



## **8311**

New generation of  
ultrasonic welding machines

# 8311 Ultrasonic

*You'll love it*





## ULTRASONIC INNOVATION: PFAFF 8311

With the new 8311, PFAFF INDUSTRIAL introduces a new generation of ultrasonic welding machines. With more than 30 years experience in rotary ultrasonic welding, the engineers at PFAFF have successfully developed this process even further. In addition to the regulation of speed and welding energy, the new 8311 allows the force measured during welding to be measured and kept constant - a true world first and a quantum leap in textile ultrasonic welding. Adjusting and handling the machine becomes much easier. The process becomes clearer, more reproducible and easier to understand. In short, the machine is taken to a new level.

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## GOOD FOR THE FABRIC - GOOD FOR THE ENVIRONMENT

The new PFAFF 8311 combines all the physical advantages of ultrasonic welding with the whole range of technological sewing experience. On the PFAFF 8311 the workpiece is held between the sonotrode and the anvil wheel and welded continuously under pressure. When welding continuously by the ultrasonic method, the material to be welded will be subjected to rapid changing pressure vibrations. The heat develops because of molecular vibrations beneath the material surface, for thin materials within the immediate vicinity of the actual weld. Ultrasonic welding with the PFAFF 8311 is a modern, innovative and economic seaming technology with many advantages compared with conventional sewing.

### Superb features and advantages of welding:

- No consumables are used (no thread, no needle, no glue)
- High, continuous production speed (no change of thread, no thread breakage, no skip stitch)
- Lingerie items are comfortable to wear due to a smooth seam
- With the selection of the welding wheel (anvil wheel) the customer can determine the design of the seam. At PFAFF there are around 50 welding wheel types available for all possible applications
- With ultrasonic and the appropriate welding wheel, a continuous, watertight and airtight seam can be made. So this seaming method is predestined for use in protective clothing or similar items.

## NEW APPLICATIONS - NEW PROSPECTS

The new PFAFF 8311 enables good weldability of almost all thermoplastic or synthetic foils, laminates, textiles and nonwovens. Generally, pure textiles are to be preferred; mixed textiles containing up to 30% other fibers may also be used. Based on the weldability the areas of application are defined:

### Technical section:

Filter bags, health care articles, medical mattresses and pillows, needle felts, operation sheets, foils, bullet proof vests, blinds and awnings, pleated filter, shower curtains, spacer fabrics, seat covers and many more

### Garment section:

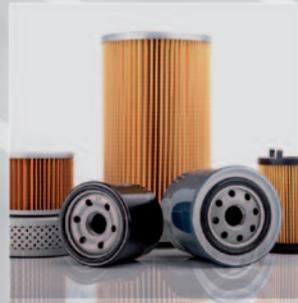
Outdoor garment, protective clothing, bras, lingerie, gowns, masks & drapes, softshells, sport garments, clean-room garments and many more

### Automotiver section:

Vehicle interior and insulation item, protective car covers, sunshades and many more



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## KEY COMPETENCE WELDING

Ultrasonic welding technology has made considerable progress in recent years. PFAFF INDUSTRIAL is without a doubt the technology leader and pacesetter in the industry and has applied numerous innovations from sewing engineering to welding. "Welding" today is more than merely the manufacturing of laminates or technical nonwovens. The new PFAFF 8311 allows complete garments to be made up, as the proven solutions from sewing engineering such as "differential feed for creating curves", "seam section programming" or "edge trimming" have been successfully implemented in the ultrasonic welding machines.



## FEATURES OF THE PFAFF 8311:

- Seam distances or operating cycles can be programmed (sequence welding)
- The energy adjusts to the speed (via a pedal) = Dynamic welding
- Total reproducibility of the welding process
- Agreeable, ergonomic ultrasonic welding frequency of 35 Khz (silent production)
- Smart functions: Seam end detection, ply detection (e.g. cross seams)
- New touch screen (simple handling with user-friendly icons)
- Differential feed: Separate drive for sonotrode and anvil wheel; that means smooth, non-distorted seams or the possibility of adding fullness
- Possibility of spot welding (tacking)
- No start/stop – marks
- Lighting from above and below for lower ply visualization (Option)
- Seam cooling device from above and below (Option)
- Cross mark laser for precise start position (Option)
- No compressed air necessary

