



Food and Beverage Industry

High-Pressure Pumps and Systems



Product Quality, Reliability and Support You Expect

www.catpumps.com



Keep It Clean with Cat Pumps

Cat Pumps offers a complete line of positive displacement high-pressure pumps and systems that exceed industry expectations for reliability, availability and support. Our commitment to produce the highest quality, longest lasting products available is supported by maintaining a rigorous zero defect quality assurance program.

When high-pressure liquid is required, Cat Pumps is the supplier of choice for pumps, pumping systems and control accessories. Applications include central cleaning, washdown, evisceration tool cleaning, mist cooling, humidification, and numerous other industry uses.

Benefits of High-Pressure Cleaning

Using high-pressure water significantly reduces cleaning time and water consumption compared to using low pressure (under 250 psi) water or other cleaning solutions. A high-pressure stream of water directed toward a surface provides increased kinetic energy, yielding a higher impact force and agitation on the surface being cleaned. Steady flow from the nozzle then flushes the contamination, resulting in a completely cleaned surface. Benefits include:

- Less time and labor required
- Water savings through reduced flow requirements at higher pressures
- Less energy consumption
- Improved cleaning results



Readily Accepted and Available

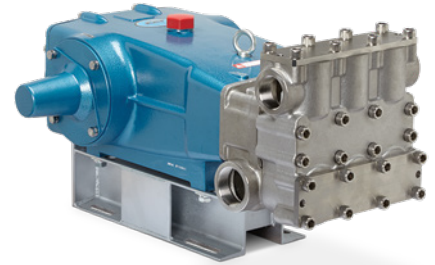
The dependability of Cat Pumps products is a major reason why our pumps and systems are in use for livestock mist cooling, pizza production and chicken processing. Cat Pumps products are hard at work in a remarkable variety of high-pressure applications in the food industry.

In addition to receiving the highest quality products available, Cat Pumps customers also benefit from 24-hour shipping, as well as the support from a worldwide sales and service channel. Customers trust Cat Pumps to keep their equipment operational and ready for production.

Product Performance Range

A variety of pump options are available, including products that meet 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 200°F (-23° to 93°C) Cat Pumps offers special high-temperature seals in addition to stainless steel valves and seats for compatibility with many liquids and temperature ranges.
- Manifold Materials: Brass, Nickel Aluminum Bronze, 304 and 316 Stainless Steel, Duplex Stainless Steel.
- Sealing Materials: NBR, FPM, EPDM, PTFE, high-temp (240° F), silicone-free and other materials available upon request
- Drives: Electric, Engine, Hydraulic, Pneumatic



Model 67102C
100 gpm (378.5 lpm), 1,000 psi (69 bar)

Custom Pumping Systems

Cat Pumps is the industry leader in providing custom-engineered pumping systems to meet a wide range of application needs, including central cleaning systems, facility cleaning, washdown, belt and tote cleaning, among others.

By selecting Cat Pumps for your next pumping system, you eliminate the expense of designing, procuring, fabricating, and testing. The Cat Pumps technical sales team assists with proper component selection as well as operation support.

With thousands of installations running around the world, Cat Pumps is the supplier of choice for custom pumping systems. Options include:

- Variable Frequency Drives (VFD)
- PID Loop (varies speed of pump to maintain system pressure)
- Multiple Pump Systems
- Low-Pressure Seal Monitors
- Auto Shutdowns (Temperature and Low Inlet Pressure)
- Other control options to meet application needs



Custom-designed systems meet the requirements for central cleaning and other food & beverage applications.

Food Industry Applications

Cleaning and Sanitation

Cat Pumps provides the longest-lasting and most dependable pumps for high-pressure cleaning and sanitation applications.

- Conveyor Belt Cleaning
- Equipment Washdown
- Surface Cleaning
- High Pressure Rinse
- Screen Cleaning
- Portable Cleaning Equipment
- Keg Washing
- Tote - Bin - IBC Cleaning
- Central Cleaning Systems
- Sanitizing
- Tank Cleaning
- Spiral Chillers/Freezers
- Aqueous Ozone



Application Spotlight

The power of directly applied high-pressure water improves cleaning efficiency in many ways. Nozzles, spray bars and rotating spray arms direct concentrated flow producing agitation that removes impinged material from totes, bins, belts, conveyors, floors, walls and other surfaces. With the power of high-pressure systems, fewer cleaning passes are required, greatly decreasing cleaning time and labor while reducing water consumption.



