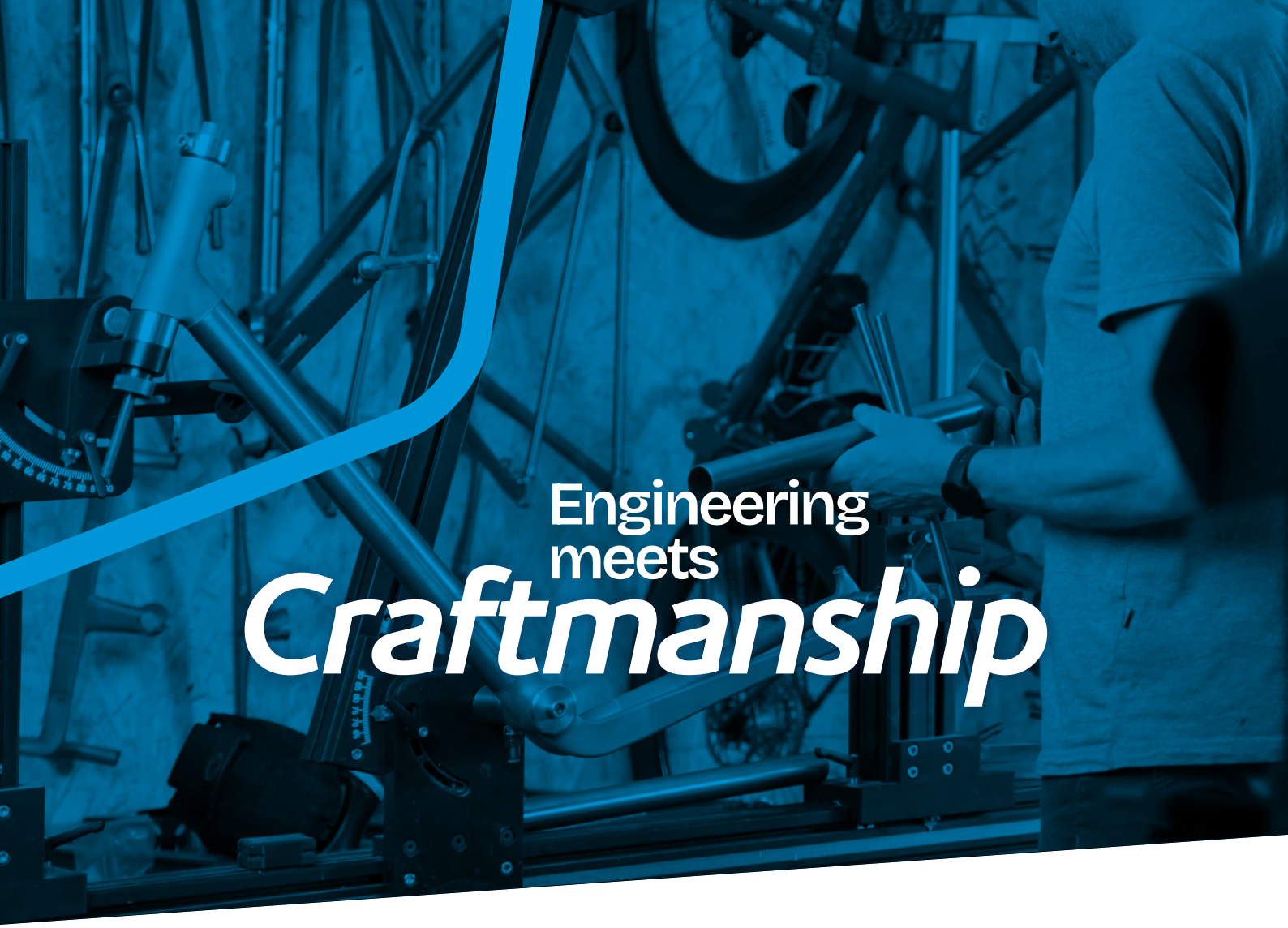
Sturdy

Cutting fluid
Case study

Precision on 2 wheels

How Blaser B-Cool Motec 501 transformed machining

Jemtech
Advanced Fluid Management



Engineering meets Craftmanship

Sturdy Cycles is not your typical bicycle manufacturer. Based in Somerset, founder and engineer Tom Sturdy has built a reputation for creating some of the world's most advanced bespoke cycles, designed and fitted to each rider with absolute precision.