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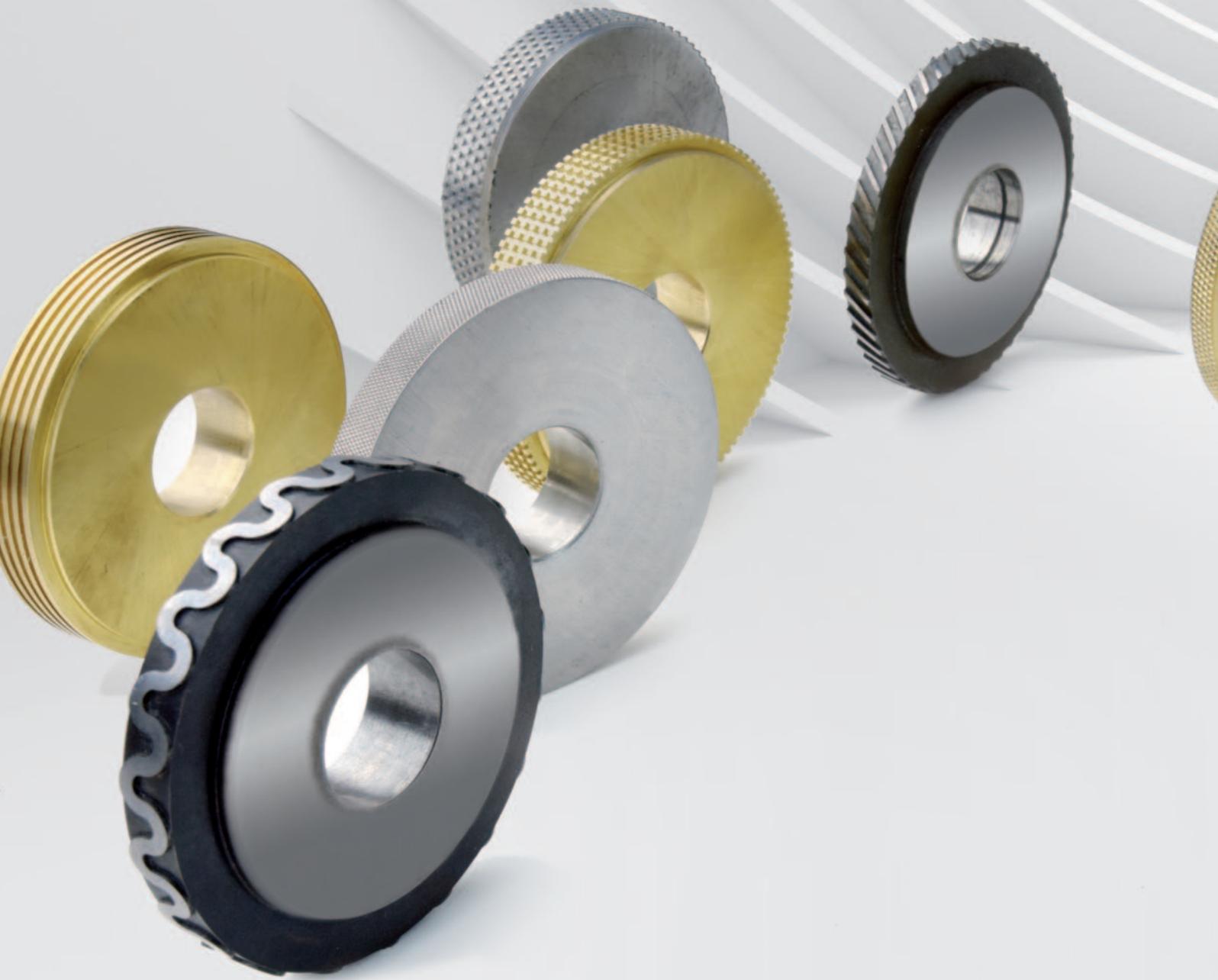




## **INNOVATION:** THE 8311 CONTROLS THE WELDING FORCE

In addition to regulation of speed and welding energy, the new 8311 allows to measure the force during welding and to keep it constant - a true world first and a quantum leap in textile ultrasonic welding. The continuous measurement and regulation of all welding parameters (speed, energy AND force) ensures a significant improvement of the welding result and makes a significant contribution to increase process reliability in ultrasonic welding. In practice, the welding energy and welding force adapts to the material and the welding speed.

