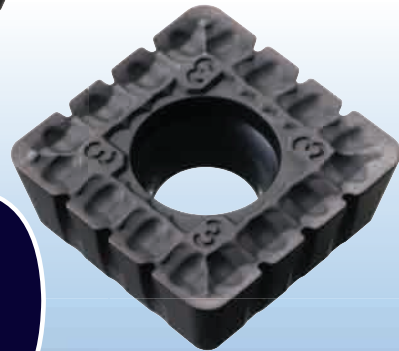
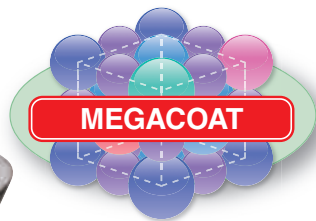


THE NEW VALUE FRONTIER

京瓷 创造新价值



MSRS90

Multiple Cutter

● MSRS90专用 高性能带分割槽无方向刀片

Hi efficiency Notched and No-hand insert for MSRS90

① 带分割槽的刀片在切入时能减小切削阻力

Notched insert reduces cutting force reduction at the first pass

实现无振刀的稳定加工 Stable machining without chatter

② 顺畅的排屑性 Smooth chip evacuation

有效防止咬屑造成崩损 Prevents fracture caused by biting chips

③ 采用长寿命的MEGACOAT涂层 MEGACOAT for long tool life

提高加工效率，降低加工成本 High machining efficiency and cutting cost reduction

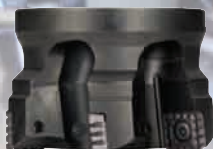
● 多样的延展性 通过与非标刀柄组合可广泛用于各个加工领域

Various expansive possibilities. Available for various type of application with custom order cutter

无方向，采用刀尖角R规格刀片 Milling insert with corner-R (no hand)

可以适用于肩切削(切入角：90°)~大进给(切入角：30°)，插铣，侧铣等多种多样的加工领域(根据用户要求可制作非标刀柄)

Available for various type of application such as shouldering (cutting angle: 90 degrees), high feed cutting (30 degrees), plunging and side cutter. (custom order)



ADVANCING PRODUCTIVITY

致力于生产效率提高的京瓷

MSRS90

Multiple Cutter

MSRS90型的特点

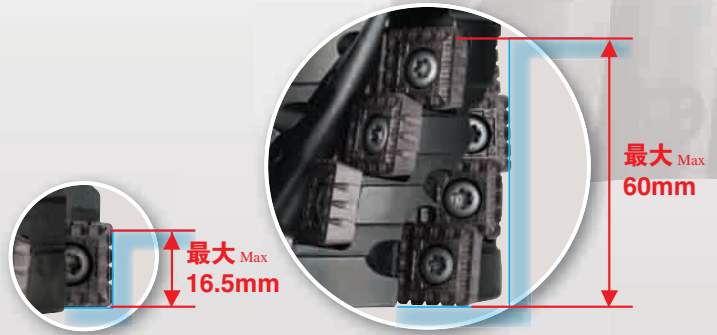
Features of MSRS90

- 高性能，低阻力，低振动刀盘
Hi efficiency cutter with low cutting force and small vibration
- 顺畅的排屑性
Smooth chip evacuation
- 采用长寿命的MEGA涂层
MEGACOAT for long tool life

● 可根据加工要求调整切刃长度

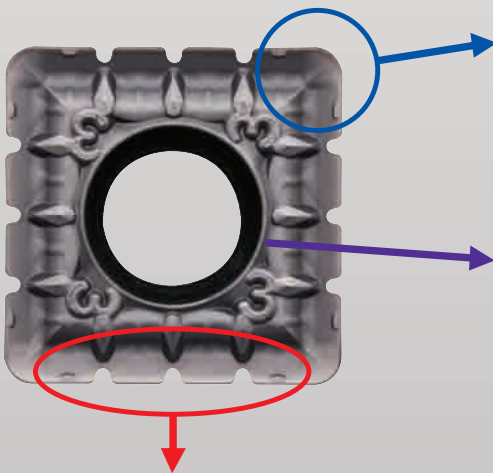
Various cutting edge length according to cutting conditions

1段、2段基础上4段(ø80、ø100)也成为标准产品
4-stage type (ø80, ø100) available in addition to 1-stage and 2-stage types.



