



www.urmachina.com

A close-up photograph of a blue industrial tool, likely a diamond tool, with a metal cutting edge. The tool has a series of blue, ribbed sections and a metal head with several holes. The background is blurred.

**Innovation Is
Our Tool**

SWISS  QUALITY

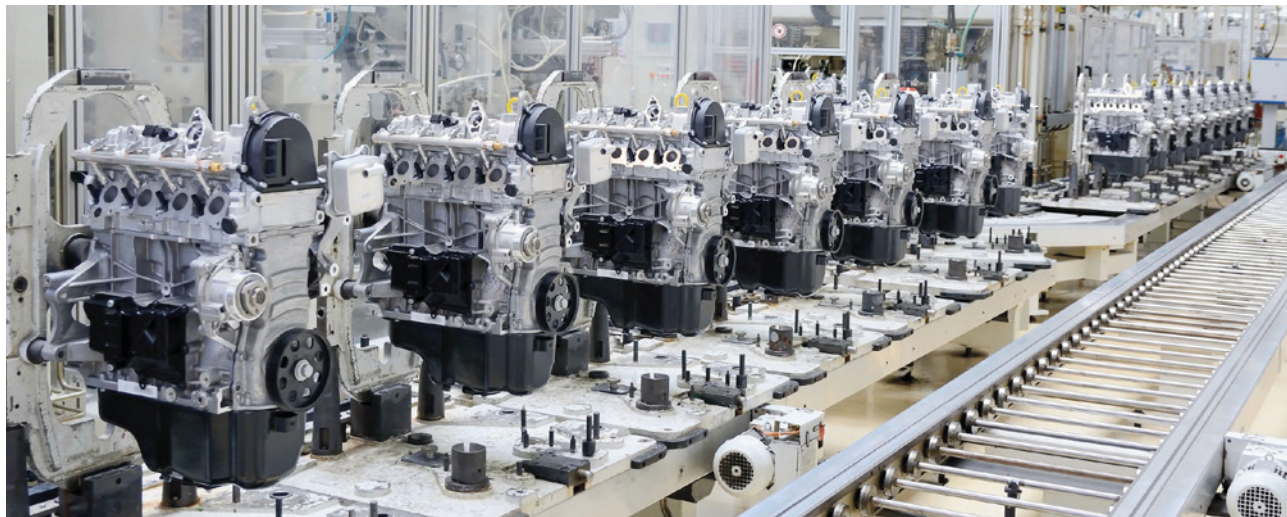
URMA MX diamond



集精度与速度于一体：
最新一代面铣解决方案

Precision and speed in one:
The latest generation of face milling.

汽车工业 Automotive



要求

- 精度
- 工艺可靠性
- 操作简便
- 效率

滑阀壳体案例

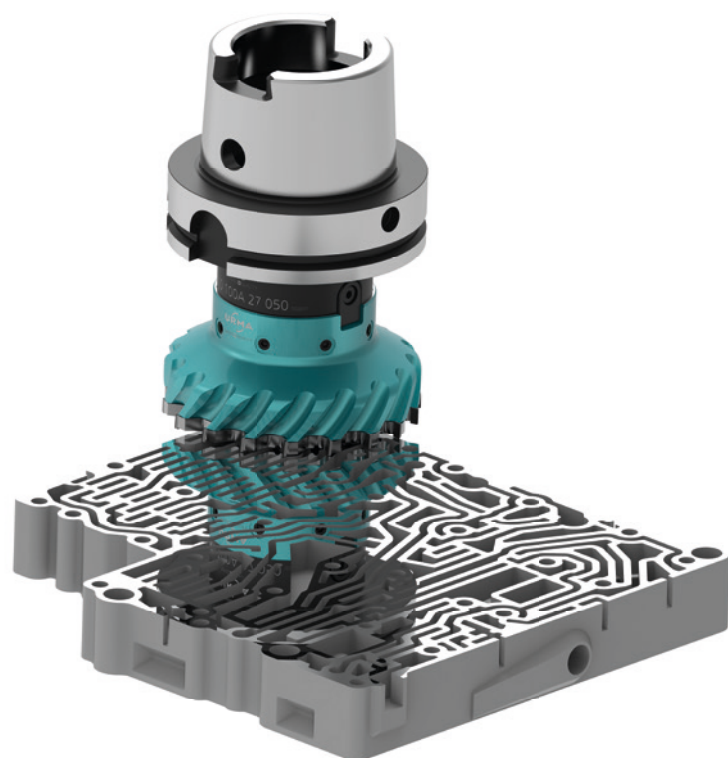
材料 G-AlSi7

Requirements

- Precision
- Process reliability
- Simple handling
- Productivity

Example of a "Slider box automatic transmission"

