

**DURATOMIC™**  
**NEW TURNING GRADES 2008**

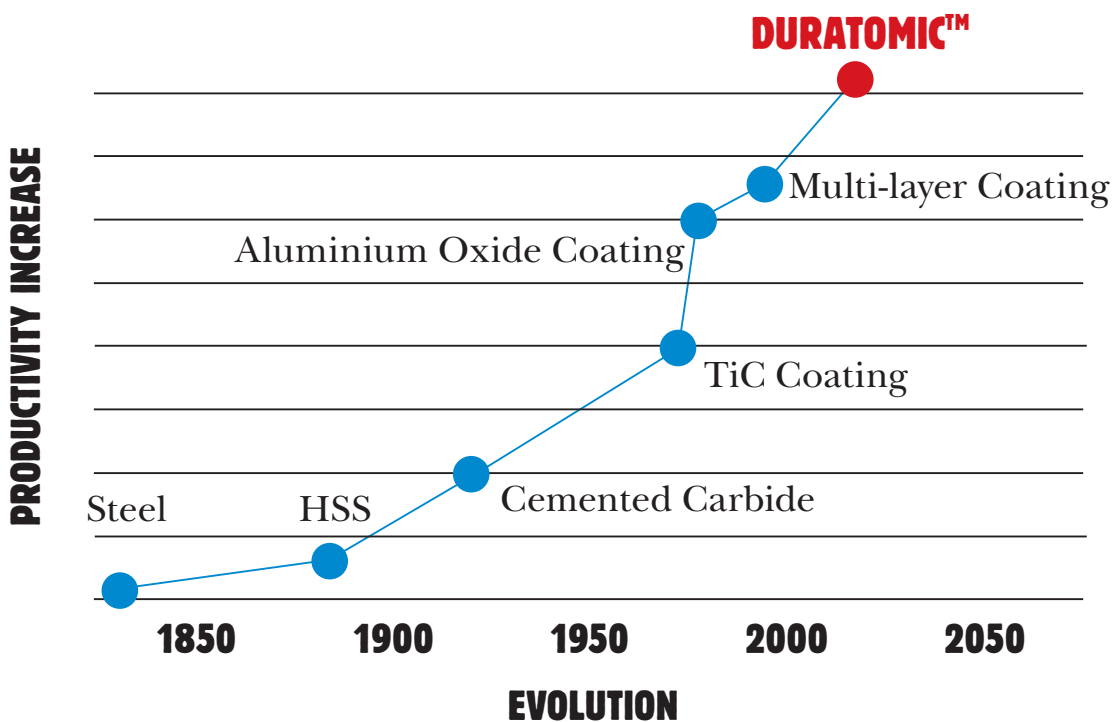


**TP1500 • TP2500 • TM2000 • TM4000**

**SECO** 

# DURATOMIC™

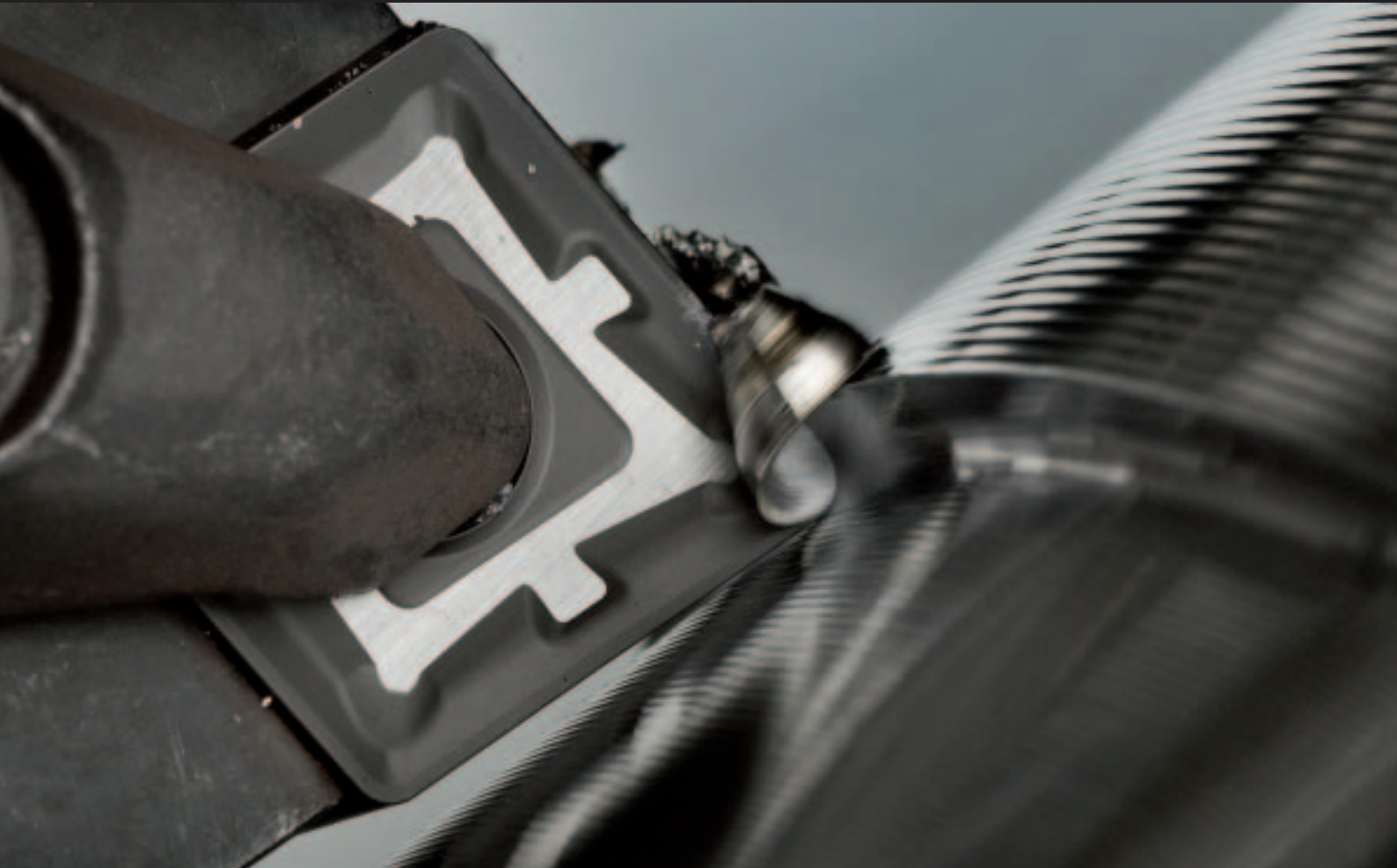
## EVOLUTION BY SECO



### A NEW TECHNOLOGY – A NEW ERA FOR EXCEPTIONAL GRADES

Duratomic is a new insert coating technology from Seco Tools that allows us to design grades for optimal performance in all areas of metal cutting.

We have explored every possibility down to the atomic level in order to increase toughness and wear resistance in our coated grades. The improved mechanical and thermal properties are far beyond the capabilities of any existing grade on the market.



### **WHEN OPPOSITES ATTRACT: MAXIMUM PRODUCTIVITY**

The Duratomic coating technology offers a new level of toughness and wear resistance in the same grade, with more versatile grades, a wider range of applications and a greater flexibility in cutting data.

This gives you higher speeds, increased cutting data, a longer and more predictable tool life, a wider machining window and dramatically increased productivity ...

# FOUR NEW GRADES FOR HIGH PRODUCTIVITY TURNING

Seco Tools is now introducing new powerful grades for steel and stainless steel turning. A full range of grades especially designed to satisfy the need for longer tool life, increased productivity, higher reliability and a more flexible and profitable production.

For the broad range of ISO P and M applications, Seco Tools offers four new Duratomic grades; TP1500 and TP2500 for steel and TM2000 and TM4000 for stainless steel.

## A COMPLETE PROGRAMME FOR STEEL & STAINLESS STEEL

TP1500 and TP2500 inserts provide unbeatable performance over a broad range of steel turning operations when a combination of increased productivity and long tool life are the main targets.

TM2000 and TM4000 inserts cover the majority of stainless steel turning applications, from finishing to heavy roughing, where productivity and reliability are of major importance.

### TP1500



TP1500 is an extremely wear resistant grade especially designed to be the first choice for high temperatures and high speeds. The new TP1500 insert provides increased heat and wear resistance as well as increased toughness.

### TP2500



TP2500 is the number one choice for high volume and unmanned production. TP2500 is a very versatile and wear resistant grade providing long, predictable tool life and increased cutting data for a broad range of steel turning.

### TM2000



TM2000 is the first choice for high temperature and high speed turning applications in stainless steel. TM2000 is a wear resistant grade designed to provide peak performance and high metal removal rates.