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## **THE RIGHT WHEEL:** FOR YOUR APPLICATION!

The choice of welding wheel determines both the functionality (e.g. seam tightness or elasticity) and the design of the seam. Experienced engineers and technicians at PFAFF will recommend the wheel that best suits the customer's required operational step. An unrivalled range of wheels for all applications is available for PFAFF INDUSTRIAL ultrasonic machines. Use the anvil wheel of your ultrasonic welding machine to customize your seam design. We offer milling and engraving your welding wheel based on your requirements or samples. This will make your weld seam unique!

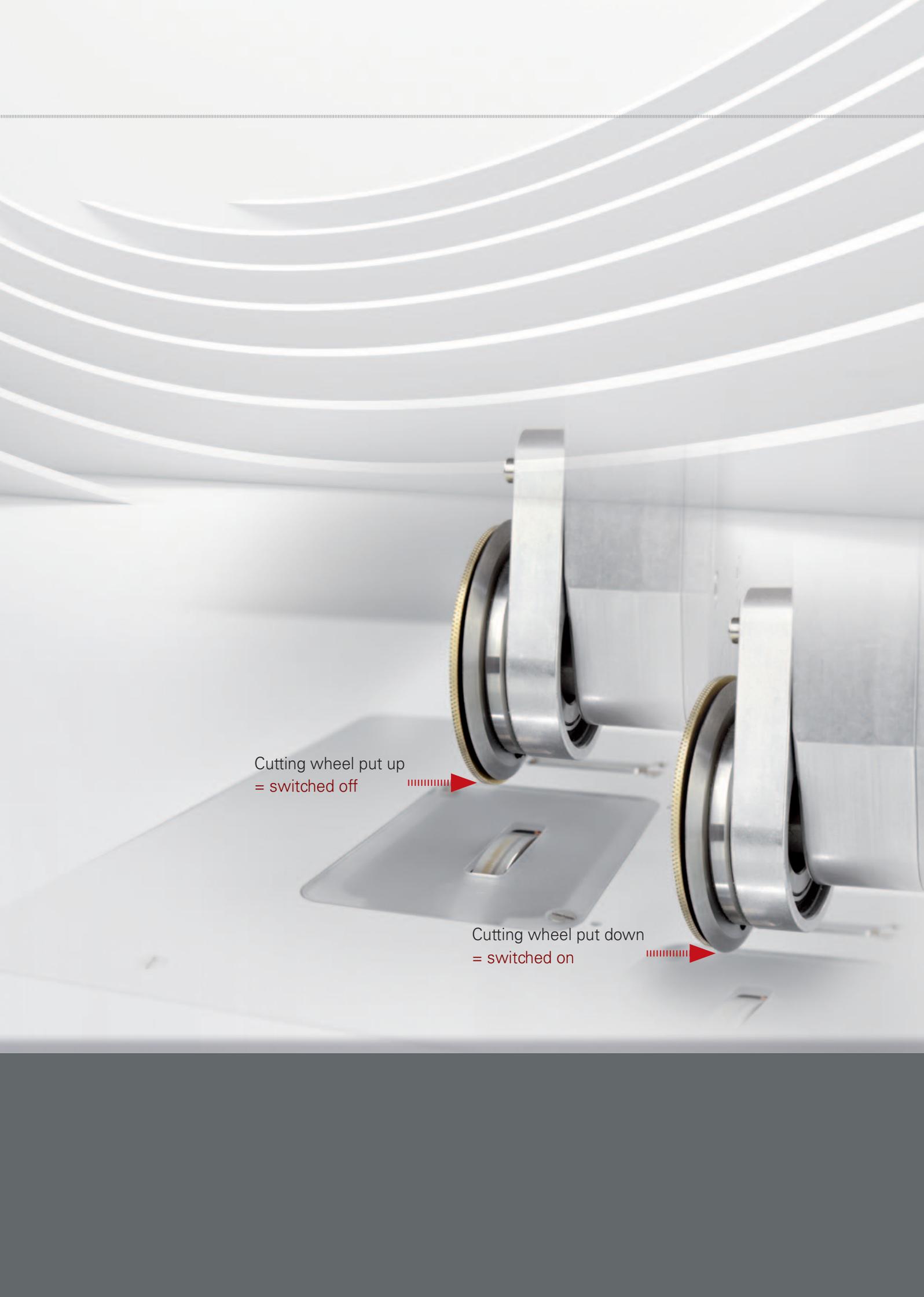


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## **C&S DUAL:** WELDING + CUTTING (SHIFTABLE)

PFAFF 8311-105/001: Welding and cutting in ONE operation. This double-wheel solution (C&S DUAL) features two anvil wheels (one for cutting and sealing and the other one to realize the second weld seam) on one post, but on separate shafts. With this unique solution the load may be individually adjusted – the two wheels are still running in sync. The machine may be adjusted better and more specifically to the material at hand and increases the process reliability when welding and cutting to weld seams. The minimum distance between weld seam and cutting is around 1 mm. The key feature of this version - the cutting wheel can be switched on and off via the touch control panel.



Cutting wheel put up  
= switched off

Cutting wheel put down  
= switched on

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## C&S: WELDING + CUTTING = MICROSEAM

**PFAFF 8311-005/001:** Welding and cutting in ONE operation (Cut & Seal) with one wheel (steel sonotrode). A minimum seam width (micro seam) at high firmness is the key benefit of this solution. The flat seam ensures a high wearing comfort. With that single-wheel solution, the tightest radii and curves can be welded effortlessly. In addition, the microseam can be taped with a taping machine PFAFF 8303 or

PFAFF 8330 (depending on the application)



**New:** Cutting wheels with a rough transport surface (plasma-nitrided) for improved grip when working with difficult materials.

