Waukesha's Tradition as the Leading Producer of Stainless Steel Rotary P.D. Pumps for sanitary and industrial markets reaches back years...five decades of producing a quality product and providing excellent service to its customers.

Now, combining all of its manufacturing and application experience with advanced technology and new concepts, Waukesha takes particular pride in its 200 Series Centrifugal Pump Line, offering the pump user higher levels of performance and the benefits of Waukesha's traditional quality, value and service.

To back this product, Waukesha's trained sales and application engineers are always available for personal consultation to help solve any installation or operational problem. A large number of fully-trained Waukesha stocking distributors throughout the country (and the world), provide quality Waukesha replacement parts and service.

Through the use of 316L stainless steel in all wetted parts, and extra heavy duty motor and solid drive linkage, Waukesha's 200 Series centrifugal pumps are ideal product movers in a broad range of sanitary and industrial applications. In addition to being designed for cleaning in place, the sanitary version of this Series is designed and manufactured to meet the requirements of U.S.D.A. and 3A Standards.

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**Typical Products**

**Efficiently Handled by 200 Series Pump**

**SANITARY**
- **BAKERY** - Batters, Fats & Oils, Flavorings, Sweeteners, Yeast Slurry
- **BEVERAGE** - Alcohols & Wines, Beer, Wort, Yeast, Fruit Drinks, Soft Drinks
- **CONFECTIONERY** - Syrups
- **COSMETICS** - Dyes, Alcohols, Essential Oils
- **DAIRY** - Whey, Cream, Milk, Sweetened Condensed, RO/UF Systems
- **PHARMACEUTICAL** - Emulsions, Extracts, Slurries, Syrups, High Purity Water, WFI (Water for Injection)

**INDUSTRIAL**
- Acetic Acid
- Acetic Anhydride
- Acetone
- Aluminum Sulfate
- Ammonium Chloride
- Ammonium Hydroxide
- Ammonium Nitrate
- Aniline Dyes
- Anhydrous Ammonia
- Beet Juice
- Benzene
- Blood
- Boric Acid
- Brines
- Butadiene
- Butyl Alcohol
- Calcium Carbonate
- Carboxylic Acid
- Carbon Disulfide
- Carbon Tetrachloride
- Cellulose Acetate
- Chloroform
- Citric Acid
- Cleansers
- Detergents
- Dyes
- Ether
- Ethyl Alcohol
- Fatty Acids
- Ferric Sulfate
- Formaldehyde
- Freon
- Fruit Acid
- Furfural
- Gelatin
- Glycerin
- Glycols-Ethylene
- Hydrazine
- Hydrogen Peroxide
- Ink
- Insecticides
- Ketones
- Lacquers
- Lactic Acid
- Lactose
- Latex
- Magnesium Sulfate
- Methyl Alcohol
- Methyl Ethyl Ketone
- Naphtha
- Oils, Mineral & Vegetable
- Oxalic Acid
- Paint
- Palmitic Acid
- Phosphoric Acid below 85%
- Plasticizers
- Polyvinyl Acetate
- Polyvinyl Chloride
- Potassium Chloride
- Propyl Alcohol
- RO/UF Systems
- Rosin
- Soap Liquors & Solutions
- Sodium Acetate
- Sodium Bisulfide
- Sodium Carbonate
- Sodium Cyanide
- Sodium Hydroxide
- Sodium Nitrate
- Sodium Peroxide
- Sodium Phosphate (neutral)
- Sodium Silicate
- Starch Slurry
- Styrene
- Tallow
- Tannic Acid
- Toluene
- Trichloroethylene
- Turpentine
- Waxes & Emulsions
- Xylene
- Zinc Sulfate

*Consult Factory for Specific Recommendation.*
Where Waukesha Departs From the “Norm” in Centrifugal Pump Design:

- Exclusive direct assembly of impeller-to-motor shaft for maximum rigidity and longer seal life.
- Clearance-ideal for all applications and a wide range of temperatures (to 450°F).
- Designed for cleaning in place (CIP).
- Stronger JM-type motor has larger bearings and stronger shaft.
- Base mounting options available for all sizes.
- Extra deep impeller “eye” offers improved inlet characteristics.
- Industrial options include unpolished wetted parts with commercially available seal choices that include cartridge type seals.

Waukesha Centrifugal Pumps are More Durable, Efficient, and Economical than Other Centrifugals

Our design eliminates problems with vibration, short bearing life, high NPSH requirements, high seal maintenance costs and poor tolerance to adverse operating conditions. The Waukesha line offers an advanced generation of pumps. In all aspects of design, construction and performance, Waukesha Centrifugal pumps are a generation ahead of the industry.