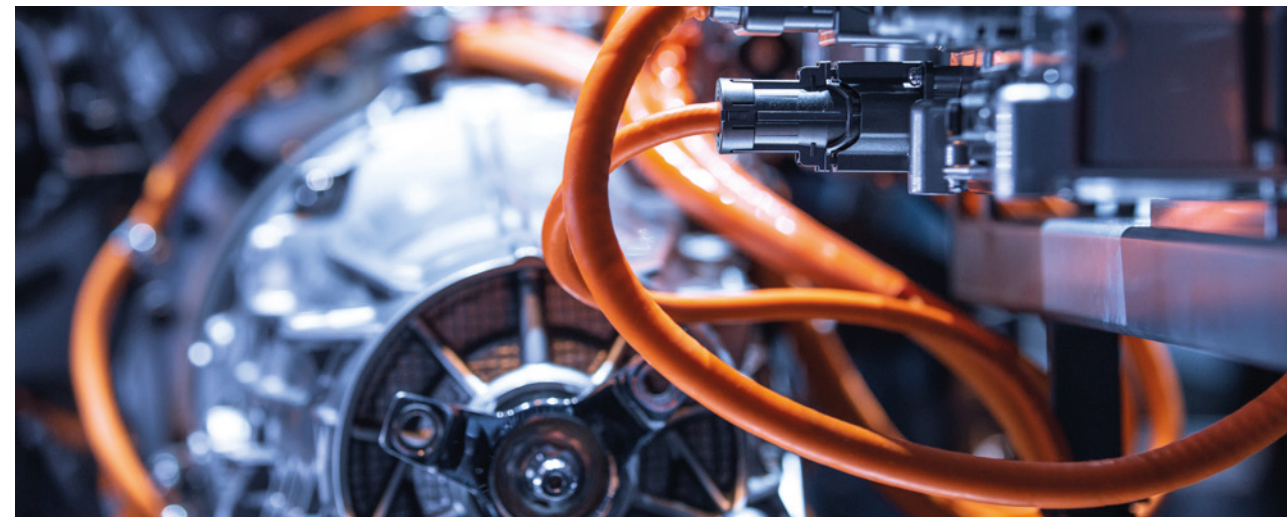
Material: G-AlSi7



加工参数

vc	3'500	m/min
fz	0.15	mm
z	20	
vf	26'700	mm/min
ap	1	mm
ae	110	mm
Ra	0.35	µm
Ø	125	mm

电动汽车 E-Mobility



要求

- 高精度
- 工艺可靠性
- 低成本
- 操作简便

电机定子壳案例

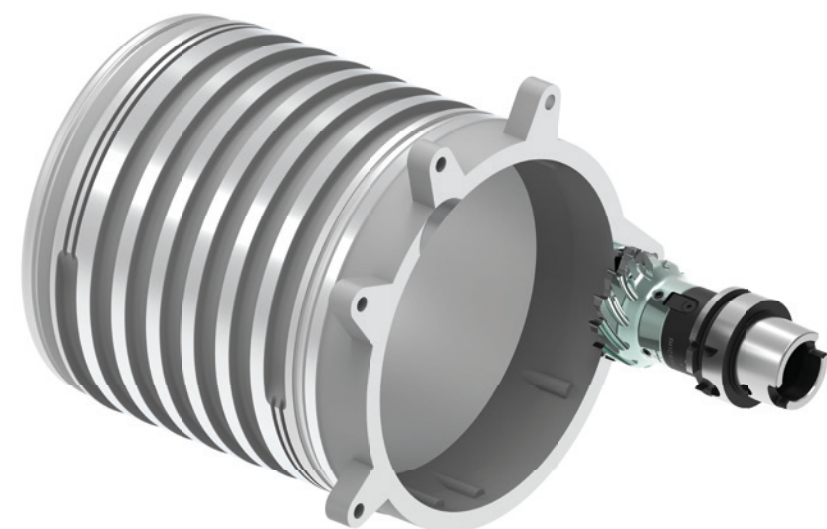
材料 G-AlSi7

Requirements

- Precision
- Process reliability
- Low costs
- Simple handling

Example of a "Electric Motor Stator Housing"

Material: G-AlSi9

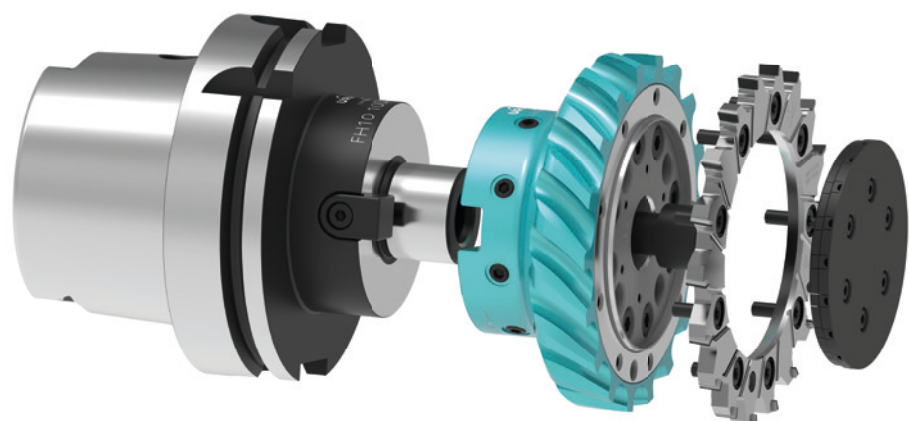


加工参数

vc	4'000	m/min
fz	0.2	mm
z	12	
vf	48'500	mm/min
ap	1	mm
ae	25-50	mm
Ra	0.4	µm
Ø	63	mm

