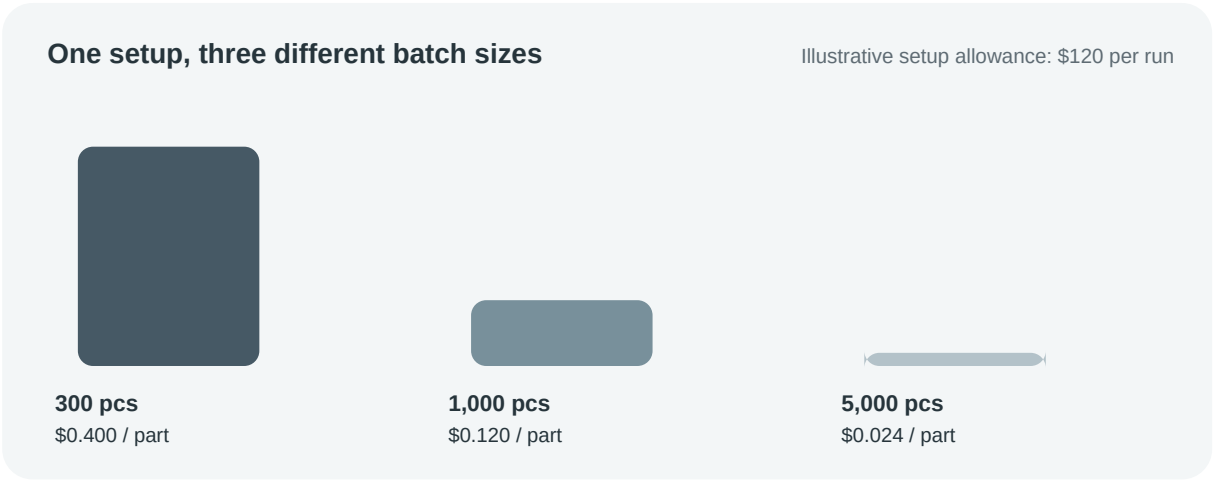
How Batch Size Changes Silicone Machine Setup and Unit Cost

A buyer-and-engineer guide to setup amortization, press utilization, scrap, color changes and realistic production-lot quotations



Direct answer. A short molding batch often costs more per accepted part because mold changeover, preform and color preparation, process stabilization, first-article checks and documentation must be completed even when only a few hundred parts are ordered. Larger runs spread those fixed per-run costs across more good pieces - until other costs or capacity limits change.

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Issued by: Shenzhen Reemane Silicone Technology Co., Ltd.

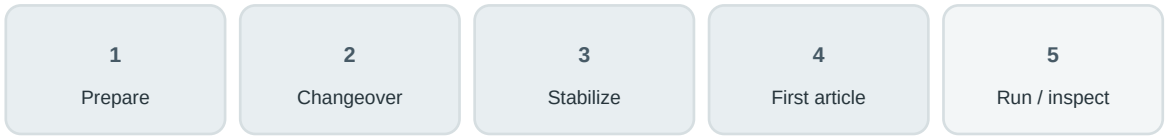
Scope: Custom solid-silicone compression molding. Actual rates and batch breakpoints depend on the part, machine, mold, cure time, cavities, quality criteria and commercial terms.

Important: All dollar figures in this guide are hypothetical teaching examples, not Reemane prices or commitments.

www.siliconefactories.com | sales@siliconefactories.com

01 / What Counts as a Machine Setup?

A new production release can require work before the press consistently produces accepted pieces. Different factories may account for these activities separately or include them within the quoted piece price.



Non-productive setup happens before stable good-part output

Typical per-run activities

- Identify the approved part revision, mold, material, hardness and color.
- Schedule press capacity; retrieve, clean, mount and inspect the mold.
- Prepare and verify silicone preforms or material charges; control pigment when applicable.
- Reach the required mold and press operating conditions; verify filling, venting and cure.
- Produce and approve first articles before the stable run, including critical fit or surface checks.
- Set up trimming, inspection, packaging and traceability for this production release.

Not all setup time is identical

Changing a mold may require different work from simply changing the color. Repeating a fully approved product with the same compound and clean mold may be less disruptive than restarting a part with new hardness, new pigment, insert changes or revised quality criteria.

One-time tooling is different

A new steel mold is generally a development investment. Machine changeover and start-up verification are operating activities that may recur on each production batch. A quotation should state whether tooling, sample approval, per-run setup and piece pricing are quoted separately or embedded in the price.

Practical test: Ask the supplier which activities recur every time your purchase order is released, rather than assuming that owning the mold eliminates all future setup cost.