Every frame, every joint, and every component is the result of careful craftsmanship, engineering know-how, and an uncompromising approach to quality.

Producing components of this calibre means pushing machining processes to their limits. For Sturdy Cycles, machining titanium and other high-performance alloys is part of the everyday workflow, but achieving flawless surface finishes and repeatable accuracy requires not just the right machines, but also the right fluids to keep everything running smoothly.

That's where Jemtech

the UK's only distributor of Blaser Swisslube cutting fluids – came in.

The challenge - coolant as a limiting factor

For years, Sturdy Cycles had been producing exceptional bicycles, but behind the scenes, coolant performance was proving a bottleneck. Precision machining demands consistency. When coolants break down, lose stability, or fail to protect tools and machines, the whole process suffers.

Issues Sturdy faced included:

- Variable surface finishes on critical components
- Reduced tool life, leading to higher costs and downtime
- Coolant instability, requiring frequent top-ups and adjustments
- Operator dissatisfaction, with odours and residue creating an unpleasant working environment

For a workshop where every component matters, this was unacceptable. Tom and his team knew there had to be a better way.

The trial - putting Blaser to the test

When Jemtech introduced Sturdy Cycles to Blaser coolants, the appeal was clear. Blaser's reputation in aerospace, medical and precision engineering made them the ideal partner for a manufacturer pushing the boundaries of cycle engineering. Jemtech recommended Blaser B-Cool Motec 501, a high-performance, water-miscible coolant designed to deliver long-term stability and consistent machining quality – even when tackling demanding alloys like titanium.

The trial was straightforward: swap out the existing coolant for Blaser B-Cool Motec 501 and monitor the results. Within days, the benefits were visible. Machining operations ran more smoothly, surfaces came off the machines cleaner, and operators immediately noticed the difference.

The results - "A massive difference"

The feedback from Sturdy Cycles couldn't have been clearer:

"Just wanted to send you a quick note to say how much better the Blaser coolant is. It's made a really massive difference!"

Tom
Owner, Sturdy Cycles

Blaser was recommended to overcome their persistent coolant stability issues. After eight months, Tom is very happy to report that those problems are gone.

But that wasn't all. An added bonus has been dramatically improved tool life, finer surface finishes, and even reduced cutting noise – proof that coolant really is a "liquid tool."

Key improvements included:

Tool life

Tools stayed sharper for longer, cutting costs and improving efficiency.

Surface finish

parts came off the machines with a noticeably finer finish, reducing the need for secondary operations.

Stability

B-Cool Motec 501 maintained concentration better, with fewer adjustments and less waste.

Operator satisfaction

No unpleasant odours, no skin irritation, and a cleaner working environment.

For a business where quality is everything, the coolant was no longer a weak link – it became a strength.

Product spotlight - Blaser B-Cool Motec 501

B-Cool Motec 501 is part of Blaser's advanced water-miscible coolant range, delivering stable, long-lasting performance across a wide range of applications and materials – from steels to titanium alloys.

Extended tool life

Reduces wear and tear, especially when machining tough materials.

Outstanding stability

Maintains concentration over long periods with less need for adjustments.

Clean machining

Minimal foaming, clean surfaces and reduced residue.

Operator friendly

No unpleasant smells, skin-friendly formulation.

Versatility

Performs well across a wide range of machines, materials and operations.

Suitable for both hard and soft water

Motec 501 is engineered for versatility and efficiency in modern manufacturing environments.

For a bespoke manufacturer like Sturdy Cycles, this meant faster turnaround, better part quality, and lower operational costs.

