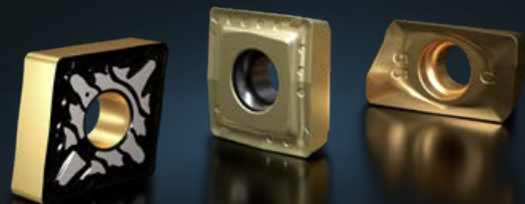


_PRODUCT HIGHLIGHTS

The right time
for innovation.



Xill-tec™

Universal eXcellence in milling.



With Xill-tec™, the solid carbide milling cutters from the MC230 Advance range, Walter offers you unprecedented universality and excellence in milling: Universal, due to versatility for virtually any application and any material. Excellent, due to the unique combination of a new high-performance geometry with Walter's own wear-resistant WK40TF high-performance grade. This makes Xill-tec™ a byword for the greatest operational smoothness, tool life increases and process reliability. And all with outstanding cost-effectiveness.

www.solid-carbide-milling.walter



walter-tools.com

 **WALTER**
Engineering Kompetenz

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A – Turning

ISO turning	Tiger·tec® Gold grades WPP10G, WPP20G, WPP30G	4
	Walter Turn W1210/W1211/WL25 copy turning system	6
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Special tools	Walter Xpress G1011 and G4011 special tools	12



New Tiger-tec® Gold turning grades – strong in steel and against wear.

NEW

THE GRADE

- New Tiger-tec® Gold coating: Fine-columnar, highly textured MT-TiCN – resistant to flank face wear
- Multilayer MT-TiCN structure – improves the elastic property of the crystals
- Highly textured Al_2O_3 – for greater resistance to crater wear
- Multi-stage post-treatment – for a smooth rake face, reduced friction and improved toughness

THE INDEXABLE INSERT

- Basic shapes: CNMG, DNMG, SNMG, TNMG, VNMG, WNMG
- Wiper geometries: FW5, MW5
- Standard geometries: FP5, MP3, MS3, MP5, MU5, RP5, RP7

THE APPLICATION

WPP10G

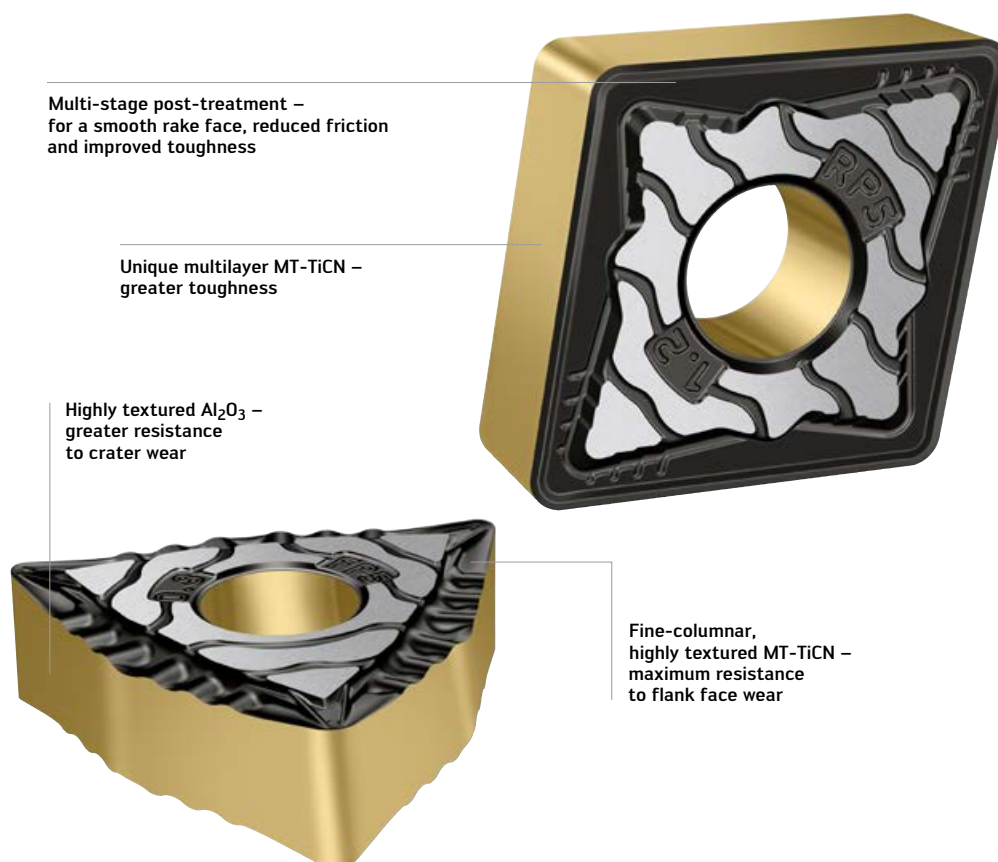
- Wear-resistant for continuous cutting and slightly interrupted cuts
- Primary application: Steel ISO P10; secondary application: Cast iron ISO K20

WPP20G

- Universal grade with long tool life and high level of process reliability for approx. 50% of all applications
- Primary application: Steel ISO P20; secondary application: Cast iron ISO K30

WPP30G

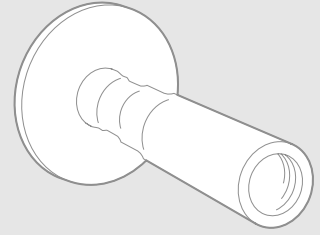
- Tough grade for interrupted cuts, unstable or unfavourable conditions
- Primary application: Steel ISO P30; secondary application: Cast iron ISO K40 and stainless steel ISO M20



Tiger-tec®Gold

APPLICATION EXAMPLE

Drive shaft – longitudinal turning



Material: 21MnCr5 / DIN 1.2162

Strength: 610 N/mm²

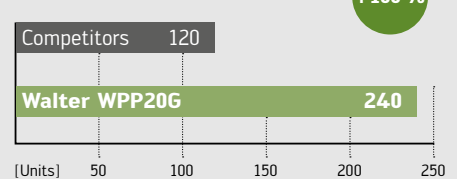
Tool: DDJNR2525M15

Indexable insert: DNNG150612-RP5 WPP20G

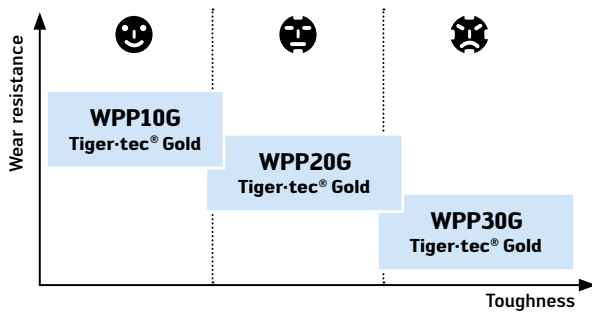
Cutting data

	Competitors ISO P20	Walter WPP20G Tiger-tec® Gold
v_c (m/min)	250	250
f (mm)	0,45	0,45
a_p (mm)	1,5–4	1,5–4
Cooling	Emulsion 30 bar	Emulsion 30 bar

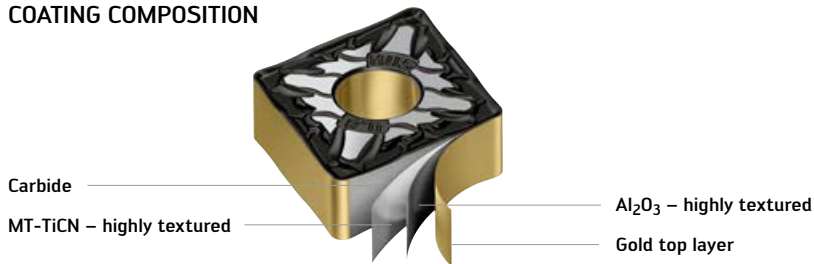
Comparison: Tool life



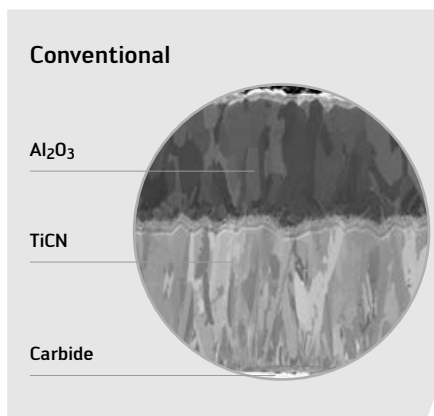
OVERVIEW OF GRADES



COATING COMPOSITION



TIGER-TEC® GOLD TECHNOLOGY



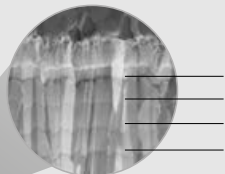
Tiger-tec® Gold

Al₂O₃ – highly textured

MT-TiCN – highly textured

Carbide

Tool life increase of +50% due to fine-columnar, highly textured MT-TiCN and Al₂O₃.



Increased toughness thanks to unique, multilayer MT-TiCN for better elastic properties of the crystals.

BENEFITS FOR YOU

- High level of cost-efficiency due to highly textured Tiger-tec® Gold coating – average tool life increase of around 50%
- High level of productivity and process reliability due to multi-stage post-treatment and unique, multilayer MT-TiCN structure
- Grades and benchmark geometries for short chips with versatile application

Stable internal machining with maximum cost-efficiency.

NEW

THE TOOL

- Copy turning system with WL positive engagement on boring bar and indexable insert
- Boring bar diameter: 25, 32 and 40 mm

THE INDEXABLE INSERT

- Three-edge, positive indexable inserts with WL positive engagement
- Neutral, left-hand, right-hand and full-radius versions fit into the same tool

THE APPLICATION

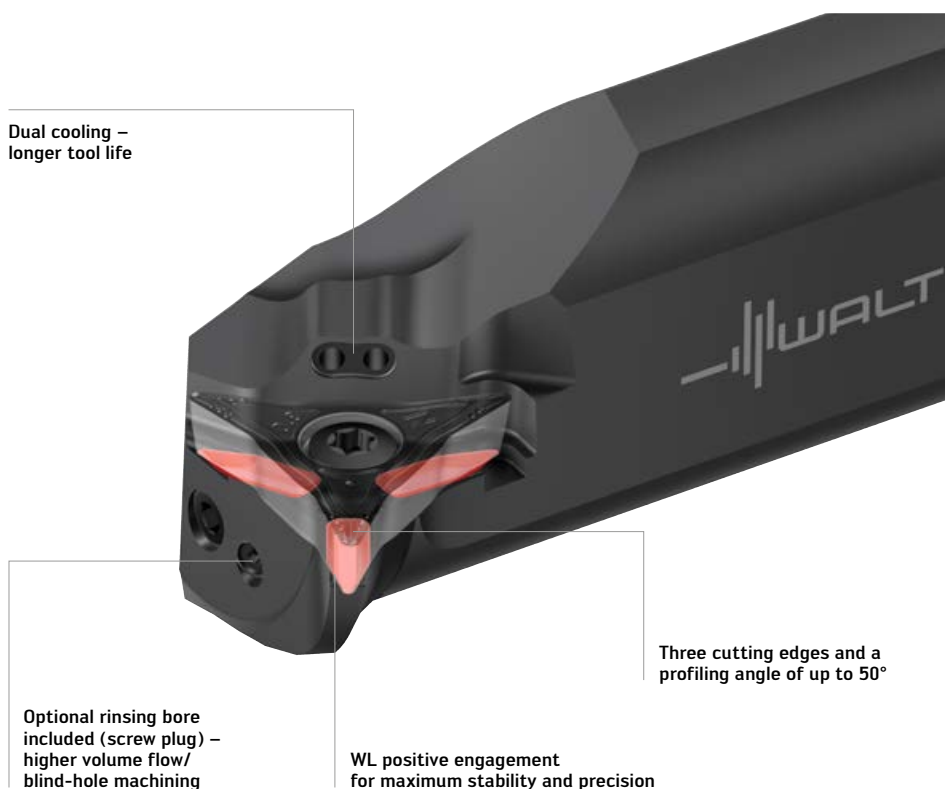
- Internal copy turning, facing and axial grooving
- Replacement for ISO VBMT, VCMT, DCMT indexable inserts
- High-precision components

W1210

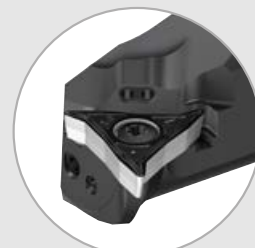
- Profiling angle of up to 72.5°
- Can be used universally due to its neutral design

W1211

- Profiling angle of up to 50°



Additional variants using a right-hand boring bar as an example



Left indexable insert for 50° profiling



Right indexable insert for facing, axial grooves



Neutral full radius indexable insert

Walter Turn copy turning system – internal machining

Fig.: W1211-32TR-WL25

BENEFITS FOR YOU

- High level of dimensional stability and indexing accuracy due to positive-locking, robust WL connection
- Long tool life when copy turning
- Highly cost-efficient thanks to lower tool costs due to three cutting edges
- Maximum flexibility: Four indexable insert types fit in the same tool

Positive – with the best performance on ISO N.

