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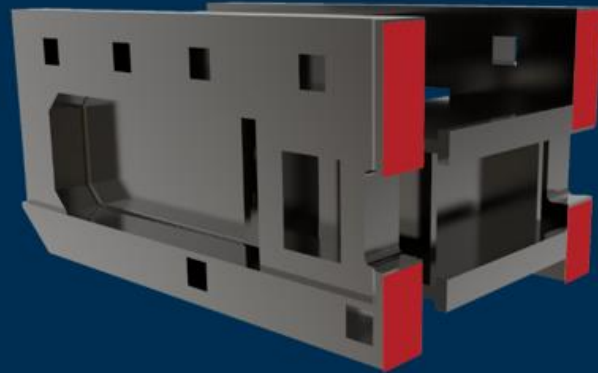
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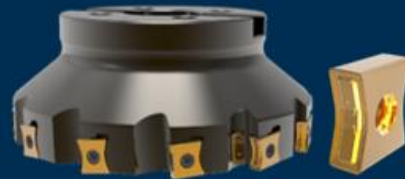
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**OP11-**  
Rough machining milling



LNMT+MVA190 series



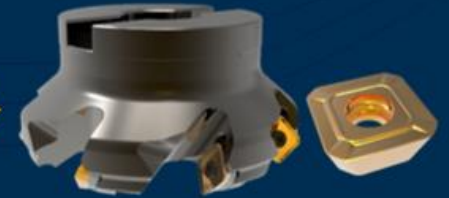
**OP12-**  
Semi-finish machining



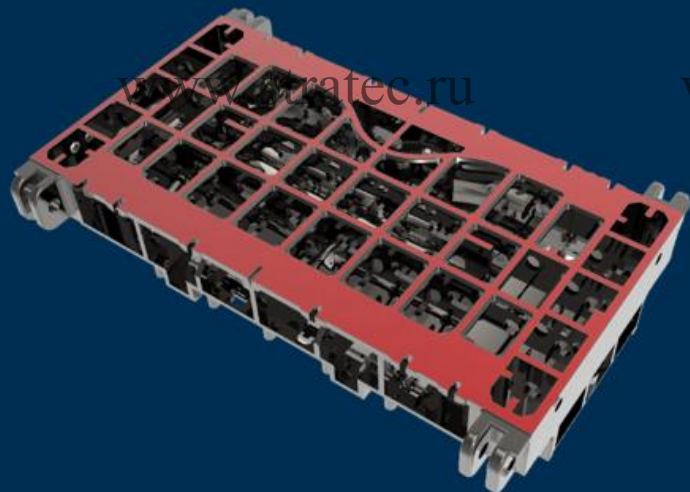
SNEU+MFB245 series



**OP13-**  
Finish machining



SEET+MFA145 series



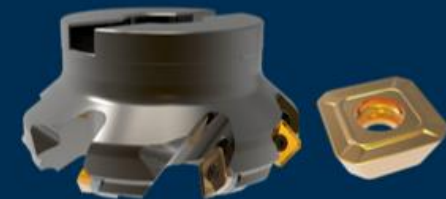
**OP11-**  
Rough machining milling



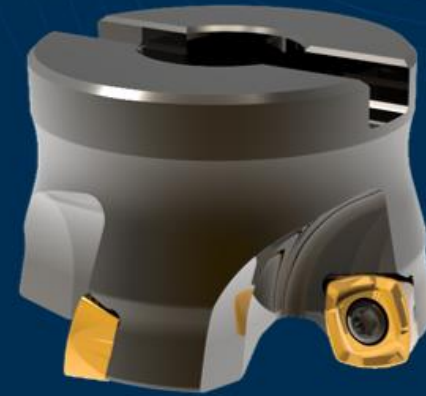
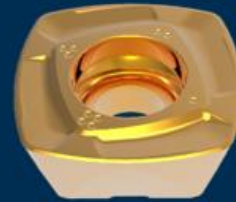
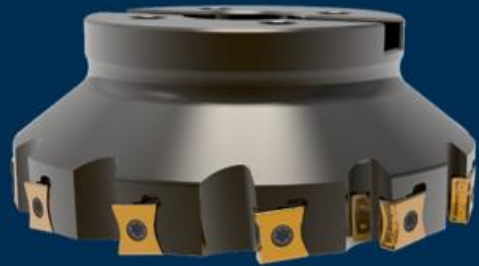
SDMT+MKB113 series



**OP12-**  
Finish machining



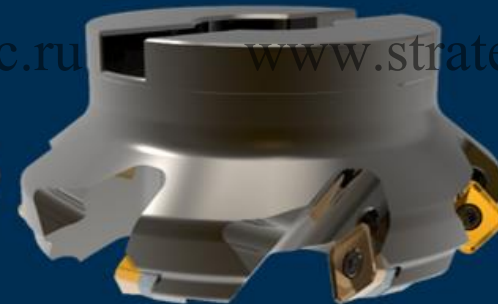
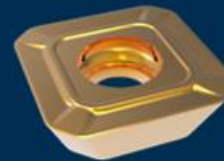
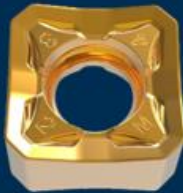
SEET+MFA145 series



