



Power Tools

Table of Contents




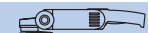




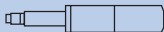





The PFERD program includes pneumatic, electric and flexible shaft drives for hand-held applications such as grinding, milling, brushing, cutting and polishing.

The machines shown on the following pages are sorted according to:

- Power source
- Machine type
- Speed
- Power output

They are listed according to RPM as follows:

- Pneumatic machines from 100,000 to 4,000 RPM
- Electric machines from 33,000 to 1,400 RPM
- Flexible shaft drives from 25,000 to 1,000 RPM (with overdrive unit 28,800 RPM).

Contents	Page
■ Your Quick Product Selection Guide	3
■ Selection of the Optimal Power Tool	3
■ Comparison of the Drive Systems	4
Air Grinders	
 	
■ Air Grinders General Information	6
	Straight Grinders 7-16
	Angle Grinders 17-19
	Belt Grinders 20
	Marking Pens 21
Electric Grinders and Accessories	
 	
■ Electric Grinders General Information	23
	Straight Grinders 24-28
	Angle Grinders 29
	Drum Grinders 30
	Belt Grinders 31

Contents	Page
Flexible Shaft Drives and Accessories	
	
■ Flexible Shaft Drives General Information	33
	Multi-Speed Machines with Stepless Regulation 34-35
	Multi-Speed Machines with Gears 36-37
	Flexible Shafts 38-43
Power Tool Accessories	
	Collets 44
	Extensions for Drive Spindles 45
	Belt Grinders for Flexible Shafts and Handpieces 46
	Maintenance Products 47

The most important prerequisite for cost effective working methods is the selection of the optimal tool. After this, the choice of a suitable power tool can be made.

The following points have to be taken into consideration:

- Design, shape and size
- Speed
- Power output
- Tool adapters, drive arbors

The selection is also influenced through:

- Accessibility of the workpiece
- Mobility
- Availability of air power or electrical power supply.

The table below provides you with an overview of suitable power tools for the PFERD tools shown in the catalogues.

Your PFERD sales advisor as well as the technical customer service engineers can help you find an individual solution to any specific application problem.

Safety Regulations



Read the instructions!
= (Please always observe the respective valid safety regulations!)




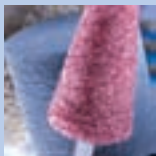
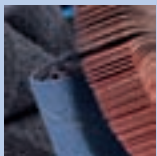


= Wear a respirator!



Read the Material Safety Data
= Sheets (MSDS) before using any materials!

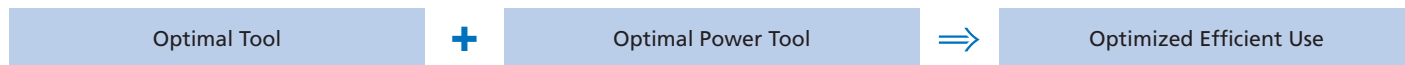
Dust Warning

Use of the tools in this catalogue may create dust and other particles. To avoid any risk of adverse health effects, the operator must use appropriate protective measures, including a respirator, during and after tool operation. Refer to our Material Safety Data Sheet (MSDS) for further information regarding the product to be used. Furthermore, additional health hazards may result from dust in the surrounding environment and from dust generated from the workpiece material. PROTECTIVE MEASURES FOR THE OPERATOR MUST ADDRESS DUST AND OTHER PARTICULATES ARISING FROM ALL SOURCES. Always use our products in a well-ventilated workspace.

			Tools	Catalogue 202	Catalogue 203	Catalogue 204	Catalogue 206	Catalogue 208
								
Power Tool		Page						
Air-Powered Machines	Straight Grinders	7-16		●	●	●	●	●
	Angle Grinders	17-19		●	●	●	●	●
	Belt Grinders	20		-	-	●	-	-
Electric Machines	Straight Grinders	24-28		●	●	●	●	●
	Angle Grinders	29		-	-	●	●	●
	Drum Grinders	30		-	-	●	-	-
	Belt Grinders	31		-	-	●	-	-
Flexible Shaft Drives	Flexible Shafts with							
	- Straight Handpieces	38-43		●	●	●	●	●
	- Angle Handpieces	38-43		●	●	●	●	●

Selection of the Optimal Power Tool

Principle:



PFERD catalogues 202 - 208 provide a multitude of possibilities, allowing you to choose the best tool for your application. In order to apply these tools with optimum efficiency, you need a power tool perfectly matching the chosen product.

The power tools are especially conceived for grinding, milling, brushing, cutting and polishing. They cover all relevant speed and power output performance ranges and accord with the latest requirements in ergonomics and safety.




They are also reliable and have long service lives. In order to find the most cost effective solution to your application problem, always choose the machine matching the most suitable tool.

Power Tools

Comparison of the Drive Systems



The PFERD Program Contains Three Power Tool Types:

Air Grinders	Electric Grinders	Flexible Shaft Drives
		
Applications and Economic Efficiency		
One-man workplace, stationary use	One-man workplace, on site use	One-man workplace, stationary, with a variety of tool applications
High-power output, efficient use of air, rugged, durable slide vane and turbine motors	High-power output, low wear ensures maximum service life	Very sturdy and durable, low wear ensures maximum service life
Power Tool Types		
Straight grinders	Straight grinders	Straight grinders
Angle grinders	Angle grinders	Angle grinders
Belt grinders	Belt grinders	-
-	Drum grinders	-
Marking pens	-	-
Machine Characteristics		
No risk of overloading, resistant until motor cuts off	Overload protection, can briefly withstand up to four times the nominal output	Overload protection, can briefly withstand up to six times the nominal output
Optimal RPM / power ratio	Optimal fine tuning for best use of tools possible	Optimal fine tuning for best use of tools possible
Good construction size to power output ratio	Higher power output compared to air-powered machines of the same speed	High motor outputs, compact handpieces, efficient power transmission to the tool
Higher RPM's available	Very speed-stable, ideal for tools that require constant speeds	Coverage of large speed ranges
Ergonomics / Handling		
Machine size and shape suitable for many applications	Ergonomic machine shapes, easy-handling	Light, easy-to-handle handpiece, for low-fatigue work
Speed Range [RPM]		
4,000 - 100,000	1,400 - 33,000	0 - 40,000
Speed Variation		
Single rotation speed	Stepless, electronic	Stepless, electronic, alternatively using gears
Energy		
Compressed air (87 psi/6.3 bar)	1-phase AC	1-phase AC 3-phase AC
Power Range [HP]		
0.1 - 1.2	0.4 - 1.4	0.4 - 1
Safety		
Safe energy form, no sparking	Safeguard to prevent unintentional re-starting	Safeguard to prevent unintentional re-starting
Maintenance		
Simple exchange of worn parts	Simple exchange of carbon brushes	Maintenance can be performed by qualified technicians

PFERD Repair Service

PFERD provides a quick maintenance service so that downtimes for defective machines are kept as short as possible. Please contact your local PFERD sales service. You will receive a detailed quotation to aid you in making your decision. If the repair costs exceed 70 % of the replacement value, you will also receive a quotation for a new machine.

Technical Changes

Further technical developments and ergonomic improvements are consistently included in our design and manufacture. We therefore reserve the right to make technical changes to our products. If we change our designs, we generally guarantee that spare parts will remain available for four years after the change.

Warranty

Within the scope of the PFERD warranty, we take liability for deficiencies in pneumatic,

electric and flexible shaft drives as well as for accessories by repairing or replacing those parts which are defective at our discretion free of charge. We guarantee this entitlement to replacement and repair for a maximum of 12 months unless the law states longer limits. We assume no liability for damages occurring within this time due to unprofessional handling, use of other replacement parts or repair in other warranty repair facilities.



Air grinders are the fastest machines amongst the drives. They achieve higher speeds in comparison to electric or flexible shaft drives. They have – when measured against their smaller size – a high power output. The durable and wear resistant sliding vane and turbine motors have a long service life, low maintenance and are easy to service.

Areas of Application

Air grinders are very versatile. They are used especially in medium and large sized companies that have a compressed air network at their disposal.

They are used economically and reliably in production and assembly lines.

PFERD Product Range

PFERD offers straight, angle and belt grinders as well as special drives. PFERD air grinders are technologically advanced and contain the latest ergonomic findings and requirements. They have been developed especially for the economic application of abrasives and cutting tools with defined geometries and cover a wide range of speeds (4,000 - 100,000 RPM) and performances (0.1 - 1.2 HP).

Advantages

- Compact, ergonomic designed shape.
- Low weight.
- Technologically advanced.
- High power to weight performance.
- Versatile in use.
- Single speed RPM.
- No danger from overloading, can be loaded up to machine standstill.
- Housing insulated against low temperatures and vibration.
- Low-maintenance.
- Easy to service.
- Cost effective.

Criteria for Selecting the Optimum Air Grinder

The most important prerequisite for cost effective work is the selection of an optimal tool. After this, the choice of a suitable power tool can be made. The following points have to be taken into consideration.

1. Design, Shape and Size

Every type of application places a specific demand on the shape and size of the power tool. The various designs can be used for many different tasks. Depending on the dimensions, accessibility, type and frequency of the application, the ideal power tool can be selected for the task at hand.

2. RPM

The power tool should always be selected according to the RPM and cutting speed recommendations for the tool. Please refer to catalogues 202 - 208 for these recommendations.

3. Power Output

The drive unit's power output is the deciding factor for maintaining the RPM under load. The load is determined from the material, cutting capability of the tool and the grinding pressure.

4. Tool Adapter

Depending on the PFERD tool you have selected, different tool adapters are available (e.g. collets or threaded spindles). Collets are available in a wide selection of imperial and metrical shanks for all machines.

Please refer to pages 44-45 for an overview of the collets and spindle extensions.

Should you have any additional questions, your PFERD sales advisor will be happy to help.

Operates with or without Oil

Turbine and sliding vane motors are labelled as follows:



Use only without oil.



Operates with or without oil.



Use only with oil.

Advantages of Oil-Free Compressed Air

- User-friendly, protecting both people and the workshop environment.
- Reduces operation costs, because oil and fittings can be dispensed with.
- Avoids oily residue on the workpiece.

Recommendations and Prerequisites for an Economically Efficient Use of Air Grinders

1. Air Pressure

The machine should be run at an air pressure of 87 - 91 psi. A sufficient flow rate must be continuously ensured. Over-pressure leads to premature and higher levels of wear.

2. Air Consumption

All data in this catalogue refers to air consumption in cubic feet per minute [cfm]. This is the volume of the air when expanded to atmospheric pressure. Unless otherwise indicated, the air consumption figures stated are always for a pressure of 87 psi and the maximum consumption of the machine in question. Non-regulated, pneumatic devices have the highest consumption at idling speed. Centrifugal-force controlled air-powered machines have the highest air consumption under full load.

3. Rotational Speed (RPM)

All speeds are stated in revolutions per minute [RPM] and refer to the idling speed at a pressure of 87 psi. In the case of non-controlled machines, the speed under full load is approx. 50 % of the idling speed with centrifugal force-controlled machines the speed under full load is approx. 80 to 90 %.

4. Oil Mist Lubrication

An adequate oil mist lubrication is of crucial importance for proper machine operation should the machine require oil.

5. Machines Running on Oil-Free Compressed Air

Machines marked oil-free can be used without oil mist lubrication. Units which can operate with or without oil have a minimal reduction in RPM/output performance when used without oil.

6. Maintenance Unit

It is recommended to install a complete maintenance unit (dirt filter + pressure reducer + oiler) at a distance not exceeding 16.4 ft from the machine.

The size of the filter pores should be 3 - 5 µm. In humid environments, air-powered machines should not be operated without oil.

7. In-Line Filter

Small high-speed grinders (approx. 40,000 RPM and over) should be used with an in-line filter instead of the regular dirt trap, should the maintenance unit's dirt filter pores be larger than 5 µm. For in-line filter, see page 45.

8. Air Supply Hose

The supply hose must have an inner diameter that at least corresponds to those stated for the drives.

9. Valves and Fittings

Always use extra fittings such as hose nozzles, self-closing valve couplings etc. with the largest possible inside diameter. It is advisable to use not more than one valve coupling to prevent unnecessary pressure losses.

10. Noise Level

Air tool operators must always wear hearing protection, as process noise emission exceeds 85 dB(A) in many cases, even though the idling noise of the machine remains clearly below this value.



11. Vibrations

PFERD air tools meet the requirements of the EC machinery directive regarding vibrations from hand-held or hand-guided machines. This is achieved through:

- Precise concentricity
- Vibration damping intermediate layers
- Vibration-insulated housings

12. Maintenance and Safety

We recommend servicing the drives at regular intervals.

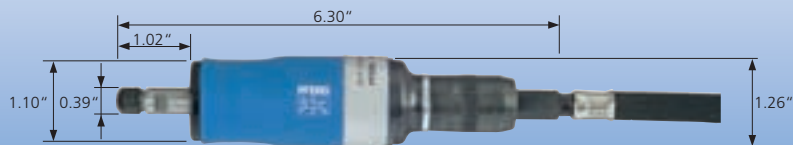


Use only without oil.

- Turbine motor, use without oil only!
- For fine milling, grinding and engraving work.
- Spindle bearing ensures high concentricity.
- Light, easy to handle.
- Holds like a pen.
- Front exhaust deflects chips.
- Comes with air supply hose.

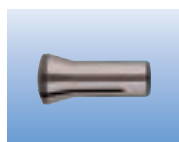
PGT 1/1000

NEW



EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90002	PGT 1/1000	front	ring	6	1/8	13/64

Collets



Group 1	for Shank Dia.		
	3/32 Inch	1/8 Inch	3 mm
EDP Number	93006	93007	93003

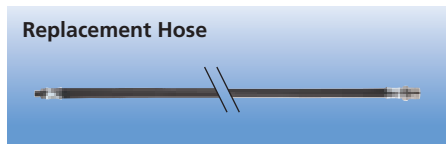
For dimensions see table page 44.

Keys



Width Across Flats	Quantity	EDP Number
7 mm	2	93327

Replacement Hose

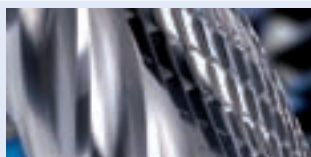


Loose replacement hose with special coupling threads.

PFERD Specification Number	EDP Number
Air hose complete	97028

Suitable PFERD Tools

Catalogue 202



Tungsten Carbide Burs
Cut: Single, Double, Fine, Diamond, ALU, MC
 1/8" head dia.
 1/8" shank dia.
 Please observe the different cutting speed recommendations in catalogue 202.

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

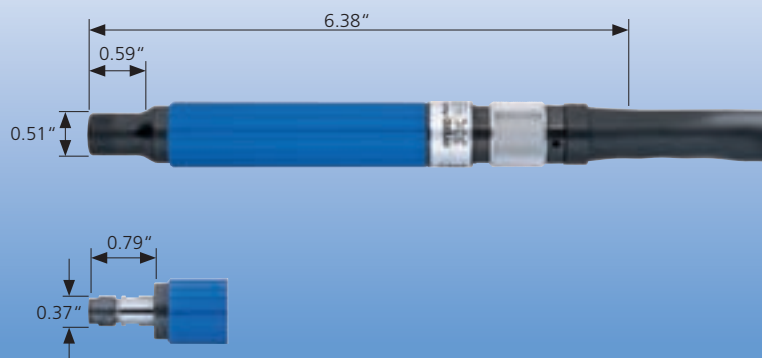
Air Grinders

Straight Grinder, Speed: 80,000 RPM / Output: 0.2 HP



PGAS 2/800 E

NEW




Use only with oil.
1 - 1.5 drops per minute.

