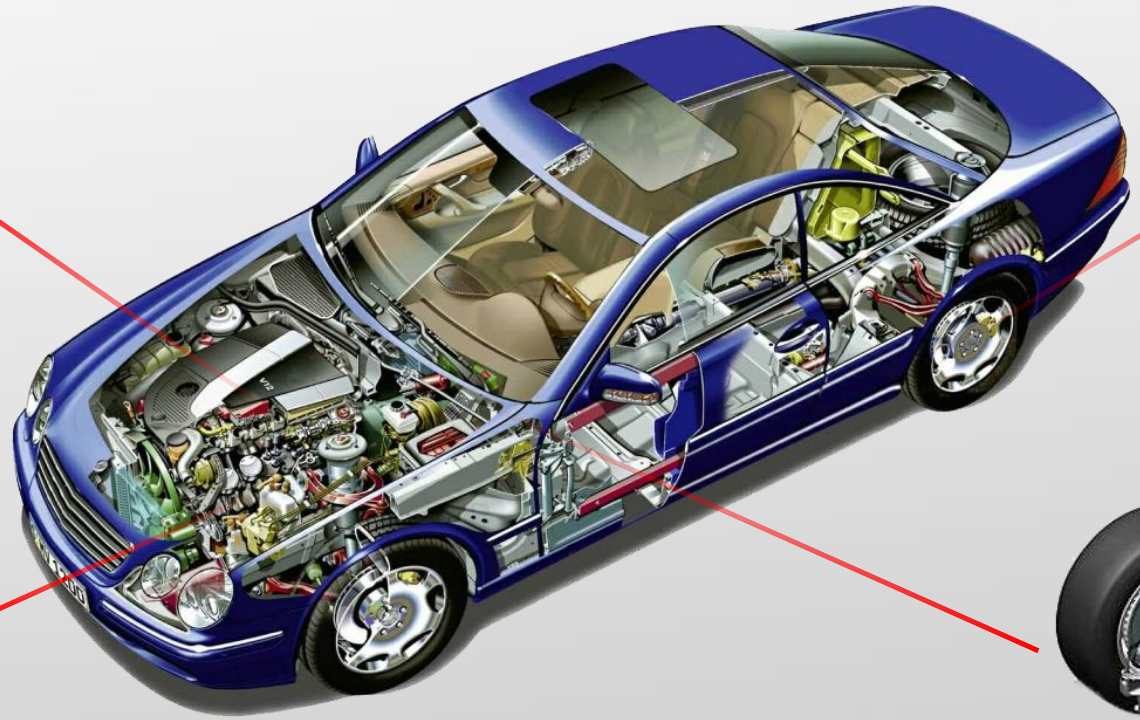
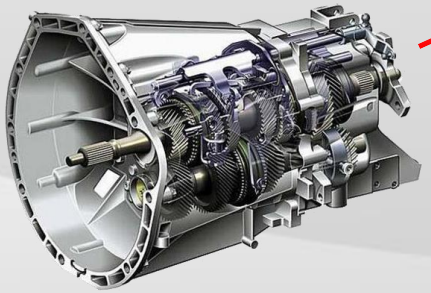
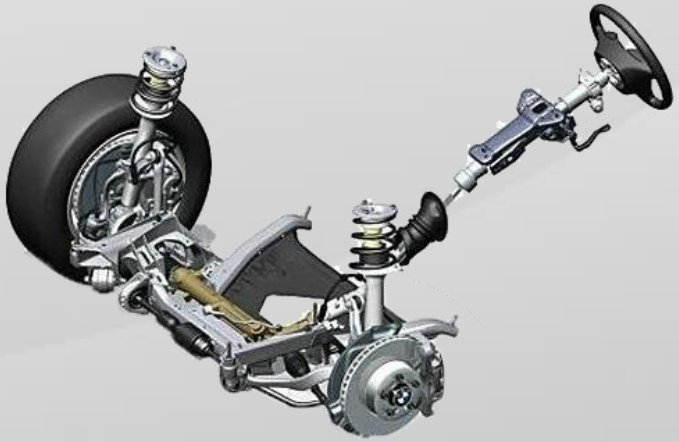
WORLDIA®

BEIJING WORLDIA DIAMOND TOOLS CO.,LTD.

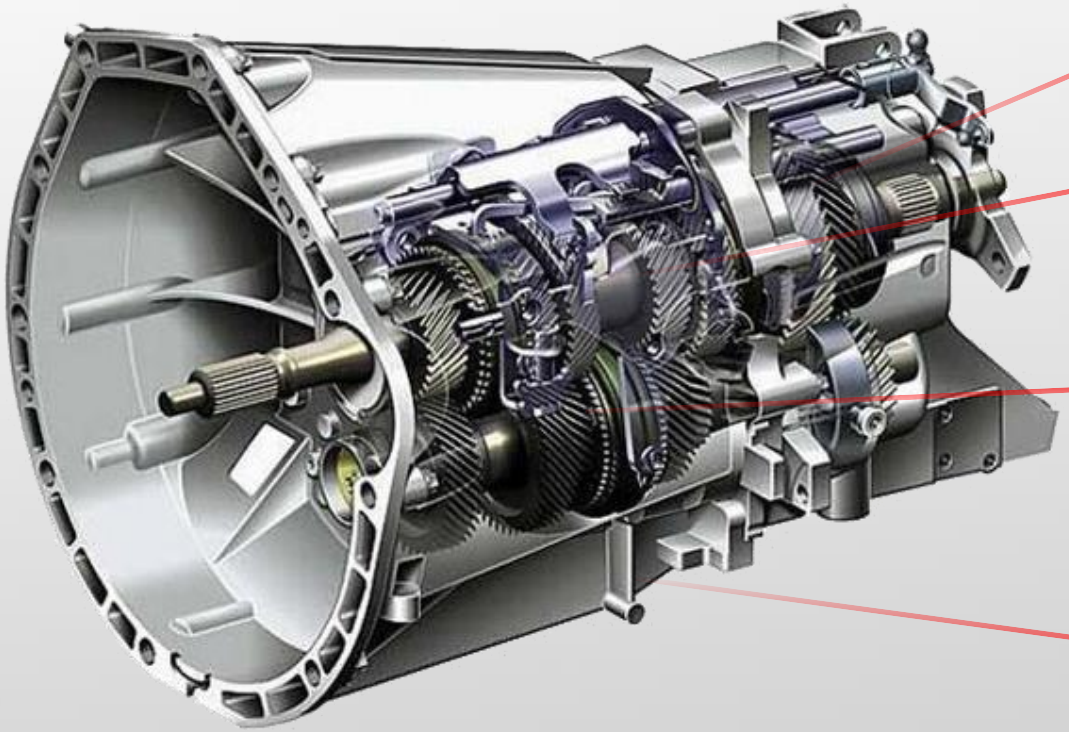
Automotive Industry Application

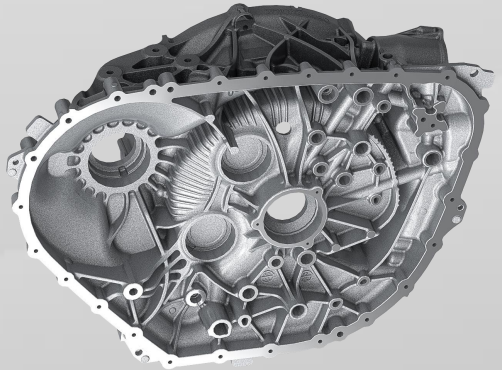






Gearbox Machining

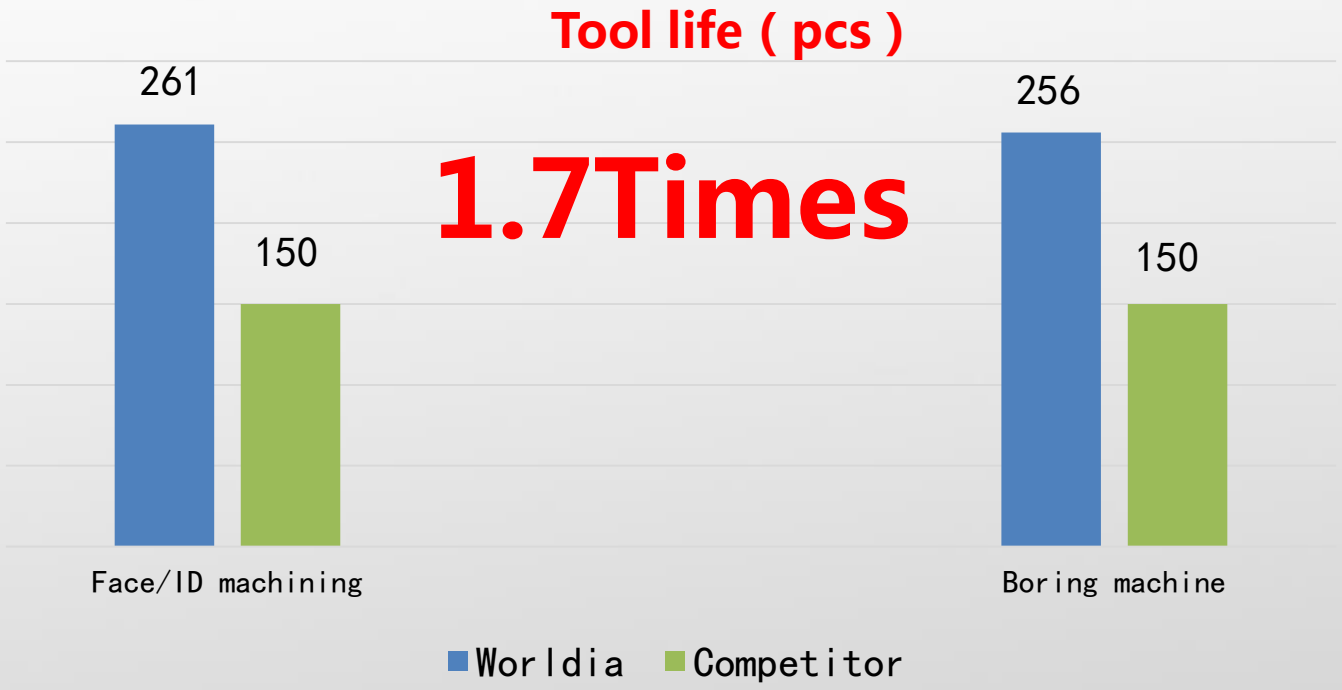




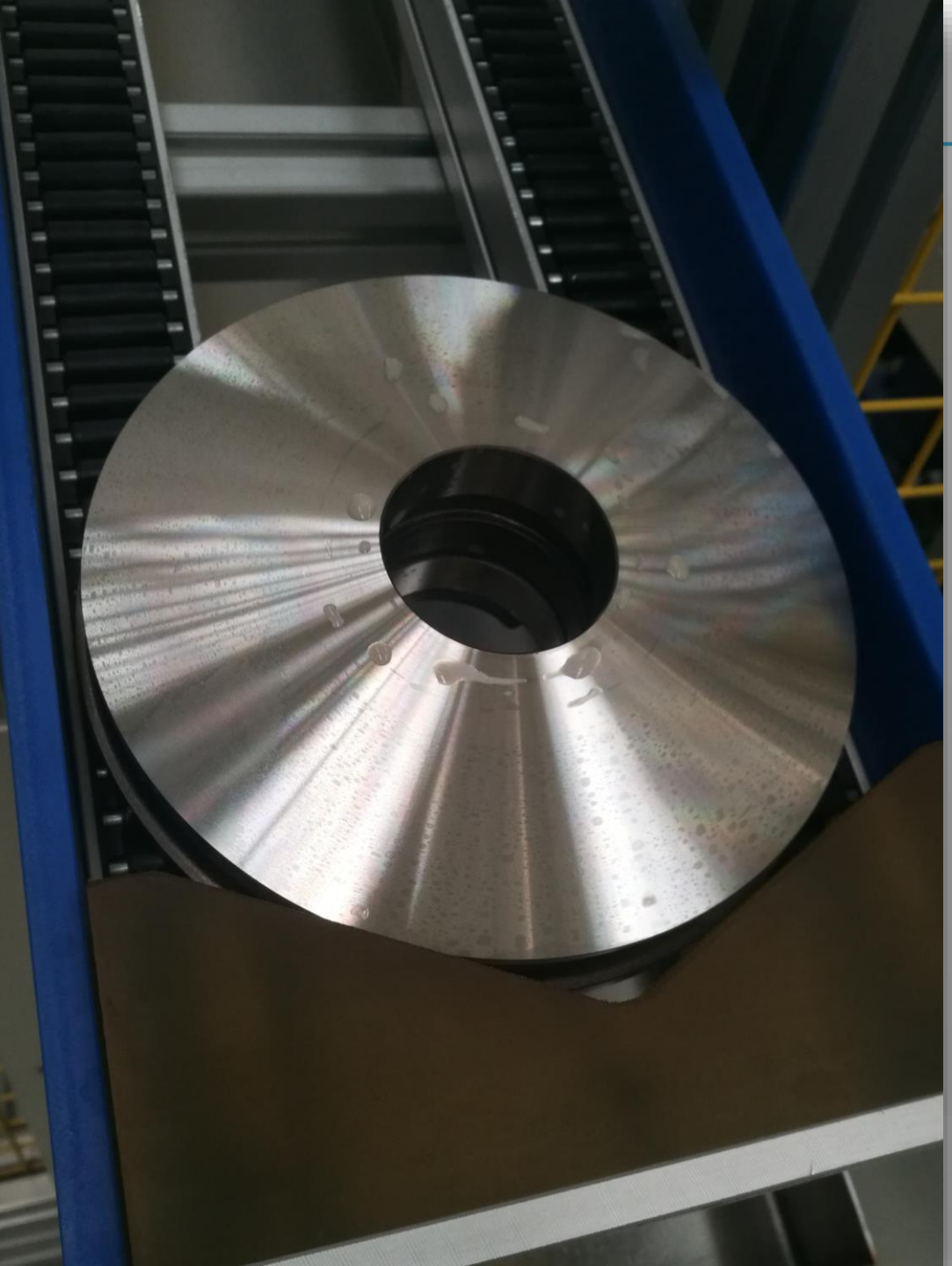
Gear Machining Case

Gear Machining——Continuous finishing

- ◆ Workpiece : Driven gears
- ◆ Hardness : HRC58~62
- ◆Material : Hardened steel
- ◆Roughness : Ra0.8



