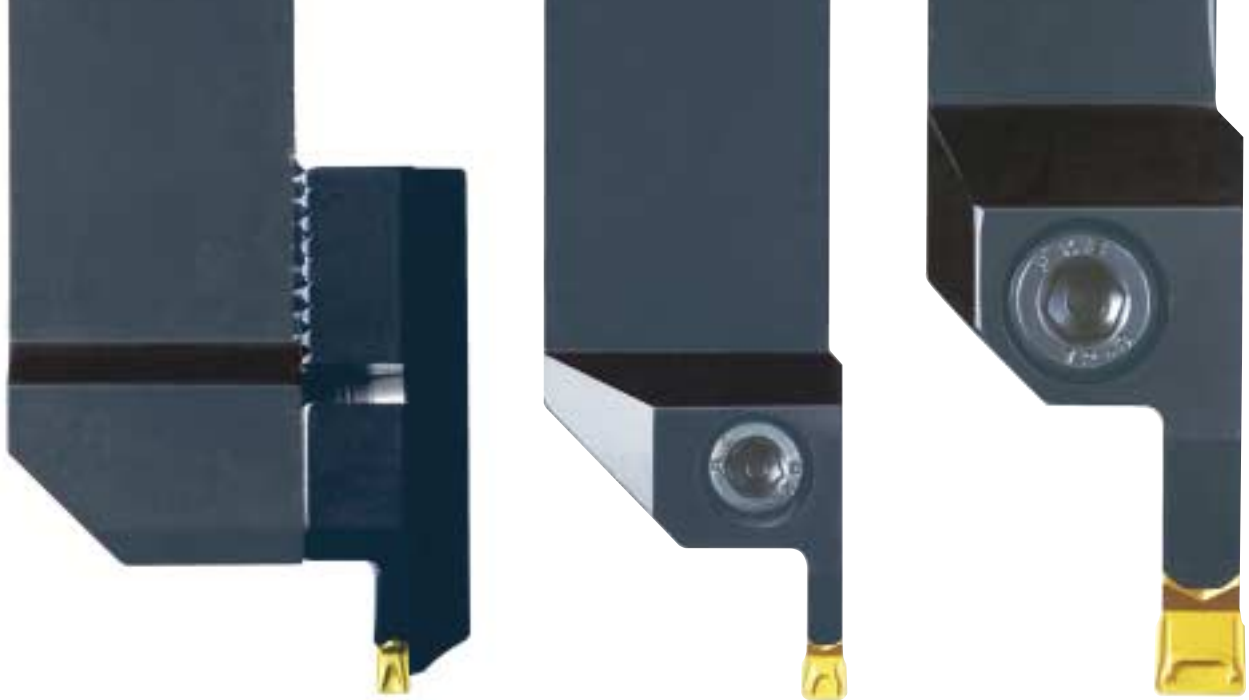


# A STABLE RELATIONSHIP.

*MULTI DIRECTIONAL TURNING,  
PRECISION GROOVING & PARTING-OFF*



**SECO** 



# MDT

**RIGID IN ALL DIRECTIONS.** There's a simple, straightforward solution for turning and grooving in components with a large variety of diameters: Seco MDT.

With it, you're getting a universal turning system with unmatched stability in all directions. Both radial and axial as well as internal machining.

The advantage is obvious – instead of diffe-

rent standard and custom tools for grooving and profiling, there's one for everything. That's not all.

You also get a tool system that gives improved safety, allows increased cutting data and produces superior finishing.

Thank MDT's stability.





## K-STYLE

**RIGID IN PRECISION GROOVING.** When machining grooves where the demand for precision is high, K-style inserts are another reliable choice.

With a K-style insert in your toolholder, you're set for radial, axial and internal precision grooving. And there's also a generous selection of inserts for several types of groove profiles.



## 150.10

**RIGID IN PARTING OFF.** In addition to MDT, the 150.10 is a great choice for parting-off. It's an easy parting-off system with extensive reach and depth.

So the 150.10 is the best tool when cutting depth exceeds 14 mm.

Another strength is the stability of its mounting and the heat tolerance in the high speed steel blade which positions the insert securely and produces precision parting-off.



