

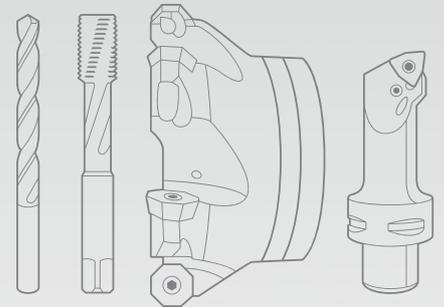


_ EXPERTISE IN MACHINING

Productivity on the right track.

Industry-specific solutions

Rail industry



THE RIGHT SIGNALS FOR EFFICIENT MACHINING.

All around the world, the requirements for the transportation of people and goods are increasing, which is turning the rail industry into an important market for the future. Railway infrastructure is one of the deciding factors for the economic success of a region. In the process, the rail industry must deal with the growing demands for mobility and flexibility and meet the challenges set by raw material shortages and environmental protection considerations.

For high-speed solutions which include the best possible levels of safety while at the same time improving profitability, rail transportation requires an innovative and reliable manufacturing partner such as Walter, who have a wealth of experience in rail technology and know how to solve the problems involved. Walter will provide you with complete solutions for all machining requirements.

Expect more.

With us, you can turn your visions into reality.

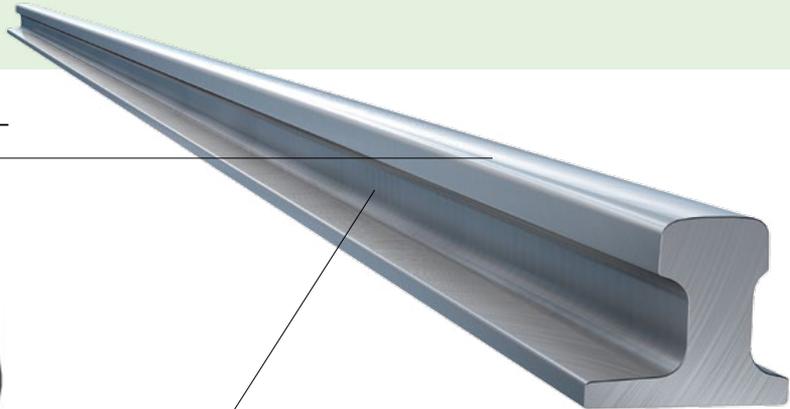


RAILS AND POINTS

The paramount objective in the manufacture of flat bottom and girder rails is always a long service life. But rails and points are subjected daily to great stresses. The rail steel that is used has a tensile strength of 700 to 1600 N/mm²

and is therefore a real challenge for machining. Robust, versatile tools are needed which are suitable for use in a wide variety of conditions. The powerful Walter milling cutters are ideal in such circumstances. They are available for all

current rail profiles and elevations and provide a high degree of process reliability and productivity, whatever type of material is used.



Walter special milling cutter:
Machining the rail head



Walter special milling cutters are available in a wide range of diameters for all current profiles. The tools ensure that the user will achieve a very high level of profile accuracy thanks to stable insert seats with minimal tolerances.



Walter special milling cutter:
Fishplate chamber machining



This special milling cutter achieves a high metal removal rate thanks to an optimum number of cutting edges and perfect space distribution for chip clearance. You can machine all profiles with this strong tool.

Walter form milling cutter:
Machining groove profiles



This form milling cutter machines straight deep grooves and points in one operation. Thanks to the optimum arrangement of the cutting edges, it is possible to achieve a high metal removal rate.

Walter form milling cutter:
Machining groove profiles



We provide this form milling cutter with a wide variety of form inserts for every possible type of profile, thereby enabling particularly efficient and precise machining of the profile at the transition of the rail head. This means greater cost efficiency for the user in comparison to normal solid carbide end mills.

BOGIES

There are few components on railway vehicles which come in so many different variant types as the bogies. The stresses on these components (which consist mainly of welded structures) are never the same, but always extremely

high. On ICE trains, for example, half of all axles are driven and the bogies can also be adjusted in their angle of inclination. For machining these units, high-precision tools are required which offer the highest possible levels of

productivity and versatility. We have the right tools and also a cutting tool material which enjoys benchmark status: Tiger-tec® Silver.

Walter Xtra-tec® F4033 face milling cutter: Machining the contact surfaces



Due to its positive and soft cutting action, the Xtra-tec® face milling cutter achieves extremely high metal removal rates, even on relatively less powerful machines. In addition, the cutter provides a high level of process reliability and allows low cutting material costs thanks to the Tiger-tec® Silver indexable inserts with 8 cutting edges.

Walter BLAXX F5138 porcupine cutter: Machining the spring plate



Equipped with four-edged, tangential Tiger-tec® Silver indexable inserts, the Walter BLAXX porcupine cutter is impressive thanks to its high metal removal rate and almost step-free contours. For even greater process reliability, each cutting edge has its own internal coolant supply.

