POLIFAN flap discs

For optimum work results on stainless steel (INOX) and aluminium

TRUST BLUE

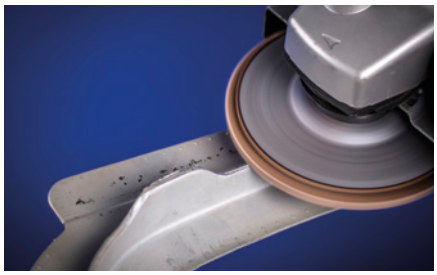
- POLIFAN flap discs with active grinding coating
- Less heat build-up in the workpiece compared with other flap discs
- Particularly cool grinding on materials with poor thermal conduction

POLIFAN flap discs
The fast way to the best tool

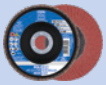
Specialists for stainless steel (INOX) and aluminium

With the POLIFAN flap discs A-COOL SG INOX + ALU, CO-COOL SG STEELOX and CO-FREEZE SG INOX, PFERD offers special solutions for use on stainless steel (INOX) and aluminium. The POLIFAN flap discs with active grinding coating convince with particularly cool grinding reduce heat build-up in the workpiece compared with standard flap discs.

For more information on POLIFAN flap discs for particular demands please see page 4 (A-COOL SG INOX + ALU ★★★☆), page 5 (CO-COOL SG STEELOX ★★★☆) and page 6 (CO-FREEZE SG INOX ★★★☆).



Product group selection

Application	Product line	Stainless steel (INOX)	Aluminium (ALU)
▪ **Surface grinding** ▪ **Work on weld seams**	**Performance Line SG ★★★☆**	 CO-FREEZE SG INOX Page 6  A-COOL SG INOX + ALU Page 4	 A-COOL SG INOX + ALU Page 4
▪ **Chamfering** ▪ **Deburring**	**Performance Line SG ★★★☆**	 CO-COOL SG STEELOX Page 5	 A-COOL SG INOX + ALU Page 4

Abrasives: A = aluminium oxide, CO = ceramic oxide grain
Coatings: COOL = Active grinding coating for cool grinding, FREEZE = Active grinding coating for ultra-cool grinding

Grit size selection

	Grit size		
	36/40	**50/60**	**80**
Application	Work on weld seams		
	Chamfering		
		Deburring	
		Surface grinding for refining the surface	

Note: With POLIFAN flap discs, grit that is one grade coarser can be selected in order to achieve the same surface as with fibre discs.

Shape selection

Form	Application
Flat type PFF	Larger grinding area for surface grinding. Optimum exploitation of the abrasive flaps at a contact angle of 0–15°.
Conical type PFC	Narrower grinding area for work on weld seams, chamfering and deburring. Optimum exploitation of the abrasive flaps at a contact angle of 10–25°.

POLIFAN flap discs
Solutions for stainless steel (INOX) and aluminium

Machining of stainless steel (INOX)

Stainless steel (INOX) is characterized in particular by its corrosion resistance, but also its toughness, high mechanical strength and exceptional aesthetics. Due to its outstanding material properties, stainless steel offers many application possibilities, but also places particular demands on grinding tools.

PFERD offers a wide range of specially developed tools that do not contaminate the workpiece and create lower heat build-up than conventional products. This prevents corrosion.

8 tips for preventing corrosion

Use the right grinding tool!

1. 

Only use grinding tools **without** ferrous (Fe), chlorinated (Cl) or sulphurous (S) fillers that are specifically designed for stainless steel (INOX). This prevents unwanted residues that can result in corrosion. Suitable tools feature the symbol above and the addition of **INOX** or **STEELOX** (STEEL + INOX).
2. To prevent signs of corrosion, the heat build-up in the workpiece must be reduced. Use grinding tools specially developed for use on stainless steel (INOX) and the largest possible grit size.

Observe during use!

3. Work with less contact pressure and oscillating movement to prevent heat discolouration, particularly with thin-walled workpieces.
4. Tools that have previously been used on steel must no longer be used for work on stainless steel (INOX). Adhering steel particles can cause impurities and therefore corrosion.
5. Ensure that, as far as possible, no sparks fall on the workpiece and no swarf is left on the workpiece.