高性能带分割槽无方向刀片

Hi efficiency Notched and No-hand insert

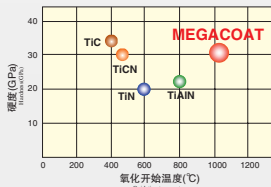


无方向刀片(采用刀尖角R规格)衍生出广泛的扩展性

Various expansive possibilities due to no-hand insert with corner-R

采用长寿命的涂层: MEGACOAT

MEGACOAT for long tool life



采用兼具强度和耐崩损性的长寿命涂层“MEGACOAT”
MEGACOAT with high strength and fracture resistance for long tool life

低阻力的带分割槽刀片

Notched insert for low cutting force

基于分割槽设计能将切屑细碎的切断，降低切削阻力和切入时的阻力，可提高加工进给量

Notched insert breaks chips into small pieces and reduces cutting force. Available for high feed cutting due to lower cutting force at the first pass

位于切刃近处第二刃背的强化设计，使其与分割槽效果相叠加，从而达到低阻力和刀头强度增大的双重效果

Second land improves the cutting edge strength and notch reduces the cutting force

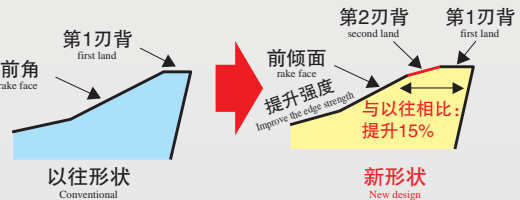


3.8mm



左右手刀片规格
适用于各类切入角的刀刃长:
18mm

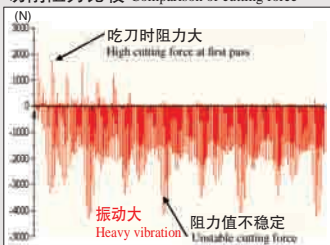
For right/left hand
Available for various cutting angle
Cutting edge length 18mm



切削断面
Edge preparation

● 低阻力(带分割槽刀片效果) Low cutting force (effect of notched insert)

切削阻力比较 Comparison of cutting force



其他公司产品A Comp.A

MSRS90

带分割槽的刀片实现低阻力，低振动加工

Notched insert realizes low cutting force and small vibration

● 加工领域(标准刀柄) Application range (standard toolholder)



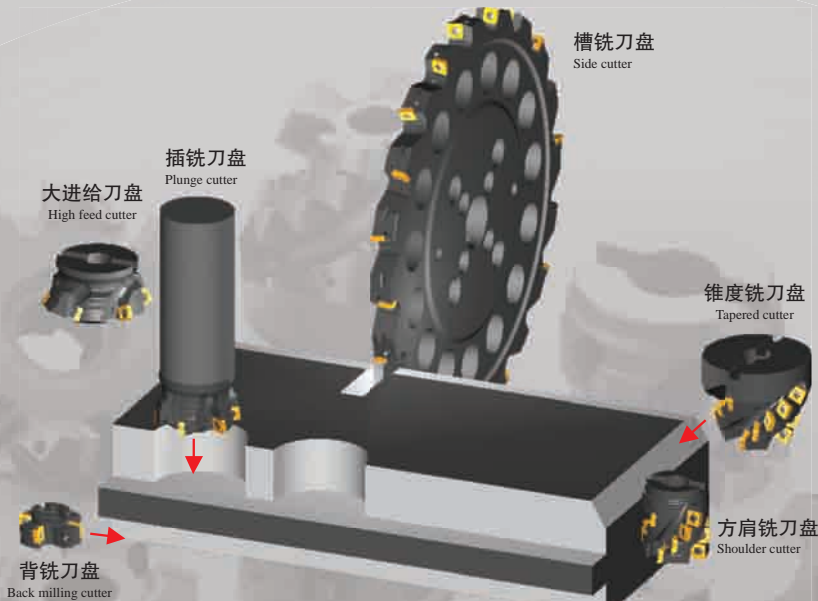
通过刀片断屑槽的组合来满足各类加工需要

Insert cross-section.(Available for various type of application with new Inserts)

