

# VSM Products designed for grinding of cylindrical workpieces

Grit size Material	← Roughing →												← Finishing →				Grain type	Backing	VSM series				
	24	36	40	50	60	80	100	120	150	180	220	240	320	400	500	600				800	1000	1200	
	○	○	○	○	○	○	○	○	○												COM-AO	Polyester cloth	VSM XK870X
	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○												CER	Polyester cloth	VSM XK760X
	●	●	●	●	●	●	●	●	●												ZA ▼TOP SIZE	Polyester cloth	VSM KK815Y
	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)												ZA	Polyester cloth	VSM KK715X
	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)												ZA	Polyester cloth	VSM ZK745X
	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○	(●)○												ZA	Polyester cloth	VSM ZK713X
																					COM-AO	Polyester cloth	VSM LK719X
	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)												COM-AO	Polyester cloth	VSM KK718X
	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)												COM-AO	Polyester cloth	VSM KK834X
	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)	(●)												COM-AO	Polyester cloth	VSM KK712X
																					COM-SIC	Polyester cloth	VSM MK748X
																					COM-SIC	Polyester cloth	VSM CK748X
																					COM-SIC	Polyester cloth	VSM CK918X
High-Quality Series																							
																					AO	P26-80 Polyester cloth	VSM KK812X
																					AO	P100-180 Cotton cloth	VSM KK711Y
																					AO	P36-180 Polyester cloth	VSM KK711X
																					SIC	P220-500 Cotton cloth	VSM CK721X
																					SIC	P24-80 Polyester cloth	VSM CK721X
																					SIC	P100-400 Cotton cloth	VSM CK721X
																					SIC	P220-600 Cotton cloth	VSM CK721X
																					Cork/SIC	Cotton cloth	VSM CK917X
																					100,180,240AO, 400SIC	Non-woven	VSM KV707X

stainless steel etc.

carbon steel etc.

non-ferrous metals and others

- for low to medium contact pressure
- ⊙ for medium contact pressure
- for medium to high contact pressure
- (●) suitable for wet applications

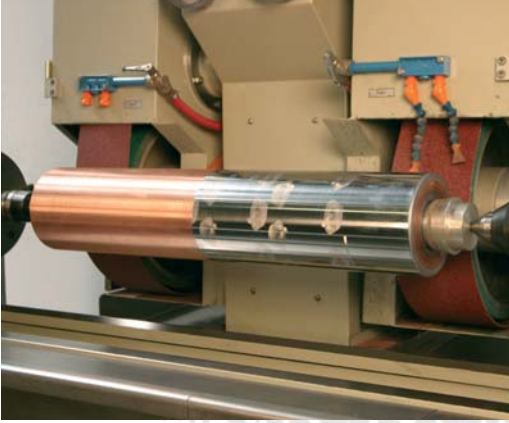
- COM-AO Compactgrain: Aluminium Oxide
- COM-SIC Compactgrain: Silicon Carbide
- ▲ TOP SIZE Additional grinding layer for cooler grinding and higher cutting rate

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APPLICATIONS

PRODUCTS

SPECIALS



QUALITY ABRASIVES

## Grinding of tubes, pipes and other cylindrical parts

Our locations can be found at [www.vsmag.de](http://www.vsmag.de)

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E-mail: [sales@vsmag.de](mailto:sales@vsmag.de) · Internet: [www.vsmag.de](http://www.vsmag.de)



