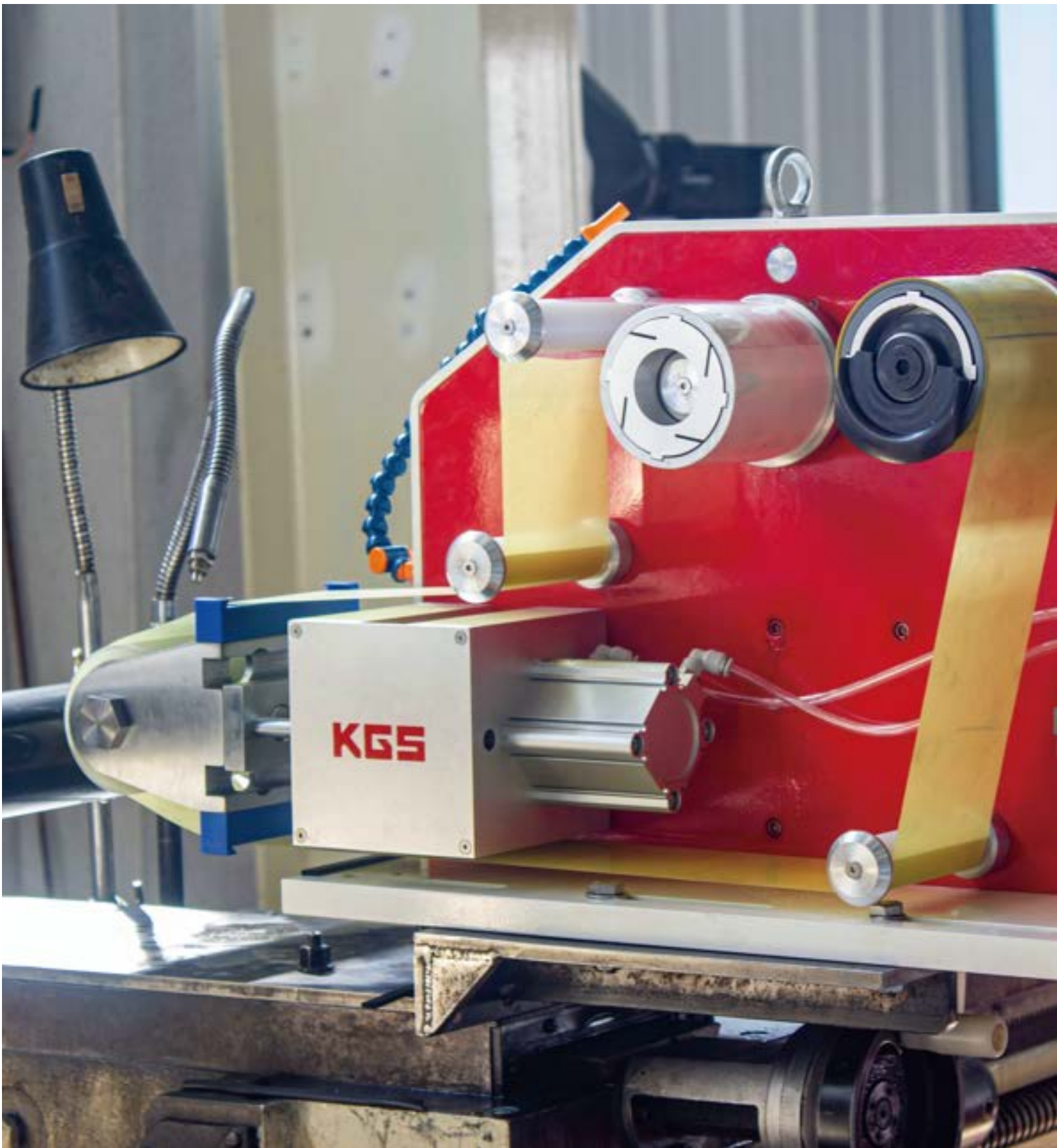


KGS PRECISION BELT GRINDER AND SUPERFINISHER





Catalogue

Tool Post Grinder

P1-P4

SUPERFINISHER

P5-P6

Large Belts

P7

Diamond strips and Film

P8



TPG M1-50A(B)

Application :

The KGS Tool Post Grinder (TPG), model M1-50A(B), is designed to significantly improve grinding and polishing efficiency of cylindrical parts. The model M1-50A(B) tool post grinder is conveniently located on the lathe carriage giving easy access to the workpiece.