EXPANSION OF THE RANGE

THE GRADE

WN10

- Uncoated, polished carbide substrate
- Cost-effective alternative to coated grades

WNN10

- HIPIMS PVD TiAlN coated, polished carbide grade
- Extremely high wear resistance
- Excellent layer bonding on sharp cutting edges

THE GEOMETRY

FN2

- Tight chip breaker – optimum chip breaking at low depths of cut

MN2

- Open geometry – high productivity and universal application

THE APPLICATION

WN10

- Primary application: ISO N; secondary application: ISO S, O
- Al wrought alloys or AlSi cast alloys with low silicon content (less than ~7%)
- Suitable for copper alloys or brass alloys

WNN10

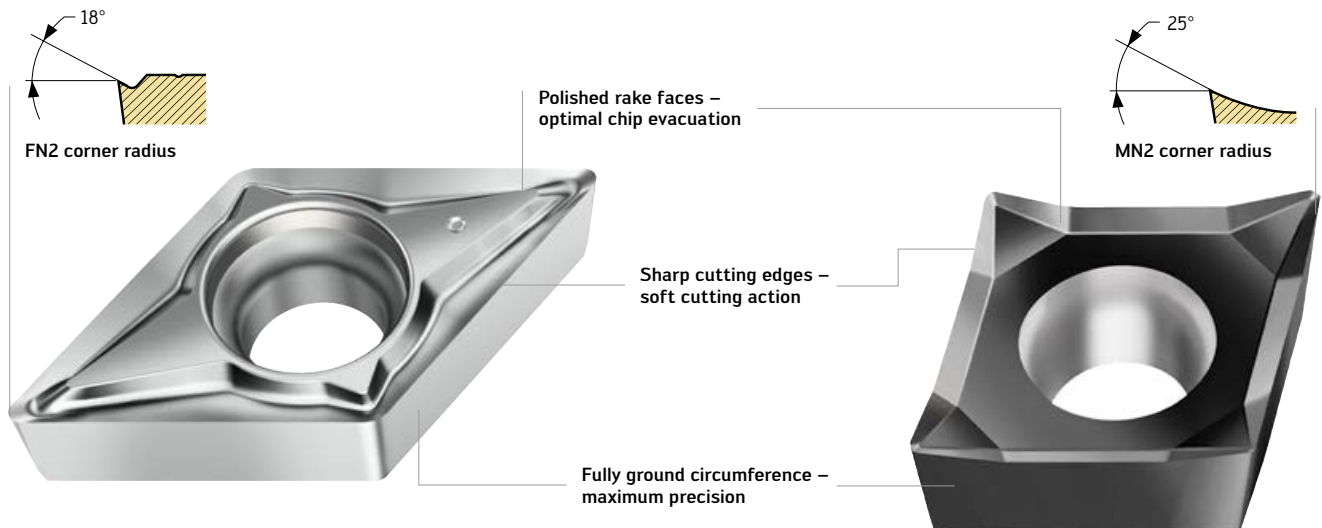
- Primary application: ISO N; secondary application: ISO P, M, K, S, O
- AlSi cast alloys (up to 10% silicon content), Al wrought alloys, copper alloys and brass alloys
- Ideal for precision finishing operations on ISO P, M and S

FN2 geometry

- Finishing of ISO N
- a_p 0.1–3.0 mm; f 0.02–0.3 mm

MN2 geometry

- Medium machining of ISO N
- a_p 0.5–6.0 mm; f 0.02–0.8 mm



Positive ISO N FN2 geometry

Fig.: DCGT070202-FN2 WN10

Positive ISO N MN2 geometry

Fig.: CCGT09T304-MN2 WNN10

BENEFITS FOR YOU

- Longer tool life on materials with a tendency to stick (build-up on the cutting edge) thanks to optimised surface roughness
- Maximum process reliability with long-chipping materials due to sharp, polished cutting edges
- Best surface qualities (up to R_z 3 μ m) when precision finishing
- No layer flaking and even wear development due to excellent layer bonding
- Machining less stable components as well as components with long overhangs

Best quality and tool life in stable conditions.

EXPANSION OF THE RANGE

THE GRADE

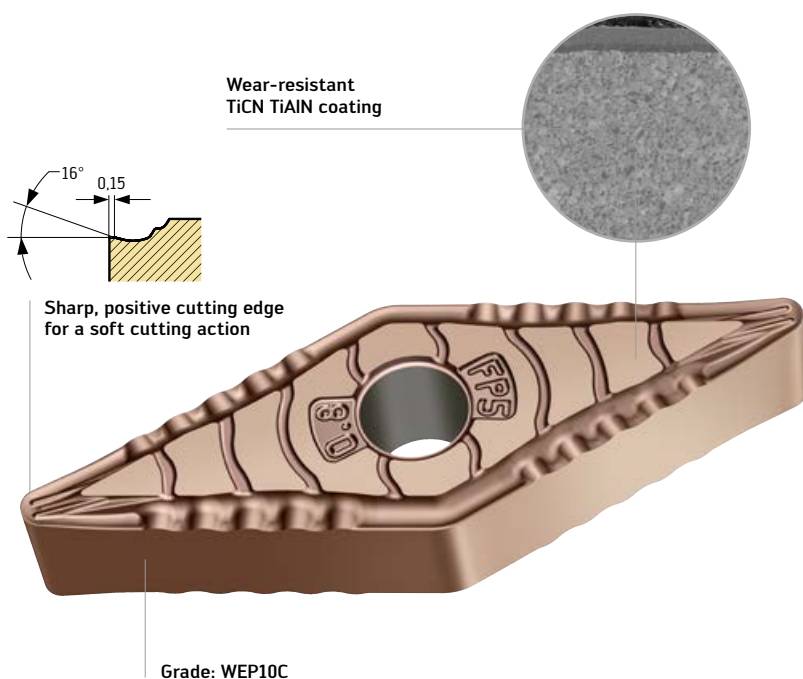
- New cermet micrograin grade WEP10C
- Wear-resistant TiCN/CN-based cermet substrate with Ni/Co binder and PVD TiCN/TiAlN coating
- Double the tool life due to unparalleled wear resistance
- Extra fine cermet substrate grain

THE INDEXABLE INSERT

- Chip formation FP5
- Sintered, sharp cutting edge
- Basic shapes: CNMG12..., DNMG11..., DNMG15..., TNMG16..., VNMG16..., WNMG08...

THE APPLICATION

- Finishing of components, internal and external
- Primary application: Steel ISO P10
- a_p : 0.1–2.0 mm; f : 0.04–0.25 mm
- Secondary application: Stainless steel ISO M10 and cast iron ISO K10
- Finishing with continuous and slightly interrupted cuts
- Areas of application: General mechanical engineering, energy and automotive industries



FP5 cermet indexable insert

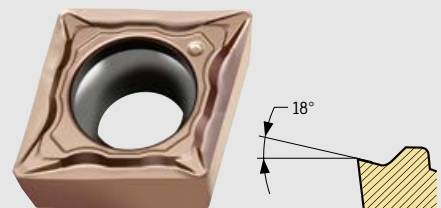
Fig.: VNMG160404-FP5 WEP10C

BENEFITS FOR YOU

- Consistently long tool life throughout the entire duration of use
- No readjustment necessary, maximum dimensional accuracy
- Longer tool life and higher productivity in comparison to carbide
- Low cutting pressure due to positive FP5 geometry and cutting edge preparation
- Extremely wear-resistant cermet substrate with multilayer coating

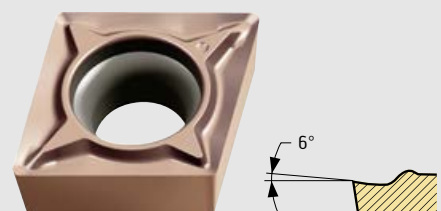
Other available cermet geometries

The stable, positive FP4



Finishing with continuous and slightly interrupted cuts in steel, stainless steel and cast iron materials

The double positive FP2



Finishing, with precision-ground cutting edges, of small diameters and long components with unstable clamping as well as thin-walled components

Neutral parting blades, which represent greater reliability.

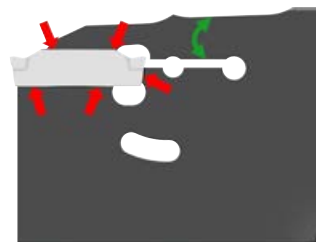
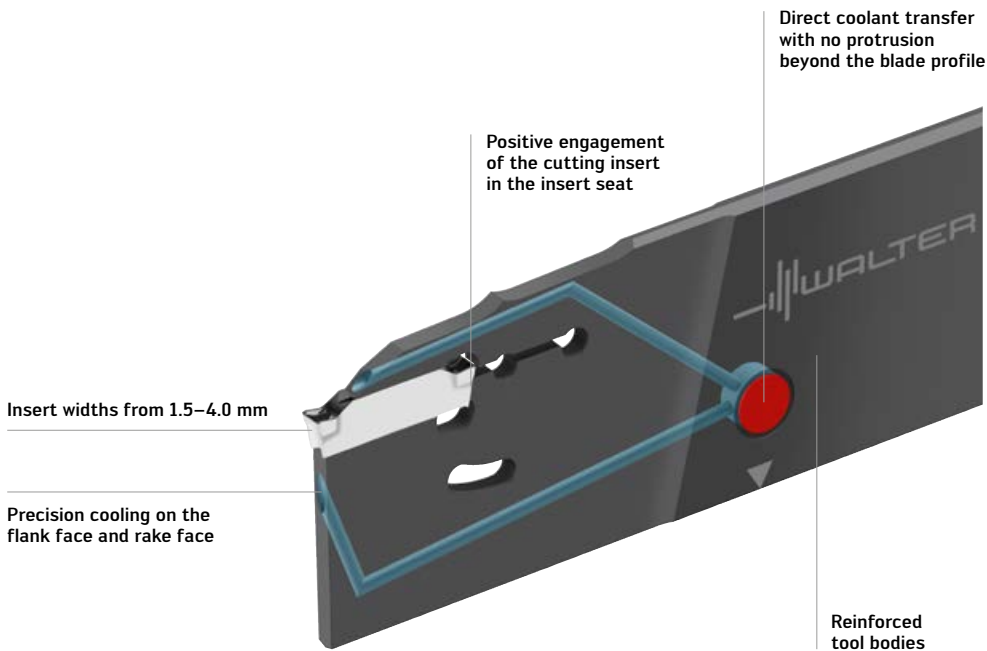
NEW

THE TOOL

- Walter Cut G4042/G4042-P deep parting blades with or without precision cooling
- Innovative new self-clamping system: Perfect four-point retention in the insert seat
- Blade height: 26–32 mm
- Insert widths: 1.5/2.0/3.0/4.0 mm
- Parting off diameter: 35–80 mm
- Stable, reinforced tool body for narrow insert widths 1.5/2.0 and 3.0 mm

THE APPLICATION

- Grooving and parting off where space is limited
- Parting off with low burr and pip formation (by 6°, 7° and 15° angled parting off inserts)
- Can be used from 10 bar up to a maximum coolant pressure of 80 bar
- Parting off with long tool overhangs



Walter Cut G4042-P/DX18 – reinforced parting blade

Fig.: G4042-32N-3T40DX18-P

BENEFITS FOR YOU

- Increased tool life thanks to reduced vibration tendency due to reinforced shank
- Maximum process reliability due to minimal deflection of the grooving inserts thanks to reinforced tool body and DX positive engagement
- High cost-efficiency due to two cutting edges
- Perfect chip control due to precision cooling on the flank and rake faces

Ideal for internal grooving with greater reliability.

