

**Tungaloy**

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Keeping the Customer First

Tungaloy Report No. 363-E



TAC Toolholders for Super High Feed Turning

# TURNFEED

Significant Reduction in Machining Time through Super High Feed Capability



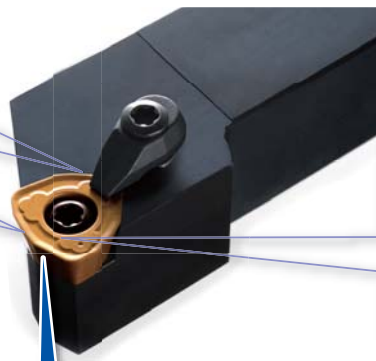
Remarkable High Feed Capability through the new Cutting Edge Geometry!

## Super High Feed TAC Toolholder "TurnFeed (Turning X)"

### Features

#### Double clamping

Double clamping technology with through insert clamping screw plus an additional clamp to secure the insert firmly in position, realizing a highly rigid turning tool.



#### ML type chipbreaker

Letter "L" is marked on the rake face of left hand inserts, allowing easy distinction of the hand of inserts.

ML chipbreaker provided with both low cutting forces and high impact resistance.

The 7mm thick insert can withstand high load at high feeds.



#### Unique cutting edge geometry

Disperses the cutting load across a wide area.

Produces thin chips

Thin and wide chips enhance chip control

**Super High Productivity**

### ● Comparison of cutting performance

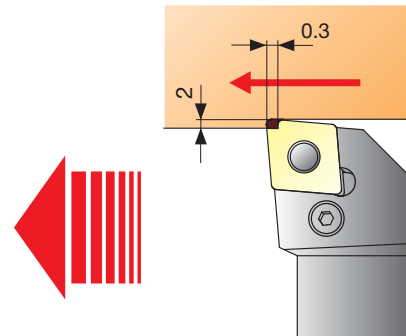
#### TurnFeed

$V_c = 150 \text{ m/min}$   
 $a_p = 2 \text{ mm}$   
 $f = 2.5 \text{ mm/rev}$   
 Work material: Mild steel (SS400)

Unique cutting edge geometry

Thin and wide chips contribute to good chip control

#### Conventional toolholder



$V_c = 150 \text{ m/min}$   
 $a_p = 2 \text{ mm}$   
 $f = 0.3 \text{ mm/rev}$   
 Work material: Mild steel (SS400)

**Productivity can be improved by 8 times with Super High Feed machining**

## Toolholders

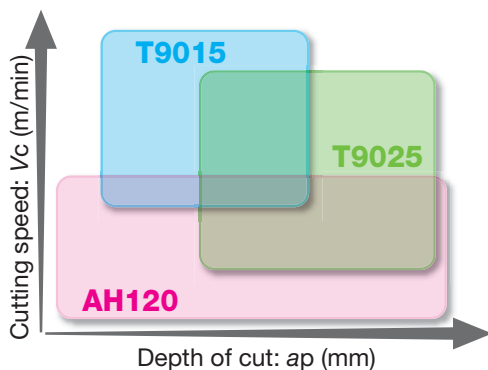
External turning and facing <b>XWXP R/L</b>										
		Cutting edge style <b>X</b>								
Cat. No.	Stock		Dimensions (mm)				Applicable inserts	Clamp set screw	Clamping	Wrench
	R	L	h	b	L <sub>1</sub>	f				
XWXPR/L2525M09	●	●	25	25	150	32	WPMT090725ZPR/L-ML	CSY-20	CSPB-5	IP-20T
XWXPR/L3232P09	●	●	32	32	170	40				
XWXPR/L4040S09	●	●	40	40	200	50				

## Inserts

	Cat. No.	Accuracy	Honing	Stocked grades			Dimensions (mm)			
				T9015	T9025	AH120	A	B	T	r <sub>ε</sub>
				WPMT090725ZPR-ML	M	With	●	●	●	9
WPMT090725ZPL-ML	●	●	●							

Notes: There are left and right hand inserts. Care should be taken not to confuse the hand of inserts. For details, see the instruction manual on our web site.

## Application areas



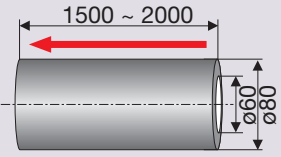
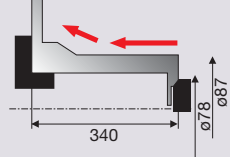
### First choice

- **T9025**
  - For low to medium speed machining. Can also be used for interrupted cutting.
  - Exceptional chip and impact resistance.
- **T9015**
  - For continuous cutting at medium to high speeds.
  - Excels in both wear and impact resistance.
- **AH120** (Complementary grade for stainless and mild steels)
  - When machining stainless and mild steels, if chipping or breakage occurs change inserts to AH120.

## Standard cutting conditions

Work material	Grades	Chipbreaker	Cutting speed V <sub>c</sub> (m/min)	Depth of cut a <sub>p</sub> (mm)	Feed f (mm/rev)
Mild and low carbon steels SS400, S25C (C25) etc. < 180 HB	<b>T9025</b>	ML	100 - 150 - 250	0.5 - 2.5	0.5 - 1.5 - 2.5
Carbon and alloy steels S50C, SCM440 (C50, 42CrMoS4) etc. < 300HB	<b>T9015</b>		100 - 150 - 250		
Stainless steels SUS304, SUS316 (X5CrNi18-9, X5CrNiMo17-12-2) etc. < 250 HB	<b>T9025</b>		100 - 150 - 250		
Grey and ductile cast irons FC250, FCD400 (GG25, GGG40) etc.	<b>T9015</b>		100 - 150 - 250		

# Practical Examples

Name of workpiece		Construction equipment parts	Automotive parts
Toolholder		XWXPR3232P09	XWXPR2525M09
Insert		WPMT090725ZPR-ML (T9025)	WPMT090725ZPR-ML (T9015)
Workpiece material		Carbon steel (S45C / C45)	Carbon steel (S45C / C45)
			
Cutting Conditions	Cutting speed: $V_c$ (m/min)	160	160
	Feed: $f_z$ (mm/rev)	2	2.5
	Depth of cut: $a_p$ (mm)	2	1.5
	Coolant	Water soluble (External supply)	Water soluble (External supply)
Result		When using competitor tool, the feed was limited to $f = 0.3 \sim 0.35$ mm/rev. By switching to "TurnFeed (Turning X)", the feed could be increased to 2 mm/rev with no chatter. This contributes to a dramatic productivity increase when roughing.	Compared to previous CNMG inserts with wiper edges, the machining cycle time could be reduced by 40%. The tool life was equal to, or improved upon competitor products despite the cycle time reduction.



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