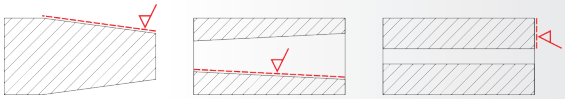
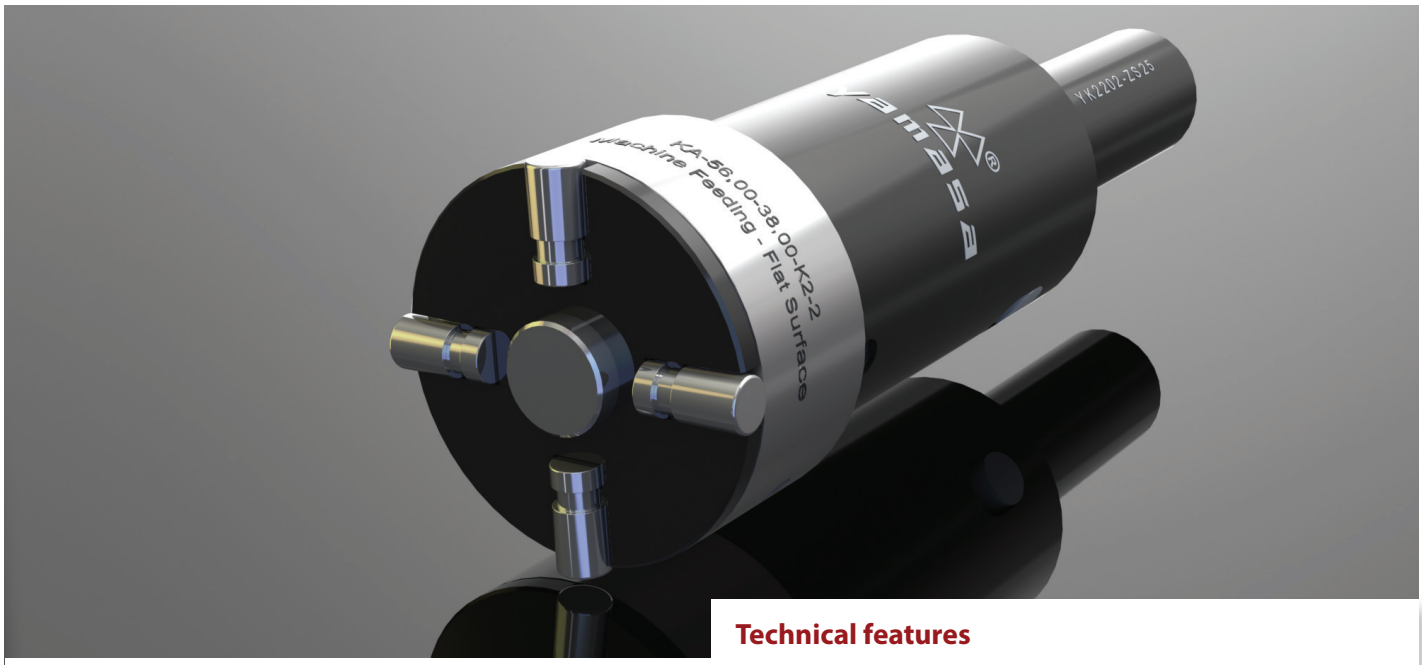


√ *Achievable surface roughness Rz<1µm / Ra<0,16 µm*

Explanation

Taper-Flat Surface Burnishing Tools



COMPACT DESIGN
For swiss and multi-spindle automatic type machines.

MKI Micro roller burnishing tool

Technical features

These tools are used to process the interior-outer conics and flat surfaces. They are suitable to roller burnish for all workpieces requiring precision. The tool body is equipped with a special spring system. This spring system enables the pressure, which is applied on the workpiece, adjusted specifically. At the same time, this spring system provides the tool a safety stroke (safety distance). The safety stroke prevents overload on the workpiece and the machine. Furthermore it helps to get a standard and perfect surface quality. The spring system which is designed specially for each tool, gives the opportunity to apply the same pressure everytime to the workpiece which is processed, thus a precision and standard size is obtained.

Any adjustment mechanism is not mentioned in tools. The roller burnishing process occurs when the roller head, which is prepared specially due to the sizes of workpiece, is contacted to the workpiece with a certain force. During the process either the tool or the workpiece may turn. These tools are capable to process all kinds of metallic metarials with 1400 N/mm² tensile strength and hardness up to max. 42-45 HRC. Tools work by universal or CNC lathes, machining centers, drilling machines, milling machines or other machines which process by turning.