Important: Proceed straight to finish machining!

6. Proceed straight to finish machining to achieve the desired surface quality. Suitable products can be found in catalogue section 4 “Fine grinding and polishing tools”.
7. If heat discolouration/oxidation occurs during grinding, this must be removed using the following fine grinding process.
8. Clean each workpiece thoroughly after completion of all the mechanical work.

Machining of aluminium

The term “aluminium” refers to a series of alloys in which the chemical element aluminium is the main component. These range from soft to tough and hard aluminium alloys.

Normal grinding tools for steel often cannot be used for work on aluminium. Particularly with soft, lubricating alloys, adhesion of materials and clogging of the grinding tool could occur. PFERD has therefore developed a series of special tools for processing aluminium.

These products also contain no fillers that could leave unwanted residues on the workpiece. The surfaces can therefore be welded immediately after cutting or grinding.

Specialized products for use on aluminium

SG ALU grinding wheels

POLIFAN flap discs **A-COOL SG ALU + INOX** (with a specially developed coating that prevents chips from adhering)

POLIFAN flap discs **A SGP CURVE ALU** for fillet weld grinding (the only flap disc with flaps on the circumference and a specially developed coating that prevents chips from adhering)

SG ALU and **PSF ALU + STONE** cut-off wheels

The innovative **ALU**MASTER High Speed Disc can be found in catalogue section 2 or on www.pferd.com.

POLIFAN flap discs
Performance Line SG ★★★☆

A-COOL SG INOX + ALU ★★★☆

POLIFAN flap disc with particularly cool grinding on materials with poor thermal conduction such as stainless steel (INOX) and aluminium.

Advantages:
- Less heat build-up in the workpiece compared with other flap discs.
- The active grinding abrasive coating prevents clogging, for example on soft aluminium.

Materials that can be worked:
stainless steel (INOX), aluminium, other non-ferrous metals

Applications:
surface grinding, weld dressing, chamfering, deburring

Abrasive:
Aluminium oxide A with active grinding, cooling coating (COOL)

Recommendations for use:
- Use only grit sizes 40 and 60 for aluminium.

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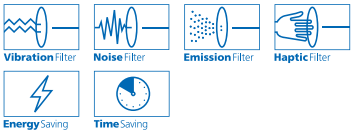

D [mm]	Grit size 40	60	80	H [mm]	Max. RPM		Description
	EAN 4007220						
Flat type PFF							
100	262764	262771	262788	16.0	15,300	10	PFF 100 A-COOL ... SG INOX+ALU/16,0
115	222737	222744	222751	22.23	13,300	10	PFF 115 A-COOL ... SG INOX+ALU
125	232910	232934	232958	22.23	12,200	10	PFF 125 A-COOL ... SG INOX+ALU
180	222768	232989	233009	22.23	8,500	10	PFF 180 A-COOL ... SG INOX+ALU
Conical type PFC							
115	232880	232897	232903	22.23	13,300	10	PFC 115 A-COOL ... SG INOX+ALU
125	232927	232941	232965	22.23	12,200	10	PFC 125 A-COOL ... SG INOX+ALU
180	232972	232996	233016	22.23	8,500	10	PFC 180 A-COOL ... SG INOX+ALU

CO-COOL SG STEELOX ★★★☆

POLIFAN flap disc with particularly cool grinding for materials that are difficult to machine such as high-alloy and rust-resistant steel, nickel-based alloys or titanium alloys.

Advantages:
- The self-sharpening action of the ceramic oxide grain guarantees optimal results, even on materials that are difficult to machine.
- Less heat build-up in the workpiece compared with other flap discs.

