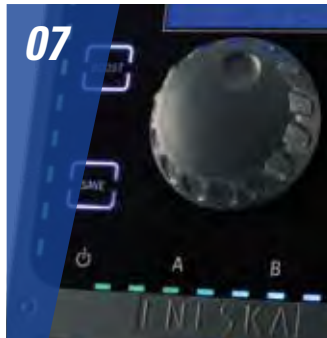


# Driving motors and handpieces

## Overview



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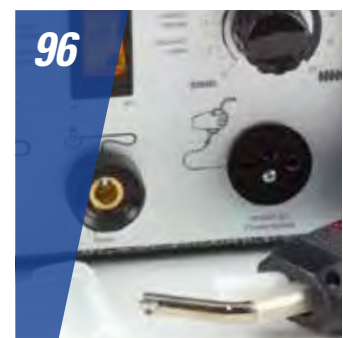
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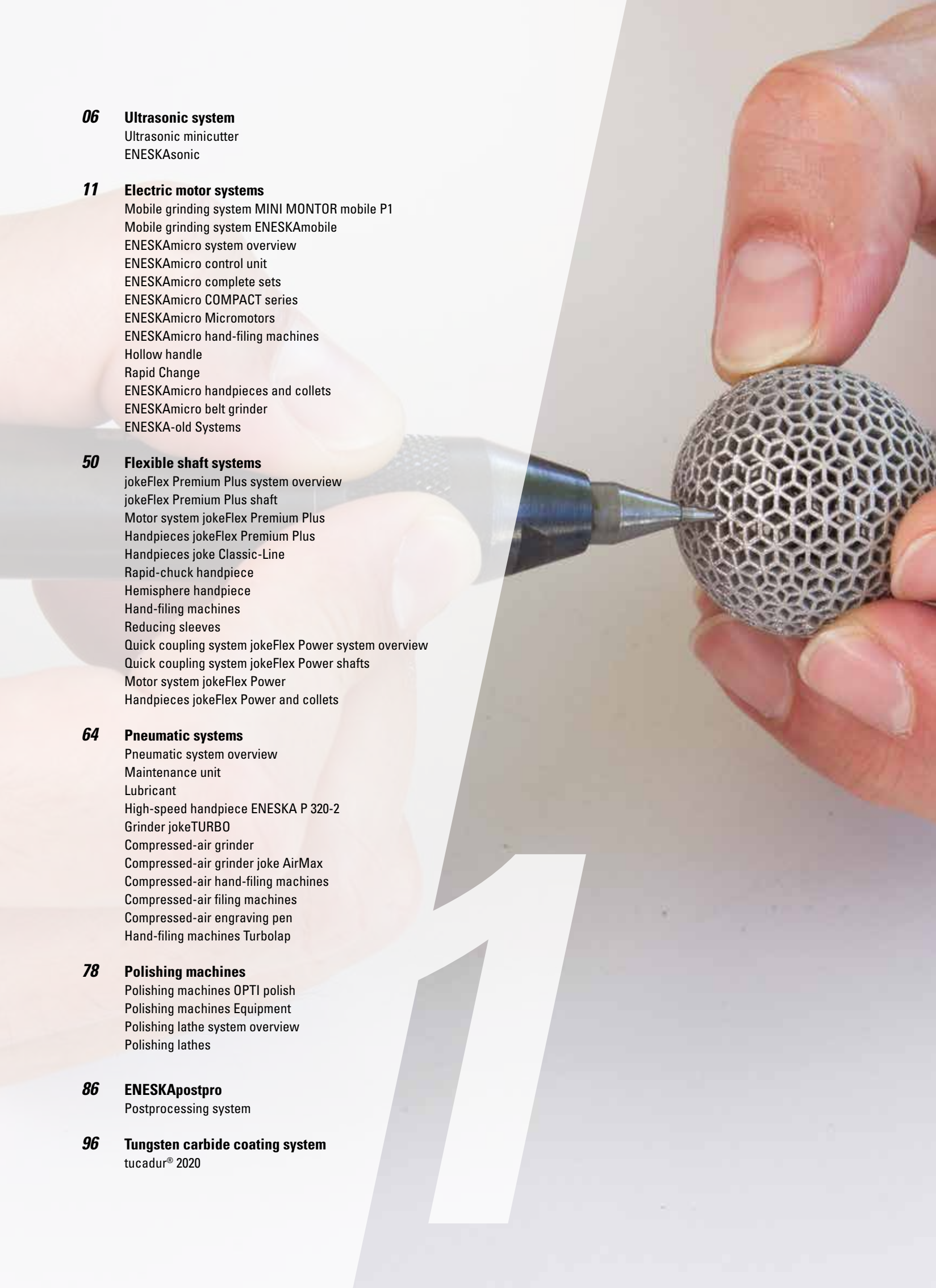
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Postprocessing system


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tucadur® 2020





## Ultrasonic minicutter ZO-91

economical alternative for plastic

		Order No.	Price from 1 piece
<b>Ultrasonic minicutter ZO-91</b>			
	Consisting of: 1 x control unit 1 x handpiece with cable 1 x blade receptacle ZH04 3 x spare screws HB03 for blade receptacle 1 x allen key RR02 40 x blades HA04	<b>0 006 260</b>	

### Accessories / spare parts

	Packing quantity	Order No.	Price from 1 pack	1 piece	1 set
<b>Spare blades HA04</b>					
	40 pieces	<b>0 006 270</b>			
<b>Blade receptacle ZH04</b>					
		<b>0 006 271</b>			
<b>Blade receptacle set ZH04S</b>					
Set contents: 1x blade receptacle ZH04 1x spare screw HB03 1x allen key RR02		<b>0 006 272</b>			
<b>Spare screw HB03</b>					
	Suitable for ultrasonic cutter blade holder ZH04	<b>0 006 273</b>			

# ENESKAsonic

The most innovative advancement  
in the field of ultrasonics



# Ultrasonic lapping and polishing system ENESKAsonic

**The most innovative advancement in the field of ultrasonics**  
**ENESKAsonic – high-efficiency, leading-edge, latest generation for finest stock removal**

As with the ENESKAmicro, the ENESKAsonic ultrasonic system is characterised by consistent advancements in every respect. An outstanding feature is the sophisticated design combined with convenient high-tech equipment.

#### Highlights:

- Intuitive touch operation combined with a rotary controller on high-quality glass
- Modern LED-assisted multifunctional display
- Boost function for applications requiring greater power
- Idle timer detects unused handpieces and protects against wear
- USB charging connection enables for example optional addition of a workplace light without a further power source

The ENESKAsonic is used for polishing and lapping in the frequency range of between 20 and 30 kHz. The Auto Tune function determines the optimum frequency. The infinitely adjustable power control is suitable for fine, delicate work on narrow webs and edges as well as in boost mode for power-intensive, extra abrasive work with sintered diamond files. The LED-assisted display shows the widest range of operating parameters and settings. The 140 g lightweight handpiece with an M6 fine thread is comfortable to hold and enables fatigue-free work.

It was especially important to our development department that this addition to our family should also be “100% Made in Germany” and be reverse-compatible with ENESKA 2-1 handpieces. Guaranteeing this demand for particularly high quality is a major concern for us and protects your years of investment. Combine the ENESKAsonic with an ENESKAmicro and you will receive an unbeatable tandem fully specialised in their respective fields.

	Order No.	Price from
<b>Control unit ENESKAsonic</b>		1 piece



Technical Data:		0 012 001
Output:	max. 80 W	
Dimensions (w x h x d):	135 x 235 x 200 mm	
Weight:	2.7 kg	
Supply voltage:	115/230 V, 50/60 Hz, 150 VA	

#### ↓ matching set

	Order No.	Price from
<b>Ultrasonic lapping and polishing system set ENESKAsonic</b>		1 piece



The set contains the following components:		0 012 000-1
1 x control unit ENESKAsonic (Order No. 0 012 001)		
1 x rapid-chuck handpiece JUS-50-ES (Order No. 0 012 008)		
1 x standard handpiece support, black (Order No. 0 011 110)		
1 x screen protector made of tempered glass (Order No. 0 011 098-G)		
1 x power cord set for Germany, Switzerland, England and Europe (Order No. 0 007 435-1)		
2 x 4 A fuse (Order No. 1 711 407-1) for 110 V use		
1 x T10 TORX screwdriver (Order No. 0 006 304-T)		
2 x chuck key (Order No. 0 006 347)		
1 x tool holder – Ø 3 mm bore (Order No. 0 006 306-E)		
1 x tool holder – 1 mm slot width (Order No. 0 006 310-E)		

# Ultrasonic lapping and polishing system ENESKAsonic


## Accessories / spare parts

	Packing quantity	Order No.	Price from		
			1 set	1 pack	1 piece
<b>ENESKAsonic ultrasonic-system, plastic case, incl. foam insert and plastic box</b>					
 <p>Easy, bundled transport due to carrying handle. Permanent order due to precisely fitting recesses for each:</p> <ul style="list-style-type: none"> <li>• 1 x handpiece</li> <li>• 1 x control unit</li> <li>• 1 x foot pedal</li> <li>• 5 x tool holder</li> <li>• 1 x plastic box, 46 x 46 x 70 mm (included in delivery)</li> </ul> <p>External dimensions (w x h x d): 210 x 396 x 296 mm</p>		<b>0 012 004</b>			
<b>ENESKAmicro footpedal</b>					
 <p>for comfortable control by foot (start/stop, speed adjustment), cable length 2 m</p>		<b>0 011 002</b>			
<b>ENESKAmicro handpiece support standard, black</b>					
 <p>for secure handpiece storage</p>		<b>0 011 110</b>			
<b>ENESKAsonic connection cable</b>					
		suitable for handpiece JUS-45 PB-ES	<b>0 012 006</b>		
		suitable for handpiece JUS-50-ES	<b>0 012 006-0</b>		
<b>ENESKAsonic set blade receptacle with graphic blades</b>					
			<b>0 006 350</b>		
<b>Blade receptacle ENESKAsonic</b>					
			<b>0 006 351</b>		
<b>Graphic blades ENESKAsonic</b>					
		10 pieces	<b>0 006 354</b>		








# Ultrasonic lapping and polishing system

## ENESKAsonic • handpieces

			Order No.	Price from 1 piece
<b>Rapid-chuck handpiece JUS-50-ES</b>			<b>0 012 008</b>	
	Receptacle:	M6/fine		
	Frequency:	22.5 kHz (40 µm)		
	Dimensions:	Ø 29.7 x 135 mm		
	Weight:	140 g (without cable)		
	Cable length:	2 m		
	Output:	50 W		

### Accessories / spare parts

				Order No.	Price from 1 piece
<b>Tool holder for receiving round tools</b>					
	d = Ø 2 mm	round	M6/fine	<b>0 006 305</b>	
	d = Ø 3 mm	squared	M6/fine	<b>0 006 306-E</b>	
<b>Tool holder for receiving flat tools</b>					
	t = 0.5 mm	squared	M6/fine	<b>0 006 308</b>	
	t = 0.8 mm	squared	M6/fine	<b>0 006 309</b>	
	t = 1 mm	round	M6/fine	<b>0 006 310</b>	
	t = 1 mm	squared	M6/fine	<b>0 006 310-E</b>	
	t = 2 mm	squared	M6/fine	<b>0 006 311</b>	
	t = 3 mm	squared	M6/fine	<b>0 006 312</b>	
<b>Adapters for receiving ultrasonic tools</b>					
	Thread M4		M6/fine	<b>0 006 900</b>	
<b>Torx screwdriver</b>					
				<b>0 006 304-T</b>	
<b>LED workplace light</b>					
	<ul style="list-style-type: none"> <li>• Flexible light holder tube</li> <li>• 3-stage adjustable</li> <li>• with clamp mounting, max. 45 mm clamping range</li> </ul>			<b>0 200 524</b>	
	Technical data: Equipment: 3-watt LED / 350 lm Colour temperature: 5,000 K Connection: USB, 5V 1A / 5V 2A input				



# Mobile polishing system


## MINI MONTOR mobile 1 P

### MINI MONTOR mobile 1 P


The mobile system for grinding, milling and polishing. Maximum mobility in processing large workpieces, for this compact system can now be taken with you almost anywhere. The Ni-Mh storage battery is not only environment friendly; it is durable too: 90 minutes working time at a stretch. If ever the juice dries up, you can also continue work with the mains cable (the storage battery is recharged in the meantime!).


The handpiece (with an integrated motor) can be rotated clockwise and anticlockwise, is infinitely adjustable in speed and is electrically protected against overload. The handpiece can be set in motion both by hand and using a foot switch. The speed can also be regulated in both ways.

The set consisting of control unit, handpiece and all accessories is supplied in a compact hard-shell aluminium case.

	Order No.	Price from 1 piece
<b>Mobile control unit MPC20-W</b>		
	For infinite speed control of the handpiece MPH 33. Including integrated storage battery (Ni-Mh) for mobile use.	<b>0 006 713</b>
	Dimensions (W x H x D): 72 x 42 x 171 mm Weight: 300 g Storage battery type: Ni-Mh Charging time: 60 min. Working time: 90 min.	

↓ *matching set*

	Order No.	Price from 1 piece
<b>Set MINI MONTOR mobile 1 P</b>		
	This set consists of: 1 x control unit MPC20-W (Order No. 0 006 713) 1 x handpiece with integrated micromotor (Order No. 0 006 711) (incl. 1 x collet Ø 3 mm Order No. 0 006 704) 1 x charging device ACP01 (Order No. 0 006 714) 1 x foot controller TPF30 (Order No. 0 006 701) 1 x handpiece rack TRC02 (Order No. 0 006 702) 1 x hard-shell aluminium case (Order No. 0 006 703)	<b>0 006 700</b>

	Order No.	Price from 1 piece
<b>Handpiece MPH 33</b>		
	Speed: max. 30,000 rpm Output: 20 W Dimensions: Ø 25 x 143 mm Weight: 180 g (incl. cable) Collet: Ø 3 mm (in scope of delivery)	<b>0 006 711</b>



# Mobile polishing system

## ENESKAmobile

**NEW!**

### ENESKAmobile


The handy, battery operated ENESKAmobile polishing system is the ideal tool for setters and toolmakers – anywhere that grinding, polishing, milling or deburring is required. Robust and shock-resistant, it can be used flexibly in any place, and away from the work bench.

This mobile device is extremely versatile as it can be used with all motors, handpieces and filing machines compatible with the ENESKAmicro. It is also powerful and long-lasting. The batteries can be charged separately, which allows non-stop working. With up to 3 hours battery life under full load and a maximum torque of 6.5 N cm at 40,000 rpm, it can be used in a significantly wider range of applications than conventional devices of this type.




The speed is continuously adjustable from 2,000 to 40,000 rpm. Left and right rotation are also a matter of course with this single-handed device.

#### Highlights:

- Extremely versatile, as it can be connected to all ENESKAmicro motors (BLDC), handpieces and filing machines
- Ergonomic handling given by start/stop function directly on the motor, straightforward control unit and pocket-size casing
- High-quality Li-Ion batteries
- No inconvenient time lost waiting for the batteries to charge, because they are exchangeable and can be recharged separately
- Brushless DC motor (BLDC)
- Runs clockwise/anticlockwise
- Monitoring of battery level and temperature
- Digital control with protective disconnection
- High torque with max. of 6.5 N cm on the motor shaft

	Order No.	Price from 1 piece
<b>ENESKAmobile cordless grinder system, control unit</b>		
	<b>0 012 301</b> Technical data Speed: 2,000 – 40,000 rpm (steplessly adjustable) Battery: 14.8 V Li-Ion Exchangeable battery: yes Battery capacity: 3,000 mAh Output power: 44,4 Wh Operating time: up to 3 hours Load time: 2.5 hours for 80 % + 0.5 hours for 100 % Dimensions (w x h x d): 176 x 103 x 49 mm Weight (without battery): 200 g Weight (with battery): 480 g	

### Accessories / spare parts

	Order No.	Price from 1 piece
<b>ENESKAmobile cordless grinder system, charger</b>		
	<b>0 012 302</b> • ENESKAmobile charger including power supply (only power supply unit Order No. 2 112 203) • LED charge level indicator • Clip-In function for joke battery pack • Dimensions (w x h x d): 176 x 103 x 42 mm • Weight: 200 g	
<b>ENESKAmobile cordless grinder system, replacement battery-pack</b>		
	<b>0 012 303</b> • Li-Ion 14.8 V • 3,000 mAh • 44.4 Wh • LG 41SP • Clip-In function for joke ENESKAmobile charger • CE approved • Dimensions (w x h x d): 100 x 103 x 36 mm • Weight: 280 g	
<b>ENESKAmobile cordless grinder system, plastic case with foam pad</b>		
	<b>0 012 304</b> Plastic case with foam insert for: • ENESKAmobile control unit including battery • ENESKAmobile charger with power supply • 2 additional battery slots • One-piece handpiece or micromotor with mounted handpiece with cable rewind • Position slots for handpiece tools	

# Mobile polishing system

## ENESKAmobile

**NEW!**

↓ matching set

	Order No.	Price from 1 piece
<b>ENESKAmobile cordless grinder system Set LITE</b>		
 <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>• ENESKAmobile control unit (Order No. 0 012 301)</li> <li>• ENESKAmobile charger including power supply (Order No. 0 012 302)</li> <li>• ENESKAmobile battery-pack (Order No. 0 012 303)</li> <li>• Plastic case (Order No. 0 012 304)</li> </ul>	<b>0 012 315</b>	
<b>ENESKAmobile cordless grinder system Set COMPACT</b>		
 <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>• ENESKAmobile control unit (Order No. 0 012 301)</li> <li>• ENESKAmobile charger including power supply (Order No. 0 012 302)</li> <li>• ENESKAmobile battery-pack (Order No. 0 012 303)</li> <li>• ENESKAmicro COMPACT HT60 SMALL, Motor incl. Rapid-Chuck-Handpiece Power, fan-variation (Order No. 0 011 469)</li> <li>• Plastic case (Order No. 0 012 304)</li> </ul>	<b>0 012 350</b>	
<b>ENESKAmobile cordless grinder system Set FLEX</b>		
 <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>• ENESKAmobile control unit (Order No. 0 012 301)</li> <li>• ENESKAmobile charger including power supply (Order No. 0 012 302)</li> <li>• ENESKAmobile battery-pack (Order No. 0 012 303)</li> <li>• Micromotor JBM 50 HT with cable (Order No. 0 008 806-E)</li> <li>• Plastic case (Order No. 0 012 304)</li> </ul>	<b>0 012 340</b>	



### The ENESKAmobile battery system Set Flex offers the following possibilities for the use of handpieces:



**Handpiece JEHG 400**  
Order No. 0 009 811



**Rapid-chuck handpiece JEHR 500**  
Order No. 0 008 810



**Mini hand-filing machines DIPROFIL®**  
**FMR/E 5**  
Order No. 0 001 207  
**FMR/E 10**  
Order No. 0 001 215  
**FMR/E 15**  
Order No. 0 001 209



**Angle handpiece JEKC 300**  
Order No. 0 009 813



**Angle handpiece WE4-45**  
Order No. 0 011 335



**Mini hand-filing machine JN 48**  
Order No. 0 001 403



**Angle handpiece JERA 270**  
Order No. 0 009 812



**Angle handpiece WE4-90**  
Order No. 0 011 330



**Belt grinder JBS 400**  
Order No. 0 008 850



**Hand-filing machine JFMM 4**  
Order No. 0 005 300

# ENESKAmicro

- significantly more power
- based on IP 54
- enhanced handpieces
- extremely high true running accuracy
- higher final speed
- highest clamping force in the world
- handpieces & motors universally compatible regardless of manufacturer!
- PLC suitable
- idletimer
- operator menu in eight different languages
- USB slot

# 100%

Made in GERMANY



## **i** Handpieces for added requirements

New **ENESKAmicro** handpieces with integrated fan in combination with inlets and outlet.

