

Tungaloy

Member IMC Group

Keeping the Customer First

Tungaloy Report No. 363-E



TURNLINE
TAC Toolholders for Super High Feed Turning

TURNFEED

Extremely reducing the machining time!



Remarkable Productivity through the new Cutting Edge Geometry!

Super High Feed Toolholder "TurnFeed (Turning X)"

Features

Double clamping

Double clamping technology with clamping screw and an additional clamp, realizing a highly rigid turning tool.



ML type chipbreaker

Letter "L" is marked on the rake face of left hand 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

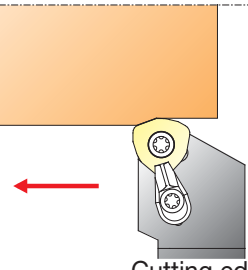
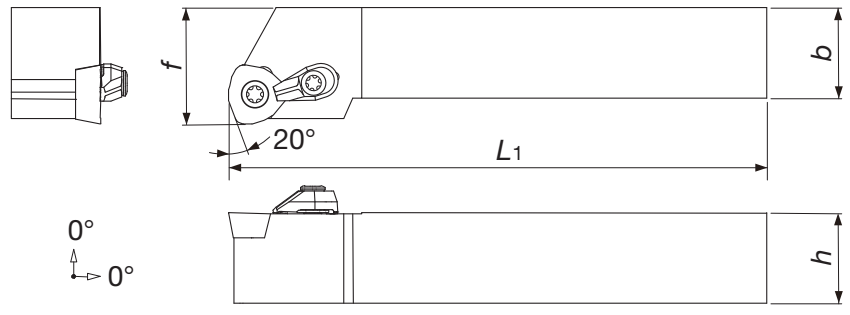
Thin and wide chips contribute to good chip control

Conventional toolholder

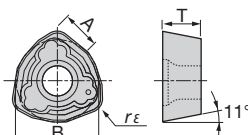
$V_c = 150 \text{ m/min}$
 $a_p = 2 \text{ mm}$
 $f = 0.3 \text{ mm/rev}$
 Work material: Mild steel (SS400)

8 times improved productivity

Toolholders

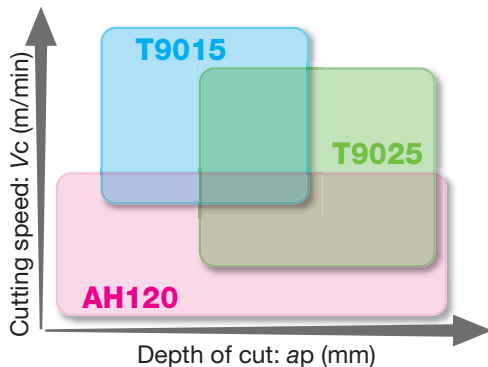
External turning and facing										
XWXP R/L										
 <p>Cutting edge style X</p>							Right hand (R) shown			
Cat. No.	Stock		Dimensions (mm)				Applicable inserts	Clamp set screw	Clamping	Wrench
	R	L	h	b	L ₁	f				
XWXPR/L2525M09	●	●	25	25	150	32	WPMT090725ZPR/L-ML	CSY-20	CSPB-5	IP-20T
XWXPR/L3232P09	●	●	32	32	170	40				
XWXPR/L4040S09	●	●	40	40	250	50				

Inserts

	Cat. No.	Accuracy	Honing	Stocked grades			Dimensions (mm)			
				T9015	T9025	AH120	A	B	T	r _ε
				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



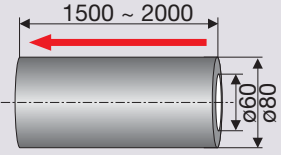
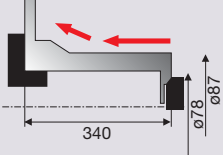
First choice

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