Why it matters – lessons for precision engineers

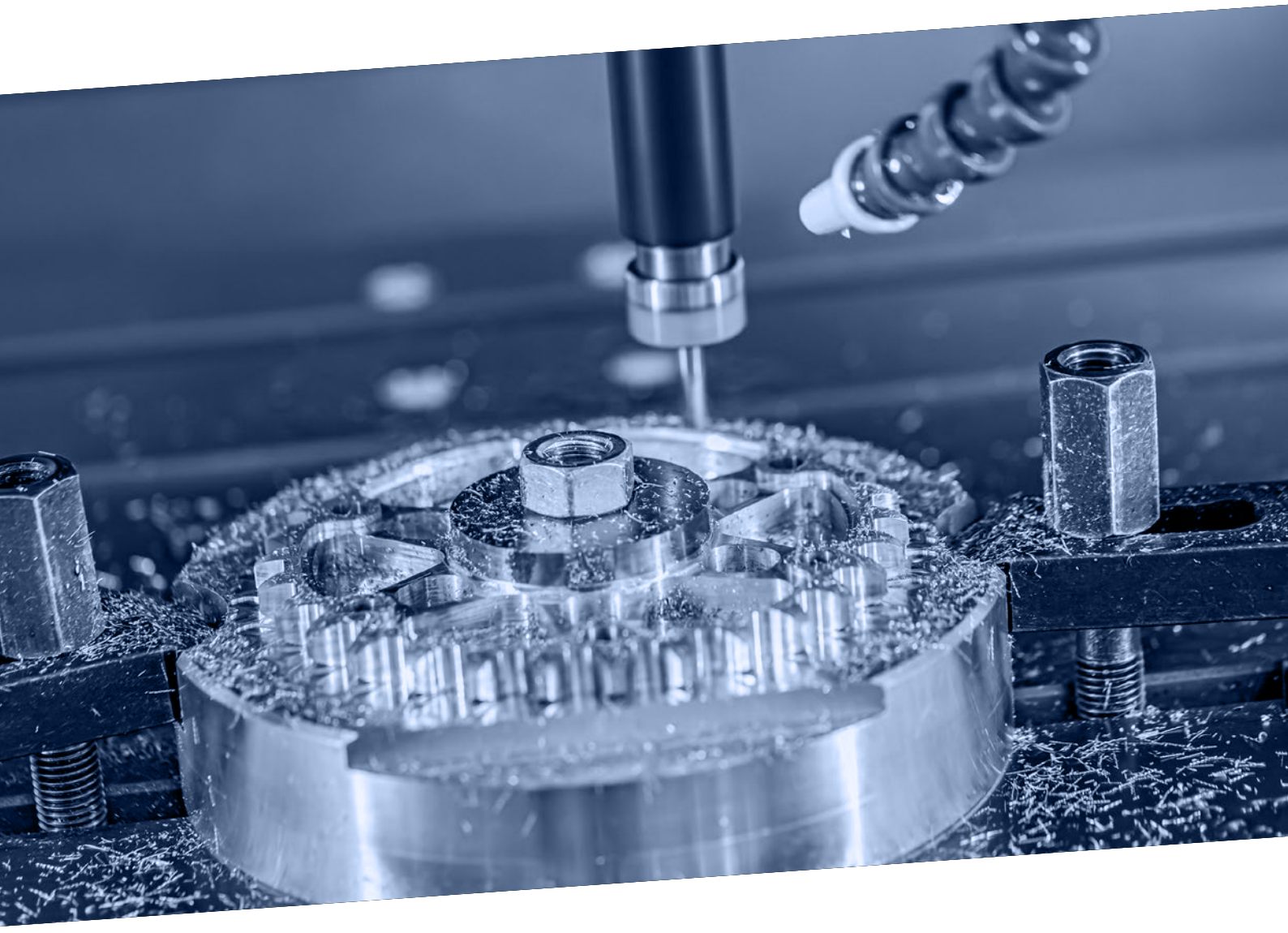
The success at Sturdy Cycles underlines an important point for all precision engineers: coolant choice is not secondary – it is central to machining performance.

Many shops accept coolant problems as unavoidable, but as this trial showed, the right product can deliver step-change improvements across productivity, quality and operator satisfaction.

As engineering pushes into more demanding materials, tighter tolerances and higher expectations, coolants like Blaser B-Cool Motec 501 are becoming an essential part of the precision toolkit.

For Sturdy Cycles, the trial wasn't just a minor upgrade – it was a game-changer. Machining performance improved, tools lasted longer, operators were happier, and the company could focus on what it does best: designing and delivering some of the most advanced bespoke cycles in the world.

If you're looking to improve your machining processes, extend tool life, and eliminate coolant headaches, Jemtech and Blaser have the solution.



Why use Jemtech's cutting fluids?

-21%

lower production costs

Improved machine availability facilitates better production planning and enables significant cost reduction for our customers.surface finishes - even on hard-to-machine materials like titanium.

-80%

less rejects

Our customer profits from less process and quality fluctuations and visibly better workpiece surface finish.