The optimized cooling makes the handpieces and motors **ideal for longer periods of use.**

## **i** Modular system



Motors & handpieces



Cables





Control unit

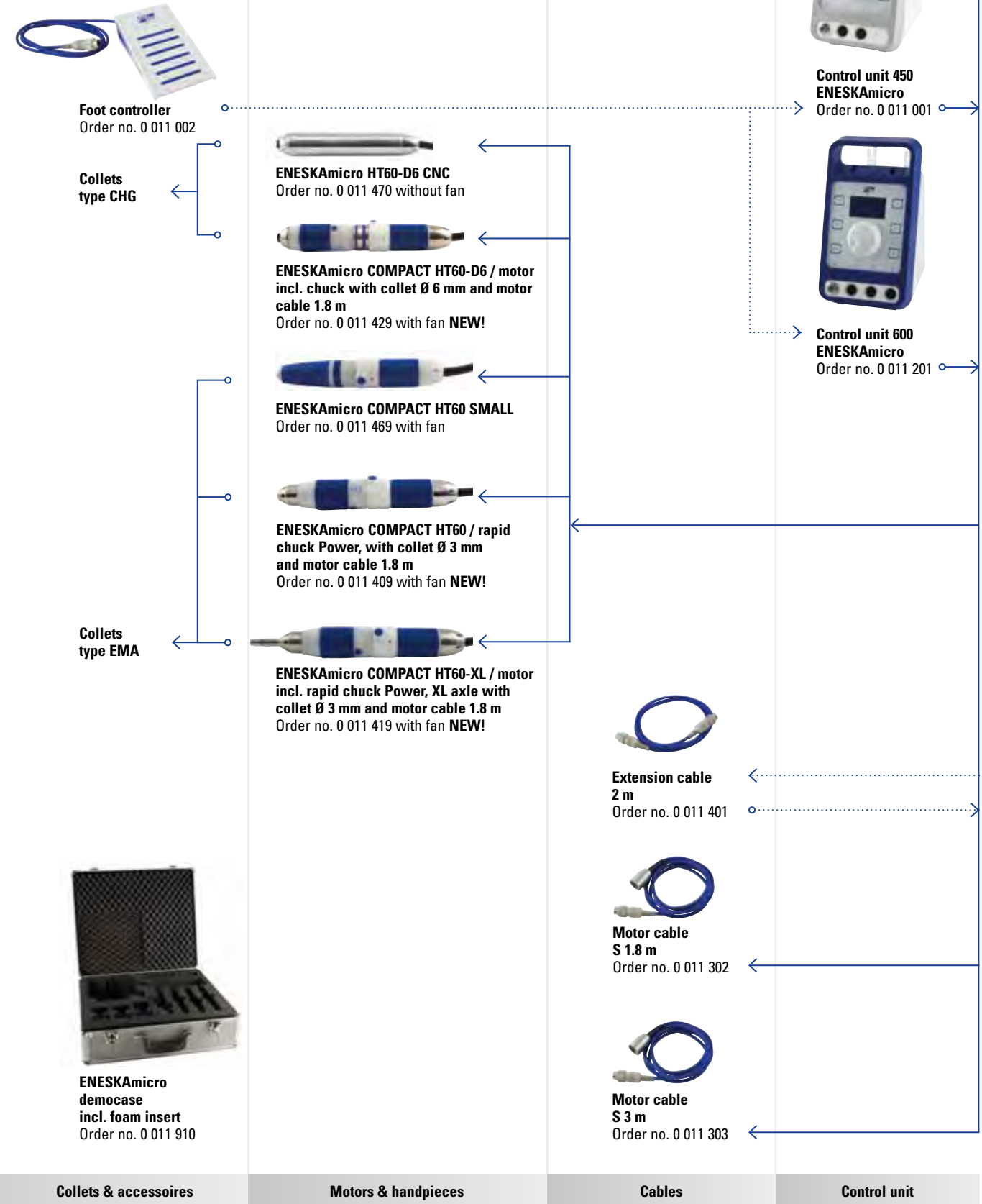


Equipment

# ENESKAmicro System overview

**i** Handpieces and motors have different connections. All items on this page require one of these variants.  

**For any questions, please contact us!**



Collets &amp; accessoires

Motors &amp; handpieces

Cables

Control unit

# ENESKAmicro with (-) connection System overview



Handpieces & hand-filing machines

Hand-filing machines

# ENESKAmicro with (-) connection

## System overview

START

**i** Handpieces and motors have different connections. All items on this page require this variant.

**For any questions, please contact us!**



**Foot controller**  
Order no. 0 011 002



**Handpiece support HT, white**  
Order no. 0 011 109

**Handpiece support standard, black**  
Order no. 0 011 110

**i** Adapter for connecting the ENESKA 3-1 motorcables to ENESKAmicro 600 control unit.



**Adapter ENESKA 3-1 motor cable**  
Order no. 0 006 203-1



**Control unit 450 ENESKAmicro**  
Order no. 0 011 001



**Control unit 600 ENESKAmicro**  
Order no. 0 011 201

**i** Reducing gear for a better torque. It lowers the speed by a quarter.



**Reducing gear JRG 01 4:1**  
Order no. 0 009 500



**Extension element JCN 01 50 mm**  
Order no. 0 009 505



**ENESKAmicro democase incl. foam insert**  
Order no. 0 011 910



**Micromotor JENK-410S**  
Order no. 0 007 505



**Micromotor JENK-250T**  
Order no. 0 007 525



**Extension cable 2 m**  
Order no. 0 011 401



**Motor cable JENK-410S/EM 1.6 m**  
Order no. 0 011 502



**Motor cable JENK-250T/EM 1.6 m**  
Order no. 0 011 501



**Motor cable SDE-BH60/EM, 1.4 m**  
Order no. 0 011 505

**i** Also competitor motor „Marathon“ can be connected.

Equipment

Motors

Cables

Control unit

# ENESKAmicro with (+) connection System overview

**Rapid-chuck handpiece**  
JEHR 500  
Order no. 0 008 810  
Collet type CHH

**Handpiece**  
JEHG 400  
Order no. 0 009 811  
Collet type CHG

**Angle handpiece**  
JERA 270  
Order no. 0 009 812  
Collet type CHS

**Angle handpiece**  
JEKC 300  
Order no. 0 009 813  
Collet type CHC

**Angle handpiece**  
WE4-90  
Order no. 0 011 330  
Collet type CHC

**Angle handpiece**  
WE4-45  
Order no. 0 011 335  
Collet type CHC

**Angle handpiece**  
JERA 270 S  
Order no. 0 008 813  
Collet type GH

**Rapid-Change coupling**  
Order no. 0 008 815

**Mini hand-filing machines**  
DIPROFIL®  
FMR/E 5  
Order no. 0 001 207  
FMR/E 10  
Order no. 0 001 215  
FMR/E 15  
Order no. 0 001 209

**Mini hand-filing machine**  
JN 48  
Order no. 0 001 403

**Belt grinder**  
JBS 100  
Order no. 0 008 950


**Hand-filing machine**  
DIPROFIL®  
Di-Pro FXM-N, Mark II  
Order no. 0 001 521-N

**Hand-filing machine**  
DIPROFIL®  
FPM/ERJ, Mark II  
Order no. 0 005 201-N

**Hand-filing machine**  
FMD/3-2/EM  
Order no. 0 011 550

**Hand-filing machine**  
DIPROFIL®  
FPT/ER, Mark II  
Order no. 0 005 204-N




**i** Handpieces with



connection can be mounted

**Hand-filing machine**  
JFMM 4  
Order no. 0 005 300

**i** **Legend**

- modular components 
- options 
- joke expert info 

Handpieces & hand-filing machines

Hand-filing machines

# ENESKAmicro with (+) connection System overview

**i** Handpieces and motors have different connections. All items on this page require this variant. +



**Foot controller**  
Order no. 0 011 002



**Handpiece support HT, white**  
Order no. 0 011 109

**Handpiece support standard, black**  
Order no. 0 011 110

**i** Adapter for connecting the ENESKA 3-1 motorcables to ENESKAmicro 600 control unit.



**Adapter ENESKA 3-1 motor cable**  
Order no. 0 006 203-1



**Control unit 450 ENESKAmicro**  
Order no. 0 011 001



**Control unit 600 ENESKAmicro**  
Order no. 0 011 201

START

**i** The reduction gear ensures higher power transmission and lowers the speed to a quarter.



**Reducing gear JERG 01 B**  
Order no. 0 009 806



**Adapter JECN 01T for ENESKA 3-1 Handpieces**  
Order no. 0 009 807



**Brushless micromotor JBM 50 S**  
Order no. 0 008 803



**Brushless micromotor JBM 50 HT**  
Order no. 0 008 806



**Extension cable 2 m**  
Order no. 0 011 401



**Motor cable JBM 50 S/EM 1,5 m**  
Order no. 0 011 503



**JBM 50 S/EM 4 m**  
Order no. 0 011 503-4m



**Motor cable JBM 50 HT/EM 1,5 m**  
Order no. 0 011 504



**JBM 50 HT/EM 4 m**  
Order no. 0 011 504-4m



**Motor cable SDE-BH60/EM, 1,4 m**  
Order no. 0 011 505



**ENESKAmicro democase incl. foam insert**  
Order no. 0 011 910

**i** Also competitor motor „Marathon“ can be connected.

Equipment

Motors

Cables

Control unit



# ENESKAmicro Control units



**The new standard for grinding, polishing, milling and deburring  
ENESKAmicro – the unbeatable all-round talent**

The in-house development by joke sets standards for micromotor systems. What is unique about this series is its system-wide and downwards compatibility as well as extreme power.

Higher final speed, more power, higher clamping force for the handpieces, 100% Made in Germany, touch display, USB interface and high level of true running are just some of the highlights of this extraordinary system.

This not only enables its use in many new application areas, such as aerospace and 3D printing, but also in conventional toolmaking and mould building or in medical engineering.

**Simple to operate with the touch display**

The core component of the ENESKAmicro is the intelligent control unit. Intelligent because it automatically detects which micromotor is connected, whether from the joke family or a third-party manufacturer. The individual settings can be saved on the touch display with station keys. The speed input can be set via a finely adjusted rotary knob or optionally via a foot switch. The slim design and low centre of gravity make for high stability. The control unit dispenses with fans or slots – which means less noise pollution for the user and it is also dust-protected (according to IP 54).

The newly developed handpieces achieve a higher clamping force than similar devices on the market. Created by a combination of spring and lever force that keeps the tool in position even at high speeds. The high-precision grinding of all axes and the installation of the latest-generation bearings enable a high level of true running to within less than 0.01 millimetres. Further advantages are the on/off switch directly on the motor and the toolless quick-clamping function. This saves time and guarantees precise, low-vibration and fatigue-free work. The joke team has developed handpieces with a longer XL axis for hard-to-reach areas in workpieces.


A special detail that was particularly important to us: the ENESKAmicro is completely “Made in Germany”. This serves local business and sensible further use and protection of previously made investments as well as our own high requirements in terms of quality and delivery time can thus be guaranteed. The powerful micromotor system therefore meets the technical requirements in milling in particular – wherever hard materials are machined, such as high-grade steels, Inconel and titanium for implant production.

The ENESKAmicro offers a genuine alternative to many compressed-air systems.


**The facts speak for themselves:**

- Tremendously high cost advantage compared to expensive compressed-air
- Remarkably high-speed, variably adjustable
- Low-vibration work
- Quick tool changes without external aids
- Low noise pollution






	Price from
Order No.	1 piece

	<ul style="list-style-type: none"> <li>• Infinitely variable speed control up to max. 60,000 rpm</li> <li>• Speed limited by potentiometer</li> <li>• Digital speed display</li> <li>• Connection for 2 motors BLDC and 1 AC motor</li> <li>• Motor recognition</li> <li>• Speed Memory button</li> <li>• Clockwise, anticlockwise running</li> <li>• Connection for foot control</li> <li>• USB charging port allows the addition of a workplace light</li> </ul> <p>Weight: 2.4 kg  Dimensions (W x H x D): 135 x 235 x 200 mm  Connection: 90–240 V, 50–60 Hz</p>	<p><b>0 011 201</b></p>
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# ENESKAmicro Control units









		Order No.	Price from 1 piece
<b>ENESKAmicro 450 control unit</b>			
	<ul style="list-style-type: none"> <li>• Infinitely variable speed control up to max. 45,000 rpm</li> <li>• Speed limited by potentiometer</li> <li>• Digital speed display</li> <li>• Connection for 2 motors BLDC</li> <li>• Motor recognition</li> <li>• Speed Memory button</li> <li>• Clockwise, anticlockwise running</li> <li>• Connection for foot control</li> </ul>	<b>0 011 001</b>	
	Weight: 2.4 kg Dimensions (W x H x D): 135 x 235 x 200 mm Connection: 90–240 V, 50–60 Hz		

## Accessories / spare parts






		Order No.	Price from 1 piece
<b>ENESKAmicro footpedal</b>			
	for comfortable control by foot (start/stop, speed adjustment), cable length 2 m	<b>0 011 002</b>	
<b>ENESKAmicro handpiece support HT, white</b>			
	for secure handpiece storage	<b>0 011 109</b>	
<b>ENESKAmicro handpiece support standard, black</b>			
	for secure handpiece storage	<b>0 011 110</b>	
<b>ENESKAmicro extension cable, 2 m</b>			
	suitable for all motor cables of the ENESKAmicro series	<b>0 011 401</b>	
<b>ENESKAmicro storage case, incl. foam inlay</b>			
	Aluminium case with carrying handle and two lockable locks Dimensions (W x H x D): 502 x 150 x 370 mm Weight: 3.2 kg	<b>0 011 910</b>	

## ENESKAmicro 600

### Complete sets







		Order No.	Price from 1 piece
<b>ENESKAmicro 600 set 2.5</b>			
	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro COMPACT HT60, Motor incl. Handpiece Power (order no 0 011 409)</li> <li>1 x ENESKAmicro Motorcable HT, 1.8 m (order no. 0 011 402)</li> <li>1 x ENESKAmicro Collet Type EMA, Ø 3 mm (order no 0 011 413)</li> <li>1 x ENESKAmicro handpiece support HT, white (order no. 0 011 109)</li> </ul>	<b>0 011 220</b>	
<b>ENESKAmicro 600 set 2.6</b>			
	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro motor HT60/rapid chuck Power, XL axle (order no. 0 011 419)</li> <li>1 x ENESKAmicro motor cable HT, 1.8 m (order no. 0 011 402)</li> <li>1 x ENESKAmicro collet type EMA, Ø 3 mm (order no. 0 011 413)</li> <li>1 x ENESKAmicro handpiece support HT, white (order no. 0 011 109)</li> </ul>	<b>0 011 230</b>	
<b>ENESKAmicro 600 set 2.7</b>			
	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro motor JENK-410S with (-) connection (order no. 0 007 505)</li> <li>1 x ENESKAmicro motor cable JENK-410S/EM, 1.6 m (order no. 0 011 502)</li> <li>1 x ENESKAmicro handpiece support, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JIR 310 (order no. 0 007 515) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 240</b>	
<b>ENESKAmicro 600 set 2.8</b>			
	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro motor JENK-250T with (-) connection (order no. 0 007 525)</li> <li>1 x ENESKAmicro motor cable JENK-250T/EM, 1.6 m (order no. 0 011 501)</li> <li>1 x ENESKAmicro handpiece support, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JIR 310 (order no. 0 007 515) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 245</b>	
<b>ENESKAmicro 600 set 2.9</b>			
	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro motor JBM 50 S with (+) connection (order no. 0 008 803)</li> <li>1 x ENESKAmicro motor cable JBM 50 S/EM, 1.6 m (order no. 0 011 503)</li> <li>1 x ENESKAmicro handpiece support standard, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JEHR 500 (order no. 0 008 810) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 250</b>	

# ENESKAmicro 600 Complete sets

	Order No.	Price from 1 piece
<b>ENESKAmicro 600 set 2.10</b>  <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro motor JBM 50 HT with (+) connection (order no. 0 008 806)</li> <li>1 x ENESKAmicro motor cable JBM 50 HT/EM, 1.6 m (order no. 0 011 504)</li> <li>1 x ENESKAmicro handpiece support standard, black (order no. 0 011 110)</li> <li>1 x ENESKA-rapid-chuck handpiece JEHR 500 (order no. 0 008 810) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 255</b>	
<b>ENESKAmicro 600 set 2.11</b>  <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro COMPACT HT60-D6, motor incl. chuck Ø 6 mm (order no. 0 011 429)</li> <li>1 x ENESKAmicro motor cable HT, 1.8 m (order no. 0 011 402)</li> <li>1 x ENESKAmicro collet type CHG, Ø 6 mm (order no. 0 011 426)</li> <li>1 x ENESKAmicro handpiece support, white (order no. 0 011 109)</li> </ul>	<b>0 011 235</b>	
<b>ENESKAmicro 600 set 2.12</b>  <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro motor JENK-410S with (-) connection (order no. 0 007 505)</li> <li>1 x ENESKAmicro motor cable JENK-410S/EM, 1.6 m (order no. 0 011 502)</li> <li>1 x ENESKAmicro handpiece support, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JIH 300 (order no. 0 009 150) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 260</b>	
<b>ENESKAmicro 600 set 2.14</b>  <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro COMPACT HT60 SMALL, motor incl. rapid-chuck head (order no. 0 011 469)</li> <li>1 x ENESKAmicro motor cable HT, 1.8 m (order no. 0 011 402)</li> <li>1 x ENESKAmicro collet type EMA, Ø 3 mm (order no. 0 011 413)</li> <li>1 x ENESKAmicro handpiece support, white (order no. 0 011 109)</li> </ul>	<b>0 011 270</b>	
<b>ENESKAmicro 600 set 2.15</b>  <p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 600 control unit (order no. 0 011 201)</li> <li>1 x ENESKAmicro ENESKAmicro HT60-D6 CNC, motor spindle in stainless steel housing (order no. 0 011 470)</li> <li>1 x ENESKAmicro motor cable HT-D6, 3 m (order no. 0 011 404-3M)</li> <li>1 x ENESKAmicro collet type CHG, Ø 3 mm (order no. 0 009 652)</li> <li>1 x ENESKAmicro collet type CHG, Ø 6 mm (order no. 0 009 651)</li> </ul>	<b>0 011 275</b>	



## ENESKAmicro 450

### Complete sets



		Order No.	Price from 1 piece
<b>ENESKAmicro 450 set 1.5</b>			
 	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 450 control unit (order no. 0 011 001)</li> <li>1 x ENESKAmicro motor JENK-410S with (-) connection (order no. 0 007 505)</li> <li>1 x ENESKAmicro motor cable JENK-410S/EM, 1.6 m (order no. 0 011 502)</li> <li>1 x ENESKAmicro handpiece support, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JIR 310 (order no. 0 007 515) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 020</b>	
<b>ENESKAmicro 450 set 1.6</b>			
 	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 450 control unit (order no. 0 011 001)</li> <li>1 x ENESKAmicro motor JENK-410S with (-) connection (order no. 0 007 505)</li> <li>1 x ENESKAmicro motor cable JENK-410S/EM, 1.6 m (order no. 0 011 502)</li> <li>1 x ENESKAmicro handpiece support, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JIR 310 (order no. 0 007 515) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 025</b>	
<b>ENESKAmicro 450 set 1.7</b>			
 	<p>The set contains the following components:</p> <ul style="list-style-type: none"> <li>1 x ENESKAmicro 450 control unit (order no. 0 011 001)</li> <li>1 x ENESKAmicro motor JENK-410S with (-) connection (order no. 0 007 505)</li> <li>1 x ENESKAmicro motor cable JENK-410S/EM, 1.6 m (order no. 0 011 502)</li> <li>1 x ENESKAmicro handpiece support, black (order no. 0 011 110)</li> <li>1 x ENESKA rapid-chuck handpiece JIH 300 (order no. 0 009 150) incl. collet type CHH, Ø 3 mm</li> </ul>	<b>0 011 030</b>	

# ENESKAmicro COMPACT series




## COMPACT HT60

	Design	Order No.	Price from 1 piece
<b>ENESKAmicro COMPACT HT60</b>			
 <ul style="list-style-type: none"> <li>• With collet Ø 3 mm</li> <li>• Brushless DC motor BLDC</li> <li>• On-off switch located on the micromotor</li> </ul> <p>Motor speed: max. 60,000 rpm                      Output: 8.9 N cm at 280 W                      Weight: 0.4 kg                      Dimensions (D x L): Ø 30 x 170 mm                      Concentricity: &lt; +/- 0.01 mm                      Collet type: EMA</p>	incl. motor cable 1.8 m and fan	<b>0 011 409</b>	
			

## COMPACT HT60 SMALL



	Design	Order No.	Price from 1 piece
<b>ENESKAmicro COMPACT HT60 SMALL</b>			
 <ul style="list-style-type: none"> <li>• With collet Ø 3 mm</li> <li>• Brushless DC motor BLDC</li> <li>• On-off switch located on the micromotor</li> </ul> <p>Motor speed: max. 60,000 rpm                      Output: 7.8 N cm at 260 W                      Weight: 0.22 kg                      Dimensions (D x L): Ø 28 x 156 mm                      Concentricity: &lt; +/- 0.01 mm                      Collet type: EMA</p>	incl. motor cable 1.8 m and fan	<b>0 011 469</b>	
			

### Accessories / spare parts

	Dimensions	Order No.	Price from 1 piece
<b>Collet type EMA</b>			
	Ø 1.6 mm	<b>0 011 411</b>	
	Ø 2.35 mm	<b>0 011 412</b>	
	Ø 3.0 mm	<b>0 011 413</b>	
	Ø 1/8"	<b>0 011 414</b>	
<b>ENESKAmicro motor cable HT, 1.8 m</b>			
	For connecting the micromotors HT to the ENESKAmicro and ENESKAmobile control units	<b>0 011 402</b>	
<b>ENESKAmicro extension cable, 2 m</b>			
	Suitable for all motor cables of the ENESKAmicro series	<b>0 011 401</b>	




# ENESKAmicro COMPACT series

## COMPACT HT60-D6

		Design	Order No.	Price from
				1 piece
<b>ENESKAmicro COMPACT HT60-D6</b>				
	<ul style="list-style-type: none"> <li>• With collet Ø 6 mm</li> <li>• Brushless DC motor BLDC</li> <li>• On-off switch located on the micromotor</li> </ul>	incl. motor cable 1.8 m and fan	<b>0 011 429</b>	
	<p>Motor speed: up to max. 50,000 rpm</p> <p>Output: 8.9 N cm at 280 W</p> <p>Weight: 0.475 kg</p> <p>Dimensions (D x L): Ø 30 x 180 mm</p> <p>Concentricity: &lt; +/- 0.01 mm</p> <p>Collet type: EMB</p>			
<b>ENESKAmicro HT60-D6 CNC</b>				
	<ul style="list-style-type: none"> <li>• With collet Ø 3 and 6 mm</li> <li>• Brushless DC motor BLDC</li> </ul>	incl. motor cable 3 m, stainless steel case	<b>0 011 470</b>	
	<p>Motor speed: up to max. 50,000 rpm</p> <p>Output: 8.9 N cm at 280 W</p> <p>Weight: 0.5 kg</p> <p>Dimensions (D x L): Ø 28 x 170 mm</p> <p>Clamping shank: Ø 28 x 45 mm</p> <p>Concentricity: &lt; +/- 0.01 mm</p> <p>Collet type: CHG</p>			







