

CAT® HYDRAULIC

CYLINDERS & RODS



**FLEXIBILITY, AVAILABILITY
AND PEACE OF MIND**

**FIVE REPAIR OPTIONS¹
CATERPILLAR LIMITED WARRANTY**

¹Consult your local dealer for available options.



FLEXIBILITY, AVAILABILITY, AND PEACE OF MIND.

Cat® hydraulic cylinders and rods provide the muscle for your machines. And just like your own muscles, they need proper care. Your Cat dealer offers repair options for a wide range of specific needs and budgets.

FIVE REPAIR OPTIONS

Reseal, repair, rebuild, replace with Cat Reman, or replace with new. Improve your return on investment with total hydraulic system management.

CATERPILLAR LIMITED WARRANTY

Covers resultant damaged Cat parts in the event of an applicable failure.¹

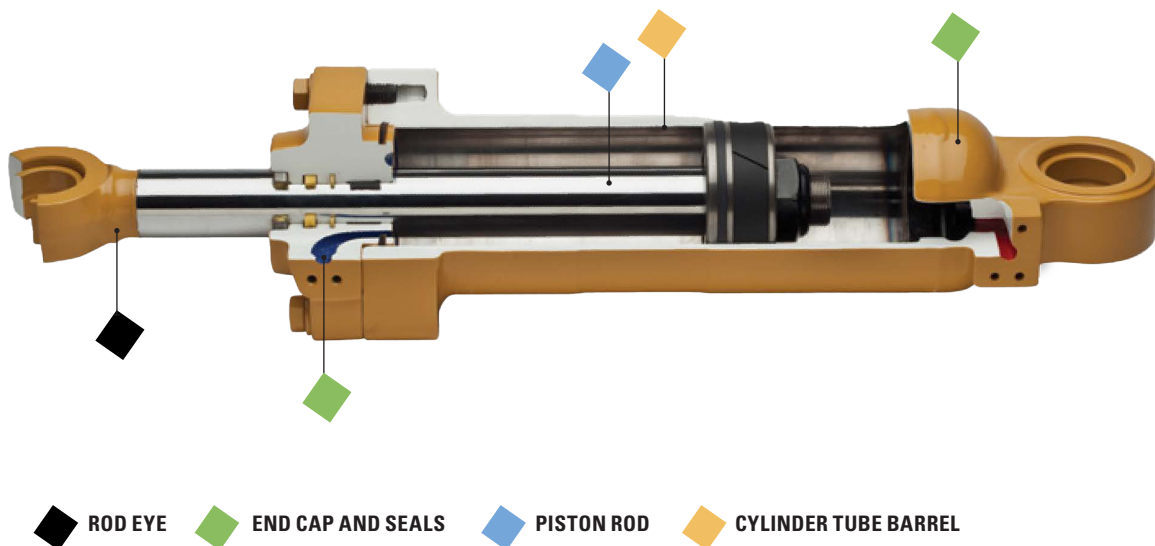
¹Warranty can vary by model and application; limitations may apply. For complete details about the applicable Caterpillar Limited Warranty, contact an authorized Cat dealer.

WHAT MAKES CAT CYLINDERS A HIGH QUALITY PRODUCT?

Cat hydraulic cylinders are designed for better durability and precision, making them an ideal choice for tough applications. A hydraulic cylinder is an actuator that uses pressurized fluid to provide linear power, and it consists of a cylinder barrel, a piston rod, end caps, seals, and connection ports. The cylinder barrel is closed by end caps and honed to reduce the risk of contamination and prolong the life of the seals. The rod eyes are attached to the piston rod through an inertia friction welding process for a stronger joint bond.

Cat cylinders also feature a sealing system that absorbs pressure spikes, withstands side loading, and guards against contamination. Induction hardening on the rod produces greater hardened depth which results in improved mechanical properties. This provides better protection against damages such as dents, scratches, and internal impacts. One piece forged rods may be available for applications with high stress. To reduce the cost of ownership, we suggest partnering with a local Cat dealer for cylinder or seal repair before failure to avoid costly repairs.





Hydraulic cylinders and rods provide the muscle for your machines, designed for your rugged work environment.

The cylinder is made up of a cylinder barrel, a piston rod and pressure fluid, such as oil, to move the rod. Valves are used to control the fluid flow and the movement's direction. Make the best choice to protect hydraulic performance and your bottom line with Cat hydraulic cylinders and rods.

HOW DO HYDRAULIC CYLINDERS WORK?