优势

Your Advantages

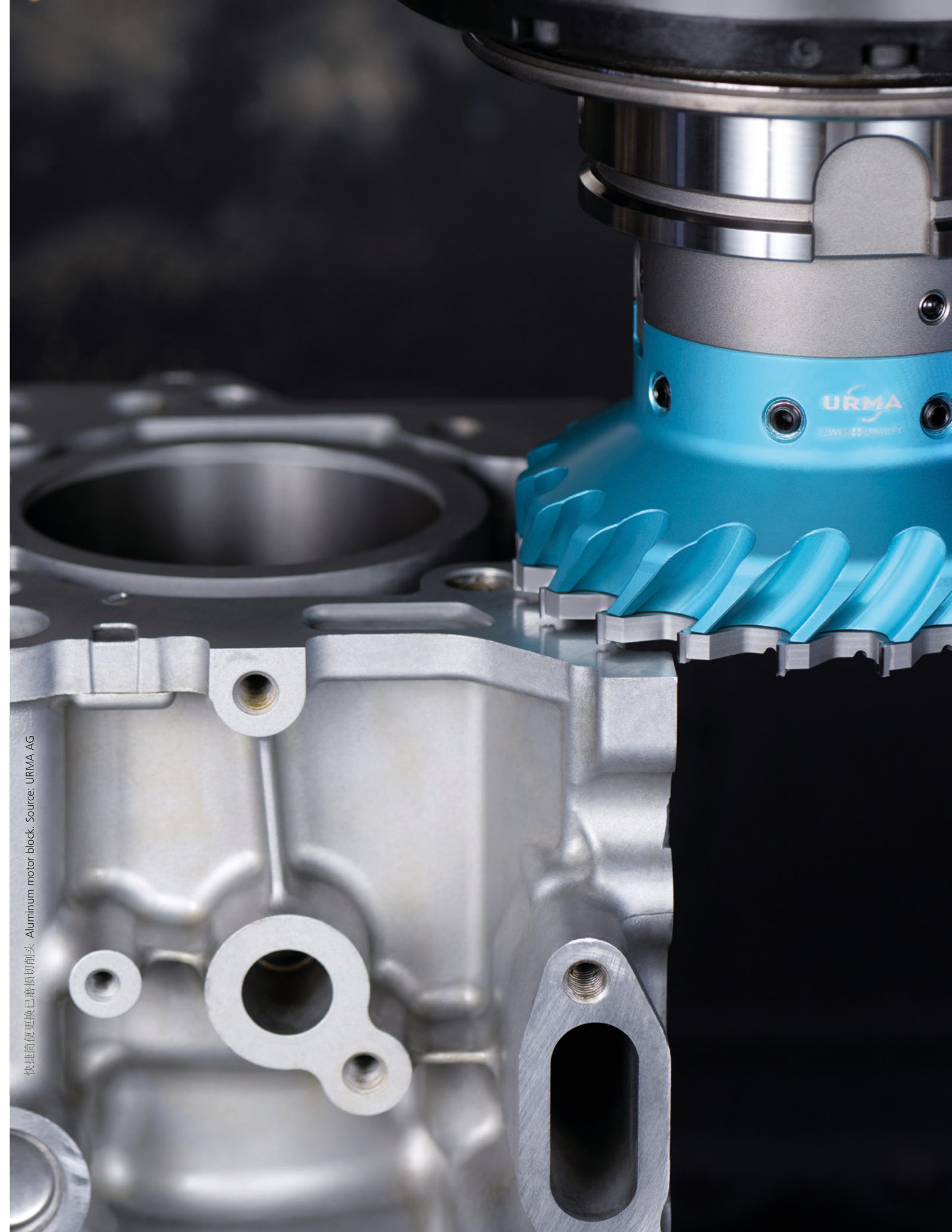


关键点

- 直径 63mm/100mm/125mm
- 基于非常可靠的 RX 技术的高精度与操作简易性
- 高效切削带来的可观成本节约
- 带 PCD 刀尖的整体硬质合金切削环产生的高刚性
- 客户无需调刀
- 快捷简便更换已磨损切削头

Key Points

- Diameter 63 mm/100 mm/125 mm
- High precision and easy handling based on the very reliable RX-technology
- Significant savings thanks to high-performance cutting
- Highest rigidity thanks to pcd tipped solid carbide cutting ring
- No adjustment efforts for the customer
- Quick and easy reconditioning of worn-out reaming heads

