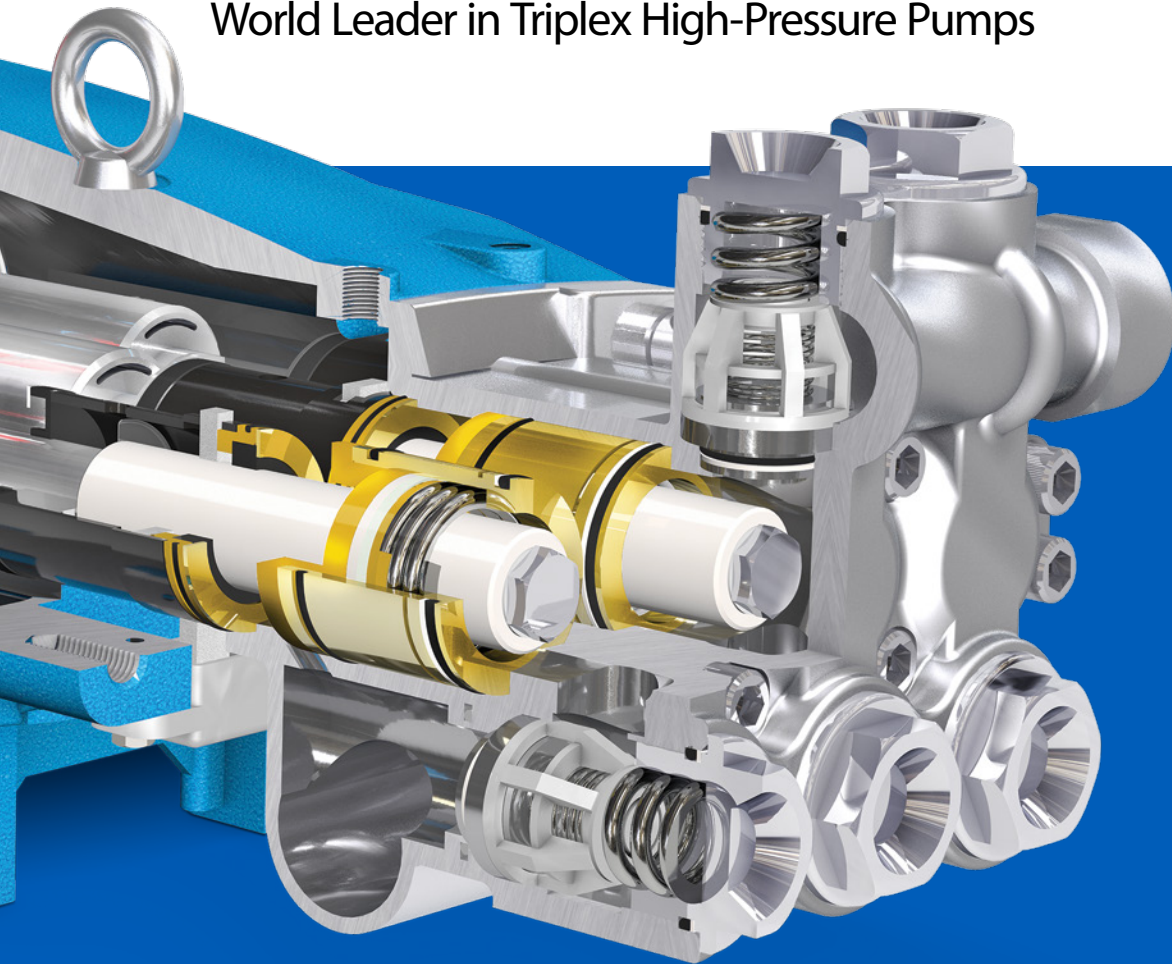


The Best Choice

World Leader in Triplex High-Pressure Pumps



Product Quality, Reliability and Support You Expect

www.catpumps.com

Cat Pumps – the Best Choice for Your Business



Designed to Keep Your Equipment Running

Cat Pumps designs and builds high-pressure pumps and systems to the highest quality standards. Every design detail is optimized for product life and reliable performance. Specially formulated seals and high density, polished ceramic plungers typify the attention to design detail. Cat Pumps commitment to quality is legendary within the industry and is one of many reasons why customers remain loyal to Cat Pumps.