02 / How Setup Is Spread Across Good Parts

A simplified internal cost view is: **Estimated unit production cost = direct variable cost per accepted piece + batch setup allowance / accepted batch quantity.** Real quotations must also consider yield, non-recurring tooling, packaging, inspection, delivery and commercial overhead. This formula is a teaching framework, not a supplier price calculator.

Illustrative cost example - same part and mold

Accepted batch	Setup allocated / part	Variable cost / part	Illustrative total
300 pcs	$0.400	$0.680	$1.080
1,000 pcs	$0.120	$0.680	$0.800
5,000 pcs	$0.024	$0.680	$0.704

Assumptions: $120 of per-run setup, $0.680 direct variable cost per accepted part, constant process efficiency and sufficient accepted yield. These are invented numbers solely to demonstrate the allocation mechanism. Actual prices may not follow this curve.

Why price does not fall forever

- As batch size grows, the setup amount per piece becomes small, but raw material and most direct conversion costs remain.
- A long run may require additional shifts, preventive maintenance, material replenishment or tighter logistics that change the cost curve.
- A mold with slow cure, difficult demolding or labor-heavy trimming may remain expensive at higher volume.
- Extra scrap can increase the number of press cycles and inputs required to deliver the promised accepted quantity.

Good pieces are the relevant denominator

If the buyer requires 1,000 accepted parts and some are rejected, the factory must plan enough material and cycles to meet that accepted output. A quote based on perfect yield may underestimate the cost of a demanding new part.

Do not confuse: Press cycle time (time per molding shot) is not the same as the total labor and elapsed time for a whole batch. Trimming, cure validation, inspection and packaging can be bottlenecks too.

03 / Changeovers, Color Splits and Lot Size

Larger orders do not necessarily behave like one continuous production run. Separating quantities across colors, hardnesses, revisions or delivery dates can require additional preparation and quality verification.

Illustrative production-release comparison

With a hypothetical $120 setup for each distinct release, one uninterrupted lot of 3,000 accepted parts allocates $0.040 setup per part. Three separately scheduled 1,000-piece releases allocate $0.120 per part. This example excludes inventory carrying cost and does not assume every real color change requires an identical full setup.

Cost drivers to evaluate

- Color change: pigment preparation, cleaning, color standard checks and scrap during transition.
- Hardness or compound change: mixing, cure-condition review and potential separate material approvals.
- SKU change: separate tools, inserts, trimming fixtures, artwork, inspection and labels.
- Restart after a long gap: mold preparation, material confirmation, thermal stabilization and new first articles.
- Packaging split: different unit packs, labels, barcodes, carton counts and line-clearance controls.

A larger batch is not automatically cheaper overall

A larger lot can reduce per-piece setup allocation but may increase buyer inventory, warehouse cost, cash tied in stock, obsolete colors, damage during storage and exposure to a future design change. Compare total landed-and-held cost, not just ex-factory unit price.

Practical order strategies

- Combine genuine same-specification demand into fewer releases when delivery requirements allow.
- Keep color and hardness variants visible as separate price-driving lines in the RFQ.
- Quote first order quantity and realistic repeat batch sizes separately.
- Use approved pre-production standards and stable product revisions to reduce repeat clarification.
- Ask whether packaging can be staged separately from molding without compromising traceability or ownership arrangements.

Purchasing decision: A lower piece price for 5,000 parts is useful only when the inventory and product risk of purchasing 5,000 parts are acceptable.

04 / RFQ and Approval Checklist

Send information that allows the manufacturer to evaluate both the part and the actual release pattern.

- STEP file, 2D drawing, approved sample, or sufficiently detailed photos and dimensions.
- Silicone compound direction, Shore A hardness, color and critical function.
- Mold status, cavity count if known, and any special cores or inserts.
- Prototype quantity and first production order.
- Requested comparison quantities: for example 300, 1,000 and 5,000 accepted pieces.
- Expected annual usage and frequency of reorders; clearly separate forecast from committed purchase orders.
- Exact count of colors, hardness grades, sizes, logos or packaging SKUs.
- Trimming, post-curing, inspection, functional testing and traceability needs.
- Required shipment dates, acceptable split deliveries and finished-pack configuration.
- Current defects, yield concerns or changes relative to the last approved revision.

A quotation should clarify

- Is steel tooling charged separately from the piece price?
- Is setup charged by run, embedded in pricing, or handled under a batch minimum?
- Do breaks in quantity apply per part/color/SKU or across an entire combined order?
- Which quantities are accepted finished units, and what testing or packing is included?
- What changes when the next purchase order has a different batch size or material?

Reemane manufacturing review

Reemane can review your drawing or sample and discuss tooling, production method, practical cavity strategy, prototype approval, production-lot quantities and cost-driving operations before issuing a project-specific quotation.

Contact: sales@siliconefactories.com
Submit an RFQ: www.siliconefactories.com/get-a-quote/
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