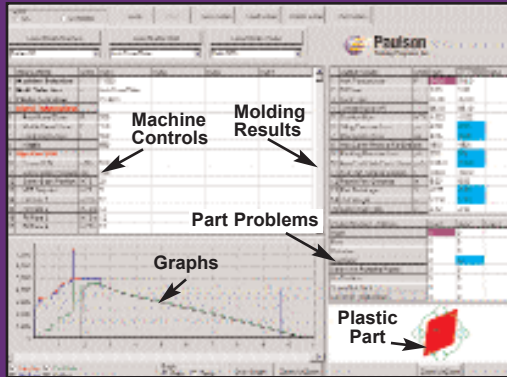




SimTech 2005 Injection Molding Process Simulator

Now a True Injection Molding Simulator for Your Molding Jobs.

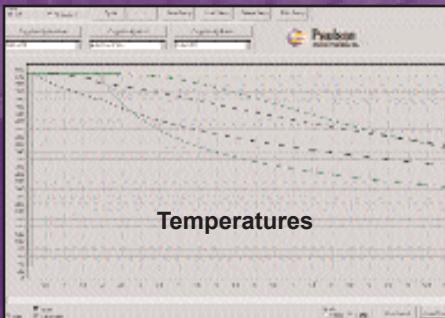
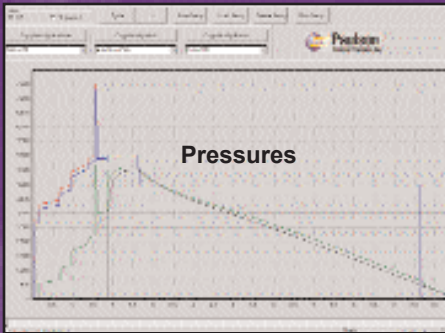


Does this sound familiar?

- ◆ You don't have enough molding "experts" to do the best setups or to solve two or more molding problems at the same time.
- ◆ Only a few personnel are allowed to make control changes because others don't have enough "molding experience".
- ◆ Machines are sometimes shut down because there is no one available who can solve the problem.
- ◆ Flash, mold damage and production delays sometimes occur because of a wrong machine control setting.
- ◆ After the molding cycle is set, you don't try to reduce the cycle time because a change might cause rejects.
- ◆ You've spent hours trying to run a new mold. The gate size, the runner size, the plastic or the control settings might be the problem; you have no way of knowing.

If this is your plant, you need SimTech 2005.

Recommended For: Setup Personnel, Foremen, Technicians, Problem Solvers,



SimTech 2005 - Your Next Molding Machine

SimTech is a software program that operates like a real injection molding machine. The plastic, the mold, and the machine specifications are all programmed into the simulator. The user sets any of the 23 machine controls and then "molds" parts. Plastic flow, pressures and temperatures are calculated each cycle. Part properties and any defects are shown based on a mathematical model. The user can also call up pressure and temperature graphs to study the details of the plastic behavior.

Uses of SimTech 2005

Increase Molding Skills - SimTech 2005 provides hands-on molding and problem solving practice. The personnel can "cycle" using any combination of machine controls, machines, plastics and molds to learn the effects of each operating control. This knowledge applies directly to your production machines.

Simulate Your Machines, Molds, and Plastics - SimTech 2005 can be customized to simulate your machines, molds and plastics. Then you can use SimTech 2005 to:

- ◆ **Improve Cycle Time** - evaluate molding conditions that will reduce cycle time.
- ◆ **Tryout New Molds** - pre-mold jobs on the computer to find an initial setup.
- ◆ **Solve Molding Problems** - use SimTech to solve problems then apply the results on the production floor.
- ◆ **Runner or Gate Changes** - evaluate different runner and gate dimensions using SimTech before sending the mold to the machine shop for changes.
- ◆ **Evaluate other Plastics** - evaluate molding different plastics on SimTech.
- ◆ **Optimize the Machine Size** - try molding the job on a larger or smaller machine.

SimTech is the final "hands-on" learning step in your training program for skilled molding personnel. Starting with our CD based injection molding "knowledge" courses, SimTech 2005 is the final step that provides molding practice and teaches machine operation, problem solving and cycle setting. Managers never again have to pay for years of shop floor trial and error experience to develop skilled molding personnel.

