



reUp
Waukesha remanufactured parts
program

Q3 2021 Release

Waukesha reUp New Products Webinar

AGENDA

- Waukesha R&O Operations
- New Parts Releases
- reUP Engine & Short/Long Block Offerings
- reUp Resources

Waukesha R&O Operations



reUp Crankcase Machining

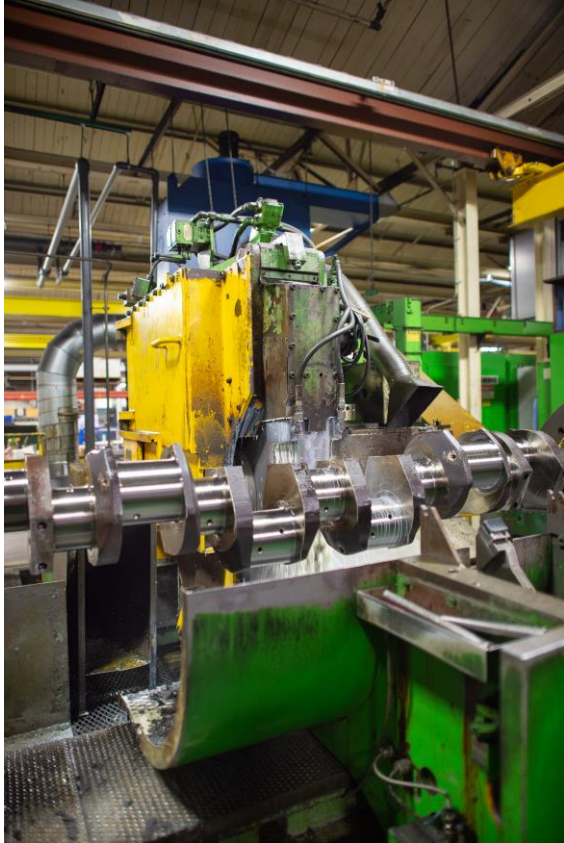


Fire deck & liner bore machining



Main bore machining

reUp Crankshaft Reman



Crankshaft Grind

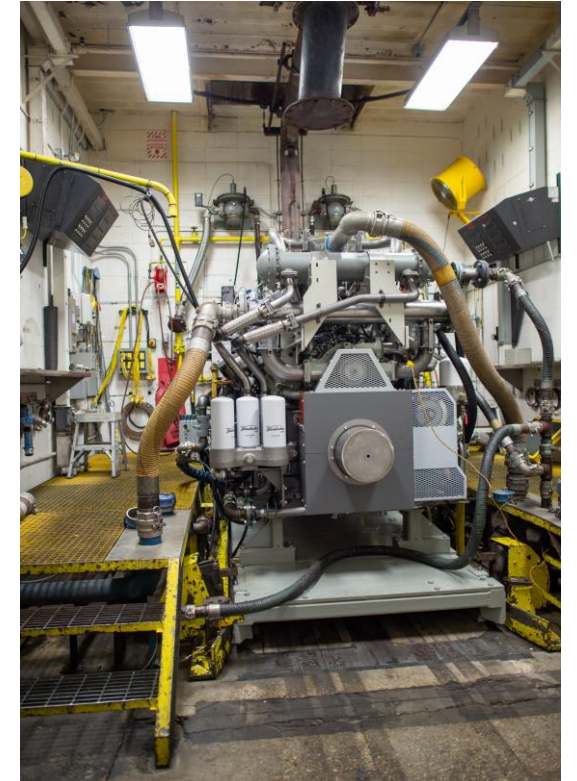
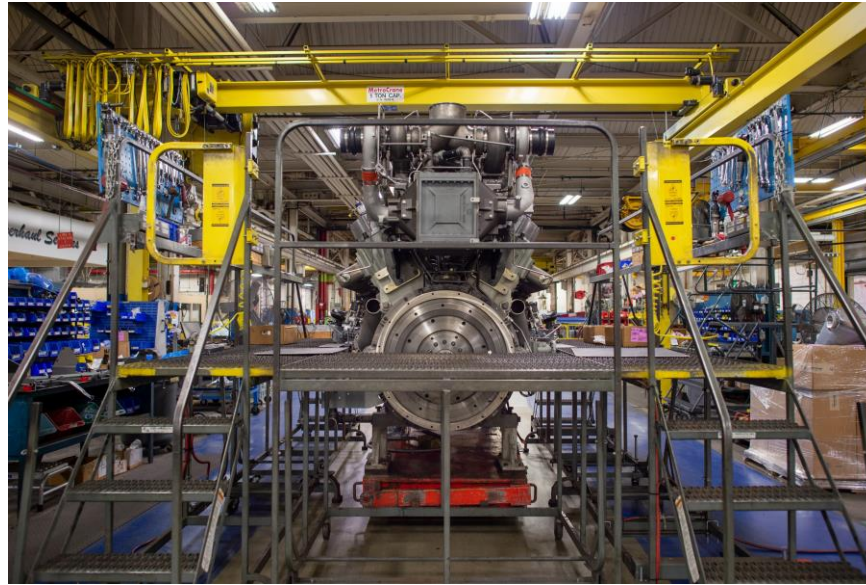
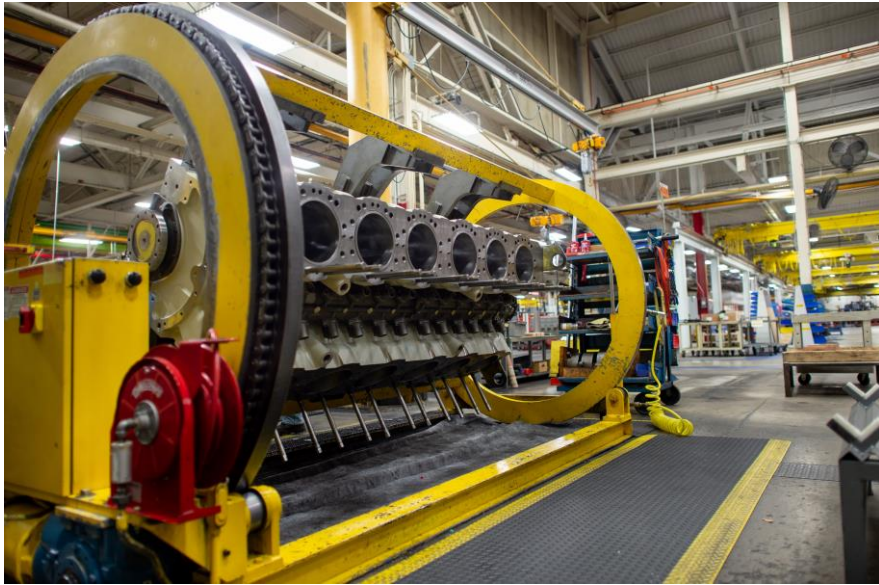


Crankshaft Lapping



Crankshaft Final Inspection

Reman in Waukesha



reUp Engines are assembled by trained personnel with the same equipment, processes, and tools used to build new units

Waukesha Reman - Inventory



reUp Engines & Short Block inventory available



reUp New Part Releases Q3 2021



3Q reUp Product Launches



3Q Waukesha reUp Update Webinar



As a leader in natural gas compression and power generation, Waukesha's reUp program uses state-of-the-art technology and assembly procedures to guarantee your remanufactured engine and parts quality and performance.

Join us for our quarterly webinar
Featuring new reUp products and parts
August 31st, 2021, at 10:00 a.m. CDT

Reserve your spot today!

Reserve your spot today!

Join INNIO Waukesha's reUp Engine & Parts Product

Please complete the form to get in contact with an INNIO expert.

First Name:

Last Name:

CONTACT US

Optimize your operations with the latest reUp engines and parts.
 Contact us to find out more.

Part Number	Description
REM-205111C	reUp VHP 6 Cyl. Crankshaft
REM-A200420D	reUp VHP 12 Cyl. Small Bore Case
REM-C214311B	reUp VHP Cam Follower
REM-G211859	reUp P9390 Oil Cooler
REM-251014	reUp VHP 16 Cyl. Turbocharger
REM-211249U	reUp VHP 16 Cyl. GSI S2 Turbocharger
REM-211249Y	reUp VHP 16 Cyl. GL S2 Turbocharger
REM-A267623D	reUp P9390 Camshaft
REM-AA257923A	reUp P9394 Camshaft
REM-A300111B	reUp VGF 6 Cyl. Crankshaft
REM-A301111B	reUp VGF 8 Cyl. Crankshaft
REM-A302011G	reUp VGF 12 Cyl. Crankshaft
REM-A303111F	reUp VGF 16 Cyl. Crankshaft
REM-300323	reUp VGF 6 Cyl. Camshaft
REM-301623	reUp VGF 8 Cyl. Camshaft
REM-A302223	reUp VGF 12 Cyl. Camshaft (Left Bank)
REM-A302323	reUp VGF 12 Cyl. Camshaft (Right Bank)
REM-A303223	reUp VGF 16 Cyl. Camshaft (Left Bank)
REM-A303323	reUp VGF 16 Cyl. Camshaft (Right Bank)

Check out our reUp Engines and Parts in our [reUp Catalog](#).

reUp Product Launch Webinar August 31st

reUp VHP 12 Cyl. Small Bore Case

VHP

APPLICABLE MODELS:

- ✓ L5774LT
- ✓ L5794LT
- ✓ L5794GSI

PART

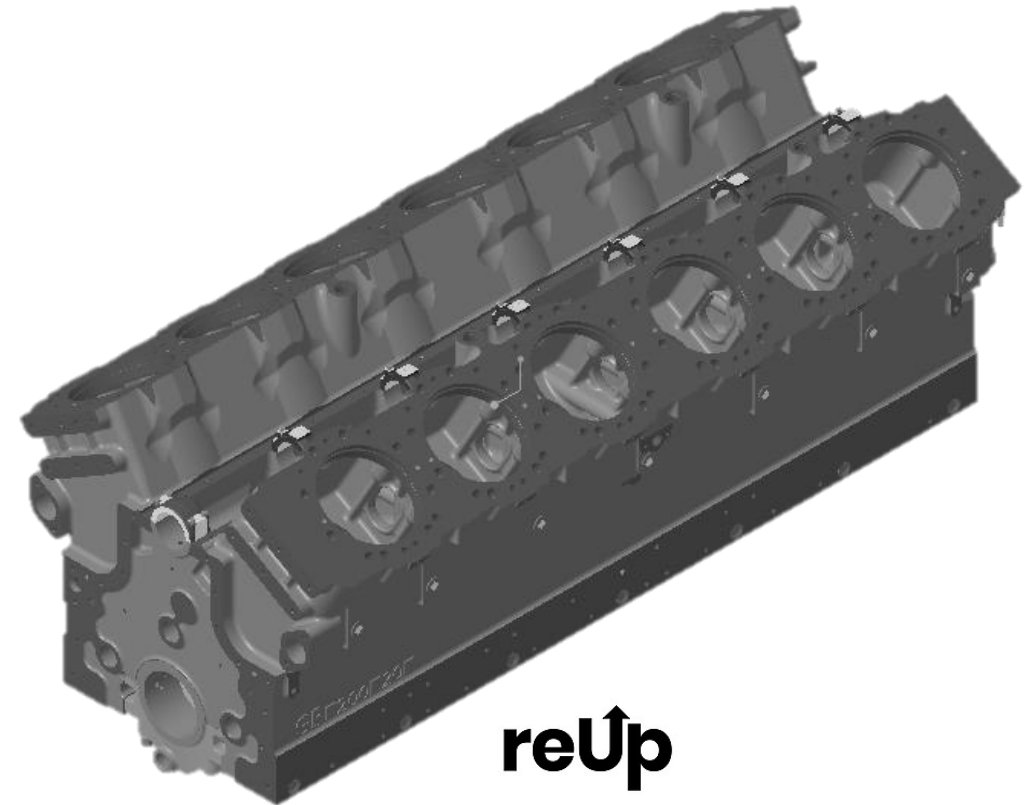
REM-A200420D

USER PRICE

\$26,500

CORE PRICE

\$43,000



Weight (lb./kg)

4928

LxWxH (in)

88.06x42x37

reUp VGF 8 Cyl. Crankshaft

VGF

APPLICABLE MODELS:

- ✓ H24GL
- ✓ H24SE

PART

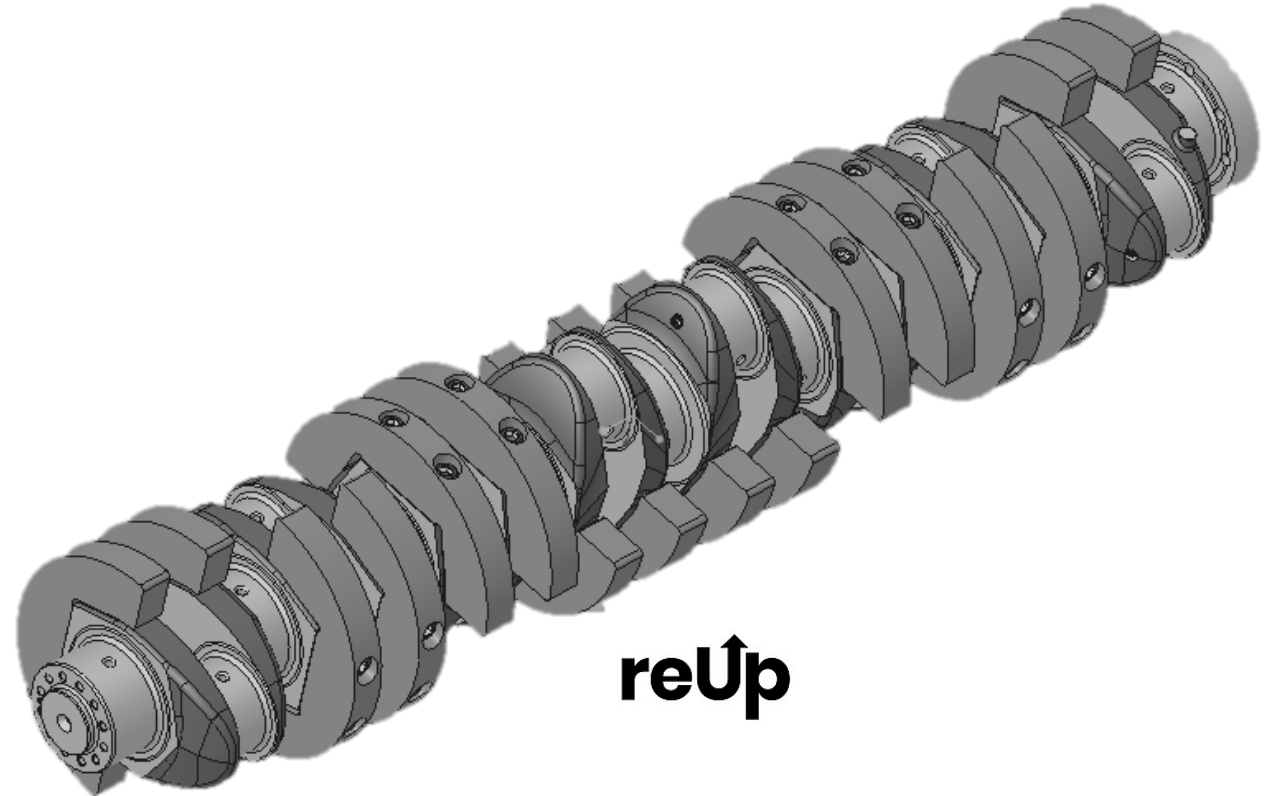
REM-A301111B

USER PRICE

\$11,500

CORE PRICE

\$17,000



Weight (lb./kg)

962.4/437

LxWxH (mm)

1760x355x355

reUp VGF 12 Cyl. Crankshaft

VGF

APPLICABLE MODELS:

- ✓ L36GL
- ✓ L36GSI

PART

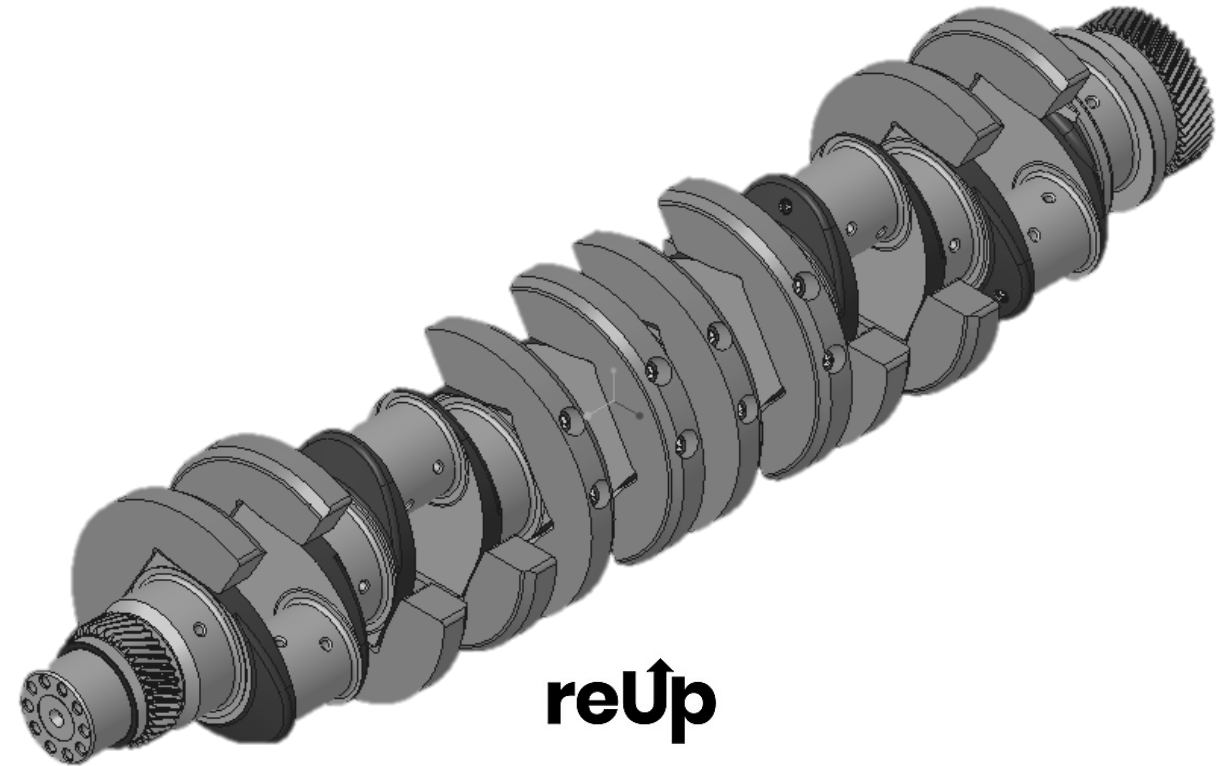
REM-A302011G

USER PRICE

\$11,500

CORE PRICE

\$17,000



Weight (lb./kg)

