

JENBACHER

# DRIVING CIRCULARITY

Services that matter

REMANUFACTURING



# RESET AND REFRESH

The energy industry is increasingly dominated by the long-term need for viable economic solutions that efficiently and sustainably use resources and materials. INNIO Group's engineers put that need front and center as they work to extend engine and plant life cycles and drive the circular economy. With our cost-effective initiatives, you can boost your sustainability and gain a greener supply chain.

## Planning for the next life cycle

Based on your business model and service profile, our experienced Jenbacher Services technicians work to give your products another life, delivering strategies for replacement of engine components and supporting you in planning your entire engine's next life cycle.

## Your strategic partner

As your Jenbacher system's original equipment manufacturer (OEM), INNIO Group is your sustainable partner with a comprehensive Remanufacturing Program that drives circularity. Our engineers have designed our engines and their parts so that they can go through multiple life cycles. Even older units can be equipped with the latest technical developments to achieve top performance levels.

## Expertise counts

INNIO Group's operational knowledge is based on diverse industry expertise — from solutions for small biogas farmers up to the needs of large independent power producers and utilities. More than 25,000 Jenbacher engines have been produced for a wide variety of applications worldwide. On average, every second engine delivered returns to our global overhaul centers to be prepared for its next life. With extensive remanufacturing capabilities and overhaul centers globally, INNIO Group supports you with guidance for the right approach to keep your Jenbacher systems running as long as possible, based on your business purpose.



## SEAMLESS TRANSITION

As the experts who developed your Jenbacher energy systems, we know exactly which overhaul service is needed to keep your engine and components performing. We focus on both sustainability and a seamless transition, so you can continue to operate with minimal interruption.

### Tailored fit

Your overhaul solution is precisely tailored to your installation and operating conditions, so it fits into your plant just as well as the original. Our wide-ranging portfolio of remanufacturing solutions, with our reUp engine options and reUp spare parts, offers you a circular way of optimizing resources and materials.

### Going further on quality

Our stringent quality controls and extensive in-house testing capabilities help ensure excellent performance and reliability. At our overhaul centers, our technology expertise, fleet operability knowledge, and advanced manufacturing come together to give your engine a new lease on life. We are constantly evolving to make sustainable energy work for you today ... and in the future.



## YOUR OEM REMANUFACTURING ADVANTAGES



### Reduced environmental footprint and circularity

Whenever possible, we re-use resources and materials within our Remanufacturing Program. With our smart OEM remanufacturing process, we bring used parts back to life as our reUp parts. Our multistep process enables effective conservation of valuable resources, materials, and energy. This remanufacturing approach also helps make your supply chain more sustainable.



### High reliability and lower costs

Designed and produced by the OEM with a focus on reusability and multiple life cycles, these parts are overhauled and tested according to INNIO Group's factory-quality standards and OEM specifications. Our zero-defect policy helps ensure reliability and increased uptime. And, we provide the same warranty for our reUp products that we give to our new parts and engines.



### Product upgrades

In combination with our upgrades, our overhauls can bring your engines and components to the latest state of development.



### Proven success

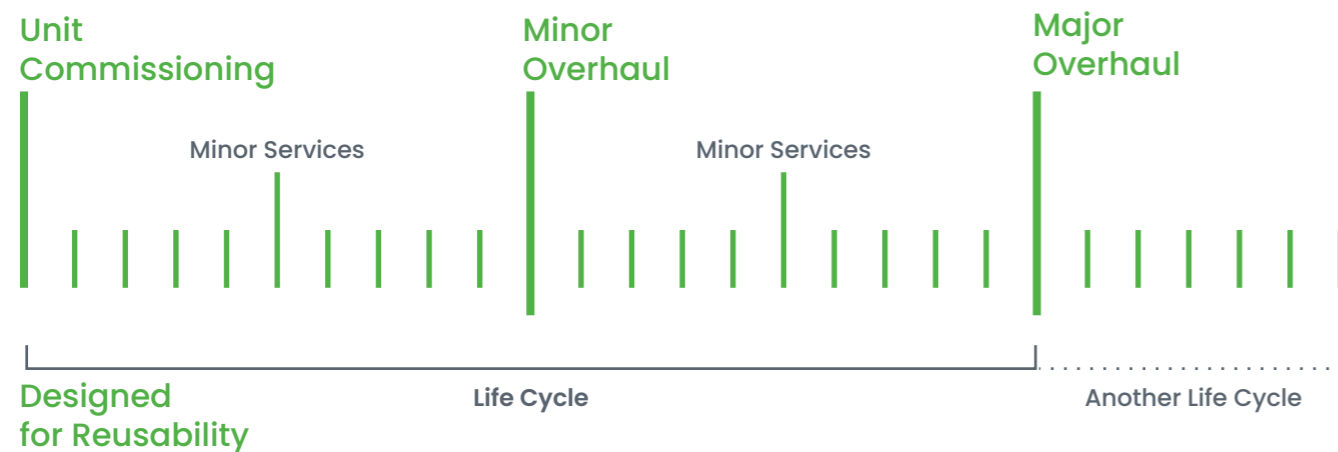
- 1.2+ million hours of skilled workers' remanufacturing experience
- >80% of overhauls delivered with technology upgrades
- Hundreds of overhauled engines annually
- Tens of thousands of overhauled components year over year
- Growing portfolio and ongoing development of new reUp components

