WALTER
Engineering Kompetenz

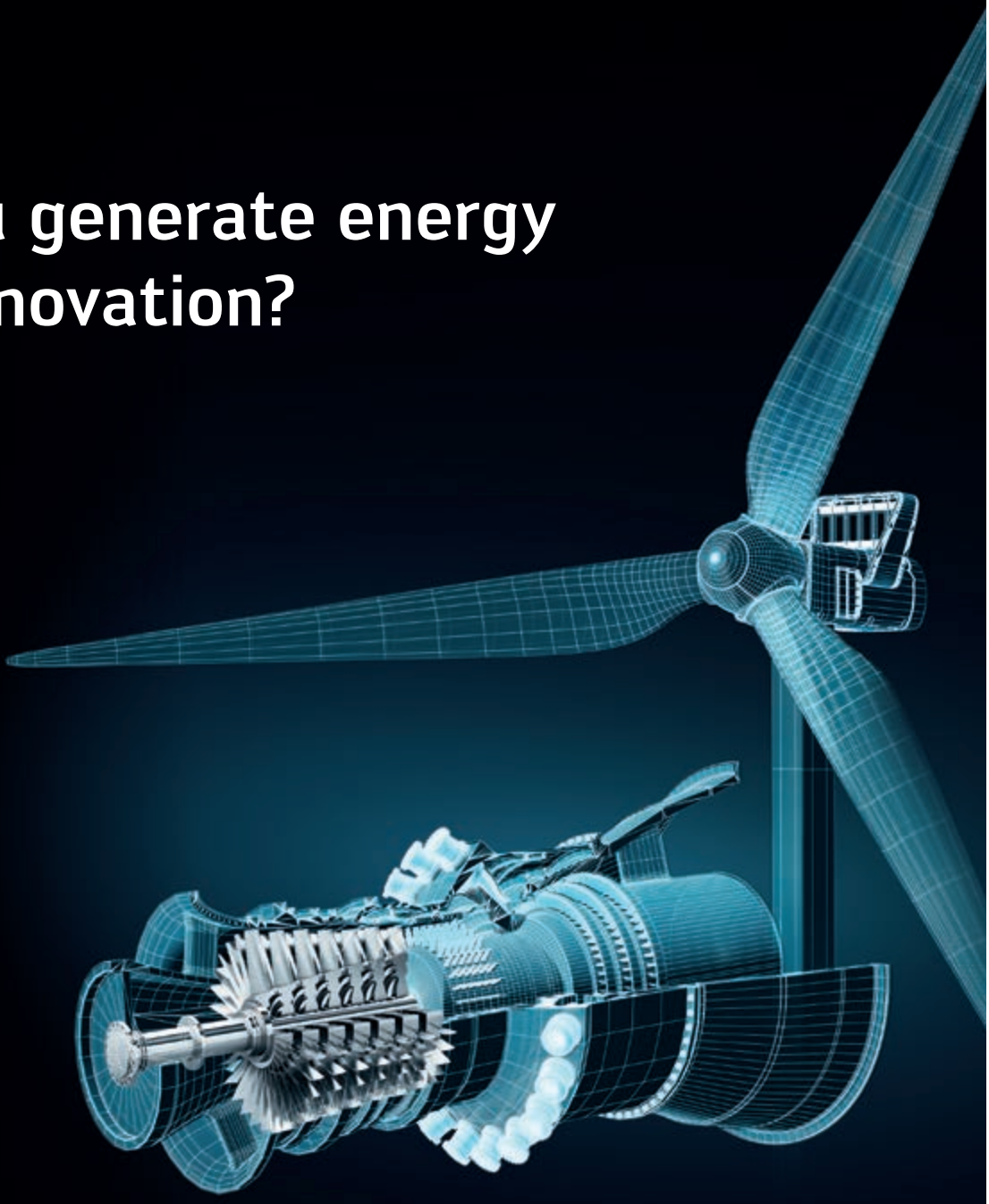
Turning, holemaking,
threading, milling

Product highlights
Edition 2020

_PRODUCT HIGHLIGHTS

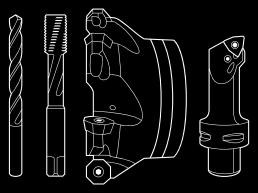
Added value for your production.

Can you generate energy from innovation?



The world's population will reach over 8 billion by 2025, leading to the energy demand rising accordingly. Achieving optimum efficiency in energy generation has therefore never been more important. Components for the energy industry need to be optimised to fulfil their maximum potential, which requires the use of new machining techniques and technologies. Having a partner that provides reliable tool solutions and a dependable service is therefore crucial.

Harnessing energy for the future: Engineering Kompetenz from Walter.



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Walter highlight flyer

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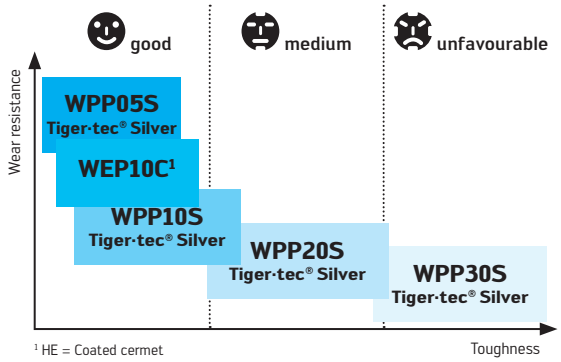
A – Turning


LTER
MX22-2-P

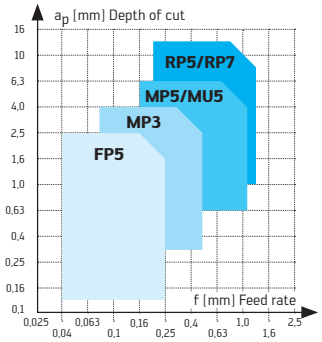
Tiger·tec® Silver grades and geometries

Machining steel ISO P



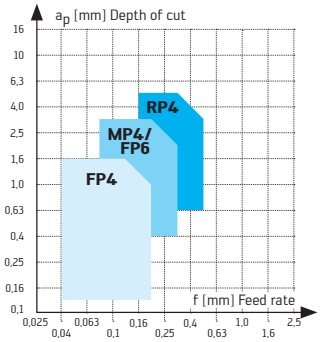
¹ HE = Coated cermet

Negative basic shape



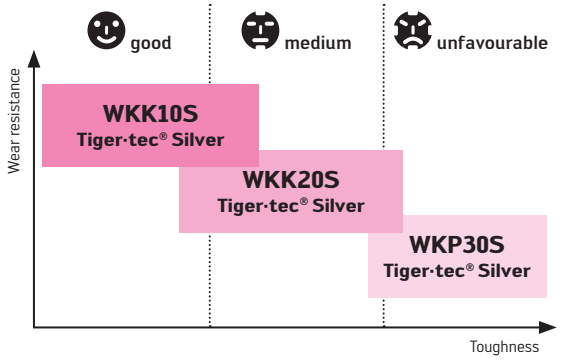
MP5: For universal machining
MU5: Easy-cutting – for ISO P and ISO M
RP5: For universal machining
RP7: For interrupted cuts, cast skin/forged skin

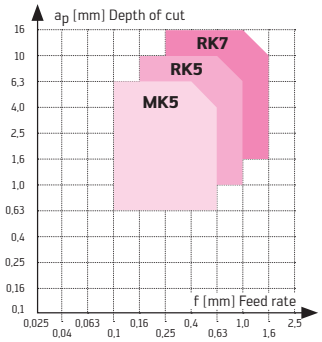
Positive basic shape

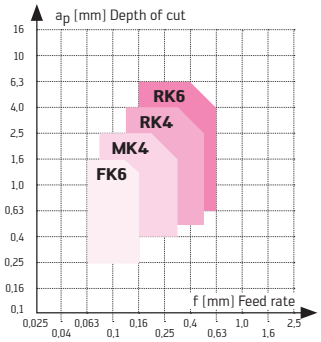


MP4: For universal machining, copy turning
FP6: For semi-finishing operations

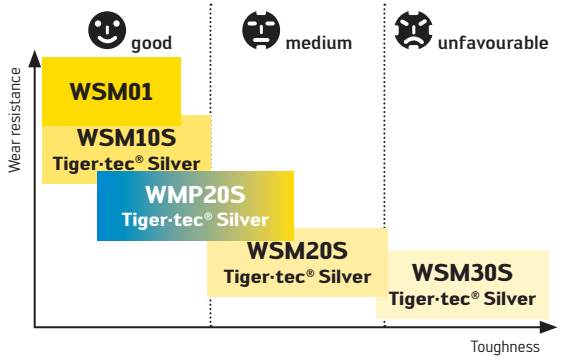
Cast iron machining ISO K

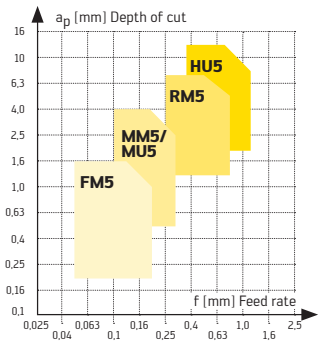




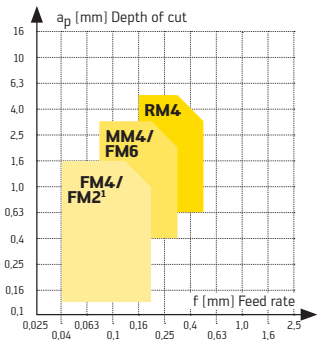


Stainless steel ISO M



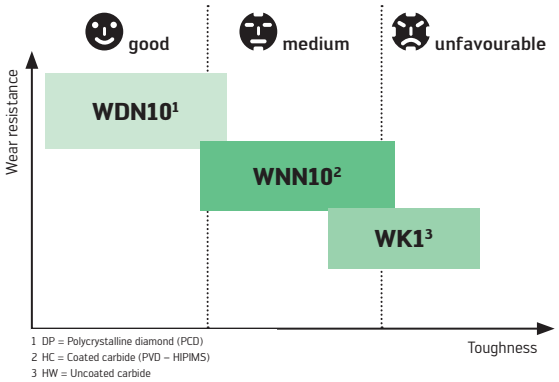


MM5: For universal machining
MU5: Easy-cutting – for ISO P and ISO M



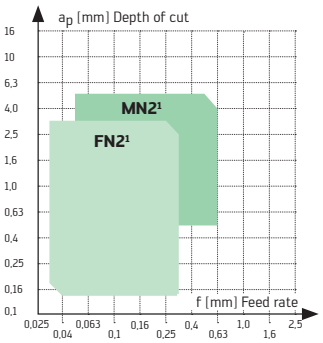
MM4: For universal machining, copy turning
FM6: For semi-finishing operations
¹ Circumference fully ground

NF metals ISO N

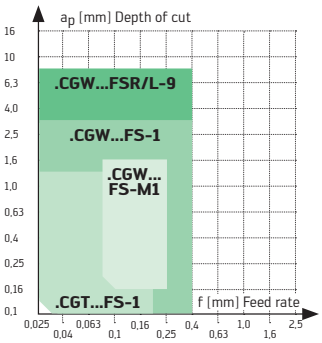


1 DP = Polycrystalline diamond (PCD)
2 HC = Coated carbide (PVD – HIPIMS)
3 HW = Uncoated carbide

Positive basic shape
Carbide

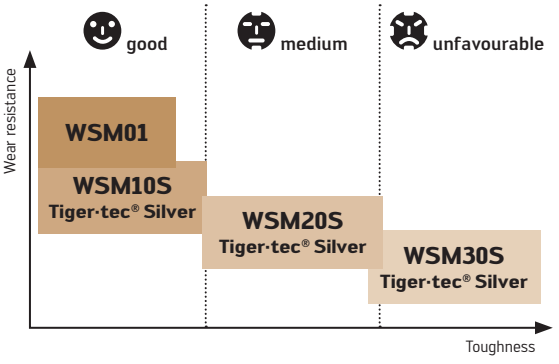


Positive basic shape
PCD



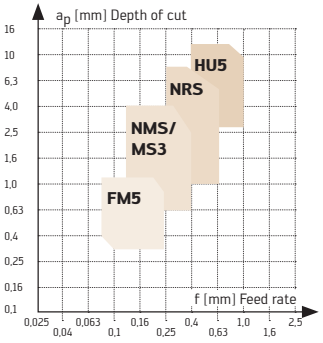
¹ Circumference fully ground

ISO S high-temperature alloys and titanium alloys



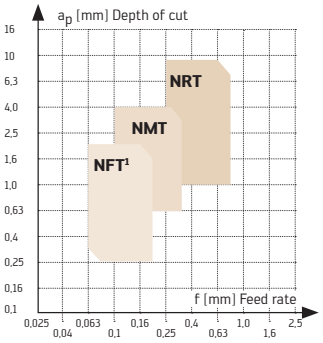
Negative basic shape

Ni, Co and Fe-based alloys



NMS: For universal machining
MS3: For low cutting pressure

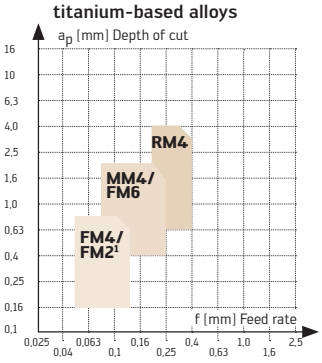
Titanium-based alloys



¹ Circumference fully ground

Positive basic shape

Ni, Co, Fe and
titanium-based alloys



MM4: For universal machining, copy turning
FM6: For semi-finishing operations
¹ Circumference fully ground

Accure·tec – the best results for long components.

NEW

NEW ADDITION TO THE PRODUCT RANGE

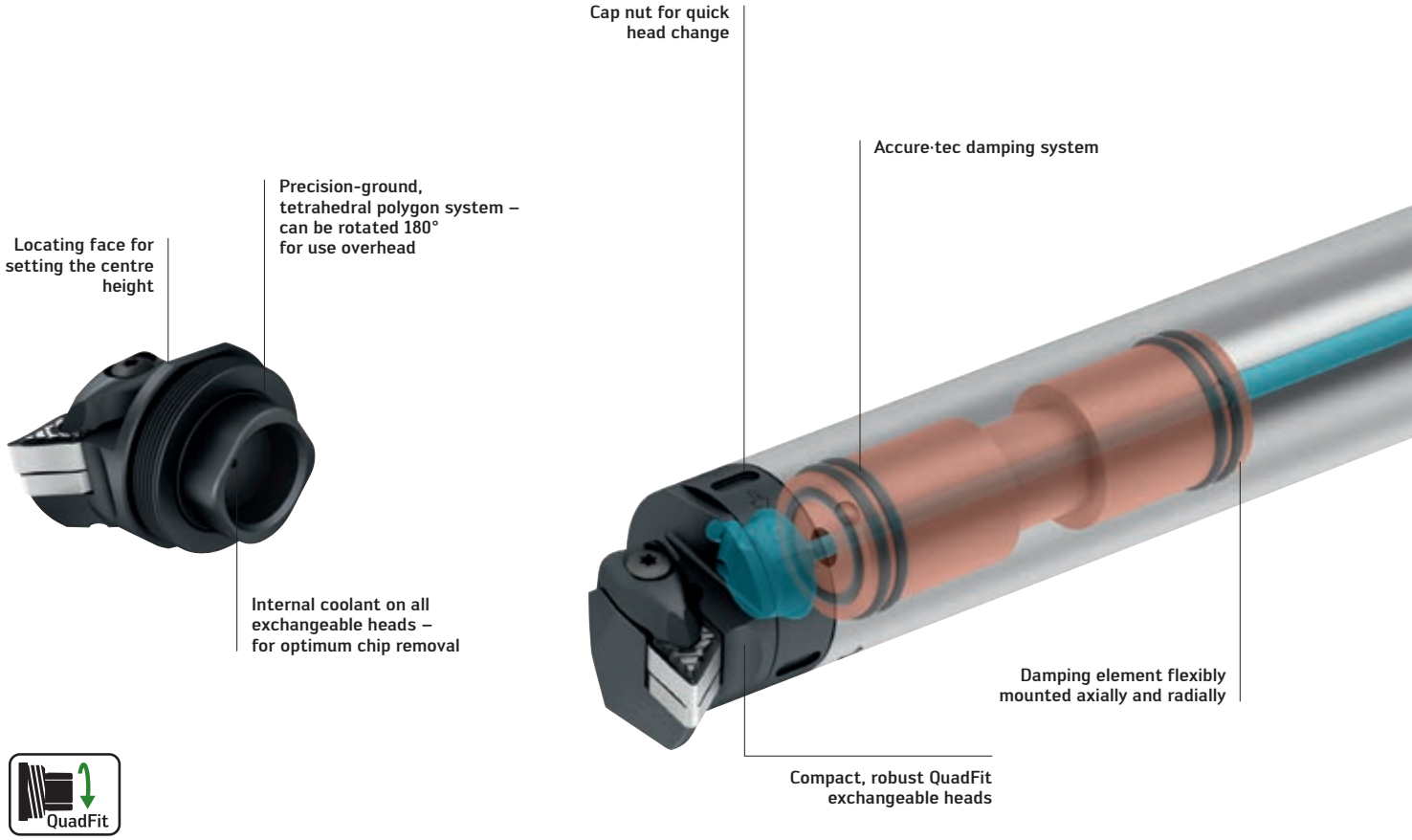
– Accure·tec A3000 boring bars with patented vibration-damping technology for maximum precision

THE INTERFACE

– QuadFit quick-change heads; 0.002 mm changeover precision
– Only one cap nut for clamping the exchangeable head
– No loose "assembly parts" (e.g. screws)
– Available for:
  • Negative indexable inserts: CNMG12/16, DNMG15, WNMG08
  • Positive indexable inserts: CCMT09/12, DCMT11, TCMT16, VBMT16

THE TOOL

– Vibration-damped, preset boring bar adaptor
– Lengths: 6 × D, 8 × D, 10 × D
– Boring bar diameters:
  • 32, 40, 50 mm
  • 1.25", 1.5", 1.75"
  • Additional sizes and lengths available on request
– Interface to the machine:
  • Parallel shank
  • Walter Capto™ C6, C8
  • HSK-T 100

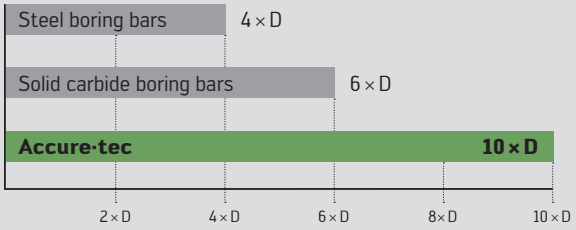


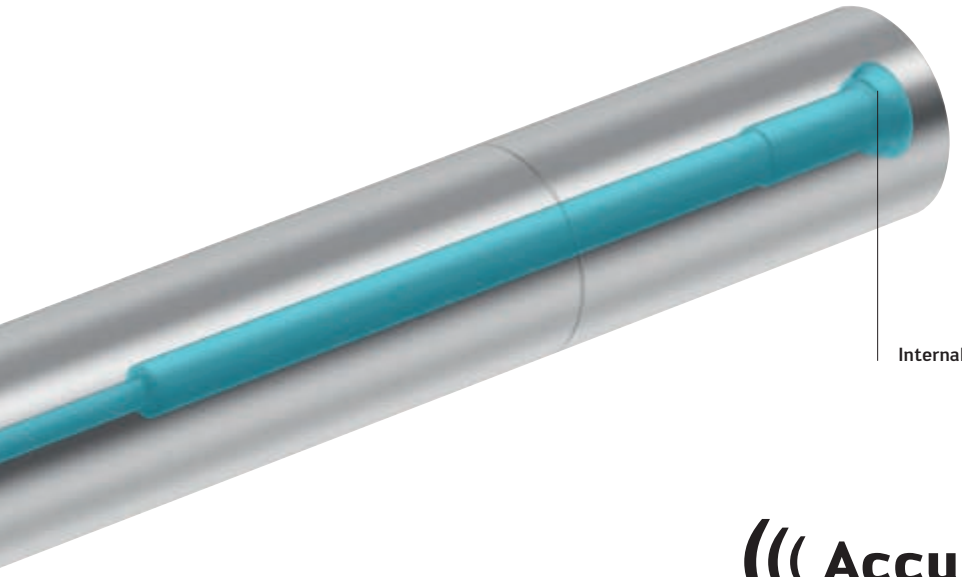
QuadFit quick-change head **Fig.:** Q40-DDUNR-27032-15

THE APPLICATION

- Can be used from 6 × D to 10 × D
- Counterboring and internal profiling deep bores with high productivity for the best surface quality
- Areas of use: Aerospace industry (e.g. engines), oil and gas industries (e.g. pumps, fittings) and general mechanical engineering

Comparison – projection length/dia.





For more Accure·tec adaptors, see the Adaptors section

Accure·tec

Vibration-damped boring bars from 6 × D to 10 × D

Fig.: A3000-40-Q40-208

BENEFITS FOR YOU

Accure·tec boring bars

- Broad scope of applications for machining expensive components safely and quickly
- Bore machining without vibration – for optimal surface quality
- Maximum damping thanks to damping element flexibly mounted axially and radially
- Vibration damping "preset" at the factory – ready for immediate use (no time lost tuning)

QuadFit exchangeable heads

- Quick and precise head change (±0.002 mm)
- Quick head change results in less non-productive time
- Broad range of products with different machine interfaces allows for versatility

Maximum cooling and tool life with ISO M and ISO S thanks to jet guiding geometry.

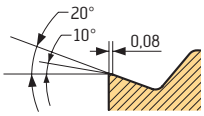
NEW

THE GEOMETRIES

FM5 – Finishing

- For optimal chip breaking
- Machining parameters:
  f: 0.03–0.25 mm
  a_p: 0.1–2.0 mm

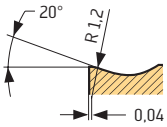
Main cutting edge



MM5 – Medium machining

- Universal geometry
  with large range of applications
- Machining parameters:
  f: 0.1–0.4 mm
  a_p: 0.5–4.5 mm

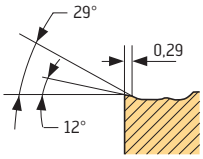
Main cutting edge



RM5 – Roughing

- For optimal coolant supply
  beneath the chip
- Machining parameters:
  f: 0.20–0.60 mm
  a_p: 1.0–5.0 mm

Main cutting edge



THE APPLICATION

Primary application

ISO M – Stainless steels

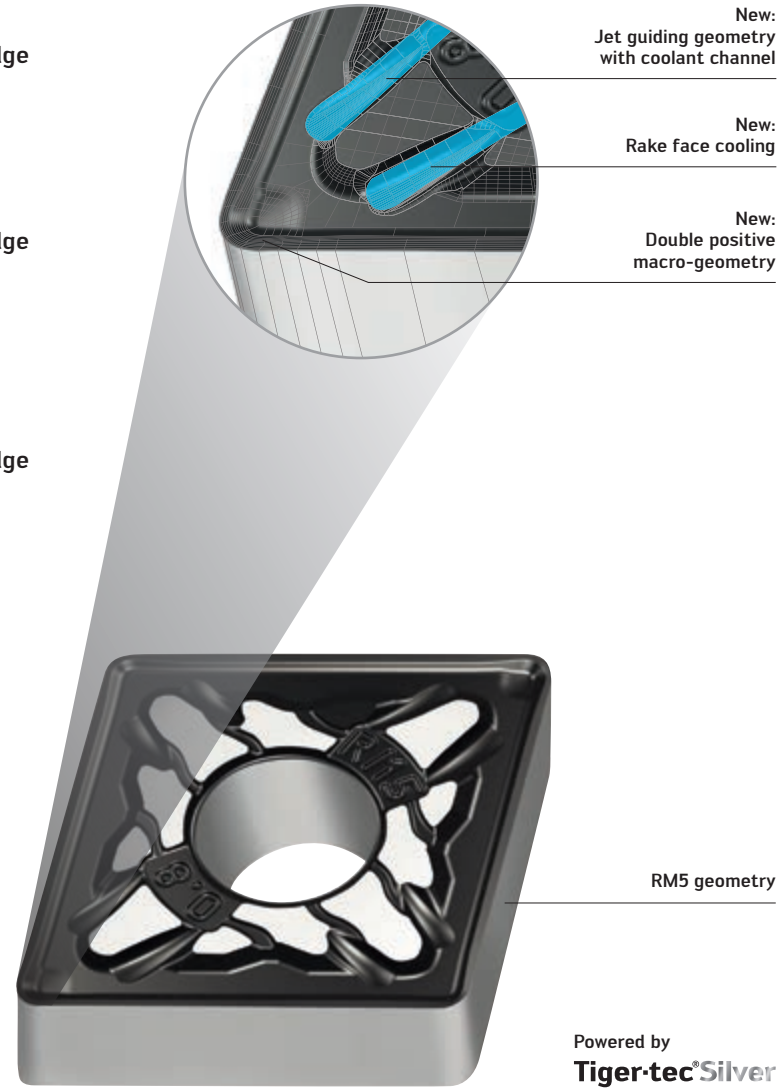
- Austenitic stainless steels
  (e.g. DIN 1.4571/AISI 316Ti)
- Duplex steels (e.g. DIN 1.4462/AISI 318LN)

ISO S – High-temperature alloys

- Nickel-based alloys (e.g. Inconel 718)
- Cobalt-based alloys

Secondary application

ISO P – Steel



Grades: WSM10S, WSM20S, WSM30S, WMP20S

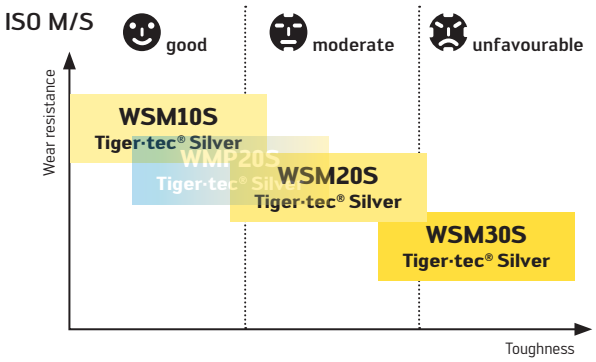
Fig.: RM5 jet guiding geometry

BENEFITS FOR YOU

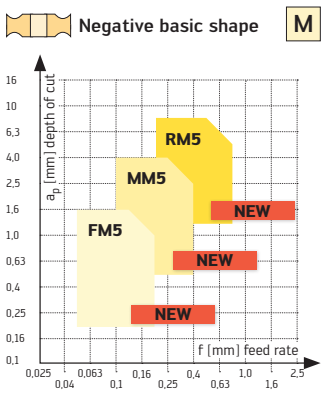
- Optimal cooling and maximum productivity
- Double positive macro-geometry reduces notch formation and crater wear – for up to 100% increase in tool life
- High wear resistance and maximum tool life due to PVD-Al_2O_3 heat shield
- Can be used universally in standard ISO turning toolholders with or without precision cooling
- Burr-free components and reduced build up on the edge

Watch the product animation:
www.youtube.com/waltertools

OVERVIEW OF GRADES: ISO M



OVERVIEW OF GEOMETRIES: ISO M



NEW ADDITION TO THE PRODUCT RANGE

- MM5 geometry basic shapes: CNMG, DNMG, SNMG, TNMG, VNMG, WNMG
- RM5 geometry basic shapes: CNMG, DNMG, SNMG, TNMG, WNMG

DNMG-FM5

THE GRADES

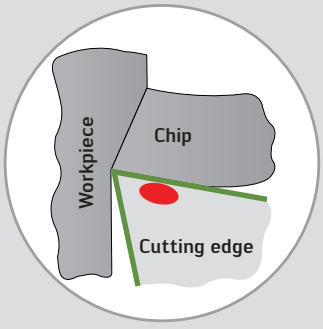
- Tiger·tec® Silver PVD-Al_2O_3 grades: WSM10S, WSM20S, WSM30S
- Tiger·tec® Silver CVD grade: WMP20S

CNMG-MM5

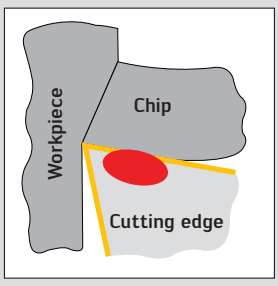
WNMG-RM5

PVD TECHNOLOGY WITH ALUMINIUM OXIDE

Tiger·tec® Silver PVD
Low transfer of heat into the carbide thanks to the Al_2O_3 heat shield



Competitors
High transfer of heat into the carbide due to a conventional PVD layer



= Temperature = Aluminium oxide (Al_2O_3) = Conventional PVD layer

Maximum metal removal rate for stainless steel and high-temperature alloys.

NEW

THE INDEXABLE INSERT

- Single-sided indexable insert for maximum stability
- Basic shapes:
  - CNMM12, CNMM16, CNMM19
  - DNMM15
  - SNMM12, SNMM15, SNMM19, SNMM25
- Corner radii: 0.8, 1.2, 1.6 and 2.4 mm

THE GRADES

- WPP10S, WPP20S
- WSM20S, WSM30S, WMP20S

THE APPLICATION

- Roughing operations with maximum machining volume
- Where a soft-cutting geometry with low cutting pressure is needed

Primary application:

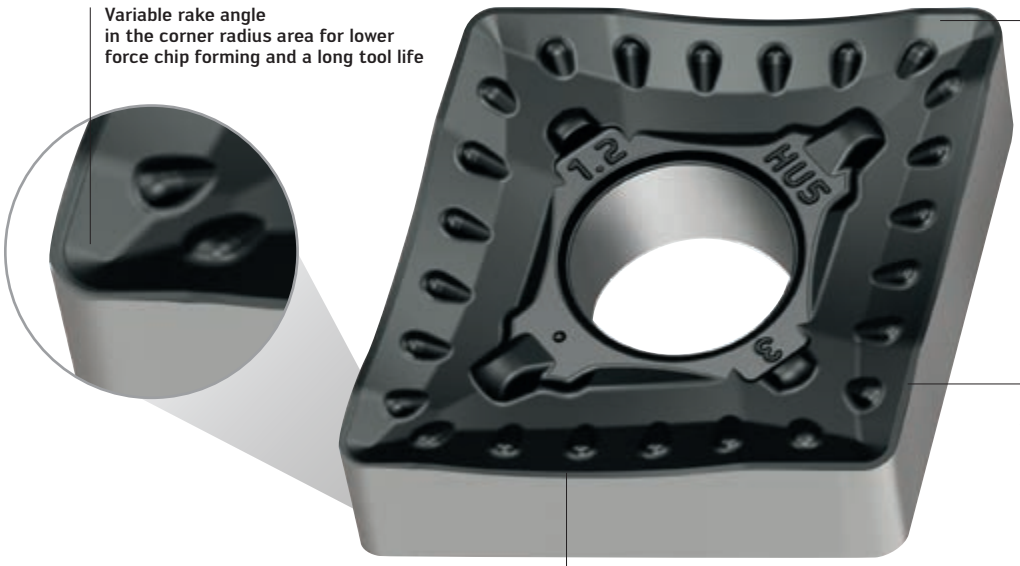
- ISO M: Stainless steels, e.g. austenitic steel 1.4301, duplex steel 1.4462
- ISO S: High-temperature alloys, e.g. Inconel 625

Other applications:

- ISO P: Long-chipping steel materials, e.g. S355J0 (St52)
- ISO K: Low cutting pressure

Machining parameters:

- f: 0.30–1.00 mm
- a_p: 2.5–10.0 mm



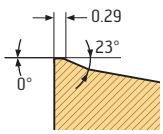
Single-sided roughing indexable insert

Fig.: CNMM160612-HU5 WSM20S

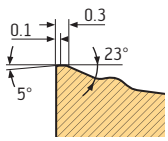
THE GEOMETRIES – HU5

- Specially developed for tough roughing operations
- Extremely soft cutting action for low machining temperatures
- Main cutting edge protected by negative chamfer (0.1 × -5°) (enables machining of skins and hard surface zones)

Corner radius – HU5

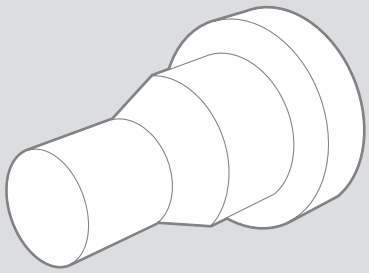


Main cutting edge – HU5



MACHINING EXAMPLE

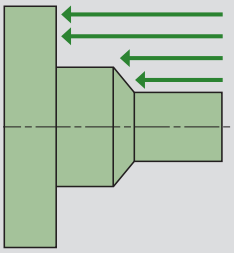
Valve: Oil and gas industry, dia. 100 mm/length 150 mm



Material:	DIN 1.4301 / X5CrNi18-10 / AISI304
Machine:	DMG MORI CTX Beta 200
Tool:	PCLNL2525M12

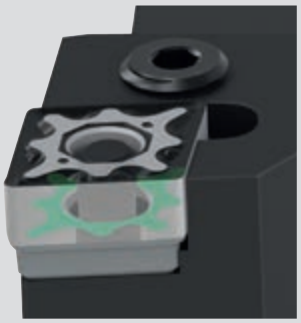
Comparison of double-sided vs single-sided geometries

Existing:
CNMG120408-MM5 WMP20S

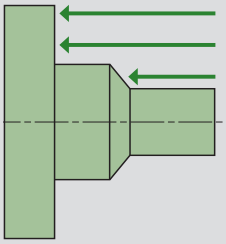


4 cutting actions/
3 mm depth of cut

Smaller contact surface
in the tool holder

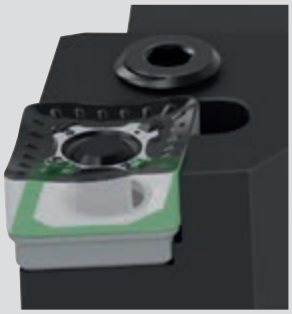


New:
CNMM120412-HU5 WMP20S



3 cutting actions/
4 mm depth of cut

Maximum contact surface
in the tool holder – for higher
feeds and greater depth of cut



Cutting data:

Indexable insert	Existing CNMG120412-MM5 WMP20S	**NEW CNMM120412-HU5 WMP20S**
v_c (m/min)	180	180
f (mm)	0.30	0.45
a_p (mm)	3.0	4.0
Tool life (components)	20	35
Metal removal rate (cm³/min)	162	324
Machining time per workpiece (min)	2.8	1.26
Machining costs per workpiece	100%	48%

Maximum metal removal rate

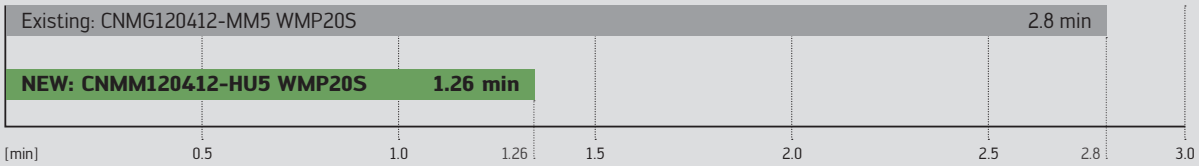
By increasing the metal removal rate [Q], the machining time can be reduced and the production costs lowered.

Calculation formula:

$$Q = v_c \times a_p \times f \ [cm^3/min]$$

Machining time reduction per workpiece

-55 %



BENEFITS FOR YOU

- Additional machine capacity, as the HU5 geometry enables higher feeds and greater depth of cut (components can be machined faster)
- Universal insert for ISO M and ISO S simplifies the application on new components
- Up to 75% longer tool life thanks to soft cutting action and Tiger·tec® Silver cutting tool materials

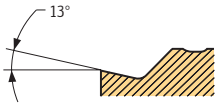
Ideal combination of low cutting pressure and long tool life.

NEW

THE GEOMETRY

- For medium and semi finish machining
- Machining parameters:
  f: 0.10–0.40 mm
  a_p: 0.6–3.0 mm

Main cutting edge



THE INDEXABLE INSERTS

- Negative circumference-sintered and circumference fully ground design with chip breaker groove
- Basic shapes: CNMG, CNGG, DNMG, DNGG, TNMG, VNMG, VNGG, WNMG
- Corner radii: 0.1, 0.2, 0.4 and 0.8 mm

THE GRADES

HIPIMS PVD grade: WSM01
- High-temperature alloys
- Austenitic stainless steels
  (e.g. DIN 1.4571/AISI 316Ti)

PVD-Al_2O_3 grades: WSM10S, WSM20S
- High-temperature alloys
- Austenitic stainless steels
- Machining operations on automatic bar feed machines and multi-spindle machines

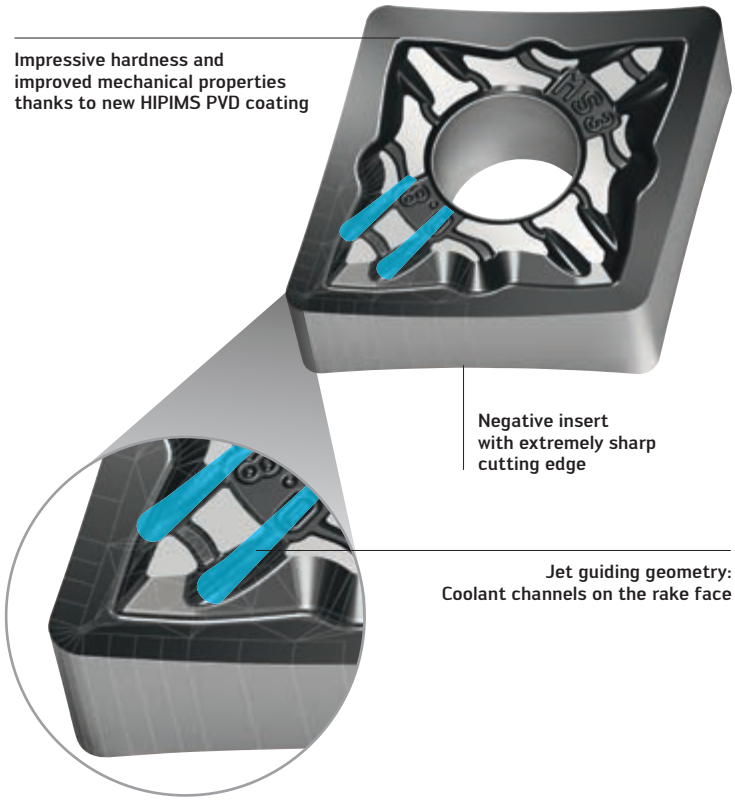
CVD grades: WPP10S, WPP20S
- Free machining steels
- Long contact times
- Maximum wear resistance

THE APPLICATION

- Ideal for long overhangs and unstable or thin-walled components
- Prevents vibration thanks to low cutting pressure

Primary application:
- ISO S: High-temperature alloys, nickel-based alloys
  e.g. Inconel 718, cobalt-based alloys

Secondary application:
- ISO P (steel)
- ISO M (stainless steels)
- ISO N (NF metals)



Grades: WSM01, WSM10S, WSM20S, WPP10S, WPP20S

Fig.: MS3 geometry

BENEFITS FOR YOU

- Burr-free components
- Less build up on the edge thanks to sharp cutting edges
- Machines unstable components with no problems due to low cutting pressure
- Cooling directly at the cutting edge thanks to jet guiding geometry and curved cutting edge design

Watch the product video:
www.youtube.com/waltertools

Precision cooling for ceramic inserts: Direct, efficient – straight to the point.

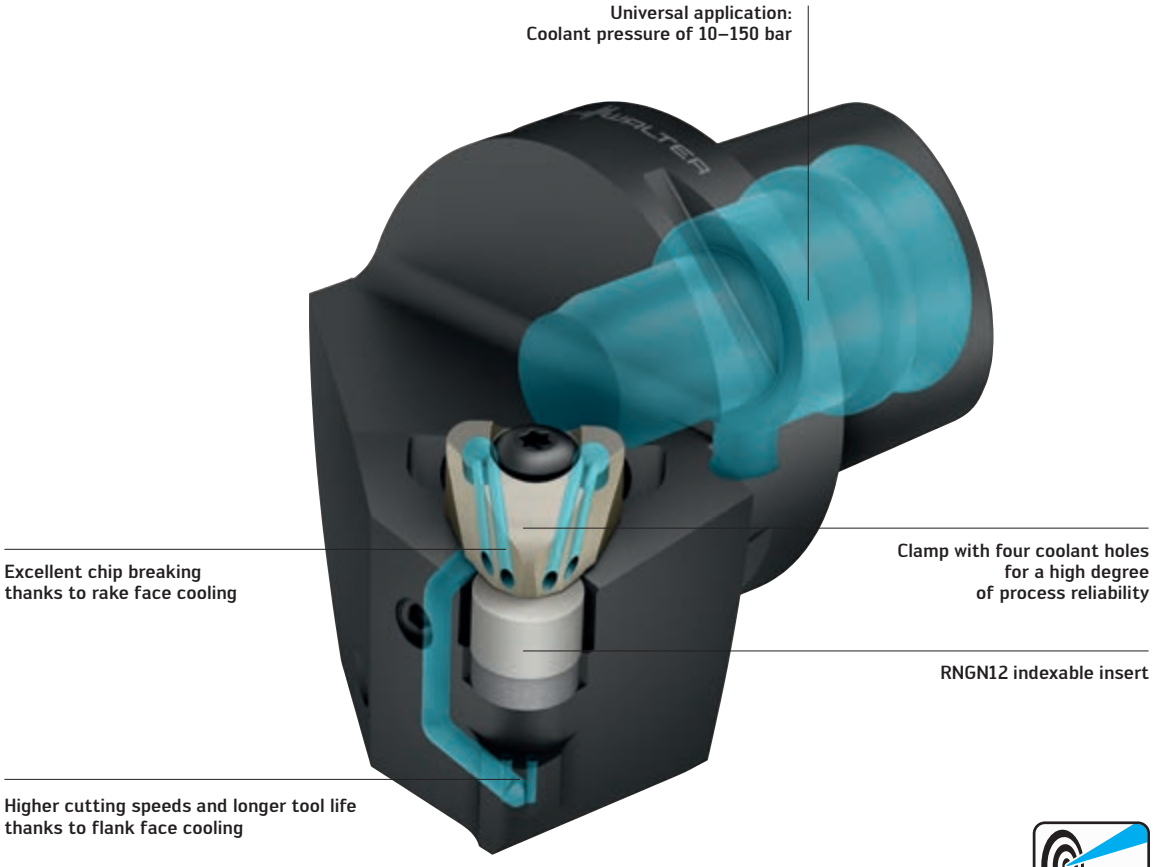
NEW

THE TOOL

- Coolant supplied directly through the clamp and along the flank face
- Tool variants:
  - Square shank 25 × 25 mm
  - Walter Capto™ C6
- RNGN120700 indexable insert
- Other sizes and special tool versions are possible
- Clamp with four coolant exits for maximum cooling

THE APPLICATION

- High-temperature alloys (ISO S), e.g. engine components made from Inconel 718 in conjunction with WIS10 SiAlON ceramic or WWS20 whisker ceramic
- Can be used starting from 10 bar up to a maximum coolant pressure of 150 bar; pressures up to 350 bar also possible following technical clarification
- Excellent chip breaking, easy chip removal



Walter Capto™ tool with precision cooling for RNGN12 **Fig.:** C6-CRSNR-45065-12-P

BENEFITS FOR YOU

- Short chips thanks to precision cooling – no adhesion to component
- Higher machine availability and satisfied machine operators
- Tool life increased by 30–150%

Watch the product video:
www.youtube.com/waltertools

Now with precision cooling: Direct, efficient – straight to the point.

NEW TECHNOLOGY

NEW ADDITION TO THE PRODUCT RANGE

- Coolant clamps with four coolant exits for maximum effect
- Available for CNMG16, CNMG19 indexable inserts

THE TOOL

- Coolant supplied directly through the clamp and along the flank face
- Flexible coolant connection on the square shank: Direct coolant transfer between adaptor and shank tool (A2120-P/A2121-P) or via coolant hose set with G1/8" thread (K601)
- Tool variants: Square shank 20–25 mm; Walter Capto™ C4–C8

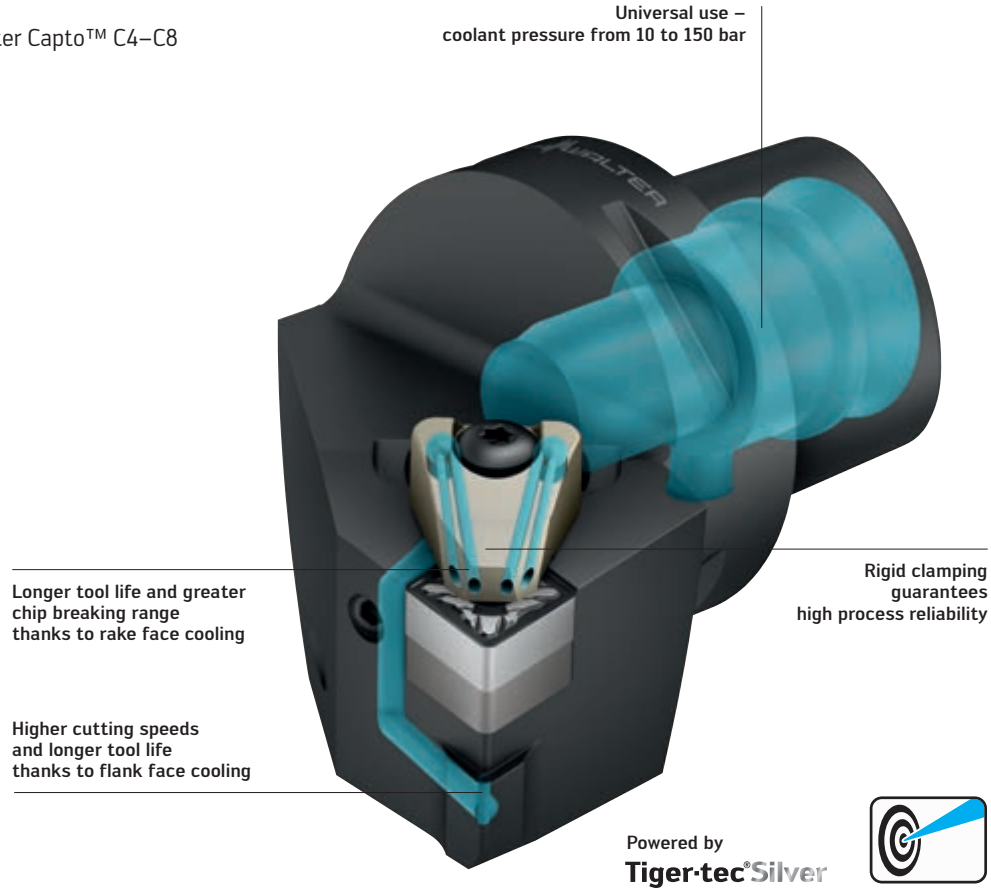
THE APPLICATION

- Stainless steels (ISO M), high-temperature alloys (ISO S) and steel (ISO P)
- Can be used from 10 bar up to a maximum coolant pressure of 150 bar
- Improved chip breaking, in particular at > 40 bar
- Multiple machine operations (e.g. multi-spindle machines), because the chips are removed effectively by the cooling system

Clamp overview:

Two coolant holes for CNMG12, etc.
Fig.: PK265R

Four coolant holes for CNMG16, etc.
Fig.: PK267



Walter Capto™ tool with precision cooling

Fig.: C6-DCLNR-45065-16-P

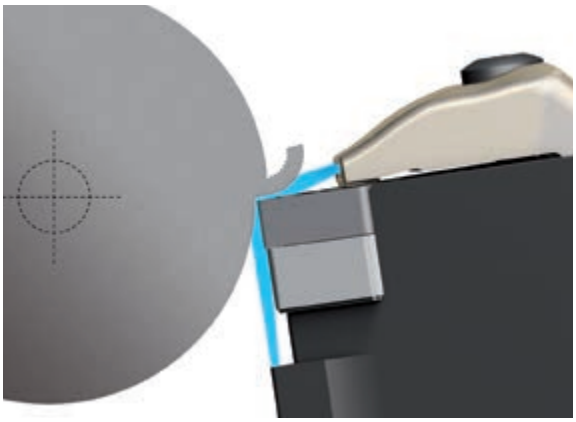
Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

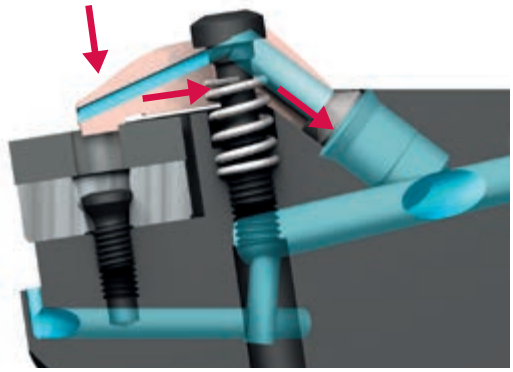
- Tool life increased by 30–150%
- Plug-and-play: Use of existing machines, as the cooling system can be used starting from a coolant pressure of 10 bar and without an interference contour on the tool
- Increase in cutting speed by up to 100%, while maintaining the same tool life

THE TECHNOLOGY

Precision cooling:
In tools with precision cooling, the adaptor, the turning toolholder and the indexable insert geometry are designed to ensure ideal cooling.



At the effective working area:
Precision cooling brings the coolant as close and flatly angled as possible to the effective working area. As a result, significant advantages can be achieved starting from a coolant pressure of just 10 bar.



Process reliability:
The rigid clamping mechanism presses the insert down and back into the insert seat. Consequently, the insert is not detached from its seat even during heavy roughing operations and the component dimensions are consistently maintained with complete accuracy.

THE SYSTEM

Jet guiding geometry:
The new FM5, MM5, RM5 and MS3 jet guiding geometries guide the coolant directly beneath the chip and thereby even closer to the cutting edge.

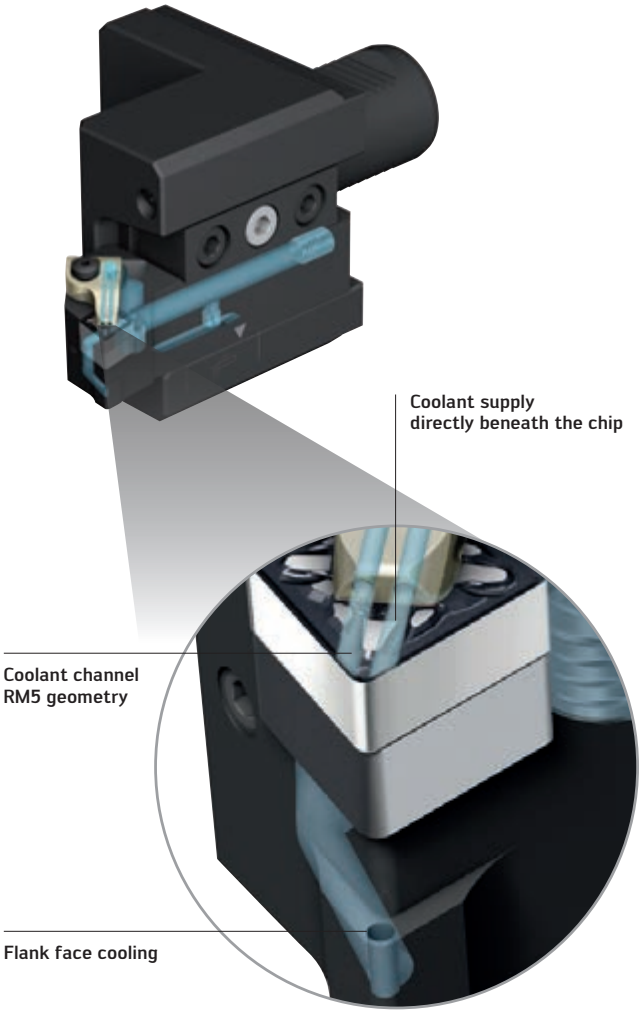


Fig.: DCLN-P shank tool, VDI A2120-P adaptor and RM5 jet guiding geometry

Peak performance on steel and stainless materials.

NEW

THE INDEXABLE INSERT

– Double-sided MU5 universal geometry

Basic shapes:

– CNMG, DNMG, TNMG, WNMG
– Corner radii: 0.8/1.2 mm

Grades:

– WPP05S, WPP10S, WPP20S
– WSM20S, WMP20S

THE APPLICATION

– Medium machining of steels and stainless materials
– Alternative to MP5/MM5 geometry with soft cutting characteristics
– Machining parameters f: 0.15–0.60 mm, a_p: 0.5–6.0 mm

Primary application:

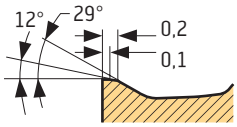
– ISO P: Steel
– ISO M: Stainless steels

Secondary application:

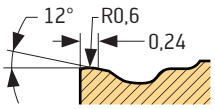
– ISO K: Cast iron materials

THE GEOMETRY

Corner radius

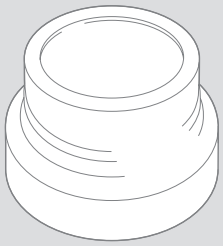


Main cutting edge



APPLICATION EXAMPLE

Bearing ring

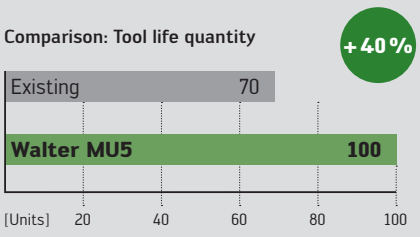


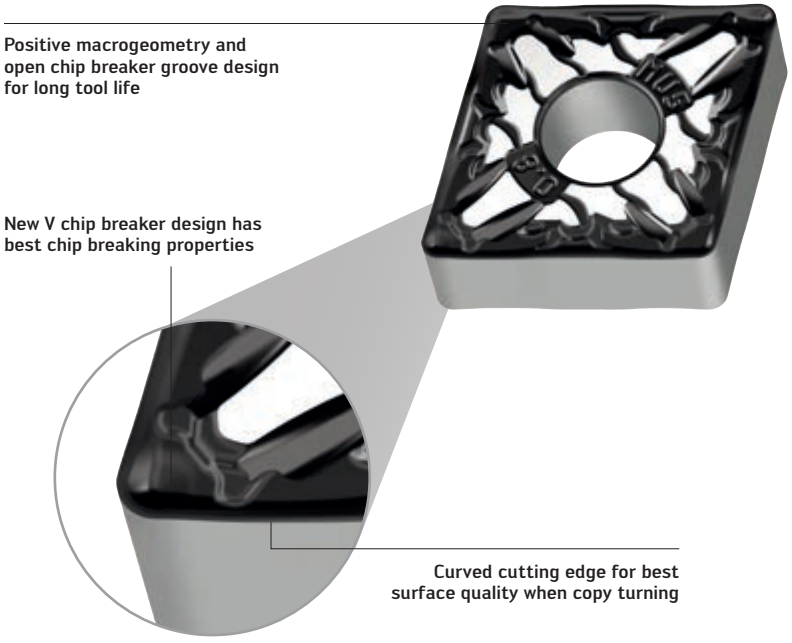
Material:	100Cr6 (DIN 1.3505)
Tool:	DWLNR2525M08
Indexable insert:	WNMG080412-MU5
Grade:	WPP10S

Cutting data:

	Existing WNMG080412 P10	**NEW WNMG080412-MU5 WPP10S**
v_c (m/min)	300	300
f (mm)	0.25–0.50	0.30–0.55
a_p (mm)	1–2	1–2

Comparison: Tool life quantity





Indexable insert **Fig.:** CNMG120408-MU5 WMP20S

BENEFITS FOR YOU

– Can be used universally in a wide range of applications
– Soft cutting action and maximum resistance to crater wear in the medium cutting area – therefore reducing tool costs
– Maximum process reliability thanks to controlled chip removal and chip breaking

Efficient, reliable, highest quality.