### Accessories / spare parts




		Dimensions	Order No.	Price from		
				1 piece	3 pieces	5 pieces
<b>Collet type CHG</b>						
		Ø 2.35 mm	<b>0 009 653</b>			
		Ø 3.0 mm	<b>0 009 652</b>			
		Ø 6.0 mm	<b>0 009 651</b>			
		Ø 1/8"	<b>0 009 657</b>			
<b>ENESKAmicro motor cable HT-D6, 1.8 m</b>						
	For connecting the micromotors HT-D6 to the ENESKAmicro and ENESKAmobile control units		<b>0 011 404</b>			
<b>ENESKAmicro extension cable, 2 m</b>						
	Suitable for all motor cables of the ENESKAmicro series		<b>0 011 401</b>			

# ENESKAmicro COMPACT series

## COMPACT HT60-XL

	Design	Order No.	Price from 1 piece
<b>ENESKAmicro COMPACT HT60-XL</b>			
 <ul style="list-style-type: none"> <li>• With collet Ø 3 mm</li> <li>• Brushless DC motor BLDC</li> <li>• On-off switch located on the micromotor</li> <li>• XL axle</li> </ul> <p>Motor speed: up to max. 50,000 rpm                      Output: 8.9 N cm at 280 W                      Weight: 0.4 kg                      Dimensions (D x L): Ø 30 x 200 mm                      Collet axle: Ø 8 x 30 mm                      (outside the housing)                      Concentricity: &lt; +/- 0.01 mm                      Collet type: EMA</p>	incl. motor cable 1.8 m and fan	<b>0 011 419</b>	
	  		




### Accessories / spare parts

	Dimensions	Order No.	Price from 1 piece
<b>Collet type EMA</b>			
	Ø 1.6 mm	<b>0 011 411</b>	
	Ø 2.35 mm	<b>0 011 412</b>	
	Ø 3.0 mm	<b>0 011 413</b>	
	Ø 1/8"	<b>0 011 414</b>	
<b>ENESKAmicro motor cable HT, 1.8 m</b>			
	For connecting the micromotors HT to the ENESKAmicro and ENESKAmobile control units	<b>0 011 402</b>	
<b>ENESKAmicro extension cable, 2 m</b>			
	Suitable for all motor cables of the ENESKAmicro series	<b>0 011 401</b>	






## ENESKAmicro micromotors with (-) connection

### Micromotor JENK-250T






		Design	Order No.	Price from 1 piece
<b>Micromotor JENK-250T</b>				
 	Brushless direct current motor BLDC for operation of handpieces with (-) connection	without motor cable	<b>0 007 525</b>	
	Power: 76 watts Rotation speed range: 1,000 – 25,000 rpm Torque: 4.8 N cm Dimensions: Ø 28.4 x 78.4 mm Weight: 147 g	incl. motor cable 1.6 m	<b>0 007 525-E</b>	
				

#### Accessories / spare parts




		Order No.	Price from 1 piece
<b>Step-down gear JRG 01</b>			
	for connection to micromotors with (-) connection	<b>0 009 500</b>	
	Reduces rotation speed: 4 : 1 Rotation speed max.: 30,000 rpm Dimensions: Ø 19 x 55 mm (Extension 42 mm) Weight: 68 g		
<b>Extension element JCN 01</b>			
	for connection to micromotors with (-) connection	<b>0 009 505</b>	
	Rotation speed max.: 35,000 rpm Dimensions: Ø 19 x 63.5 mm (Extension 50 mm) Weight: 83 g		
<b>Motor cable JENK-250T/EM, 1.6 m</b>			
	for connecting the micromotors JENK-250T to the ENESKAmicro and ENESKAmobile control units	<b>0 011 501</b>	

# ENESKAmicro micromotors with (-) connection

## Micromotor JENK-410S






		Design	Order No.	Price from 1 piece	
<b>Micromotor JENK-410S</b>					
 	Brushless direct current motor BLDC for operation of handpieces with (-) connection Power: 73 watts Rotation speed range: 1,000 – 40,000 rpm Torque: 4.2 N cm Dimensions: Ø 24.5 x 67.1 mm Weight: 90 g	without motor cable	<b>0 007 505</b>		
		incl. motor cable 1.6 m	<b>0 007 505-E</b>		
		  			

### Accessories / spare parts




		Order No.	Price from 1 piece
<b>Step-down gear JRG 01</b>			
	for connection to micromotors with (-) connection Reduces rotation speed: 4 : 1 Rotation speed max.: 30,000 rpm Dimensions: Ø 19 x 55 mm (Extension 42 mm) Weight: 68 g	<b>0 009 500</b>	
<b>Extension element JCN 01</b>			
	for connection to micromotors with (-) connection Rotation speed max.: 35,000 rpm Dimensions: Ø 19 x 63.5 mm (Extension 50 mm) Weight: 83 g	<b>0 009 505</b>	
<b>Motor cable JENK-410S/EM, 1.6 m</b>			
	for connecting the micromotors JENK-410S to the ENESKAmicro and ENESKAmobile control units	<b>0 011 502</b>	

## ENESKAmicro micromotors with (+) connection

### Micromotor JBM 50 HT




		Design	Order No.	Price from 1 piece
<b>Micromotor JBM 50 HT</b>				
 	Brushless direct current motor BLDC for operation of handpieces with (+) connection	without motor cable	<b>0 008 806</b>	
		incl. motor cable 1.5 m	<b>0 008 806-E</b>	
	Output: 200 W Torque: 8.4 N cm Speed range: 1,000 – 50,000 1/min Sound level: < 62 dB(A) at 30,000 rpm Dimensions: Ø 28.3 x 87.7 mm (without cable) Weight: 160 g			
	  			

#### Accessories / spare parts




		Order No.	Price from 1 piece
<b>Step-down gear JERG 01 B</b>			
	For use with micromotors with (+) connection Speed step-down ratio: 4 : 1 Speed max.: 30,000 rpm Dimension: Ø 22.4 x 40 mm (without thread) Weight: 65 g	<b>0 009 806</b>	
<b>Adapter JECN 01 T</b>			
	To connect micromotors with (+) connection to handpieces with (-) connection Speed max.: 30,000 rpm Dimension: Ø 22.4 x 29 mm (without thread) Weight: 31 g	<b>0 009 807</b>	
<b>Motor cable JBM 50 HT/EM, 1.5 m</b>			
	For connecting the micromotors JBM 50 HT to the ENESKAmicro and ENESKAmobile control units	<b>0 011 504</b>	

# ENESKAmicro micromotors with (+) connection

## Micromotor JBM 50 S


	Design	Order No.	Price from 1 piece
<b>Micromotor JBM 50 S</b>			
 	Brushless direct current motor BLDC for operation of handpieces with (+) connection	without motor cable	<b>0 008 803</b>
		incl. motor cable 1.5 m	<b>0 008 803-E</b>
	Torque:	5.6 N cm	
	Speed range:	1,000 – 50,000 1/min	
	Sound level:	< 58 dB(A) at 30,000 rpm	
	Dimensions:	Ø 27.4 x 74.7 mm (without cable)	
	Weight:	117 g	
			

### Accessories / spare parts



		Order No.	Price from 1 piece
<b>Step-down gear JERG 01 B</b>			
	For use with micromotors with (+) connection		<b>0 009 806</b>
	Speed step-down ratio:	4 : 1	
	Speed max.:	30,000 rpm	
	Dimension:	Ø 22.4 x 40 mm (without thread)	
	Weight:	65 g	
<b>Adapter JECN 01 T</b>			
	To connect micromotors with (+) connection to handpieces with (-) connection		<b>0 009 807</b>
	Speed max.:	30,000 rpm	
	Dimension:	Ø 22.4 x 29 mm (without thread)	
	Weight:	31 g	
<b>Motor cable JBM 50 S/EM, 1.5 m</b>			
	For connecting the micromotors JBM 50 S to the ENESKAmicro and ENESKAmobile control units		<b>0 011 503</b>

## ENESKAmicro Hand-filing machines with (+) connection

### Hand-filing machine DIPROFIL® FPT/ER, Mark II

		Price from
		Order No. 1 piece
<b>Hand-filing machine DIPROFIL® FPT/ER, Mark II</b>		
	for connection to JBM 50 S and JBM 50 HT	<b>0 005 204-N</b>
	Stroke length: 0 – 6 mm, continuously adjustable (0.5 – 3 mm recommended) No. of strokes: 7,000 – 8,000 strokes/min (depending on control unit) (5,000 – 6,500 strokes/min recommended) Tool receptacle: Ø 2 – 6.4 mm Insertion depth: 40 mm Sound level: < 70 dB(A) at 7,000 strokes/min (acc. to ISO 15744) Vibration: 5.79 – 13.37 m/s <sup>2</sup> Weight: 560 g (without micromotor) Accessories: storage box, tool set, extension tube/finger protection bush, replacement friction bearing and felts, lubricating oil	

#### Accessories / spare parts



		Price from
		Order No. 1 piece
<b>Micromotor JBM 50 S</b>		
	Brushless direct current motor BLDC for operation of handpieces with (+) connection	<b>0 008 803-E</b>
	Torque: 5.6 N cm Speed range: 1,000 – 50,000 1/min Sound level: < 58 dB(A) at 30,000 rpm Dimensions: Ø 27.4 x 74.7 mm (without cable) Weight: 117 g	
<b>Micromotor JBM 50 HT</b>		
	Brushless direct current motor BLDC for operation of handpieces with (+) connection	<b>0 008 806-E</b>
	Output: 200 W Torque: 8.4 N cm Speed range: 1,000 – 50,000 1/min Sound level: < 62 dB(A) at 30,000 rpm Dimensions: Ø 28.3 x 87.7 mm (without cable) Weight: 160 g	





Suitable tool holders can be found on page 249 and on the web at [www.joke-technology.com](http://www.joke-technology.com)

# ENESKAmicro Hand-filing machines with (-) connection

## Hand-filing machine DIPROFIL® FPT/NR, Mark II

		Price from
		Order No. 1 piece
<b>Hand-filing machine DIPROFIL® FPT/NR, Mark II</b>		
 	For connection to micromotors JENK-410S and JENK-250T	<b>0 005 203-N</b>
	Stroke length: 0 – 6 mm, continuously adjustable (0.5 – 3 mm recommended)	
	No. of strokes: 7,000 – 8,000 strokes/min (depending on control unit) (5,000 – 6,500 strokes/min recommended)	
	Tool receptacle: Ø 2 – 6.4 mm	
	Insertion depth: 40 mm	
	Noise level: < 70 dB(A) at 7,000 strokes/min according to ISO 15744)	
	Vibration: 5.79 – 13.37 m/s <sup>2</sup>	
Weight: 560 g (without micromotor)		
Scope of supply: Storage case, tool set, extension tube/finger protection bush, Replacement friction bearing and felts, lubricating oil		



### Accessories / spare parts

		Price from
		Order No. 1 piece
<b>Micromotor JENK-410S</b>		
	Brushless direct current motor BLDC for operation of handpieces with (-) connection	<b>0 007 505-E</b>
	Power: 73 watts	
	Rotation speed range: 1,000 – 40,000 rpm	
	Torque: 4.2 N cm	
	Dimensions: Ø 24.5 x 67.1 mm	
	Weight: 90 g	
<b>Micromotor JENK-250T</b>		
	Brushless direct current motor BLDC for operation of handpieces with (-) connection	<b>0 007 525-E</b>
	Power: 76 watts	
	Rotation speed range: 1,000 – 25,000 rpm	
	Torque: 4.8 N cm	
	Dimensions: Ø 28.4 x 78.4 mm	
	Weight: 147 g	



 **Suitable tool holders** can be found on **page 249** and on the web at **www.joke-technology.com**

# ENESKAmicro Hand-filing machines with (+) connection

## Hand-filing machine JFMM 4

		Order No.	Price from 1 piece
<b>Hand-filing machine JFMM 4</b>			
	For connection to micromotors with (+) connection, with step-down gear ratio 4:1 Stroke length: 0 – 6 mm, continuously adjustable No. of strokes: max. 7,800 strokes/min Initial speed: max. 30,000 1/min Tool support: Ø 1 – 6.2 mm Weight: 750 g Accessories: storage box, tool holder, tool set, oil	<b>0 005 300</b>	
			

### Accessories / spare parts

		Order No.	Price from 1 piece
<b>Micromotor JBM 50 S</b>			
	Brushless direct current motor BLDC for operation of handpieces with (+) connection  Torque: 5.6 N cm Speed range: 1,000 – 50,000 1/min Sound level: < 58 dB(A) at 30,000 rpm Dimensions: Ø 27.4 x 74.7 mm (without cable) Weight: 117 g	<b>0 008 803-E</b>	
<b>Micromotor JBM 50 HT</b>			
	Brushless direct current motor BLDC for operation of handpieces with (+) connection  Output: 200 W Torque: 8.4 N cm Speed range: 1,000 – 50,000 1/min Sound level: < 62 dB(A) at 30,000 rpm Dimensions: Ø 28.3 x 87.7 mm (without cable) Weight: 160 g	<b>0 008 806-E</b>	





**Suitable tool holders** can be found on **page 249**  
and in our shop at **[www.joke-technology.com](http://www.joke-technology.com)**

# ENESKAmicro Hand-filing machines with integrated micromotor

## Hand-filing machine DIPROFIL® Di-Pro FXM-N, Mark II

### Hand-filing machines with integrated micromotor

These hand-filing machines with a built-in micromotor can be directly connected to suitable ENESKAmicro 600 series control units. No additional micromotor is required.



		Price from
		Order No.      1 piece
<b>Hand-filing machine DIPROFIL® Di-Pro FXM-N, Mark II</b>		
for direct connection to ENESKAmicro control units 600		<b>0 001 521-N</b>
	Stroke length:	of 0 – 6 mm, continuously adjustable (0.5 – 3 mm recommended)
	No. of strokes:	max. 7,000 strokes/min (5,000 – 6,000 strokes/min recommended)
	Tool receptacle:	Ø 2 – 6.4 mm
	Insertion depth:	40 mm
	Vibration:	1.55 – 5.08 m/s <sup>2</sup>
	Weight:	860 g
	Noise level:	< 75 dB (A) at 7,000 strokes/min
	Accessories:	Storage case, tool set, extension tube /finger protection bush, counterweights, replacement friction bearing and felts, lubricating oil
		

# ENESKAmicro Hand-filing machines with integrated micromotor

## Hand-filing machine DIPROFIL® FPM/R, Mark II

### Hand-filing machines with integrated micromotor

These hand-filing machines with a built-in micromotor can be directly connected to suitable ENESKAmicro 600, as well as DIPROFIL® DPU-3 series control units (via adapter). No additional micromotor is required.

		Price from
		Order No.      1 piece
<b>Hand-filing machine DIPROFIL® FPM/R, Mark II</b>		
for direct connection to ENESKAmicro control units 600		<b>0 005 201-N</b>
	Stroke length:	0.5 – 6 mm, infinitely adjustable
	Number of strokes:	1,000 – 7,800 strokes/min.
	Initial speed:	max. 30,000 rpm
	Tool receptacle:	Ø 1 – 6.2 mm
	Weight:	800 g
	Scope of supply:	2 tool holders, tool set, oil and storage case
		

 **Suitable tool holders** can be found on **page 249** and in our shop at **www.joke-technology.com**




# ENESKAmicro Hand-filing machines with integrated micromotor

## Hand-filing machine FMD/3-2/EM

### Hand-filing machines with integrated micromotor





These hand-filing machines with a built-in micromotor can be directly connected to suitable ENESKAmicro 600 series control units. No additional micromotor is required.

	Order No.	Price from 1 piece
<b>Hand-filing machine FMD/3-2/EM</b>		
 <p>for direct connection to ENESKAmicro and ENESKAmobile control units</p> <p>Stroke length: 0.5 – 6 mm, infinitely adjustable            Number of strokes: 1,000 – 7,800 strokes/min.            Initial speed: max. 30,000 rpm            Tool receptacle: Ø 1 – 6.2 mm            Weight: 800 g            Scope of supply: 2 tool holders, tool set, oil and storage case</p>	<b>0 011 550</b>	



**Suitable tool holders** can be found on **page 249** and on the web at **[www.joke-technology.com](http://www.joke-technology.com)**





## ENESKAmicro Mini hand-filing machines with (+) connection Mini hand-filing machines

		Design	Order No.	Price from 1 piece
<b>Mini hand-filing machine DIPROFIL® FMR/E</b>				
 	No. of strokes:	max. 8,000 strokes/min	stroke length 0.5 mm	<b>0 001 207</b>
	Tool receptacle:	Ø 3.5 mm	stroke length 1.0 mm	<b>0 001 215</b>
	Sound level:	< 70 dB(A)	stroke length 1.5 mm	<b>0 001 209</b>
	Vibration:	< 2.5 m/s <sup>2</sup>		
	Dimensions:	Ø 24 x 90 mm (without thread)		
	Weight:	120 g		
	Scope of supply:	storage box, tools, oil, rubber covering (long)		
<b>Mini hand-filing machine JN 48</b>				
 		with integrated step-down gear 4:1	stroke length 0.8 mm	<b>0 001 403</b>
	No. of strokes:	max. 12,500 strokes/min		
	Tool receptacle:	Ø 3.1 mm		
	Dimensions:	Ø 22.4 x 92 mm (without thread)		
	Weight:	130 g		
	Scope of supply:	storage box, tools		





Suitable tool holders can be found on page 249 and on the web at [www.joke-technology.com](http://www.joke-technology.com)

## ENESKAmicro Mini hand-filing machines with (-) connection Mini hand-filing machines


		Design	Order No.	Price from 1 piece
<b>Mini hand-filing machine DIPROFIL® FMR/N</b>				
 	No. of stroke:	max. 8,000 strokes/min	stroke length 0.5 mm	<b>0 001 203</b>
	Tool receptacle:	Ø 3.5 mm	stroke length 1.0 mm	<b>0 001 214</b>
	Noise level:	< 70 dB(A)	stroke length 1.5 mm	<b>0 001 218</b>
	Vibration:	< 2.5 m/s <sup>2</sup>		
	Dimensions:	Ø 24 x 83.5 mm (without thread)		
	Weight:	120 g		
	Scope of supply:	storage case, tools, oil, rubber collar long		
<b>Mini hand-filing machine JN 38</b>				
 		With integrated step-down-gear 4:1	stroke length 0.8 mm	<b>0 001 401</b>
	No. of strokes:	max. 10,000 strokes/min with the micromotor JNK 351		
	Tool receptacle:	Ø 3.1 mm		
	Dimensions:	Ø 21.4 x 93 mm (without thread)		
	Weight:	130 g		
	Scope of supply:	storage case, tools		

## ENESKAmicro handpieces with (+) - connection

### Rapid-chuck handpiece JEHR 500



			Order No.	Price from 1 piece
<b>Rapid-chuck handpiece JEHR 500</b>				
		Collet: CHH (Ø 3 mm in scope of supply) Speed: max. 50,000 rpm, in continuous operation 40,000 rpm Concentricity: ± 0.01 mm Dimensions: Ø 22.4 x 58 mm (without thread) Weight: 95 g	<b>0 008 810</b>	

#### Accessories / spare parts


		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHH</b>				
		Ø 1.0 mm	<b>0 009 155</b>	
		Ø 1.6 mm	<b>0 009 157</b>	
		Ø 2.35 mm	<b>0 009 152</b>	
		Ø 3.0 mm	<b>0 009 151</b>	
		Ø 1/8"	<b>0 009 153</b>	

## ENESKAmicro handpieces with (+) - connection



### Angle handpiece JERA 270 S

			Order No.	Price from 1 piece
<b>Angle handpiece JERA 270 S</b>				
		equipped from the outset with Rapid-Change connection! Collet: GH (Ø 6 mm included) Speed: max. 18,000 1/min, same rotation direction Dimensions: Ø 24 x 44 mm (without connector) Head dimensions: Ø 24 x 44 mm Weight: 110 g	<b>0 008 813</b>	




#### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type GH</b>				
		Ø 2.35 mm – 3/32"	<b>0 030 010</b>	
		Ø 3 mm	<b>0 030 013</b>	
		Ø 6 mm	<b>0 030 016</b>	



## ENESKAmicro handpieces with (+) - connection Handpiece JEHG 400

		Order No.	Price from 1 piece
<b>Handpiece JEHG 400</b>			
 	Collet: Speed: Concentricity: Dimensions: Weight:	CHG (Ø 6 mm included) max. 30,000 1/min ± 0.01 mm Ø 22.4 x 75 mm (without thread) 100 g	<b>0 009 811</b>


### Accessories / spare parts

	Dimensions	Order No.	Price from		
			1 piece	3 pieces	5 pieces
<b>Collet type CHG</b>					
	Ø 2.35 mm	<b>0 009 653</b>			
	Ø 3.0 mm	<b>0 009 652</b>			
	Ø 6.0 mm	<b>0 009 651</b>			

## ENESKAmicro handpieces with (+) - connection Angle handpiece JERA 270



		Order No.	Price from 1 piece
<b>Angle handpiece JERA 270</b>			
 	Collet: Speed: Head gearing: Concentricity: Dimensions: Weight:	CHS (Ø 3 mm included) max. 20,000 1/min, reverse initial rotation 1:1,5 ± 0.01 mm Ø 22.4 x 71 mm (without thread) 100 g	<b>0 009 812</b>

### Accessories / spare parts


	Dimensions	Order No.	Price from
			1 piece
<b>Collet type CHS</b>			
	Ø 1.6 mm	<b>0 750 515</b>	
	Ø 2.35 mm	<b>0 750 511</b>	
	Ø 3.0 mm	<b>0 750 510</b>	
	Ø 1/8"	<b>0 750 520</b>	