Walter BLAXX

Powered by Tiger-tec® Silver



Walter Xtra-tec® B4215 Insert Drill: Drilling from solid



The Xtra-tec® Insert Drill achieves higher machining values and minimal hole tolerances with 4 usable cutting edges and extremely strong insert clamping. For the user, that means more productivity and precision when drilling or spot drilling in steel, cast iron and stainless steel.

Walter Prototyp Paradur® X-pert P: Tapping of blind hole threads



The Walter Prototyp Paradur® X-pert P tap has a large rake angle and produces excellent surface finish qualities. A tough tool which produces cost-effective results for small and medium-sized batch sizes and is available in many profile variants and sizes.

WHEEL SET

A wheel set for a modern rail vehicle consists of two monoblock wheels and one axle. These vehicle components are important for vehicle safety and must be able to withstand enormous physical and thermal stresses. The demands on material and manufacturing process are

accordingly high. Forged steel (tensile strength 800 to 1000 Nm/mm²) needs to be machined with a high degree of precision. This is because the surface finish quality has a direct influence on the running characteristics and, consequently, on energy efficiency. Walter

turning tools are made for such challenges and provide the user with an extremely high level of precision, reliability and flexibility in one cost-effective machining process.

Walter Capto™ turning toolholder:
Machining the inner profile

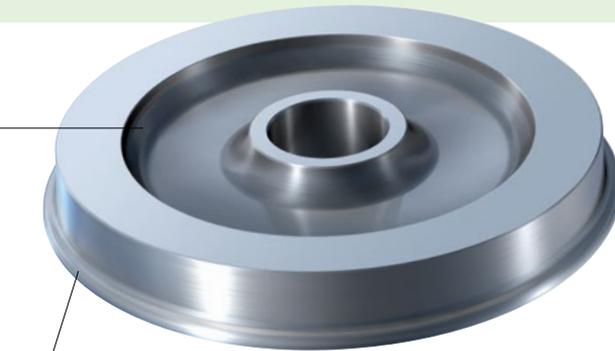


The Walter turning toolholder with its tough Tiger-tec® Silver round inserts ensures excellent surfaces and large-volume chip removal when machining the inner side of the wheel. Thanks to the Walter Capto™ interface, fast tool changes and the transmission of high forces are no problem for this tool.

Walter Capto™ turning toolholder:
Machining the outer profile



Fitted with Tiger tec® Silver inserts, these large special turning toolholders which, in the new C8 size, can absorb enormous forces, provide an extremely high level of versatility and dimensional accuracy when machining the wheel flange. A decisive advantage when turning large-scale components cost-effectively.



Walter Tiger-tec® Silver insert:
External and internal turning



The circumference-sintered Tiger-tec® Silver insert with new HU6 geometry has been specially developed for the medium and heavy roughing of solid wheels and forged parts. A robust and powerful cutting tool with special chip grooves for ideal chip formation and a tool life that is up to 40 percent longer.

Walter Tiger-tec® Silver turning inserts: ISO P machining



Users of the new Tiger-tec® Silver ISO P Generation can achieve up to 75 percent increased performance at the cutting edge when turning steel. The field of application is also increased by up to 40 percent, as a result of which tool costs in production can be significantly reduced.

Tiger-tec® Silver

Walter AG

Derendinger Straße 53, 72072 Tübingen
Postfach 2049, 72010 Tübingen
Germany

www.walter-tools.com

Walter GB Ltd.

Bromsgrove, England
+44 (1527) 839 450, service.uk@walter-tools.com

Walter Kesici Takımlar Sanayi ve Ticaret Ltd. Şti.

Istanbul, Türkiye
+90 (216) 528 1900 Pbx, service.tr@walter-tools.com

Walter Wuxi Co. Ltd.

Wuxi, Jiangsu, P.R. China
+86 (510) 8241 9399, service.cn@walter-tools.com

Walter AG Singapore Pte. Ltd.

+65 6773 6180, service.sg@walter-tools.com

Walter Korea Ltd.

Anyang-si Gyeonggi-do, Korea
+82 (31) 337 6100, service.kr@walter-tools.com

Walter Tools India Pvt. Ltd.

Pune, India
+91 (20) 3045 7300, service.in@walter-tools.com

Walter (Thailand) Co., Ltd.

Bangkok, 10120, Thailand
+66 2 687 0388, service.th@walter-tools.com

Walter Malaysia Sdn. Bhd.

Selangor D.E., Malaysia
+60 (3) 8023 7748, service.my@walter-tools.com

Walter Tooling Japan K.K.

Nagoya, Japan
+81 (52) 723 5800, service.jp@walter-tools.com

Walter USA, LLC

Waukesha WI, USA
+1 800-945-5554, service.us@walter-tools.com

Walter Canada

Mississauga, Canada
service.ca@walter-tools.com