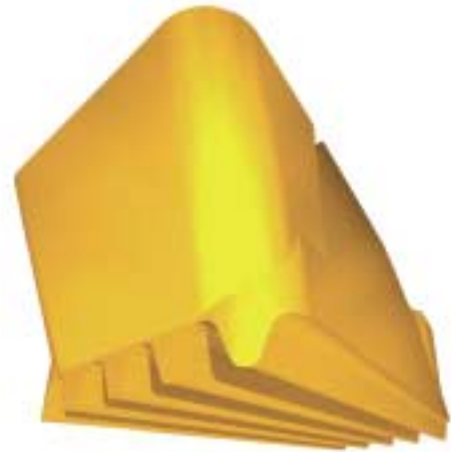
# MDT. UNMATCHED RELIABILITY.

MDT's stability comes from its unique Secoloc clamping action.

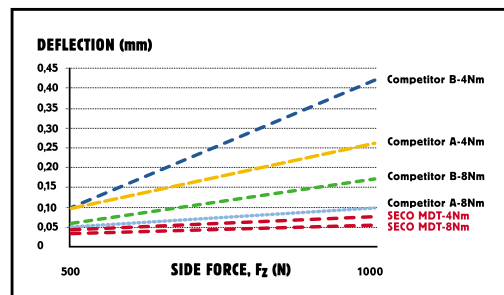
This innovative clamp combines a V-location in the top of the insert with serrations underneath.

This means that the contact surface between insert and toolholder is exact and stability complete.

No other product matches this.



*Unique to MDT is the system for securing the insert in the toolholder — Secoloc. It's a clamp that resists side forces from every direction. It also gives high repeatable precision when changing blades.*



*The figure shows the tool's deflection at different side forces. A small deflection means minimal risk of inaccuracy in the finished component.*

# THREE SIZES COVER ALL APPLICATIONS.

**MDT13** is the newest family member, giving the MDT programme complete coverage as a strong, universal system for turning grooves and profiles in all directions.

MDT13 for small dimensions has the same stable and reliable construction as the larger MDT versions.

It's used for turning, profile turning and grooving applications both axially and internally.

The smallest diameter in axial machining is 17 mm. The smallest diameter in internal machining is 16 mm.

The internal toolholders have diameters of 16, 20, 25 and 32 mm. The smallest holder diameter is 16 mm.

**MDT16** is used for radial, axial and internal turning, profile turning and grooving.

The smallest diameter in axial machining is 70 mm.

The smallest diameter in internal machining is 45 mm.

The maximum cutting depth radially using a standard toolholder is 5 x the insert width.

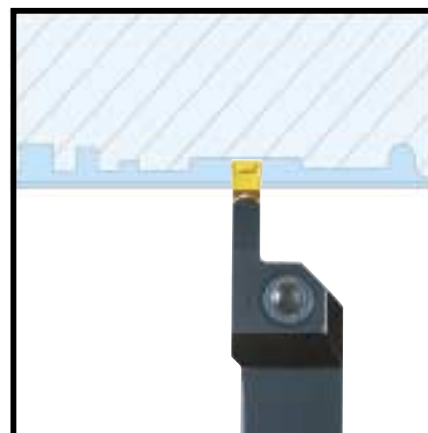
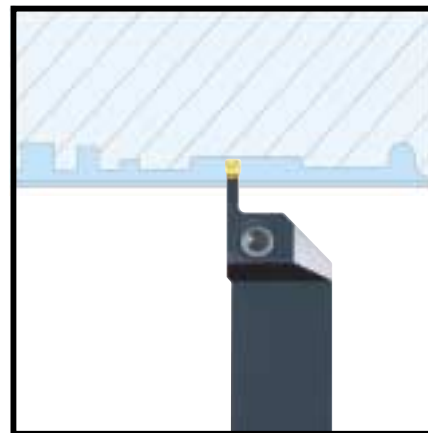
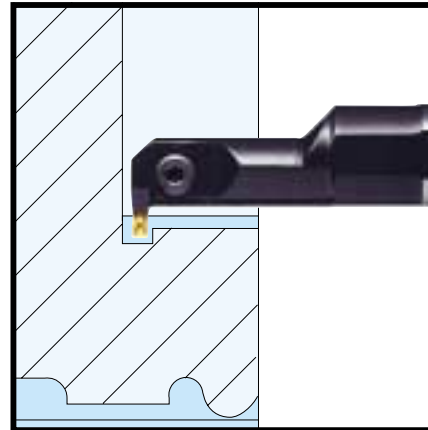
The maximum cutting depth axially using a standard toolholder is 3 x the insert width.