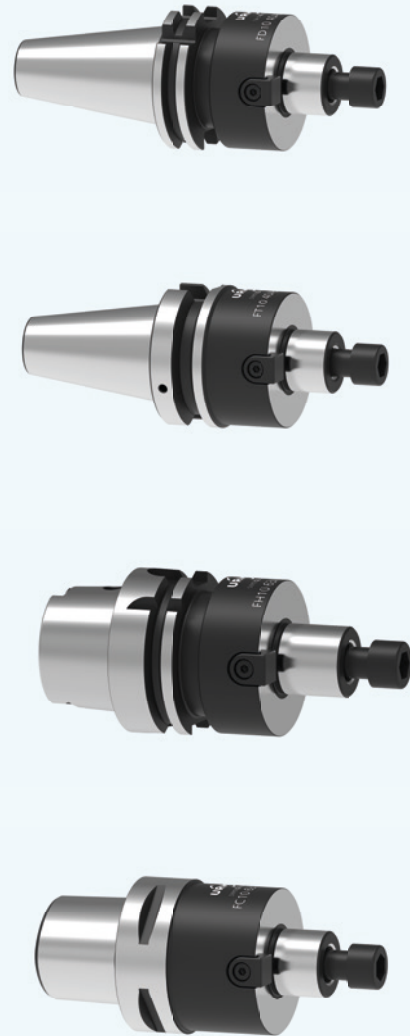


快捷简便更换已磨损切削头 Aluminum motor block. Source: URMA AG

铣削

URMA Milling MX diamond

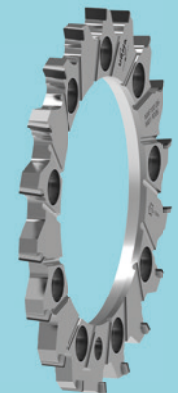
刀柄
Adaptors



刀体
Cutter Body



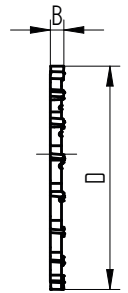
铣刀环
Milling Cutter



铣刀环
Milling Cutter

铣刀环
Milling Cutter

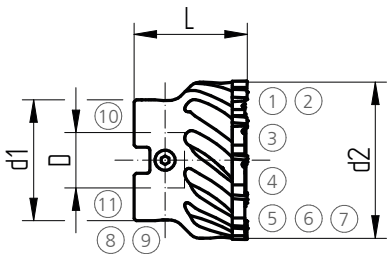
System Size	Order Number	d	B	z	kg	Geometry	Grade	Stock
MX063	MXF63 06-M01 PD06	63	6	12	0.091	M01	PD06	●
MX100	MXF100 06-M01 PD06	100	6	18	0.210	M01	PD06	●
MX125	MXF125 06-M01 PD06	125	6	20	0.398	M01	PD06	●



刀体
Cutter Body

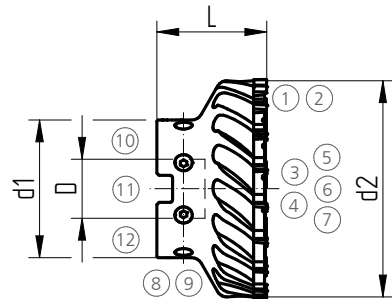
钢制刀体
Cutter Body Steel

System Size	Order Number	L	D	d1	d2	kg	Stock
MX063	MXK63 22 045	45	22	48	62	0.601	●



铝制刀体
Cutter Body Aluminum

System Size	Order Number	L	D	d1	d2	kg	Stock
MX100	MXKL100 27 050A	50	27	63	99	0.956	●
MX125	MXKL125 32 055A	55	32	78	124	1.527	●



配件见13页
Spare parts blade carrier on page 13

z 齿数
Number of teeth

● 库存
On stock

▲ 快速交付
Short-term availability

○ 可实现定制需求
Availability on request

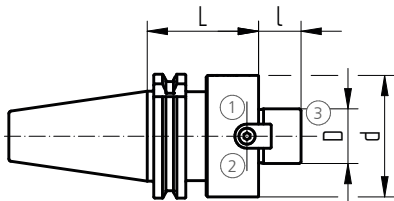
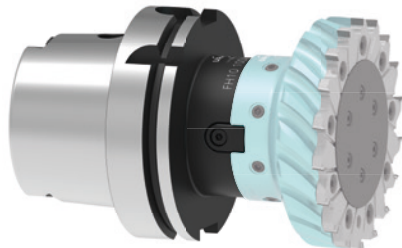
公制
All dimensions in mm



刀柄
Adaptors

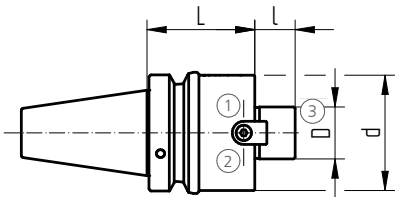
DIN 69871 – AD

System Size	L	I	D	d	Order Number	Stock
SK40	55	19	22	48	FD10 40AB 22 055	●
SK40	55	21	27	60	FD10 40AB 27 055	●
SK40	60	24	32	78	FD10 40AB 32 060	●
SK50	55	19	22	48	FD10 50AB 22 055	●
SK50	55	21	27	60	FD10 50AB 27 055	●
SK50	55	24	32	78	FD10 50AB 27 055	●



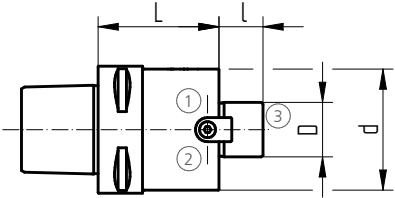
MAS-BT JIS 6339 – AD

System Size	L	I	D	d	Order Number	Stock
BT40 - Ø22	55	19	22	48	FT10 40AB 22 055	●
BT40 - Ø27	55	21	27	60	FT10 40AB 27 055	●
BT40 - Ø32	60	24	32	78	FT10 40AB 32 060	●
BT50 - Ø22	55	19	22	48	FT10 50AB 22 055	●
BT50 - Ø27	55	21	27	60	FT10 50AB 27 055	●
BT50 - Ø32	55	24	32	78	FT10 50AB 32 055	●



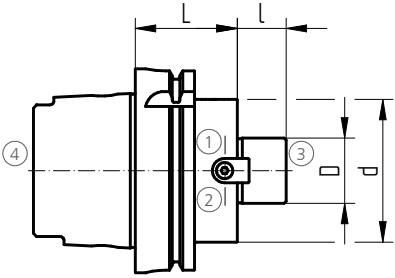
DIN 26623-1-PSC

System Size	L	I	D	d	Order Number	Stock
PSC 60	50	19	22	48	FC10 63 22 050	•
PSC 60	60	21	27	60	FC10 63 27 060	•
PSC 60	60	24	32	78	FC10 63 32 060	•



DIN 69893 HSK-A

System Size	L	I	D	d	Order Number	Stock
HSK63	50	19	22	48	FH10 63A 22 050	•
HSK63	60	21	27	60	FH10 63A 27 060	•
HSK63	60	24	32	78	FH10 63A 32 060	•
HSK100	50	19	22	48	FH10 100A 22 050	•
HSK100	50	21	27	60	FH10 100A 27 050	•
HSK100	50	24	32	78	FH10 100A 32 050	•