# TAILORED MULTIPLE LIFE OPTIONS

## The Jenbacher remanufacturing portfolio

Your specific multiple life options are tailored to your individual needs. Your plant stays in operation for another life cycle with just the right amount of support.

With our support, your plant can operate for another life cycle



### Other services to consider over the life cycle of an engine

Over the life cycle of an engine, our customized service agreements give you more predictable life-cycle costs. All service events can be combined with optional upgrades for even better performance, reliability, and engine life.

# OUR REMANUFACTURING SOLUTIONS

## reUp engines

The engine is the heart of your power plant, and efficient engine performance allows you to operate with confidence. Choose from three different engine overhaul options for your engine's next powerful life cycle:

### reUp scope

### Your benefits

#### Basic - Shortblock

A cost-effective core engine replacement with our basic shortblock major overhaul solution using remanufactured parts

- Upfront delivery of a preassembled exchange core engine
- Cost-effective solution with basic scope of supply
- Most flexible overhaul solution

#### Extended - Longblock

Tailored to meet your specific needs, our extended longblock major overhaul solution provides you with a swift exchange through upfront delivery of a preassembled engine that has gone through a comprehensive engine test run at our Jenbacher test bench facilities.

- Upfront delivery of a preassembled exchange engine
- Fastest route for a new life
- Several upgrade offerings
- Full engine test run

#### Complete - Genset

Our full overhaul solution for your Jenbacher engine and generator allows you to plug and play your entire genset with a fully tested, highly functional unit that can be set up quickly at your site.

- Small on-site effort with plug-and-play solution
- Maximum available upgrade solutions
- Full unit test run

## Exchange engines, the fastest way for all three overhaul reUp engine scopes

Our engine exchange program provides preassembled and overhauled reUp engines for quick on-site replacement. We will deliver your engine ahead of schedule to keep your downtime as short as possible for a full new engine life.

