

Upgrade Today. Lead Tomorrow.

Checklist for Introducing the latest Plastic Moulding Machines

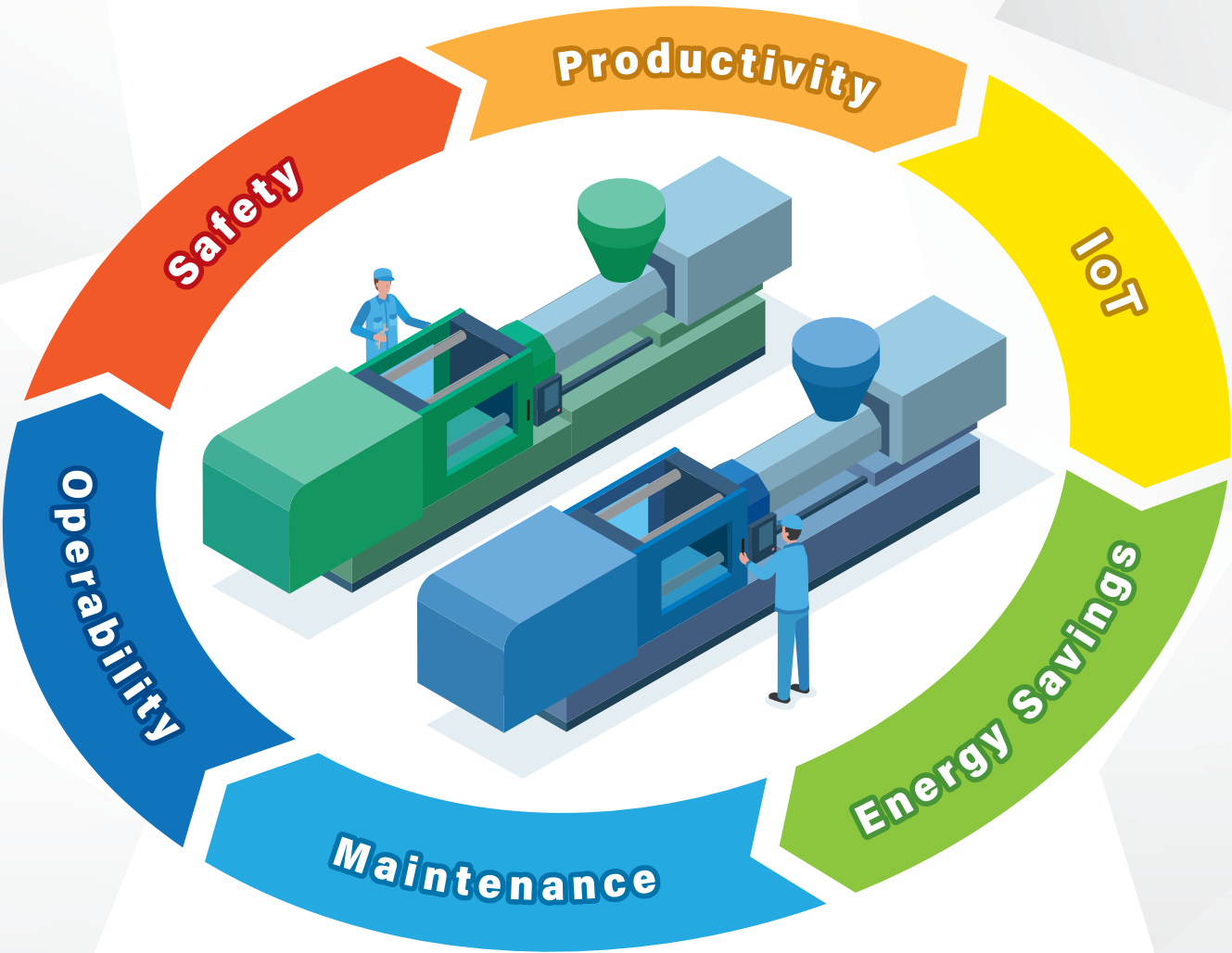
Please use this checklist as a guideline to support the introduction of the latest plastic moulding machines.