	Worldia	Japanese Brands	Worldia	Japanese Brands
Insert type.	CNGA120412	CNGA120408	CNGA120404	CNGA120404
Coated	C2	yes	C2	yes
Ap (mm)	0.3	0.3	0.3	0.3
Speed (m/min)	140	140	160	160
feed (mm/rev)	0.12	0.12	0.1	0.1

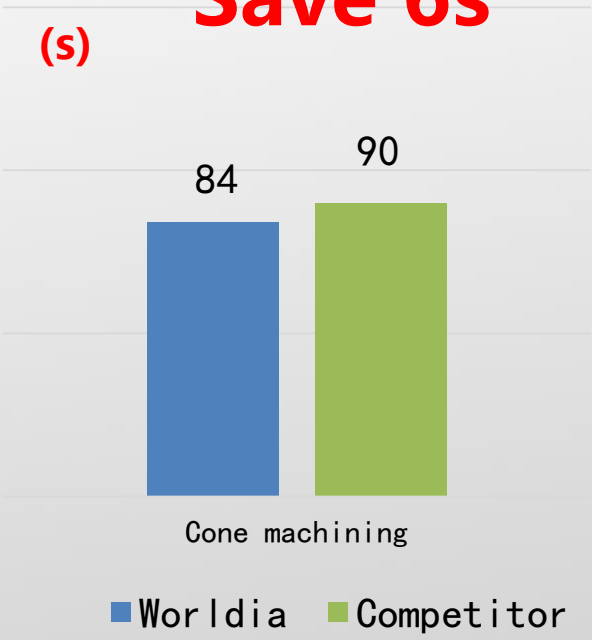


Gear Machining——Continuous finishing

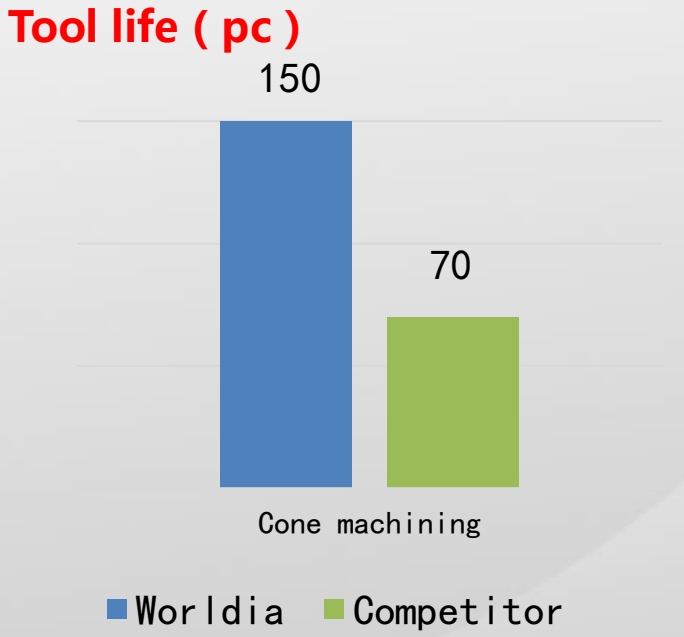
WORLDIA

◆Workpiece : Pulley
◆Hardness : HRC58~63
◆Material : Hardened steel
◆Roughness : Ra1.6

Save 6s



2.14Times



	Wordia	German Brand
Insert type.	CNGA120416	CNGA120412
Coated	C2	yes
Ap (mm)	0.3	0.3
Speed (m/min)	150	205
feed (mm/rev)	0.25	0.18

Gear Machining——Continuous+ Interrupt

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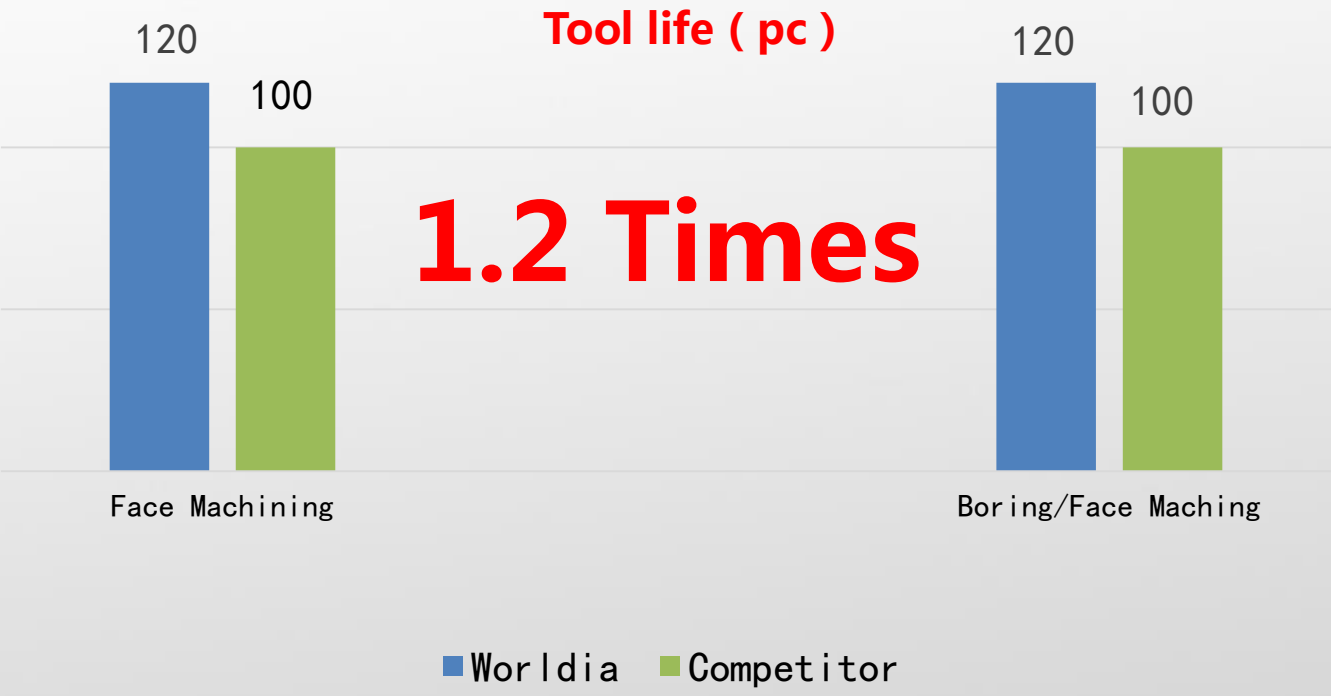
- ◆ Workpiece : Second driven gears
- ◆ Hardness : HRC58~62
- ◆Material: 20CrMoTi
- ◆Roughness : Ra0.8



	Worldia	Japanese Brands	Worldia	Japanese Brands
Insert type.	CNGA120408	CNGA120408	CCGW09T308	CCGW09T308
Coated	C2	Yes	No	Yes
Ap (mm)	0.25	0.25	0.25	0.25
Speed (m/min)	180	180	180	180
feed (mm/rev)	0.15	0.15	0.11	0.11

Gear Machining——Continuous+ Interrupt

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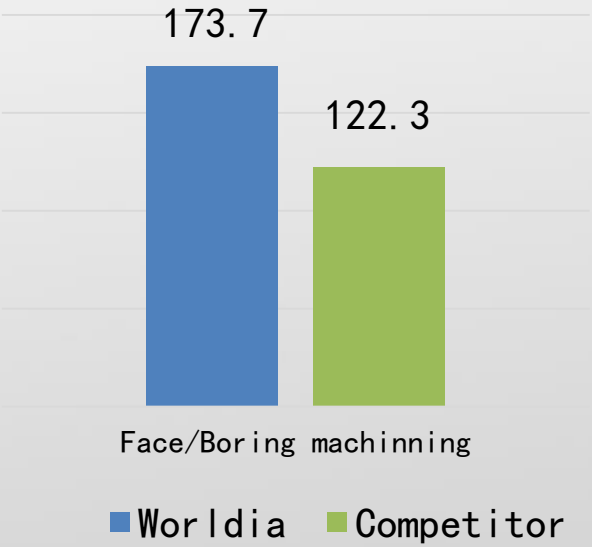
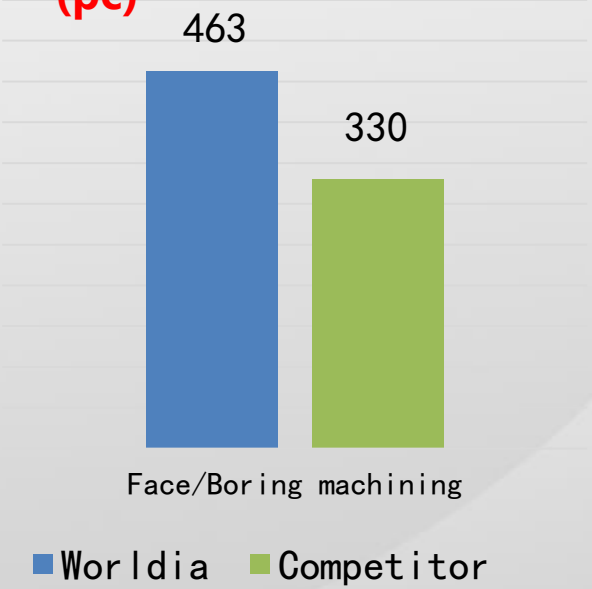
◆Workpiece : First driven gears
◆ Hardness : HRC58~62
◆Material: 20CrMoTi
◆Roughness : Ra0.8

Speed (mm/min) **1.42Times**



Tool life (pc) **1.4 Times**



	Wordia	German Brand
Insert type.	CCGW09T3SL	CCGW09T300
Coated	No	No
Ap (mm)	0.15	0.15
Speed (m/min)	150	130
feed (mm/rev)	0.16	0.13