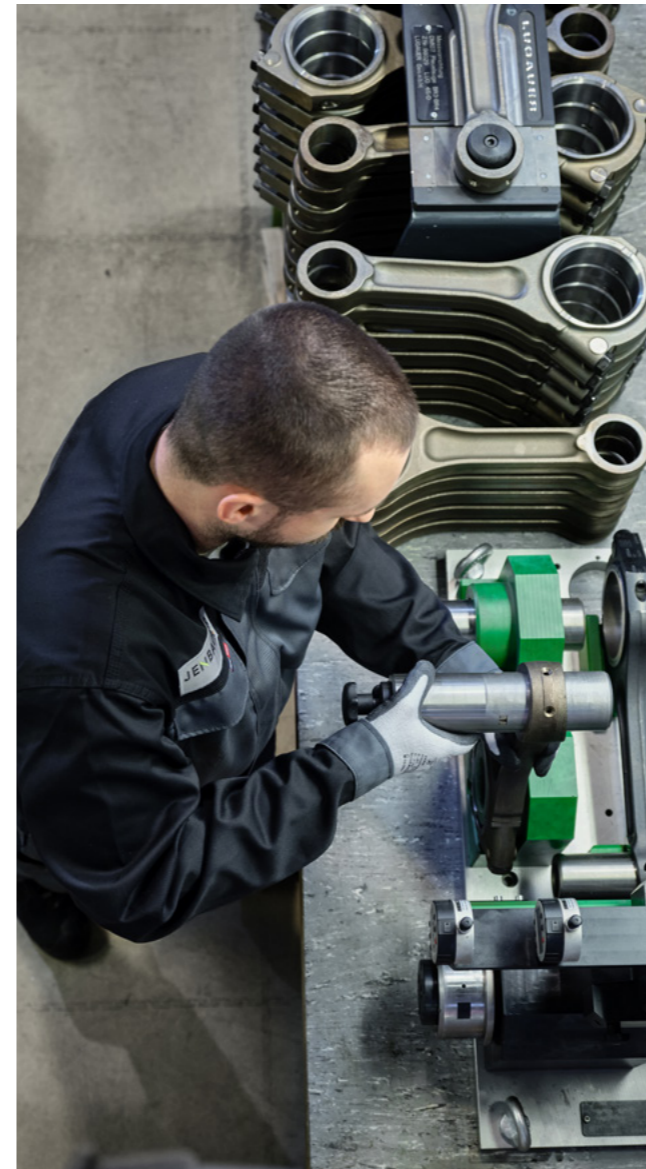


### Fully equipped on-site test bench in Jenbach:

For certification, each engine genset and longblock must pass an extensive test, including all major performance metrics, before delivery to you.

## reUp spare parts

An engine is only as good as the parts inside it. Choose from our reUp spare parts portfolio<sup>1</sup> to support your ongoing maintenance planning:



- Bypass valves
- Conrod
- Cylinder heads
- Flat tappet
- Intercooler
- Lube oil pumps
- Pre-chamber gas valves
- Roller tappet
- Servomotor ProAct
- Servomotor STG
- Spark plug sleeve
- TecJet<sup>2</sup>
- Water pumps

We are constantly working to extend our remanufacturing portfolio with new component additions and the latest configurations.

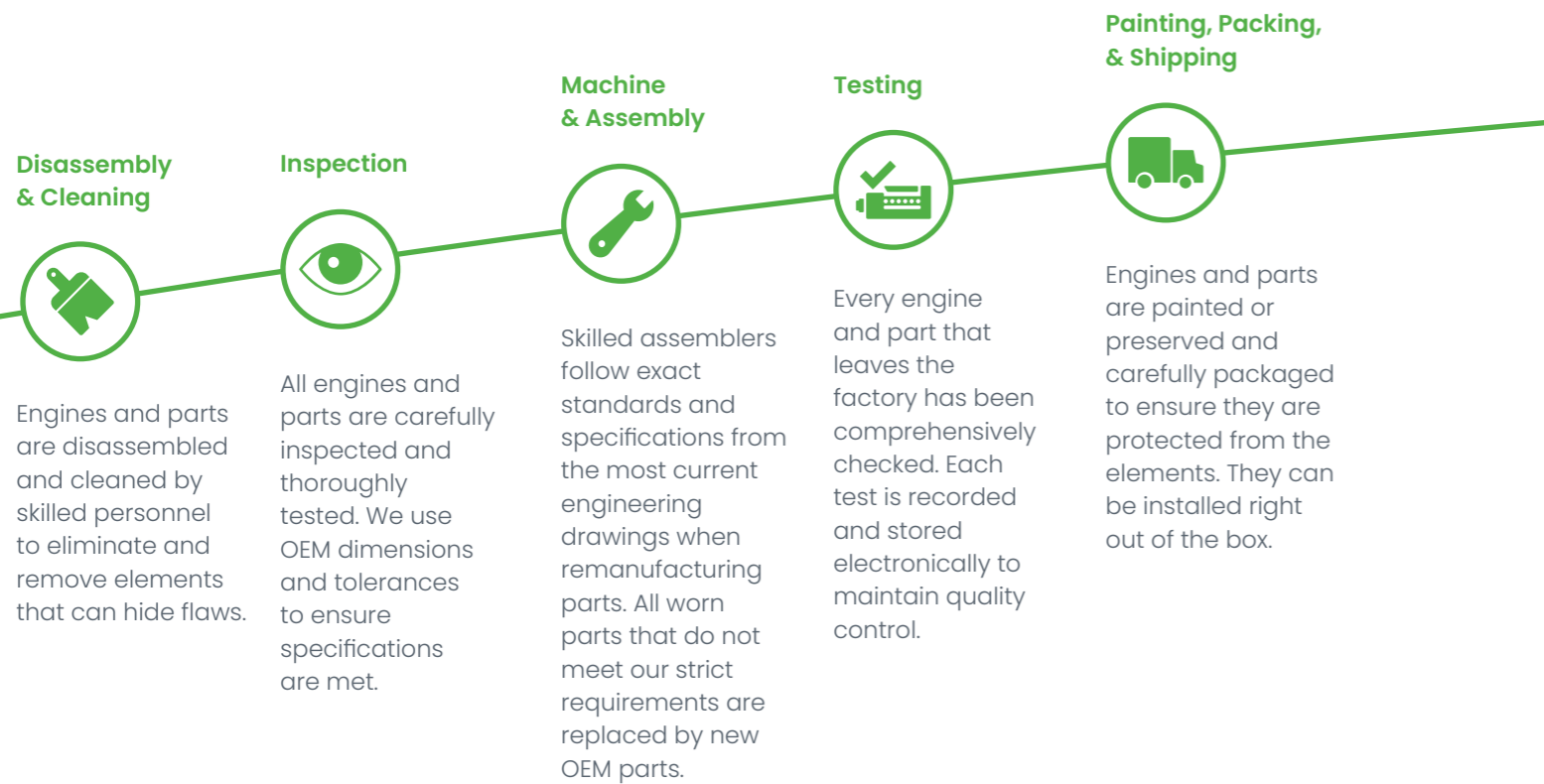
### Your chance to support circularity and gain economically