用途 Application	选择断屑槽标准 Purpose	3个分割槽式样 3 notches	4个分割槽式样 4 notches	无分割槽规格 Without notch
通用 General purpose 第一推荐 1st Recommendation	标准断屑槽 Standard type	NB3	+	NB4
注重阻力 Low cutting force oriented	低阻力断屑槽 Low resistance type	NB3P	+	NB4P
注重刀尖强度 Emphasis on edge strength	无分割槽式样 (可与带分割槽刀片共同使用) Without notch (Possible to use notched insert)	NB3	or	NB4

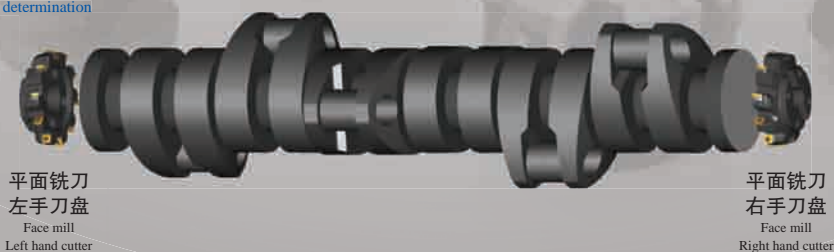
广泛的扩展性(订制非标以及标准刀柄)

Various expansive possibilities (custom order and standard)

