

# PTZ Weidner Separation technology

“The new world of ring separation technology”



With resource efficiency  
secure competitive advantages

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## Rings from PTZ Weidner in use worldwide





INNOVATION BW  
2015  
Innovationspreis Baden-Württemberg  
Dr.-Rudolf-Eberle-Preis  
Preisträger 2015



## Presentation of PTZ Weidner

**PTZ Weidner cuts rings and tubes with a cutting machine developed in-house.**

**The constant further development of this cutting technology enables a wider range of ring dimensions and materials for our customers.**

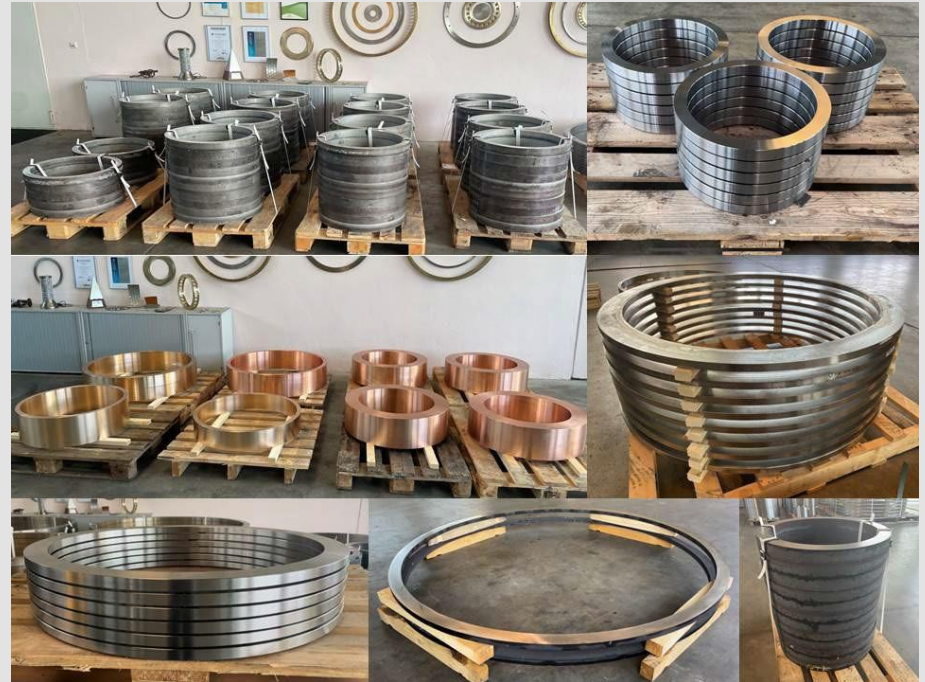
**We have over 35 years of experience in the cutting technology of copper, steel, stainless steel, titanium or nickel-based materials.**

**Seamless rolled, forged or centrifugally cast rings are machined by us.**

## Application area for the rings

These rings are used in almost every conceivable branch of industry:

- Mechanical engineering
- Mining
- Armaments
- Aerospace
- Wind energy plant construction
- Chemical and plant engineering
- Offshore technology
- Commercial vehicle construction
- Shipbuilding
- Electric motor construction
- Medical technology
- Hydrogen plants



## Intended use for the rings

These rings are installed in different sizes as:

- Flanges
- Pressure rings
- Cellrings
- Sealing rings
- Turbine rings
- Adjusting rings
- Bearing rings
- Slewing rings
- Short-circuit rings
- Gear wheels



