

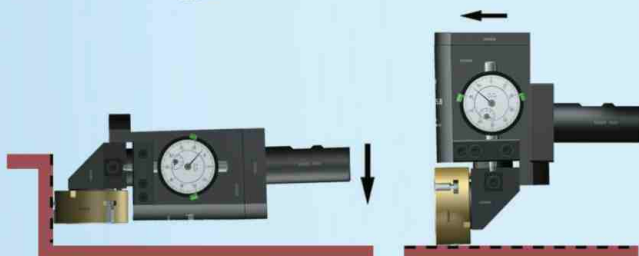
Single Roller Burnishing Tools

Type SX For cylindrical external surfaces, external tapers and flat surfaces



Application

YAMASA SX Type Tools are used for the aim of burnishing the stepped-plain shafts, female tapers and flat surfaces. The tools provide as well as surface hardness and at low rate calibration (measurement accuracy) beside of 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 $Rz < 1 \mu\text{m}$ ($Ra < 0,2 \mu\text{m}$) can be obtained.
- It is possible to burnish in different sizes with same tool.
- Tools can be used in two different ways by changing the shank. Shank of the tool can be disassemble and can be interchanged on the body. So with same tool both shafts and flat surfaces can be burnished. For this reason it does not require to have two other tools for two different surfaces.
- Used on CNC and Universal Lathe Machines.
- Tool shank and indicator have a special right and left interchange. So the tool can used both on Universal and CNC Machines.
- Tools don't require settings and when the tool is fixed to the machine it is ready to use.
- During the operation the tool is fixed and workpiece rotates. Rotation is possible in two directions.
- Roller burnishing force can be adjusted. So it is possible to achieve high quality and standard roughness values.
- Special design and spring system apply rolling force consistently. So it provides high quality and standard work flow.

- Roller burnishing of shoulders and other edges is possible up to the end.
- It is capable to burnish all kinds of metallic materials up to the tensile strength of 1400N/mm₂ and to the hardness 42-45 HRC.
- It is easy to change the spare part.
- Process time is short.
- It removes the second machine and personnel requirements.
- It is enough a little lubrication (oil or emulsion)
- It does not make sawdust.



Samples of application

- Telescopic cylinders • Hydraulic cylinders • Rods
- Axle shafts • Clutch parts • Brake disks • Spline hubs
- Pulleys • Torque converters • Shafts etc.

SX 5 ~ Ø10 - Ø40 mm
SX 8 ~ Ø12 - Ø150 mm
SX 14 ~ Ø30 - Ø2000 mm



Recommended

Machining Parameters

	SX 5	SX 8	SX 14
Recommended dia.range	: External surfaces ~Ø10-40 mm Flat surfaces ~Ø1-40 mm	External surfaces ~Ø12-150 mm Flat surfaces ~Ø1-150 mm	External surfaces ~Ø30-2000 mm Flat surfaces ~Ø1-2000 mm
Circumferential speed	: 80 m/min. (max.150)	100 m/min. (max.150)	100 m/min. (max.200)
Feeding	: between 0,1 - 0,3 mm/rev. (max.0,6)	between 0,1 - 0,3 mm/rev. (max.0,6)	between 0,1 - 0,3 mm/rev. (max.1)
Burnishing allowance	: ~ +0,005 to +0,02 mm	~ +0,005 to +0,02 mm	~ +0,005 to +0,02 mm
Pre-machining	: Precision lathening or grinding	Precision lathening or grinding	Precision lathening or grinding
Pre-machining roughness	: Rz = 5-15 µm	Rz = 5-15 µm	Rz = 5-15 µm
Coolant	: Oil emulsion or cutting oil	Oil emulsion or cutting oil	Oil emulsion or cutting oil

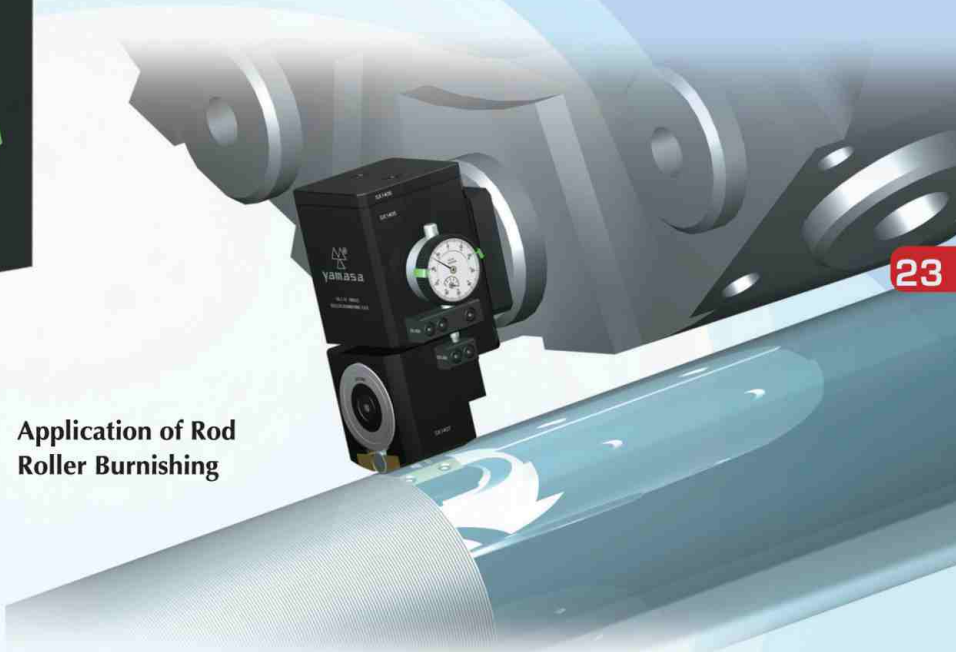
Tool Structure

SX Type Single Roller Burnishing Tools consist of a connecting shank, precision body which is special designed, roller head which contains special mechanism parts for long using life and a dial gauges which is assembled for adjusting the force. According to the preference, shank is delivered as Square, Weldon or VDI Shank. All shanks are demountable.

SX-1-14-SL25



Application of Rod Roller Burnishing



Order Sample

SX-1-14-VDI40

- SX : Type
- 1 : Version
- 14 : Type of the roller
- VDI : Shank
- VDI = DIN 69880
- WE = DIN 1835 Weldon
- SL = Square

SX Table of Tool Selection

Dia. Range ~	Surface	Machining Direction	Type
10 - 40	External	From tailstock to chuck	SX-1-5
10 - 40	External	From chuck to tailstock	SX-2-5
1 - 40	Flat	side of tailstock	SX-1-5 / SX-2-5
12 - 150	External	From tailstock to chuck	SX-1-8
12 - 150	External	From chuck to tailstock	SX-2-8
1 - 150	Flat	side of tailstock	SX-1-8 / SX-2-8
30 - 2000	External	From tailstock to chuck	SX-1-14
30 - 2000	External	From chuck to tailstock	SX-2-14
1 - 2000	Flat	side of tailstock	SX-1-14 / SX-2-14



Application of Internal Roller Burnishing