4 types of  
tool bodies

+

4 types of  
inserts





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# Hexa series

Multifunctional and Economical Face-milling Tools

www.stratec.ru HNGU+MFC115&145&160 www.stratec.ru

Presenter: Yuan Wenhao

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# CONTENT

- 1. Two highlights
- 2. Application of the two highlights

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HNGU+MFC115&145&160

# PART 1.

## Two highlights

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1 Versatility

2 Various options



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Hexa series



Two highlights



1 Versatility

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PART 1



Fast-feed face milling



General face milling



Heavy cutting face milling





Hexa series



Two highlights



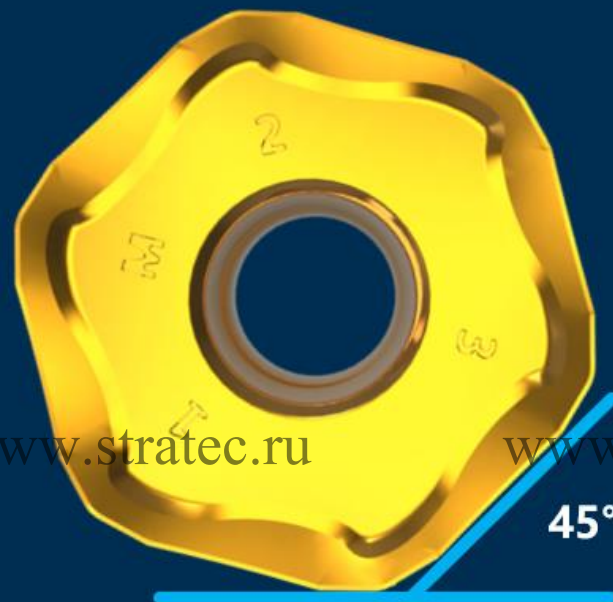
1 Versatility

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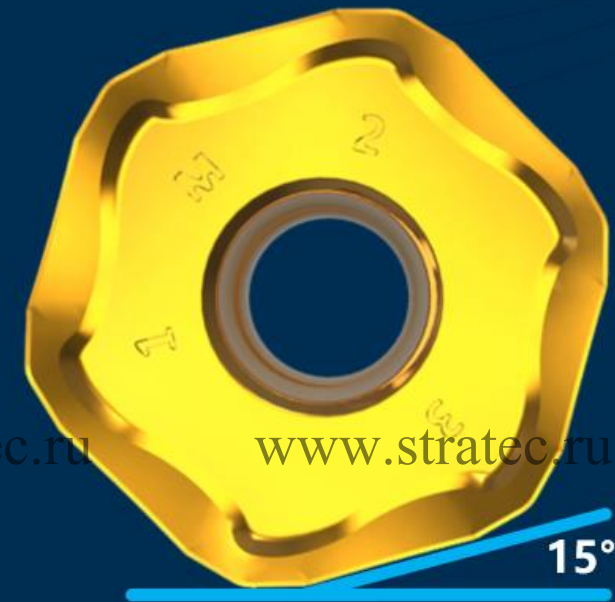
PART 1



MFC160



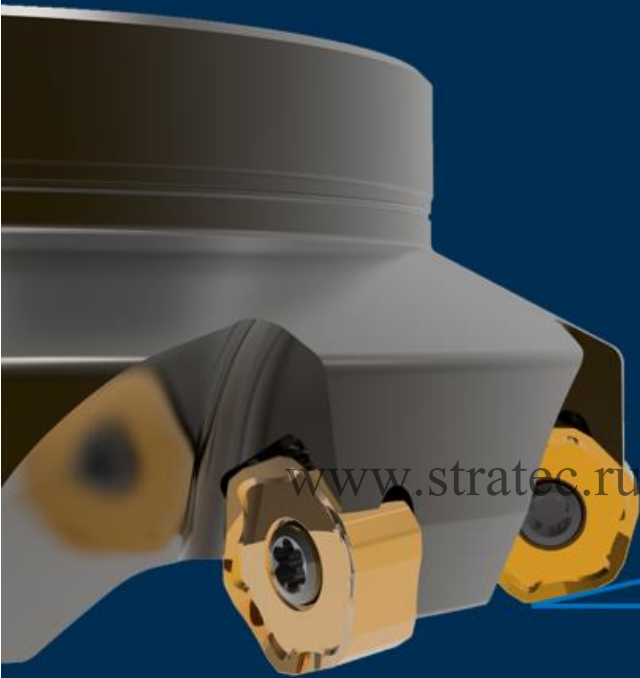
MFC145



MFC115



## High-feed MFC115



15°

HN06: APMX =1.6mm

HN09: APMX =2.2mm

Low-feed directional force

Small depth of cut

Thin chips

High feed per tooth



Suitable for machining with long overhangs

### High metal removal rate

Small entering angle

High-Feed

High machining efficiency

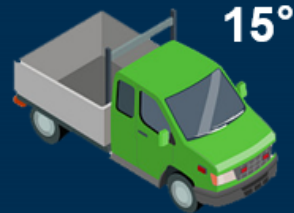
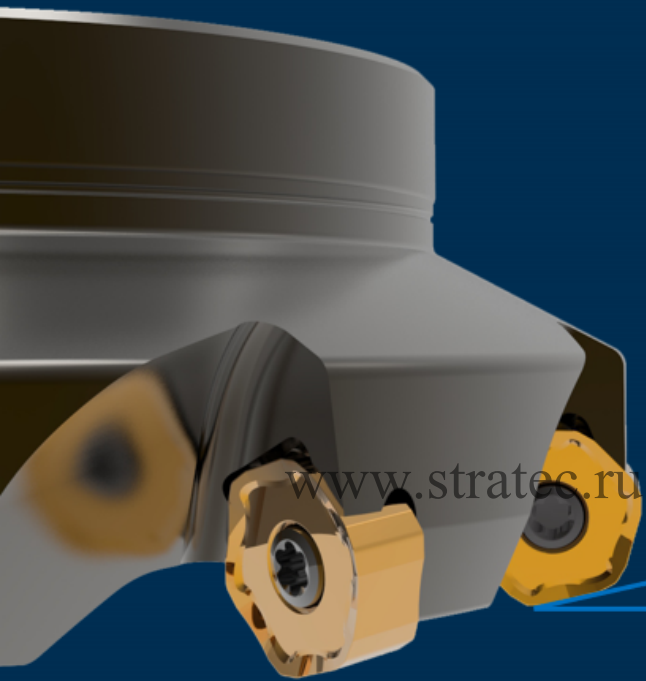
Low tool vibration



