

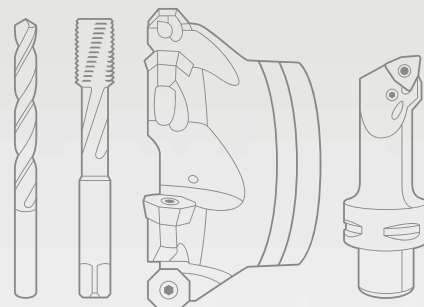


_ENGINEERING, EXPERIENCE, TOTAL SOLUTIONS

Setting the course for perfect machining.

Sector 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 in 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: This company will provide you with complete solutions for all machining requirements.

Expect more.

With us, you can turn your visions into reality.

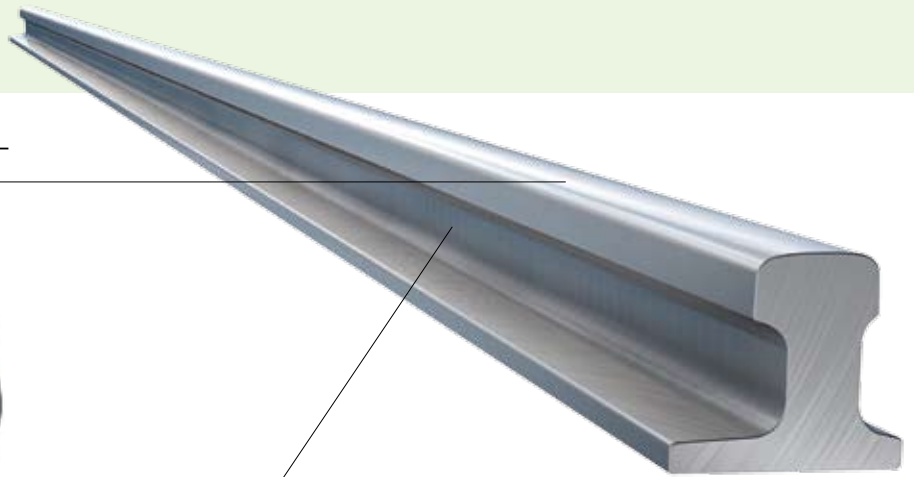


RAILS AND POINTS

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 material used has a tensile strength of 700 to

1600 N/mm² and is therefore a real challenge for machining. Robust tools are needed which are flexible and capable of being used in a wide variety of conditions. The powerful Walter milling cutters are ideal in such circumstances.

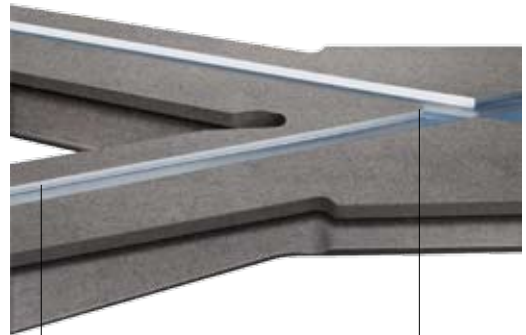
They are available for all current rail profiles and elevations and provide a high degree of process reliability and productivity, whatever type of material is used.



Walter special milling cutter:
Machining the rail head



The Walter special milling cutter is available in diameters from 140 to 700 mm for all current profiles. This tool ensures 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 chip space distribution. It is available for all current profiles, with or without overhead machining.

Walter form milling cutter:
Machining the transition profile



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.

Walter form milling cutter:
Machining the grooved rail



This form milling cutter machines straight deep grooves in one operation. Because of the optimum arrangement of the cutting edges, it is possible to achieve a high metal removal rate. Short rails can be machined very cost effectively with standard Walter tools.

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 feature the highest possible levels of

productivity and flexibility. We have the right tools and also a cutting tool material which already 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 Xtra-tec® F4338 porcupine cutter: Machining the pivot point



With its tough and strong Tiger-tec®Silver indexable inserts, our porcupine cutter can be universally used for shoulder milling and trimming. The axial fixed stop behind the first row of inserts ensures additional process reliability when machining steel and cast iron materials.

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 Protodyn S Plus: Blind hole and through hole threads



The universal HSS-E thread former guarantees long tool life and extremely high machining reliability (without swarf packing and chip removal problems). It performs impressively in all formable materials, producing an excellent thread surface and achieving an efficient cost-benefit ratio.

Tiger-tec®Silver

SOLID WHEEL

Mostly solid wheels (monobloc wheels) are used on today's railway vehicles. 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 steels (tensile strength 800 to 1000 Nm/mm²) need 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® 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



These large special turning toolholders, which in the new C8 size can absorb enormous forces, provide an extremely high level of flexibility and dimensional accuracy when machining the wheel flange. A decisive advantage when turning large-scale components cost-effectively.

Walter Capto™ turning toolholder:
Facing the inner surface



This Walter Capto turning toolholder can also be easily preset. As a result, setting times can be reduced to a minimum when machining large-scale components made of steel and cast iron materials.

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 Limited Sirketi Istanbul, Turkey

+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.

Ansan, Kyungki-do, Korea
+82 (31) 3646 100, service.kr@walter-tools.com

Walter Tools India Pvt. Ltd.

Pune, India
+91 (20) 2714 5028, service.in@walter-tools.com

Walter (Thailand) Co., Ltd.

Bangkok, 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 Australia Pty. Ltd.

Victoria, Australia
+61 (3) 8793 1000, service.au@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

TDM Systems Inc.

Schaumburg (IL), USA
+1 (847) 605 1269, info@tdmsystems.com

Walter Tools S.A. de C.V.

Saltillo Coahuila, Mexico
+52 (55) 5365-6895, service.mx@walter-tools.com

Walter Canada

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