配件

Spare Parts

D	①	②	③
22	Z00 70 22	C00 22 05	C00 24 08
27	Z00 70 27	C00 22 07	C00 24 04
32	Z00 70 32	C00 24 05	C00 24 09

冷却管

Coolant Tube

Size	④
63	H00 63 01
100	H00 100 01

附件

Accessories

螺丝刀

Screw Driver

System Size	Dimension	Torque	Order Number	Stock
MX 063	T10	3,5 Nm	G00 40 18	▲
MX 100	T15	3,5 Nm	G00 40 13	▲
MX 125	T15	3,5 Nm	G00 40 13	▲



六角套筒

Hex Bit Socket

System Size	Dimension	Torque	Order Number	Stock
MX 063 - MX 125	SW8 / SW10 / SW14	40 - 200 Nm	G00 40 40	▲
MX 063	SW8	80 Nm	G00 40 44	▲
MX 100	SW10	85 Nm	G00 40 43	▲
MX 125	SW14	160 Nm	G00 40 42	▲



测量仪器

Measuring Device

Type	Description	Order Number	Stock
Twin T10	电子测量仪, 含电池 Electronic measuring instrument, batteries incl.	04430013	○
LRC 6, AA	电池 (3颗) Batteries (3 pieces)	04768002	○
GT 31	测头 Lever probe	03210802	○
MGA	磁力表座 Magnetic articulated arm	01639022	○



Twin T10

MGA

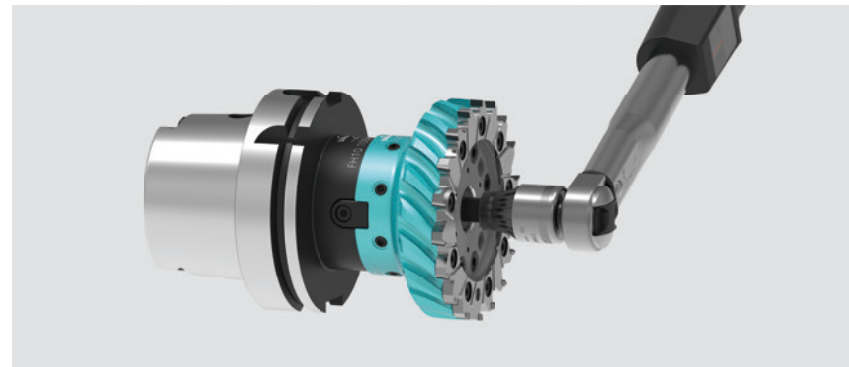
刀盘附件

Spare Parts Cutter Body

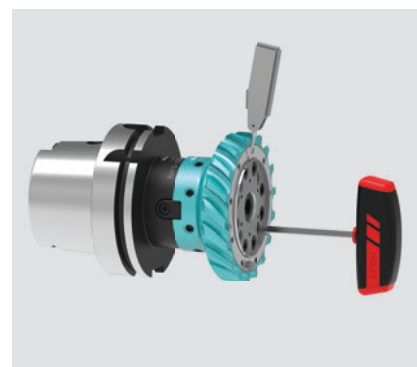
System Size	①	②	③	④	⑤
MX063	C00 70 04	G00 20 07	C00 22 64	G00 02 08	Z90 15 06
MX100	C00 70 05	G00 20 03	C00 70 06	G00 02 09	Z90 15 10
MX125	C00 70 05	G00 20 03	C00 70 07	G00 02 16	Z90 15 12

System Size	⑥	⑦	⑧	⑨	⑩	⑪	⑫
MX063	C00 22 30	G00 02 03	C00 25 03	G00 02 04	ZA00 90 14	C00 70 01	G00 02 25
MX100	C00 22 30	G00 02 03	C00 25 04	G00 02 04	ZA00 90 13	C00 70 02	G00 02 26
MX125	C00 22 56	G00 02 03	C00 25 04	G00 02 04	ZA00 90 07	C00 70 03	G00 02 27

初次使用安装方法 Initial Setup

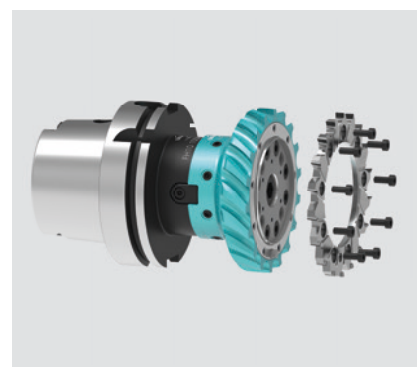


- 1** 组装刀具
Assemble the tool.



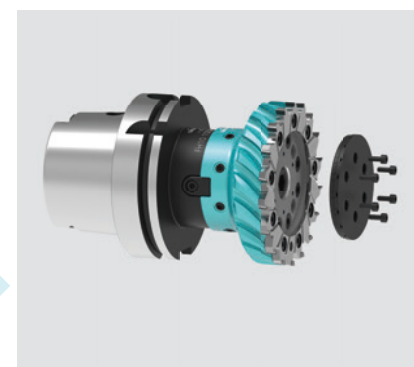
- 2** 跳动调整
Run-out adjustment.

- 3** 清理安装表面
Clean the interface.