-72%

lower cutting fluid costs

The right Blaser cutting fluid costs only about 0.5% of production costs per workpiece – but reduces up to 99.5% of our customer's production costs.

Water Miscible Range

B-Cool

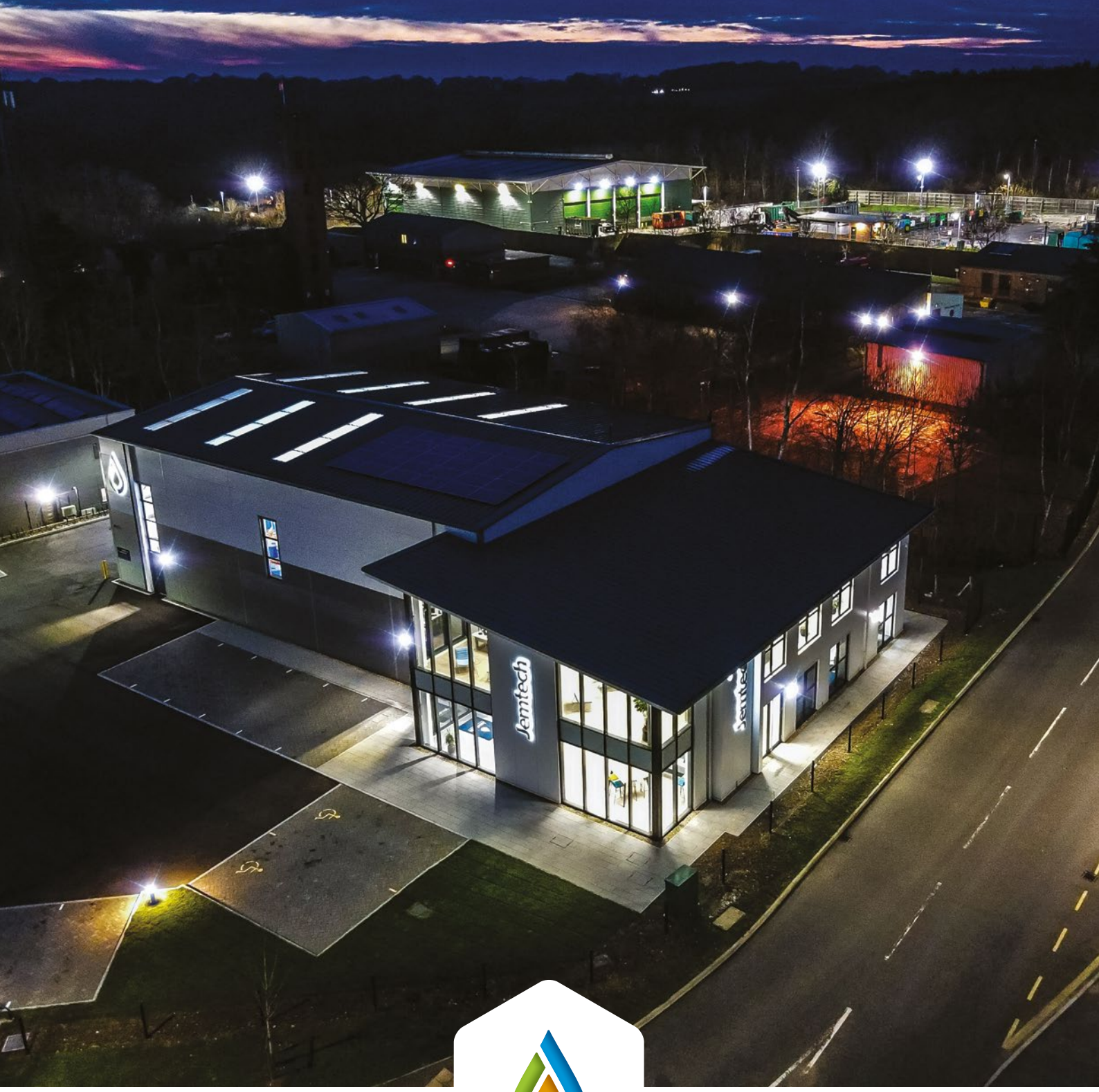
A water-miscible, mineral oil based, chlorine free cutting fluid.

Synergy

A water-miscible, oil free, full-synthetic metalworking fluid.

Blasocut

A water-miscible, mineral and ester oil based, boric and chlorine free cutting fluid with minimal residue.



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