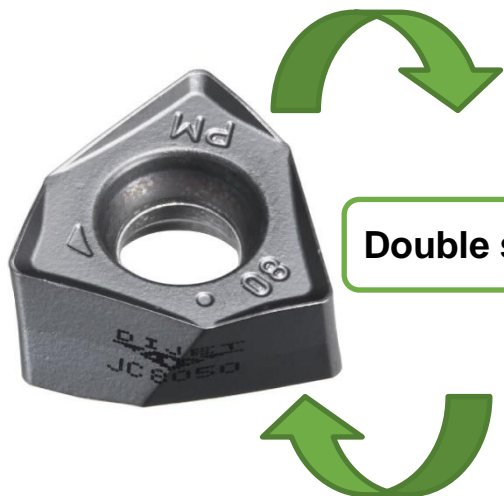


# **Shoulder6 ~EXSIX Type~**

**Double side 6 corners use shoulder cutter**



# The feature of “EXSIX”



Double side usable

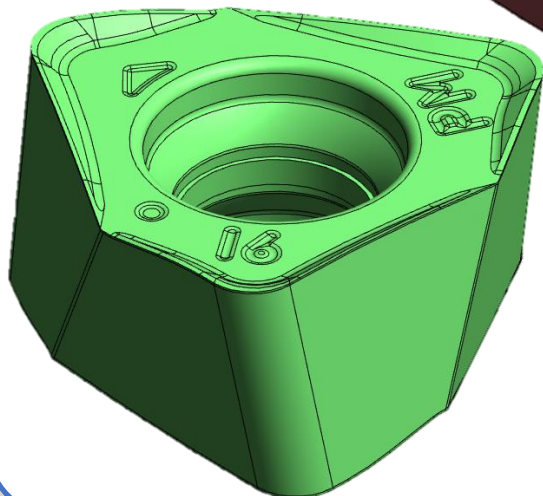
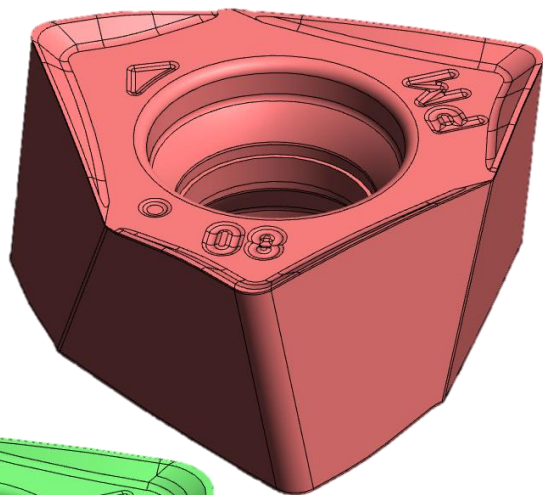
- Double side **6 corners usable**
- **Max. ap 10mm**
- High rigid inserts with **thickness 7.5mm**
- Corner radius **R0.8&R1.6 are lined up.**
- Low cutting force geometry by adopting **3D chip breaker.**

- Tool dia.  **$\phi 50 \sim \phi 160$**
- Locus of peripheral cutting edge on an arc  
⇒ **High efficiency & High precision**  
**Shoulder milling is possible**
- By adopting unique 3D insert,  
Axial rake of holder is positive.  
⇒ **Achieved low cutting force**