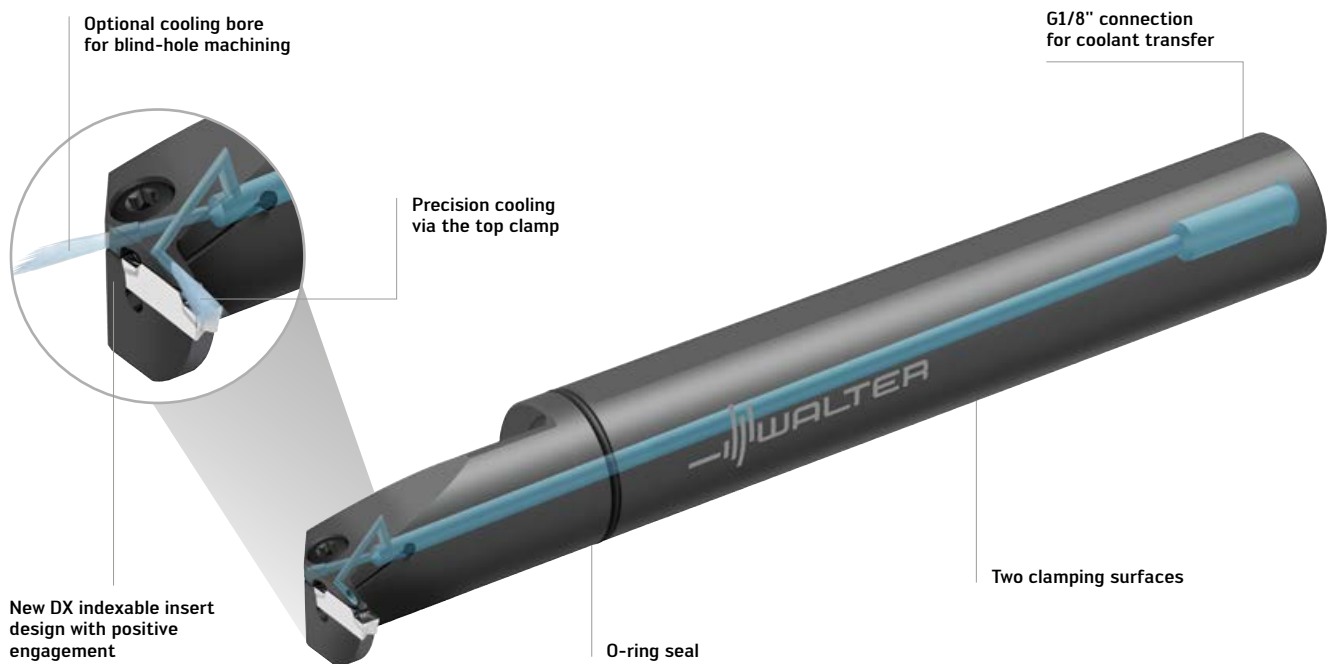
NEW

THE TOOL

- Walter Cut G4221-P/DX18 grooving system
- Precision cooling via the top clamp
- Axial coolant bore (sealable) for blind-hole machining
- Flexible O-ring seal for leak-free coolant transfer
- Insert widths: 2, 3, 4 mm

THE APPLICATION

- Internal grooves with a diameter starting from $D_{\min} = 25$ mm
- Grooving to a depth of $T_{\max} = 10$ mm
- Can be used up to a coolant pressure of 80 bar
- Shank dia. 25–32 mm



Grooving bar with precision cooling

Fig.: G4221-25RR-3T08-DX18-P

BENEFITS FOR YOU

- Process reliability and reduced costs due to unique DX positive engagement design (the cutting insert does not move)
- Reliable blind-hole machining due to flushing effect thanks to unique axial cooling bore
- Extremely high productivity and extra-long tool life due to improve chip breaking (no chip jams)
- Maximum clamping force due to sophisticated clamping system

Intelligent internal grooving – with QuadFit quick-change heads.

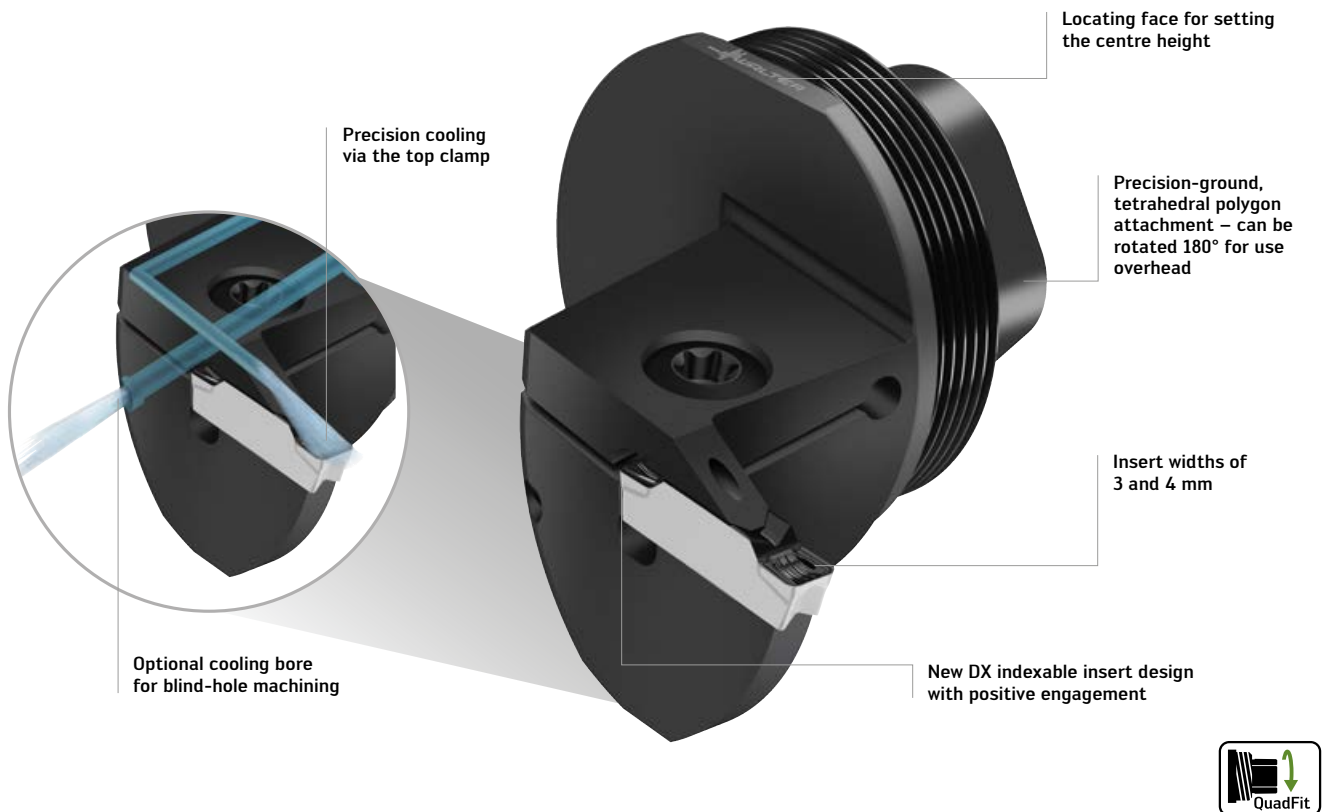
NEW

THE TOOL

- Walter Cut G4221-Q..-P/DX18 grooving system:
QuadFit quick-change heads
- Precision cooling via the top clamp
- 0.002 mm indexing accuracy
- Only one cap nut for clamping the exchangeable head
- Precision-ground, tetrahedral polygon attachment;
can be rotated 180° for use overhead
- Sealable axial cooling bore for blind-hole machining

THE APPLICATION

- Internal grooves with a diameter starting from $D_{\min} = 50$ mm
- Grooving to a depth of $T_{\max} = 21$ mm
- Insert widths of 3 and 4 mm
- Can be used up to a coolant pressure of 80 bar
- QuadFit interfaces: Q32/Q40/Q50 mm
- Can be used in conjunction with Accure-tec vibration-damped boring bars



QuadFit quick-change head for internal grooving

Fig.: G4221-Q40R-4T12DX18-P

BENEFITS FOR YOU

- Process reliability and reduced costs due to unique DX positive engagement design: The cutting insert does not move
- Unique chip flushing effect due to the axial cooling bore for blind-hole machining
- Higher productivity due to improved chip breaking (no chip jams, longer tool life)
- Maximum clamping force due to sophisticated clamping system

Grooving tools in just four weeks: Cost-effective and custom-designed.

SPECIAL TOOL

THE TOOL

- G1011 monoblock special tools for GX16, GX24, GX30 and GX34 cutting inserts, also DX18 for G4011
- Left-hand, right-hand or neutral versions
- With and without precision cooling
- Approach angle: 0 to 90° possible
- Cutting depths: 5–33 mm
- Shank sizes: 10–50 mm
- Walter Capto™ C3–C8

THE APPLICATION

- Grooving and groove turning with and without precision cooling
- Radial grooving, parting off and groove turning
- Can be used from 10 bar up to a maximum coolant pressure of 150 bar (connections and position freely selectable)
- Ideal grooving tool design (e.g. reinforcement of the cutting insert support for a longer tool life and higher productivity)

Possible variants:



Walter Capto™ C3–C8



0° approach angle



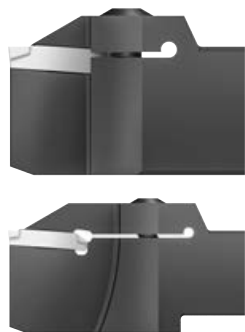
90° approach angle

Walter Xpress



1–89° approach angle

Variants – cutting depth:



Adapted cutting depths: 5–33 mm

Variants – cooling:



Precision cooling on the rake and flank faces, or only on the rake face or the flank face and without precision cooling

Also available:



Walter Xpress for double-edged DX and GX cutting inserts

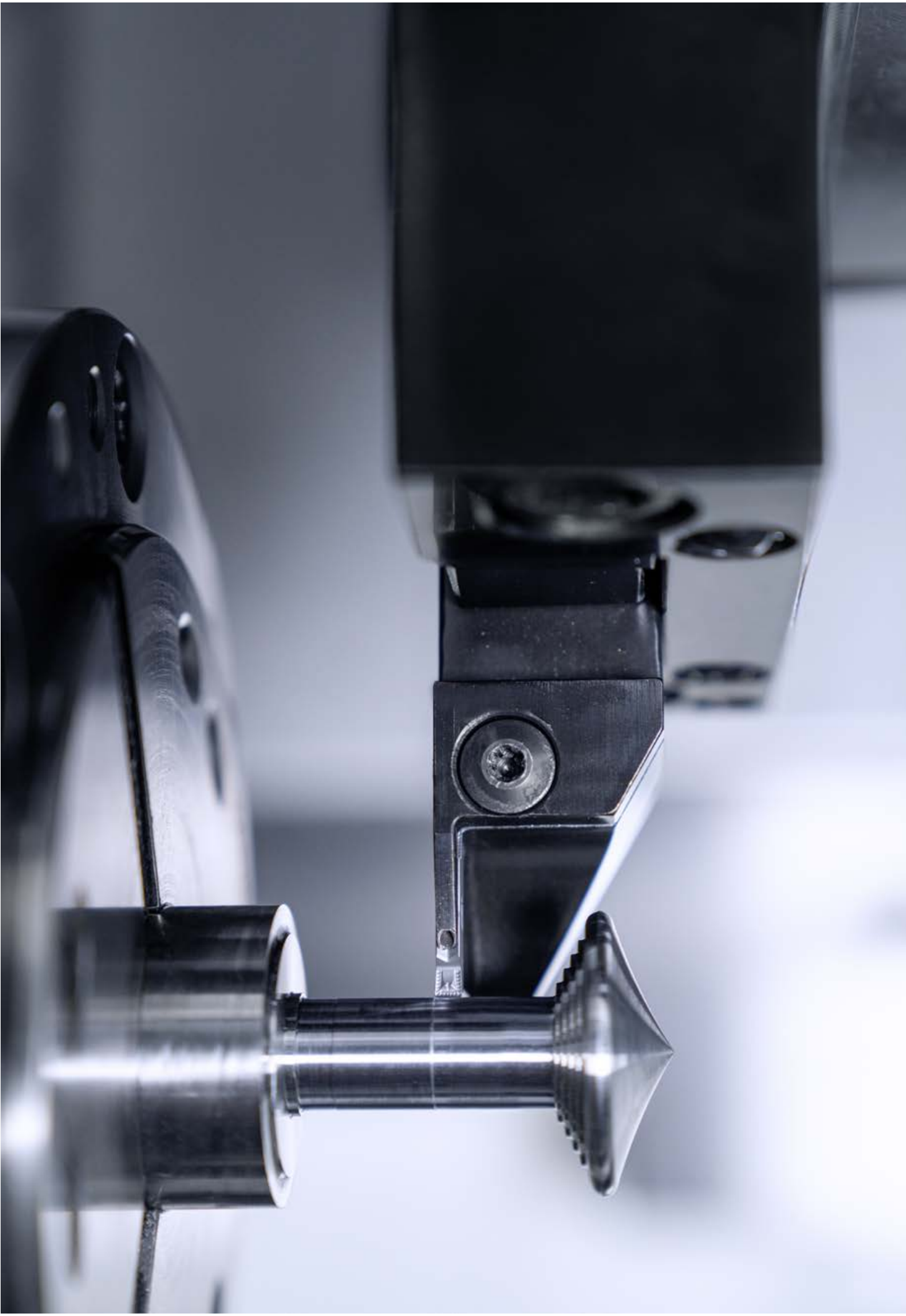


Walter Xpress for four-edged MX cutting inserts

Walter Xpress – maximum stability for individual grooving solutions

BENEFITS FOR YOU

- Greater flexibility due to four-week delivery time for little more than the standard price
- Rapid feedback thanks to quotes being returned within 24 hours
- Sophisticated tool design due to a rule-based design approach in accordance with the component definition
- Superlative machining results due to proven standard technology plus optimal special design
- Walter Xpress is available for grooving tools and cutting inserts



B – Holemaking

Drilling from solid	DC175 Supreme solid carbide drill	16
	Drilling grade WNN15	18



Performance: Effective. Cooling: Efficient.

NEW

THE TOOL

- DC175 Supreme solid carbide drill with Walter precision cooling
- Dia. 3–20 mm

Dimensions

- $3 \times D_c$ in accordance with DIN 6537 short
- $5 \times D_c$ in accordance with DIN 6537 long
- $8 \times D_c$ in accordance with Walter standard

Grades

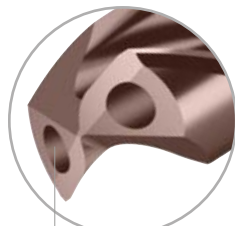
- WJ30RZ, K30F, HIPIMS TiAlSiN (complete coating) – for 3 and $5 \times D_c$
- WJ30RY, K30F, HIPIMS TiAlSiN (point coating) – for $8 \times D_c$

THE APPLICATION

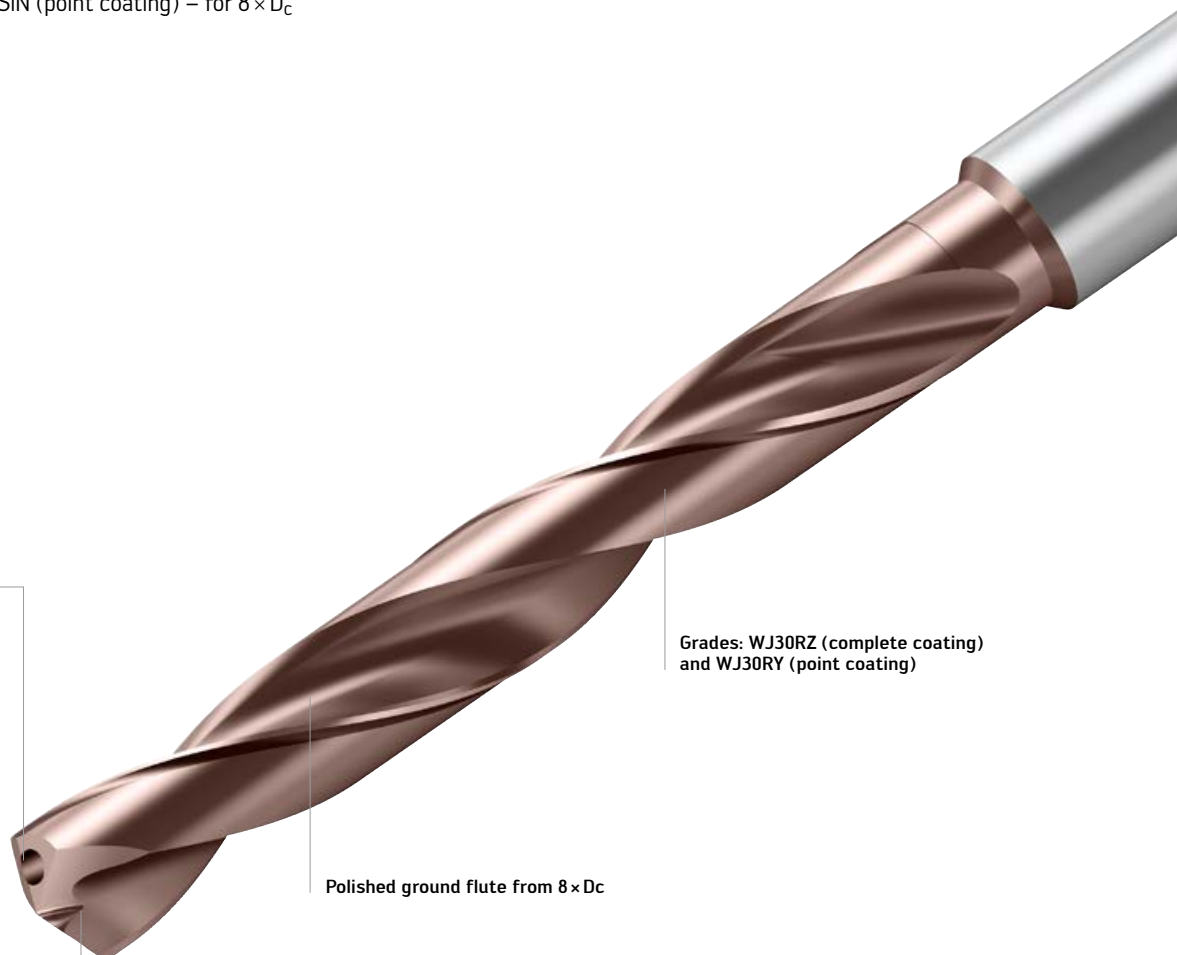
- ISO material groups M and S
- Can be used with emulsion and oil
- Areas of application: General mechanical engineering, automotive, aeronautical, food and medical industries



Stable, straight main cutting edge



Walter precision cooling



Grades: WJ30RZ (complete coating) and WJ30RY (point coating)

Polished ground flute from $8 \times D_c$

Large clearance in the centre

Walter press

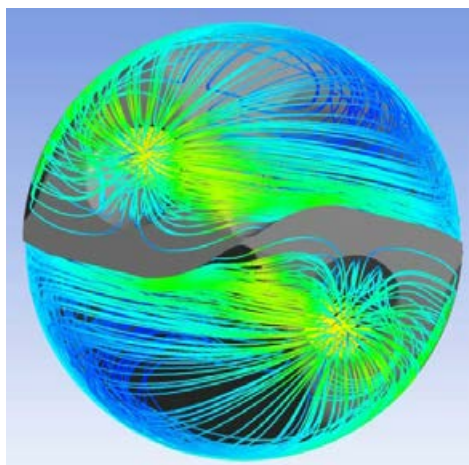
DC175 Supreme solid carbide drill

Fig.: DC175-05-08.500A1-WJ30RZ



Shank end in accordance with
DIN 69090

Shank in accordance with DIN 6535 HA

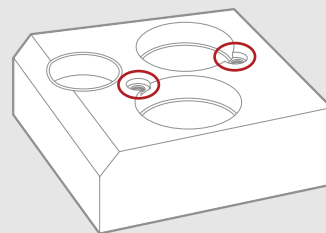


Flow analysis

Walter precision cooling
guides the coolant near
to the main cutting edge.
This increases the tool life
of the tool.

APPLICATION EXAMPLE

Hydraulic valve

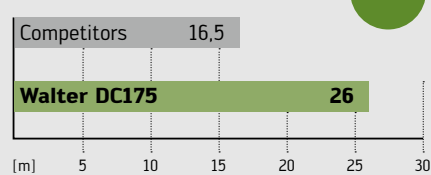


Material: 1.4404 / 316L
Strength: 605 N/mm²
Tool: DC175-05-04.300A1-WJ30RZ
Cooling: 10% emulsion – 40 bar

Cutting data

	Competitors	Walter DC175 Supreme
v_c (m/min)	80	70
n [min ⁻¹]	5925	5180
f (mm/U)	0,06	0,096
v_f (mm/min)	355	500
Drilling depth (mm)	12,5	12,5
No. of bores	1320	2080
Tool life travel (m)	16,5	26

Comparison: Tool life travel



BENEFITS FOR YOU

- Optimum productivity due to precise coolant supply to the cutting edge
- Long tool life and reduced production costs due to stable, straight cutting edge
- Reliable chip flow thanks to innovative new, extremely smooth HIPIMS TiAlSiN coating
- Three times more cost-efficient due to the possibility of being reconditioned in Walter Reconditioning Centres

Reliable drilling in aluminium and other materials.

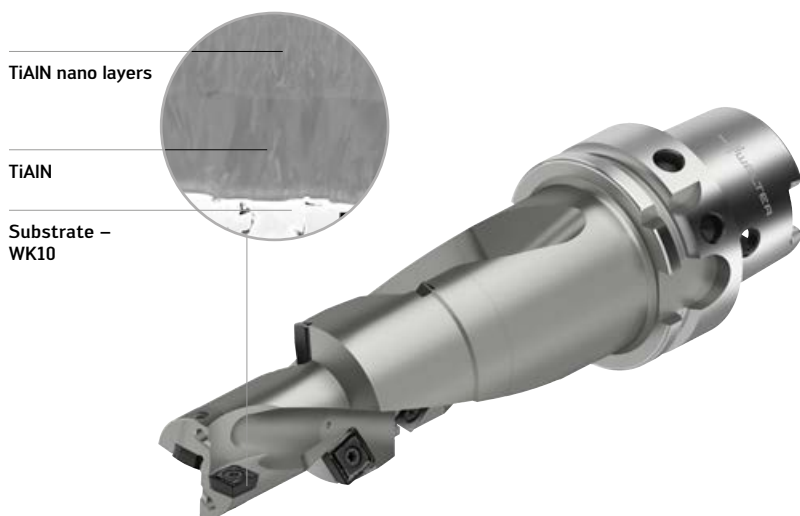
EXPANSION OF THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- PVD drilling grade WNN15
- P4840C (centre) and P4840P (external):
Sizes 1–8 for indexable insert drill D4120
- P2840S (centre and external):
Sizes 1–7 for indexable insert drill D3120
- LCGX (centre and external):
Sizes 05 and 06 for indexable insert drill
B3212.DF. – B3214.DF. in dia. range 10–18 mm

THE GRADE

- TiAlN coating with special structure: 1. Coarse crystalline area;
2. Nanostructured area with higher Al content
- Hard substrate for maximum cutting edge stability
- Extremely smooth rake face for low friction
- HiPIMS PVD coating technology



ISO N grade: WNN15

Fig.: B4273-7497120

THE GEOMETRY

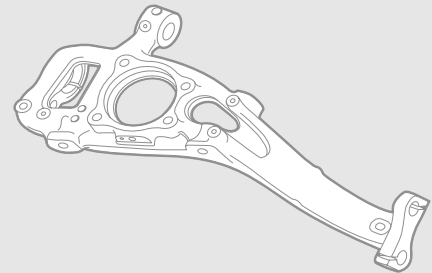
- E77 – the sharp one
- Fully ground circumference – for maximum precision
- Polished rake face – for the lowest friction and material adhesion
- Sharp cutting edge formation – for low cutting forces

THE APPLICATION

- Non-ferrous metals (ISO N), can be used specifically for wrought aluminium alloys as well as cast aluminium alloys
- Areas of application: Aeronautical and automotive industries, general mechanical engineering, etc.