Energy Savings・SDGs - Save Energy. Reduce Costs. Protect the Planet.			
1	Save on electricity costs	☐	Benefits of Implementation The latest machines excel in energy efficiency. Introducing them can reduce running costs and environmental impact.
2	Reduce water and hydraulic oil consumption	☐	
3	Contribute to SDGs and GX (Green Transformation)	☐	
4	Attract ESG investments	☐	
5	Enhance CSR activities	☐	
Productivity - Produce More. Waste Less. Stay Ahead.			
6	Improve yield and stabilize production	☐	Benefits of Implementation The latest machines excel in productivity. They offer benefits such as reducing waste, shortening cycle times, saving labour and manpower, decreasing overtime hours, and expanding order opportunities.
7	Review production costs	☐	
8	Upgrade the production line	☐	
9	Address labour shortages	☐	
10	Utilize factory space efficiently	☐	
Operability - Simple to Operate. Easy to Master.			
11	Have a control device that is easy to operate	☐	Benefits of Implementation The latest machines have improved operability. They offer benefits such as shortening the training period for workers, making it easier to pass on skills from experienced workers, reducing errors, shortening the time required for settings, and reducing worker fatigue.
12	Easy set moulding conditions	☐	
13	Digitize and visualize moulding conditions	☐	
14	Reduce operational errors and human errors	☐	
15	Use machines that new operator could operate immediately	☐	
IoT・DX - Connected Machines. Smarter Decisions.			
16	Reduce waste in equipment management	☐	Benefits of Implementation The latest machines can be connected to a network. They are effective in automating information collection, analyzing data, and planning production and maintenance.
17	Reduce errors in equipment management	☐	
18	Collect and analyze machine data	☐	
19	Remotely monitor equipment	☐	
20	Connect to company's network system	☐	
Maintenance - Zero Surprises. Maximum Uptime			
21	Increased frequency of breakdowns and part replacements	☐	Benefits of Implementation Upgrading to the latest machines reduces the frequency of breakdowns. This results in reliable execution of planned production, adherence to delivery schedules, and reduced maintenance costs.
22	Concern about machines sudden stoppage	☐	
23	Difficulty obtaining maintenance parts due to discontinued production	☐	
24	Unstable production and time-consuming adjustment	☐	
25	Upgrade old equipment	☐	
Safety - Safety Built In. Confidence Built Up.			
26	Reduce labour accidents and near-misses	☐	Benefits of Implementation The latest machines have improved safety. They help prevent workplace accidents, move away from undesirable working conditions, attract young talent, and reduce employee stress.
27	Implement safety measures	☐	
28	Eliminate safety differences between machines	☐	
29	Ensure a safe working environment to attract and retain employees	☐	

Boost your plastic moulding machine now!

PIONEERING the FUTURE with CUTTING-EDGE TECHNOLOGY!

Achieve energy savings, productivity enhancement, work style reform, and safety

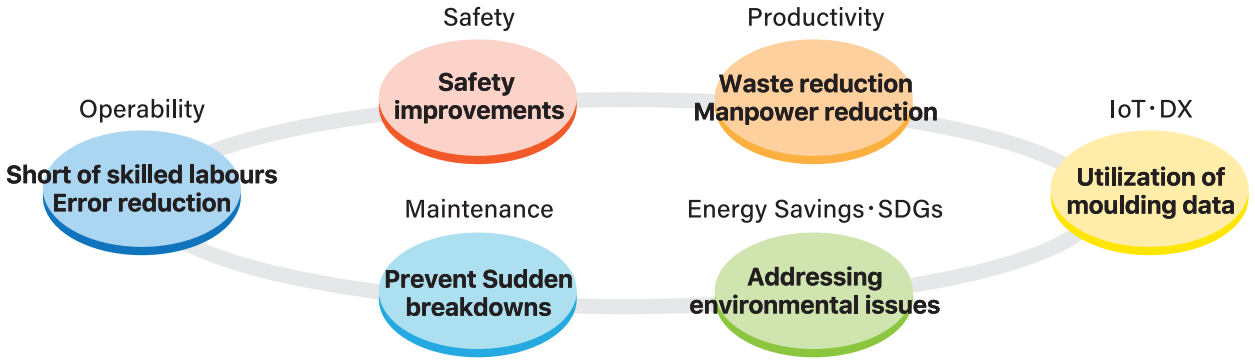


THE JAPAN SOCIETY OF INDUSTRIAL MACHINERY MANUFACTURERS
PLASTIC MACHINERY DIVISION



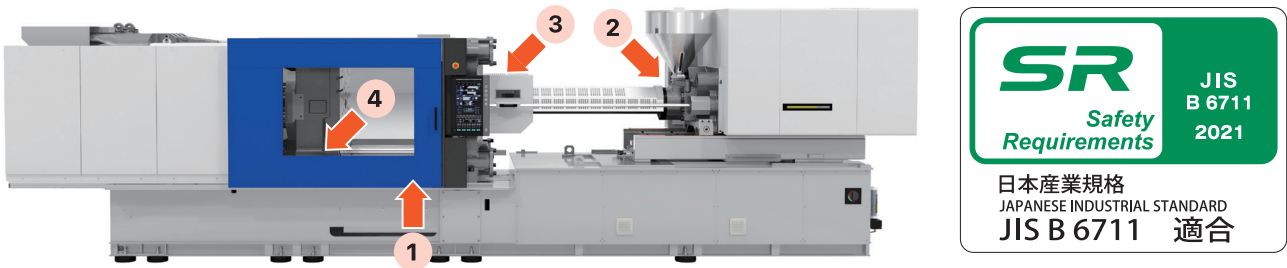
Effects of Upgrading Plastic moulding machine

Plastic moulding machines are key for transforming plastics into various products. These machines have seen significant technological advancements alongside the industrial use of plastics and continue to evolve. Notable improvements in safety and energy efficiency mean that adopting the latest plastic moulding machines could address the challenges you face.



