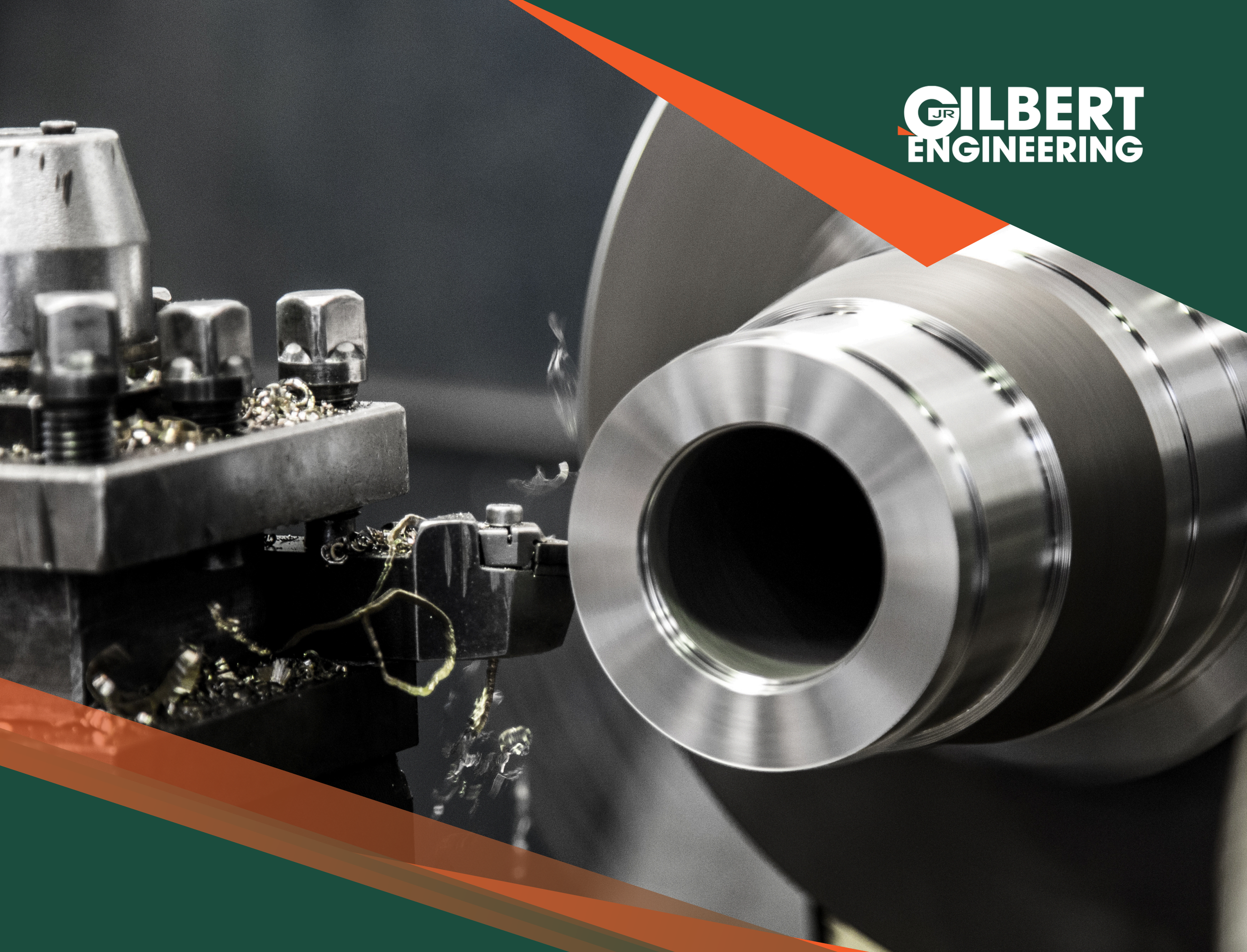

GILBERT JR ENGINEERING

OPTIMISING YOUR CUSTOM MACHINED PART BUDGET:

STRATEGIES FOR COST EFFICIENCY

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Introduction

Purchasing managers and buyers working in bespoke machine manufacturing face constant pressure: deadlines are tight, supply chains can be unpredictable, and cost-saving targets are never far away. A single delay or a batch of poor-quality parts can hold up an entire machine build, driving costs up and damaging customer relationships.