NEW

NEW ADDITION TO THE PRODUCT RANGE

– Walter Perform line: Indexable inserts for turning applications in ISO P and ISO K

THE GRADES

– Versatile cutting tool materials
  - WPV10 (ISO P)
  - WPV20 (ISO P)
  - WKV10 (ISO K)
  - WKV20 (ISO K)

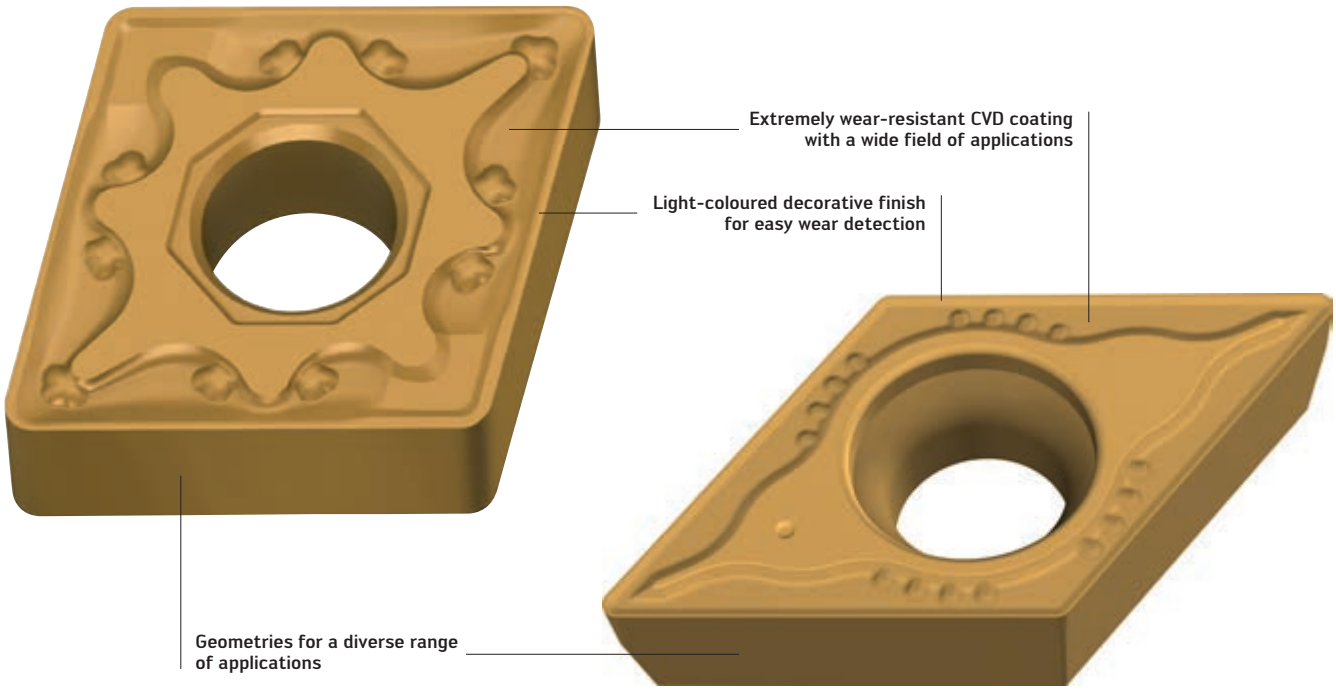
THE GEOMETRIES

Negative basic shape:
ISO P
– FV5: Finishing operation
– MV5: Medium machining
– RV5: Roughing operation
ISO K
– MV7: Medium machining
– RV7: Roughing operation

Positive basic shape:
ISO P
– FV4: Finishing operation
– MV4: Medium machining

THE APPLICATION

– Versatile use for an extremely wide range of materials and applications
– Areas of application: General mechanical engineering, single-part production and other industries



Perform line ISO indexable inserts **Fig.:** CNMG120408-MV5 WPV20, DCMT11T304-MV4 WPV20

BENEFITS FOR YOU

– Efficient machining with tried-and-tested technology
– Extremely reliable and wear-resistant
– Simple geometry selection and wear detection
– Flexible use in a wide range of applications
– Highest product quality – made by Walter

Hard, harder, WSM01 – the no. 1 grade for demanding machining operations.

NEW

THE GRADE

- PVD HIPIMS coating technology for a smooth surface
- Excellent layer bonding with sharp cutting edges
- Extremely hard, wear-resistant ultra fine-grain carbide substrate

THE GEOMETRIES

- Negative basic shape: MS3, NMS, NRS
- Positive basic shape: FM2, MM4, MN2

THE APPLICATION

Primary application:

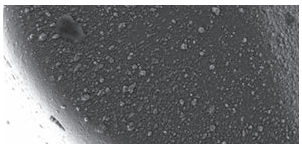
- ISO S – e.g. finishing of engine components made of Inconel 718
- ISO M – e.g. valves made of 1.4462 duplex steel

Secondary application:

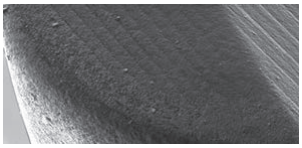
- ISO P – e.g. precision finishing of tool steel
- ISO N – e.g. high-polish turning
- ISO H – e.g. machining of hardened steel with 56 HRC

SURFACE COMPARISON:

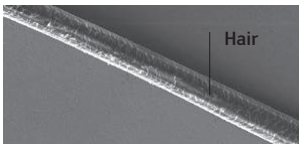
Standard PVD process:
Increased droplet formation

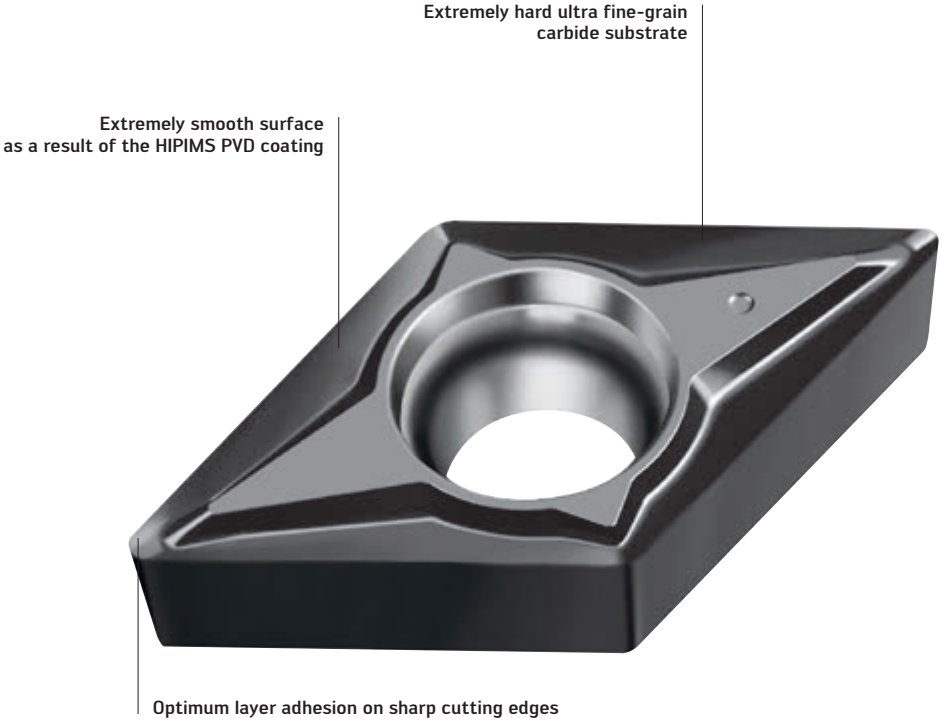


HIPIMS PVD process (WNN10):
Extremely smooth surface

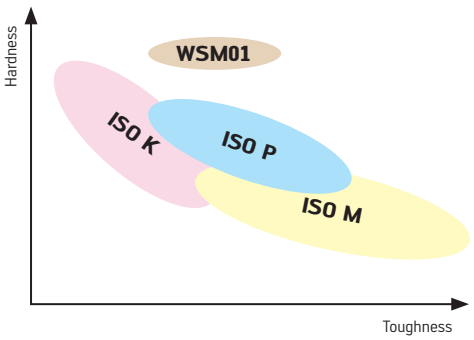


HIPIMS surface and structure of a hair as a direct comparison





CARBIDE COMPARISON – WSM01 GRADE:



The new WSM01 grade is harder than existing carbide substrates with increased toughness at the same time.

Grade: WSM01

Fig.: DCGT – FM2 WSM01

BENEFITS FOR YOU

- Maximum tool life for high-strength materials
- Optimum surface qualities thanks to HIPIMS coating
- High-quality workpieces over a long tool life

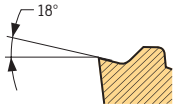
Perfect performance thanks to the new HIPIMS grade.

NEW

THE GEOMETRIES

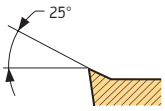
FN2 – Positive indexable inserts for finishing ISO N:
- Finishing insert with circumference fully ground
- For low cutting forces
- Polished rake face
- For long, small-diameter shafts with a tendency to vibrate

Main cutting edge



MN2 – Positive indexable inserts for medium machining of ISO N:
- Can be used universally for non-ferrous metal
- Sharp cutting edge with circumference fully ground
- Polished rake face
- Precision finishing on steel and stainless materials

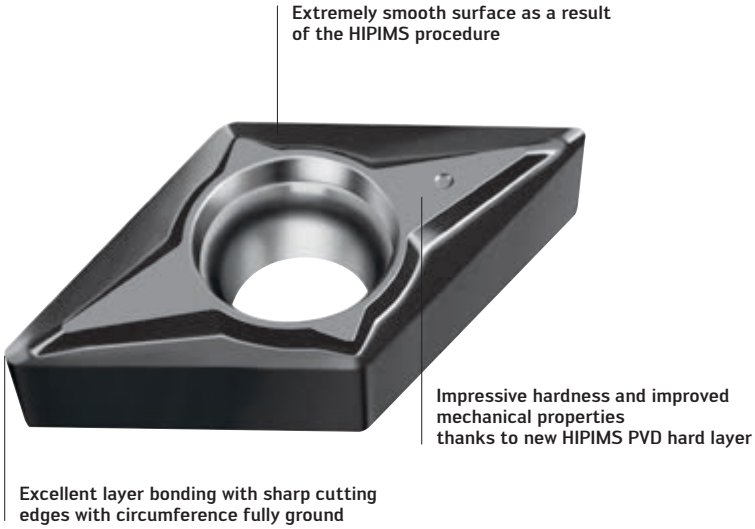
Main cutting edge



THE APPLICATION

Primary application
- Finishing and roughing of:
  ISO N alloys
  Aluminium-based alloys (e.g. 3.2382, AlSi10Mg(Fe))
  Copper-based alloys (e.g. 2.0265, CuZn30)
  Magnesium-based alloys (e.g. 3.5200, MgMn2)

Secondary application
- Fine finishing of small components made from:
  ISO P (steel)
  ISO M (stainless steels)
  ISO S (high-temperature alloys)
- Finishing and roughing of:
  ISO O (thermosets and thermoplastics)



Grade: WNN10

Fig.: FN2 geometry

BENEFITS FOR YOU
- Excellent surface quality and dimensional accuracy
- High process reliability thanks to the new WNN10 grade
- No layer flaking and even wear due to excellent layer bonding
- Longer tool life on materials with a tendency to stick (adhesion) thanks to improved surface roughness

The latest CBN generation – hard machining at the highest level.

NEW

THE INDEXABLE INSERTS

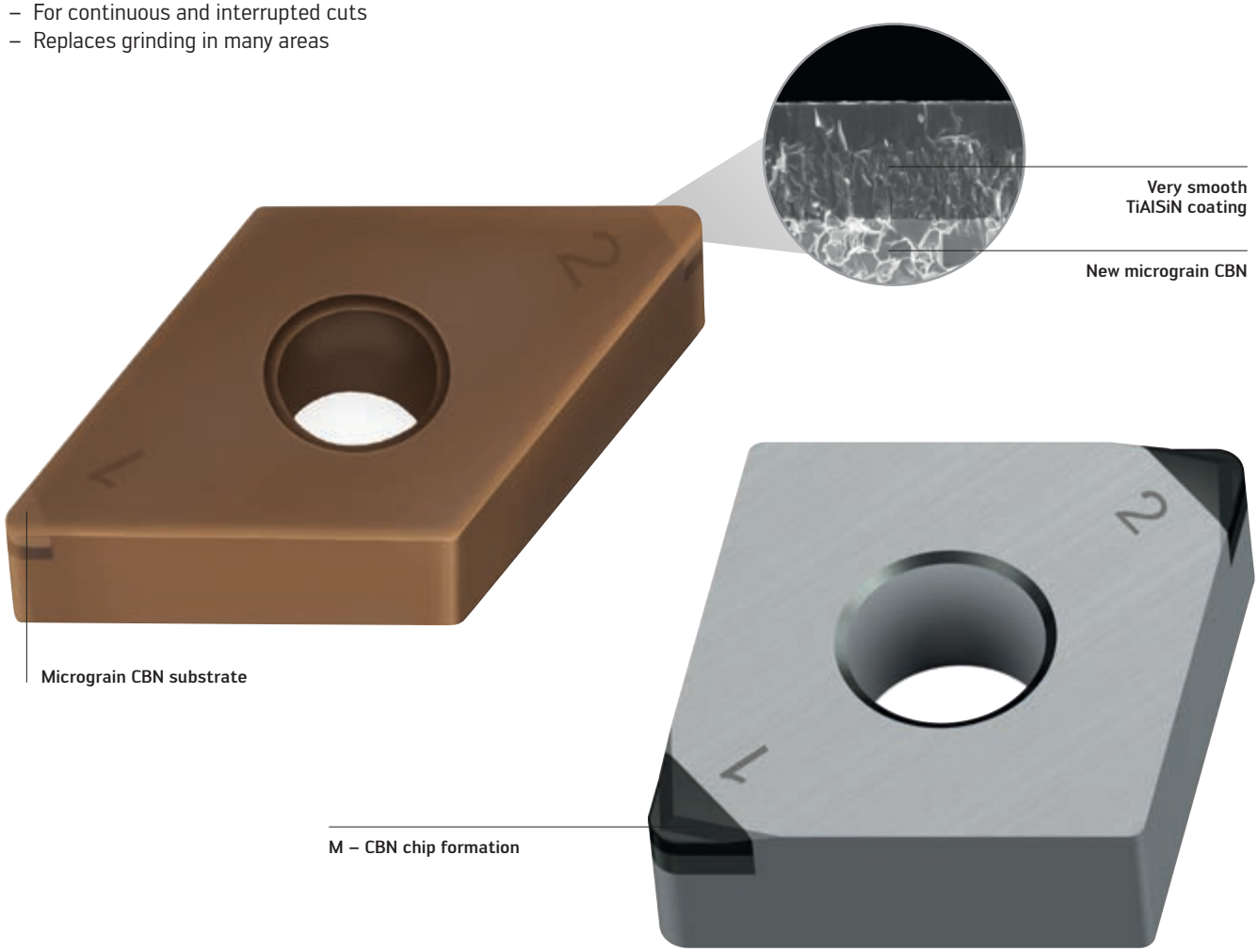
- New CBN grades for hard machining
- Technology update for chip formation and wiper geometry

THE APPLICATION

- Hard materials up to 65 HRC
- ISO H materials
- For continuous and interrupted cuts
- Replaces grinding in many areas

THE COATING TECHNOLOGY

- New TiAlSiN coating technology
- Finest surface structure and layer smoothness
- Defect free coating and superb layer adhesion
- Very high thermal stability and oxidation resistance



ISO H CBN indexable inserts **Fig.:** DNGA150608TM-2 WBH10C, CNGA120408TM-M2 WBH10

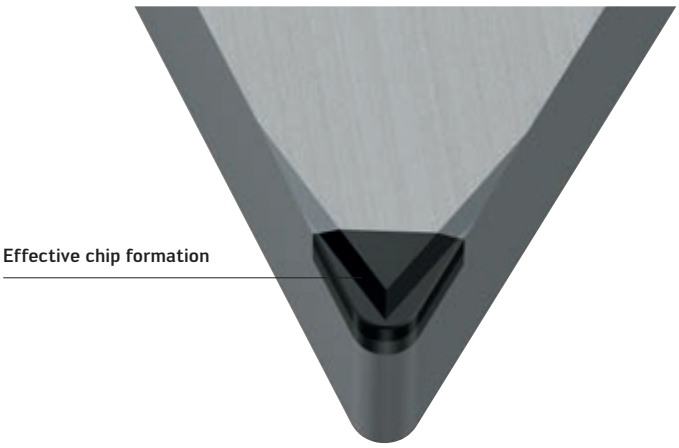
Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- Optimum component surface finish thanks to the latest wiper technology
- High process reliability thanks to the latest production technology
- Long tool life thanks to the TiAlSiN coating technology with extremely fine surface structure

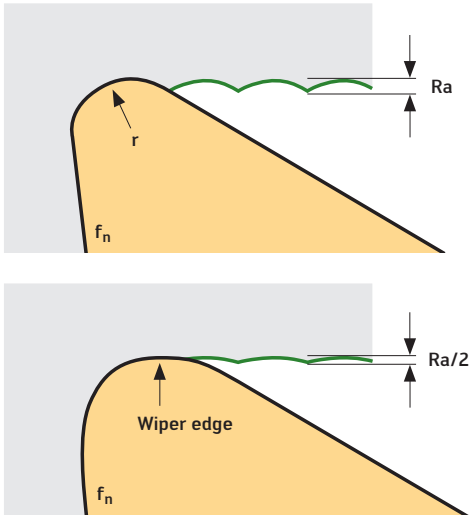
THE CHIP FORMATION

- M CBN chip formation
- Controlled chip removal
- Series production without interruptions



THE WIPER GEOMETRY

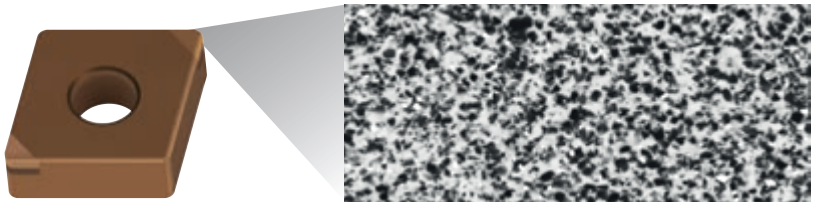
- MW wiper geometry
- Higher feed
- Better surface quality



THE CBN GRADES*

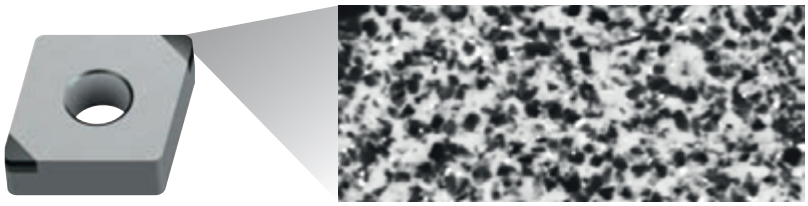
WBH10C (ISO H10)

- CBN substrate (grain size dia. 1.5 µm)
- Coated with new TiAlSiN coating technology
- Wear-resistant at highest v_c



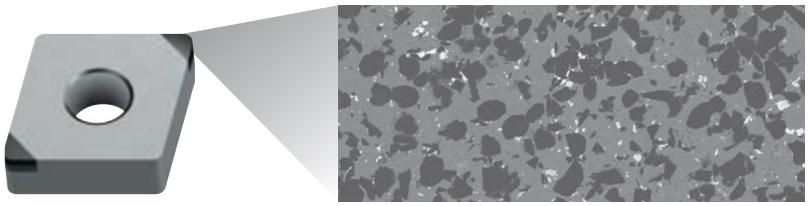
WBH10 (ISO H10)

- CBN substrate (grain size dia. 1.5 µm)
- Wear-resistant at high v_c



WBH20 (ISO H20)

- CBN substrate (grain size dia. 2.0 µm)
- Wear-resistant with interrupted cuts and medium v_c



* Substrate grain sizes: Micrograin – 1.5 µm | Fine grain – 2.0 µm

_CBN GRADE WBS10

Finishing heat-resistant high-temperature alloys at 250 m/min.

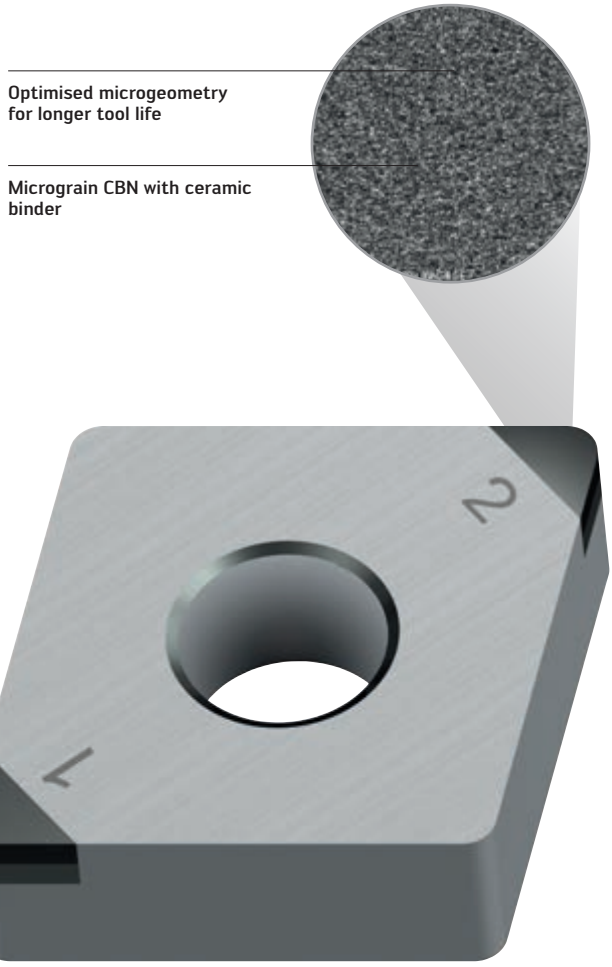
NEW

THE INDEXABLE INSERT

- New CBN grades for ISO S materials
- Optimised microgeometry for longer tool life

THE APPLICATION

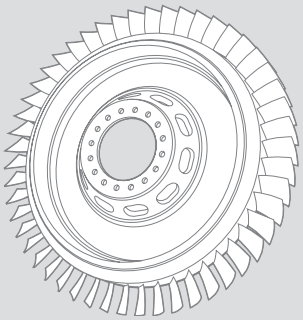
- Continuous and interrupted-cut finishing operations
- Areas of use: Aerospace industry, general mechanical engineering



CBN indexable insert – ISO S **Fig.:** CNGA120408-EM2 WBS10

APPLICATION EXAMPLE

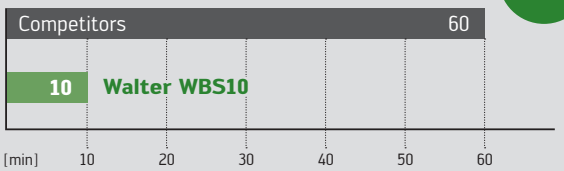
Facing – blisk



Material:	Inconel 718-42HRc (2.4668)	
Tool:	SVHCL2525M16	
Indexable insert:	VCGW160408EM-2	
Grade:	WBS10	
	Competitors Carbide ISO S	**Walter CBN WBS10**
v_c (m/min)	50	250
f (mm)	0.10	0.10
a_p (mm)	0.25	0.25
Unwound turning length/ hour (m)	3,000	15,000
Comment	Structural changes	No structural changes

Comparison: Machining time for 3,000 m turning length per cutting edge

- 500 %



Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- High machining speeds with CBN compared to carbide
- No structural changes in the cutting zone
- Higher output thanks to shorter machining times

The new CBN generation for cast iron and sintered metals.

NEW

THE INDEXABLE INSERT

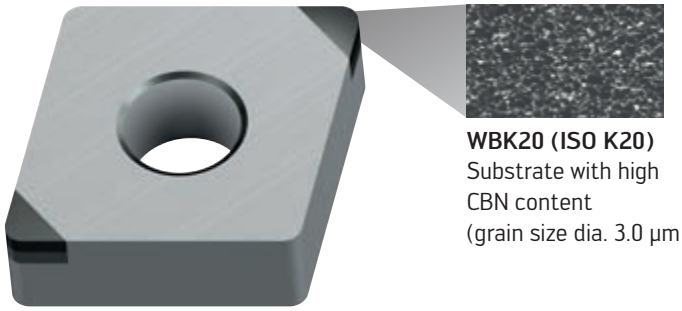
- New CBN grades for ISO K and H materials
- Optimised microgeometry design for the relevant application

THE APPLICATION

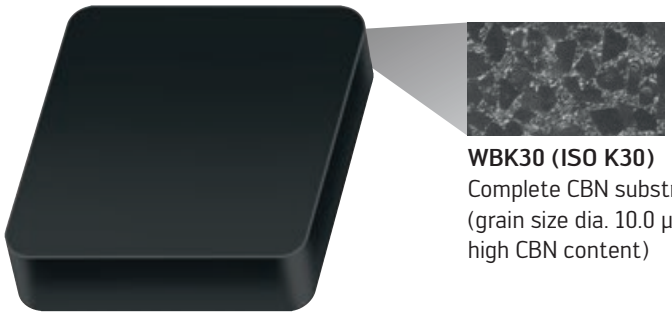
WBK20
- ISO K materials: Finishing

WBK30
- ISO K materials: Roughing
- ISO H materials: Machining with large depths of cut

WBK20 + WBK30
- Sintered materials: Roughing and finishing
- ISO H materials: Finishing with heavily interrupted cuts
- Areas of use: Automotive industry, general mechanical engineering, among others



WBK20 (ISO K20)
Substrate with high CBN content
(grain size dia. 3.0 µm)



WBK30 (ISO K30)
Complete CBN substrate
(grain size dia. 10.0 µm, high CBN content)

CBN indexable inserts **Fig.:** CNGA120408TS-2 WBK20/CNGN120412TM-S WBK30

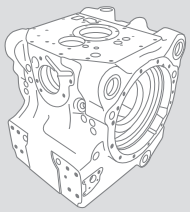
BENEFITS FOR YOU

- Maximum tool life in ISO K and ISO H thanks to new CBN grades
- Highly productive and reliable due to high-precision manufacturing
- Wear-resistant in cast iron and sintered steel (WBK20) and at high a_p in hardened steel (WBK30)

APPLICATION EXAMPLE

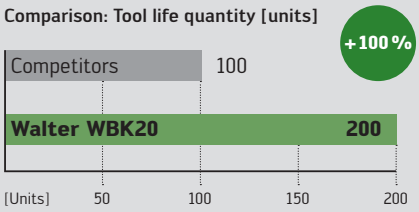
WBK20 – spindle boring the casing

Material:
GG25 - EN-GJL-250
Tool:
B3230.C8.135-178.Z1.CC06
Indexable insert:
CCGW060204TS-2
Grade: WBK20



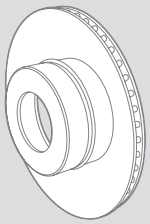
Cutting data:	Competitors	**Walter WBK20**
v_c (m/min)	190	250
f (mm)	0.07	0.07
a_p (mm)	0.5	0.5

Comparison: Tool life quantity [units]



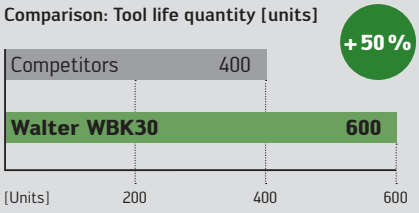
WBK30 – brake disc

Material:
GG25 - EN-GJL-250
Tool:
DCLNL2525M12
Indexable insert:
CNGN120412TS-2
Grade: WBK30



Cutting data:	Competitors	**Walter WBK30**
v_c (m/min)	1000	1200
f (mm)	0.5	0.5
a_p (mm)	2.5	2.5

Comparison: Tool life quantity [units]



Double the tool life thanks to unparalleled wear resistance.

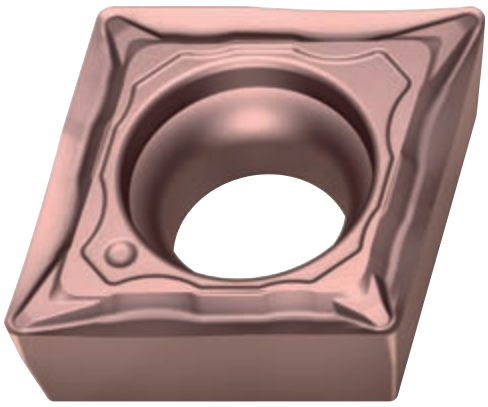
NEW

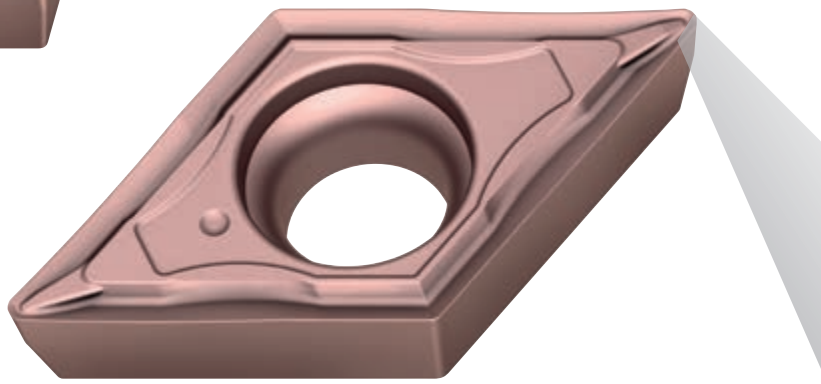
THE TECHNOLOGY

The extremely fine-grain titanium carbon-based cermet substrate, combined with the highly wear-resistant multilayer coating, provides clear advantages during finishing operations compared to coated tungsten carbide indexable inserts.

THE INDEXABLE INSERTS

- Indexable insert with wear-resistant TiCN/CN-based cermet substrate with Ni/Co binder
- Extremely hard TiCN outer layer
- Extra fine cermet substrate grain
- Finishing chip former for versatile use with FP4 soft-cutting geometry
- CCMT, DCMT, TCMT, VCMT indexable insert shapes





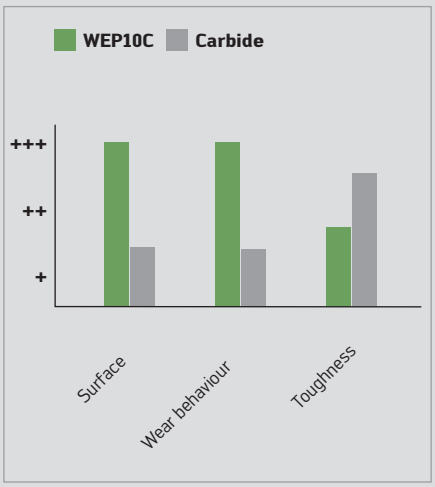
Watch the product video:
www.youtube.com/waltertools

Grade: WEP10C

Fig.: FP4 finishing geometry

COMPARISON

Finishing – WEP10C and carbide



BENEFITS FOR YOU

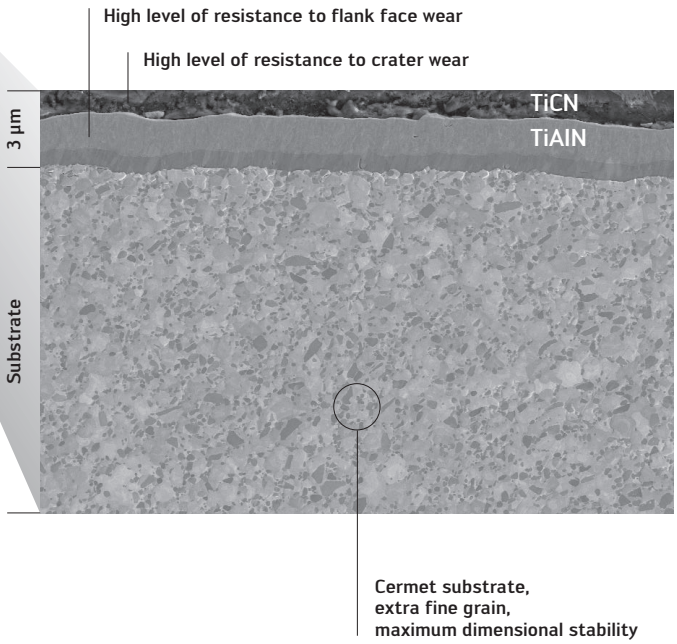
- No readjustment necessary, maximum dimensional accuracy
- Longer tool life and higher productivity in comparison to carbide
- Extremely wear-resistant cermet substrate with multilayer coating
- Reflective surfaces at high and low cutting speeds

THE APPLICATION

- Finishing with continuous and slightly interrupted cut
- Ideal for steels, stainless steels and cast iron workpieces
- Application areas: General mechanical engineering, energy and automotive industries

ISO material groups

Grades	P		M	K	N	S	H	O
	Steel < 1000 N/mm²	Steel > 1000 N/mm²	Stainless steel	Cast iron	NF metals	Difficult-to-machine materials	Hard materials	Other
WEP10C	●●	●	●	●				
WSM01	●	●●	●●		●	●●	●	



APPLICATION EXAMPLE

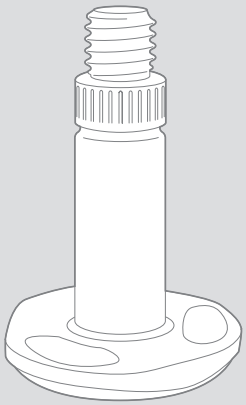
Finishing – Threaded bolt

Material: 15CrMo5 (1.7362; SCM415)

Tool: SVJCR1616H16

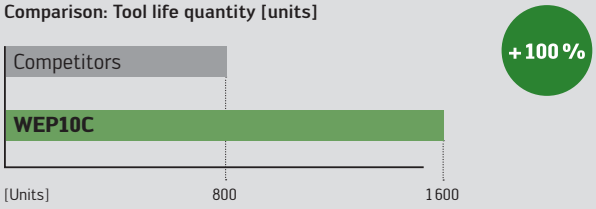
Indexable insert: VCMT160404-FP4

Grade: WEP10C

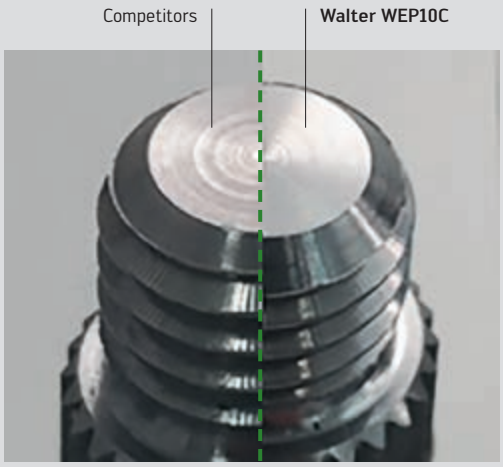


	Competitors	**Walter**
v_c	270 m/min	270 m/min
f	0.08 mm	0.08 mm
a_p	0.3 mm	0.3 mm

Comparison: Tool life quantity [units]



Consistently good surface quality right up to the end of tool life



Fast and productive on cast iron.

NEW

THE INDEXABLE INSERT

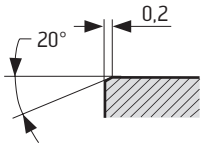
- A variety of versions:
  - With hole (e.g. CNGA), flat top insert
  - Without hole (e.g. CNGN)
  - With cavity clamping (e.g. CNGX)
- Different basic shapes: C, D, S, T, W
- Different corner radii: 0.8; 1.2 and 1.6 mm

THE APPLICATION

- First choice for grey cast iron materials
- Cutting speeds of up to 1000 m/min
- Suitable for turning and milling
- For roughing and finishing

THE GEOMETRIES

- With negative chamfer on the cutting edge – 0.2 mm × 20°
- Further cutting edge versions as a special option



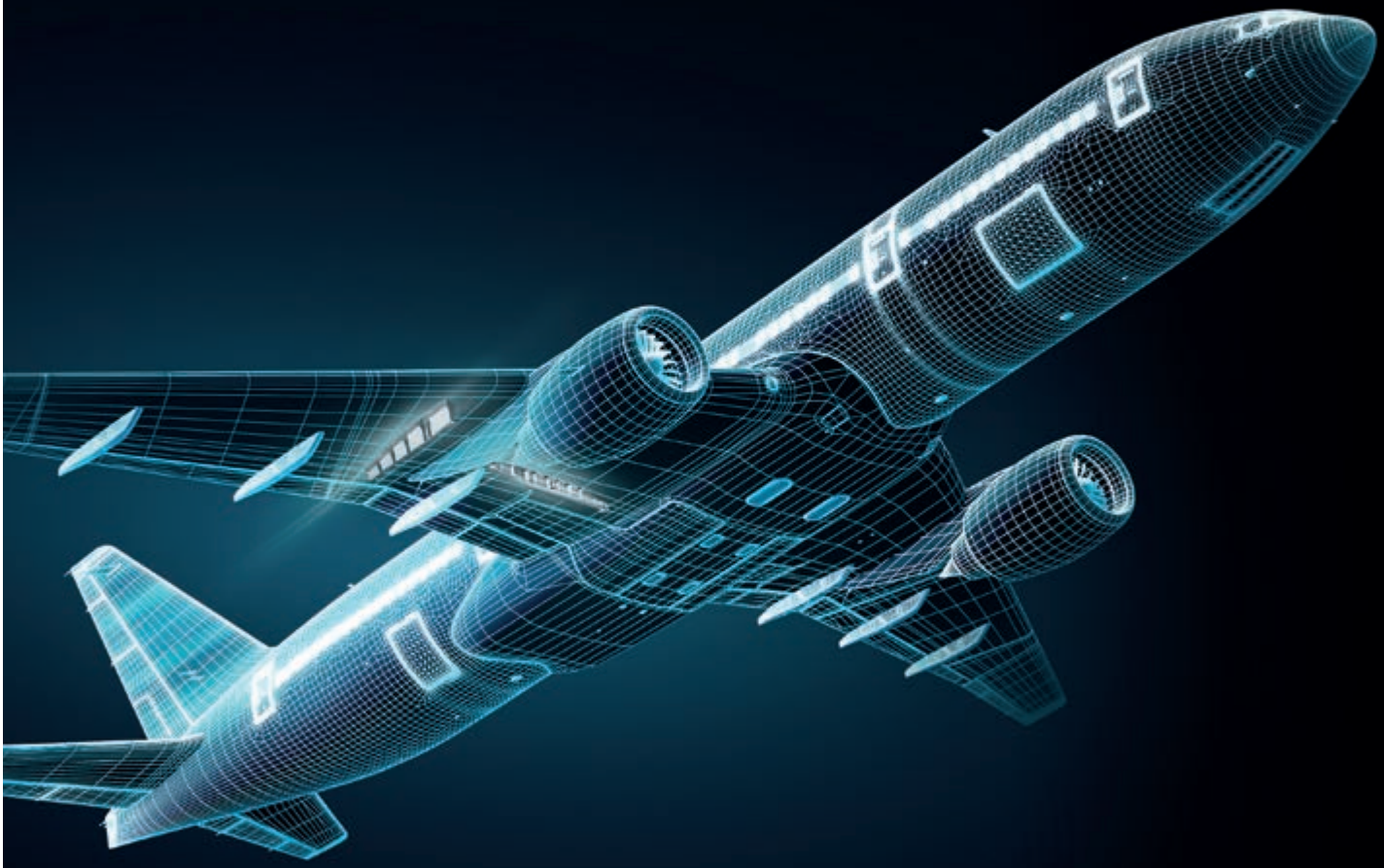
WCK10 indexable inserts in various designs

Fig.: CNGN, WNGA, SNGX

BENEFITS FOR YOU

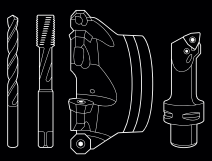
- Optimum productivity due to maximum cutting speeds
- Long tool life due to wear-resistant ceramic cutting material
- Increased process reliability in tough machining conditions (in comparison to carbide indexable inserts)

Can we stop lighter planes being a weighty issue.



The number of passenger aircraft is set to double to more than 40,000 by 2030. Twenty-first-century long-haul aircraft have a take-off weight of up to 500 tonnes. The task of lifting these goliaths into the air economically is about more than keeping the weight of materials and components down – our future needs require stepping up process reliability and quality when machining them too. This is presenting suppliers to the aviation and aerospace industries with a huge challenge. Having a tool partner that keeps costs firmly on the ground is therefore crucial.

Lofty ambitions made easy: with Engineering Kompetenz from Walter.



walter-tools.com

WALTER
Engineering Kompetenz

Patented parting-off system with SmartLock.

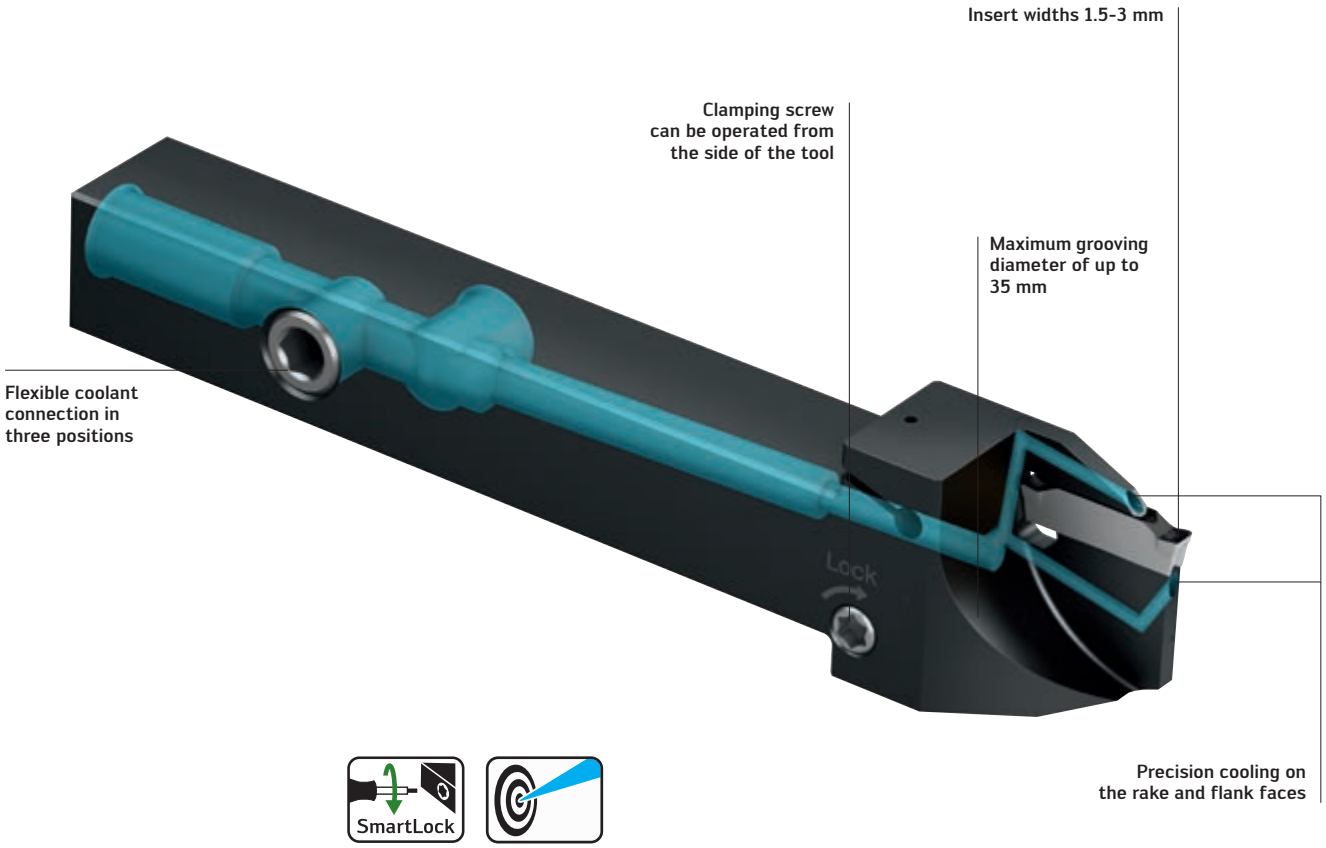
NEW

THE TOOL

- Patented G4014-P/DX18 grooving and parting-off tool with precision cooling
- Screw clamping on the side for easy insert changeover
- New clamping method: 30% higher clamping forces compared to conventional tools on the market
- Patented positive engagement at the insert locating surface
- Shank sizes: 10 × 10, 12 × 12, 16 × 16, 20 × 20 mm

THE INDEXABLE INSERT

- Double-edged DX18 cutting inserts with second prism
- Insert widths: 1.5/2.0/2.5/3.0 mm
- Chip formation geometries: CE4, CF5, CF6 and GD6
- Grades: WSM23S, WSM33S, WSM43S, WKP23S



Powered by Tiger·tec® Silver

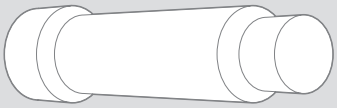
Walter G4014-P/DX18 parting-off system **Fig.:** G4014-1616R-3T17DX18-P

BENEFITS FOR YOU

- Reliable thanks to patented positive engagement design (no incorrect fitting of the cutting insert, particularly for small insert widths)
- Tool change time reduced by 70% thanks to simple insert changeover in the machine
- Increased cutting parameters and tool life thanks to new insert clamping
- Maximum productivity and tool life thanks to new generation Tiger·tec® Silver PVD grade

APPLICATION EXAMPLE

Axis dia. 10 mm – parting off

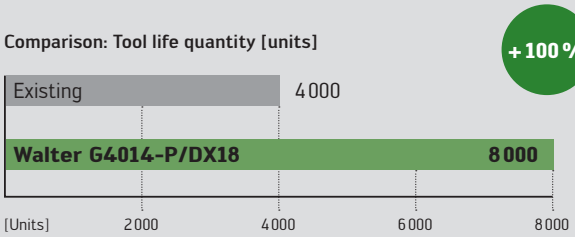


Material:	X8CrNiS18-9 (DIN 1.4305)
Tool:	G4014.1616R-2T17DX18-P
Indexable insert:	DX18-1E200N02-CF5
Grade:	WSM33S

Cutting data:

	Existing G1011.1616R- 2T15GX16-P GX16-1E200N02-CF5 WSM33S	**NEW** **G4014.1616R-** **2T17DX18-P** **DX18-1E200N02-CF5** **WSM33S**
v_c (m/min)	80	80
f (mm)	0.12	0.12
Insert width (mm)	2	2
Cutting depth (mm)	5	5

Comparison: Tool life quantity [units]



THE APPLICATION

- Automatic lathe and multi-spindle machines having up to 150 bar of coolant pressure
- Parting off with low burr and pip formation (by 6°, 7° and 15° angled parting-off inserts)
- Grooving and parting off along the main or counter spindle up to dia. 35 mm for flexible use
- For replaceable components (as tool operation can be modified)

THE TECHNOLOGY

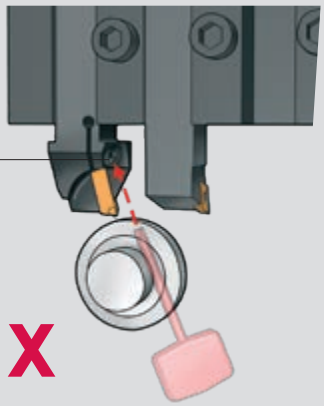
Raised insert design protects the top clamp and produces short chips

The patented positive engagement in the insert seat prevents the inserts from being incorrectly fitted

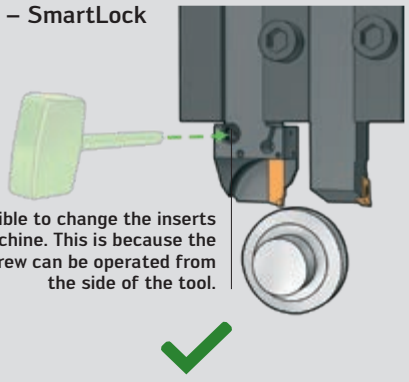
INDEXABLE INSERT CHANGEOVER

Competitors

No insert changeover possible in the machine. The holder has to be removed at this point for you to have access to the clamping screw.



Walter – SmartLock



It is possible to change the inserts in the machine. This is because the clamping screw can be operated from the side of the tool.

Multiply your success – with four cutting edges.