APPLICATION EXAMPLE

Pivot bearings

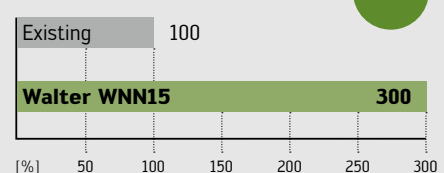


Material: AlMgSi1 F54 forged aluminium, hardened (3.2315); ISO N
Tool: B4273-7497120
Indexable insert: P4840P-5R-E77 WNN15
P4840C-5R-E77 WNN15

Cutting data

	Existing	Walter WNN15
v_c (m/min)	443	443
n [min ⁻¹]	4700	4700
f_n (mm)	0,22	0,22
v_f (mm/min)	1034	1034
Drilling depth (mm)	32	32
Cooling	6% emulsion	6% emulsion
Adaptor	HSK 63	HSK 63

Comparison: Tool life



BENEFITS FOR YOU

- Maximum process reliability due to optimum layer bonding of the WNN15 grade
- Reliable chip removal thanks to polished rake face and extremely smooth surface
- Reduced tendency towards adhesion and build-up on the cutting edge increase process reliability and wear resistance
- Long tool life at maximum cutting speeds due to HiPIMS PVD coating

Shape the future.



Aluminium is conquering a wide range of applications. In automotive and aerospace applications, it saves weight and CO₂. In mechanical engineering, it reduces the machining time. Walter offers the perfect tool range for aluminium: Available in standard versions or customised via Walter Xpress. Whether you are roughing with a high metal removal rate or finishing with superior quality, whether you are using "soft" materials or highly-abrasive AlSi alloys:

Walter tools for milling, turning, drilling and threading shape up aluminium components.

Thread milling

TC630 Supreme thread milling cutter

22



The solution for demanding applications.

NEW

THE TOOL

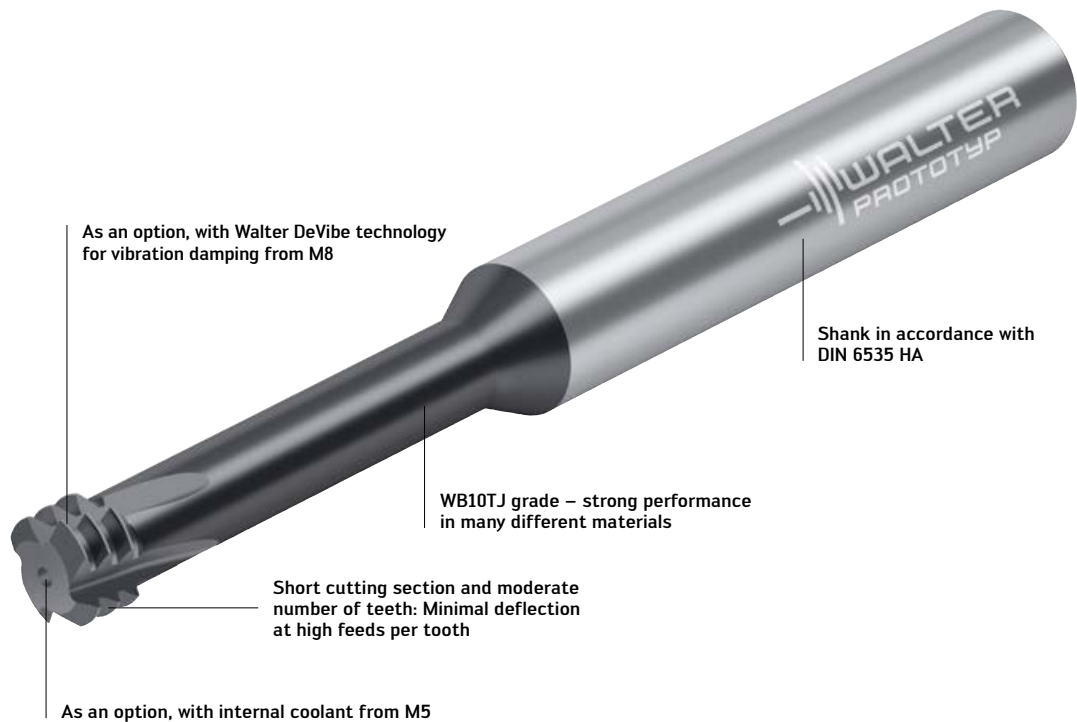
- TC630 Supreme universal orbital thread milling cutter for blind-hole and through-hole threads
- Walter DeVibe technology for vibration damping
- Optional internal coolant from M5 for reliable chip removal on deep threads
- Flexible clamping options (collet, shrink-fit chuck, hydraulic expansion chuck and power clamping chuck)

Dimensions:

- M1.6–M18
- M5 × 0.5 – M14 × 1.5
- UNC 1–64 – UNC 3/4–10
- UNF 1–72 – UNF 3/4–16
- STI UNF 10–32 – STI UNF 3/8–24

THE APPLICATION

- ISO materials P, M, K, N and S (up to 48 HRC)
- Useable length up to $4 \times D_N$ in the standard range
- Ideal for strict requirements on process reliability (e.g. for expensive components) and demanding applications such as:
 - Long projection lengths
 - Unfavourable machining conditions
 - Difficult materials (e.g. Inconel 718)
 - Small threads
- Areas of application: General mechanical engineering, aerospace, medical, electronics and precision mechanical industries

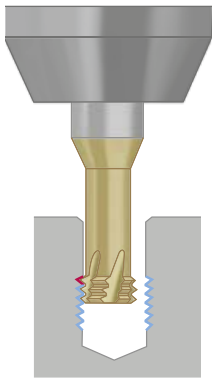


TC630 Supreme thread milling cutter

Fig.: TC630-M8-A1F-WB10TJ

THE TECHNOLOGY

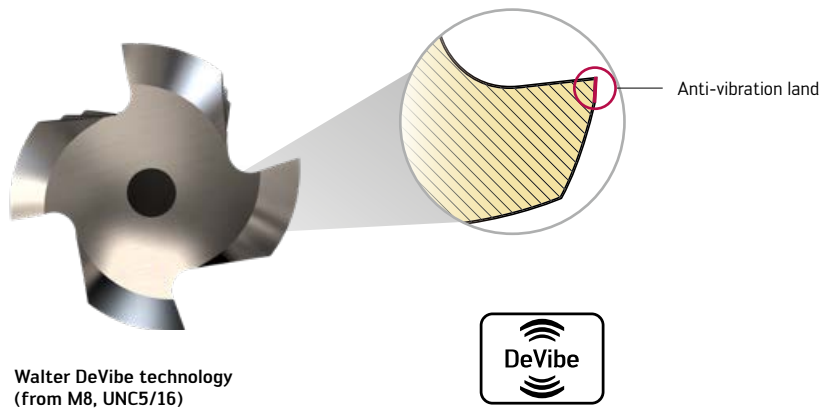
Since only one row of cutting edges engages, the deflection is minimal – ideal for difficult materials, long projection lengths and deep threads. Wear of the front cutting edge is compensated for by the subsequent rows of cutting edges: The threads stay true to size for a long period of time.



THE GEOMETRY

Effectively suppress vibration – with the Walter DeVibe technology:

An anti-vibration land reduces the clearance angle on the flank face. Result: The tool is supported during machining, vibration is effectively suppressed – for long projection lengths and unfavourable conditions (e.g. narrow and long shrink-fit chucks).



Walter DeVibe technology
(from M8, UNC5/16)

OPTIMISED DESIGN FOR STI UNF THREAD INSERT:

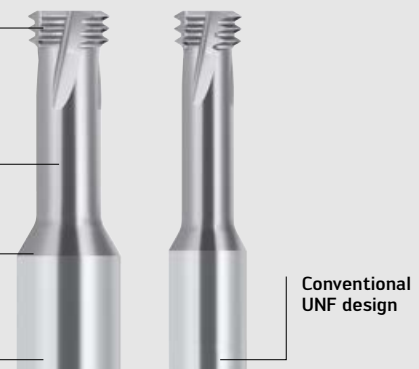
Increased cutting diameter and therefore greater stability: The TC630 STIUNF tools achieve almost double the tool life quantity and require fewer radius corrections (compared to tools designed for UNF threads). The WB10RA grade is also the first choice for Ni and Ti alloys – ideal for the aerospace industry.

Increased cutting diameter

More stable neck

Larger shank

Optimised design for STI UNF
threads: Greater stability –
increased process reliability



BENEFITS FOR YOU

- High level of process reliability for demanding machining operations
- Walter DeVibe technology: Reliable machining, even in extreme conditions
- Universal application in many different materials
- Extensive product range
- Flexible clamping options

C – Milling

Milling tools with indexable inserts	Xtra-tec® XT M5468 button insert milling cutter	26
	Xtra-tec® XT M5460 profile milling cutter	28
	Xtra-tec® XT M5137 shoulder milling cutter	30
	Walter milling grade WSP45G	32
	Tiger-tec® Silver cutting tool material WSM45X	34



Maximum security against inadvertent rotation.

NEW

THE TOOL

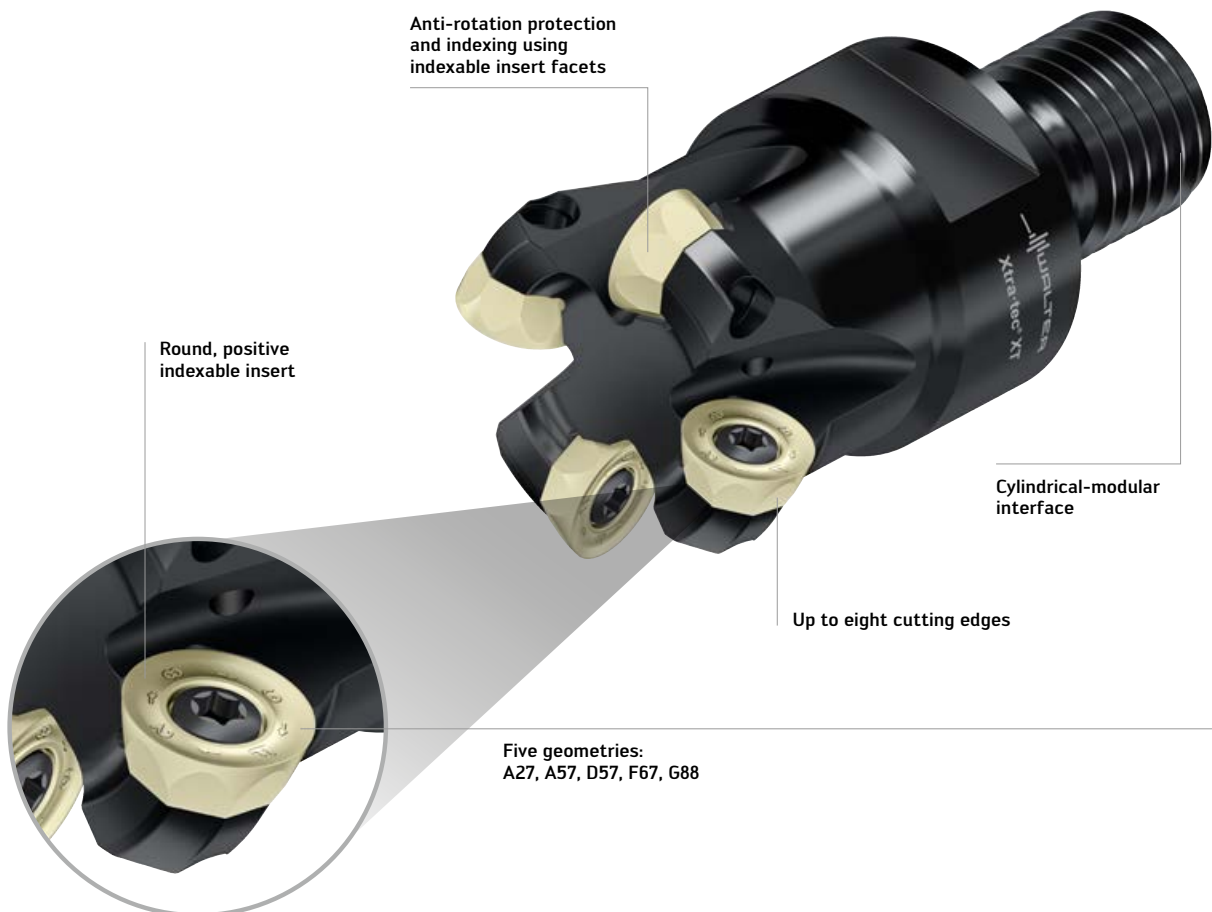
- Xtra-tec® XT M5468 button insert milling cutter
- Protection against rotation and cutting edge indexing due to up to eight facets on the indexable insert
- Oversize milling cutter for machining operations on deep shoulders
- Dia. 10–125 mm (or 1.0–5.0")
- Two pitches for different applications
- Interfaces: ScrewFit, cylindrical-modular, Weldon shank and bore adaptor
- No assembly parts getting in the way
- Good chip removal when machining deep pockets

THE INDEXABLE INSERT

- Up to eight cutting edges with positive basic shape
- Seven indexable insert sizes: RD.X0501M0; RD.X07T1M0; RO.X0803M04; RO.X10T3M08; RO.X1204M08; RO.X1605M08; RO.X2006M08

Variants:

- Fully sintered circumference (RDM.../ROM...)
- Fully ground circumference (ROG.../ROH...)