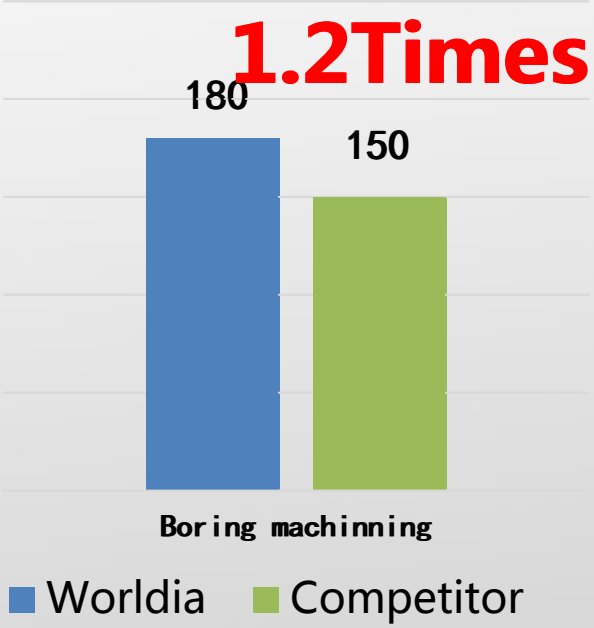
Gear Machining——Interrupt

◆Workpiece：Reduction gears
◆ Hardness：HRC58~62

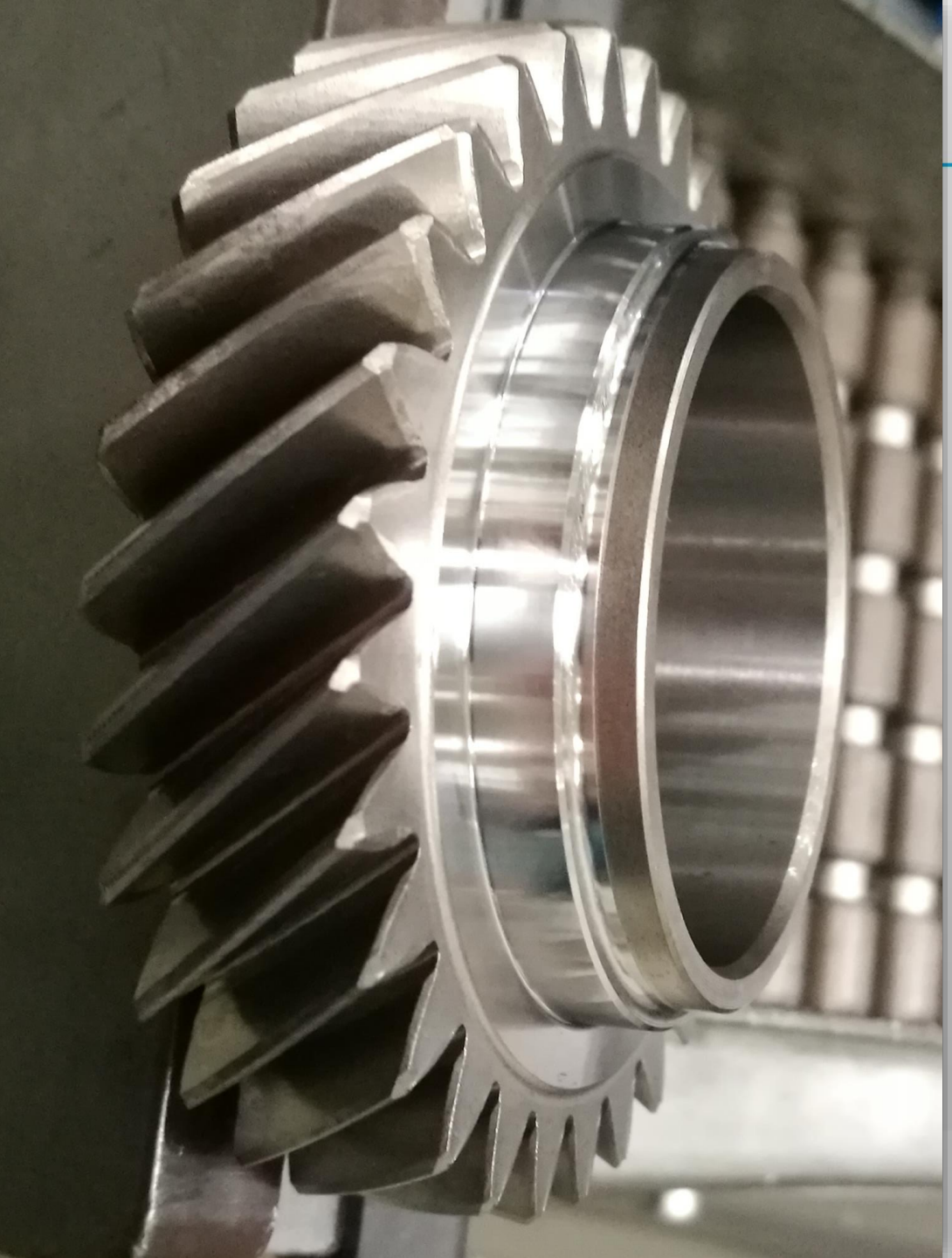
◆Material: 20CrMoTi
◆Roughness：Ra0.8

Tool life (pc) 1.35 Times

Tool life(pc) 1.2Times



	Worldia	Japanese Brands	Worldia	Japanese Brands
Insert type.	CNGA120408	CNGA120408	CNGA120408	CNGA120408
Coated	C2	Yes	No	Yes
Ap (mm)	0. 25	0. 25	0. 25	0. 25
Speed (m/min)	150	150	150	150
feed (mm/rev)	0. 25	0. 25	0. 25	0. 25



Gear Machining——Remove Carburized layer

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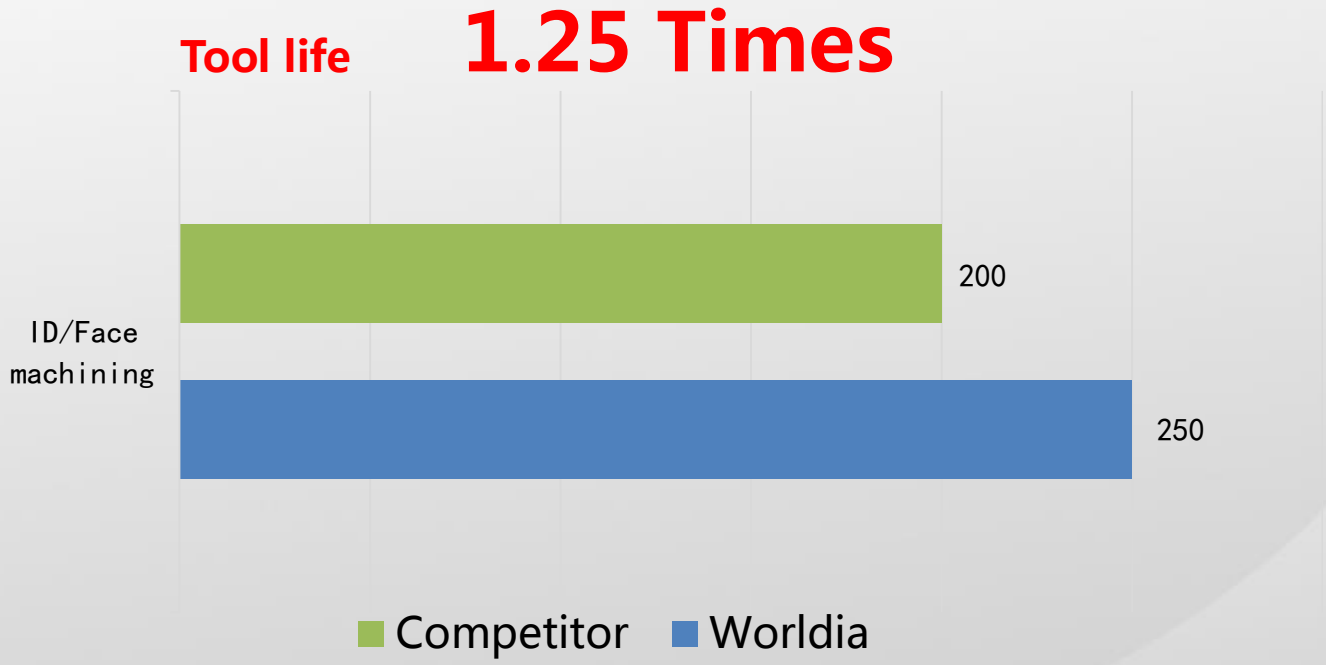
◆Workpiece：Six driven gears
◆ Hardness：HRC58~62
◆Material: 20CrMoTi
◆Roughness：Ra0.8



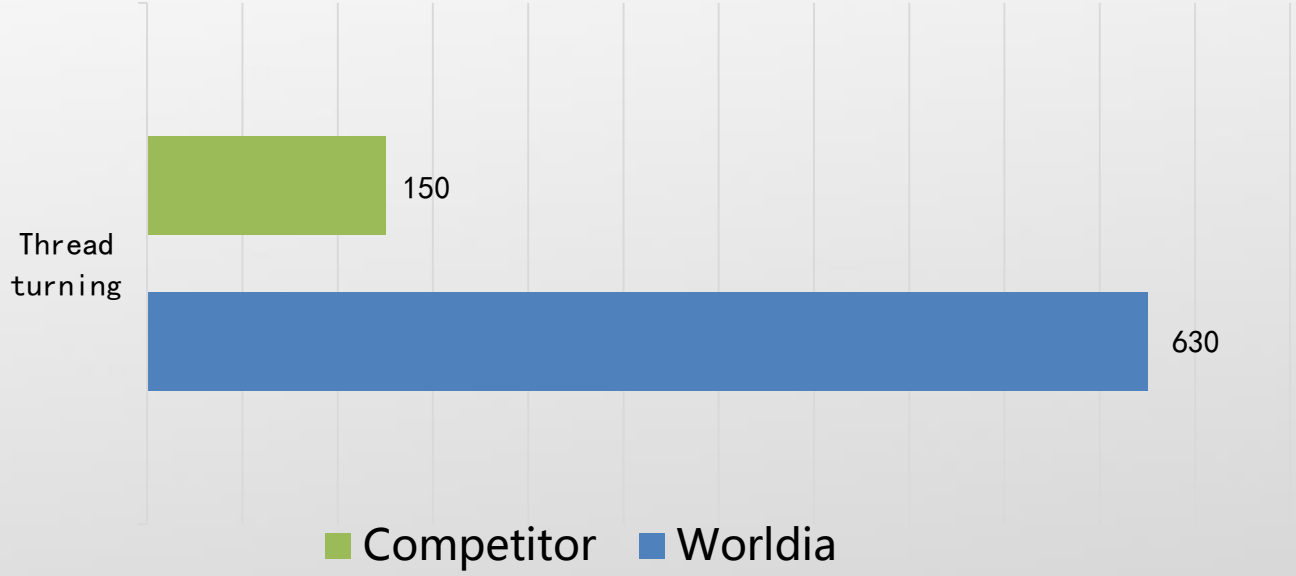
	Wordia	German Brand
Insert type.	DNGA110408	DNGN110408
Coated	C2	有
Ap (mm)	0. 7	0. 7
Speed (m/min)	120	160
feed (mm/rev)	0. 22	0. 17

Shaft Machining Case

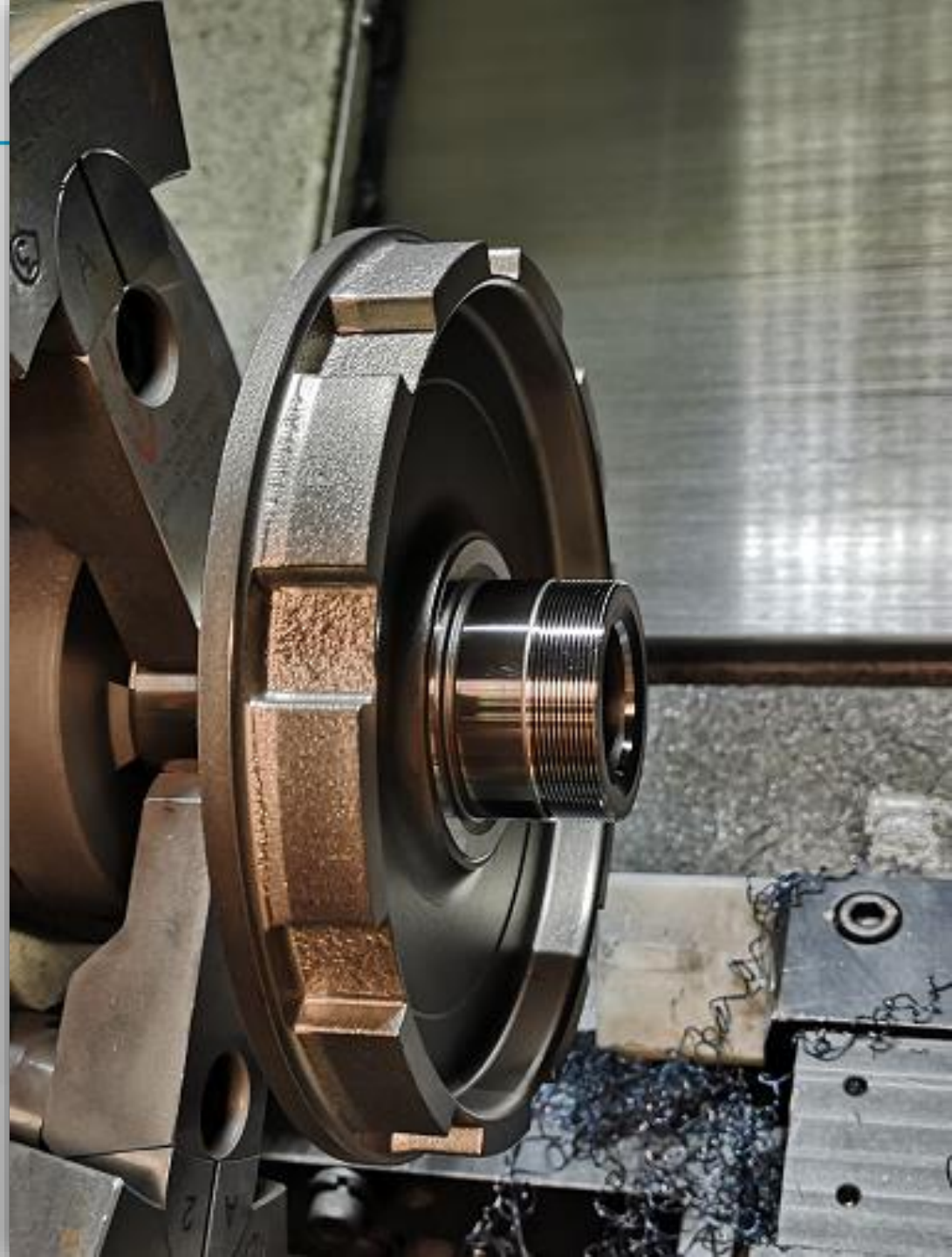
Shaft Machining——Thread turning

◆ Workpiece: Belt wheel
◆Hardness : HRC58~63
◆Material : 20CrMoTiH
◆Roughness : Ra1.6

Tool life (PC) **4.2Times**



	Worldia	European brand
Insert type.	GTITR-F1.ON60	266RG-16
Coated	No	No
Ap (mm)	0.06	0.06
Speed (m/min)	100	100
feed (mm/rev)	1	1