At JR Gilbert Engineering, we understand these challenges because we've been working alongside machine builders and manufacturers since 1983. Operating from our modern 40,000 sq. ft. facility in Oakdale, South Wales, we provide a complete manufacturing solution that includes CNC milling, CNC turning, waterjet cutting, surface grinding, gear cutting, fabrication, and finishing coordination. With over 20 CNC machines running across day and afternoon shifts, we are structured to support both urgent orders and long-term supply requirements.

This guide will explore strategies that purchasing professionals can use to optimise their budgets for custom CNC-machined parts without compromising on quality. By focusing on reliable supply chains, smarter procurement, and suppliers who act as partners, businesses can control costs while maintaining the quality and delivery standards their customers expect.

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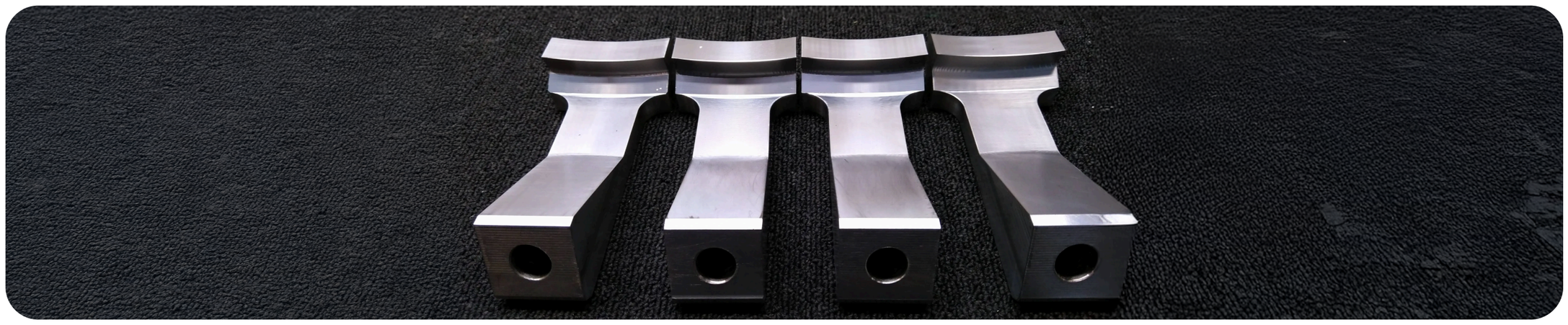
Understanding Your Part Budget

When managing spend on custom-machined parts, it's tempting to focus solely on the unit cost quoted by suppliers, but the "true cost" of a part goes far beyond the price on a purchase order.

Factors influencing cost:

- **Material choice:** Aluminium, stainless steel, and engineering plastics are common, but exotic alloys or harder steels like Hardox significantly impact machining time and tool wear, as well as increasing part lead time due to material taking longer to arrive from specialist suppliers.
- **Part complexity:** Multi-axis machining, deep pockets, hard-to-reach features or complex profiles add setup and programming time.
- **Tolerances and finishes:** Tight tolerances or demanding finishes (e.g., ground or anodised surfaces) require more passes, inspection time, and secondary processes.
- **Batch size:** A one-off part can be several times more expensive per unit than a run of 100, simply due to the time it takes to program and set a CNC machine up to make a part.
- **Lead time:** A shorter lead time will increase the cost of parts; it also limits you to certain suppliers, as not all will be able to accommodate the short lead time, and most will charge a premium for a fast turnaround.
- **Size:** Generally, as parts get bigger, they tend to get more expensive: material costs are higher, and there is more to machine, so prices go up. Although there is a point where parts become so small that specialist CNC machines are required for manufacture, increasing the cost of manufacture.



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Tips for cost-effective planning:

1. **Batch intelligently:** Align orders to make the most of machine setups. For example, instead of ordering 20 parts each month, consider a batch of 60 with call-off scheduling.
2. **Forecast material requirements:** Working with suppliers that stock common materials (like aluminium plate or stainless steel) reduces delays and avoids costly “expedite” orders.
3. **Collaborate on design for manufacturability (DFM):** Suppliers with engineering expertise can recommend design tweaks that lower machining time without affecting function.