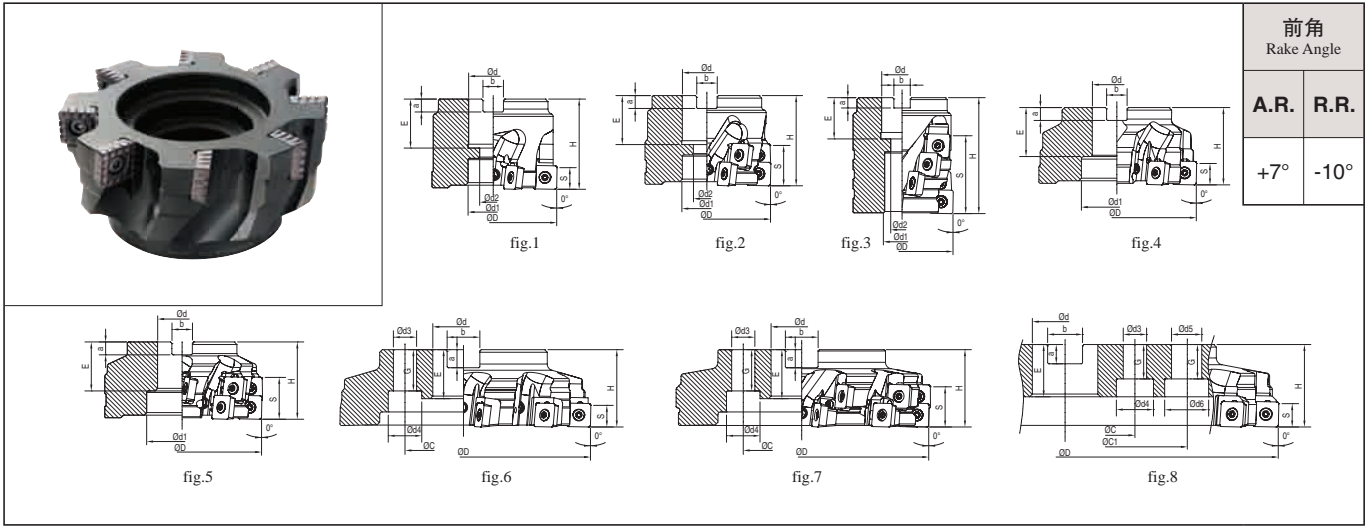


● 传动轴总长余量的加工

Shaft length determination




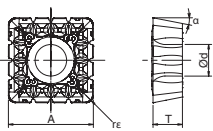

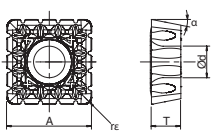

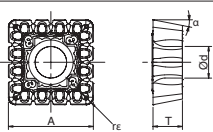

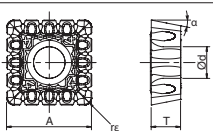

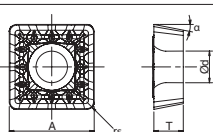
MSRS90型 MSRS90



● 刀柄尺寸 Holder dimension

型号 Description	库存 Stock	刃数 No. of Insert	刃列数 No. of Line	段数 No. of Stage	尺寸(mm) Dimension(mm)													形状 Shape	重量 (kg) Weight					
					øD	ød	ød1	ød2	H	E	a	b	S	ød3	ød4	ød5	ød6			G				
刀柄安装部定制规格 Without Cartridge	无固定卡夹 Without Cartridge	MSRS 90080R-1-4T	●	4	4	1	80	31.75	27	18	60	32	8	12.7	16.5						fig.1	1.4		
		MSRS 90080R-2-4T	●	8	4	2					31				fig.2						1.2			
		MSRS 90080R-4-4T	●	16	4	4					60				fig.3						1.5			
		MSRS 90100R-1-6T	●	6	6	1					70				16.5						fig.1	2.3		
		MSRS 90100R-2-6T	●	12	6	2					38				10						15.9	31	fig.2	2.1
		MSRS 90100R-4-6T	订制	24	6	4					90				60						fig.3	3.2		
		MSRS 90125R-1-8T	●	8	8	1					125				38.1						55	-	60	38
	MSRS 90125R-2-8T	订制	16	8	2	31	-	-	-	-	-	-	-	fig.5	2.4									
	带固定卡夹 With Cartridge	MSRS 90160R-1-8T	●	8	8	1	160	50.8	70	-	60	38	11	19.1	16.5	fig.4	4.3							
		MSRS 90160R-2-8T	订制	16	8	2	31	fig.5	4.1															
		MSRS 90200R-1-10T	●	10	10	1	200	47.625	-	-	60	38	14	25.4	16.5	fig.6	6.7							
		MSRS 90200R-2-10T	订制	20	10	2	31	fig.7	6.6															
		MSRS 90250R-1-12T	●	12	12	1	250	47.625	-	-	60	38	14	25.4	16.5	fig.6	12.6							
		MSRS 90250R-2-12T	订制	24	12	2	31	fig.7	12.5															
MSRS 90315R-1-14T		●	14	14	1	315	47.625	-	-	60	38	14	25.4	16.5	17	27	22	32	25	fig.8	16.1			
MSRS 90315R-2-14T	订制	28	14	2	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0				
公制规格 Without Cartridge	无固定卡夹 Without Cartridge	MSRS 90080R-1-4T-M	●	4	4	1	80	27	20	13	60	24	7	12.4	16.5						fig.1	1.3		
		MSRS 90080R-2-4T-M	●	8	4	2					31				fig.2						1.1			
		MSRS 90080R-4-4T-M	●	16	4	4					60				fig.3						1.4			
		MSRS 90100R-1-6T-M	●	6	6	1					70				16.5						fig.1	2.2		
		MSRS 90100R-2-6T-M	●	12	6	2					38				10						14.4	31	fig.2	2.0
		MSRS 90100R-4-6T-M	订制	24	6	4					90				60						fig.3	3.1		
		MSRS 90125R-1-8T-M	●	8	8	1					125				40						55	-	60	33
	MSRS 90125R-2-8T-M	订制	16	8	2	31	-	-	-	-	-	-	-	fig.5	2.4									
	带固定卡夹 With Cartridge	MSRS 90160R-1-8T-M	●	8	8	1	160	60	70	-	60	33	9.4	16.4	16.5	fig.4	4.2							
		MSRS 90160R-2-8T-M	订制	16	8	2	31	fig.5	4.0															
		MSRS 90200R-1-10T-M	●	10	10	1	200	60	-	-	60	38	15	25.9	16.5	fig.6	6.7							
		MSRS 90200R-2-10T-M	订制	20	10	2	31	fig.7	6.6															
		MSRS 90250R-1-12T-M	●	12	12	1	250	60	-	-	60	38	15	25.9	16.5	fig.6	12.6							
		MSRS 90250R-2-12T-M	订制	24	12	2	31	fig.7	12.5															
MSRS 90315R-1-14T-M		●	14	14	1	315	60	-	-	60	38	15	25.9	16.5	17	27	22	32	25	fig.8	16.1			
MSRS 90315R-2-14T-M	订制	28	14	2	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0				