Safety Improvements

The latest plastic moulding machines are equipped with a variety of safety measures, including doors that prevent access to hazardous areas while ensuring workability, sensors that detect when operator enters accident-prone areas, programs that automatically detect equipment malfunctions and safely stop the machine, and covers that prevent burns and fractures. Internationally, efforts are being made to standardize machine safety regulations. In the field of injection moulding machines, ISO 20430:2020 was issued early on, and machines that comply to this standard are available on the market.

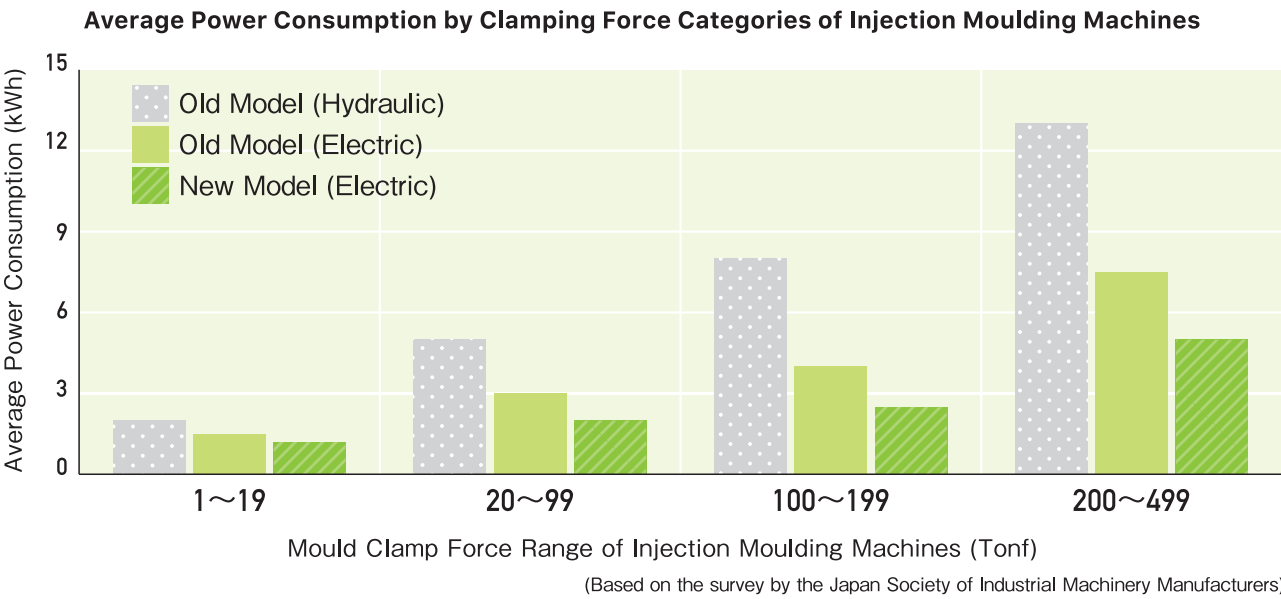


Examples of safety measures in injection moulding machines

- 1 Equip the Operator-side Safety door with an Electromagnetic lock**
Prevent the safety door from being opened while machine is in operation.
- 2 Implementation of Safety Measures to Prevent Head Entrapment by the movement of Injection Device and Hoppers**
Measures are being taken to prevent heads from being trapped between injection device, hopper and fixed platen.
- 3 Installation of Purge Covers to Protect People from Resin Splatter**
A control circuit is in place to prevent the injection device from operating when the cover is open.
- 4 Abolition of the Mandatory Installation of Mechanical Safety Devices**
With the improved performance requirements for safety circuits, it is now possible to ensure safety without relying on mechanical safety devices.

Improvement of Energy Efficiency

The energy efficiency of plastic moulding machines is continuously advancing. Designs are being optimized in every aspect to eliminate waste, including the lightweighting of drive components, the incorporation of servo motors, the optimization of plasticizing screws, the minimization of hydraulic oil usage, and the enhancement of insulation performance.



Prevent Sudden Breakdowns

Older plastic moulding machines are more prone to unexpected breakdowns. When this occurs, it can halt the production line, necessitate the transfer of moulds to other machines, and incur additional costs to meet customer deadlines. Furthermore, sourcing replacement parts for older machines is often challenging, time-consuming, and costly. Electrical components, in particular, may become irreparable once their production ceases. The latest moulding machines are now available with a function that notifies the customer when maintenance is due, allowing for planned maintenance and inspections to be performed.



Damaged Bearings due to Lack of Lubrication



Toggle Link Bushing with Advanced wear (Mould Clamping Unit)

(Source: The Japan Society of Industrial Machinery Manufacturers)