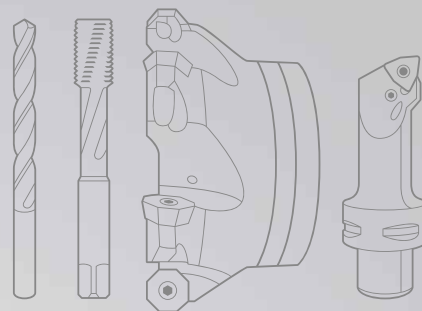


\_ MACHINING EXPERTISE

# Precision tools for better performance

Component solutions

Turbocharger



# PRODUCTIVITY IN THE FAST LANE.

High fuel prices are a constant challenge to our mobile society. Energy-saving solutions are required. Many modern engines are therefore practically unimaginable without a turbocharger nowadays. The majority of modern diesel engines use turbocharging, and increasing numbers of gasoline engines are also being equipped with turbochargers in order to meet efficiency and ecological requirements. Through downsizing, increasingly better performance is being achieved by modern engines in which the exhaust turbocharger also plays an essential part.

The machining of the individual components of a turbocharger makes considerable demands on the machining tools. We meet these demands by coming up with new developments and innovations, and provide a comprehensive range of high-stability cutting materials and tool systems for efficient, economical and process-reliable machining of your components.

**Expect more. Engineer what you envision.**



# TURBINE HOUSING WITH MANIFOLD

The high-precision manufacture of exhaust manifolds and turbine housings on a machining centre represents quite

particular challenges for both tools and machine. Decisive machining steps during this process are the milling of

the exhaust manifold surfaces and the stress relief grooves, the boring of the main bore and the V-band machining.



**Walter Xtra-tec® F4045** heptagon milling tool for machining the surface of the exhaust manifold



With the new, powerful Tiger-tec® Silver indexable inserts (14 cutting edges) the F4045 heptagon milling tool is the perfect tool for roughing the surface of exhaust manifolds.

**Walter** combination tool for machining the main bore



The Walter combination tool equipped with Tiger-tec® Silver inserts provides maximum productivity and a high level of process reliability during the machining of the main bore. Unit costs are significantly reduced due to the efficient machining of steps and chamfers in a single work operation.

**Walter** interpolation turning tool for machining the V-band



The Walter interpolation turning tool is the perfect tool for machining the V-band, since it impresses with its rapid machining times and low cost per part and also its extremely high degree of process reliability.

**Walter BLAXX** slotting cutter for milling the relief grooves



The Walter BLAXX F5055 milling cutter provides process reliability, productivity and therefore maximum cost-effectiveness when milling the stress relief grooves with a high cutting volume and high precision.

**Walter BLAXX**  
powered by Tiger-tec® Silver

# TURBINE HOUSING WITHOUT MANIFOLD

Turbine housings without manifolds are usually machined on lathes. The key operations during manufacture are the core drilling of the main bore, the

machining of the inner contour and the drilling and tapping of the screw mounting holes.

**Walter** combination cutting tool for machining the inner contour and the V-band



The inner contour of the turbine housing and the V-band can be machined with absolute process reliability and without tool changes using the Walter combination cutting tool.



**Walter** prototype tap  
Prototex Eco Plus



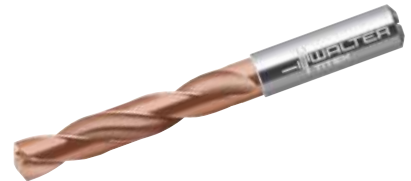
The Prototex Eco Plus produces the thread in the screw mounting holes of the turbine housing. The combination of the geometry of the tap and the THL coating makes fast cutting speeds possible with a higher tool life at the same time.

**Walter** reaming tool for roughing the inner contour



The Walter step boring bar makes it possible to carry out highly efficient and therefore cost-effective roughing of the inner contour.

**Walter** Titex X-treme for machining the screw mounting hole



The solid carbide high-performance drill with XPL coating and internal cooling makes high-precision drilling possible. 4 lands provide maximum drilling quality with impressive cutting data and an equally impressive service life at the same time.

# COMPARISON WITH V-BELT MACHINING PROCEDURE

The machining of the V-band plays a decisive part in the cutting of the individual operations. Maximum quality and process reliability are required. In

order to achieve this, different approaches can be used when machining the V-band: Circular milling or interpolation cutting on machining

centres. Walter provides high-tech tools for both procedures.



Walter circular milling tool



During circular milling, the cutting speed is defined by the rotational speed of the machine. The feed is defined by the circular movement of the linear axes.

All of the most popular machining centres provide this option for machining the V-band. In this case, Walter provides a suitable special milling tool version to suit the machine.

Walter interpolation turning tool



During interpolation turning, the cutting speed is achieved by the circular movement of two (or three) linear axes. The spindle rotates at the same angular velocity, meaning that the cutting edge(s) is/are always in action. This is how a turning operation is performed on a machining centre.

**Through this modern machining process, the V-band is not only manufactured more quickly, but also with a much higher process reliability.**

## Walter AG

---

Derendinger Straße 53, 72072 Tübingen  
PO Box 2049, 72010 Tübingen  
Germany

[www.walter-tools.com](http://www.walter-tools.com)

---

---

### Walter GB Ltd.

Bromsgrove, England  
+44 (1527) 839 450, [service.uk@walter-tools.com](mailto: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](mailto:service.tr@walter-tools.com)

### Walter Wuxi Co. Ltd.

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

### Walter AG Singapore Pte. Ltd.

+65 6773 6180, [service.sg@walter-tools.com](mailto:service.sg@walter-tools.com)

### Walter Korea Ltd.

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

### Walter Tools India Pvt. Ltd.

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

### Walter (Thailand) Co., Ltd.

Bangkok, 10120, Thailand  
+66 2 687 0388, [service.th@walter-tools.com](mailto:service.th@walter-tools.com)

### Walter Malaysia Sdn. Bhd.

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

### Walter Tooling Japan K.K.

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

### Walter USA, LLC

Waukesha WI, USA  
+1 800-945-5554, [service.us@walter-tools.com](mailto:service.us@walter-tools.com)

### Walter Canada

Mississauga, Canada  
[service.ca@walter-tools.com](mailto:service.ca@walter-tools.com)

---