You can help us strengthen the circular economy to make the most out of available material. Visit our Jenbacher Services website at [jenbacher.com/en/services](https://jenbacher.com/en/services) for more details on our core return initiative.

<sup>1</sup> Applicability depends on engine type.  
<sup>2</sup> Indicates a trademark of Woodward Inc.

# OUR REMANUFACTURING PROCESS

With our holistic and systematic five-step remanufacturing process, our reUp engines and reUp parts are carefully re-assembled and comprehensively tested before delivery. In this way, we help ensure that all components work together in harmony for optimal system performance.



INNIO Group maintains a newly remanufactured – not just rebuilt – attitude. In fact, INNIO Group's Remanufacturing Program designs, engineers, and delivers only genuine components that meet our exact standards and specifications.

# STARTING A FULL NEW LIFE

## Adding efficiency and reducing costs with an upgrade version

### Dominikus-Ringeisen-Werk, Germany

For more than 20 years, church foundation Dominikus-Ringeisen-Werk (DRW) has operated three Jenbacher Type 3 combined heat and power (CHP) units at its largest location in Bavaria. In 2013, after the first 60,000 hours of operation, DRW upgraded from version B to version C. Eight years and another 60,000 operating hours later, the foundation again opted to upgrade to the latest technology – the Jenbacher Type 3F – as part of a major overhaul.

### 3F major overhaul and upgrade customer benefits

- **Greater efficiency**  
Up to 2 percentage points improvement in fuel usage
- **Lower emissions**  
Smaller environmental footprint through compliance support with THC emissions regulations
- **Reduced oil costs**  
Life-cycle cost reduction due to less consumption and longer lube oil lifetime
- **Convenient upgrade**  
On-site major overhaul of the installed engines
- **Greater runtime**  
Maintenance interval extension to 80,000 operating hours before next major overhaul

### KEY TECHNICAL DATA

<b>Installed engines</b> <small>(Upgrade: 2013 - 3C version, 2021/22 - 3F version)</small>	3 x J312 (F)
<b>Electrical output</b>	1.6 MW
<b>Thermal output</b>	2 MW
<b>Energy source</b>	Pipeline gas
<b>Commissioning</b> <small>(3B version)</small>	1999/2000

»Jenbacher Type 3 engines have kept us up and running reliably since 2000. Supported by Jenbacher experts with their focus on innovation, we keep pace with the latest developments. This is our second version upgrade, so our engines are now in their third life cycle. And thanks to the upgrade, they now run even better and longer than before. We look forward to working with Jenbacher experts throughout the next life cycle and feel well-equipped for the future.«

Thomas Roth,  
Head of Power and Engineering, Dominikus-Ringeisen-Werk (DRW, church foundation under public law)



