

# WESTERN INDUSTRIES PLASTIC PRODUCTS, LLC

LEADERS IN CONTRACT BLOW MOLDING SINCE 1986

Our Core manufacturing capabilities have established us as a leader in large-part blow molding, and we continue to expand our range of expertise with sophisticated, state-of-the-art secondary equipment.

Blow Molding is the fastest most cost-effective plastic molding process when production volume reaches 3,000 + parts per year. With an increasing focus on light weighting and sustainability, it's no wonder why engineers across the globe in nearly every industry have turned an eye towards blow molding for their production needs.

Blow Molding can offer great benefits vs other processes. Those include, a faster production rate and tighter tolerances than Roto-Molding. Much more conducive to production of mid to higher volumes. Vastly improved design capabilities than thermoforming. Part shape, complexity, and size are rarely an issue. Far lower tooling costs than injection molding.

| BLOW MOLDING<br>VERSUS<br>ROTOMOLDING                               |   | BLOW MOLDING<br>VERSUS<br>INJECTION                                |   | BLOW MOLDING<br>VERSUS<br>THERMOFORMING  |   |
|---|---|--|---|--|---|
| BLOW  | ROTO  | BLOW   | INJECTION   | BLOW   | THERMO  |
| <b>LOW</b><br>THINNER WALLS MEANS A LIGHTER PART                    | <b>HIGH</b><br>THICKER WALLS MEANS A HEAVIER PART                     | <b>LOW</b><br>ELEMINATION OF THE NEED FOR TWO-PART MOLD COMPONENTS | <b>HIGH</b><br>MUST METICULOUSLY CREATE TWO-HALVE CAVITY MOLD THAT MUST LINE UP PERFECTLY | <b>LOW</b><br>EXTRUDED RESINS ALLOW FOR THINNER WALLS AND A LIGHTER PART                                     | <b>HIGH</b><br>STARTING WITH A SHEET MEANS HEAVIER GAUGE AND POSSIBLY A HEAVIER PART            |
| <b>LOW</b><br>PARISON RESULTS IN PARTING LINE INTEGRITY             | <b>HIGH</b><br>LOOSE MATERIAL MELTED IN-MOLD RESULTS IN VOIDS         | <b>LOW</b><br>LOWER INITIAL MACHINE INVESTMENT                     | <b>HIGH</b><br>COSTS IN INJECTION MOLD BUILDS ARE HIGHER                                  | <b>LOW</b><br>CYCLE TIME IS OFTEN LESS THAN A MINUTE   | <b>HIGH</b><br>CYCLE TIMES VARY CONSIDERABLY DEPENDING ON DWELL OF PART                         |
| <b>LOW</b><br>MACHINE INVESTMENT AND MAINTANANCE IS LOWER           | <b>HIGH</b><br>MOLD MUST BE REFURBISHED OR REPLACED                   | <b>LOW</b><br>MACHINERY AND TOOLING COSTS ARE TYPICALLY LOWER      | <b>HIGH</b><br>MOLD MUST BE REFURBISHED OR REPLACED                                       | <b>LOW</b><br>FASTER CYCLES AND GREATER AUTOMATION ALLOWS FOR MUCH LESS EXPENSIVE PART                       | <b>HIGH</b><br>LONGER CYCLE TIMES AND TYPICALLY FAR GREATER SECONDARY REQUIREMENTS ADD EXPENSE  |
| <b>LOW</b><br>CYCLE TIME IS OFTEN LESS THAN ONE MINUTE              | <b>HIGH</b><br>CYCLE TIME IS OFTEN MORE THAN 30 MINUTES               | <b>HIGH</b><br>HAS VASTLY IMPROVED DESIGN CAPABILITIES             | <b>LOW</b><br>DESIGN IS LIMIITED SINCE THERE ARE TWO-HALVES                               | <b>LOW</b><br>CONSISTENT AND FIRST GENERATION USE OF REGRIND ELIMINATED ADDED COSTS                          | <b>HIGH</b><br>SHEET TEMPLATES FREQUENTLY ADD SCRAP USAGE AND ADD TO COSTS                      |
| <b>LOW</b><br>PIECE PRICE IS 30% LOWER AT A 3,000-PIECE BREAK POINT | <b>HIGH</b><br>PIECE PRICE IS 30% HIGHER AT A 3,000-PIECE BREAK POINT | <b>HIGH</b><br>HIGHER PRODUCTION COSTS                             | <b>LOW</b><br>LOWER PRODUCTION COSTS  | <b>LOW</b><br>POTENTIAL OF COMPARABLE DESIGN AS TWO-UP PRODUCTION LOWERS COSTS CONSIDERABLY FOR LARGER PARTS | <b>HIGH</b><br>FOR LARGER PARTS, PLATEN SIZE MAY LIMIT TO 1-UP PRODUCTION FOR COMPARABLE DESIGN |



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