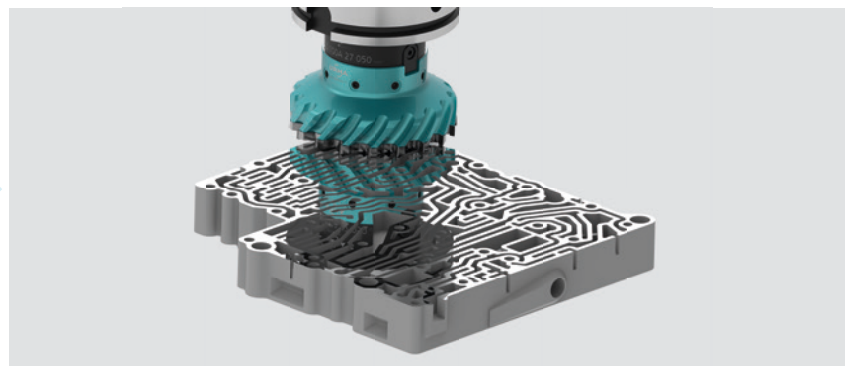


- 4** 安装新铣刀环
Assemble new cutting ring.

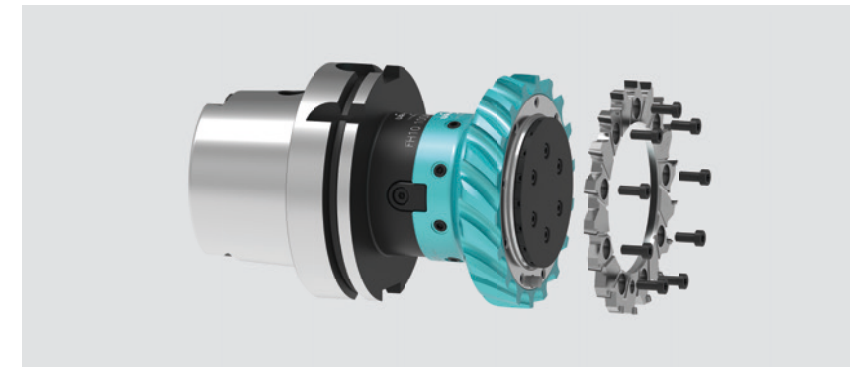
- 5** 安装冷却盘
Assemble the coolant disk.



- 6** 加工零件
Machining the component.



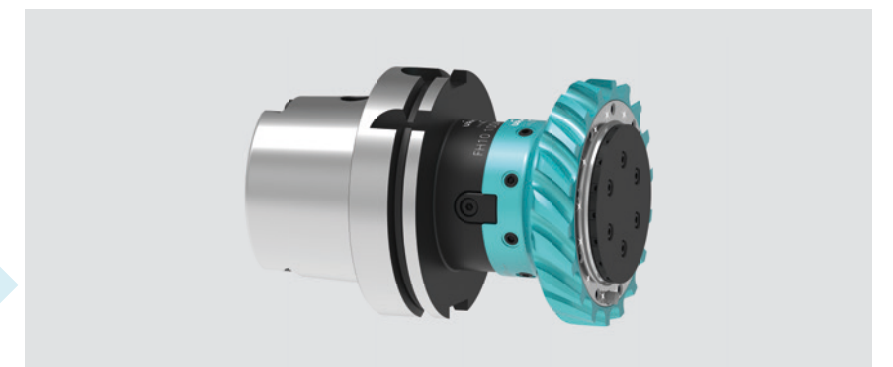
更换铣刀环 Changing Cutting Ring



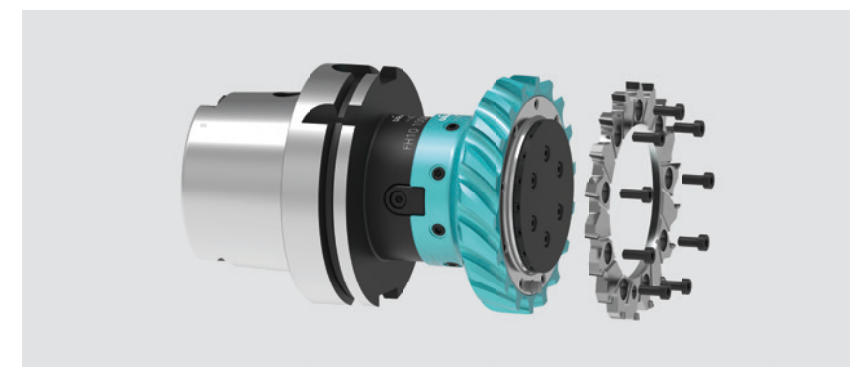
- 1** 卸下铣刀环
Remove the cutting ring.



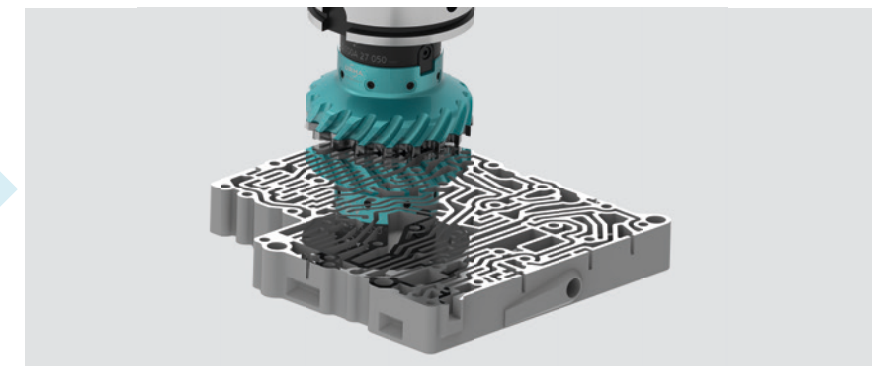
- 2** 清理安装表面
Clean the interface.