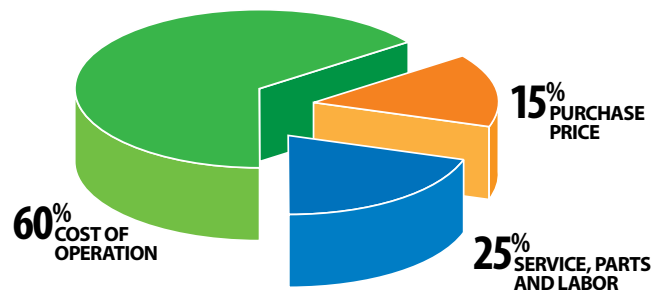
Quality is the Difference

Cat Pumps embraces a zero defects manufacturing philosophy and has done so since the beginning. Products are produced in ISO 9001 registered facilities and fully tested to complete performance specifications before shipment. Precision machining, tight tolerances, and world-class process capabilities guarantee every product is ready for trouble-free service, right out of the box. Design and manufacturing excellence set Cat Pumps apart from the competition; no other pump company does is better.

Pump Price vs. Cost

Customers buy Cat Pumps because they realize maximizing uptime (by reducing downtime) is good for business. The savings of a lower-dollar pump seldom covers the cost of downtime — and the impact on customer satisfaction and business reputation.

The chart (*right*) depicts the typical life cycle costs of a pump. The initial purchase price of the pump ranges between 10% and 15%. Maintenance labor and service parts account for 25% to 30% of the cost-of-use. The cost of operation (primarily energy consumption) is between 60% and 80%.



Life Cycle Costs of a Pump
The purchase price is only one selection variable.

Make the Best Pump Choice

Selecting a pump on the basis of the initial price ignores other important decision factors, such as the expected life of the pump and its service requirements. The cost of lost production or being out-of-operation can never be recovered, therefore it makes sense to buy the longest-lasting, most trouble-free pump. That's why customers trust their business to Cat Pumps.

Customer Care that Keeps You in Business



Customer Service – Another Cat Pumps Difference

When customers do business with Cat Pumps, they benefit not only from long-lasting dependable products, but also from excellent customer service and support. Cat Pumps customers enjoy the following benefits:

- 99.4% order fill rate, supported by world-class inventory management system
- 99.9% shipping accuracy, which means customers receive what they ordered
- 99.8% of orders ship within 24 hours for fast on-the-job delivery
- Worldwide distribution network stocking genuine Cat Pumps products and parts
- Industry-leading customer service with “live” support, from phone operators to Technical Services
- Experienced staff on call to assist with inquiries, from designing power units to system troubleshooting
- “Account Access” portal provides 24/7 access to registered customers to enter purchase orders, receive up-to-date pricing, and track orders. Contact Cat Pumps for more information.
- Email sales@catpumps.com for fast response to questions and requests or call (763) 780-5440

Sales and service support is provided by highly qualified distribution network covering the U.S., Canada, and Mexico. Cat Pumps has an international presence with sales offices in the U.K., Belgium and Germany as well as a worldwide distribution channel.

Complete, Accurate and Fast Order Shipping



Pumps and parts are stocked for off-the-shelf delivery. Wherever customers are in the world, Cat Pumps service and support are never far away. Long-lasting products backed by excellent customer service are why Cat Pumps is the best choice for high-pressure pumps and systems.

The Cat Pumps Difference

Quality is evident in every design detail. Our products are designed and built to be the industry's most dependable and longest-lasting available.

Crankshaft

- Chrome-moly forging provides exceptional strength for high durability and long life.
- Three journals with shoulders prevent lateral drift, reducing wear throughout the pump. Superior alignment is maintained by centering on two carrier bearings.