● 适用刀片 Applicable Insert

形状 Shape	型号 Description	尺寸(mm) Dimension				角度(°) Angle	MEGACOAT	
		A	T	ød	rε	α	PR1230	PR1210
 带3个分割槽 3 notches	 SPMT 180616EN-NB3	18	6.35	6.8	1.6	11°	●	●
 带4个分割槽 4 notches	 SPMT 180616EN-NB4						●	●
 带3个分割槽 低阻力型 3 notches Low resistance type	 SPMT 180616EN-NB3P	18	6.35	6.8	1.6	11°	●	●
 带4个分割槽 低阻力型 4 notches Low resistance type	 SPMT 180616EN-NB4P						●	●
 无分割槽 Without notch	 SPMT 180616EN-V	18	6.35	6.8	1.6	11°	●	●

●:标准库存 ●:Standard Stock

● 带分割槽刀片的安装注意事项 Caution when installing notched Insert





必须将带分割槽的刀片安装到正确位置。请务必注意，安装错位会导致无法加工甚至损伤刀柄。MSR90型会在刀片安装处旁边刻上带分割槽刀片的安装位置指示标记。

It is important to install the appropriate notched insert into the correct position. Failure to do so may result in damage to the cutter body. The appropriate insert is marked on the pocket of the cutter body.

刀片安装方法  请参见P5 How to install the insert Refer Page 5

型号 Description	刃数 No. of Insert	刃列 No. of Line	段数 No. of Stage	安装数 No. of Inserts	
				带分割槽 Notched	NB3(P)
MSRS 90100R-1-6T	6	6	1	3	3
	12		2	6	6
	24		4	12	12

● 零件 Spare parts

型号 Description	零件 Spare Parts						
	紧固螺钉 Clamp Screw	扳手 Wrench	固定卡夹 Cartridge	紧固螺钉 Clamp Screw	扳手 Wrench	烧结防止剂 Anti-seize Compound	锥柄安装用螺栓 Arbar Clamp Screw
无固定卡夹 Without Cartridge	SB-60120TR	TT-25L	 (仅适用于底刃) (Only bottom edge should be used)				HH16x45
MSRS 90080R-○-4T							HH20x55
MSRS 90100R-○-6T							
MSRS 90125R-○-8T							
带固定卡夹 With Cartridge							
MSRS 90160R-○-8T							
90315R-○-14T							
无固定卡夹 Without Cartridge							HH12x35
MSRS 90080R-○-4T-M							
MSRS 90100R-○-6T-M							
MSRS 90125R-○-8T-M							
带固定卡夹 With Cartridge							
MSRS 90160R-○-8T-M							
90315R-○-14T-M							

备注)*1: MAP-1806M是MSRS90..R-1.的专用固定卡夹

*2: MAP-1806S是MSRS90..R-2..的底刃(第1段)专用固定卡夹。固定卡夹仅适用于底刃(第1段)

Note) *1: MAP-1806M is only for MSR90..R-1..cartridge

*2: MAP-1806S is only for MSR90..R-2..bottom edge (1st stage) cartridge. This cartridge is used for bottom edge (1st stage) only.

固定卡夹安装方法: 固定卡夹由2个紧固螺钉固定, 在安装时, 请先拧上斜方向固定用的紧固螺钉, 然后再拧上另一个紧固螺钉。
How to attach cartridge: To fix the cartridge, tighten the slant screw at first, then tighten the other screw.

 在固定刀片的时候, 请涂抹少量烧结防止剂(MP-1)于紧固螺钉上 · Coat Anti-seize Compound (MP-1) thinly on clamp screw when insert is fixed.

刀片安装方法 How to install the insert

带分割槽的刀片安装注意事项 Installation of Notched Inserts

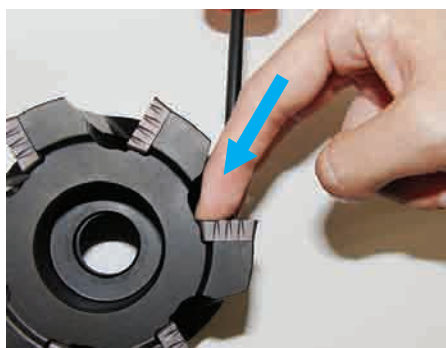
请确保刀杆上的数字和刀片上的数字相同后再进行安装

When installing the inserts, match the insert's top surface number to the number on the holder



刀片更换操作步骤 Insert Replacement Procedure

1. 确保刀片安装部位的清洁，无切屑等残留物。 Remove chips or any dust from the insert pocket.
2. 用手指按住刀片(下部)将刀片安装牢固。 Install inserts by pushing down the insert with a finger.