# Your Application



Tubes

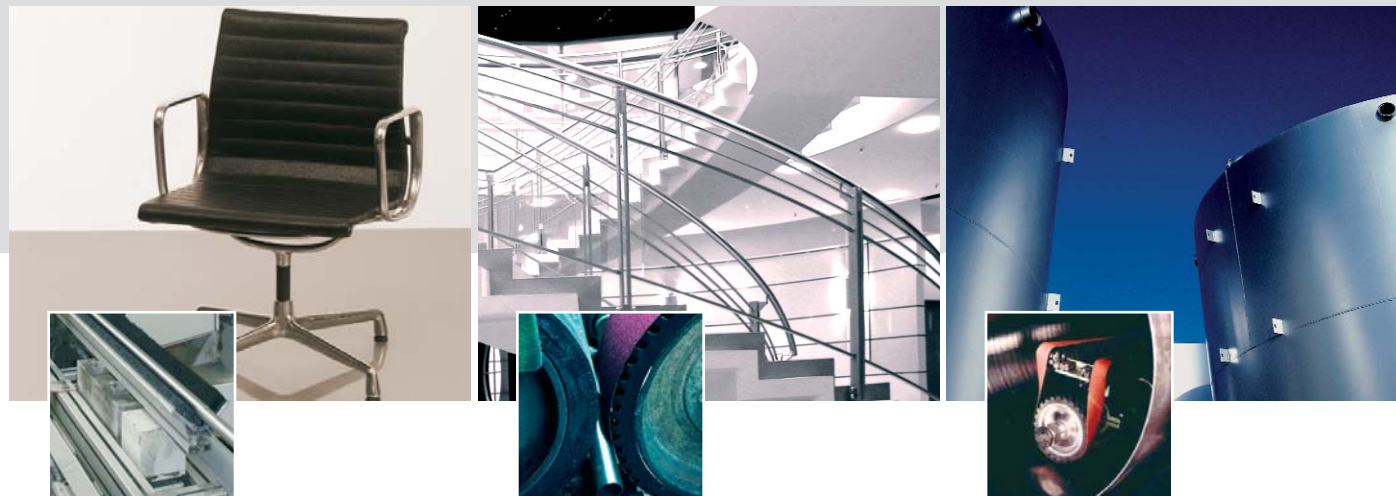
Rams

Cylinders

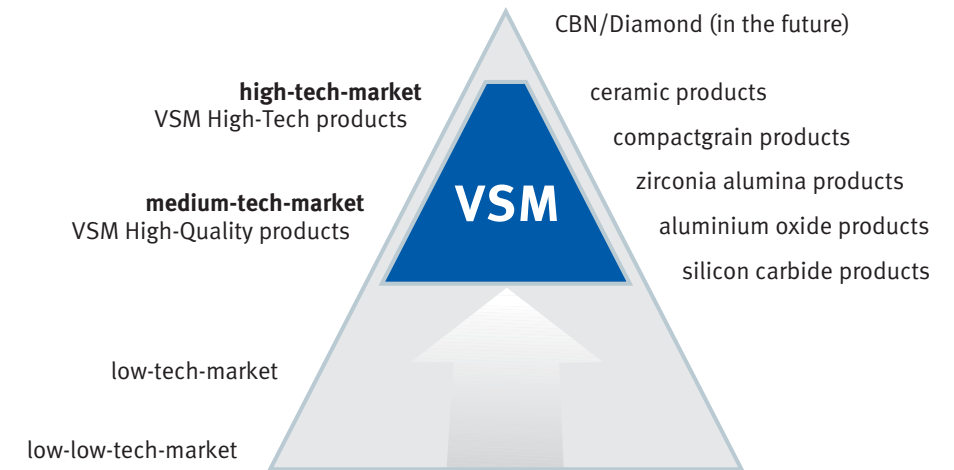
Furniture

Architecture

Containers



# Our solutions for your grinding processes



VSM OFFERS HIGH-TECH AND HIGH-QUALITY PRODUCTS WHICH PROVIDE EXCELLENT PERFORMANCE AND EXCELLENT RESULTS FOR YOUR GRINDING PROCESS.

# Your benefit

VSM offers a complete range of coated abrasives for all cylindrical grinding applications from rough to fine grinding.



VSM considers all parameters of the grinding process and possesses a in-depth knowledge about grinding machines, grinding parameters, materials and abrasive tools to optimize your grinding process.



VSM is a reliable partner and offers excellent quality at any time regarding product quality and continous support.