Cut & Seal micro seam  
= without seam overlap

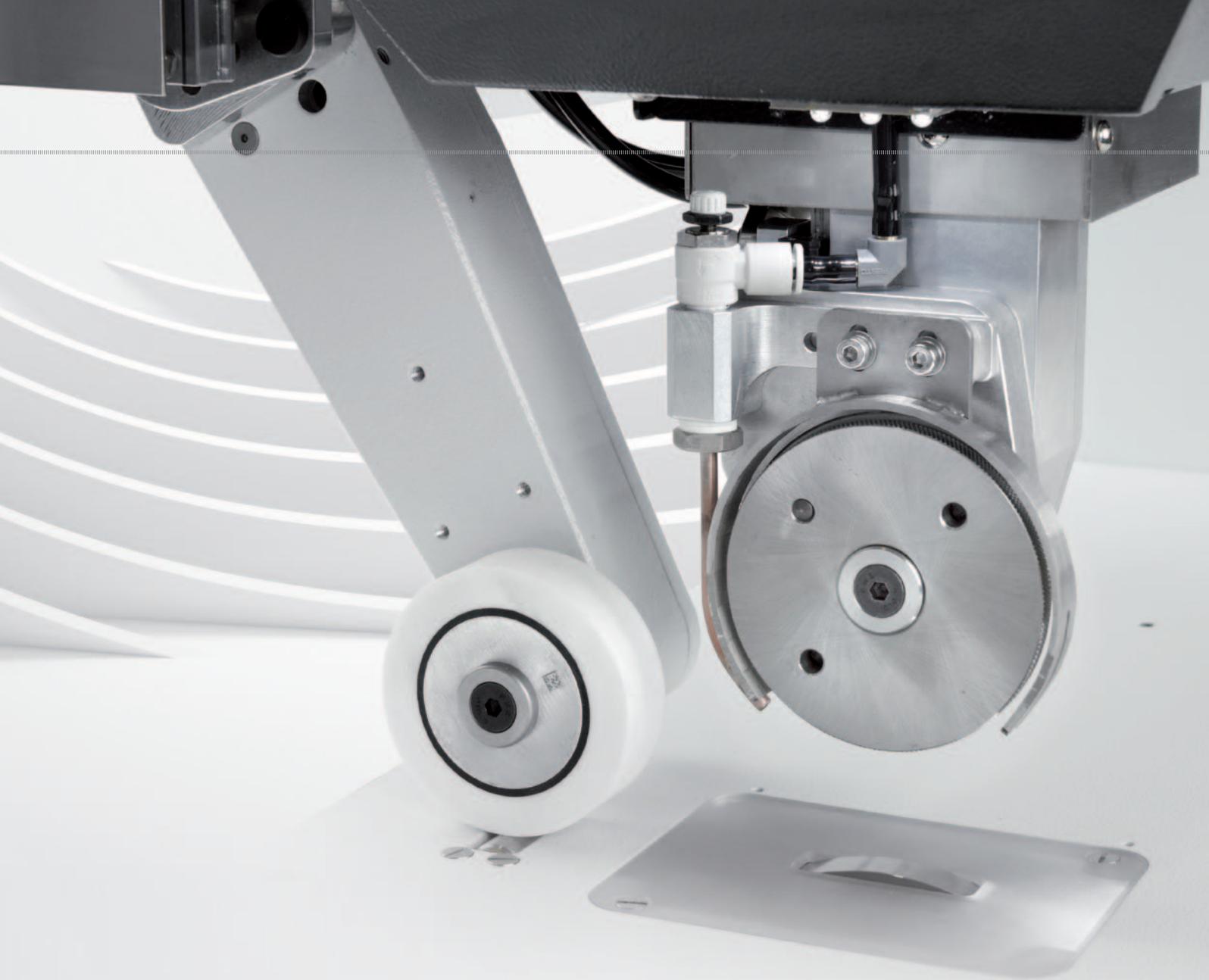