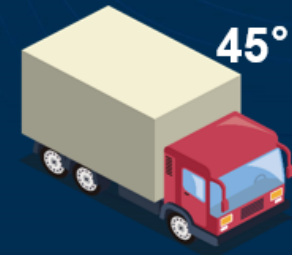
High-feed MFC115

Q = ae \* ap \* Vf / 1000

Diameter: ø80
Number of teeth: 8
Vc = 160m/min



15°



45°



ae = 56.0mm



ae = 56.0mm



ap = 1.5mm



ap = 4.0mm



Vf = 4074mm/min



Vf = 1019mm/min

HN06: APMX = 1.6mm

HN09: APMX = 2.2mm

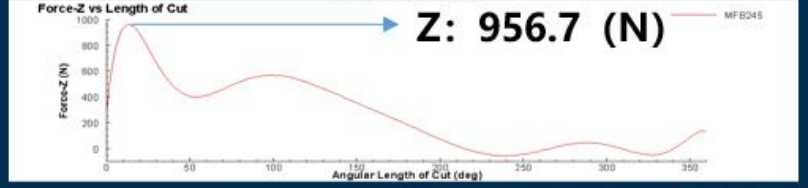
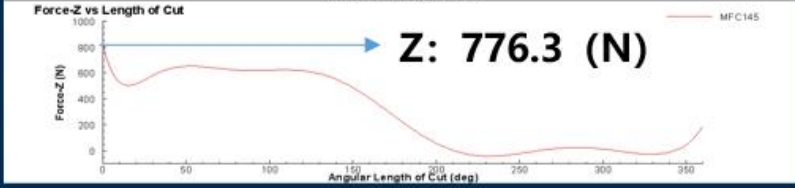
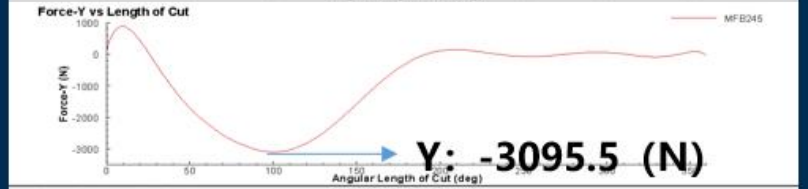
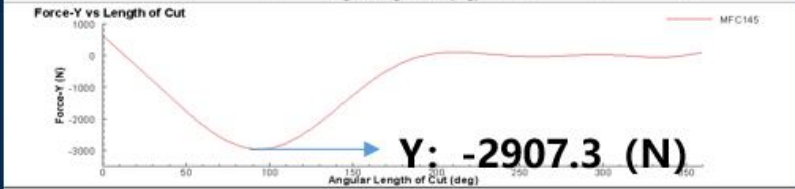
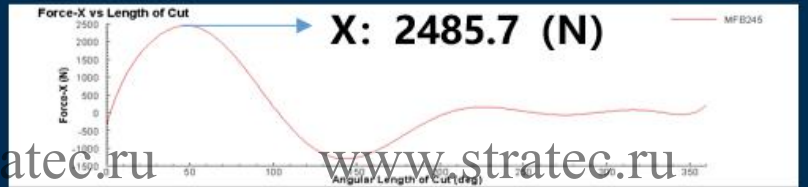
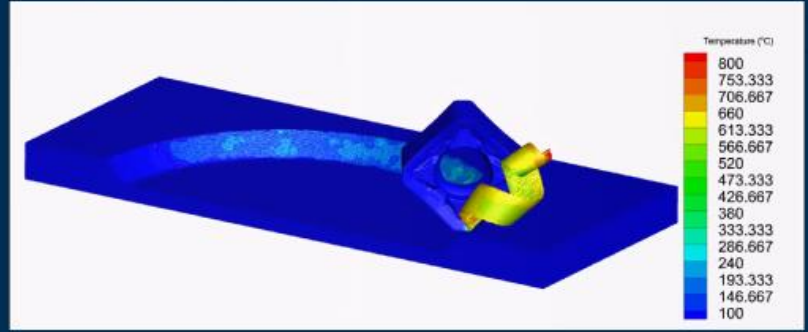
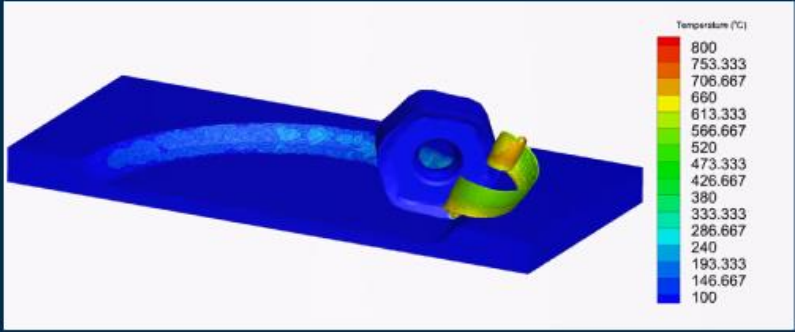
+50%

Q = 342.25cm³/min

Q = 228.16cm³/min

**General application MFC145**

**Diameter:**  $\varnothing 63$   
**Materials:** P20  
**Cutting Parameters:**  $V_c = 230 \text{ m/min}$   $f_z = 0.2 \text{ mm/z}$   $a_p = 3 \text{ mm}$



HN06: APMX=3.2mm  
 HN09: APMX=4.5mm  
 HN13: APMX=8.0mm



Hexa series

Two highlights

# 1 Versatility

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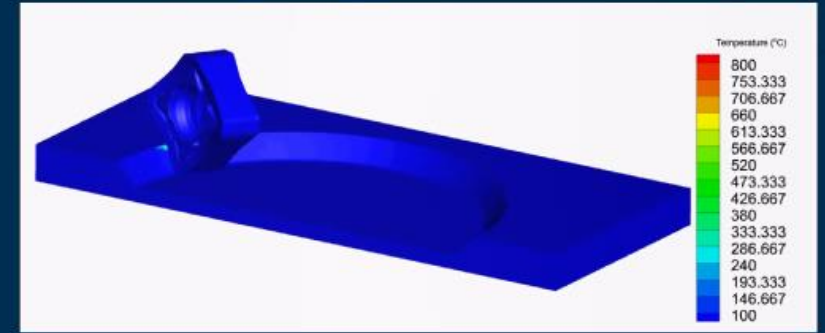
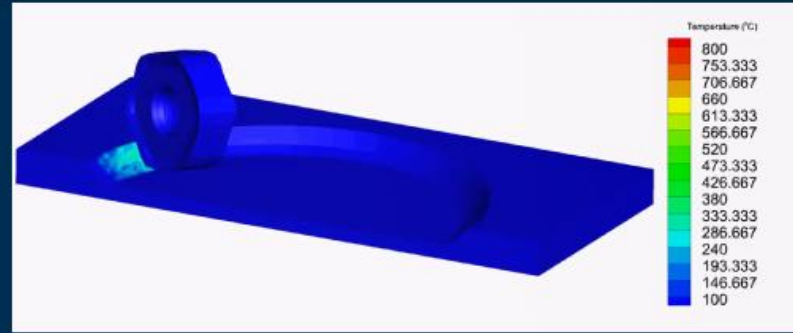
PART 1

General application MFC145

Diameter:  $\varnothing 63$

Materials: P20

Cutting Parameters:  $V_c = 230$  m/min  $f_z = 0.2$  mm/z  $a_p = 3$  mm



Cutting Force 10%



HN06: APMX=3.2mm

HN09: APMX=4.5mm

HN13: APMX=8.0mm



Hexa series



Two highlights



# 1 Versatility

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PART 1

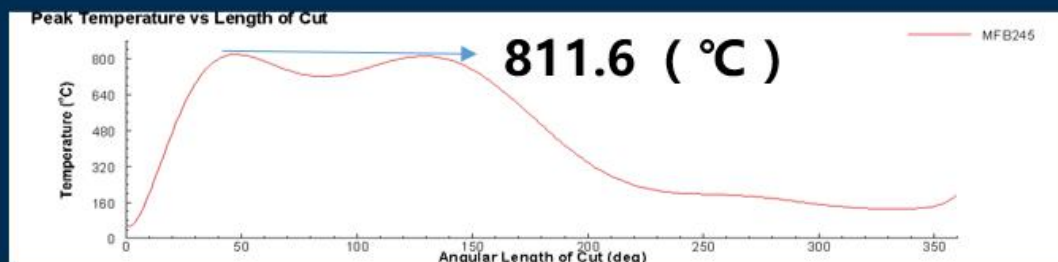
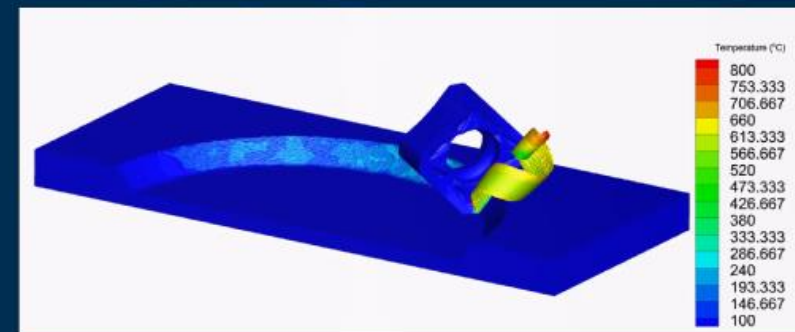
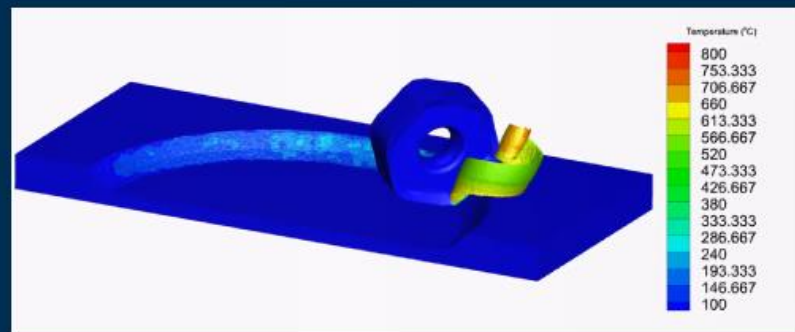