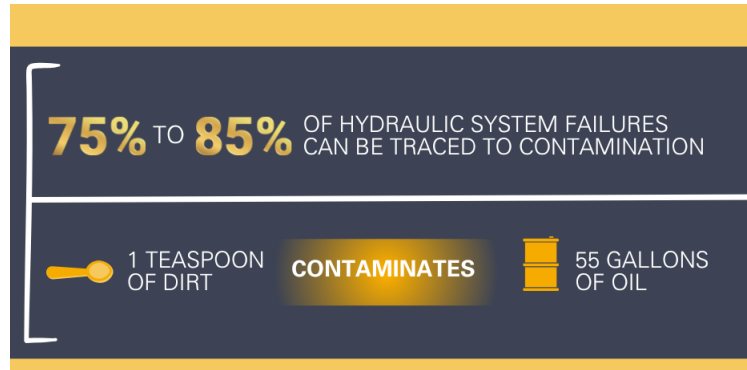
Hydraulic cylinders use pressurized fluid to create motion and help move heavy machinery. When pressurized fluid is forced into the cylinder, the piston rod extends or retracts and creates a linear motion. The cylinder barrel is the stationary part of the cylinder while the piston rod is the movable part. The end caps and seals help contain the fluid and keep it from leaking out. The pressure created by the fluid is what powers the hydraulic cylinder and enables it to move.

Operating a machine with cylinders requires an expert touch. The operator must have the skill and knowledge to know how much pressure to apply to each individual cylinder and when to apply it to keep all components of the machine working together efficiently and smoothly. With this expertise, the operator can ensure that the machine produces the highest quality output with minimal downtime.

WHY IS CONTAMINATION PREVENTION IMPORTANT?

Preventing cylinder contamination and choosing the right repair option can save you time and money. Did you know that 75-85% of hydraulic system failures are traced to contamination issues?²

²According to industry standards.

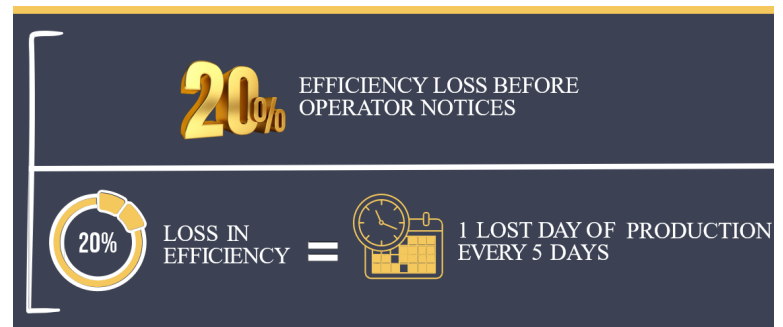


Contamination control is an important part of maintaining a healthy hydraulic system. Surface damage to cylinder rods, because of scoring, pitting, or denting, is a common entry point for contaminants, leading to costly repairs and reduced efficiency. Performing regular maintenance and inspections can help proactively manage potential hydraulic system issues. Additionally, if any damage is identified, selecting the right repair option is essential. By investing in the right solution, you can reduce the risk of further contamination, protect the integrity of your hydraulic system, and save time and money.

Not detecting hydraulic system performance problems soon enough can result in significant efficiency losses, equivalent to a whole day of lost productivity in a 5-day week.

Efficiency loss also increases fuel usage. Taking into consideration the high cost of efficiency loss, it is vital to take proactive steps to keep your hydraulic system clean. Regular maintenance and preventive checks can help detect and reduce contamination, keeping your machine running smoothly and efficiently.

Contamination can be a major issue when performing repairs, which is why your Cat dealer has a comprehensive contamination control program in place. They also offer a variety of repair solutions depending on your situation and needs so they always have you covered. If your cylinder has a leak, your dealer can provide a cost-effective repair option called cylinder light hone and reseal. This repair can help maintain your machine's performance and efficiency. If your cylinder is broken, your dealer offers other options such as dealer rebuild or exchange, Cat Reman, or Cat new. These options are backed by the Caterpillar Limited Warranty, giving you peace of mind when selecting a repair option from your Cat dealer.



REPAIR OPTIONS MAKE REPAIR OR REPLACE DECISIONS EASY THE CHOICE IS YOURS

Your Cat dealer is your go-to source for any hydraulic component repairs and replacements. They offer a wide selection of repair and maintenance services that range from basic and economical services, such as cylinder resealing, to full component replacement using remanufactured (Cat Reman) or brand-new Cat parts. With your dealer, you can find a repair option that fits your budget and time requirements.