**MDT30** is used for rough machining in radial and axial turning, profile turning and grooving.

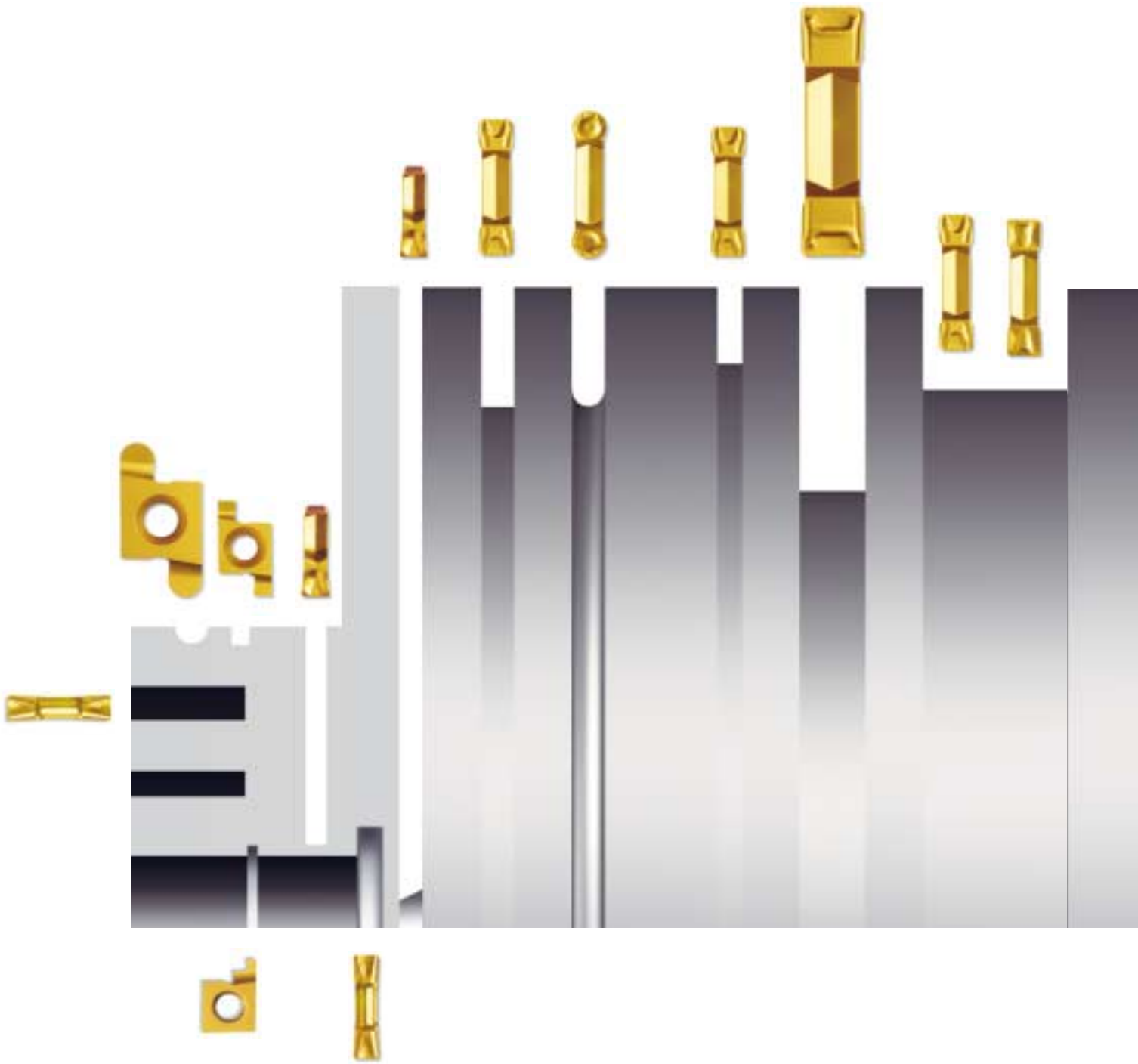
The smallest diameter in axial machining is 90 mm.