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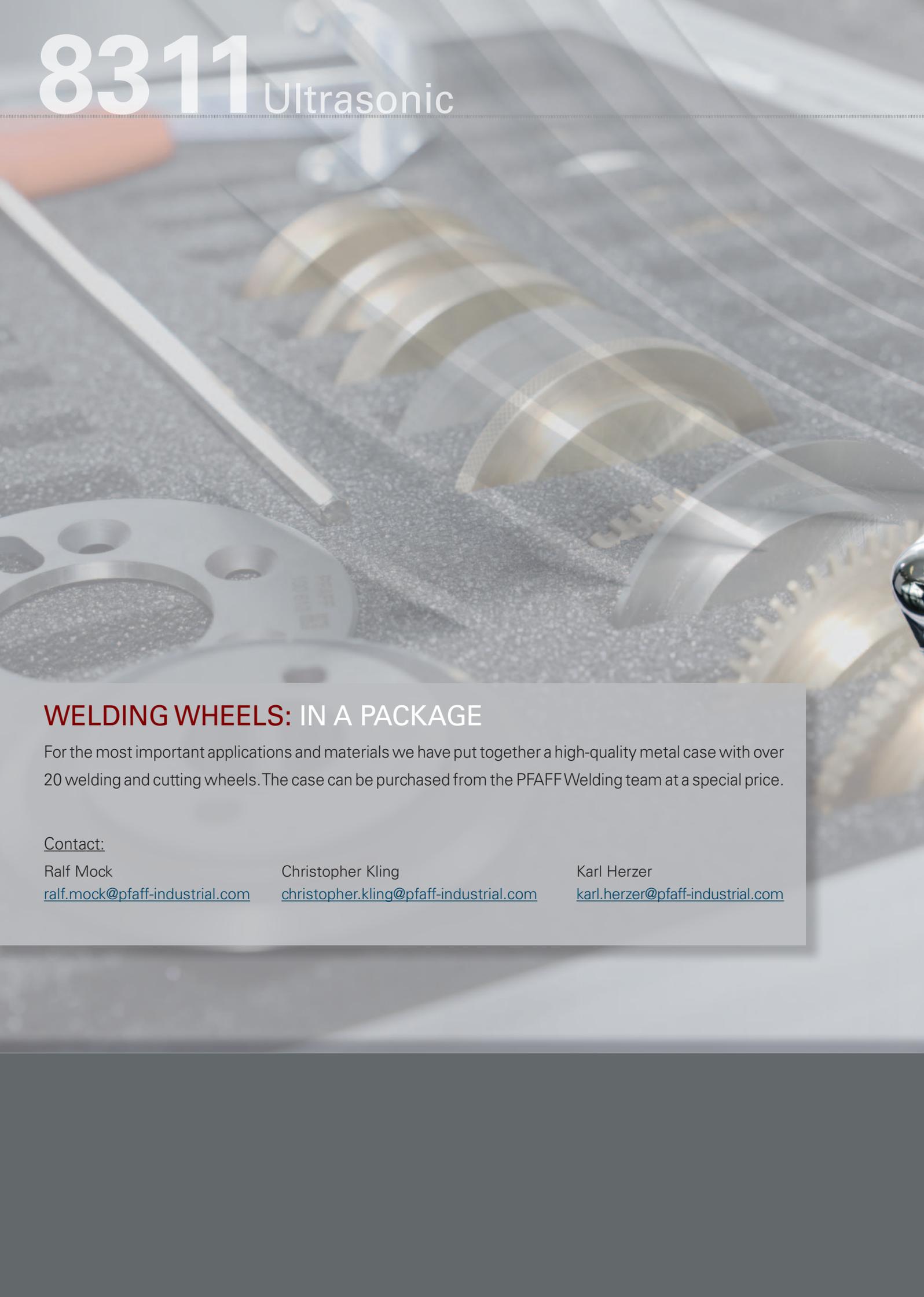