NEW

THE INDEXABLE INSERTS

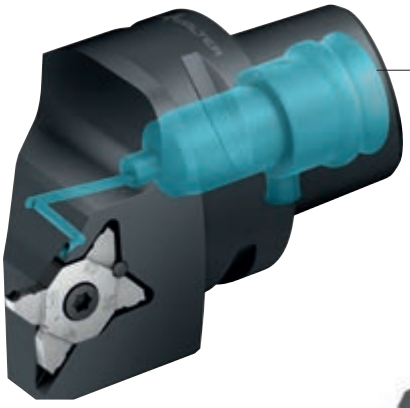
- Four precision-ground cutting edges ± 0.02 mm
- Insert widths from 0.80–5.65 mm
- Cutting depth up to 6 mm
- Four chip formation geometries: GD8, CF5, RF5 and AG
- One insert for left and right tool holders

THE APPLICATION

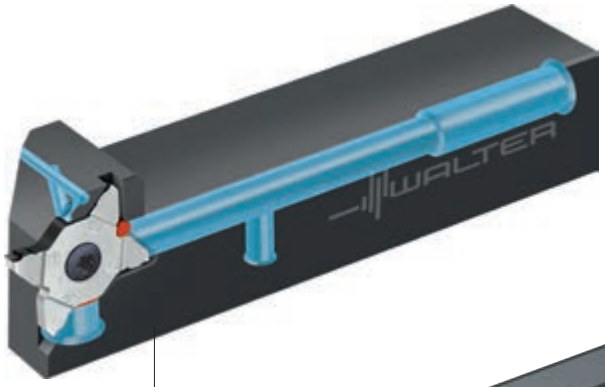
- Grooving, parting off, profiling, recessing and thread turning
- Where a high degree of precision and small diameters matter
- Areas of use: Swiss type auto lathe and multi-spindle machines, automatic lathes, machines with Walter Capto™ interface

THE TOOLS

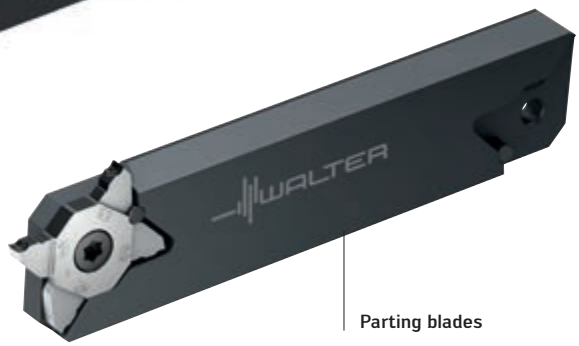
- Grooving and parting off tool with precision cooling
- Stable, self-aligning, tangential insert mount
- Available tools:
  - Shank sizes: 10 × 10, 12 × 12, 16 × 16, 20 × 20, 25 × 25 mm
  - Walter Capto™: C3, C4, C5 and C6
  - Parting blades: 26 mm blade height



Walter Capto C3–C6 for quick tool changes



12–25 mm shank tools



Parting blades

Walter Cut MX system **Fig.:** G3011-C-P, G3011-P, G3041

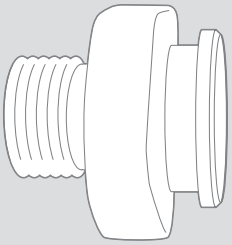
Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- Very user friendly thanks to self-aligning tangential screw clamping
- High level of flexibility: All cutting edge variants can be inserted in the same toolholder
- Maximum tool life thanks to the latest Tiger·tec® Silver PVD cutting tool materials

APPLICATION EXAMPLE

Grooving in stainless steel – connector

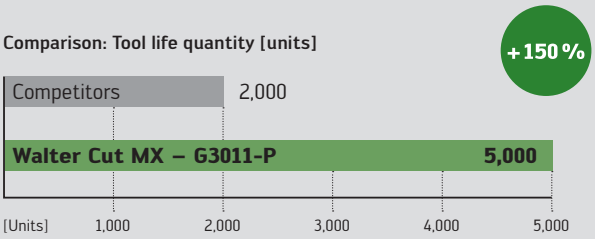


Material:	X2CrNiMo17-12-2 (1.4404)
Tool:	G3011-C3R-MX22-2-P
Indexable insert:	MX22-2E200N02-CF5
Grade:	WSM23S

Cutting data:

	Competitors Five-edged grooving insert	**Walter Four-edged grooving insert**
v_c (m/min)	144	144
f (mm)	0.05	0.05
Cutting depth (mm)	1.5	1.5
Tool life (units)	2,000	5,000

Comparison: Tool life quantity [units]



THE GEOMETRIES

Grooving and parting off

GD8:

- Grooving operations
- Straight cutting edge for flat groove base

CF5:

- Grooving and parting off operations
- Excellent chip control

Profiling and thread turning

RF5:

- Full-radius grooving operations
- Contour turning with small machining allowances

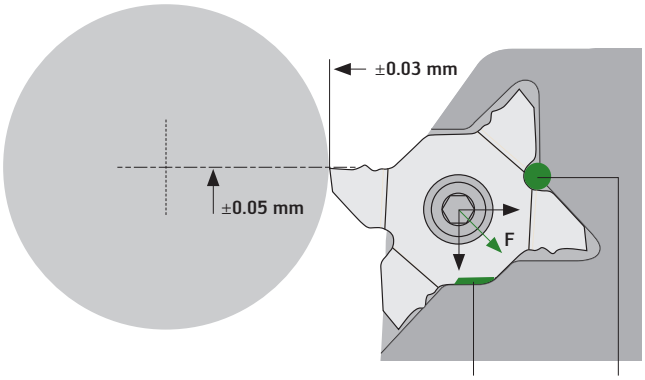
A60/ AG60..:

- Thread turning operations where space is limited
- Thread turning with the same basic holder

Other special profiles available from: Walter Xpress

THE TECHNOLOGY

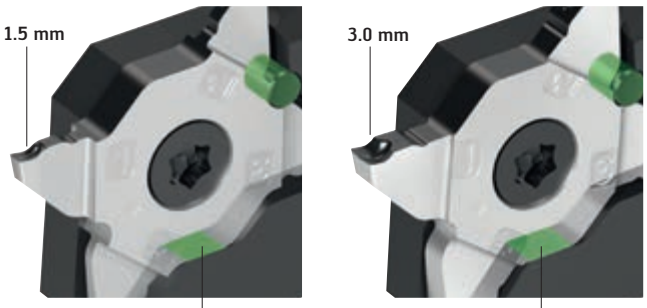
Maximum change accuracy and user-friendliness



Tightening the screw pulls the insert against the contact surfaces and dowel pin

Maximum stability and precision

Stable, wide contact surface in the toolholder, regardless of cutting width



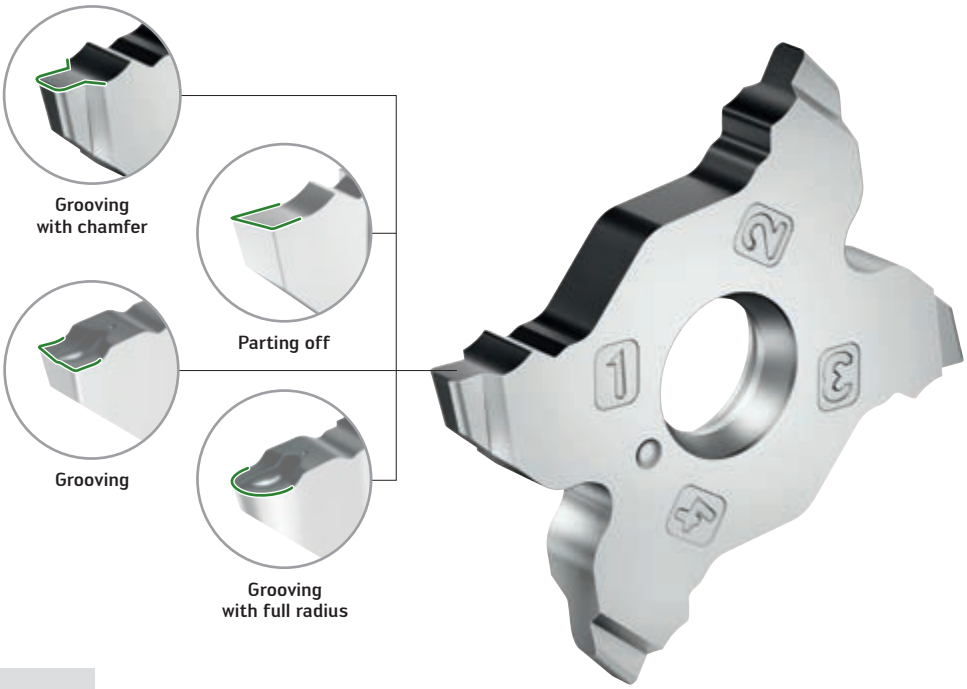
_FOR WALTER CUT MX

Walter Xpress – special profiles delivered within four weeks.

NEW

THE INDEXABLE INSERT

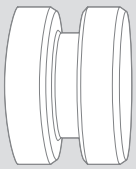
- Insert widths from 0.5–5.5 mm
- Cutting depths up to 6 mm
- Radii from 0.05–5.4 mm
- Parting off approach angles from 3–20°
- Chamfer angles from 30–60°



Walter Xpress

APPLICATION EXAMPLE

Grooving with chamfer – shaft



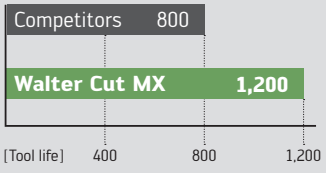
Material: 42CrMo4 (1.7225)

Tool: G3011-C4R-MX22-2-P

Cutting insert: Xpress 2.2 mm with 0.2 × 45° chamfer

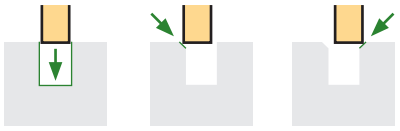
	Competitors Three-edged grooving insert	**Walter Four-edged grooving insert**
v_c (m/min)	140	140
f (mm)	0.12	0.12
T (mm)	1.1	1.1
Tool life (grooves)	800	1,200
Increase in productivity		+40%

Comparison: Grooves



THE APPLICATION

Existing:



Grooving | Chamfer left | Chamfer right

Chamfering and grooving with corner radii
Disadvantages: Longer runtime and higher peripheral cutting edge wear

New with Xpress special insert:

Grooving and chamfering in a single step

Chamfering and grooving with Xpress special insert: Shorter runtime, lower peripheral cutting edge wear (distributed across the entire cutting edge) and higher tool life quantity

BENEFITS FOR YOU

- Same-day grooving insert calculation including creation of drawing
- Grooving inserts in a four-week delivery time
- Special widths and radii with CF5/GD8 chip formation geometry
- Reduction of cost per part by reducing travel distances and multiple grooving

Grooving shoulders in a systematic way.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- G3051-P with MX22-L/R….-GD8 indexable inserts for shoulder machining
- New shank sizes: 12 × 12, 16 × 16, 20 × 20, 25 × 25 mm

THE INDEXABLE INSERTS

- Four precision-ground cutting edges ±0.02 mm
- 3° installation position in the groove turning holder
- MX22-2L/R; insert widths from 1.50–3.00 mm; GD8 geometry
- MX22-2L/R; insert width 2.80 mm; VG8 geometry

THE APPLICATION

- Grooving and parting off – shoulders and large diameters without interference contour; small dia. with high accuracy
- Can be used on CNC lathe and multi-spindle machines, automatic lathes

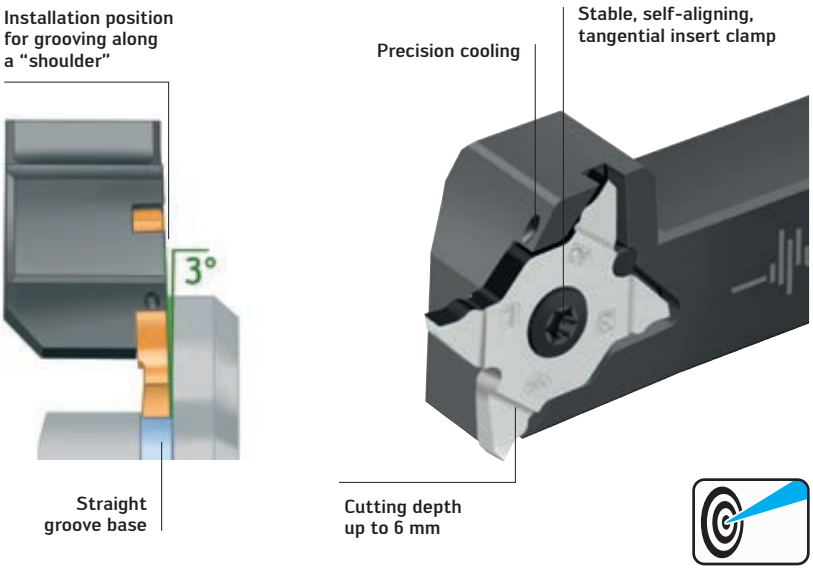
THE GEOMETRIES

GD8:

- For precision grooving
- Extremely soft cutting action
- Light to moderate feeds

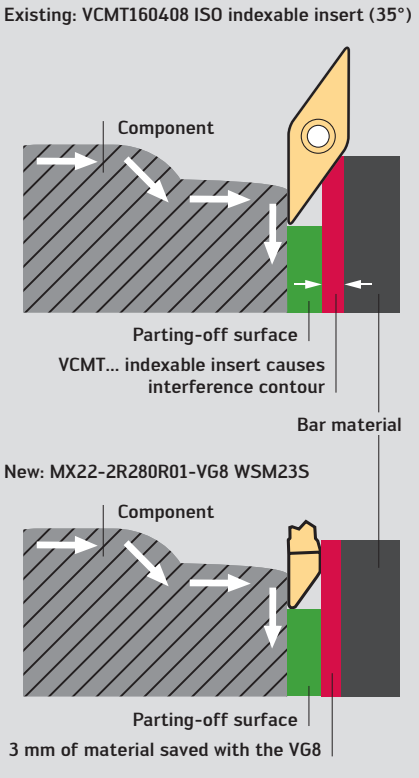
VG8:

- For finishing operations on the rear face of a component
- Enormous savings on material compared to standard ISO indexable inserts



Walter Cut MX 3° – for shoulder machining **Fig.:** G3051-2525R-MX22-2-P

Material saved due to smaller space requirements



BENEFITS FOR YOU

- Tangential arrangement for outstanding flatness and surface quality
- User-friendly thanks to self-aligning screw clamping
- Enormous savings on material in mass production thanks to VG8 geometry
- Maximum tool life thanks to the latest Tiger·tec® Silver PVD cutting tool materials

Part off a diameter of up to 65 mm with two cutting edges.

NEW

THE TOOL

Walter Cut G1041..R/L-P parting blades with reinforced shank
- Precision cooling on the rake face and flank face
- Blade height 26–32 mm
- In right-hand, left-hand and contra versions

Walter Cut G1011...R/L-P monoblock tools
- Precision cooling on the rake face and flank face
- Shank sizes 20–25 mm
- Optimal application of force from below due to clamping screw
- G1/8" internal coolant connection

THE APPLICATION
- Deep grooving and parting off up to a diameter of 65 mm
- Parting off operations where space is limited
- Large tool overhangs

THE INDEXABLE INSERT
- 34 mm long grooving inserts, width 3–4 mm
- Three chip formations to choose from: Low to high feed

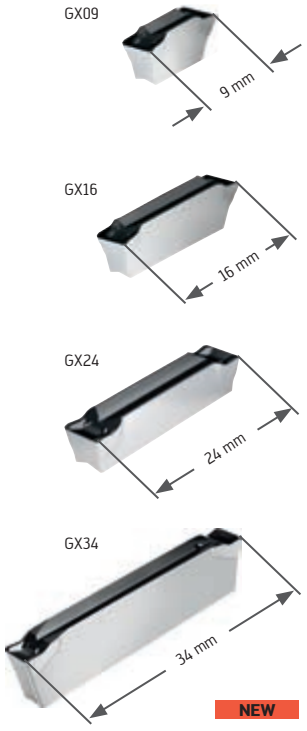
THE GEOMETRIES

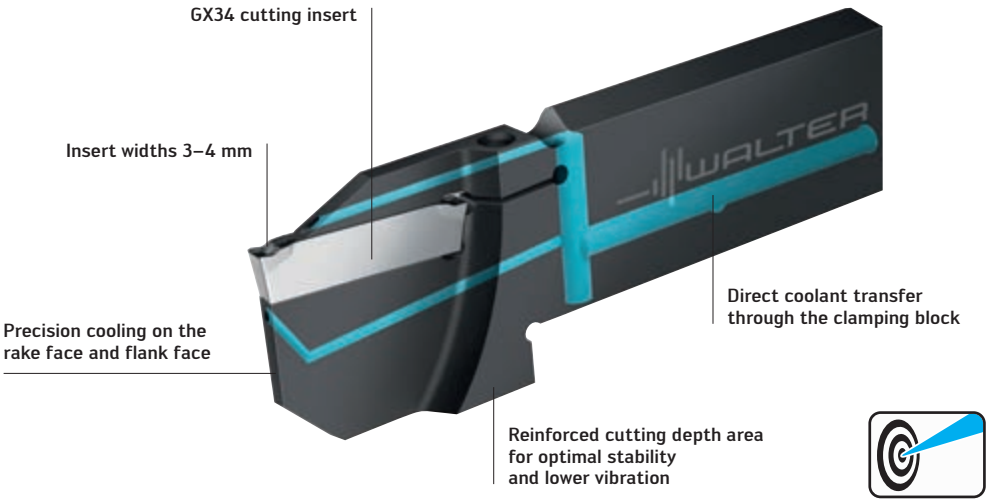
CF5:
- Light to moderate feeds
- Good chip control
- 6° angle, low burr and pip formation

GD6:
- Medium feeds
- Long-chipping materials
- Average machining conditions

CE4:
- Moderate to high feeds
- Good chip constriction
- Stable cutting edge

GX size comparison:





Shank tool with precision cooling – GX34 cutting insert

BENEFITS FOR YOU
- Maximum productivity and cutting values due to optimal cooling, stability and controlled chip breaking
- Efficient parting off with two cutting edges (up to a diameter of 65 mm)
- Best surface qualities and plane parallelism thanks to a long insert guide
- Shorter set-up times and greater process reliability due to omission of cooling nozzle alignment task

_WALTER CUT G1041-P REINFORCED PARTING BLADE

Double the cooling in the groove.

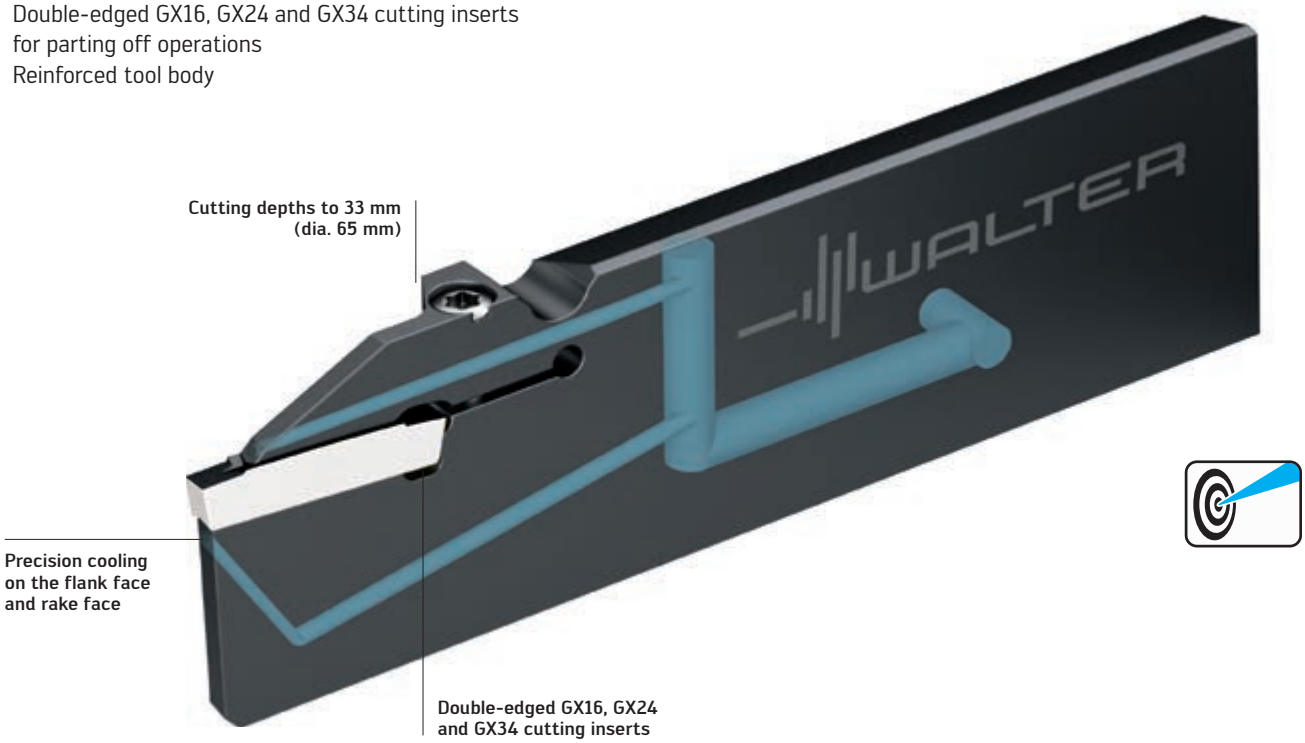
NEW

THE TOOL

- G1041..R/L-P parting blades with reinforced shank and precision cooling on rake face and flank face
- Blade heights 26–32 mm
- Insert widths 2–4 mm
- Grooving to a cutting depth of 33 mm and parting off up to a diameter of 65 mm
- Available in right-hand, left-hand, and contra versions
- Double-edged GX16, GX24 and GX34 cutting inserts for parting off operations
- Reinforced tool body

THE APPLICATION

- Parting off operations where space is limited
- Parting off using long tool projections
- First choice when using parting blades
- Can be used from 10 bar up to a maximum coolant pressure of 80 bar



Reinforced blade with precision cooling **Fig.:** G1041 . . R/L-P

BENEFITS FOR YOU

- Long tool life and high productivity
- Optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar
- Perfect chip control through precision cooling
- Reduced vibration tendency thanks to reinforced shank
- Little deflection due to reinforced tool body
- High cost efficiency thanks to two cutting edges

Right-hand version

Standard
E.g.: G1041 . 32R-3T32GX24-P

Contra
E.g.: G1041 . 32R-3T32GX24C-P

_WALTER CUT G1221-P BORING BAR

Internal grooving and recessing with cool precision.

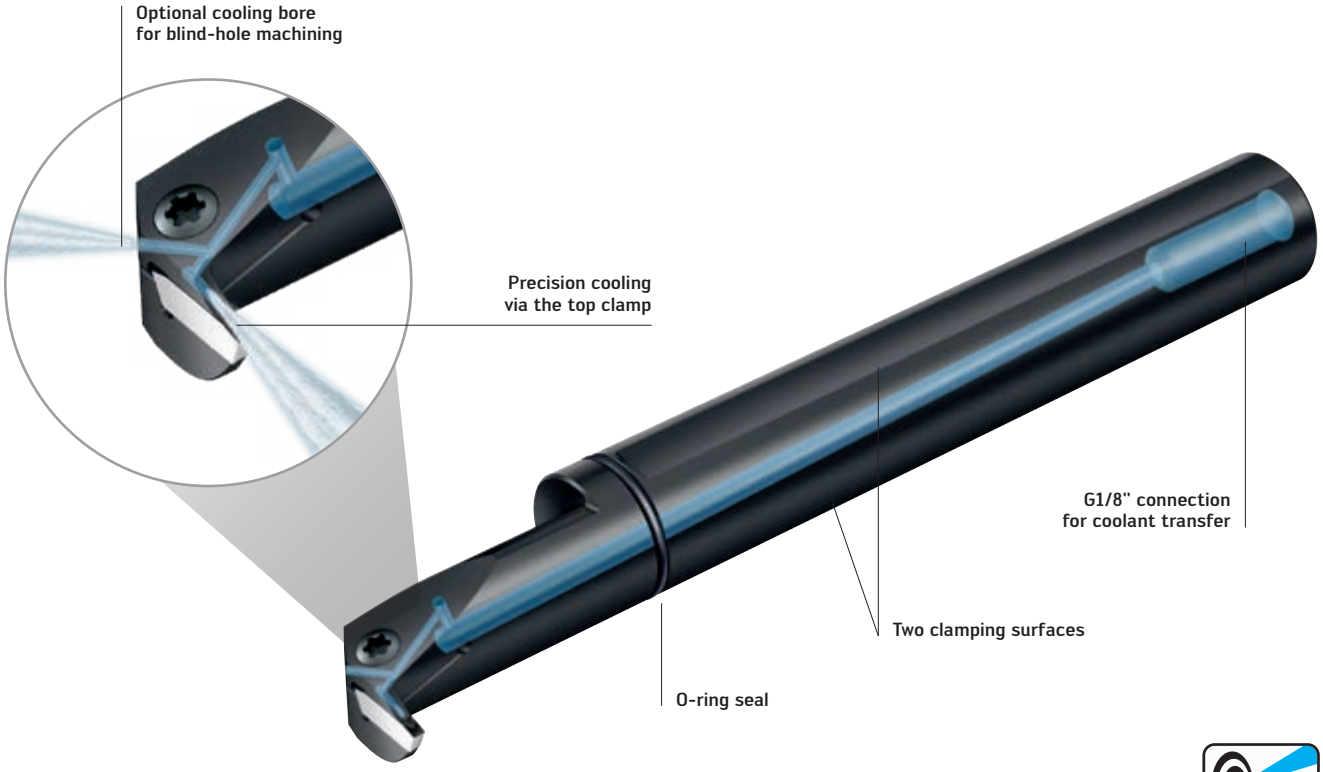
NEW

THE APPLICATION

- First choice for internal grooving and recessing
- Internal grooves with a diameter starting from D_{min} = 16 mm
- Grooving to a depth of T_{max} = 12 mm
- Insert widths of 2, 3, 4, 5 and 6 mm
- Can be used up to a coolant pressure of 80 bar
- Shank dia. 16–40 mm

THE TOOL

- Precision cooling via the top clamp
- Sealable axial coolant bore for blind-hole machining
- Connection using K601 coolant set (G1/8" thread on shank) or installation, e.g. using a Weldon basic adaptor
- Flexible O-ring seal for leak-free coolant transfer
- Two clamping surfaces



Grooving bar with precision cooling

Fig.: G1221-P

BENEFITS FOR YOU

- Interface between basic adaptor and tool free from pressure loss thanks to O-ring seal
- Unique chip flushing effect due to the axial cooling bore for blind-hole machining
- Excellent surface quality, process reliability and chip evacuation
- Maximum clamping force thanks to sophisticated clamping system

Watch the product video:
www.youtube.com/waltertools

_WALTER CUT G2016-P/UX GROOVING SYSTEM

Robust and reliable heavy-duty cutting.

NEW

THE INDEXABLE INSERT

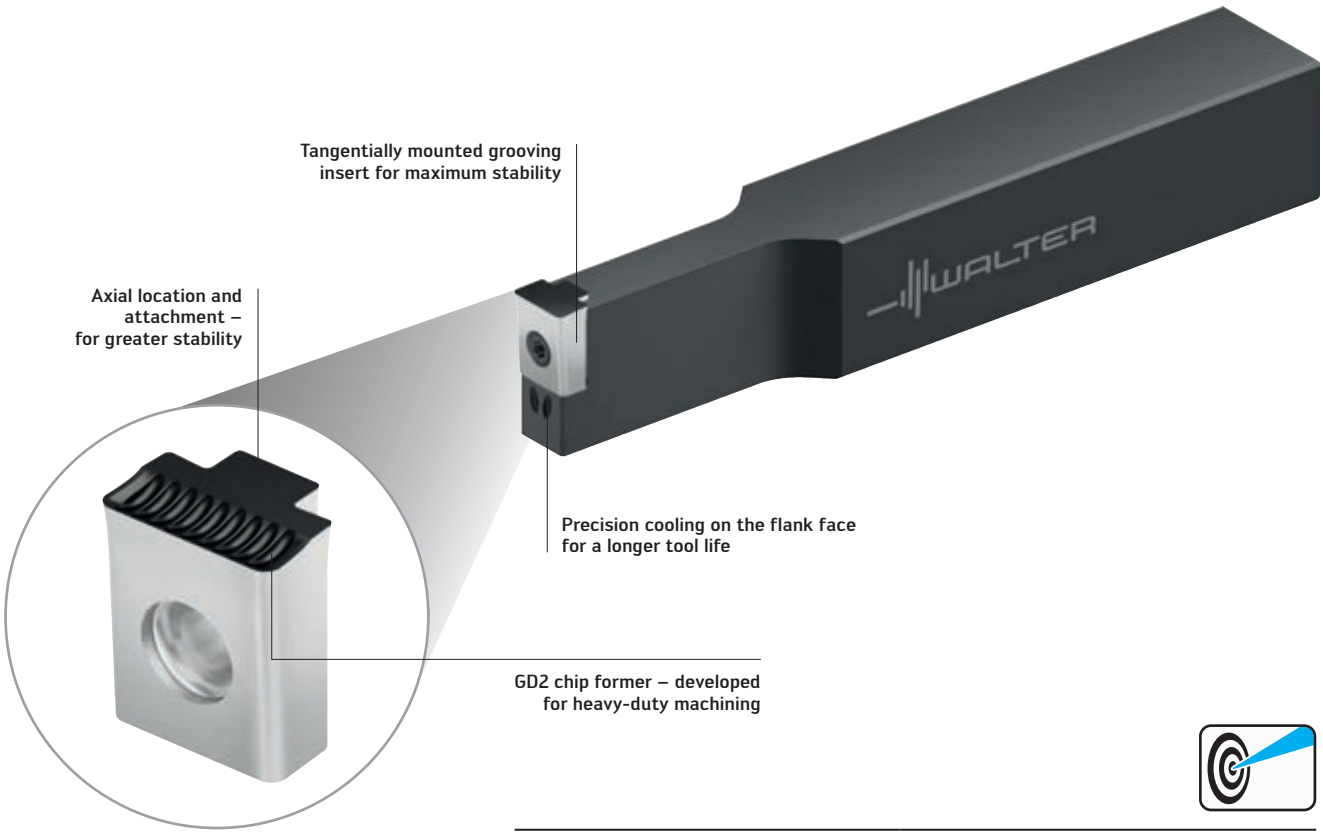
- Tangentially mounted cutting inserts for grooving and widening, with precision cooling
- Stable, tangential clamping
- Insert widths: 12 and 19 mm
- Shank sizes: 25 × 25 and 32 × 32 mm

THE GEOMETRY

- Universal GD2 chip formation geometry
- Very short chips when cutting to the maximum depth and when widening
- Feed rate f: 0.2–0.6 mm

THE APPLICATION

- Ideal for machining generator and turbine shafts
- Grooves into solid material to the required groove depth
- Widen grooves with small lateral depths of cut
- Areas of use: Energy industry, wind power, roller manufacturers, shipbuilding, general mechanical engineering



Walter Cut UX system for grooving **Fig.:** G2016-2525N-12T40UX-P

BENEFITS FOR YOU

- Reliable and with excellent chip control
- Cutting forces are optimally absorbed thanks to the tangential arrangement
- Widen grooves without “tipping” the cutting insert in the insert seat

_WALTER CUT UF8 GEOMETRY, PRECISION-GROUND

All in one: Grooving, parting off and recessing.

NEW

NEW ADDITION TO THE PRODUCT RANGE

- Geometry can be used universally for all grooving operations
- Circumference fully ground for maximum precision and change accuracy
- Cutting insert sizes: GX09, GX16, GX24 and GX30
- Cutting insert widths of 1.6–8.0 mm
- Tiger·tec® Silver WSM23S PVD cutting tool material

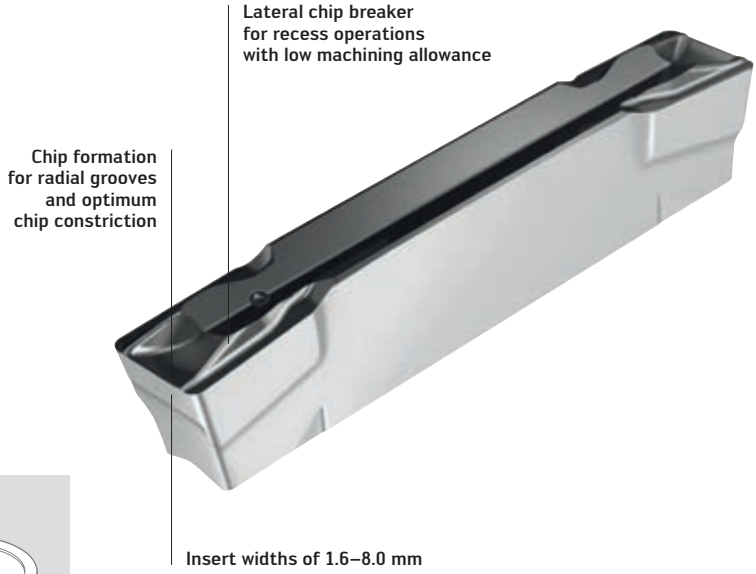
THE APPLICATION

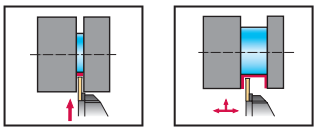
- All grooving, parting off and recessing operations
- For DIN 471 circlip grooves with the tolerance class H13
- Ideal for machining ISO M and ISO S materials thanks to sharp, precision-ground cutting edge

THE GEOMETRY

UF8

- Good chip control in all grooving operations
- Low to average feed range
- Minimal force cutting behaviour thanks to ground cutting edge





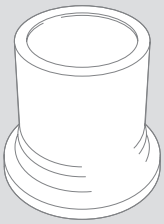
Powered by Tiger·tec® Silver

Grade: WSM23S

Fig.: UF8 geometry

APPLICATION EXAMPLE

Parting off – Bearing bush

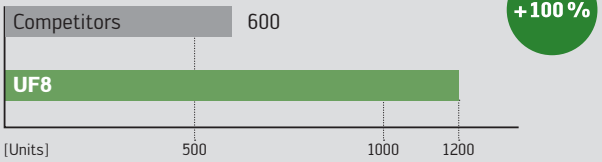


Material:	44SMn28 (1.0762)
Tool:	G1011.2020R-3T21GX24
Indexable insert:	GX24-2E300N02-UF8
Grade:	WSM23S

Cutting data:

	Competitors Single-edged grooving insert	**Walter** Double-edged grooving insert
v_c	200 m/min	200 m/min
f	0.25 mm	0.25 mm
Cutting depth	17.5 mm	17.5 mm
Tool life quantity	600 units	1200 units
Note:	Chip control	Outstanding chip control

Comparison: Tool life quantity [units]



BENEFITS FOR YOU

- Optimum chip breaking for all grooving applications
- Short chips when radial and axial machining
- No production downtime caused by long chips
- Maximum tool life thanks to the latest Tiger·tec® Silver PVD cutting tool material

Enormous potential savings when machining rear faces.

NEW

NEW ADDITION TO THE PRODUCT RANGE

– VG7 geometry for Walter Cut GX grooving tools

THE INDEXABLE INSERT

– Two precision-sintered GX24 cutting edges
– For use in standard tools
– Indexable insert width of 2.8 mm (designed for 3 mm parting off)
– Corner radii of 0.2 and 0.4 mm

THE APPLICATION

– For finishing operations on the rear face of a component
– Machining parameters: f: 0.05–0.25 mm; a_p: 0.2–2.0 mm
– Machining operations on automatic bar machines and multi-spindle machines

Primary application:
– ISO P – steel

Secondary application:
– ISO M – stainless steels
– ISO N – non-ferrous metals

THE GRADE

– PVD-Al_2O_3 grades: WSM23S, WSM33S

Walter Cut GX grooving tools **Fig.:** GX24

BENEFITS FOR YOU

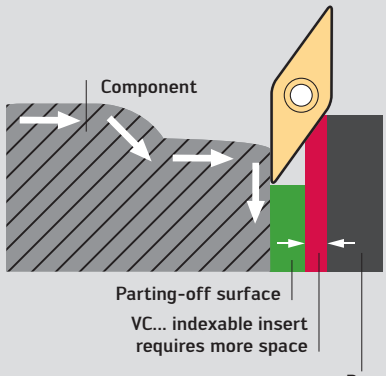
– Enormous savings on material in mass production compared to standard ISO indexable inserts
– High level of efficiency for series production on automatic bar machines and multi-spindle machines
– Optimum chip breaking during finishing operations thanks to VG7 geometry
– Can be used on standard tools

MACHINING EXAMPLE

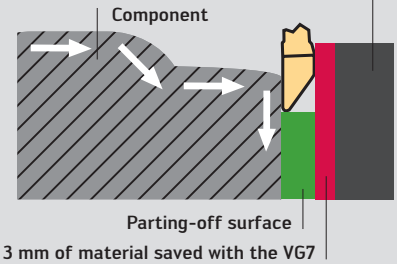
Machining the rear side of bar stock

Components:	4,000,000 units
Saving per component by using GX...VG7:	3 mm
Saving – Material:	125 tonnes of steel

Previously: VCMT160408 ISO indexable insert (35°)



New: GX24-2E280R02-VG7 WSM33S



WBS10 and WBH20 – the new CBN generation.

NEW

THE GRADES

WBS10
- New WBS10 grooving inserts for ISO S materials
- Optimised microgeometry for longer tool life

WBH20
- New CBN grade WBH20 for hard material machining
- Stable edge preparation with negative chamfer

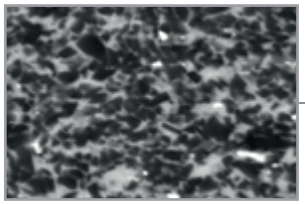
THE APPLICATION

- Grooving on smooth cuts and interrupted cuts

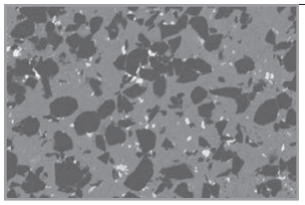
WBS10
- ISO S materials
- Areas of use: Aerospace (e.g. Inconel on engine components), oil, gas and energy industries, general mechanical engineering

WBH20
- ISO H materials (e.g. 16MnCr5, 42CrMo, etc.) up to 65 HRC
- Areas of use: Automotive industry, general mechanical engineering

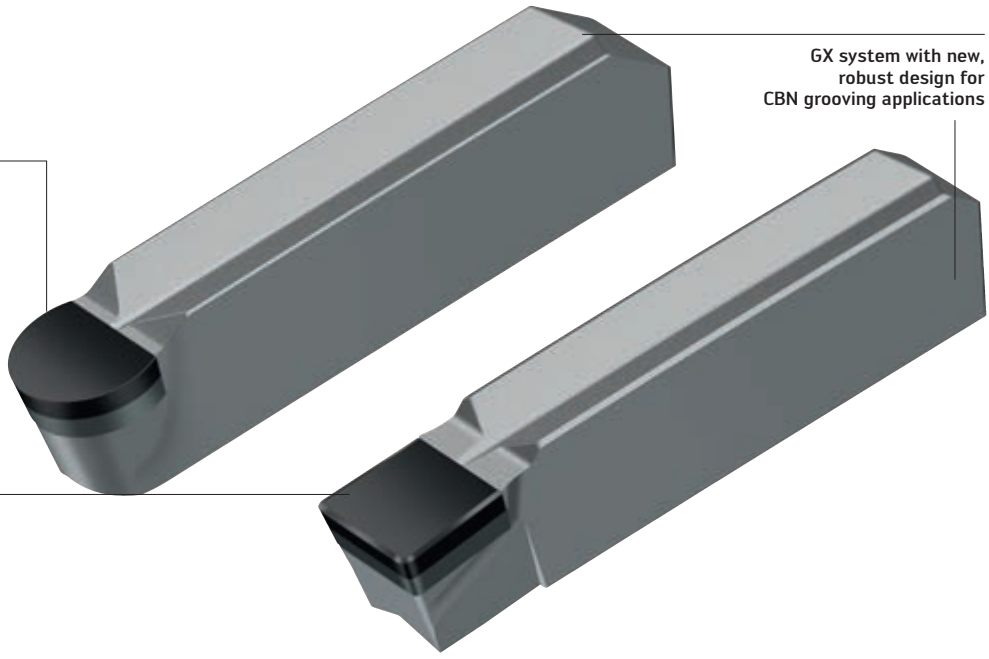
THE CBN GRADES



WBS10 (ISO S10)
- CBN substrate (grain size dia. < 1.0 µm)
- Wear-resistant at highest v_c



WBH20 (ISO H20)
- CBN substrate (grain size dia. 2.0 µm)
- Wear-resistant at medium v_c



GX system with new, robust design for CBN grooving applications

Full-radius and straight cutting inserts

Fig.: GX24-3F400N20EM-1 WBS10/GX24-3F400N02TM-1 WBH20

BENEFITS FOR YOU

WBS10
- Higher machining speeds with CBN (compared to carbide)
- Capacities increased for the same machinery
- Highly cost-effective thanks to low unit costs

WBH20
- Reliable process thanks to stable design of inserts and geometry
- Maximum tool life thanks to new CBN grade
- High productivity due to higher operating parameters

Efficient grooving in aluminium and titanium alloys.

NEW

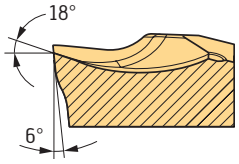
THE INDEXABLE INSERT

- Straight and full-radius grooving inserts
- Efficient, laser-generated chip formation for reliable grooving
- Insert widths from 2–8 mm

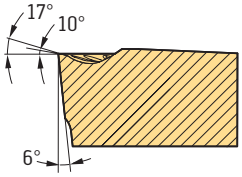
THE APPLICATION

- Parting off, grooving and recessing
- Areas of use: Aerospace industry, medical engineering, automotive industry
- Threaded aluminium joints, parting off, rim-base machining on aluminium wheels
- Parting off titanium bone screws

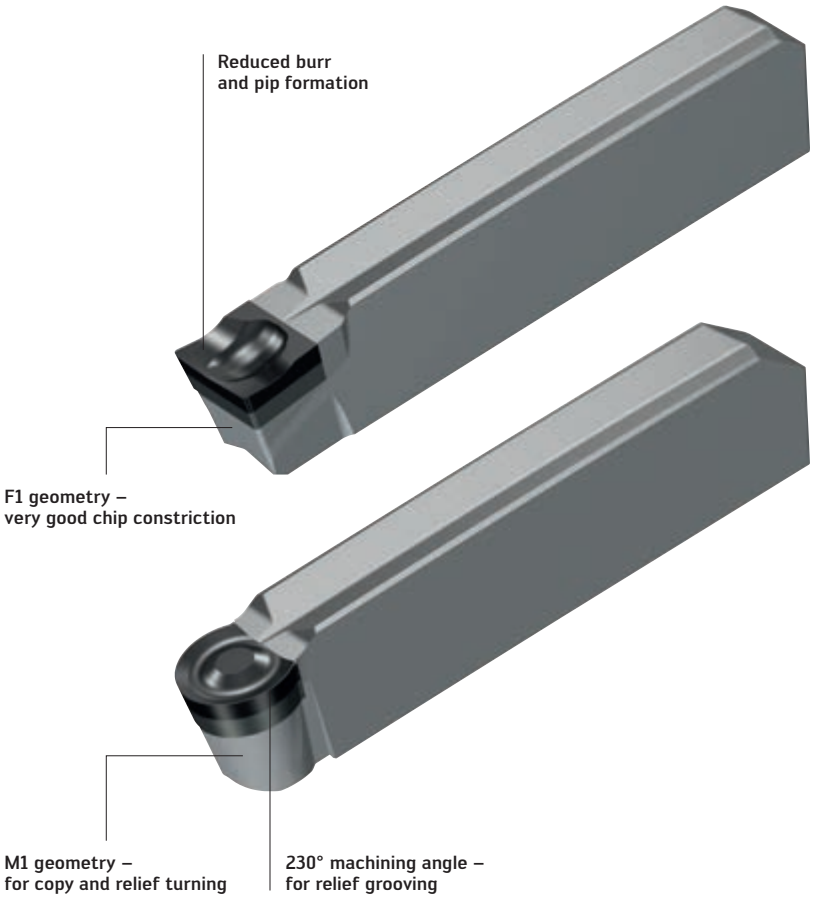
THE LASER-GENERATED PCD GEOMETRIES



– F1 geometry for grooving and parting off



– M1 geometry for grooving and copy turning



GX grooving inserts

Fig.: GX24-3F400N02FS-F1 WDN10, GX24-3F400N20FS-M1 WDN10

BENEFITS FOR YOU

- High cutting speeds and long tool life
- Maximum process reliability through laser-generated chip formation geometry
- Maximum surface quality and constantly high grade

_A2140 BORING BAR ADAPTOR

Short and sweet – extreme stability.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

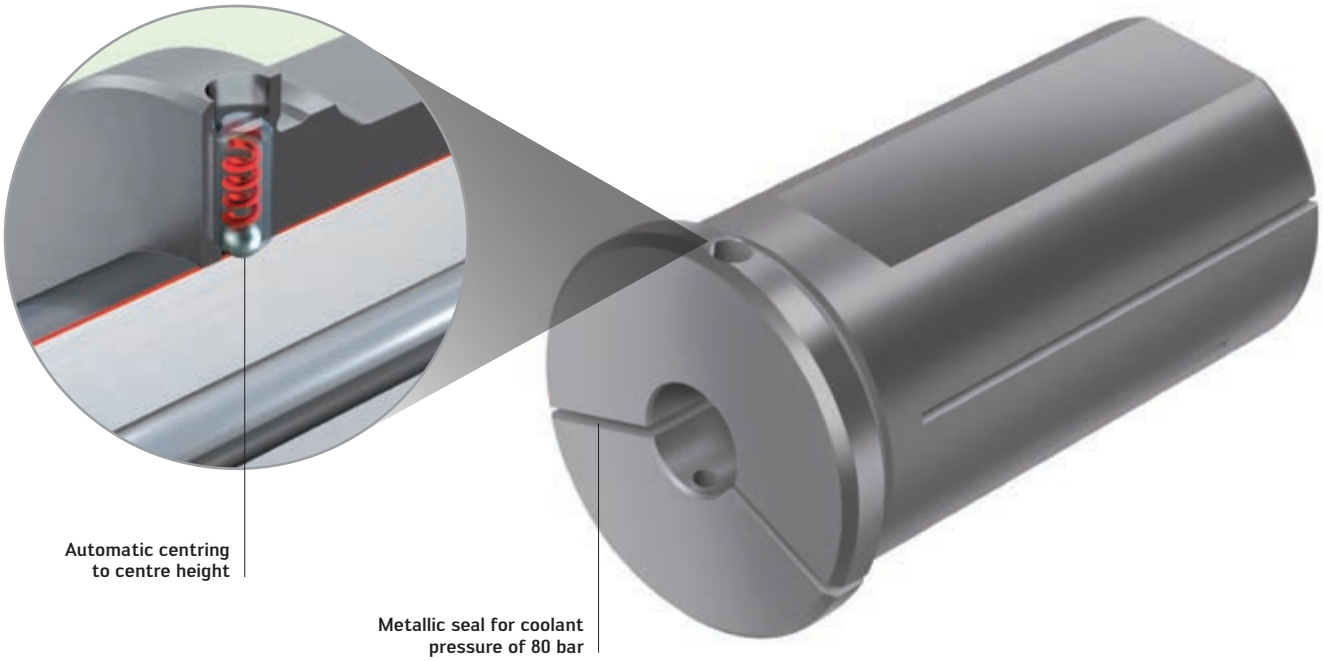
- AK600... is being replaced by A2140-...

THE TOOL

- A2140... adaptor for round shank boring bars using a spring-loaded ball to automatically set the centre height
- Completely enclosed cylindrical shank boring bars (-R) for maximum stability
- Lengths adjusted for VDI boring bar adaptors
- Outside dia.: 25, 32, 40 mm
- Inside dia.: 6, 8, 10, 12, 16, 20 mm

THE APPLICATION

- Internal turning
- Simple, stable boring bar clamping for cylindrical shank without flats
- Machining operations with vibration tendency
- Can be used up to a coolant pressure of 80 bar thanks to metallic seal



Boring bar adaptor **Fig.:** A2140

BENEFITS FOR YOU

- Excellent workpiece surfaces due to exact alignment of the centre height for vibration-free machining
- Automatic alignment of the centre height saves time during tool changes
- One adaptor for solid carbide and steel boring bars

Walter GPS

The latest generation of tool navigation.

The right tool at the click of a mouse
With just four clicks, Walter GPS takes you from the definition of your objective to the most cost-effective tool and machining solution. Walter GPS is surprisingly comprehensive. Be it holemaking, threading, turning or milling: Full information on all tools from Walter, Walter Titex and Walter Prototyp can be displayed in an instant. Access essential usage data, such as accurate cutting data or precise cost-efficiency calculations, on your screen.

Walter GPS is now also available for smartphones and tablet PCs. This means that you are able to access all the required tool information at any time, wherever you are, even without a PC: In the workshop, at the machine or on the move.

walter-tools.com

WALTER
Engineering Kompetenz

Drilling from solid

Boring and precision boring

X·treme Evo – the next generation of holemaking up to 30 × D_C

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

With internal coolant:
- 16 × D_C in accordance with Walter standard
- 20 × D_C in accordance with Walter standard
- 25 × D_C in accordance with Walter standard
- 30 × D_C in accordance with Walter standard

Additional dimensions – with internal coolant:
- 3 × D_C in accordance with DIN 6537 short
- 5 × D_C in accordance with DIN 6537 long
- 8 × D_C in accordance with Walter standard
- 12 × D_C in accordance with Walter standard

Additional dimensions – without internal coolant:
- 3 × D_C in accordance with DIN 6537 short
- 5 × D_C in accordance with DIN 6537 long

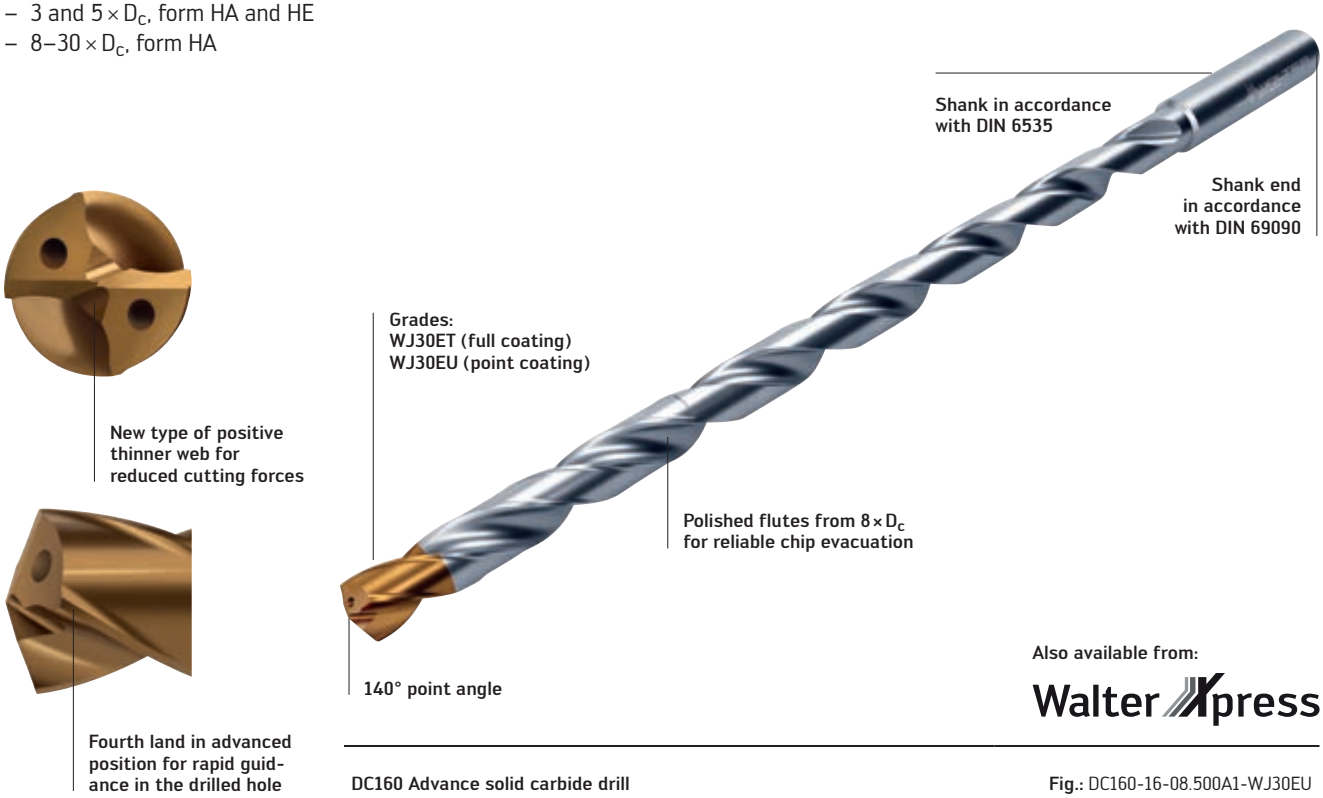
Shank in accordance with DIN 6535:
- 3 and 5 × D_C, form HA and HE
- 8–30 × D_C, form HA

THE TOOL

- DC160 Advance solid carbide drill with and without internal coolant
- Dia. 3–25 mm
- Dimensions from ~3 × D_C (in accordance with DIN 6537 short) up to 30 × D_C in accordance with Walter standard
- Grades:
  - WJ30ET, K30F TiSiAlCrN/AlTiN (full coating)
  - WJ30EU, K30F TiSiAlCrN/AlTiN (point coating)

THE APPLICATION

- ISO material groups P, M, K, N, S, H, O
- Can be used with emulsion, oil and MQL
- Areas of use: General mechanical engineering, mould and die making, energy and automotive industries



Also available from: Walter Xpress

DC160 Advance solid carbide drill

Fig.: DC160-16-08.500A1-WJ30EU

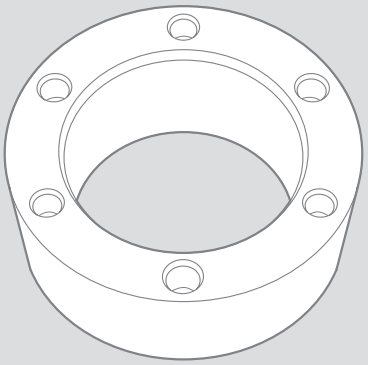
BENEFITS FOR YOU

- XD Technology: Deep-hole drilling up to 30 × D_C without pecking
- High productivity in many different materials
- Lands located in advanced position to ensure rapid guidance in the hole
- Remarkable positioning accuracy thanks to the innovative new thinner web
- Can be used universally

Watch the product video:
www.youtube.com/waltertools

APPLICATION EXAMPLE

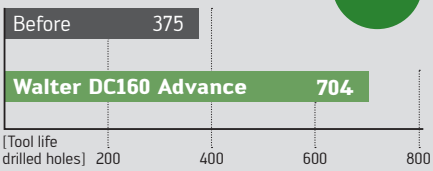
Cylinder



Material:	1.0570 / St 52
Tensile strength:	550 N/mm²
Tool:	DC160-05-16.900F1-WJ30ET
Drilling depth:	44 mm
Cooling:	Emulsion

	Before	DC160 Advance
v_c (m/min)	140	140
n (rpm)	2640	2640
f (mm/rev)	0.35	0.35
v_f (mm/min)	920	920

Comparison: Number of drilled holes **+90 %**



Very even wear on the DC160 Advance

THE RANGE

DC160 ADVANCE – without internal coolant:

3 × D_c – shank shapes HA and HE

5 × D_c – shank shapes HA and HE

DC160 ADVANCE – with internal coolant:

3 × D_c – shank shapes HA and HE

5 × D_c – shank shapes HA and HE

8 × D_c – shank shape HA

12 × D_c – shank shape HA

16 × D_c – shank shape HA

20 × D_c – shank shape HA

25 × D_c – shank shape HA

30 × D_c – shank shape HA

Universal use, strong performance.