Bearings

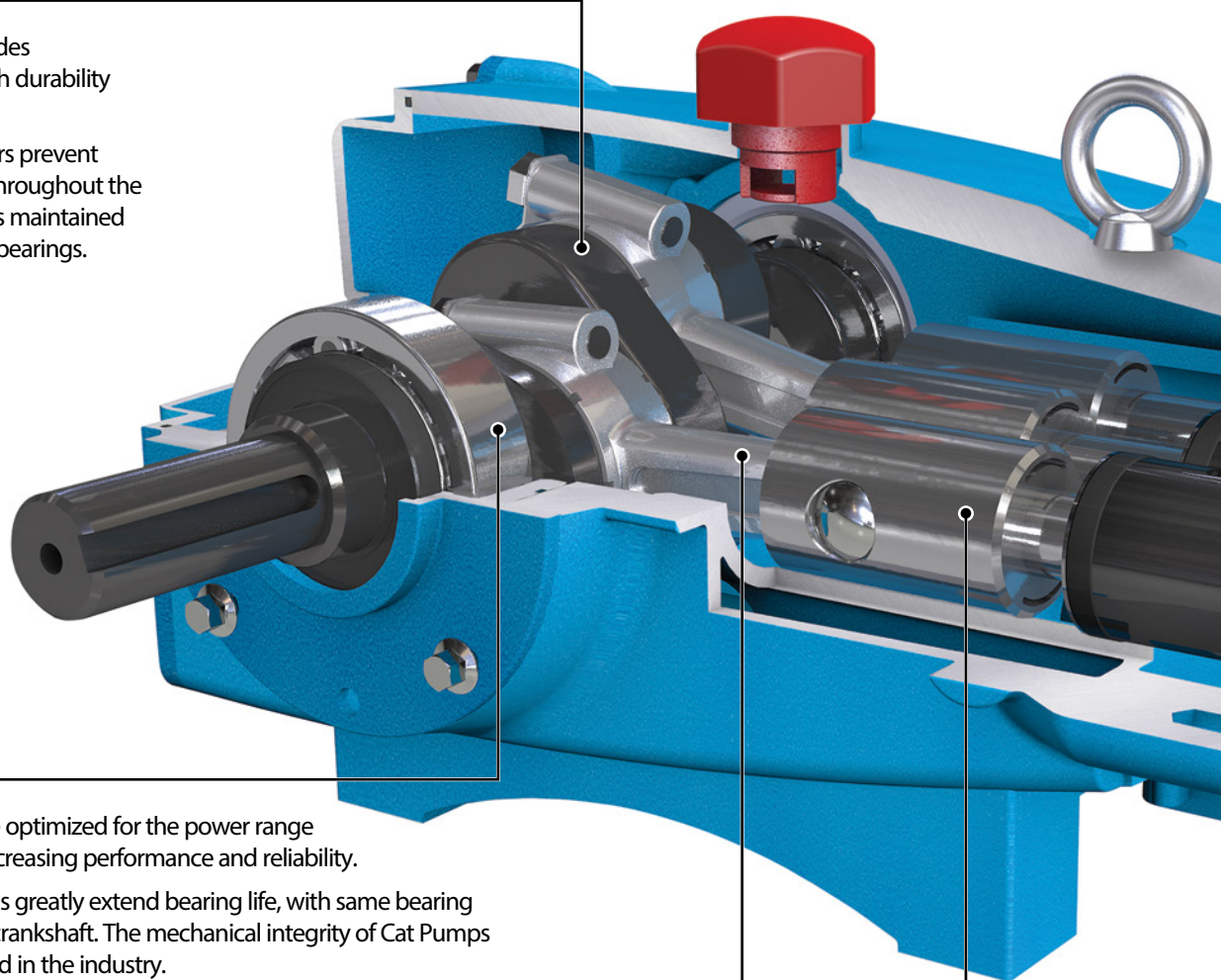
- Bearing design and style are optimized for the power range of each pump frame size, increasing performance and reliability.
- Oversized premium bearings greatly extend bearing life, with same bearing style used on both sides of crankshaft. The mechanical integrity of Cat Pumps bearing design is unmatched in the industry.

Connecting Rods

- Matched oversized connecting rods are made of a special high-strength alloy, selected for its excellent castability and long term dimensional stability.
- Material blend provides excellent dampening capacity and vibration attenuation – excellent for connecting rod material.
- Hardened material and robust design reduces wear; no inserts or sleeves required in journal bearings.

Plunger Rods

- High tensile strength stainless steel with Zamak crossheads for strength and superior wear qualities.
- Guided plunger rod heads, traveling shorter stroke distances in oil flooded lubrication, create less wear than competitive designs.
- Crankcase crosshead section is concentric with 360° plunger rod support and features drilled-through oil port to lubricate front side of crosshead area.



Crankcase

- High-strength, lightweight die cast aluminum crankcase with splash oil design allows operation at speeds as low as 100 rpm.
- Two-coat electrostatic paint process provides a highly durable surface that is water and chemical resistant. Primer consists of a special synthetic resin; final coat is either blue epoxy or blue hammertone paint. Cat Pumps crankcase finish is superior to less expensive surface treatments, such as anodizing.

Manifolds

- Precision machined high-strength manifolds provide a superior sealing surface for consistently longer seal life when compared to competitive designs.
- Manifolds are available in different materials including: brass, nickel aluminum bronze, 304 and 316 stainless steel, duplex stainless steel and others on request.
- Manifolds can be easily serviced using standard tools.