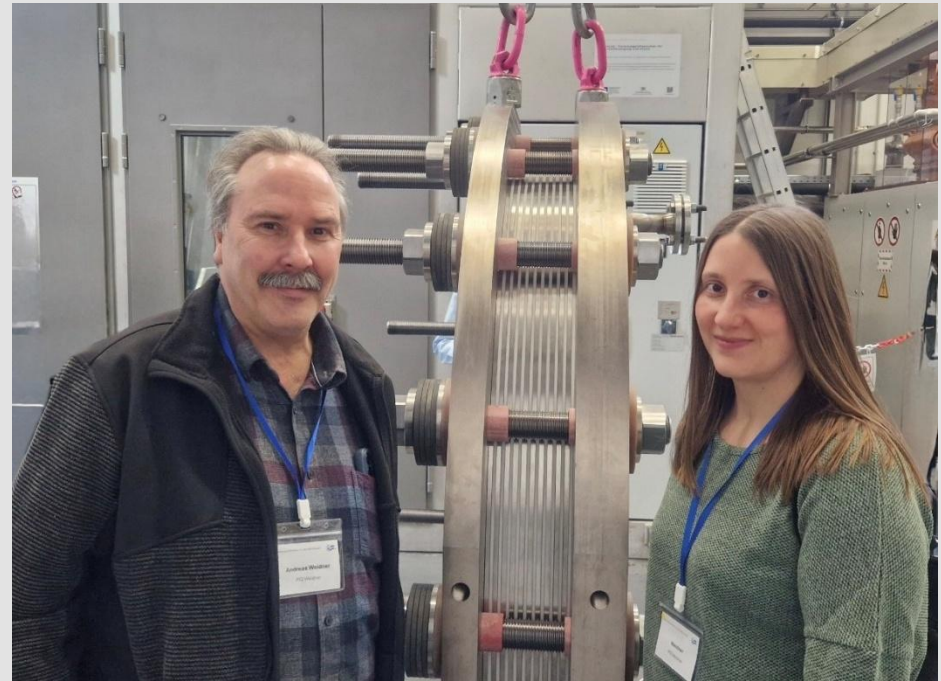
## PTZ Weidner Presentation – Hydrogen

**With our innovative ring separation technology,  
we help produce green hydrogen more cost-effectively.**



## PTZ Weidner Presentation – Hydrogen

**With our innovative ring separation technology, we support the cost-effective production of green hydrogen. Project: Mega Stack**



# Future Technology: Green Hydrogen Energy

Rings from PTZ Weidner for the newly developed electrolysis systems from the ZSW research institute



Zentrum für Sonnenenergie- u...

2.128 Follower:innen

1 Monat •

Mit einem grünen Knopf hat Wirtschaftsministerin Dr. Nicole Hoffmeister-Kraut gestern unsere [#Elektrolyse](#)-Anlage eingeschaltet. Nach zw ... mehr



Grünes Licht für die Elektrolyse: Ministerin Dr. Nicole Hoffmeister-Kraut weht Elektrolyseu...

## Future technology green energy hydrogen

**Precisely separated steel rings for electrolyzers for the production of hydrogen. Material and finishing included on request.**



## Future technology green energy hydrogen

### Precisely separated steel rings for electrolyzers



## Future technology green energy hydrogen

### Precisely separated steel rings for electrolyzers



Thanks to our cold, deformation-free and precise cutting process, we achieve high savings in terms of material and processing costs, even with very large ring diameters.

## Future technology green energy hydrogen

**In accordance with the pressure vessel construction guidelines we use multiple seamless rolled steel rings are used as the material for the precise separated rings.**

**Thanks to our re-stamping authorization, our customer and we are always able to find the position of each individual ring in the bushing at any time.**

**The marking of these rings is applied continuously across the bushing, the separated ring through to the finished ring. An acceptance certificate for the material is included in accordance with TÜV and customer specifications.**



## Separate rings for electrolysis systems



**An electrolyzer for producing hydrogen consists of individual steel or stainless steel rings**

# Minister of Economic Affairs Dr. Hoffmeister-Kraut



## Example of separating a large steel ring



## Example of cutting large steel rings



## Handling of a Large Steel Ring



## Examples of non-ferrous metal rings



## Examples of separating stainless steel and nickel-based rings



## Example of separating material 1.4404

Ring dimensions: Outer diameter 1230 mm,  
inner diameter 1090 mm with 70 mm wall thickness, 4 mm high, flatness 0.1 mm