Xtra-tec® XT M5468 button insert milling cutter
Indexable insert for Xtra-tec® XT M5468 button insert milling cutter

Fig.: M5468-032-TC16-04-05
Fig.: ROMX10T3M08-F67 WSP45G

THE APPLICATION

- Universal system for copy milling, face milling, ramping, pocket milling and circular interpolation milling
- Ideal for copy milling with minimal material removal
- For steel, stainless steels, cast iron, non-ferrous metals, materials with difficult cutting properties and for hard machining
- Areas of application: Mould and die making, general mechanical engineering, energy industry, among others

Overview of geometries:



A27 – The stable one



A57 – The special one



D57 – The universal one



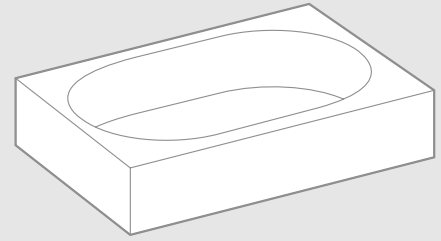
F67 – The easy-cutting one



G88 – The sharp one

APPLICATION EXAMPLE

Pocket milling



Material: 42CrMo4, 900 N/mm², ISO P

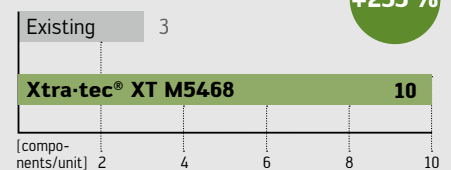
Tool: M5468 / Ø24 / Z2

Indexable insert: ROMX1204M08-F67

Cutting tool material: WSP45G

Cutting data:	Existing	Walter Xtra-tec® XT M5468
v_c (m/min)	200	200
f_z (mm)	0,18	0,18
a_e (mm)	14,0–24,0	14,0–24,0
a_p (mm)	max. 4,00	max. 4,00
Cooling	Dry	Dry

Comparison: Tool life quantity



BENEFITS FOR YOU

- Maximum productivity due to optimum cutting data and tool life
- Maximum process reliability due to indexing of the indexable inserts using facets
- Perfectly adapted to the machining operation due to different indexable insert sizes and geometries
- High level of flexibility for use in existing adaptor systems due to cylindrical-modular interface
- Lower tool costs and minimised effort due to universal application
- High level of cost-efficiency due to Tiger-tec® cutting tool materials, higher number of teeth

Copying and finishing with maximum tool life and precision.

NEW

THE TOOL

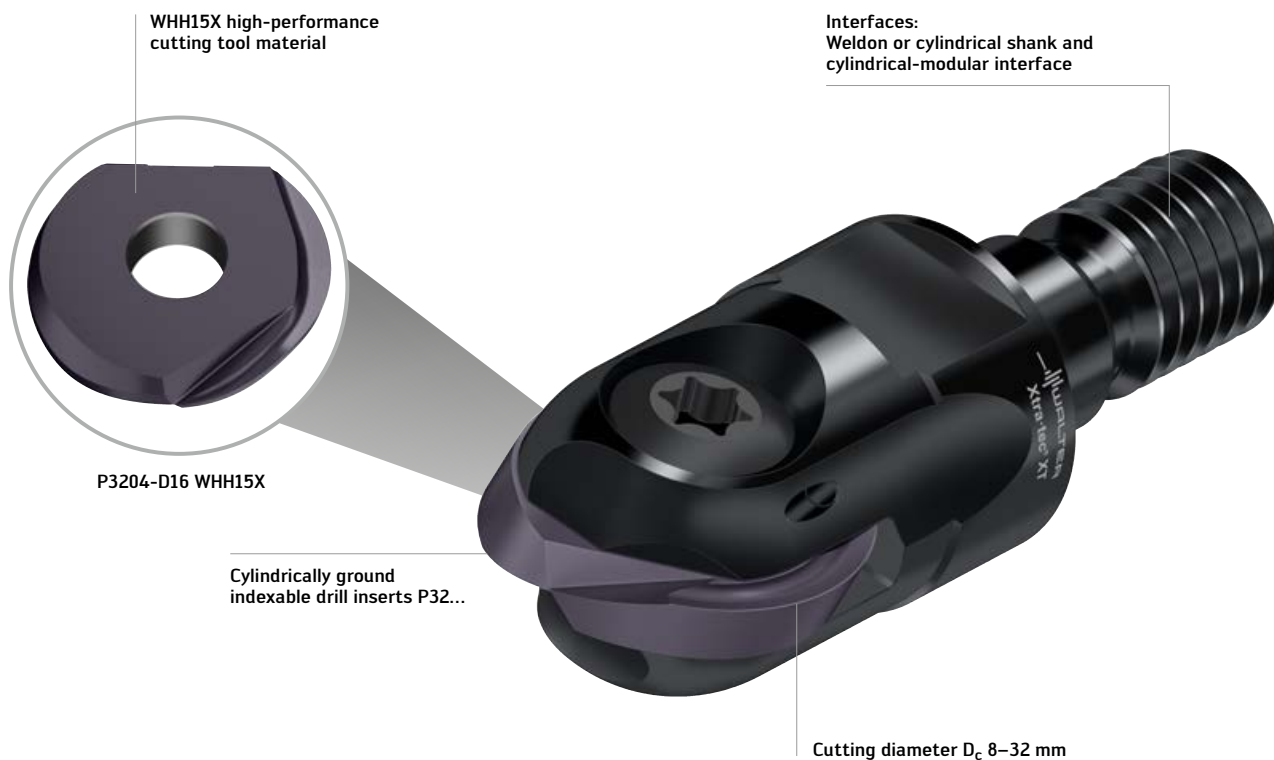
- Xtra-tec® XT M5460 profile milling cutter
- Compressed air supply or minimum quantity lubrication through an internal coolant channel
- Dia. 8–32 mm (3/8–1")
- Interfaces: Cylindrical-modular, Weldon and cylindrical shank

THE INDEXABLE INSERT

- Double-edged, precision-ground indexable inserts with positive basic shape
- WHH15X high-performance cutting tool material with ultra-wear-resistant carbide substrate
- AlTiN coating (optimised for hard machining)

Geometries:

- P3201 (e.g. for semi-finishing and hard milling); P3204 (e.g. for fine finishing and general finishing)
- Correction in the thinner web area for maximum workpiece accuracy
- Precise cutting edge geometry for the best surface quality



Xtra-tec® XT M5460 profile milling cutter with milling grade WHH15X

THE APPLICATION

- High-precision copying and finishing of freeform surfaces and deep cavities
- For steel, stainless steels, cast iron and materials with difficult cutting properties
- Specialist for hard machining of steels up to 63 HRC
- Areas of application: Mould and die marking, aerospace and energy industries

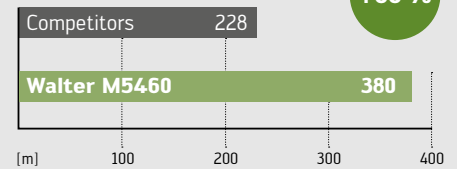
APPLICATION EXAMPLE

Copy forming

Material:	X155CrMo12-1 (1.2379) ISO H (60 HRC)
Tool:	M5460 / z2 / Ø 16 mm
Indexable insert:	P3204-D16 WHH15X

	Competitors	Walter Xtra-tec® XT M5460
v_c (m/min)	120	120
f_z (mm)	0,1	0,1
a_e (mm)	0,5	0,5
a_p (mm)	0,5	0,5
Cooling	Dry	Dry

Milling travel comparison



Xtra-tec® XT M5460 profile milling cutter
with cylindrical-modular interface

Fig.: M5460-016-TC08-02-08

BENEFITS FOR YOU

- Universal application due to various different shank designs and extensive range of cutting tool materials
- High level of cost-efficiency due to higher cutting speeds and less manual rework
- Maximum precision and tool life due to extreme cutting edge stability and wear resistance (especially with hardness > 58 HRC)
- Maximum process reliability and best surfaces due to optimised chip removal

Six times as cost-efficient – 90° approach angle.

EXPANSION OF THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- Indexable insert size TNMU11T304R-G55 for 5 mm depth of cut

THE TOOL

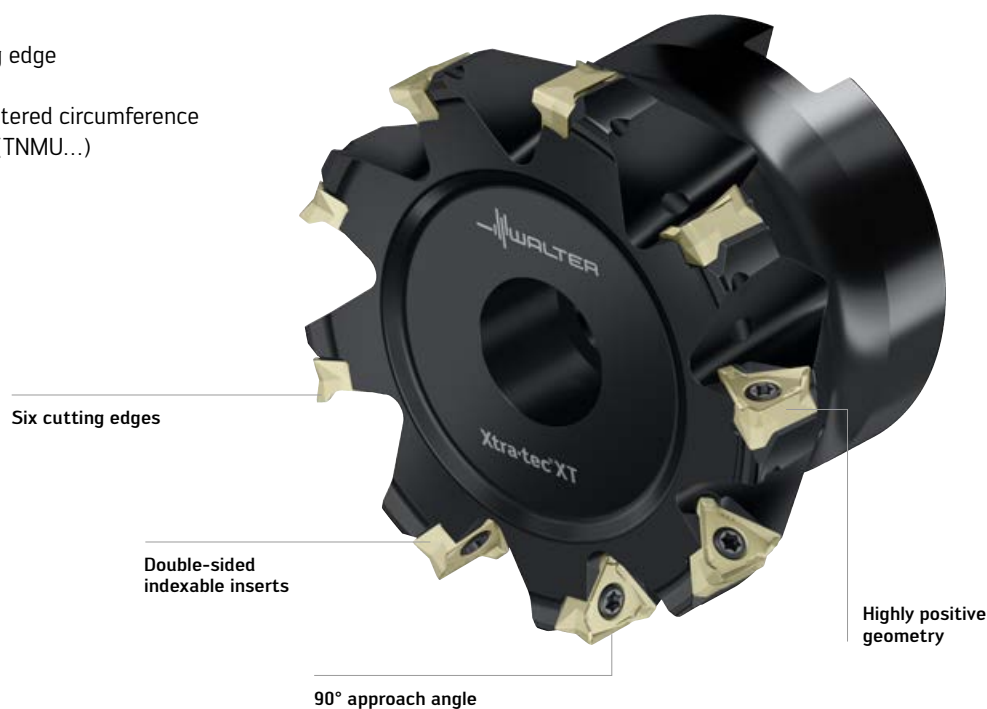
- Shoulder milling cutter with triangular, double-sided indexable inserts
- Two pitches for different applications
- 90° approach angle
- Interfaces: Weldon shank or bore adaption
- Dia. 32–100 mm
- Maximum depth of cut a_p max = 5 or 8 mm

THE INDEXABLE INSERT

- Design with secondary cutting edge
- Easy-cutting geometry
- Indexable inserts with fully sintered circumference for maximum cost-efficiency (TNMU...)