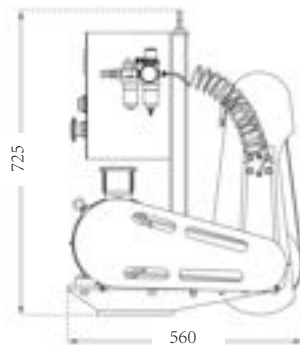
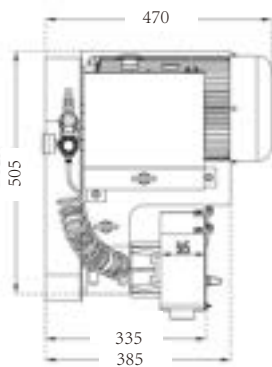
The KGS TPG is widely used for roll grinding in the paper industry, hydraulic rods for heavy equipment, printing machine components, metal calendaring, bearings, wire drawing pulleys and many other cylindrical part grinding or polishing applications.

Machinable range :

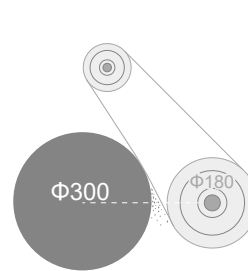
Contact grinding: 30mm<diаметer <500mm

Free grinding: 30mm<diаметer <300mm

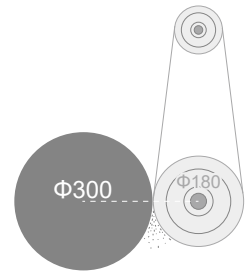
For both setup, the maximum machinable length depends on the traverse length of the lathe or grinder, the minimum length is equal to the belt width.



M1-50A(B) Size, Structure schematic



Free grinding



Contact grinding

Advantage :

- The contact area, contact pressure and belt speed can all be adjusted for a consistent finish on the workpiece surface.
- Fixed grinding and free grinding modes can be selected by adjusting the angle of the support arm.
- Belt tension and belt replacement are easily managed through a pneumatically controlled belt tension system.
- The belt speed and motor load are displayed on the control panel to monitor the process status of the TPG.

Specifications :

Model	Power (kW)	Size of belt(mm)		rpm	Feed speed of belt (m/s)	Voltage (V)	Electrical phase	Frequency (Hz)	Weight (kg)	Dimensions LxWxH (mm)
		Min	Max							
M1-50A(B)	2.2	1180x50	1220x50	0-2400	0-50	380	3	50/60	96	560x470x725
M1R-50A(B)	2.2	1180x50	1220x50	0-2400	0-50	380	3	50/60	96	560x470x725

Note :

1. Air pressure 90psi (6bar)
2. Recommended lathe specifications: Swing over carriage >240mm
3. The standard center height of this machine is 120mm (The distance from the mounting plate to the center of the contact wheel)
4. M1-50A(B) mounted on the same side as the operator M1R-50A (B) installed opposite the operator



TPG M1RT-50A(B)

Application :

The KGS Tool Post Grinder (TPG), model M1RT-50A(B), is designed to significantly improve grinding and polishing efficiency of cylindrical parts. The model M1RT-50A(B) tool post grinder is conveniently located on the lathe carriage giving easy access to the workpiece.

