration setup file storage
- Internal and USB key user access system
- USB printing and print to graphic file
- Large high resolution touch screen and keyboard for data entry
- Integrated front panel USB hub with three access ports
- Multi-function keyboard for manual machine functions and system navigation
- Optional SPI robot interface
- Optional SPI auxiliary device communication
- Optional multi-channel programmable I/O
- Optional startup and shutdown sequence

\*Additional hardware may be required, depending on current machine configuration.

### Connectivity and Remote Diagnostics

The VDU® is the perfect control for your machine. But its capabilities do not stop there. With two integrated Ethernet ports, the VDU® provides connectivity to your network and the world. Capable of providing Web-based remote access, imagine viewing your process from the plant office or anywhere in the world. Also, with its advanced OPC server, data collection into plant monitoring systems is seamless. Our service experts are also able to monitor your machine and provide troubleshooting assistance using the integrated real-time diagnostic features of the VDU® via the Internet.

### OEM Support

Designed and installed by the OEM of your machine, the VDU® is the only aftermarket control upgrade that makes perfect sense. Unlike many control retrofitters, we are there to support you through the entire upgrade process and beyond. We know your machine so we can ensure that the control upgrade will be a perfect fit.

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### Step #2: Motor Control

A Demag Plastics Group VDU® Energy Savings retrofit will reduce your operating costs and help you manage your ever-increasing electric power expenses.

Retrofitting your hydraulic machinery with a VDU® control system and the addition of a hydraulic motor servo controller system not only increases the machine’s operating capability and efficiency, but it does so with tighter control and precision and is easy to use. Accomplished by combining powerful, state-of-the-art controls, our solutions provide substantial energy savings on new and old machines, with fixed or variable volume pumping systems.



The motor controller allows dynamic control of electric motors for servo-like performance and reduced power consumption. The system also features automatic optimal acceleration and deceleration as well as the ability to consistently monitor and control motor output torque. The controller is designed for all internal components, resulting in long-term reliability.

Our motor controllers also offer enhanced motor protection including:

- Over Current
- Ground Fault
- Over Temperature
- Short Circuit Protection
- Electronic Motor Overload
- Over/Under Voltage
- Motor Stall Prevention

#### Key Benefits and Features

- Fully Automatic Supervision
- Reduced Mechanical Stress
- Lower Operating Temperatures
- Less Audible Noise

The system works by controlling how much energy and pump speed is required to allow the hydraulic pump system to only use the amount of energy required to produce quality parts, without an increase in cycle time, while limiting the amount of over-production and waste. This functionality allows the machine to make the same quality parts using a reduced kWh draw. The system is able to produce savings with cycle times as low as 5 seconds and as high as several minutes with an average savings of 30%-40%.

Demag Plastics Group									
Estimated Savings Evaluation									
5 Year Savings Estimate \$91,837.39									
Demag Plastics Group 11792 Alameda Drive Strongsville, Ohio 44149-3011 Phone: 888-491-1043 Fax: 440-238-4688 Email: mka.miller@dbg.com									
Evaluation For KSC Controllers									
Project Description: Molding Machines Savings Estimate									
Hours Per Day	24	Custom							
Days Per Week	7	Com							
Weeks Per Year	52	Add							
Total Hours Annually	8736	100%							
Savings Per Machine									
Machine(s)	Qty.	HP	HP	Total HP	Tons	Machine	Power kw Savings	Hours	Annual Energy Saved
1000 Ton	75	100	175	1000	Van Dorn		27.31	8736	2385.39
KWH Savings Annually		2385.39		KWH					
KW Savings		27.31		KW					
Power Rate		0.077		KW					
Annual Power Savings		\$18,967.48		USD					
Budget Breakdown									
Budget Cost		\$45,663.96		USD					
Net Cost		\$45,663.96		USD					
5 Year Savings Estimate		\$91,837.39		USD					
*This estimated Energy Savings Evaluation is an approximation based off rough data that your company provided. Actual savings may vary depending on machines, utility provider rates, and actual kWh/Energy usage. Please Contact a Sales Representative for Pricing, Information and Scheduling of an Official Energy Engineering Report & Audit. 888-491-1043									

**Sample**

### Step #3: Rebates & Capital Funding

With a global push for energy savings, there is no better time than now to implement our energy-saving solutions. We will help you complete the documentation required by the utility providers to obtain incentives. Many of you have already been paying into a special fund, which helps support these energy rebate programs. Why not use that money to your advantage? We have helped our customers secure approximately \$10 million in rebate and incentive funding. Take the guesswork out of the paperwork. Save time, money, and energy and let us complete the documentation and metering for you.

**"VDU® Energy Savings" offering in 3 Steps**

**VDU® & Energy Savings RFQ**

Customer Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_  
 State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Contact Number: \_\_\_\_\_  
 E-mail Address: \_\_\_\_\_  
 Utility Rate per KWH: \_\_\_\_\_  
 Utility Provider: \_\_\_\_\_  
 Demag Sales Rep Group: \_\_\_\_\_  
 Demag Sales Rep Name: \_\_\_\_\_

Model	Size	S/N	IU	Current Control	Average Cycle Time	Mtr #1 HP	Mtr #2 HP	Voltage
VDU Options	1. 2. 3. 4. 5.							
VDU Options	1. 2. 3. 4. 5.							
VDU Options	1. 2. 3. 4. 5.							
VDU Options	1. 2. 3. 4. 5.							
VDU Options	1. 2. 3. 4. 5.							