## ENESKAmicro handpieces with (+) - connection

### Angle handpiece JEKC 300



			Order No.	Price from 1 piece
<b>Angle handpiece JEKC 300</b>				
		Collet: Speed: Head gearing: Concentricity: Dimensions: Weight:	CHC (Ø 3 mm included) max. 20,000 1/min, same rotation direction 3:4 ± 0.01 mm Ø 22.5 x 69.5 mm (without thread) 60 g	<b>0 009 813</b>

#### Accessories / spare parts


		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHC</b>				
		Ø 1.6 mm	<b>0 009 207</b>	
		Ø 2.35 mm	<b>0 009 202</b>	
		Ø 3.0 mm	<b>0 009 201</b>	

## ENESKAmicro handpieces with (+) - connection



### Angle handpiece WE4-90

			Order No.	Price from 1 piece
<b>ENESKAmicro Angle handpiece WE4-90</b>				
		Collet: Speed: Concentricity: Dimensions: Weight:	CHC (Ø 3 mm included) max. 30,000 rpm, reversal of direction of rotation < +/- 0.01 mm Ø 22 x 62 mm (without thread) 65 g	<b>0 011 330</b>

#### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHC</b>				
		Ø 1.6 mm	<b>0 009 207</b>	
		Ø 2.35 mm	<b>0 009 202</b>	
		Ø 3.0 mm	<b>0 009 201</b>	



## ENESKAmicro handpieces with (+) - connection Angle handpiece WE4-45

			Order No.	Price from 1 piece
<b>ENESKAmicro Angle handpiece WE4-45</b>				
		Collet: CHC (Ø 3 mm included) Speed: max. 30,000 rpm, same direction of rotation Concentricity: < +/- 0.01 mm Dimensions: Ø 22 x 62 mm (without thread) Weight: 65 g	<b>0 011 335</b>	


### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHC</b>				
		Ø 1.6 mm	<b>0 009 207</b>	
		Ø 2.35 mm	<b>0 009 202</b>	
		Ø 3.0 mm	<b>0 009 201</b>	

## ENESKAmicro handpieces with (-) - connection Rapid-chuck handpiece JIR -310



			Order No.	Price from 1 piece
<b>Rapid-chuck handpiece JIR -310</b>				
		Collet: CHH (Ø 3 mm included) Speed: max. 40,000 rpm Concentricity: ± 0.01 mm Dimensions: Ø 24 x 75 mm (without thread) Weight: 90 g	<b>0 007 515</b>	

### Accessories / spare parts




		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHH</b>				
		Ø 1.0 mm	<b>0 009 155</b>	
		Ø 1.6 mm	<b>0 009 157</b>	
		Ø 2.0 mm	<b>0 009 158</b>	
		Ø 2.35 mm	<b>0 009 152</b>	
		Ø 2.5 mm	<b>0 009 159</b>	
		Ø 3.0 mm	<b>0 009 151</b>	
		Ø 1/8"	<b>0 009 153</b>	

## ENESKAmicro handpieces with (-) - connection

### Handpiece JHG 210



			Order No.	Price from 1 piece
<b>Handpiece JHG 210</b>				
		Collet: Speed: Concentricity: Dimensions: Weight:	CHG (Ø 6 mm included) max. 27,000 rpm ± 0.01 mm Ø 25 x 102 mm (without thread) 180 g	<b>0 007 650</b>

#### Accessories / spare parts


		Dimensions	Order No.	1 piece	3 pieces	5 pieces
<b>Collet type CHG</b>						
		Ø 2.35 mm	<b>0 009 653</b>			
		Ø 3.0 mm	<b>0 009 652</b>			
		Ø 6.0 mm	<b>0 009 651</b>			

## ENESKAmicro handpieces with (-) - connection



### Handpiece JIH 300

			Order No.	Price from 1 piece
<b>Handpiece JIH 300</b>				
		Collet: Speed: Concentricity: Dimensions: Weight:	CHH (Ø 3 mm included) max. 40,000 rpm ± 0.01 mm Ø 23 x 60 mm (without thread) 60 g	<b>0 009 150</b>


#### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHH</b>				
		Ø 1.0 mm	<b>0 009 155</b>	
		Ø 1.6 mm	<b>0 009 157</b>	
		Ø 2.0 mm	<b>0 009 158</b>	
		Ø 2.35 mm	<b>0 009 152</b>	
		Ø 2.5 mm	<b>0 009 159</b>	
		Ø 3.0 mm	<b>0 009 151</b>	
		Ø 1/8"	<b>0 009 153</b>	



## ENESKAmicro handpieces with (-) - connection Angle handpiece JKC 345

			Order No.	Price from 1 piece
<b>Angle handpiece JKC 345</b>				
 	Collet:	CHC (Ø 3 mm included)	<b>0 009 200</b>	
	Speed:	max. 20,000 rpm, same rotation direction		
	Head gear:	3:4		
	Concentricity:	± 0.01 mm		
	Dimensions:	Ø 22 x 62 mm (without thread)		
Weight:	60 g			


### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHC</b>				
		Ø 1.6 mm	<b>0 009 207</b>	
		Ø 2.35 mm	<b>0 009 202</b>	
		Ø 3.0 mm	<b>0 009 201</b>	

## ENESKAmicro handpieces with (-) - connection Angle handpiece JIC 390

			Order No.	Price from 1 piece
<b>Angle handpiece JIC 390</b>				
 	Collet:	CHC (Ø 3 mm included)	<b>0 009 250</b>	
	Speed:	max. 20,000 rpm, reverse initial rotation		
	Head gear:	3:4		
	Concentricity:	± 0.01 mm		
	Dimensions:	Ø 22 x 58 mm (without thread)		
Weight:	60 g			



### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHC</b>				
		Ø 1.6 mm	<b>0 009 207</b>	
		Ø 2.35 mm	<b>0 009 202</b>	
		Ø 3.0 mm	<b>0 009 201</b>	




## ENESKAmicro handpieces with (-) - connection

### Miniature angle handpiece JMFC 300 S



			Order No.	Price from 1 piece
<b>Miniature angle handpiece JMFC 300 S</b>				
		Collet: K-252 (Ø 1.6 mm included) Speed: max. 15,000 rpm, reverse initial rotation Head gear: 10:11 Concentricity: ± 0.01 mm Dimensions: Ø 19 x 95 mm (without thread) Head-Ø: 14 mm Weight: 50 g	<b>0 009 512</b>	

#### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type K-252</b>				
		Ø 1.6 mm	<b>0 009 514</b>	

## ENESKAmicro handpieces with (-) - connection



### Miniature angle handpiece JMFC 300 M

			Order No.	Price from 1 piece
<b>Miniature angle handpiece JMFC 300 M</b>				
		Collet: K-253 (Ø 1.6 mm included) Speed: max. 15,000 rpm, reverse initial rotation Head gear: 10:11 Concentricity: ± 0.01 mm Dimensions: Ø 19 x 95 mm (without thread) Head-Ø: 9.8 mm Weight: 47 g	<b>0 009 511</b>	


#### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type K-253</b>				
		Ø 1.6 mm	<b>0 009 513</b>	

## ENESKAmicro handpieces with (-) - connection Handpiece JBMH 300 N

		Order No.	Price from 1 piece
<b>Handpiece JBMH 300 N</b>			
		Collet: CHM (Ø 3 mm included) Speed: max. 35,000 rpm Dimensions: Ø 19 x 128.5 mm (without thread) Concentricity: ± 0.01 mm Weight: 160 g	<b>0 009 350</b>





### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece
<b>Collet type CHM</b>				
		Ø 2.35 mm	<b>0 009 352</b>	
		Ø 3.0 mm	<b>0 009 351</b>	

## ENESKAmicro belt grinder with (-)- and (+)-connection J-BS 100 • J-BS 400

### Belt grinder J-BS




Compliments the ENESKAmicro system. This belt grinder is screwed onto the micromotors, just like a handpiece. It is small, fits nicely in your hand and can be used for delicate work. The head can be swivelled on its axis by approximately 90°. A hand rest is located above the grinding belts to enable the device to be used safely with both hands.

		Order No.	Price from 1 piece
<b>Belt grinder JBS 100 with (-)-connection</b>			
		For connection to micromotors with (-)-connection, fits grinding belts 4, 6 and 8 mm wide. Gearing: 8:3 Input rotation speed: max. 35,000 rpm Output speed: max. 13,000 rpm Weight: 355 g Delivered with two grinding belts 6 x 300 mm respectively in grain sizes 120, 240 and 400.	<b>0 009 950</b>
<b>Belt grinder JBS 400 with (+)-connection</b>			
		For connection to micromotors with (+)-connection, for grinding belts 4, 6 and 8 mm wide Gearing: 8:3 Input speed: max. 40,000 rpm Speed: max. 15,000 rpm Weight: 355 g Delivered with two grinding belts 6 x 300 mm respectively in grain sizes 120, 240 and 400.	<b>0 008 850</b>

## ENESKAmicro belt grinder with (-)- and (+)-connection

### J-BS 100 • J-BS 400

#### Accessories / spare parts



	Dimensions	Grit size	Packing quantity	Order No.	Price from					
					1 pack	1 piece	10 packs	100 pieces	300 pieces	
<b>Grinding belt, corundum</b>										
	6 x 300 mm	120	10 pieces	<b>0 401 540</b>						
		240	10 pieces	<b>0 401 541</b>						
		320	10 pieces	<b>0 401 545</b>						
		400	10 pieces	<b>0 401 542</b>						
		500	10 pieces	<b>0 401 549</b>						
		600	10 pieces	<b>0 401 547</b>						
	8 x 300 mm	80	50 pieces	<b>0 401 930</b>						
		120	50 pieces	<b>0 401 931</b>						
		180	50 pieces	<b>0 401 932</b>						
		240	20 pieces	<b>0 401 933-0</b>						
320		50 pieces	<b>0 401 934</b>							
400		20 pieces	<b>0 401 935-0</b>							
	600	20 pieces	<b>0 401 936-0</b>							
	800	20 pieces	<b>0 401 937-0</b>							
	1000	30 pieces	<b>0 401 938</b>							
<b>Grinding belt, zirconium corundum</b>										
	6 x 300 mm	80	10 pieces	<b>0 401 543</b>						
		120	10 pieces	<b>0 401 544</b>						
<b>Grinding belt, diamond</b>										
	8 x 300 mm	180	3 pieces	<b>0 404 343</b>						
		240	3 pieces	<b>0 404 344</b>						
		800	3 pieces	<b>0 404 348</b>						
		1000	3 pieces	<b>0 404 349</b>						
<b>Grinding belt 3M Trizact</b>										
	6 x 300 mm	120	1 piece	<b>0 404 362</b>						
		240	1 piece	<b>0 404 361</b>						
		280	1 piece	<b>0 404 360</b>						



# Hollow handle for ergonomic handling of your handpieces

## Hollow handle for ENESKAmicro



Perfect handling of the handpiece during polishing. The handle hemisphere fits perfectly into the hand, thereby providing full control with fatigue-free work. By simple conversion, the handle can be used by both right and left-handed individuals.

		Order No.	Price from 1 piece
<b>Hollow handle for ENESKAmicro with (-)-connection</b>			
	Use with extension element JCN 01 (Order No. 0 009 505) or step-down gear JRG 01 (Order No. 0 009 500)	<b>0 009 240</b>	
	Weight: 120 g		
<b>Hollow handle for ENESKAmicro with (+)-connection</b>			
	Use with step-down gear JERG 01B (Order No. 0 009 806)	<b>0 009 245</b>	
	Weight: 100 g		

## Quick coupling system with (-)-connection joke Rapid-Change

### Rapid-Change with (-) connection for ENESKAmicro

The system for changing handpieces on the ENESKAmicro with (-) connection within seconds. Ingenious and simple: Remove the old handpiece, attach the new one and back to work. All is a matter of a few seconds. Retrofitting the handpiece and motor is child's play with just two components. joke Rapid-Change lets you make the most of your working time, which is no longer spent on time-consuming changing of handpieces or collets.

		Order No.	1 piece	Price from 3 pieces	5 pieces
<b>Rapid-Change coupling for micromotor with (-)-connection</b>					
	for retrofitting of ENESKAmicro micromotors with (-) connection	<b>0 007 050</b>			
	Weight: 30 g Dimensions: Ø 19 x 16 mm (without thread) The suitable hook wrench (Order No. 0 009 379) is included in the scope of supply of the handpieces!				
<b>Rapid-Change connection plug for handpieces with (-)-connection</b>					
	suitable for all ENESKAmicro-handpieces with (-) connection (except JHG 200), Order No. 0 009 650	<b>0 007 051</b>			
	Weight: 15 g Dimensions: Ø 19 x 14.7 mm (without thread) Suitable installation wrench (Order No. 0 007 052)				

# Quick coupling system with (+)-connection joke Rapid-Change




## Rapid-Change with (+)-connection for ENESKAmicro

The system for rapid handpiece change for our ENESKAmicro system with (+)-connection.

Screw the coupling on to the micromotor and the desired handpieces and/or mini hand-filing machines can be simply push-fitted with the corresponding connector. Screw-fitting is a thing of the past!

The system is suitable for all ENESKAmicro handpieces with (+)-connection, the DIPROFIL® mini hand-filing machines and all micromotors with (+)-connection.

Switch to joke Rapid-Change saves you time, effort and hard cash.

		Order No.	Price from		
			1 piece	3 pieces	5 pieces
<b>Rapid-Change coupling for micromotor with (+)-connection</b>					
	for retrofitting of ENESKAmicro micromotors with (+) connection Dimensions: Ø 21.9 x 18 mm (without thread) Weight: 36 g	<b>0 008 815</b>			
<b>Rapid-Change connection plug for handpieces with (+)-connection</b>					
	suitable for all handpieces with (+) connection Dimensions: Ø 22 x 18 mm (without thread) Weight: 37 g	<b>0 008 816</b>			
<b>Rapid-Change connector for DIPROFIL® mini hand-filing machines with (+)-connection</b>					
	suitable for the DIPROFIL® FMR/E mini hand-filing machines Dimensions: Ø 21 x 18.2 mm (without thread) Weight: 33 g	<b>0 008 817</b>			



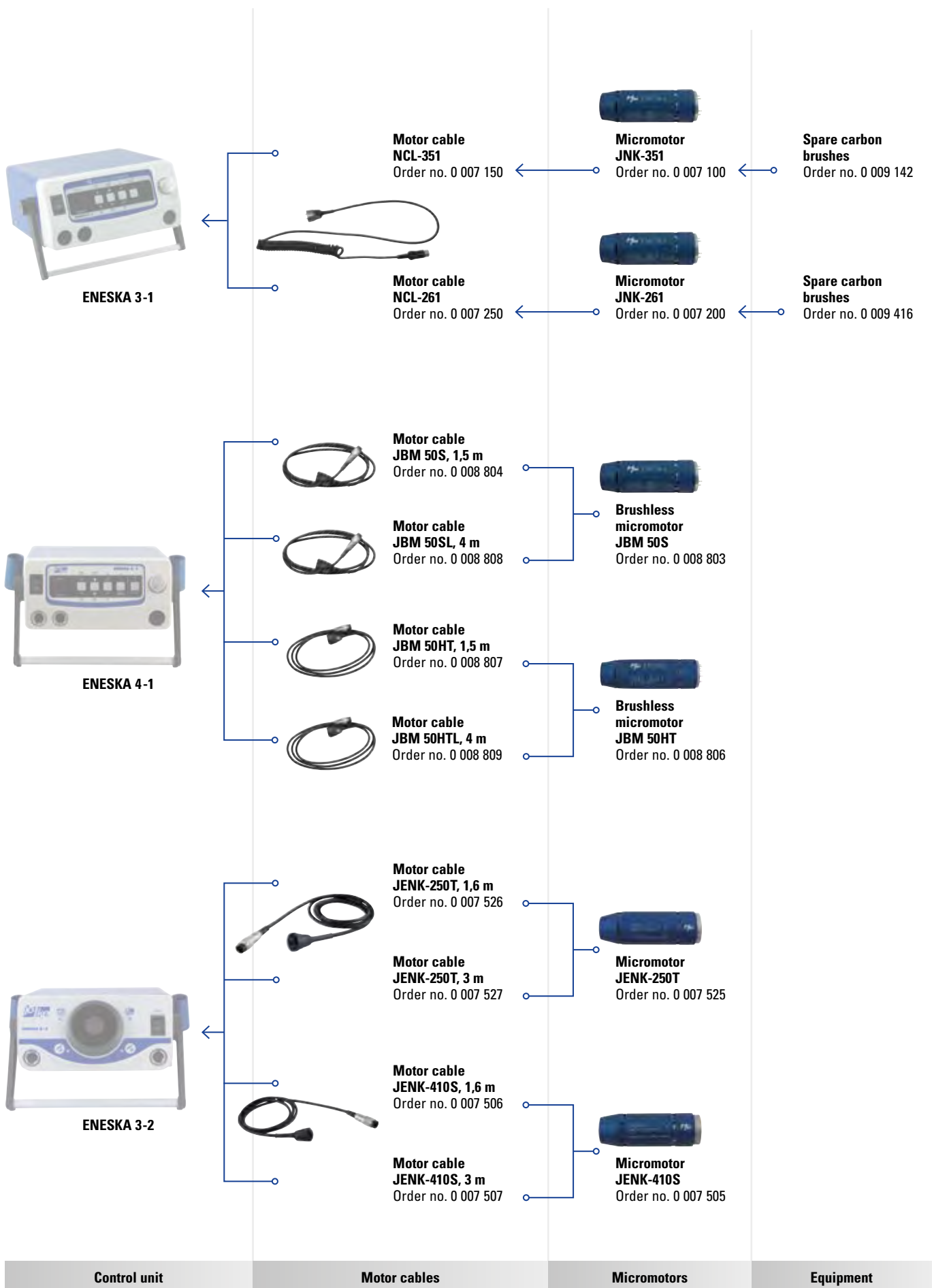
The filigree Rapid-Change components fit perfectly between the motor and handpiece and are only minimally noticeable in length and weight.



- The advantages to you:**
- Handpiece change quick and easy
  - Retrofitting child's play in two steps
  - Fits perfectly between the handpiece and the motor

# Overview of old ENESKA systems

control units, micromotors, motor cables, carbon brushes



1

## Motor system with flexible shaft jokeFlex Premium Plus



# jokeFlex Premium PLUS

- Minimised noise emission
- The most powerful joke motor of all time
- Compatible with accessories from the previous generation
- Flexible shafts with silicon hose

### jokeFlex Premium Plus motor system

Our flexible shaft system for today and the future. The core is the motor with an impressive 1,000 watts power. The noise level is reduced to a pleasant level in spite of increased power. The motor can be used in a hanging or lying position. Thanks to the robust construction of the suspension and shaft connection, it is optimally equipped for a hard day's work.

The matching **joke Premium Plus handpieces** fulfill all requirements which are expected of a modern handpiece. They lie comfortably and securely in the hand, muffle vibrations effectively and tire the worker's hand over long working periods. This is achieved by the uniformly narrow handle made of special rubber which is used in all handpieces. At least equally important: the inside. And also here high tech is the key. The handpieces are very robust and have a closed double bearing inside. The result is extremely quiet-running operation. Further advantages of the Premium Plus hand-pieces: changing the tool in seconds, without pinning.

The joke Premium Plus handpieces are available in a straight design or with a 90° angle head. The handpieces are of course also available in Rapid-Change design which connects to the motor system in a second. A closer look at the angle handpiece is worth-while: the slim, almost filigree head gives you the opportunity of reaching and processing even otherwise difficult to access areas of the workpiece.

# Motor system with flexible shaft jokeFlex Premium Plus



**Handpiece**  
**joke Premium Plus**  
Order No. 0 030 200  
**Collet Typ GH**



**Angle-handpiece**  
**joke Premium Plus**  
Order No. 0 030 250  
**Collet Typ WH**



**Technical handpiece**  
**THSZ/N**  
Order No. 0 030 004  
**Collet Typ GH**



**Angle-handpiece**  
**VTN-N 90°**  
Order No. 0 031 341  
**Collet Typ WH**



**Angle-handpiece**  
**VTN-S/N**  
Order No. 0 031 540  
**Collet Typ GH**



**Rapid-chuck handpiece**  
**TH-M II**  
Order No. 0 030 640  
**Collet Typ TH**



**Hemisphere handpiece**  
**NHG-L**  
Order No. 0 031 400  
**Collet Typ WH**



**Hand-filing machines**  
**DIPROFIL®**  
**Di-Pro FXK-N, Mark II**  
Order No. 0 001 503-N



**Hand-filing machines**  
**DIPROFIL®**  
**FPK/R, Mark II**  
Order No. 0 005 151-N



**Flexible shafts**  
**Premium Plus**

**Standard motor connection**  
Spring clip 1.1 m  
Order No. 0 015 800  
Rapid-Change 1.1 m  
Order No. 0 015 900

**Quick-change motor connection**  
Spring clip 1.1 m  
Order No. 0 016 800  
Rapid-Change 1.1 m  
Order No. 0 016 900



**Motor**  
**jokeFlex Premium Plus**  
Order No. 0 016 550




**Foot control**  
**Premium**  
Order No. 0 016 600



**Suspension device,**  
**clamp-on**  
Order No. 0 020 200

**Quick coupling system**  
**joke Rapid-Change**  
Coupling piece  
Order No. 0 015 250  
Connector plugs for handpieces see from page 54!





# Motor system with flexible shaft

## jokeFlex Premium Plus

### Premium Plus flexible shafts

The Premium Plus flexible shafts are consistently optimised to suit everyday requirements in industry. The silicone hose offers many advantages:

- Utmost flexibility and suppleness
- Extremely smooth running (owing to minimised vibrations)
- Very quiet
- No heat generation

For connecting the handpieces, our flexible shafts offer you a choice between a spring clip and the joke Rapid-Change quick coupling system. This innovative system allows safe handpiece change in a few seconds without any "fumbling around". Shafts with a hook spring are also available on request.