Shaft Machining——Turning chip breaking

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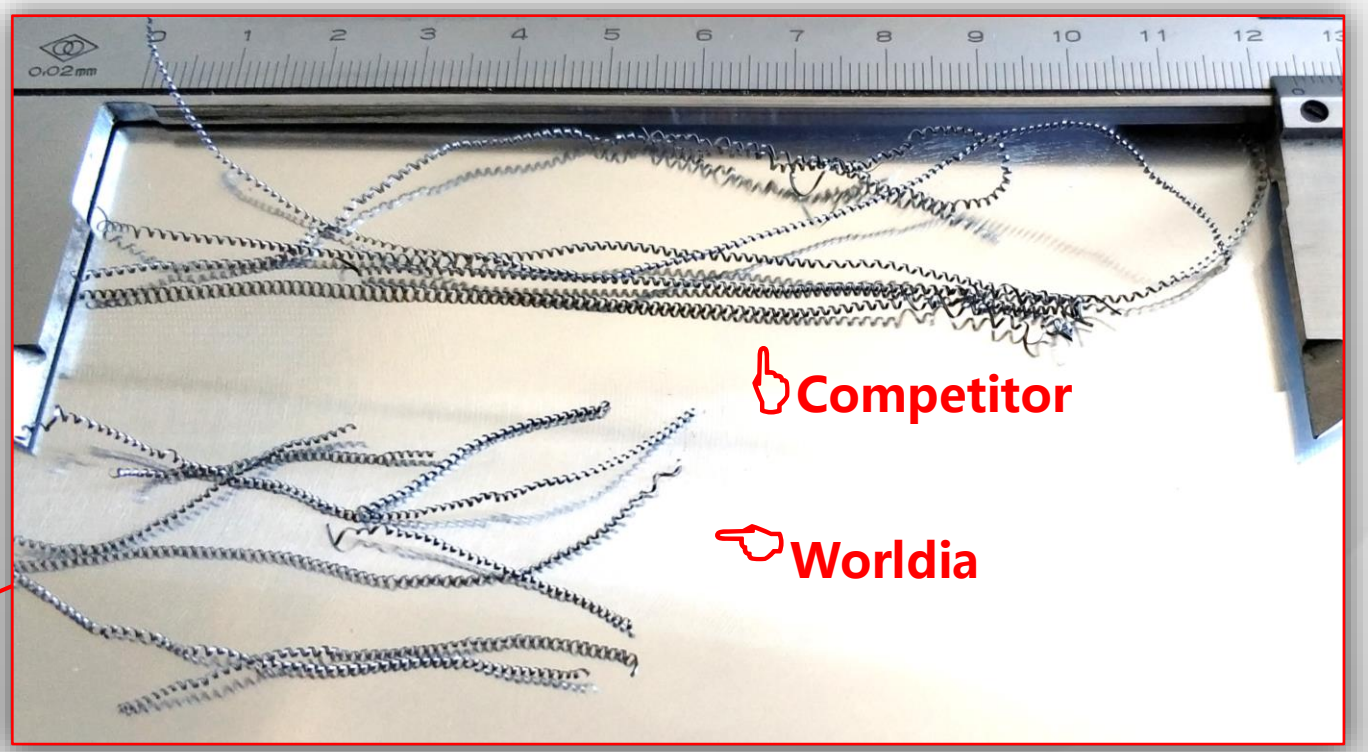
- ◆ Workpiece : Oil pump cover
- ◆Material : Hardened steel
- ◆Hardness : HRC 40-45
- ◆Roughness : Ra0.4



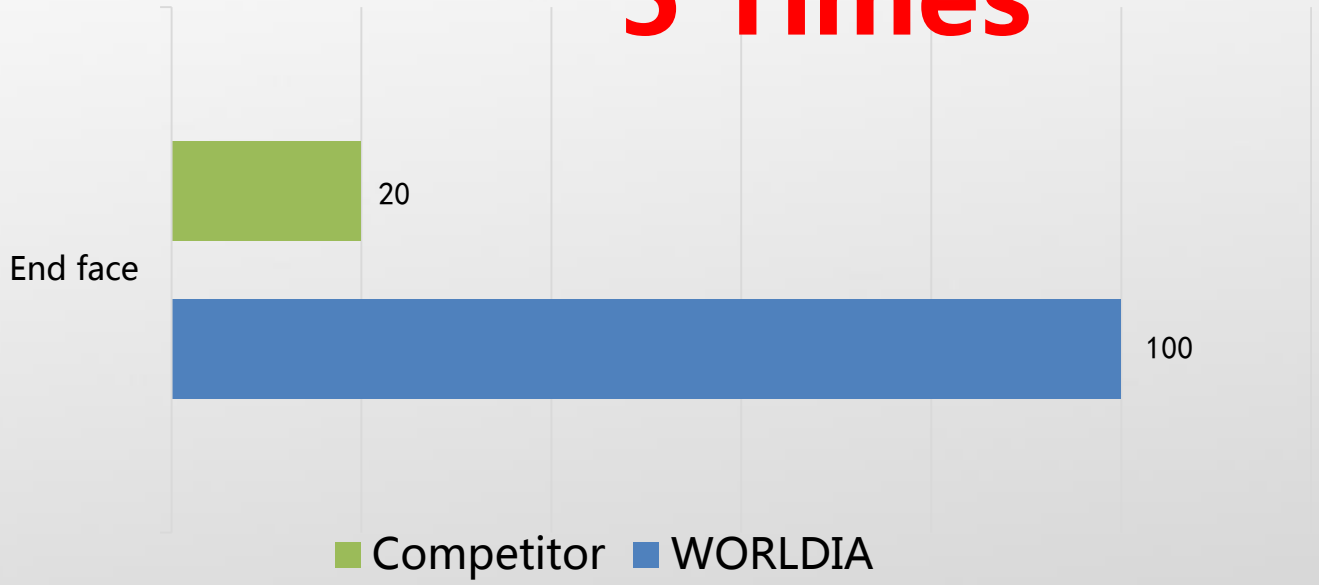
	Worldia	Japanese Brands
Insert type.	TPGT110308	TPGT110308
Coated	No	No
Ap (mm)	0. 08	0. 08
Speed (m/min)	195	195
feed (mm/rev)	0. 08	0. 08

Shaft Machining —— Chip breaking

◆Workpiece: Input shaft ◆Material：Hardened Steel
◆Hardness：HRC58~62 ◆Roughness：Ra0.4

Tool life (Pcs)

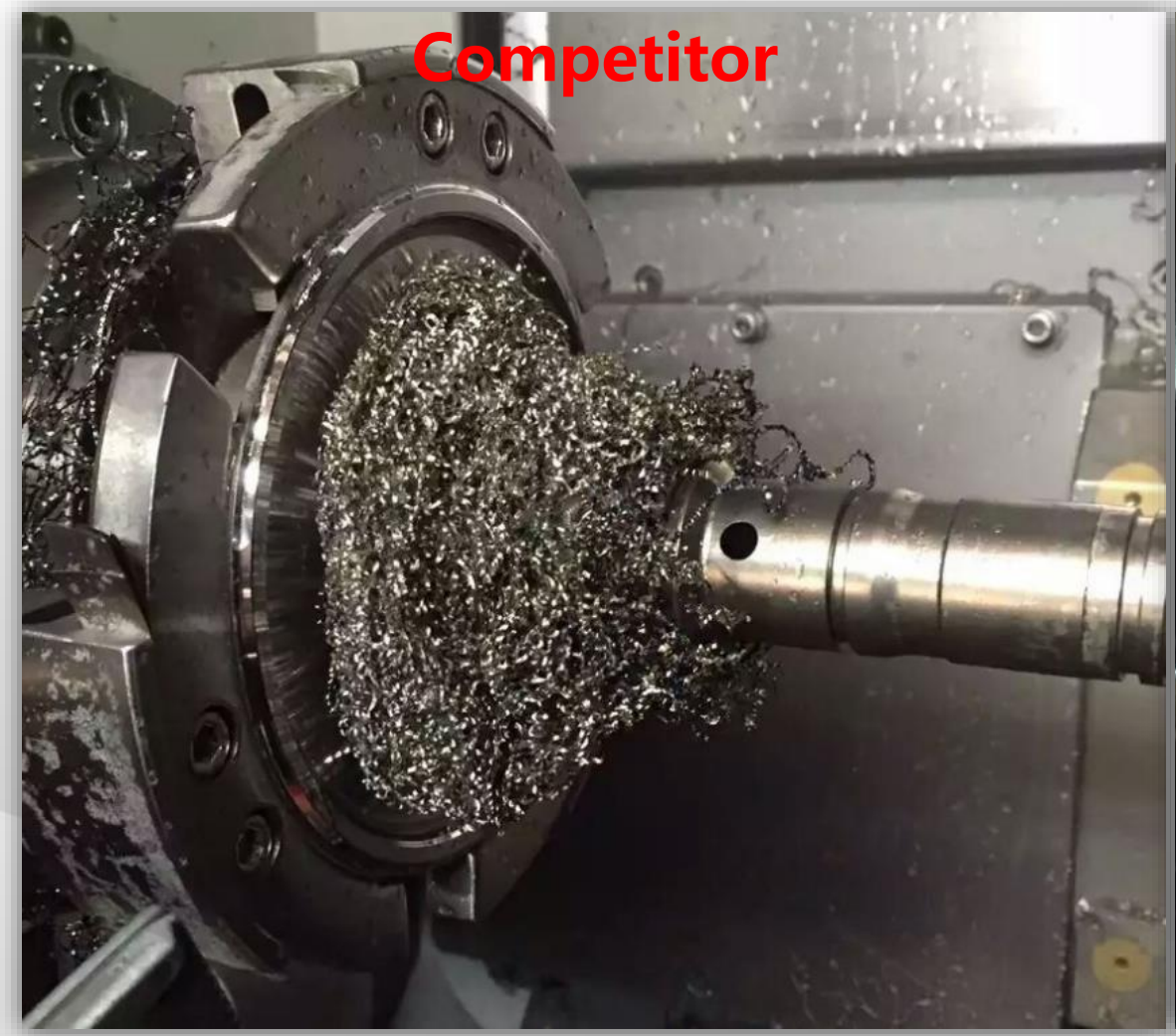
5 Times

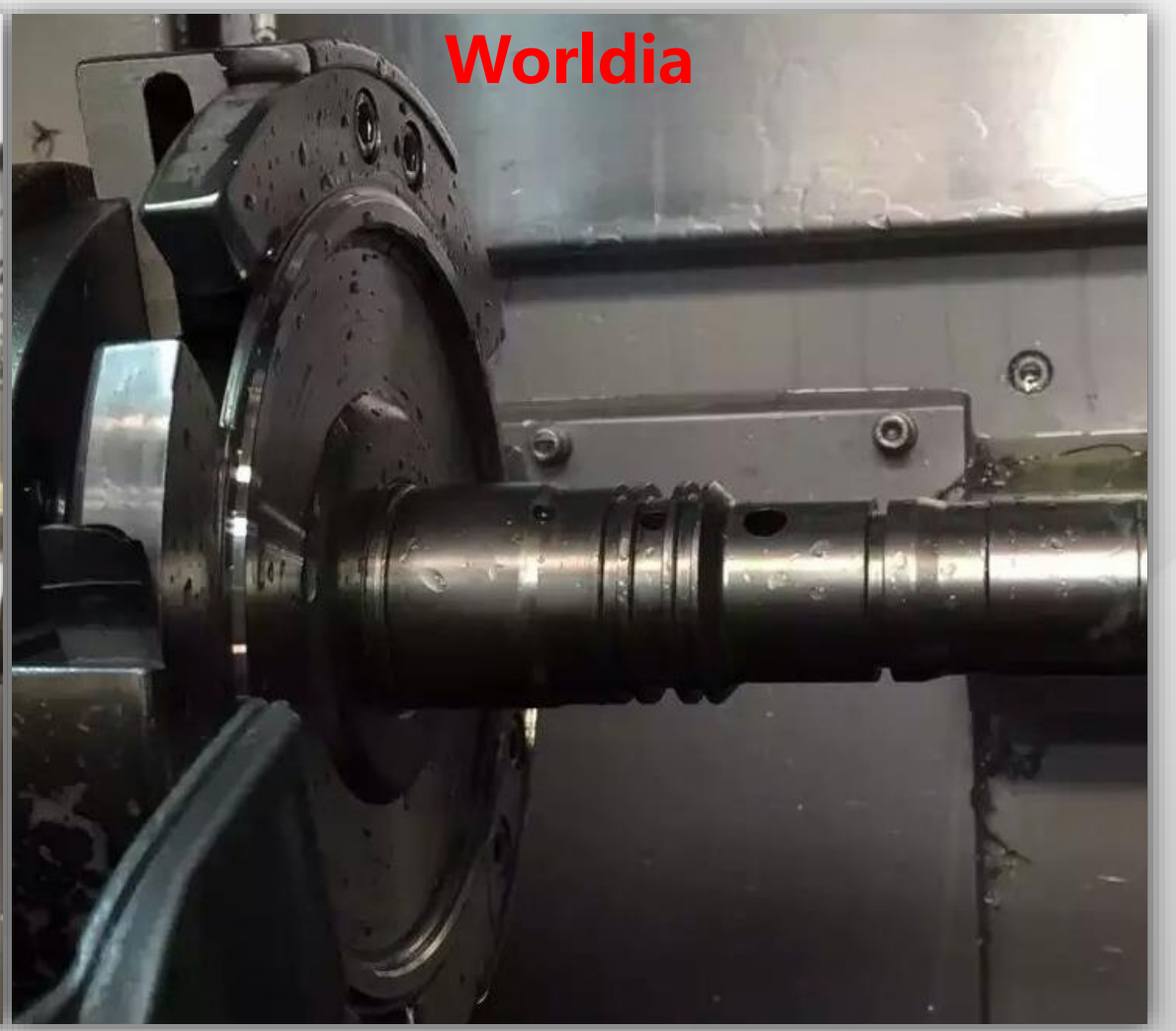


	WORLDIA	Japanese Brand
Insert Type	VBGT160408	VBGT160408
Coated/uncoated	uncoated	uncoated
Cutting depth (mm)	0.15	0.15
Cutting Speed (m/min)	160	160
Feed (mm/rev)	0.1	0.1

