

000000000 000000 00000000000

# REMANUFACTURED

**HYDRAULIC COMPONENTS** 

#### RESTORE EQUIPMENT PERFORMANCE WITH LIKE-NEW EFFICIENCY

Stay productive on your rebuilds and repairs by leveraging cost-saving repair options from Cat® Reman. Maintain your equipment with our **expertly salvaged**, carefully validated line of 8,000+ Cat Reman replacement parts and components, including a broad selection of hydraulic products.

Drop-in solutions can be purchased across more than 2,300 authorized Cat locations around the globe for a fraction of the cost of new¹. Incorporating critical engineering updates. Cat Reman cylinders, rods, pumps, motors and other products provide like-new performance for a fraction of new, when you return your core².

All Cat Reman products come with a **same-as-new**, **12-month Caterpillar Limited Warranty**<sup>3</sup>, providing long-term protection and confidence as you work.

<sup>1</sup>Core conditions apply.

<sup>2</sup>Core Acceptance Criteria (CAC) vary by component and are subject to change. Partial core refunds are available for some Cat Reman components. See your Cat dealer for specific information.

\*Warranty can vary by model and application; limitations apply. For complete details about the applicable Caterpillar Limited Warranty, contact an authorized Cat dealer.



# WHEN TO CHOOSE CAT REMAN

When rebuilding equipment, you can save time by using Cat Reman hydraulic components for **time-saving replacements**. Caterpillar salvages only viable used cores — i.e., end-of-life hydraulic components — after they pass a series of stringent inspections as part of our state-of-the-art remanufacturing process.



WHETHER IT'S A COMPONENT REPAIR, REPLACEMENT, OR MACHINE REBUILD, USING CAT REMAN HYDRAULIC COMPONENTS PROVIDES **LIKE-NEW PERFORMANCE** WHILE OFFERING THE **SAME WARRANTY** AS NEW. WHY NOT HAVE PEACE OF MIND AND CHOOSE RIGHT THE FIRST TIME?

- CECILIA GALLAGHER
CAT REMAN DIRECTOR OF PRODUCT MANAGEMENT



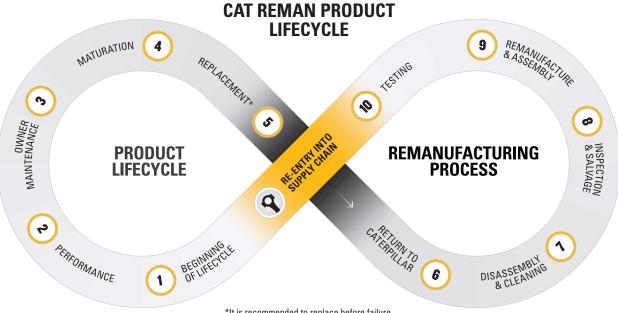
## REVIVE YOUR EQUIPMENT, REPLENISH THE SUPPLY

#### REMANUFACTURING OFFERS SUSTAINABLE BENEFITS

With a steady flow of used cores moving from customers to authorized Cat dealers to our remanufacturing facilities — ultimately putting a like-new Cat Reman part back in the customers' hands — remanufacturing delivers **sustainability** benefits and contributes to the circular economy.

At Caterpillar, we're dedicated to protecting your equipment and contributing to a circular economy. By extension, the Cat Reman process<sup>4</sup> uses **65-87% less process energy and 80-90% less new materials, emitting 65-87% less process greenhouse gases** than the manufacture of new products.

'Represents U.S. environmental impacts of gate-to-gate remanufacturing and remanufacturing processes for Cat engines and components, as defined in the 2018 United Nations Environment Programme report "Redefining Value – The Manufacturing Revolution." Does not include impacts elsewhere in our value chain.



\*It is recommended to replace before failure. Replacements after failure may result in partial credit.

# KEEP YOUR **EQUIPMENT PUMPING**

#### FROM ONE CYCLE TO THE NEXT

At the end of the day, you need a healthy hydraulic system, one that promotes high performance and easily transforms operator commands into action — and you get that through Cat Reman.

So, take advantage of the like-new performance provided by the following Cat Reman hydraulic parts:

#### **PUMPS AND MOTORS**

- + Gear pumps
- + Piston pumps/motors
- + Vane cartridges

#### CYLINDERS & RODS

- + Cylinder groups
- + Rods





#### **VALVES & ACCUMULATORS**

- + Diverter
- + Implement valves
- + Lockup & relief
- + Pressure regulator
- + Piston accumulators



#### THE ABOVE CAT REMAN OFFERINGS ARE DESIGNED TO SUPPORT THE FOLLOWING:

#### Construction

- + Excavation
- + Earthmoving
- + Paving
- + Quarry & Aggregates
- + Waste/Compaction

#### Mining

- + Surface Mining
- + Underground Longwall
- (Soft Rock)
- + Underground Hard Rock Room & Pillar Mining

Reach out to your local authorized Cat dealer to confirm which parts may be applicable to your needs.

Also, explore the Cat Reman product line on **parts.cat.com** to see the wide array of offerings available across all the industries we serve.

# **PROMOTING EXCELLENCE** FOR YOUR CONVENIENCE

Cat cylinders are designed with precise sealing around each rod to avoid leakage. Plus, our durable gear pumps, piston pumps, vane pumps and motors are 100-percent validated for like-new performance.