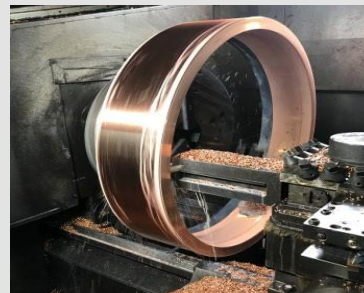


Austenitic stainless steel X2CrNiMo17-12-2



Surface quality 1.293 Ra

# Mechanical processing



# Mechanical processing



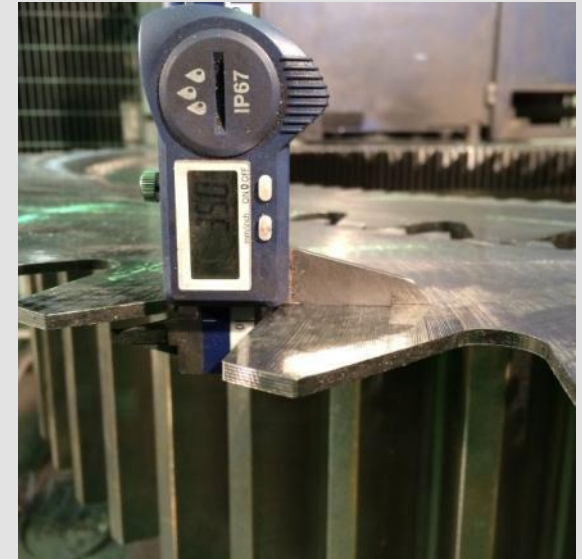
# Mechanical processing of various materials



## Special solutions



## Separation example gear wheel



**Material 42CrMo4**

**Hardened and tempered to 1200N/mm<sup>2</sup>**

**Outer diameter 1440 mm, 160 mm wall thickness**

**Temperature during cutting approx. 25 C°**

**Separated gear height 3.50 mm**



## From the raw part to the end product



**Highly rolled material efficiency    Precisely separated rings    Ready-to-install machined rings**

**Material X5CrNi18-10 (1.4301)**

**Stainless austenitic chromium nickel steel**

**Outer diameter 970 mm, inner diameter 800 mm, height 27 mm**

**After cutting, the rings were machined ready for installation.**

## Material grades

### There is nothing that we do not separate:

- **Structural steels** e.g.: 1.0116, 1.0570, 1.0044
- **Unalloyed, alloyed heat-treatable steels** e.g.: 1.0503, 1.6582, 1.7225
- **Heat-resistant steels** e.g.: 1.0426, 1.5415, 1.6368, 1.4922
- **Fine-grained structural steel** e.g.: 1.0487, 1.8932, 1.8933
- **Stainless steels** e.g.: 1.4301, 1.4404, 1.4541, 1.4571
- **Duplex** e.g.: 1.4462, 1.4410, 1.4501
- **Nickel-based** e.g.: 2.4602, 2.4665, 2.4819, 2.4602
- **Titanium** e.g.: 3.7025, 3.7165
- **Aluminium** e.g.: 3.3547, 3.3211
- **Non-ferrous metals** e.g.: 2.1293, 2.0070, 2.0966, 2.0971

## Advantages for our customers

The focus is on the enormous savings:

- **Less input material**
- **Faster production times**
- **Less energy required**
- **Less tool costs**
- **Lower machining costs**
- **Lower set-up costs**
- **High flatness and surface quality**
- **Deformation-free rings**

## Advantages for our customers

### PTZ Weidner can take over for you:

- **Material procurement  
(with works certificate and also with TÜV approval)**
- **Optimization of your components**
- **Cutting of individual rings**
- **Pre- and finish-machining of rings according to drawings**
- **Heat treatment of rings**
- **Finishing of the rings**
- **Organization of transports**

**Convince yourself of our significant cost and quality benefits for your company.**



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**PTZWEIDNER**®  
Präzisions- Trenn- & Zerspanungstechnik

## Company philosophy

# “The new world of PTZ separation technology”

Highest material efficiency

Lowest energy consumption

Very environmentally friendly

Stabilization of your competitive advantages

...with us...

always one **cut** ahead



...immer einen Schnitt präziser.