Shaft Machining —— Chip breaking comparasion

◆Workpiece : Input Shaft
◆Hardness : HRC58~62
◆Material : Hardened Steel
◆Roughness : Ra0.4

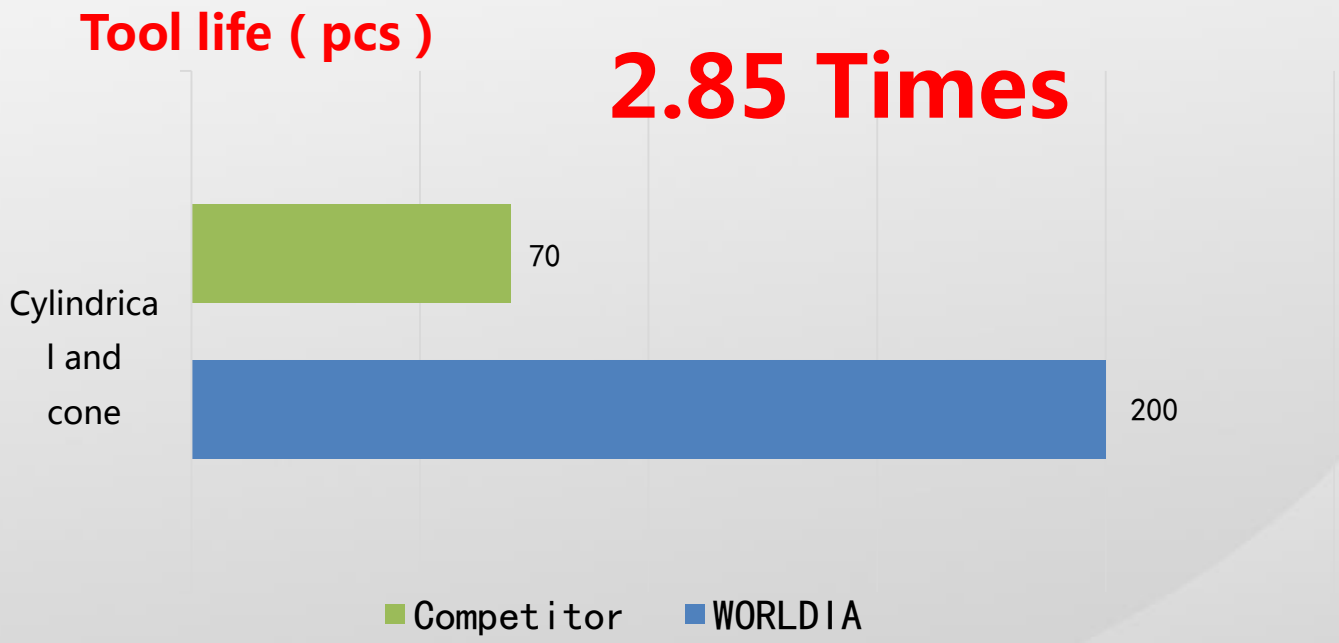




Shaft Machining—— Chip breaking

WORLDIA

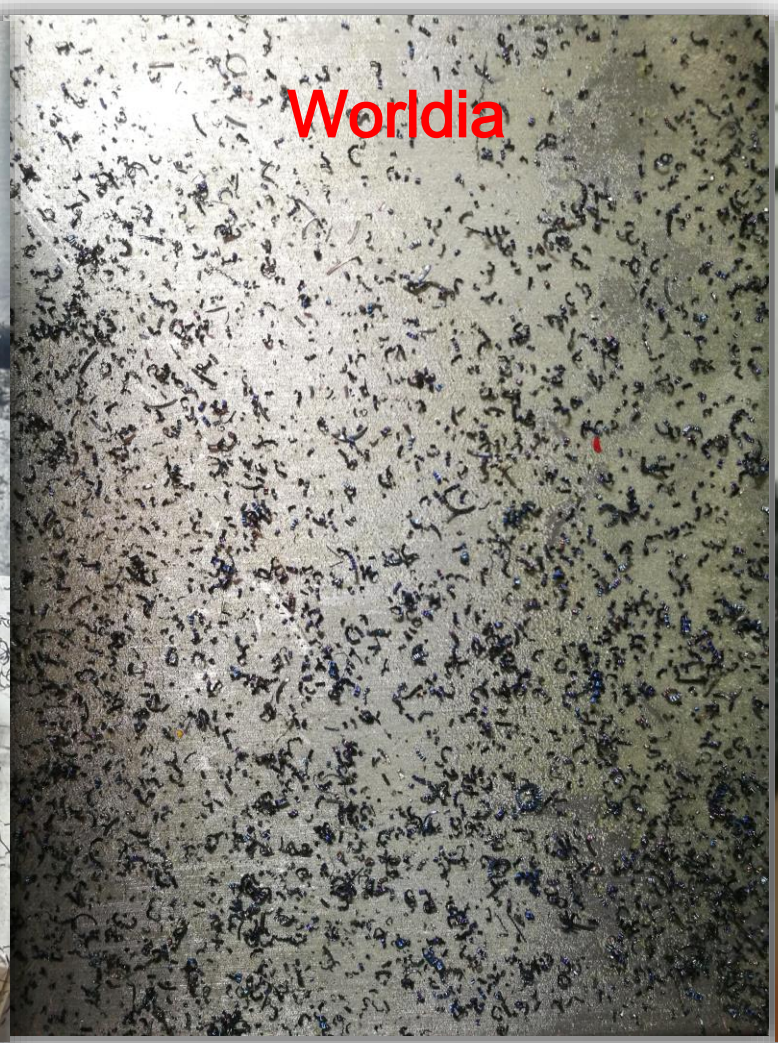
◆Workpiece : Input shaft
◆Hardness : HRC58~63
◆Material : 20CrMoTiH
◆Roughness : Ra1.6

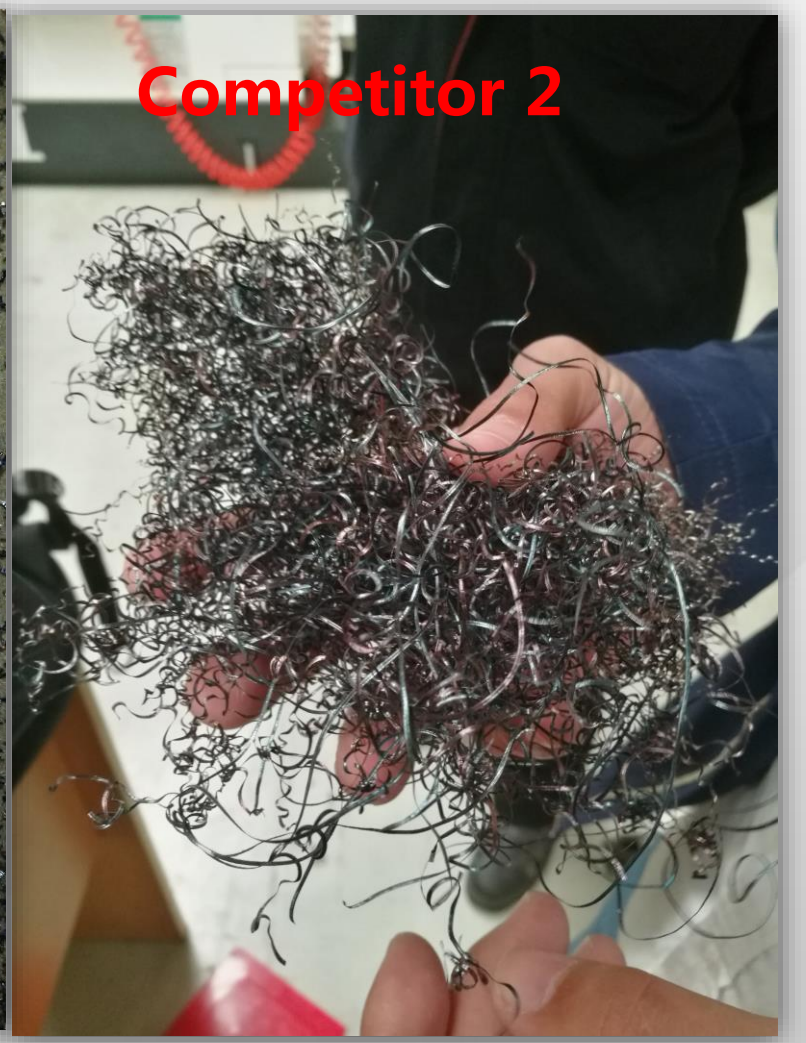


	WORLDIA	SWEDEN BRAND
Insert type	CNGA120408	CNGA120408
Coated/Uncoated	C2 Coated	Coated
Cutting depth (mm)	0.2	0.2
Cutting speed (m/min)	130	130
Feed (mm/rev)	0.15	0.15