Photo provided by Commercial Cleanser, Schiller Park, IL

Tote Cleaning

Previous system to clean totes required 8 hours to clean 200 totes. This system also used high volume of low-pressure water and often required multiple passes. A newly installed system using Cat Pumps products greatly improved the cleaning process.

Results: in 3 hours, 1,300 totes cleaned with considerable water and labor savings.



Belt Cleaning

Previous method of cleaning coated nuts from a belt required 8 hours and 2 employees using high-temperature water and chemicals. The customer installed a Cat Pumps high-pressure pump in a system with rotor arms supplied by Mosmatic®.

Results: reduced cleaning time from 8 hours to 1 hour, reduced chemical and hot water consumption, and increased belt life due to less exposure to chemicals.

High Pressure Misting/Cooling

With thousands of systems in operation worldwide, Cat Pumps is the standard for providing high pressure misting pumps. From poultry barns in Indiana to greenhouses in Ontario and to the finest wineries in California, Cat Pumps are on-the-job.

- Humidity Control
- Temperature Control
- Greenhouse Misting
- Odor Control
- Produce Storage
- Pre-cooling HVAC
- Dust Suppression
- Flash Evaporation
- Livestock and Poultry Cooling
- Pest Control
- Poultry Hatchery



Application Spotlight



Egg Production Facility – Misting

Heat stress has severe economic impact on egg production facilities. High heat results in lower resistance to disease, increased metabolic disorders, productivity losses and increased bird mortality. Previous system relied on airflow alone to control barn temperatures, which was not always adequate when the outside temperature reached 90° F or above. A 1,000 psi high-pressure misting system was installed to reduce the temperature of the incoming air. At this pressure, water droplet size is 5 micron, which will flash evaporate and reduce air temperatures — in this case by up to 20° F.

Results: reduced heat related bird loss from thousands to zero, increased egg production and egg size, and reduced airborne dust.

Processing

Cat Pumps industrial-grade products are designed for continuous duty applications, keeping your equipment running. From reverse osmosis to tool cleaning, trust Cat Pumps products to get the job done.

- Homogenization
- Vinegar Production
- Evisceration Tool Cleaning
- Fish Descaling Machine
- French Fry Cutting Tool
- Flash Drying
- Waterjet De-Boning
- Reverse Osmosis
- Margarine Processing
- Liquid CO₂ Lipid Extraction
- Injection
- Crab Cleaning
- Egg Wash
- Liquid CO₂ Freezing
- Wine Production



Food Processing Plant Reduces Energy Costs by 70% with Cat Pumps

Many large food processing production sites use centralized cleaning systems that feature one or more high-pressure pumps feeding a variety of wash-down guns and lances. Using high-pressure water demonstrates advantages over lower pressure systems and chemical-based cleaning.

Original systems were installed at a time when excessive energy consumption was not a major consideration, so the use of a rotary pitot tube pump was common. The pitot tube pump is widely recognized as being very inefficient, typically running at less than 40% mechanical efficiency even at its optimum operating point. A further disadvantage of pitot pumps is the high speeds (4,500 to 5,500 rpm) required to achieve desired flow and pressure rates.

High-speeds and contamination build-up can throw the rotor out of balance, leading to early seal and bearing failure. Often, the pitot tube pump requires servicing at its manufacturer's site, resulting in a lengthy and expensive repair.

A Cat Pumps model 6831 high-pressure pump is cutting energy and maintenance costs at a leading food processing plant. The triplex positive displacement plunger pump replaced two pitot tube pumps used for washing filter screens and supplying high pressure water for wash-down applications.

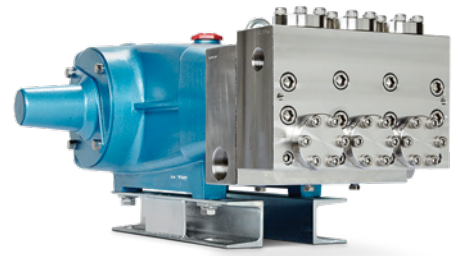
In its first year of operation, the Cat Pumps pump and system reduced the energy costs from \$50.6K to \$14.8K, and maintenance costs from \$33.5K per year to \$3.1K. These are 70% energy and 92% maintenance savings respectively – per year. Payback for the Cat Pumps system upgrade was just 9.9 months.