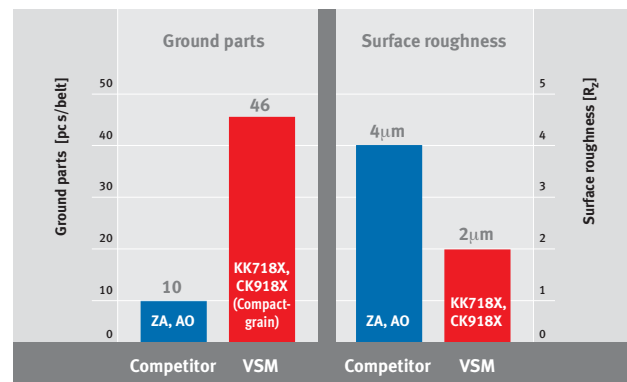


# Application example 1: Cylindrical grinding of tubes

Workpiece: Tubes  
Material: Stainless Steel (1.4301)

### Grinding conditions

Grinding machine: Centerless, 14 heads  
Contact wheel: — diameter: 400 mm  
— hardness: 65° Shore A  
Cutting speed: 30 m/sec  
Feed rate: 10 m/min  
Belt dimension: 150 x 3500 mm  
Grit: P24 to P600  
Lubricants: Emulsion



### Grinding result

#### Centerless grinding of tubes

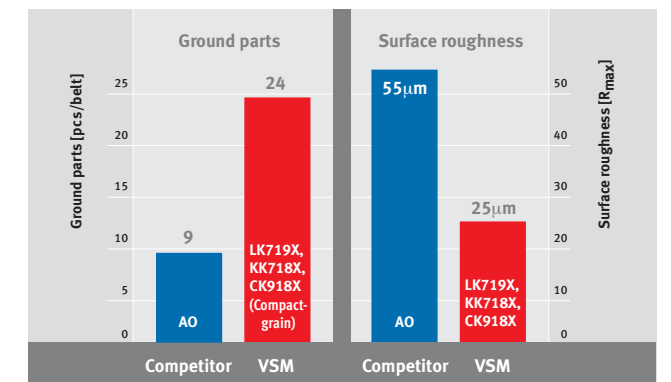
360 % more ground parts and 50 % reduced surface roughness with VSM KK718X and VSM CK918X

# Application example 2: Cylindrical grinding of hydraulic pistons

Workpiece: Hydraulic pistons  
Material: Carbon steel (C40)

### Grinding conditions

Grinding machine: Centerless, 8 heads  
Contact wheel: — diameter: 350 mm  
— hardness: 90° Shore A  
Cutting speed: 28 m/sec  
Feed rate: 12 m/min  
Belt dimension: 150 x 3350 mm  
Grit: P180 to P800  
Lubricants: Emulsion (8 %)

