



Engineering Your Competitive Edge

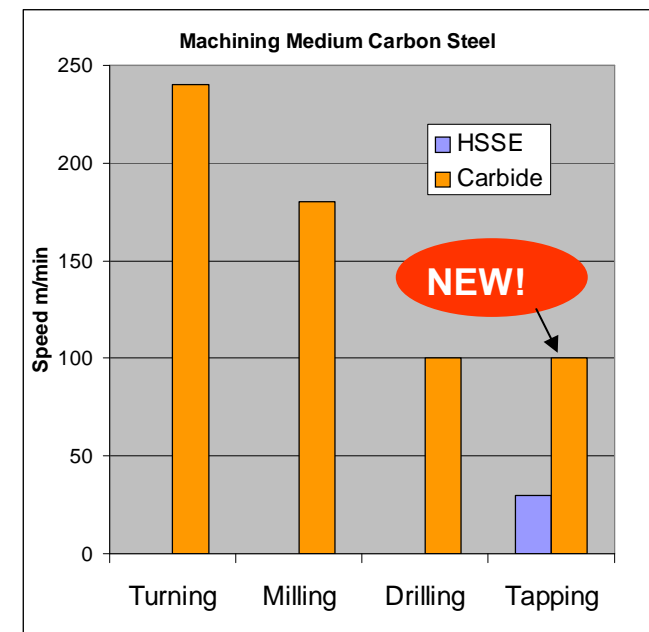


Kennametal High Performance KC7542 Solid Carbide Taps



KC7542 Carbide Taps - Value Proposition

- Patented Solid Carbide Tap
 - Take full advantage of the productivity of CNC machines
 - Use with synchronous or rigid CNC tapping control
 - Designed for through holes
 - First carbide tap that can be used in mild and alloy steels
 - Precision design yields exceptional thread quality
- “4x4” - highest performing tap on the market
 - Runs 4x faster and lasts 4x longer than *any* conventional HSSE tap from competition
 - Tap at carbide drilling speeds
 - Can reduce total tapping cost by 65%



KC7542 Carbide Taps - Features & Functions

- LH spiral flute T320 tap design
 - For through hole tapping
 - LH spiral flutes push chips ahead, permitting free tapping of long chipping materials (RH thread)
 - Steels, ductile & malleable cast iron
 - T321 available with through coolant holes
- Straight flute T340 tap design
 - For through hole tapping
 - Ductile & malleable cast iron
 - Gray cast iron
 - Short chipping steels
 - For blind holes, through-coolant, semi-bottom (Form C) T351 taps available as custom



LH Spiral Flute Tap T320

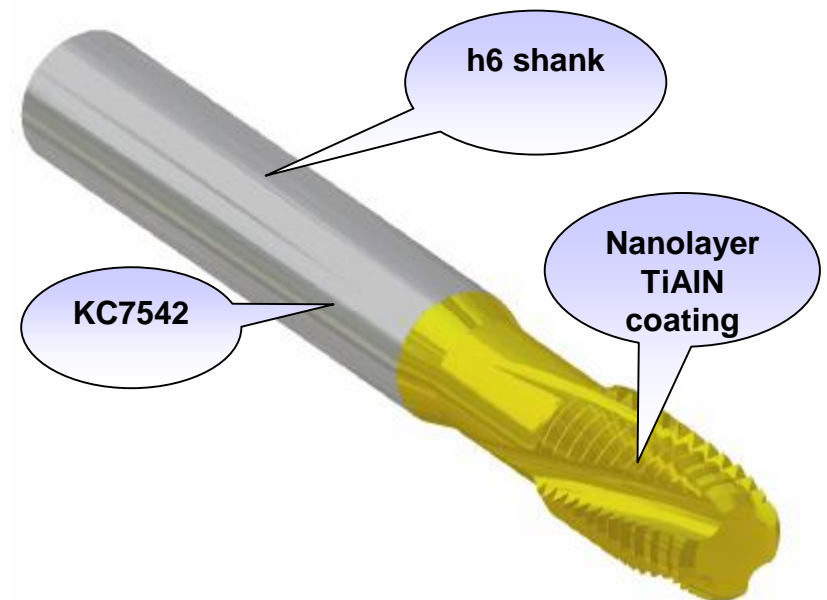


Straight Flute Tap T340

US Patents 7,147,413; 7,147,939

KC7542 Carbide Taps - Features & Functions

- KC7542: new patented high strength grade
 - Developed by Kennametal specifically for taps
 - Patented nanolayer TiAlN/TiN coating
- Precision h6 cylindrical shanks
 - Shank diameters match solid carbide drills
 - Can be used in TG collet, hydraulic and shrink fit holders
 - Low runout (< 10 microns) yields precision threads, long life
- Regrindable
 - Recondition to factory specifications
 - Affordable tooling costs