LEVEL 1: RESEAL



Resealing your cylinder is the lowest-cost option. Restore undamaged components with fast dealer turnaround service or order DIY kits.

- Lowest-cost option

LEVEL 2: REPAIR

Do your components show light damage? Then this is the option for your machine. A quick turn-around from your experienced dealer delivers results and gets you back to work quickly.

- Ideal for lightly damaged cylinders and rods
- Retains reusable parts for cost efficiency

LEVEL 3: REBUILD

When you have older and worn components a rebuild is the right choice. It retains usable parts for cost efficiency and includes engineering updates for a like-new result.

- For more severely damaged cylinders and rods
- Retains reusable parts for cost efficiency

LEVEL 4: CAT REMAN

When you select the Cat Reman option, you'll receive like-new performance and quality at a fraction of the cost of new, including a same-as-new Caterpillar Limited Warranty.¹ Off-the-shelf availability business model helps minimize downtime versus rebuilding a component, while sustainability benefits offer less energy and materials used compared to the manufacture of new parts.

- ~ 65-85% cost of new parts²
- Less greenhouse gas process emissions and less process energy used³
- 80-90% less new materials used³
- Includes engineering updates

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²Cost savings based on return of core; core conditions apply.

³Represents U.S. environmental impacts comparing "gate-to-gate" remanufacturing and manufacturing processes for engines and components. Based on 2018 external study of Cat engines, alternators, and turbochargers. Does not include impacts elsewhere in our value chain.

LEVEL 5: NEW



Genuine Cat parts are factory-assembled and available worldwide.

- Genuine Cat parts
- Factory-assembled
- Ready to go
- Available worldwide

MORE THAN PARTS AND COMPONENTS

When you buy Cat parts, components, or equipment, you get so much more. You also get the support of a best-in-class dealer network, backed by a range of flexible solutions, technology, tools and more.



CUSTOMER VALUE AGREEMENTS

Keep your Cat machines and engines ready to work with a flexible, hassle-free plan for parts delivery, service, data access and more. CVAs are available for your new, and not-so-new Cat machines and engines.

FINANCING & EXTENDED PROTECTION

Cat Financial offers tailored financing options for your business such as buying equipment, protecting investments beyond the standard warranty, and using equipment equity to drive business growth. Plus, you can manage your online account anywhere, any time and using any device.

CAT INSPECT

Access your equipment data on your mobile device. This easy-to-use app lets you capture inspection data and integrates with your other Cat data systems, so you can keep a close eye on your fleet.

HYDRAULIC HOSE & COUPLINGS

Cat hose and couplings exceed industry standards to assure performance across all makes and all models.

HYDRAULIC PUMPS & MOTORS

Precisely matched to your machine specs, Cat pumps and motors protect your productivity and profits.

FILTERS & FLUIDS

From unique design to proven results, Cat filters and fluids deliver enhanced protection for your Cat equipment.

LINKAGE PINS

Choose strength. Cat linkage pins and bearings can help you avoid downtime.

THE CAT DEALER NETWORK THEY'RE NOT JUST A CAT DEALER. THEY'RE *YOUR* CAT DEALER.

You are supported by the largest, most experienced dealer network in the industry. When you collaborate with a Cat dealer, you get more than basic maintenance or repairs. You get a personal partner who will do whatever it takes to help you succeed.



4 REASONS TO CHOOSE A CAT DEALER

Whether you're an owner-operator or a multi-national corporation, you'll get concierge-level support from a team of industry and equipment experts.



LOCAL PARTNERS

Cat dealers are locally operated by people who are invested in your success. Many customer-dealer relationships go back generations.



TAILORED SUPPORT

Your Cat dealer will listen to your unique needs and find the right solution for your business, budget, and goals.



ONE STOP SHOP

From engines to gensets to machines, your Cat dealer can support all your equipment needs, from purchase to consignment. No need to go elsewhere.



SEASONED EXPERTS

Cat dealers employ long-tenured technicians and industry-specific experts to give you the best support possible.

PROTECT AND MAINTAIN YOUR MACHINE'S COMPONENTS

Cat dealers hate downtime as much as you do. They offer maintenance planning, repair services, protection plans and an inventory of same-day parts to keep you up and running. When you partner with your local Cat dealer you will have the right parts and services solutions customized to your equipment and operation.





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CAT DEALERS DEFINE
WORLD-CLASS
PRODUCT SUPPORT.

For more complete information on Cat products, dealer services and industry solutions, visit us on the web at www.cat.com

Materials and specifications are subject to change without notice.

Featured machines in photos may include additional equipment.

See your Cat dealer for available options.

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www.cat.com

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