# “EXSIX” Insert

Line up of insert  
YCMU0907**08**ZER-PM  
YCMU0907**16**ZER-PM



Coated grades of insert

**JC8050:**

**Good fracture resistance**

**Normal steel**

**Mold steel**

**(Less than 35HRC)**

**JC8118:**

**Good wear resistance**

**Cast iron**

**Nodular cast iron**

**High hardened steel**

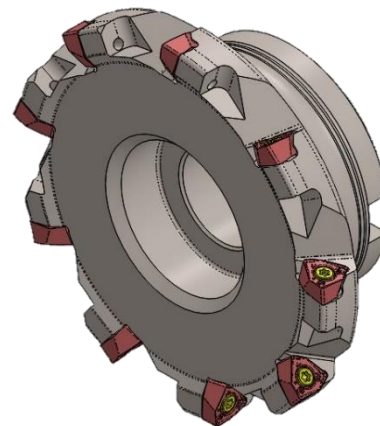
**(Less than 50HRC)**

# Dimensions of “EXSIX” Holder

## EXSIX-5053R-22



## EXSIX-9160R-40

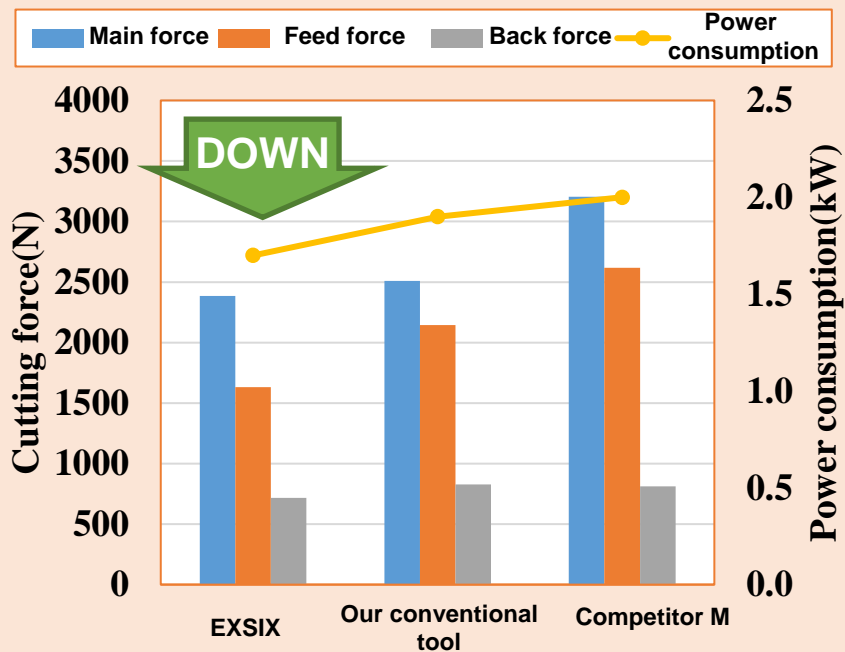


Tool dia.	Item code	No. of tooth	Hight	End face dia.	Bore dia.	Coolant hole
50	EXSIX-4050R-22	4	40	47	22	With
63	EXSIX-5063R-22	5	40	50	22	With
80	EXSIX-6080R-27	6	50	56	27	With
100	EXSIX-7100R-32	7	50	85	32	With
125	EXSIX-8125R-40	8	63	100	40	With
160	EXSIX-9160R-40	9	63	100	40	Without