- Rubber bearings for reduced vibration applications.
- Tungsten carbide burs in particular can now be applied at a max. angle of contact of 180° without recoiling.
- For fine milling, grinding and engraving work.
- Protective spindle cap can be removed for work in narrow geometries.
- Hold like a pen.
- Rear exhaust.
- Ships with air supply and exhaust hose.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90006	PGAS 2/800 E	rear	ring	10 - 11	1/8	15/64

Collets


	Group 1	for Shank Dia.		
		3/32 Inch	1/8 Inch	3 mm
	EDP Number	93006	93007	93003

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	8 mm	2	93328

Suitable PFERD Tools

Catalogue 202	Catalogue 203*
	
Tungsten Carbide Burs Cut: Single, Double, Fine, Diamond, ALU, MC 1/8" head dia. 1/8" shank dia. Please observe the different cutting speed recommendations in catalogue 202.	Mounted Points B97, B123, B124 1/8" shank dia.

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

***Catalogue 203:** These data apply to a free shank length of 1/2" and the stated max. head length.

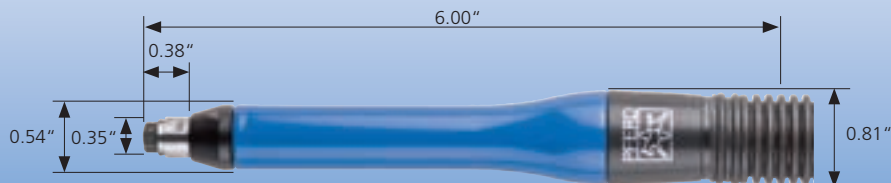


Use only with oil.
1 - 0.75 drops per minute.

- Very slim design. Optimal for precision application.
- Ideal for fine engraving, deburring and polishing tasks.
- Can be used like a pen.
- Rear exhaust.
- Comes with air supply and exhaust hose.


PGAS 1/550

NEW




EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90009	PGAS 1/550	rear	ring	4	1/8	13/64

Collets




	Group 15	for Shank Dia.		
		3/32 Inch	1/8 Inch	3 mm
	EDP Number	93240	93239	93238

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	8/6 mm	2	93325

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*
		
Tungsten Carbide Burs Cut: Single, Double, Fine, Diamond, ALU, MC 1/8" head dia. 1/8" shank dia. Please observe the different cutting speed recommendations in catalogue 202.	Mounted Points B42, B51, B52, B121, B131, B132, W154, W163 1/8" shank dia.	POLIFLEX™ Tools Bond LR B125, W162 1/8" shank dia. Bond TX B52

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

Air Grinders

Straight Grinder, Speed: 44,000 RPM / Output: 0.3 HP



PG 3/440 DH



Use only with oil.
2 drops per minute.

- Smallest and lightest straight grinder in this performance class.
- Slim and rugged design.
- Ergonomic grip for optimum control, particularly in axial direction.
- Safety ring lever throttle (DH) prevents inadvertent start-up.
- Comes with air supply and exhaust hose, with silencer.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90014	PG 3/440 DH	rear	ring/lever	12	1/4	5/16

Collets

Group 6	for Shank Dia.					
	3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
EDP Number	93067	93072	93074	93057	93062	93064

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	11 mm	1	93335

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*
<p>Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine up to 3/16" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond up to 3/16" head dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	<p>Mounted Points B70, B81 W164, W170, W182 1/8" shank dia.</p> <p>A15, A24, A26, A40</p>	<p>Abrasive Spiral Bands 3/8", 1/2" dia.</p> <p>POLICAP™ 1/4" dia.</p> <p>Mounted Flap Wheels 3/8" dia. 1/8" shank dia.</p> <p>POLIFLEX™ Tools Bond LR B122, W168, W170, W174, W175, W176 1/8" shank dia.</p> <p>B52, W178</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

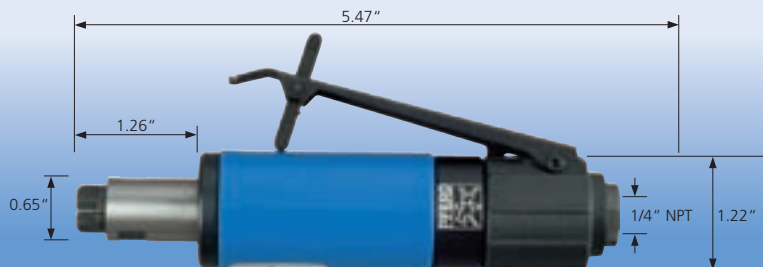
***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.



**Use only with oil.
2 drops per minute.**


- Compact design, convenient in use.
- Handles lightly, like a pen.
- Low vibration, protecting people, tools and machine.
- Safe ring lever throttle (DH) prevents inadvertent start-up.

PG 3/380 DH



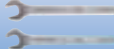
EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90018	PG 3/380 DH	front	ring/lever	12	1/4	3/8

Collets

	Group 6	for Shank Dia.					
		3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
	EDP Number	93067	93072	93074	93057	93062	93064

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	11 mm	1	93335

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*
 <p>Tungsten Carbide Burs Cut: Single, Double, Fine 3/16" up to 5/16" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond, Fine 3/16" up to 5/16" head dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	 <p>Mounted Points B70, B81, W164, W185 1/8" shank dia.</p> <p>A14, A23, A26, A39</p>	 <p>Abrasive Spiral Bands 3/8", 1/2", 5/8" dia</p> <p>POLICAP™ 1/4", 9/32" dia.</p> <p>Mounted Flap Wheels 3/8" dia. 1/8" shank dia.</p> <p>POLIFLEX™ Tools Bond TX W187, W196</p> <p>Bond GR B125, W162 1/8" shank dia.</p> <p>Bond LR W185, W186 1/8" shank dia.</p> <p>B121,</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

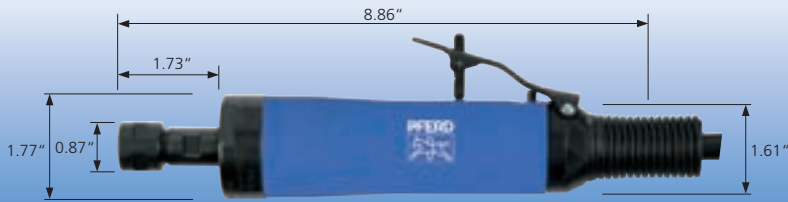
Air Grinders

Straight Grinder, Speed: 25,000 RPM / Output: 0.8 HP



PGAS 8/250 E-HV

NEW



Use only with oil.
4 - 5 drops per minute.

- Rubber bearing, especially suitable for use with tungsten carbide burs, reduces tooth breakage.
- Extremely high stock removal.
- Low vibration protecting people, tools and machine.
- Silencer.
- Comes with air supply and exhaust hose.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90033	PGAS 8/250 E-HV	rear	lever	30	1/4	11/32

Collets

Group 7	for Shank Dia.					
	1/8 Inch	1/4 Inch	3/8 Inch	3 mm	6 mm	8 mm
EDP Number	93081	93084	93085	93081	93082	93083

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	9/16"	1	93383
	3/4"	1	93384

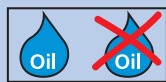
Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*
<p>Tungsten Carbide Burs Cut: Single, Double, Fine 3/16" up to 5/16" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond, Fine 3/16" up to 5/16" head dia.</p> <p>Cut: ALU 3/8", 1/2" head dia.</p> <p>Cut: MC 3/8" head dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	<p>Mounted Points A2, A4, A21, A25, A31, A37, A38, W189, W205, W207, W215, W220</p>	<p>Abrasive Spiral Bands 3/4", 7/8" dia.</p> <p>POLICAP™ 9/32", 3/8" dia.</p> <p>Mounted Flap Wheels 5/8" dia. 1/8" shank dia.</p> <p>POLIFLEX™ Tools Bond TX A5, A12, W189, W204</p> <p>Bond GR B122, W174, W175, W176 1/8" shank dia.</p> <p>Bond GR W178</p> <p>Bond LR A26, W193, W196</p> <p>Felt Points 1/4", 5/16" dia. 1/8" shank dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.



Can be used with or without oil.
3 - 4 drops per minute.

- Very slim machine extension.
- Highly durable working spindle due to rubber bearing and robust construction.
- With oil:
Speed 23,000 RPM,
power output 0.5 HP
- Without oil:
Speed 18,000 RPM,
power output 0.46 HP
- Operation without oil mist lubrication
 - Workplace-friendly
 - No oil precipitation onto the workpiece
 - No negative effects on oil-sensitive materials (e.g. ceramic, wood, plastic).
- Safety lever throttle.
- Comes with air supply and exhaust hose with silencer.


PG 5/230 V-HV

NEW



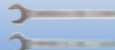
EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90035	PG 5/230 V-HV	rear	lever	22	1/4	5/16

Collets

	Group 6	for Shank Dia.					
		3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
	EDP Number	93067	93072	93074	93057	93062	93064

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	11 mm	1	93335

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*	Catalogue 206	
				
<p>Tungsten Carbide Burs Cut: Single, Double, Fine 1/4" up to 5/16" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond, Fine 1/4" up to 5/16" head dia.</p> <p>Cut: ALU, MC 5/16" up to 1/2" head dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	<p>Mounted Points A2, A4, A11, A21, A25, A31, A34, A37, A38, W188, W189, W205, W207, W215, W220, W221, W236</p>	<p>Abrasive Spiral Bands 3/4", 7/8", 1" dia.</p> <p>POLIROLL 1/4"</p> <p>POLICAP™ 9/32", 3/8" dia.</p> <p>Mounted Flap Wheels 5/8" dia. 1/8" shank dia.</p>	<p>POLIFLEX™ Tools Bond TX A1, A5, A11, W204</p> <p>Bond GR B122, W174, W175, W176 1/8" shank dia.</p> <p>Bond GR B52, W178</p> <p>Bond LR A5, A12, A26, A40, W193, W196, W206</p> <p>Felt Points 1/4", 5/16" dia. 1/8" shank dia.</p>	<p>Snagging Wheels 2" dia.</p> <p>Die Grinder Wheels 2" dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

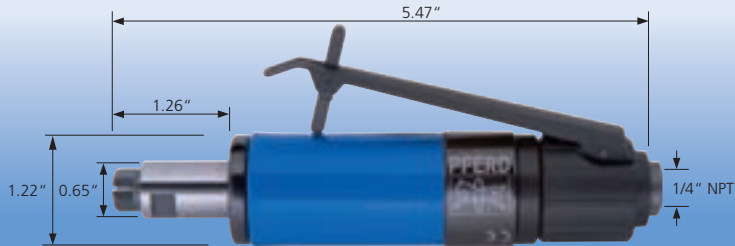
*Catalogues 203/204: These data apply to a free shank length of 1/2" and the stated max. head length.

Air Grinders

Straight Grinder, Speed: 21,000 RPM / Output: 0.3 HP



PG 3/210 DH



Use only with oil.
2 - 3 drops per minute.

- For fine milling and grinding work with good performance.
- Easy to handle and light to guide.
- High speed stability and power output.
- Precise one-handed guidance is possible.
- Low vibration protecting people, tools and machine.
- Safe ring lever throttle (DH) prevents inadvertent start-up.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90036	PG 3/210 DH	front	ring/lever	17	1/4	3/8

Collets

Group 6	for Shank Dia.					
	3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
EDP Number	93067	93072	93074	93057	93062	93064

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	11 mm	1	93335

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*	
Tungsten Carbide Burs Cut: Single, Double, Fine, 3R 1/4" up to 3/8" head dia. 1/8" shank dia. Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 1/4" up to 3/8" head dia. 1/4" shank dia. Please observe the different cutting speed recommendations in catalogue 202.	Mounted Points A4, A11, A31, A34, A36, A37, W189, W207, W208, W221, W236	Abrasive Spiral Bands 3/4", 7/8", 1" dia. POLIROLL 1/4" dia. POLICAPT™ 3/8", 1/2" dia. Mounted Flap Wheels 5/8" dia. 1/8" shank dia. 3/4", 1" dia. 1/8" + 1/4" shank dia.	POLIFLEX™ Tools Bond LR A5, A11, A12, A21, A25, A40, W206, W220 Bond TX A1, A11, A21, A25, W220, W222 Bond GR W185 1/8" shank dia. B121 Felt Points 1/4", 5/16" dia. 1/8" shank dia. 3/8" dia. 1/8" + 1/4" shank dia.

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

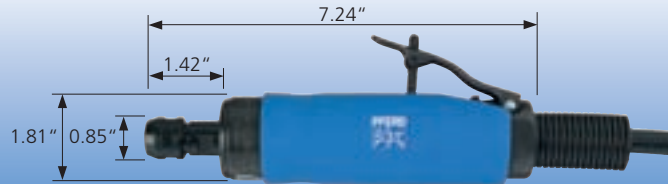


Use only with oil.
1 - 5 drops per minute.

- Consistent power due to centrifugal governor.
- Short, easy to handle machine shape, light-weight design.
- Safety lever throttle (HV).
- Comes with air supply and exhaust hose.

PGAS 8/100 HV

NEW



EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90064	PGAS 8/100 HV	rear	lever	6 - 30	1/4	11/32

Collets

Group 7	for Shank Dia.					
	1/8 Inch	1/4 Inch	3/8 Inch	3 mm	6 mm	8 mm
EDP Number	93081	93084	93085	93081	93082	93083

For dimensions see table page 44.

Keys

Width Across Flats	Quantity	EDP Number
9/16"	1	93383
3/4"	1	93384

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*	Catalogue 206	Catalogue 208	
					
<p>Tungsten Carbide Burs Cut: 3R, 3RS 3/8" up to 3/4" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond, ALU PLUS, 3R, 3RS 3/8" up to 3/4" head dia. 1/4" shank dia.</p> <p>Cut: 3R, 3RS 3/8" up to 3/4" head dia. 3/8" shank dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	<p>Mounted Points A3, W239, W242</p>	<p>Abrasive Spiral Bands 1-1/2", 2" dia.</p> <p>POLIROLL 3/4", 1-3/16" dia.</p> <p>POLICAP™ 5/8" dia.</p> <p>Mounted Flap Wheels 1-3/8", 2" dia.</p> <p>POLISTAR 3/4", 1-1/4" dia.</p> <p>POLINOX™ Mounted Flap Wheels 1-1/2" dia.</p>	<p>POLINOX™ Unitized Wheels 2", 3" dia.</p> <p>POLIFLEX™ Tools Bond GR A5, A11, A12, A21, A25, A26, A40, W193, W196, W204, W230</p> <p>Bond PUR W196, W206, W220</p> <p>Felt Points 3/8" dia. 1/8" + 1/4" shank dia. 9/16", 3/4" dia.</p>	<p>Snagging Wheels 2" dia.</p> <p>Die Grinder Wheels 2" dia.</p>	<p>Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia.</p> <p>Stem Mounted Crimped / Knot End 1/2" up to 1" dia.</p> <p>Crimped / Knot Wheels 1-1/2" up to 3" dia.</p> <p>Crimped Cups 1-1/4" up to 2-3/4" dia.</p> <p>Bevel 1-1/2" up to 3" dia.</p> <p>Specialty Pilot 1/2"</p> <p>Specialty Circular End 1-1/4" up to 3" dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

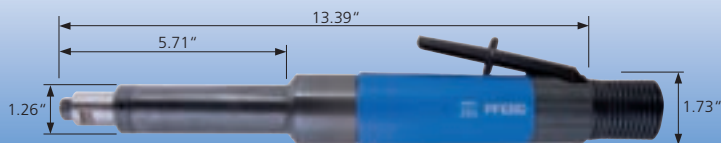
Air Grinders

Straight Grinder, Speed: 4,000 RPM / Output: 1.2 HP



PG 10/40 V-HV

NEW



Use only with oil.
6 - 7 drops per minute.