Valves

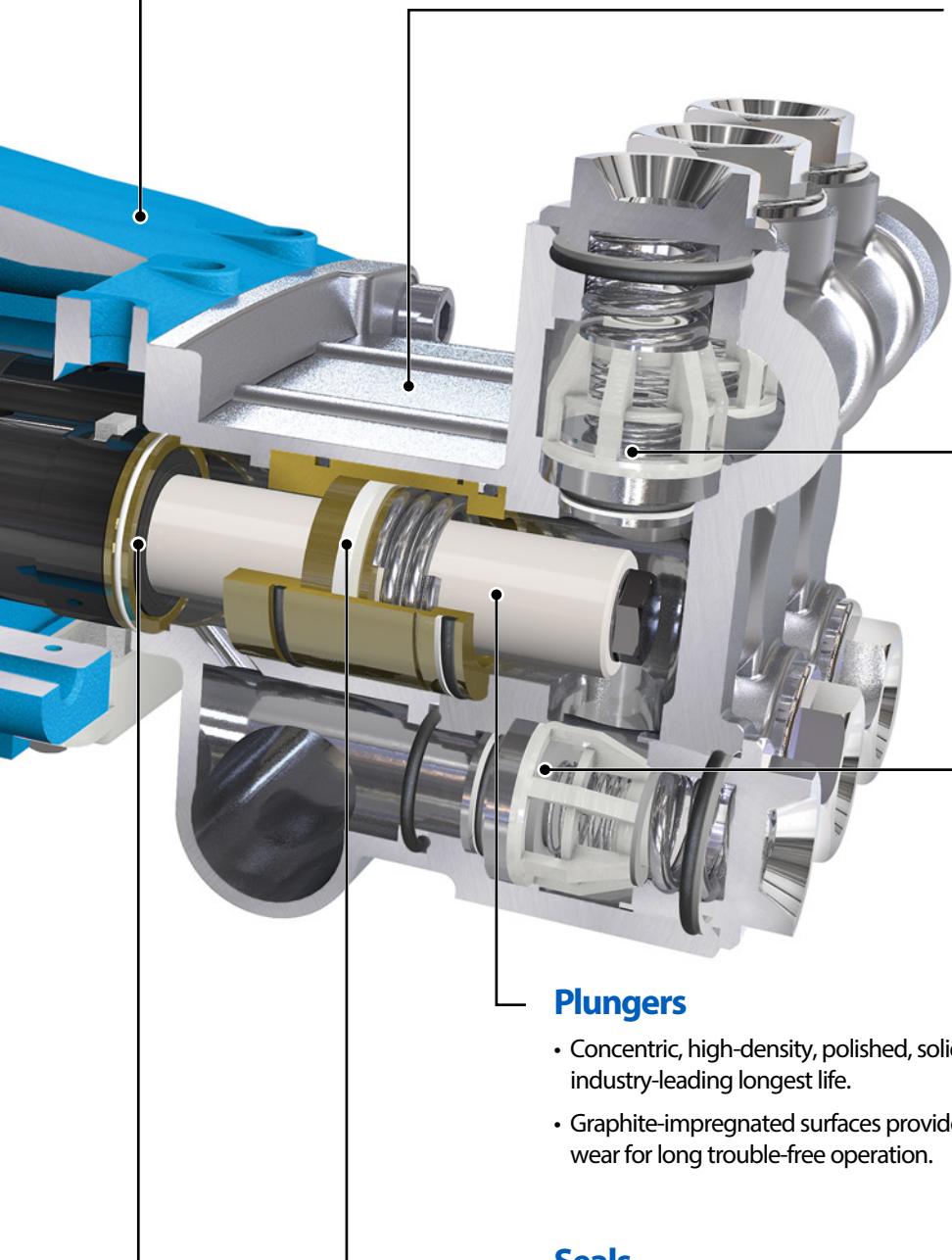
- Stainless steel valves, seats and springs provide corrosion resistance, positive seating and long life.
- Valves designed for fast and easy servicing.
- Valve clearances designed for low pressure loss, preventing cavitation and improving pump efficiency.

Plungers

- Concentric, high-density, polished, solid ceramic plungers provide a true wear surface for industry-leading longest life.
- Graphite-impregnated surfaces provide lubrication and resistance to abrasion, reducing seal wear for long trouble-free operation.