The Cat Pumps model 6831 pump was selected for a rating of 28 gpm at 2,300 psi, achieved at a shaft speed of just 440 rpm. The Cat Pumps power unit system also offered a significant reduction in required footprint area.

Reduced maintenance and energy costs and less downtime were decisive factors in the selection of Cat Pumps. Given the reliable performance of the model 6831, the customer also decided that a standby (backup) pump was not required.



Cat Pumps high-pressure cleaning systems are used to improve cleaning results in less time and maximize water and energy savings.



Model 6831
40 gpm (152 lpm), 2300 psi (158 bar)

Advantages vs. Pitot Tube Pump

When considering pumps and power unit systems for central cleaning, belt cleaning and washdown applications, Cat Pumps products are an excellent choice. Compare the advantages of Cat Pumps to competitive pitot tube centrifugal pumps.

Pump/System Variable	Cat Pumps	Pitot Tube Pump
Overall Pump Efficiency	85%	45% to 60%
Horsepower Requirement (100 gpm at 1,000 psi)	68.6 hp (85% pump efficiency)	129.6 hp to 97.2 hp (45% to 60% pump efficiency)
Pump Maintenance*	Easy in-plant service; no special tools required	Often pump must be returned to manufacturer for servicing

* Cat Pumps standard service repair requires only (1) seal kit, (1) inlet valve kit, and (1) discharge valve kit. Based on industry feedback, the Cat Pumps can be serviced for 1/8 of the cost compared to a pitot tube pump.

Your Complete High-Pressure Pump and System Supplier

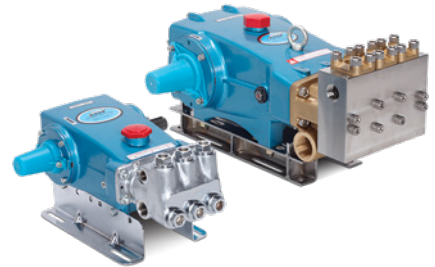
Food processing facilities must meet increasing production demands while adhering to stringent quality, sanitation and cleanliness requirements. In addition, there is pressure to reduce water usage, use fewer chemicals and increase labor efficiency. Given these demands, the industry continuously looks for ways to reduce resource consumption while maintaining quality and cleanliness standards.

Cat Pumps high-pressure pumps and systems keep production lines running by significantly reducing cleaning time. Spending less time cleaning means more time producing. With less cleaning time, there is significantly lower usage of water, chemical, and labor. These benefits are in addition to greatly improved cleaning effectiveness of the Cat Pumps high-pressure system.

Pumps

Cat Pumps commitment to quality earns trust from customers worldwide. Our positive displacement high-pressure pumps powers food industry cleaning systems. To meet certain application requirements, Cat Pumps offers special high-temperature seals and elastomers in addition to stainless steel valves and seats.

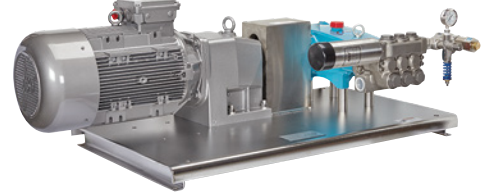
- Flow: 0.13 to 240 gpm (0.49 to 908 lpm)
- Pressure: 100 to 10,000 psi (6.9 to 689 bar)
- Materials: Brass, Nickel Aluminum Bronze, 304 and 316 Stainless Steel, Duplex Stainless Steel



Custom Power Units

Cat Pumps is the industry leader in providing custom-engineered pumping systems to meet a wide range of application needs. The Cat Pumps technical sales team assists with proper component selection, as well as operation and maintenance support.

Cat Pumps also offers Variable-Frequency Drives (VFDs) that reduce energy consumption by controlling the frequency supplied to the motor. Used with a pressure-sensing transducer, factory programmed VFD's control motor speed to maintain system pressure. Result: lower operating costs and longer system life. Contact Cat Pumps for more information.



Accessories

Cat Pumps offers a wide range of high quality accessories adhering to the same exacting standards as our industry-leading pumps. Every accessory is performance tested and designed to match pump specifications. By demanding genuine Cat Pumps products, you receive the best value and lowest cost of ownership over the life of the system.



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.

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