- High power output straight grinder geared to lower speed.
- Ideal for fine grinding and polishing tools.
- Safety lever throttle (HV) protects against inadvertent start-up.
- Rear exhaust with silencer.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90083	PG 10/40 V-HV	rear	lever	42	1/4	11/32

Collets

Group 8	for Shank Dia.			
	1/4 Inch	3/8 Inch	6 mm	8 mm
EDP Number	93094	93095	93091	93092

For dimensions see table page 44.

Keys

Width Across Flats	Quantity	EDP Number
14 mm	1	93340
17 mm	1	93350

Suitable PFERD Tools

Catalogue 204*			Catalogue 208
			
Abrasive Spiral Bands 2-3/8" dia. POLIROLL 1" dia. Mounted Flap Wheels 3" dia.	POLINOX™ Mounted Flap Wheels 2", 2-3/8", 3" dia. POLICLEAN™ Wheels 3" dia.	Felt Points 1", 1-1/4" dia. Felt Wheels 1-1/4", 1-3/4", 2-1/4", 3" dia. Cloth Rings 3" dia.	Unthreaded Crimped Wheels Narrow Face 3" dia. Stem Mounted Specialty Pencil End Side an Bottom Cleaning M-BRAD™ Abrasive Filament Small Dia. Copper Centre 1-1/2" up to 3" dia. Narrow Face 3" dia.

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

*Catalogue 204: These data apply to a free shank length of 1/2" and the stated max. head length.



**Use only with oil.
1 drop per minute.**

- Smallest, high speed angle grinder in this performance class for industrial applications.
- Durable design, without angular gear.
- Silencer.
- Adjustable side exhaust.

PWS 1/800

NEW



EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90502	PWS 1/800	rear	push-pull	6	1/8	15/64

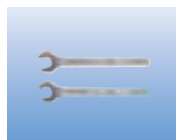
Collets



Group 2	for Shank Dia.		
	3/32 Inch	1/8 Inch	3 mm
EDP Number	93013	93012	93011



For dimensions see table page 44.

Keys



Width Across Flats	Quantity	EDP Number
6 mm	1	93326
8 mm	1	93328

Suitable PFERD Tools

Catalogue 202	Catalogue 203*
 <p>Tungsten Carbide Burs Cut: Single, Double, Fine, Diamond, ALU, MC 1/8" head dia. 1/8" shank dia. Please observe the different cutting speed recommendations in catalogue 202.</p>	 <p>Mounted Points B97, B123, B124 1/8" shank dia.</p>

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

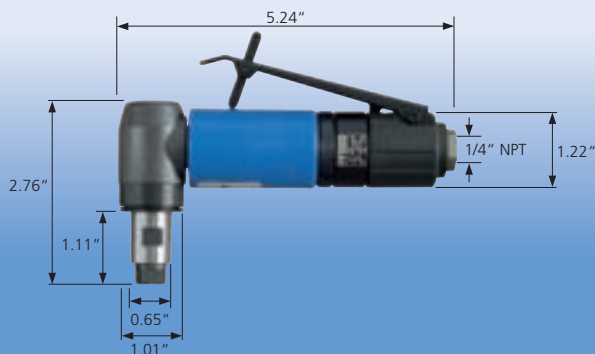
***Catalogue 203:** These data apply to a free shank length of 1/2" and the stated max. head length.

Air Grinders

Angle Grinder, Speed: 20,000 RPM / Output: 0.3 HP



PWS 3/200 DH



Use only with oil.
1 - 2 drops per minute.

- Slim angle head for work in narrow workpieces.
- Long-life angle transmission.
- High spindle concentricity.
- Easy to handle, compact shape.
- Safety ring lever throttle (DH) protects against inadvertent start-up.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Incl. Collet Dia. [Inches]	Air Supply Hose Inner Dia. [Inches]
90510	PWS 3/200 DH	front	ring/lever	12	1/4	3/8

Collets

Group 6	for Shank Dia.					
	3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
EDP Number	93067	93072	93074	93057	93062	93064

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	11 mm	1	93335

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*	
 <p>Tungsten Carbide Burs Cut: Single, Double, Fine, 3R 1/4" up to 3/8" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 1/4" up to 3/8" head dia. 1/4" shank dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	 <p>Mounted Points A1, A4, A11, A34, A36, A37, W208, W221, W236</p>	 <p>COMBIDISC® Abrasive Discs 1", 1-1/2" dia.</p> <p>COMBIDISC® TX Discs 1-1/2" dia.</p> <p>COMBIDISC® Non-Woven Discs 1-1/2", 2" dia.</p> <p>COMBIDISC® POLICLEAN™ Discs 1-1/2", 2" dia.</p> <p>Abrasive Spiral Bands 3/4", 7/8" dia.</p> <p>POLIROLL 1/4", 5/16", 3/8" dia.</p> <p>POLICAPT™ 3/8" dia.</p>	 <p>Mounted Flap Wheels 5/8" dia. 1/8" shank dia.</p> <p>3/4" dia. 1/8" + 1/4" shank dia.</p> <p>POLIFLEX™ Tools Bond TX A1, A11, A21, A25, W220, W222</p> <p>Bond LR A5, A11, A40, W206</p> <p>Bond GR W185 1/8" shank dia.</p> <p>B121</p> <p>Felt Points 5/16" 1/8" shank dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

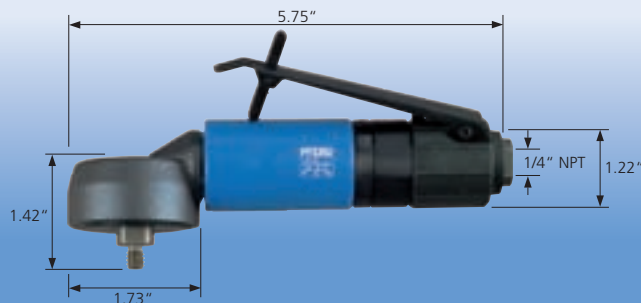
***Catalogues 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.



**Use only with oil.
2 drops per minute.**


- For grinding and finishing work using any COMBIDISC® tool (use backing pad without shank).
- Flat angle head facilitates work in hard-to-reach areas.
- High torque.
- Easy to handle, compact shape.
- Safety ring lever throttle (DH) protects against inadvertent start-up.

PW 3/120 DH



EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Drive Spindle Thread	Air Supply Hose Inner Dia. [Inches]
90521	PW 3/120 DH	front	ring/lever	12	1/4" - 20 UNC	3/8

Spindle extension (20 mm)

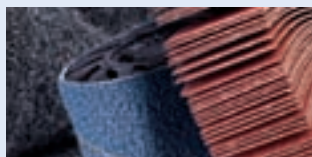
NEW	PFERD Specification Number	Tool Mounting	EDP Number
	SPV 20 CD 1/4-20 UNC	COMBIDISC® holder without threaded shank	95808

Keys

	Width Across Flats	Quantity	EDP Number
	11 mm	1	93335

Suitable PFERD Tools

Catalogue 204



COMBIDISC® Mini POLIFAN®

COMBIDISC® Discs
2", 3" dia.

COMBIDISC® Abrasive Discs
1-1/2", 2", 3" dia.

COMBIDISC® Non-Woven Discs
1-1/2" dia.

COMBIDISC® PNER Unitized
2" dia.

COMBIDISC® Textile Discs
2" dia.

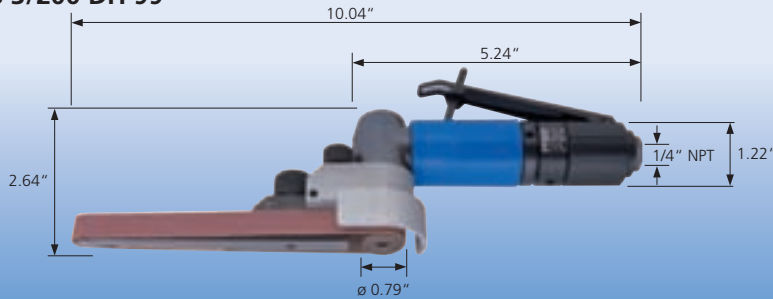
Comply with ANSI B 7.1-2000 standards and OSHA regulations.

Air Grinders

Belt Grinder, Belt Length: 12" x 1/8" - 1/2"



PBS 3/200 DH 99



with protective cover



Use only with oil.
1 - 2 drops per minute.

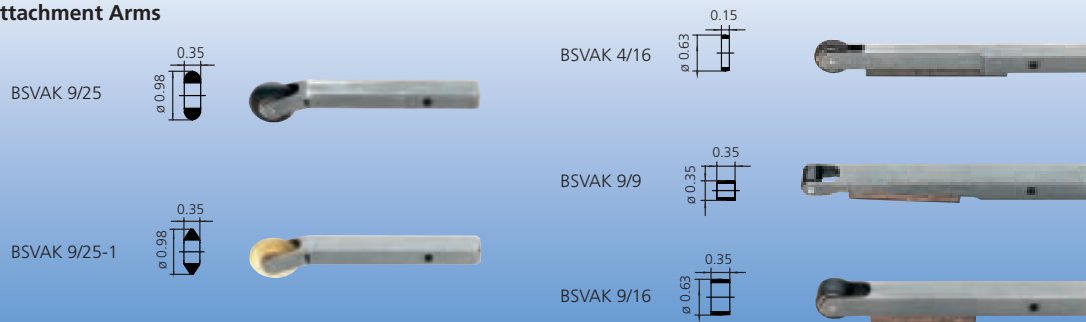
- Light, ergonomically-shaped one-hand belt grinder.
- Thin attachment arms allow work in cut outs, recesses and fillet welds, even on particularly small workpieces.
- Long-life angle transmission.
- Easy to handle, compact shape.
- Safety ring lever throttle (DH) protects against inadvertent start-up.
- Incl. belt grinder attachment arm BSVAK 9/9 for 12" belts.

EDP Number	PFERD Model Number	Exhaust Direction	Throttle Type	Air Consumption [cfm]	Belt Speed [SFPM]	Power Output [HP]	Air Supply Hose Inner Dia. [Inches]
90710	PBS 3/200 DH 99	front	ring/lever	12	4134	0.3	3/8
95001	Protective Cover	-	-	-	-	-	-

Keys

	Allen Wrench	Quantity	EDP Number
	3 mm	1	93302
	5 mm	1	93304

Belt Grinder Attachment Arms



- Durable, quality steel design.
- Use of the full roller width possible.
- Extremely slim fixtures on the roller.
- Asymmetrical arms for flush grinding.
- Belt arm can be rotated 360°.
- Belt tracking can be adjusted.
- BSVAK 9/25-1 with conical guide roller (angle flat width 0.04").
- Belt length 12".

Ordering Note:

Please refer to catalogue 204 for detailed information and ordering data regarding abrasive and non-woven belts.

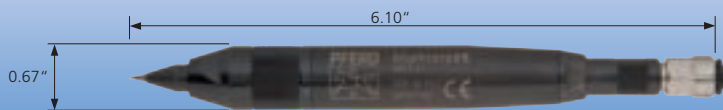
PFERD Specification Number	Width x Roll Dia. [Inches]	Width x Roll Dia. [mm]	Suitable Belt Width [Inches]	Use for	EDP Number
BSVAK 9/25 x 305	0.35 x 0.98	9 x 25	1/8, 1/4, 3/8, 1/2	Finishing jobs, deburring, matting, fine grinding and seamless blending of inner radii / channels, especially on pipe couplings areas	95006
BSVAK 9/25-1 x 305	0.35 x 0.98	9 x 25	1/8, 1/4, 3/8, 1/2	Finishing jobs in narrow/small inner radii / channels, especially on pipe coupling areas made of stainless steel (INOX) with very small welded seams (tungsten-inert gas welding)	95005
BSVAK 4/16 x 305	0.15 x 0.63	4 x 16	1/8, 1/4, 3/8	Leveling, deburring, matting, fine grinding, cleaning and seamless blending of stainless steel in narrow, small areas	95009
BSVAK 9/9 x 305	0.35 x 0.35	9 x 9	3/8, 1/2	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on small areas	95008
BSVAK 9/16 x 305	0.35 x 0.63	9 x 16	3/8, 1/2	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on small areas	95007



**Use only with a little oil.
1 drop every 5 minutes.**

- For engraving markings in metal, glass, plastics and even heat-treated tool steel (with fine needle).
- Patented pneumatic engraving pen working at about three times the frequency of competitive products.
- Frequency: 500 - 600 strokes/sec.
- Does not transmit harmful vibrations to the hand.
- Includes tungsten carbide engraving needle.
- Includes air supply hose.

Marking Pen MST 31



EDP Number	PFERD Model Number	Needle Gauge	Throttle Type	Exhaust Direction	Air Consumption [cfm]	Air Supply Hose Inner Dia. [Inches]	Frequency [Strokes/Min]	Hose Length [Feet]	Operation Pressure [psi]
90700	MST 31 F	fine	ring	front	1	4	30,000 - 36,000	6.6	87 - 106
90701	MST 31 M	medium	ring	front	1	4	30,000 - 36,000	6.6	87 - 106
80702	MST 31 G	coarse	ring	front	1	4	30,000 - 36,000	6.6	87 - 106

Replacement Hose

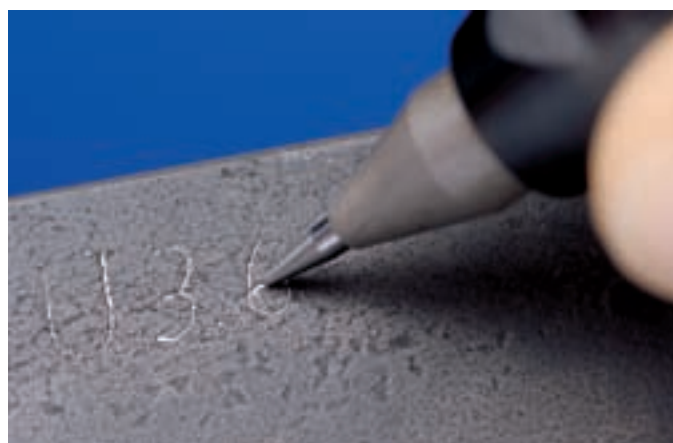


Please order tungsten carbide replacement needles separately.
The fine needle is for engraving hardened surfaces such as heat-treated tool steels.
The coarse needle is for softer surfaces such as plastics and aluminum.

TC Engraving Needles for Marking Pens



PFERD Specification Number	Description	EDP Number
Replacement hose	Loose replacement hose with special coupling nipples, length: 6.6 feet	95200
HM-GN MST 31 F	Needle gauge fine	95500
HM-GN MST 31 M	Needle gauge medium	95501
HM-GN MST 31 G	Needle gauge coarse	95502





Electric tool drives are universal versatile. In relation to their size and weight they offer high performance. They are particularly suitable for use with grinding tools that require a constant RPM.

Application

Electric grinders can be used for nearly every application. They are successfully used in many industries for different processes. The stepless electronic speed adjustment allows the use of various types of tools on one single machine. Electric grinders are not suitable for:

- Boiler construction
- Use in very dusty conditions.