Seals

- Specially formulated, Cat Pumps exclusive high-pressure/V-Packing seal material and design offer unmatched seal life. Seals are 100% elastomeric for consistent high quality.
- Cat Pumps original 100% wet seal design adds to service life by allowing pumped liquid to pass from inlet side through a chamber to lubricate and cool the backside of the V-Packing and spring-side of low-pressure seal. No external lubrication or oilers required.
- A variety of optional seals/elastomers are available to handle special applications.



Industrial Grade Premium Bearings

Mechanical integrity of the drive-end starts with bearing selection and sizing. Cat Pumps is one of the few high-pressure pump suppliers that offers three different styles of premium bearings based on optimum pump performance. Cat Pumps designers specify bearings sized at the low-end of their performance specification, resulting in oversized bearings that can handle extreme load transfers.

For example, Cat Pumps uses a straight roller bearing in the 3560 pump because it offers greater radial load capacity than the equivalent tapered roller bearing often found in competitors' pumps. In fact, many competitors use only one style of bearing, compromising performance for the sake of economy. With Cat Pumps, customers benefit from long trouble-free life from the mechanical drive-end.



Tapered Roller Bearings



Straight Roller Bearings



Caged Ball Bearings



In the Cat Pumps design, straight and true alignment through the entire pump drive-train reduces sideloading and wear on the plunger and seals. By design, Cat Pumps builds the longest-lasting mechanical drive on the market.

Forged Chrome-Moly Crankshaft

Chrome-moly (chromium-molybdenum) is a high-strength material that exhibits excellent wear resistance, making it an excellent choice to translate rotary input power to the pump connecting rods. To offset torque loading that can cause material fatigue, Cat Pumps increases the material thickness of the journal support, resulting in unmatched mechanical integrity.

Superior alignment is maintained by precision machining to tight tolerances and centering on two carrier bearings and using three journals. This design prevents lateral drift; one reason why replacement seals offer the same long-life as original seals.

High-Strength Connecting Rods

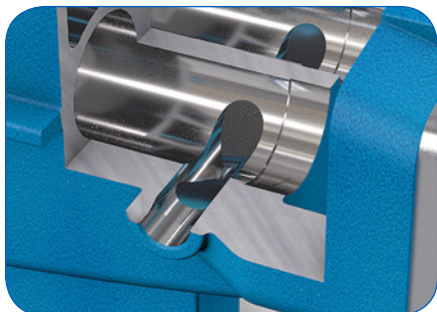
To minimize the effects of stress concentration on the wrist pin and crankshaft connection, Cat Pumps uses oversized connecting rods made from a special high-strength friction reducing journal bearing material. The excellent casting dimensional stability of this material and the overall design of the connecting rods reduce wear for industry-leading long product life.



Guided Plunger Rod Heads and Internal Oil Porting

High tensile strength 316 stainless steel with Zamak or bronze crossheads provide strength with excellent wear qualities. Crankcase crosshead area is concentric with 360° plunger rod support for superior alignment, reducing mechanical wear. Competitive products reduce material content by not providing complete rod head support, resulting in less bearing support and higher wear rates.

In a Cat Pumps exclusive design feature, drilled-through internal oil porting lubricates the front side of the crosshead area, providing a constant flow of lubricating oil. Coupled with the splash-oil design enhanced by the trapezoidal shape of the crankcase, every Cat Pumps model can operate efficiently down to 100 RPM. For variable frequency drive (VFD) applications, this is an important consideration. (Competitive pumps are generally limited to a minimum range of 350 to 500 RPM to prevent excessive wear and erratic operation.)



Internal oil porting lubricates the front side of the crosshead area, providing industry-leading longest life. This is a Cat Pumps exclusive design feature not found on competitive products.