### TM4000



TM4000 is a particularly reliable grade when it comes to tough and interrupted cutting in stainless steel. TM4000 is a high productivity grade developed for maximized toughness in the cutting zone.



# TP1500 – FOR HIGH TEMPERATURES AND HIGH SPEEDS IN STEEL

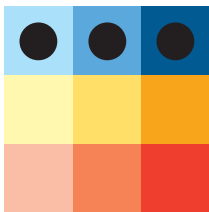
## EXCELLENT HEAT AND WEAR RESISTANCE FOR A LONGER TOOL LIFE

TP1500 is an extremely wear resistant grade ideally suited for high speed turning operations in various kinds of steel. It has excellent performance when it comes to high temperatures, when long tool life and increased cutting data is important.

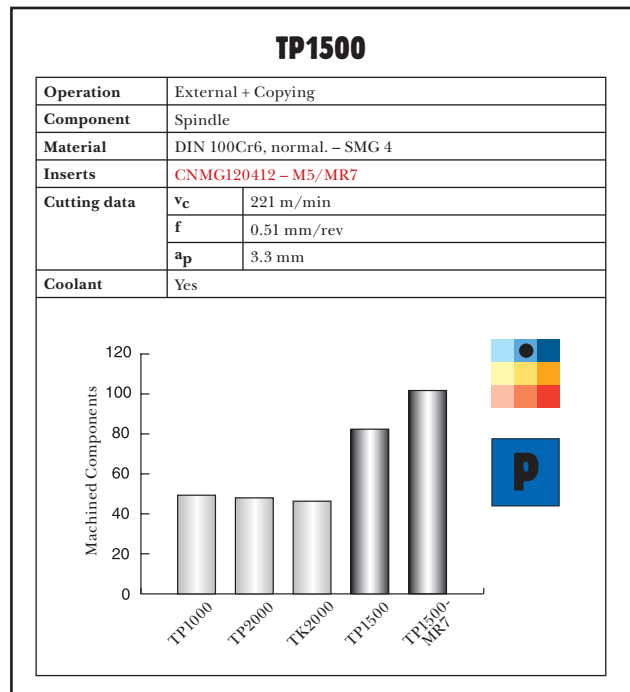
TP1500 is designed for increased heat and wear resistance as well as increased toughness and shows improved features regarding both tool life and reliability. These qualities lead to higher productivity and maximum performance, resulting in more parts machined in less time.

TP1500 is the first choice for customers seeking better performance, higher output and increased productivity.

### TP1500 – FEATURES AND BENEFITS:



- Long tool life for cost reduction and unmanned production
- Increased heat resistance for higher cutting speeds and increased productivity
- Extreme flank wear resistance for part accuracy
- Reduced built-up-edge tendency, superior surface finish and part quality



# TP2500 – FOR MAXIMUM VERSATILITY AND PEAK PERFORMANCE IN STEEL

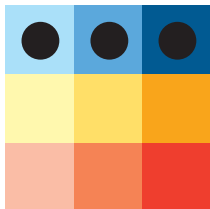
## LONG, PREDICTABLE TOOL LIFE FOR A FLEXIBLE PRODUCTION

TP2500 is a very tough and wear resistant grade suitable for a broad range of steel turning applications. It has a wide application area and can be used for finishing and roughing, in wet and dry machining, in both small and large batch productions.

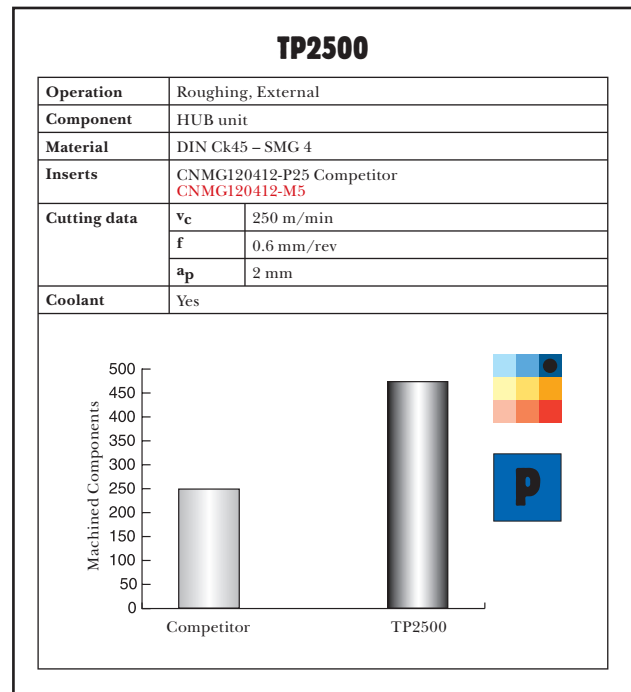
TP2500 has a unique combination of wear resistance and toughness, and is the perfect grade when it comes to high metal removal rates and flexibility in production. The long and predictable tool life, in combination with the opportunity to increase cutting data, makes TP2500 a clear number one choice for high volume, minimum staffing levels and unmanned production.

