

## Soft Start & Speed Control



Photo shows Model 800-28 and Model 200-7 Pumps with the Soft Start Variable Frequency Drive (VFD) Unit

- **Soft Start Roughing to Limit Turbulence**
  - **No Moving Parts; No Conductance Limiting**
  - **Control Pressure by Adjusting Pump Speed**
- ### Soft Start

To minimize turbulence and particles during evacuation, you may "Soft Start" your pump down and then switch to maximum speed to give the ultimate vacuum you need.

### Pressure Control

Adjust the set point on your vacuum gauge to the vacuum level that is best for your process. The pump will then run at maximum speed until that pressure is reached and will then slow its speed to maintain the vacuum you have selected.

### Roughing for Cryo or Ion Pumps

With this system you can operate your mechanical pump at maximum speed. When the high vacuum pump takes over, slow the mechanical pump or turn it off when roughing is complete.

### Backing of Turbo and Diffusion Pumps

Use a single mechanical pump for roughing and backing for turbo or diffusion pumps. For roughing, ramp the pump speed up slowly to minimize turbulence in the chamber. For backing slow the mechanical pump to 25% of capacity.

### Install Remote From Pump

The Soft Start Control can be located up to 300 feet from the pump and it will accept 4-20 mA or serial inputs or contact closures for start, stop, speed and ramp.

When the Soft Start is ordered with a new vane pump it is shipped with a 6 ft. (2 m) cord wired from the VFD to the pump motor. Cords available up to 100 ft.

### Soft Start Ordering Information

<b>P/N</b>	<b>Soft-220-1/2 HP</b>	price each	.....	\$.495.
		for pump models	100-3.5 and 200-7	
<b>P/N</b>	<b>Soft-220-1 to 2 HP</b>	price each	.....	\$.695.
		for pump models	400-14, 600-21, 800-28, and 1000-35	
<b>P/N</b>	<b>Soft-220-3 to 5 HP</b>	price each	.....	\$.995.
		for pump models	1500-53 and 1800-64	

## High - Low Vacuum Control



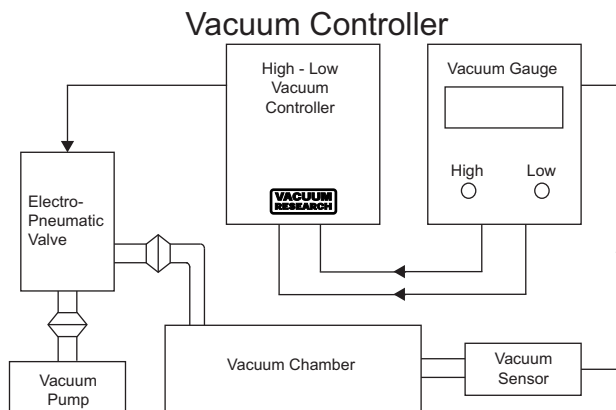
Photo shows the High-Low controller with standard NW-25 isolation valve

- **Works with Your Existing 2 Set Point Gauge**
  - **Pressure Control for Your Vacuum Chamber**
  - **Directly Control Pump Isolation Valve**
- ### Pressure Control

This inexpensive device allows your existing vacuum gauge with high and low set points to directly control your vacuum pump isolation valve to keep the vacuum in your system between the high and low limits that you select. The High-Low vacuum control will work with any pump of any size and any vacuum gauge with 2 set-points. An electropneumatic valve is required.

The contacts in this controller can directly switch the current needed to operate the solenoid on any size electropneumatic vacuum valve.

If the vacuum gets too low the valve will close, when rising pressure reaches your upper limit the valve will open and your system will be pumped back down to the pressure you have selected.



### High-Low Controller Ordering Information

The High-Low Controller includes NW-25 Aluminum Vacuum Valve (fail safe, close on power failure). Select proper voltage: 24VDC, 120 VAC or 220 VAC. Vacuum Gauge is available at additional cost as are NW-16, NW-40, and NW-50 valves.

<b>P/N</b>	<b>RV801005-24VDC</b>	for 24 VDC solenoid	.....	\$.565.
<b>P/N</b>	<b>RV801005-120VAC</b>	for 120 VAC solenoid	.....	\$.565.
<b>P/N</b>	<b>RV801005-220VAC</b>	for 220 VAC solenoid	.....	\$.565.