

TOTINOX

TT9200 Series Turning Grades Stainless Steel



Ingersoll is pleased to announce the launch of its **TOTINOX** series carbide grades for turning stainless steel (also known as inoxidizable steel).

The new **TOTINOX** series consists of three new, CVD-coated grades. TT9215 offers high wear resistance and chipping resistance, and is ideally suited for high speed, continuous turning of stainless steel. TT9225 is an excellent choice for general purpose stainless steel applications, providing an optimal balance of wear and fracture resistance. TT9235 provides superior toughness, making it ideal for applications with interrupted cutting or at low cutting speeds.

All three grades feature Ingersoll's **TOTURN+** technology which provides a very smooth and stable cutting edge. When combined with a special coating method, these copper-colored **TOTINOX** inserts resist build-up on the cutting edge which often

leads to micro-chipping and premature failure when machining stainless steel. These combined technologies also reduce the friction between the chip and the upper surface of the inserts compared to traditional carbide grades, providing smooth chip flow and extended tool life.

All **TOTINOX** series inserts also contain a sharper cutting edge that minimizes cutting forces and burr development on the work piece after machining, further extending the tool life of the insert. The end result is a series of new grades that offer optimal performance in stainless steel applications.



TOTINOX

Features by Grades

TT9215: ISO Range M10-M25

Excellent insert wear resistance
For high cutting speed & continuous cutting

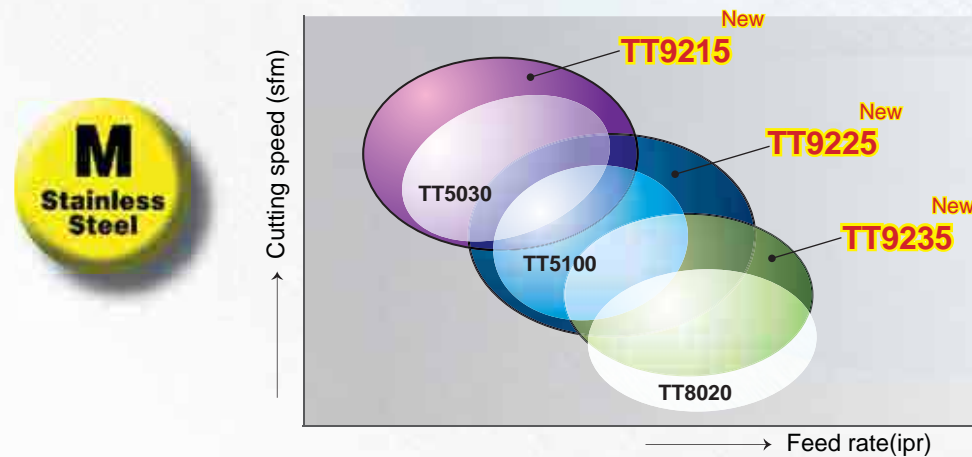
TT9225: ISO Range M20-M35

Excellent combination of insert wear resistance & fracture resistance
For general turning application

TT9235: ISO Range M30-M45

Excellent combination of insert wear resistance & toughness
For low cutting speed & interrupted cutting

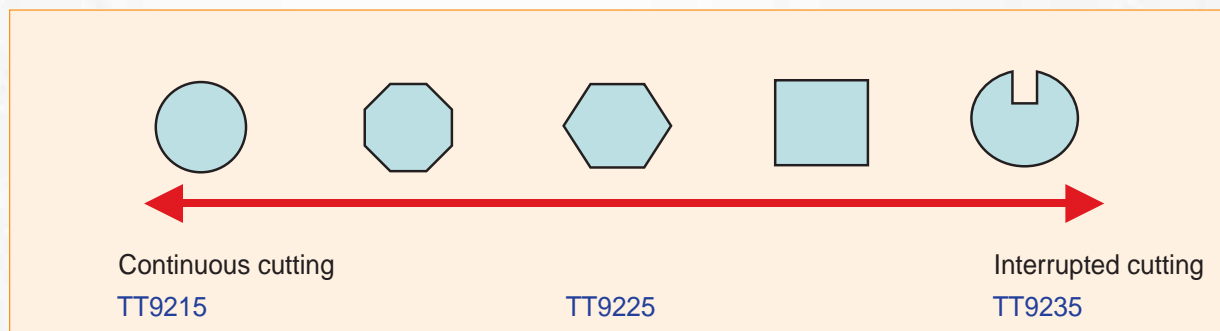
Application Range by Grades



Recommended cutting speed(Vc)

Material	Condition	New Grade		
		TT9215	TT9225	TT9235
Stainless steel	Martensitic, Ferritic	557~820 sfm	426~722 sfm	361~558 sfm
	Austenitic	459~722 sfm	361~656 sfm	295~492 sfm
	Duplex	426~623 sfm	295~492 sfm	262~426 sfm