The maximum cutting depth radially using a standard toolholder is 5 x the insert width.

The maximum cutting depth axially using a standard toolholder is 3 x the insert width.



# MASTERS MULTIPLE APPLICATIONS.



+ First choice, 0 Alternative	MDT13	MDT16	MDT30	K-STYLE	150:10
<b>PARTING-OFF TUBES: WALL THICKNESS &lt; 14 MM</b>					
Insert width < 3 mm					+
Insert width > 3 mm		+			0
<b>PARTING-OFF TUBES: WALL THICKNESS &gt; 14 MM</b>					
Insert width < 3 mm					+
Insert width > 3 mm		0			+
<b>PARTING-OFF BARS: DIA &lt; 28 MM</b>					
Insert width < 3 mm					+
Insert width > 3 mm		+			0
<b>PARTING-OFF BARS: DIA &gt; 28 MM</b>					
Insert width < 3 mm					+
Insert width > 3 mm		0			+
<b>RADIAL GROOVING</b>		+	+	0	
<b>PRECISION GROOVING</b>					
Groove width < 2 mm	0	0		+	
Groove width > 2 mm	+	+		0	
<b>COPYING</b>		+	+		
<b>GROOVE-TURNING</b>	+	+	+		
<b>FACE GROOVING</b>					
Dia < 17 mm				+	
Dia < 70 mm	+			0	
Dia > 70 mm	0	+	+		
<b>INTERNAL GROOVING</b>					
Dia < 16 mm				+	
Dia < 45 mm	+			0	
Dia > 45 mm	0	+			

	<b>1. MDT13 – INTERNAL GROOVING</b> <i>Component: Stainless steel fitting, Material: Seco Material Group 9</i>		<b>2. MDT13 – FACE GROOVING</b> <i>Component: Gear wheel Material: Seco Material Group 4</i>	
	REFERENCE	SECO	REFERENCE	SECO
<b>TOOL HOLDER</b>	Tool holder for grooving insert	A25S-CGFR1304	Tool holder for grooving insert	FL2525M-V21 with V21-CIL1304R050032
<b>INSERT</b>	Grooving insert	LCMF130404-0400-FT, CP50	Grooving insert for face grooving	LCMF130404-0400-FT, CP50
<b>CUTTING SPEED</b> $v_c$ [m/min]	100	100	160	160
<b>FEED</b> $f$ [mm]	0,05	0,06	0,06	0,08
<b>DEPTH OF CUT</b> $a_p$ [mm]	NA	NA	0,7	0,7
<b>DEPTH OF GROOVE</b> $a_r$ [mm]	3	3	0,7	0,7
<b>ENGAGEMENT WIDTH</b> $a_e$ [mm]	4	4	0,5	0,5
<b>TOOL LIFE</b> (total time in cut $t_c$ [min] and number of parts)	25 min 500 parts	25 min 600 parts	16 min 80 parts	80min 400 parts
<b>CRITERION FOR INDEXING INSERT</b>	Dimensions out of tolerance, Vibrations	Dimensions out of tolerance, Vibrations	Surface roughness, Dimensions out of tolerance	Surface roughness, Dimensions out of tolerance
<b>COOLANT OR DRY</b>	Emulsion	Emulsion	Emulsion	Emulsion
<b>CUSTOMER BENEFITS</b>	<i>Shorter time in cut = Higher productivity → Longer tool life → Less indexing → No vibrations</i>		<i>Longer tool life = Higher productivity → Less indexing → Better chip control = Safer production</i>	