Output Results	Units	Run1	Run2	Run3	Run4
1 Melt Temperature	F	540.0	540.0		
2 Fill Time	s	1.86	1.86		
3 Cycle Time	s	36.00	36.00		
4 % Mold Full at VPT	-	95.19	95.19		
5 Cushion Size	in ³	4.022	4.022		
6 Filling Pressure Loss	psi	4706	4705		
7 Max Cavity Press	psi	4706	4705		
8 Max Cavity Press at Far End	psi	4501	4501		
9 Packing Pressure Loss	psi	205	204		
10 Area Post-Gate Press Curve	psi*s	32458	23870		
11 Avg Part Temp at Ejection	F	198.0	198.0		
12 Plastic Flow Distance	in	5.00	5.00		
13 Part Shrinkage	%	-0.77	-0.81		
14 Part Weight	oz	5.950	5.927		
15 Screw Run Time	s	2.42	2.42		

Plastic/Machine Problems	Run1	Run2	Run3	Run4
Flash	0	0		
Burn	0	0		
Distortion	0	0		
Discharge	0	62		
Screw Not Pumping Plastic	0	0		
No Cushion	0	0		
Screw Not Back	0	0		
Low Melt Temperature	0	0		



Umberto Catignani

President of Orbital Plastics Consulting, Inc.

□ *SimTech operates just like a real molding machine. I can show production personnel exactly what happens inside the mold and they can relate this to the molded part properties. This simulation program can teach in days what it takes months to learn on the production floor.* □

Torsten Kruse

President of Kruse Analysis

□ *It's amazing how SimTech calculates the pressures, temperatures and flows inside the mold. It's a computer simulation that will increase the processing expertise in any molding plant.* □

William Frizelle

Assistant Professor of Engineering and Technology, consultant and SPE seminar lecturer.

□ *Using the new Paulson simulator, I can show, as well as tell, my students how the injection molding process works. They leave with a far better understanding of the relationship between the machine, the plastic and the molded parts. The results of this simulation is a revelation to both new and experienced molders.* □

Features of SimTech 2005

- ◆ 23 operating injection molding machine controls, including velocity to pressure transfer (vpt).
- ◆ 15 outputs for plastic temperature, fill time, cycle time, cushion size, pressures, flow distance, part shrinkage, part weight, screw run time.
- ◆ Shows part problems caused by the molding conditions.
- ◆ Graphs of plastic pressures and temperatures in the runner, gate and cavity.
- ◆ Units can be either US (english) or SI (metric units).
- ◆ Stores machine specifications for up to 25 molding machines.
- ◆ Stores mold specifications for up to 25 molds.
- ◆ Stores plastics data for up to 25 plastics.
- ◆ Runs from 1 to 4 cycles at the same time using different machine control settings for each cycle.

The Benefits of Using SimTech 2005:

- ◆ Safe and effective hands-on molding practice that is directly applicable to your molding floor.
- ◆ More "molding experts" are developed. Foremen, lead persons, technicians and setup personnel can become molding experts in months instead of years.
- ◆ Personnel can learn what to do and what not to do in the safe environment of the simulator.
- ◆ Lessons learned on the simulator are directly applied to the production machines.
- ◆ Start-up time, downtime and cycle times for the production molds can first be tested on the simulator.
- ◆ As the plant's skill level is increased, production problems are reduced and productivity increases.

ROI on one machine whose machine hour rate is \$35/hour

- ◆ **Electrical costs** - The cost of electricity is 3 to 4 % of the sales dollar (SPI figures). Improved barrel temperature settings, injection pressures and clamp force can often reduce electrical costs by 20 to 25%. The savings are added profit. What would it amount to in your plant?
- ◆ **Cycle time** - Could a better setup reduce the cycle time? A two second saving per minute is about \$6,000/yr. It becomes added profit.
- ◆ **Downtime** - Could a faster startup or a faster solution to molding problems save money? The machine making added production for just 3 hours per week increases output by \$5,460/yr.
- ◆ **Mold Damage** - Does damage ever occur in your plant due to inadequate training or operating experience?
- ◆ **Reject Parts** - A reject part costs twice as much as good parts. Why? You must mold the reject, find it, regrind the plastic and then mold a replacement. A reduction from 4% to 2% would increase profit by about \$12,000/yr.



Paulson
Training Programs, Inc.