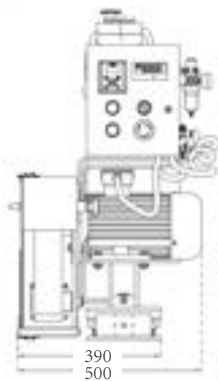
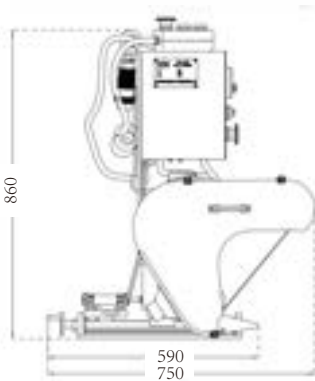
The KGS TPG is widely used for roll grinding in the paper industry, hydraulic rods for heavy equipment, printing machine components, metal calendaring, bearings, wire drawing pulleys and many other cylindrical part grinding or polishing applications.

Machinable range :

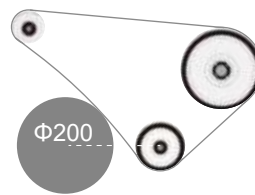
Contact grinding: 30mm<diаметer <300mm

Free grinding: 30mm<diаметer <300mm

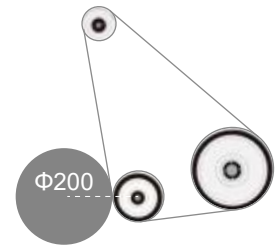
For both setup, the maximum machinable length depends on the traverse length of the lathe or grinder, the minimum length is equal to the belt width.



M1RT-50A(B)Size, Structure schematic



Free grinding



Contact grinding

Advantage :

- The available contact area for "free grinding" is larger so that the grinding results can be more homogeneous on the workpiece. This allows more control to texture surfaces.
- The support arm of the abrasive belt is easily adjustable to select between "free grinding" or "contact grinding" and giving more options depending on the size of the workpiece.
- Pneumatically controlled belt tensioning allows for precise process control and for easy belt replacements.
- The digital display of speed and motor amps also allows precision process control and adjustments can be made in real time.
- The TPG has dustproof and waterproof covers and can work in WET or DRY working conditions.

Specifications :

Model	Power (kW)	Size of belt(mm)		rpm	Feed speed of belt (m/s)	Voltage (V)	Electrical phase	Frequency (Hz)	Weight (kg)	Dimensions LxWxH (mm)
		Min	Max							
M1RT-50A(B)	2.2	1200x50	1230x75	0-4600	0-50	380	3	50/60	96	750x500x860

Note:

1. Air pressure 90psi (6bar)
2. Recommended lathe specifications: Swing over carriage >210mm
3. The standard center height of this machine is customized(The distance from the mounting plate to the center of the contact wheel)



TPG M2RT-75A(B)

Application :

The KGS Tool Post Grinder (TPG), model M2RT-75A(B), is designed to significantly improve grinding and polishing efficiency of cylindrical parts. The model M2RT-75A(B) tool post grinder is conveniently located on the lathe carriage giving easy access to the workpiece.

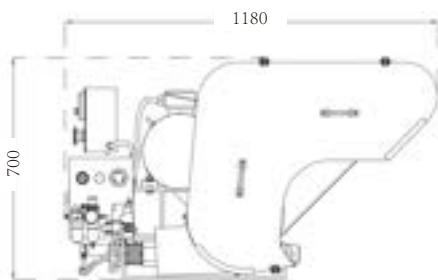
The KGS TPG is widely used for roll grinding in the paper industry, hydraulic rods for heavy equipment, printing machine components, metal calendaring, bearings, wire drawing pulleys and many other cylindrical part grinding or polishing applications.

Machinable range :

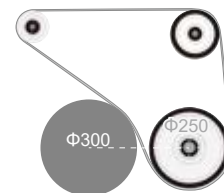
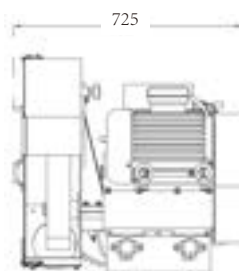
Contact grinding: 30mm<diаметer <1000mm

Free grinding: 30mm<diаметer <600mm

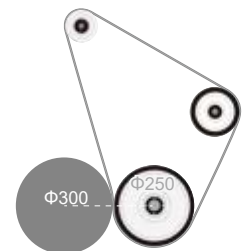
For both setup, the maximum machinable length depends on the traverse length of the lathe or grinder, the minimum length is equal to the belt width.