The PFERD Product Range

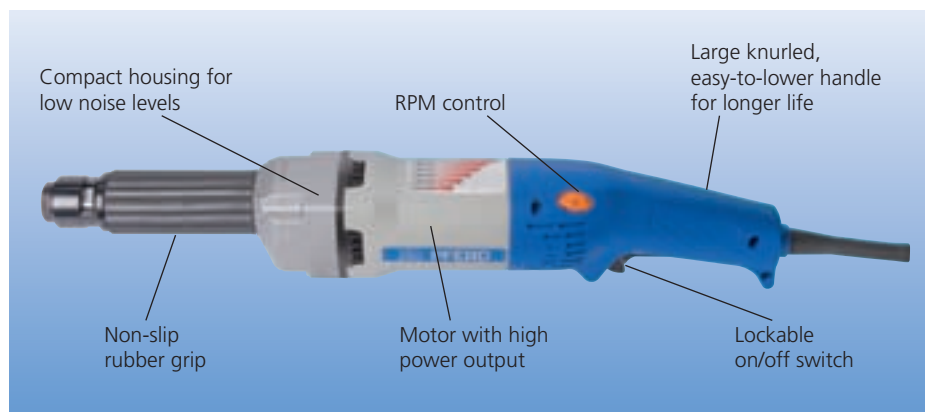
PFERD provides a wide range of electric straight, angle, belt and drum grinders. PFERD electric grinders are of the highest technological standard and accord with the latest ergonomic knowledge and requirements. They were specially developed for economic use of grinding, milling, brushing, cut-off and polishing tools, and cover a broad range of speeds (1,400 - 33,000 RPM) and power outputs (0.4 - 1.4 HP). PFERD electric grinders have an electronic speed control for constant RPM values.

Equipment/Special Features

- **Smooth start-up:**
The electronically-regulated smooth start-up ensures a jolt-free start-up preventing machine wear.
- **Under-voltage protection/restart protection:**
Should the power supply fail, PFERD electric grinders do not start-up again inadvertently. Only after they have been switched off and on again will the machine restart.
- **Current limiting/blocking protection:**
On double nominal current input, the grinders switch off for approx. 0.2 seconds. By removing the load, the grinder is able to resume initial RPM again.
- **Temperature overload protection:**
When a critical temperature is reached, the safety electronic system switches into cooling mode. The machine must not be placed under loads when in cooling mode. The machine will only start at the set working RPM after it has been switched on and off.

Advantages


- Compact, ergonomic design and shape.
- Low weight.
- Technologically up to date.
- High power output.
- Versatile use.
- Simple power supply.
- Low-maintenance.
- Easy to service.
- Cost effective.



Electrical Safety

According to current safety standards for hand-guided electric power tools, machines offered by PFERD comply with Class II equipment specifications.

Double Insulated Electric Power Units (Class II)

Such equipment is marked with the symbol  for double insulated ("Class II") appliances and has a PFERD Model Number addition "SI".

PFERD guarantees a safe use of their machines though compliance with the valid machine laws.

Any special or national codes must be observed.

Criteria for Selecting the Optimal Electric Grinder

The most important prerequisite for cost effective work is the selection of an optimal tool. Then a suitable drive can be chosen. Please take the following into consideration:



1. Design, Shape and Size

Every type of application places specific demands on the shape and size of the tool drive. The different designs can be used for various applications: The ideal drive should be selected for the task in hand depending on the dimensions, accessibility, type and frequency of the application.

2. RPM

The tool drive should always be selected according to the RPM and cutting speed recommendations for the tool. Please refer to catalogues 202 - 208 for these recommendations.

3. Power Output

The machine power output is the deciding factor for maintaining the RPM under load. The load is determined from the material to be machined, cutting capability of the tool and the grinding pressure.

4. Tool Adapter

Depending on the PFERD tool you have selected, different tool adapters are available (e.g. collets or threaded spindles). Collets are available in a wide selection of imperial and metrical shanks for all machines.

Please refer to pages 44-45 for an overview of the collets and spindle extensions.

Should you have any additional questions, your PFERD sales advisor will be happy to help.

Electric Grinders and Accessories

Electric Straight Grinder, Speed: 33,000 RPM / Output: 0.9 HP



UGER 11/330 SI 120 V

NEW




Special Features

- Particularly suitable for milling and grinding work with tungsten carbide burs and mounted points.
- High power output straight grinder with stepless speed adjustment.
- Digital electronic speed control.
- Smooth start-up for the protection of people, tools and machine.
- Electronic overload switch-off, restart protection on power failure.
- Double insulated.
- Durable, comfortable ergonomic design.
- Optimum machine guidance due to long spindle housing.

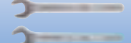
EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Incl. Collet Dia. [Inches]
91003	UGER 11/330 SI	15,000 - 33,000	120	1,050	0.9	8.5	1/4

Collets




	Group 8	for Shank Dia.			
		1/4 Inch	3/8 Inch	6 mm	8 mm
EDP Number		93094	93095	93091	93092

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	18 mm	1	93370

Suitable PFERD Tools


Catalogue 202	Catalogue 203*	Catalogue 204*	Catalogue 208
 <p>Tungsten Carbide Burs Cut: Single, Double, Fine, 3R, 3RS 3/16" up to 5/8" head dia. 1/8" shank dia.</p> <p>Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/16" up to 5/8" head dia. 1/4" shank dia.</p> <p>Cut: 3R, 3RS 3/16" up to 5/8" head dia. 3/8" shank dia.</p> <p>Cut: Coarse, ALU 1/4" up to 5/8" head dia. 1/8" shank dia.</p> <p>Cut: Coarse, ALU, MC 1/4" up to 5/8" head dia. 1/4" shank dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	 <p>Mounted Points B70, B81 1/8" shank dia.</p> <p>A1, A2, A4, A5, A6, A11, A12, A14, A21, A23, A25, A31, A34, A36, A37, A38, A39, W179, W185, W187, W188, W204, W205, W207, W208, W215, W220, W221, W222, W236, W237, W238, W239, W242</p>	 <p>Abrasive Spiral Bands 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/2"</p> <p>POLIROLL 1/4", 5/16", 3/8" dia.</p> <p>POLICAP™ 9/32", 3/8", 1/2", 5/8" dia.</p> <p>Mounted Flap Wheels 3/4", 1" dia. 1/8" + 1/4" shank dia.</p> <p>POLIFLEX™ Tools Bond TX A1, A3, A5, A11, A12, A21, A25, W187, W189, W196, W204, W220, W222</p> <p>Bond GR B122, B125, W162, W168, W170, W174, W175, W176, W185 1/8" shank dia.</p> <p>A26, B52, B121, W178, W193, W196</p> <p>Bond LR W185, W186 1/8" shank dia.</p> <p>A5, A11, A12, A21, A25, A26, A40, B121, W193, W196, W206, W220</p> <p>Bond PUR W196</p> <p>Felt Points 1/4", 5/16" dia. 1/8" shank dia. 3/8" dia.</p>	 <p>Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia.</p> <p>Unthreaded Knot Wheels 3" dia.</p> <p>Stem Mounted End 1/2" up to 1" dia.</p> <p>Wheels and Bevel 1-1/2" up to 3" dia.</p> <p>Specialty Pilot 1/2" dia.</p> <p>Specialty Circular End 1-1/4" dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

*Catalogues 203/204: These data apply to a free shank length of 1/2" and the stated max. head length.

Special Features


- Multi-purpose machine, suitable for use with many different tools.
- Stepless speed variation with markings for (output RPM): 25,000, 22,000, 19,000, 16,000, 13,000, 11,000.
- Powerful, easy to handle.
- Digital electronic speed control ensures constant RPM even under load.
- Soft start feature protects people, tools and machine.
- Restart protection on power failure.
- Electronic shutdown device deactivates motor in case of extreme overload.
- Double insulated. 
- Side switch for maximum ease of use.
- Sturdy, maintenance friendly design.

UGER 5/250 SI 120 V



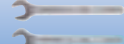
EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Incl. Collet Dia. [Inches]
91005	UGER 5/250 SI	11,000 - 25,000	120	500	0.4	4.6	1/4

Collets

	Group 11 for Shank Dia.					
	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm	
EDP Number	93179	93182	93157	93163	93166	

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	18 mm	1	93370

Suitable PFERD Tools

Catalogue 202	Catalogue 203*	Catalogue 204*	Catalogue 206	Catalogue 208
 <p>Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 1/4" up to 3/4" head dia.</p> <p>Cut: Coarse, ALU, MC 1/4" up to 5/8" head dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	 <p>Mounted Points A1, A2, A3, A4, A11, A21, A25, A31, A34, A36, A37, A38, W189, W207, W208, W215, W220, W221, W222, W236, W237, W238, W239, W242</p>	 <p>Abrasive Spiral Bands 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/2", 1-3/4", 2" dia.</p> <p>POLIROLL 3/8", 1/2" dia.</p> <p>POLICAP™ 3/8", 1/2", 5/8" dia.</p> <p>Mounted Flap Wheels 5/8", 3/4" dia. 1/8" shank dia. 1", 1-3/16" dia. 1/8" + 1/4" shank dia. 1-3/8" dia.</p> <p>POLIVLIES™ Star Pads 1-1/2", 2", 3" dia.</p> <p>POLIFLEX™ Tools Bond TX A1, A3, A5, A11, A12, A21, A25, W189, W204, W220, W222</p>	 <p>Snagging Wheels 2" dia.</p> <p>Bond GR B122, W174, W175, W176, W185 1/8" shank dia. A5, A11, A12, A26, A40, B52, B121, W178, W193, W196, W204</p> <p>Bond LR A5, A11, A12, A21, A25, A26, A40, W193, W196, W206, W220</p> <p>Bond PUR W196, W206</p> <p>Felt Points 1/4", 5/16" dia. 1/8" shank dia. 3/8" dia. 1/8" + 1/4" shank dia. 9/16", 3/4" dia.</p>	 <p>Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 2-1/2" dia. Narrow Face</p> <p>Stem Mounted End 1/2" up to 1" dia.</p> <p>Wheels 1-1/2" up to 2-1/2" dia.</p> <p>Bevel 1-1/2" up to 2-1/2" dia.</p> <p>Specialty Pilot 1/2" dia.</p> <p>Specialty Circular End 1-1/4" up to 2" dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

*Catalogues 203/204: These data apply to a free shank length of 1/2" and the stated max. head length.

Electric Grinders and Accessories

Electric Straight Grinder, Speed: 9,000 RPM / Output: 0.4 HP



UGER 5/90 SI 120 V



Special Features

- Multi-purpose machine, suitable for use with many different tools, especially for POLINOX™/POLIVLIES™ tools (cat. 204).
- Stepless speed variation with markings for (output RPM): 9,000, 8,000, 7,000, 6,000, 5,000, 4,000.
- Powerful, easy to handle.
- Digital electronic speed control ensures constant RPM even under load.
- Soft start feature protects people, tools and machine.
- Restart protection on power failure.
- Electronic shutdown device deactivates motor in case of extreme overload.
- Double insulated.
- Side switch for maximum ease of use.
- Sturdy, maintenance friendly design.

EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Incl. Collet Dia. [Inches]
91010	UGER 5/90 SI	4,000 - 9,000	120	500	0.4	4.6	1/4

Collets

	Group 11	for Shank Dia.				
		1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
EDP Number		93179	93182	93157	93163	93166

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340
	18 mm	1	93370

Suitable PFERD tools


Catalogue 202	Catalogue 204*		Catalogue 208
Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 5/8" up to 3/4" head dia. Please observe the different cutting speed recommendations in catalogue 202.	Abrasive Spiral Bands 1-1/2", 1-3/4", 2", 2-3/8" dia. POLIROLL 5/8", 3/4", 1" dia. Mounted Flap Wheels 1-1/2", 2", 2-1/2", 3" dia. Overlap Slotted Discs 1-1/4", 2" dia. POLINOX™ Mounted Flap Wheels 1-1/2", 2", 2-3/8", 3" POLIVLIES™ Star Pads 1-1/2", 2", 3" dia. POLINOX™ Cross Buffs 1", 1-1/2" dia.	POLINOX™ Unitized Wheels 2", 3" dia. POLICLEAN™ Wheels/ Mounted Points 2", 3" dia. POLIFLEX™ Bond GR A5, A11, A21, A25, A40, W204, W220, W230 Bond PUR W206, W220 Felt Points 3/8" dia. 1/8" + 1/4" shank dia. 9/16", 3/4", 1" dia. Felt Wheels 1-1/4", 1-3/4" dia.	M-BRAD™ Abrasive Filament Wheels Small Dia. Copper Centre 1-1/2" up to 2" dia. Stem Mounted End 1/2" up to 1" dia. Tampico and Nylon Wheels 2" dia.

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

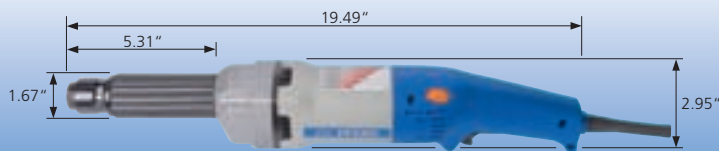
***Catalogue 204:** These data apply to a free shank length of 1/2" and the stated max. head length.

Special Features

- For heavy milling and grinding work.
- Stepless RPM adjustment.
- High torque.
- Digital electronic for a constant RPM.
- Smooth start-up for the protection of people, tools and machine.
- Restart protection on power failure.
- Electronic shutdown device deactivates motor in case of extreme overload.
- Double insulated. 


UGER 15/60 SI 120 V

NEW




EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Incl. Collet Dia. [Inches]
91016	UGER 15/60 SI	2,800 - 5,900	120	1,530	1.4	12	1/2

Collets

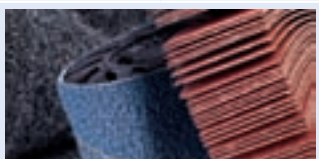

	Group 12	for Shank Dia.					
		1/4 Inch	3/8 Inch	1/2 Inch	6 mm	8 mm	12 mm
	EDP Number	93211	93215	93218	93196	93199	93203

For dimensions see table page 44.

Keys

	Width Across Flats	Quantity	EDP Number
	22 mm	2	93380

Suitable PFERD Tools

Catalogue 204*		Catalogue 208
		
POLIROLL 1" dia. Mounted Flap Wheels 2-1/2", 3" dia. Unmounted Flap Wheels 4", 6" dia. POLINOX™ Mounted Flap Wheels 1-1/2", 2", 2-3/8", 3", 4" dia. POLINOX™ Unmounted Wheels 6" dia.		Unthreaded Crimped Wheels Narrow 3" dia. M-BRAD™ Abrasive Filament Wheels Small Dia. Copper Centre 1-1/2" up to 3" dia. Narrow Face 3" up to 4" dia.
POLINOX™ Unitized Wheels 6" POLICLEAN™ Wheels/Mounted Points 2", 3", 4" dia. Felt Points 9/16", 3/4", 1", 1-1/4" dia. Felt Wheels 1-1/4", 1-3/4", 2-1/4" dia. Cloth Rings 3", 4" dia.		

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

*Catalogue 204: These data apply to a free shank length of 1/2" and the stated max. head length.

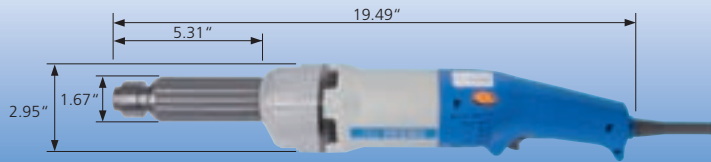
Electric Grinders and Accessories

Electric Straight Grinder, Speed: 3,000 RPM / Output: 1.4 HP



UGER 15/30 SI 120 V

NEW



Special Features

- Ideal for finishing work on surfaces with larger grinding tools.
- Stepless RPM adjustment.
- High torque ensures excellent speed stability.
- Digital electronic for a constant RPM.
- Smooth start-up for the protection of people, tools and machine.
- Restart protection on power failure.
- Electronic shutdown device deactivates motor in case of extreme overload.
- Double insulated. □

EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Incl. Collet Dia. [Inches]
91019	UGER 15/30 SI	1,400 - 3,000	120	1,530	1.4	12	1/2

Collets



Group 12	for Shank Dia.					
	1/4 Inch	3/8 Inch	1/2 Inch	6 mm	8 mm	12 mm
EDP Number	93211	93215	93218	93196	93199	93203

For dimensions see table page 44.