KC7542 Carbide Taps - Benefits

- Best in class productivity
- 4X life at 4X speed
- Obsolete HSSE taps
- Obtain the full advantage of CNC machines
- Lower tapping costs
- Superior product thread quality

In combination with synchronous CNC machine tools and precision holders, Kennametal High Performance KC7542 Carbide Taps will revolutionize tapping

KC7542 Carbide Taps - Product Range

- Size ranges:
 - T320 LH spiral flute plug taps: M6 – M16 (1/4" – 5/8")
 - T340 straight flute plug taps: M10 – M20 (3/8" – 3/4")
- Shank diameter to common metric or inch fractional sizes
- Sold according to class of fit
- Popular thread pitches (TPI) available as standard for 6H or 3B fit
- Custom taps available with short delivery time from semi-finished blanks:
 - Non-stocked thread pitches, classes of fit, oversize taps
 - Custom taps with internal coolant

KC7542 Carbide Taps – Tool Holders

- Use only with precision tap holders
- Three types of holders can be used:
 - Hydraulic
 - Shrink fit
 - TG collet type (TGHP)
 - ER possible
- It is desirable, but not mandatory, that the holders have a small amount of axial compensation for “Synchronous” tapping
 - Compensate for small differences in machine feed & tap lead
 - Errors greatest during reversal
 - Tapmatic SynchroFlex SFT
 - Bilz Synchro Chuck



SFT/TG Collet Holder



Bilz Synchro Shrink Fit

KC7542 Carbide Taps - Applications

- General Engineering and Automotive
- CNC machine tools with synchronous or rigid tapping control
- Steel and cast iron
 - Through holes in steels
 - Through or blind holes in short chipping materials like cast iron
- Displace “high performance” PVD coated high speed steel taps including highly alloyed powder metal HSS

Case study: automotive parts

Conditions:

- Thread size: M14 x 2 6H
- Workpiece: automotive part
- Material: A536 ductile iron
- Hole depth: 26 mm through
- Tap drill size: 12.0 mm
- Machine: Chiron FZ18S
- Coolant: water soluble (now using thru coolant)



	Current Tap	New Tap
Tap type	HSS-PM TiCN	New KC7542 tap
Coolant	Through coolant	Flood
Holder	Emuge	Tapmatic SFT TG
Speed	750 rpm, 33 m/min	3000 rpm, 130 m/min
Tap life	10,000 holes	40,000 holes; recond OK
Cost/part		66% less

Case study: automotive parts

Conditions:

- Thread size: M12 x 1.75
- Workpiece: automotive part
- Material: A536 ductile iron
- Hole depth: 30 mm through
- Tap drill size: 10.25 mm
- Machine: Chiron FZ18W
- Coolant: MQL

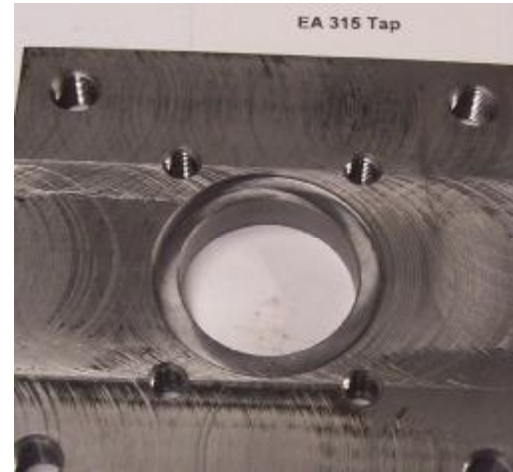


	Current Tap	New Tap
Tap type	Cobalt HSS-PM TiAlN	KC7542 carbide tap
Coolant	Through coolant MQL	Through coolant MQL
Holder	Synch type, square drive	Tapmatic SFT TG
Speed	1000 rpm, 38 m/min	3000 rpm, 113 m/min
Tap life	24,000 holes	125,000 holes
Mach cost/part		64% less

Case study: job shop

Conditions:

- Thread size: 3/8-16 2B
- Workpiece: retainer plates
- Material: ASTM A36
- Hole depth: 5/8" through
- Tap drill size: 5/16"
- Machine: HAAS VF2
- Coolant: water soluble 7%



	Current Tap	New Tap
Tap type	TiN coated HSS	KC7542 carbide tap
Coolant	Flood	Flood
Holder		Tapmatic SFT TG
Speed	350 rpm, 34 sfm	3056 rpm, 300 sfm
Tap life	250 holes	>> 800 holes
Cost/part		35% less

KC7542 Carbide Taps deliver exceptional value . . .

...by providing state of the art productivity and tool life

- Ø *Technological Innovation***
- Ø *Unique Performance***
- Ø *New Global Standard***

