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# INDUSTRY TRENDS & TECHNOLOGY

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Special points of interest:

- **SENTRA - VE Starting at \$1,295**
- **Processing Tips, First in our Series**



## ADVANTAGE ENGINEERING INTRODUCES SENTRA VE LINE

Advantage Engineering, Inc. has expanded their already broad line of water temperature controllers with the addition of the Sentra VE to the Sentra temperature controller line. The VE product line focuses on value for the end user.

The old engineering adage of "doing with one dollar what any man can do with two" applies well to this product. Advantage has kept a number of features that have allowed them to be a leader in the temperature controller industry while engineering in significant savings for the end user. The VE product line will continue Advantage's leadership in the market place for those users focusing on cost, with pricing starting at \$1,295.

The Sentra VE series includes stainless steel enclosure panels, a new PVT™ pulsed cooling valve, custom designed high performance pump, flange mounted incoloy sheath heater, and a new microprocessor instrument. The Sentra warranty includes a lifetime on the pump seal, 4 year controller, 2 year cooling valve, 2 year heater, and a 2 year mechanical—making the Sentra line of temperature controllers the benchmark in the industry.

The Sentra LE and HE lines include the addition of Advantage's AVT™ modulating valve technology and increased instrumentation for

**NEW TEMPERATURE CONTROLLERS**

**SENTRA VE SERIES**

- INSTRUMENT
- PULSED COOLING VALVE



The SENTRA VE Series includes stainless steel enclosure panels, a new PVT™ pulsed cooling valve, custom designed high performance pump, flange mounted incoloy sheath heater, and new microprocessor instrument.

**MODEL SK-1035-VE**  
3/4 HP, 35 GPM at 30 PSI, 10 KW...  
**\$1,295.00**

**NEW POWER PUMP™**

**MODEL SK-1075-VE**  
2 HP, 75 GPM at 30 PSI, 10 KW, including all other described VE features, shipped from stock!  
**\$1,345.00**

Quantity and each discount apply.

- Quantity Discounts:
  - 5-9 units less 2%
  - 10-24 units less 3%
  - 25-49 units less 3.5%
  - 50+ units less 7%
- Cash Discounts:
  - Payment with order less 4%
  - Payment prior to shipment less 2%



**FEATURES - AT A GLANCE:**

- Single height: 27" x 17" x 36" (skid)
- New microprocessor instrument
- New PVT™ pulsed cooling valve
- 1/2" JIC mounted sheath heater seals
- 1/2" JIC front process pressure gauge
- Flange mount heater
- High reliability control
- 12 standard panel ports
- Outstanding warranty

**ADVANTAGE**  
MAKING WATER WORK™

Information on all ADVANTAGE water system products available at:  
[www.AdvantageEngineering.com](http://www.AdvantageEngineering.com)

those applications requiring a more sophisticated level of process control.

## GRANULATOR NOISE LEVELS EXPERIENCE RENEWED FOCUS

Many plastics processors are developing a new found interest in granulator noise levels, the result of spot inspections from State safety officials.

The SPI guidelines for granulator noise is 85 dB (A) and is based upon two factors - sound pressure level, measured in decibels and time of exposure (duration).

Employees exposed to a time weighted average of 85 dB(A) must be enrolled in a monitoring program at the employer's cost. The SPI recommended procedures require 1" dia. schedule 40 PVC pipe, 6" long pieces. Measurements are taken from 4 different locations, 36" from the grinder and 60" off the floor. Readings are taken in front of the hopper opening and 3, 6, and 9 o'clock positions around the ma-

chine. Screen size is not to exceed 5/16", and no blower should be used. The number of pieces used and the feed rate are determined by the motor HP.

Contact your local representative if you'd like further information. This information is being brought to you by Rapid Granulator, an industry leader in plastic granulation. Rapid offers a full line of granulators; low speed, high speed, press side, central, etc. In addition, Rapid offers three different sound control levels.

# 1. SINK MARKS

Sink marks appear as depressions on the surface of the molded part if the thermal contraction (shrinkage) cannot be compensated for.

Figure 1. shows sink marks near ribs. Figure 2. shows sink marks due to wall thickness variations, and figure 3. has sink marks opposite a core whose temperature was not controlled correctly.

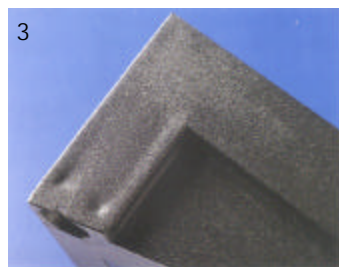
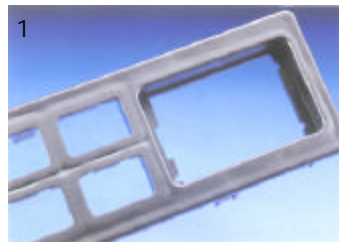
**Cause:** Sink marks occur during the cooling part of the process, the result of uncontrolled shrinkage or shrinkage that is not compensated for. Poor cooling can lead to the outside walls of a molded part not being stable enough to prevent the outside layer from being drawn in while **Corrective Action:**

cooling continues.

The three primary causes are:

1. Part solidification too slow
2. Holding pressure time too short
3. Insufficient hold pressure being transferred from the machine to the part; the result of high resistance to plastic flow in the cavity.

Ideally, gates should be located so that plastic can flow from thick to thin sections. In addition, attention to proper sprue, runner, and gate design help to insure the runner system does not contribute to difficulties in filling the part.



1. Melt Cushion too small	YES	1. Increase shot size 2. Inspect check ring on screw
2. Sinks near the gate or thick wall areas?	YES	1. Optimize holding pressure time 2. Increase holding pressure 3. Decrease mold temperature
3. Sinks away from the gate or in thin wall sections?	YES	1. Optimize Holding pressure time 2. Increase holding pressure 3. Increase injection speed
4. Sink marks present right after	YES	1. Check mold vents 2. Check sprue, runner & gate sizing 3. Check plastic for contamination 4. Inspect mold plumbing and temperature controller
	NO	5. Remove material build up in tool 6. Consider part design, wall thickness/rib ratio 7. Consider blowing agent, gas assist, or EGM process 8. Consider plastic with lower shrink rate
	NO	1. Increase cooling time



*It is important to confirm voids have not resulted from efforts made to eliminate sinks. Any changes made should be done one at a time and the process allowed to stabilize.*

## E.G.M. FROM INCOE

E.G.M.—External Gas Molding is a new version of Gas Assist Molding based on applying low pressure gas on the surface of the plastic in a mold cavity from the core side of the mold in order to force the molten plastic against the opposite cavity surface during cooling. This results in improving the replication of the mold cavity surface and preventing sink marks caused by ribs, bosses or other geometry. Gas, normally nitrogen, enters the cavity through specially designed pins.

sions. Applying gas prevents sink marks and other cosmetic imperfections such as shadow marks that typically result using conventional injection molding. Gas pressure is used in place of the normal packing pressure provided by the molding machine.

Contact your sales representative for further details and to arrange a presentation.

EGM is applicable to flat surface parts with or without ribs, bosses and protrusions.