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 application: 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-B22-09-05

BENEFITS FOR YOU

- High process reliability due to stable, double-sided indexable inserts
- High level of cost-efficiency due to Tiger-tec® cutting tool materials and six cutting edges per indexable insert
- Simple tool selection and low cutting tool material costs

Xtra-tec® XT

Performance and reliability extend your perspective.



Performance and reliability in equal measure – a unique experience.

Xtra-tec® XT – the next generation of Walter's highly successful range of milling tools boasts a remarkable new design feature: The installation position of the Tiger-tec® indexable inserts has been modified to deliver considerably more power at the same high level of process reliability.

A new perspective on productivity: Xtra-tec® XT – Xtended Technology from Walter.

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 **WALTER**
Engineering Kompetenz

Tiger-tec® Gold is pushing the boundaries.

EXPANSION OF THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- Indexable inserts for Xtra-tec® shoulder, helical milling and slotting cutters
- Indexable inserts for F2330 high-feed milling cutter
- Indexable inserts for F2239 copy milling cutter

THE GRADE

- PVD-coated Tiger-tec® Gold milling grade WSP45G
- The only PVD Al_2O_3 coating technology of its kind in the world
- ZrN top layer for the best wear detection
- Perfect balance between wear resistance and toughness
- Extremely smooth rake face for low friction

THE TOOL

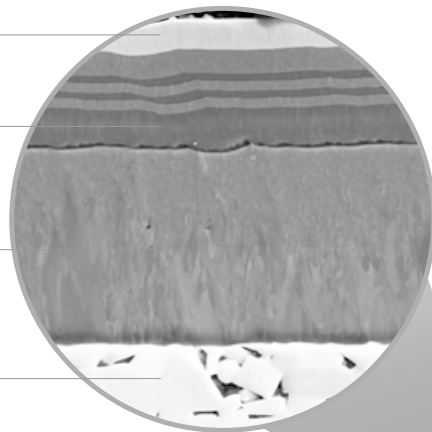
- Compatible with all standard milling cutters from the Walter range, such as:
Xtra-tec® XT: M5130 and M5137 shoulder milling cutters, M5009 and M5012 face milling cutters, M5008 high-feed milling cutter; M4000; Walter BLAXX

ZrN – best friction characteristics
and wear detection

Al_2O_3 – high temperature
resistance

TiAlN – high wear resistance

Carbide substrate –
high level of toughness



Tiger-tec® Gold

Tiger-tec® Gold milling grade WSP45G

Fig.: Walter BLAXX M3024

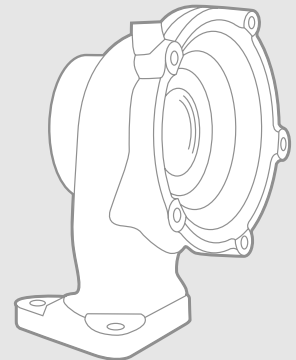
THE APPLICATION

- Can be used universally on materials from ISO groups P, M and S (e.g. austenitic stainless steel or titanium alloys)
- Ideal for unfavourable conditions such as long overhangs or for wet machining
- Areas of application: Aerospace and energy industries, general mechanical engineering, etc.



APPLICATION EXAMPLE

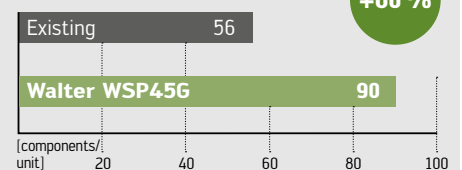
Turbocharger



Material: GX35CrNiSi 25 12 (1.4837), ISO M
Tool: M3024 / Ø100 / Z8
Indexable insert: XN MU0705ANN-F57
Cutting tool material: WSP45G

	Existing	Walter WSP45G
v_c (m/min)	120	120
f_z (mm)	0,29	0,29
a_e (mm)	50–78	50–78
a_p (mm)	3	3
Cooling	Dry	Dry

Comparison: Tool life quantity



BENEFITS FOR YOU

- Maximum process reliability due to the combination of high wear resistance and optimal toughness
- Long tool life due to unique PVD Al_2O_3 coating
- Can be used universally, even in difficult conditions and for materials with difficult cutting properties
- Best wear detection due to the gold-coloured top layer

WSM45X – the Walter grade with eXtra performance in ISO S and M.

EXPANSION OF THE RANGE

NEW ADDITION TO THE PRODUCT RANGE

- Tiger-tec® Silver WSM45X indexable inserts for:
- Xtra-tec® XT M5130 shoulder milling cutter
- Xtra-tec® XT M5468 copy milling cutter
- Walter BLAXX F5041 and F5141 shoulder milling cutters

THE INDEXABLE INSERT

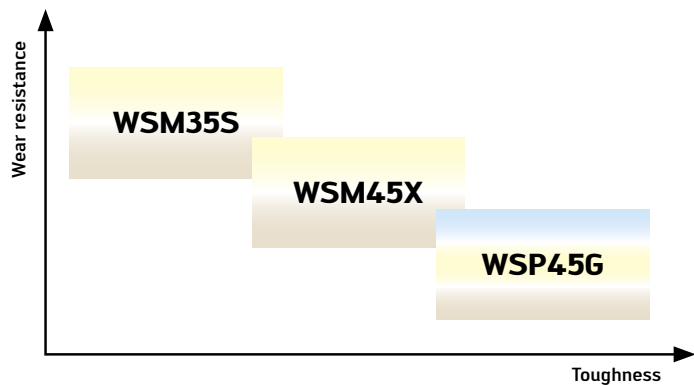
For all new and standard milling tools from the Walter range:

- Xtra-tec® XT M5130, F4042 and F4042R shoulder milling cutters
- Xtra-tec® XT M5008 high-feed milling cutter and M5004 octagon milling cutter
- Xtra-tec® M5468 copy milling cutter
- M4000: M4002 and M4132 face and shoulder milling cutters and M4574 and M4575 profiling cutters
- Walter F2334, F2334R copy milling cutters

THE GRADE

- Extremely reliable and extremely hard thanks to Tiger-tec® Silver CVD high-performance coating
- High temperature resistance combined with high level of toughness for a longer tool life
- High level of process reliability due to special Tiger-tec® Silver surface treatment

OVERVIEW OF GRADES: ISO M AND ISO S



Indexable inserts in the Tiger-tec® Silver grade WSM45X

THE APPLICATION

- Machining stainless steels (ISO M) and difficult-to-cut materials (ISO S), such as 1.4848, TiAl6V4 or Inconel 718.
- Typical components: Exhaust turbochargers, turbine blades and titanium formers for the aircraft industry

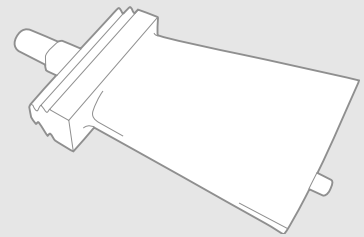


Xtra-tec® XT M5130 shoulder milling cutter

Fig.: M5130-063-B22-07-15 with
BCMT160508R-G55 WSM45X

APPLICATION EXAMPLE

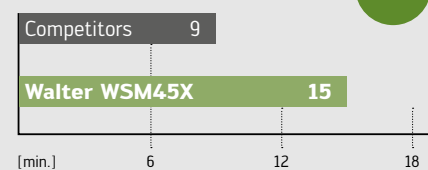
Turbine blade – roughing



Material: X 5 CrNiCuNb 16-4, ISO P
Tool: Xtra-tec® XT M5468 / z = 5 / Ø 52 mm
Indexable insert: ROMX1204M08-F67
Cutting tool material: WSM45X
Cutting data

	Competitors	WSM45X
v_c (m/min)	326	326
f_z (mm)	0,40–0,45	0,40–0,45
v_f (mm/min)	4000–4500	4000–4500
a_e (mm)	8	8
a_p (mm)	2,5–3,5	2,5–3,5

Comparison: Tool life



BENEFITS FOR YOU

- High level of process reliability due to a unique combination of wear resistance and hardness
- A high level of productivity when machining unconventional materials due to the unique Al_2O_3 coating
- Less formation of build-up on the edge due to extremely smooth surfaces
- Reliable wear detection through dual colour Tiger-tec® Silver coating

D – Boring bars/adaptors

Rotating adaptors

AB019 slim hydraulic expansion adaptor

38



Powerful, highly precise and suitable for universal use.

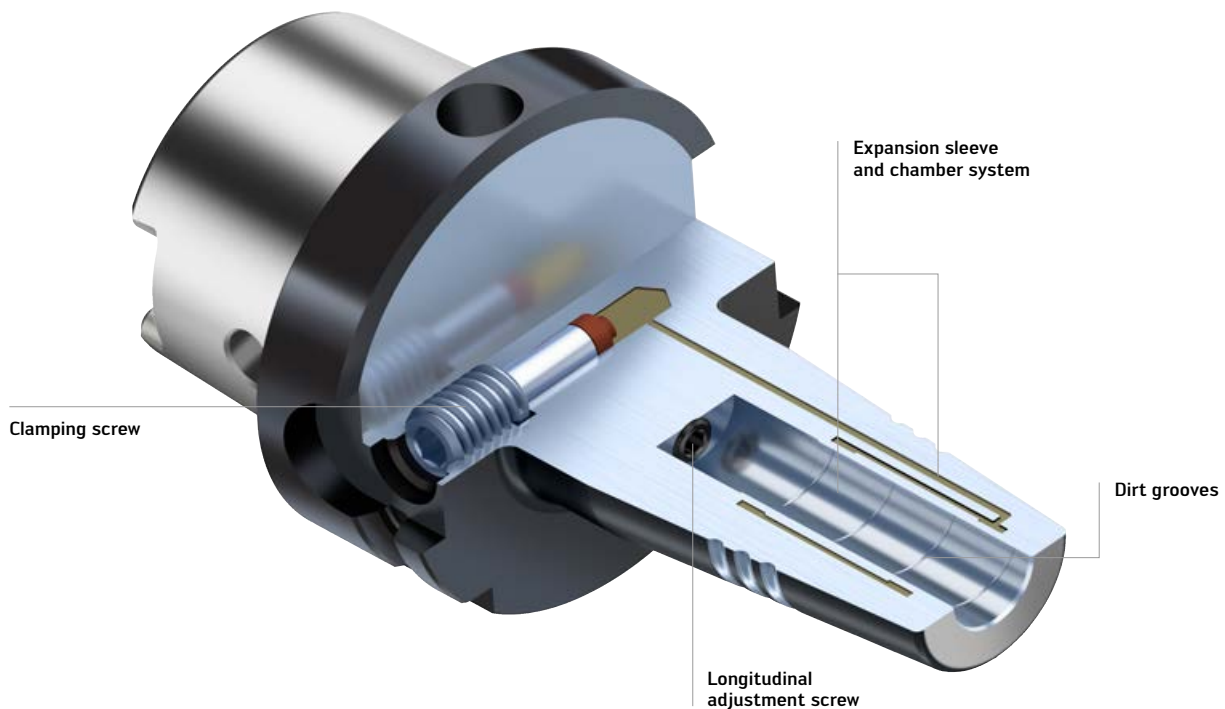
NEW

THE TOOL

- AB019 narrow hydraulic expansion adaptor
- High torque transfer
- Concentricity and indexing accuracy < 0.003 mm
- Clamping diameter: 6, 8, 10, 12, 14, 16 and 20 mm
- Short and long versions
- HSK-A 63, HSK-A 100

THE APPLICATION

- Universal application for milling, holemaking, thread milling and reaming
- Clamping of cylindrical shanks and tools in accordance with DIN 1835 form B, E and in accordance with DIN 6535 form HB, HE
- Drilling from solid and reaming with Walter Titex tools
- Roughing with Walter Prototyp solid carbide milling tools

