

**BLOWMOLDING
VS
ROTOMOLDING**

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BLOW MOLDING VS ROTATIONAL MOLDING

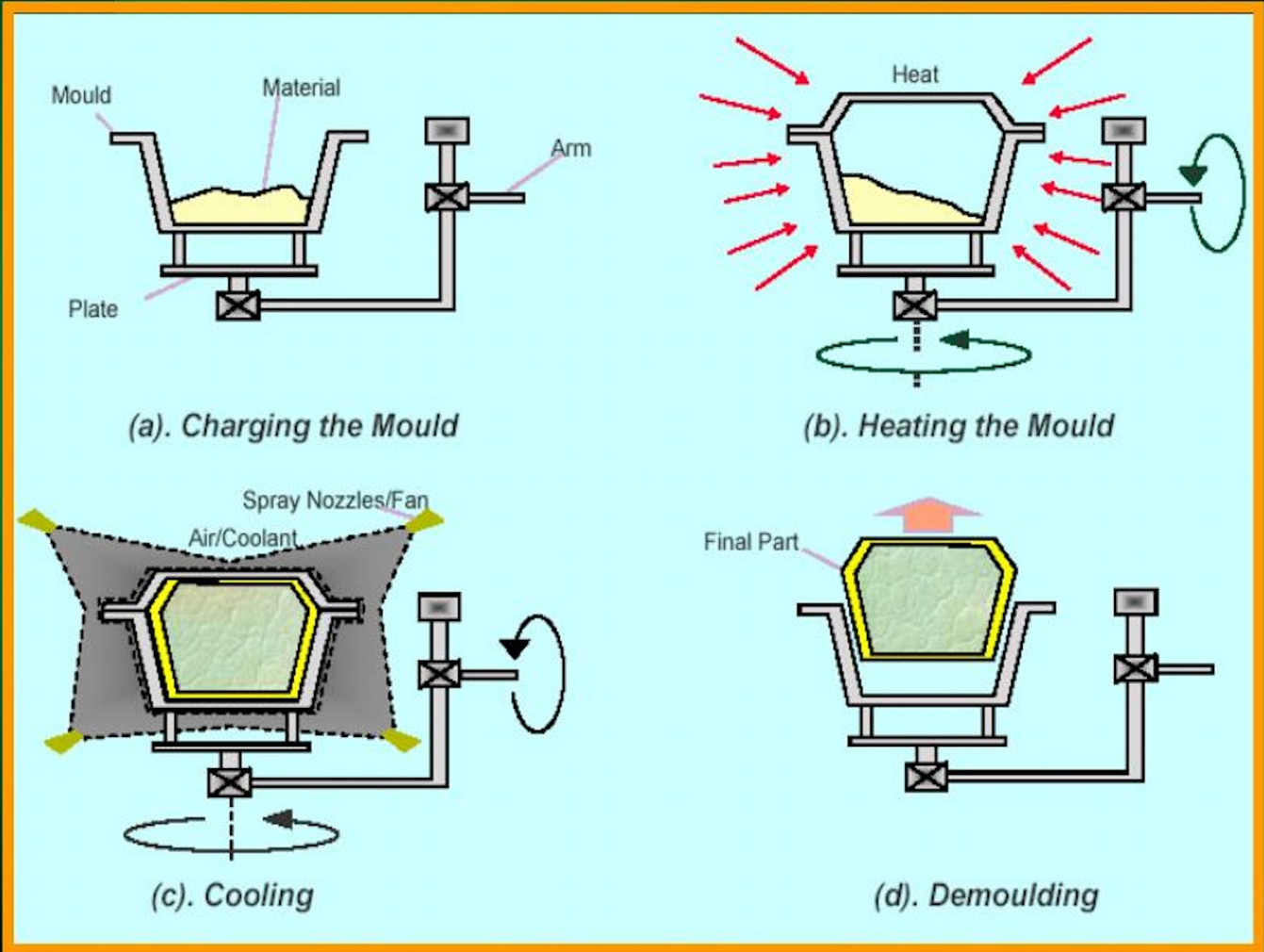
High Pressure Process



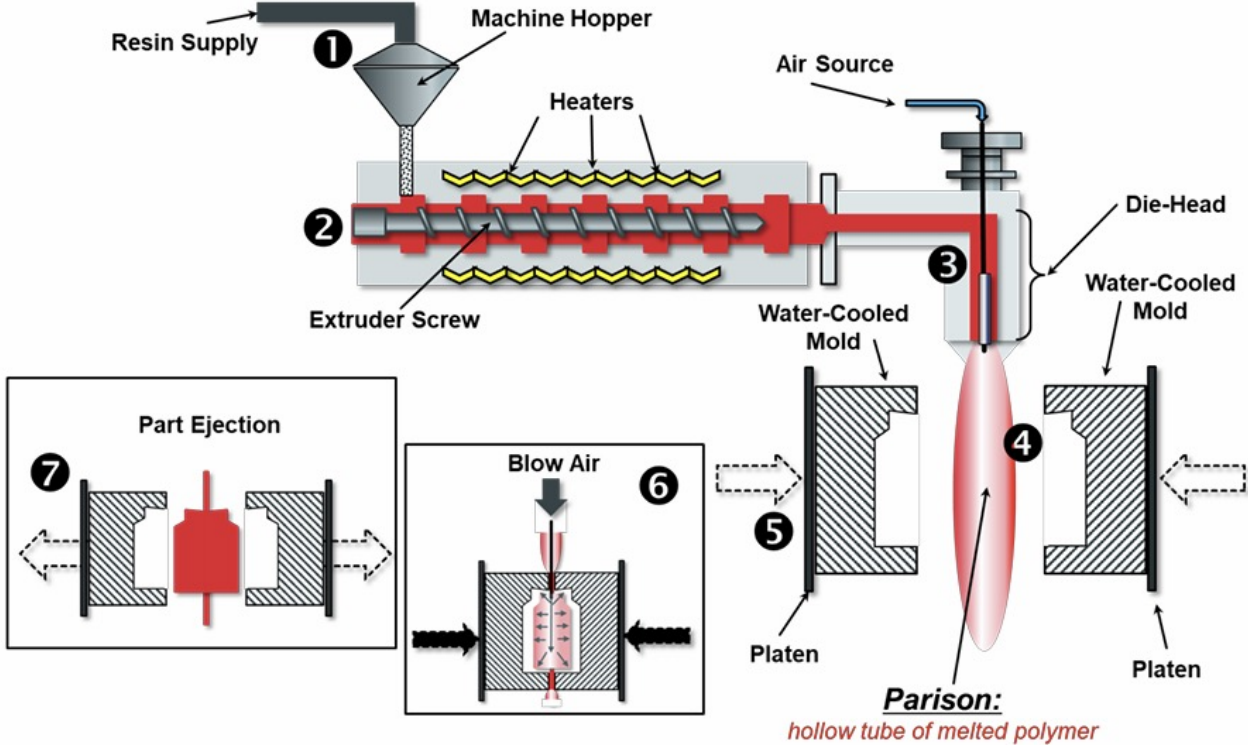
Low Pressure Process

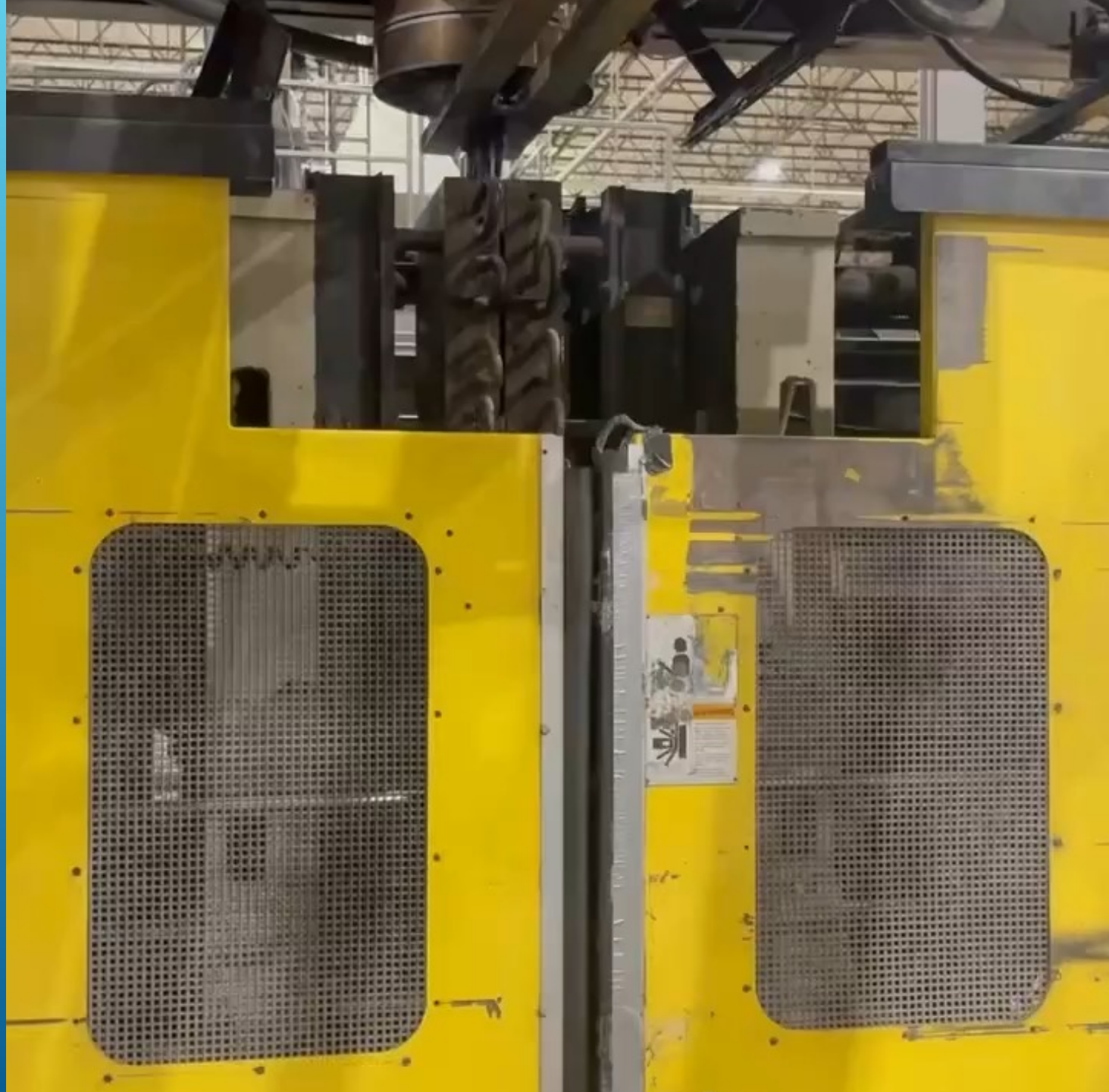


ROTATIONAL MOLDING



BLOW MOLDING PROCESSES: METHODOLOGY TO MAKE HOLLOW PARTS





Process Decision Matrix

Features	Roto	Blow
Tooling Costs	X	
Machine/Equipment Cost	X	
High Volume Production Runs		X
Mid Volume Production Runs	X	X
Low Volume Production Runs	X	
Cycle Time		X

Process Decision Matrix

Features	Roto	Blow
Part Dimensional Tolerances		X
Surface Finish	X	
Wall Thickness		
Consistency	X	
Ability to Change	X	
Very Thick Walls	X	

Process Decision Matrix

Features	Roto	Blow
Part Size		
Small		X
Medium	X	X
Large	X	
Part Geometry		
Flat Panel		X

Process Decision Matrix

Features	Roto	Blow