On the motor side, a choice of shafts with standard motor connection or the joke Quick-Change "premium connection" is available.

### Shaft connectors



Flexible shaft with spring clip



**available on request!**

Flexible shaft with hook ring



Flexible shaft with Rapid-Change coupling

### Motor connectors



joke Quick-Change motor connector



Standard motor connector (with pins)

	Motor connection	Dimensions	Order No.	Price from 1 piece
<b>Flexible shaft with Rapid-Change coupling</b>				
	standard	1,100 mm	<b>0 015 900</b>	
	Quick-Change	1,100 mm	<b>0 016 900</b>	
<b>Flexible shaft with spring clip</b>				
	standard	1,100 mm	<b>0 015 800</b>	
	Quick-Change	1,100 mm	<b>0 016 800</b>	

# Motor system with flexible shaft


## jokeFlex Premium Plus

### jokeFlex Premium Plus motor system


Our flexible shaft system for today and the future. The core is the motor with an impressive 1,000 watts power. The noise level is reduced to a pleasant level in spite of increased power. The motor can be used in a hanging or lying position. Thanks to the robust construction of the suspension and shaft connection, it is optimally equipped for a hard day's work.

The matching joke Premium Plus handpieces fulfill all requirements which are expected of a modern handpiece. They lie comfortably and securely in the hand, muffle vibrations effectively and tire the worker's hand over long working periods. This is achieved by the uniformly narrow handle made of special rubber which is used in all handpieces. At least equally important: the inside. And also here high tech is the key. The handpieces are very robust and have a closed double bearing inside. The result is extremely quiet-running operation. Further advantages of the Premium Plus hand-pieces: changing the tool in seconds, without pinning.




The joke Premium Plus handpieces are available in a straight design or with a 90° angle head. The handpieces are of course also available in Rapid-Change design which connects to the motorsystem in a second. A closer look at the angle handpiece is worthwhile: the slim, almost filigree head gives you the opportunity of reaching and processing even otherwise difficult to access areas of the workpiece.

	Order No.	Price from 1 piece
<b>Motor jokeFlex Premium Plus</b>		
 <p>Robust construction (shaft connection and suspension) pleasant noise level, can be used lying and hanging, compatible with foot controller Premium</p> <p>Rotational speed: max. 18,000 1/min Power: 1,000 W input, 700 W output Dimensions (H x W x D): 240 x 105 x 95 mm Weight: 2.1 kg Cable length: 2.2 m Shaft connection: Quick-Change</p>	<b>0 016 550</b>	

### ↓ matching set


	Design	Order No.	Price from 1 piece
<b>Advantage package jokeFlex Premium Plus</b>			
 <p>This advantage package for getting started straight away includes: 1 x motor Premium Plus (Order No. 0 016 550) 1 x foot controller Premium (Order No. 0 016 600) 1 x flexible shaft Premium Plus 1.1 m length (Order No. 0 016 800, for Rapid-Change Order No. 0 016 900)</p>	Standard	<b>0 016 850</b>	
	Rapid-Change	<b>0 016 850R</b>	

### ⚙ Accessories / spare parts




	Order No.	Price from 1 pack	1 piece
<b>Foot control Premium, Motor system with flexible shaft</b>			
 <p>To adjust motor speed by foot action</p> <p>Speed range: 3,000 to 22,000 1/min Speed restriction: 10,000 to 22,000 rpm Dimensions: Ø 190 (230 with pedal) x 200 mm Weight: 2 kg Supply voltage: 230 volts, 50 Hz Cable length: 2.8 m</p>	<b>0 016 600</b>		
<b>Suspension device G2, height adjustable</b>			
 <p>Fixable to the workbench</p> <p>Clamping range: max. 70 mm Height adjustable: between 700 and 1,100 mm Depth adjustable: cantilever arm adjustable by max. 300 mm, lockable in any desired position</p> <p>Colour: blue/silver</p>	<b>0 020 200</b>		
<b>Spring clip, Standard</b>			
 <p>Proven steel design, pack contents: 20 pieces</p>	<b>0 015 201</b>		

## Handpieces

### joke Premium Plus


	Type	Order No.	Price from 1 piece
<b>Handpiece joke Premium Plus</b>			
	Rotational speed:	max. 22,000 1/min	
	Collet:	GH (Ø 3 mm in scope of delivery)	
	Dimensions:	Ø 25 x 138 mm	
	Weight:	160 g	
	Scope of delivery:	including tool set	
	Standard	<b>0 030 200</b>	
	Rapid-Change	<b>0 030 200R</b>	

#### Accessories / spare parts




	Dimensions	Order No.	Price from 1 piece	3 pieces
<b>Collet type GH</b>				
	Ø 2.35 mm – 3/32"	<b>0 030 010</b>		
	Ø 3 mm	<b>0 030 013</b>		
	Ø 6 mm	<b>0 030 016</b>		
<b>Driver</b>				
		<b>0 030 205</b>		
<b>Connector plug</b>				
	Rapid change to joke Premium Plus handpieces	<b>0 015 285</b>		

## Handpieces

### joke Premium Plus


	Type	Order No.	Price from 1 piece
<b>Angle-Handpiece 90° joke Premium Plus</b>			
	Rotational speed:	max. 18,000 1/min, clockwise rotation	
	Collet:	WH (Ø 3 mm in scope of delivery)	
	Dimensions:	Ø 26 x 165 mm (head Ø 17 x 27 mm)	
	Weight:	170 g	
	Scope of delivery:	including tool set	
	Standard	<b>0 030 250</b>	
	Rapid-Change	<b>0 030 250R</b>	

#### Accessories / spare parts




	Dimensions	Order No.	Price from 1 piece	3 pieces
<b>Collets, type WH</b>				
	Ø 2.35 mm – 3/32"	<b>0 031 301</b>		
	Ø 3 mm	<b>0 031 302</b>		
<b>Driver</b>				
		<b>0 030 205</b>		
<b>Connector plug</b>				
	Rapid change to joke Premium Plus handpieces	<b>0 015 285</b>		


# Handpieces

## joke Classic-Line




		Type	Order No.	Price from 1 piece
<b>Handpiece THSZ/N</b>				
	Collet:	GH (Ø 3 mm in scope of delivery)	Standard	<b>0 030 004</b>
	Speed:	max. 18,000 1/min	Rapid-Change	<b>0 030 004R</b>
	Dimensions:	Ø 24 x 132 mm		
	Weight:	120 g		
Scope of delivery:		wrench, clamping pin		

### Accessories / spare parts

		Dimensions	Order No.	Price from 1 piece    3 pieces
<b>Collet type GH</b>				
		Ø 2.35 mm – 3/32"	<b>0 030 010</b>	
		Ø 3 mm	<b>0 030 013</b>	
		Ø 6 mm	<b>0 030 016</b>	
<b>Driver for Rapid-Change</b>				
			<b>0 015 262</b>	
<b>Connector plug</b>				
	Rapid change to Handpiece THSZ/N (order no. 0 030 004, 0 030 005 and 0 030 006)		<b>0 015 261-1</b>	


		Type	Order No.	Price from 1 piece
<b>Angle-handpiece VTN-N 90°</b>				
	70 mm telescope-type extendable angle head with 90° head adjustment, clockwise rotation		Standard	<b>0 031 341</b>
	Collet:	WH (Ø 2.35 and Ø 3 mm in scope of delivery)	Rapid-Change	<b>0 031 341R</b>
	Speed:	max. 18,000 1/min		
	Dimensions:	Ø 24 x 175 mm (head Ø 17 x 30 mm)		
Weight:		185 g		
Scope of delivery:		tool kit		

### Accessories / spare parts




		Dimensions	Order No.	Price from 1 piece    3 pieces
<b>Collets, type WH</b>				
		Ø 2.35 mm – 3/32"	<b>0 031 301</b>	
		Ø 3 mm	<b>0 031 302</b>	
<b>Driver</b>				
			<b>0 015 264</b>	
<b>Connector plug</b>				
	Rapid change to Anglehandpiece VTN/N		<b>0 015 263</b>	

## Handpieces

### joke Classic-Line

			Type	Order No.	Price from 1 piece
<b>Angle-handpiece VTN-S/N</b>					
	Collet:	GH (Ø 3 and Ø 6 mm in scope of delivery)	Standard	<b>0 031 540</b>	
	Speed:	max. 18,000 1/min	Rapid-Change	<b>0 031 540R</b>	
	Rotation:	clockwise			
	Dimensions:	Ø 24 x 171 mm (head Ø 24 x 40 mm)			
	Weight:	240 g			
Scope of delivery:	tool kit				


#### Accessories / spare parts

		Dimensions	Order No.	Price from	
				1 piece	3 pieces
<b>Collet type GH</b>					
		Ø 2.35 mm – 3/32"	<b>0 030 010</b>		
		Ø 3 mm	<b>0 030 013</b>		
		Ø 6 mm	<b>0 030 016</b>		
<b>Driver</b>					
			<b>0 031 563</b>		
<b>Connector plug</b>					
		Rapid change for anglehandpiece VTN-S/N	<b>0 015 265</b>		



## Rapid-chuck handpiece

### TH-M II

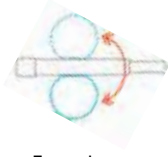
This Rapid-chuck handpiece was designed for lighter jobs involving frequent tool changes. The selected tools are clamped in using the clamping lever fitted on the top.

			Type	Order No.	Price from 1 piece
<b>Rapid-chuck handpiece TH-M II</b>					
	Collet:	TH (Ø 3 mm in scope of delivery)	Standard	<b>0 030 640</b>	
	Speed:	max. 15,000 1/min	Rapid-Change	<b>0 030 640R</b>	
	Dimensions:	Ø 21.9 x 139 mm			
	Weight:	107 g			

#### Accessories / spare parts


		Dimensions	Order No.	Price from	
				1 piece	3 pieces
<b>Collets, type TH</b>					
		Ø 2.35 mm	<b>0 030 641</b>		
		Ø 3 mm	<b>0 030 642</b>		
<b>Driver</b>					
			<b>0 030 666</b>		
<b>Connector plug</b>					
		Rapid Change suitable for the TH-M II quick release handpiece (0 030 640)	<b>0 015 273</b>		

# Hemisphere handpiece NHG-L






Easy change  
between  
right and  
left-handed use!

Our special recommendation for polishing jobs (for example, when using rings for finishing). The hemisphere attached to the handle provides a fatigue-free handrest and can be adapted for either right or left-handed users.


		Type	Order No.	Price from 1 piece
<b>Hemisphere handpiece NHG-L</b>				
	Telescopically extendable angle head (70 mm), with 125° head adjustment, anticlockwise rotation	Standard	<b>0 031 400</b>	
	Collet: WH	Rapid-Change	<b>0 031 400R</b>	
	Speed: max. 11,000 1/min			
	Dimensions: Ø 18 x 190 mm (head Ø 18 x 30 mm)			
	Weight: 250 g			
	Scope of delivery: Collet Ø 3 mm, holder for ring Ø 12 mm, tool kit			

## Accessories / spare parts


		Dimensions	Order No.	Price from	
				1 piece	3 pieces
<b>Collets, type WH</b>					
		Ø 2.35 mm – 3/32"	<b>0 031 301</b>		
		Ø 3 mm	<b>0 031 302</b>		
<b>Driver</b>					
			<b>0 015 256</b>		
<b>Connector plug</b>					
	Rapid change for hollow handpiece		<b>0 015 255</b>		


## Hand-filing machines

### DIPROFIL® Di-Pro • FXK-N • FPK/R


			Type	Order No.	Price from 1 piece
<b>Hand-filing machine DIPROFIL® FPK/R, Mark II</b>					
	Stroke length:	0 – 6 mm, (recommended 0.5 – 3 mm)	Standard	<b>0 005 151-N</b>	
	No. of strokes:	max. 8,000 strokes/min (5,000 – 6,000 strokes/min recommended)	Rapid-Change	<b>0 005 151R-N</b>	
	Tool receptacle:	Ø 2 – 6.4 mm			
	Insertion depth:	40 mm			
	Vibration:	5.79 – 13.37 m/s <sup>2</sup>			
	Sound level:	< 70 dB(A) at 7,000 strokes/min (acc. to ISO 15744)			
Weight:	575 g				
Scope of delivery:	storage case, tool set, oil, extension tube/finger protection bush, replacement friction bearing and felts, lubricating oil				

#### Accessories / spare parts



		Order No.	Price from 1 piece	3 pieces
<b>Driver</b>				
		<b>0 015 252</b>		
<b>Connector plug</b>				
	Rapid change to Diprofil-Handfilingmachine	<b>0 015 251</b>		

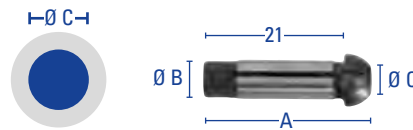
			Type	Order No.	Price from 1 piece
<b>Hand-filing machine DIPROFIL® Di-Pro FXK-N, Mark II</b>					
	Stroke length:	0.5 – 6 mm (recommended 0.5 – 3 mm)	Standard	<b>0 001 503-N</b>	
	No. of strokes:	max. 7,000 strokes/min, (5,000 – 6,000 strokes/min recommended)	Rapid-Change	<b>0 001 503R-N</b>	
	Tool receptacle:	Ø 2 – 6.4 mm			
	Insertion depth:	40 mm			
	Vibration:	1.55 – 5.08 m/s <sup>2</sup>			
	Sound level:	< 75 dB(A) at 7,000 strokes/min			
Weight:	700 g				
Scope of delivery:	Storage case, tool set, extension tube, finger protection bush, counterweights replacement friction bearing and felts, lubricating oil				

#### Accessories / spare parts

		Order No.	Price from 1 piece	3 pieces
<b>Driver</b>				
		<b>0 015 252</b>		
<b>Connector plug</b>				
	Rapid change to Diprofil-Handfilingmachine	<b>0 015 251</b>		

## Reducing sleeves to allow use of a smaller shaft diameter in larger collets

	Length A	Dimensions	Order No.	Price from	
				1 piece	5 pieces
<b>Reducing bush RHB</b>					
	28 mm	B Ø 3.0   C Ø 2.35 mm	<b>0 545 287</b>		
<b>Reducing bush with collar</b>					
	25 mm	B Ø 3.0   C Ø 1.6 mm	<b>0 010 583</b>		
		B Ø 3.0   C Ø 2.35 mm	<b>0 010 588</b>		
		B Ø 6.0   C Ø 3.0 mm	<b>0 545 288</b>		



**More reducing bushes on request!**

Other reducing bushes in 0.1 mm decrements are available!

## Quick coupling system joke Rapid-Change

### joke Rapid-Change


The revolution in secure, rapid handpiece changes. The joke Rapid-Change quick coupling system means you can change handpieces in just a few seconds: just pull out the old handpiece and push in the new one. Hey presto!

This system does not just optimise hand-piece changes however. It also means that you can work with joke Rapid-Change more safely and economically, because firstly, there is no longer any risk of injury from spring clips and secondly, repair costs are lower. A "Rapid-Change connection" between the hand-piece and the shaft simply lasts longer.

You can continue to use your existing hand-pieces. All you need is a conversion set and a coupling piece, which is simply fitted to the handpiece end of the flexible shaft.

When buying handpieces, you can choose between the standard design with spring clips and the version with the Rapid-Change connector.



	Order No.	Price from	
		1 piece	3 pieces
<b>Rapid-Change coupling for jokeFlex Premium Plus</b>			
	for mounting at the flexible shaft (handpiece end)	<b>0 015 250</b>	



**Handpiece conversion in just two steps:**



# jokeFlex Power Motor • Accessories • Flexible shafts

## Motor system jokeFlex Power – The heavyweight champion

Our most powerful driving motor – for your coarse and large surface grinding needs. The jokeFlex Power motor system delivers up to 13,000 rpm – adjustable in 100 rpm steps. Everything is adjusted and controlled digitally. Soft start, stable speeds and an active brake are the decisive advantages of the unit's electronic control. Low speeds down to 500 rpm are also possible with this system – thanks to powerful torque with real pulling power! Force is not the same as mass. The high-output motor in the metal housing is robust, but thanks to its light and compact design. It is also suitable for portable use. Also: the jokeFlex Power system has a 230 V connection, enabling it to be quickly connected anywhere.

- Output max. 1,500 W (230 V supply voltage)
- High torque for stability at all speeds
- Digital control and monitoring
- Versatile operation thanks to large range of handpieces



**jokeFlex motor  
Power 2.0**  
Order No. 0 019 020



**Straight handpiece  
FH 4 INOX**  
Order No. 0 019 120



**Angle handpiece  
WI 4**  
Order No. 0 019 130



**Adapter for belt grinder**  
Order No. 0 019 150  
Adapter for belt grinder on request!

- Belt grinders**
- KAK 16/4**  
Order No. 0 019 155
  - KAK 16/9**  
Order No. 0 019 160
  - KAK 25/9**  
Order No. 0 019 165
  - KAK 9/9**  
Order No. 0 019 170
  - KAK 25/1.5**  
Order No. 0 019 175

### Shaft connection G16



**Flexible shaft  
DIN 10/G16**  
Order No. 0 019 100

### Motor connection DIN 10



**Straight handpiece  
FH 7 INOX**  
Order No. 0 019 420



**Angle Handpiece  
WI 7**  
Order No. 0 019 230

**Flexible shaft  
DIN 10/G22**  
Order No. 0 019 200

### Shaft connection G22



**Movable stands**  
Order No. 0 019 021

# jokeFlex Power

## Motor • Accessories • Flexible shafts

		Order No.	Price from 1 piece
<b>Motor jokeFlex Power 2.0</b>			
	Speed between:	500 and 13,000 1/min (adjustable in 100 rpm steps)	<b>0 019 020</b>
	Power output:	1,650 W	
	Power consumption:	2,000 W	
	Shaft connection:	DIN 10	
	Supply voltage:	230 V, 50/60Hz, 1 phase	
	Sound level:	63 dB(A)	
	Dimensions (W x H x D):	472 x 340 x 352 mm	
Weight:	27 kg		

### ⚙️ Accessories / spare parts


		Order No.	Price from 1 piece
<b>Movable stands for jokeFlex Power 2.0</b>			
	Dimensions (W x L x H):	Ø 470 x 470 x 606 mm	<b>0 019 021</b>
	Weight:	23 kg	

	Shaft connection	Motor connection	Dimensions	Order No.	Price from 1 piece
<b>Flexible shaft jokeFlex Power</b>					
	G 16	DIN 10	Ø 4 x 1,250 mm	<b>0 019 100</b>	
	G 22	DIN 10	Ø 7 x 1,500 mm	<b>0 019 200</b>	



### ⚙️ Accessories / spare parts

	Dimensions	Order No.	Price from 1 piece
<b>Flexible shaft core NA 4 / G 16 for jokeFlex Power</b>			
	Ø 4 x 1,250 mm	<b>0 019 101</b>	
	<b>Flexible shaft core NA 7 / G 22 for jokeFlex Power</b>		
	Ø 7 x 1,500 mm	<b>0 019 201</b>	


## jokeFlex Power Handpieces

			Order No.	Price from 1 piece
<b>Straight handpiece FH 4 INOX</b>				
	Shaft connection:	G 16	<b>0 019 120</b>	
	Speed:	max. 40,000 rpm		
	Dimensions:	Ø 20 x 107 mm		
	Weight:	135 g		
	Accessories:	Collet 6 mm, chuck key set		



### Accessories / spare parts

			Order No.	Price from 1 piece		
<b>Collet for handpiece FH 4</b>						
	Dimensions	Ø 3 mm	Type	FH	Order No.	<b>0 019 111</b>
		Ø 6 mm		FH		<b>0 019 112</b>


## jokeFlex Power Handpieces

			Order No.	Price from 1 piece
<b>Straight handpiece FH 7 INOX</b>				
	Shaft connection:	G 22	<b>0 019 420</b>	
	Speed:	max. 25,000 rpm		
	Dimensions:	Ø 27 x 128 mm		
	Weight:	315 g		
	Accessories:	Collet 6 mm, chuck key set		


### Accessories / spare parts

			Order No.	Price from 1 piece		
<b>Collets for handpieces FH 7, FH 10</b>						
	Dimensions	Ø 3 mm	Type	FH	Order No.	<b>0 019 211</b>
		Ø 6 mm		FH		<b>0 019 212</b>
		Ø 8 mm		FH		<b>0 019 213</b>


## jokeFlex Power Handpieces

			Order No.	Price from 1 piece
<b>Angle handpiece WI 4</b>				
	Shaft connection:	G 16	<b>0 019 130</b>	
	Rotation speed:	max. 20,000 rpm (1 : 1), clockwise		
	Dimensions:	Ø 23 x 111 x 43 mm		
	Weight:	265 g		
	Accessories:	Collet 3 mm, chuck key set		


### Accessories / spare parts

			Order No.	Price from 1 piece
<b>Collet for angle handpiece WI 4</b>				
	Dimensions	Type	Order No.	Price from
	Ø 3 mm	WI	<b>0 019 131</b>	1 piece
	Ø 6 mm	WI	<b>0 019 132</b>	

## jokeFlex Power Handpieces

			Order No.	Price from 1 piece
<b>Angle handpiece WI 7</b>				
	Shaft connection:	G 22	<b>0 019 230</b>	
	Speed:	max. 17,000 rpm (1.3:1), clockwise		
	Dimensions:	Ø 36 x 156 x 61 mm		
	Weight:	610 g		
	Accessories:	Collet 6 mm, chuck key set		

### Accessories / spare parts

			Order No.	Price from 1 piece
<b>Collets for angle handpieces WI 7, WI 10 and jokeAirMax</b>				
	Dimensions		Order No.	Price from
	Ø 3 mm		<b>0 750 831</b>	1 piece
	Ø 6 mm		<b>0 750 832</b>	

# Pneumatics System overview



# Pneumatics System overview



**Maintenance unit  
joke Oiljet**  
Order No. 0 004 070

**i** **Tips for proper oiling**

To ensure that the motors of the compressed-air devices are adequately lubricated during operation, the air processed by the maintenance unit joke Oiljet is impregnated with oil. Particularly with compressed-air grinders and DIPROFIL® hand-filing machines, less is often more: With these machines, the optimum injection quantity is approx. 2 – 3 drops per minute.