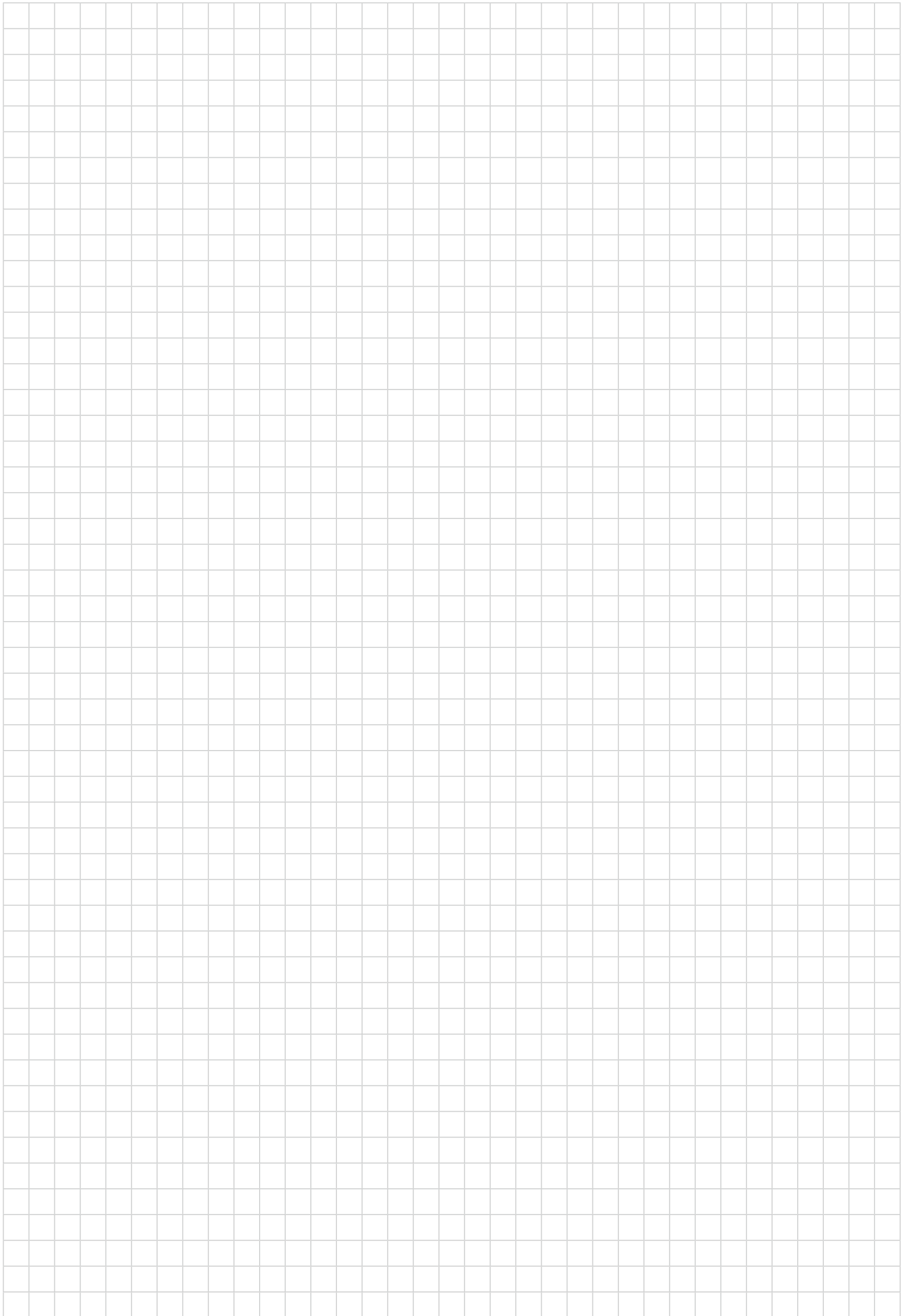


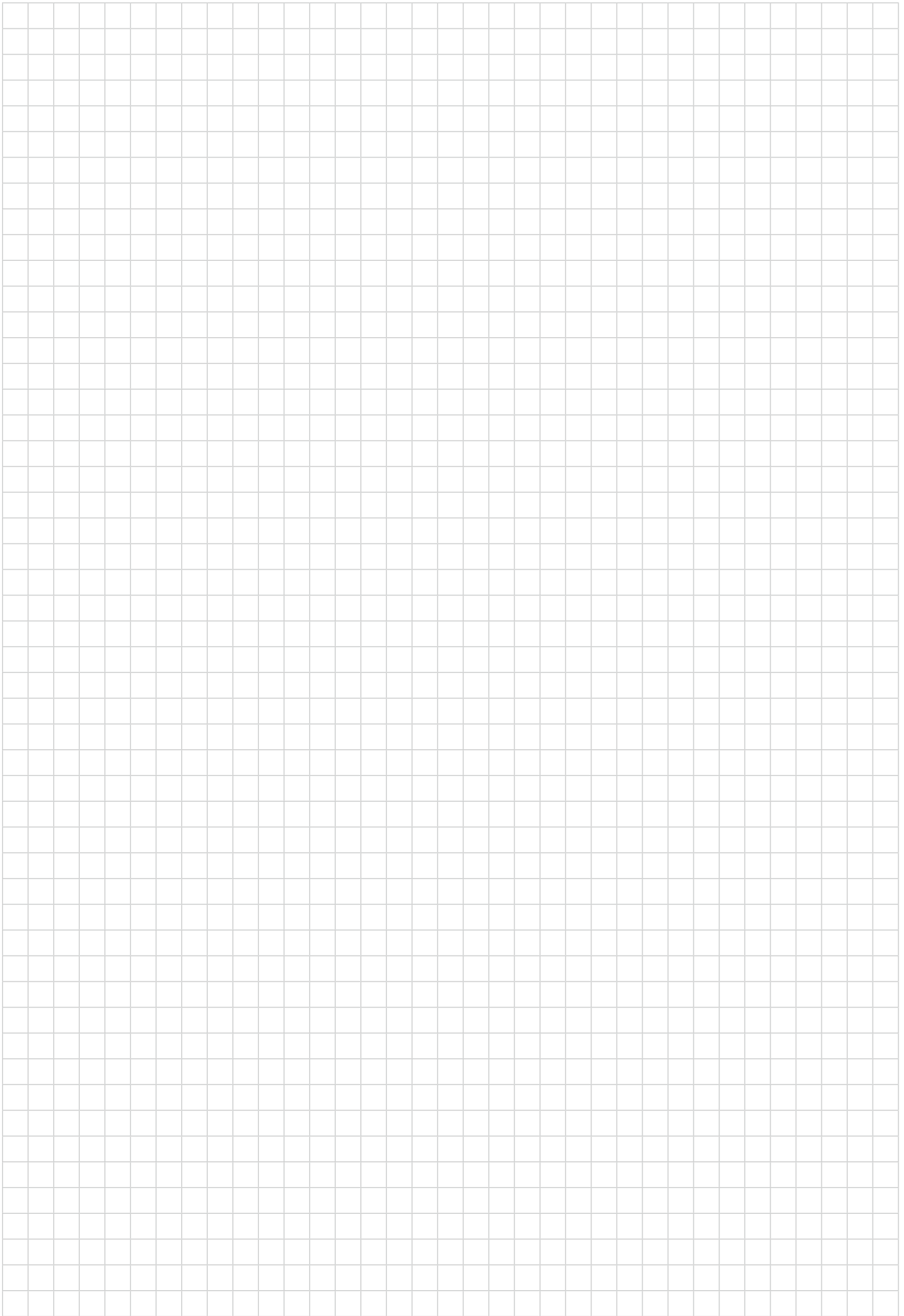
Hydraulic expansion adaptor, slim version

Fig.: AB019-H63-P10-120

BENEFITS FOR YOU

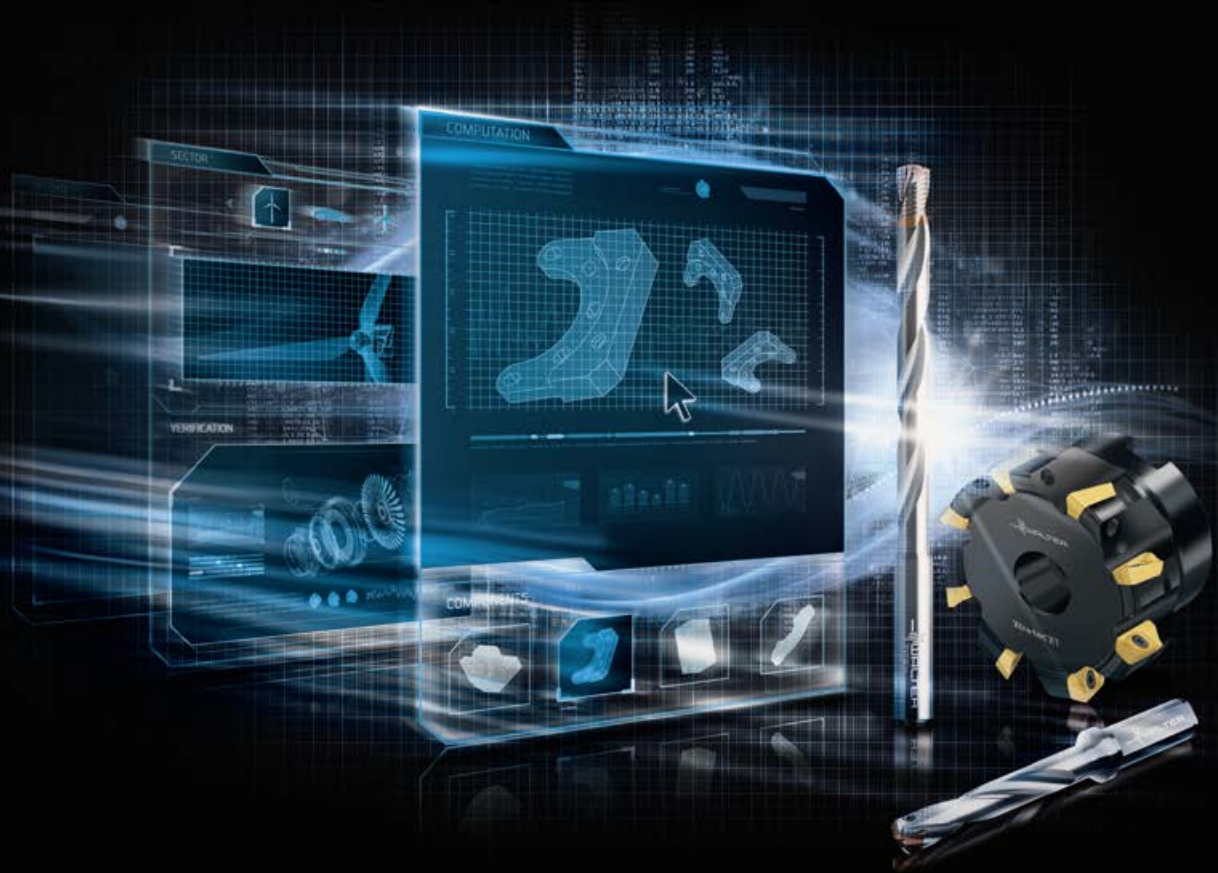
- Up to 40% increase in tool life
- High level of concentricity and vibration-damping effect especially when milling
- Tool change in a matter of seconds without peripheral devices
- Precise adjustment of tool lengths and clamping against an adjustable stop
- High level of radial stiffness and vibration damping with high, transmissible torques





Walter Innotime®

From component to tooling solution at high speed.



Get the best tool solution for your component in next to no time.

With Walter Innotime®, you can take your process design to the next level. This digital interface to Walter Engineering Kompetenz provides an overview of all required tools and machining parameters based on the 3D model of your component.

Cost-efficiency is easy and intuitive with Walter Innotime®.



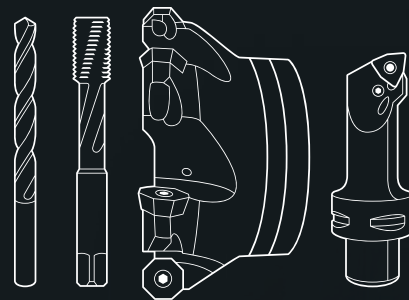
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WALTER
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