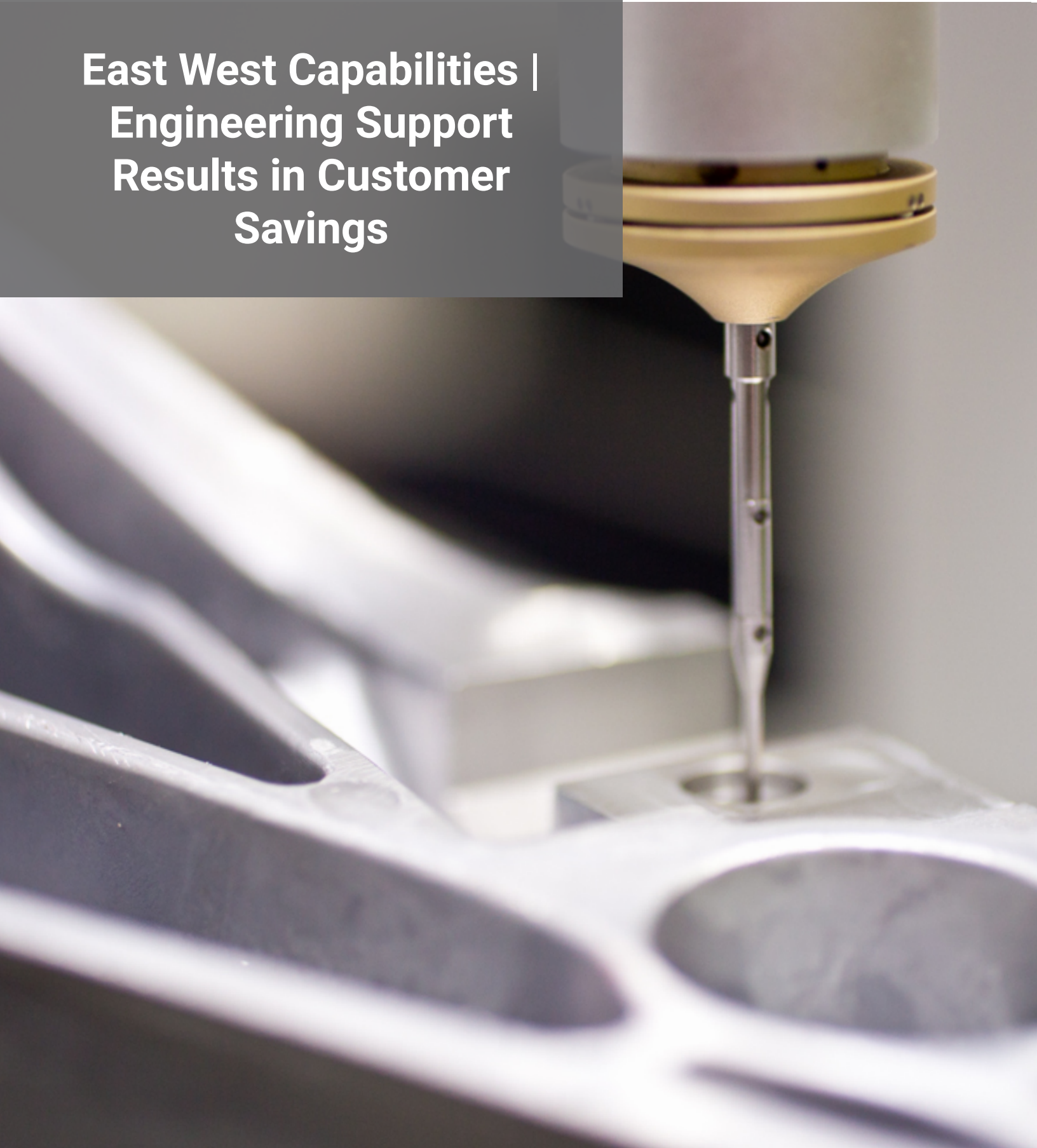




East West

FREE GUIDE

**East West Capabilities |
Engineering Support
Results in Customer
Savings**



Increasing Tolerances Can Potentially Drive Production Costs Down

What is Tolerance: *The total amount a specific dimension may vary (+/-)*

The Challenge: Sometimes tolerances are drawn very tightly, much more tightly than they need to be. The customer sees higher costs because tighter tolerances:

- Limit the manufacturing process the customer can use.
- Limit the materials a customer can use.
- Make it difficult to get the number of in spec parts needed (if a component).
- Make it difficult to get the number of spec products needed.
- Require more intricate tooling.
- Require more expensive materials.
- Often require post-production processes or testing.

Contract manufacturers have no choice but to pass those costs along to the customer. However, East West Manufacturing provides excellent engineering support, which includes close inspection of a customer's design drawing package. Our engineers have demonstrated the ability to find places in customer's design where tolerances can be loosened, bringing about significant decreases in production of the part/product.

Below: Engineers review the tolerances specified for a product.



Increasing Tolerances | Electronics

Situation: Customer sent a PCBA drawing with extremely tight tolerance of +/- 0.05 mm on hole locations.