General application MFC145

Diameter:  $\varnothing 63$

Materials: P20

Cutting Parameters:  $V_c = 230$  m/min  $f_z = 0.2$  mm/z  $a_p = 3$  mm



HN06: APMX=3.2mm

HN09: APMX=4.5mm

HN13: APMX=8.0mm



Hexa series



Two highlights



# 1 Versatility

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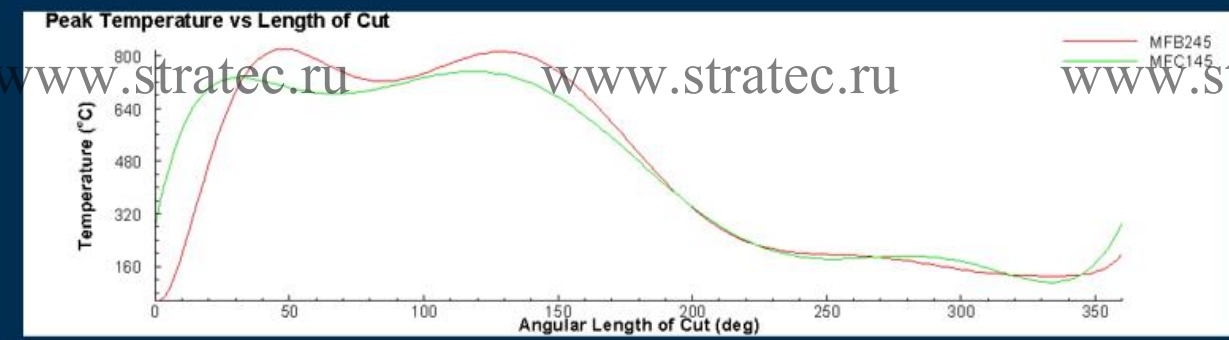
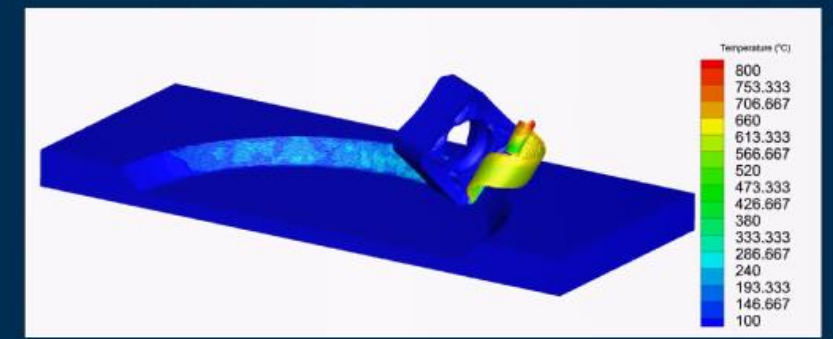
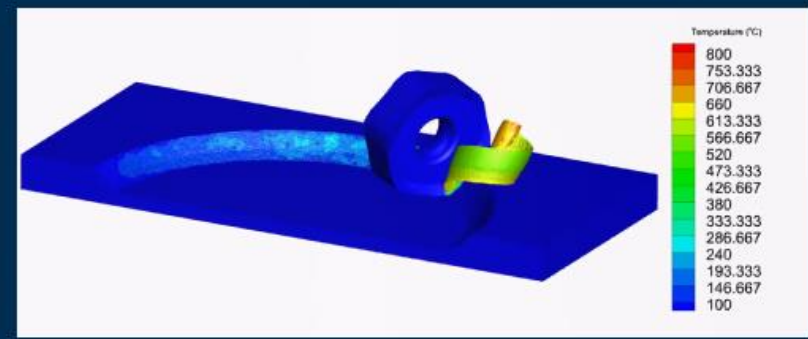
PART 1

General application MFC145

Diameter:  $\varnothing 63$

Materials: P20

Cutting Parameters:  $V_c = 230 \text{ m/min}$   $f_z = 0.2 \text{ mm/z}$   $a_p = 3 \text{ mm}$



Cutting

Temperature 9%



HN06: APMX=3.2mm

HN09: APMX=4.5mm

HN13: APMX=8.0mm



Hexa series



Two highlights



1 Versatility

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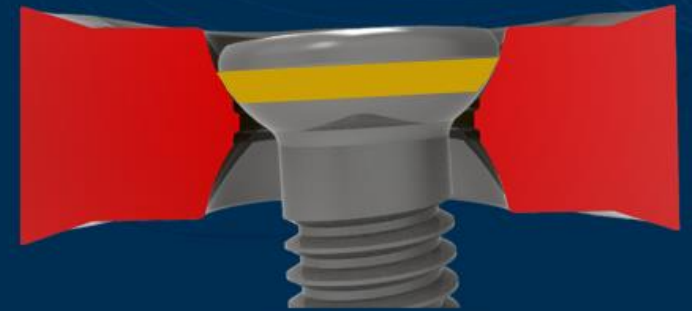
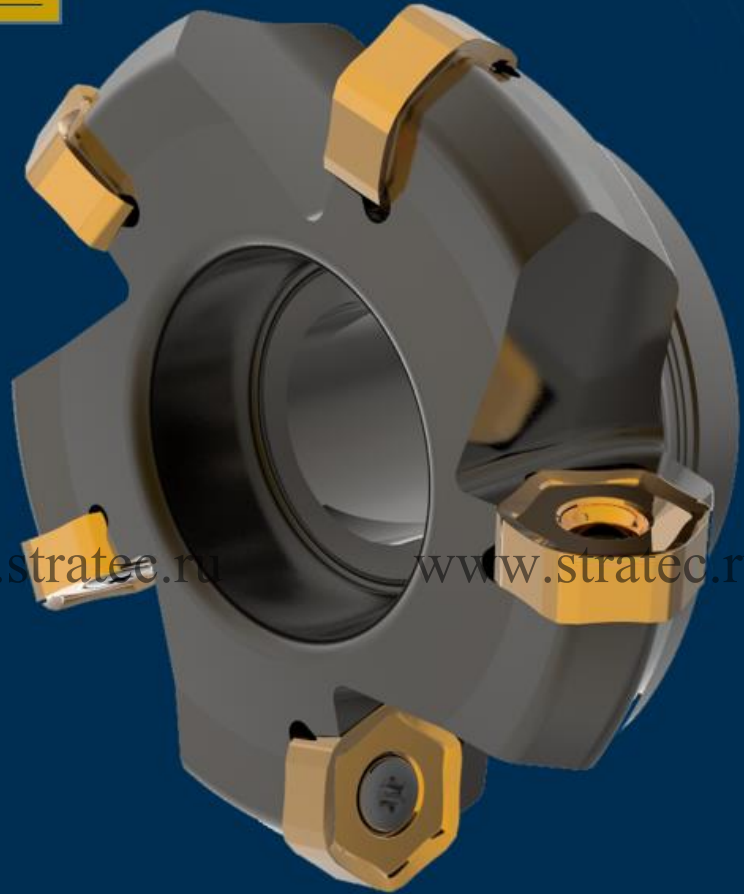
PART 1