Materials that can be worked:
steel, mill scale, stainless steel (INOX), nickel-based alloys (e.g. Inconel and Hastelloy), hard aluminium alloys

Applications:
surface grinding, weld dressing, chamfering, deburring

Abrasive:
Ceramic oxide grain CO with active grinding, cooling coating (COOL)

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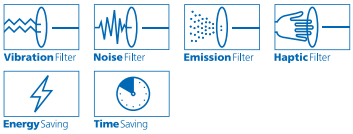

D [mm]	Grit size 40	Grit size 60	H [mm]	Max. RPM		Description
	EAN 4007220					
Flat type PFF						
115	725436	793145	22,23	13,300	10	PFF 115 CO-COOL ... SG STEELOX
125	725450	793152	22,23	12,200	10	PFF 125 CO-COOL ... SG STEELOX
180	725474	-	22,23	8,500	10	PFF 180 CO-COOL ... SG STEELOX
Conical type PFC						
115	725443	793169	22,23	13,300	10	PFC 115 CO-COOL ... SG STEELOX
125	725467	793176	22,23	12,200	10	PFC 125 CO-COOL ... SG STEELOX
180	725481	-	22,23	8,500	10	PFC 180 CO-COOL ... SG STEELOX

The whole range of cut-off wheels, flap discs and grinding wheels as well as more knowledge can be found on www.pferd.com.

You can find POLIVLIES flap discs for fine grinding in catalogue section 4 “Fine grinding and polishing tools” or on www.pferd.com.

CO-FREEZE SG INOX ★★★☆

POLIFAN flap disc specifically developed for stainless steel (INOX) with ultra-cool grinding. Due to the ceramic oxide grain CO with active grinding and cooling special coating (FREEZE), there is no heat discolouration (even in thermally unfavourable conditions), so no reworking is required.

Advantages:
- The FREEZE coating significantly reduces heat build-up in the workpiece compared with standard flap discs.
- Fast work progress and high economic efficiency thanks to the aggressive stock removal rate.
- Maximum aggressiveness over the entire tool life.
- Fewer tool changes due to the excellent tool life.
- The usual flying sparks are minimized. Damage to stainless steel workpieces from flying glowing sparks is therefore almost entirely ruled out.

Materials that can be worked:
stainless steel (INOX), nickel-based alloys (e.g. Inconel and Hastelloy)

Applications:
surface grinding, weld dressing

Abrasive:
Ceramic oxide grain CO with active grinding, cooling special coating (FREEZE)

Recommendations for use:
- Even during the first use of the POLIFAN CO-FREEZE SG INOX, the flaps exhibit an exceptional wear pattern after just a few seconds. The highly effective fillers form a shiny cooling film on the flaps (no "vitrification"). This provides the basis for ultra-cool grinding.

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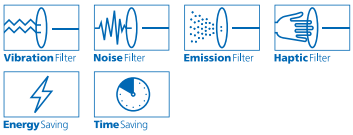
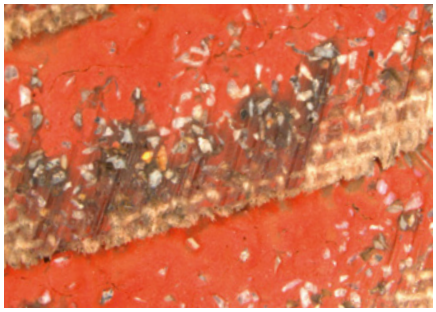


D [mm]	Grit size 36	50	80	H [mm]	Max. RPM		Description
	EAN 4007220						
Flat type PFF							
115	104040	104057	104064	22,23	13,300	10	PFF 115 CO-FREEZE ... SG INOX
125	104071	104088	104095	22,23	12,200	10	PFF 125 CO-FREEZE ... SG INOX
Conical type PFC							
115	104101	104118	104125	22,23	13,300	10	PFC 115 CO-FREEZE ... SG INOX
125	104132	104149	104156	22,23	12,200	10	PFC 125 CO-FREEZE ... SG INOX
180	104163	104170	-	22,23	8,500	10	PFC 180 CO-FREEZE ... SG INOX

CO-FREEZE SG INOX flap disc

Typical wear pattern with the characteristic shiny cooling film (no "vitrification").



Optimum results: no blue discolouration thanks to low thermal load.

Flap disc with conventional abrasive belt

Heat discolouration/oxidation due to high heat build-up. Subsequent fine grinding is required, otherwise there is a high risk of corrosion.

Subject to technical modifications.