The TP2500 is the perfect choice for customers looking for a simple, reliable, high-quality and easy to use solution.

### TP2500 – FEATURES AND BENEFITS:



- Wide working window for general steel turning
- Secured edge line for finishing to moderate interruptions
- Versatility for mixed production
- Reduced built-up-edge tendency, superior surface finish and part quality



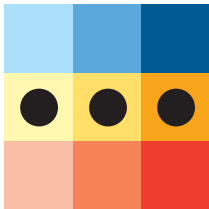
# TM2000 – FOR HIGH TEMPERATURES AND HIGH SPEEDS IN STAINLESS STEEL

## EXCEPTIONAL HEAT RESISTANCE FOR INCREASED PRODUCTIVITY

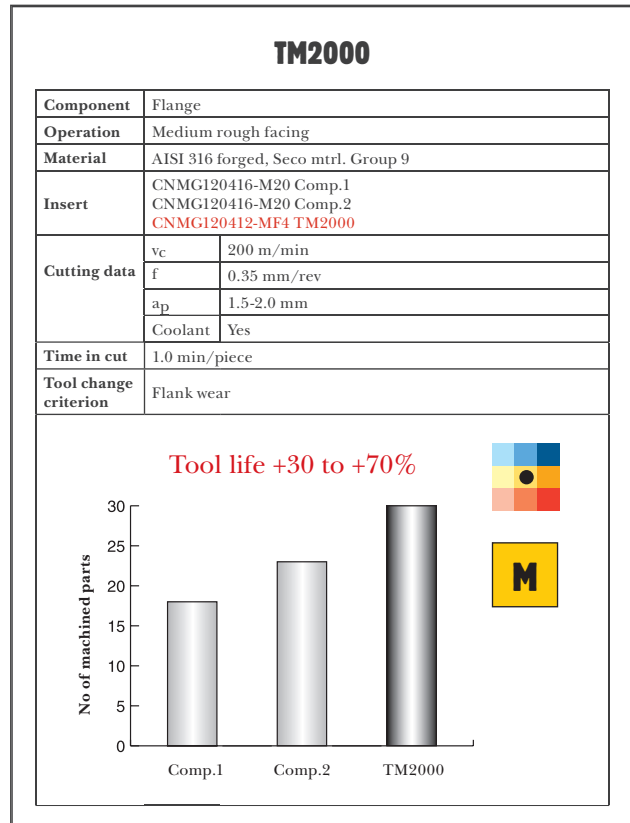
TM2000 is a heat and wear resistant grade ideal for higher cutting speeds and increased productivity when it comes to turning stainless steel. The combination of wear resistance and speed capability results in higher cutting speeds and longer tool life, resulting in increased productivity in all areas of stainless steel turning.

When machining austenitic stainless or duplex steel, TM2000 can achieve speeds of up to 300 m/min in finishing operations. The capabilities of TM2000 extend beyond finishing: increase the feed rate and depth of cut towards roughing, and you can still achieve 200 m/min.

### TM2000 – FEATURES AND BENEFITS



- Long tool life for cost reduction and unmanned production
- Increased heat resistance for higher cutting speeds and increased productivity
- Increased resistance to abrasion for longer tool life and greater reliability
- Reduced built-up-edge tendency, superior surface finish and part quality



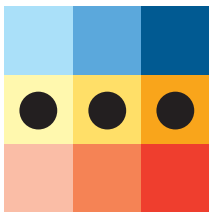
# TM4000 – FOR INTERRUPTED CUT AND DIFFICULT MACHINING IN STAINLESS STEEL

## EXTREME TOUGHNESS FOR MAXIMUM RELIABILITY

TM4000 is a very tough grade especially designed to provide peak performance in interrupted machining operations in stainless steel turning. Thanks to its toughness, it is an ideal grade for difficult machining and a perfect choice for customers looking for a reliable performance when it comes to demanding stainless steel turning.