## Cutting force

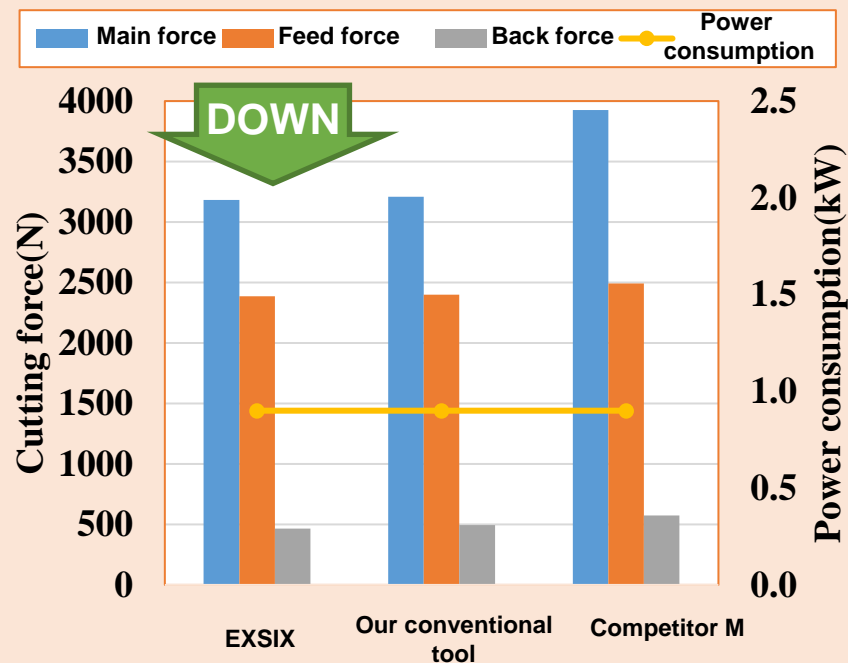
### Low depth of cut

Dc63(Z=1), Vc180, fz0.3, ap3, ae40,  
L140(L/Dc2.2), Down cut, C50



### High depth of cut

Dc63(Z=1), Vc180, fz0.3, ap8, ae3,  
L140(L/Dc2.2), Down cut, C50





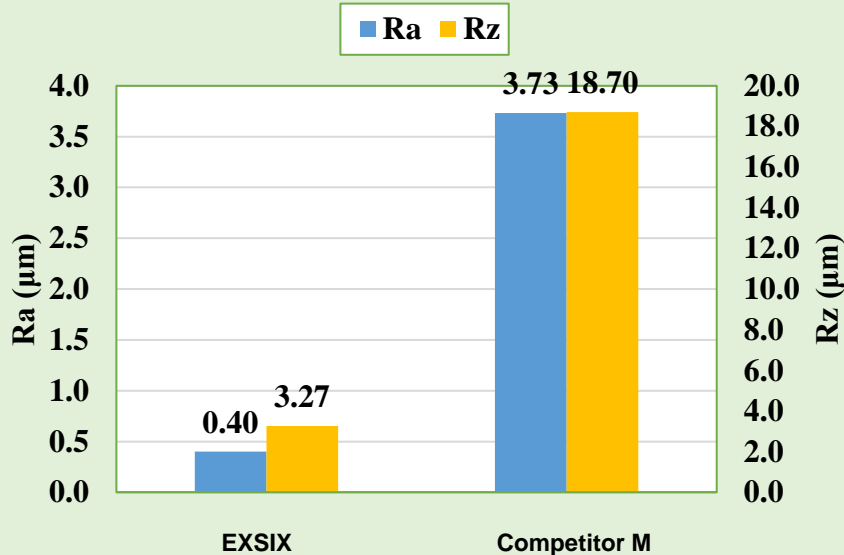
Surface roughness

Low depth of cut

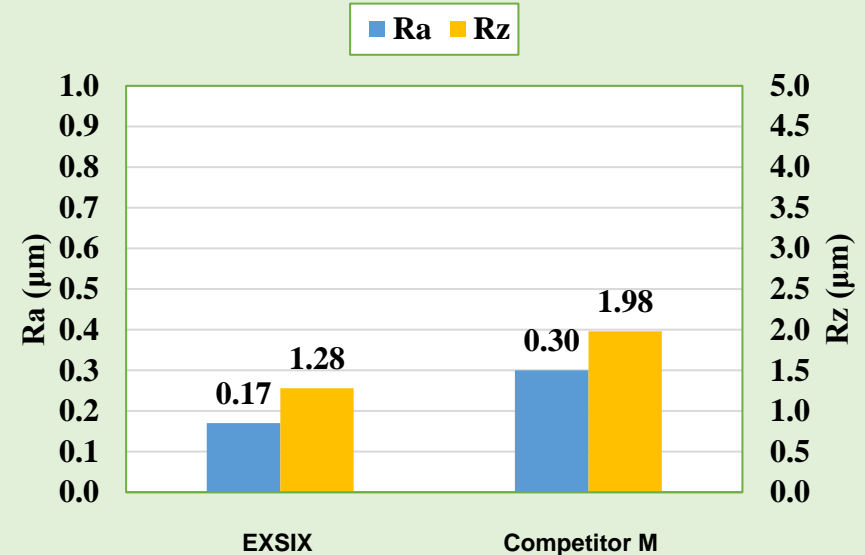