M2RT-75A(B) Structure schematic



Free grinding



Contact grinding

Advantage :

- The available contact area for "free grinding" is larger so that the grinding results can be more homogeneous on the workpiece. This allows more control to texture surfaces.
- The support arm of the abrasive belt is easily adjustable to select between "free grinding" or "contact grinding" and giving more options depending on the size of the workpiece.
- Pneumatically controlled belt tensioning allows for precise process control and for easy belt replacements.
- The digital display of speed and motor amps also allows precision process control and adjustments can be made in real time.
- The TPG has dustproof and waterproof covers and can work in WET or DRY working conditions.

Specifications :

Model	Power (kW)	Size of belt(mm)		RPM	Feed speed of belt (m/s)	Voltage (V)	Electrical phase	Frequency (Hz)	Weight (kg)	Dimensions LxWxH (mm)
		Min	Max							
M2RT-75A(B)	4	1980x50	2100x75	0-2400	0-50	380	3	50/60	225	1180x725x700

Note:

1. Air pressure 90psi (6bar)
2. Recommended lathe specifications: Swing over carriage >400mm
3. The standard center height of this machine is 200mm (The distance from the mounting plate to the center of the contact wheel)



TPG-M3-100A(B)

Application :

The KGS Tool Post Grinder (TPG), model M3-100A(B), is designed to significantly improve grinding and polishing efficiency of cylindrical parts. The model M3-100A(B) tool post grinder is conveniently located on the lathe carriage giving easy access to the workpiece.

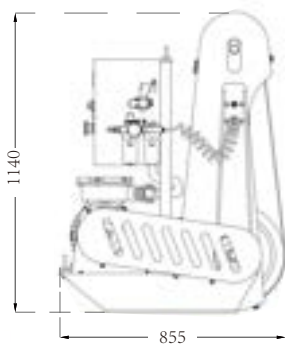
The KGS TPG is widely used for roll grinding in the paper industry, hydraulic rods for heavy equipment, printing machine components, metal calendaring, bearings, wire drawing pulleys and many other cylindrical part grinding or polishing applications.

Machinable range :

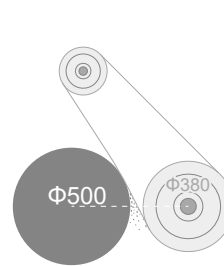
Contact grinding: 50mm< diameter <2000mm

Free grinding: 100mm< diameter <500mm

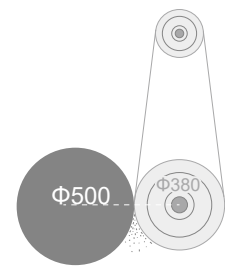
For both setup, the maximum machinable length depends on the traverse length of the lathe or grinder, the minimum length is equal to the belt width.



M3-100A(B) Structure schematic



Free grinding



Contact grinding

Advantage :

- The contact area, contact pressure and belt speed can all be adjusted for a consistent finish on the workpiece surface.
- Fixed grinding and free grinding modes can be selected by adjusting the angle of the support arm.
- The M3 is very powerful, designed for high efficiency processing of larger cylindrical parts.
- Belt tension and belt replacement are easily managed through a pneumatically controlled belt tension system.
- The belt speed and motor load are displayed on the control panel to monitor the process status of the TPG.