## **PULLER concept:** PERFECT PULLING AND GUIDING

Pullers perform two functions, both pulling AND guiding the material. Two puller concepts are available for the PFAFF 8311. The motorized puller is ideal for use with heavy materials or longer material webs. It can be switched on via the touch control panel. It also has a differential function, just as with sewing machines. The operator can use this to increase or reduce the puller feed rate with respect to the controlled welding speed. This differentiation helps eliminate ripple when working with difficult materials. The alternative single-parallel puller (not motor-controlled) can be adjusted via adjusting screws on the left and right.



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## WELDING WHEELS: IN A PACKAGE

For the most important applications and materials we have put together a high-quality metal case with over 20 welding and cutting wheels. The case can be purchased from the PFAFF Welding team at a special price.

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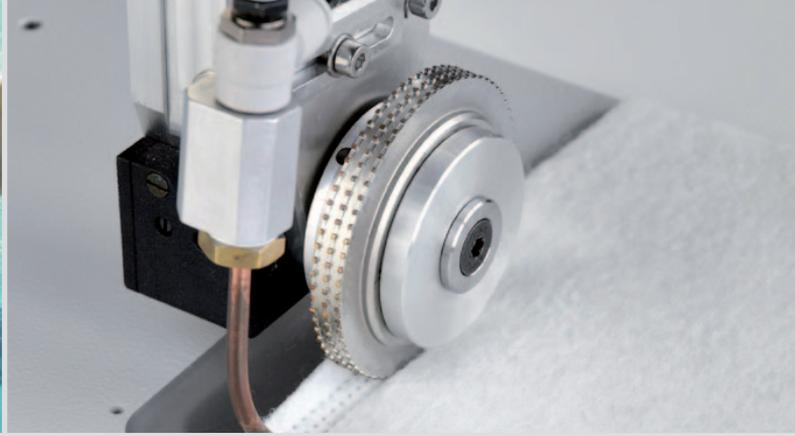
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**...and what is your application?**



## Technical Data:

**Welding speed:**

0.1 - 10.0 m/min. (Option: 20 m/min.)

**Seam width:**

0,5 – 10 mm

**Welding pressure:**

Ø 500 N

**Welding power:**

max. 400 W

**Material thickness:**

> 50 µ / up to approx. 300 g/qm

**Power supply:**

230 V, 50/60 Hz, 16 A

**Consumption:**

4 A, 800 VA

Subject to alternations in design, dimensions and weight.

Pictures/graphics could show additional equipment.

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