Die Cast Aluminum Crankcase and Surface Finish

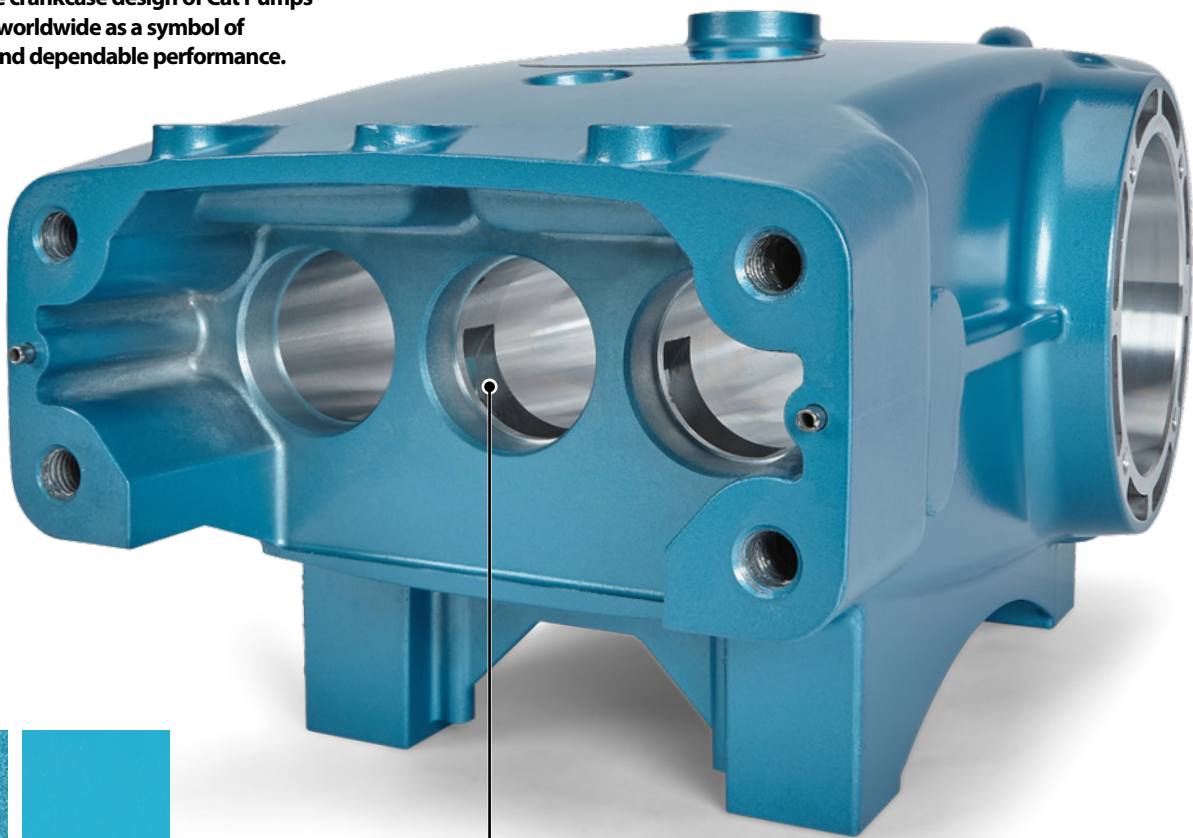
The distinctive crankcase design of Cat Pumps is recognized worldwide as a symbol of high quality and dependable performance. Cat Pumps "Blue" means customers can expect long-life and lowest life cycle cost. For nearly 50 years, this design has proven to be superior to any competitive offering. Sound engineering principles account for the shape, internal configuration, and finish.

The trapezoidal shape of the crankcase and the internal oil porting provides abundant lubricating oil for critical mechanical parts. The combination of submersed and splash-oil design permits operating as low as 100 RPM, often a requirement for variable frequency drive (VFD) systems.

Thick-walled, high quality die cast aluminum provides excellent heat dissipation that does not require engineering workarounds, such as heat dissipating pockets or fins. In the Cat Pumps design, the causes of excessive heat rise are eliminated by the use of oversized bearings, internal oil porting, and splash-oil design.

Cat Pumps provides the industry's most durable pump finish with a two-coat electrostatic paint process designed to handle hot and humid industrial environments. This highly durable surface offers excellent water and chemical resistance, making it superior to less expensive finishes such as anodizing. Primer consists of a special synthetic resin; final coat is either blue epoxy or blue hammertone paint. The distinctive Cat Pumps "Blue" is recognized throughout the world as an indicator of high quality and dependable performance.

The distinctive crankcase design of Cat Pumps is recognized worldwide as a symbol of high-quality and dependable performance.