892/410

LxWxH (mm)

1774x357x357

reUp VGF 16 Cyl. Crankshaft

VGF

APPLICABLE MODELS:

- ✓ P48GL
- ✓ P48GSI

PART

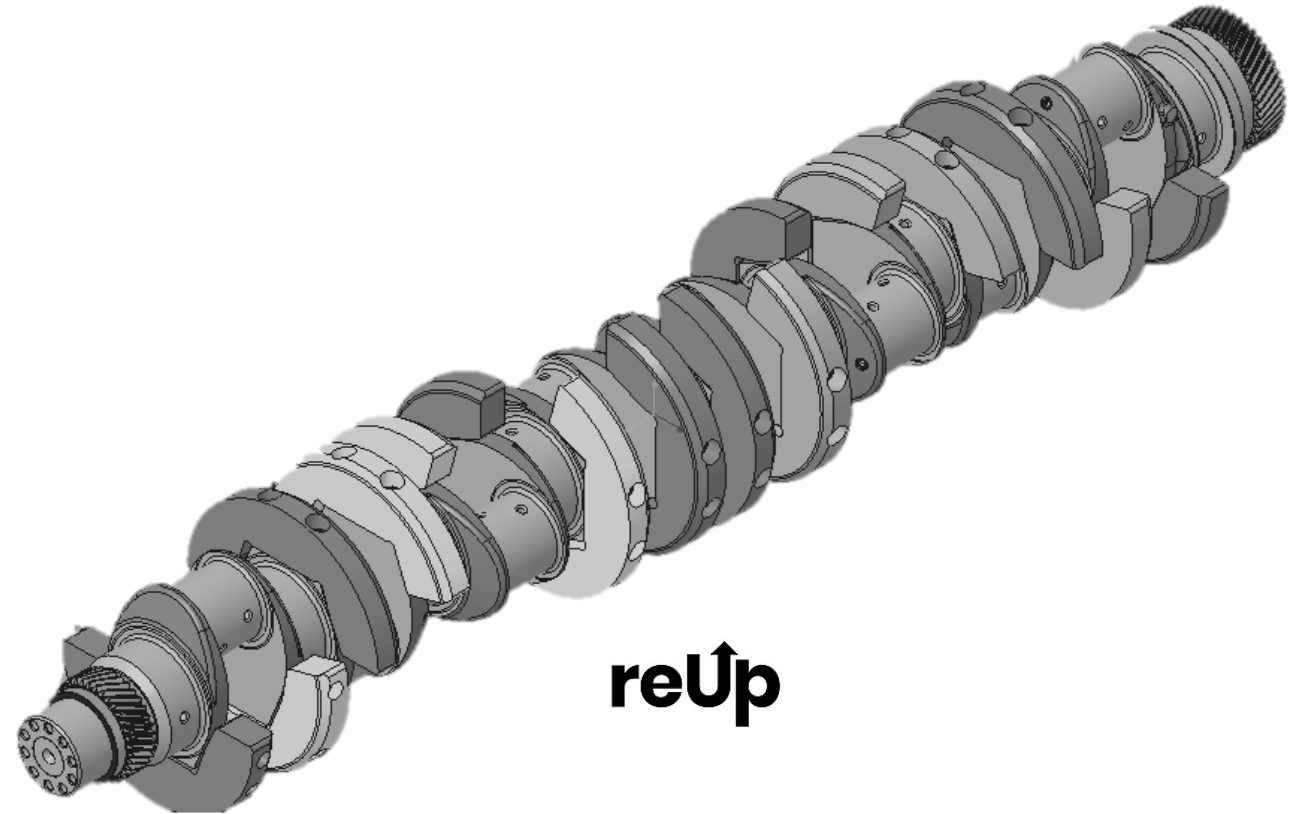
REM-A303111F

USER PRICE

\$12,500

CORE PRICE

\$19,000



Weight (lb./kg)

1146/520

LxWxH (mm)

2244x357x357

reUp VGF 6 Cyl. Crankshaft

VGF

APPLICABLE MODELS:

- ✓ F18G
- ✓ F18GL
- ✓ F18SE

PART

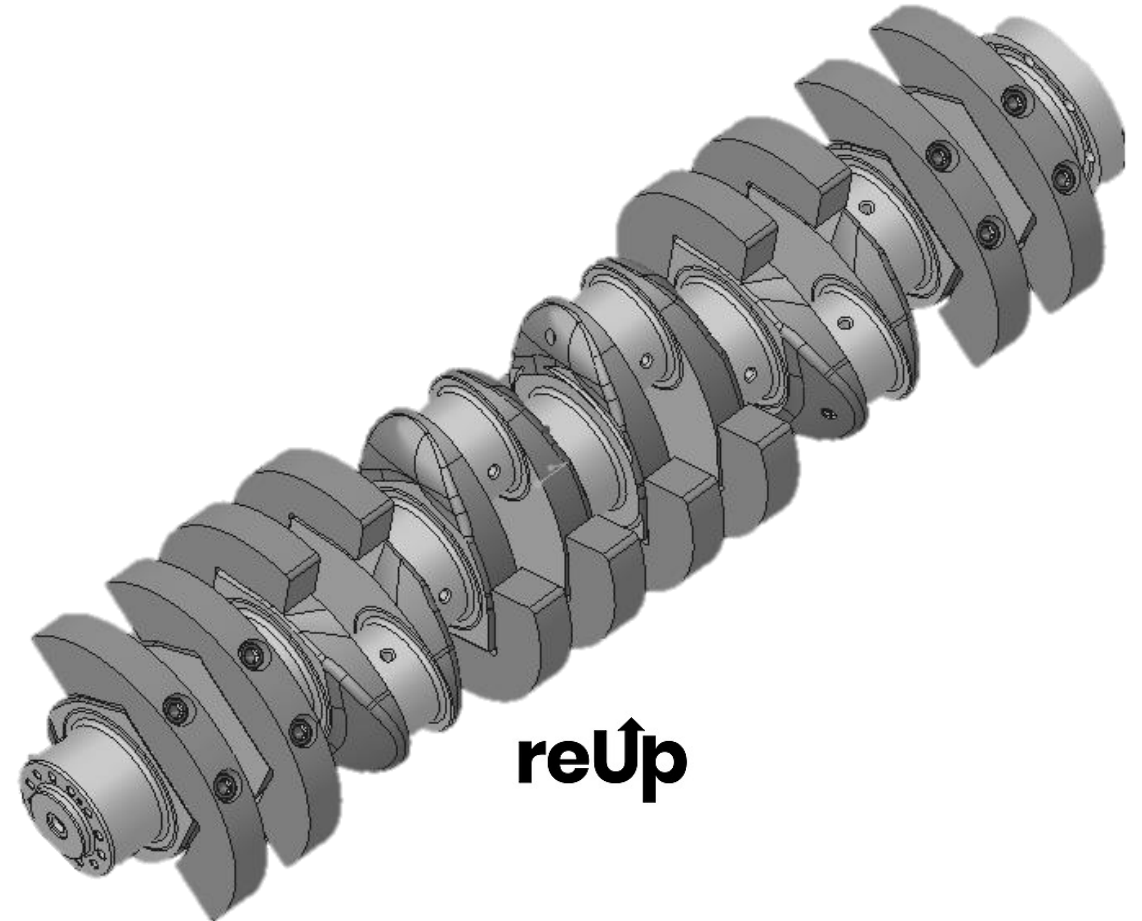
REM-A300111B

USER PRICE

\$10,500

CORE PRICE

\$16,000



Weight (lb./kg)

735/333.3

LxWxH (mm)

1350x335x335

reUp P9390 Oil Cooler

VHP

APPLICABLE MODELS:

- ✓ P9390G
- ✓ P9390GL
- ✓ P9390GSI

PART

REM-G211859

USER PRICE

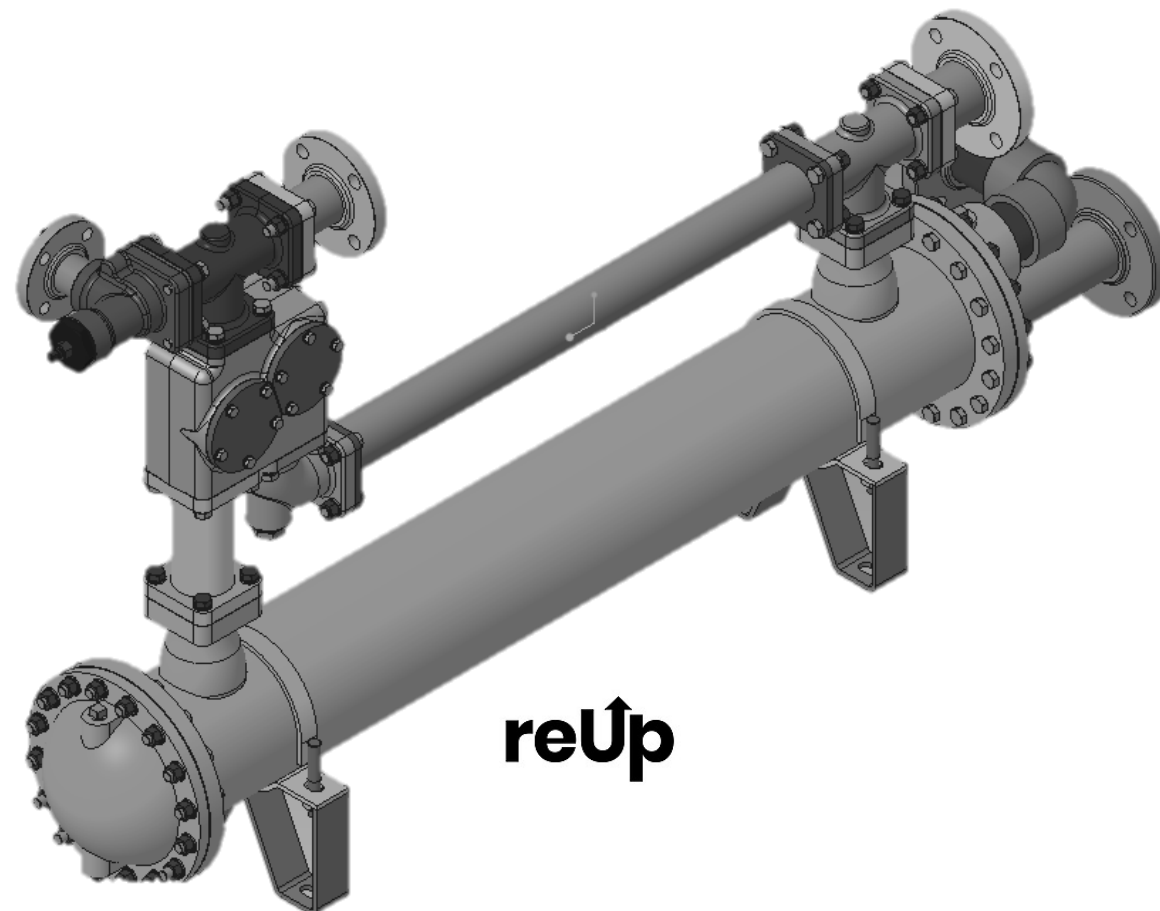
\$2,300

CORE PRICE

\$8,000



All rights reserved



Weight (lb./kg)

310/140

LxWxH (in)

69x11x38

reUp P9390 Camshaft

VHP

APPLICABLE MODELS:

- ✓ P9390GL
- ✓ P9390GSI

PART

REM-A257623D

USER PRICE

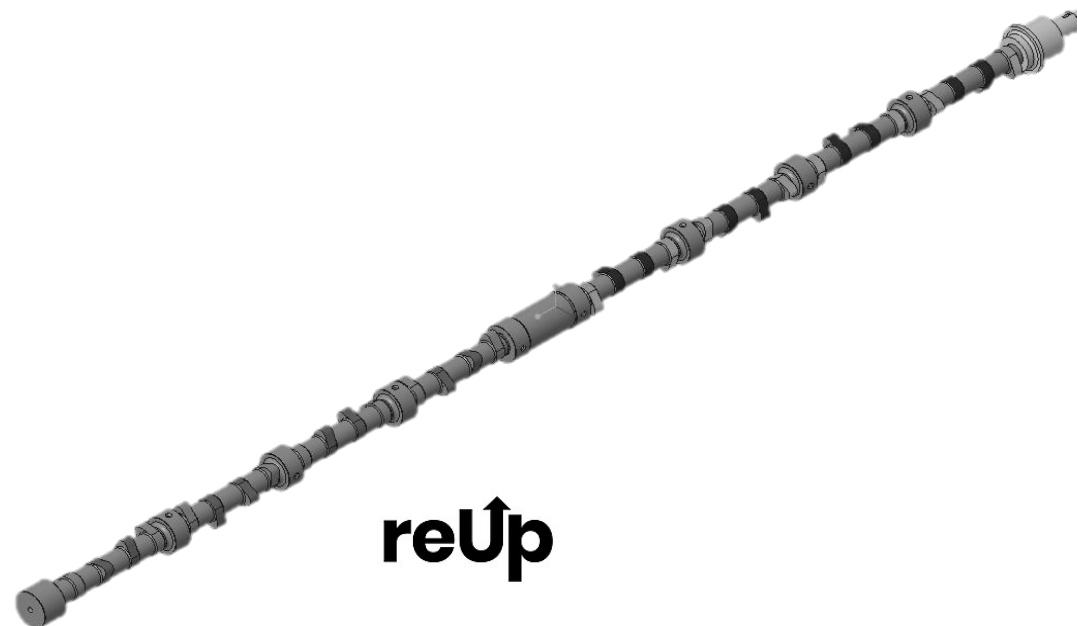
\$3,400

CORE PRICE

\$6,000



All rights reserved



Weight (lb./kg)

163.4/74.1

LxWxH (in)

125.1x4.5x4.5

reUp P9394 Camshaft

VHP

APPLICABLE MODELS:

- ✓ P9394GSI
- ✓ P9394GSI S5

PART

REM-AA257923A

USER PRICE

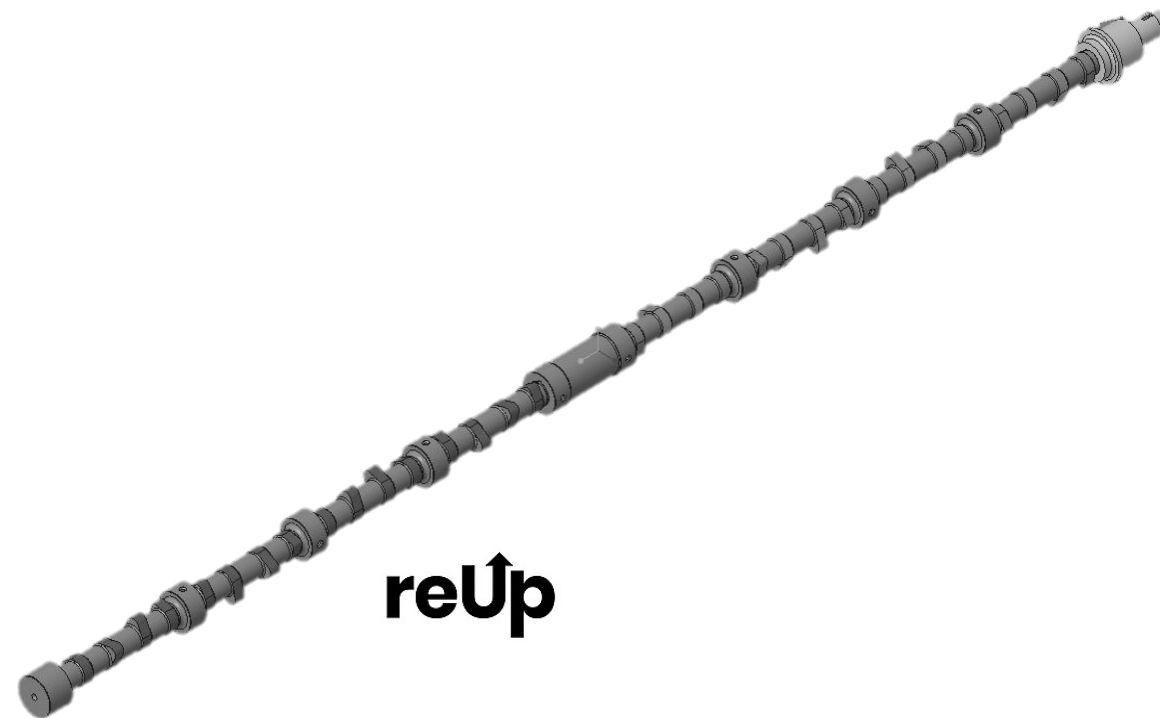
\$4,400

CORE PRICE

\$7,500



All rights reserved



Weight (lb./kg)

161.3/73.2

LxWxH (in)

125.1x4.5x4.5

reUp VGF 12 Cyl. Camshaft (Left Bank) VGF

APPLICABLE MODELS:

- ✓ L36GL
- ✓ L36GSI

PART

REM-A302223

USER PRICE

\$2,000

CORE PRICE

\$3,500



All rights reserved



Weight (lb./kg)

86/39

LxWxH (mm)

1578x114x114

reUp VGF 12 Cyl. Camshaft (Right Bank)

VGF

APPLICABLE MODELS:

- ✓ L36GL
- ✓ L36GSI

PART

REM-A302323

USER PRICE

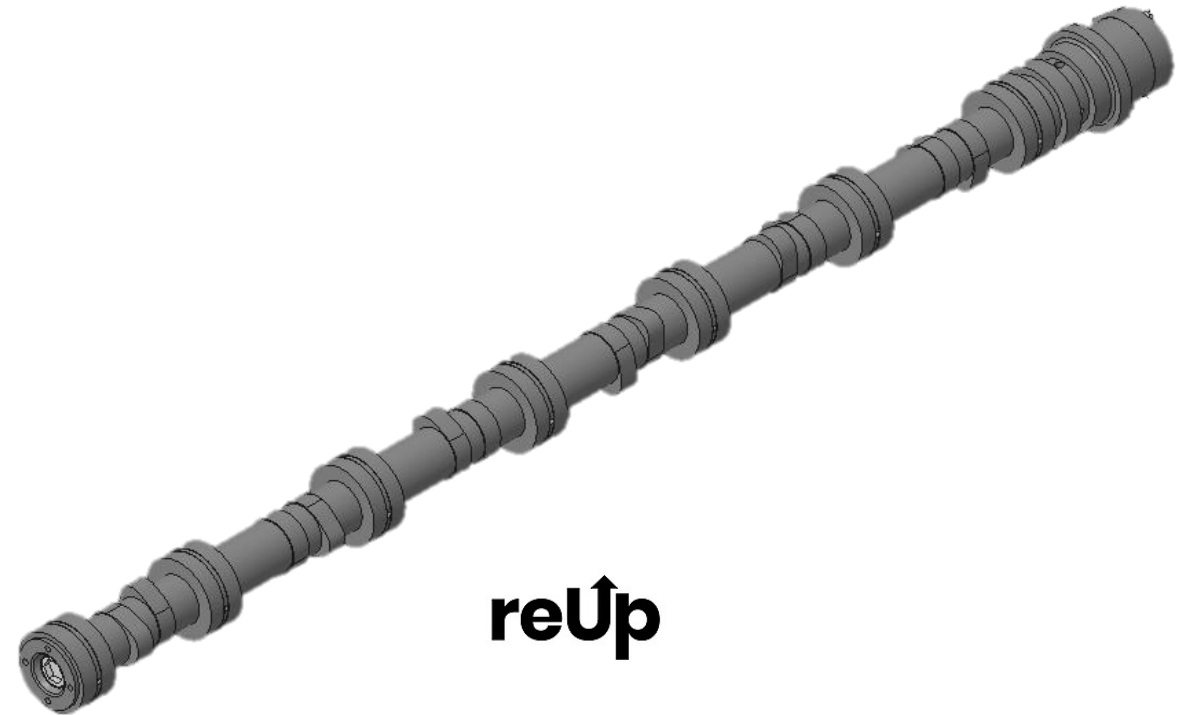
\$2,000

CORE PRICE

\$3,500



All rights reserved



Weight (lb./kg)

86/39

LxWxH (mm)

1578x114x114

reUp VGF 16 Cyl. Camshaft (Left Bank) VGF

APPLICABLE MODELS:

- ✓ P48GL
- ✓ P48GSI

PART

REM-A303223

USER PRICE

\$2,100

CORE PRICE

\$3,500



All rights reserved



Weight (lb./kg)

379/172

LxWxH (mm)

2048x114x114

reUp VGF 16 Cyl. Camshaft (Right Bank)

VGF

APPLICABLE MODELS:

- ✓ P48GL
- ✓ P48GSI

PART

REM-A303323

USER PRICE

\$2,075

CORE PRICE

\$3,500



All rights reserved



Weight (lb./kg)

379/172

LxWxH (mm)

2048x114x114

reUp VHP 6 Cyl. Crankshaft

VHP

APPLICABLE MODELS:

- ✓ F3524G
- ✓ F3514GSI
- ✓ F3524GSI

PART

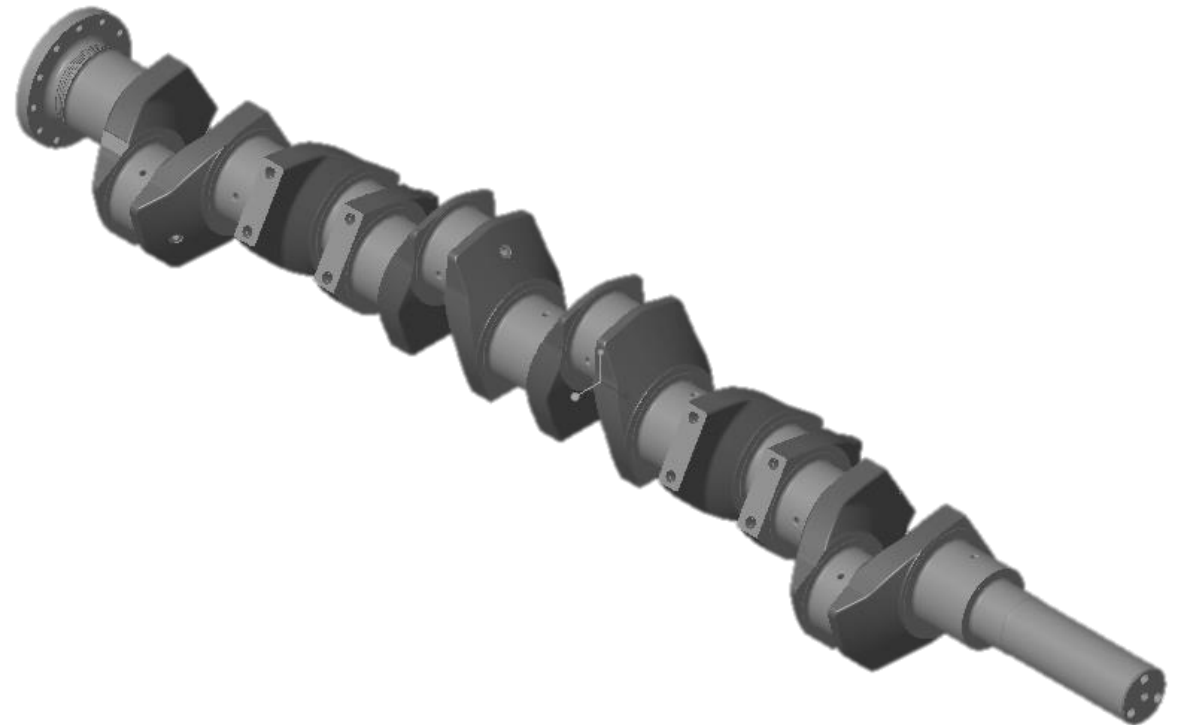
REM-205111C

USER PRICE

\$22,500

CORE PRICE

\$34,500



reUp

reUp VHP 16 Cyl. Turbocharger

VHP

APPLICABLE MODELS:

- ✓ P9394GSI
- ✓ P9394GSI S5

PART

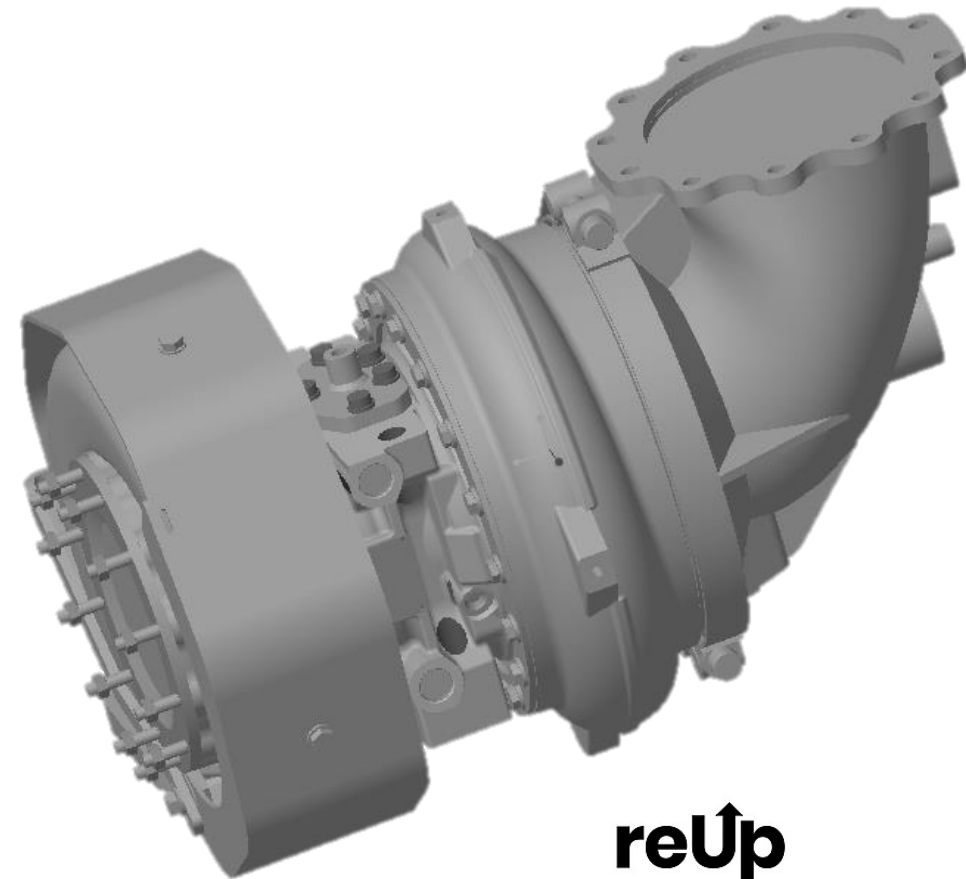
REM-251014-WAU

USER PRICE

\$15,700

CORE PRICE

\$24,000



reUp

reUp VHP 16 Cyl. GSI S2 Turbocharger

VHP

APPLICABLE MODELS:

✓ P9390GSI

PART

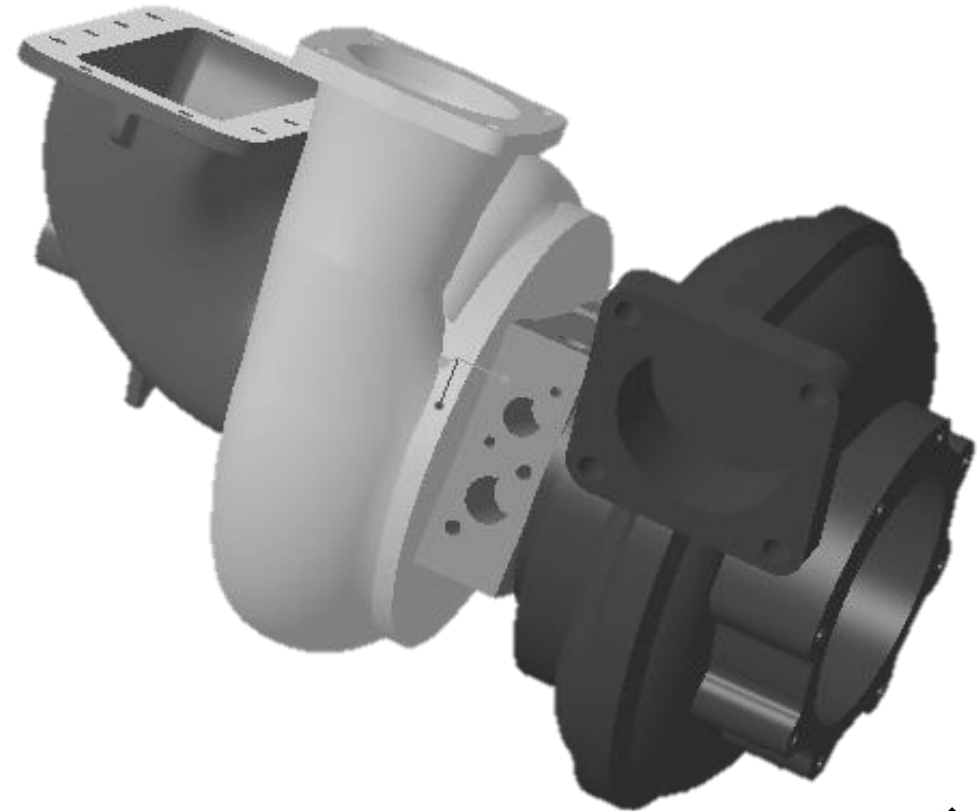
REM-211249U

USER PRICE

\$12,500

CORE PRICE

\$19,000



reUp

reUp VHP 16 Cyl. GL S2 Turbocharger

VHP

APPLICABLE MODELS:

✓ P9390GL

PART

REM-211249Y

USER PRICE

\$13,500

CORE PRICE

\$20,000



reUp

reUp VGF 6 Cyl. Camshaft

VGF

APPLICABLE MODELS:

- ✓ F18G
- ✓ F18GL
- ✓ F18GSI
- ✓ F18SE

PART

REM-300323

USER PRICE

\$950

CORE PRICE

\$1,500



reUp VGF 8 Cyl. Camshaft

VGF

APPLICABLE MODELS:

- ✓ H24G
- ✓ H24GL
- ✓ H24GSI
- ✓ H24SE

PART

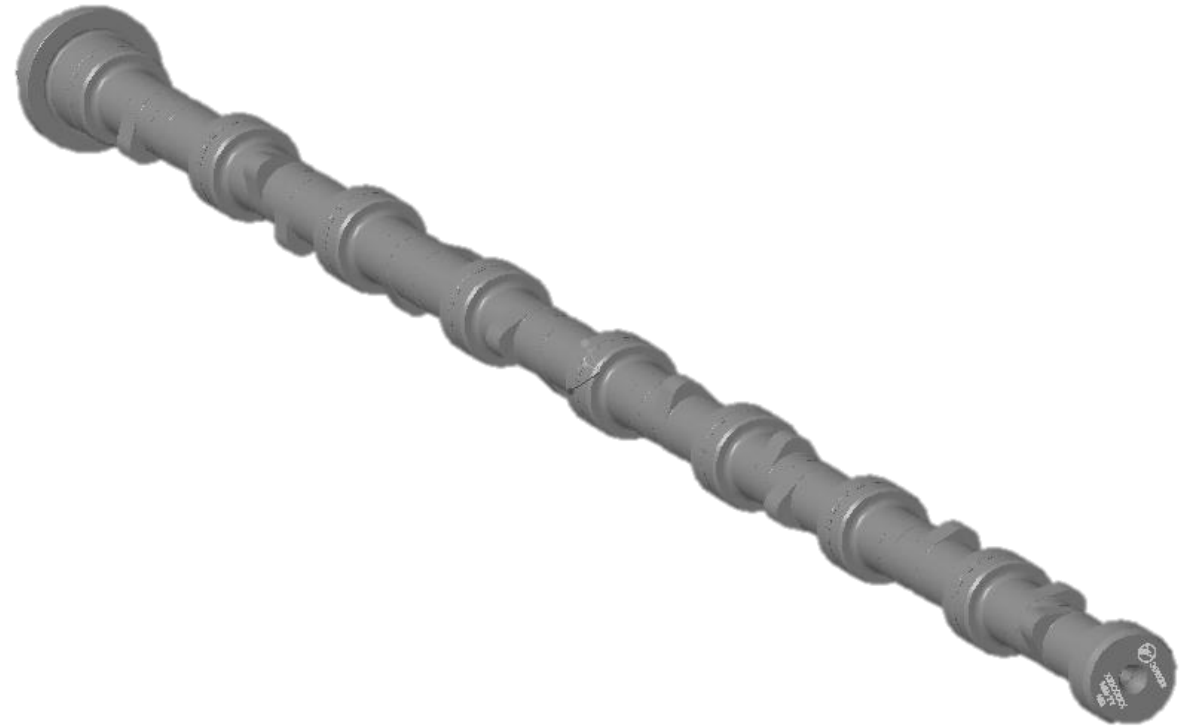
REM-301623

USER PRICE

\$1,250

CORE PRICE

\$2,000



reUp

reUp VHP Cam Follower

VHP

APPLICABLE MODELS:

- ✓ F3524G
- ✓ F3514GSI
- ✓ F3524GSI
- ✓ L5774LT
- ✓ L5794LT
- ✓ L5794GSI
- ✓ L7042GSI
- ✓ L7042GSI S4
- ✓ L042GSI S5
- ✓ L7044GSI
- ✓ L7044GSI S5
- ✓ P9390GL
- ✓ P9390GSI
- ✓ P9394GSI
- ✓ P9394GSI S5

PART

REM-C214311B

USER PRICE

\$250

CORE PRICE

\$100



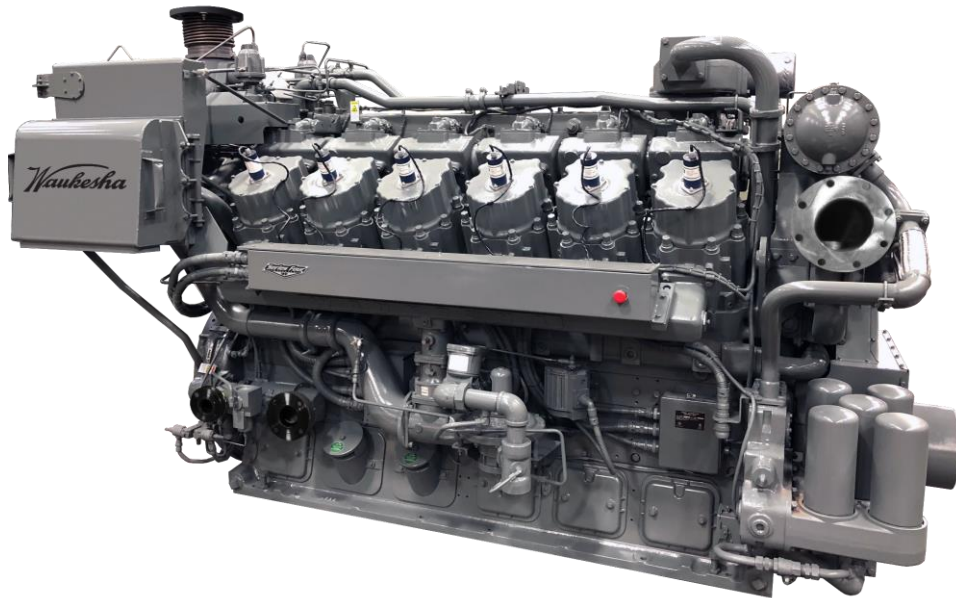
reUp

reUp Engines & Short/Long Block Product Offerings



reUp Upgraded VHP S4 and S5 engine

Waukesha Overhauled & Upgraded Engine



Models Available

- L7044GSI S5, L7042GSI S5, L7044GSI, L7042GSI S4, L5794GSI, F3524GSI

Performance Expectations

- Latest specification S4 gas compression unit - ESM2 w/ AFR2 & x-Cooled heads
- Zero hour overhaul with identical intervals to new unit
- New unit operating speed, load, fuel flexibility range
- Same as new engine warranty

Flat Rate Core Criteria

- VHP-12 S2/S4 engine w/ internal oil header (1981 and newer)
- Non-OEM head core accepted
- Core credit is based on visual inspection. **No adder fees** for downstream fallout.

reUp Short/Long Blocks

SCOPE INCLUDED:

- Crankshaft
- Crankcase
- Camshaft
- Connecting rods
- Pistons
- Rings
- Liners
- Bearings
- Gaskets
- Seals
- Gear housing
- Gear train
- Cam rollers (ship loose)

WARRANTY:

Same warranty as new OEM equipment

SHIPPING:

Includes shipping skid & bag

BOM & PRICING SUPPLIED UPON REQUEST



AVAILABLE MODELS:

- | | |
|---------------|------------|
| ✓ L7044G | ✓ L5794GSI |
| ✓ L7044GSI | ✓ L5794LT |
| ✓ L7044GSI S5 | ✓ L5774LT |
| ✓ L7042GSI | ✓ L5790GSI |
| ✓ L7042GL | ✓ L5790GL |
| ✓ L7042G | ✓ L5790G |

reUp Resources



reUp Product Catalog



Waukesha reUp Product Catalog

VHP	VGf	275GL/ATGL	reUp Engines
F2895G	L5794GSI	F18G	L7044GSI S5
F2895GL	L7042G	F18GL	L5794GSI
F2895GSI	L7042GL	F18GSI	L7044GSI
F3521G	L7042GSI	F18SE	
F3521GL	L7044G	H24G	VSG
F3521GSI	L7044GSI	H24GL	F11G/GSI
F3514/F3524G	P9390G	H24GSI	
F3514/3524GSI	P9390GL	H24SE	reUp Short Blocks
L5108GSI	P9390GSI	L36GL	L5794GSI
L5790G	P9394GSI	L36GSI	L7042GSI S4
L5790GL		P48GL	L7044GSI S4
L5790GSI		P48GSI	
L5774/5794LT			

Click here for [reUp Program Details](#)

For more information about reUp offerings please visit <https://www.innio.com/en/services/waukesha/remanufactured-parts-reup>



L7044GSI

Select your reUp part category

- Cylinder Head**
- Auxiliary Water Pump**
- Turbocharger**
- Wastegate**
- Regulator**
- Oil Cooler**
- Oil Pump**
- Actuator**
- Carburetor**
- Crankshaft**
- Connecting Rod**
- Rocker Arm Assembly**
- Jacket Water Pump**
- Intercooler**



L7044GSI

Cylinder Head

- **New With Core: Cylinder Head - VHP GSI S4 xCooled**

Part Number	Timing
NWC-AA205002H	Top/Bottom Overhaul

- **New With Core: Cylinder Head - VHP GSI S5 xCooled**
Applicable model: L7042GSI S5

Part Number	Timing
NWC-DA205002H	Top/Bottom Overhaul

- **reUp Cylinder Head - xCooled**

Part Number	Timing
REM-AA205002H	Top/Bottom Overhaul

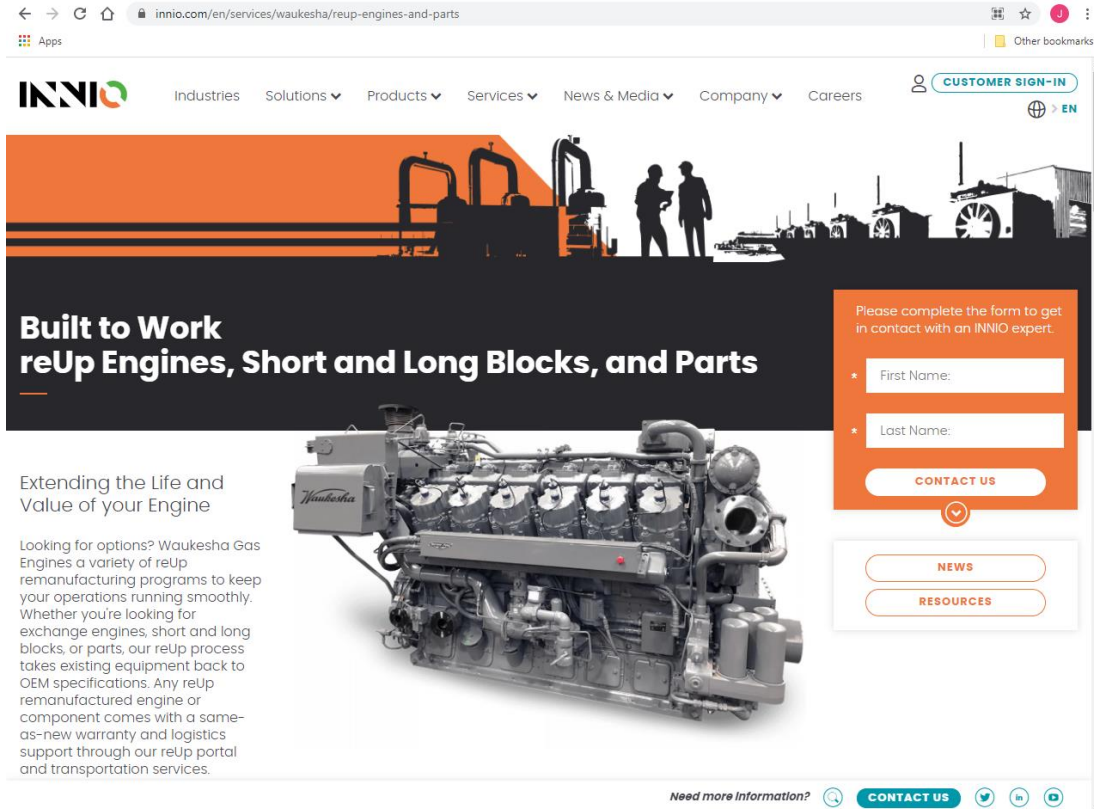
- **reUp Cylinder Head - VHP GSI S4**

Part Number	Timing
REM-AF205002G	Top/Bottom Overhaul



reUp Website

<https://www.innio.com/en/services/waukesha/reup-engines-and-parts>



The screenshot shows the website's header with the INNIO logo and navigation menu (Industries, Solutions, Products, Services, News & Media, Company, Careers). A 'CUSTOMER SIGN-IN' button is visible. The main banner features a silhouette of workers in a factory setting with the text 'Built to Work reUp Engines, Short and Long Blocks, and Parts'. Below this, a detailed image of a Waukesha gas engine is shown. To the right of the engine is a contact form with fields for 'First Name' and 'Last Name', and buttons for 'CONTACT US', 'NEWS', and 'RESOURCES'. A 'Need more information?' link with a magnifying glass icon is at the bottom left of the page.

Website content to include:

- Fact sheets
- Product launch information
- reUp FAQs
- Webinar content

reUp Fact Sheets



Waukesha reUp Long/Short Blocks VHP 12 Cylinder Engines Upgrade Offering



Product description

INNIO's Waukesha® reUp long and short blocks provide the foundation of a quality engine overhaul. Blocks consist of reman and new components which conform to OEM specifications and are assembled in production environments by trained technicians. The no added fee core credit policy and Waukesha Warranty provide additional value.

Product details

- Short block with new & reUp components
- Each VHP® reUp short block includes:
 - Crankshaft
 - Crankcase
 - Camshaft
 - Connecting rods
 - Pistons
 - Rings
 - Liners
 - Bearings
 - Gaskets
 - Seals
 - Gear housing
 - Gear train
 - Cam rollers (ship loose)
 - Heads (long block only)

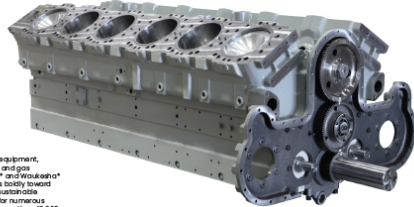
Customer benefits

- **OEM Engineering reman specifications:** Reman specs are determined by Waukesha Engineering using the same design methodology and validation process used for new units. Validation includes detailed modeling, finite element analysis, materials lab testing, or on-engine testing.
- **Quality and reliability:** VHP reUp short block components are remanufactured in production environments with supporting quality systems. Block assembly is completed by trained personnel with the same equipment, processes, and tools used to build new units.
- **Component fallout:** Core credit is determined based on visual inspection of core. **No added fees** are applied if components fall out later in the core process.

- **Warranty:** Waukesha Extended Limited Warranty applies and is available: one year from date of service or two years from sale.
- **Shipping:** Short blocks are shipped with custom skids and bags which prevent damage and corrosion during transport.

Units available

VHP	L7044G L7044G S1 L7042G S1 L7042G S4 L7042G L7042G L5794G S1 L5794L L5790G S1 L5790L L5790G
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*Indicates a trademark.
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INNIO® is a leading solutions provider of gas engines, power equipment, a digital platform and related services for power generation and gas compression or near the point of use. With our "reUp" and "Waukesha" product brands, INNIO pushes beyond the possible and into the future. Our diverse portfolio of reliable, economical and sustainable industrial gas engines generates 200 kW to 10 MW of power for numerous industries globally. We can provide life cycle support to the more than 40,000 delivered gas engines worldwide. And, backed by our service network in more than 100 countries, INNIO connects with you locally for rapid response to your service needs. Headquarters in Jurbach, Austria, the business also has primary operations in Wallasey, Ontario, Canada and Waukesha, Wisconsin, US. Find your local support online: www.innio.com/en/company/providers

Our legacy is your future.



Waukesha reUp Engine VHP L7044GSI & L7042GSI S4 with ESM2 Upgrade Offering

Product description

INNIO's Waukesha® reUp Engine Program converts and upgrades existing engines to the latest gas compression specification, equivalent to new units. The infusion of new technology increases engine performance and reliability. The program provides customers the following options:

- Upgrade a VHP® fleet engine through the core engine exchange program.
- Purchase an upgraded VHP engine outright without core exchange.

Product details

- Zero hour overhaul engine with new & reUp components
- Each upgraded VHP includes:
 - xCooled heads
 - ESM2 control system
 - Air-fuel ratio control (AFR2)
 - Advanced crankcase breather system
 - impact emission control upgrade (optional)
 - Gas compression specification options (flywheel, alternator, high pressure air/gas started, front stub shaft, and water connections)
- Upgraded engines are dynamometer tested at full load and come with an updated bill of material.