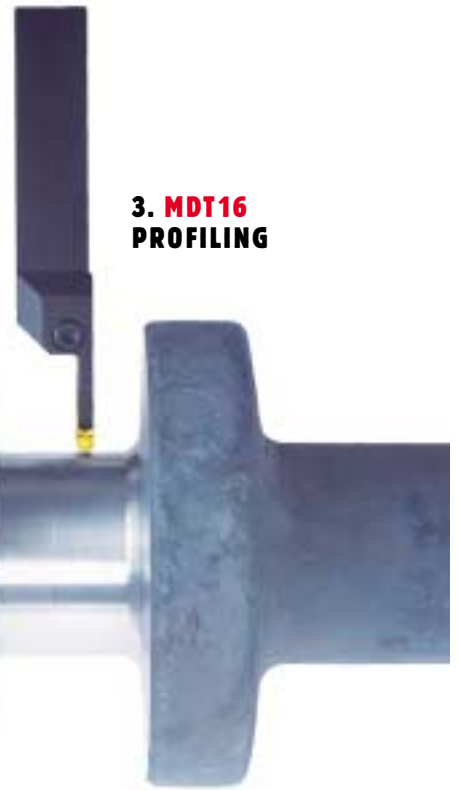
	<b>3. MDT16 – PROFILING</b> <i>Component: Forged gear shaft for bus Material: Seco Material Group 4</i>		<b>4. MDT16 – FACE GROOVING</b> <i>Component: Differential lock coupler Material: Seco Material Group 4</i>	
	REFERENCE	SECO	REFERENCE	SECO
<b>TOOL HOLDER</b>	4 holders for ISO inserts	CFMR2525M06	Tool holder for grooving insert	CFIR2525M06
<b>INSERT</b>	2*CNMG120412 DNMG150612 VNMG160412	LCMF1606M0-0600-MP, TP200	Grooving insert	LCMF1606M0-0600-MP, TP200
<b>CUTTING SPEED</b> $v_c$ [m/min]	200	200	85	110
<b>FEED</b> $f$ [mm]	0,2 – 0,4	0,4	0,1	0,12
<b>DEPTH OF CUT</b> $a_p$ [mm]	1 – 3	1 – 3	NA	NA
<b>DEPTH OF GROOVE</b> $a_r$ [mm]	NA	NA	7	7
<b>ENGAGEMENT WIDTH</b> $a_e$ [mm]	NA	1 – 3	6	6
<b>TOOL LIFE</b> (total time in cut $t_c$ [min] and number of parts)	48 min 100 parts	31 min 75 parts	51 min 60 parts	55 min 100 parts
<b>CRITERION FOR INDEXING INSERT</b>	Surface roughness, Dimensions out of tolerance	Surface roughness, Dimensions out of tolerance	Dimensions out of tolerance	Dimensions out of tolerance
<b>COOLANT OR DRY</b>	Emulsion	Emulsion	Emulsion	Emulsion
<b>CUSTOMER BENEFITS</b>	<i>One tool instead of four → Shorter time in cut → Less tool indexing time (total time saving 10s per part) = Higher productivity → Improved surface finish</i>		<i>Shorter time in cut = Higher productivity → Longer tool life → Less indexing → Better chip control = Safer production</i>	