Shaft Machining-Chip breaking comparison

◆Workpiece： Input Shaft ◆Material：20CrMoTiH
◆Hardness：HRC58~63 ◆Roughness：Ra1.6





Competitor

Worldia

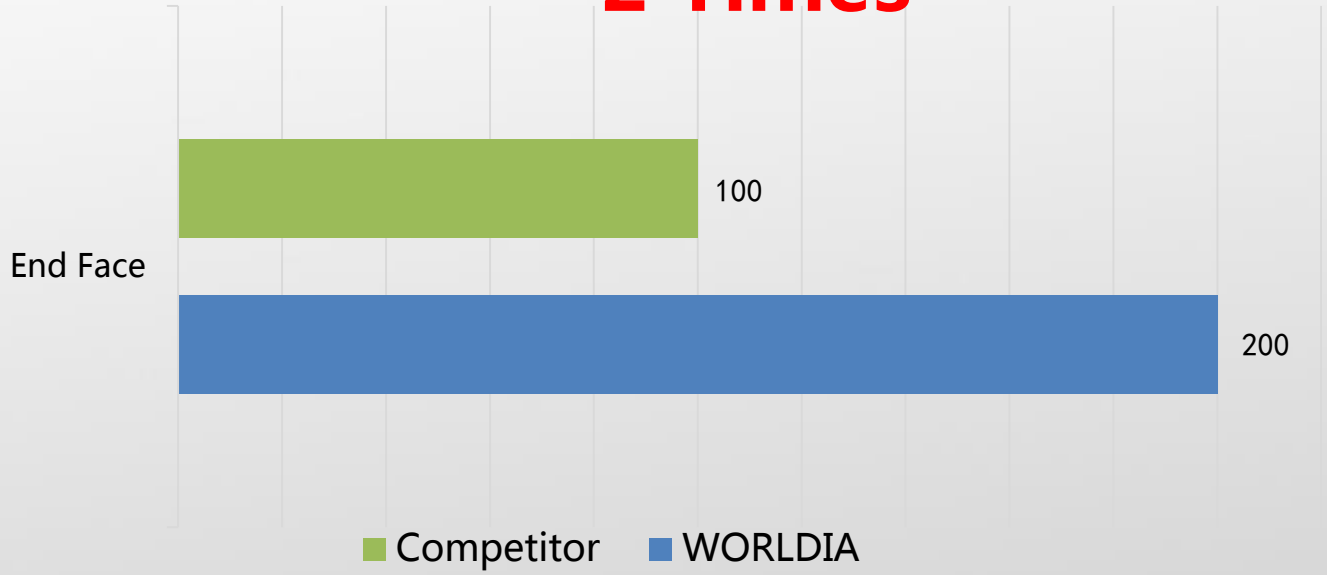
Powder Metallurgy Processing

Powder Metallurgy Processing –Chain Wheel

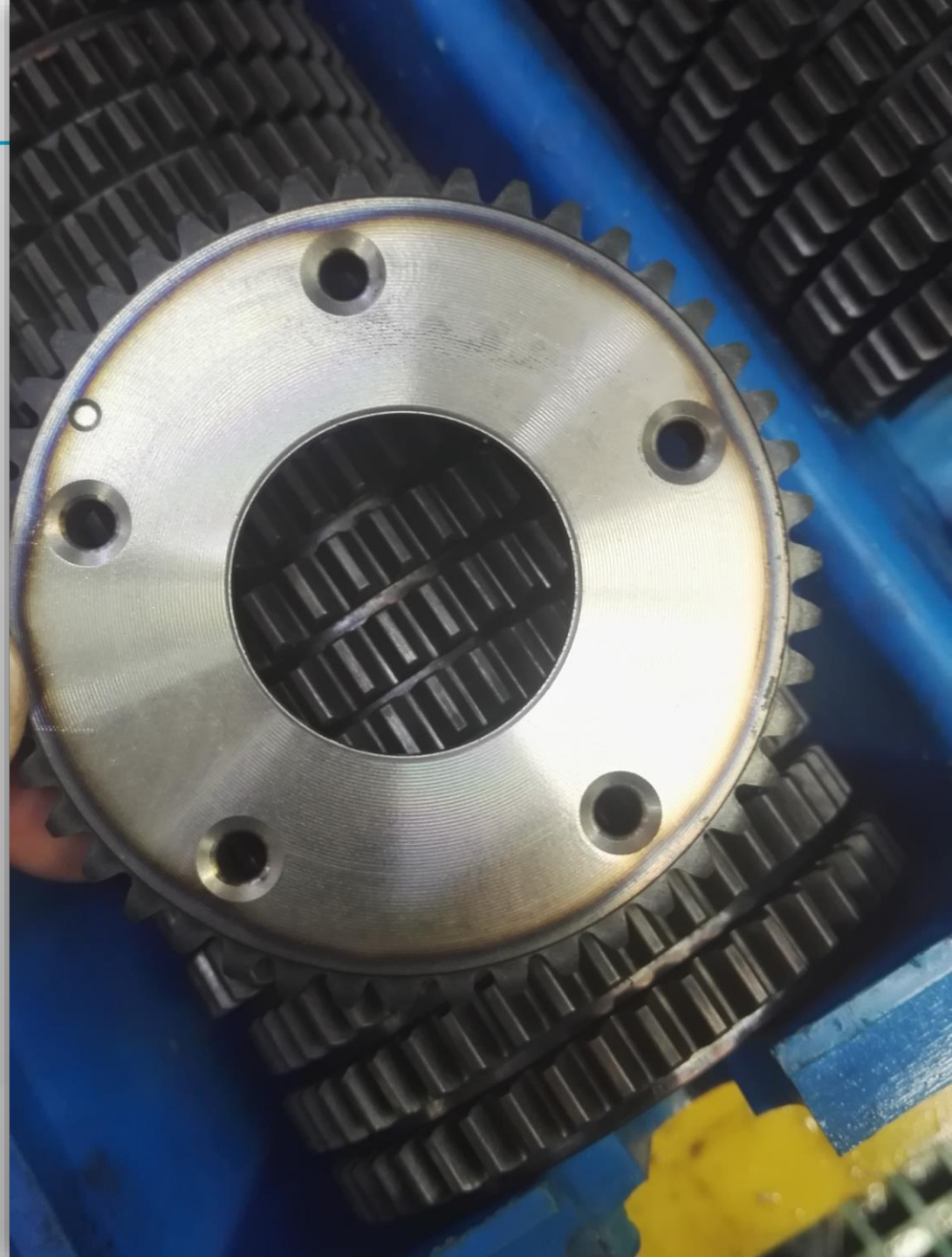
◆Workpiece：Camshaft timing chain wheel
◆Hardness：HB180~220
◆Material：Powder Metallurgy
◆Roughness：Ra1.2

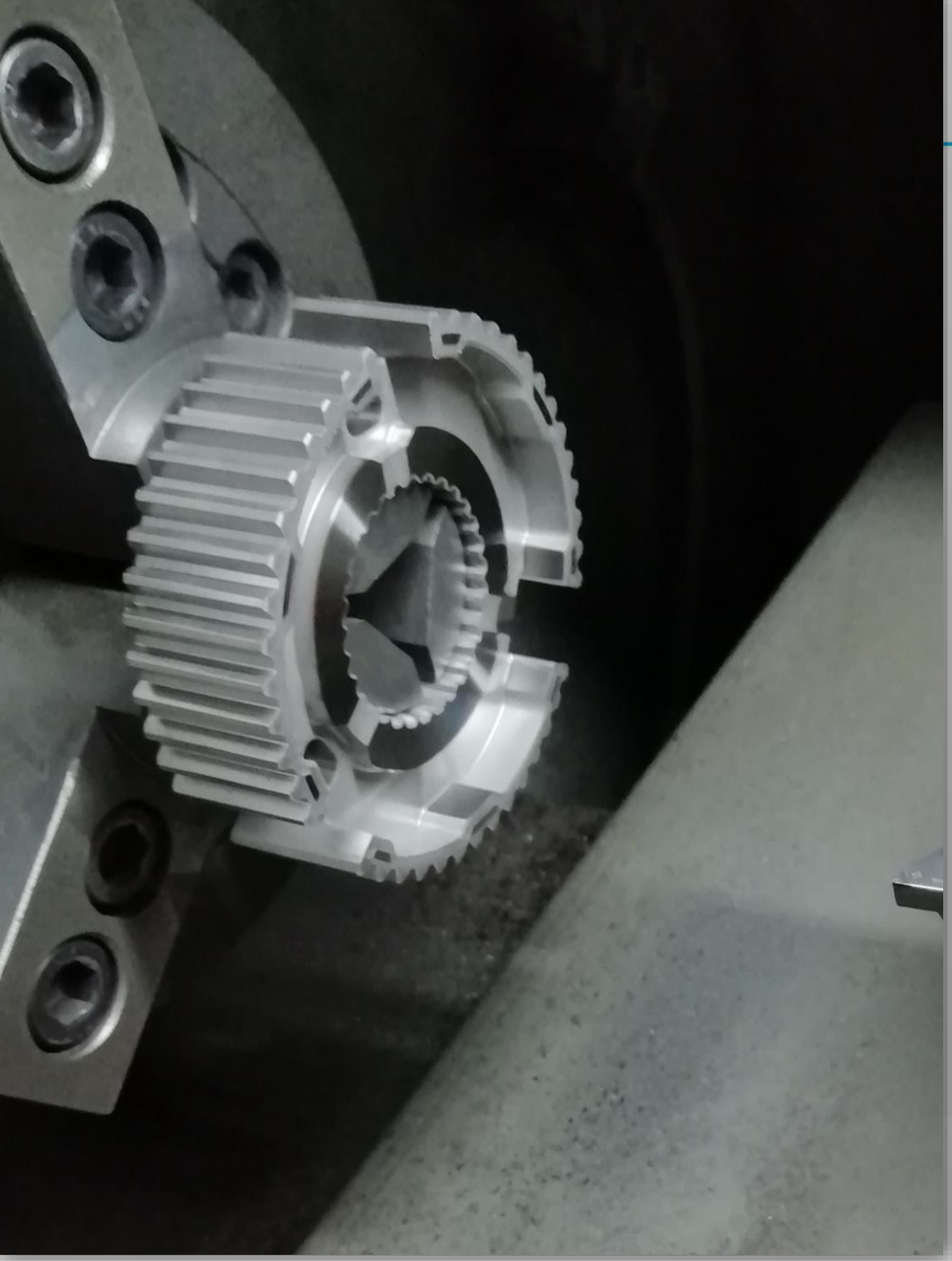
Tool Life (Pcs)

2 Times



	WORLIDA	Domestic Brand
Insert Type	DCGW11T308	DCGW11T308
Coated/uncoated	uncoated	uncoated
Cutting depth (mm)	0.1	0.1
Spindle speed (rev/min)	1900	2400
Feed (mm/rev)	0.09	0.07



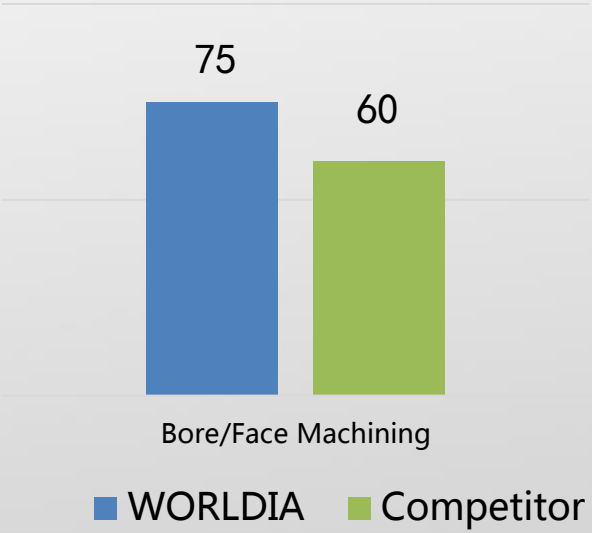


Powder Metallurgy Processing –Gear hub

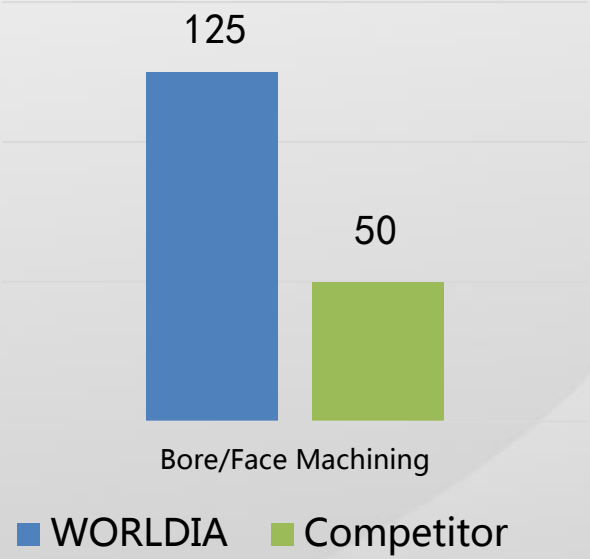
WORLDIA®

◆Workpiece：Gear hub
◆Hardness：HB180~220
◆Material：Powder Metallurgy
◆Roughness：Rz6.3

Feed Speed (mm/min) **1.25 Times**

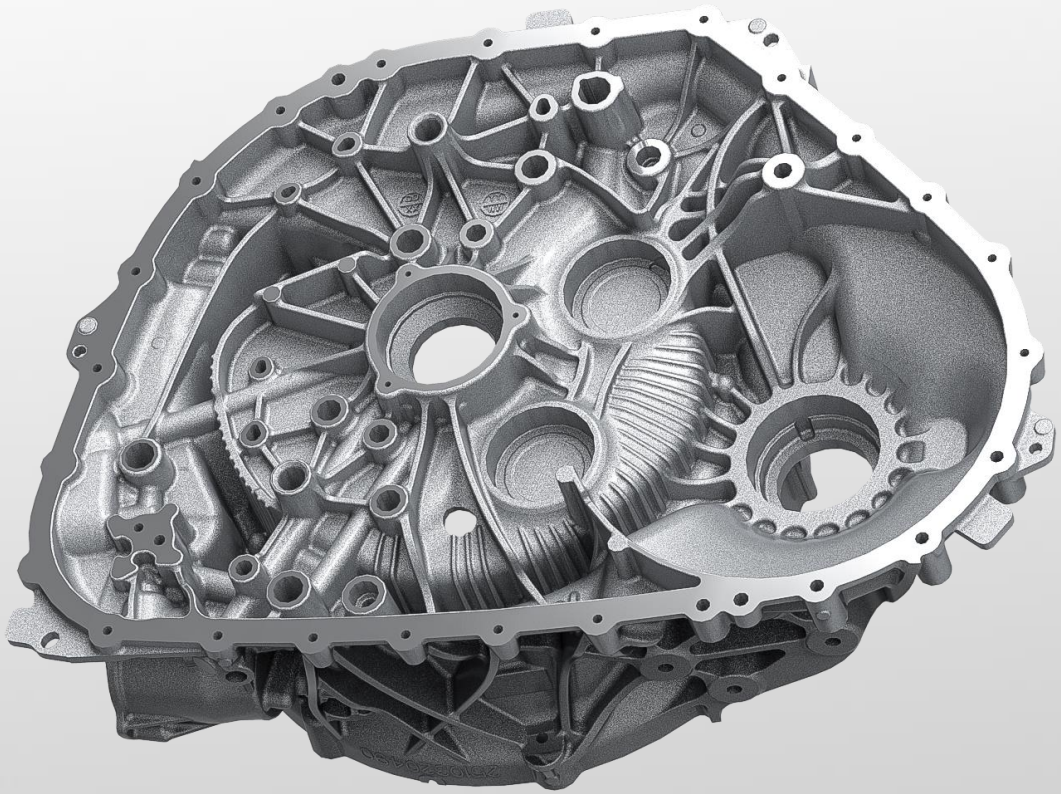


Tool Life (Pcs) **2.5 Times**



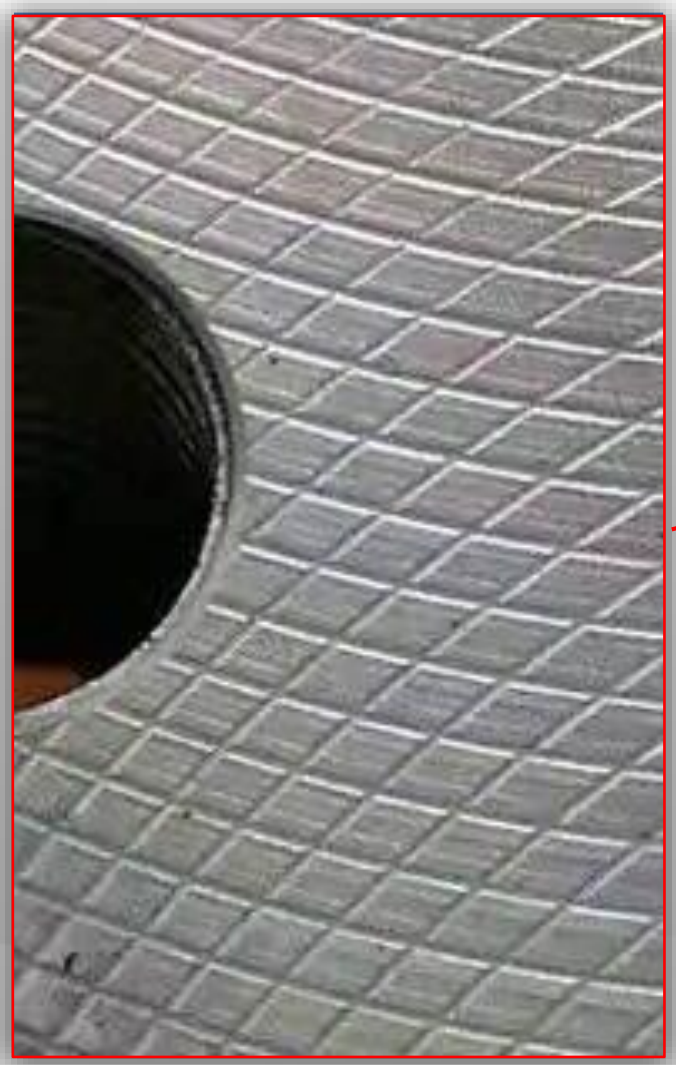
	WORLDIA	Domestic Brand
Item Type	VCGW110306	VCGW110308
Coated/Uncoated	uncoated	uncoated
Cutting depth (mm)	0.15	0.15
Spindle speed (rev/min)	1500	1200
Feed (mm/rev)	0.05	0.05