The shock of interrupted cutting can cause failure in even the toughest multilayer coatings, but not for TM4000. The combination of the Duratomic coating and the graded substrate of TM4000 maximizes the toughness in the cutting zone without compromising the high strength of the base material, a design that shows substantially improved resistance to both crater wear and edge breakdown.

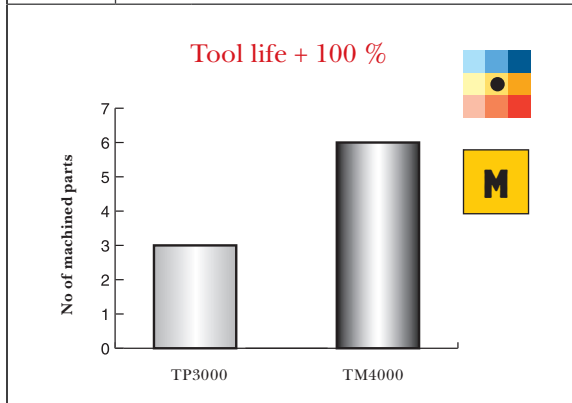
## TM4000 – FEATURES AND BENEFITS



- Extreme toughness reduces the impact from chip hammering, notching, and edge chipping for maximum reliability
- The wide application area reduces the need for alternative grades
- Cost effective and reliable even in interrupted cuts
- Reduced built-up-edge tendency, superior surface finish and part quality

## TM4000

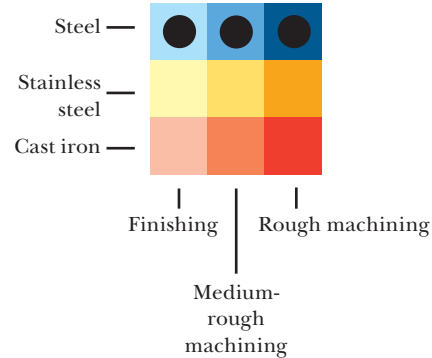
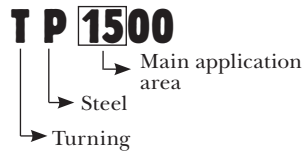
Component	Gate valve body	
Operation	External turning	
Material	UNS 31803 Duplex stainless steel, Seco mtrl. Group 11	
Insert	CNMG160612-MR7 TP3000 CNMG160612-MR7 TM4000	
Cutting data	$v_c$	90 m/min
	$f$	0,4 mm/rev
	$a_p$	2,5 mm
	Coolant	Yes
Time in cut	2 min 15 sec per part	
Tool change criterion	Flank/Notch wear	





mm (0.4 - 2.7)  
(.02 - .11)  
(0.40 - 0.60)  
(.024)  
(.50)

# A FULL RANGE SUPPLIER



## SECO GRADES FOR MAXIMUM PRODUCTIVITY IN ALL ISO P, M AND K MATERIALS

Today Seco's family of grades provides excellent capability for the widest range of steel, stainless and cast iron applications. With the new TP1500 together with TP2500, both featured with the outstanding Duratomic technology coating, you have easy first choice steel turning grades for numerous applications.

### STEEL:

- TP1500: **DURATOMIC™** First choice for high productivity and a long and reliable tool life.
- TP2500: **DURATOMIC™** First choice for general purpose steel turning, including high speed and interrupted cut machining.
- TP3000: First choice in steel applications where high edge security is needed and general stainless steel turning.

### STAINLESS STEEL:

- TM2000: **DURATOMIC™** First choice for the highest productivity in high temperature applications, like high speed.
- TM4000: **DURATOMIC™** First choice for the highest productivity in interrupted machining and when reliability is the most important requirement.

### CAST IRON:

- TK1000: First choice in abrasive cast irons and hardened steels.
- TK2000: For productivity and security in all types of cast iron and soft, ductile steels.

# MR6 – DESIGNED FOR A NEW LEVEL OF PERFORMANCE

## DESIGNED FOR A NEW LEVEL OF PERFORMANCE

MR6 is designed for peak performance in medium-rough turning of steels. The open design is engineered to generate very low cutting forces and therefore reduce temperature in the cutting zone. This reduction of temperature can be utilized to increase the cutting speed in order to gain productivity.

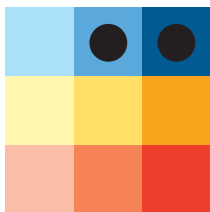
The main advantage with MR6 is that the open and highly positive design allows the use of higher cutting speeds compared to traditionally shaped chipbreakers.

The MR6 chipbreakers have been individually designed for each insert considering insert size, shape and size of the corner radii, to cover as much area as possible and will work excellently in the primary target area of medium-rough turning of steels.