Specifications :

Model	Power (kW)	Size of belt(mm)		RPM	Feed speed of belt (m/s)	Voltage (V)	Electrical phase	Frequency (Hz)	Weight (kg)	Dimensions LxWxH (mm)
		Min	Max							
M3-100A(B)	7.5	2400x50	2480x100	0-2400	0-50	380	3	50/60	225	855x585x1140
M3R-100A(B)	7.5	2400x50	2480x100	0-2400	0-50	380	3	50/60	225	855x585x1140

Note :

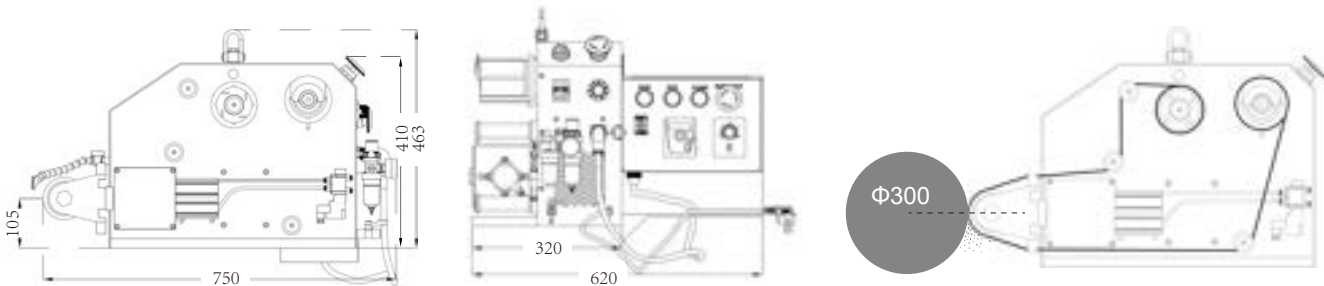
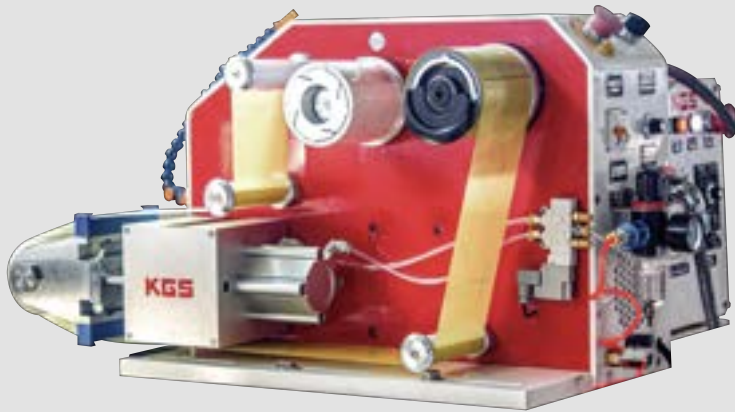
1. Air pressure 90psi (6bar)
2. Recommended lathe specifications: Swing over carriage >440mm
3. The standard center height of this machine is 220mm (The distance from the mounting plate to the center of the contact wheel)
4. M3-100A(B) mounted on the same side as the operator M3R-100A(B) installed opposite the operator

SUPERFINISHER M100

Application :

This M100 superfinishing machine can be mounted to lathes, grinders or other suitable industrial equipment. The superfinishing machine uses abrasive belts for grinding, polishing and texturing many types of cylindrical parts requiring high levels of precision. Parts such as tungsten carbide rolls, stainless steel rolls, and other metallic or ceramic materials can easily be polished to a mirror finish.

The M100 Superfinisher is the ideal solution for achieving a stable and precision finish.



SUPERFINISHER M100 Structure schematic

Contact grinding

Advantage :

- With adjustable speed oscillating grinding, longitudinal wear marks can quickly be eliminated leaving a uniform finish.
- When equipped with a precision grinding belt, excellent flatness and high dimensional accuracy levels can be achieved, giving professional ultra-high precision results.
- The superfinisher can be easily mounted and unmounted from lathes or grinding equipment, making it a very versatile addition to any workshop.
- High stability, low noise, low power consumption.