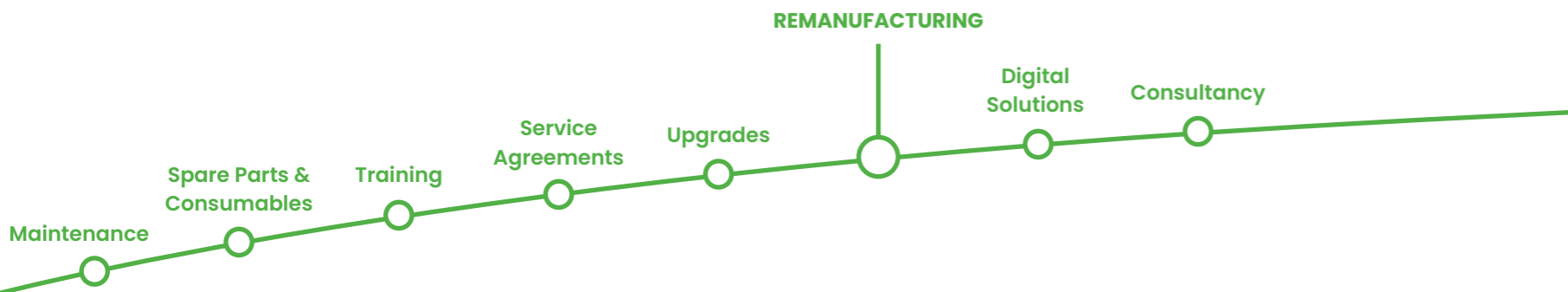
**Upgrade video:**  
Scan the QR code for more information on the engine version upgrade at DRW.



**3F product video:**  
Scan the QR code to find out more about the customer benefits of the Jenbacher next-generation 3F engine platform.

# JENBACHER SERVICES SOLUTIONS

Our global Jenbacher Services team knows your Jenbacher energy system best. As your OEM, INNIO Group provides you with a full suite of life-cycle solutions – from original parts to reliable remote and on-site services – all enabled by our cutting-edge myPlant technology.



Your Jenbacher Services team

# TOTAL SUPPORT FROM INNIO GROUP

## Delivering flexibility and experience

Drawing on more than 65 years of power innovation, INNIO Group’s Jenbacher technology provides hydrogen-ready power generation to businesses and industries striving for a greener future. Today’s highly efficient Jenbacher systems deliver energy independence through low-emission, secure, and cost-effective energy solutions.

## With key benefits from our powerful digital platform

Through our myPlant Performance digital platform, we provide remote support for our connected customer-operated systems around the globe. Today, more than 12,000 Jenbacher systems are managed remotely, and more than 1,200 billion data points are evaluated annually – a powerful proof-point of INNIO Group’s knowledge and experience.

## Backed by our commitment to sustainability

At INNIO Group, we commit to the highest ethical standards and implement best practices in governance and compliance. A sustainable way of conducting business is front and center of everything we do. By selecting us as your supplier, you enter a long-term relationship with a reliable partner. Our fundamental mission to deliver a sustainable future and empower the world’s transition to net zero was recognized with prestigious EcoVadis ratings. In 2021, we joined the “Race to Zero” campaign, initiated by the United Nations, to bring together global leadership for an accelerated transition to a net-zero future. Thanks to our efforts, INNIO Group’s ESG Risk Rating again secures our number one position across more than 500 companies globally in the machinery industry assessed by Sustainalytics.<sup>3</sup>

<sup>3</sup> Ratings took place in March 2023.

## HOW WILL YOU BENEFIT?

Contact an expert from Jenbacher Services to learn more.

We keep your engine running throughout – and even beyond – its original life. Reach out to us to plan for another life cycle with our reUp engines and reUp spare parts portfolio.

Reach out today by completing the contact form online:  
[jenbacher.com/contact](https://jenbacher.com/contact).





## About INNIO Group

INNIO Group is a leading energy solution and service provider that empowers industries and communities to make sustainable energy work today. With its product brands Jenbacher and Waukesha and its digital platform myPlant, INNIO offers innovative solutions for the power generation and compression segments that help industries and communities generate and manage energy sustainably while navigating the fast-changing landscape of traditional and green energy sources. INNIO is individual in scope, but global in scale. With its flexible, scalable, and resilient energy solutions and services, INNIO enables its customers to manage the energy transition along the energy value chain wherever they are in their transition journey.

INNIO is headquartered in Jenbach (Austria), with other primary operations in Waukesha (Wisconsin, U.S.) and Welland (Ontario, Canada). A team of more than 4,000 experts provides life-cycle support to INNIO's more than 55,000 delivered engines globally through a service network in more than 100 countries.

In March 2023, INNIO's ESG rating ranked first out of more than 500 companies worldwide in the machinery industry assessed by Sustainalytics.


For more information, visit the INNIO website at [innio.com](https://innio.com), the Jenbacher website at [jenbacher.com](https://jenbacher.com) or the Jenbacher Services website at [jenbacher.com/en/services](https://jenbacher.com/en/services).

Follow INNIO Group and its brands on  (formerly known as Twitter) and .



**ENERGY SOLUTIONS.**  
EVERYWHERE, EVERY TIME.

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