MR6, Seco Tools latest geometry, has been engineered for the medium-rough application area, generating low cutting forces while utilizing high feeds for excellent metal removal and long reliable tool life.

MR6 is an excellent performer when looking for high removal rates, and together with MF5 for NNS-components, an ideal combination to machine a complete component from roughing to finishing.

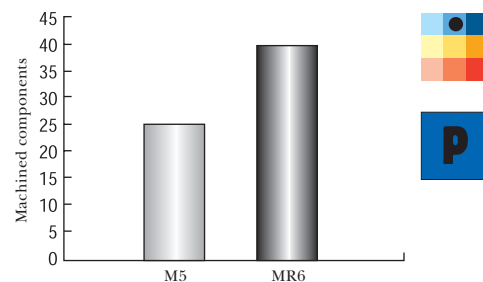
## MR6 – FEATURES AND BENEFITS

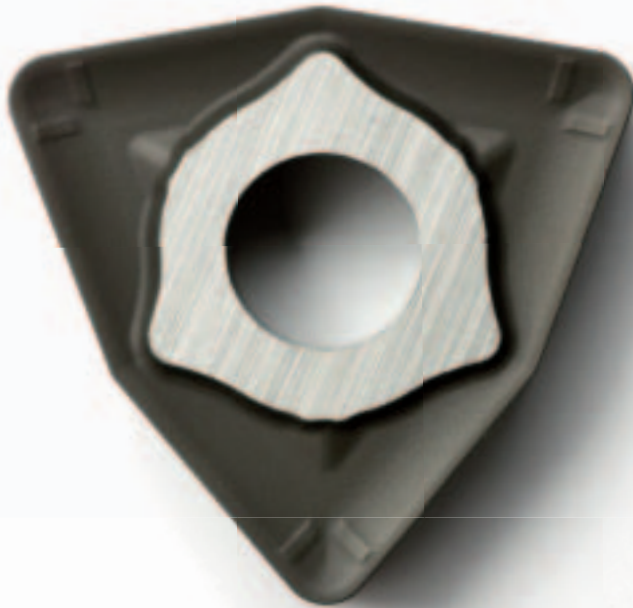


- Positive cutting rakes for low cutting forces
- Open design for reducing crater wear

## TP1500 MR6

Operation	External facing	
Component	Rock-drill head	
Material	DIN 47CrMo4 - SMG4	
Insert	CNMG160616-M5,TP1500 CNMG160616-MR6,TP1500	
Cutting data	$v_c$	250 m/min
	$f$	0.5 mm/rev
	$a_p$	1-2 mm
	Coolant	Yes





# HIGH PERFORMANCE TOOLS FOR INCREASED PRODUCTIVITY AND BETTER RESULTS

## THREADING

Seco's versatile threading system offers more than 1500 combinations of profiles and grades. The A1 chipbreaker in grade CP500 is specifically designed for steel threading operations and the A2 for stainless steel.

Together with an array of internal and external toolholders, including the unique and rigid HD-style holder with anti-twist feature, Seco delivers exceptional results.

## MULTI DIRECTIONAL TURNING (MDT)

Seco's Multi Directional Turning (MDT) system consists of holders and inserts for a full range of internal, radial- and axial-machining. MDT can be used for longitudinal turning, profiling, facing, grooving, threading and parting-off operations. CP500 is our first choice for MDT applications.

## SECO-CAPTO™ – FROM THE SPINDLE TO THE CUTTING EDGE

Seco-Capto is a quick change tooling system which provides an accurate, convenient setup and indexing of cutting tools representing a total solution.

- Increased production by changing tooling quickly
- Reduce tool inventories. The flexibility of Seco-Capto allows you to use the same toolholder in different machines and the modularity allows you to build different tools with extension adapters
- Reliable cutting data, Seco-Capto is so rigid you can maintain or even increase your cutting data
- The tapered polygon coupling produces a strong, self-centering joint providing accuracy and repeatability within  $\pm 2 \mu\text{m}$ !



**JETSTREAM TOOLING – A NEW SOLUTION THAT DELIVERS COOLANT PRECISELY TO THE CUTTING ZONE**

Jetstream tooling works by guiding a concentrated high pressure jet of coolant, at high velocity, straight to the optimum position near to the cutting edge. This jet of coolant improves chip control and tool life enabling increased cutting data to be applied.



**SECO – YOUR NUMBER ONE PARTNER IN TURNING**

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