**1. MDT13  
INTERNAL GROOVING**



**2. MDT13  
FACE GROOVING**



**3. MDT16  
PROFILING**

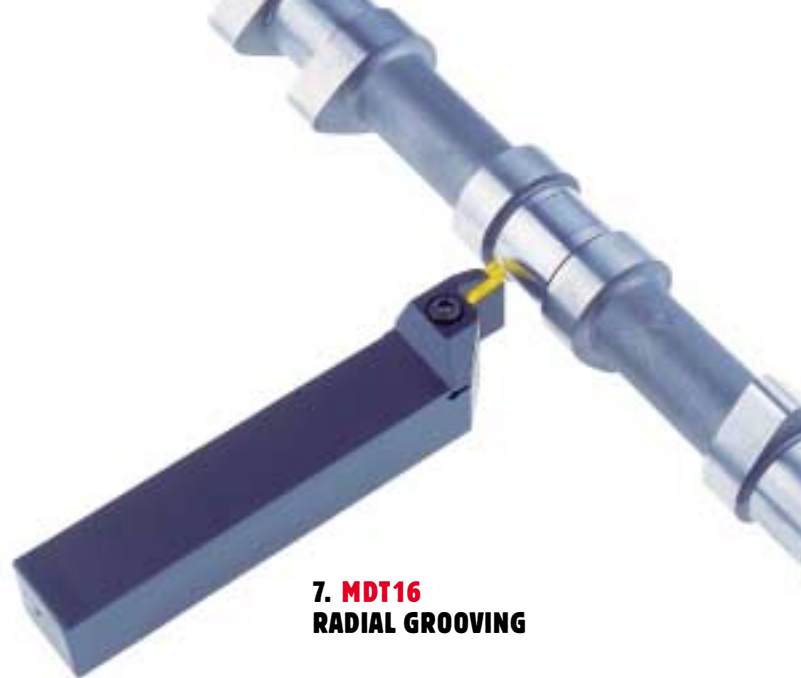
**4. MDT16  
FACE GROOVING**



**5. MDT16  
PARTING OFF**



**6. MDT16  
TAILOR MADE**



**7. MDT16  
RADIAL GROOVING**

**8. SECO 150.10  
PARTING OFF**



**9. MDT30  
RADIAL GROOVING**



**10. SECO K-STYLE  
RADIAL PRECISION  
GROOVING**

	<b>5. MDT16 – PARTING-OFF</b> <i>Component: Safety valve Material: Seco Material Group 3</i>		<b>6. MDT16 – TAILOR MADE</b> <i>Component: Gear wheel Material: Seco Material Group 4</i>	
	REFERENCE	SECO	REFERENCE	SECO
<b>TOOL HOLDER</b>	Tool holder with blade for parting-off inserts	Tool holder with blade CFMN26-03	2 tool holders for grooving inserts	SFN2525N with blade CFNN04
<b>INSERT</b>	Parting-off insert	LCMF160302-0300-MCR15, CP600	2 tailor-made inserts	LCCGF1606xxx, CP50 (tailor-made)
<b>CUTTING SPEED</b> $v_c$ [m/min]	180	180	140 – 160	140 – 180
<b>FEED</b> $f$ [mm]	0,1	0,1	0,07 – 0,15	0,05-0,25
<b>DEPTH OF CUT</b> $a_p$ [mm]	NA	NA	0,2	0,2
<b>DEPTH OF GROOVE</b> $a_r$ [mm]	15,8	15,8	3	3
<b>ENGAGEMENT WIDTH</b> $a_e$ [mm]	3	3	4,2	4,2
<b>TOOL LIFE</b> (total time in cut $t_e$ [min] and number of parts)	20 min 240 parts	25 min 300 parts	Insert 1: 60min (200 parts) Insert 2: 84min (1000 parts)	68 min 250 parts
<b>CRITERION FOR INDEXING INSERT</b>	Straightness of machined surface, pip formation	Straightness of machined surface, pip formation	Surface roughness, Dimensions out of tolerance	Surface roughness, Dimensions out of tolerance
<b>COOLANT OR DRY</b>	Emulsion	Emulsion	Dry	Dry
<b>CUSTOMER BENEFITS</b>	<i>Better straightness of machined surface → Pip-free component over tool life</i>		<i>Less tool holders → Less inserts → Shorter time in cut = Higher productivity → Better chip control = Safer production → Better surface roughness → Measure longer within tolerance</i>	

	<b>7. MDT16 – RADIAL GROOVING</b> <i>Component: Cam shaft Material: Seco Material Group 12</i>		<b>8. SECO 150.10 – PARTING-OFF</b> <i>Component: Guidance ring Material: Seco Material Group 13</i>	
	REFERENCE	SECO	REFERENCE	SECO
<b>TOOL HOLDER</b>	Tool holder for grooving-turning insert	CFIR2525M05	Tool holder for parting-off insert	150.10-25-3
<b>INSERT</b>	Grooving-turning insert	LCMF160508-0500-MT, TP200	Parting-off insert (eight inserts in cut)	150.10-3N-12, T25M (eight inserts in cut)
<b>CUTTING SPEED</b> $v_c$ [m/min]	118	142	90	90
<b>FEED</b> $f$ [mm]	0,08	0,08	0,12	0,12
<b>DEPTH OF CUT</b> $a_p$ [mm]	1	1	NA	NA
<b>DEPTH OF GROOVE</b> $a_r$ [mm]	12	12	20	20
<b>ENGAGEMENT WIDTH</b> $a_e$ [mm]	1,5	1,5	3	3
<b>TOOL LIFE</b> (total time in cut $t_e$ [min] and number of parts)	116 min 150 parts	258 min 250 parts	85 min 50 parts	110 min 65 parts
<b>CRITERION FOR INDEXING INSERT</b>	Burr formation	Burr formation	Straightness of surface	Straightness of surface
<b>COOLANT OR DRY</b>	Dry	Dry	Emulsion	Emulsion
<b>CUSTOMER BENEFITS</b>	<i>Shorter time in cut = Higher productivity → Longer tool life → Less indexing → Less burr formation</i>		<i>Longer tool life → Less indexing</i>	