NEW

THE TOOL

- DC260 Advance solid carbide chamfering drill with and without internal coolant
- Dia. 3.3–14.5 mm
- For drilled thread core holes M4–M16, MF8 × 1–16 × 1.5
- Step length in accordance with DIN 8378
- Grade: WJ30ET, K30F TiSiAlCrN/AlTiN
- Dimensions: Walter standard with and without internal coolant

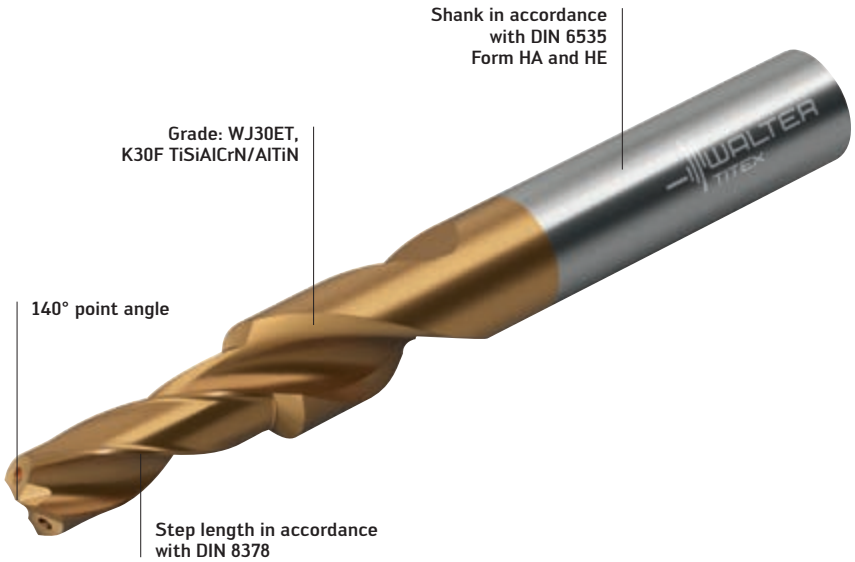
THE APPLICATION

- For drilled thread core holes
- ISO material groups P, M, K, N, S, H, O
- Can be used with emulsion, oil and MQL
- Areas of use: General mechanical engineering, mould and die making, energy and automotive industries

THE RANGE

Solid carbide chamfering drills with internal coolant:

Solid carbide chamfering drills without internal coolant:



DC260 Advance solid carbide chamfering drill **Fig.:** DC260-03-08.500A1-WJ30ET

BENEFITS FOR YOU

- High productivity in many different materials
- Lands located in advanced position to ensure rapid guidance in the hole
- Remarkable positioning accuracy thanks to the innovative new thinner web
- Universal application

Also available from:

Walter Xpress

_DC150 PERFORM SOLID CARBIDE DRILL

New dimensions – now even more flexible.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- DC150 Perform solid carbide twist drill
- WJ30RE grade
- Dia. 1.5–2.9 mm

Without internal coolant:

- $3 \times D_C$; dia. 1.5–1.9 mm in accordance with DIN 1897 > dia. 1.9 mm in accordance with DIN 6539

Additional dimensions – with internal coolant:

- $3 \times D_C$ in accordance with DIN 6537 short; HA shank and double shank (HE/HB)
- $5 \times D_C$ in accordance with DIN 6537 long; HA shank and double shank (HE/HB)
- $8 \times D_C$ in accordance with Walter standard; HA shank
- $12 \times D_C$ in accordance with Walter standard; HA shank

Additional dimensions – without internal coolant:

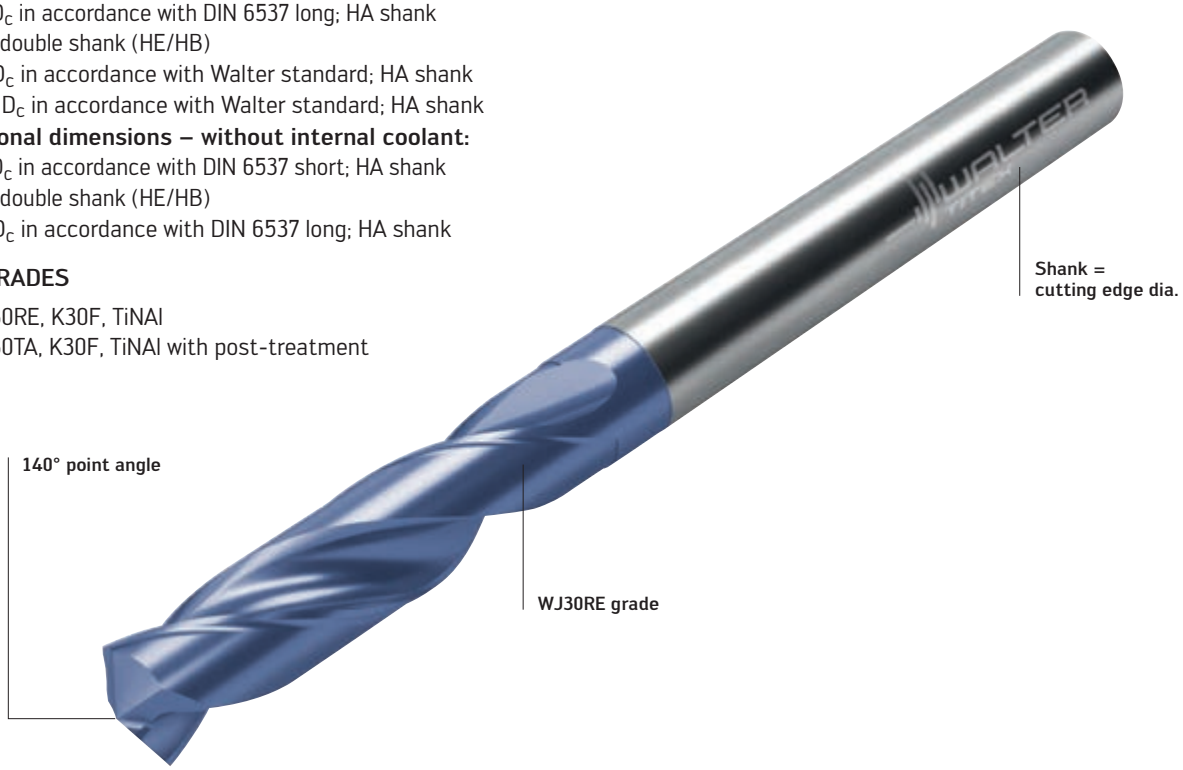
- $3 \times D_C$ in accordance with DIN 6537 short; HA shank and double shank (HE/HB)
- $5 \times D_C$ in accordance with DIN 6537 long; HA shank

THE GRADES

- WJ30RE, K30F, TiNAl
- WJ30TA, K30F, TiNAl with post-treatment

THE APPLICATION

- ISO material groups P, M, K, N, S, H, O
- Can be used with emulsion, oil and MQL
- Areas of use: General mechanical engineering, mould and die making, energy and automotive industries



DC150 Perform solid carbide drill **Fig.:** DC150-03-02.000U0-WJ30RE

BENEFITS FOR YOU

- Cost-efficient machining of small and medium batch sizes
- Can be used universally with all materials
- Now even more flexible thanks to extended range of drills
- Shank variants for all adaptors typically used when holemaking: Weldon, whistle notch, hydraulic expansion chuck, collet chuck, shrink-fit chuck, power chuck
- Optimum protection against wear due to WJ30RE and WJ30TA grades

Watch the product video:
www.youtube.com/waltertools

Precision down to the smallest detail.

NEW

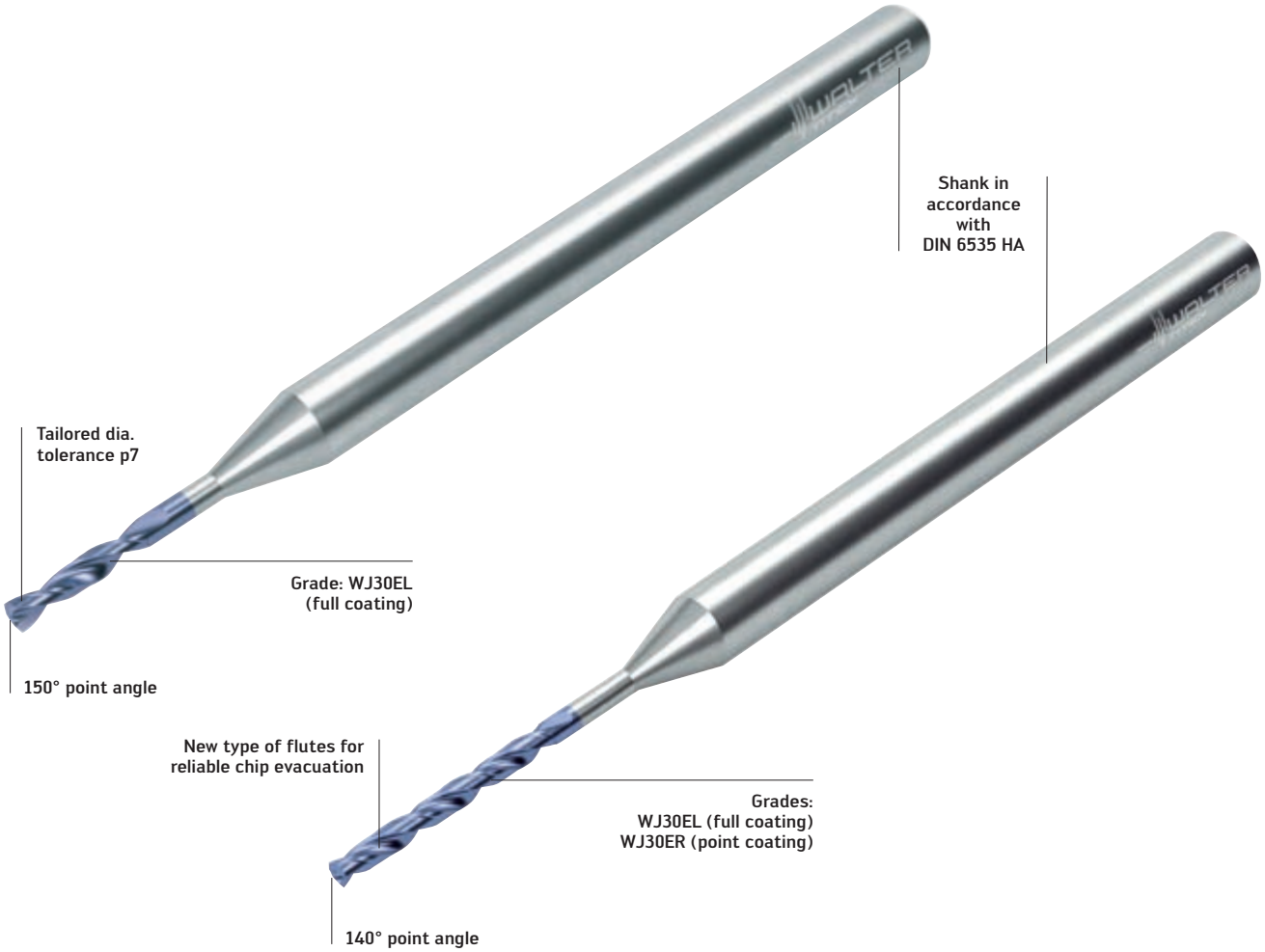
THE TOOLS

DB131 solid carbide micro pilot drill without internal coolant

- Dimensions in accordance with Walter standard: $2 \times D_C$
- Diameter range: 0.5–1.984 mm
- Shank in accordance with DIN 6535 HA
- Grade: WJ30EL, K30F, AlCrN (full coating)

DB133 solid carbide micro drill with internal coolant

- Dimensions in accordance with Walter standard: $5 \times D_C$, $8 \times D_C$, $12 \times D_C$
- Diameter range: 0.7–1.984 mm
- Shank in accordance with DIN 6535 HA
- Grades:
  - WJ30EL, K30F, AlCrN (full coating)
  - WJ30ER, K30F, AlCrN (point coating)



DB131/DB133 Supreme solid carbide micro drill **Fig.:** DB131-02-01.000A0-WJ30EL/DB133-05-01.000A1-WJ30EL

Watch the product video:
www.youtube.com/waltertools

THE APPLICATION

- ISO material groups P, M, K, N, S, H, O
- Can be used with emulsion, oil
- Areas of use: Medical technology, watchmaking industry, general mechanical engineering, mould and die making, energy and automotive industries

THE RANGE

DB131 Supreme solid carbide micro pilot drill – grade: WJ30EL
$2 \times D_C$ – shank shape HA

DB133 Supreme solid carbide micro drill – grade: WJ30EL
$5 \times D_C$ – shank shape HA

DB133 Supreme solid carbide micro drill – grade: WJ30ER
$8 \times D_C$ – shank shape HA

DB133 Supreme solid carbide micro drill – grade: WJ30ER
$12 \times D_C$ – shank shape HA

BENEFITS FOR YOU

- Maximum process reliability combined with minimal dimensions
- Optimised dimensions for maximum stability
- Pilot drill with adjusted dia. tolerance and 150° point angle
- Excellent surface quality on the component thanks to the customised preparation of the cutting edges on the drill

Superior productivity in all types of aluminium alloys.

SPECIAL TOOL

THE TOOL

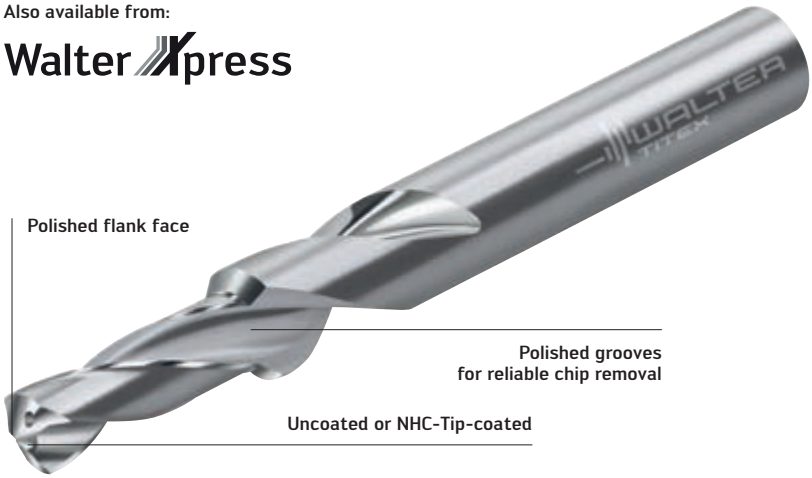
- DC166 solid carbide high-performance drill with internal coolant
- Dia. 4–20 mm drilling depth up to 30 × D_C
- Step drill with up to three steps
- Uncoated or NHC-Tip-coated, polished flutes and face
- Special tools in line with customer's requirements

THE APPLICATION

- ISO material group N
- Cast aluminium and wrought alloys
- Can be used with emulsion or MQL
- Areas of use: Automotive industry, general mechanical engineering, components with large batch sizes
- Deep-hole drilling up to 30 × D_C

Also available from:

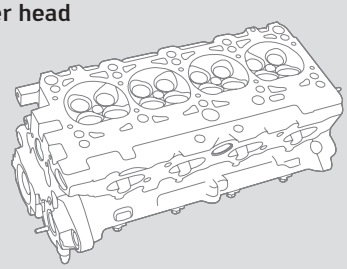
Walter Xpress



DC166 solid carbide step drill **Fig.:** Ø 9/16 mm

APPLICATION EXAMPLE

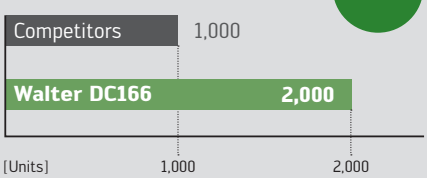
Cylinder head



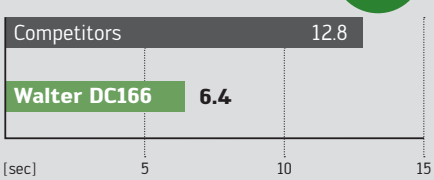
Material:	AlSi10MgCu
Tool:	DC166 step drill, dia. 9/16 mm
Drilling depth:	60 mm
Drilled holes per workpiece:	16

	Competitors	Walter DC166
v_c (m/min)	753	753
n (rpm)	15,000	15,000
f_u (mm)	0.3	0.6
v_f (mm/min)	4,500	9,000

Comparison: Number of workpieces **+100 %**



Comparison: Machining time **-50 %**



BENEFITS FOR YOU

- Customer-specific version adapted to the application
- Up to 30% higher feed rate for maximum productivity
- High process reliability thanks to reliable chip removal
- For cast aluminium and wrought alloys

Incomparably tough under all working conditions.

NEW TO THE RANGE

NEW ADDITIONS TO THE PRODUCT RANGE

- D4240-02 (chamfering drill 2.5 × D_C)
- D4140-01 (1.3 × D_C)

Extension (diameter and shank versions)

- D4140-03 (3 × D_C)
- D4140-05 (5 × D_C)
- D4140-07 (7 × D_C)

THE TOOL

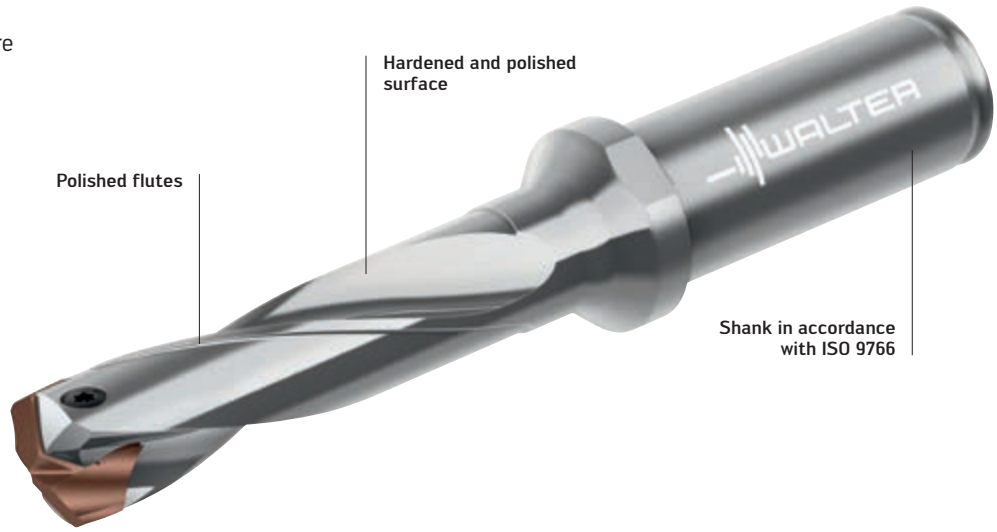
- Dia. 12–37.99 mm for 3 × D_C, 5 × D_C and 7 × D_C
- Dia. 0.472–1.496" for 3 × D_C, 5 × D_C and 7 × D_C
- Dia. 18–24.7 mm for 10 × D_C
- Optimal coolant outlet to centre

THE APPLICATION

- Drilling from solid, suitable for stack drilling, inclined inlet and outlet up to approx. 5°
- ISO materials P, M, K, N, S
- Areas of use: General mechanical engineering, mould and die making, energy and automotive industries

THE INDEXABLE INSERT

- Exact positioning thanks to 100° prism at insert seat
- Four geometries and grades



P6001	P6005	P6003	P6004
WPP45C specialist for ISO P	WKK45C specialist for ISO K	WMP35 specialist for ISO M and ISO S	WNN25 specialist for ISO N

Walter D4140 indexable insert drill

Fig.: P600x – indexable insert range

BENEFITS FOR YOU

- Maximum process reliability and tool life due to coolant outlet directly on the cutting edge
- Reliable chip evacuation due to polished flutes
- Protection against friction and long tool life for the drilling body due to hardened and polished surface
- Simple indexable insert selection with Color Select

Also available from:

Walter Xpress

Perfect performance and precision.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- Solid drills
- Dimensions (metric):
  D4120-02 ($2 \times D_C$) dia. 13.5–29.5 mm and 43–59 mm
  D4120-03 ($3 \times D_C$) dia. 13.5–29.5 mm and 43–59 mm
  D4120-04 ($4 \times D_C$) dia. 43–59 mm
  D4120-05 ($5 \times D_C$) dia. 43–59 mm
- Dimensions (inches):
  D4120.03 ($3 \times D_C$) 0.562–1.375"
  D4120.04 ($4 \times D_C$) 0.812–1.375"

THE TOOL

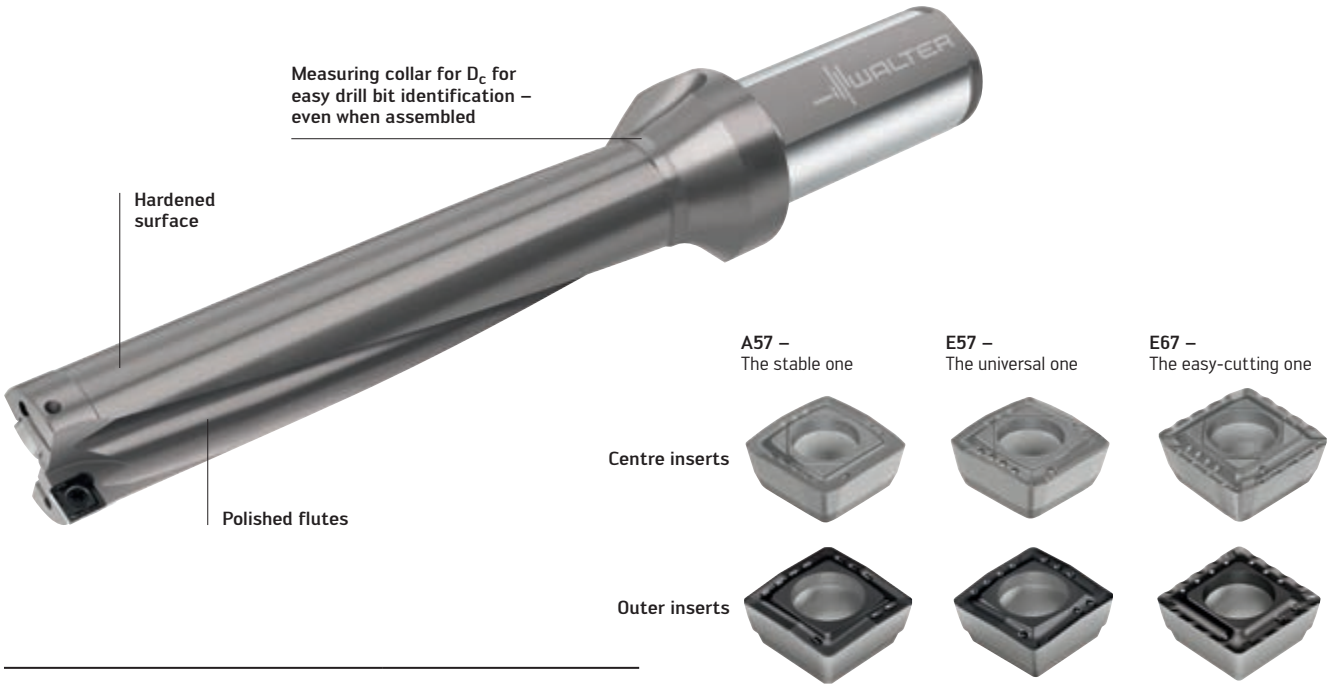
- Dia. 13.5–59 mm (2 and $3 \times D_C$)
- Dia. 17–59 mm (4 and $5 \times D_C$)
- Two optimised coolant-exits

THE INDEXABLE INSERTS

- Four-edged, positive indexable insert
- Four grades: WKP25S, WKP35S, WSP45, WXP40
- Wiper cutting edge for P4840 design with fully ground circumference

THE APPLICATION

- Drilling from solid with precision and consistent hole diameter
- Drilling from solid in difficult machining operations such as cross holes, chain drilling, inclined inlet and exit
- ISO materials P, M, K, N, S
- Areas of use: General mechanical engineering, mould and die making, energy and automotive industries



Walter D4120 indexable insert drill **Fig.:** D4120-04-21.00F25-P43

Powered by
Tiger·tec® Silver

Also available from:
Walter Xpress

BENEFITS FOR YOU

- High precision in hole diameter thanks to precise balancing of the cutting forces between the centre and outer insert
- Excellent surface quality due to wiper cutting edge
- Maximum process reliability thanks to easy chip removal
- Hardened and polished surfaces offer protection against friction
- Low cutting tool material costs due to four cutting edges

Strong performance with four cutting edges.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- Solid drills
- Dimensions (inches):
  D3120.03 ($3 \times D_C$) 0.75–1.5"
  D3120.04 ($4 \times D_C$) 0.75–1.5"

THE TOOL

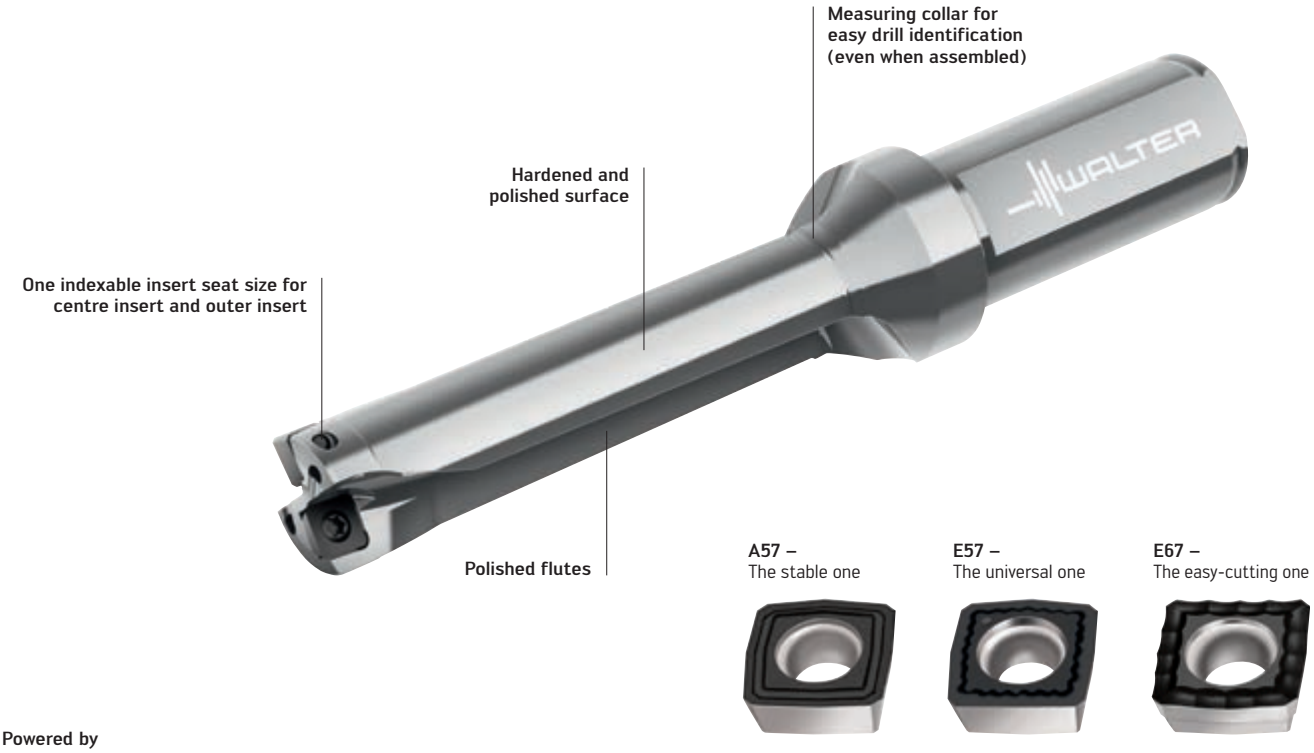
- Dia. 16–42 mm
- 2, 3 and $4 \times D_C$
- Robust design for lathes and machining centres

THE INDEXABLE INSERTS

- Four-edged, positive indexable insert
- Three geometries:
  A57 – The stable one
  E57 – The universal one
  E67 – The easy-cutting one
- Four grades: WKP25S, WKP35S, WSP45S, WXP40
- For special drills, can also be used as a left-hand cutting indexable insert

THE APPLICATION

- Drilling from solid
- Difficult machining operations, such as cross holes, chain drilling, inclined inlet and exit
- Suitable for drilling with X offset
- ISO materials P, M, K, N, S
- Areas of use:
  General mechanical engineering, mould and die making, energy and automotive industries



Powered by
Tiger·tec® Silver

Walter D3120 indexable insert drill

Fig.: D3120-04

BENEFITS FOR YOU

- Maximum process reliability thanks to easy chip removal
- Best protection against friction due to hardened and polished surfaces
- High stability in all working conditions
- Low cutting tool material costs due to four cutting edges
- Easy to operate (one indexable insert seat size for outer and inner insert)

Also available from:
Walter Xpress

_DA110 PERFORM HSS DRILL

Efficient in all materials.

NEW

NEW

– DA110 Perform HSS drill

THE TOOL

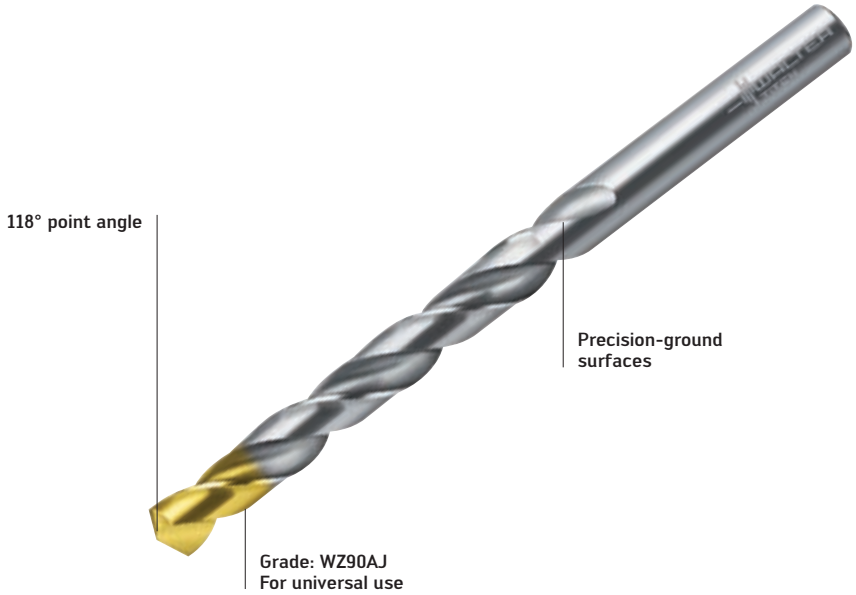
– Dia. 1–16 mm
– Grade: WZ90AJ HSS, TiN point coating
– Type N
– 118° point angle

THE DIMENSIONS

– In accordance with DIN 338

THE APPLICATION

– ISO material groups P, M, K, N, S, H, O
– Can be used with emulsion, oil and MQL
– Areas of use: General mechanical engineering, mould and die making, energy and automotive industries



DA110 Perform HSS drill **Fig.:** DA110-08-08.500U0-WZ90AJ

BENEFITS FOR YOU

– Can be used universally with various different materials
– Tip geometry for optimum centring accuracy
– Maximum accuracy on the component thanks to precision-ground surfaces

Wide range for your boring needs.

NEW

THE INDEXABLE INSERTS

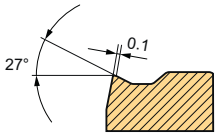
Insert types:

- P4160-2R04-E47 in WKK20S, WKP30S, WSM20S
- P4160-2R08-E47 in WKK20S, WKP30S, WSM20S
- P4160-2L08-E47 in WKK20S, WKP30S, WSM20S
- P4130-4R12-E47 in WKK10S, WKK20S, WKP30S

THE GEOMETRY

E47 – The universal one

- Flexible, can be used universally for variable depths of cut
- Suitable for all boring operations with and without interrupted cut



THE APPLICATION

- ISO materials P, K, M
- Flexible use for customer-specific special tools

Stable indexable insert with a negative basic shape and a highly positive chip breaker groove

For both tangential and lateral positioning of indexable inserts

Four + four cutting edges

Powered by
Tiger·tec® Silver

P4160-2R04-E47/P4130-4R12-E47 **Fig.:** B2074-7016678

BENEFITS FOR YOU

- Flexible tool solutions for variable depths of cut
- Higher number of teeth for small tool diameters
- Increased productivity and shorter machining times due to higher feeds for each tooth
- High process reliability thanks to excellent chip breaking at all depths of cut
- Longer tool life thanks to optimum geometry design

Also available from:
Walter Xpress

Efficient and highly precise – with three cutting edges.

NEW

NEW ADDITION TO THE PRODUCT RANGE

- Boring bars and cartridges for precision boring with TC.. indexable inserts

THE TOOL

- Single-edged precision boring tool with convenient analogue indicator
- 0.002 mm adjustment accuracy
- Dia. 2–203 mm using boring bars and cartridges
- Dia. 150–640 mm with aluminium bridge design
- Coolant supply up to the cutting edge
- Adaptors and extensions matched to the system
- Walter Capto™ and ScrewFit adaptor; B3230.C with cartridges can also be delivered as a set
- The B4030 system is self-balancing

THE APPLICATION

- Suitable for all material groups
- Producing precision parts
- Finish machining of precise drilled holes (IT6)
- B3230.C... can be easily used for reverse machining
- Areas of use: General mechanical engineering, automotive and aerospace industries
- Finishing operations ($a_{p\ max}$ 0.5 mm)
- ISO materials P, M, K, N, S, H, O

THE INDEXABLE INSERTS

- TC..06, TC..11, CC..06 and CP..05
- Indexable insert range adapted for precision boring

Walter[Precision] **precision boring tools** **Fig.:** B3230. EB512, EB518.CS, EB347.TC06

BENEFITS FOR YOU

- Highly precise thanks to backlash-free, 2 µm precise setting
- No change in length when the diameter is adjusted
- High surface quality thanks to balanced tools
- High level of flexibility thanks to an extensive range of modular components: Adaptors, extensions, etc.
- Comprehensive indexable insert range

_CCMT, WCMT, SCMT IN E47 GEOMETRY

Now also in Tiger·tec® Silver grades.

NEW TO THE RANGE

THE GRADES

- WPP20S, WSM20S and WSM30S
- Maximum toughness thanks to minimal thermal loads with the newly developed coating process
- PVD aluminium oxide (Al_2O_3) protects the substrate against heat ingress during machining
- Reduced friction during machining due to extremely smooth rake face
- Maximum wear resistance and temperature resistance when machining stainless steels and heat-resistant super alloys

THE APPLICATION

- Suitable for all counterboring operations with and without interrupted cut
- WPP20S and WSM30S are PVD multi-range grades with Tiger·tec® Silver coating; can be used with ISO material groups M and S
- WPP20S is a Tiger·tec® Silver CVD grade; main application range: Steel (ISO P)

THE GEOMETRIES

- 15° rake angle
- Flexible geometry that can be used universally for variable depths of cut
- Can be used with ISO material groups P, M and S

THE INDEXABLE INSERTS

- Indexable insert in basic shapes CC.., SC.. and WC..
- Circumference-sintered
- Straight cutting edge
- Chip groove with variable width for different depths of cut
- Protective chamfer: Designed for the ISO material groups
- PVD- and CVD-coated Tiger·tec® Silver grades

Powered by Tiger·tec® Silver

Grades: WSM10S, WSM20S and WSM30S

Fig.: CCMT, WCMT, SCMT

BENEFITS FOR YOU

- Long tool life due to optimally designed geometry and less heat entering the carbide
- Best level of wear resistance thanks to optimised aluminium oxide
- Maximum process reliability thanks to excellent chip breaking at all depths of cut
- Increase in productivity thanks to higher cutting data from Tiger·tec® Silver
- Ideally suited to highly variable depths of cut

Universal counterboring with a very clean cut.

NEW TO THE RANGE

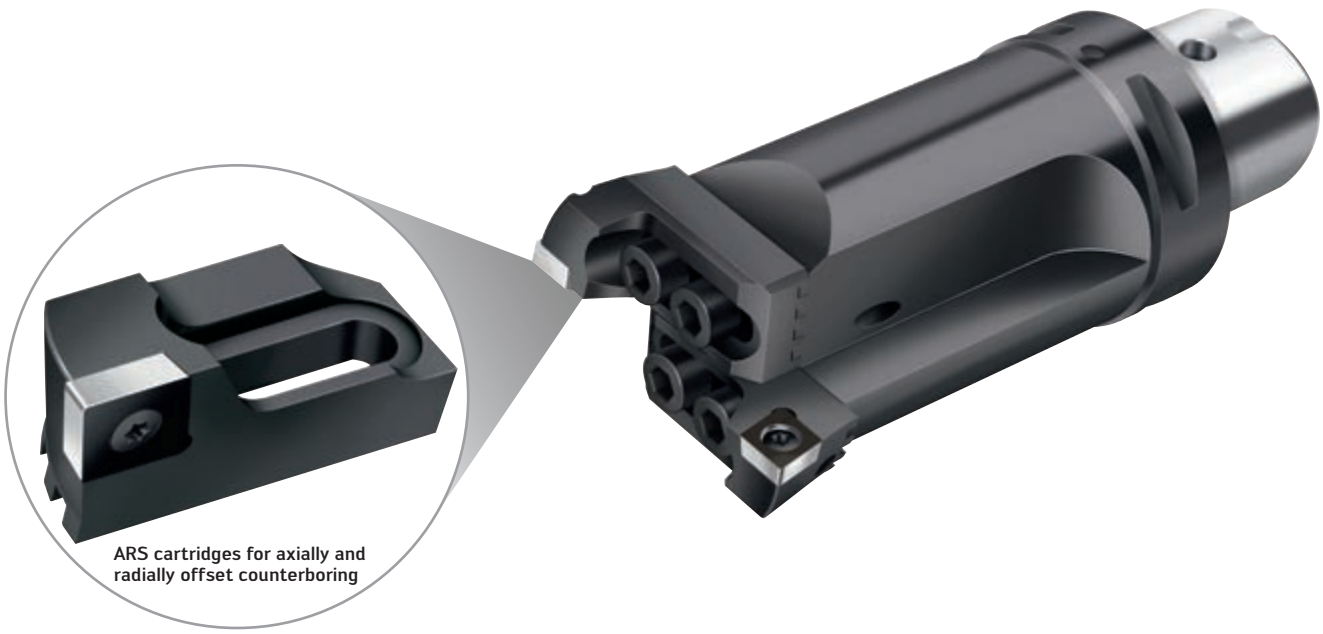
THE INDEXABLE INSERT

Indexable insert in the CC.. basic shape

- Circumference-sintered
- Straight cutting edge
- Chip groove with variable width for different depths of cut
- Protective chamfer: Designed for the ISO material groups
- PVD- and CVD-coated Tiger·tec® Silver grades

THE APPLICATION

- The CC..1605.. indexable insert enables larger overlaps to be achieved
- Suitable for all counterboring operations with and without interrupted cut
- WSM20S and WSM30S are PVD multi-range grades with Tiger·tec® Silver coating; can be used with ISO material groups M and S
- WPP20S is a Tiger·tec® Silver CVD grade; main application range: Steel (ISO P)



ARS cartridges for axially and radially offset counterboring

Grades: WSM20S

Fig.: B3220.C

BENEFITS FOR YOU

- The CC..1605 covers larger diameter ranges
- High process reliability due to stable insert thickness and excellent chip breaking across the entire cutting depth range
- Ideally suited to highly variable depths of cut
- Higher cutting data thanks to Tiger·tec® Silver grades
- Long tool life thanks to optimum geometry design

Watch the product video:
www.youtube.com/waltertools

Best tool life and surface quality for precision boring.

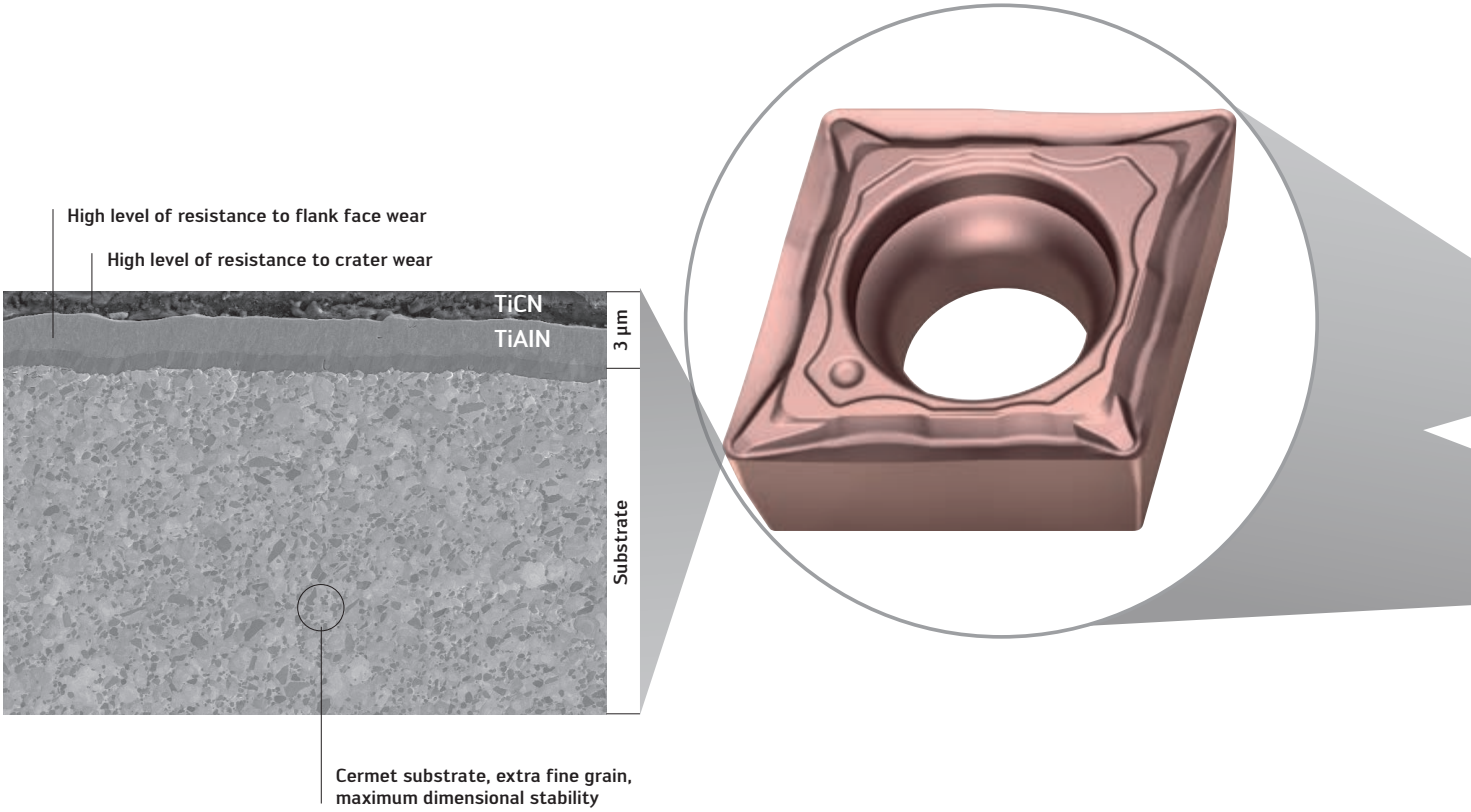
NEW

THE INDEXABLE INSERTS

- Indexable inserts made of the wear-resistant, coated WEP10 cermet grade for precision boring tools
- Wear-resistant TiCN/CN-based cermet substrate with Ni/Co binder
- Extremely hard TiCN outer layer
- Extra fine cermet substrate grain
- Finishing chip former for versatile use with FP4 soft-cutting geometry
- CCMT indexable insert shapes

THE TECHNOLOGY

The extremely fine-grain titanium carbon-based cermet substrate, combined with the highly wear-resistant multilayer coating, provides clear advantages during finishing operations compared to coated tungsten carbide indexable inserts.



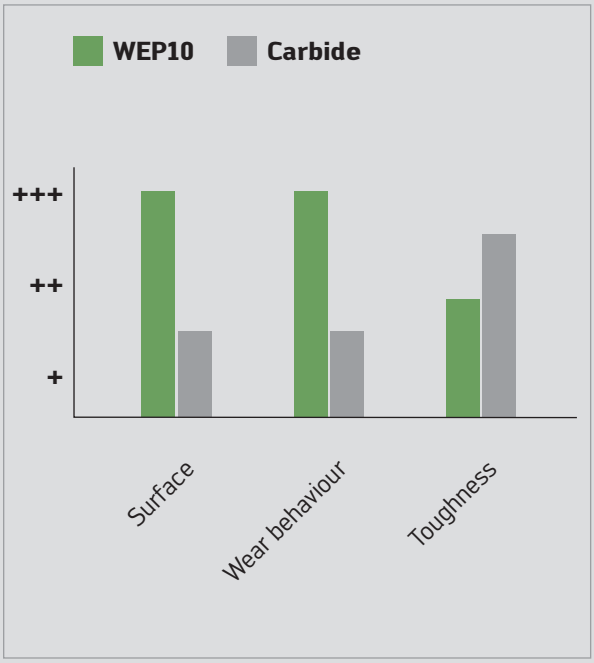
Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- No readjustment necessary, maximum dimensional accuracy
- Longer tool life and higher productivity in comparison to carbide
- No burr formation or build-up on the cutting edge
- Mirror finishes at high and low cutting speeds

COMPARISON

Finishing – WEP10 and carbide



THE APPLICATION

- Precision boring applications with long machining paths
- Applications with continuous or slightly interrupted cut
- For low and high cutting speeds
- Can be used in the B3230... and B4030... precision boring tools

B3230 precision boring tool

Fig.: B3230-C-20-100/ B3230-C-150-640

Precision down to the smallest detail times two.

NEW TO THE RANGE

THE CARTRIDGE

- Precision boring cartridge with adjustment mechanism accurate to 2 µm
- Approach angles of 90° and 95°
- For CC..0602 and TC..1102 indexable inserts
- FR760: TC..1102.. / 90° approach angle
- FR761: CC..0602.. / 90° approach angle
- FR763: CC..0602.. / 95° approach angle

THE APPLICATION

- Areas of use: General mechanical engineering, etc.
- Machining connecting rods, gearbox housings, bearing gaps, fittings
- Precise and cost-effective custom solutions

FR710

FR761 – 2 µm version

0.01 mm precision boring/0.002 mm precision boring

Fig.: FR710 and FR761

BENEFITS FOR YOU

- Two programming variants – adjustment steps: 0.01 mm and NEW: 0.002 mm
- Reliable and easy to use with error-free readings
- Backlash-free adjustment in "+" and "–" directions
- Backlash < 2 µm
- No need for locking
- Low-maintenance
- Easy to integrate into custom solutions

Proven, flexible – and highly productive.

NEW

THE TOOL

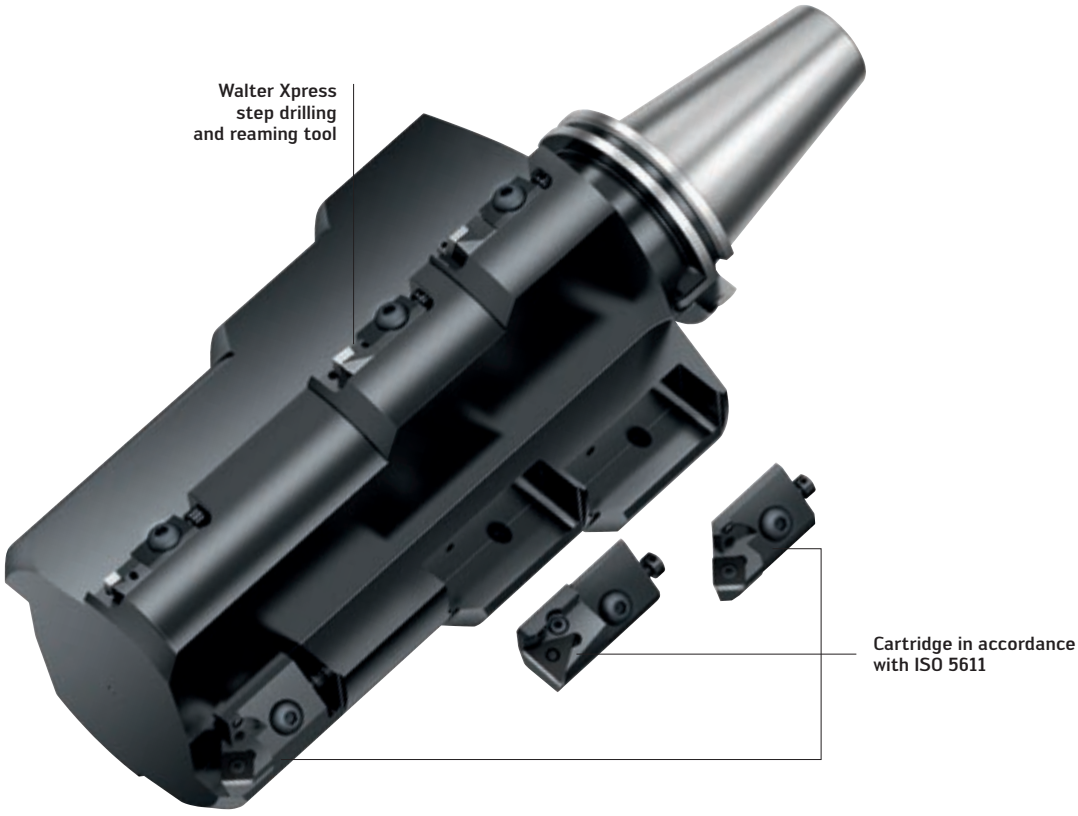
- Cartridges in accordance with ISO 5611 for special solutions

Variants:

PCFNR12CA-12, PCLNR25CA-19, PSKNR25CA-19, PSKNR10CA-09, PSSNR12CA-12, PTFNR20CA-22, STFCL08CA-09, STFCR08CA-09

THE APPLICATION

- Flexible uses for customer-specific special solutions
- Highly efficient tool solutions in combination with precision boring and mini cartridges



Step tool

Fig.: Cartridge in accordance with ISO 5611

BENEFITS FOR YOU

- Extremely flexible, efficient and highly productive
- Reduction in tool costs
- Reduced machining time
- Creates spare machine capacity

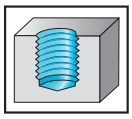
Also available from:

Walter Xpress

Threading

The new generation of Supreme taps for steel.

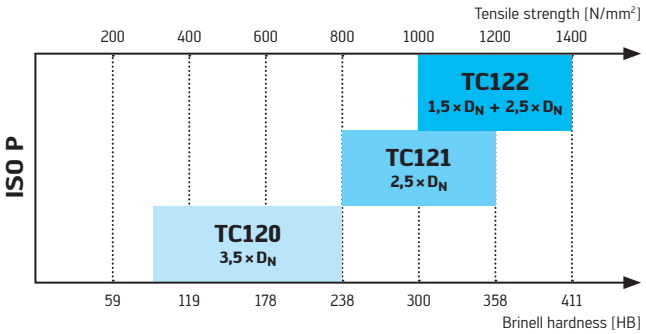
NEW



Supreme taps for blind-hole machining:
Three different taps with various geometries and coatings for machining all steel materials.

		Tensile strength	Material groups P	M	K	N	S	H	O
Soft steels	**TC120** 	90–240 HB (300–800 N/mm²)	●●			●			
Medium-strength steels	**TC121** 	240–370 HB (800–1250 N/mm²)	●●	●	●	●			
High tensile steels	**TC122** 	300–420 HB (1000–1400 N/mm²)	●●		●				

Application ranges in ISO P



The application ranges of the TC120, TC121 and TC122 product ranges in steel materials are specified according to tensile strengths of between 300 and 1400 N/mm².

High reliability in soft steel and medium-strength steel.

NEW

NEW ADDITION TO THE PRODUCT RANGE

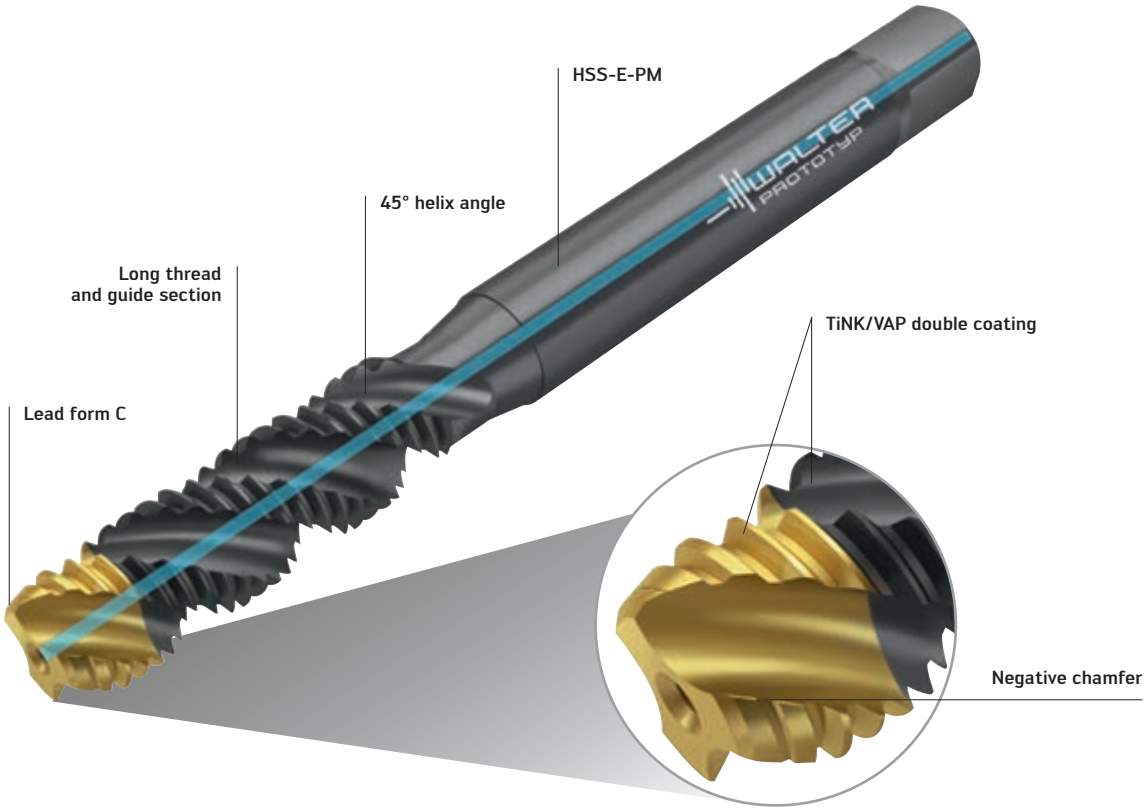
Dimension range:
- M3–M30 (without internal coolant)
- M8–M16 (with internal coolant)

THE TOOL

- Blind hole tap
- Double coating: TiN in the lead section; vaporised in the guide section
- WW60AG grade (HSS-E-PM + TiNK/VAP)
- 45° helix angle
- Thread section $3 \times D_N$ long
- Negative chamfer in the lead section
- With and without internal coolant

THE APPLICATION

- ISO P materials
- 90–240 HB (300–800 N/mm²)
- Thread depth $3 \times D_N$



TC120 tap

Fig.: TC120-M10-C1-WW60AG

BENEFITS FOR YOU

- No more birds nesting due to negative chamfer in the lead section
- Prevents total breakage due to chip build-up
- Significantly less fracturing in the guide section thanks to extra long thread.

Maximum performance in steel in medium strength range.

