

# CAT<sup>®</sup> REMAN

## HYDRAULIC COMPONENTS

CONNECT YOUR EQUIPMENT TO COST-EFFECTIVE,  
HIGH PERFORMING, LIKE NEW REPAIR OPTIONS.

# REMANUFACTURED HYDRAULIC COMPONENTS

## RESTORE EQUIPMENT PERFORMANCE WITH LIKE NEW EFFICIENCY

**Be productive** — reducing equipment failures and outages — through time and money-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.

With off-the-shelf parts availability, drop-in solutions can be purchased **across more than 2,300 authorized Cat locations** around the globe for up to **60 percent off the cost of new**. Engineered with the latest design elements and upgrades, Cat Reman cylinders, rods, pumps, motors and other products provide like new performance for a fraction of the price.

All Cat Reman products come with a **same-as-new, 12-month Caterpillar Limited Warranty<sup>1</sup>**, which covers Caterpillar defects in material and/or workmanship<sup>1</sup>, providing long-term protection and confidence as you work.

# WHEN TO CHOOSE CAT REMAN

Rebuilds can be essential when performing standard repairs, but Cat Reman is **ideal for affordable**, wholesale 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.



IF YOU THINK ABOUT A REBUILD, IT'S MORE ABOUT EXTENDING THE LIFE OF A PRODUCT. IF YOU THINK ABOUT CAT REMAN, IT'S BRINGING A PRODUCT BACK TO **NEW SPECIFICATIONS**, YOU'RE TESTING TO NEW SPECIFICATIONS. SO, YOU'VE GOT A **FRESH, LIKE NEW** PRODUCT FOR YOUR OPERATIONS.

**MARCUS FAIR, CAT REMAN, E&T DEVELOPMENT MANAGER**

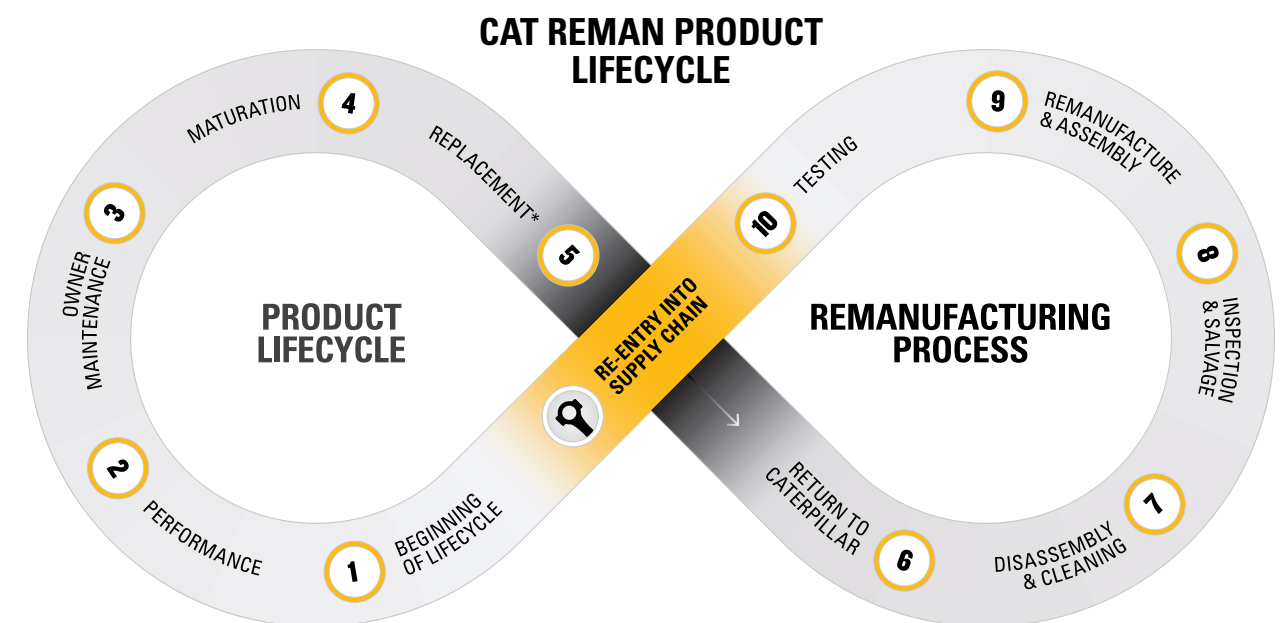


# REVIVE YOUR EQUIPMENT, REPLENISH THE SUPPLY

## A MORE SUSTAINABLE PROCESS<sup>2</sup> FOR VALUABLE PRODUCTS

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 — Caterpillar delivers **sustainability** benefits and contributes to the circular economy.