Heavy cutting MFC160



60°

HN06: APMX=4.3mm  
HN09: APMX=7.4mm



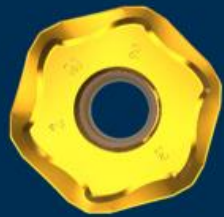
HNGU+MFC



Previous products

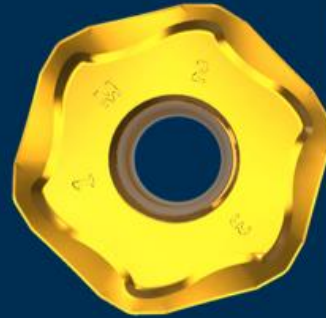


## Various specifications

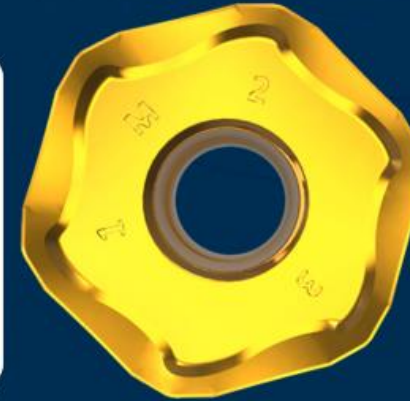


mini

HNGU06



HNGU09

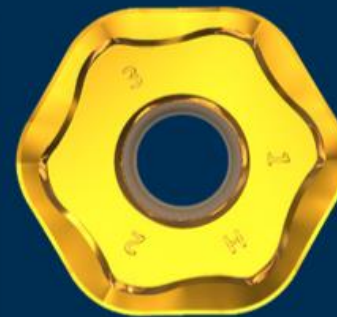


plus

HNGU13



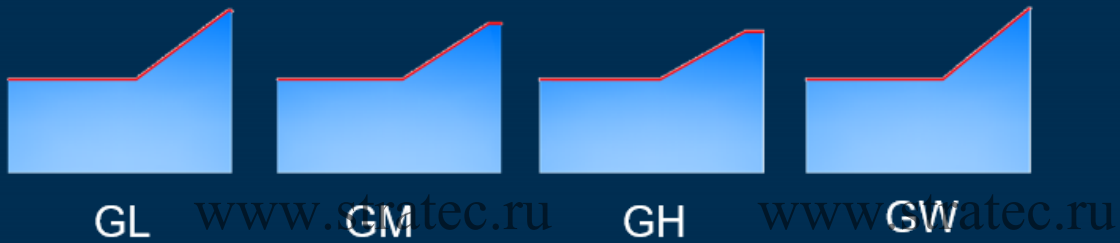
Wiper



Radius



»» Various geometries and grades



<b>P</b>	GPM7120	GA4325	GA4330
<b>M</b>	GM2140	GM4135	
<b>K</b>	GK2115	GK4125	
<b>S</b>	GS4130		



HNGU+MFC115&145&160

# PART 2.

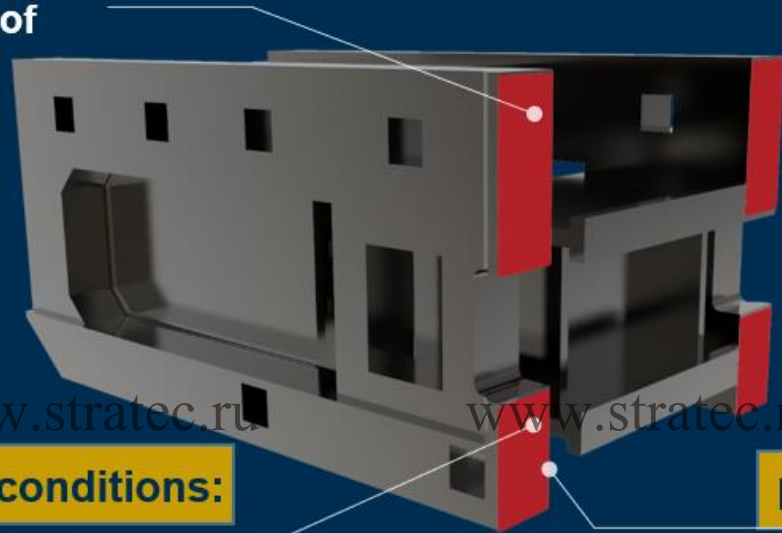
## Application of the two highlights

- 1 Machine tool industry > face milling solution
- 2 Mould industry > face milling solution
- 3 Automobile industry > face milling solution



**Location machined:**

mounting surface of structural parts of machine tool

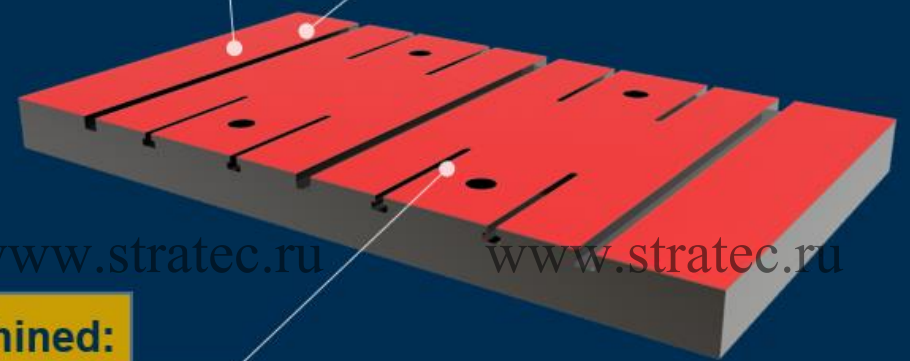


**Machining conditions:**

Cast structural parts  
(Roughing - finishing)