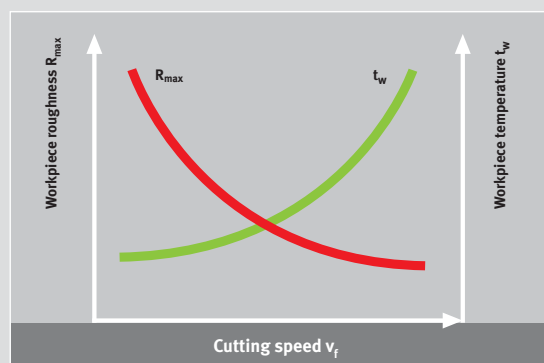


### Grinding result

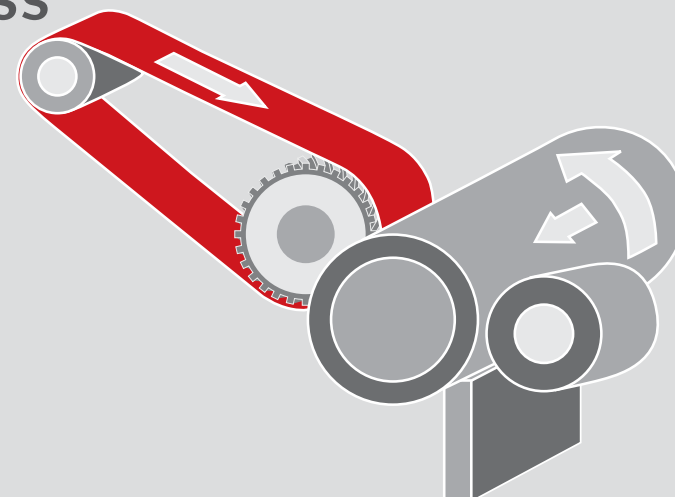
#### Centerless grinding of pistons

167 % more ground parts and 55 % reduced surface roughness with VSM LK719X, VSM KK718X and VSM CK918X

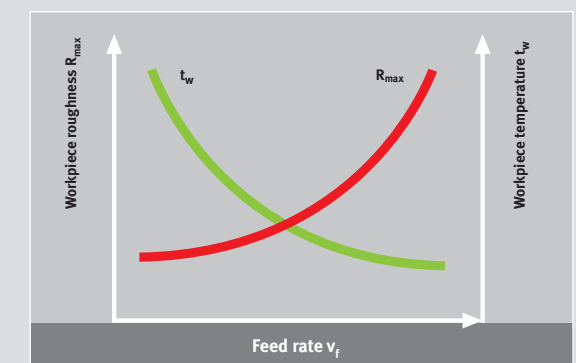
## Cutting speed, workpiece roughness and temperature



The higher the cutting speed, the lower the roughness and the higher the temperature of the workpiece in the grinding zone.



## Feed rate, workpiece roughness and temperature



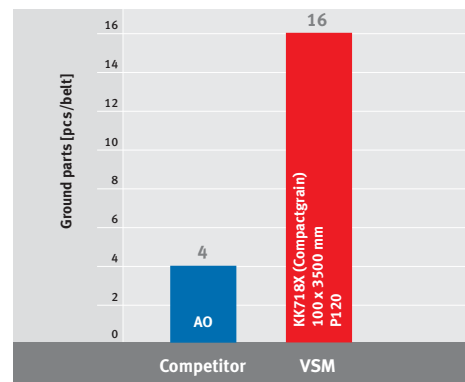
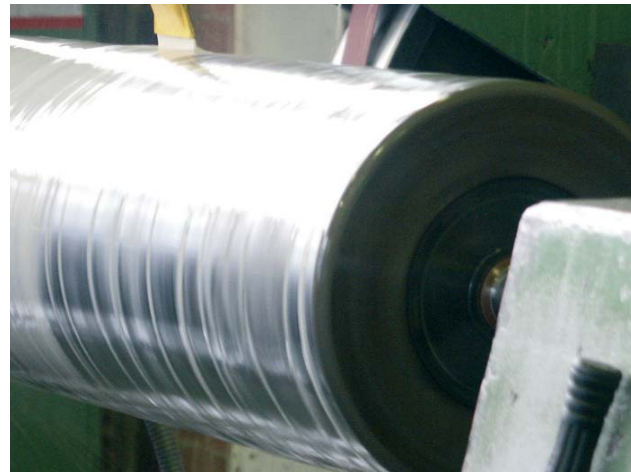
The higher the feed rate, the higher the roughness and the lower the temperature of the workpiece in the grinding zone.