Keys

Width Across Flats	Quantity	EDP Number
22 mm	2	93380

Suitable PFERD Tools

Catalogue 204*	Catalogue 208
 <p>Unmounted Flap Wheels 6", 8" dia.</p> <p>POLIFLAP™ Wheel</p> <p>POLINOX™ Mounted Flap Wheels 4" dia.</p> <p>POLINOX™ Unmounted Flap Wheels 6", 8" dia.</p>	 <p>POLICLEAN™ Wheels/Mounted Tools 4", 6"</p> <p>Felt Wheels 1-1/4", 1-3/4", 2-1/4", 3", 4", 5", 6", 8" dia.</p> <p>Cloth Rings 3", 4", 5", 6", 8" dia.</p> <p>M-BRAD™ Abrasive Filament Small Dia. Copper Centre 2" up to 3" dia. Narrow, Wide Face 3" up to 4" dia.</p>

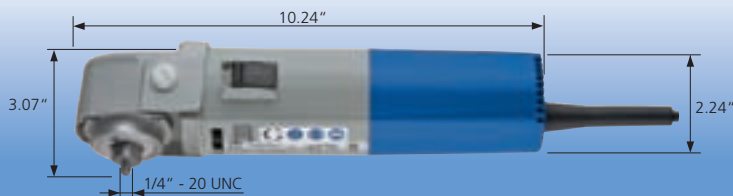
Comply with ANSI B 7.1-2000 standards and OSHA regulations.

*Catalogue 204: These data apply to a free shank length of 1/2" and the stated max. head length.

Special Features


- For grinding and finishing work using any COMBIDISC® tool (use backing pad without shank).
- Stepless speed variation with markings for (output RPM): 20,000, 17,500, 15,500, 13,500, 11,000, 9,000.
- High output, convenient to use.
- Spindle with 1/4"-20 UNC thread.
- Digital electronic speed control ensures constant RPM even under load.
- Restart protection on power failure.
- Double insulated.

UWER 5/200 SI 120 V



EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Drive spindle thread
91200	UWER 5/200 SI	9,000 - 20,000	120	500	0.4	4.6	1/4"-20 UNC

Spindle Extension (20 mm)

	NEW	PFERD Specification Number	EDP Number
		SPV 20 CD 1/4-20 UNC	95808

Keys

	Width Across Flats	Quantity	EDP Number
	14 mm	1	93340

Suitable PFERD Tools

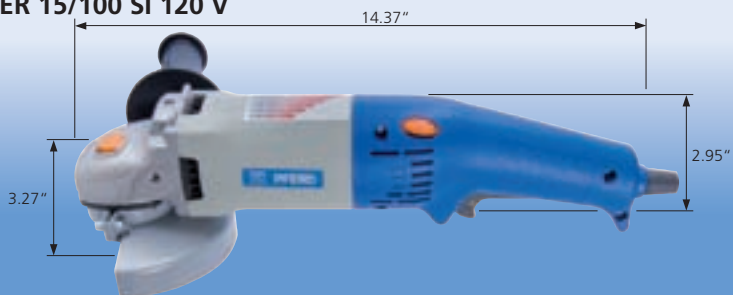
Catalogue 204
COMBIDISC® 1", 1-1/2", 2" dia.

Electric Angle Grinder, Speed: 10,000 RPM / Output: 1.4 HP

Special Features


- Max. tool dia. up to 5".
- Stepless RPM adjustment.
- High torque ensures excellent RPM stability.
- Digital electronic for constant RPM, ideal for work on metals which do not conduct heat well.
- Restart protection on power failure.
- Electronic shutdown device deactivates motor in case of extreme overload.
- Double insulated.

UWER 15/100 SI 120 V

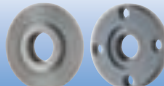


EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Drive Spindle Thread [Inches]	Tool Mounting Dia. [Inches]
91205	UWER 15/100 SI	4,200 - 10,000	120	1,530	1.4	12	5/8	7/8

Keys

	Type	Quantity	EDP Number
	35 mm (Face key)	1	93395
	4 mm (Allen)	1	93303

Wheel flanges

	PFERD Specification Number	EDP Number
	Wheel flange 5/8"	95994
	Clamping nut 5/8"	95995

Suitable PFERD Tools

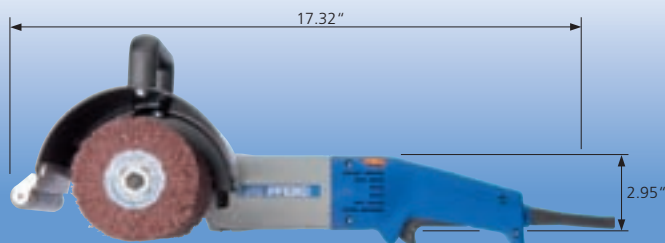
Catalogue 204	Catalogue 206	Catalogue 208
COMBICLICK® Fibre Discs POLICLEAN™ Discs Flap Wheels for Angle Grinders PSA Discs	POLINOX™ PNER Unitized Discs/Wheels POLIVLIES™ Hook and Loop Discs POLIVLIES™ Flap Discs POLIFLEX™ Discs 4-1/2", 5" dia.	Grinding Wheels POLIFAN®-Flap Discs Cut-Off Wheels 4-1/2, 5" dia.
		Threaded Crimped / Knot Wheels 4" dia. Crimped / Knot Cup 2-3/4" dia. Crimped / Knot Bevel Cup 4" dia.
		M-BRAD™ Abrasive Filament Cup 3-1/2" dia.

Electric Grinders and Accessories


Drum Grinder, Speed: 3,500 RPM / Output: 1.4 HP

UWER 15/40 SI D19 120 V

NEW




Special Features

- Low speed angle grinder/burnisher with stepless RPM adjustment.
- Drive spindle with two keyways for increased force transmission.
- Digital electronic for constant RPM even under load.
- Smooth start-up for the protection of people, tools and machine.
- Restart protection on power failure.
- Electronic shutdown device deactivates motor in case of extreme overload.
- Double insulated. 
- Spindle lock for easy tool change.

EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps	Max. Tool Dia. [Inches]	Drive Spindle [Inches]
91210	UWER 15/40 SI D19	1,700 - 3,600	120	1,530	1.4	12	4-1/2	3/4 x 3.9

Keys

	Width Across Flats	Quantity	EDP Number
	13 mm	1	93337

Suitable PFERD Tools

Catalogue 204




POLINOX™ Grinding Drums

Flap Drums

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

Special Features


- Uses short abrasive and non-woven belts in 1/8", 1/4", 1/2", 5/8", 3/4" width, belt length: 20-1/2".
- Stepless speed variation.
- High output, convenient to use.
- Digital electronic speed control ensures constant RPM even under load.
- Soft start feature protects mechanical and electronic components.
- Restart protection on power failure.
- Electronic overload shut-off feature.
- Double insulated. 
- The medium-sized belt grinder attachment is pivotable on the machine and allows flexible adjustment to individual working situations.
- Sturdy, easy maintenance machine.
- Supplied with belt grinding attachment holder BSVH 41 (see page 46) and belt grinding attachment arm BSVA 9/25.

UBS 5/100 SI 925 120 V



EDP Number	PFERD Model Number	RPM	Belt Speed [m/s]	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amps
91410	UBS 5/100 SI 925	4,000 - 10,000	6.5 - 16	120	500	0.4	4.6

Keys

	Allen Wrench	Quantity	EDP Number
	4 mm	1	93303

Belt Grinder Attachment Arms

BSAD 41/36 x 610



BSVA 9/25



BSVA 9/25-1



BSVA 4/16



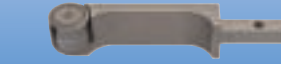
BSVA 9/16



BSVA 12/19



BSVA 18/23



- Sturdy steel arms.
- Use of the full roller width possible.
- Slim profile allows flush use.
- Asymmetrical arms for flush sideways grinding.

- Belt arm can be rotated 360°.
- Belt tracking can be adjusted.
- BSVA 9/25-1 with conical guide roller (width 0.04").
- Belt length 20-1/2" or with adapter 24".

Ordering note:

Please refer to catalogue 204 for detailed information and ordering data regarding abrasive and non-woven belts.

PFERD Specification Number	Width x Roll Dia. [Inches]	Width x Roll Dia. [mm]	Suitable Belt Width [Inches]	Use for	EDP Number
BSAD 41/36 x 610	-	-	-	Adapter to extend the belt length from 20-1/2" to 24"	95016
BSVA 9/25 x 520	0.35 x 0.98	9 x 25	1/8, 1/4, 3/8, 1/2, 5/8	Finishing jobs, deburring, matting, fine grinding, and seamless blending of inner radii/channels, especially on pipe coupling areas	95020
BSVA 9/25-1 x 520	0.35 x 0.98	9 x 25	1/8, 1/4, 3/8, 1/2	Finishing jobs in narrow/small inner radii/channels, especially on pipe coupling areas made of stainless steel (INOX) with very small welded seams (tungsten-inert gas welding)	95021
BSVA 4/16 x 520	0.15 x 0.63	4 x 16	1/4	Leveling, deburring, matting, fine grinding, cleaning and seamless blending of stainless steel in narrow areas	95018
BSVA 9/16 x 520	0.35 x 0.63	9 x 16	1/2	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on wide areas	95019
BSVA 12/19 x 520	0.45 x 0.75	12 x 19	1/2, 5/8	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on wide areas	95022
BSVA 18/23 x 520	0.71 x 0.91	18 x 23	3/4	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on wide areas on outer radii (convex forms i.e. pipes)	95023



Flexible shaft drives are multiple speed machines. They cover a wide RPM range and can be adjusted steplessly electronically or over gears to match individual tool requirements. Flexible shaft drives have an extremely high power output. They can also be used with the compact handpieces or extensions for work in hard-to-reach places.

Applications

Flexible shaft drives can be used for almost all jobs. They are used successfully in many industrial sectors for different processes. The RPM adjustment allows the use of various tools on one single machine.

Electrical Safety

According to current safety standards for hand-guided electric power tools, a distinction is made between three safety classes. PFERD flexible shaft drives comply with two of these safety classes.

1. Electric Motor Units with Protective Grounding (Class I)

This design is used in the following PFERD flexible shaft machines:


- Mammoth (page 36-37)

The PFERD Product Range

PFERD offers various types of flexible shaft drives as well as a comprehensive range of matching flexible shafts, handpieces, angle drives, drum and special drives.

PFERD flexible shaft drives and their accessories are extremely durable, technically up to date and are built according to the latest ergonomic knowledge and specifications. This programme was developed especially for the economic use of grinding, milling, brushing, cut-off and polishing tools and cover a wide range of speeds (0 - 28,800 RPM) and outputs (0.4 - 1 HP).

2. Double Insulated Electric Motor Units (Class II)

Such equipment is marked with the symbol for double insulated  appliances and with the ordering addition "SI".

The following PFERD electric drive units are double insulated:

- Flexible Shaft Drive Motors
- RUER 5/250 SI 120 V (page 34)
- RUER 10/250 SI 120 V (page 35)

Advantages

- Extremely compact and ergonomic handpieces.
- Extremely low-weight handpieces.
- Extremely durable drives designed for permanent operation.
- Technically up to date.
- Extremely high power output.
- Extremely versatile.
- Simple power supply.
- Low-maintenance.
- Easy to service.
- Cost effective.

PFERD guarantees a safe use of their machines though compliance with the valid machine laws.

Any special or national codes must be observed.

Criteria for Selecting the Optimum Flexible Shaft Drive

The most important prerequisite for cost effective work is the selection of an optimal tool. Then a suitable tool drive can be chosen. Please take the following into consideration:

1. Design, Shape and Size

Every type of application places specific demands on the shape and size of the tool drive. The different designs can be used for various applications: The ideal drive should be selected for the task in hand depending on the dimensions, accessibility, type and frequency of the application.

2. RPM

The tool drive should always be selected according to the RPM and cutting speed recommendations for the tool.

Please refer to catalogues 202 - 208 for these recommendations.

3. Horsepower

The tool drive's power output is the deciding factor for maintaining the RPM under load. The load is determined from the material to be machined, cutting capability of the tool and the grinding pressure.

4. Tool Adapter

Depending on the PFERD tool you have selected, different tool adapters are available (e.g. collets or threaded spindles). Every machine is allocated with matching collets. Please refer to pages 44-45 for an overview of the collets and spindle extensions.

Flexible Shaft

Flexible shafts consist of three components which are combined with each other:

- Flexible core
- Flexible casing
- Handpiece

Flexible Core

Consists of 4 to 10 layers of wire acc. to DIN 2076, especially designed for high speed, clockwise rotation. The coupling is securely press fitted to the core. After approx. 100 operating hours, the flexible core must be re-lubricated. The core and casing must be degreased and new, special shaft grease must be applied.

Flexible Casing

The flexible casing consists of oil-resistant rubber; the interior being a flat steel spiral and the outside being solid rubber. The connection couplings are pressed on firmly and encased in a rubber sheath as reinforcement.

Handpiece

The handpieces are light and easy to handle in relation to their power output transmission, and cover a wide speed range. Low-noise, easy-handling continuous operation is possible. Replaceable collets or the special shank adapter for Morse cones allow various tools to be mounted. The sliding connection allows quick handpiece changes.

Maintenance

It is not possible to repair cores and flexible casings. We recommend replacement with preassembled new parts.

Radius of Curvature

When using flexible shafts, please ensure that the shafts are not bent outside the radius of curvature. The smallest possible radius of curvature is given for each flexible shaft.

Flexible Shaft Drives and Accessories

RUER Multi-Speed Machines




RUER 5/250 SI 120 V



Record-Universal Motor RUER 5/250 SI

- High output for fine milling, grinding and polishing tasks. Lightweight, slim handpieces allow comfortable use.
- Stepless speed variation with markings for (output RPM): 25,000, 22,000, 19,000, 16,000, 13,000, 11,000.
- Digital electronic speed control ensures constant RPM even under load.
- Protected by tube frame in any position.
- Soft start feature protects mechanical and electronic components.
- Restart protection on power failure.



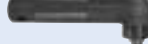
- Electronic overload shut-off.
- Double insulated. 
- Flexible in use, can be connected to any 120 V mains outlet or 120 V 50/60 Hz generator.

Dimensions L x W x H:
11.22" x 2.24" x 4.02"

Ordering Note:

The machine is delivered without a flexible shaft. Please order separately.
For replacement key see page 37.