NEW

NEW ADDITION TO THE PRODUCT RANGE

Dimension range:
- M2–M20 (without internal coolant)
- M5–M20 (with internal coolant)

THE TOOL

- Blind hole tap
- Grades: WW60RG (HSS-E-PM + TiAlN) WY80BD (HSS-E + TiCN)
- 40° helix angle
- Chamfered thread section

THE APPLICATION

- ISO P materials
- Thread depth $2.5 \times D_N$
- 240–370 HB (800–1250 N/mm²)
- With and without internal coolant

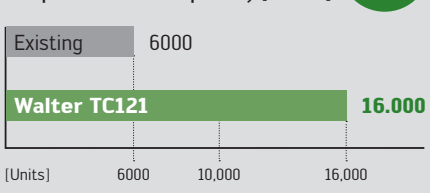
APPLICATION EXAMPLE

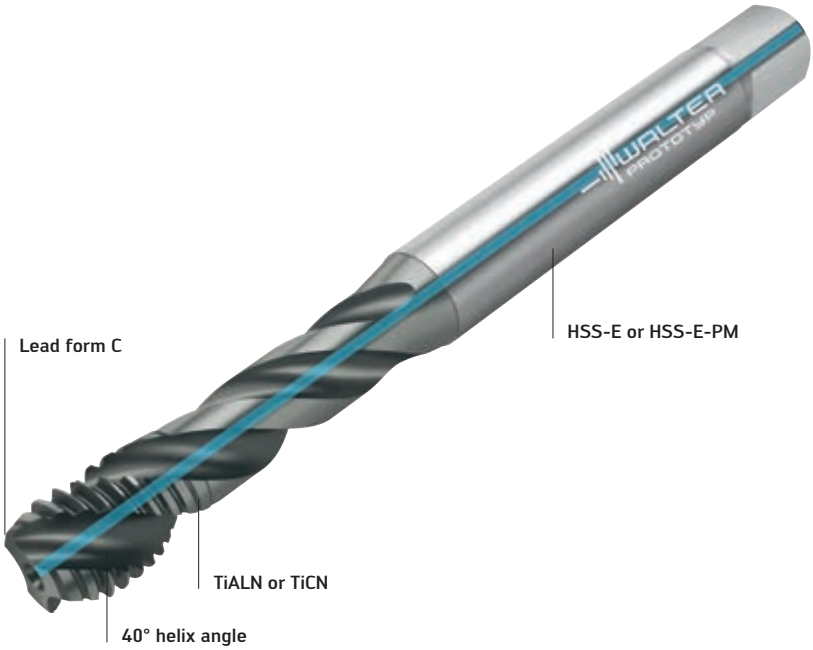
Nuts – Multi-spindle machines

Material: 1.0718 (11SMPb30)
Tensile strength: 240 HB (800 N/mm²)

	Existing	Walter – TC121
Application:	Blind hole	Blind hole
Dimensions:	M8	M8
Tolerance:	6G	6G
Coating/grade:	TiN	WW60RG
Chamfer:	Form C	Form C
Thread depth:	10 mm	10 mm
v_c	14 m/min	14 m/min
Lubrication:	Oil	Oil
Machining:	Horizontal	Horizontal
Tool life	6000 threads	16,000 threads

Comparison: Tool life quantity [thread] **+267 %**





TC121 tap **Fig.:** TC121-M10-C1-WW60RG

BENEFITS FOR YOU

- Reliable due to tightly rolled chips
- Prevents birds nesting (WW60RG)
- Maximum tool life (WY80BD)
- Internal coolant for improved chip evacuation

_TC122 TAP

Maximum tool life in steel with medium to high tensile strength.

NEW

NEW ADDITION TO THE PRODUCT RANGE

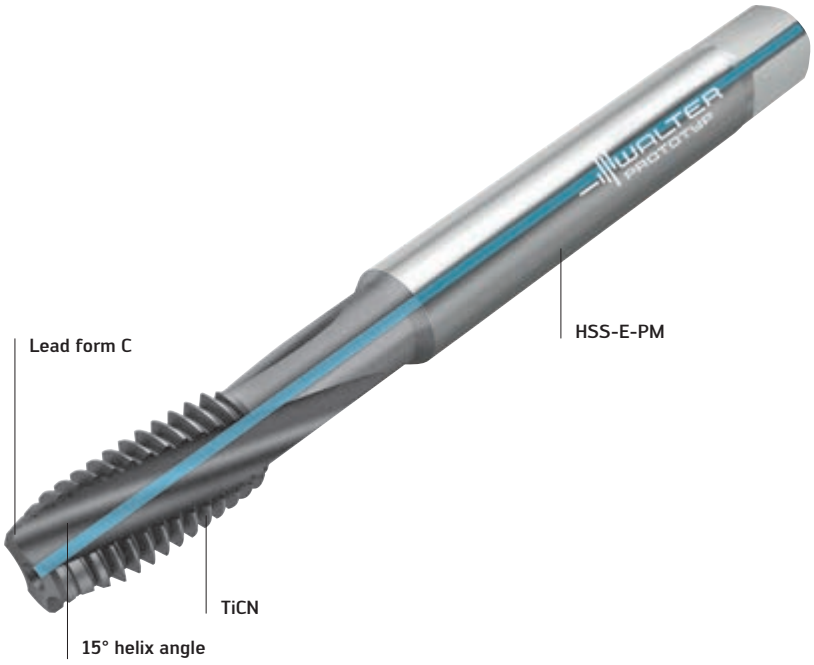
Dimension range:
- M3–M20 (without internal coolant)
- M5–M20 (with internal coolant)

THE TOOL

- Blind hole tap
- Grade: WW60BC (HSS-E-PM + TiCN)
- 15° helix angle

THE APPLICATION

- ISO P materials
- Thread depths:
  $1.5 \times D_N$ without internal coolant
  $2.5 \times D_N$ with internal coolant
- 300–420 HB (1000–1400 N/mm²)



TC122 tap **Fig.:** TC122-M10-C1-WW60BC

BENEFITS FOR YOU

- Maximum tool life in strong to high tensile ISO P materials
- Short chips
- No chip residue in the hole thanks to internal coolant

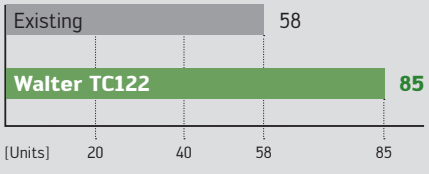
APPLICATION EXAMPLE

Blind hole thread – Inlet side valve

Material: 1.2367 (X38CrMoV5-3)
Tensile strength: 360 HB (1200 N/mm²)

	Existing	Walter – TC122
Application:	Blind hole	Blind hole
Dimensions:	M10	M10
Coating/grade:	TiN	WW60BC
Lead:	Form C	Form C
Thread depth:	23 mm	23 mm
v_c	4 m/min	10 m/min
Cooling:	External cooling	Internal cooling
Lubrication:	Emulsion	Emulsion
Machining:	Horizontal	Horizontal
Tool life	58 threads	85 threads

Comparison: Tool life quantity [thread] **+147%**



Reliable chip evacuation and process in ISO P, K and N.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- UNC: UNC 1/4–UNC 1

Additional dimensions:

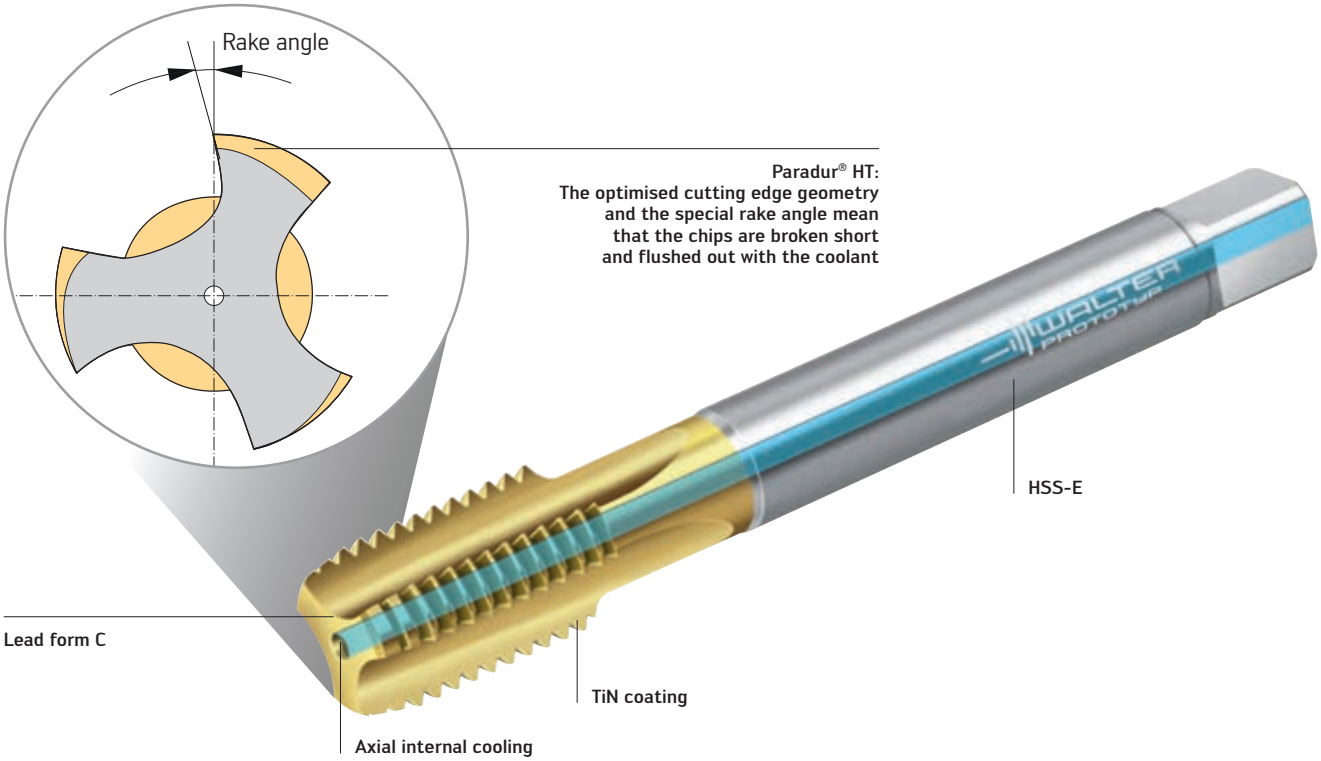
- M: M4–M36
- MF: MF10 × 1–MF33 × 2

THE TOOL

- Blind hole tap
- TiN coating
- Lead form C
- Axial internal cooling
- Tolerance 2B

THE APPLICATION

- Primary application
  ISO P: 700–1400 N/mm²
  ISO K: Predominantly GJS (GGG) materials
- Secondary application
  AlSi alloys > 7% Si content
  Short-chipping Cu alloys
  Mg alloys
- Up to 3.5 × D_N



Walter Prototyp

Fig.: 2236115

BENEFITS FOR YOU

- Extremely high process reliability even with deep threads
- Outstanding chip breaking even in long-chipping materials – no more birds nesting
- Optimum transport of the short broken chips thanks to axial internal cooling

_WALTER PROTOTYP PROTOTEX® TINI

High performance, wide range of applications in ISO S, ISO P & ISO M materials.

NEW TO THE RANGE

THE TOOL

- HSS-E-PM taps
- Spiral point
- Tolerances: 6HX, 2B and 3B
- Coating: TiCN
- Dimension range:
  Metric: M8 × 0.75–M16 × 1
  UNC: UNC 2-56–UNC 3/4-10
  UNF: UNF 4-48–UNF 5/8-18

THE APPLICATION

- Through-hole threads
- Thread depth up to $2 \times D_N$
- ISO material groups P, M and S
- Areas of use: General mechanical engineering, aerospace, medical and foodstuff industries

Walter Prototyp Prototex® TiNi **Fig.:** 21216106

BENEFITS FOR YOU

- Cost-efficient and reliable machining of Ti and Ni alloys
- Wide range of applications in ISO P, M and S
- Long tool life – even with abrasive materials, reduced friction (large flank clearance angle), hard cutting tool material, extreme toughness, "X" tolerance position
- Reduced torque thanks to sharp cutting edges (ideal for tough, hard materials)

Watch the product video:
www.youtube.com/waltertools

_WALTER PROTOTYP PARADUR® NI

Reliable tapping in ISO S materials.

NEW TO THE RANGE

THE TOOL

- HSS-E-PM taps
- Tolerances: 6HX, 2B and 3B
- Coating: TiCN
- Dimension range:
  Metric: M2–M20
  UNC: UNC 2-56–UNC 3/4-10
  UNF: UNF 6-40–UNF 5/8-18
  NPT: NPT1/16-27–NPT1-11.5

THE APPLICATION

- Blind hole thread
- Thread depth up to 1.5 × D_N
- ISO material groups: ISO S and P
- Areas of use: General mechanical engineering, aerospace industry, offshore

Walter Prototyp Paradur® Ni **Fig.:** 20410206

BENEFITS FOR YOU

- High level of process reliability thanks to stable design and reduced friction
- Reliable machining of nickel alloys
- Reduced torque thanks to sharp cutting edges

For the toughest challenges.

NEW

THE TOOL

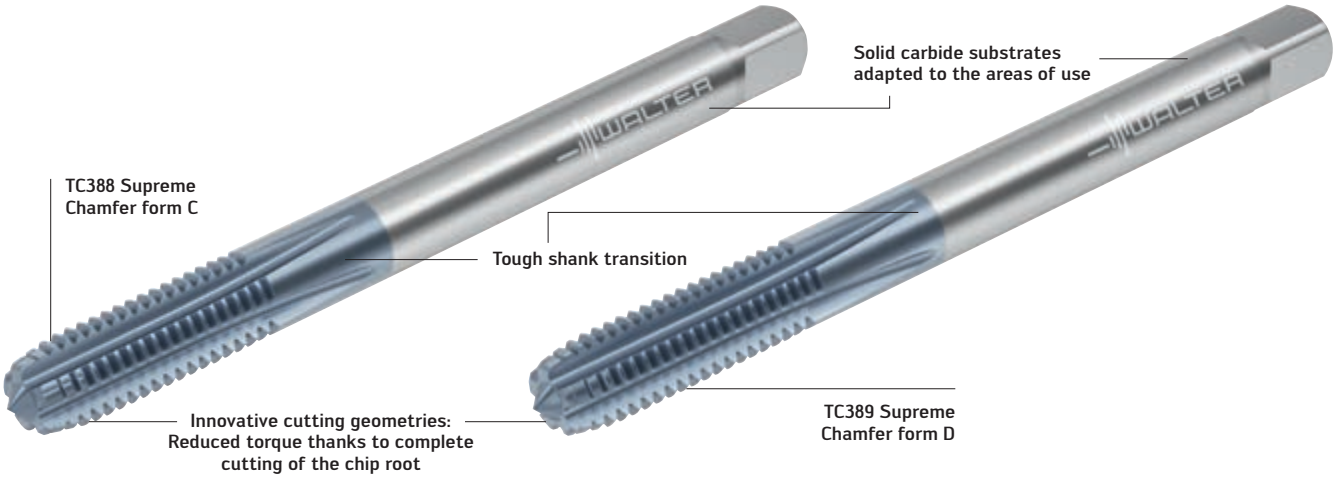
- Solid carbide tap for hard machining
- New cutting geometries for reduced torque when reversing
- Can be used with emulsion
- Suitable for manual rethreading to compensate quenching distortion

Dimension range:

- M3–M16
- G1/8" and G1/4"

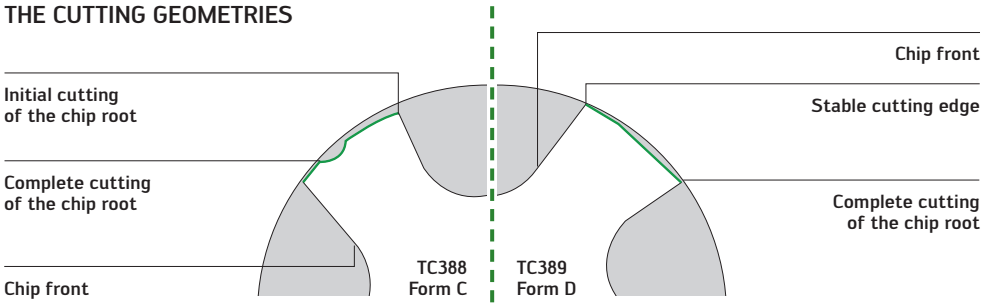
THE APPLICATION

- Blind and through-hole threads up to 2.0 × D_N
- TC388 Supreme:
  - ISO H materials with 50–58 HRC
- TC389 Supreme:
  - ISO H materials with 55–65 HRC
  - Can be used starting from 50 HRC for through-hole threads



TC388/389 Supreme taps **Fig.:** TC388-M8-C0-WJ30BA / TC389-M8-CD-WE10BA

THE CUTTING GEOMETRIES



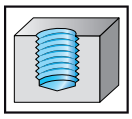
Watch the product video:
www.youtube.com/waltertools

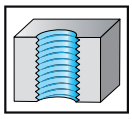
BENEFITS FOR YOU

- High level of process reliability thanks to special cutting geometries
- Low cost per thread thanks to high tool life quantity and fast machining time
- No oil required; can be used with emulsion

Three for all applications: The new thread former generation.

NEW

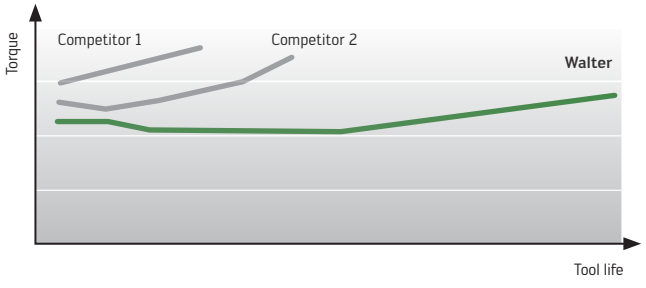


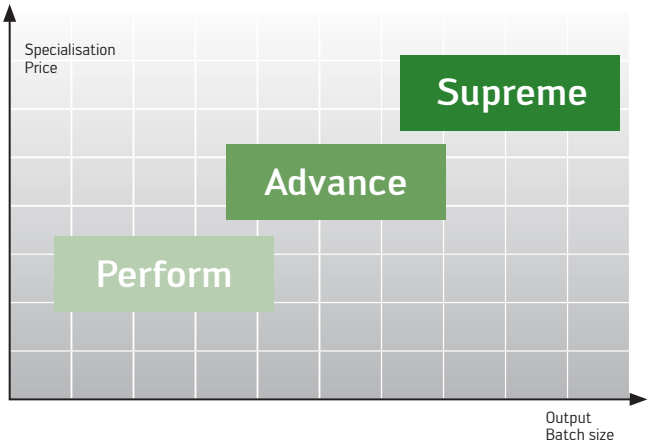


Tailored to different requirements:
Three thread formers with individual geometries and coatings for machining all formable materials and specifically for ISO P.

	Area of use	Tool characteristics	Advantages	Material groups P	M	K	N	S	H	O
TC430 Supreme 	ISO P	– HIPIMS and TiN coating – Higher number of forming edges – HSS-E-PM – Short threaded part	– Maximum tool life – For ISO P materials	●●	●	●	●	●		
TC420 Supreme 	Universal	– TiN and TiCN coating – HSS-E-PM – Short threaded part	– Long tool life – For all formable materials	●●	●●	●	●●	●		
TC410 Advance 	Universal	– TiN coating – HSS-E – Long threaded part	– For small and medium batch sizes – For all formable materials	●●	●●	●	●●	●		

Reduced torque and longer tool life thanks to new geometry as well as pre-treatment and post-treatment





_TC410 ADVANCE THREAD FORMER

Even more powerful thanks to new geometry.

NEW

THE TOOL

- Universal HSS-E thread former
- New geometry and very high surface quality
- Reduced torque and longer tool life
- For small to medium batch sizes

THE GRADES

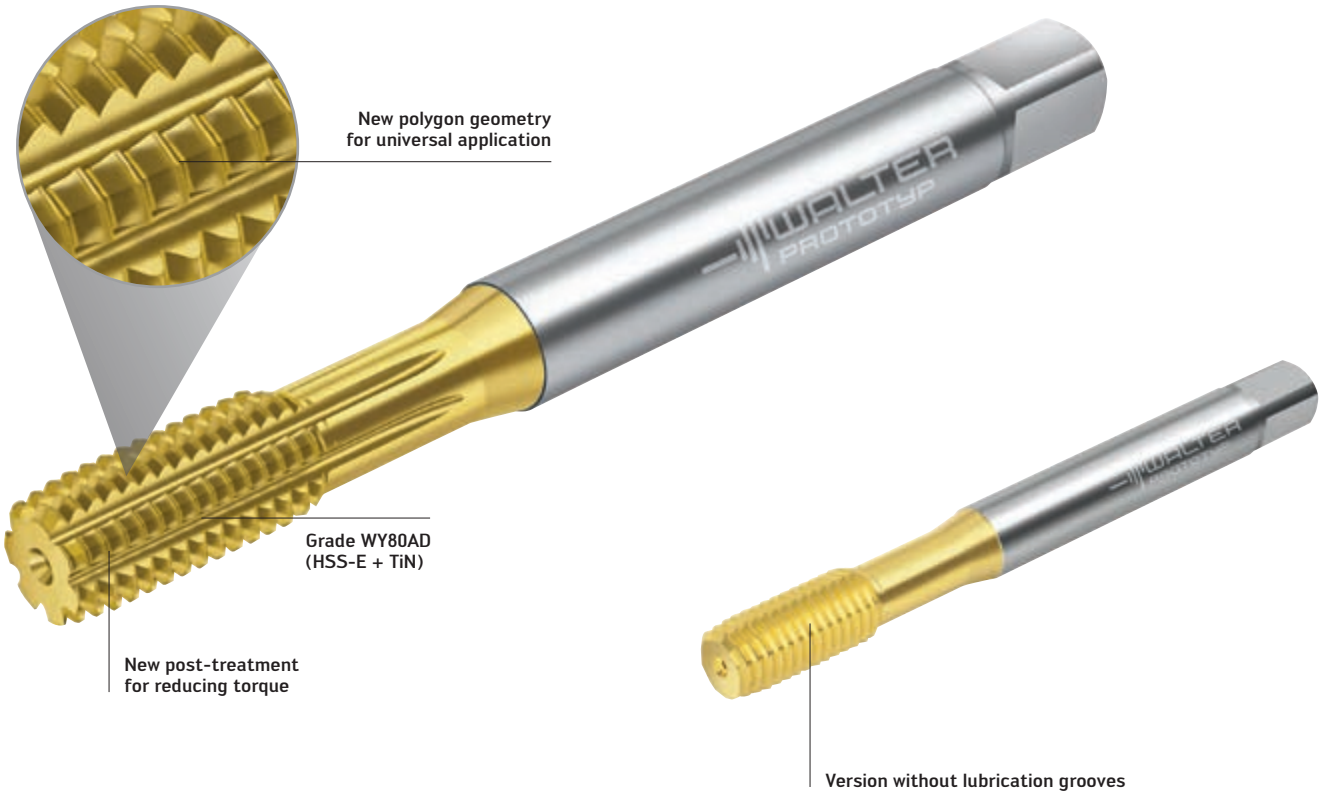
- WY80AD (HSS-E + TiN)

Dimension range:

- Metric: M2–M24
- Metric fine: M4 × 0.5–M30 × 2
- UNC: UNC 2–56 – UNC 5/8–11
- UNF: UNF 2–64 – UNF 5/8–18
- G: G1/8"–G1"

THE APPLICATION

- Blind-hole and through-hole threads
- Thread depth up to 3.5 × D_N
- ISO material groups P, M, K, N and S
- All formable materials
- Areas of use: General mechanical engineering, automotive and energy industries, etc.



TC410 Advance thread former

Fig.: TC410-M10-C6-WY80AD and TC410-M10-C0-WY80AD

BENEFITS FOR YOU

- Cost-effective even for small and medium batch sizes
- Can be used in all formable materials
- Reduced torque and longer tool life thanks to new geometry and post-treatment

_TC420 SUPREME THREAD FORMER

Superior performance, for universal use.

NEW

THE TOOL

- HSS-E-PM thread former
- With and without lubrication grooves
- With and without internal coolant (axial/radial)
- Tolerances: 6HX and 6GX

THE GRADE

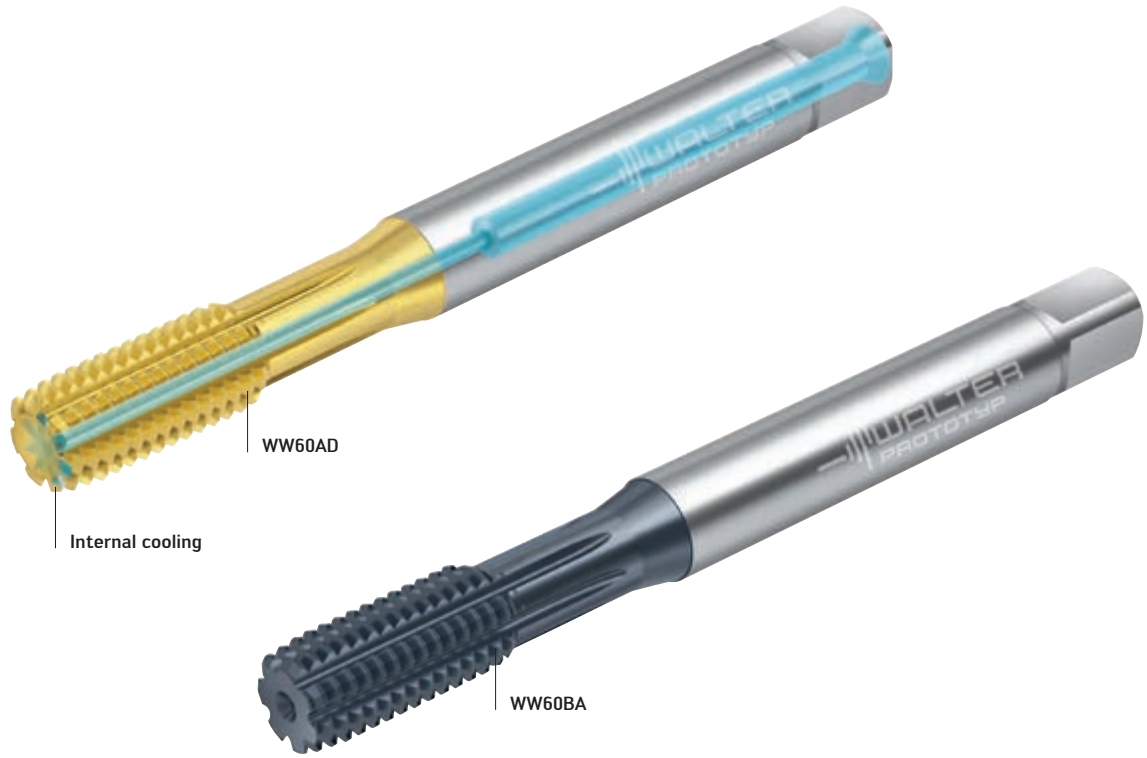
- WW60AD (HSS-E-PM + TiN)
- WW60BA (HSS-E-PM + TiCN)

Dimension range:

- Metric: M2–M20
- Metric fine: M8 × 1–M16 × 1.5

THE APPLICATION

- Blind-hole and through-hole threads
- Thread depth up to $3.5 \times D_N$
- ISO material groups P, M, K and N
- All formable materials
- Areas of use: General mechanical engineering, automotive and energy industries, amongst others



TC420 Supreme thread former **Fig.:** TC420

Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- Can be used universally
- Up to 30% lower torque
- High cutting speeds possible
- Better surface finish than that achieved using thread cutting

_TC430 SUPREME THREAD FORMER

Specialist in chip-free ISO P machining.

NEW

THE TOOL

- HSS-E-PM thread former
- With and without lubrication grooves
- With and without internal coolant (axial/radial)
- Tolerances: 6HX and 6GX

THE GRADE

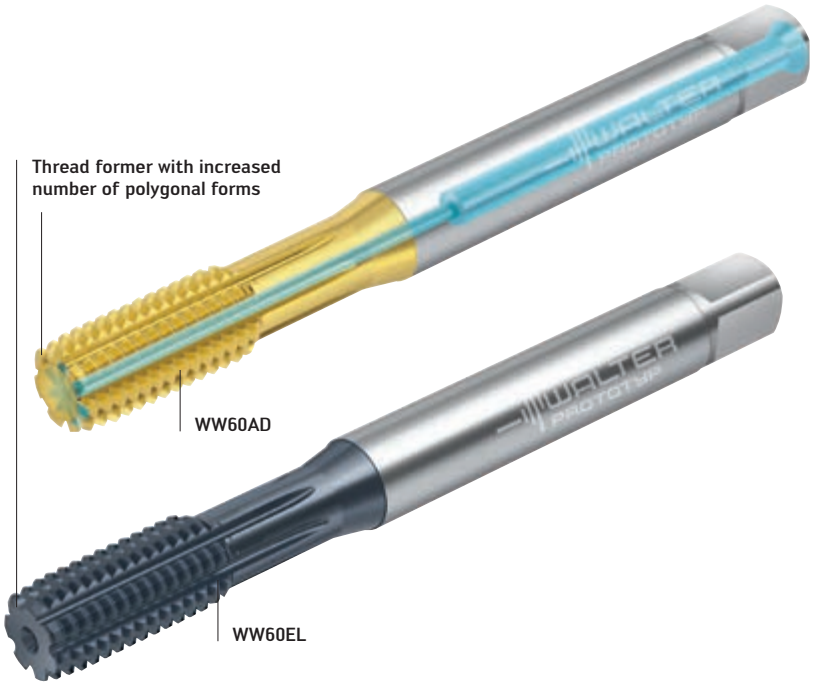
- WW60AD (HSS-E-PM + TiN)
- WW60EL (HSS-E-PM + TiAlN)

Dimension range:

- Metric: M2–M20
- Metric fine: M8 × 1–M16 × 1.5

THE APPLICATION

- For blind-hole and through-hole threads
- Thread depth up to 3.5 × D_N
- Specialist for ISO P materials
- All formable steel materials
- Areas of use: General mechanical engineering, automotive and energy industries, etc.



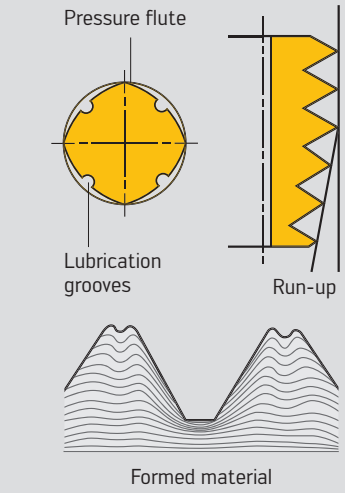
TC430 Supreme thread former **Fig.:** TC430

BENEFITS FOR YOU

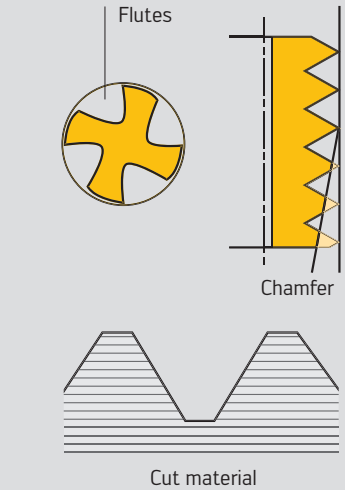
- Maximum tool life with ISO P
- No chip formation, no miscutting, improved surface finish
- Stable tool design to counteract the risk of breakages
- Very strong formed thread

Non-cutting production of internal threads

Thread former:



Tap:



A cut above the rest for large batch sizes and mass production.

NEW

THE TOOL

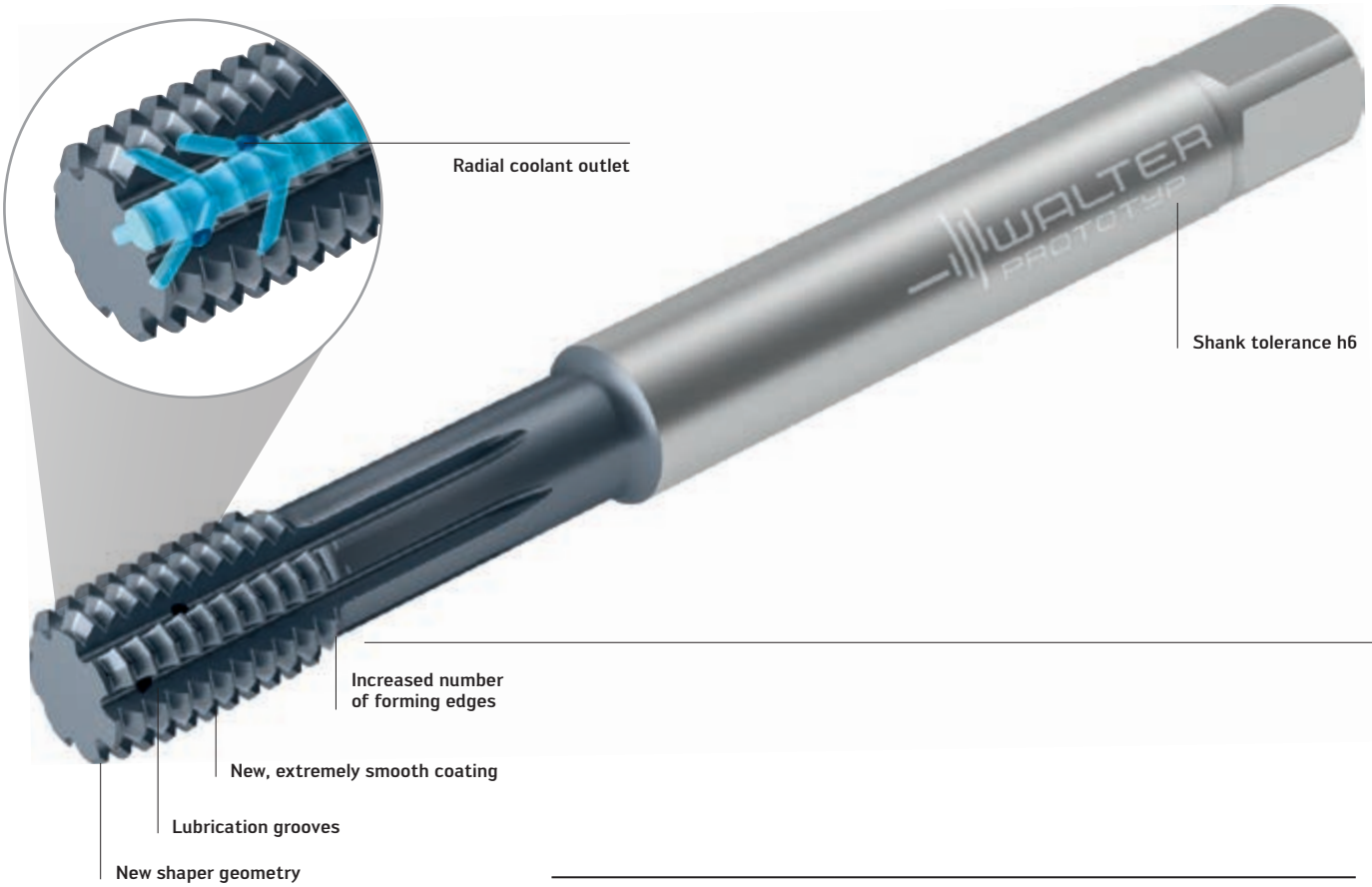
- Solid carbide thread formers
- New geometry, coating and surface treatment
- Grade: WG20EL (solid carbide + TiAlN)

Dimension range:

- Metric: M3–M10
- Metric fine: M10 × 1 – M16 × 1.5

THE APPLICATION

- Blind-hole and through-hole threads
- Thread depth up to 3.5 x D_N
- Specialised in ISO P
- Areas of use: Ideal for large-scale and mass production



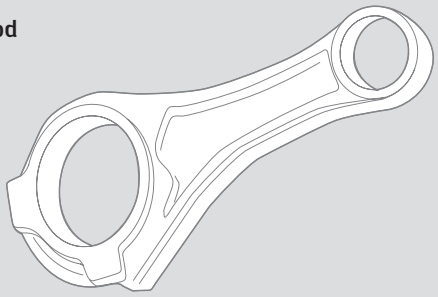
TC470 Supreme thread former **Fig.:** TC470-M10-C2-WG20EL

BENEFITS FOR YOU

- Low cost per thread for large batch sizes
- Maximum tool life thanks to the new substrate, innovative geometry and newly developed coating
- Reduced torque thanks to very high surface quality
- For all formable materials from the ISO P material group

APPLICATION EXAMPLE

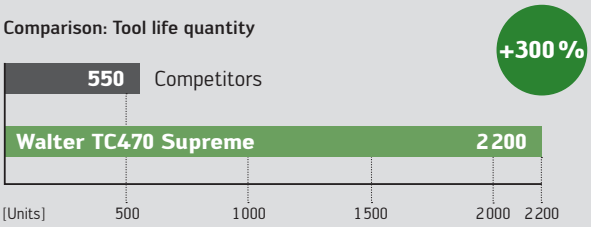
Connecting rod



Material: C7056

	Competitors (HSS-E)	**TC470 Supreme Solid carbide**
v_c (m/min)	13	24
Tool life quantity (units)	550	2 200

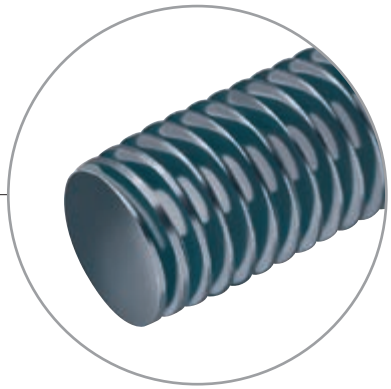
Comparison: Tool life quantity



Additional variants:

With lubrication grooves

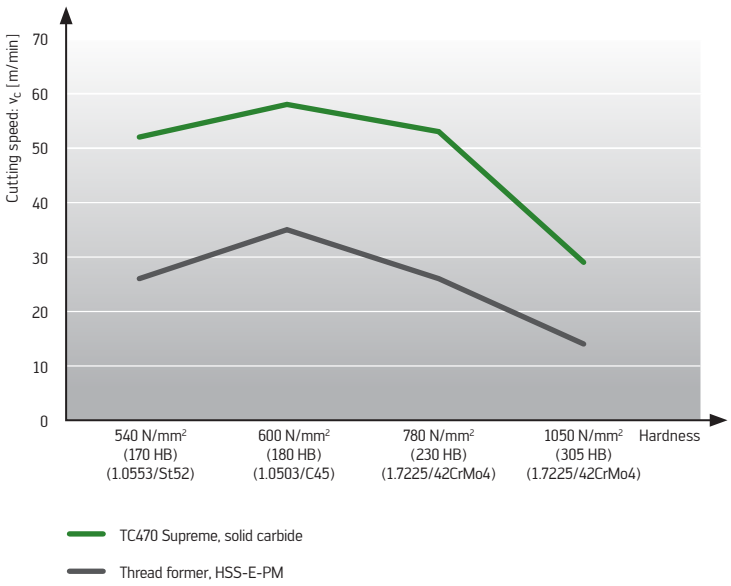
With lubrication grooves and axial internal coolant



Without lubrication grooves, without internal coolant

Comparison of cutting data

M10 · 2 × D_N · blind-hole machining



_TC620 SUPREME THREAD MILLING CUTTER

Reduced cutting pressure – increased productivity.

NEW

THE TOOL

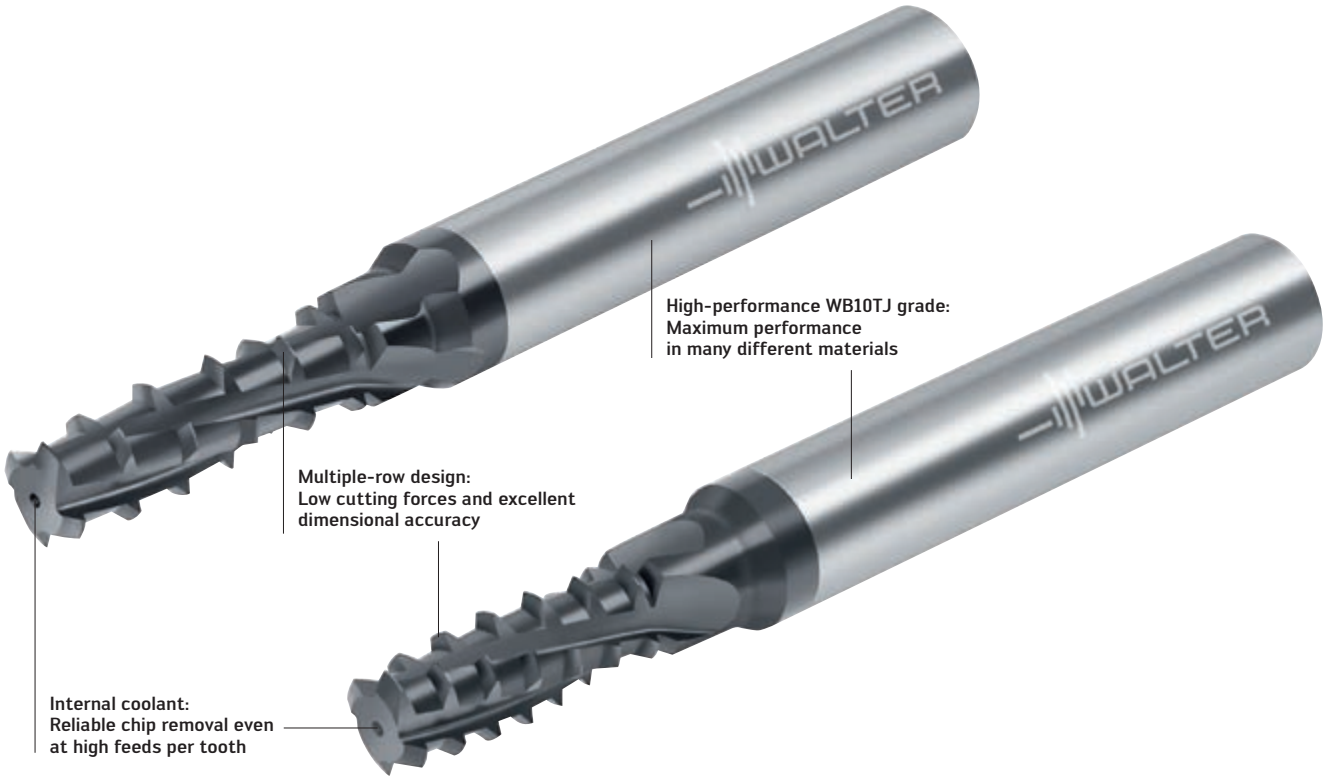
- Multiple-row thread milling cutter for universal application
- Designed for high cutting speeds and high feeds per tooth
- Shank according to DIN 6535 HA

Dimension range:

- M4–M20
- UNC 8–UNC 3/4

THE APPLICATION

- Blind-hole and through-hole threads
- ISO materials P, M, K, N and S up to 48 HRC
- Thread depths of 2 × D_N and 2.5 × D_N



TC620 thread milling cutter **Fig.:** TC620-M8-A1E-WB10TJ / TC620-M8-A1D-WB10TJ

Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- Low costs per thread thanks to fast machining time and high tool life quantity
- High level of process reliability and easy handling due to extremely infrequent radius correction
- Very good results even under unfavourable conditions and difficult materials

THE DESIGN

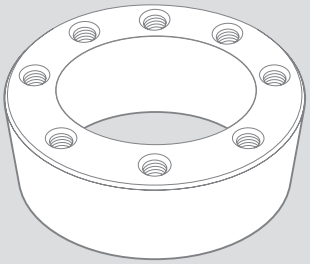
Thanks to the multiple-row tool design, the TC620 thread milling cutters impress with low cutting forces. This enables higher feeds per tooth than on conventional thread milling cutters.
The result: Lower wear and therefore higher tool life quantities.
The low cutting pressure means that radius corrections are only rarely required.

THE STRATEGY

Once the row spacing is bridged, the thread is complete. Asynchronous milling is advantageous when machining steel. Synchronous milling is recommended for tough materials, for example stainless steel. Some materials require a non-cutting pass.

APPLICATION EXAMPLE

Thread milling – M10

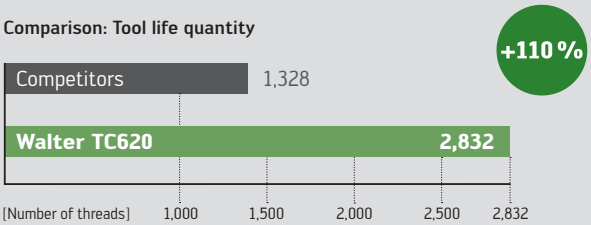


Material: ISO P - 1.0503 (C45)

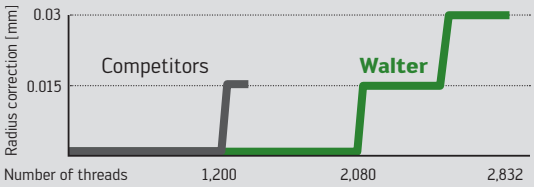
Strategy: Asynchronous milling

	Competitors	TC620-M10-A1D-WB10TJ
v_c (m/min)	100	130
f_z (mm)	0.06	0.2
Tool life quantity	1,328	2,832
Machining time (sec)	3.8	2.6

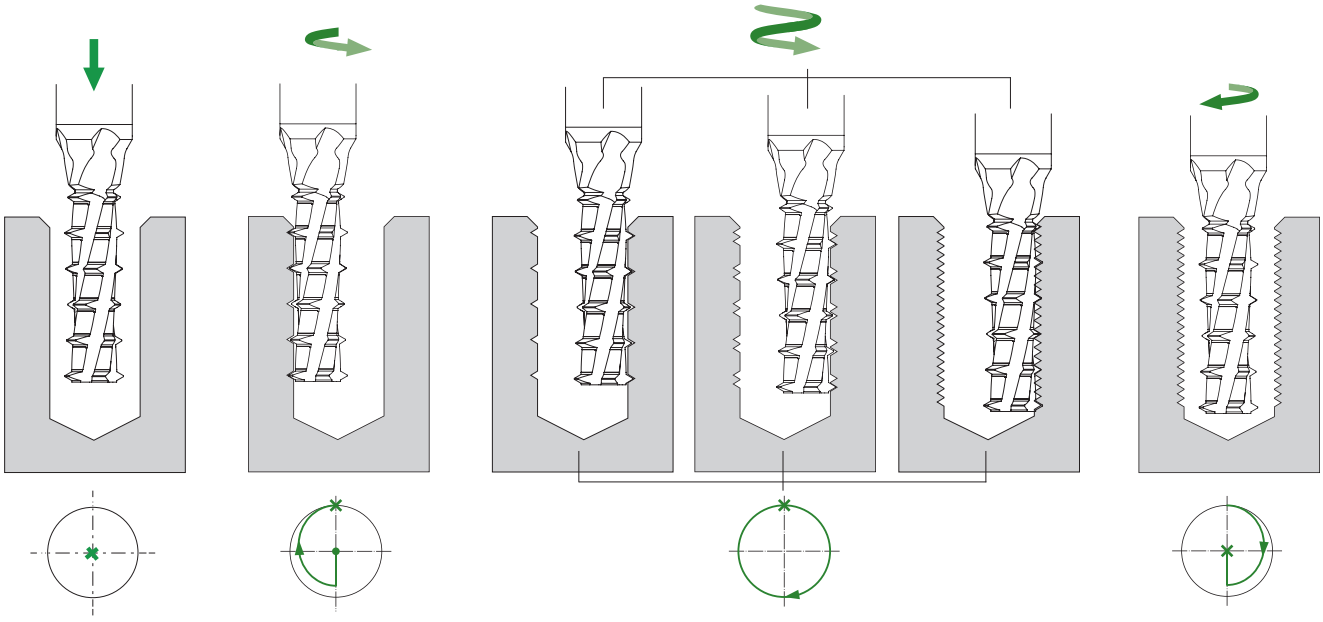
Comparison: Tool life quantity



Radius corrections



Easy handling, e.g. in unmanned production environments: Radius corrections are only required after 2080 threads.



Positioning the milling cutter over core hole and plunging

Descending loop

Producing the thread using helical interpolation until the row spacing is bridged

Exit loop

Hard machining times two: Core hole and thread in one operation.

NEW

THE TOOL

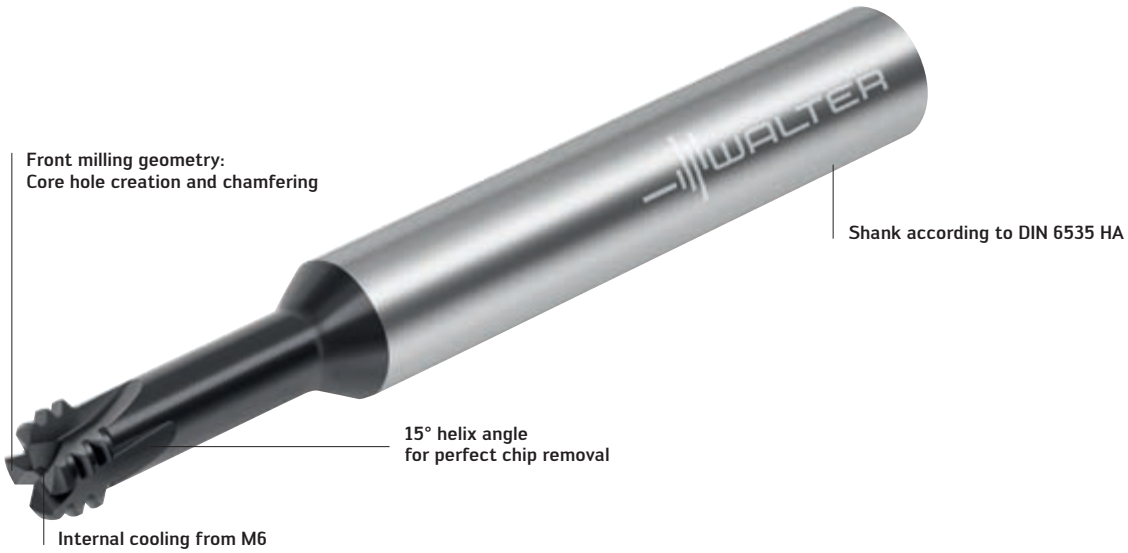
- Orbital drill thread milling cutter for hard machining
- Creation of core hole and thread in one operation
- Can also be used for chamfering
- IMPORTANT: Left-hand cutting tool

Dimension range:

- M3–M16
- UNC10–UNC3/4

THE APPLICATION

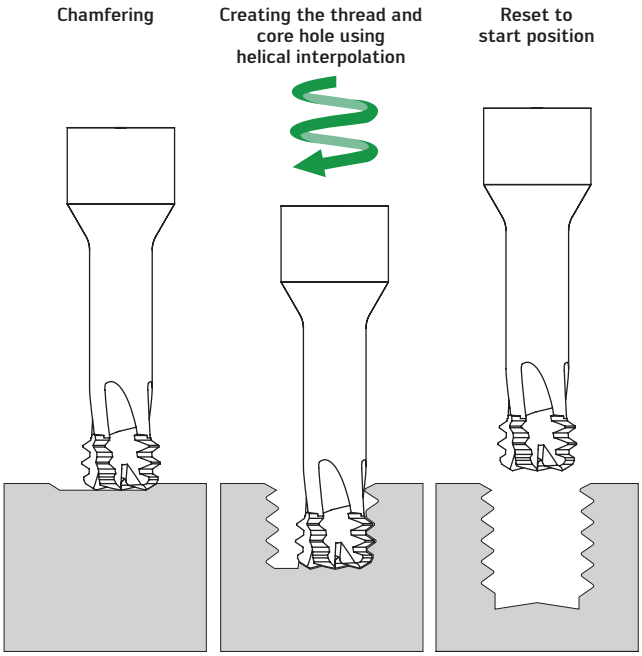
- Blind-hole and through-hole threads
- ISO P and ISO H materials with 44–65 HRC
- Thread depths of 2.0 × D_N and 2.5 × D_N



TC685 Supreme thread milling cutter **Fig.:** TC685-M8-A1D-WB10RC

THE STRATEGY

The TC685 is designed as a left-hand cutting version. Right-hand threads are therefore machined synchronously. Chamfering should take place before thread milling. Cooling with compressed air enables maximum tool life quantities in materials > 50 HRC.



BENEFITS FOR YOU

- Maximum process reliability and tool life quantity
- Very low cost per thread
- Reduces the number of tool positions

Maximum productivity – absolute process reliability.