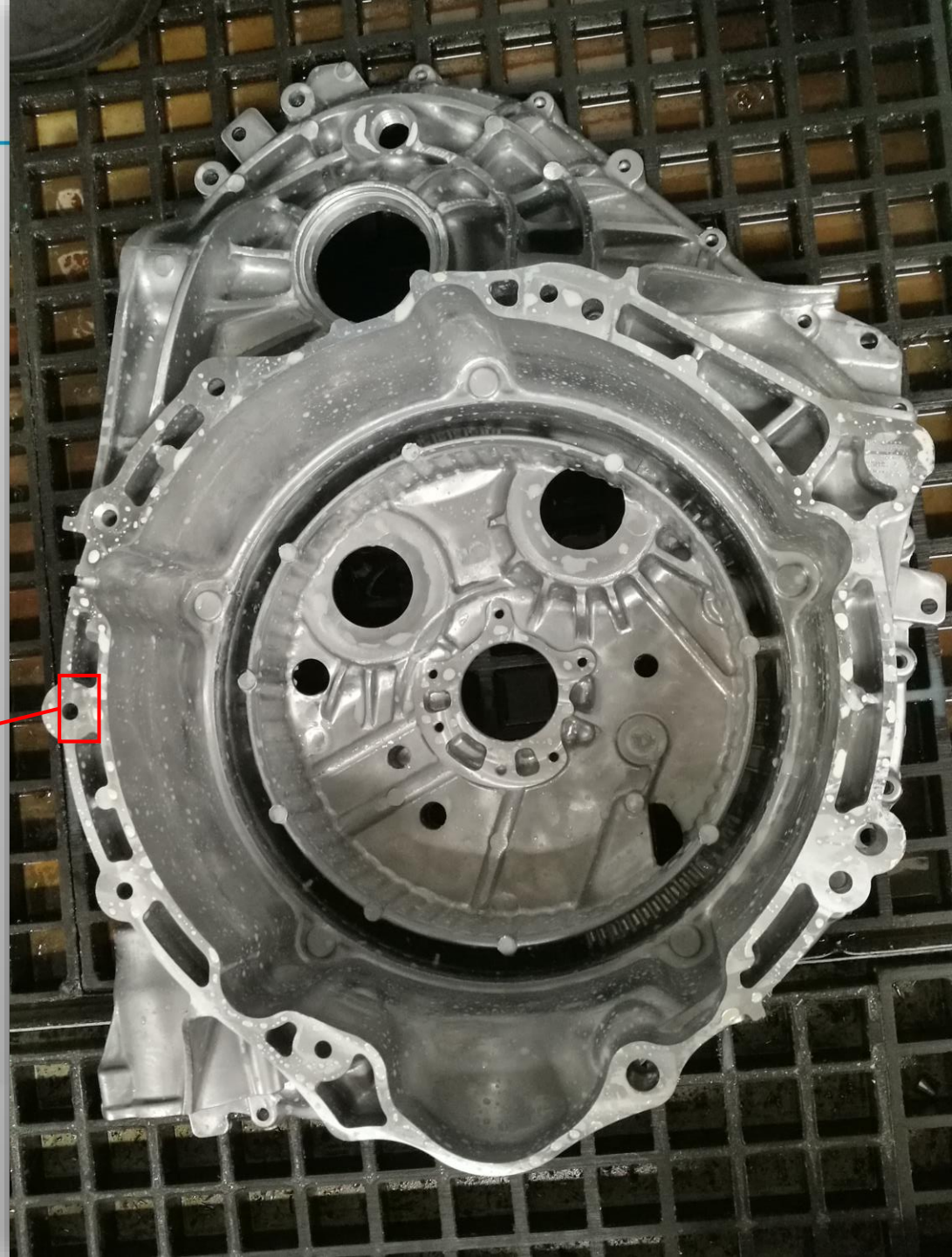
Box Machining Cases



Box Machining Cases – Textured Milling

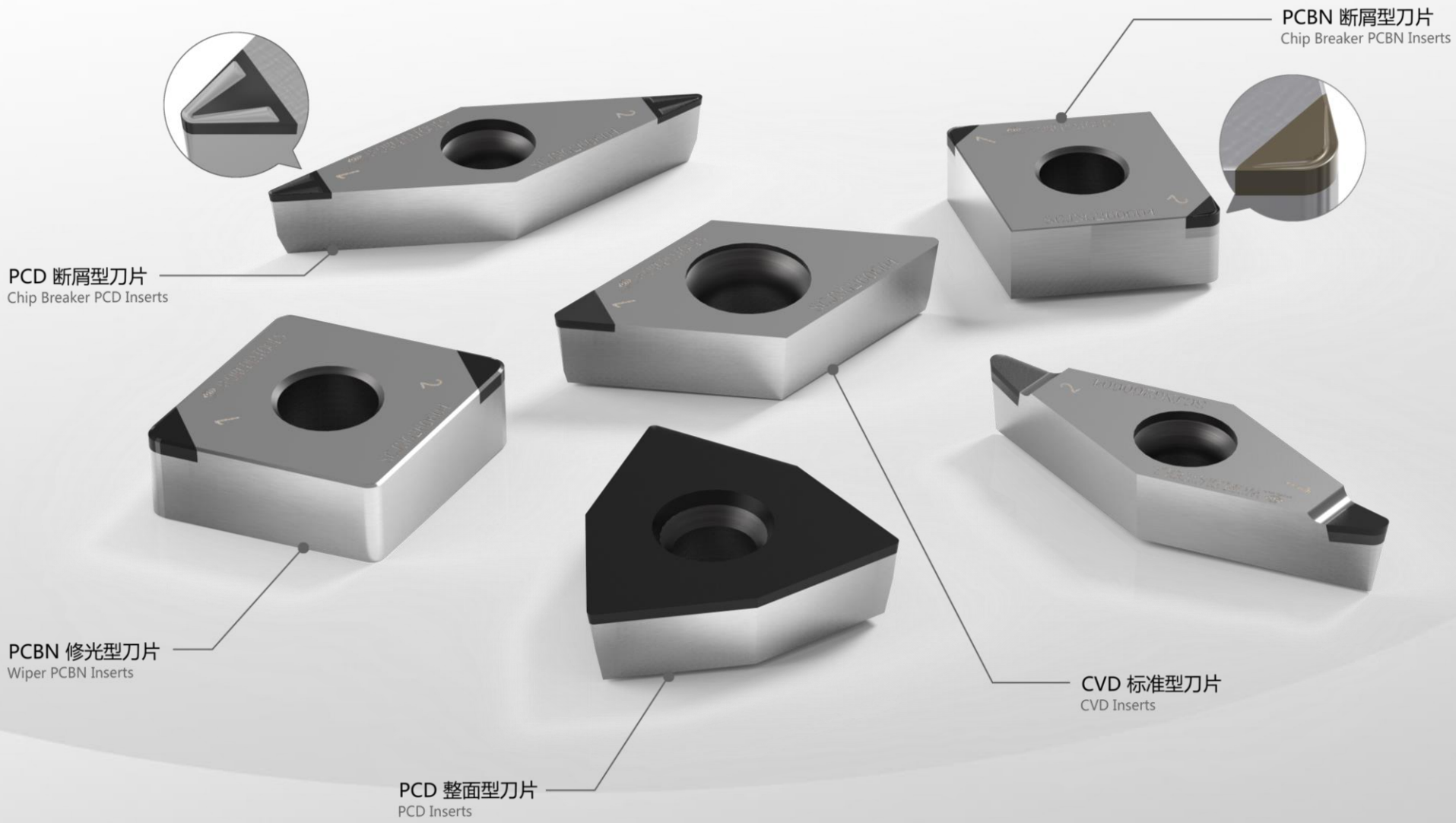
◆Workpiece:Gear box
◆Hardness：HB100~110
◆Material：AlSi10Mg
◆Roughness：Rz8~16



