

Top gear



Shift your transmission production
to higher levels of quality and security



Geared up to meet industrial productivity goals in transmission manufacture

Transmission component manufacture is a true mass production industry. Just like any other big-volume operation, key goals include security, rapid cycle times and high quality. Low total cost per component is the overriding objective.

Steel turning dominates shaft and gear manufacture, so it is here that you can achieve many of the gains you seek. Switching from grinding to hard part turning (HPT) is winning ground and raising productivity accordingly. New super-hard insert grades plus geometries and wiper technology optimized for HPT all make a big contribution to this trend.

Steel turning is also an area amenable to dry machining or mini-

mum quantity lubrication (MQL). As lubricant costs and recycling/disposal expenses make wet machining costly, such a move is certainly tempting.

Our turning solutions and application know-how are geared up to help you.



Steel turning creates the ideal surface for hard part turning

Steel turning shafts and gears has the unglamorous yet vital task of creating the ideal surface for hard-part turning in as few operations as possible and as securely as possible. Investing in a quality-turned surface with close tolerances repays itself later on in HPT. This is a job you can safely entrust to our tooling solutions and skills.

Start as you mean to go on

Our new GC4225 grade inserts get shaft and gear turning off to the best possible start. Secure, reliable and predictable, these inserts feature optimized geometries for roughing to finishing, or wiper inserts that maximize surface generation productivity

at the same time as they secure very close dimensional tolerances and surface quality.

Coromant Capto® tool holding system with CoroTurn® RC insert-holders ensure that both the cutting tool and insert are clamped for opti-

mal accuracy and stability. Note also that dry machining or MQL is entirely feasible when turning with this new GC4225 insert solution.



New steel turning inserts GC4225 boost productivity and pave the way for a successful HPT result later.



Coromant Capto system and RC holders secure optimal stability, strength and accuracy.



Hard part turning finishes the job in style

Gear and shaft components are increasingly designed for HPT rather than grinding. HPT quite simply meets industry productivity goals of flexibility, higher quality and shorter cycle times. It is today a viable manufacturing process for transmission part production. With a new and complete cutting tool package of optimized wiper inserts and insert grades like cubic boron nitride (CBN), we have the optimal HPT solution for your transmission manufacture.

Finish with a flourish

Super-hard CBN insert grades like new CB7015 have all the attributes needed to finish very hard steel surfaces and generate cost savings into the bargain.

The quality of the finished surface is never in doubt, and CB7015 inserts allow tolerance and productivity to be balanced as desired. HPT-optimized wiper radii let you choose the same surface finish at twice the feed rate, or twice as good a finish at the same feed rate, for example. As with steel turning, Coromant Capto® and CoroTurn® RC secure tool holder and insert in an iron grip. And once again, dry machining offers yet another cost-saving opportunity.



Optimized wiper inserts in CB7015 with Safe-Lok multi-corner technology make a strong choice for balancing surface and dimensional tolerance with productivity demands.

Even faster feed, even more productivity

Even more productivity is at hand thanks to our new CBN Xcel insert. This unique insert offers maintained surface integrity at greatly enhanced feeding rates.

CBN Xcel inserts feature a straight cutting edge with a low entry angle, a result of the edge blending into the wiper rather than the traditional standard nose radius. This reduces cutting temperature and allows feed to be increased to 0.4 mm while keeping a

surface finish of Ra 0.5 μm .

It's a simple change, yet it boosts productivity to at least two-fold that achievable with conventional wiper technology. And still it lets you turn more components per cutting edge!



New CBN Xcel inserts further boost productivity by allowing much greater feed rates.

Turning transmission parts in low carbon steel

Low carbon steels are found in transmission components, and to extract the best machining performance in mass production, you need to apply cutting parameters optimized for this material. Good chip evacuation is particularly challenging in this respect.

New optimized geometries give better chip control

Our new low carbon geometries are a big step forward in turning mass production transmission components like automated gearboxes. Their outstanding overall chip control results from precise formation plus excellent evacuation. With fewer long chips to

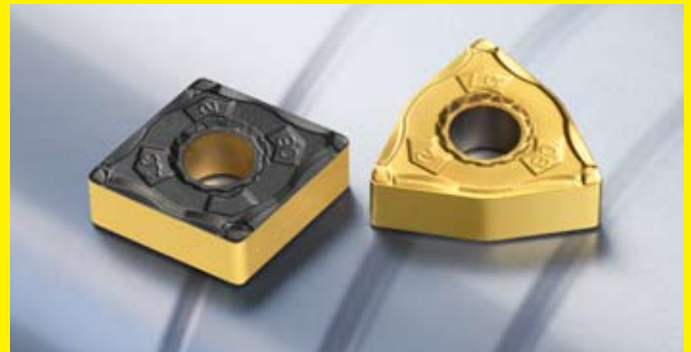
jam machines, break tools or damage surfaces, downtime is lower and quality higher.

These optimized chip-control geometries can be found in insert grades GC4225 and GC1525 with LC (low carbon) and WL (low carbon wiper)

designations. As you would expect, the WL insert allows higher, productivity-boosting feed rates with a maintained top quality surface finish.



The outstanding chip control of our low carbon geometries cuts downtime and raises the quality of the finished surface.



Grades GC4225 and GC1525 both feature low carbon insert geometries. The wiper version (WL) boosts feed rates significantly.

High-speed machining of aluminium gearbox housings

New thinking in gearbox manufacture is shifting machining solutions from large diameter face mills towards ever-faster working in flexible production cells. Smaller, high-speed machining (HSM) tools like CoroMill® Century are taking over.

The small, light face mill with a big impact

The light cutting of CoroMill® Century reduces loading and vibrations, thus minimizing tool damage and simplifying clamping. Its simple design also ensures a high level of rotational security. You can run HSM at 40,000 rpm with confidence. Wiper geometries push productivity to new heights via increased feed rates with maintained surface finish.

Moreover, CoroMill® Century combines high speed with high quality. Its

PCD inserts meet very high surface finishing demands. And thanks to a cutter body of high axial and radial accuracy plus simple, single screw adjustment, you can set it to machine exactly the finished tolerance and quality you want.



CoroMill Century is an innovative, lightweight face mill cutter for fast, precision machining of aluminium gearbox housings.

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