

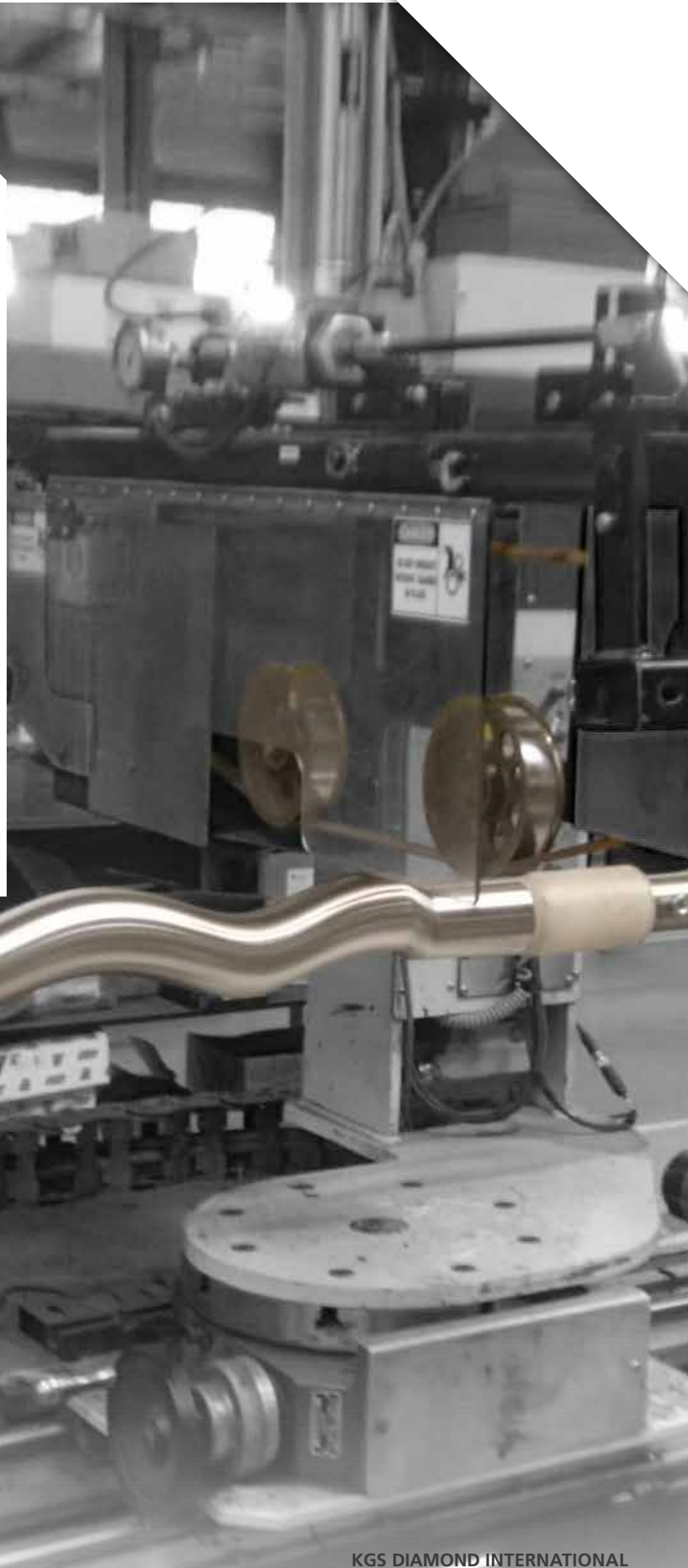
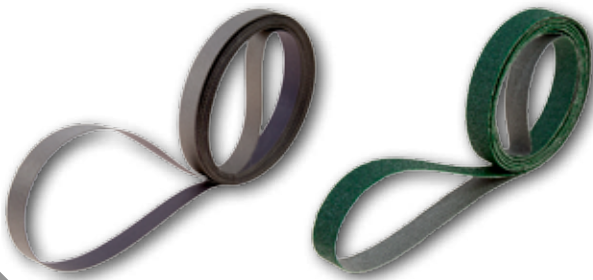
Mud rotor finishing

HIGH FLEXIBILITY TO FOLLOW COMPLEX SHAPES

Flexible diamond tools for hard-coated complex shapes

These highly-engineered flexible diamond belts are the most efficient tools to grind and polish hard coatings on flat, concave and complex 3D shapes.