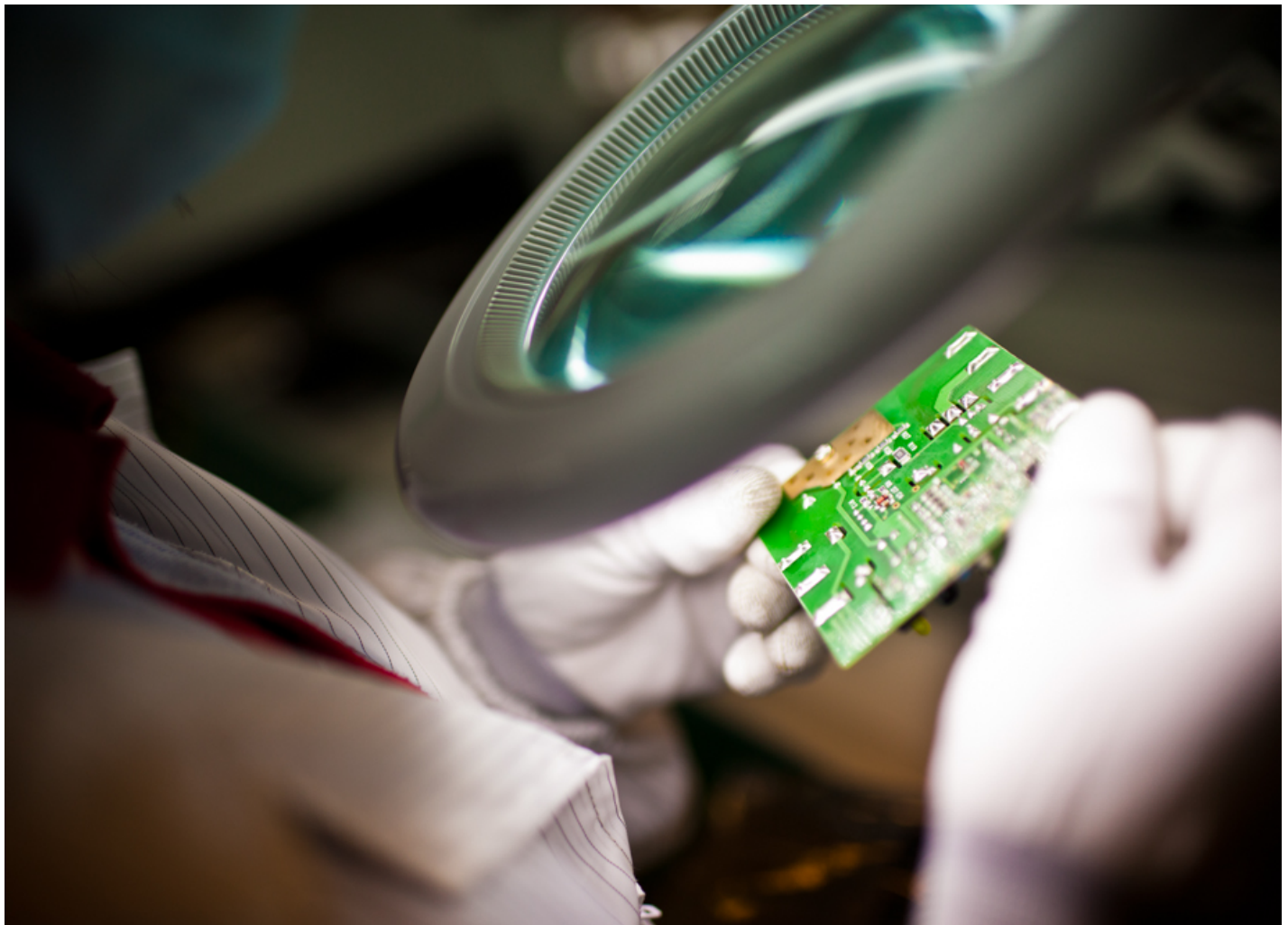
The Breakdown: To meet the customer's requirement, we had three options:

1. Invest in advanced precision equipment.
2. Develop additional test and control procedures to ensure the product met spec, since variations in production (especially for plastic injection molded parts) could put the product out of tolerance.
3. Outsource the project to a supplier with existing precision equipment to make the PCBA.

Unfortunately, all the options would result in increased unit cost.

Resolution: We determined that the part would still fit and function properly if the tolerance were increased from 0.05 mm to 0.076 mm, and this is a tolerance we could easily meet with existing equipment and inspection procedures. Our customer agreed to this revision and ultimately saved \$0.08 per board.

Below: A factory employee carefully inspects a PCBA.



Increasing Tolerances | Product Design

Situation: Customer sent a design with surface finish requirements that were extremely high, requiring additional secondary operations, including polishing. As a result of the secondary operation, the customer was struggling with the cost of the component.

The Breakdown:

1. In this case, the customer provided East West with a drawing that had tolerances and specs similar to a product previously made by the company.
2. The original product had a similar use/application, but was in a division that did not have tight cost demands.
3. The part was over-designed, but the original department did not care – as cost was not an issue to them.

Resolution: Based on the product's application, and by examining competitive products, East West negotiated with the customer on an appropriate level of finishing. Varying levels of surface finish were sampled, and a lower level of surface finish was selected based on actual performance data – saving the company money. Our customer agreed to this revision and ultimately saved 10% on the cost of the product.

If you are looking to tweak production costs look at your part's tolerances. You can start by asking these questions:

1. How is the part used?
2. Can I justify these tight tolerances?
3. Is the tolerance critical for fit or function?
4. Is the tolerance passed down as part of a legacy or previous generation design?
5. Which manufacturing process is being used?

Is it time for you to make a call to your contract manufacturer?

Tap into the engineering support offered by East West to see if increasing tolerance on your design can put more money back into growing your business.



Above: A finished metal product is ready for assembly.