At Caterpillar, we're dedicated to protecting your equipment as well as the environment around us. By extension, the Cat Reman process<sup>2</sup> uses **85 percent less material, water and energy and emits 61 percent fewer greenhouse gases** than the manufacture of new products.



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

# KEEP YOUR EQUIPMENT PUMPING

## PUMPS AND MOTORS

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

## CYLINDERS & RODS

- + Cylinder groups
- + Off-highway trucks (OHT) front & rear struts
- + Off-highway trucks (OHT) front & rear suspension
- + Rods

## VALVES & ACCUMULATORS

- + Diverter
- + Implement valves
- + Lockup & relief
- + Pressure regulator
- + Quick drop
- + 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

### Energy & Transportation

- + Electric Power
- + Industrial
- + Marine
- + Oil & Gas
- + On-Highway Trucks

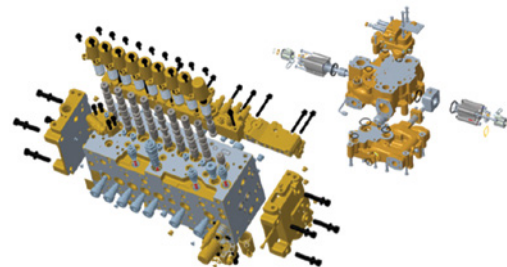
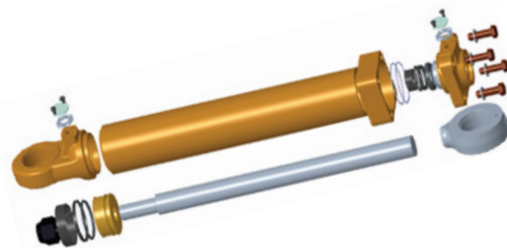
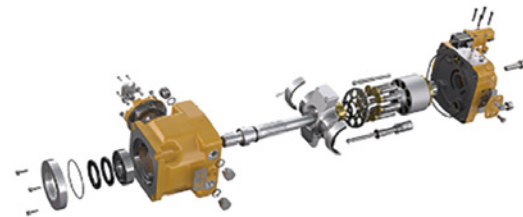
Reach out to your local authorized Cat dealer to confirm which parts may be applicable to your needs.

Also, explore the Cat Reman product line on [parts.cat.com](https://parts.cat.com) to see the wide array of offerings available across all the industries we serve.

## 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. According to industry standards, hydraulic systems can be responsible for **up to one-fifth** of the output performed by a given machine.

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



# ENSURING EXCELLENCE FOR YOUR CONVENIENCE

We supply our own hoses, couplings and assembly kits. Meanwhile, 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 efficiency.

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

- + To meet the latest new part specifications, certain components are replaced with new parts
- + Rods feature friction-welded and inertia-welded eyes for added strength
- + All rods are induction-hardened, improving resistance to wear and extending seal life