Specifications :

Model	Power (kW)	Voltage (V)	Width of belt (mm)	Feed speed of belt (mm/min)	Vibration frequency (Hz)	Contact pressure (N)	Air pressure (bar)	Noise (dB)	Weight (kg)	Center height (mm)	Dimensions LxWxH (mm)
SUPERFINISHER M100	0.8	220	101.6	0-30	0-1420	0-1180	0-6.2	<90	75	105	750x320x410

Note:

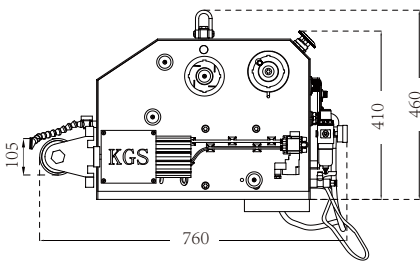
1. The M100 superfinisher consists of an electrical control box and the base machine. The components can be fixed together or mounted separately for convenience.
2. The M100 can work with many types of abrasive belts including films, diamond electroplated, or normal polishing belts
3. Recommended lathe model and specification: Swing over carriage >210mm

SUPERFINISHER M200

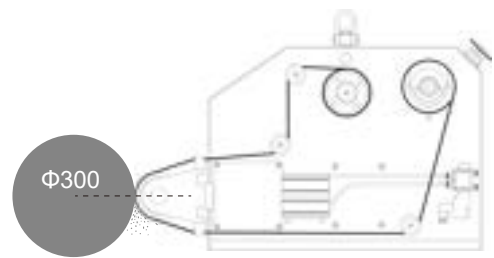
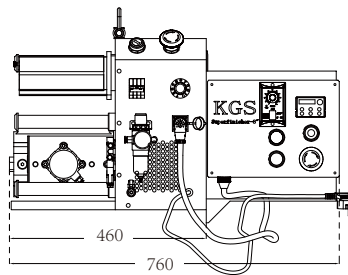
Application :

This M200 superfinishing machine can be mounted to lathes, grinders or other suitable industrial equipment. The superfinishing machine uses abrasive belts for grinding, polishing and texturing many types of cylindrical parts requiring high levels of precision. Parts such as tungsten carbide rolls, stainless steel rolls, and other metallic or ceramic materials can easily be polished to a mirror finish.

The M200 Superfinisher is the ideal solution for achieving a stable and precision finish.



SUPERFINISHER M200 Structure schematic



Contact grinding

Advantage:

- With adjustable speed oscillating grinding, longitudinal wear marks can quickly be eliminated leaving a uniform finish.
- When equipped with a precision grinding belt, excellent flatness and high dimensional accuracy levels can be achieved, giving professional ultra-high precision results.
- The M200 is very powerful, designed for high efficiency processing of larger cylindrical parts.
- The superfinisher can be easily mounted and unmounted from lathes or grinding equipment, making it a very versatile addition to any workshop.
- High stability, low noise, low power consumption.

Specifications :

Model	Power (kW)	Voltage (V)	Width of belt (mm)	Feed speed of belt (mm/min)	Vibration frequency (Hz)	Contact pressure (N)	Air pressure (bar)	Noise (dB)	Weight (kg)	Center height (mm)	Dimensions LxWxH (mm)
SUPERFINISHER M200	1.5	220	203	0-30	0-1420	0-1870	0-6.2	<90	98	105	760x460x410

Note:

1. The M200 superfinisher consists of an electrical control box and the base machine. The components can be fixed together or mounted separately for convenience.
2. The M200 can work with many types of abrasive belts including films, diamond electroplated, or normal polishing belts
3. Recommended lathe model and specification: Swing over carriage >210mm



KGS Telum® CH Belts

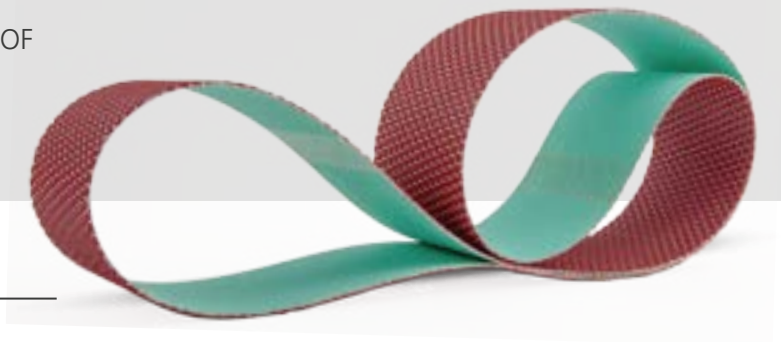
For wet grinding and polishing of cylinders with hard coatings. Especially those used in the pulp, paper & printing industries. Including Chrome replacement with HVOF Tungsten Carbide - Hydraulic rams and shock absorbers plus rolls and cylinders used for hot rolling in the metal industry.