3. 安装刀片时请使用附带的T型扳手(TT-25L)。 Please use only the attached T-wrench (TT-25L) for insert installation.

※使用非附带扳手安装刀片可能无法使刀片紧固(螺钉松动)。

Inserts might not be clamped properly when using a different wrench.



附带扳手(TT-25L)
Attached T-wrench (TT-25L)

刀片紧固用
紧固扭矩7.5Nm
for Insert Clamp Tightening Torque



非本产品附带的扳手
Other wrench

4. 刀片安装完毕后，请确保刀片和凹槽(支撑座)间无缝隙。

After installing the insert, ensure there is no gap between the insert and the cartridge.



5. 每次使用后，推荐用附带扳手再次紧固各螺栓。

After each use, additional clamping is recommended using the attached T-wrench.

推荐切削条件 Recommended Cutting Conditions

被切削材料 Workpiece Material	进给量(mm/t) Feed Rate (mm/t)		切削速度(m/min) Cutting Speed (m/min)	
	标准断屑槽 Standard type NB3 + NB4	低阻力断屑槽 Low resistance type NB3P + NB4P	MEGACOAT	
			PR1230	PR1210
普通构造用压延钢材(SS等) Soft Steel	0.1~ 0.2 ~0.25	0.1~ 0.2 ~0.25	★ 120~ 150 ~220	☆ 120~ 150 ~220
碳钢(SxxC等) Carbon Steel	0.1~ 0.2 ~0.25	0.1~ 0.2 ~0.25	★ 100~ 150 ~200	☆ 100~ 150 ~200
合金钢(SCM等) Alloy Steel	0.1~ 0.15 ~0.2	0.1~ 0.15 ~0.2	★ 100~ 150 ~200	☆ 100~ 150 ~200
模具钢(SKD/NAK等) Die Steel	0.1~ 0.15 ~0.2	0.1~ 0.12 ~0.15	★ 100~ 150 ~180	☆ 100~ 150 ~180
灰口铸铁(FC) Gray Cast Iron	0.1~ 0.2 ~0.3	0.1~ 0.2 ~0.25	☆ 100~ 180 ~250	★ 100~ 180 ~250
球墨铸铁(FCD) Nodular Cast Iron	0.1~ 0.2 ~0.25	0.1~ 0.18 ~0.2	☆ 100~ 180 ~220	★ 100~ 180 ~220
不锈钢(SUS304等) Stainless Steel	不推荐 Not Recommended			
铝、铜 Non-ferrous Metals	不推荐 Not Recommended			

★:第一推荐 ☆:第二推荐 ★:1st Recommendation ☆:2nd Recommendation

多种多样的非标刀柄 Various custom order cutters



大进给刀盘
High feed cutter



45° 平面铣刀
45 degrees face mill



插铣刀盘
Plunge cutter



锥度铣刀盘
Tapered cutter



槽铣刀盘
Side cutter

根据客户订制要求，可以制作满足各类加工径、切入角、刀片段数的非标刀柄。

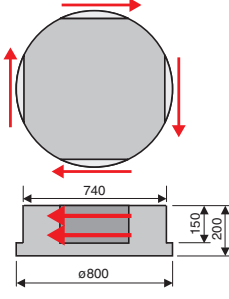

Various types of cutter design available to meet with your conditions, such as cutting diameter, cutting angle and cutting edge length (stages), etc.

加工实例 Case studies

FCD450	
工业零件 Industrial parts 刀盘和刀片 Cutter and inserts MSRS90100R-1-6T($\phi 100$ · 6刃) 6 edges SPMT180616EN-NB3/NB4 (PR1210) · Vc=150 m/min · ap x ae=6 x 65 mm · fz=0.15mm/t (Vf=430mm/min)	
MSRS90(PR1210)	切屑排出量258cc/分 Chip removal 258cc/min.
其他公司产品B Comp.B	 107cc/分 107cc/min.
<p>结果</p> <ul style="list-style-type: none"> · 对比其他公司产品B, MSRS90的加工效率提高到2倍以上 · 对比其他公司产品B, ap x ae=3 x 65mm 需两次走刀加工, MSRS90只需一次走刀加工 · 缩短了加工时间 <p>Results</p> <ul style="list-style-type: none"> · MSRS90 doubled the cutting efficiency compared with comp. B. · Comp. B machined with 2 passes (apxae=3x65mm). MSRS90 machined with only 1 pass. · Cutting time reduced <p style="text-align: right;">(来自客户评价) Evaluation by the user</p>	