Machining parameters

Circumferential speed	max.40 m/min.
Feed rate	0,1 - 0,3 mm/rev.
Rolling share	up to 0,01 mm
Machinable material hardness	max. 42 - 45 HRC
Pre-machining roughness	Rz = 5 - 20 µm
Pre-machining	lathe or reaming
Coolant	Oil or emulsion

Tapered internal surface
KI type

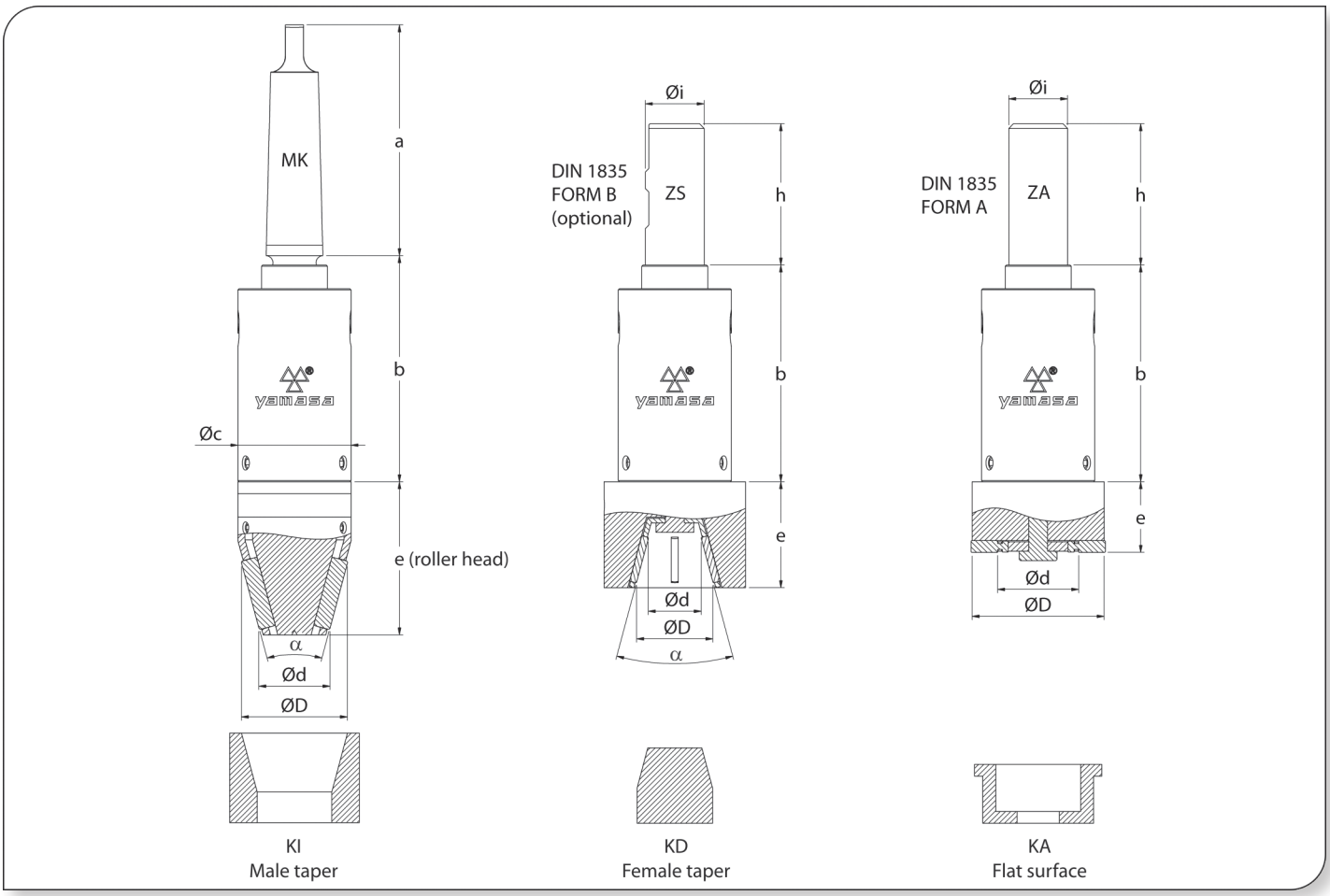
Tapered external surface
KD type

Flat surface
KA type

Taper-Flat Surface Burnishing Tools

Tool structure

K Series tools consist of a body and a roller head. The tool body consists of a shank and a precision housing equipped with the pressurized spring system. The special spring system is designed due to the requirements of the work suitability. The tool is sending with morse taper or cylindrical shank due to the preference. The roller head consists of cage, cone and rollers. These parts are designed and produced due to the dimensions of the workpiece. Later the roller heads are assembled to the proper body. As the roller heads are designed upon the specifications of the desired work, it is not possible to keep these parts in stock.