KGS diamond tools for hard to grind coated geometries offer a perfect balance between cut-rate, flexibility, strength, surface finish and high productivity.



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INDUSTRY

Oil and gas industry

MAIN APPLICATIONS

The market for thermal spray coatings and other advanced materials are showing a strong upward trend. Special and very hard coatings are applied for resurfacing metal parts to minimize the effects of mechanical wear, extending the "material life". Examples are tungsten carbide coatings for corrosive low-temperature wear and nickel chromium carbides for elevated temperature wear (1000° C). Carbide coatings containing cobalt chrome have over 4 - 6 times the abrasive wear. Wire flame, powder and plasma arc spraying are examples of thermal spray wear coating methods, next to the well known HVOF (High Velocity Oxygen Fuel Spraying method) which creates micro structure densities close to that of rough materials. All these coatings are very hard to grind and often applied to complex 3D shapes which makes it a challenge to achieve the required surface finish during the grinding process while keeping up productivity.

Mud rotors / Pump shafts

The high-end manufacturers of down hole mud rotors in the oil and gas industry are using KGS diamond belts to finish and blend the tungsten carbide coating. An obvious choice, which increases productivity, lifetime, the surface finish and thus the performance of the rotors. Most applications need belts to work dry. KGS offers enhanced joint technology – this enables the resulting belt joint to withstand the maximum pressure under dry working conditions.



TYPE OF GRINDING MACHINES

Several set-ups are possible to reach the required finish. Stationary belt grinders provide a consistent finish where manual belt grinders allow the finishing of more difficult to reach areas. The belts can be used with or without coolant. Use with coolant gives a better lifespan. With KGS diamond belts finishes up to high gloss ($R_a < 0.05$) are within reach and conceivable.

PRODUCT OFFERING

KGS Flexis® - These sustainable belts have a dot pattern, metal bond design, that ensures a very strong, precise diamond grain adhesion which delivers long-lasting durability, high cut-rate and consistent grinding results. The flexible backer supports the diamond mineral to respond to surface imperfections and contoured shapes, with continuous high cut-rate and excellent productivity. The open dot pattern allows the removal of swarf, reducing loading, providing longer lifetime. KGS Flexis® belts perform at best when used wet.

KGS Swiflex® SDA - These sustainable belts have a flexible backer with a thin structured resin bond diamond layer. The feel and touch of this product is very similar to coated abrasives. KGS Swiflex® SDA are designed for wet and dry use. The flexible backer, type FSC, has a high flexibility to follow intricately contoured shapes.

PRODUCT OVERVIEW

Product	Pattern	Backer			Grit availability	Wet/Dry	Joint type
		Backing type	Flexibility	Stretch			
Flexis® Belts	Flexis® 18	FSB - Thin highly flexible JF-weight cotton, waterproof	High	Medium	120,200,400,800 and 1500	Wet or mist of water	FAB
Flexis® Belts	Flexis® 18	BPG - Flexible XF-weight polyester, waterproof	Medium	Low	120,200,400,800 and 1500	Wet or mist of water	SF
Swiflex® SDA Belts	SDA® 1	FSC* - Thin very flexible F-weight cotton backing	High	High	60,120,200,400,800,1500 and 3000	Dry or mist of water	FAB

* FSC backer is not waterproof, recommended for dry use

	Flexis®		Swiflex® SDA	
Dimensions (mm)	min	max	min	max
Width	8	300	8	300
Length	305	5000	305	5000