Side face

Bottom face

N910, Vc180, Vf273, f0.3, ap3, ae40, Down cut,  
WORK:C50, L/Dc2.2, Dc63



N910, Vc180, Vf273, f0.3, ap3, ae40, Down cut,  
WORK:C50, L/Dc2.2, Dc63



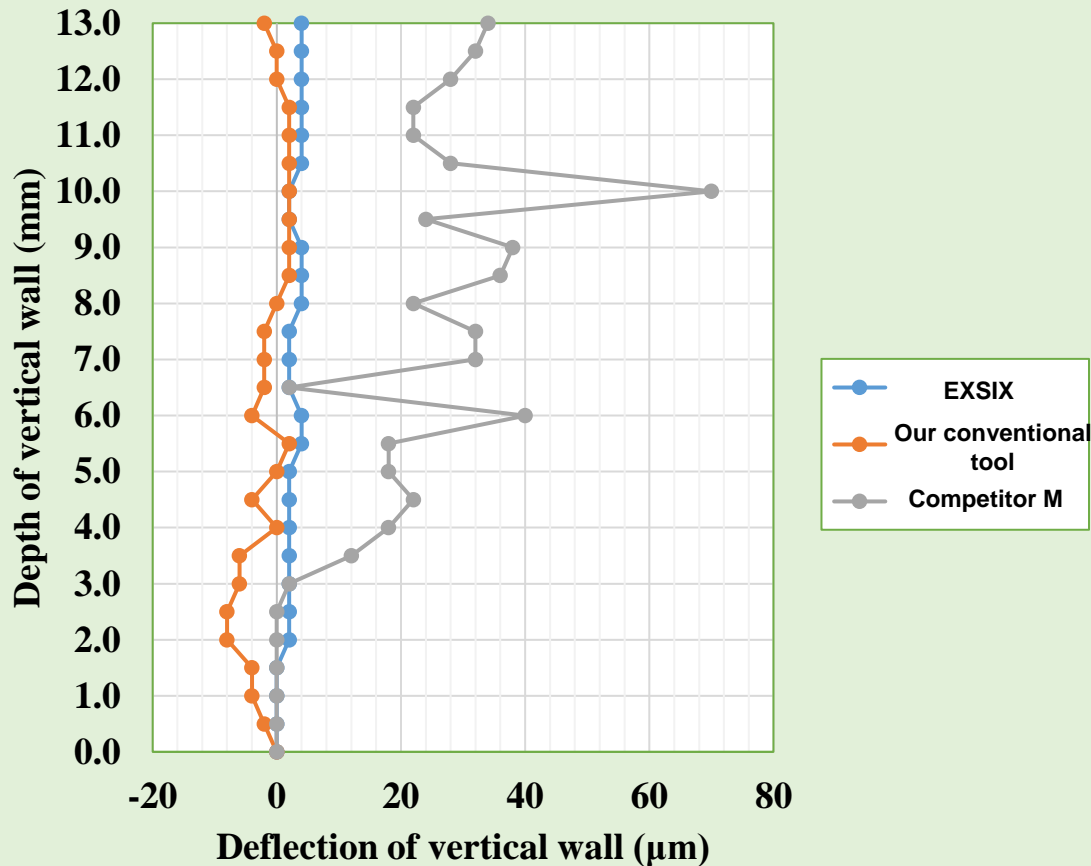
Due to positive axial rake,  
Chip evacuation is good.

High precision surface is available  
by adopting wiper edge.