Product selection

K Series tool selection (complete)							Dimensions						
Tool type			Diameter ØD	Diameter Ød	Angle* α	Shank	Tool body	Shank		a	b	c	e (roller head)
								Cylindrical (Øi x h)	MK				
KI	KD	KA	x,xx	x,xx	x°	MK • ZS • ZA	K1	Ø20h6 X 50	MK2	78,5	62	33	it can be changed according to the workpiece and surface dimensions.
							K2	Ø25h6 X 56	MK3	98	85	48	
							K3	Ø32h6 X 60	MK4	123	93	65	

** Only for KI and KD tools. All dimensions in mm.*

How to order | Order samples

KI-35,00-15,00-30°-ZA Roller Burnishing Tool

You can create order codes of the tool by looking at the product selection table. For this, please rank the requested product features side by side.

Tool body selection is made by YAMASA according to material features and sizes of workpiece. Roller heads are designed according to workpiece sizes.

It is enough to send us order code of your selected product together with following informations. After that we will inform you the suitable tool configuration for your work.

Needed informations for tool configuration

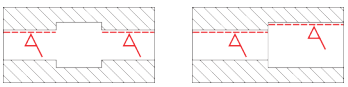
- Material:
- Material hardness (HRC etc.):
- Material yield strength (N/mm^2):
- Workpiece technical drawing

UX Series | For stepped and axial holes

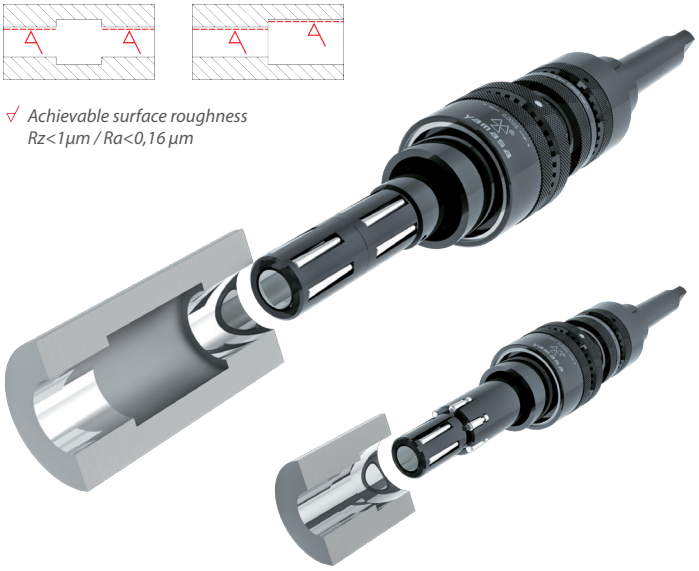
Multiple Head Burnishing Tools

Machining parameters

Circumferential speed	max.250 m/min.
Feed rate	0,10 - 0,30 mm/rev. per roller
Pre-machining roughness	Rz = 5 - 20 µm
Pre-machining	Reaming or lathe
Coolant	Oil or emulsion



Achievable surface roughness
Rz<1µm / Ra<0,16 µm



Application

YAMASA UX type tools can burnish two different hole sizes at the same time. Beside of this, tools are used for the aim of providing a precision measurement and surface quality by keeping axiality. The tools provide as well as surface hardness and calibration (measurement accuracy) beside of the burnishing. The tools provide time saving through a high processing power and speed and this is a motive to prefer for the serial production.

Technical features and advantages

- The surfaces in quality of Rz<1 µm (Ra<0,16 µm) can be obtained.
- With same setting it can burnish till H8 hole allowance.
- It is capable to burnish all kinds of metallic materials up to the tensile strength of 1400N/mm^2 and to the hardness 42-45 HRC.
- Used on universal and CNC Controlled lathe machines, machining centers, milling, drilling etc. machines and also production centers and machines which controlled manuel.
- Roller burnishing force can be adjusted, so it is possible to achieve high quality and standard roughness values.
- Diameter adjustments are independent from each other.
- During the operation, the tool or workpiece rotate.
- Roller burnishing of shoulders and other edges is possible up to the end.
- The tool is automatically retracted for do not damage the surface while pulling back .
- It is easy to change the spare part.
- Short process time, provides time saving.
- It removes the second or third tool, machine and personnel requirements.
- It is enough a few lubrication (oil or emulsion).
- It does not make sawdust.

Tool structure

UX type tools consist of a precision body which is special designed and roller head. The bodies of the tools have a special mechanism which enables to make adjustment independent from each other of the roller heads. The roller head consists of cage, cone and rollers. Roller head is specially designed according to workpiece measurements. According to the preference, shank is delivered as morse taper or cylindrical.

Rolling length

Rolling length and step increment are designed specially according to workpiece dimensions. While machining the workpiece, the roller heads of this tools which remove the plenty of tool using and provide time saving are designed to machine max. 3 steps.