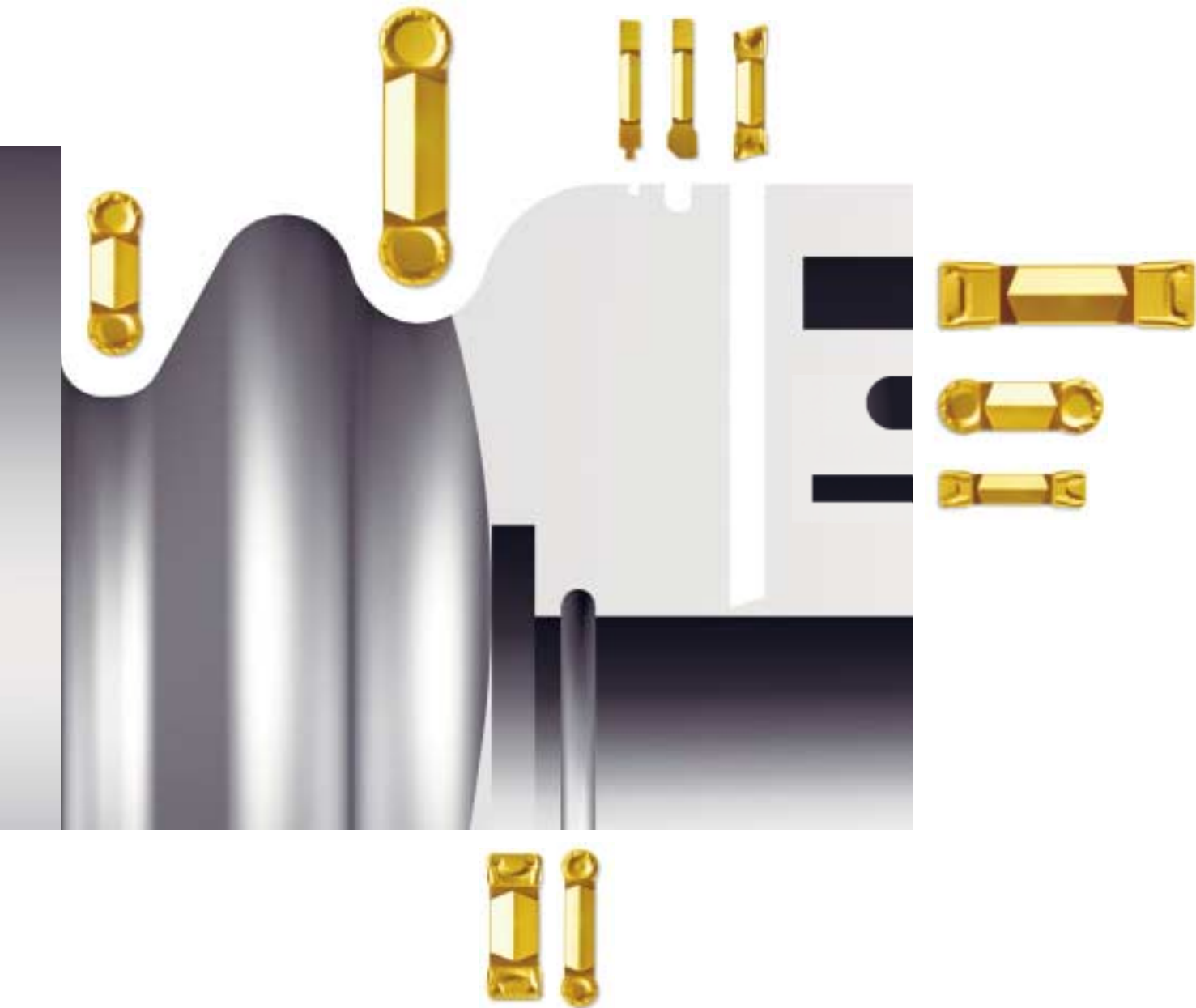
	<b>9. MDT30 – RADIAL GROOVING</b> <i>Component: Differential lock coupler Material: Seco Material Group 4</i>		<b>10. SECO K-STYLE – RADIAL PRECISION GROOVING</b> <i>Component: Gear shaft, Material: Seco Material Group 4</i>	
	REFERENCE	SECO	REFERENCE	SECO
<b>TOOL HOLDER</b>	Tool holder for grooving inserts	CFIR3225P08	Tool holder for grooving inserts	CEL2525M10Q
<b>INSERT</b>	Grooving insert	LCMF300808-0800-FT, TP200	Grooving insert	10NR2.65FG, CP500
<b>CUTTING SPEED</b> $v_c$ [m/min]	100	180	130	150
<b>FEED</b> $f$ [mm]	0,1	0,14	0,07	0,08
<b>DEPTH OF CUT</b> $a_p$ [mm]	NA	NA	NA	NA
<b>DEPTH OF GROOVE</b> $a_r$ [mm]	6	6	2,65	2,65
<b>ENGAGEMENT WIDTH</b> $a_e$ [mm]	8	8	2,65	2,65
<b>TOOL LIFE</b> (total time in cut $t_e$ [min] and number of parts)	21 min 60 parts	25 min 100 parts	23 min 100 parts	22 min 120 parts
<b>CRITERION FOR INDEXING INSERT</b>	Dimensions out of tolerance	Dimensions out of tolerance	Dimensions out of tolerance	Dimensions out of tolerance
<b>COOLANT OR DRY</b>	Emulsion	Emulsion	Emulsion	Emulsion
<b>CUSTOMER BENEFITS</b>	<i>Shorter time in cut = Higher productivity → Longer tool life → Less indexing → Better chip control = Safe production</i>		<i>Shorter time in cut = Higher productivity → Longer tool life → Less indexing</i>	