KGS Telum ® CH Belts are engineered to replace both metal bond diamond wheels and super-finishing systems. Combines the accuracy of rigid tools (bonded wheels); with the speed, consistency & ease of use of a flexible diamond belt system. And for many applications, can replace the need for Diamond Film Finishing. Benefits: Same results every time - Grinds fast, can polish too - Hard pulley gives high calibration An efficient, low cost solution - Lower grinding force than wheels - Much lower capital investment

Backing BP2 - Heavy and very durable backing, Y-weight poly-cotton, waterproof

Materials Hard materials and coatings like HVOF

Usage  



Availability

Size(mm)	FOR MACHINES	Grit
1220x50	M1-50A(B) M1RT-50A(B)	60/120/200/ 400/800/ 1500/3000
1230x75	M1RT-50A(B)	
2100x75	M2RT-75A(B)	
2480x100	M3-100A(B) M3R-100A(B)	

Tech tip: For calibration hard materials and coatings use grit 60. For finishing use grit 800 (sometimes grit 400 will be enough also) to achieve an RA of around 0.2.

Use coolant additives suitable for belt grinding operations like Shell Metalina B200 or D3202 (non-solvent base), avoid oil based coolants.



OTHER DIMENSIONS AND GRIT SIZES ARE AVAILABLE ON REQUEST

Grit range
50 up to 3000

Dimensions

	min (mm)	max (mm)
Width	20	300
Length	533	5000

Flexible diamond strips and Diamond Lapping Film

INDUSTRY

Pulp, paper, printing, hot rolling mills, oil, gas, mining, drilling, water engineering, earthmoving

MAIN APPLICATIONS

Superfinishing systems are commonly used for optimising surfaces of rolls and other cylindrical parts. Long super-abrasive strips (with tails) and/or Diamond Lapping Film are used for polishing and finishing hard brittle materials such as Thermal sprayed coatings like HVOF sprayed carbides and ceramics.

This system provides predictable, consistent (over the entire surface) and repeatable finishes. It improves the surface structure which can easily be compared to levels reached by honing or lapping.

Another important advantage is the ability to achieve the desired surface texture.

From a highly reflective finish and low Ra value, to a specific surface roughness for friction grip & ink, water or oil retention. During the constant use of these rolls, they tend to lose this surface roughness and become "polished" during use. In this way rolls can be refurbished many times before fully being stripped and recoated. Superfinishing tape has a speed controlled slow movement over a pressure controlled rubber contact roll. This contact roll has an oscillating movement. When the workpiece is rotating in the opposite direction, the superfinish machine traverses along the workpiece; these combined motions create a cross-hatch pattern with a high percentage of plateaus and some grooves. Giving the desired surface finish and cylindricity.



TYPE OF GRINDING MACHINES

SUPERFINISHER M100 / SUPERFINISHER M200

PRODUCT OFFERING

KGS has a dedicated range of products for micro-finishing with flexible diamond strips and Diamond Lapping Film.



Flexible diamond strips

For these applications we recommend KGS Telum – strong interlocking arrow pattern and KGS Flexis – dot pattern. These long strips – also known as MO-strips - are available in various widths including 50mm, 75mm, 100mm, 150mm and 200mm. Popular lengths are 3.200/1.200mm, 4.000/2.000mm, 6.000/4.000mm, 7.000/5.000mm, 12.000/10.000mm. The strips have 1.000mm tails for lead-in and lead-out and are supplied on a 75mm keyed plastic core. Flexible diamond tools perform at best when used with coolant.