**Location machined:**

worktable surface



**Machining conditions:**

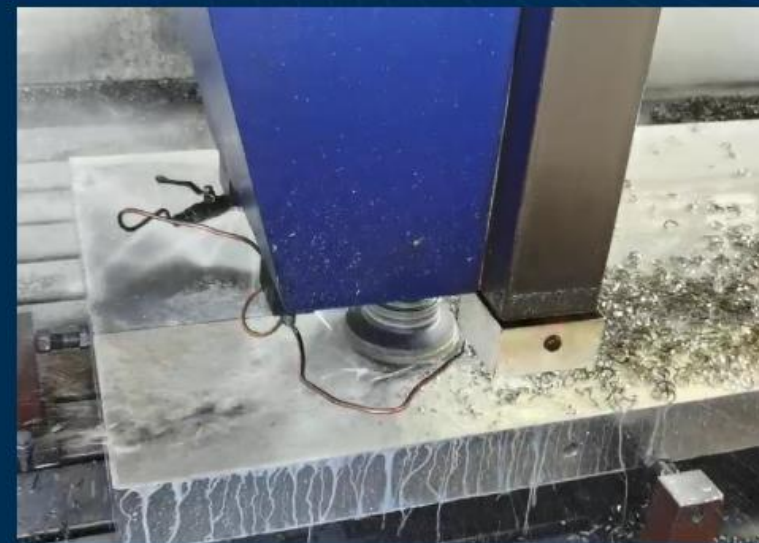
Cast structural parts  
(Roughing - grinding wheel finishing)

**Material machined:**

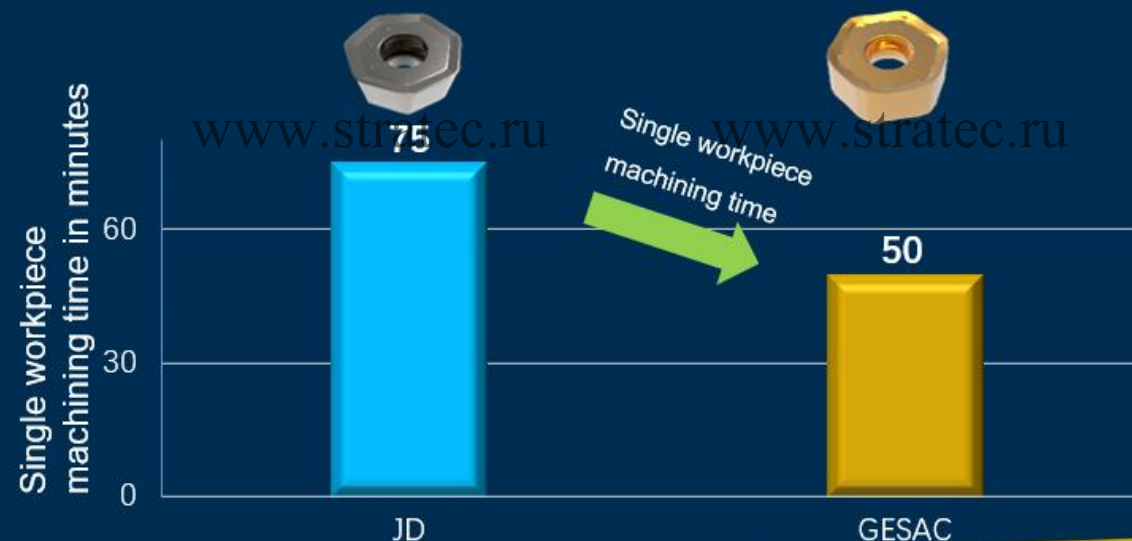
Cast steel (Q235)



Machine tool structure - worktable surface - rough machining

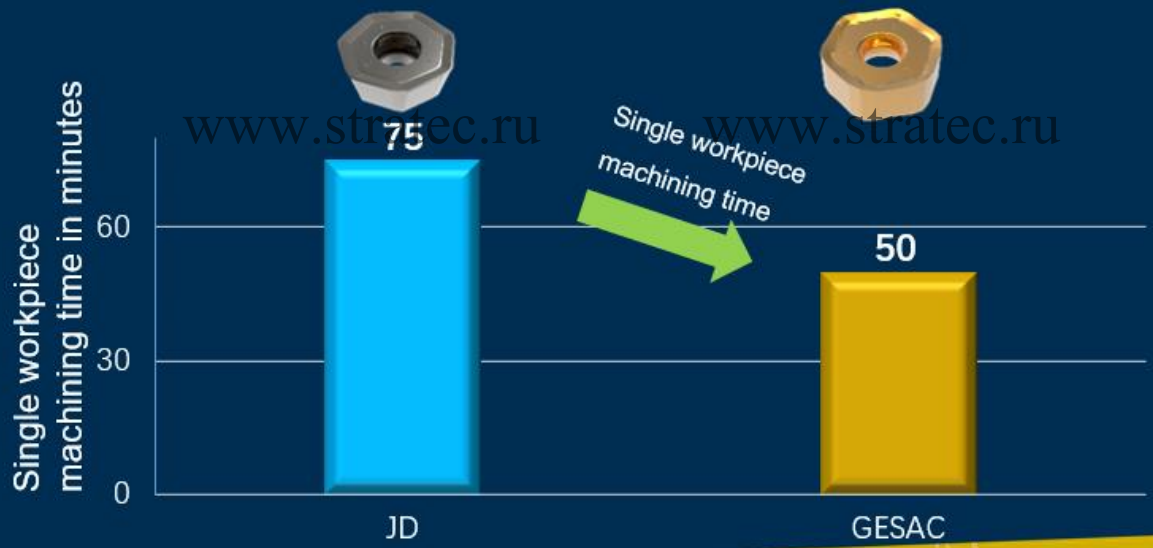


Tool specifications	HNGU1307ANEN-GH
Tool grade	GPM7120
Tool body specifications	MFC145-160R09C40-HN13
Workpiece material	Cast steel Q235
Cutting speed	Vc=180m/min
Feed	Original parameters: fz=0.2mm/z New parameters: fz=0.3mm/z
Cutting amount	ap=2-5mm ae=120mm
Cutting method	face milling
Cooling method	Water-based emulsion/external cooling



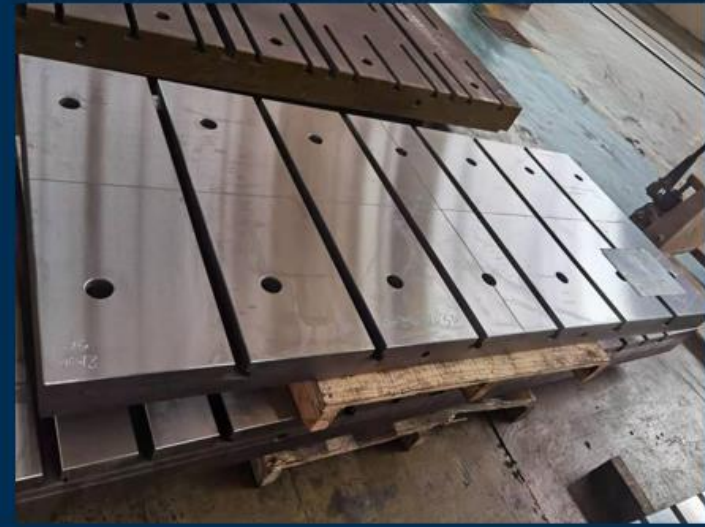
## Machine tool structure - worktable surface - rough machining