SCM420	
建机零件 Construction machine parts 刀盘和刀片 Cutter and inserts MSRS90125R-1-8T($\phi 125$ · 8刃) 8 edges SPMT180616EN-NB3/NB4 (PR1230) · Vc=200 m/min · ap x ae=10 x 50 mm · fz=0.1mm/t (Vf=400mm/min)	
MSRS90(PR1230)	切屑排出量200cc/分 Chip removal 200cc/min.
其他公司产品C Comp.C	 153cc/分 153cc/min.
<p>结果</p> <ul style="list-style-type: none"> · 对比其他公司产品C, MSRS90的加工效率提高到了1.3倍 · 其他公司产品C为ap x ae=5 x 50mm · 其他公司产品C是2刀尖刀片, 成本高→MSR90在提高加工效率的同时将加工成本降至1/3 <p>Results</p> <ul style="list-style-type: none"> · MSRS90 improved cutting efficiency to 1.3 times compared with comp. C. · Comp. C: apxae=5x50mm · Tool cost reduced to 1/3 since comp. C is 2-cornered insert. MSRS90 reduced machining cost as well as improving cutting efficiency. <p style="text-align: right;">(来自客户评价) Evaluation by the user</p>	

SKD	
造船用零件 Ship parts 刀盘和刀片 Cutter and inserts MSRS90160R-1-8T($\phi 160$ · 8刃) 8 edges SPMT180616EN-NB3/NB4 (PR1230) · Vc=150 m/min · ap x ae=10 x 10 ~ 50 mm · fz=0.1mm/t (Vf=240mm/min)	
MSRS90(PR1230)	切屑排出量120cc/分 Chip removal 120cc/min.
其他公司产品D Comp.D	 60cc/分 60cc/min.
<p>结果</p> <ul style="list-style-type: none"> · 对比其他公司产品D, MSRS90的加工效率提高了2倍多 · 对比其他公司产品D的ap x ae=5 x 10 ~ 50mm →MSRS90基于低阻力设计, 可以将ap扩大到2倍 · 随着切削速度的上升(Vc=100→150), 有效的倍增了ap, 从而提升加工效率(缩短加工时间) <p>Results</p> <ul style="list-style-type: none"> · MSRS90 doubled the cutting efficiency compared with comp. D. · Comp. D: apxae=5x10~50mm, MSRS90 can increase ap twice due to low cutting force. · MSRS90 can increase ap as well as cutting speed (Vc=150). It resulted in total cutting efficiency improvement. (time reduction) <p style="text-align: right;">(来自客户评价) Evaluation by the user</p>	

SNCM	
发电机零件 Power generator parts 刀盘和刀片 Cutter and inserts MSRS90125R-1-8T($\phi 125$ · 8刃) 8 edges SPMT180616EN-NB3/NB4 (PR1230) · Vc=160 m/min · ap x ae=10 x 0 ~ 20 mm · fz=0.15mm/t (Vf=500mm/min)	
MSRS90(PR1230)	12面/C 12 faces /edge
其他公司产品E Comp.E	 8面/C 8 faces / edge
<p>结果</p> <ul style="list-style-type: none"> · MSRS90的使用寿命是其他公司产品E的1.5倍 · 其他公司产品E的ap x ae=12 x 0 ~ 10mm(单边需两次走刀) 并且其他公司产品E的进给量小(Vf=400mm/min) →提升加工效率(缩短加工时间) · 与其他公司产品E的切削阻力大, 加工操作中会发出巨大噪音相比MSRS90加工非常安静。(切削阻力小) <p>Results</p> <ul style="list-style-type: none"> · MSRS90 improved tool life to 1.5 times of comp. E. · Comp. E machined with 2 pass (apxae=12x0~10mm) with low cutting feed (Vf=400mm/min). MSRS90 improved cutting efficiency. (time reduction) · Comp. E creates large noise due to large cutting force. MSRS90 reduced the cutting force and noise as well. <p style="text-align: right;">(来自客户评价) Evaluation by the user</p>	

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