Flexible Shaft and Handpieces

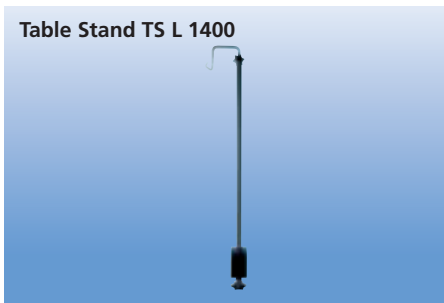
Flexible Shaft 6 ZG DIN 10		Straight Handpiece	Angle Handpiece
			
RPM: 11,000 - 25,000 Output [HP]: 0.9 - 2	Connection on - Motor side DIN 10 - Handpiece side G 16	4 ZGB max. 40,000 RPM see page 39	WZ 4 A max. 20,000 RPM see page 39

EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amp	Connection [DIN]
92201	RUER 5/250 SI 120 V	11,000 - 25,000	120	500	0.4	4.6	10
94005	Flexible shaft 6 ZG DIN 10	11,000 - 25,000	-	-	0.9 - 2	-	10
94301	Straight handpiece 4 ZGB	max. 40,000	-	-	-	-	G 16
94351	Angle handpiece WZ 4 A	max. 20,000	-	-	-	-	G 16

Suitable Catalogue Tools

RPM RUER 5/250 SI 120 V	Catalogue 202	Catalogue 203	Catalogue 204	Catalogue 206	Catalogue 208
25,000	●	●	●	-	-
22,000	●	●	●	●	-
19,000	●	●	●	●	-
16,000	●	●	●	●	-
13,000	●	●	●	●	●
11,000	●	●	●	●	●

Table Stand TS L 1400




The **TS L 1400** table stand comes with a clamp for secure attachment to tables measuring up to 2.56" in thickness.

Telescope construction for manual height adjustment up to 5.51" max.

EDP Number	PFERD Specification Number	Description
95520	TS L 1400	Table stand

Record-Universal Motor RUER 10/250 SI

- Drive motor is designed for use in tool, die and mouldmaking, precision mechanics and DIY applications.
- High output for milling, grinding and polishing tasks.
- Stepless speed variation with markings for (output RPM): 25,000, 22,000, 19,000, 16,000, 13,000, 11,000.
- Digital electronic speed control ensures constant RPM even under load.
- Protected by tube frame in any position.
- Soft start feature protects mechanical and electronic components.

- Restart protection on power failure.
- Electronic overload shutoff.
- Double insulated. 
- Flexible in use, can be connected to any 120 V mains outlet or 120 V 50/60 Hz generator.

Dimensions L x W x H:
11.81" x 2.95" x 5.51"

Ordering Note:

The machine is delivered without a flexible shaft.
Please order separately.
For replacement key see page 37.

RUER 10/250 SI 120 V US



Flexible Shaft and Handpieces

Flexible Shaft 7 ZGU DIN 10		Angle Handpieces		Other Attachments
				
RPM: 11,000 - 25,000 Output [HP]: 1.1 - 2.4	Connection on - Motor side DIN 10 - Handpiece side G 22	WZ 7 45° max. 17,100 RPM see page 41	WZ 7 B max. 17,100 RPM see page 41	WT 7 E M14 max. 25,000 RPM see page 41

EDP Number	PFERD Model Number	RPM	Voltage 50 - 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amp	Motor Connection [DIN]
92205	RUER 10/250 SI 120 V	11,000 - 25,000	120	1,050	0.9	9.5	10
94015	Flexible shaft 7 ZGU DIN 10	11,000 - 25,000	-	-	1.1 - 2.4	-	10
94375	Angle handpiece WZ 7 45°	max. 17,100	-	-	-	-	G 22
94355	Angle handpiece WZ 7 B	max. 17,100	-	-	-	-	G 22
94385	Angle drive WT 7 E M14	max. 25,000	-	-	-	-	G 22

Suitable Catalogue Tools

RPM RUER 10/250 SI 120 V	Catalogue 202	Catalogue 203	Catalogue 204	Catalogue 206	Catalogue 208
25,000	●	●	●	-	-
22,000	●	●	●	●	-
19,000	●	●	●	●	-
16,000	●	●	●	●	-
13,000	●	●	●	●	●
11,000	●	●	●	●	●

The **TS L 1400** table stand comes with a clamp for secure attachment to tables measuring up to 2.56" in thickness.

Telescope construction for manual height adjustment up to 5.51" max.

Table Stand TS L 1400



EDP Number	PFERD Specification Number	Description
95520	TS L 1400	Table stand

Flexible Shaft Drives and Accessories

Mammoth Multi-Speed Machine



MD 10



The high power output Mammoth is suitable for general use milling, grinding and polishing work.

- Drive speeds:
1,000, 1,900, 2,500, 3,800, 6,800, 9,600, 14,400
- Restart protection on power failure.
- Dimensions L x W x H:
18.11" x 6.30"/9.45" x 15.75"

Ordering Note:

The drive motors are supplied without plug and flexible shaft.

Recommended Use:

Grinding and polishing tools dia. $\geq 4"$ are not suitable for use with the Mammoth.

Overdrive ST 103 DIN 10



Replacement core
Adjusting key

The overdrive ST 103 transmits the drive speed in a ratio of 1 : 3.

Drive core included in delivery.

Safety Recommendations

Maximum input speed 12.000 RPM.

For replacement key see page 37.

Flexible Shaft and Handpieces

Flexible Shaft 7 ZGU DIN 10		Angle Handpieces		Other Attachments
RPM: 11.000 - 25.000 Output [HP]: 1.1 - 2.4	Connection on - Motor side DIN 10 - Handpiece side G 22	WZ 7 45° max. 17,100 RPM see page 41	WZ 7 B max. 17,100 RPM see page 41	WT 7 E M14 max. 25,000 RPM see page 41

EDP Number	PFERD Model Number	Voltage 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amp	Motor Connection [DIN]
92001	MD 10	480	1,000	1	1.6	10
92901	ST 103 DIN 10	-	-	-	-	10
92905	Replacement core ST 103 DIN 10	-	-	-	-	10
93320	Adjusting key	-	-	-	-	-
94015	Flexible shaft 7 ZG DIN 10	-	-	1.1 - 2.4	-	10
94375	Angle handpiece WZ 7 45°	-	-	-	-	G 22
94355	Angle handpiece WZ 7 B	-	-	-	-	G 22
94385	Angle drive WT 7 E M14	-	-	-	-	G 22

Suitable Catalogue Tools

RPM MD 10 + ST 103 DIN 10	Catalogue 202	Catalogue 203	Catalogue 204	Catalogue 206	Catalogue 208
28,800	●	●	●	●	●
20,400	●	●	●	●	●
11,400	●	●	●	●	●
7,500	●	●	●	●	●
5,700	●	●	●	●	●
3,000	-	-	●	-	●

MD 10



The high power output Mammoth is suitable for general use milling, grinding and polishing work.

- Drive speeds:
1,000, 1,900, 2,500, 3,800, 6,800, 9,600, 14,400
- Restart protection on power failure.
- Dimensions L x W x H:
18.11" x 6.30"/9.45" x 15.75"




Ordering Note:

The drive motors are supplied without plug and flexible shaft.

Recommended Use:

Grinding and polishing tools dia. $\geq 4"$ are not suitable for use with the Mammoth.

Flexible Shaft and Handpieces

Flexible Shaft 10 ZG DIN 10		Angle Handpieces	
			
RPM: 750 - 18.000 Output [HP]: 0.2 - 3.3	Connection on - Motor side DIN 10 - Handpiece side G 28	WZ 10 45° max. 17,100 RPM see page 43	WZ 10 B max. 17,100 RPM see page 43

EDP Number	PFERD Model Number	Voltage 60 Hz	Power Consumption [Watts]	Horsepower [HP]	Max. Amp	Motor Connection [DIN]
92001	MD 10	480	1,000	1	1.6	10
94020	Flexible shaft 10 ZG DIN 10	-	-	0.2 - 3.3	-	10
94380	Angle handpiece WZ 10 45°	-	-	-	-	G 28
94360	Angle handpiece WZ 10 B	-	-	-	-	G 28

Suitable Catalogue Tools

RPM MD 10	Catalogue 202	Catalogue 203	Catalogue 204	Catalogue 206	Catalogue 208
14,400	●	●	●	●	●
9,600	●	●	●	●	●
6,800	●	●	●	●	●
3,800	●	●	●	●	●
2,500	-	-	●	-	●
1,900	-	-	●	-	●
1,000	-	-	●	-	●

Keys

Type	Quantity	EDP Number
Pin key	2	93312

Replacement key for fixing flexible shafts to the drive unit.

Flexible Shaft Drives and Accessories

Flexible Shaft



	Catalogue 202	Catalogue 203*	Catalogue 204*		Catalogue 206	Catalogue 208
RPM Output						
28,800 RPM Mammoth + Overdrive	<p>Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/16" up to 1/4" head dia.</p> <p>Cut: Coarse, ALU, MC 1/4" up to 1/2" head dia.</p> <p>Please observe the different cutting speed recommendations in catalogue 202.</p>	<p>Mounted Points A2, A21, A25, A38, W188, W205, W215, W220</p>	<p>Abrasive Spiral Bands 3/8", 5/8", 3/4" dia.</p> <p>POLICAP™ 9/32" dia.</p> <p>Mounted Flap Wheels 5/8" dia., 1/8" shank dia.</p> <p>POLIFLEX™ Tools Bond GR B52, W178 1/8" shank dia.</p> <p>B122, W168, W170, W174, W175, W176,</p>	<p>Bond LR W185, W186, 1/8" shank dia.</p> <p>A26, B121, W193, W196, W204</p> <p>Bond TX A5, A12, W196, W204</p> <p>Felt Points 1/4" dia. 1/8" shank dia.</p>	<p>Die Grinder Wheels 2" dia.</p> <p>Snagging Wheels 2" dia.</p>	
20,400 RPM Mammoth + Overdrive, RUER 5/250 SI 120 V, RUER 10/250 SI 120 V	<p>Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 1/4" up to 3/8" head dia.</p> <p>Cut: Coarse, ALU, MC 3/8" up to 5/8" head dia.</p>	<p>Mounted Points A4, A11, A34, A36, A37, W208, W221, W236</p>	<p>Abrasive Spiral Bands 3/4", 7/8", 1" dia.</p> <p>POLIROLL 1/4", 5/16" dia.</p> <p>POLICAP™ 3/8", 7/16" dia.</p> <p>Mounted Flap Wheels 5/8" dia. 1/8" shank dia.</p> <p>3/4", 1" dia. 1/8" + 1/4" shank dia.</p> <p>POLISTAR 3/4" dia.</p>	<p>POLIFLEX™ Tools Bond GR W185 1/8" shank dia.</p> <p>B121</p> <p>Bond LR A5, A11, A12, A21, A25, A40, W206, W220</p> <p>Bond TX A1, A11, A21, A25, W220, W222</p> <p>Felt Points 1/4", 5/16" dia. 1/8" shank dia. 3/8" dia.</p>	<p>Die Grinder Wheels 2" dia.</p> <p>Snagging Wheels 2" dia.</p>	
18,000 RPM RUER 5/250 SI 120 V, RUER 10/250 SI 120 V	<p>Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 5/16" up to 3/8" head dia.</p> <p>Cut Coarse, ALU, MC 3/8" up to 5/8" head dia.</p>	<p>Mounted Points A1, A36, W208, W222, W237, W238, W242</p>	<p>COMBIDISC® Abrasive Discs 1" dia.</p> <p>Abrasive Spiral Bands 7/8", 1", 1-1/8" dia.</p> <p>POLIROLL 3/8", 5/16" dia.</p> <p>POLICAP™ 1/2" dia.</p> <p>Mounted Flap Wheels 3/4", 1" dia. 1/8" + 1/4" shank dia.</p> <p>POLISTAR 3/4"</p> <p>POLIVLIES™ Star Pads 1-1/2", 2", 3" dia.</p>	<p>POLINOX™ Cross Buffs 1", 1-1/2" dia.</p> <p>POLIFLEX™ Tools Bond GR W185 1/8" shank dia.</p> <p>A26, B121, W193, W196</p> <p>Bond LR A11, A21, A25, W220</p> <p>Bond TX A21, A25, W220</p> <p>Felt Points 1/4", 5/16" dia. 1/8" shank dia.</p> <p>3/8" dia. 1/8" + 1/4" shank dia.</p>	<p>Die Grinder Wheels 2" dia.</p> <p>Snagging Wheels 2" dia.</p>	<p>Unthreaded Knot Wheel 3" up to 3-1/4" dia.</p>
14,400 RPM Mammoth, RUER 5/250 SI 120 V, RUER 10/250 SI 120 V	<p>Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/8" up to 1/2" head dia.</p> <p>Cut: Coarse, ALU, MC 1/2" up to 5/8" head dia.</p>	<p>Mounted Points A3, A36, W239, W242</p>	<p>COMBIDISC® 1-1/2", 2" dia.</p> <p>Abrasive Spiral Bands 1-1/8", 1-1/2" dia.</p> <p>POLIROLL 1/2" dia.</p> <p>POLICAP™ 5/8" dia.</p> <p>Mounted Flap Wheels 3/4", 1-3/16", 1" dia. 1/8" + 1/4" shank dia.</p> <p>POLISTAR 3/4" dia.</p> <p>POLINOX™ Cross Buffs 1-1/2" dia.</p>	<p>POLIFLEX™ Tools Bond GR A5, A11, A12, A26, A40, W193, W196, W204</p> <p>Bond LR A21, A25, W220, W230</p> <p>Bond TX A3</p> <p>Bond PUR W196, W206</p> <p>Felt Points 5/16", 1/2" dia. 1/8" shank dia.</p> <p>3/8" dia.</p>		<p>Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia.</p> <p>Unthreaded Knot Wheels 3" up to 4" dia.</p> <p>Stem Mounted Crimped / Knot End 1/2" up to 1" dia.</p> <p>Crimped / Knot Wheels 1-1/2" up to 4" dia.</p> <p>Bevel 1-1/2" up to 4" dia.</p> <p>Specialty Pilot 1/2" dia.</p>

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

* **Catalogue 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

PFERD Specification Number EDP Number

DIN 10 G 16



Flexible Shaft 4 ZG DIN 10 94001



Core 4 ZG DIN 10 / G 16 94801



Casing 4 ZG DIN 10 / G 16 94501

Technical Data

Dimensions Dia. x Length Inches [mm]	Motorside Coupling Dia. Inches [mm]	Handpiece Side Coupling Dia. Inches [mm]
---	--	---

0.51 x 54.72 [13 x 1,390]	1.18 [30]	0.63 [16]
------------------------------	--------------	--------------

0.16 x 52.32 [4 x 1,329]	M 10	0.14/0.10 [3.5/2.45]
-----------------------------	------	-------------------------

0.51 x 51.18 [13 x 1,300]	1.18 [30]	0.63 [16]
------------------------------	--------------	--------------

Special Features

- Speed range: n = 24,000 - 40,000 RPM.
- Power range: 0.4 - 0.7 HP.
- Speed and power levels should be kept within stated range.
- At reduced power demand < 0.4 HP, RPM levels below the indicated range are acceptable.
- The radius of curvature should not be smaller than 4".
- Special lengths are available upon request.
- Maintenance set for flexible shafts: see page 47.
- Replacement core, ready for installation.
- Replacement casing, ready for installation.



Flexible Shaft 6 ZG DIN 10 94005



Core 6 ZG DIN 10/G 16 94805



Casing 6 ZG DIN 10/G 16 94505

Dimensions Dia. x Length Inches [mm]	Motorside Coupling dia. Inches [mm]	Handpiece Side Coupling Dia. Inches [mm]
---	--	---

0.63 x 64.69 [16 x 1,643]	1.18 [30]	0.63 [16]
------------------------------	--------------	--------------

0.24 x 62.32 [6 x 1,583]	M10	0.14/ 0.1 [3.5/2.45]
-----------------------------	-----	-------------------------

0.63 x 61.14 [16 x 1,553]	1.18 [30]	0.63 [16]
------------------------------	--------------	--------------

- Speed range n = 11,000 - 25,000 RPM.
- Power range = 0.9 - 2 HP.
- Speed and power levels used should be kept within stated range.
- At reduced power demand < 0.9 HP, RPM levels below the indicated range are acceptable.
- The radius of curvature should not be smaller than 5.6".
- Maintenance set for flexible shafts: see p. 47.
- Replacement core, ready for installation.
- Replacement casing, ready for installation.