Tool specifications	HNGU1307ANEN-GH
Tool grade	GPM7120
Tool body specifications	MFC145-160R09C40-HN13
Workpiece material	Cast steel Q235
Cutting speed	Vc=180m/min
Feed	Original parameters: <b>fz=0.2mm/z</b> New parameters: <b>fz=0.3mm/z</b>
Cutting amount	ap=2-5mm ae=120mm
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## >> Machine tool structure - worktable surface - rough machining

Tool specifications	HNGU1307ANEN-GH
Tool grade	GPM7120
Tool body specifications	MFC145-160R09C40-HN13
Workpiece material	Cast steel Q235
Cutting speed	Vc=180m/min
Feed	Original parameters: <b>fz=0.2mm/z</b> New parameters: <b>fz=0.3mm/z</b>
Cutting amount	ap=2-5mm ae=120mm
Cutting method	face milling
Cooling method	Water-based emulsion/external cooling



**Machine tool structure - mounting surface of structural parts of machine tool - rough machining**

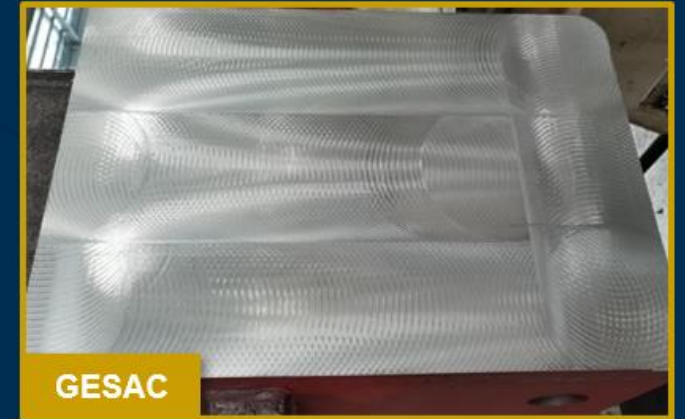
Tool specifications	HNGU0905ANEN-GH
Tool grade	GA4330
Tool body specifications	MFC160-160R14C40-HN09
Workpiece material	Cast steel Q235
Cutting speed	$V_c=175\text{m/min}$
Feed	$f_z=0.24\text{mm/z}$
Cutting amount	$a_p=4\text{mm}$ $a_e=110\text{mm}$
Cutting method	face milling
Cooling method	Dry cutting





## Machine tool structure - mounting surface of structural parts of machine tool - rough machining

Tool specifications	HNGU0905ANEN-GH
Tool grade	GA4330
Tool body specifications	MFC160-160R14C40-HN09
Workpiece material	Cast steel Q235
Cutting speed	$V_c=175\text{m/min}$
Feed	$f_z=0.24\text{mm/z}$
Cutting amount	$a_p=4\text{mm}$ $a_e=110\text{mm}$
Cutting method	face milling
Cooling method	Dry cutting



**>>> Machine tool structure - mounting surface of structural parts of machine tool - finish machining**

Tool specifications	HNGU0905ANEN-GM
Tool grade	GA4330
Tool body specifications	MFC145-160R12C40-HN09
Workpiece material	Cast steel Q235
Cutting speed	$V_c=200\text{m/min}$
Feed	$f_z=0.17\text{mm/z}$
Cutting amount	$a_p=0.5\text{mm}$ $a_e=110\text{mm}$
Cutting method	face milling
Cooling method	Dry cutting