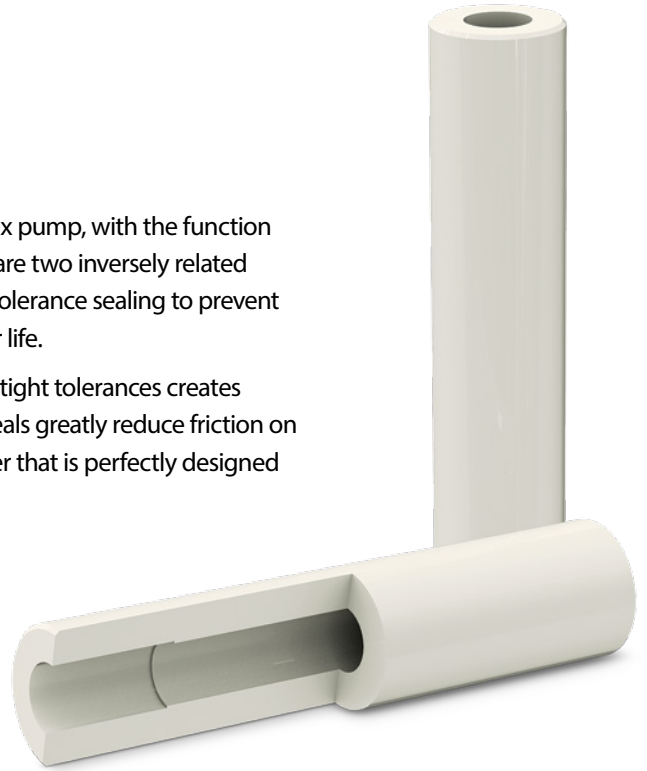
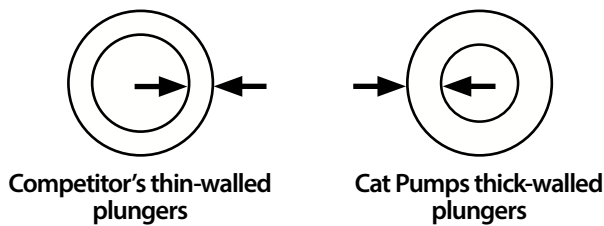
Cat Pumps two-coat electrostatic paint process provides a highly durable finish. Final coat is either blue hammertone or blue epoxy paint.

Cat Pumps unique crankcase design and the internal oil porting provide abundant lubrication for critical mechanical parts, extending product life.

High-Density, Polished Solid Ceramic Plungers

Plungers are a critical work component of a positive displacement triplex pump, with the function of pushing liquid through the discharge manifold to the system. There are two inversely related engineering challenges that Cat Pumps designers have resolved: tight-tolerance sealing to prevent leaking and ceramic surface treatment to achieve long seal and plunger life.

Using a polished, solid ceramic plunger and holding its concentricity to tight tolerances creates optimum sealing characteristics. Graphite-impregnated low-pressure seals greatly reduce friction on the plunger. These design elements work together to produce a plunger that is perfectly designed for continuous duty applications — and long dependable life.



The Cat Pumps plunger features a single concentric bore with greater wall thickness through the length of the plunger than competitive designs. The temperature gradient is much more consistent and with the higher-mass plungers, there is better heat distribution and dissipation, reducing the potential for thermal shock and surface cracking.

Specially Formulated High and Low Pressure Seals

Cat Pumps proprietary one piece seals have earned the reputation for being the most durable pump seals available. While some competitive designs are no more than rubber-coated woven fabric, Cat Pumps specially formulated high-pressure/V-Packing seal material is 100% elastomeric, offering better resiliency and longer life.

Cat Pumps original wet seal design adds to service life by allowing pumped liquid to pass from inlet side through a chamber to lubricate and cool the backside of the V-Packing and spring-side of low-pressure seal.

Seal kits and other service parts are on the shelf for 24-hour shipping, reducing wait times and the need for excessive inventory.

A variety of optional seals/elastomers are available to meet application requirements. Materials include NBR (nitrile/buna-N), EPDM (Ethylene Propylene Diene Monomer), PTFE (polytetrafluoroethylene), FPM (fluorocarbon), and other compounds on request.



Stainless Steel Valves Assemblies

Computer modeling and years of experience guided Cat Pumps engineers to design valves with ideal operating characteristics. Optimum valve clearances result in better sealing and lower pressure loss compared to competitive designs. Low pressure loss prevents pump cavitation on the inlet side of the pump while improving overall pump efficiency.

Valve life is increased by the use of high-grade stainless steel that provides corrosion resistance while offering positive sealing. Valves are designed for fast and easy service.



Precision Machined Manifolds

Manifolds serve the important purpose of housing the valve assemblies, high and low pressure seals and plungers. Cat Pumps offers a variety of manifold styles to best-fit application requirements. Critical sealing surfaces are precision machined to exacting tolerances for better sealing and improving pump efficiency by minimizing unswept volume.

No detail is overlooked, from material selection to manifold mounting. Larger frame pumps feature a two-piece manifold design for fast and easy servicing in-the-field. Cat Pumps designers analyze bolt patterns for optimum load distribution to maintain true alignment and also allow easy servicing without special tools.