Customer benefits

- **Improved Package Economics:** VHP reUp Engines use the latest technology to increase engine horsepower and compressor flow at the lowest capital cost. Upgraded remanufactured engines also have increased service intervals (identical to new) and reduced oil consumption. Increased power and reduced operational expense combine to greatly improve package economics.
- **Reliability:** VHP reUp Engines are assembled by trained personnel with the same equipment, parts, processes, and tools used to build new units. Upgraded engines come with the same core reliability and warranty offered on new equipment.
- **Latest Technology:** Each reUp VHP includes the latest parts and control systems to ensure equivalent to new engine performance and reliability. Newly designed power cylinder components allow increased horsepower. ESM2 and AFR2 improve engine fuel flexibility and the speed

and load response required in gas compression applications. The impact system attains low emissions with little to no operator adjustment.

Units available

	Core Exchange	reUp Engine
VHP	L7044GSI L7042GSI S4 L7042G L7042G L5794G S1 L5794L L5790G S1 L5790L	L7044GSI* L7042GSI S4*

*latest GC specification



Waukesha reUp Reman Exchange Product Offerings reUp remanufactured exchange Cylinder Heads for Waukesha® gas engines



Product description

Overview of Waukesha® Cylinder Heads available in the reUp program

VHP reUp Cylinder Heads

Part No.	Description
REM-AA204702R	VHP® S2 GSI
REM-AD204802E	VHP S2 GL w/ rotators
REM-CD204802E	VHP S2 GL w/ rotators & spark plug carrier
REM-EA204802E	VHP S2 GL (legacy)
REM-AF205002G	VHP S4 GSI
REM-AG205002G	VHP S4 LT
NWC-AA205002H	VHP S4 GSI xCooled
REM-CF205002G	VHP S4 P384 w/ new SPARC carrier design
REM-CG205002G	VHP S4 Landfill Gas w/ new SPARC carrier design

VGf reUp Cylinder Heads

Part No.	Description
REM-DE300302C	VGf® GL
REM-DF300302C	VGf GSI
REM-AG300302C	VGf SE Model

275/AT reUp Cylinder Heads

Part No.	Description
REM-AD287002A	275/AT275 GL
REM-AD287002B	275/AT275 GL w/ combustion pressure port
REM-AA285002H	AT25 GL

Product details

- Re-machined and reassembled to original part specifications for Waukesha gas engines, or latest specifications
- 100% magnetic particle inspection & leak testing
- 100% new wear component part replacement includes: valves, valve guides and valve rotators, seat rings, and o-rings/gaskets
- Fire deck and valve pockets machined with proprietary CNC machining technology
- Standard Waukesha Warranty, 1 year date of service, 2 years date of sale, covers progressive damage

Customer benefits

INNIO's Waukesha reUp parts reduce operating costs, increase uptime and reliability and recycle material to reduce environmental impact.

• **Latest Technology:** Each cylinder head is remanufactured to the latest design specification incorporating the technology designed to improve engine performance, uptime, and availability

• **Reliability:** No other component provider can provide the holistic and systematic engineering expertise to remanufacture spare parts for Waukesha gas engines like we can. We back it up with our standard warranty covering progressive damage

• **Reduced Operating Costs:** reUp parts are priced at approximately 40-70% of new OEM parts and are trusted to go the distance to maximize return on investment

• **Reduced Environmental Impact:** reUp parts deliver efficiencies for manufacturing material and energy consumption

Applicable units

VHP*	All VHP engine models & versions
VGf*	All VGf engine models & versions
275/AT	All 275 and AT engine models & versions



INNIO® is a leading solutions provider of gas engines, power equipment, a digital platform and related services for power generation and gas compression or near the point of use. With our "reUp" and "Waukesha" product brands, INNIO pushes beyond the possible and into the future. Our diverse portfolio of reliable, economical and sustainable industrial gas engines generates 200 kW to 10 MW of power for numerous industries globally. We can provide life cycle support to the more than 40,000 delivered gas engines worldwide. And, backed by our service network in more than 100 countries, INNIO connects with you locally for rapid response to your service needs. Headquarters in Jurbach, Austria, the business also has primary operations in Wallasey, Ontario, Canada and Waukesha, Wisconsin, US. Find your local support online: www.innio.com/en/company/providers

WV-29537-EN

*Indicates a trademark.
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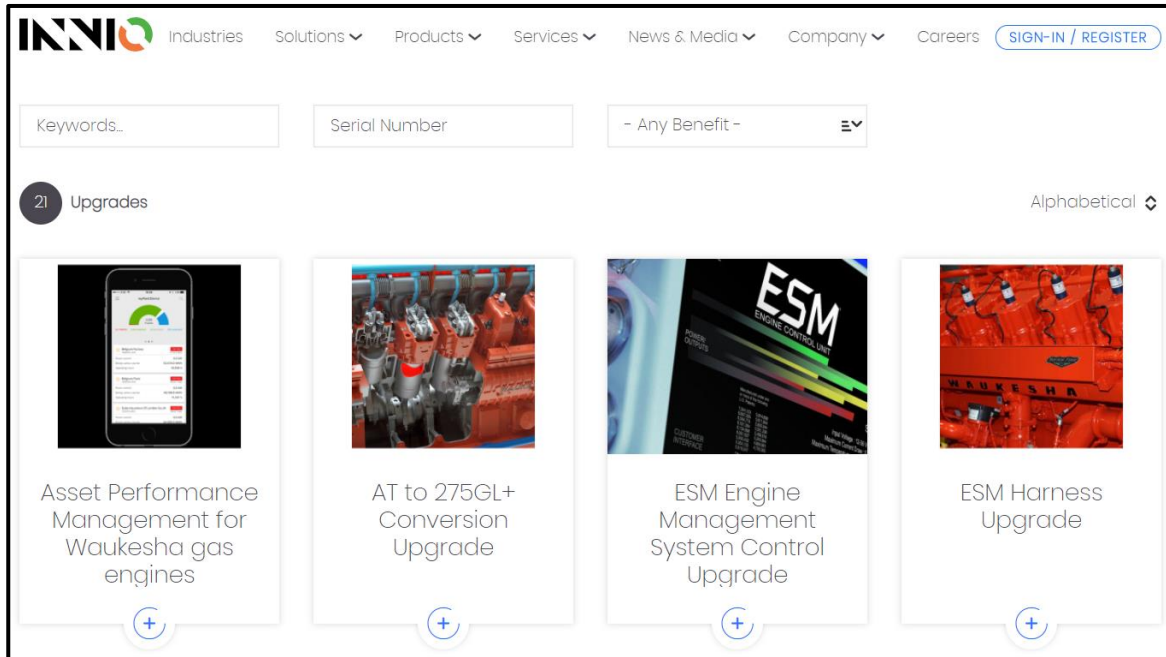


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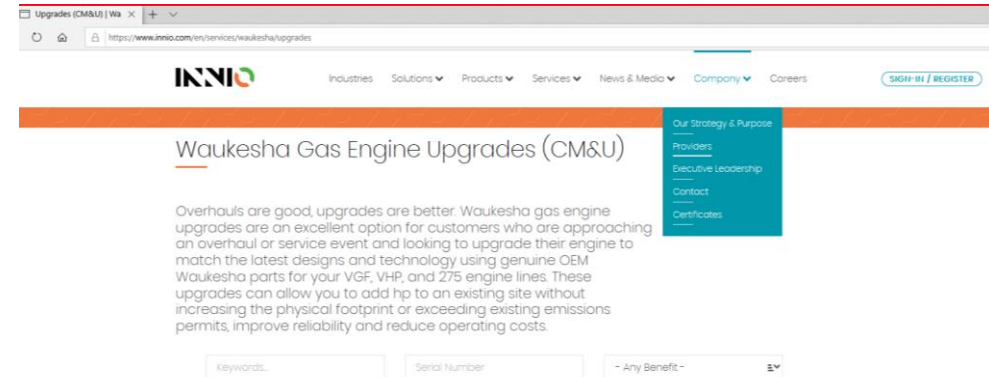
Waukesha Upgrades Website

Waukesha Upgrades Website

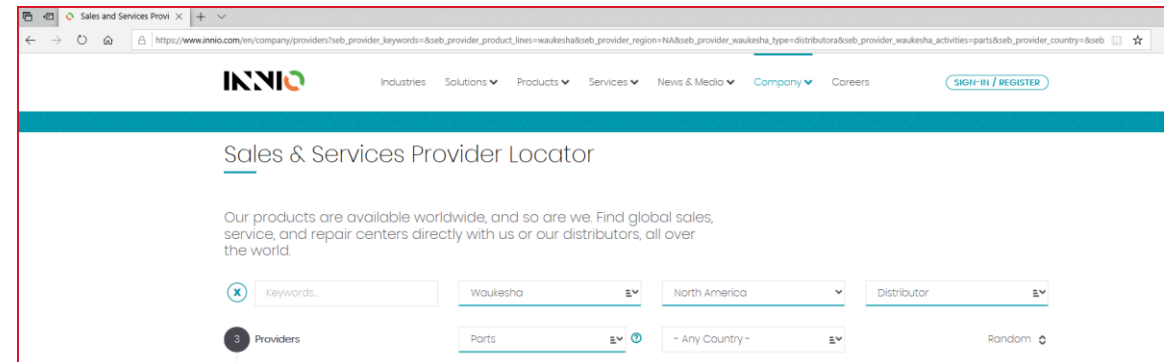
www.innio.com/waukeshaupgrades



How to Find a reUp Parts Provider:



On the Waukesha Upgrades Website, use the “Company” dropdown to select “**Providers**”



On the Sales & Services Provider Locator page select “Waukesha”, your region, and “**Parts**” in the Activity dropdown

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