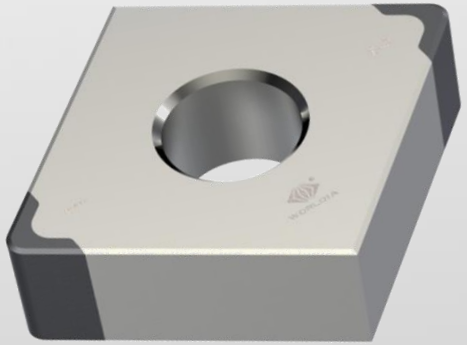


Products

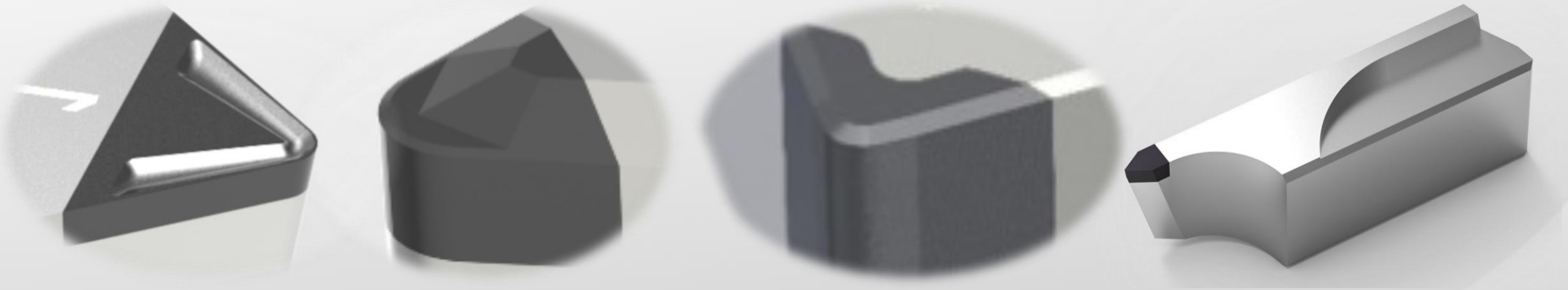
PCD/PCBN Inserts



PCBN Inserts

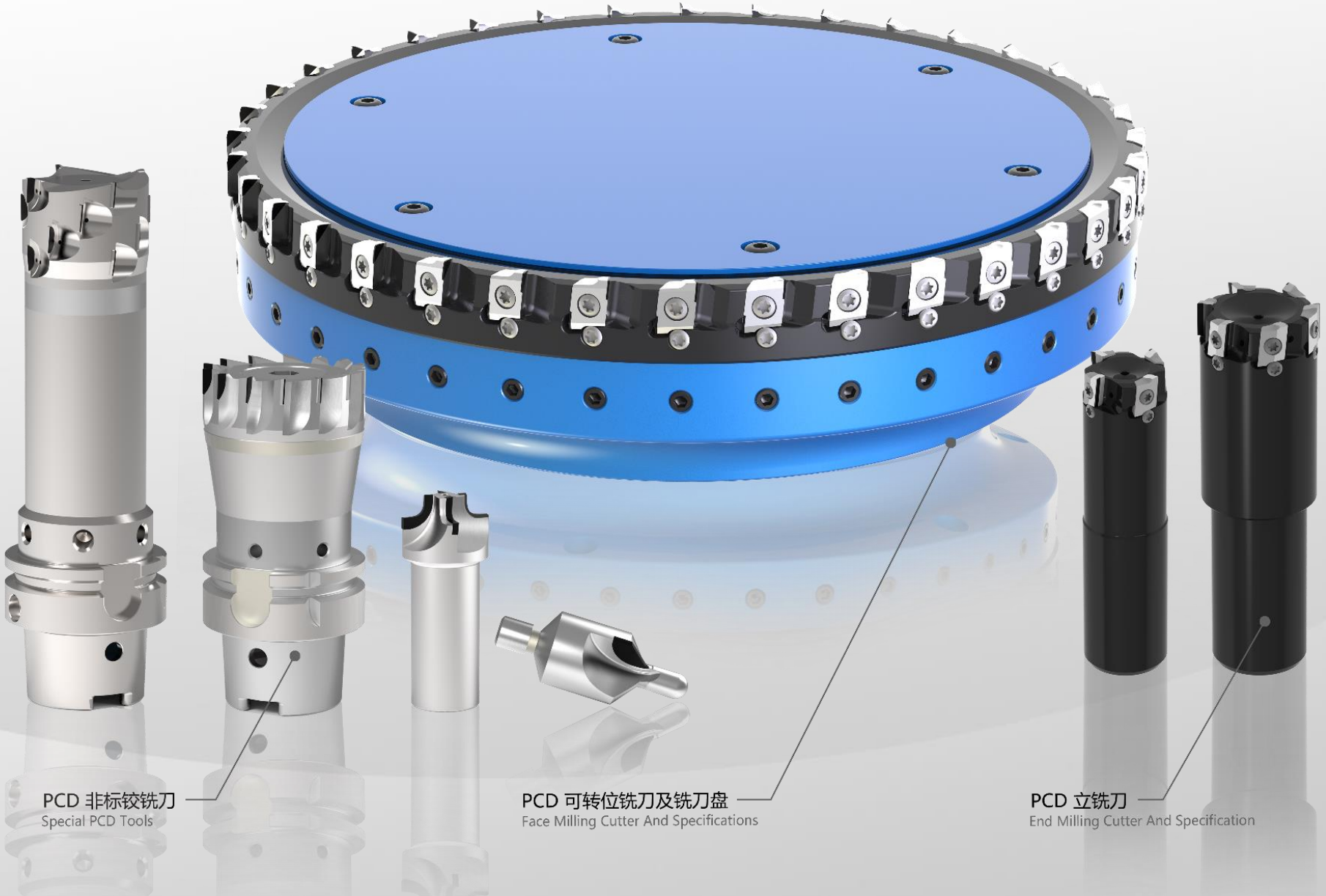


PCD/PCBN Inserts

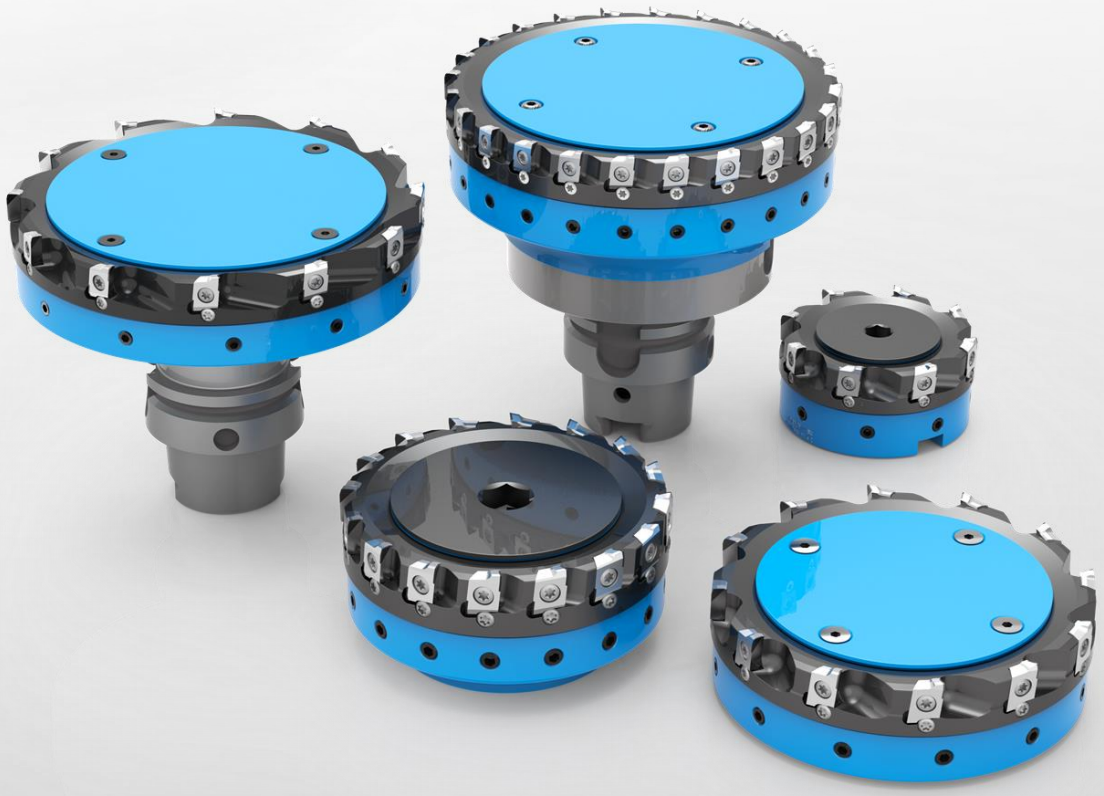


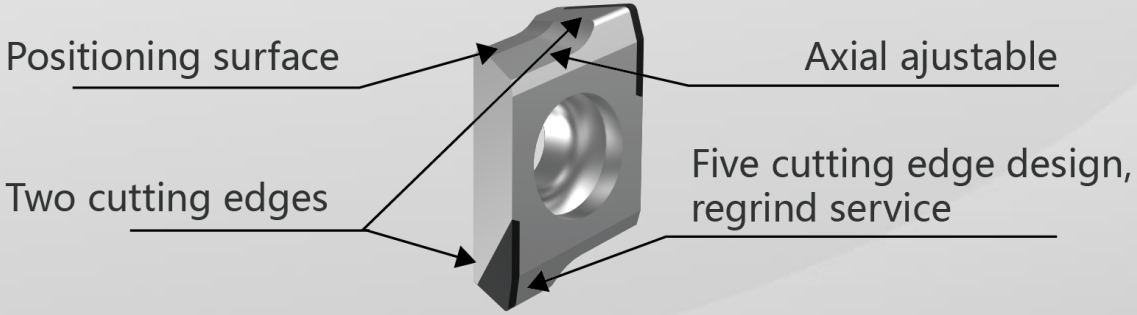
PCD Milling & Reamer tools

WORLDIA



PCD Milling Tools

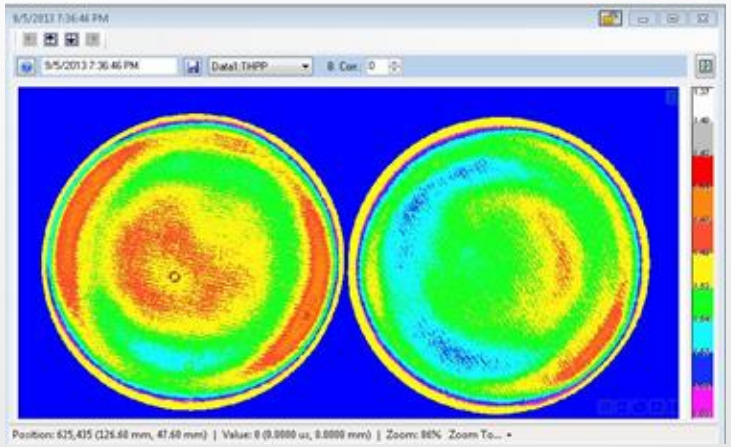


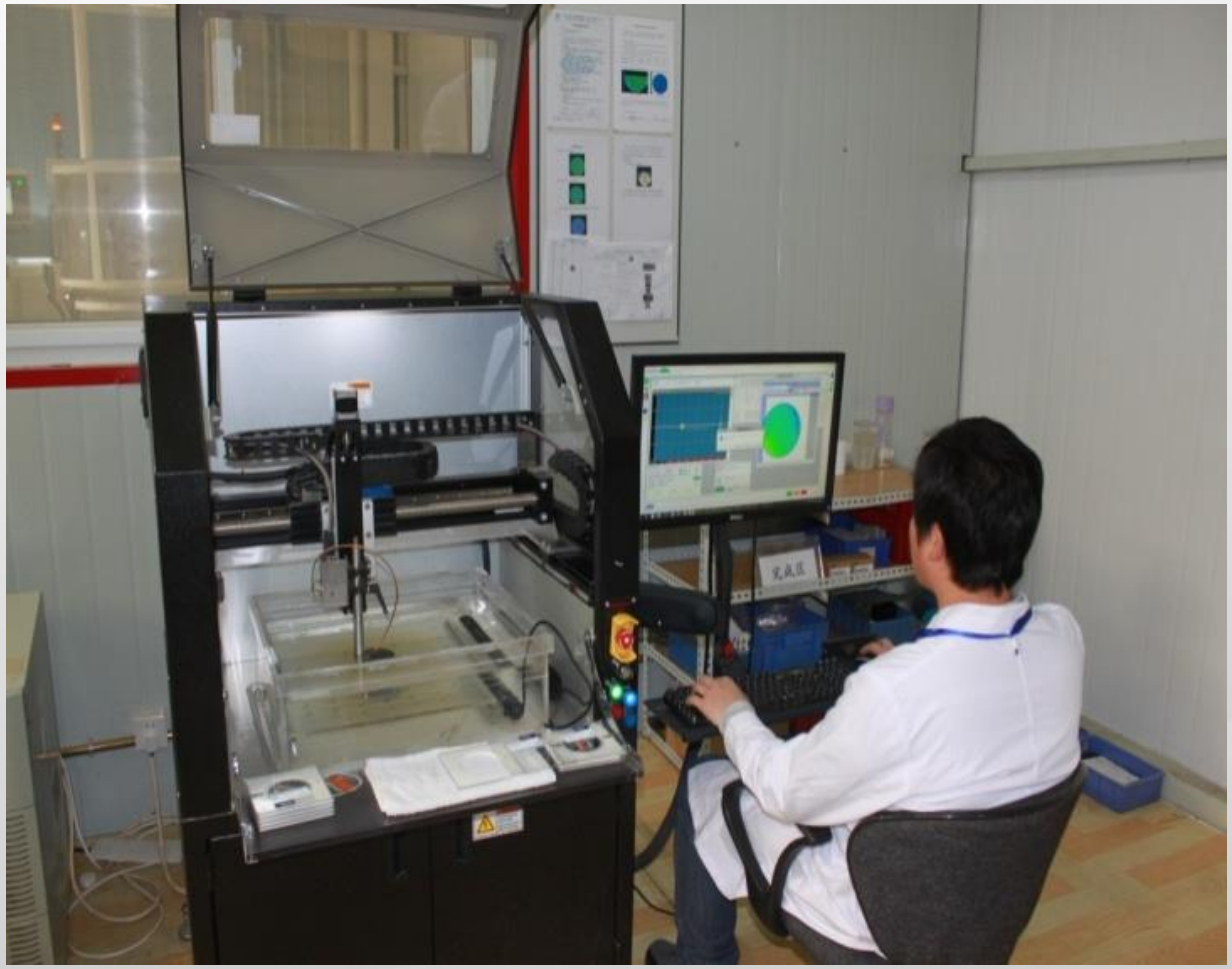


Non-standard PCD tools

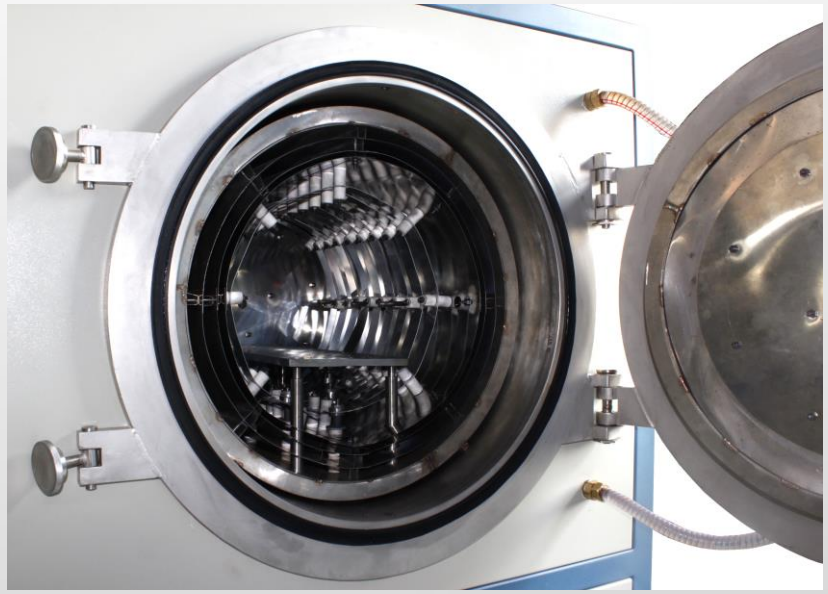
Quality Control & Innovation

Raw material inspection





Vacuum Brazing Machine



Automated production

Automated production

Quality Assurance

WORLDIA®

Continuous Innovation

WORLDIA®

Over 110 Patents

New Made in China

Invest in Future