## Deflection

## Low depth of cut

Dc63(Z1), N910, Vc180, Vf273, fz0.3, ap3, ae40,  
L/Dc2.2, Down cut, S50C



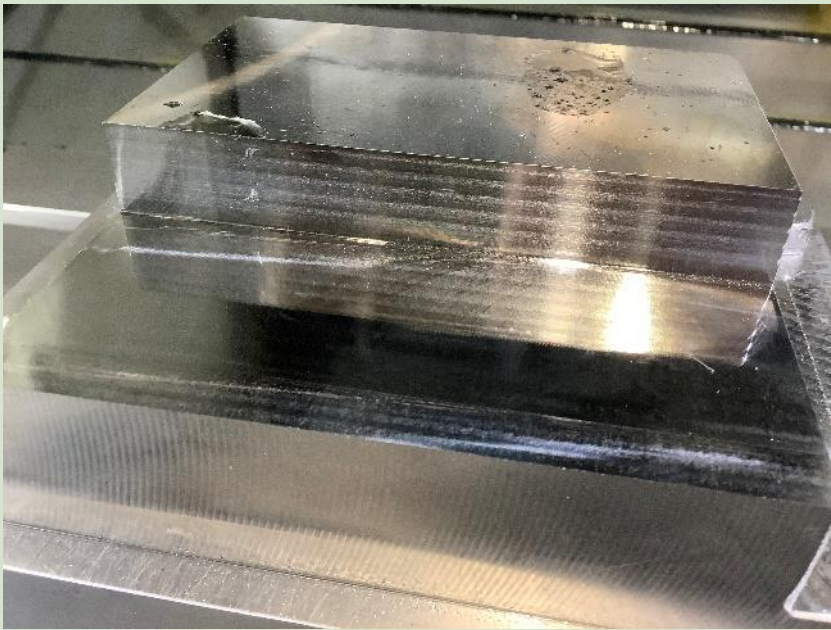
- Good chip evacuation by positive axial rake geometry.

- High precision surface by arc shape peripheral cutting edge.

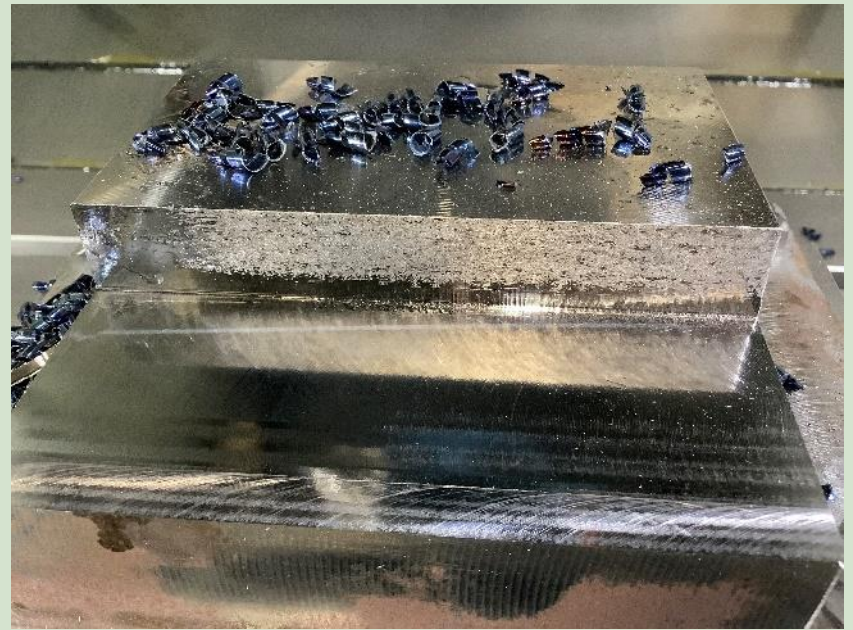
Appearance of machined surface

Low depth of cut

“EXSIX”