How do we make sure Cat Reman hydraulic cylinders and rods operate with like new performance at a lower price point?

- + To meet original Caterpillar part specifications, certain components are replaced with new parts
- + Cylinder groups are end-of-line tested the same as new
- + All rods are induction-hardened, improving resistance to wear and extending seal life

#### And what about Cat Reman hydraulic pumps, motors and components?

- + Barrel assembly faces are remachined
- + Bushings are replaced and machined to new specifications
- + Piston slippers and port plates are reconditioned and updated to the latest designs or replaced with new parts
- + Viable shafts are polished with bearing surfaces re-chromed, then remanufactured, while shafts that don't pass inspection are replaced with new
- + Vanes are all qualified to new specifications or replaced with new components, while vane pump rotors and cams are remanufactured to original Caterpillar specifications or replaced with new components
- + All pumps are end of line tested for leaks and performance



### **BEGIN YOUR CAT REMAN JOURNEY**

#### RETURN YOUR USED CORE

Caterpillar's remanufactured products program runs on a core deposit basis. This means you may return used/end-of-life core hydraulic part or component to your dealer to receive a core deposit refund.

The amount of credit you receive depends on the viability of your core. This is determined through an inspection by your Cat dealer. In most cases, we accept core for full or partial credit<sup>3</sup> that:

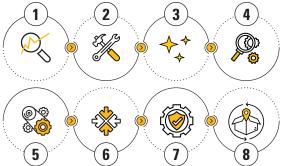
- + Is fully assembled and complete
- + Is not visibly cracked, broken or welded
- + Displays no non-operational damage, mishandling, excessive rust, corrosion or pitting
- + Has an acceptable Cat part number



## PUTTING IT ALL TOGETHER

#### HOW CATERPILLAR REMANUFACTURES HYDRAULIC PARTS

- 1. After the dealer inspection, the used hydraulic core is sent to one of our core processing facilities for additional inspection. Then, the viable core is forwarded to state-of-the-art remanufacturing facilities.
- 2. There, it's disassembled down to its individual piece parts and inspected.
- 3. Afterward, it goes through our cleaning process.
- 4. Then, during a salvage inspection, auditors note any pre-existing damage due to wear and tear.
- 5. Next, the core proceeds through our advanced salvage procedures, in which imperfections are addressed through:
  - **5a. Machining** with processes like grinding, horizontal/vertical lathing, milling, radial drilling, and multi-axis machining.
  - **5b. Metal deposition** with procedures such as laser cladding. manual welding and twin wire arc thermal coating.



- 6. Following salvage, the core is reassembled
- 7. Finally, the functionality of the remanufactured part is tested before being approved for distribution.
- 8. The finished Cat Reman component re-enters the supply chain with like-new performance.

<sup>3</sup>Core Acceptance Criteria (CAC) vary by component and are subject to change. Partial core refunds are available for some Cat Reman components. See your Cat dealer for specific information

#### MEETING YOUR NEEDS FOR MORE CAT REMAN HYDRAULIC CYLINDERS AND RODS

work instructions, testing and validation are performed for each remanufactured part.

full ramp and deramp specifications before rejoining the supply chain.

The Cat Reman product line is growing, with over 300 additional remanufactured hydraulic components now available as drop-in ready repair options.

PROCESS IMPROVEMENTS THAT

OFFER **SOMETHING FOR EVERYONE** 

Throughout the Cat Reman process, our team — from production to salvage to quality control —

each process is in line with ISO 16/13 cleanliness standards so contamination is not introduced into your hydraulic system. Caterpillar validates the purity of hydraulic oil as part of the final test of

Through regular assessments and updates, Caterpillar meets customer demand for Cat Reman

Mandatory replacement parts called out in a component's original design — like seals, gaskets and O-rings — are always replaced with new. Also, all validation testing for Cat Reman matches what is required for new parts. Cat Reman hydraulic pumps and motors, for instance, must pass

Cat Reman procedures are aligned with a Production Part Approval Process (PPAP). Standardized

supply chain as like-new products.

Setting high benchmarks for hydraulic

and electro-hydraulic production

+ Conducting end-of-line testing for

performance and quality

hydraulic products by:

tailors the remanufacturing to the practical function of each component. With hydraulics, that means

Cat Reman hydraulic products. This way, we meet ISO 9001 standards before the parts re-enter the



A MACHINE'S HYDRAULIC SYSTEM RELIES ON COMPONENTS THAT ARE BUILT AND TESTED TO MEET SPECIFIC APPLICATION DEMANDS. CAT REMAN HYDRAULIC COMPONENTS LEVERAGES NEW COMPONENT PERFORMANCE AND QUALITY SPECIFICATIONS ENABLING SERVICE SOLUTIONS THAT **LOWER TOTAL COST OF OWNERSHIP** WHILE HELPING CUSTOMER GET BACK TO DOING THE WORK THAT MATTERS MOST TO THEM.

+ Tightening internal clearances to align

contamination

with evolving expectations of productivity

+ Upgrading equipment designs, specifications

and manufacturing processes to limit fluid

- ANDY HENDRIX, CAT REMAN NEW PRODUCT INTRODUCTION MANAGER