Grade application by shape of workpiece



Case Story

1. Component: Flange

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
316 Stainless Steel	525	0.012	0.120	External	Yes	CNMG 433 VM HB7135	5.5
						CNMG433 ET / TT9225	9.5 173%↑
316 Stainless Steel	394	0.010	0.043~0.070	External	Yes	CNMG 432 MM GC2025	17
						CNMG432 ET / TT9225	35 206%↑
316 Stainless Steel	558	0.012	0.100~0.120	External & Facing	Yes	CNMG 432 MM GC2025	25
						CNMG432 ET / TT9225	32 128%↑
316 Stainless Steel	558	0.012	0.080~0.100	External	Yes	CNMG 432 MM GC2025	25
						CNMG432 ET / TT9225	32 128%↑
316 Stainless Steel	590	0.016	0.030	Internal	Yes	CNMG 433 M5 TP400	40
						CNMG433 MT / TT9235	60 150%↑
316 Stainless Steel	426	0.0121	0.050	Internal	Yes	CNMG 433 M5 TP400	10
						CNMG433 RT / TT9235	20 200%↑
316 Stainless Steel	590	0.010~0.012	0.060	External	Yes	CNMG 433 M5 TP400	20
						CNMG433 MP / TT9235	40 200%↑
317 Stainless Steel	150	0.014	0.080	External	Yes	CNMG 433 M5 TP400	60
						CNMG433 RT / TT9235	80 133%↑

2. Component: Valve

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
Duplex Stainless Steel	492	0.007	0.040	Facing	Yes	CNMG 432 MH US7020	2
						CNMG432 RT / TT9225	4 200%↑
316 Stainless Steel	656	0.009	0.040	External interrupted	Yes	CNMG 432 GH US735	1.5
						CNMG432 RT / TT9225	2 133%↑
316 Stainless Steel	656	0.007	0.060	External	Yes	CNMG 432 MH US7020	8.75
						CNMG432 RT / TT9215	22 251%↑

3. Component: Shaft

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc (sfm)	f(ipr)	ap(inch)				
304 Stainless Steel	525	0.010~0.014	0.060~0.100	External	Yes	WNMG 433 NR4 WAM20	28, 31
						WNMG433 MP / TT9235	41, 38 134%↑
304 Stainless Steel	525	0.010~0.014	0.060~0.100	External	Yes	CNMG 433 M5 TP3000	14, 8
						CNMG433 MP / TT9235	16, 24 182%↑

4. Component: Round bar

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
316 Stainless Steel	295	0.011	0.090	External	Yes	WNMG 432 MF1 CP200	3 ~ 4
						WNMG432 ET / TT9225	5 125%↑

5. Component: Axle

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap (inch)				
Duplex Stainless Steel	259	0.015	0.160	External	Yes	CNMG 643 MM GC2025	0.75
						CNMG643 ET / TT9225	1 133%↑

6. Component: Water chuck unit

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
316 Stainless Steel	820, 617	0.0070~0.0078	0.275	External & Facing	Yes	CNMG 432 MA US735	7
						CNMG432 PC / TT9225	9 129%↑

7. Component: Roll

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
420 Stainless Steel	203	0.001	0.060~0.080	External	Yes	CNMG 432 HM PC9030	100
						CNMG432 MT / TT9225	200 200%↑

8. Component: Con rod

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
316 Stainless Steel	492~328	0.005	0.040~0.060	External	Yes	CNMG 432 MF1 CP500	7
						CNMG432 FC / TT9225	10 130%↑

9. Component: Plus DIN50

Material	cutting parameter			Operation	Coolant	Insert Designation	Tool life (pcs/corner)
	Vc(sfm)	f(ipr)	ap(inch)				
Duplex Stainless Steel	656	0.007	0.080 inch	External Interrupted	Yes	CNMG 432 GH US735	4
						CNMG432 RT / TT9225	10 250%↑