## Application example 3: Cylindrical grinding of print rollers

**Workpiece:** Print rollers  
**Material:** Unalloyed steel (ST32 and ST52)

### Grinding conditions

**Grinding machine:** Loeser, between centers  
**Contact wheel:** — diameter: 350 mm  
— hardness: 60°–70° Shore A  
**Cutting speed:** 40 m/sec  
**Feed rate:** 1 m/min  
**Belt dimension:** 100 x 3500 mm  
**Grit:** P120  
**Lubricants:** Emulsion



### Grinding result

#### Grinding of print rollers between centers

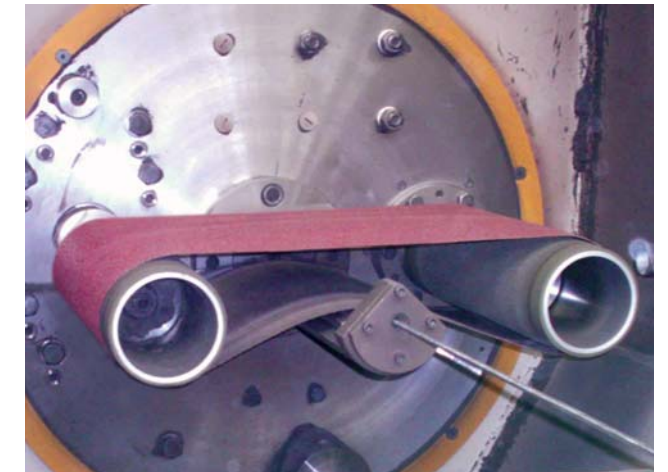
300 % more ground parts with VSM KK718X

## Application example 4: Cylindrical grinding of wires

**Workpiece:** Wires  
**Material:** Low-alloy steel

### Grinding conditions

**Grinding machine:** Planetary polishing machine  
**Contact wheel:** None; slack of the belt  
**Cutting speed:** approx. 18 m/sec  
**Belt dimension:** 300 x 1220 mm  
**Grit:** P80  
**Lubricants:** None

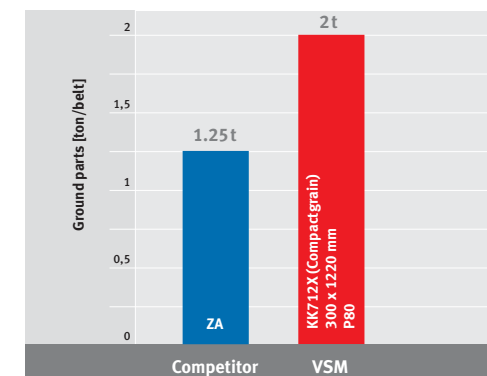


**Grinding operation:** Descaling

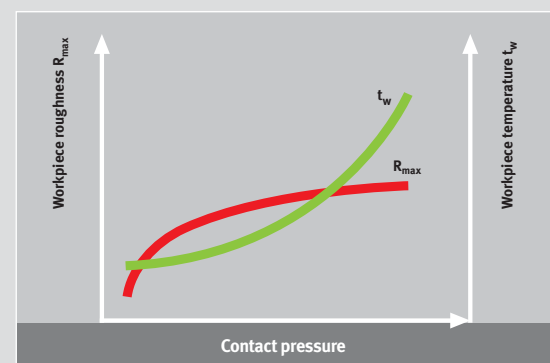
### Grinding result

#### Grinding of wires with a planetary polishing machine

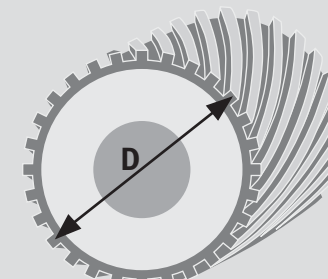
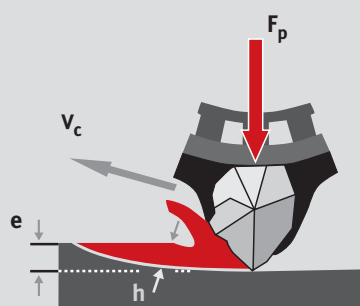
60 % more ground parts with VSM KK712X



## Contact pressure, workpiece roughness and temperature



The higher the contact pressure, the higher the workpiece temperature. The workpiece roughness remains nearly unchanged.



The harder the contact wheel surface, the higher the roughness and the lower the temperature of the workpiece in the grinding zone.