NEW

THE TOOL

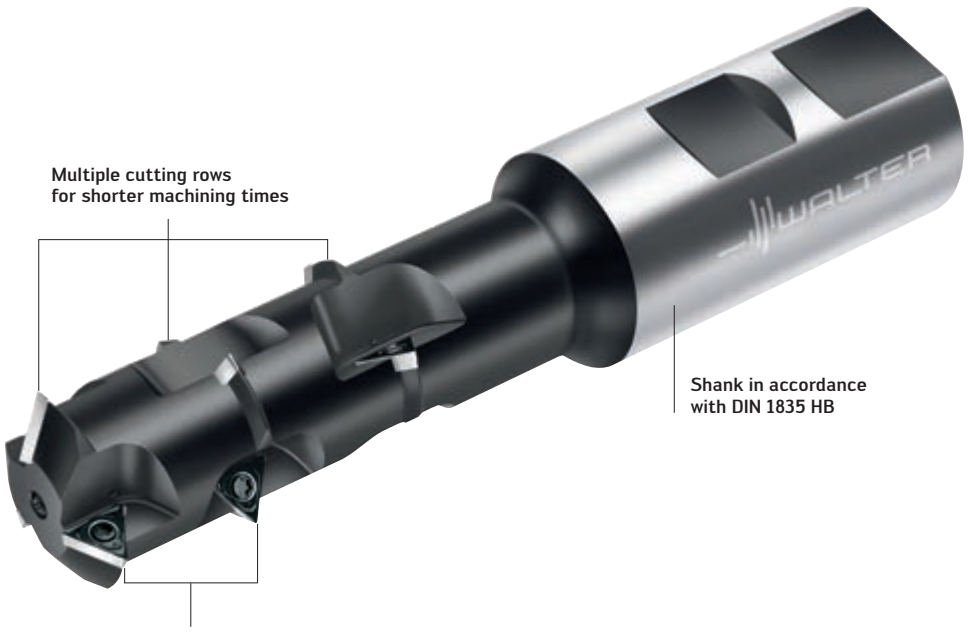
- Universal indexable insert thread milling cutter
- Designed for high cutting speeds and high feeds per tooth
- Adjustable coolant supply: Radial or axial coolant outlets
- T2712 family: Designed for $2 \times D_N$ thread lengths and with an additional neck in order to bridge interference contours

THE APPLICATION

- For threads with a nominal diameter from 24 mm
- Pitch range: 1.5–6 mm/18-4 TPI
- Thread depth up to $2.5 \times D_N$
- Can be used universally with ISO P, M, K, S and H up to 55 HRC

THE THREAD MILLING CUTTER INSERT

- Positive basic shape with three cutting edges
- Easy-cutting geometry
- Wear-resistant, universal grade: WSM37S
- Defined corner radii for producing threads in accordance with various standards



Powered by
Tiger·tec® Silver

T2711/T2712 thread milling cutter

Fig.: T2711

Significant reduction in machining time as multiple thread sections are machined simultaneously.
This enables machining times to be achieved which, in many cases, are comparable with tapping and thread forming.
The row spacing must be an integer which is a multiple of the thread pitch to be produced.
This means that numerous different pitches can be produced with just a few bodies.

BENEFITS FOR YOU

- **100% productivity:** Low costs per thread thanks to quick machining and high tool life quantity
- **100% process reliability:** Easy handling and few radius corrections
- **100% quality:** Outstanding thread quality thanks to superb operational smoothness – threads are free of chip residue

Walter Xpress

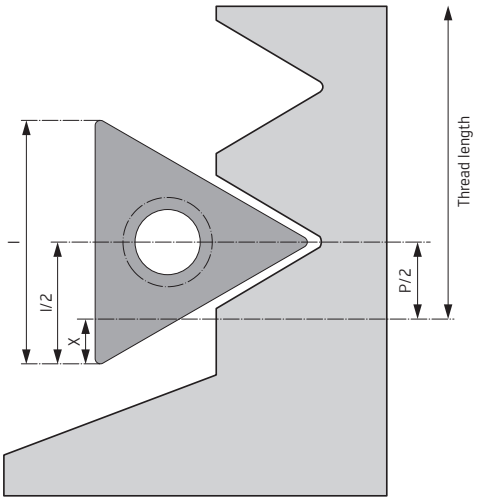
Watch the product video:
www.youtube.com/waltertools

UNUSABLE LENGTH

The thread length includes the last thread ridge plus half a pitch. Since l/2 is greater than P/2, this results in an "unusable length" (X), which must be taken into consideration during programming. This is calculated as half of the insert length (l/2) minus half of the thread pitch (P/2).

Example: M36 with P26300-0902.. thread milling cutter insert

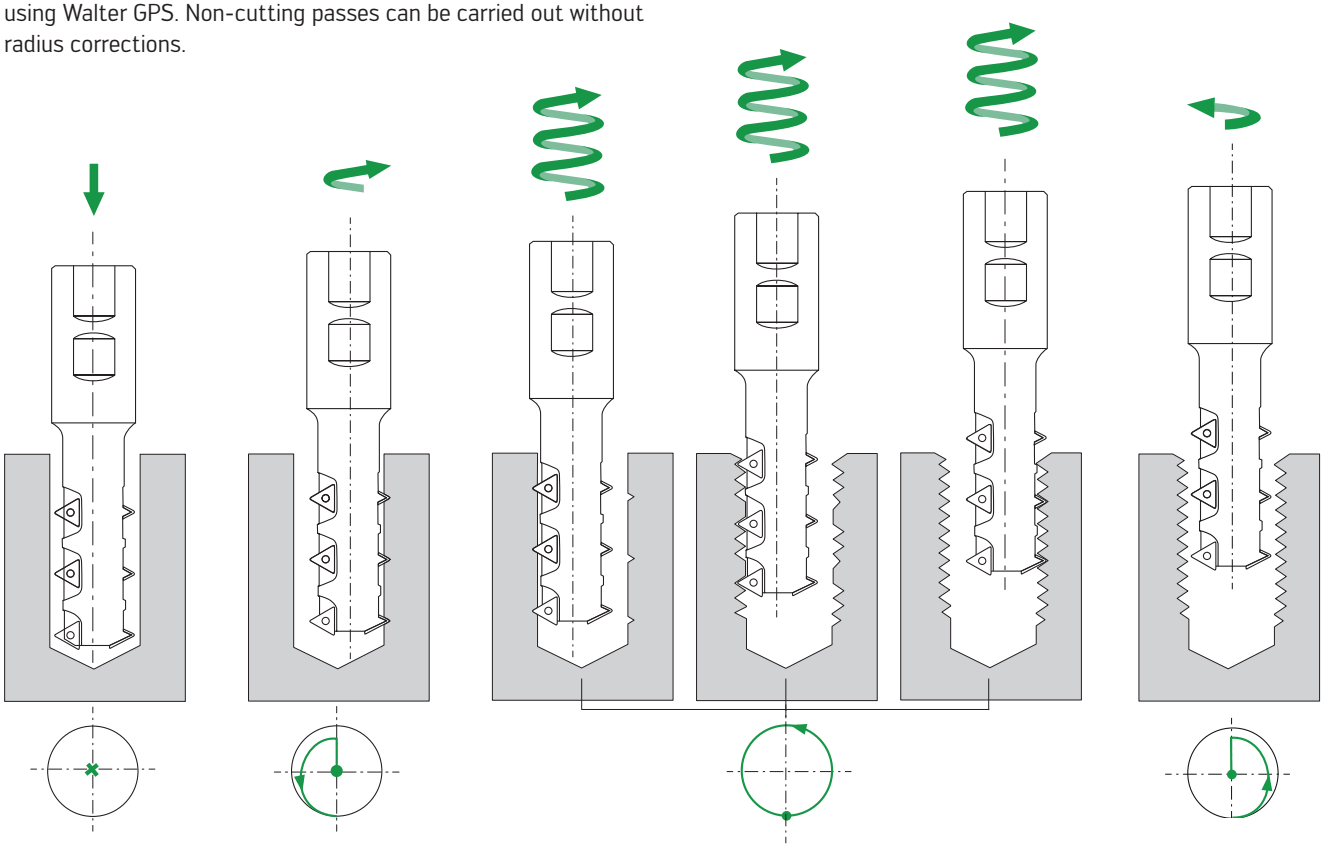
$$\text{Unusable length } X = l/2 - P/2 = \frac{9.34\ \text{mm}}{2} - \frac{4\ \text{mm}}{2} = 2.67\ \text{mm}$$



The unusable length of the T271.. families is less than the lead length of a tap.

THE STRATEGY

It is recommended that the thread be produced with a radial cut using synchronous milling. The programming radius can be determined using Walter GPS. Non-cutting passes can be carried out without radius corrections.



Positioning the milling cutter over core hole and plunging

Ascending loop

Producing the thread using helical interpolation until the row spacing is bridged

Exit loop and retracting the tool to the start position

Three families – singularly productive and versatile.

NEW

THE TOOL

- Universal indexable insert thread milling cutter
- Designed for high cutting speeds and high feeds per tooth

Single-row tools:

- With flute for completely cylindrical threads
- With Weldon shank and Walter Capto™ interface

THE APPLICATION

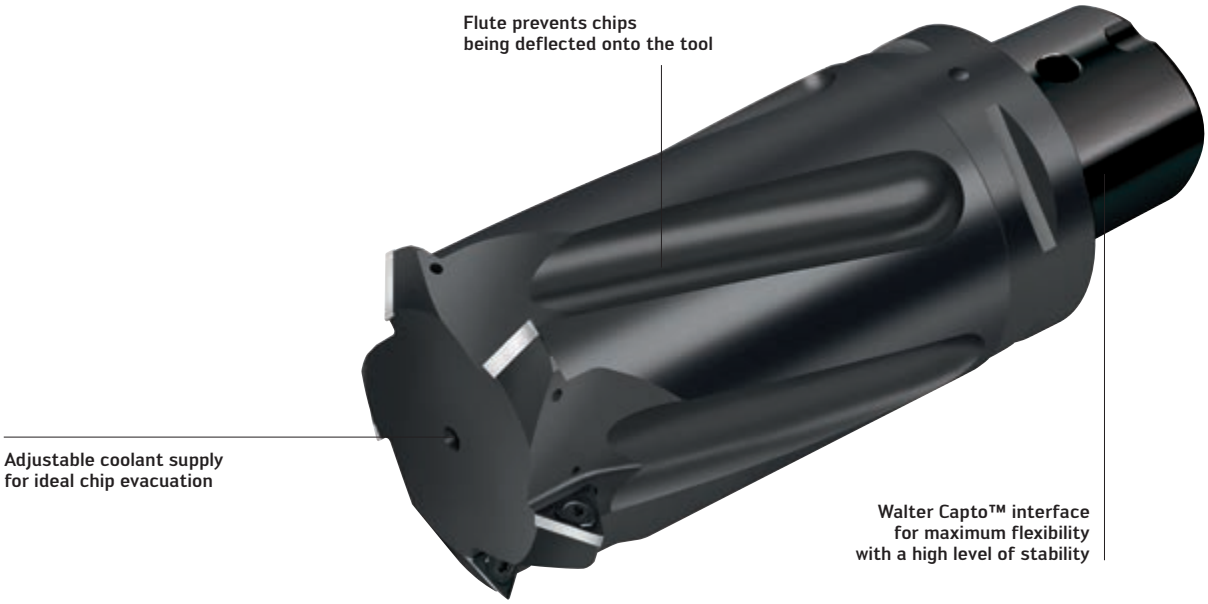
- For threads with a nominal diameter from 24 mm
- Pitch range: 1.5–10 mm/18–4 TPI
- Can be used universally with ISO material groups P, M, K, S and H up to 55 HRC

THE THREAD MILLING CUTTER INSERT

- Positive basic shape with three cutting edges
- Wear-resistant, universal grade: WSM37S
- Defined corner radii for producing threads in accordance with various standards

Two geometry variants:

- D67: Universal geometry for maximum tool life quantity
- D61: With anti-vibration land for a high level of operational smoothness with large projection lengths and difficult conditions



Powered by
Tiger·tec®Silver

T2713 thread milling cutter

Fig.: T2713-73-C6-5-14

BENEFITS FOR YOU

- **100% productivity:** Fast machining and high tool life quantity
- **100% process reliability:** Easy handling and few radius corrections
- **100% quality:** High operational smoothness and completely cylindrical threads
- **100% flexibility:** Various different thread pitches and lengths

Watch the product video:
www.youtube.com/waltertools

NEW ADDITION TO THE PRODUCT RANGE

T2713-94-C8-5-22
- For threads from M125/UN 5"
- With Walter Capto™ C8 interface

P26300-2204-D61 WSM37S
- For the pitch range 6–10 mm and 4 TPI

P26310-..G11-D61 WSM37S
- With 55° flank angle, for G threads (BSP)
- Designed for single-row tools

P26310 indexable insert **Fig.:** P26310-09G11-D61 WSM37S

THE STANDARD RANGE

- Different dimensions:
  M24–M125 / UNC 1"–UN 5" / G1"–G3 1/2"
- Different projection lengths:
  $2.0 \times D_N$, $2.5 \times D_N$ and $3.0 \times D_N$
- Tools for UN threads also available with one-inch shank

Also available from:

Walter Xpress

T2711-29-W32-3-09-3-24

T2712-29-W32-3-09-2-36

T2713-29-W32-3-09

C – Milling


WALTER
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WALTER

_MC025 ADVANCE SOLID CARBIDE MILLING CUTTER

High-feed milling at lightning speed.

NEW

THE TOOL

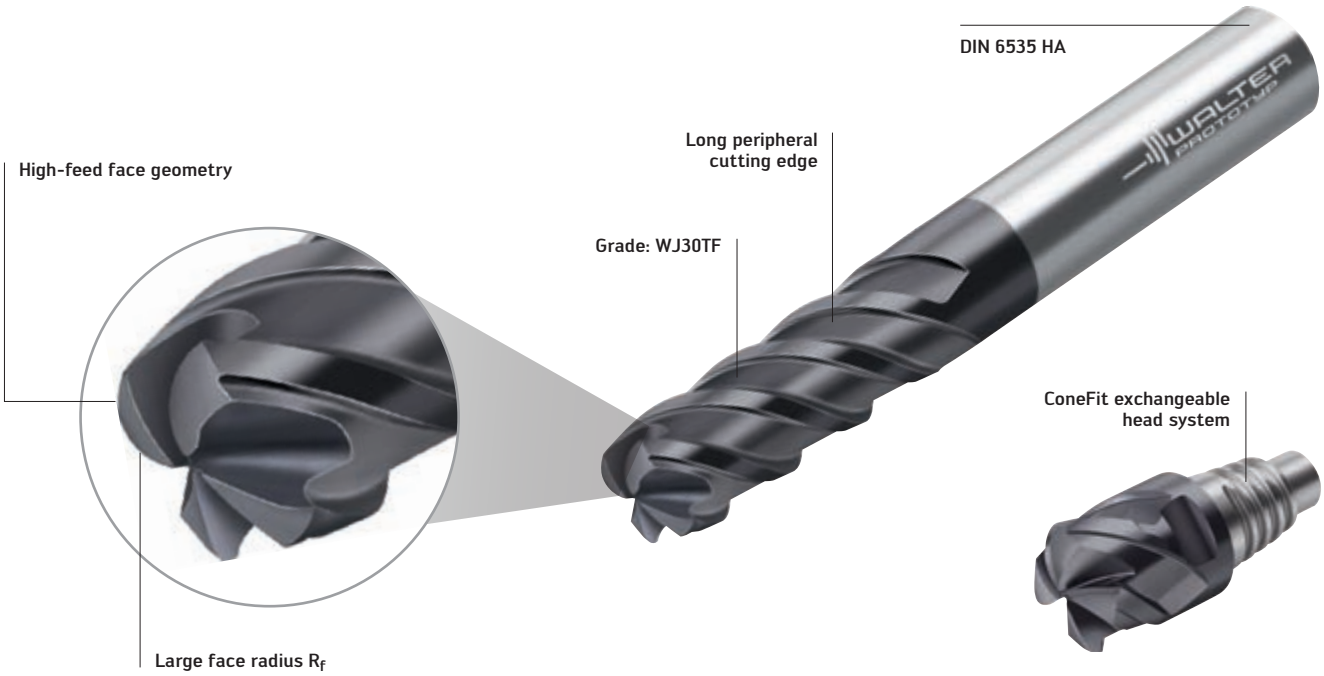
- Solid carbide milling cutter with high-feed face geometry
- Designs with both parallel shank and ConeFit exchangeable head system
- Long peripheral cutting edge for good chip removal and for providing support when machining walls
- Dia. 1–25 mm / 1/8–1"
- z = 2–4

THE GRADE

- WJ30TF (for ISO groups P, M, K and S)

THE APPLICATION

- Can be used universally
- Near-net roughing with high feeds per tooth at low depth of cut
- Machining operations for pocket, groove and freeform surfaces
- Areas of use: General mechanical engineering, mould and die making



Flash

MC025 Advance solid carbide milling cutter **Fig.:** WJ30TF

BENEFITS FOR YOU

- High-feed tools available from dia. 1 mm
- High process reliability thanks to low radial load on the tool
- Low inventory costs thanks to universal usability
- Can be reconditioned multiple times

_MD025 SUPREME SOLID CARBIDE MILLING CUTTER

High-feed milling at the highest level.

NEW

THE TOOL

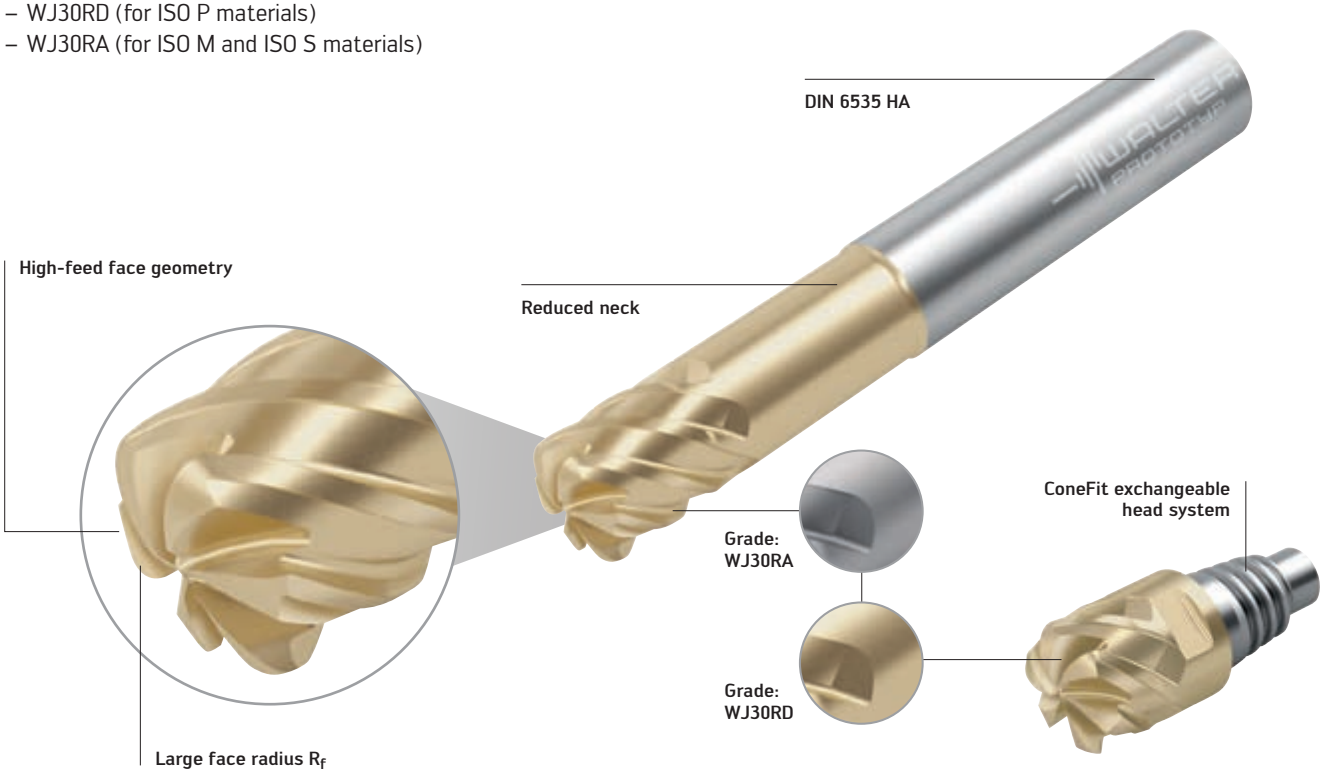
- Solid carbide milling cutter with high-feed face geometry
- With parallel shank and ConeFit exchangeable head system
- Short, stable peripheral cutting edge
- High number of teeth and reduced neck
- Two designs for different primary applications:
  - Dia. 6–25 mm / 1/4–1"
  - z = 5–6

THE GRADES

- WJ30RD (for ISO P materials)
- WJ30RA (for ISO M and ISO S materials)

THE APPLICATION

- ISO material groups P or M and S
- Near-net roughing with high feeds per tooth at low depth of cut
- Machining operations for pocket, groove and freeform surfaces
- Areas of use: Mould and die making, medical technology, aerospace and energy industries



Flash

MD025 Supreme solid carbide milling cutter

Fig.: WJ30RD and WJ30RA

BENEFITS FOR YOU

- High-feed tools with even more teeth for maximum productivity
- Ideal for variable use on complex components thanks to compact design and reduced neck for deep cavities
- High process reliability thanks to low radial load on the tool

Uniquely efficient – for universal use in ISO P, M and K.

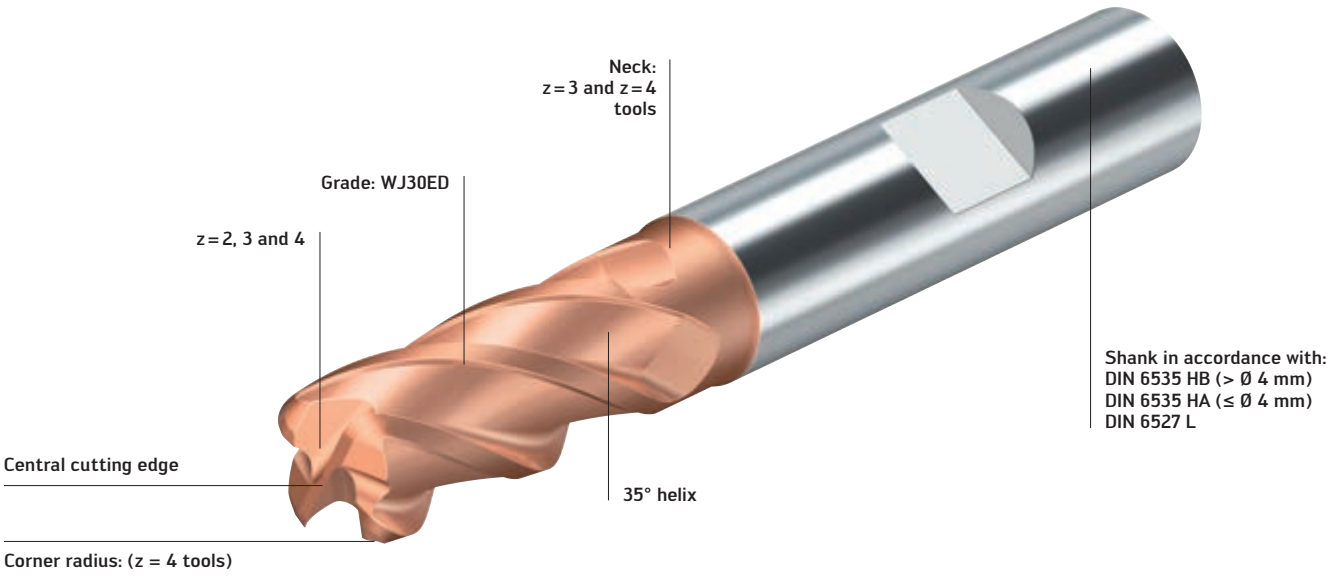
NEW TO THE RANGE

THE APPLICATION

- ISO material groups P, M and K
- Lateral milling, full slotting, pocket milling, helical plunging, ramping
- Areas of use: General mechanical engineering, mould and die making, automotive and energy industries

THE TOOLS

- Solid carbide milling cutters from the Perform line
- Metric and inch
- With and without neck (z = 3 and z = 4 tools)
- With and without corner radius (z = 4 tools)
- 1 family; 126 dimensions
- With 2, 3 or 4 cutting edges
- Dia. 2–20 mm; 1/8–3/4"



Walter Prototyp MC232 Perform **Fig.:** MC232-12.0W4B200C-WJ30ED

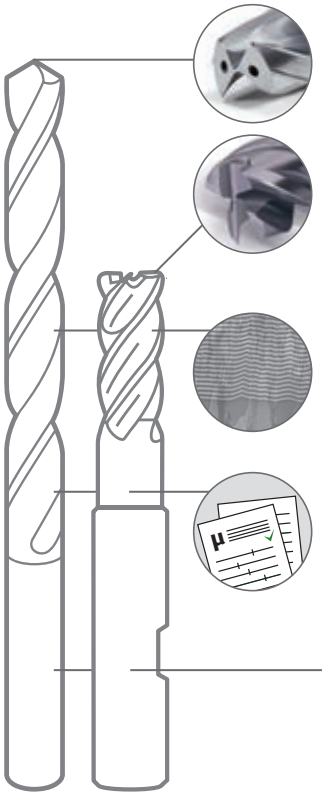
BENEFITS FOR YOU

- Can be used universally for diverse milling strategies with various different materials
- Wide range of applications thanks to tools with reduced neck and corner radii
- High level of cost efficiency for small and medium batch sizes

_WALTER RECONDITIONING SERVICE

Reconditioning to the original manufacturer quality really pays off.

The Reconditioning Service from Walter Multiply makes a significant contribution towards lowering your production costs. This service can provide you with Walter Titex and Walter Prototyp tools that are as good as new, in the original manufacturer quality and all at an attractive price-performance ratio.



ORIGINAL GEOMETRIES
Cutting edge geometries are extremely complex. During reconditioning, Walter calls upon its extensive manufacturing experience to return them to their original condition.

ORIGINAL COATING
When it comes to tool performance, the coating is key. Only Walter uses the original coating process during reconditioning.

ORIGINAL TOLERANCES
These marks of quality are just as important when reconditioning as when Walter manufactures a completely new tool. To achieve this, we only use the most up-to-date measuring methods.

RECONDITIONING RANGE
Walter's solid carbide milling cutters and drills can be reconditioned as standard and special tools.

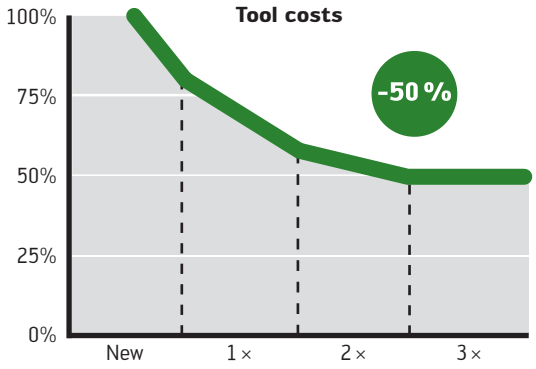
Reconditioning Service
Original Walter Quality

OUR MARK OF 100% QUALITY
Look out for the "Original Walter Quality" label. This label indicates that a tool has been reconditioned to original manufacturer quality. It even appears in the ordering documents, enabling you to see the tools for which we recommend our Reconditioning Service.

50% LOWER COSTS!

Tools are often disposed of far too early, even though the Walter Reconditioning Service can restore the tool a number of times to original manufacturer quality. Benefit from reduced costs, reliable production processes and consistent tool life by having your tools reconditioned at our Reconditioning Centre, which is available worldwide. That's how you save up to 50% on your tool costs!

Find out more at: www.reconditioning.walter



Number of reconditioning operations

More efficient roughing – with the new knurled profile.

NEW

THE TOOLS

– Two families with new knurled profile for roughing operations

MC319 Advance: Solid carbide end milling cutter [metric] with internal coolant supply

– Variant:
  With neck (DIN 6527 L)

MC320 Advance: Solid carbide end milling cutter [inch & metric]

– Variants:
  Without neck (DIN 6527 K)
  With neck (DIN 6527 L)

MC320 ConeFit: Replaceable head system [metric]

THE APPLICATION

– Roughing operation
– Can be used universally

Primary application:

– Steel (ISO P)

Secondary application:

– Stainless steels (ISO M)
– Cast iron (ISO K)
– Materials with difficult cutting properties (ISO S)

THE GRADES

– WK40TF (MC319 Advance; MC320 Advance)
– WJ30TF (MC320 ConeFit)

Walter Prototyp solid carbide milling cutters **Fig.:** MC319 / MC320 Advance; MC320 ConeFit

BENEFITS FOR YOU

– Requires 30% less power in the milling process thanks to the new roughing profile
– Robust tool
– Can be used universally, especially for roughing
– Short chips
– Extremely quiet milling process
– Ideal for unstable conditions of use

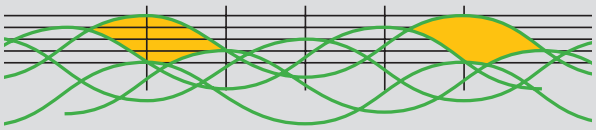
THE GEOMETRIES

- Knurled profile specially developed for roughing operations
- With centre cutting edge: MC320 Advance; MC320 ConeFit
- Without centre cutting edge: MC319 Advance
- DIN 6535 HB shank variant
- 40° helix
- Pre-treatment adapted to tool diameter

CHIP FORMATION ON THE KNURLED PROFILE

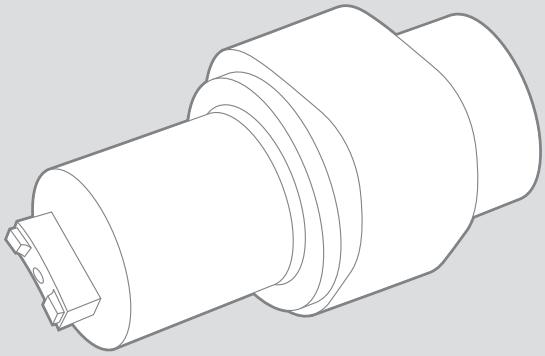
Smooth cutting edge:

Profiled cutting edge:



APPLICATION EXAMPLE

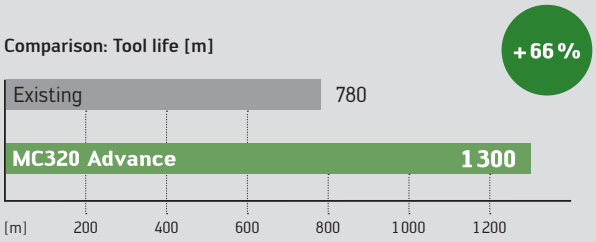
Roughing – Camshaft



Material: 100Cr6

	Existing	Walter MC320-16.0W4BC-WK40TF
a_e	14 mm	14 mm
a_p	8.0 mm	8.0 mm
v_c	80 m/min	80 m/min
n	1600 rpm	1600 rpm
f_z	0.30 mm	0,30 mm
v_f	1920 mm/min	1920 mm/min
Cooling	Emulsion	Emulsion
Q	215 cm³/min	215 cm³/min
Tool life	780 m	1300 m

Comparison: Tool life [m]



Watch the product video:
www.youtube.com/waltertools

Dynamic milling – now an entire range.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

– Length of cutting edge $L_c = 4 \times D_c$

THE APPLICATION

– Specially designed for dynamic milling (low a_e, high a_p)
– Suitable for various materials
– Cutting width a_e depends on the material

THE GRADE

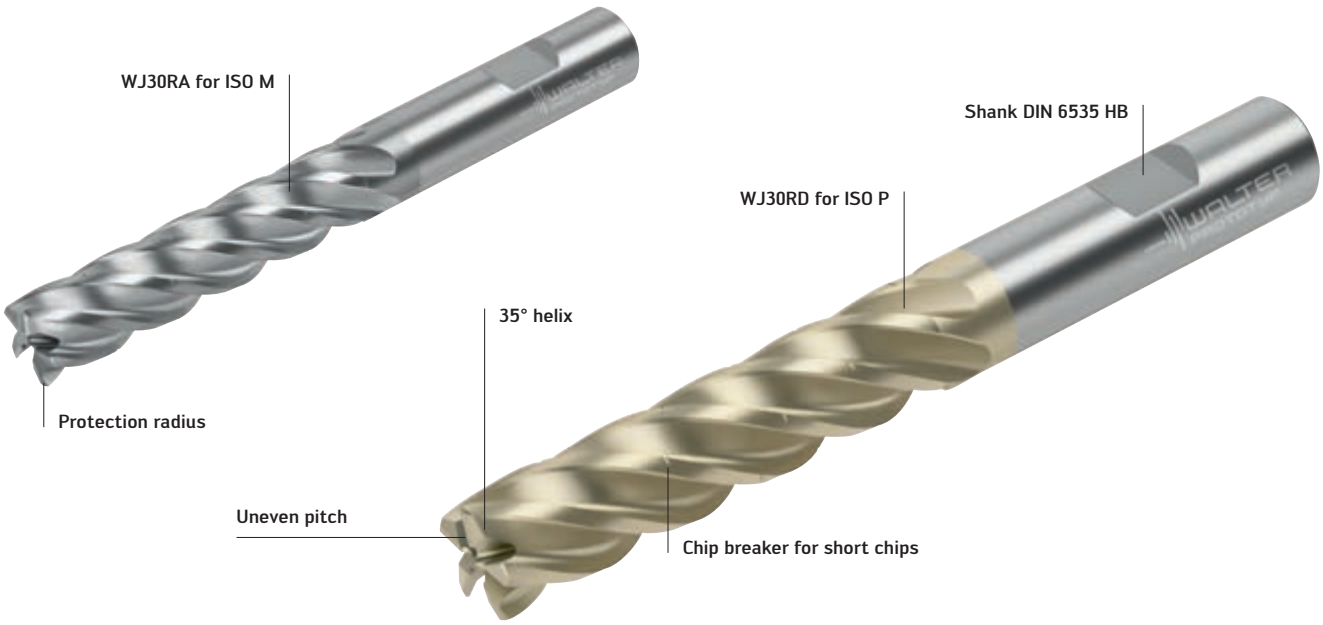
– WJ30RD for steel (ISO P)
  Secondary application: Cast iron (ISO K), NF metals (ISO N)
– WJ30RA for stainless steels (ISO M)
  Secondary application: Materials with difficult cutting properties (ISO S)

THE TOOL

– Solid carbide milling cutter with Weldon shank
– Version with chip separator
– Dia. 6–12 mm / z = 5
– Dia. 1/4–1/2" / z = 5
– Dia. 16–20 mm / z = 6
– Dia. 5/8–3/4" / z = 6

THE GEOMETRY

– No centre cutting edge
– Defined protection radius
– Cutting length L_c:
  $3 \times D_c$ / $3 \times D_c$ (with neck) / $4 \times D_c$ / $5 \times D_c$



MD133 Supreme solid carbide milling cutter **Fig.:** WJ30RD and WJ30RA

BENEFITS FOR YOU

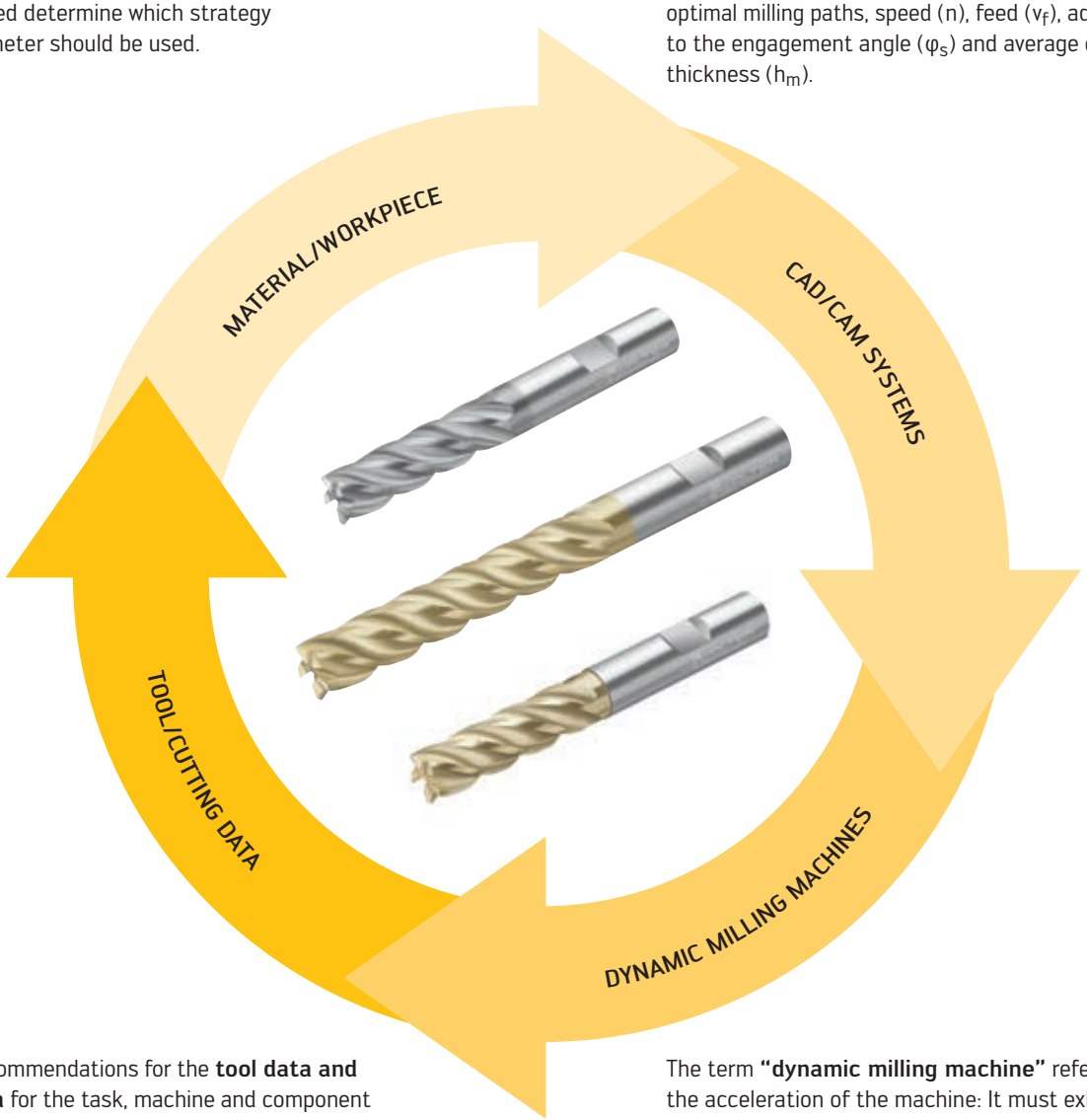
– High process reliability in unmanned machining
– Maximum productivity due to optimal metal removal rate with reduced machining times
– Max. tool life: Use of the entire length of the cutting edge and uniform wear
– High level of flexibility for a variety of different cavities on the component (machining with a tool diameter)
– No problems working with materials that have difficult cutting properties or under unstable conditions

Watch the product video:
www.youtube.com/waltertools

What are the requirements for dynamic milling?

The **material** dictates the cutting values for the milling tools, i.e. the radial cutting width (a_e) and the engagement angle (φ_s). The dimensions of the pockets and cavities to be produced determine which strategy and tool diameter should be used.

Most **CAD/CAM systems** provide the elements necessary for dynamic milling. The software avoids full-depth cuts and collisions, calculating all of the key parameters such as the milling direction, optimal milling paths, speed (n), feed (v_f), adherence to the engagement angle (φ_s) and average chip thickness (h_m).



Optimum recommendations for the **tool data and cutting data** for the task, machine and component in question can be determined using Walter GPS*. Most chucks can be used for dynamic milling. However, Walter recommends the MD133 Supreme solid carbide milling cutter with Weldon shank. The milling cutter's cutting length (L_c) and diameter (D_c) are defined by the geometry of the workpiece.

The term **"dynamic milling machine"** refers to the acceleration of the machine: It must exhibit sufficiently high acceleration behaviour and high rapid traverse rates and feeds, as well as a wide speed range and short calculating and switching times.

* Walter GPS – the machining navigation system at: walter-tools.com

The full range for solid carbide machining.

NEW

THE TOOLS

Seven tool families for ISO H machining up to 63 HRC

- New, performance-improving geometry and WB10TG grade
- Optimised for maximum surface quality and tool life

THE APPLICATION

- Specially designed for ISO H materials up to 63 HRC
- For machining of 3D contours
- For a range of milling strategies: HPC roughing, high-feed milling, finishing with ball-nose end mills
- Areas of use: Mould and die making, general mechanical engineering

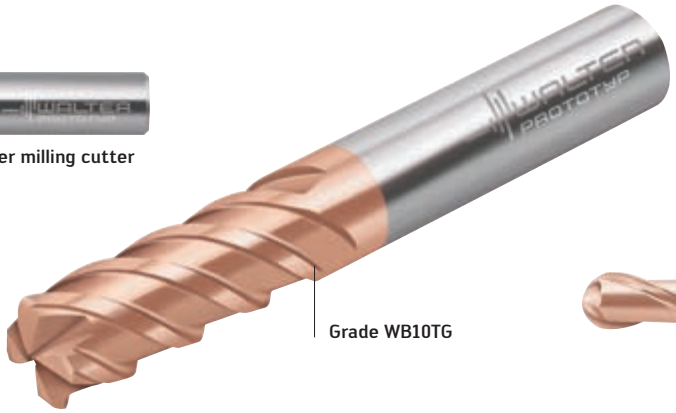
THE GEOMETRIES

- Specially developed for solid carbide machining
- Large selection of neck and shank variants for universal use in ISO H materials

MC183 Advance multi-flute shoulder milling cutter with up to 16 teeth

MC480 Advance mini ball-nose end mill Dia. 0.4–5 mm

MC187 Advance multi-flute shoulder milling cutter with/without radius



Grade WB10TG

MC089 Advance high-feed milling cutter

MC482 Advance ball-nose end mill

Toric MC281 Advance mini tools Dia. 1–4 mm

MC388 Advance shoulder/slot milling cutter with/without radius

ISO H Advance solid carbide milling cutters

Fig.: MC089 Advance, MC183 Advance, MC187 Advance, MC281 Advance, MC388 Advance, MC480 Advance, MC482 Advance

BENEFITS FOR YOU

- Cost-effective and technically optimised for hardened materials up to 63 HRC (ISO H)
- Large selection from wide range of seven tool families
- High metal removal rates thanks to special geometries for solid carbide machining
- Long tool life due to Walter's new WB10TG grade
- Time and cost-savings for high-speed or high-performance milling

Can be used universally for small and medium batch sizes.

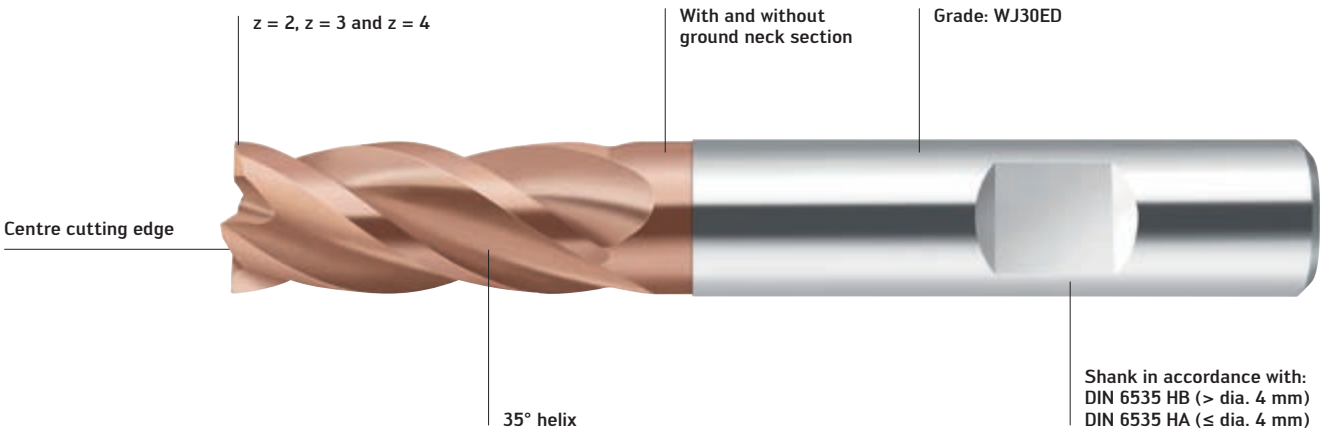
NEW

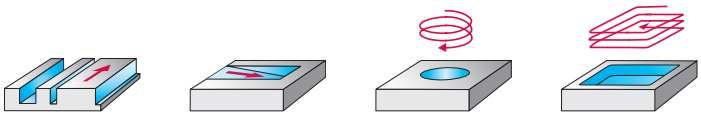
NEW ADDITION TO THE PRODUCT RANGE

- With ground neck section
- Solid carbide milling cutters from the Perform line
- 1 family – 78 dimensions
- Milling cutters with two, three or four cutting edges
- Dia. 2–20 mm
- Dia. 1/8–3/4"
- Design according to DIN 6527 L

THE APPLICATION

- ISO material groups P, M and K
- Lateral milling, full slotting, pocket milling, helical plunging, ramping
- Areas of use: General mechanical engineering, mould and die making, automotive and energy industries





Solid carbide milling cutter **Fig.:** MC232 Perform

BENEFITS FOR YOU

- Universal applicability
- Wide range of applications
- High level of cost efficiency for small and medium batch sizes

Cost-efficient machining of nickel-based alloys.

NEW

THE TOOL

Walter Prototyp brazed ceramic milling cutters MC275/MC075

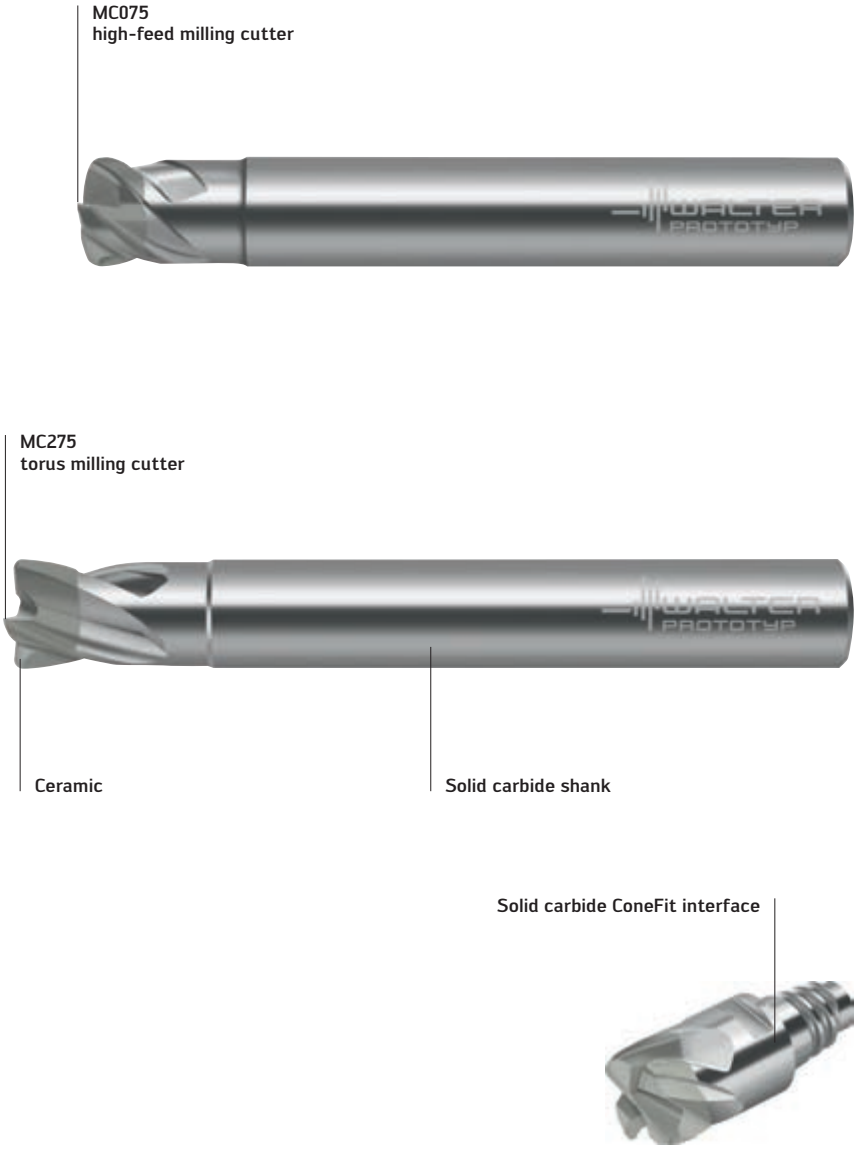
Toric milling cutters:
- Dia. 8–25 mm
- Corner radius 1–1.5 mm
- Number of teeth 4–8
- Cutting length 7–9 mm

High-feed milling cutters:
- Dia. 8–25 mm
- Number of teeth 4

Properties:
- Tough tool thanks to combination of carbide and ceramic
- Good vibration damping

THE INTERFACE

- Parallel shank
- ConeFit



Walter Prototyp ceramic milling cutters

Fig.: MC275 and MC075

BENEFITS FOR YOU

- Significantly increased cutting speeds (in comparison to solid carbide tools)
- High metal removal rate
- Short machining times
- High productivity with nickel-based alloys with difficult cutting properties, in particular, Inconels

THE APPLICATION

- Roughing operations on nickel-based alloys (e.g. Inconel 718)
- Synchronous milling
- Dry machining
- Milling strategies: Full slotting, lateral milling, ramping, helical milling, plunging
- Recommended machining allowance for subsequent finishing operation (milling, grinding): Min. 0.5 mm
- Recommended chucks: Power chuck, hydro-expansion chuck

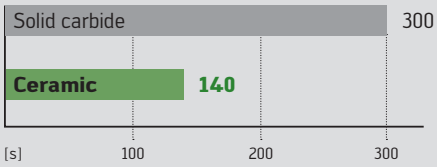
APPLICATION EXAMPLE

Inconel 718 / Strategy: Roughing

Ceramic milling cutters in use: Blisk machining (plunging), Inconel

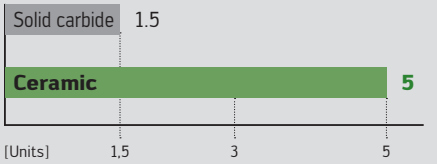
	Solid carbide Dia. 12	**Ceramic Dia. 12**
a_e	1.75 mm	1.1 mm
a_p	18 mm	18 mm
v_c	40 m/min	680 m/min
n	1060 rpm	18,000 rpm
f_z	0.1 mm	0.02 mm
v_f	424 mm/min	1440 mm/min
Cooling	Emulsion	Dry
Q	13.3 cm³/min	28.6 cm³/min

Comparison: Machining time [s]



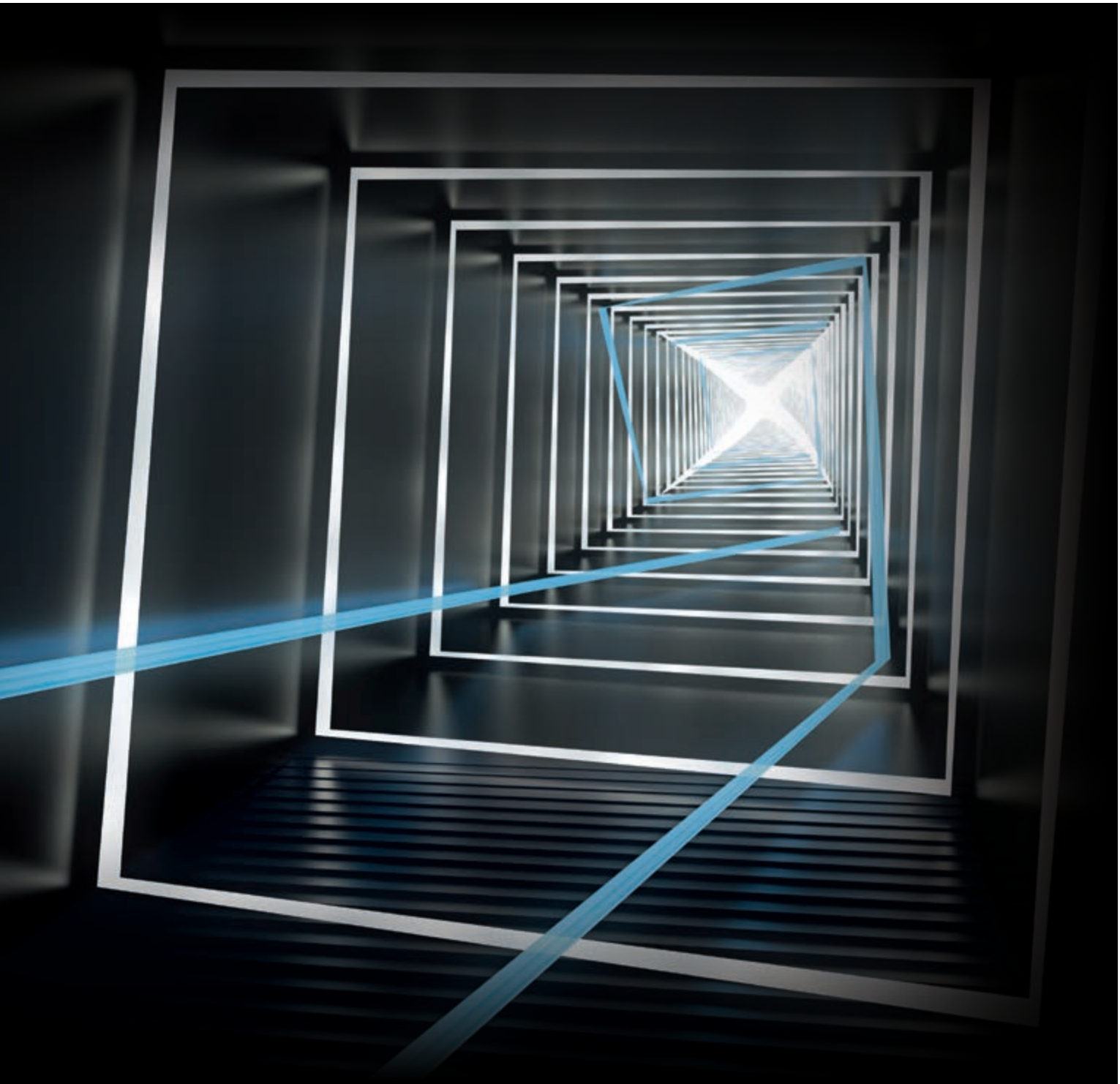
-53 %

Comparison: Tool life [units]



+333 %

PERFORMANCE AND RELIABILITY IN EQUAL MEASURE – A UNIQUE EXPERIENCE.



Xtra·tec® XT

Better performance, greater process reliability: The latest generation in the successful range of Walter milling tools not only meets both these requirements but takes them to a whole new level.
These two defining characteristics, evident in equal measure, are the product of an innovative and pioneering development process that is opening up a completely new perspective on productivity. The name alone means business: XT stands for Xtended Technology.

At Walter, we have never been afraid of setting ourselves ambitious goals. This two-fold challenge – performance and process reliability – is the key to a new perspective with Xtra·tec® XT.

For identifying two objectives and eventually reaching them together is no mean achievement.
A new perspective on productivity: Xtra·tec® XT.