Part Geometry		
Round		X
Complex	X	
Cores	X	
Double Wall	X	
Corners – Material Thickness	X	

Process Decision Matrix

Features	Roto	Blow
Corners		
Radius		
Tight / Small	X	
Large		X
Change Over/Mold Setup	X	
Color Changes	X	

Process Decision Matrix

Features	Roto	Blow
Variety of Molding Materials		X
Semi-Automated - Low Labor Input		X
Molded-in Inserts/Graphics	X	X
Recycle Flash, Cutoffs in Cycle		X
Mold Life (Longevity)		X
Mold / Part Modification	X	

Process Decision??

Review all the features for a given part

Process of Elimination

Part size – Too Large – Too Small

Part Geometry – Cores – Irregular Shape

Material – Resin available for the process

Aesthetics

Quantity of parts required?

Economic Analysis

Production Run Size – Setup Costs $\begin{cases} \text{Blow } \$1500 - \$3000 \\ \text{Roto } \$100 - \$500 \end{cases}$

Color Changes $\begin{cases} \text{Blow } \$500 - \$2000 \\ \text{Roto - Minimal} \end{cases}$

Weekly Run Rate – per Mold $\begin{cases} \text{Blow } 3000 \\ \text{Roto } 100 \end{cases}$

Tooling Amortization — Blow Molding is 1.5 to 2.5 X over Roto

Machine Rate — Blow Molding is 30 to 50 % Higher

Labor Input $\begin{cases} \text{Roto – Example – 8 parts per 4 arm machine / 7.5 minutes – 2 people} \\ \text{Blow – 3.75 minutes – 1 person} \end{cases}$

Other Factors

Part Storage

Tolerances

Wall Thickness — Corners: Roto Thicker vs Blow Thinner
Blow – thicker at parting line

Mechanical Performance

Stiffness

Mold Life

EXAMPLES OF PARTS PRODUCED WITH BOTH PROCESSES



Ice Cream Machine Covers

EXAMPLES OF PARTS PRODUCED WITH BOTH PROCESSES



Trash Liners

EXAMPLES OF PARTS PRODUCED WITH BOTH PROCESSES



Snow Sleds

EXAMPLES OF PARTS PRODUCED WITH BOTH PROCESSES



Cases



**THANK YOU FOR
YOUR ATTENTION
TO THIS MATTER**