At JR Gilbert Engineering, we routinely advise customers on these areas. For instance, one machine builder reduced part costs by 15% after we suggested switching from a fully machined block to a waterjet-cut blank that required less CNC time.

Building a Reliable Supply Chain

Even the best-priced part is worthless if it arrives late or out of tolerance. For buyers, the hidden costs of unreliable suppliers can dwarf any savings made on the quote. Missed deliveries mean machine downtime, rescheduling, and frustrated end customers.

What to look for in a supplier:

- **Capacity & flexibility:** Does the supplier run shifts to handle urgent work? Can they accommodate large, varied POs typical of bespoke machine builds? Are they big enough to be able to handle the amount of work you want to put with them?
- **Quality systems:** ISO 9001 accreditation ensures a structured approach to processes, traceability, and continuous improvement.
- **Transparency:** Suppliers who communicate clearly about lead times and capacity help you plan better. Things don’t always go as planned, so it's essential to work with a supplier that will let you know when something hasn’t gone right.

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- **Longevity:** Established suppliers with decades of experience are less likely to disappear mid-project. If you can try to put a consistent amount of work with your suppliers, this helps build a relationship and prevents them from filling their machining capacity with work from elsewhere.

At JR Gilbert, we pride ourselves on reliability. With over 40 years in business, ISO 9001 certification, and an afternoon shift designed to absorb demand spikes, we ensure that our customers can rely on us not just for parts, but for peace of mind.

Proactive Procurement and Inventory Management

The bespoke machine industry is particularly vulnerable to delays caused by missing components. A machine with 500 unique parts can be stalled by just one late delivery. Effective procurement and inventory management are therefore critical.

Best practices for buyers:

- **Call-off orders:** Place a large order that allows your supplier to run an efficient batch, then call parts off monthly. This reduces your unit cost and ensures stock availability.
- **Forecast sharing:** Communicate anticipated future needs. If your supplier knows you'll need 200 parts this year, they can pre-order material, avoiding shortages and price spikes.
- **Supplier-managed finishing:** Outsourcing anodising, painting, or heat treatment separately can add weeks. A supplier that manages finishing in-house or via approved partners saves time and reduces logistics.
- **Lead times:** It is worth telling your supplier when you think parts will be needed for production. This helps them prioritise quotes that need to be done quickly, as well as plan what their machining capacity might look like when the parts are needed.

At JR Gilbert Engineering, we can hold stock of frequently ordered parts for customers. By machining in larger batches and delivering against call-off schedules, we help buyers meet production deadlines while reducing overall costs.

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Evaluating Suppliers Beyond Price

Cost is always a priority, but the cheapest supplier is rarely the most cost-effective. A failed batch or a supplier that can't hit a deadline introduces costs that aren't visible on the purchase order.

A framework for evaluating suppliers:

1. **Quality:** Do they have robust inspection processes and ISO accreditation?
2. **Reliability:** What is their track record on on-time delivery?
3. **Capacity:** Can they scale with you as demand increases?
4. **Expertise:** Do they specialise in bespoke machine components and understand your industry?
5. **Value-add:** Do they provide input on design, materials, or finishing that can save you money?
6. **Capacity:** Do they have the capacity to grow alongside your business, or will you outgrow them?

JR Gilbert isn't just a machining subcontractor; we're a partner. Our customers rely on us not only for precision machining but also for advice on material selection, process improvement, and supply chain simplification. This consultative approach reduces hidden costs and strengthens long-term relationships.

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Conclusion

Optimising your custom-machined part budget is about more than chasing the lowest quote. By planning intelligently, building strong supplier relationships, and evaluating suppliers on reliability and expertise, not just cost, buyers can reduce hidden expenses and keep machine builds on track.

At JR Gilbert Engineering, we've built our reputation on quality, reliability, and customer focus. With over 20 CNC machines, waterjet cutting, gear cutting, surface grinding, and fabrication in-house, plus ISO 9001 accreditation, we provide a complete manufacturing solution for bespoke machine builders across the UK.

We've recently expanded into a larger, modern facility and are actively looking to build long-term partnerships with forward-thinking companies. Whether you need one-off prototypes or production batches in the hundreds, we have the experience and capacity to deliver.

Get in touch today to request a quote or discuss how we can support your business.

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