Description	Grade		
	TT9215	TT9225	TT9235
CCMT21.51 (060204) FG		●	●
CCMT21.51 (060204) MT		●	●
CCMT32.51 (09T304) FG		●	●
CCMT32.51 (09T304) MT		●	●
CCMT32.52 (09T308) FG		●	●
CCMT32.52 (09T308) MT		●	●
CCMT432 (120408) MT		●	●
CNMG431 (120404) FC	●	●	●
CNMG431 (120404) MP	●	●	●
CNMG431 (120404) PC	●	●	●
CNMG432 (120408) FC	●	●	●
CNMG432 (120408) ET	●	●	●
CNMG432 (120408) MP	●	●	●
CNMG432 (120408) MT	●	●	●
CNMG432 (120408) PC	●	●	●
CNMG432 (120408)RT	●	●	●
CNMG432 (120408)WT	●	●	●
CNMG433 (120412) ET	●	●	●
CNMG433 (120412) FC	●	●	●
CNMG433 (120412) MP	●	●	●
CNMG433 (120412) MT	●	●	●
CNMG433 (120412) PC	●	●	●
CNMG433 (120412) RT	●	●	●
CNMG543 (160612) ET	●	●	●
CNMG642 (190608) MT	●	●	●
CNMG643 (190612) ET	●	●	●
CNMG643 (190612) MT		●	●
CNMG643 (190612) RT		●	●
CNMG644 (190616) ET		●	●
CNMM643 (190612) RH		●	●
CNMM644 (190616) RH		●	●
CNMM646 (190624) RH		●	●
CNMM856 (250724) HT		●	
DCMT21.51 (070204) FG		●	●
DCMT21.52 (070208) FG		●	
DCMT32.51 (11T304) FG		●	●
DCMT32.51 (11T304) MT		●	●
DCMT32.52 (11T304) FG		●	●
DCMT32.52 (11T308) MT		●	●
DCMT431 (150404) FC		●	
DNMG431 (150404) MP	●	●	
DNMG431 (150404) PC	●	●	
DNMG432 (150408) FC	●	●	
DNMG432 (150408) MP	●	●	●
DNMG432 (150408) MT	●	●	●
DNMG432 (150408) PC	●	●	●
DNMG441 (150604) FC		●	
DNMG441 (150604) MP		●	
DNMG441 (150604) PC	●	●	

Description	Grade		
	TT9215	TT9225	TT9235
DNMG442 (150608) FC	●	●	
DNMG442 (150608) MP	●	●	●
DNMG442 (150608) MT	●	●	●
DNMG442 (150608) PC	●	●	●
DNMG443 (150612) MP	●	●	●
DNMG443 (150612) MT		●	●
DNMG443 (150612) PC		●	●
KNUX3331 (160405) R11		●	
KNUX3331 (160405) L11		●	
KNUX3332 (160410) R11		●	
KNUX3332 (160410) L11		●	
SCMT32.51 (09T304) FG		●	
SCMT32.51 (09T304) MT		●	
SCMT32.52 (09T308) FG		●	
SCMT32.52 (09T308) MT		●	
SCMT432 (120408) MT		●	
SNMG432 (120408) MP		●	●
SNMG432 (120408) MT		●	●
SNMG432 (120408) PC		●	
SNMG433 (120412) MP		●	
SNMG433 (120412) MT		●	
SNMG433 (120412) PC		●	
SNMG642 (190608) MT		●	●
SNMG643 (190612) MT		●	●
SNMG643 (190612) RT		●	●
SNMG644 (190616) RT		●	●
SNMM643 (190612) RH		●	●
SNMM644 (190616) RH		●	●
SNMM646(190624) RH		●	●
SNMM856 (250724) HT		●	
TCMT731 (090204) MT		●	●
TCMT21.51 (110204) FG		●	●
TCMT21.51 (110204) MT		●	●
TCMT21.52 (110208) FG		●	●
TCMT21.52 (110208) MT		●	●
TCMT32.51 (16T304) MT		●	●
TCMT32.52 (16T308) FG		●	●
TCMT32.52 (16T308) MT		●	●
TNMG331 (160404) FC		●	●
TNMG331 (160404) MP		●	●
TNMG331 (160404) PC		●	
TNMG332 (160408) FC		●	●
TNMG332 (160408) MP		●	●
TNMG332 (160408) MT		●	●
TNMG332 (160408) PC		●	●
TNMG333 (160412) FC		●	●
TNMG333 (160412) MP		●	●
TNMG333 (160412) MT		●	●

● : Items in stock

Description	Grade		
	TT9215	TT9225	TT9235
TNMG333 (160412) PC		●	●
TNMG431 (220404) MP		●	
TNMG432 (220408) MP		●	
VBMT331 (160404) FG		●	
VBMT331 (160404) MT		●	
VBMT332 (160408) FG		●	
VBMT332 (160408) MT		●	
VNMG331 (160404) FG		●	
VNMG331 (160404)MT		●	
VNMG332 (160408) FC	●	●	●
VNMG332 (160408) MT	●	●	●
WNMG331 (060404) MT		●	

Description	Grade		
	TT9215	TT9225	TT9235
WNMG332 (060408) MP		●	
WNMG332 (060408) MT		●	
WNMG431 (080404) MT		●	
WNMG432 (080408) FC	●	●	●
WNMG432 (080408) ET	●	●	●
WNMG432 (080408) MP	●	●	●
WNMG432 (080408) MT	●	●	●
WNMG432 (080408) PC	●	●	●
WNMG432 (080408) RT	●	●	●
WNMG433 (080412) MP	●	●	●
WNMG433 (080412) MT	●	●	●
WNMG433 (080412) PC	●	●	●

● : Items in stock

Prices: Please refer to ASK MARGARET