**Set:  
High-speed handpiece  
P320 with maintenance  
unit P 320-2**  
Order No. 0 009 900-0



**Hand-filing machines  
Turbolap linear stroke  
Turbolap TLL 03**  
Order No. 0 750 702

**Turbolap TLL 07**  
Order No. 0 750 700

**Turbolap TLL 12**  
Order No. 0 750 701



**Hand-filing machines  
Turbolap transverse stroke  
Turbolap TLS 03**  
Order No. 0 750 709

**Turbolap TLS 07**  
Order No. 0 750 704

**Turbolap TLS 12**  
Order No. 0 750 703



**Compressed-air filing  
machine PRV-70**  
Order No. 0 751 630



**Compressed-air filing  
machine FRV-110**  
Order No. 0 751 600



**Compressed-air grinder  
ENESKAir G1000**  
Order No. 0 751 100



**Maintenance unit  
joke Dryjet**  
Order No. 0 004 080

Maintenance unit with oil

Hand-filing machines without oil


Maintenance unit without oil

## Maintenance units



### joke Oiljet • joke Dryjet

#### Maintenance units

Maintenance unit for connection to all joke compressed-air equipment. Excellent compressed-air treatment with filter, manual water separator and a micro-oiler that is simple and precise to operate. The joke Oiljet Maintenance Unit is delivered preassembled with filter, manual water separator, pressure reducer, pressure gauge, micro-oiler and wall attachment. We recommend our prepared installation packs for connecting the individual compressed-air devices. Optimum results in conjunction with the two high-performance lubricants.


	Order No.	Price from
<b>Maintenance unit joke Dryjet</b>		1 piece
	<b>Filter controller MD1-FR0000-1/4:</b>  Max. Working flow: 1,200 l / min Max. Inlet pressure: 16 bar Container capacity: 24 cm <sup>3</sup> Condensate drain: semi-automatic-manual, automatic via pressure relief, drain via threaded connection G1/8  Air connection: 1/4" Medium: compressed air  Scope of delivery: 25 µm filter, manual water separator, pressure reducer, pressure gauge and wall mounting	<b>0 004 080</b>

#### Accessories / spare parts





	Order No.	Price from
<b>Ball stop valve 1/4"</b>		1 piece
	1x internal and 1x external thread 1/4"	<b>0 004 053</b>
<b>Double nipple 1/4"</b>		
	Fits on connector for Turbolap handpieces, supplied with two O-rings	<b>1 722 246-0</b>

# Maintenance units

## joke Oiljet • joke Dryjet

	Order No.	Price from 1 piece
<b>Maintenance unit joke Oiljet</b>		
	Filter controller MD1-FR0000-1/4:	<b>0 004 070</b>
	<ul style="list-style-type: none"> <li>• Max. Working flow: 1,200 l/ min</li> <li>• Max. Inlet pressure: 16 bar</li> <li>• Container capacity: 24 cm<sup>3</sup></li> <li>• Condensate drain: semi-automatic-manual, automatic via pressure relief, drain via threaded connection G1/8</li> </ul>	
	<ul style="list-style-type: none"> <li>• Air connection: 1/4"</li> <li>• Medium: compressed air</li> </ul>	
	Oiler MD1-L00-1/4:	
	<ul style="list-style-type: none"> <li>• Max. Inlet pressure: 16 bar</li> <li>• Container capacity: 40 cm<sup>3</sup></li> <li>• Air connection: 1/4"</li> <li>• Medium: compressed air</li> </ul>	
	Scope of delivery: 25 µm filter, manual water separator, micro oiler, pressure reducer, pressure gauge and wall mounting	



### Accessories / spare parts

	Order No.	Price from 1 piece
<b>Installation pack DIPROFIL®</b>		
	The package contains everything necessary for the direct connection of the maintenance unit to its air supply line (including 1.5 m hose) and for connection of the DIPROFIL® hand-filing machine with (3 m hose) rapid coupling HSI-M (including lubricant MFA-K in a 0.5 l container).	<b>0 004 051</b>
<b>Installation pack Turbo hand grinder</b>		
	The package contains everything necessary for the direct connection of the maintenance unit to its air supply line (including 1.5 m hose) and for connection of the Turbo hand grinder including high- performance lubricant X 73012 in a 1 l container.	<b>0 004 055</b>
<b>Ball stop valve 1/4"</b>		
	1x internal and 1x external thread 1/4"	<b>0 004 053</b>
<b>Double nipple 1/4"</b>		
	Fits on connector for Turbolap handpieces, supplied with two O-rings	<b>1 722 246-0</b>



## Lubricants

for compressed-air grinders and hand-filing machines

	Content	Order No.	Price from 1 piece
<b>High-performance lubricant X 73012</b>			
	for all compressed-air grinders	0.1 litre	<b>0 580 601</b>
		1 litre	<b>0 580 602</b>
		5 litres	<b>0 580 603</b>
<b>Lubricant MFA-K</b>			
	for all DIPROFIL® hand-filing machines	0.5 litre	<b>0 004 002</b>



### Tips for proper oiling

To ensure that the motors of the compressed-air devices are adequately lubricated during operation, the air processed by the maintenance unit joke Oiljet is impregnated with oil. Particularly with compressed-air grinders and DIPROFIL® hand-filing machines, less is often more: With these machines, the optimum injection quantity is approx. 2 – 3 drops per minute.




# High-speed handpiece ENESKA P 320-2

## High-speed handpiece ENESKA P 320-2



The virtuoso among our handpieces. This handpiece can be used for the highest precision jobs anywhere; for example, when deburring steel, stainless steel or even glass and plastics. Thanks to its compact, ergonomic and – due to its aluminium casing - very light design, the handpiece fits perfectly in your hand and can be held like a pen. This means that the user can work even for longer periods without tiring. Changing tools takes just seconds, thanks to the Quick-Change mechanism: Twist, take out old tool, click in new tool, that's it.



Use with:  
 joke Dryjet  
 (page 66)

	Order No.	Price from
<b>Set ENESKA P 320-2</b>		1 piece
 <p>Complete set incl. handpiece including collet Ø 1.6 mm, 2 m air line and connection, maintenance unit, foot switch and connecting accessories (3-part)</p> <p>Dimensions (W x H x D): 115 x 160 x 100 mm (Maintenance unit)                  Ø 16 x 130 mm (handpiece)</p> <p>Weight handpieces: 71 g                  Speed: 320,000 1/min                  Power: approx. 10 W                  Air pressure: 2.5 bar                  Air consumption: 40 l/min                  Noise level: 75 dB(A) at 320,000 1/min</p>	<b>0 009 900-0</b>	

### ⚙️ Accessories / spare parts

	Dimensions	Type	Order No.	Price from
<b>Collet Ø 1.6 mm</b>				1 piece
	Ø 1.6 mm	P 320-2	<b>0 009 909</b>	
<b>Head, complete (spare), incl. collet</b>				
			<b>0 009 902</b>	

## Hand-grinders joke TURBO

### Hand-grinders joke TURBO

Our own old favourites: thanks to a powerful blade motor, these air grinders deliver real power (70 watts) and yet run very quietly (70 dB(A)). Thanks to their sturdy design, they are virtually tireless workhorses. Ideal for coarse grinding as well as finer tasks. Little maintenance is required, thanks to permanent lubrication by the oil mist (optimum: 3 drops/min). The drive air is led out backwards via a tube and baffle.





- The installation pack (Order no. 0 004 055) contains everything for connecting the "TURBOs".
- Suitable collets (type CHS) to be found on page 39!
- Suitable tool holders with clamping shank on page 249!
- The matching rubber holder Ø 30 mm with internal thread bears the order no. 0 531 008!

	Hand grinders joke TURBO G 180/60	Hand grinders joke TURBO W 45/40	Hand grinders joke TURBO W 45/23	Hand grinders joke TURBO W 90/23
Rotation speed	60,000 1/min	40,000 1/min	23,000 1/min	23,000 1/min
Power	70 W	70 W	70 W	70 W
Air pressure	4 – 6 bar	4 – 6 bar	4 – 6 bar	4 – 6 bar
Air consumption	165 l/min	165 l/min	165 l/min	165 l/min
Exhaust air	backwards	backwards	backwards	backwards
Noise level	80 – 90 dB(A)	80 – 90 dB(A)	80 – 90 dB(A)	80 – 90 dB(A)
Vibration	< 0.32 m/s <sup>2</sup>	< 0.32 m/s <sup>2</sup>	< 0.56 m/s <sup>2</sup>	< 0.56 m/s <sup>2</sup>
Dimensions	Ø 24 x 146 mm	Ø 24 x 158 mm	Ø 51.5 x 159 mm	Ø 46.5 x 152 mm
Weight	200 g	230 g	230 g	230 g
Lubrication	continuously by oil mist	continuously by oil mist	continuously by oil mist	continuously by oil mist
Scope of delivery	Tube package (1.1 m) with coupling sleeve 1/4", collet Ø 3 mm (type CHS), tool set	Tube package (1.1 m) with coupling sleeve 1/4", collet Ø 3 mm (type CHS), tool set	1 x rubber holder, 2 x cup wheels, 1 x clamping shank, assortment of consumables, tool set, tube package 1.1 m with coupling sleeve 1/4", collet Ø 3 mm (type CHS)	1 x rubber holder, 2 x cup wheels, 1 x clamping shank, assortment of consumables, tool set, tube package 1.1 m with coupling sleeve 1/4", collet Ø 3 mm (type CHS)
Order No.	<b>0 750 501</b>	<b>0 750 502</b>	<b>0 750 503</b>	<b>0 750 504</b>
Price				

## Compressed-air grinder FX 3.0

### Compressed-air grinder FX 3.0

High power – low air consumption. With the FX 3.0 air grinder, you can use tools with heads-Ø up to 10 mm. Ergonomic design means that even working for longer periods need no longer be “torture”, as vibrations are absorbed efficiently.


		Order No.	Price from 1 piece
<b>Compressed-air grinder FX 3.0</b>			
 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">                     Use with:  <b>joke Oiljet</b>                      (page 67)                      </div>	Speed:	65,000 rpm	<b>0 750 705</b>
	Air pressure:	max. 5 bar	
	Air consumption:	90 l/min	
	Exhaust air:	backwards	
	Noise level:	< 75 dB(A)	
	Dimensions:	Ø 22.5 x 150 mm	
	Weight:	78 g	
Lubrication:	continuously by oil mist		
Scope of delivery:	collet Ø 3 mm, wrench, air tube 1.5 m, 1/4" connecting sleeve including filter		

## Compressed-air grinder ENESKAir G1000

### The latest generation compressed-air grinder

- 100,000 rpm during oil-free operation
- Extremely compact construction incl. ceramic ball bearings
- Stainless steel construction throughout with rotary valve
- Replacement spare motor, easy replacement on site
- Quiet-running with very low vibration



		Order No.	Price from 1 piece
<b>Compressed-air grinder ENESKAir G1000</b>			
	Speed:	100.000 1/min	<b>0 751 100</b>
	Power:	63 Watts	
	Air pressure:	max. 6.3 bars	
	Air consumption:	170 l/min	
	Exhaust air:	backwards	
	Noise level:	70 dB(A)	
	Vibration:	< 2.5 m/s <sup>2</sup>	
	Dimension:	Ø 21 x 129 mm	
	Weight:	150 g	
Lubrication:	oilfree		
Scope of delivery:	Tube package (2 m) with connection nipple R1/4", collet Ø 3 mm, tool set		

# Compressed-air grinder

## joke AirMAX






### Compressed-air grinder joke AirMAX

The family of compressed-air grinders from joke. The name says it all, for these power tools make full use of air. Regardless of whether you need high speed or just solid performance – the joke AirMAX series has the right device for you. All these grinders are lubricated with oil in conjunction with the joke Oiljet.



	Compressed-air grinder joke AirMAX 20	Compressed-air grinder joke AirMAX 35	Compressed-air grinder joke AirMAX 90/20
Rotation speed	20,000 1/min	35,000 1/min	20,000 1/min
Power	270 W	220 W	220 W
Air pressure	6 bar	6 bar	6 bar
Air consumption	590 l/min	520 l/min	520 l/min
Exhaust air	forwards	forwards	forwards
Noise level	81 dB(A)	78 dB(A)	79 dB(A)
Vibration	< 6 m/s <sup>2</sup>	< 6 m/s <sup>2</sup>	< 6 m/s <sup>2</sup>
Dimensions	Ø 32 x 80 mm	Ø 31 x 143 mm	Ø 31 x 70 mm / 42 x 137 mm
Weight	420 g	290 g	370 g
Lubrication	continuously by oil mist	continuously by oil mist	continuously by oil mist
Scope of delivery	collet Ø 6 mm, clamping wrench, rotary and lever valve	collet Ø 6 mm, clamping wrench, rotary and lever valve	collet Ø 6 mm, clamping wrench, rotary and lever valve
Order No.	<b>0 750 830</b>	<b>0 750 840</b>	<b>0 750 860</b>
Price			

### Accessories / spare parts

	Type	Dimensions	Order No.	Price from 1 piece
<b>Supply air tube, for all models</b>				
	Important: also remember the matching air supply hose when ordering!		<b>0 750 813</b>	
<b>Collets for angle handpieces WI 7, WI 10 and jokeAirMax</b>				
		Ø 3 mm	<b>0 750 831</b>	
		Ø 6 mm	<b>0 750 832</b>	
<b>Collet for angle handpiece WI 4</b>				
	WI	Ø 3 mm	<b>0 019 131</b>	
	WI	Ø 6 mm	<b>0 019 132</b>	

## Compressed-air hand-filing machines DIPROFIL® for operating on the joke Oiljet maintenance unit



	Compressed-air hand-filing machine DIPROFIL®, Di-Pro FXL-N, Mark II	Compressed-air hand-filing machine DIPROFIL®, FPL/R, Mark II
Stroke length	0 – 6 mm, continuously adjustable (0.5 – 3 mm recommended)	0 – 6 mm, continuously adjustable (0.5 – 3 mm recommended)
Max. no. of strokes	max. 7,000 strokes/min (5,000 – 6,000 strokes/min recommended)	max. 8,000 strokes/min (5,000 – 6,000 strokes/min recommended)
Tool support	Ø 2 – 6.4 mm	Ø 2 – 6.4 mm
Insertion depth	40 mm	40 mm
Air pressure	4 bar	4 bar
Air consumption	approx. 60 l/min at 7,000 strokes/min	approx. 65 l/min at 8,000 strokes/min
Exhaust air	through housing	through housing
Noise level	< 75 db(A) at 7,000 strokes/min	70 db(A) at 7,000 strokes/min (according to ISO 15744)
Vibration	< 1.55 – 5.08 m/s <sup>2</sup>	5.79 – 13.37 m/s <sup>2</sup>
Weight	900 g	740 g
Lubrication	continuously by oil mist	continuously by oil mist
Scope of delivery	storage case, tool set, extension tube/fingerprotection bush, counterweights, replacement friction bearing and felts, lubricating oil	storage case, tool set, extension tube/fingerprotection bush, replacement friction bearing and felts, lubricating oil
Order No.	<b>0 001 504-N</b>	<b>0 002 251-N</b>
Price		

### Accessories / spare parts

	Order No.	Price from 1 piece
<b>Rapid-release coupling HSL-M</b>		
	With "on/off" switch, for connection of hand-filing machines to maintenance unit	<b>0 003 001</b>
<b>Important:</b> this rapid-release coupling is needed for using the DIPROFIL® compressed-air hand-filing machines. So be sure to include it in your initial order!		

## Compressed-air filing machine LFC 11

### Compressed-air filing machine LFC 11

The high-speed allrounder (12,000 strokes/min). Ideal for grinding, filing, polishing, cutting, sawing and also deburring larger areas. A continuously adjustable stroke length (between 2 and 11 mm) enables this device to be used for both coarse and fine working. The bare machine is available, but also a case, complete with tools and accessories.

Use with:

joke Oiljet  
(page 67)



Price from

Order No.



1 set

### Set Compressed-air filing machine LFC 11 with case



No. of strokes:	6,000 – 12,000 strokes/min	<b>0 750 960</b>
Stroke length:	2 – 11 mm, continuously adjustable	
Output:	300 W	
Air pressure:	6.3 bar	
Air consumption:	230 l/min	
Noise level:	74 dB(A)	
Vibration:	< 2,2 m/s <sup>2</sup>	
Dimensions:	280 x 60 mm	
Weight:	830 g	
Lubrication:	continuously by oil mist	
Scope of supply:	tool holder Ø 4 mm, 1 file, various different tools, counter-holder, hose unit and case	

### Accessories / spare parts

	Tool support	Order No.	Price from 1 piece
<b>Tool holder</b>			
	Ø 3 mm	<b>0 750 751</b>	
	Ø 4 mm	<b>0 750 752</b>	
	Ø 6 mm	<b>0 750 753</b>	
<b>High-performance lubricant X 73012</b>			
	for all compressed-air grinders, 0.1 litre	<b>0 580 601</b>	
	for all compressed-air grinders, 1 litre	<b>0 580 602</b>	
	for all compressed-air grinders, 5 litres	<b>0 580 603</b>	

# Compressed-air filing machines PRV-70 • FRV-110

## "24/7"-use owing to minimal vibrations

### Compressed-air filing machines PRV-70 • FRV-110

24/7, so around the clock, 7 days a week:

this is just how long you can work with these filing machines at a stretch, as the vibration values lie markedly below the limit value of 2.5 m/s<sup>2</sup>.

Available with short (2 mm) and long (8 mm) stroke. The machines lie conveniently and securely in the user's hands and consume little air. Both machines can dispense with oiling and may therefore be directly connected to the joke Dryjet maintenance unit.

#### Highlights:

- use 24/7 possible
- extremely high degree of running smoothness
- 2 and 8 mm stroke length versions
- excellent service life
- use without oil, only a few drops a day are required
- low air consumption



**Compressed-air filing machine FRV-110**

**Compressed-air filing machine PRV-70**

	<b>Compressed-air filing machine FRV-110</b>	<b>Compressed-air filing machine PRV-70</b>
Stroke length	8 mm	2 mm
Max. no. of strokes	9,000 strokes/min	7,000 strokes/min
Tool support	max. 6 mm	max. 4 mm
Air pressure	6,5 bar	6,5 bar
Air consumption	78 l/min	30 l/min
Exhaust air	backwards	backwards
Noise level	< 77 dB(A)	< 71 dB(A)
Vibration	2 m/s <sup>2</sup>	2 m/s <sup>2</sup>
Dimensions	Ø 40 x 182 mm	Ø 28 x 190 mm
Weight	1,000 g	300 g
Lubrication	not necessary	not necessary
Scope of delivery	tool (without air hose)	tool, air hose
Order No.	<b>0 751 600</b>	<b>0 751 630</b>
Price		



## Compressed-air engraving pen LGS 30


### Compressed-air engraving pen LGS 30

This little pen enables you to engrave metal, glass, plastics, etc. effortlessly. Thanks to the carbide needle, you can even make deep indentations in hardened steel. No harmful vibrations are transmitted to your hand, which protects your health and gives you maximum pen control.




Use with:

**joke Oiljet**  
(page 67)



			Order No.	Price from 1 piece
<b>Compressed-air engraving pen LGS 30, incl. engraving needle</b>				
	No. of strokes:	30,000 strokes/min	<b>0 750 790</b>	
	Air pressure:	6 bar		
	Air consumption:	30 l/min		
	Dimensions:	Ø 17 x 154 mm		
	Weight:	150 g		
	Vibration:	< 2.5 m/s <sup>2</sup>		
	Lubrication:	continuously by oil mist		
Scope of supply:	air tube 2 m, engraving needle type GN M, connection nipple 1/4"			

### Accessories / spare parts

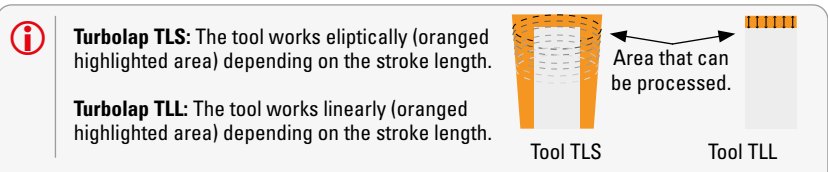
			Order No.	Price from 1 piece
<b>Engraving needle</b>				
	fine tipped	GN F	<b>0 750 791</b>	
	medium tipped	GN M	<b>0 750 792</b>	
	coarse tipped	GN G	<b>0 750 793</b>	
<b>Engraving chisel</b>				
	flat	GM F	<b>0 751 930</b>	
	angled	GM S	<b>0 751 931</b>	
<b>Air hose, supply air, 2 m</b>			<b>0 750 795</b>	
				

# Hand-filing machines Turbolap Linear and transverse stroke!

## Turbolap hand-filing machines

High power in a small casing. These permanently lubricated handfiling machines connect directly to the joke Dryjet maintenance unit. With these devices, there is no need to worry about oiling, just about your hands, as they will prefer to no longer be without from these ergonomic high-tech handpieces ...

Available with linear and transverse stroke (0.3, 0.7 with 1.2 mm stroke length).