Manifolds are available in different materials including: brass, nickel aluminum bronze, 304 and 316 stainless steel, duplex stainless steel and others on request.

Product Performance Range

A wide range of pump options are available to meet application needs, including products that meet various industry certifications and directives.

- Flow: 0.13 to 240 gpm (0.49 to 908 lpm)
- Pressure: 100 to 10,000 psi (6.9 to 689 bar)
- RPM: 100 to 3450
- Liquid Temperature: -10° to 240°F (-23° to 115°C)
- Manifold Materials: Brass, Nickel Aluminum Bronze, 304 and 316 Stainless Steel, Duplex Stainless Steel
- Drives: Electric, Engine, Hydraulic, Pneumatic

Cat Pumps also offers complete pumping systems, pump/motor subassemblies, and pump modifications to meet application requirements. Contact us for more information.

Protect Your Business Investment with Cat Pumps

Business owners, managers, and operators understand the value of being open and ready for business. They realize the consequences of lost production and missed schedules. Business reputations are made on reliability and performance. That is why Cat Pumps never compromises on quality. Our customers trust our products to keep their businesses running.

Cat Pumps remains firmly committed to its original mission and one that accounts for being the worldwide leader in high-pressure pumps and systems:

"It is the mission of Cat Pumps to manufacture the longest-lasting, most dependable high-pressure pumps possible and back them with outstanding service and availability from stock."

When it needs to run, make it Cat Pumps.

Customers Agree

"We use Cat Pumps exclusively. We cannot afford a breakdown on the job site. We need a pump that is dependable when locating utility lines. Cat Pumps provides that dependability."

– Greg M., FL

"If a customer is not convinced to use a Cat Pump and asks me to substitute another pump, I cover the difference in cost, because I know who is going to get the call when the other pump goes down. I have learned that you can reduce your operating costs with the dependability of Cat Pumps."

– Mike C., AZ

"We have tried other brands and had failures in less than two years. We find the Cat Pumps to deliver a true rated performance, operate smoothly and perform with extreme reliability. Now we specify only Cat Pumps on our equipment."

– Mike P., FL

ABOUT CAT PUMPS

Proven Quality, Customer Focused

Cat Pumps is the world leader in the design, manufacture and marketing of the most dependable high-pressure positive displacement reciprocating triplex pumps and systems in the market. Our mission to exceed customer expectations for quality, reliability, availability, delivery, technical expertise and aftermarket support to assure the best value in all the industries served.

LOCATIONS

Worldwide Headquarters

Cat Pumps

1681 94th Lane Northeast
Minneapolis, MN 55449
USA

P: 763-780-5440
F: 763-780-2958
techsupport@catpumps.com
www.catpumps.com

Territories Served

U.S., Canada

International Division

P: 763-780-5440
F: 763-785-4329
intlsales@catpumps.com
www.catpumps.com

Territories Served

Africa, Asia, Australia, Central and
South America, Mexico, Middle East,
New Zealand, Turkey

Cat Pumps International N.V.

Heiveldekens 6A
2550 Kontich
Belgium

P: 32 3 450 71 50
F: 32 3 450 71 51
cpi@catpumps.be
www.catpumps.be

Territories Served

Western Europe (except U.K.,
Germany, and Austria)

Cat Pump (U.K.) Ltd.

1 Fleet Business Park, Sandy Lane
Church Crookham
FLEET, Hampshire GU52 8BF
England

P: +44 1252 622031
F: +44 1252 626655
sales@catpumps.co.uk
technical@catpumps.co.uk
www.catpumps.co.uk

Territories Served

England, Ireland, Scotland,
N. Ireland, Wales

Cat Pumps Deutschland GmbH

Buchwiese 2, D-65510
Idstein
Germany

P: +49 6126 9303 0
F: +49 6126 9303 33
catpumps@t-online.de
www.catpumps.de

Territories Served

Austria, Commonwealth of Independent States
(CIS), Germany and Eastern Europe

SALES, DISTRIBUTION, SERVICE

Call today for product and application assistance.
763-780-5440 or visit us at www.catpumps.com



CAT PUMPS

1681 - 94TH LANE N.E. MINNEAPOLIS, MN 55449-4324
PHONE (763) 780-5440 — FAX (763) 780-2958
e-mail: techsupport@catpumps.com
www.catpumps.com

For International inquiries go to www.catpumps.com and navigate to the "Contact Us" link.