- 3** 安装新铣刀环
Assemble new cutting ring.



- 4** 加工零件
Machining the component.



加工参数

Cutting Data

ISO	UMC	Grade	VC	fz
N	N1	PD06	2000-3500-5000	0.05-0.15-0.3
	N2			
	N3			
	N4	PD06	1500-2500-3500	0.05-0.15-0.3
	N5			
	N6	PD06	1000-1800-2500	0.05-0.15-0.3
O	O1	PD06	500-800-1000	0.05-0.15-0.3
	O2			
	O3	PD06	300-600-800	0.05-0.15-0.3
	O4			

ISO	UMC	描述	Description	Rm [N/mm²]	HB	Kc1.1	mc	DIN Nr.	Example
N	N1	Si < 2% 铝合金	Aluminum wrought alloy with Si < 2%	< 300	< 150	600	0.23	3.3535	AlMg3
	N2	Si < 7% 铝合金	Aluminum alloys, Si < 7%	< 400	< 120	700	0.25	3.2152	AlSi6Cu4
	N3	Si > 8% < 15% 铝镁合金	Aluminum alloys 8% < Si < 15% and alloys Magnesium	< 400	< 120	700	0.25	3.2163 3.2581	AlSi9Cu3 AlSi12
	N4	Si > 15% 铝合金	Aluminum alloys, Si > 15%	> 400	> 120	800	0.25		AlSi17Cu4Mg
	N5	易切铜合金	Copper alloys, good machinability	< 700	< 210	800	0.2	2.0401 2.1090	CuZn39Pb3 CuSn7Zn4Pb7-C
	N6	难切铜合金	Copper alloys, more difficult machinability	> 500	> 150	1100	0.25	2.0966	CuAl10Ni5Fe4

复合材料

Composite Materials

ISO	UMC	描述	Description	Rm [N/mm²]	HB	Kc1.1	mc	DIN Nr.	Example
O	O1	热塑酚树脂	Thermoplastic polymers			150	0.26		Polyamid 6 (PA 6) Polyoxymethylen (POM)
	O2	热固塑胶	Thermosetting plastics			150	0.26		Epoxydharze (EP)
	O3	玻璃纤维 < 50% 的强化塑料	Reinforced plastics with < 50% glass fibers			300	0.26		Polyamid 6 mit 30% GF (PA 6 GF 30)
	O4	玻璃纤维, 碳纤维, 芳纶增强塑料	Glass fiber-, carbon fiber- and aramid reinforced plastics			300	0.26		GFK CFK

最大转速

Maximum Revolution

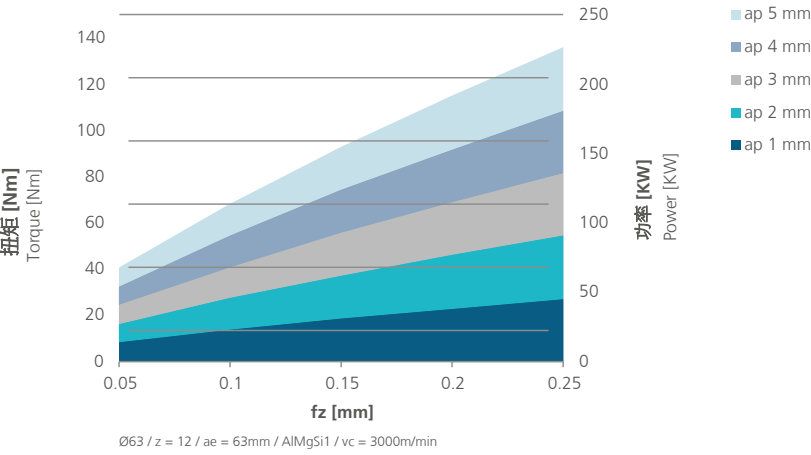
System Size	D	max. Vc	max. rpm
MX063	63	4948 m/min	25000 1/min
MX100	100	4712 m/min	15000 1/min
MX125	125	4712 m/min	12000 1/min