G 16 Handpiece 4 ZGB 94301

Dimensions Dia. x Length Inches [mm]	Collet Group
0.77 x 4.33 [19.5 x 110]	9

- Max. rotational speed: 40,000 RPM.
- Including 1/4" collet.



**Collet*
Group 9**

Collet Diameter and EDP Number

	3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm
EDP No.	93120	93125	93127	93108	93114



Keys	Pcs.	EDP No.
13 mm	2	93337



G 16 Angle Handpiece WZ 4 A 94351

Dimensions Dia. x Length Inches [mm]	Trans- mission Ratio	Collet Group
1.69 x 4.37 [43 x 111]	1 : 1	10

- Max. rotational speed: 20,000 RPM.
- Including 1/8" collet.
- Max. rotational speed with 1/4" collet: 15,000 RPM.



**Collet*
Group 10**

Collet Diameter and EDP Number

	1/8 Inch	1/4 Inch	3 mm	6 mm
EDP No.	93146	93148	93134	93140



Keys	EDP No.
9 mm	93330
11 mm	93336

* For dimensions see table page 44.
For cores and hoses with sliding-type coupling at both ends, please inquire.

Flexible Shaft Drives and Accessories

Flexible Shaft




	Catalogue 202	Catalogue 203*	Catalogue 204*	Catalogue 206	Catalogue 208
RPM Output					
24,000 RPM RUER 5/250 SI 120 V RUER 10/250 SI 120 V	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/16" up to 5/16" head dia. Cut: Coarse, ALU, MC 5/16" up to 1/2" head dia. Please observe the different cutting speed recommendations in catalogue 202.	Mounted Points A4, A11, A21, A25, A31, A34, A37, A38, W189, W207, W215, W220, W221, W236	Abrasive Spiral Bands 3/4", 7/8" dia. POLIROLL 1/4" dia. POLICAP™ 3/8", 7/16" dia. Mounted Flap Wheels 5/8" dia. 1/8" shank dia.	POLIFLEX™ Tools Bond GR B122, W174, W175, W176 1/8" shank dia. B52, W178 Bond LR A12, A26, A40, W193, W196, W204, W206 Bond TX A5 Felt Points 1/4", 5/16" dia. 1/8" shank dia.	Die Grinder Wheels 2" dia. Snagging Wheels 2" dia.
20,400 RPM Mammoth + Overdrive, RUER 5/250 SI 120 V V, RUER 10/250 SI 120 V	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 1/4" up to 3/8" head dia. Cut: Coarse, ALU, MC 3/8" up to 5/8" head dia.	Mounted Points A4, A11, A34, A36, A37, W208, W221, W236	Abrasive Spiral Bands 3/4", 7/8", 1" dia. POLIROLL 1/4", 5/16" dia. POLICAP™ 3/8", 7/16" dia. Mounted Flap Wheels 5/8" dia. 1/8" shank dia. 3/4", 1" dia. 1/8" + 1/4" shank dia. POLISTAR 3/4" dia.	POLIFLEX™ Tools Bond GR W185 1/8" shank dia. B121 Bond LR A5, A11, A12, A21, A25, A40, W206, W220 Bond TX A1, A11, A21, A25, W220, W222 Felt Points 1/4", 5/16" dia. 1/8" shank dia. 3/8" dia.	Die Grinder Wheels 2" dia. Snagging Wheels 2" dia.
14,400 RPM Mammoth RUER 10/250 SI 120 V	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/8" up to 1/2" head dia. Cut: Coarse, ALU, MC 1/2" up to 5/8" head dia.	Mounted Points A3, A36, W239, W242	COMBIDISC® 1-1/2", 2" dia. Abrasive Spiral Bands 1-1/8", 1-1/2" dia. POLIROLL 1/2" dia. POLICAP™ 5/8" dia. Mounted Flap Wheels 3/4", 1-3/16", 1" dia. 1/8" + 1/4" shank dia. POLISTAR 3/4" dia. POLINOX™ Cross Buffs 1-1/2" dia.	POLIFLEX™ Tools Bond GR A5, A11, A12, A26, A40, W193, W196, W204 Bond LR A21, A25, W220, W230 Bond TX A3 Bond PUR W196, W206 Felt Points 5/16", 1/2" dia. 1/8" shank dia. 3/8" dia.	Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia. Unthreaded Knot Wheels 3" up to 4" dia. Stem Mounted Crimped / Knot End 1/2" up to 1" dia. Crimped / Knot Wheels 1-1/2" up to 4" dia. Bevel 1-1/2" up to 4" dia. Specialty Pilot 1/2" dia.
11,400 RPM Mammoth + Overdrive RUER 10/250 SI 120 V	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/8" up to 5/8" head dia. Cut: Coarse, ALU, MC 5/8" head dia.	Mounted Points A3, W242	COMBIDISC® Mini-POLIFAN® Discs 3" dia. COMBIDISC® Abrasive Discs 2", 3" dia. COMBIDISC® Non-Woven Discs 1-1/2", 2" dia.	COMBIDISC® TX Discs 2", 3" dia. COMBIDISC® POLICLEAN™ Discs 2" dia.	Catalogue 208 Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia. Unthreaded Knot Wheels 3" up to 4" dia.

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

* **Catalogue 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

PFERD Specification Number EDP Number

DIN 10	G 22
	
Flexible Shaft 7 ZGU DIN 10 6.56 ft [2 m]	94015
	
Core 7 ZGU DIN 10/G 22 6.56 ft [2 m]	94815
	
Casing 7 ZGU DIN 10/G 22 6.56 ft [2 m]	94515

Technical Data

Dimensions Dia. x Length Inches [mm]	Motorside Coupling Dia. Inches [mm]	Handpiece Side Coupling Dia. Inches [mm]
0.71 x 84.80 [18 x 2,154]	1.18 [30]	0.87 [22]
0.28 x 82.24 [7 x 2,089]	M10	0.20/0.15 [5/3.85]
0.71 x 80.83 [18 x 2,053]	1.18 [30]	0.87 [22]


Special Features


- Speed range n = 11,000 - 25,000 RPM.
- Power range: 1.1 - 2.4 HP.
- Speed and power levels should be kept within stated range.
- At reduced power demand < 1.1 HP, RPM levels below the indicated range are acceptable.
- The radius of curvature should not be smaller than 5.6".
- Special lengths available upon request.
- Maintenance set for flexible shafts: see p. 47.
- Replacement core, ready for installation.
- Replacement casing, ready for installation.

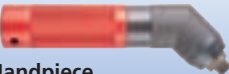
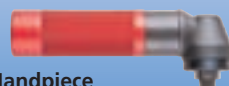
G22		
Handpiece 7 ZGA		94315

Dimensions Dia. x Length Inches [mm]	Collet Group
1.06 x 5.12 [27 x 130]	11

- Max. rotational speed: 25,000 RPM.
- Including 1/4" collet.


	Collet* Group 11	Collet Diameter and EDP Number					
	EDP No.	3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
		93174	93179	93182	93157	93163	93166

	Keys	EDP No.
	14 mm	93340
	18 mm	93370

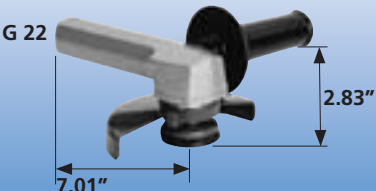
G22		
Angle Handpiece WZ 7 45°		94375
G22		
Angle Handpiece WZ 7 B		94355

Dimensions Dia. x Length Inches [mm]	Trans- mission Ratio	Collet Group
2.24 x 6.89 [57 x 175]	1.3 : 1	6
2.17 x 6.18 [55 x 157]	1.3 : 1	6

- RED = WZ 7 angle handpiece for flexible shaft 7 ZGU.
- Max. rotational speed: 17,100 RPM.
- Including 1/4" collet.
- Max. rotational speed: 17,100 RPM.
- Including 1/4" collet.

	Collet* Group 6	Collet Diameter and EDP Number					
	EDP No.	3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
		93067	93072	93074	93057	93062	93064


	Keys	EDP No.
	11 mm	93335
	17 mm	93350

Angle Drive WT 7 E M14

G 22

Technical Data:

- Input speed n max.: 25,000 RPM.
- Output speed at n max.: 9,300 RPM.
- Transmission ratio: 2.7 : 1.
- M14 drive spindle.
- Mounts tools with bore dia. 7/8" supplied with flange and guard, 4-1/2" dia.
- Shaft connection can be rotated through 360°.
- Connectable to flexible shafts without handpiece (7 ZGU).

EDP Number	PFERD Specification Number
94385	WT 7 E M14/G 22

	Keys	EDP No.
	17 mm	93350
	35 mm	93395

Accessories for WT 7 E M14/G 22

Belt grinder attachment holder	BSVH 41
Belt grinder attachment arms	BSVA 4/16 BSVA 9/16 BSVA 9/25 BSVA 9/25-1 BSVA 12/19 BSVA 18/23





EDP Number please see page 46.

* For dimensions see table page 44.
For cores and hoses with sliding-type coupling at both ends, please inquire.

Flexible Shaft Drives and Accessories

Flexible Shaft






	Catalogue 202	Catalogue 203*	Catalogue 204*		Catalogue 208		
RPM Output							
14,400 RPM Mammoth	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/8" up to 1/2" head dia. Cut: Coarse, ALU, MC 1/2" up to 5/8" head dia. Please observe the different cutting speed recommendations in catalogue 202.	Mounted Points A3, A36, W239, W242	COMBIDISC® 1-1/2", 2" dia. Abrasive Spiral Bands 1-1/8", 1-1/2" dia. POLIROLL 1/2" dia. POLICAP™ 5/8" dia. Mounted Flap Wheels 3/4", 1-3/16", 1" dia. 1/8" + 1/4" shank dia. POLISTAR 3/4" dia. POLINOX™ Cross Buffs 1-1/2" dia.	POLIFLEX™ Tools Bond GR A5, A11, A12, A26, A40, W193, W196, W204 Bond LR A21, A25, W220, W230 Bond TX A3 Bond PUR W196, W206 Felt Points 5/16", 1/2" dia. 1/8" shank dia. 3/8" dia.	Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia. Unthreaded Knot Wheels 3" up to 4" dia. Stem Mounted Crimped / Knot End 1/2" up to 1" dia. Crimped / Knot Wheels 1-1/2" up to 4" dia. Bevel 1-1/2" up to 4" dia. Specialty Pilot 1/2" dia.		
	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 3/8" up to 5/8" head dia. Cut: Coarse, ALU, MC 5/8" head dia.	Mounted Points A3, W242	COMBIDISC® Mini-POLIFAN® Discs 3" dia. COMBIDISC® Abrasive Discs 2", 3" dia. COMBIDISC® Non-Woven Discs 1-1/2", 2" dia. COMBIDISC® TX Discs 2", 3" dia. COMBIDISC® POLICLEAN™ Discs 2" dia.		Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 3" dia. Unthreaded Knot Wheels 3" up to 4" dia. Stem Mounted Crimped / Knot End 1/2" up to 1" dia. Crimped / Knot Wheels 1-1/2" up to 4" dia. Bevel 1-1/2" up to 4" dia. Specialty Pilot 1/2" dia.		
	9,600 RPM Mammoth	Tungsten Carbide Burs Cut: Single, Double, Diamond, Fine, ALU PLUS, 3R, 3RS 1/2" up to 3/4" head dia.		Abrasive Spiral Bands 1-3/4", 2", 2-3/8" dia. POLIROLL 3/4", 5/8" dia. POLICAP™ 27/32" dia. Mounted Flap Wheels 1-1/2", 2" dia. POLINOX™ PNER Unitized Wheels 2" dia.	POLIFLEX™ Tools Bond GR A11, A21, A25, W220, W230 Bond PUR W220 Felt Points 1/2" shank dia. 3/8" dia. 1/8" + 1/4" shank dia. 9/16", 3/4" dia.	Unthreaded Crimped Wheels Small Dia. Copper Centre 1" up to 4" Unthreaded Knot Wheels 4" dia. Stem Mounted Crimped / Knot End 1" dia. Crimped / Knot Wheels 3" up to 4" dia. Bevel 1-1/2" up to 4" dia. Specialty Pilot 1/2" dia.	M-BRAD™ Abrasive Filament End 1/2" up to 1" dia. Tampico and Nylon Wheels Small Dia. Copper Centre 2" up to 3" dia.

Note: Where no shank diameter is indicated, the shank diameter specification is 1/4".

Comply with ANSI B 7.1-2000 standards and OSHA regulations.

* **Catalogue 203/204:** These data apply to a free shank length of 1/2" and the stated max. head length.

PFERD Specification Number EDP Number

DIN 10	G 28
	
Flexible Shaft	
10 ZG DIN 10	94020
10 ZG DIN 10 6.56 ft	94025
[2 m]	
	
Core	
10 ZG DIN 10/G 28	94820
10 ZG DIN 10/G 28 6.56 ft	94825
[2 m]	
	
Casing	
10 ZG DIN 10/G 28	94520
10 ZG DIN 10/G 28 6.56 ft	94525
[2 m]	

Technical Data

Dimensions Dia. x Length Inches [mm]	Motorside Coupling Dia. Inches [mm]	Handpiece Side Coupling Dia. Inches [mm]
0.87 x 66.26 [22 x 1,683]	1.18 [30]	1.10 [28]
0.87 x 85.94 [22 x 2,183]	1.18 [30]	1.10 [28]
0.39 x 62.99 [10 x 1,600]	M10	0.30/0.23 [7.5/5.85]
0.39 x 82.68 [10 x 2,100]	M10	0.30/0.23 [7.5/5.85]
0.87 x 61.14 [22 x 1,553]	1.18 [30]	1.10 [28]
0.87 x 80.83 [22 x 2,053]	1.18 [30]	1.10 [28]


Special Features

- Speed range n = 750 - 18,000 RPM.
- Power range: 0.2 - 3.3 HP.
- Speed and power levels should be kept within stated range.
- The radius of curvature should not be smaller than 6.7".
- Special lengths available upon request.
- Maintenance set for flexible shafts: see page 47.
- Replacement core, ready for installation.
- Replacement casing, ready for installation.

G28	
Handpiece 10 ZGE	94320

Dimensions Dia. x Length Inches [mm]	Collet Group
1.30 x 6.69 [33 x 170]	11

- Elastic spindle bearing.
- Max. rotational speed: 18,000 RPM.
- Including 1/4" collet.


	Collet* Group 11	Collet Diameter and EDP Number					
		3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
	EDP No.	93174	93179	93182	93157	93163	93166

Keys	Pcs.	EDP No.
18 mm	2	93370



G28	
Handpiece 12 ZGA	94330

Dimensions Dia. x Length Inches [mm]	Collet Group
1.3 x 6.38 [33 x 162]	12

- Two front bearings for tough applications.
- Max. rotational speed: 18,000 RPM.
- Including 1/2" collet.

	Collet* Group 12	Collet Diameter and EDP Number					
		1/4 Inch	3/8 Inch	1/2 Inch	6 mm	8 mm	12 mm
	EDP No.	93211	93215	93218	93196	93199	93203

Keys	Pcs.	EDP No.
22 mm	2	93380


G28	
Angle Handpiece WZ 10 45°	94380
G28	
Angle Handpiece WZ 10 B	94360

Dimensions Dia. x Length Inches [mm]	Transmission Ratio	Collet Group
2.24 x 6.89 [57 x 184]	1.3 : 1	6
2.17 x 6.54 [55 x 166]	1.3 : 1	6

- BLUE = WZ 10 angle handpiece for flexible shaft 10 ZG.

