

How to Fix Cycle Time Issues in Servo Injection Molding Machines



HOW TO FIX CYCLE TIME ISSUES IN SERVO INJECTION MOLDING MACHINES

FASTER CYCLES • HIGHER PRODUCTIVITY • GREATER PROFITS

COMMON REASONS FOR LONG CYCLE TIME

- Improper Machine Settings
- Excessive Cooling Time
- Poor Mold Design
- Material Issues
- Slow Mold Opening & Closing
- Machine Maintenance Issues
- Inefficient Ejection System
- Overpacking & Excess Material Use
- Outdated Machine Technology
- Lack of Process Monitoring

WHY OPTIMIZE CYCLE TIME?

- Increase Production Output
- Reduce Operational Costs
- Improve Product Quality
- Enhance Machine Efficiency

PRACTICAL SOLUTIONS TO FIX CYCLE TIME ISSUES

- Optimize Machine Settings**
Fine-tune speed, pressure and holding time
- Reduce Cooling Time**
Improve cooling system and optimize time
- Improve Mold Design**
Enhance flow, venting and cooling channels
- Use Right Material**
Select suitable material and dry properly
- Increase Mold Movement Speed**
Optimize open/close speed settings
- Maintain Machine Regularly**
Lubricate, inspect and replace worn parts
- Optimize Ejection System**
Set proper ejector speed and stroke
- Optimize Shot Size**
Avoid overpacking and reduce material use
- Monitor & Analyze Performance**
Track cycle data and find improvement areas
- Upgrade to Advanced Technology**
Invest in modern servo injection molding machines

Regular maintenance, proper training and continuous monitoring are the key to achieving consistent and faster cycle times.

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Fort Myers, Florida May 7, 2026 (IssueWire.com) - Cycle time plays a critical role in the productivity and profitability of any plastic manufacturing process. In [servo injection molding machines](#), faster and consistent cycle times mean higher output, better efficiency, and lower production costs. However, many manufacturers struggle with cycle time delays due to various operational and technical issues.

If your servo injection molding machine is not delivering optimal cycle performance, identifying the root causes and applying the right solutions is essential.

What Is Cycle Time in Injection Molding?

Cycle time refers to the total time required to complete one full molding process, including:

- Injection
- Cooling
- Mold opening and closing
- Ejection

Reducing this time without compromising product quality is the key to improving efficiency.

1. Improper Machine Settings Problem:

Incorrect settings such as injection speed, pressure, or cooling time can increase cycle time unnecessarily.

Solution:

- Optimize injection speed and pressure based on material
- Adjust holding pressure and time
- Fine-tune cooling duration

Proper machine calibration ensures faster and consistent cycles.

2. Excessive Cooling Time Problem:

Cooling often takes up the largest portion of the cycle. If it is longer than necessary, it slows down production.

Solution:

- Use efficient mold cooling systems
- Optimize cooling channel design
- Set the minimum required cooling time

Reducing cooling time without affecting product quality can significantly improve cycle efficiency.

3. Poor Mold Design Problem:

An inefficient mold design can lead to uneven cooling, longer cycle times, and defects.

Solution:

- Improve mold flow design
- Ensure proper venting
- Use high-quality mold materials
- Maintain uniform wall thickness

A well-designed mold reduces cycle delays and improves output.

4. Material Issues Problem:

Using incorrect or low-quality materials can affect melting, cooling, and overall cycle time.

Solution:

- Choose the right plastic material for your application
- Ensure proper drying of materials
- Maintain consistent material quality

Good material selection leads to smoother and faster processing.

5. Slow Mold Opening and Closing Problem:

If the mold opening and closing speed is too slow, it increases the overall cycle time.

Solution:

- Adjust machine speed settings
- Maintain hydraulic and servo systems
- Ensure proper lubrication

Optimizing these movements can reduce unnecessary delays.

6. Machine Maintenance Issues Problem:

Lack of maintenance can cause friction, misalignment, and slower machine response.

Solution:

- Perform regular maintenance checks
- Lubricate moving parts
- Inspect servo motors and drives
- Replace worn-out components

A well-maintained machine operates faster and more efficiently.

7. Inefficient Ejection System Problem:

Slow or improper part ejection can delay the next cycle.

Solution:

- Optimize ejector speed and stroke
- Use proper ejector pin design
- Ensure smooth mold release

Efficient ejection ensures a quicker transition between cycles.

8. Overpacking and Excess Material Use Problem:

Excessive material injection increases cooling time and energy consumption.

Solution:

- Optimize shot size
- Reduce packing pressure
- Avoid overfilling the mold

This helps in faster cooling and shorter cycles.

9. Outdated Machine Technology Problem:

Older machines may lack the speed and precision needed for modern production demands.

Solution:

- Upgrade to advanced [servo injection molding machines](#)
- Use machines with energy-efficient and high-speed features
- Implement automation where possible

Modern machines are designed for faster cycle times and better efficiency.

10. Lack of Process Monitoring Problem:

Without proper monitoring, it's difficult to identify delays and inefficiencies.

Solution:

- Use real-time monitoring systems
- Track cycle time data
- Analyze performance regularly

Data-driven optimization helps maintain consistent cycle performance.

Final Thoughts

Cycle time issues in [servo injection molding machines](#) can directly impact production efficiency and profitability. The good news is that most of these issues can be fixed with proper machine settings, regular maintenance, better mold design, and optimized processes.

By focusing on key areas like cooling time, material quality, and machine performance, you can significantly reduce cycle time and improve overall productivity. Whether you operate a small unit or a large manufacturing plant, optimizing cycle time is essential for staying competitive in the industry.

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