Performance and reliability extend your perspective.

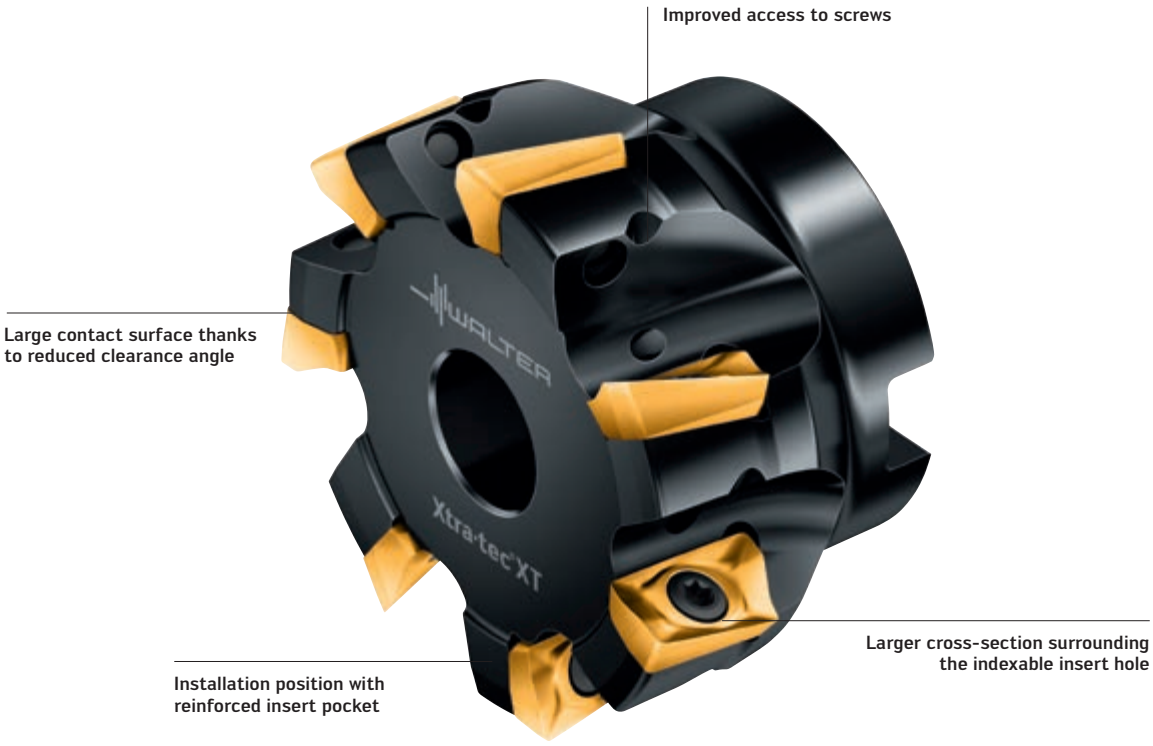
NEW

THE TOOL

- Xtra·tec® XT M5130 shoulder milling cutter
- Stable cross-section due to modified installation position of the indexable inserts
- Two pitches for different applications
- Approach angle: Exactly 90°
- Oversize milling cutter for machining operations on deep shoulders
- Dia. 10–160 mm (or 0.5–6")
- Interfaces: ScrewFit, cylindrical-modular, Weldon or parallel shank and bore adaption

THE INDEXABLE INSERTS

- Rhombic, positive indexable inserts
- Two cutting edges with positive basic shape
- Stabilised cross-section due to reduced clearance angle
- Three indexable insert sizes with different corner radii:
  - AC..0602..: r = 0.2–1.6 mm, $a_{p\ max}$ = 5 mm
  - BC..1204..: r = 0.4–4.0 mm, $a_{p\ max}$ = 12 mm
  - BC..1605..: r = 0.8–6.0 mm, $a_{p\ max}$ = 15 mm
- Variants:
  - Circumference fully sintered (ACMT.., BCMT..)
  - Circumference fully ground (ACGT.., BCGT.. or ACHT.., BCHT..)



Powered by
Tiger·tec® Silver
Tiger·tec® Gold

Xtra·tec® XT M5130 shoulder milling cutter

Fig.: M5130-063-B22-07-15

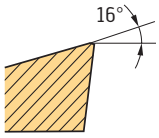
THE APPLICATION

- Universal system
- For steel, stainless steels, cast iron, non-ferrous metals and materials with difficult cutting properties
- Face milling, shoulder milling, ramping, pocket milling and circular interpolation milling
- Small indexable inserts, high number of teeth: Ideal for workpieces with small machining allowances
- Areas of use: Energy industry, mould and die making, general mechanical engineering, among others

THE GEOMETRIES

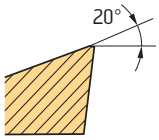
F55 – The stable one

- For unfavourable machining conditions
- Maximum cutting edge stability
- High feeds



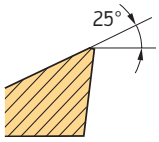
G55/G65 – The universal one

- For medium machining conditions
- Can be used universally for most materials



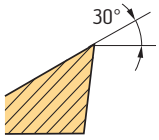
K55 – The easy-cutting one

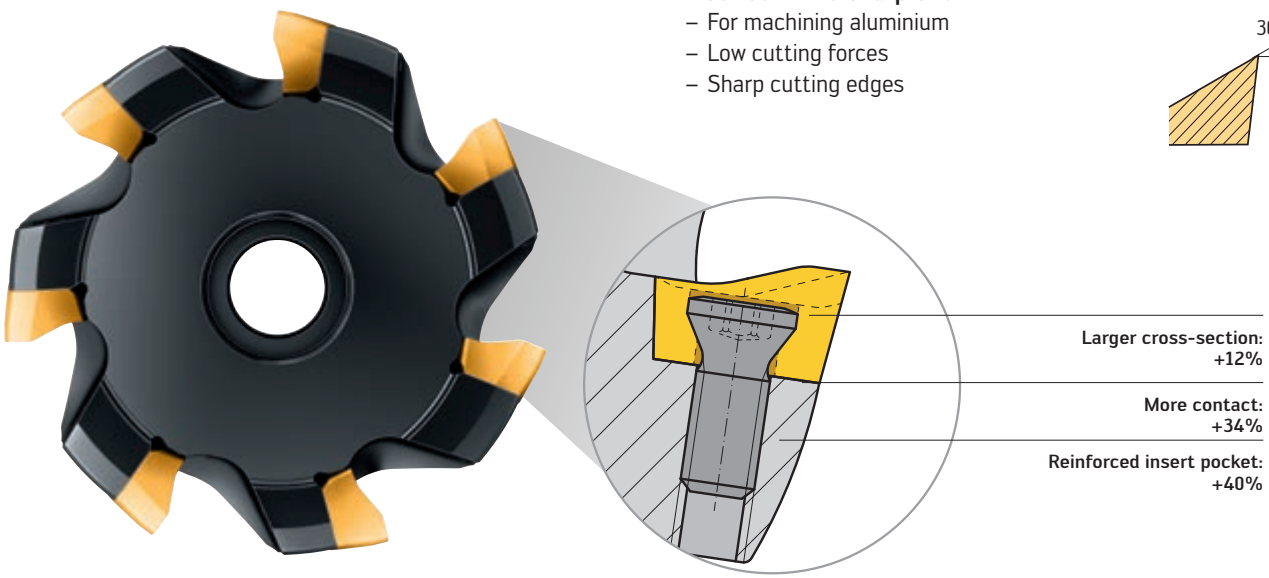
- For good machining conditions
- Low cutting forces
- Medium feeds



M85K85 – The sharp one

- For machining aluminium
- Low cutting forces
- Sharp cutting edges





BENEFITS FOR YOU

- Optimum cutting data and tool life for maximum productivity
- Maximum process reliability thanks to high stability
- Perfectly adapted to the machining operation due to different indexable insert sizes, corner radii and geometries
- Lower tool costs and minimised effort thanks to universal usability
- No additional finishing operations thanks to exact 90° angle
- Excellent handling thanks to improved access to screws
- Maximum cost efficiency thanks to Tiger·tec® cutting tool materials, high number of teeth and small indexable inserts

Six effective approach angles of exactly 90°.

NEW

THE TOOL

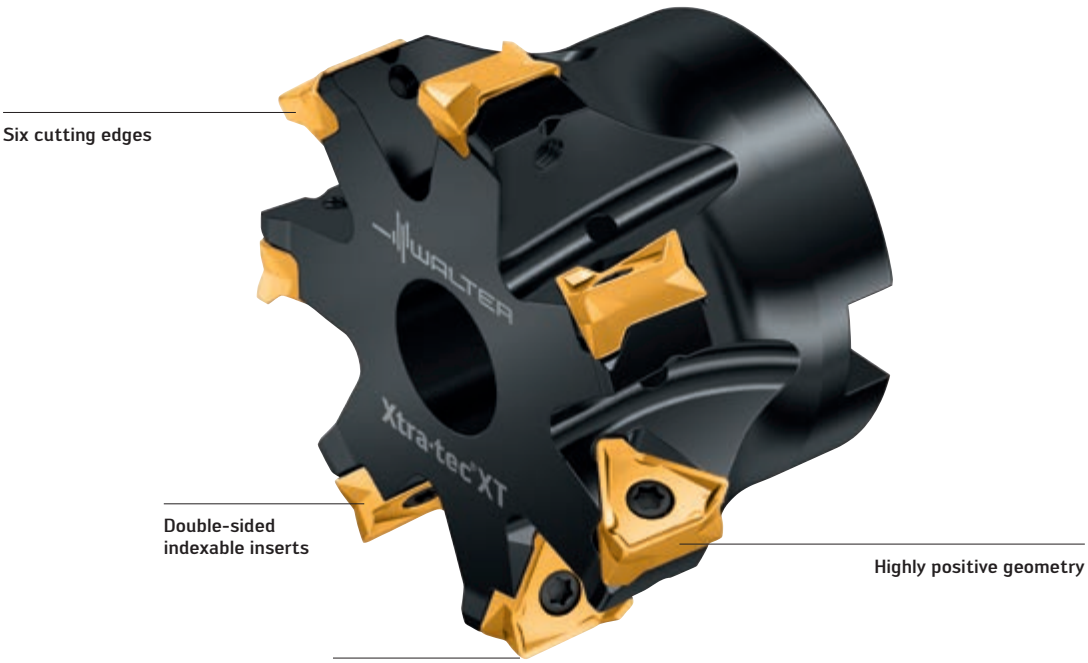
- Xtra·tec® XT M5137 shoulder milling cutter
- Shoulder milling cutter with triangular, double-sided indexable inserts
- Two pitches for different applications
- Interface: Bore adaption
- Dia. 50–100 mm
- Maximum depth of cut $a_{p\ max}$ = 8 mm

THE INDEXABLE INSERTS

- Design with facet
- Easy-cutting geometry
- Circumference-sintered indexable inserts for maximum cost efficiency (TNMU160508R-G57)

THE APPLICATION

- Can be used universally for steel, stainless steels, cast iron and materials with difficult cutting properties
- Face milling, shoulder milling, ramping, pocket milling and circular interpolation milling
- Areas of use: Energy industry, mould and die making, general mechanical engineering, among others



Powered by
Tiger·tec® Silver
Tiger·tec® Gold

Xtra·tec® XT M5137 shoulder milling cutter **Fig.:** M5137-063-B22-07-08

BENEFITS FOR YOU

- High process reliability thanks to stable, double-sided indexable inserts
- No additional finishing operations thanks to exact 90° angle
- Reduced process costs thanks to Tiger·tec® cutting tool materials and six cutting edges per indexable insert
- Simple tool selection and low cutting tool material costs

Walter GPS

The latest generation of tool navigation.

The right tool at the click of a mouse
With just four clicks, Walter GPS takes you from the definition of your objective to the most cost-effective tool and machining solution. Walter GPS is surprisingly comprehensive.
Be it drilling, threading, turning or milling: Full information on all tools from Walter, Walter Titex and Walter Prototyp can be displayed in an instant. Access essential usage data, such as accurate cutting data or precise cost-efficiency calculations, on your screen.

Walter GPS is now also available for smartphones and tablet PCs. This means that you are able to access all the required tool information at any time, wherever you are, even without a PC: In the workshop, at the machine or on the move.

walter-tools.com

WALTER
Engineering Kompetenz

High machining volume thanks to maximum number of teeth.

NEW

THE TOOL

- Xtra·tec® XT M5008 high-feed milling cutter
- 0–15° approach angle
- Depth of cut 1 mm
- Extremely close pitch
- Oversize milling cutter for maching operations requiring deep wall clearance
- Two pitches for different applications
- Dia. 16–66 mm (or 5/8–2½")
- Interfaces: ScrewFit, cylindrical-modular, parallel shank and bore adaption

THE INDEXABLE INSERTS

- Double-sided indexable inserts with four cutting edges
- Rhombic basic shape for small tool diameters and high number of teeth
- Curved cutting edges for maximum stability
- Combines stability with easy-cutting geometries
- Tiger·tec® cutting tool materials for optimum cutting data and tool life

Powered by
Tiger·tec® Silver
Tiger·tec® Gold

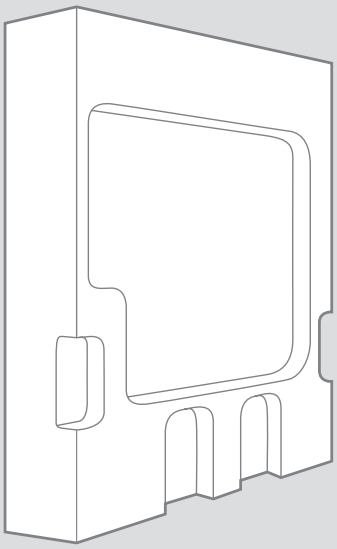
Xtra·tec® XT M5008 high-feed milling cutter **Fig.:** M5008-032-T28-06-01

THE APPLICATION

- For steel, stainless steels, cast iron and materials with difficult cutting properties
- Face milling at high feed rates, for plunging, inclined plunging and circular interpolation milling
- Areas of use: Energy industry, mould and die making, among others

APPLICATION EXAMPLE

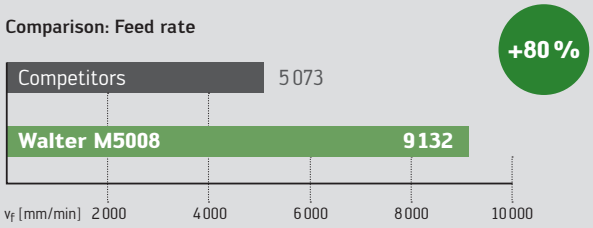
Base plate:
Roughing the pockets



Material:	40CrMnMoS8-6 (1.2312), ISO P
Tool:	M5008/dia. 32 mm
Indexable insert:	ENMX08T316R-D27
Cutting tool material:	WKP35G

	Competitors	Walter
Number of teeth	3	6
v_c (m/min)	170	170
f_z (mm)	1.0	0.9
v_f (mm/min)	5073	9132
a_p (mm)	0.5	0.7
a_e (mm)	20	20

Comparison: Feed rate



BENEFITS FOR YOU

- Can be used universally
- Optimum productivity thanks to extremely close pitched tools
- High machining volume thanks to the combination of low depths of cut and high feed per tooth rates
- High process reliability due to stable indexable insert
- Low vibration tendency in long tools
- Reduced process costs thanks to Tiger·tec® cutting tool materials and four cutting edges

Watch the product video:
www.youtube.com/waltertools

Plug & Play – the cylindrical-modular standard interface.

NEW

THE INTERFACE

- Cylindrical-modular interface for milling tools
- For milling tools in dia. range 10–42 mm
- Tools can be centred on the adaptor on the cylindrical section
- Suitable for commonly used adaptors with cylindrical-modular interface

THE APPLICATION

- Ideal as an interface for smaller tools

THE RANGE

Xtra·tec® XT M5130 shoulder milling cutter

Xtra·tec® XT M5008 high-feed milling cutter

M4132 shoulder milling cutter

M4574 chamfer milling cutter

M4002 high-feed milling cutter

Product range overview: Milling tools with cylindrical-modular interface

BENEFITS FOR YOU

- Easy to change existing milling tools (no need to invest in new adaptors)
- Maximum flexibility through exchanging a wide range of modular milling tools
- Easy to assemble and dismantle
- Long tool life thanks to good concentricity of tool interface
- High process reliability thanks to high stability of tool interface

Small indexable inserts, large depth of cut.

NEW

THE TOOL

- M5012 face milling cutter with 88° approach angle
- Dia. 32–100 mm, at $a_{p\ max}$ = 8 mm
- Small indexable inserts, resulting in a higher number of teeth
- Easily accessible clamping screws at an angle
- Two pitches for different applications
- Interfaces: ScrewFit and bore adaption

THE INDEXABLE INSERTS

- System inserts: Can be used in
  Xtra·tec® XT M5009 face milling cutters (45° approach angle)
  and in
  Xtra·tec® XT M5012 face milling cutters (88° approach angle)

Roughing insert:

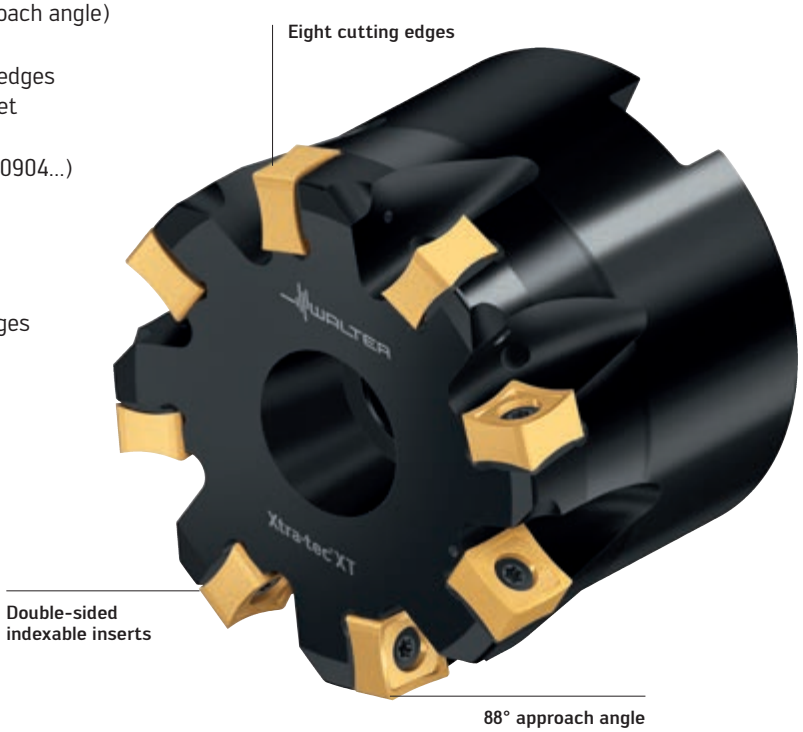
- Double-sided indexable inserts with eight cutting edges
- Easy-cutting geometries with corner radius or facet
- Variants:
  - Circumference fully ground (SNGX0904..., SNHX0904...) for maximum precision
  - Circumference fully sintered (SNMX0904...) for maximum cost efficiency

Wiper insert:

- Double-sided indexable insert with two cutting edges (XNGX0904...)

THE APPLICATION

- For steel and cast iron materials, stainless steels, materials with difficult cutting properties and non-ferrous metals
- Face milling, roughing and rough-finishing with wiper inserts
- Can also be used on less powerful machines due to the positive, soft cutting action
- Face milling with greater depth of cut ($a_{p\ max}$ = 8 mm)



Powered by
Tiger·tec® Silver
Tiger·tec® Gold

Xtra·tec® XT M5012 face milling cutter **Fig.:** M5012-063-B22-08-08

BENEFITS FOR YOU

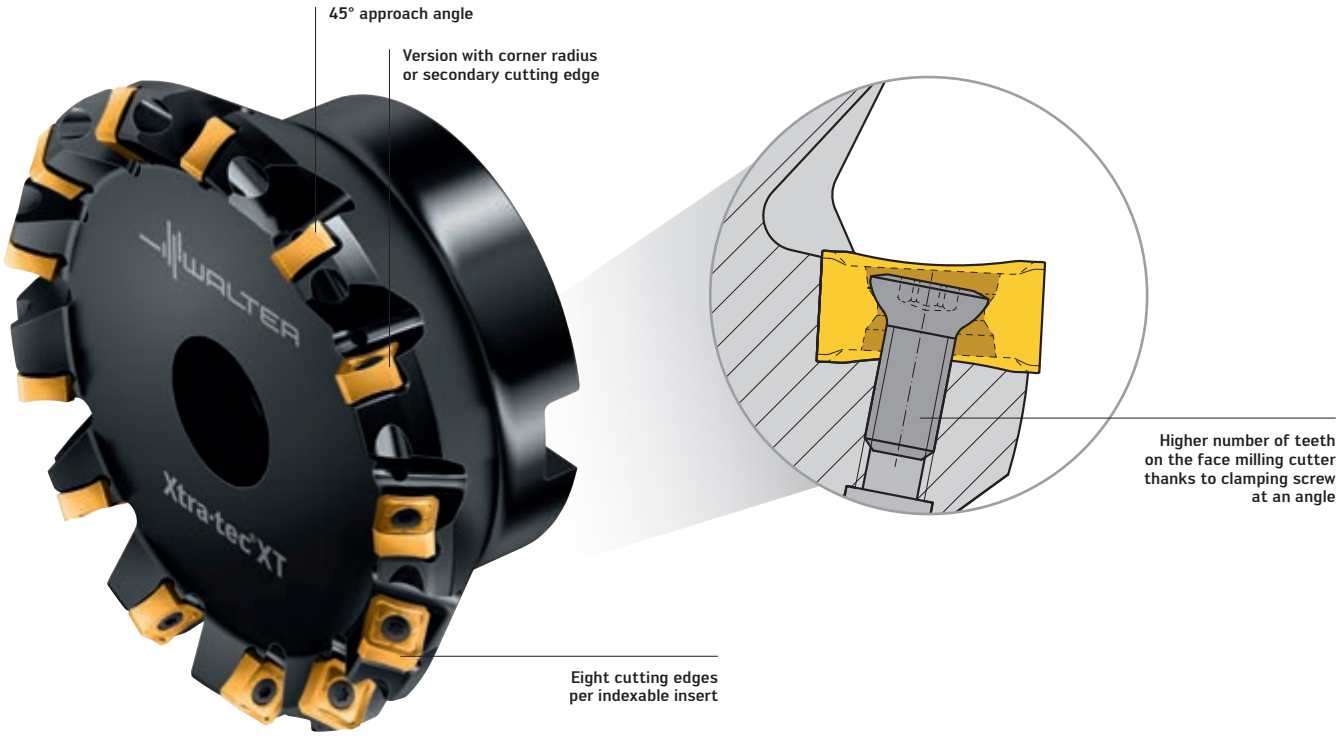
- Ideal when space is limited (e.g. by clamping devices)
- Maximum feeds, tool life and productivity thanks to small indexable inserts and high number of teeth
- High process reliability thanks to stable, double-sided indexable inserts
- Easy handling thanks to easily accessible clamping screw at an angle (prevents typical assembly mistakes)
- Highly cost-effective thanks to low cutting tool material costs

Small indexable inserts, great productivity – Xtra·tec® XT.

NEW

THE TOOL

- Face milling cutter with square, double-sided indexable inserts
- Small indexable inserts, resulting in a higher number of teeth
- Indexable inserts with improved access to the clamping screw for easy handling
- Body protected against wear by a special surface treatment
- Clamping screw at an angle for maximum number of teeth
- Two pitches for different applications
- Dia. 25–100 mm (or 1–4")
- Cost-efficient machining up to a depth of cut of 5 mm
- Interfaces: ScrewFit and bore adaption



M5009 face milling cutter

Fig.: Dia. 100 mm; z = 13 with SN . X0904 . .

BENEFITS FOR YOU

- High level of stability – ideal for small machining allowances and variable conditions
- Maximum feeds, tool life and productivity thanks to small indexable inserts and high number of teeth
- High level of process reliability due to stable, double-sided indexable inserts
- Very good handling thanks to easily accessible clamping screw at an angle – prevents typical installation mistakes
- Highly cost-effective thanks to low cutting tool material costs

THE INDEXABLE INSERTS

Roughing insert:

- Square, double-sided indexable inserts with eight cutting edges
- Version with corner radius or secondary cutting edge
- Easy-cutting geometries
- Variants:
  - Circumference fully sintered for maximum cost efficiency (SNMX0904...)
  - Circumference fully ground for maximum precision (SNGX0904.., SNHX0904..)
- Tiger·tec® Gold and Tiger·tec® Silver cutting tool materials for maximum cutting speeds

Wiper insert:

- Double-sided indexable insert with two cutting edges (XNGX0904...)

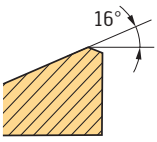
THE APPLICATION

- For all steel and cast iron workpieces, stainless steels or materials with difficult cutting properties and non-ferrous metals
- For face milling, roughing and rough-finishing with wiper inserts
- Even on less powerful machines due to the positive, soft cutting action

THE GEOMETRIES

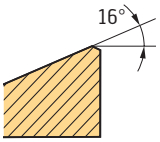
F27 – The stable one

- For unfavourable machining conditions
- Maximum cutting edge stability
- High feeds



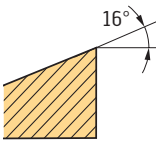
F57 – The universal one

- For medium machining conditions
- Can be used universally



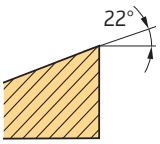
F67 – The easy-cutting one

- For good machining conditions
- Low cutting forces
- Medium feeds



K88 – The sharp one

- For machining aluminium
- Low cutting forces
- Sharp cutting edges



Invest in the future

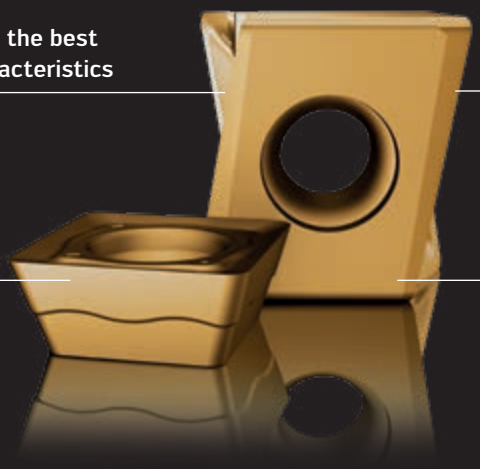
Xtra·tec® XT and Walter Green represent shared responsibility for our use of precious resources. From raw material procurement to development and manufacture through to packing and inventory: The entire CO_2 needs of Xtra·tec® XT are balanced, documented and compensated.

Walter Green

YOU HAVE HIGH EXPECTATIONS – WE CAN OFFER LONG TOOL LIFE.

Smooth rake face for the best possible friction characteristics

Optimum wear detection on rake face and flank face



Tough cutting edge for maximum process reliability

Latest coating technology for long tool life and excellent cutting data

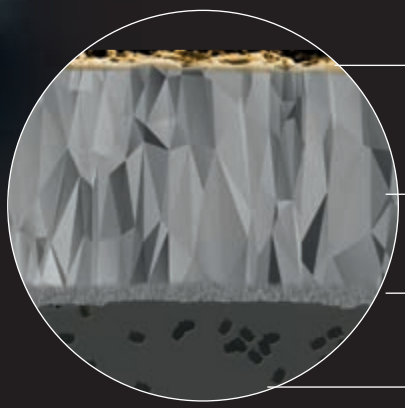
Tiger·tec® Gold

Your challenges spur us on to exceed our own expectations
As an innovative company, we are frequently asked how we manage to produce fascinating and often groundbreaking technological products time and time again. The answer begins with a question we put to ourselves: How can we at Walter help you design your machining process to make it even more efficient?

Our answer is: By making your objectives our own, as your product is the best starting point for our development work.

And the result of this development strategy is remarkable: With Tiger·tec® Gold, we are providing you with a new technology that meets the most exacting requirements placed on machining.

HOW CAN YOU TURN AN OUTSTANDING LAYER INTO A PERFECT COATING? WITH SUPERIOR PROPERTIES.



Schematic diagram

Tiger·tec® Gold was developed to make your production process even more reliable and efficient

At the core of Walter's new indexable insert grade lies a particularly tough carbide substrate. Although much less material is used on the outer area, this makes it all the more advantageous: In addition to the geometry of the indexable insert, it is the coating that really makes the crucial difference.

With the new WKP35G milling grade, manufactured using the innovative ultra low pressure method (ULP-CVD), you can benefit from tomorrow's technology right now.

The superior properties of Tiger·tec® Gold are based on several related factors

The standout feature is the extremely tough and resistant TiAlN layer, with an extremely high aluminium content. This is located directly underneath the TiN top layer and protects the substrate against abrasion, hairline cracks, plastic deformation and oxidation. The eye-catching, gold-coloured top layer enables outstanding wear detection and boasts impressive friction characteristics. Another, delicate TiN layer is located between the carbide substrate and the TiAlN layer, ensuring excellent binding of the layers.

Tiger·tec® Gold – the new technology platform from Walter.

NEW

THE GRADE

- New WKP35G Tiger·tec® Gold milling grade: CVD-coated all-round grade
- TiAlN as the main component: High aluminium content for outstanding wear characteristics
- Produced using the innovative ultra low pressure method (ULP-CVD)
- Gold-coloured textured top layer made of TiN
- Excellent combination of wear resistance and toughness for milling

THE APPLICATION

- For roughing steel and cast iron materials
- For moderate to high cutting speeds
- For dry milling or use with coolant

THE INDEXABLE INSERT

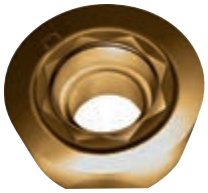
WKP35G – available for almost the entire Walter milling range, such as:

- All tools in the M4000 family
- Walter BLAXX milling cutters
- Xtra·tec®

Indexable inserts – selected examples from the range:

LNMU..L55T

SDGT...-D57



ROHX...-F67

XNMU...-F27

SNMX...-F57

ADMT...-G56

Tiger·tec® Gold

Fig.: Indexable inserts

BENEFITS FOR YOU

- Up to 200% longer tool life due to the optimised wear behaviour
- Maximum process reliability due to the tough cutting edge
- Optimum wear detection due to the gold-coloured top layer

Watch the product trailer: www.youtube.com/waltertools

Tiger·tec® Gold – Top performance when roughing turbine blades.

NEW

THE GRADE

- New WMP45G Tiger·tec® Gold milling grade
- Produced using the ultra low pressure method (ULP-CVD)
- As the main constituent of the coating, TiAlN ensures outstanding wear properties
- Gold-coloured top layer made of TiN
- Special high-performance substrate with a balanced ratio between temperature resistance and toughness enables extra performance during milling

THE APPLICATION

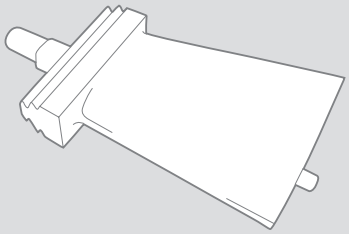
- Helirough and z-level machining of turbine blades
- Face milling under difficult conditions
- For martensitic and austenitic stainless steels

THE INDEXABLE INSERTS

- Round indexable inserts, specially for face and copy milling of turbine blades
- Positive ROHX10T3M0.. and ROHX1204M0.. round indexable inserts in the D57, D67 and F67 geometries
- Four cutting edges per indexable insert
- Suitable for the F2334R copy milling cutter

APPLICATION EXAMPLE

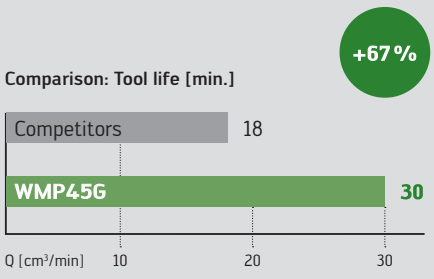
Turbine blade roughing



Material: X11CrNiMo12, ISO P

	Competitors	ROHX1204M0-F67 WMP45G
Ø / z	40 / Z4	40 / Z4
v_c	200 m/min	200 m/min
f_z	0.30 mm	0.30 mm
v_f	1900 mm/min	1900 mm/min
a_p	2.0 mm	2.0 mm
a_e	25 mm	25 mm

Comparison: Tool life [min.]



Tiger·tec® Gold **Fig.:** F2334R

BENEFITS FOR YOU

- Maximum productivity due to the wear-resistant Tiger·tec® Gold grade
- Easy wear detection thanks to the gold-coloured top layer
- High level of process reliability thanks to heat-resistant and tough substrate

Maximum cost efficiency – truly universal.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- New indexable insert size RNMX1005M0
- Now also with Tiger·tec® Silver PVD WSM35S grade
- Milling cutter dia. 25 mm with parallel shank or modular ScrewFit interface

THE TOOL

- Eight cutting edges thanks to double-sided basic shape
- Secure indexing using the flank face

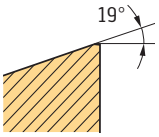
THE APPLICATION

- Face milling and copy milling
- For steel, stainless steels and materials with difficult cutting properties
- Areas of use: Aerospace and energy industries (ideal for milling turbine blades)

THE GEOMETRIES

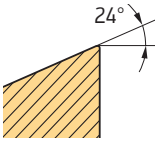
G57 – The universal one

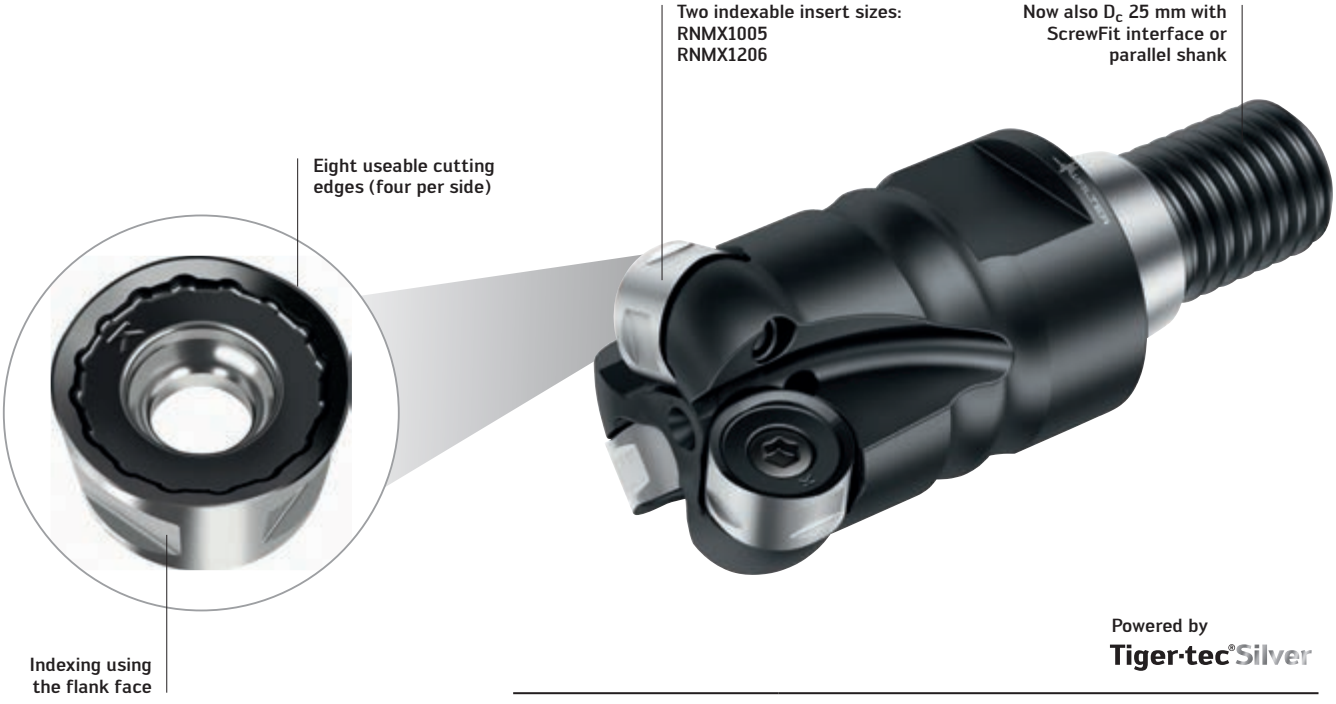
- For medium machining conditions
- Can be used for most materials



K67 – The easy-cutting one

- For good machining conditions
- Low cutting forces
- Medium feeds





M2471 copy milling cutter **Fig.:** M2471-025-T22-03-05

BENEFITS FOR YOU

- High metal removal rate even when used on less powerful machines thanks to soft-cutting geometries and positive cutting characteristics
- Tiger·tec® Silver WSM35S and WSP45S grades: Can be used universally in ISO P, ISO M and ISO S materials
- Low cutting tool material costs due to sintered design and eight cutting edges
- High process reliability thanks to stable indexable inserts with secure indexing

Walter M4000 – high performance made universal.

SYSTEM EXPANSION

System insert SD ...
- Square, positive basic shape
- Different grades and geometries

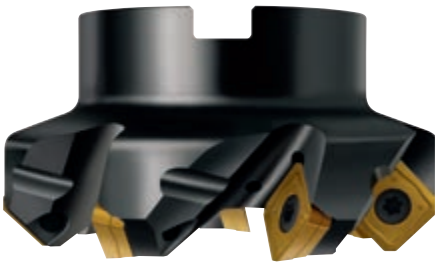
Powered by Tiger·tec® Silver

Now also in: Tiger·tec® Gold

Can now also be equipped with the new WKP35G Tiger·tec® Gold grade for even longer tool life on steel and cast iron.

Shoulder milling cutters
M4132

High-feed milling cutter
M4002



Face milling cutter
M4003

THE SYSTEM INSERTS

- 15° clearance angle
- Ground support face: Improves the seating of the indexable inserts in the insert seat and reduces vibration

Square indexable inserts:
- Can be used in face milling cutters, shoulder milling cutters, high-feed milling cutters, routing cutters, porcupine milling cutters, chamfer milling cutters and T-slot milling cutters
- Four cutting edges
- Circumference-sintered design for maximum cost efficiency
- Circumference fully ground with secondary cutting edges (45° + 90°) for best component surfaces

Rhombic indexable inserts:
- Can be used in shoulder milling cutters, routing cutters and porcupine milling cutters
- Two cutting edges
- Circumference-sintered design for maximum cost efficiency

BENEFITS FOR YOU

- High degree of cost efficiency and reduced procurement and inventory costs thanks to system insert which can be used universally
- Resource-saving thanks to CO_2-compensated production through climate protection projects
- Low power requirement thanks to highly positive geometries
- CVD-coated grades (WKP25S, WKP35S and WKP35G) for steel and cast iron machining as well as for machining stainless steels and difficult-to-cut materials (WSM45X)
- PVD-coated grades (WKK25S, WSM35S and WSP45S) for machining steel and cast iron, stainless steels and difficult-to-cut materials

NEW FLANK FACE DESIGN FOR FASTER IDENTIFICATION

The number of waves on the flank face indicates the geometry: The more waves there are, the more positive the geometry of the indexable insert. This means that the geometry can be identified at a glance.

Leading insert LD...

- Rhombic, positive basic shape
- Different grades and geometries

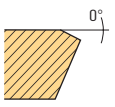
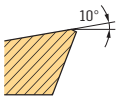
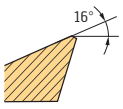
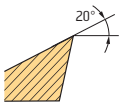
Chamfer milling cutter M4574

T-slot milling cutter M4575

Routing cutter M4792

Porcupine milling cutters M4256/M4257/M4258

Shoulder milling cutters M4130

Geometry example	Areas of application	Main cutting edge section	Material groups P	M	K	N	S	H	O
	**A57 – The special one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds – No wave on the flank face		●●		●●				
	**D57 – The stable one** – For medium machining conditions – Can be used universally – One wave on the flank face		●●	●●	●●		●●		
	**F57 – The universal one** – For good machining conditions – Low cutting forces – Medium feeds – Two waves on the flank face		●●	●●	●●		●●		
	**G88 – The sharp one** – For machining aluminium – Low cutting forces – Sharp cutting edges – Three waves on the flank face					●●			●

Four cutting edges for one-of-a-kind surfaces.

NEW

THE TOOL

- Face milling cutter with 45° approach angle and four-edged system insert
- Diameter range 20–160 mm (or 1–6")
- Available with parallel shank and bore adaptor
- Two insert sizes: SD..09T3.. and SD..1204..
- Depth of cut 4.5/6.5 mm

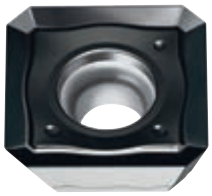
THE APPLICATION

- Face milling of steel, cast iron, stainless steels, non-ferrous metals and materials with difficult cutting properties
- Roughing, semi-finishing and finishing

THE INDEXABLE INSERTS

- Square system inserts with secondary cutting edges
- 15° clearance angle
- Circumference-sintered design for maximum cost efficiency
- Design with circumference fully ground for maximum precision
- Different geometries available
- Three CVD-coated grades: WKP25S, WKP35G and WSM45X
- Three PVD-coated grades: WKK25S, WSM35S and WSP45S

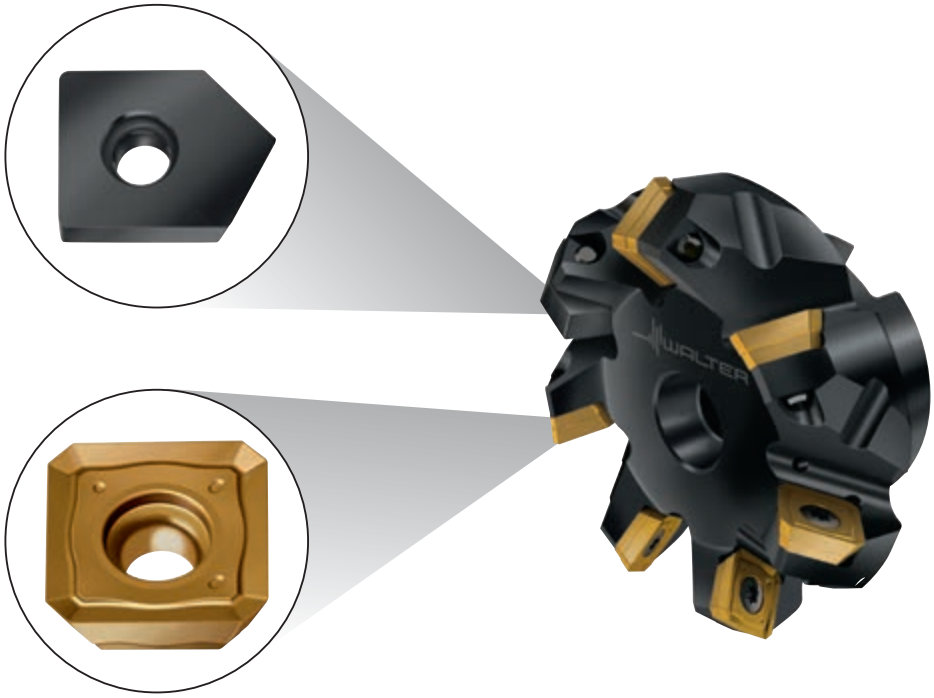
Powered by
Tiger·tec® Silver



SDGT...-F57
WKP25S

Now also in:
Tiger·tec® Gold

SDGT...-F57
WKP35G



Walter M4000 face milling cutter

Fig.: M4003

BENEFITS FOR YOU

- High degree of cost efficiency thanks to system insert which can be used universally
- Reduced procurement and inventory costs
- Four cutting edges per indexable insert
- Reduction of machining steps by combining roughing and finishing
- Resource-saving thanks to CO_2-compensated production
- Low power requirement thanks to highly positive geometries

Walter Green

Watch the product animation:
www.youtube.com/waltertools

Four cutting edges for one-of-a-kind surfaces.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

– SDET.. cermet indexable inserts

THE TOOL

– Dia. 20–160 mm (or 1–6")
– Available with parallel shank and bore adaption
– Two insert sizes: SD..09T3.. and SD..1204..
– Depths of cut: 4.5 and 6.5 mm

THE INDEXABLE INSERTS

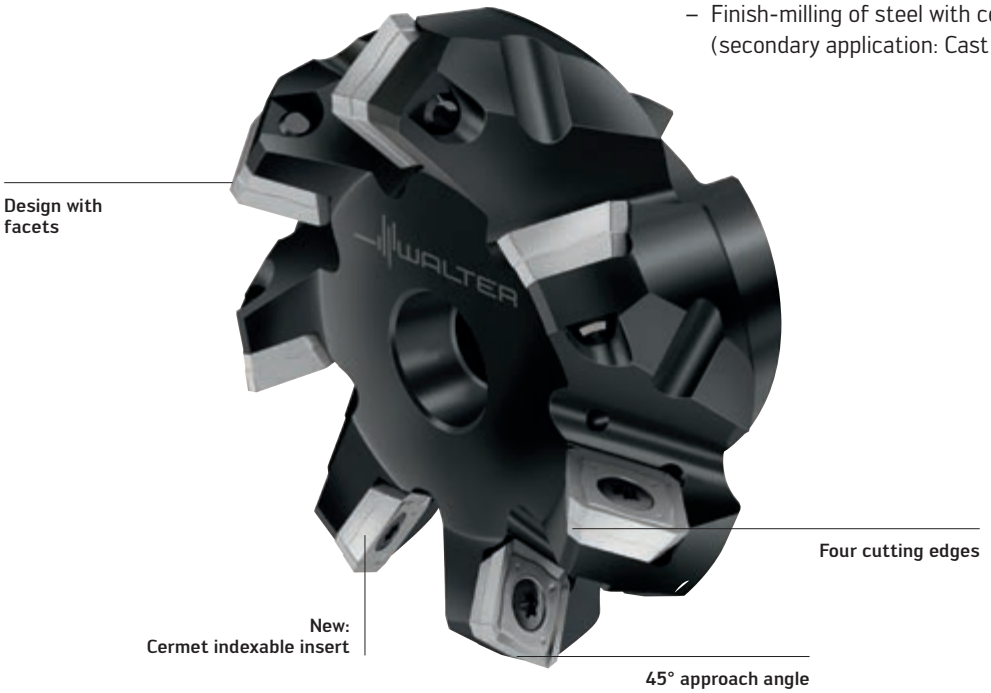
– Square system inserts with facets
– 15° clearance angle
– Circumference-sintered design for maximum cost efficiency
– Design with circumference fully ground for maximum precision

THE GRADES

– Three CVD-coated grades: WKP25S, WKP35G and WSM45X
– Three PVD-coated grades: WKK25S, WSM35S and WSP45S
– New: Uncoated cermet – WEP20

THE APPLICATION

– Roughing, semi-finishing and finishing
– New: High gloss surfaces thanks to the use of cermet indexable inserts
– Finish-milling of steel with cermet cutting tool material (secondary application: Cast iron and stainless steels)



M4003 face milling cutter **Fig.:** SDET1204AZN-F57 WEP20

BENEFITS FOR YOU

– High degree of cost efficiency thanks to system insert which can be used universally
– Reduced procurement and inventory costs
– Reduction of machining steps by combining roughing and finishing
– Long tool life, with consistently high surface quality
– Low power requirement thanks to highly positive geometries
– Save resources thanks to CO_2-offset manufacturing

Walter Green

Cost-efficient shoulder milling with M4000 system.

NEW

THE TOOL

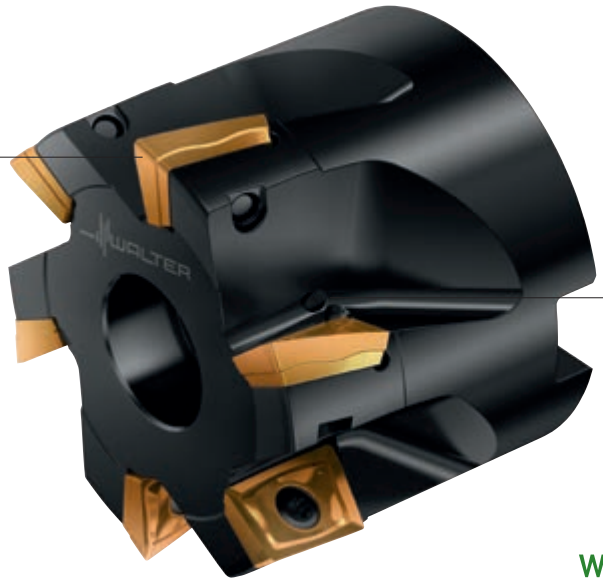
- M4130 shoulder milling cutter with 90° approach angle
- Double-edged indexable insert
- Dia. 16–100 mm
- Depth of cut: 8/13/16 mm
- Available with Weldon shank and bore adaption

THE APPLICATION

- Roughing operation
- Shoulder milling, ramping, pocket milling and circular interpolation milling
- For steel, cast iron, stainless steel and materials with difficult cutting properties

THE INDEXABLE INSERTS

- Three indexable insert sizes with two cutting edges each (LDM.08T2.., LDM.14T3.., LDM.1704..)
- Rhombic basic shape with 15° clearance angle
- Circumference-sintered – for maximum cost efficiency
- Three CVD-coated grades (WKP25S, WKP35G and WAK15)
- Three PVD-coated grades (WKK25S, WSM35S and WSP45S)
- Can also be used in routing cutters and porcupine milling cutters from the M4000 family



Walter Green

Walter M4000 shoulder milling cutter

Fig.: M4130, diameter 63

APPLICATION EXAMPLE

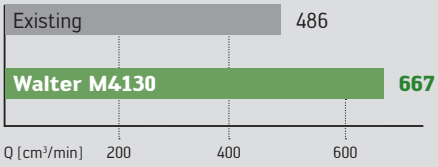
Gripper clamp
Operation: Trimming

Material: 42CrMo4 (1.7225) ISO P

	Existing	**Walter M4130 LDMT170408-D51 WKP35G**
Dia. / z	63 / Z5	63 / Z6
v_c	182 m/min	250 m/min
f_z	0.24 mm	0.2 mm
v_f	1104 mm/min	1516 mm/min
a_p	8 mm	8 mm
a_e	55 mm	55 mm

Comparison:
Metal removal rate [cm³/min]

+37%



BENEFITS FOR YOU

- High level of cost efficiency
- Reduced procurement and inventory costs
- Concept requiring minimum resources
- Low power requirement thanks to positive geometries
- CO_2-compensated production

Modular slot milling with maximum cost efficiency.

NEW

THE INDEXABLE INSERTS

- Circumference-sintered design for maximum cost efficiency
- 15° clearance angle

Square system inserts from the M4000 milling system:

- Four cutting edges
- For universal use in face, shoulder, chamfer and T-slot milling cutters and also as the leading insert in slot drill and porcupine milling cutters

Rhombic indexable inserts:

- Two cutting edges
- Can be used as a face insert in shoulder milling cutters, routing cutters and porcupine milling cutters

THE GRADES

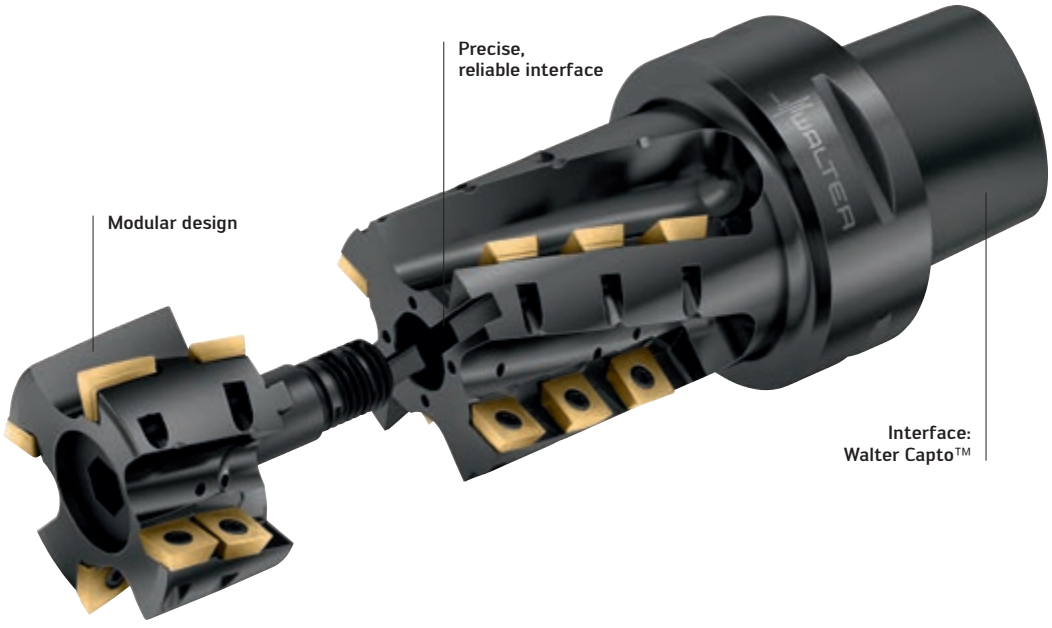
- Three CVD-coated grades (WKP25S, WKP35G, WKP35S) for machining steel and cast iron
- Three PVD-coated grades (WKK25S, WSM35S and WSP45S)

THE TOOL

- M4258 half effective porcupine milling cutter
- Modular design: Replaceable front piece
- Dia. 50–80 mm
- Interface: Walter Capto™ C6 and C8

THE APPLICATION

- For shoulder and slot milling
- For steel, cast iron, stainless steels and materials with difficult cutting properties



Porcupine milling cutter **Fig.:** M4258

BENEFITS FOR YOU

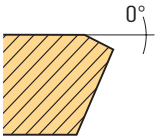
- Modular design: The front piece can be replaced when the face of the cutter body is worn
- High level of process reliability thanks to an internal coolant supply – even in the front piece
- Reduced procurement and inventory costs
- High cost efficiency thanks to four or two cutting edges per indexable insert
- Low power requirement thanks to positive geometries
- Concept requiring minimum resources
- Walter Green: CO_2-compensated production

Walter Green

THE GEOMETRIES

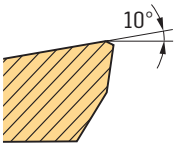
A57 – the special one:
- Unfavourable machining conditions
- Maximum cutting edge stability
- High feeds
- Straight border (no wave on the flank face)

A57



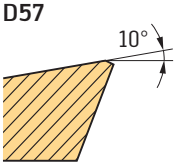
D51 – the quiet one:
- Anti-vibration geometry
- For tools with long overhang
- One wave on the flank face

D51



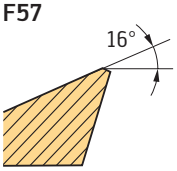
D57 – the stable one:
- Average machining conditions
- Can be used universally
- One wave on the flank face

D57



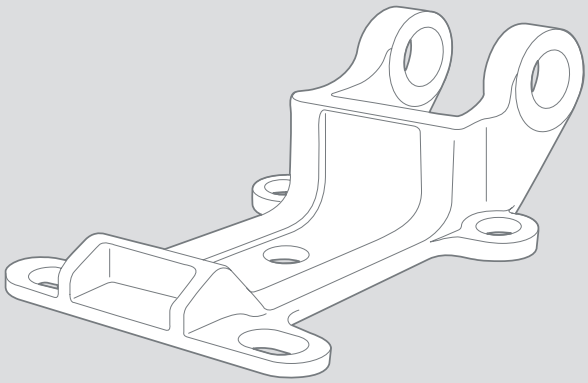
F57 – the universal one:
- Good machining conditions
- Low cutting forces
- Medium feeds
- Two waves on the flank face

F57



APPLICATION EXAMPLE

Hinge – Slotting

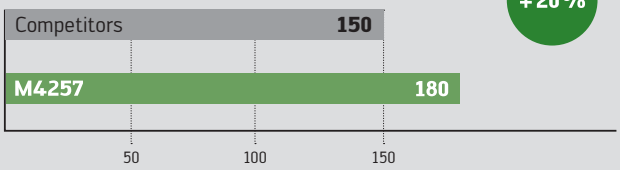


Material:	ST-52, ISO P (1.0570)
Tool:	M4258 / Ø 50 mm / Z2
Indexable inserts:	LDMT1170408-D57 / SDMT120408R-D57
Cutting tool material:	WKP35G

Cutting data:

	Competitors	**Walter**
v_c	250 m/min	250 m/min
n	1590 rpm	1590 rpm
f_z	0.11 mm	0.225 mm
v_f	835 mm/min	715 mm/min
a_e	1.5 mm	3 mm
a_p	37.5 mm	37.5 mm
Power requirement	3.0–4.5 kW	2.0–3.5 kW
Q	47 cm³/min	81 cm³/min

Tool life quantity comparison [pcs]



+20 %

Watch the product video:
www.youtube.com/waltertools

Machine large components efficiently.