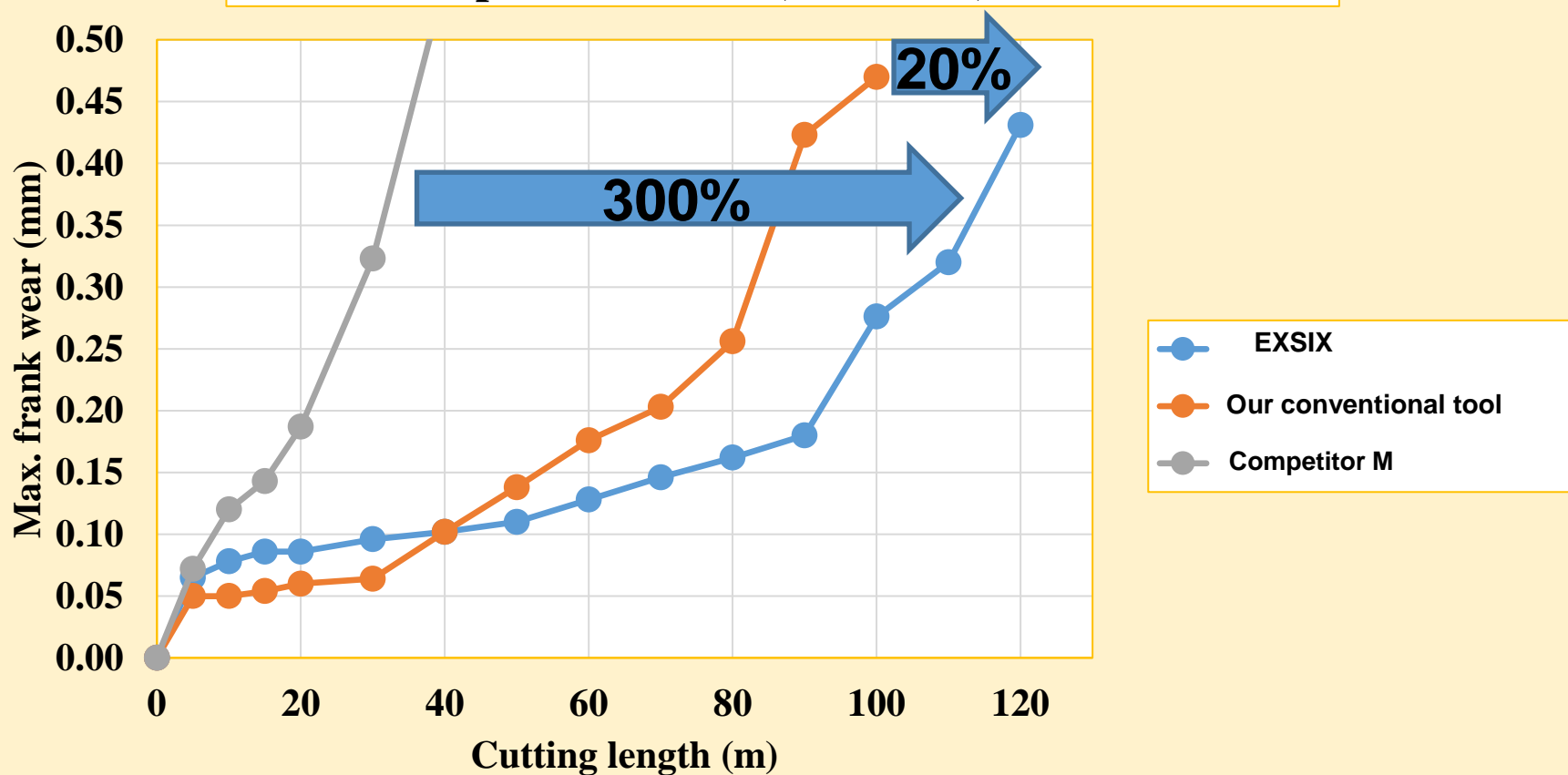
Competitor M





## Tool life

Dc63(Z1), N750, Vc148, Vf225, fz0.3, ap8, ae3, L/Dc2.2,  
Up and down cut, Air blow, 1.2311



# “EXSIX” & “EXSAP”

	25	30	40	50	63	80	125	160
Double side 4 corners	EXSAP (Max.ap15)							
Double side 6 corners	EXSIX (Max.ap10)							

▪ Achieved high precision vertical wall application by machining with bigger Ap and smaller Ae.

⇒ Shows good performance in semi-finishing.

▪ Achieved high precision vertical wall application and better appearance by machining with smaller Ap and bigger Ae.

▪ Since thickness of inserts and size of screw is bigger than EXSAP, tool life in roughing process is long.

⇒ Shows good performance in roughing process.