Diamond Lapping Film

Is coated with a resin bond slurry containing superfine abrasives applied to the film backing in a uniform and consistent layer. This provides a structure giving a uniform finish without making any deep scratches. Micron graded abrasive grains are uniformly distributed in the resin adhesive and coated on the polyester film. Diamond Lapping Film provides consistent, accurate and high quality finishes.

Product	Pattern	Backer			Grit availability	Wet/Dry	Key core
		Backing type	Flexibility	Stretch			
Telum Strips	Telum	BYW - Strong XY polyester, waterproof	Medium	Low	60 120 200 400 800 1500	Wet	Yes
Flexis Strips	Flexis	BYW - Strong XY polyester, waterproof	Medium	Low	60 120 200 400 800 1500	Wet	Yes
Diamond Lapping Film		Polyester film 75 µ	Medium	Low	60/45/30/15/9/5/3/1/ 0.5/0.1 µm	Wet	Yes

Example - On a HVOF sprayed WCCo coating with a start finish Ra 0.6, Superfinishstrip Ye-400 can achieve Ra 0.2

	Telum		Flexis		Lapping Film	
Dimensions	min	max	min	max	min	max
Width	50	200	50	200	50	200
Length	1200	10000	1200	10000	15000	50000



Swiss Diamond Technology®

EUROPE

Head Office:

KGS DIAMOND GROUP S.A.

Châtel-St-Denis, Switzerland

T +41 21 967 00 00

info@kgs.swiss

International Sales Office:

KGS DIAMOND INTERNATIONAL

Elburg, The Netherlands

T +31 525 683 300

sales@kgs.swiss

KGS WINTER GmbH

Dortmund, Germany

T +49 231 9 67 87 900

kgswinter@kgs.swiss

KGS DIAMOND NEDERLAND B.V.

Elburg, The Netherlands

T +31 525 685 500

salesnl@kgs.swiss

KGS DIAMOND FRANCE S.A.S.

Quetigny, France

T +33 3 80 49 76 65

kgsfrance@kgs.swiss

KGS DIAMOND PORTUGAL Lda.

Viana do Castelo, Portugal

T +351 258 735 189

sales-pt@kgs.swiss

KGS DIAMOND ESPAÑA S.L.

Barcelona, Spain

T +34 617 841 259

kgsspain@kgs.swiss

KGS DIAMOND UK LTD

Kent, United Kingdom

T +44 1580 211 975

salesuk@kgs.swiss

KGS DIAMOND HUNGARY Kft.

Budapest, Hungary

T +36 1 347 80 20

kgshungary@kgs.swiss

AMERICAS

Sales Office, Service and Distribution Center:

KGS DIAMOND U.S.A. Inc.

Columbia, United States of America

T +1 865-604-2198

kgs-usa@kgs.swiss

ASIA / MIDDLE-EAST / AFRICA / AUSTRALIA

Head Office:

THE FERRONATO KGS HOLDING LTD

Dubai, United Arab Emirates

T +971 43 99 11 22

info-dubai@kgs.swiss

Service Center for the Middle East:

KGS DIAMOND TOOLS

General Trading LLC

Dubai, United Arab Emirates

T +971 43 99 11 22

info-dubai@kgs.swiss

KGS DIAMOND TOOLS

Private LTD

Bangalore, India

T +971 80 95 51 45 18

sales-india@kgs.swiss

KGS DIAMOND GUANGZHOU Ltd

Guangzhou, China

T +86 20 3758 5369

china@kgs.swiss

KGS DIAMOND HONG KONG LLC.

Hong Kong, China

T +86 20 3758 5369

saleshk@kgs.swiss

KGS DIAMOND AUSTRALASIA PTY. Ltd

Sydney, Australia

T +61 498 999 698

australasia@kgs.swiss

KGS DIAMOND SINGAPORE PTE. LTD.

Singapore, Singapore

T +65 6692 1053

info-singapore@kgs.swiss

KGS WINTER MACHINES AND TOOLS (DALIAN) CO., LTD

Dalian, China

T +86 0411 8853 9181

china@kgs.swiss