If you're looking for a large and easily recognizable turning and grooving tools programme, look no further than Seco MDT.

The holders, chipbreakers and grades can master all applications. The source of its versatility, simplicity and breadth is its unique, rigid construction.

This, together with the newly developed geometry and grades, results in markedly better performance than for competing systems.

In short, machine time for each component is reduced. No reductions, though, in productivity and profit.



# RELIABLE INSERTS FOR TOUGH PRODUCTION.

MDT's versatility applies to the inserts as well. They are available in both single- and double-ended types.

Carbide grades and chipbreaker geometries also cover a wide range of applications.

On offer: universal grades and a grade for high cutting speeds, difficult operations or tough materials.

**A WIDE SELECTION OF INSERTS.** Double-ended insert with two cutting edges. An economical basic choice for turning and grooving.

Single-ended insert with one cutting edge. A flexible problem-solver.

Double-ended or single-ended special insert. A natural choice for special applications.

Double-ended profile insert with two cutting edges. A basic choice for profile turning.



# K-STYLE. THE PRECISION GROOVING TOOL.



This is a perfect tool for grooving of different profiles.

Precision comes from the insert's

ground contact surface. This helps the insert slot in exactly at every change. The replaceable anvils, in turn, protect both insert seat and insert.

## **UNIQUE SHAPES.**

The inserts' unique shapes have been developed to suit most groove profiles. This makes K-style a good choice in grooving circlip profiles, O-ring profiles, thread undercuts and radiused grooves.

Application areas are radial, axial and internal grooving.



# 150.10. DEEP AND STRAIGHT PARTING-OFF.



If you need to part-off with the least possible deflection and reach large depths, the 150.10 is a sure choice.

Its straight, rigid parting-off comes from two qualities.

One: the blade holding the insert is made from high speed steel.

Two: the patented Seco inserts are shaped to minimise side forces and therefore minimise deflection of the blade.

Normally, parting-off surfaces are concave, since side forces are considerable.

Not so with the 150.10.

**GREAT ACCESSIBILITY.** The toolholder is designed for reversible high speed steel blades. These are adjustable for cutting

depths of up to 160 mm in diameter.

For cutting depths of up to 38 mm, there is an extremely compact blade holder. Short high speed steel blades give good stability, and when mounted on the holder are suitable for machines with limited space, such as automated lathes.

**FINE PARTING-OFF SURFACES.** The inserts have been made both with and without a setting angle. The surface of the component parted off is thus smooth and without burrs. Plus, the parting-off pip left in the centre of the workpiece is minimal.

The inserts are available in both neutral and right- and left-handed versions with a 6° setting angle.

Universal grades cover most materials and many special alloys.



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