NEW

THE CARTRIDGES

Cartridges for the F2010 face and shoulder milling cutter and indexable inserts from the M4000 system:

- F2010...R756M for SD..09; Approach angle [κ] 89.5°
- F2010...R757M for SD..12; Approach angle [κ] 89.5°
- F2010...R755M for SD..12; Approach angle [κ] 15°
- F2010...R758M for SD..1204AZN..; Approach angle [κ] 45°

THE TOOL

- Dia. 80–315 mm
- Replaceable cartridges
- Bore adaption
- Runout adjustable

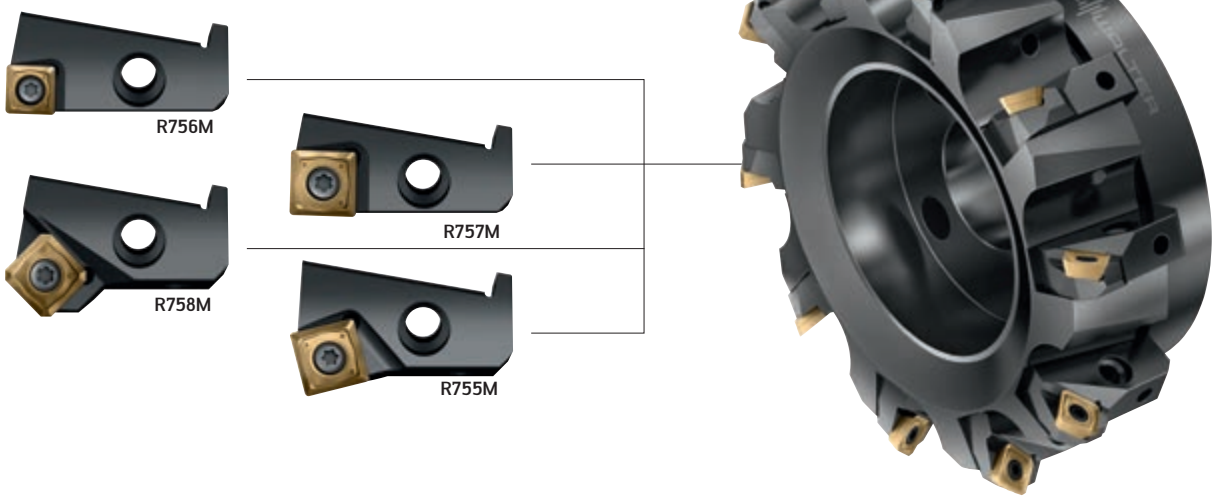
THE APPLICATION

- Shoulder, face or high-feed milling
- Steel and cast iron workpieces, stainless steels, materials with difficult cutting properties, aluminium and non-ferrous metals
- Areas of use: Automotive and aerospace industries, general mechanical engineering, etc.

THE INDEXABLE INSERTS

- Square system inserts
- Can be used in face, shoulder, chamfer, porcupine and T-slot milling cutters and routing cutters
- Circumference-sintered design for maximum cost efficiency
- Design with circumference fully ground for maximum precision
- Four cutting edges
- 15° clearance angle

Cartridges for the F2010 face and shoulder milling cutter:



Face milling cutter **Fig.:** F2010

BENEFITS FOR YOU

- High metal removal rate, even on low-performance machines, due to soft cutting action thanks to positive geometry
- Excellent surface quality when finishing thanks to adjustable runout
- High level of flexibility thanks to replaceable cartridges and large diameter range

Face milling with high process reliability.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

Cartridges for the F2010 face milling cutter and indexable inserts from the M3024 family:

- F2010...R759M for XN.U0705
- Dia. 80–315 mm
- Replaceable cartridges
- Bore adaption
- Runout adjustable

THE INDEXABLE INSERTS

For roughing:
XN.U0705.. and XNMU0906..

- Double-sided indexable insert with 14 cutting edges
- Positive cutting edge geometry
- Version with secondary cutting edge: XN.U0705ANN... and XNMU0906ANN...
- Version with corner radius: XNMU070508... and XNMU090612...

THE TOOL

- M3024 Walter BLAXX 45° face milling cutter
- Maximum depth of cut 4 or 6 mm
- Dia. 40–160 mm (or 3/4–12")
- Protected against corrosion and wear by special Walter BLAXX surface treatment

THE APPLICATION

- Face milling in all steel and cast iron workpieces as well as in stainless steels
- Perfect for machining components in mass production, such as exhaust turbochargers
- Areas of use: General mechanical engineering and other sectors

Versions available with secondary cutting edge or corner radius

14 cutting edges

New: FR759M cartridge for the F2010 face milling cutter (and XN.U0705 indexable inserts)

Powered by Tiger·tec® Silver

Walter BLAXX

Now also in: Tiger·tec® Gold

Cartridge for F2010 and Walter BLAXX heptagon face milling cutter

Fig.: M3024

BENEFITS FOR YOU

- High level of efficiency, even on low-performance machines
- Soft cutting action and high metal removal rate thanks to positive cutting edge geometry
- High level of process reliability thanks to stable indexable inserts
- Carbide shim provides an optimum support face and a high feed per tooth
- High surface quality when finishing and high level of flexibility thanks to replaceable cartridges and large diameter range

Watch the product video:
www.youtube.com/waltertools

_M2029 OCTAGON FINISHING FACE MILLING CUTTER

Productive face milling with 16 cutting edges.

NEW

THE TOOL

- M2029 finishing face milling cutter with 45° lead angle
- Available as semi-standard
- Dia. 50–160 mm (or 2–6")
- Face cutting length 4 mm
- Double-sided, tough indexable insert

THE INDEXABLE INSERT

- Double-sided standard insert with 16 cutting edges
- 0.8 mm corner radius
- Circumference fully ground: ONHU050408-F57 and ONHU050408-F67
- Sintered: ONMU050408-D57 (also suitable for roughing)

THE APPLICATION

- Roughing and finishing (including unstable cast steel workpieces)
- Cast iron and steel materials, e.g. GG25, 42CrMo4, 1.4837
- Areas of use: Automotive industry, general mechanical engineering, etc.

Octagon finishing face milling cutter **Fig.:** M2029

BENEFITS FOR YOU

- High process reliability due to stable indexable insert
- Low cutting material costs due to 16 cutting edges
- Soft cutting action due to positive cutting edge geometry
- Can be used universally due to Tiger·tec® Gold and Tiger·tec® Silver cutting tool materials
- Maximum productivity and tool life

APPLICATION EXAMPLE

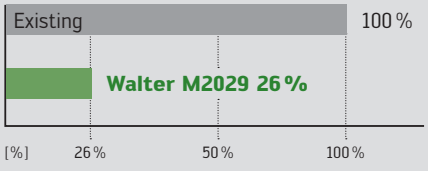
Finishing – Turbocharger flange surface

Material: GX40CrNiSi22-10 (1.4826+Nb) ISO M

	Existing	**Walter M2029 (octagon)**
Dia.	100	100
z	8 + 2	8
v_c	137 m/min	165 m/min
f_z	0.26 mm	0.31 mm
v_f	916 mm/min	1325 mm/min
a_p	0.35 mm	0.35 mm
a_e	90 mm	90 mm
Tool life	36 parts	80 parts

-74 %

Comparison: CPP [in %]



Cost-effective roughing with soft cutting action.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

– Sintered indexable inserts for roughing LNMU090404R-L55T and LNMU130608R-L55T

THE INDEXABLE INSERTS

LNMU090404R-L55T

– Available in Tiger·tec® Gold grade WKP35G and Tiger·tec® Silver grades WKP25S, WSP45S and WKK25

LNMU130608R-L55T

– Available in Tiger·tec® Gold grade WKP35G and Tiger·tec® Silver grades WKP25S, WKP35S, WSP45S, WKK25

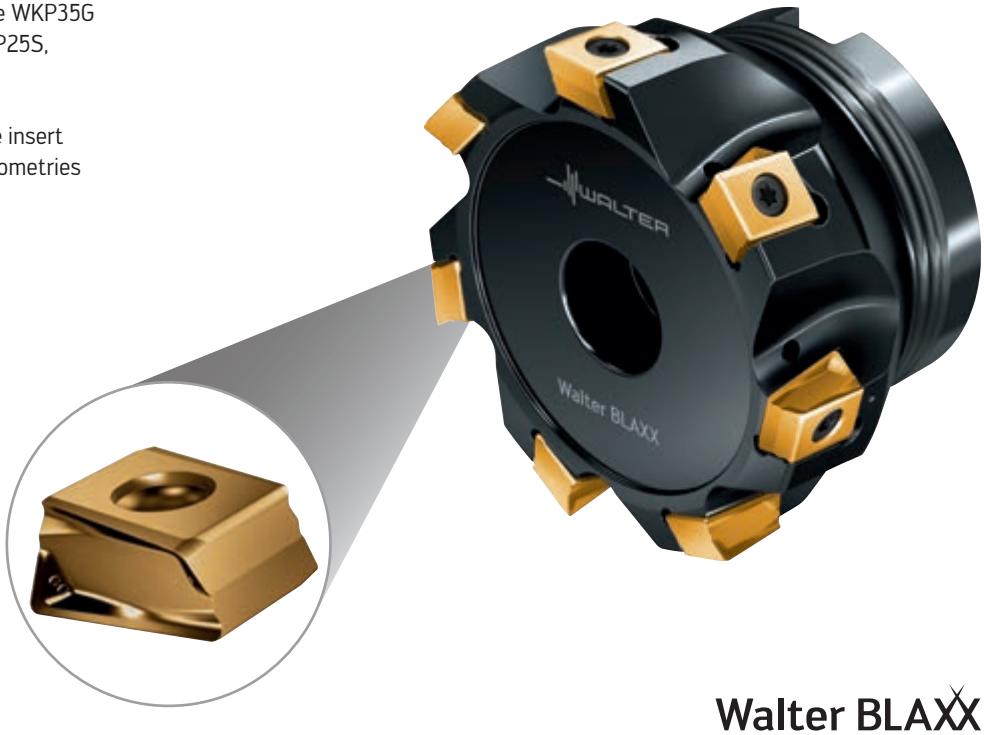
– Four cutting edges per indexable insert
– Soft-cutting indexable insert geometries thanks to helical cutting edges

THE TOOL

– Can be used in Walter BLAXX F5041 and F5141 shoulder milling cutters and in F2010 cartridge cutters
– Can be used in Walter BLAXX F5038 and F5138 porcupine milling cutters
– Dia. 25–315 mm

THE APPLICATION

– Roughing of shoulders and end faces
– Steel, cast iron, stainless steels and materials with difficult cutting properties
– Areas of use: Automotive industry, aerospace industry, general mechanical engineering



Powered by
Tiger·tec® Silver

Now also in:
Tiger·tec® Gold

Walter BLAXX

Walter BLAXX shoulder milling cutters **Fig.:** F5141

BENEFITS FOR YOU

– Extremely reliable due to stable tangential indexable insert
– High degree of cost efficiency thanks to more cutting edges per diameter
– Soft cutting action and up to 30% higher feed per tooth

Machine specialist for wrought aluminium alloys.

NEW

THE TOOL

- M2331 90° ramping milling cutter for HSC milling
- Maximum depth of cut 15 mm or 20 mm
- Dia. 32–50 mm or 1.5–2"
- High concentricity
- Finely balanced basic body
- With different interfaces such as HSK for Makino machines, ScrewFit or bore adaption
- Extremely high speeds are possible

THE APPLICATION

- Non-ferrous metals (ISO N) such as wrought aluminium alloys or aluminium-lithium alloys
- Machining of structural components in aircraft construction
- Rough milling and semi-finishing of pockets with high chip volume
- Can be used at extremely high speeds (e.g. for D_C = 50 mm; n = 33,000 rpm

THE INDEXABLE INSERTS

- Two indexable insert sizes with various corner radii
  ZDGT15A4…R-K85 (r = 0.4–4.0 mm)
  ZDGT20A5…R-K85 (r = 0.8–6.4 mm)
- Positive basic shape with special geometry for pocket milling
- Centrifugal force protection at the contact surface for HSC machining
- Indexable inserts in grade WMG40

Walter ramping milling cutter **Fig.:** M2331

BENEFITS FOR YOU

- High level of process reliability even at maximum speeds thanks to centrifugal force protection
- Short machining times thanks to maximum metal removal rate
- Long tool life due to minimised build-up on the cutting edge
- Machine-specific variants of milling cutters are available (Makino)

90° shoulders with eight-edged indexable insert.

NEW

THE TOOL

- Face/shoulder milling cutter with 90° lead angle
- Depth of cut 6.5 mm
- Dia. 50–160 mm (or 2–6")

THE APPLICATION

- For all cast iron workpieces (e.g. GG25, GG26Cr, CGI, etc.)
- For face and shoulder milling
- For roughing and finishing
- Areas of use: Automotive industry, general mechanical engineering, etc.

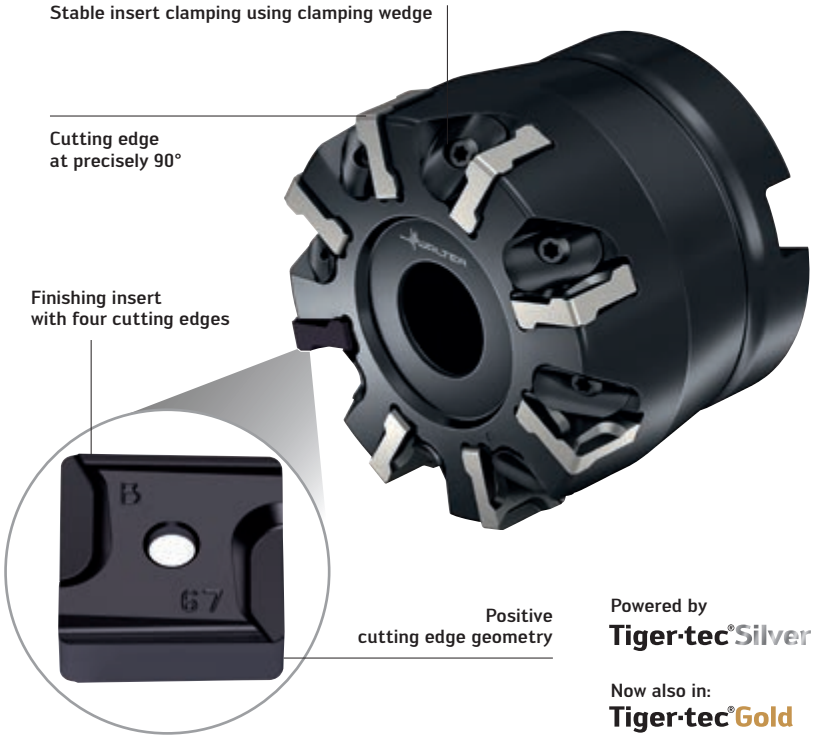
THE INDEXABLE INSERTS

Roughing inserts:

- Double-sided indexable insert with eight cutting edges
- With corner radius and secondary cutting edge
- Tiger·tec® Gold and Tiger·tec® Silver cutting tool materials for maximum tool life
- Insert type SNEF120408R...

Finishing inserts:

- SNEX1204PNR-B67 for surface structures with cross-section cut
- SNEX1204PNN-A27 for homogeneous surface structures



Close pitch cutter

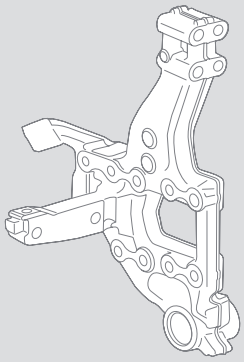
Fig.: M2136

BENEFITS FOR YOU

- High process reliability due to stable, wedge-clamped indexable inserts
- Low cutting material costs thanks to indexable inserts with eight cutting edges
- Soft cutting action due to positive cutting edge geometry
- Maximum productivity thanks to cutting tool materials that can be used universally

APPLICATION EXAMPLE

Toolholder, face milling top side

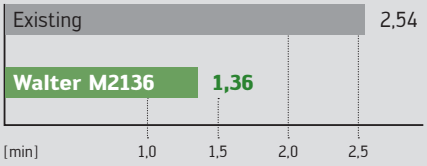


Material: EN-GJS-500-7 (GGG50 - 0.7050), ISO K

	Existing	Walter M2136
Number of teeth	7	12
v_c	226 m/min	226 m/min
f_z	0.286 mm	0.218 mm
v_f	1800 mm/min	2350 mm/min
a_p	3–5 mm	3–5 mm
a_e	75 mm	75 mm

Comparison: Machining time [min]

-47 %



Reliable parting and slitting.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- Attachment variant now also with one-inch locating bore
- F5055.UBN...

THE INDEXABLE INSERTS

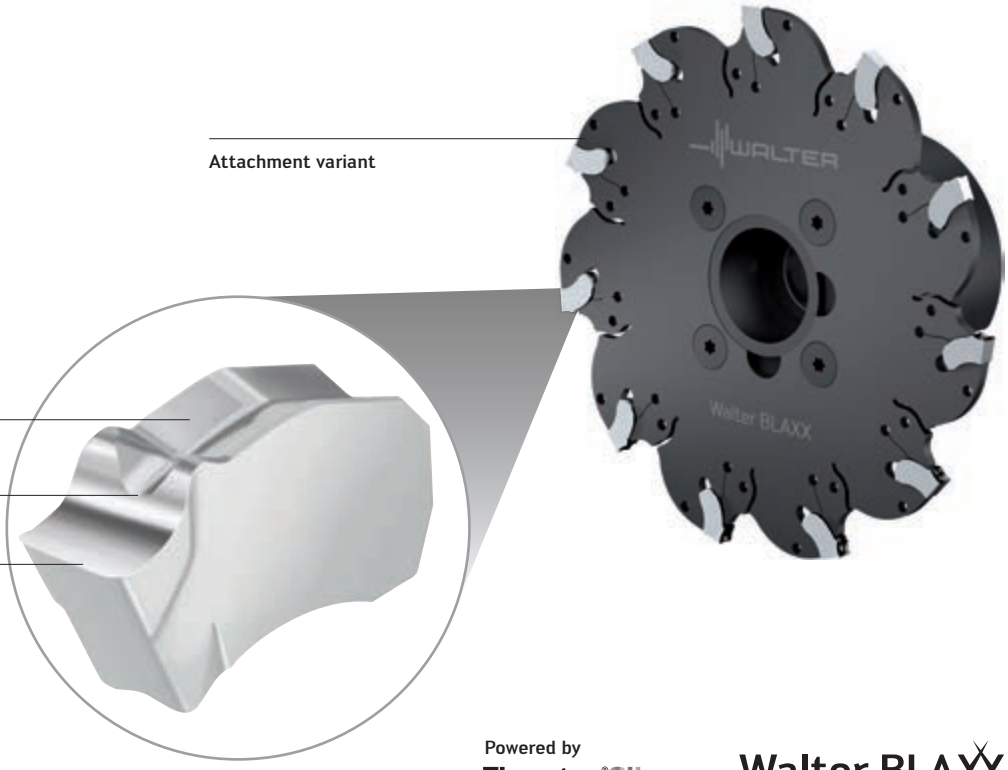
- Single-edged indexable insert
- Cutting widths: 1.5 / 2.0 / 3.0 / 4.0 / 5.0 mm
- Available with CE4, SF5, CE6 and SK8 geometries

THE APPLICATION

- Cutting off and slitting of: Steel and cast iron, stainless steels, non-ferrous metals and materials with difficult cutting properties
- Areas of use: General mechanical engineering, automotive industry, aerospace industry, etc.

THE TOOL

- Walter BLAXX F5055 slitting cutter
- Dia. 63–250 mm (2.48–6.3")
- Non-positive and positive-locking insert clamping
- Optimised top clamp with extremely high retaining forces



Powered by Tiger·tec®Silver

Walter BLAXX

Walter BLAXX slitting cutter **Fig.:** F5055.UBN..

BENEFITS FOR YOU

- Optimal process reliability as the machining force is introduced into the most rigid part of the insert seat
- High level of radial and axial runout accuracy
- User-friendly indexable insert self-clamping system
- Low inventory costs thanks to universal system inserts (can be used in slitting cutters and groove turning holders)

Controlled cutting – even with large dimensions.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- F5055 slitting cutter with single-edged insert
- Dia. 500 mm
- Cutting width: 5.0 mm
- Number of teeth: z = 40
- FS2290 ergonomic mounting wrench

THE INDEXABLE INSERTS

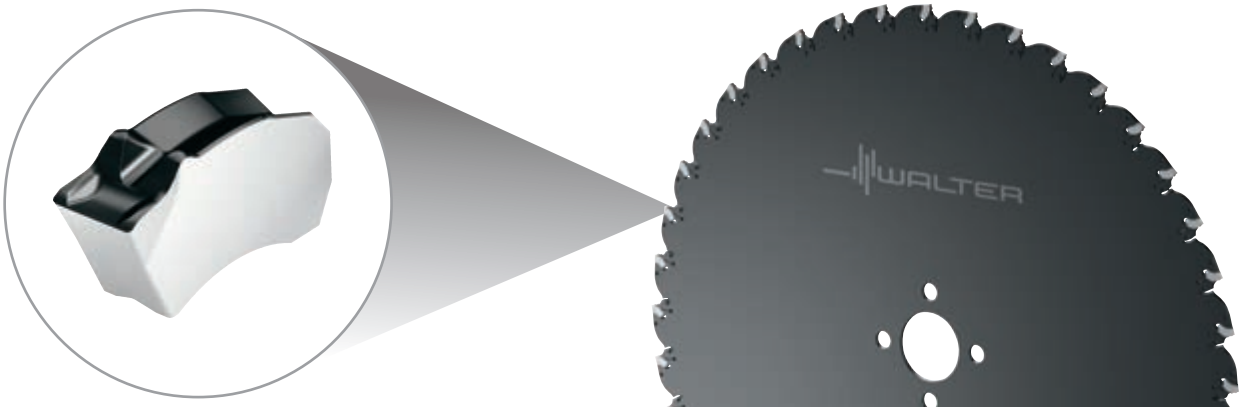
- Single-edged
- Cutting width: 5.0 mm
- Available geometries: CE4, SF5, CE6 and SK8

THE APPLICATION

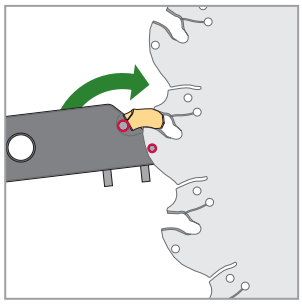
- Cutting and slitting: Steel and cast iron, stainless steels, non-ferrous metals and materials with difficult cutting properties
- Areas of use: General mechanical engineering (e.g. cutting of large-volume workpieces on sawing machines)

THE TOOL

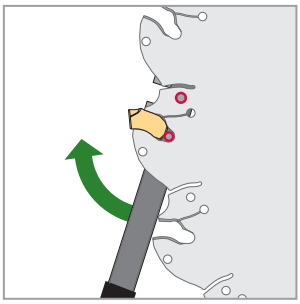
- Walter BLAXX F5055 slitting cutter
- Dia. 63–250 mm (2.48"–6.3"); NEW: 500 mm
- Non-positive and positive-locking insert clamping
- Optimised top clamp for extremely high retaining forces



Fitting



Removal



Powered by Tiger·tec®Silver

Walter BLAXX

Walter BLAXX slitting cutter **Fig.:** F5055

BENEFITS FOR YOU

- Brazed saw blades replaced by a cost-efficient indexable insert solution
- High flexibility thanks to wide selection of geometries to choose from
- Inserts are easy to change thanks to FS2290 ergonomic mounting wrench (resulting in an approximately 40% saving on set-up times)

YOUR PRODUCTION PROCESS AT A GLANCE – TRANSPARENT AND IN REAL TIME

comara icut

THE SOFTWARE

The intelligent Comara iCut intervenes in the machining process in real time. The entire machining process is carried out at the optimum feed rate.

Comara iCut measures the spindle output up to 500 times per second and automatically adjusts the feed to the current cutting conditions.

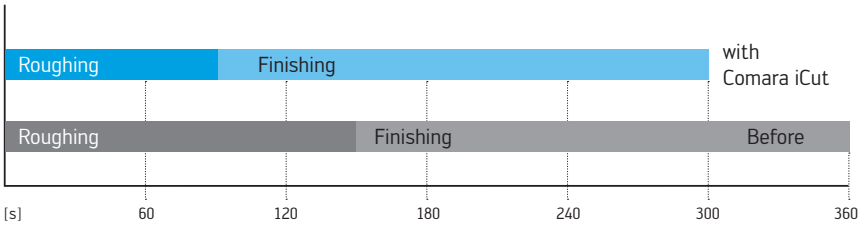
As fast as possible, as slowly as necessary. In every situation. With a unique reaction time.

APPLICATION EXAMPLE

Reduced production time

-10 %
Reduction

Comparison: Time



BENEFITS FOR YOU

- Average ROI: Less than six months
- Increased process reliability
- Useful tool on the path to unmanned production environments
- Easy operation of several machines
- Better/longer use of the tools
- Can prevent tool breakage or overstraining
- "Learns" a maximum output value for each tool and does not exceed it
- More even tool deflection for roughing applications
- Better contour parallelism for finishing

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THE SOFTWARE

Comara appCom – the intuitive production assistance system for your machinery

Comara appCom collects, analyses, visualises and interprets comprehensive machine and production data.

Comara appCom can be used for a wide range of control systems regardless of the machine manufacturer, such as Siemens, Fanuc, Heidenhain, OPC-UA, etc.

BENEFITS FOR YOU

- Transformation of downtime into value-adding time
- Continuous recording of each component's operating time
- Allows multiple machine operation and unmanned shifts
- You are immediately notified of any abnormalities in real time
- No longer any need for manual notifications and time-consuming, complex analysis
- Live analysis, not just retrospectively at the end of the month
- Automatic monitoring of a wide range of values with immediate notification

For more information, visit:
http://www.comara.de/en/

D – Adaptors

Stationary adaptors

Rotating adaptors

Walter Capto™ adaptors with direct coolant transfer.

NEW

THE APPLICATION

- Walter Capto™ shank adaptor in accordance with ISO 26623
- For shank tools with precision cooling

THE ADAPTOR

- A2120-C/A2121-C shank adaptors
- For 20 mm and 25 mm square shanks
- Axial and radial versions
- Direct coolant transfer for shank tools with internal coolant

THE INTERFACES

- Walter Capto™ C5 and C6

Axial/radial adaptors for square shanks

Fig.: A2120-C / A2121-C

BENEFITS FOR YOU

- Easy handling thanks to plug-and-play solution
- Increase in the service life of the tool and the cutting edge, as well as improved chip formation, thanks to precision cooling
- Reduction of downtime

Accure·tec – vibration-free machining with long milling tools.

NEW

THE ADAPTOR

- Accure·tec AC001 vibration-damped adaptors for milling
- Patented vibration damping
- For shell end milling cutters with tenon in accordance with DIN 138
- Cylindrical design
- High rigidity
- Internal coolant supply
- Concentricity < 5 µm

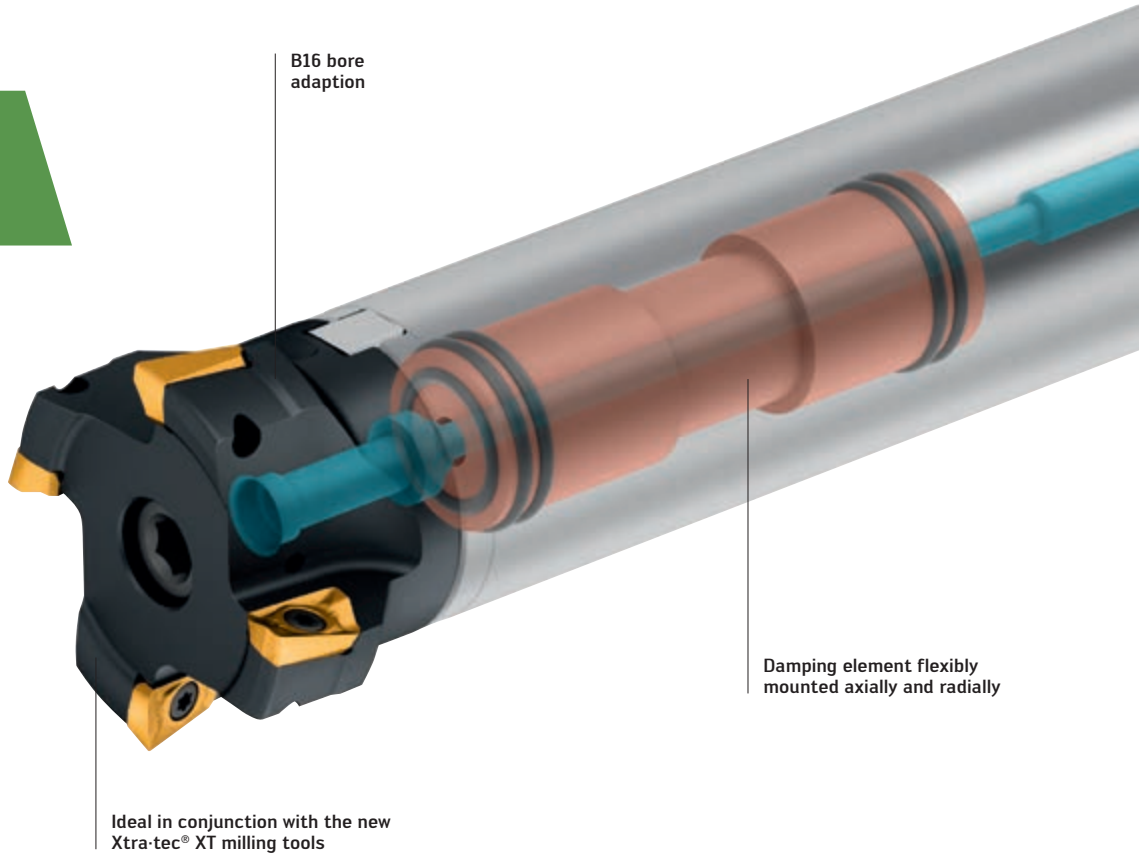
THE INTERFACES

- Walter Capto™
- HSK-A
- SK
- MAS-BT

THE APPLICATION

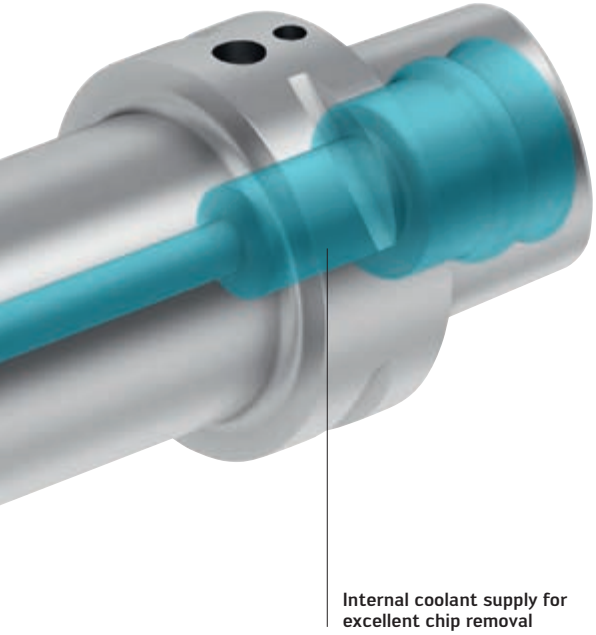
- Machining deep pockets
- Machining complex one-piece workpieces
- Long overhangs of up to 4 × D are possible
- Areas of use: Mould and die making, aerospace, general mechanical engineering, automotive and energy industries

For more Accure·tec adaptors, see the Turning section



Accure·tec

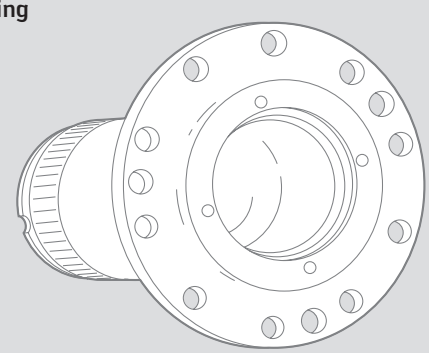
Vibration-damped end mill adaptor **Fig.:** AC001-C6-B16-160



Internal coolant supply for excellent chip removal

APPLICATION EXAMPLE

Shoulder milling

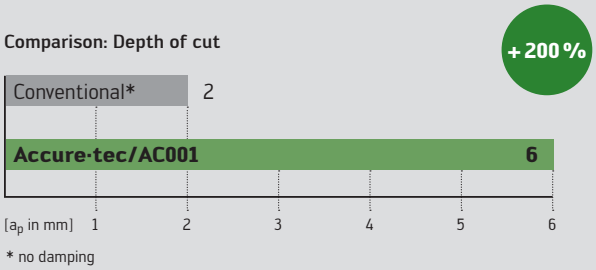


Material:	42CrMo4
Adaptor:	AC001-H100-B27-320
Tool:	M5130 | dia. 63 | Z4
Projection length:	4 × D
Machine:	GROB G550

Cutting data:

	Conventional undamped	**Accure·tec/AC001 damped**
v_c (m/min)	120	120
n (rpm)	606	606
f_z (mm)	0.2	0.2
v_f (mm/min)	485	485
a_e (mm)	25	25
a_p (mm)	2	6
Q (cm³/min)	25	73
R_a (µm)	1.07	0.75

Comparison: Depth of cut



* no damping

BENEFITS FOR YOU

- High productivity and surface quality – with long service life for the tool and spindle
- Vibration damping preset at the factory; installed directly (no time lost tuning)
- Stable process producing little noise
- Reliable machining operations with projection lengths of up to 4 × D are possible
- Depth of cut up to three times higher (compared to conventional methods)
- Optimum chip removal thanks to internal coolant supply

_AB735 SYNCHRONOUS ER THREADED INSERT

Minimise axial forces – make the most of your tool's performance.

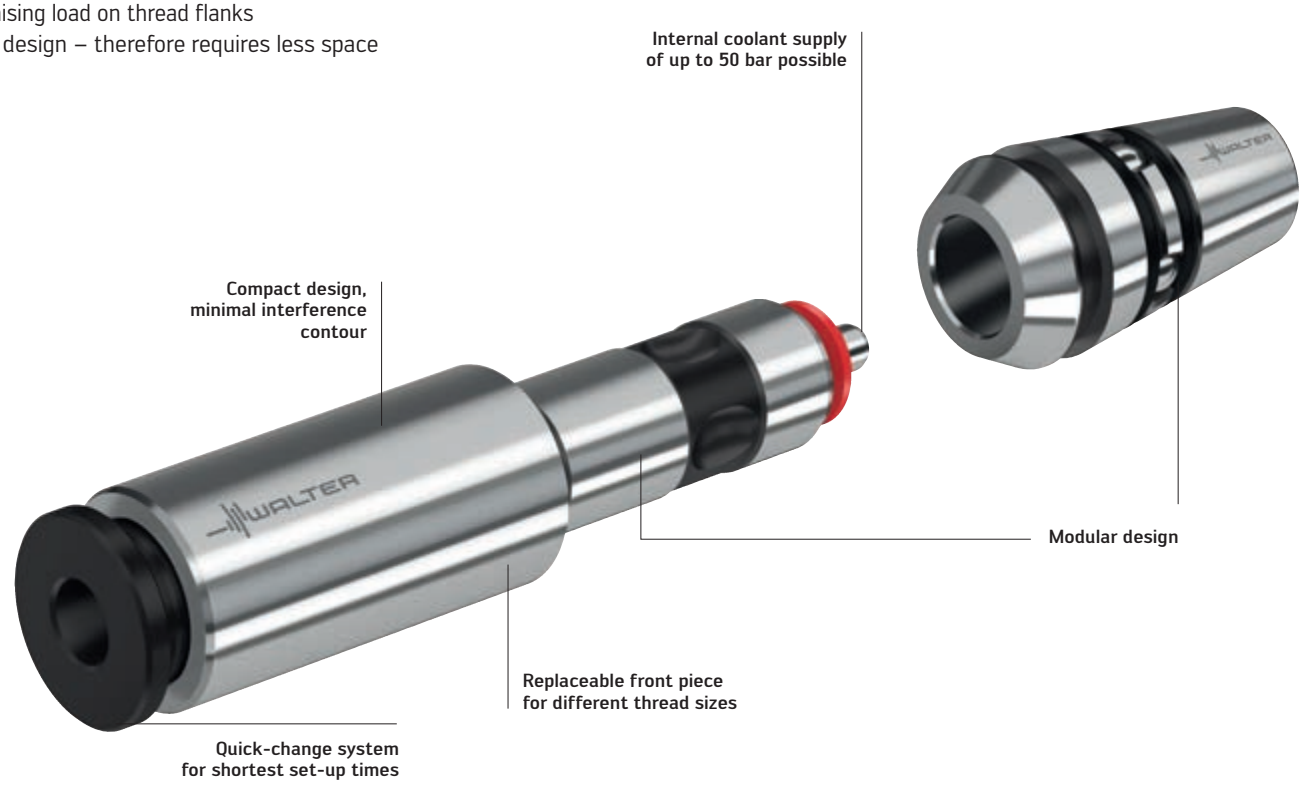
NEW

THE ADAPTOR

- AB735 synchronous threaded insert for axial movement and pressure compensation
- Can be used in all common ER collet chucks
- In sizes ER16 to ER32
- For all tool types with and without internal coolant

THE APPLICATION

- Compensating synchronisation errors
- Avoiding high axial forces
- Minimising load on thread flanks
- Sleek design – therefore requires less space



Synchronous threaded insert

Fig.: AB735-ER20
AB735-ER20-R060-035

BENEFITS FOR YOU

- Low investment costs thanks to modular design
- Increased tool life and process reliability
- Higher productivity thanks to faster tool changing
- Low-maintenance; lower risk of tool breakage
- Saves costs as fewer tools required

Watch the product video:
www.youtube.com/waltertools

ScrewFit – the adaptor for the new Xtra·tec® XT M5130 shoulder milling cutters.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- ScrewFit adaptor AK530.H100A...
- ScrewFit adaptor AK580.C8...

THE ADAPTOR

- Walter Capto™ C8... for T09, T14, T18, T22, T28, T36, T45
- HSK 100A.. for T09, T14, T18

THE APPLICATION

- On machining centres, lathes and multi-task machines
- Holemaking and milling operations

Xtra·tec® XT M5130 shoulder milling cutter + ScrewFit adaptors **Fig.:** M5130, AK530.H.., AK580.C...

BENEFITS FOR YOU

- Short and tough
- High concentricity for longer tool life and better surfaces
- High rigidity for reduced vibration
- High repeat accuracy
- Easy tool changes in the machine

_AB035 SYNCHRONOUS THREAD CUTTING CHUCK

Control the pressure forces – make the most of your tool's performance.

NEW TO THE RANGE

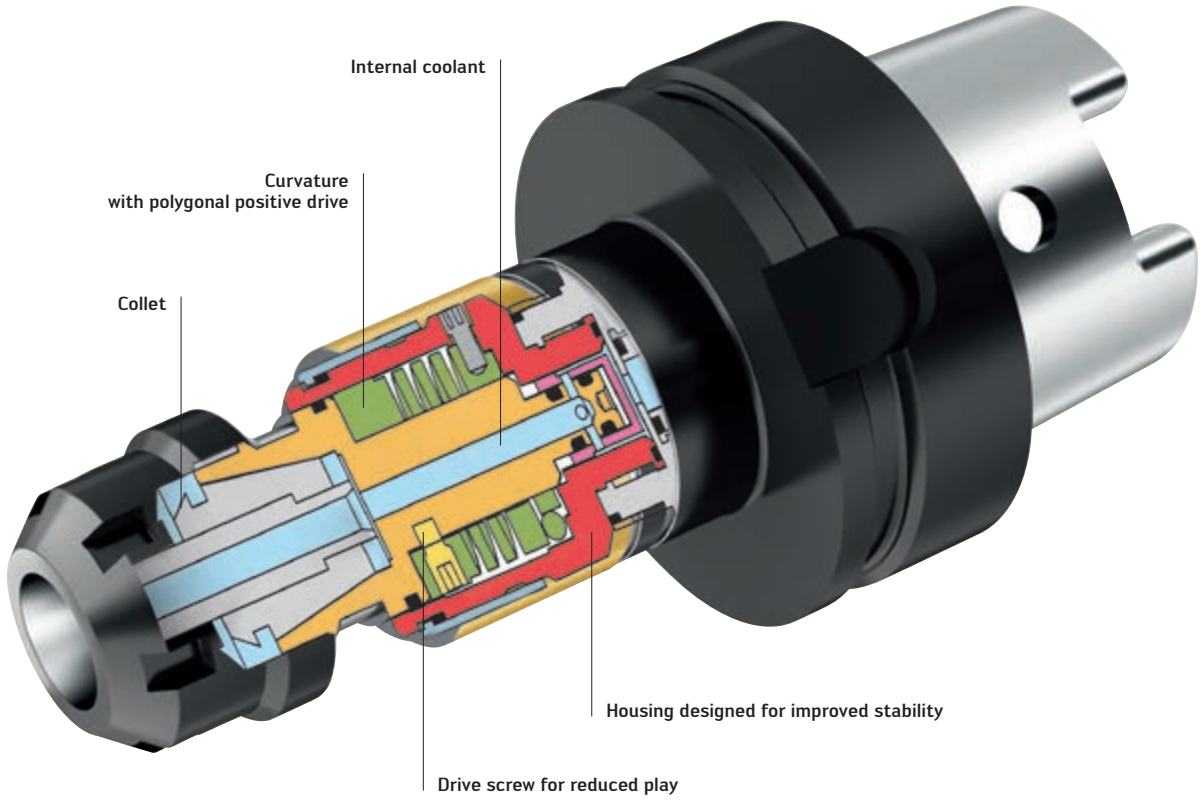
NEW ADDITION TO THE PRODUCT RANGE

Interfaces:
- Walter Capto™
- C4, C5, C6

Other available interfaces:
- HSK63
- HSK100
- BT30/40/50
- SK40/50
- DIN 1835 B/E combi-shank
- NCT

THE TOOL

- Synchronous thread cutting chuck for optimal use of modern high-performance tools with tapping collets according to DIN 6499
- Patented micro-compensator made of a specially developed alloy
- Integrated minimum compensation in axial and radial directions
- MQL variant available on request



AB035-H

BENEFITS FOR YOU

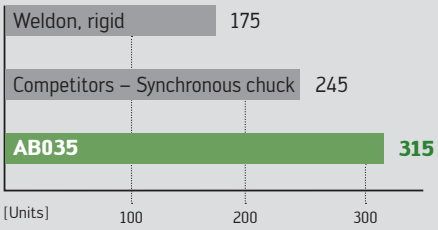
- Compensates for axial changes in position within a range of ± 0.5 mm
- High process reliability thanks to the reduced risk of fracture (particularly where dimensions are small)
- Longer threading tool life due to less friction

APPLICATION EXAMPLE

Tool life comparison in tool steel

Material	Tool steel 1.2344
Tensile strength	1100 N/mm²
Cooling	5% emulsion
v_c	12 m/min
Thread	M6 – 12 mm deep

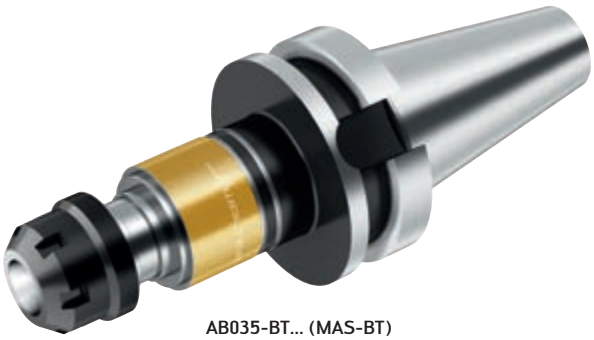
Comparison: Tool life quantity [units]



THE APPLICATION

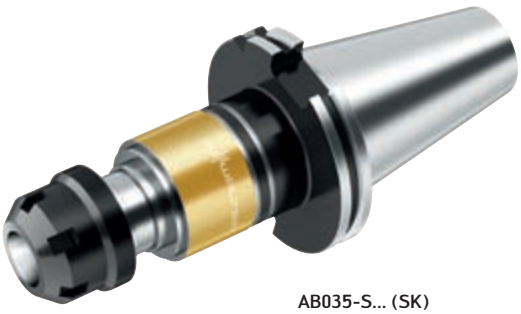
- Synchronous machining
- Suitable for taps and thread formers
- Also for high cutting speeds
- Can be used on all conventional machining centres

AB035-C... (Walter Capto™)



AB035-BT... (MAS-BT)

AB035-H... (HSK)



AB035-S... (SK)

Adaptors with Walter Capto™ HSK, MAS-BT and SK interface

Fig.: AB035... synchronous chuck

Clamp inch tools with a precise fit.

NEW TO THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

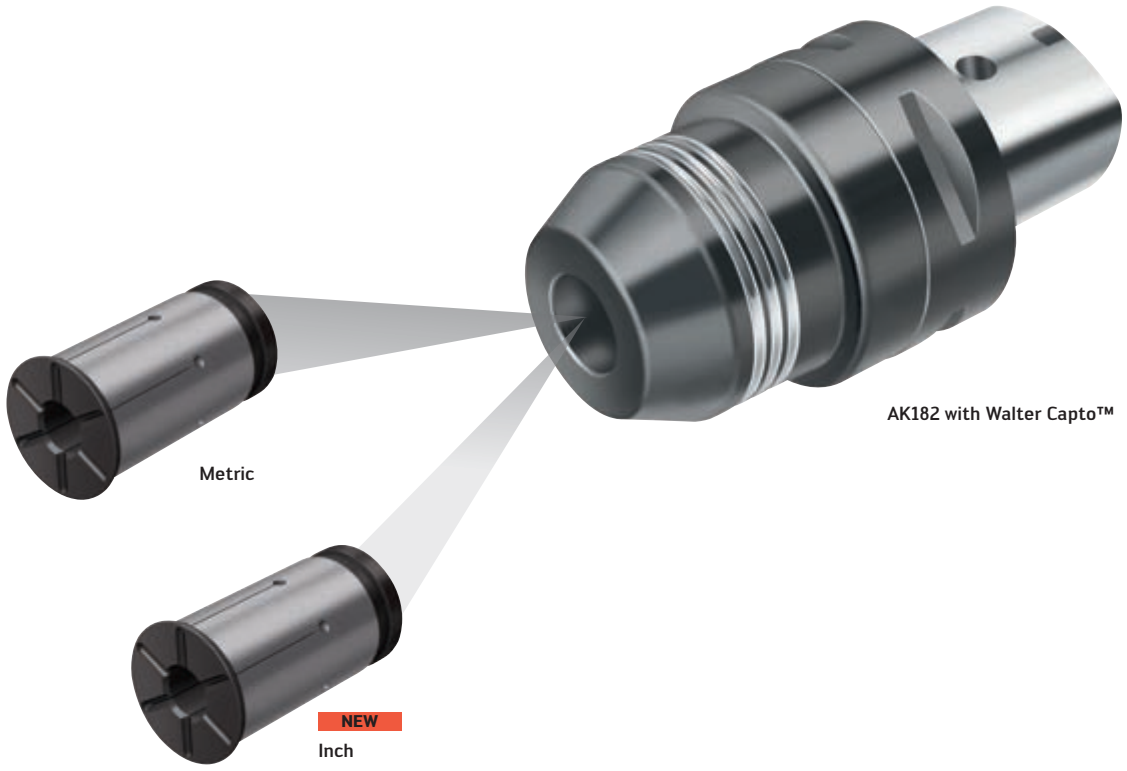
– SL00.. adaptor sleeves in inch dimensions, for the AK182 hydraulic expansion chuck for clamping diameters of 12 mm, 20 mm, 32 mm

THE ADAPTOR

– Adaptor sleeves for inch tools
– Reduction of hydraulic expansion clamping diameters 12 mm, 20 mm, 32 mm
– Dia. 1/8"–1"

THE APPLICATION

– Clamping of inch tools with a precise fit
– For tools with shank in accordance with DIN 1835 form A



SL000.. adaptor sleeve **Fig.:** SL000..

BENEFITS FOR YOU

– High concentricity for a longer tool life
– High repeat accuracy when using inch tools
– Optimum machining results thanks to high accuracy of fit

_GL00.. ER COOLING NOZZLE

Optimise tool life and lubrication.

NEW

THE COOLING NOZZLE

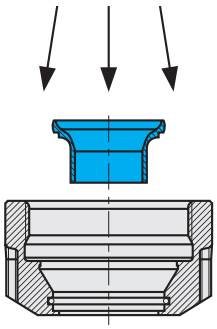
- GL00.. ER cooling nozzle
- For collets ER16, ER20, ER25, ER32
- For ER collets with:
  Tool dia. 3–10 mm – ER16
  Tool dia. 6–12 mm – ER20
  Tool dia. 6–16 mm – ER25
  Tool dia. 6–16 mm – ER32

THE APPLICATION

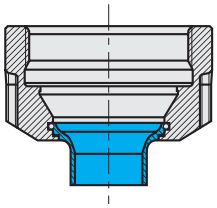
- Can be used for all ER collets in accordance with DIN 6499
- Holemaking, threading, milling
- For tools without internal coolant
- Targeted cooling along the cutting edge

THE HANDLING

Fitting

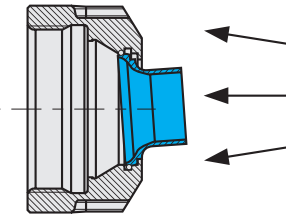


Installed

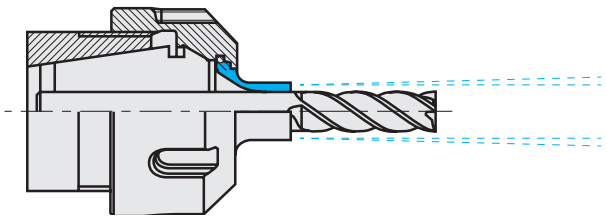


ER cooling nozzle **Fig.:** GL00..

Removal



Cooling along the tool periphery



Watch the product video:
www.youtube.com/waltertools

BENEFITS FOR YOU

- Better cooling and lubrication
- Longer tool edge life
- Improved chip removal

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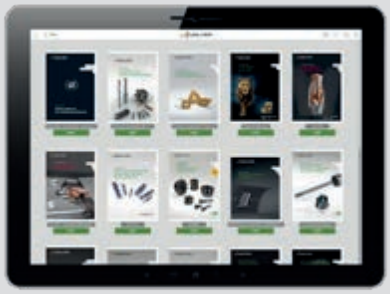
Walter eLibrary



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Digital ordering methods

TOOLSHOP

EDI B2B

Walter TOOLSHOP & EDI
The Walter TOOLSHOP offers customers opportunities to find information and place orders quickly. EDI (electronic data interchange) also makes it possible to exchange documents (e.g. orders) – even special tools can be ordered.

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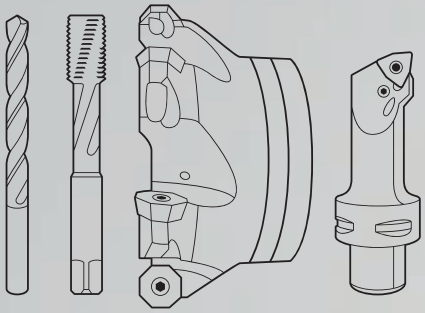

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