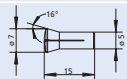

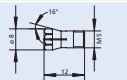

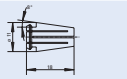

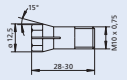

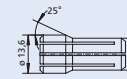

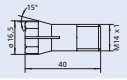

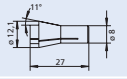

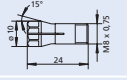

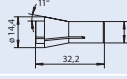

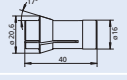
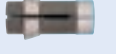
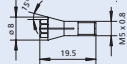

- Max. rotational speed: 17,100 RPM.
- Including 1/4" collet.

- Max. rotational speed: 17,100 RPM.
- Including 1/4" collet.

	Collet* Group 6	Collet Diameter and EDP Number					
		3/32 Inch	1/8 Inch	1/4 Inch	3 mm	6 mm	8 mm
	EDP No.	93067	93072	93074	93057	93062	93064

Keys	EDP No.
11 mm	93335
17 mm	93350

* For dimensions see table page 44.
For cores and hoses with sliding-type coupling at both ends, please inquire.

Collet Group			Collet Diameter and EDP Number								
			3/32"	1/8"	1/4"	3/8"	1/2"	3 mm	6 mm	8 mm	12 mm
1			93006	93007				93003			
2			93013	93012				93011			
4				93038	93039			93033	93036		
6			93067	93072	93074			93057	93062	93064	
7				93081	93084	93085		93081	93082	93083	
8					93094	93095			93091	93092	
9			93120	93125	93127			93108	93114		
10				93146	93148			93134	93140		
11			93174	93179	93182			93157	93163	93166	
12					93211	93215	93218		93196	93199	93203
15			93240	93239				93238			

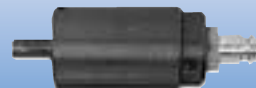
Collets with special bores are available on request.

Order example no. 93006 = collet 3/32"
for PGT 1/1000: According to the table (below),
the **collet group 1** has been defined for this machine.

Catalogue Page	Machines/Handpieces	Collet Group	Catalogue Page	Machines/Handpieces	Collet Group
7	PGT 1/1000	1	27, 28	UGER 15/60 SI, UGER 15/30 SI	12
8	PGAS 2/800 E	1	39	Handpiece 4 ZGB	9
9	PGAS 1/550	15	39	Angle Handpiece WZ 4A	10
10	PG 3/440 DH	6	41	Handpiece 7 ZGA	11
11	PG 3/380 DH	6	41	Angle handpiece WZ 7 45°	6
12	PGAS 8/250 E-HV	7	41	Angle handpiece WZ 7 B	6
13	PG 5/230 V-HV	6	43	Handpiece 10 ZGE	11
14	PG 3/210 DH	6	43	Angle handpiece WZ 10 45°	6
15	PGAS 8/100 HV	7	43	Angle handpiece WZ 10 B	6
16	PG 10/40 V-HV	8	43	Handpiece 12 ZGA	12
17	PWS 1/800	2	45	Spindle extension SPV 50-1/8 S1/4	2
18	PWS 3/200 DH	6	45	Spindle extension SPV 75-1/4 SPG 6	10
24	UGER 11/330 SI	8	45	Spindle extension SPV 75-6 S8	10
25	UGER 5/250 SI	11	45	Spindle extension SPV 100-1/4 SPG 6	10
26	UGER 5/90 SI	11	45	Spindle extension SPV 100-1/4 S3/8	10

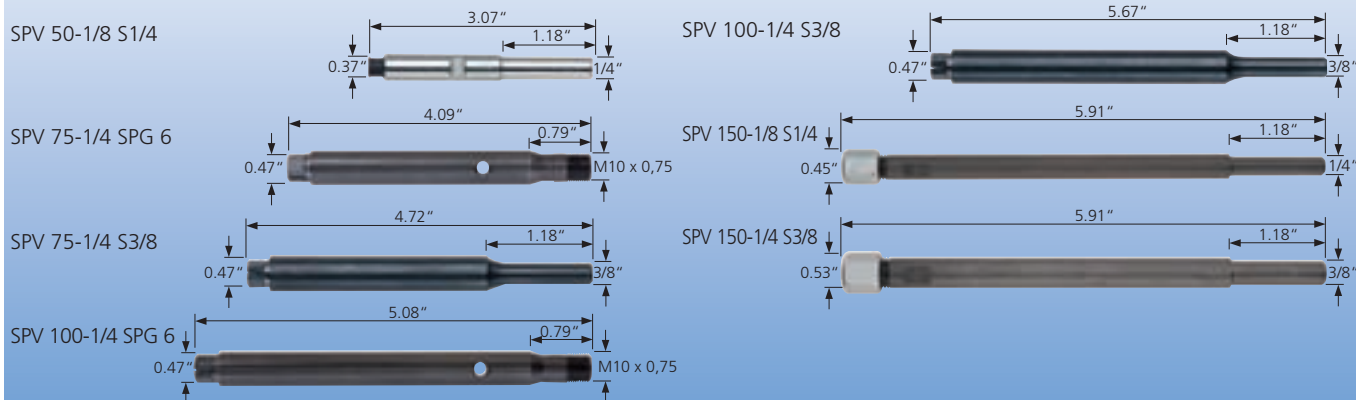
EDP Number	PFERD Specification Number	Use	Suitable for Machine Types
95510	SFF 08	Inserts into 3/8" air supply hose lines in high-dirt environments. Also for use with oil-free air grinders.	PG 3/440 DH, PG 3/380 DH, PWS 3/200 DH, PW 3/120 DH, PBS 3/200 DH 99

In-Line Microfilter SFF 08



Extensions for Drive Spindles

NEW



With spindle extensions, shafts of grinding, brushing and milling tools can be extended. They allow access to difficult to reach areas. The extensions are mounted into collets, or the threaded version direct into the machine spindle.

Spindle extensions are a cost effective alternative to special types of made-to-order burs and mounted points with long shanks.

Safety note:

Caution! When using spindle extensions, please observe the valid safety regulations and the accident prevention regulations.

When working with long shank lengths, it is vital that the tool is inserted into the workpiece (e.g. cores, pipes, ducts or keyways) before the tool drive is switched on. The extension must not run free with the tool outside the workpiece (e.g. cores, pipes, ducts or keyways).

If this rule is not observed, there is an increased risk of accidents. If the given conditions are unfavourable, the extension with the tool clamped in it may buckle. **The extensions are only intended for manual use** in connection with suitable air-power, electric grinders or flexible shaft handpieces for tools with standard

shafts. When using spindle extensions, please make sure you are running the tool at the appropriate RPM, and that the tool is properly inserted into a central running chuck. Do not insert the tool all the way into the chuck, or clamp the chuck onto the shoulder radius of the tool.

Clamping of a second extension or of tools with excessive length shanks is not permitted.

EDP Number	PFERD Specification Number	Max. Speed [RPM]	Dia. Mounting Pin (Motor/Handpiece) [Inches]	Tool Mounting [Inches]	Overall Length [Inches]	Length Mounting Pin [Inches]	Outer Tool Holder Dia. [Inches]	Incl. Collet Dia. [Inches]	Collet Group
95820	SPV 50-1/8 S1/4	44,000	1/4	1/8	3.07	1.18	0.37	1/8	2*
95821	SPV 75-1/4 SPG 6	20,000	SPG 6	1/4	4.09	Special	0.47	1/4	10*
95822	SPV 75-1/4 S3/8	20,000	3/8	1/4	4.72	1.18	0.47	1/4	10*
95823	SPV 100-1/4 SPG 6	20,000	SPG 6	1/4	5.08	Special	0.47	1/4	10*
95824	SPV 100-1/4 S3/8	20,000	3/8	1/4	5.67	1.18	0.47	1/4	10*
95825	SPV 150-1/8 S1/4	10,000	1/4	1/8	5.91	1.18	0.45	-	-
95826	SPV 150-1/4 S3/8	10,000	3/8	1/4	5.91	1.18	0.53	-	-

* All available collets are shown on the adjacent page.

Belt Grinder Attachment Holder



BSHV 25,5



Protective cover



BSVH 41

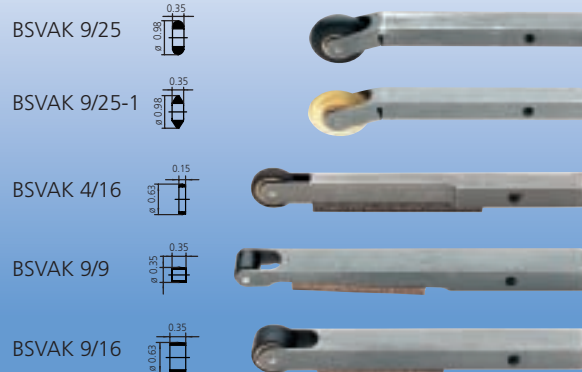
Medium-sized belt grinding attachment BSVH 41 for belt lengths 20-1/2" and 24". Small belt grinding attachment BSVH 25,5 for belt length 12".

■ The belt grinder attachment can be pivoted on the respective tool drive or the handpiece and therefore allows flexible adaptation to each work situation.

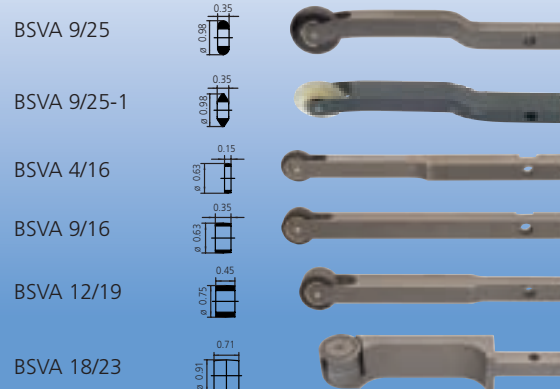
■ Highly-accurate belt guidance due to adjustable belt clamping force and fixable belt arms.
■ Easy, quick belt replacement due to spring clamping.

PFERD Specification Number	Mounting Dia. [Inches]	Drive Roll [Inches]	Suitable for Machine Types	EDP Number
BSVH 41	1.61	1.18	WT 7 E M14 G22, UBS 5/100 SI 925	95015
BSVH 25,5	1	0.79	PWS 3/200 DH, PBS 3/200 DH 99	95000
Protective cover	-	-	BSVH 25,5	95001

Belt Grinder Attachment Arms



BSAD 41 x 610



PFERD Specification Number	Width x Roller Dia. [Inches]	Width x Roller Dia. [mm]	Applicable Belt Width [Inches]	Fits Belt Grinder Attachment	Applications	EDP Number
BSAD 41/36 x 610	-	-	-	BSVH 41	Adapter for belt length 24" with beltgrinder attachment arms BSVA below	95016
BSVAK 9/25 x 305	0.35 x 0.98	9 x 25	1/8, 1/4, 3/8, 1/2, 5/8	BSVH 25,5	Finishing jobs, deburring, matting, fine grinding, and seamless blending of inner radii/channels, especially on pipe coupling areas	95006
BSVA 9/25 x 520				BSVH 41		95020
BSVAK 9/25-1 x 305	0.35 x 0.98	9 x 25	1/8, 1/4, 3/8, 1/2	BSVH 25,5	Finishing jobs in narrow/small inner radii/channels, especially on pipe coupling areas made of stainless steel (INOX) with very small welded seams (tungsten-inert gas welding)	95005
BSVA 9/25-1 x 520				BSVH 41		95021
BSVAK 4/16 x 305	0.15 x 0.63	4 x 16	1/8, 1/4, 3/8	BSVH 25,5	Leveling, deburring, matting, fine grinding, cleaning and seamless blending of stainless steel in narrow areas	95009
BSVA 4/16 x 520				BSVH 41		95018
BSVAK 9/9 x 305	0.35 x 0.35	9 x 9	3/8, 1/2	BSVH 25,5	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on wide areas	95008
BSVAK 9/16 x 305	0.35 x 0.63	9 x 16				BSVH 41
BSVA 9/16 x 520				95019		
BSVA 12/19 x 520	0.45 x 0.75	12 x 19	1/2, 5/8	BSVH 41	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on wide areas	95022
BSVA 18/23 x 520	0.71 x 0.91	18 x 23	3/4	BSVH 41	Leveling, chamfering, matting, fine grinding, cleaning and seamless blending on wide areas on outer radii (convex forms i.e. pipes)	95023

Special grease with special lubrication and adhesive properties for flexible shafts 4 ZG - 10 ZG.

After approx. 100 operating hours, the core of a flexible shaft must be re-lubricated. The core and hose must be degreased and the new special flexible shaft grease must be applied to the core.

Flexible Shaft Grease



EDP Number	PFERD Specification Number	Content	Description
96003	FT 3	1 lbs	For gear transmissions of flexible shaft machines, angle drives and angle handpieces
96004	FT 4	1.1 lbs	A special-grade lubricant with high lubricating and adhesion properties
96005	FT 5	0.22 lbs	For all ball bearings. Readily wets grease slingers to prevent dust contamination

After approx. 100 operating hours, the core of a flexible shaft has to be re-lubricated. The core and hose must be degreased and new special shaft grease must be applied to the core.

Maintenance set consists of:

1 Casing Brush

For removing the old grease from the flexible casing.

2 Pieces of Lint-Free cleaning cloths (15.7 x 13 inches)

The core is freed of the old grease using a degreasing agent and a cleaning cloth (do not use cotton waste)! Apply new grease on to the second cloth and pull the core through it.

1 can of shaft grease FT 4 (approx. 1.1 lbs)

Special grease with special lubrication and adhesive properties.

Maintenance Sets for Flexible Shafts



EDP Number	PFERD Specification Number	Suitable for Flexible Shaft	Contents [pcs.]
96104	Maintenance Set 4 ZG	4 ZG, 6 ZG	2 cleaning cloths, can of shaft grease FT 4, casing brush 4 ZG
96107	Maintenance Set 7 ZG	7 ZGU	2 cleaning cloths, can of shaft grease FT 4, casing brush 7 ZGU
96110	Maintenance Set 10 ZG	10 ZG	2 cleaning cloths, can of shaft grease FT 4, casing brush 10 ZG



Catalogue 201

Files



Catalogue 206

Grinding and
Cut-Off Wheels



Catalogue 202

Tungsten Carbide Burs
and Bi-Metal Hole Saws



Catalogue 208

Power and
Maintenance Brushes



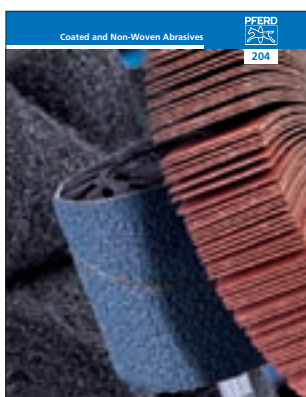
Catalogue 203

Mounted Points



Catalogue 209

Power Tools



Catalogue 204

Coated and
Non-Woven Abrasives

PFERD CANADA INC.
5570 McAdam Road · Mississauga, ONT L4Z1P1
Phone: (905) 501-1555 · Toll-Free: (866) 245-1555
Fax: (905) 501-1554
sales@pferdcanada.ca · www.pferd.com

PFERD INC.
30 Jytek Drive · Leominster, MA 01453
Phone: (978) 840-6420 · Toll-Free: (800) 342-9015
Fax: (978) 840-6421
sales@pferdusa.com · www.pferd.com

Printed in Germany

Subject to technical modifications.

11/2010

820 909