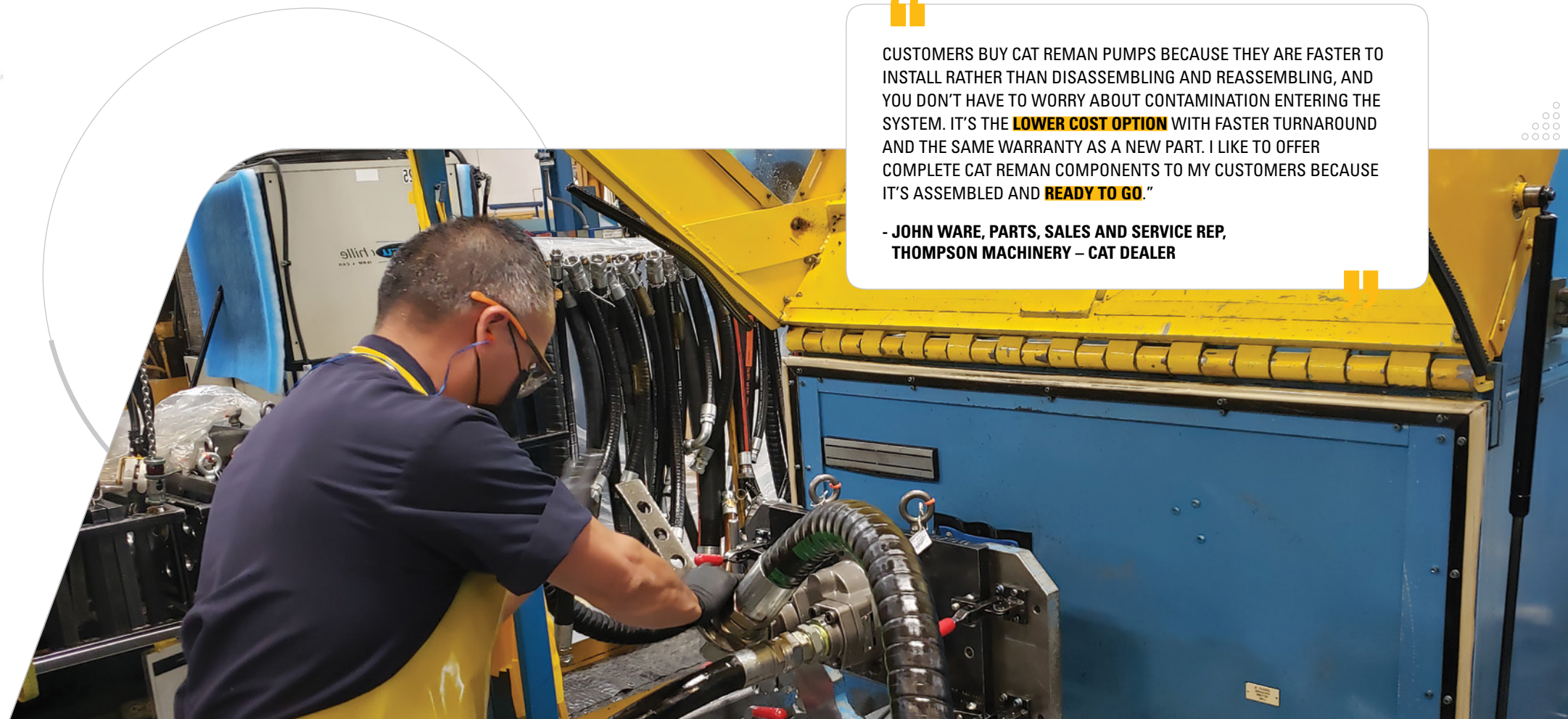
**And what about Cat Reman hydraulic pumps, motors and components?**

- + 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 Cat specifications or replaced with new components
- + All pumps are updated with the latest design upgrades and tested for leaks to promote longer life

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CUSTOMERS BUY CAT REMAN PUMPS BECAUSE THEY ARE FASTER TO INSTALL RATHER THAN DISASSEMBLING AND REASSEMBLING, AND YOU DON'T HAVE TO WORRY ABOUT CONTAMINATION ENTERING THE SYSTEM. IT'S THE **LOWER COST OPTION** WITH FASTER TURNAROUND AND THE SAME WARRANTY AS A NEW PART. I LIKE TO OFFER COMPLETE CAT REMAN COMPONENTS TO MY CUSTOMERS BECAUSE IT'S ASSEMBLED AND **READY TO GO.**”

- JOHN WARE, PARTS, SALES AND SERVICE REP,  
THOMPSON MACHINERY – CAT DEALER



# BEGIN YOUR CAT REMAN JOURNEY

## RETURN YOUR USED CORE

When your hydraulic part or component shows signs that it's nearing the end of its lifecycle, consult with your dealer about a Cat Reman replacement option. Once a Cat Reman product is purchased, you may return your used/end-of-life core to your dealer for a core 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

**Dealers and customers may strip and inspect a core if required for proper failure analysis. To receive credit, it is essential for the component to be reassembled and demonstrate that it still meets the Core Acceptance Criteria with no damage caused by the strip down.**



# PROCESS IMPROVEMENTS THAT OFFER SOMETHING FOR EVERYONE

Throughout the Cat Reman process, our team — from production to salvage to quality control — tailors every remanufacture to the **practical function of each component**. With hydraulics, that means 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 Cat Reman hydraulic products. This way, **we meet ISO 9001 standards** before the parts re-enter the supply chain as like new products.