AK



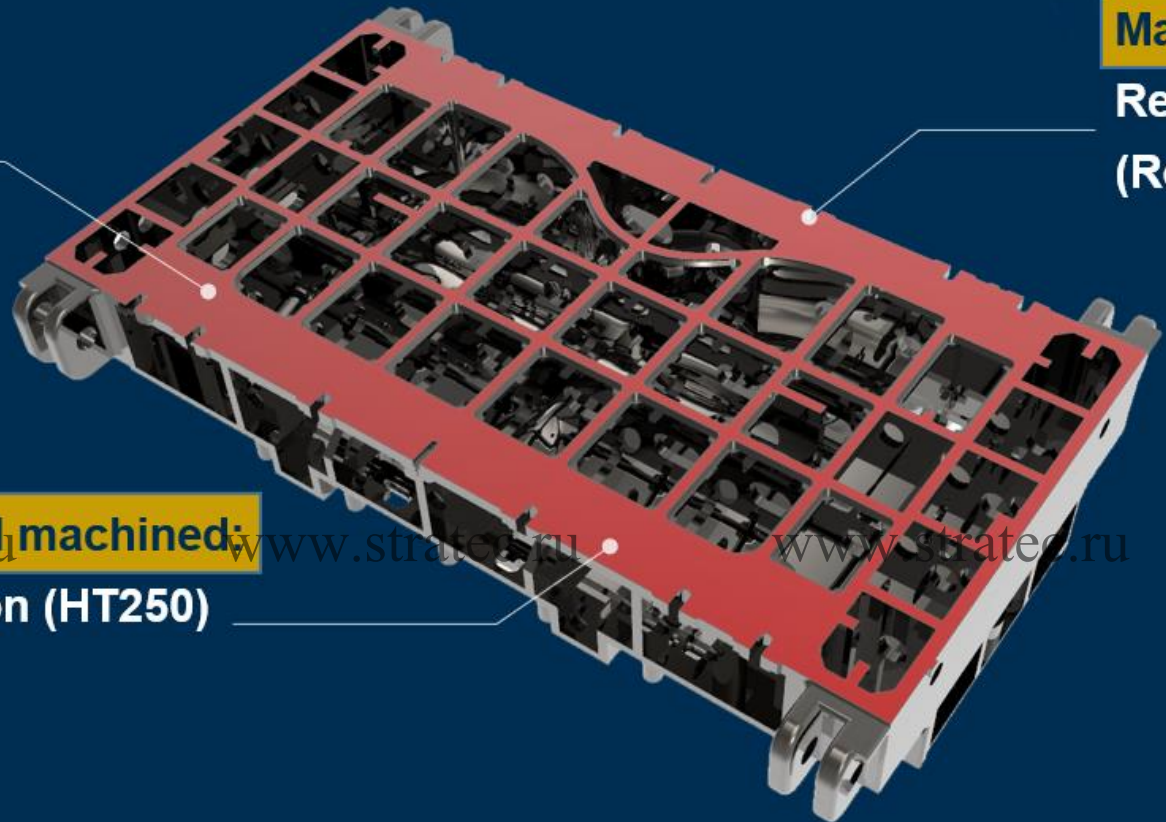
GESAC



**Location machined:**  
Mould plane

**Machining conditions:**  
Reinforcing bar large face milling  
(Roughing - finishing)

**Material machined:**  
Cast iron (HT250)



**Stamping mould - base plate - rough machining**



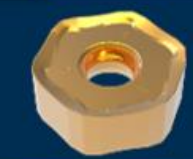
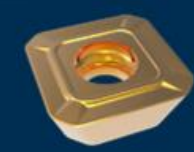
Tool specifications	HNGU0905ANEN-GM
Tool grade	GK4125
Tool body specifications	MFC115-063R05A22-HN09
Workpiece material	HT250
Cutting speed	$V_c=160\text{m/min}$
Feed	$f_z=1.48\text{mm/z}$
Cutting amount	Original parameters: $a_p=1.2\text{mm}$ $a_e=40\text{mm}$ New parameters: $a_p=1.5\text{mm}$ $a_e=40\text{mm}$
Cutting method	face milling
Cooling method	Dry cutting



**Stamping mould -  
base plate - finish machining**



Tool specifications	HNGU0905ANEN-GM
Tool grade	GK4125
Tool body specifications	MFC145-063R06A22-HN09
Workpiece material	HT250
Cutting speed	Vc=130m/min
Feed	fz=0.17mm/z
Cutting amount	ap=0.3mm ae=40mm
Cutting method	face milling
Cooling method	Dry cutting



**Location machined:**

Flange surface = exhaust  
pipe connection surface =  
air intake surface

**Material machined:**

Heat-resistant stainless  
steel (1.4826, 1.4837, 1.4848,  
1.4849, etc.)



**Machining conditions:**

Shaped clamping surface,  
weak clamping rigidity  
(Roughing - finishing)

**>>> Turbine housing – flange surface  
- rough machining**

Tool specifications	HNGU0604ANEN-GM
Tool grade	GM2140
Tool body specifications	MFC145-080R05A27-HN06
Workpiece material	1.4837
Cutting speed	Vc=130m/min
Feed	fz=0.15mm/z
Cutting amount	ap=2.5mm ae=56mm
Cutting method	face milling
Cooling method	Dry cutting





# Hexa series > Application of the two highlights > 3 Automobile industry

PART 2



**Turbine housing - flange surface  
- finish machining**



Tool specifications	HNGU0604ANEN-GL
Tool grade	GM2140
Tool body specifications	MFC145-100R09A32-HN06
Workpiece material	1.4837
Cutting speed	Vc=172m/min
Feed	fz=0.12mm/z
Cutting amount	ap=0.3mm
Cutting method	face milling
Cooling method	Water-based emulsion/external cooling

Number of machined workpieces/pc





**Turbine housing - flange surface - finish machining**

Tool specifications	HNGU0604ANEN-GL
Tool grade	GM2140
Tool body specifications	MFC145-100R09A32-HN06
Workpiece material	1.4837
Cutting speed	Vc=172m/min
Feed	fz=0.12mm/z
Cutting amount	ap=0.3mm
Cutting method	face milling
Cooling method	Water-based emulsion/external cooling



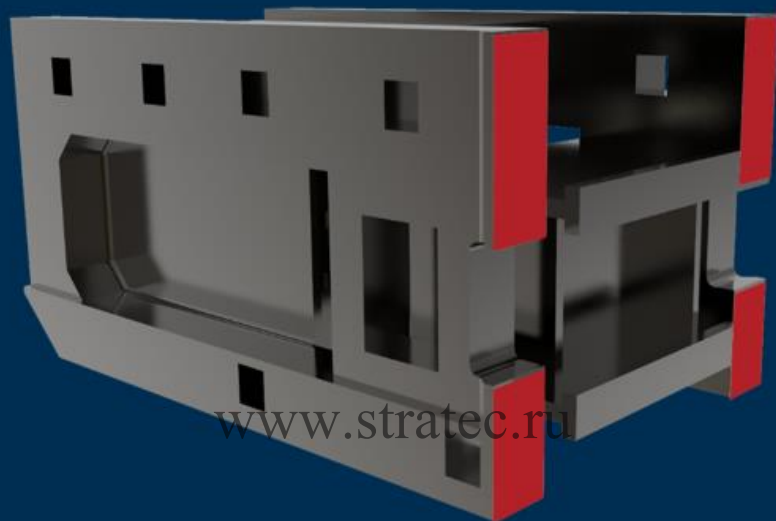
**Better surface quality**



**Comparable**

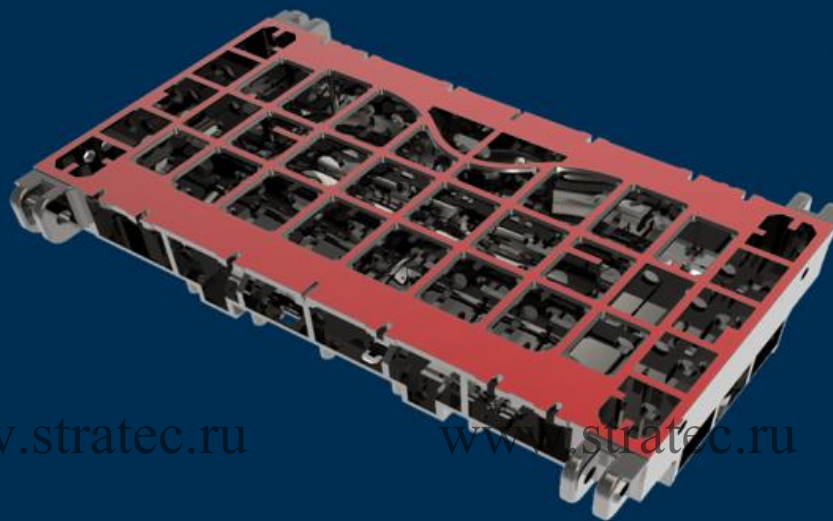


# Hexa series > Application of the two highlights > 3 Three industries



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**Machine tool industry**



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**Mould industry**



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**Automobile industry**

## 01

### Versatile tool body structure

- MFC115 High-feed
- MFC145 General-purpose
- MFC160 Heavy cutting

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## 02

### Various specifications

- HNGU06 09 13
- Matched with wiper insert
- Wide range of R-angle: R1.0-R4.3

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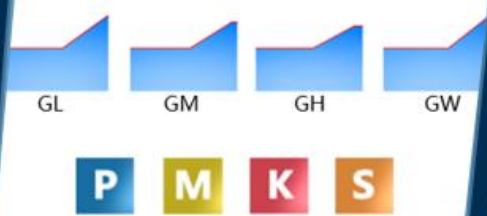


## 03

### Various geometries and grades

- Various geometries available: GL GM GH GW
- Matched with a full range of milling tool grades

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## 04

### Broad industry applications

- Broad industry applications
- Committed to providing face milling solutions for every industry.

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