	Hand-filing machines <b>Turbolap TLL 03</b> with linear stroke	Hand-filing machines <b>Turbolap TLS 03</b> with transverse stroke	Hand-filing machines <b>Turbolap TLL 07</b> with linear stroke	Hand-filing machines <b>Turbolap TLS 07</b> with transverse stroke	Hand-filing machines <b>Turbolap TLL 12</b> with linear stroke	Hand-filing machines <b>Turbolap TLS 12</b> with transverse stroke
Stroke length	0.3 mm	0.3 mm	0.7 mm	0.7 mm	1.2 mm	1.2 mm
Max. no. of strokes	52,500 1/min	56,000 1/min	28,000 1/min	20,000 1/min	14,000 1/min	14,000 1/min
Tool support	Ø 3 mm / 4 mm high	Ø 3 mm / 4 mm high	Ø 3 mm / 4 mm high	Ø 3 mm / 4 mm high	Ø 3 mm / 4 mm high	Ø 3 mm / 4 mm high
Air pressure	3 bar / max. 6 bar	1–2 bar / max. 6 bar	3 bar / max. 6 bar	1,5–2,5 bar / max. 6 bar	2–3 bar / max. 6 bar	6 bar
Air consumption	125 l/min	125 l/min	46 l/min	46 l/min	46 l/min	46 l/min
Exhaust air	backwards	backwards	backwards	backwards	backwards	backwards
Noise level	72 dB(A)	73 dB(A)	64 dB(A)	63 dB(A)	59 dB(A)	63 dB(A)
Vibration	8.69 m/s <sup>2</sup>	4.58 m/s <sup>2</sup>	9.79 m/s <sup>2</sup>	3.37 m/s <sup>2</sup>	7.86 m/s <sup>2</sup>	4.90 m/s <sup>2</sup>
Dimensions	Ø 28 x 216 mm	Ø 28 x 216 mm	Ø 28 x 216 mm	Ø 28 x 216 mm	Ø 28 x 216 mm	Ø 28 x 216 mm
Weight	180 g	180 g	180 g	180 g	180 g	180 g
Lubrication	not necessary	not necessary	not necessary	not necessary	not necessary	not necessary
Scope of delivery	tool holder, chuck key, supply airhose 1.5 m, exhaust air tube, 1/4" connecting sleeve incl. filter	tool holder, chuck key, supply airhose 1.5 m, exhaust air tube, 1/4" connecting sleeve incl. filter	tool holder, chuck key, supply airhose 1.5 m, exhaust air tube, 1/4" connecting sleeve incl. filter	tool holder, chuck key, supply airhose 1.5 m, exhaust air tube, 1/4" connecting sleeve incl. filter	tool holder, chuck key, supply airhose 1.5 m, exhaust air tube, 1/4" connecting sleeve incl. filter	tool holder, chuck key, supply airhose 1.5 m, exhaust air tube, 1/4" connecting sleeve incl. filter
Order No.	<b>0 750 702</b>	<b>0 750 709</b>	<b>0 750 700</b>	<b>0 750 704</b>	<b>0 750 701</b>	<b>0 750 703</b>
Price						

# Polishing machine

## OPTI polish

### Polishing machines OPTI polish

The workhorses for precision work. For grinding, polishing, deburring, matting, rounding... the possible uses of these grinding lathes are so to speak virtually unlimited.

#### Highlights:

- Robust, heavy industrial design
- Long lasting with maintenance-free motor
- Casing made of cast aluminium
- Quiet running owing to balanced motor and quality ball bearings ...

For rapid deburring, we recommend a tandem of one brush with nylon bristles on one side of the polishing machine and a wrapped fleece disk on the other side.

**For individual matching to your application please contact our Product Manager Dominic Singer:**  
Tel. +49 (0) 22 04 / 8 39-0 e-mail: d.singer@joke.de



	Polishing machine OPTI polish GU 20 P	Polishing machine OPTI polish GU 25 P
Polishing disc size Ø	200 x 20 mm	250 x 25 mm
Tool support	Ø 16 mm	Ø 20 mm
Max. tool width	20 mm	25 mm
Rotation speed	2,850 1/min	2,850 1/min
Power	600 W	1.500 W
Dimensions (W x H x D)	591 x 326 x 292 mm	591 x 326 x 292 mm
Supply voltage	230 V, AC, 1 PH, 50/60 Hz	400 V, AC, 3 PH, 50/60 Hz
Weight	10.6 kg	17.4 kg
Scope of delivery	1 x polishing disc soft Ø 200 x20 x 16 mm (Order No. 0 041 622) and 1 x polishing disc hard Ø 200 x 20 x 16 mm (Order-No. 0 041 623)	1 x polishing disc soft Ø 250 x25 x 20 mm (Order No. 0 041 632) and 1 x polishing disc hard Ø 250 x 25 x 20 mm (Order No. 0 041 633)
Order No.	<b>0 041 620-0</b>	<b>0 041 630-0</b>
Price		

### Accessories / spare parts

	Order No.	Price from 1 piece
<b>Machine substructure for polishing machines OPTI polish</b>		
 <p>Dimension: table 320 x 270 mm, height: 825 mm. The suitable substructure for the series OPTI PSM polishing machines. Please be aware that this must be fixed to the bottom and holes at the table need to be drilled. Drilling template inside but no fixing material.</p>	<b>0 041 621-1</b>	

## Polishing machine Accessory

2

3

4

5

6

7

### Convolute compact grinding discs

Wound, not pressed. These special grinding discs have been developed for the demanding preliminary and final processing of surfaces of the widest array of materials. They result from winding nylon fleece fabric around a hard core. The fabric is wetted with a special abrasive resin system beforehand. The winding results in a very uniform structure with which the direction of rotation must nevertheless be observed.

The discs are available in two abrasive finishes (corundum and SiC) and two diameters and grit sizes in addition to three hardnesses.



Further information on page 176.

### Round brushes with nylon grinding bristles

The nylon fibres of these brushes are interspersed with silicon carbide. The latter is constantly released during work and a highly even grinding effect with a very uniform ground section is produced.

The nylon polishing bristles are extremely elastic and flexible and consequently absolutely unbreakable. The trimming area does not clog with work residues during deployment and the polishing effect remains constantly high throughout the entire working period. Suitable for wet and dry use.



Further information on page 177.

### Polishing buffing discs OPTI

These discs are used on stationary polishing machines in conjunction with solid polishing compounds (Dialux).

#### Available in two versions:

- Cotton, soft
- Cotton, hard (quilted)



Further information on page 178.

## Polishing lathe PB 2 System overview

### Polishing lathe PB

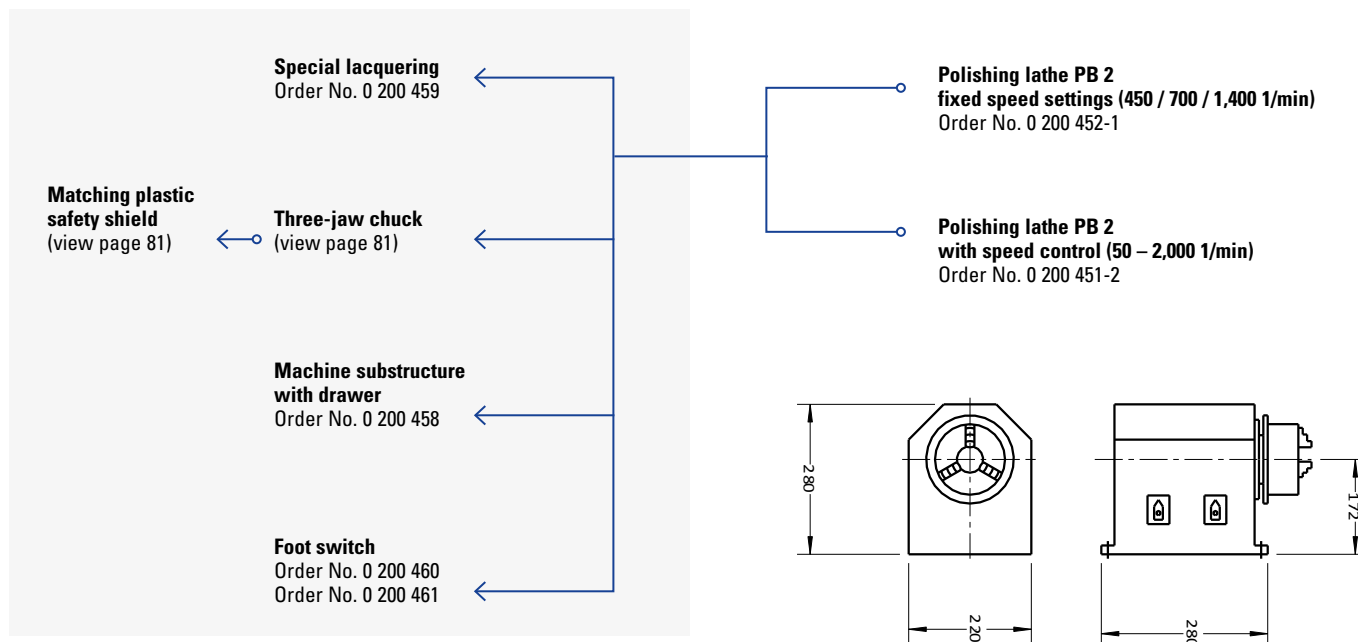
The polishing lathes with high-performance motors. Three-stage or infinite speed adjustment possible. Ideal for all tough tasks that can be accomplished by turning: filing, sanding, polishing, deburring, scraping, brushing, winding, separating, chamfering, rounding, hand filing, coating, etc. ...

#### Highlights:

- Maintenance-free work
- Clamping of the workpieces by a three-jaw chuck
- Limited spatial requirements owing to compact construction
- Robust, interference-proof, extremely durable
- Comprehensive range of accessories and safety devices available
- Radial run-out of shaft  $\pm 0,01$  mm
- Shaft rotated and balanced in a clamping system



**Optional accessory** to be determined before ordering, as no longer possible afterwards!



## Polishing lathe PB 2



**Polishing lathe PB 2**



**Polishing lathe PB 2**

Tool support	Ø 37 mm	Ø 37 mm
Rotation speed	50 - 1,300 rpm, infinitely adjustable	450 / 700 / 1,400 rpm, fixed speed settings
Power	max. 0.2 kW	0.2 / 0.5 / 0.6 kW
Centre height	172 mm	172 mm
Dimensions (W x H x D)	280 x 280 x 220 mm	280 x 280 x 220 mm
Supply voltage	400 V, 50/60 Hz, IP 54	400 V, 50/60 Hz, IP 54
Weight	38 kg	38 kg
Order No.	<b>0 200 451-0</b>	<b>0 200 452</b>
Price		

### Accessories / spare parts

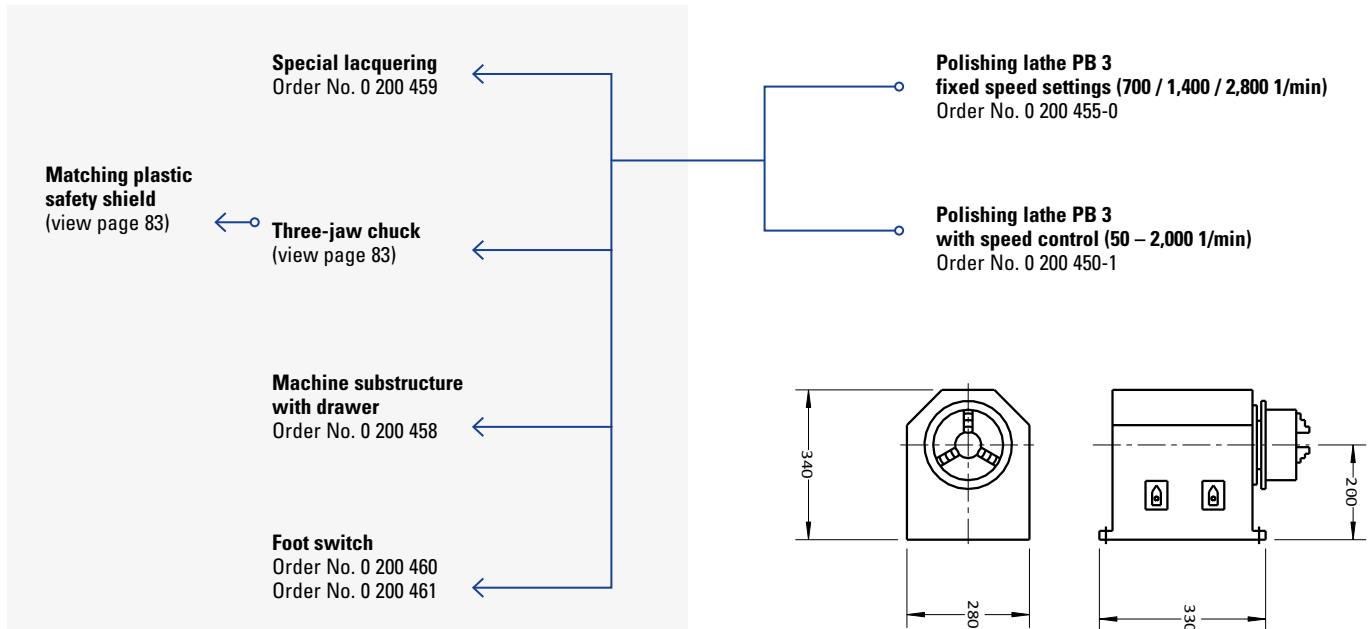
	Size	Dimensions	Order No.	Price from 1 piece
<b>Machine substructure with drawer</b>				
		Dimensions (W x D x H): 390 x 540 x 800 mm	<b>0 200 458</b>	
<b>Special lacquering</b>				
		Any RAL colour is optionally available.	<b>0 200 459</b>	
<b>Foot switch type 1</b>				
		Function: press = start hold = work release = stop	<b>0 200 460</b>	
<b>matching three-jaw chuck incl. chuck flange</b>				
		Chuck Ø 125 mm max. perm. rpm 3,200 rpm	Ø 125 mm	<b>0 200 473</b>
		Chuck Ø 160 mm max. perm. rpm 3,000 rpm	Ø 160 mm	<b>0 200 474</b>
<b>Plastic protective disc for three-jaw chuck</b>				
		suitable for Ø 125 mm	Ø 125 mm	<b>0 200 481</b>
		suitable for Ø 160 mm	Ø 160 mm	<b>0 200 482</b>

# Polishing lathe PB 3 System overview

Just bigger and stronger than his little brother PB 2!



**i** **Optional accessory** to be determined before ordering, as no longer possible afterwards!



## Polishing lathe PB 3



	Polishing lathe PB 3	Polishing lathe PB 3
Tool support	Ø 37 mm	Ø 37 mm
Rotation speed	50 – 2,000 rpm, infinitely adjustable	700 / 1,400 / 2,800 rpm., fixed speed settings
Power	max. 2,5 kW	1,1 / 1,9 / 2,4 kW
Centre height	200 mm	200 mm
Dimensions (W x H x D)	330 x 340 x 280 mm	330 x 340 x 280 mm
Supply voltage	400 V, 50/60 Hz, IP 54	400 V, 50/60 Hz, IP 54
Weight [kg]	90 kg	90 kg
Order No.	<b>0 200 450-1</b>	<b>0 200 455-0</b>
Price		

### Accessories / spare parts

	Size	Dimensions	Order No.	Price from 1 piece
<b>Machine substructure with drawer</b>				
		Dimensions (W x D x H): 390 x 540 x 800 mm		<b>0 200 458</b>
<b>Special lacquering</b>				
		Any RAL colour is optionally available.		<b>0 200 459</b>
<b>Foot switch type 1</b>				
		Function: press = start hold = work release = stop		<b>0 200 460</b>
<b>matching three-jaw chuck incl. chuck flange</b>				
		Chuck Ø 125 mm max. perm. rpm 3,200 rpm	Ø 125 mm	<b>0 200 473</b>
		Chuck Ø 160 mm max. perm. rpm 3,000 rpm	Ø 160 mm	<b>0 200 474</b>
		Chuck Ø 250 mm max. perm. rpm 2,000 rpm	Ø 250 mm	<b>0 200 477</b>
<b>Plastic protective disc for three-jaw chuck</b>				
		suitable for Ø 125 mm	Ø 125 mm	<b>0 200 481</b>
		suitable for Ø 160 mm	Ø 160 mm	<b>0 200 482</b>
		suitable for Ø 250 mm	Ø 250 mm	<b>0 200 483</b>



## Poli Base polishing unit with integrated suction

**NEW!**

Are your quality requirements high, but space is limited? If so, the powerful, versatile and space-saving joke poli base polishing machine is exactly the right solution for your company. Our compact polishing unit guarantees extremely smooth running and excellent results when polishing or deburring in many areas, such as the industrial, optical, jewellery or dental sectors.

The most important data at a glance:

- particularly compact polishing unit, space-saving and efficient
- integrated, powerful and low-noise extraction system
- equipped with the universal 11 mm stub shaft
- wide variety of possible processing operations
- various tool receptacles available as accessories
- working area completely made of stainless steel
- easy to clean
- removable solid rubber polishing trough
- jacket-cooled motor, dust protected
- speed: 750 – 6,000 rpm, adjustable in increments
- easily replaceable, large-capacity micro fine dust filter bag, dust class M
- optimum illumination: integrated daylight LEDs and daylight LED spotlight
- designed for a long service life
- extremely low maintenance and wear
- completely preassembled



### Poli Base polishing unit with integrated suction





Rotation speed	750 – 6,000 rpm
Power	500 W
Noise level	< 65 dB(A)
Dimensions	455 x 485 x 505 mm
Fan output	445 m <sup>3</sup> /h
Supply voltage	220 – 240 V, 50/60 Hz
Weight [kg]	37 kg
Scope of delivery	<ul style="list-style-type: none"> <li>• Poli Base polishing unit</li> <li>• Micro fine dust filter bag</li> <li>• Storage tray (W 257 mm x H 40 mm x D 198 mm)</li> <li>• Polishing trough</li> <li>• Supply lead</li> </ul>
Order No.	<b>0 200 400</b>
Price	



# Poli Base polishing unit with integrated suction

**NEW!**

## Accessories / spare parts

	Packing quantity	Order No.	Price from	
			1 set	1 piece
<b>Pocket filter micro fine dust for Poli Base, set</b>				
	2 pieces	0 200 401		
<b>Poli Base drill chuck with a clamping range of 1.6-6 mm</b>				
		0 200 402		
<b>Poli Base tool holder big</b>				
 for panes with: bore: Ø 14 mm – 25 mm diameter: max Ø 150 mm width: max 30 mm		0 200 403		
<b>Poli Base tool holder medium</b>				
 for panes with: bore: Ø 6 mm – 13 mm diameter: max Ø 110 mm width: max 30 mm		0 200 404		





**NEW!**

# ENESKApostpro

The safety postprocessing system  
for all materials and work steps

100%  
made in Germany



# ENESKApostpro

## Advantages at a glance

- High standard of safety
- No risk of explosion or deflagration
- No permanent damage due to respirable dust
- No need for additional protective clothing
- Ergonomic working and simple operation
- Many options for connecting various tools – either pneumatic or electric.

## Work steps that you can perform

- Removal of residual powder
- Separation from the substrate material
- Removal of support structures
- Deburring
- Coarse surface finishing
- Fine surface finishing
- Finish

## Materials that you can process

- |                   |                         |
|-------------------|-------------------------|
| ■ Steel           | ■ Ceramic               |
| ■ Stainless steel | ■ PEEK                  |
| ■ Aluminium       | ■ POM                   |
| ■ Titanium        | ■ Plastics              |
| ■ Carbon          | ■ Rubber-like materials |
| ■ Inconel         | ■ Gypsum                |
| ■ Brass           | ■ and many more         |



Belt grinder



Hand-filing machine



Compressed-air filing machine

## Extraction and cleaning process function



Extraction is through the floor of the working chamber.



It is only possible to work in the ENESKApostpro with the extraction system running. The system is locked during processing.



With flow-optimized air guidance, hazardous dusts are directed towards the extractor.



After the processing, the system cannot be opened until a special automatic cleaning process has finished. This stirs up and extracts the residual dust from the corners of the chamber.



The system can be equipped with the special FSX automatic fine dust measurement. The dust load in the working chamber is continuously measured and shown on the display.

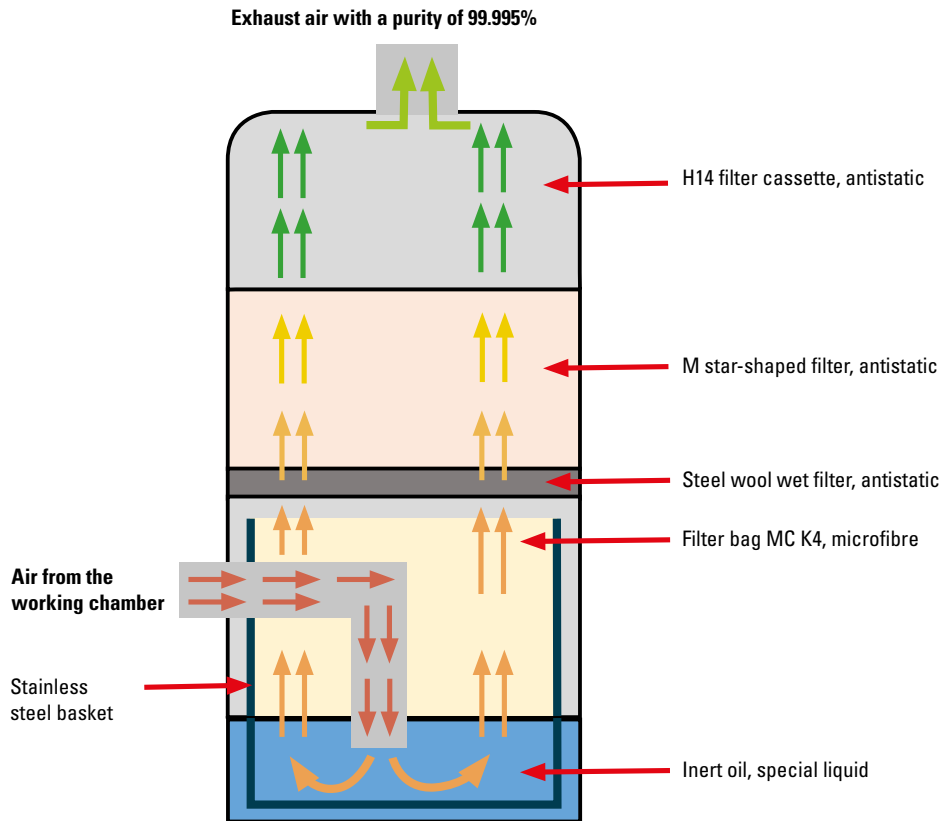
In combination with this FSX, the previously described cleaning process can be adjusted so that the system does not unlock before a defined value is reached.