**Through regular assessments and updates, Caterpillar meets customer demand for Cat Reman hydraulic products by:**

- + Setting high benchmarks for hydraulic and electro-hydraulic production
- + Raising the level of system pressures that hydraulic components can handle
- + Tightening internal clearances to align with evolving expectations of productivity
- + Upgrading equipment designs, specifications and manufacturing processes to limit fluid contamination

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 performed for new parts. Cat Reman hydraulic pumps and motors, for instance, must pass full ramp and deramp specifications before rejoining the supply chain.

All Cat Reman procedures are aligned with a Production Part Approval Process (PPAP). Standardized work instructions, testing and validation are performed for each remanufactured part.

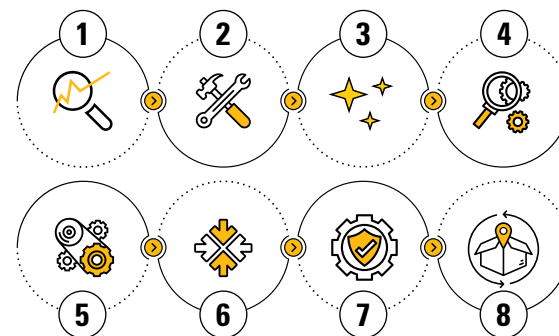
# PUTTING IT ALL TOGETHER

## 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, 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.

**Our commitment to customer satisfaction** stretches back to each product's initial development phase, during which time engineers design the product for performance and durability.

With each new release, the product design is usually updated. The Cat Reman team adjusts

their designs accordingly, in anticipation of the newer product's end of life — when, down the line, customers will one day return the part to Caterpillar for remanufacture.

Throughout all the updates within the product line, our commitment to like new quality remains consistent.



WE REMANUFACTURE INDIVIDUAL COMPONENTS IN THE CAT REMAN FACILITY. WE CLEAN, DISASSEMBLE, INSPECT, SORT EXCHANGED CORE TO BUILD UP A **HIGHER-LEVEL UNIT** LIKE A HYDRAULIC PUMP OR HYDRAULIC CYLINDER GROUP. IT IS MANUFACTURED DOWN AN ASSEMBLY LINE, JUST LIKE NEW, USING THE SAME **CAT QUALITY MANAGEMENT SYSTEM** AS NEW.

- JENNIFER LEUSTEK, CAT REMAN PRODUCT MANAGER, CAT REMAN HYDRAULICS, ELECTRONICS, & ELECTRIFICATION



# REMANUFACTURED TO LAST. BACKED BY A CATERPILLAR LIMITED WARRANTY<sup>1</sup>.

CAT REMAN HYDRAULIC COMPONENTS ARE ENGINEERED TO LAST WITH **SAME-AS-NEW** PROTECTION UNDER OUR 12-MONTH CATERPILLAR LIMITED WARRANTY<sup>1</sup>, COVERING CATERPILLAR DEFECTS IN MATERIAL AND/OR WORKMANSHIP, AND RESULTANT DAMAGE<sup>1</sup>.

Reach out to your dealer to learn more about the warranty<sup>1</sup>, core exchange and other Cat Reman details. They're fully equipped to help you find and install the right hydraulic parts for the job ahead.

**Explore additional information, resources and repair options at [www.cat.com/reman](http://www.cat.com/reman).**

<sup>1</sup>Warranty can vary by model and application; limitations may apply. For complete details about the applicable Caterpillar Limited Warranty, contact an authorized Cat dealer.

<sup>2</sup>Represents environmental impacts from remanufacturing process for a Cat Reman engine and components as compared to manufacturing a new, comparable engine and components. Does not include impacts elsewhere in our value chain. Based on a 2006 study done by Caterpillar on a 3412 cylinder head.

<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.



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