Bou-Matic® Variable Speed Drive
(for vacuum pumps)

Helps reduce energy usage and can cut money spent on electricity.

About Efficiency

A Bou-Matic Variable Speed Drive adjusts the speed of your vacuum pump automatically to match the exact airflow needed for milking or washing. With an old-fashioned fixed speed drive, the vacuum pump has to be set to always run at the fastest speed that will ever be needed for milking or washing. With a Bou-Matic Variable Speed Drive, the vacuum pump always runs at the slowest speed possible to supply the airflow actually being used by the milking or washing system. You can save energy and cut costs by equipping a vacuum pump with a Bou-Matic variable speed drive.

Adjusts Speed

A Bou-Matic variable speed drive uses a vacuum sensor to accurately monitor the vacuum level in the system. When the system needs more airflow due to attaching units on cows, fall-offs, or an air injector, the sensor signals the Bou-Matic variable speed drive to speed up the vacuum pump just enough to supply the extra airflow needed to keep vacuum level steady. As soon as the extra airflow is no longer needed, the sensor signals the drive to slow the vacuum pump back down.

Other Benefits

Because vacuum systems only seldom need maximum air flow, a vacuum pump with a Bou-Matic Variable Speed Drive spends most of the time running at a slower speed than it would with a fixed speed drive. Because of its slower speed, it uses less electrical power and runs more quietly. Operating a vacuum pump at a reduced speed is also easier on bearings and other internal components, which reduces wear and tear on the pump, and may extend pump life.

Investment Payback

Use our investment payback estimator (shown on back) to determine the types of efficiencies that might apply to your dairy. The investment in a Bou-Matic Variable Speed Drive helps with future ongoing operating savings.

Variable Speed Drive features include:

- Two Year Warranty
- Custom Bou-Matic software for ease of programming, setup and troubleshooting
- Motor soft start function controls current to motor at the beginning of milk and wash to help prevent over current to motor and/or faulting of the drive
- Programmable relay output to control water valve for automatically flushing vacuum pumps
- Runtime counters for pump maintenance
- Real time clock for logging faults
- On screen selection of variable speed or constant speed

- Drive sized for motor duty cycle and vacuum pump to provide rapid response
- Enclosure provides protection for dairy farm environment
- Tested to UL, CUL, and European standards
- Optional wash relay can be installed to run VSD at a constant speed during wash
- No Standard ID Run and Auto-Tune required
- Optional RF filter kits to reduce interference to cow ID system

Investment Payback Estimator for Bou-Matic Variable Speed Drive System

Cornell University research and on-farm tests have shown variable speed vacuum pumps consume up to 60% less electrical energy than constant speed vacuum pumps.

Instructions: Identify the size (horsepower) of vacuum pump now used to determine the amount of electrical power consumed (kW). Then complete the formula to estimate the potential payback on an investment in a Bou-Matic variable speed drive system.*

Electrical Consumption Per Motor

5hp - 3.73 kW	7.5hp - 5.59 kW	10hp - 7.45 kW
15hp - 11.18 kW	20 hp - 14.9 kW	30 hp - 22.4 kW

1. Enter the electrical consumption for your pump. _____ *(kW)*

2. Multiply this by your cost per kilowatt hour for electricity. x _____ *(¢/kWh)*

3. This is the cost per hour to operate your pump. = _____ *(cost per hour)*

4. Multiply the cost per hour by the number of hours the pump is run each day to get the cost per day to operate your pump.
   x _____ *(hours of run time/day)*
   = _____ *(cost per day)*

5. Multiply the cost per day by 365 to get the annual vacuum pump electrical cost.
   x 365
   = _____ *(annual electrical cost)*

6. Multiply the annual electrical cost by 40%, the estimated minimum savings, to get your estimated electrical cost reduction*
   x .40 *(minimum savings)*
   = _____ *(est. electrical cost reduction*)*

7. Divide the variable speed drive investment by the estimated electrical cost reduction to get the number of years required to recover your initial investment with energy savings.
   _____ *(variable speed drive investment)*
   - _____ *(utility rebates)*
   / _____ *(est. electrical cost reduction*)*
   = _____ *(# of yrs. to recover investment*)*

**Estimates shown are for illustration purposes only. Actual results may vary. Many factors affect actual electrical energy usage.*

BOU-MATIC Working for You

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