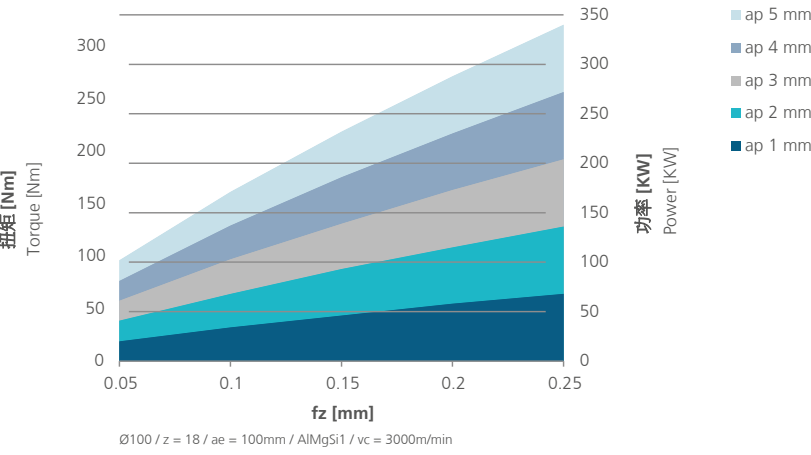
扭矩与功率要求

Torque And Power Requirements

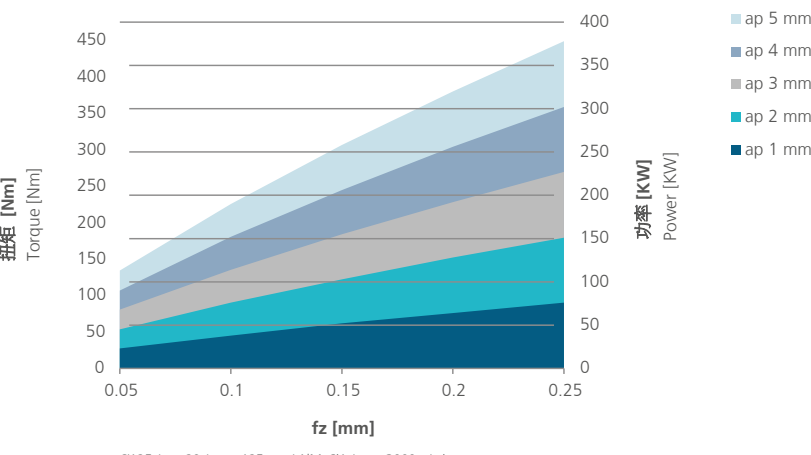
铣刀环 Ø63
Cutting ring Ø63



铣刀环 Ø100
Cutting ring Ø100



铣刀环 Ø125
Cutting ring Ø125



加工调研
Machining Study

邮件至 customerservice@urma.ch

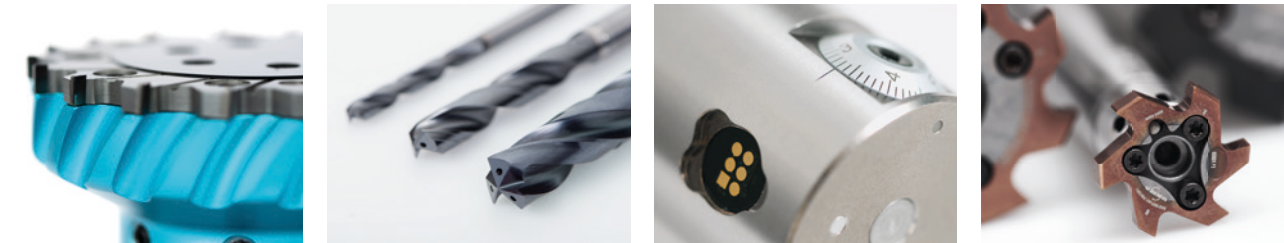
发件人 * Sender		序号			
公司 Company		钨马经销商 URMA Distributor			
地址 Address		联系方式 Contact			
设备 Machine-Tool					
设备型号 Machine Type					
卧式* Horizontal		立式* Vertical			
主轴接口* Spindle Holder		尺寸* Size		类型* Execution	
DIN 69893-HSK		20		A	
DIN 69871		30		B	
MAS-BT		40		C	
圆柱柄 DIN 1835 Cylinder Shank DIN 1835		63		D	
DIN 69880 VDI		100		E	
冷却方式 Lubricant					
油 * Oil		微量润滑 * 1) MLS 1)		混合物比例 (in %) Ratio of Mixture (in %)	
中心冷却* Intern. Coolant Supply		乳化液* Emulsion		冷却液压力 (bar)* Coolant Pressure (bar)	
工件 Workpiece					
名称 Designation		材料代号* Material Number		热处理 (硬度) * Treatment Condition (Hardness)	
加工要求 Machining Requirements					
公差 * Tolerance		干涉长度 Interfering contours		前序加工方式* Method of Pre-Machining	
最小刀具长度 (OAL) Minimum Tool Length (OAL)		//		盲孔* Blind Hole	
表面质量(微米)* Surface Quality (µm)		Ra Rz Rt		Yes No	
日期* Date				年产量: Annual Production:	
备注 Notes				优先级: Urgency:	

* 必填项
Mandatory fields

1) 微量润滑
Minimal lubrication system (mist coolant)

附件: 请附您的加工零件图纸
Attachement: Your Application Sketch

URMA Tools
Milling, Drilling, Boring & Reaming



Art. M003043

**URMA AG WERKZEUGFABRIK**

Obermatt 3
CH-5102 Rapperswil
Switzerland
T +41 62 889 20 20
F +41 62 889 20 28
info@urma.ch
www.urma.ch

Subsidiaries

URMA GmbH
Bertha-Benz-Strasse 7
D-76532 Baden-Baden
Germany
+49 7221 9969 250
info@urma-gmbh.de

URMA Trading (Shanghai) Co. Ltd.
Room 511, Hua Nan Mansion
1988 Dongfang Road
Pudong New District
CN-200125 Shanghai
+86 (21) 6109 6216
info@urmachina.com

Iraupen ITU S.L.
Poligono Belartza
ES-20018 Donostia-San Sebastian
Spain
+34 943 667 036
info@iraupen.es

URMA USA, Inc.
215 Camellia Street
Franklin, TN 37064
USA
info@urmausa.com

License Manufacturer

Command Tooling Systems, LLC
13931 Sunfish Lake Blvd.
Ramsey MN, 55303
USA
+1 800 328 2197
support@commandtool.com

Paul Horn GmbH
Horn-Straße 1
D-72072 Tübingen
Germany
+49 (0) 7071 7004 0
info@phorn.de

Sumitomo Electric Ind., Ltd.
1-1-1, Koyakita,
Itami-shi, Hyogo 664-0016
Japan
+81 72 772 4535
info@sumitomotool.com