The system is not unlocked and the working chamber is not released until the cleaning process has finished.

# Filter system

## Diagram of the system for reactive substances



## View of extraction system



Extraction system is easily accessible from the rear



View of the ENESKApostpro extraction system - the complete extractor can be removed

## ENESKApostpro


### Perfect solution for finishing in 3D printing

The standard of safety during manual postprocessing is inadequate in many companies. Protective suits are often only worn during individual working stages and are of no help against the risk of deflagration. Moreover, the working areas are not protected from invisible airborne dusts, which are usually underestimated. This is precisely where ENESKApostpro from joke can help you.

Particular caution is required when processing reactive materials. In this case, it is not only the dusts that can ignite through friction; the material is also highly flammable and therefore carries higher risks of explosion and deflagration. A special moisture extractor with 5-fold filtration and explosion protection according to ATEX standard guarantees safe work. An integrated liquid bath binds the reactive particles which are thus unable to develop their explosive effect.

Titanium or aluminium are the common materials that most users recognised as reactive, but many alloys also have references to minimum ignition energy of less than one mJ in their data sheets.

Are you not sure? We will be pleased to advise you.

	Order No.	Price from 1 piece
<b>ENESKApostpro incl. extraction with wet separator for reactive materials</b>		
 <ul style="list-style-type: none"> <li>• suitable for materials with a minimum ignition energy above one mJ</li> <li>• with explosion protection according to ATEX standard</li> <li>• moisture separator suitable for zone 22</li> <li>• 5-fold filtration</li> <li>• extraction capacity / volumetric flow: max. 350 m<sup>3</sup>/h</li> <li>• incl. FSX automatic fine dust measuring system (for further information, see Order no. 0 210 306)</li> <li>• optionally with height adjustment</li> <li>• materials to be processed: incl. among others aluminium and titanium</li> </ul>	<b>0 210 010</b>	

## Technical data

ENESKApostpro	
Weight:	580 kg (Order No. 0 210 000) 600 kg (Order No. 0 210 010)
Dimensions of the working chamber (W x D x H):	930 x 790 x 250-600 mm
Device dimensions (W x D x H)	1,300 x 1,500 x 1,790 mm
Lighting:	a. 5,000K / ca. 3,300 lm, dimmable
Supply voltage:	400 V / 16 A


# ENESKApostpro

## Perfect solution for finishing in 3D printing


This variant of ENESKApostpro was developed for the processing of non-reactive materials. However, respirable dusts are also an issue with steel, stainless steel and Inconel. The ENESKApostpro helps enormously in this case and protects you and your colleagues from hazardous particles. Wearing cumbersome protective suits is also no longer required.

A large working chamber of approx. 0.75 m<sup>2</sup> offers sufficient space even for the largest 3D-produced workpieces. There are numerous possibilities for connecting various tools simultaneously at the same workplace – whether pneumatic or electric.

Dimmable light, a large glass front and ergonomically shaped hand apertures make everyday work very pleasant.

	Order No.	Price from 1 piece
<b>ENESKApostpro incl. extraction for non-reactive materials</b>		
	Special features of the ENESKApostpro incl. extraction for non-reactive materials:	<b>0 210 000</b>
	<ul style="list-style-type: none"> <li>• dry extractor with explosion protection according to ATEX standard</li> <li>• triple filtration</li> <li>• extraction capacity / volumetric flow: max. 350 m<sup>3</sup>/h</li> <li>• optionally with FSX automatic fine dust measuring system (more Information see Order No. 0 210 306)</li> <li>• optionally with height adjustment</li> <li>• materials to be processed: incl. among others, steel, stainless steel, Inconel and various plastics</li> </ul>	

### ⚙️ Accessories / spare parts

	Order No.	Price from 1 piece
<b>ENESKApostpro automatic fine dust measurement FSX</b>		
	The FSX automatic fine dust measuring system from joke is to be included in the order for your ENESKApostpro! The FSX cannot be retrofitted!	<b>0 210 306</b>
	<ul style="list-style-type: none"> <li>• Precise dust measurement – independent of gas velocity or particle charge</li> <li>• No external purge air unit required as it is integrated in the unit (option)</li> <li>• Low cost and maintenance due to self-monitoring</li> <li>• Independent measuring device</li> <li>• Automatic monitoring of zero and reference point</li> <li>• Robust and compact design</li> <li>• No moving parts in the duct</li> </ul>	

## Variants

ENESKApostpro for <b>reactive</b> substances (Order No. <b>0 210 010</b> )	ENESKApostpro for <b>non-reactive</b> substances (Order No. <b>0 210 000</b> )
Extraction system suitable for continuous operation, for extracting <b>flammable dusts</b> – MIE ≥ 1 mJ	Extraction system suitable for continuous operation, for extracting <b>dusts</b> – MIE ≥ 1 mJ
<b>5-fold filtration, including moisture separator</b> , suitable for zone 22 ATEX II 3D c T 125 °C 5-fold filtration, removal efficiency: 99.995%	<b>3-fold filtration</b> , removal efficiency: 99.95%
Exchangeable, stainless steel collection tank <b>with drain cock, inert oil (approx. 30 L)</b> , tank capacity 100 litres	Exchangeable, stainless steel collection tank, tank capacity 100 litres
M star-shaped filter, antistatic with manual cleaning	M star-shaped filter, antistatic with manual cleaning
H14 filter cassette, antistatic	H14 filter cassette, antistatic
<b>Wet filter cassette, earthed</b>	–
<b>Filter bag MC K4 microfibre, antistatic</b>	–



## ENESKApostpro



### Improved safety standard for postprocessing

Powder removal, support removal and surface finishing, release of residual powders and dusts that may be respirable, carcinogenic, skin-irritant, and in some cases even explosive.

The standard of safety during manual postprocessing is inadequate in many companies. Protective suits are often only worn during individual work stages, and are of no help against the risk of deflagration.

Some deburring boxes are only slightly better than protective goggles, which do not retain the dust.

The ENESKApostpro makes it possible to carry out all work stages without any contact with the materials or fine dusts – which means greater safety for both user and company.



### Safe working instead of silicosis

The respirable dusts released during post-processing are blamed for cancer and cardiovascular diseases, among other things.

For this reason, the ENESKApostpro is completely enclosed and sealed. It has appropriate and safe extraction and filtering equipment. No dust can escape from its working area. Before the system can be opened, there is an after-suction phase and a special cleaning process - only then does the system unlock and the finished workpiece can be removed.

The system complies with important legal regulations on dust control, such as that dust must be directly removed at the point of exit.



### No more risks of explosion

Particularly with reactive substances, such as titanium and aluminium, explosions and fires may occur simply through friction of individual particles. Therefore, all components of the ENESKApostpro are completely earthed to prevent spark discharge. An integrated moisture separator is optionally available for highly reactive substances.

In addition, a compressed-air gun and special air showers enhance cleaning in more concealed corners. These enable fine dusts to be removed from crevices in a workpiece without any risk of explosion.



### Convincing versatility

Integrated control units drive a range of electric and pneumatic tools for deburring, milling, grinding or polishing.

Up to three different micromotors and two pneumatic devices can be connected simultaneously – which reduces setup times, and allows rapid, versatile work.

A range of accessories may be used, such as magnifying glasses, turntables and magnetic clamping balls.



### Ergonomics, user friendliness - and thinking of the user!






Concentration and relaxation during work is a prerequisite for optimum postprocessing results. The joke development team has achieved this goal by means of many details of the equipment. Coloured instructions on the touch display indicate the current status of the ENESKApostpro. The lighting intensity can be dimmed, and the hand apertures, with a diameter of 240 mm, give the user great freedom of movement. The display also shows information about upcoming maintenance, filter cleaning and similar items. Both the lower limit of the particle count and the cleaning cycle can be adjusted on the display.

An optimal working height is perfect for the back. The ENESKApostpro can be optionally equipped with height adjustment. The large glass dome gives a very good view of the components to be processed.





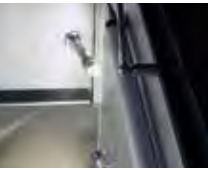
## ENESKApostpro Accessories

	Size	Dimensions	Order No.	Price from	
				1 piece	1 pair
<b>ENESKAmicro footpedal</b>					
	<ul style="list-style-type: none"> <li>• for comfortable control by foot (start/stop, speed adjustment),</li> <li>• cable length 2 m</li> </ul>		<b>0 011 002</b>		
<b>Maintenance unit joke Oiljet</b>					
	<p>Filter controller MD1-FR0000-1/4:</p> <ul style="list-style-type: none"> <li>• Max. Working flow: 1,200 l / min</li> <li>• Max. Inlet pressure: 16 bar</li> <li>• Container capacity: 24 cm<sup>3</sup></li> <li>• Condensate drain: semi-automatic-manual, automatic via pressure relief, drain via threaded connection G1/8</li> </ul> <p>• Air connection: 1/4"</p> <p>• Medium: compressed air</p> <p>Oiler MD1-L00-1/4:</p> <ul style="list-style-type: none"> <li>• Max. Inlet pressure: 16 bar</li> <li>• Container capacity: 40 cm<sup>3</sup></li> <li>• Air connection: 1/4"</li> <li>• Medium: compressed air</li> </ul> <p>Scope of delivery: 25 µm filter, manual water separator, micro oiler, pressure reducer, pressure gauge and wall mounting</p>		<b>0 004 070</b>		
<b>ENESKApostpro high-performance oil, 20 l</b>					
	for filling the extraction with wet scrubber for reactive materials		<b>0 580 518</b>		
<b>ENESKApostpro Glass dome, laminated glass</b>					
			900 x 900 x 8,5 mm	<b>0 210 050</b>	
<b>Protective screen with flexible arm and suction foot</b>					
	can be clamped on flat and slightly uneven surfaces. Flexibly adjustable by 4 joints.		<b>0 210 208</b>		
	Suction force: 350 N Dimensions: Suction foot: Ø 88 x 23 mm Screen: 300 x 200 x 2 mm				
<b>Protective screen, plexiglass</b>					
			200 x 200 x 2 mm	<b>0 210 202</b>	
			300 x 200 x 2 mm	<b>0 210 201</b>	

## ENESKApostpro Accessories

	Size	Dimensions	Order No.	Price from	
				1 piece	1 pair
<b>Gloves latex for ENESKApostpro, 600 mm</b>					
 <ul style="list-style-type: none"> <li>• with cuff Ø 180 – 300 mm</li> <li>• size 10</li> <li>• EN388</li> </ul>	10		<b>0 210 250</b>		
<b>ENESKApostpro arm cuff made of latex</b>					
 <ul style="list-style-type: none"> <li>• Length: 500 mm</li> <li>• Installation diameter: from Ø 230 to 360 mm</li> <li>• Arm cuff made from very robust and stretchable latex with rolled edge for installation for Ø 230 to approx. 360 mm</li> <li>• For long-term use because the wear on the extra gloves to be used happens</li> <li>• With star slits for optimal sealing</li> </ul>			<b>0 210 260</b>		
<b>Stainless steel tank 100 l, dry version</b>					
			<b>0 210 360</b>		
<b>Stainless steel tank 100 l, variant inert oil</b>					
		with drain cock and window	<b>0 210 356</b>		
<b>Stainless steel basket to hold the filter bag MC K4</b>					
		Ø 430 x 500 mm	<b>0 210 362</b>		

# ENESKApostpro Accessories

	Size	Dimensions	Order No.	Price from	
				1 piece	1 pair
<b>Filter bag MC K4 microfibre, variant inert oil</b>					
 <p>with wire ring</p>		Ø 430 x 500 mm	<b>0 210 361</b>		
<b>Wet filter cassette, version inert oil</b>					
 <p>filled with stainless steel wool, antistatic</p>		Ø 260 x 70 mm	<b>0 210 363</b>		
<b>Star shaped filter dust class M, variant inert oil</b>					
 <ul style="list-style-type: none"> <li>• Dust class M (medium risk) according to EN60335-2-69</li> <li>• for the separation of dust with an exposure limit of greater than 0.1 mg/m<sup>3</sup></li> <li>• Suitable for vacuuming dry, flammable dusts in zone 22</li> <li>• PU/polyester, antistatic (separation efficiency: 99.95%)</li> </ul>		Ø 460 x 210 mm	<b>0 210 357</b>		
<b>HePa filter cartridge H14, variant inert oil</b>					
 <ul style="list-style-type: none"> <li>• 3 m<sup>2</sup> filter surface</li> <li>• Filter Dust class H (high risk) according to EN60335-2-69</li> <li>• for the separation of all dust with all exposure limits, including carcinogenic and pathogenic dusts</li> <li>• antistatic (separation efficiency: 99.995%)</li> </ul>		Ø 460 x 105 mm	<b>0 210 358</b>		
<b>ENESKApostpro automatic fine dust measurement FSX</b>					
 <p>The FSX automatic fine dust measuring system from joke is to be included in the order for your ENESKApostpro! The FSX cannot be retrofitted!</p> <ul style="list-style-type: none"> <li>• Precise dust measurement – independent of gas velocity or particle charge</li> <li>• No external purge air unit required as it is integrated in the unit (option)</li> <li>• Low cost and maintenance due to self-monitoring</li> <li>• Independent measuring device</li> <li>• Automatic monitoring of zero and reference point</li> <li>• Robust and compact design</li> <li>• No moving parts in the duct</li> </ul>			<b>0 210 306</b>		

1

2

3

4

5

6

7

# Tungsten carbide coating unit



# Tungsten carbide coating unit

## tucadur® 2020

### Methods

Nowadays, very high demands are made on the toughness, hardness and surface wear resistance of tools, equipment and machines. Either hardness or toughness can be determined by the normal hardening process; in practice therefore a middle course is selected. The following options came to light in seeking a tough material with a more wear-resistant coating:

1. Galvanic coating with hard layers,
2. Plasma gun spraying method,
3. Electroerosive tungsten carbide coating.

The adhesive strength of the coatings in methods 1 and 2 is unsatisfactory in the case of heavy stresses since the coatings are likely to scale off. With the third method, however, it is possible to apply tungsten carbide in a very wear-resistant surface on the heavily stressed points of a workpiece.

### Properties of the tungsten carbide coat

The layer applied combines joins perfectly with the steel and adheres in such a way that it withstands almost any mechanical stress. Blows, bending, stretching or compressive strains are incapable of detaching the coating. This can only be done by grinding or special sand blasting; it can, however, be relapped with diamond or silicon carbide. The steel beneath is not softened by the coating but increases in hardness in the upper zone. In the case of certain steel alloys the tungsten carbide layer even penetrates into the base material. The coating produces a hardness of up to 82 HR 30N, without the workpiece undergoing any change or distortion since the depositing process is practically cold. The coating possesses a high degree of heat resistance. The surface is uniform and shows no directional texture. With good saturation, it achieves a mean roughness of 2-9 µm.

### Examples of applications

1. Hardness coating of tools or wear parts to extend service life.
2. Adhesion: coating of smooth surfaces in order to achieve greater adhesion through the structure of the layer.
3. Lubricating film: coating of smooth surfaces in order to maintain a lubricating film, as the lubricant remains embedded in the structure and therefore is not immediately squeezed out again.
4. Cold welding: coating of sliding surfaces in order to avoid cold weldings as a result of the structure of the layer, i.e. sticking of material.

### Materials and their pretreatment

Any soft, heat-treated and hardened unalloyed or alloyed steel is suitable as material for coating with tungsten carbide. The surface must be clean and metallurgically pure. Scale and oxide layers must be removed without fail. Ground, polished or brightly machined parts must be degreased. If the tungsten carbide coating is applied to an unclean surface, no satisfactory adhesive strength can be obtained and the coating becomes irregular and exhibits inclusions.

### Principle of operation

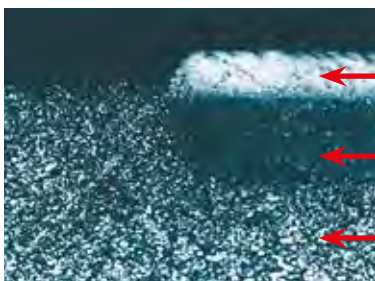
The coating device functions in accordance with the principle of electro-erosion. A tungsten carbide electrode is attached to the positive pole in a d.c. circuit with electric current and voltage regulation to which condensers of varying capacities are connected. The vibrator (coating gun) causes oscillations in the electrode and this is brought into contact with the workpiece to be treated. The workpiece is connected to the negative pole. By contact of the electrode with the workpiece, an ionised field results, which ensures that oxide-free fusion of the tungsten carbide with the base material occurs. This field is constantly reconstituted with the aid of the vibrator. With uniform to-and-fro movement of the electrode a compact hard metal layer results. The predetermined layer thickness cannot be exceeded, since no more uptake of material occurs once saturation is reached. The selected layer thickness is so precise that it does not normally need any finishing operation. It can nevertheless be lapped and polished if necessary. Coating using the tucadur® 2020 is so easy that anyone can do it.



### Micro-section magnified 250 times

uncoated

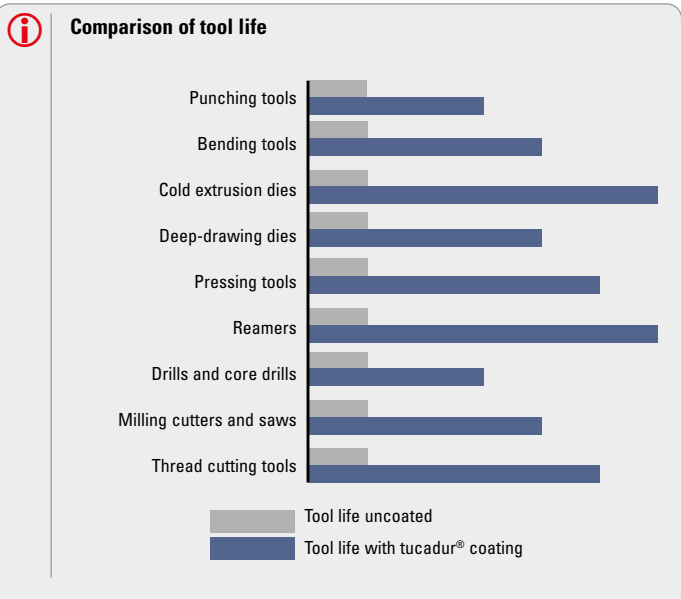
coated



Tungsten carbide layer up to 82 HR 30N hardness

Steel layer rehardened

Base material (steel) unaltered



## Tungsten carbide coating unit tucadur® 2020

Price from

Order No.

1 piece

### Tungsten carbide coating unit tucadur® 2020



Control unit  
 Max. hardness of coating: 82 HR 30N  
 Layer thickness adjustable: from 2-40 micron  
 Vibration level: adjustable  
 Power supply: 230 V, 50 Hz  
 Dimensions (W x T x H): 210 x 320 x 220 mm  
 Weight: 11 kg

**0 700 000**

Coating gun  
 Vibration frequency: 100 Hz  
 Illumination: built-in

Scope of supply:  
 Control unit, coating gun, mains cable, foot switch, contact magnet, 1 set  
 (24 pieces) of tungsten carbide electrodes, hexagon head screwdriver

### ⚙️ Accessories / spare parts

Price from

Order No.




1 piece

### Coating gun

**0 700 213**

# Tungsten carbide coating unit

## tucadur® 2020

Shape	Dimensions	Order No.	Price from	
			1 piece	10 pieces
<b>Tungsten carbide electrodes, for tucadur® 2020</b>				
 round	Ø 1.0 x 50 mm	<b>0 700 036</b>		
	Ø 1.3 x 50 mm	<b>0 700 046</b>		
	Ø 1.8 x 50 mm	<b>0 700 047</b>		
	Ø 2.3 x 50 mm	<b>0 700 048</b>		
 square	1.1 x 50 mm	<b>0 700 039</b>		
	1.6 x 50 mm	<b>0 700 040</b>		
	2.1 x 50 mm	<b>0 700 041</b>		
 triangular	1.95 x 50 mm	<b>0 700 042-0</b>		

 *matching set*

	Order No.	Price from	
		1 set	10 set
<b>Set of tungsten carbide electrodes (24 pieces)</b>			
consisting of: • 3 pieces each 1.0 mm round (Art.-Nr. 0 700 036) • 3 pieces each 1.3 mm round (Art. no. 0 700 046) • 3 pieces each 1.8 mm round (Art. no. 0 700 047) • 3 pieces each 2.3 mm round (Art. no. 0 700 048) • 3 pieces each 1.1 mm square (Art. no. 0 700 039) • 3 pieces each 1.6 mm square (Art. no. 0 700 040) • 3 pieces each 2.1 mm square (Art. no. 0 700 041) • 3 pieces each 2.1 mm triangular (Art. no. 0 700 042)	<b>0 700 034</b>		