Construction Features:

- Pump Motor Bracket - NEDOX® nickel plated, polymer coated cast iron.
- Motor Types - NEMA JM Frame (standard): TEFC and Washdown enclosures available from stock. Energy-efficient, Chem-duty, Explosion Proof and stainless steel also available, as well as single phase or three phase, 60 or 50 Hertz.

Specifications

<table>
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<th>MODEL</th>
<th>INLET SIZE in (mm)</th>
<th>OUTLET SIZE in (mm)</th>
<th>MAXIMUM IMPELLER SIZE in (mm)</th>
<th>MAXIMUM CAPACITY GPM (M3/HR)</th>
<th>MAXIMUM HEAD FEET (METERS)</th>
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Casing - Investment Cast (machined from solid bar optional on selected models) 316L, satin exterior with sanitary finish in product zone. Industrial models are unpolished.

Port Connections - S-Clamp; Bevel Seat; Flanged; NPT Threaded; I-Line; DIN; ButtWeld.

Mounting - Heavy duty flange with clamp.

Backplate - Machined from solid bar 316L stainless steel.

Impeller - Machined from solid bar 316L stainless steel with five compound curved vanes with integral motor shaft sleeve (2045 has four vanes.) Directly bolted to motor shaft with impeller retaining nut.
- 3A Authorized
- USDA Approved
- Optional Industrial Models Available

- Modular Seal Design
  Wide range of seal options including commercially available seals
  One size for entire model range

- Precise clearances for optimum performance

- 316L Impeller installs directly to motor shaft
  Eliminates source of problems in other designs
  Easy to position impeller
  Fewer parts
  Concentricity maintained

- Increased depth of impeller eye offers improved inlet characteristic

- 316L Casing
  Rugged, strong construction with consistent dimensions

- JMR Frame Motor
  Designed for close coupled pumps; strong and reliable
  Larger shaft; larger bearing
  Director attaching impeller
  Impeller close to bearing
Waukesha's one-piece impeller/shaft sleeve design not only extends the life of seals, but it reduces the number of shaft seal sizes to one, resulting in a minimum spare parts inventory requirement.

Waukesha stationary seals are designed to last longer with a siliconized carbon (standard) lapped seat that is replaceable and reversible. This provides an excellent mating surface for the variety of rotary seals including food grade hard carbon, siliconized carbon, silicon carbide and tungsten carbide. No matter how demanding your application, there's a Waukesha seal that's tough enough to handle it.

Waukesha’s pump offering includes eight sizes of pumps form 4-1/2” to 10-1/2” impeller diameter. All use the same size seal. These pumps have:

- Seal combination options of:
  - Single external mechanical seal
  - Single mechanical with a water cascade
  - Double mechanical seal

- Optional Elastomer Choices:
  - Fluroelastomer O-Ring
  - Standard EPDM
  - Silicone
  - PTFE Encapsulated Kalrez

Waukesha pumps are also set up to accept, as standard, a large number of commercially available mechanical seals.

For Example:
- John Crane Type 21 (inside mounted seal)
- John Crane Type 21 (Double seal)
- Chesterton 440 (outside mounted seal)
- Chesterton 880 (inside mounted seal)

- Flowserve/Durametallic Type “CRO” Double Seal
- Flowserve/Durametallic Type “RA” (externally mounted seal)
- Flowserve/Durametallic Type “RO” (internally mounted seal)

An optional water cascade attachment is available for handling products that tend to crystallize. It also protects the seal against overheating due to high vacuum conditions or high product temperatures.

For particularly adverse applications, Waukesha pumps are also available with an external balanced seal with replaceable silicon carbide mating surface. The water-cooled rotary double seal (Type 4) features two seals fully enclosed with a stainless steel seal housing. Water or other suitable coolant circulates through the housing under moderate pressure to cool the seal surfaces. Higher coolant pressures may be used to assure proper interface between product seal face and products which have a tendency to solidify or otherwise denature when in contact with hot, rotating surfaces.

For unique applications not covered by stock seals: Consult the factory for specific recommendations and other commercial seal types available.
The Waukesha Volute Casing (High Capacity Models are More Versatile)

The optimized Waukesha design performs more efficiently over a wide range of operating conditions. The efficient casing and port design maximize performance under low NPSH conditions.

Waukesha’s Exclusive Impeller Design

The Waukesha impeller/shaft sleeve is a single, piece mounted rigidly on the motor shaft. Unlike C-flange mounted pumps, it stays aligned and performs with less vibration under the most rigorous operating conditions and maximizes seal life.

Waukesha Offers Exclusive NEMA JM Frame Motors for both Sanitary and Industrial Applications

JM Frame Motors are specifically designed for centrifugal close coupled pumps and conform to NEMA, Hydraulic Institute and ANSI Standards

Heavier front bearing extends life.
Extra large motor shaft increases rigidity, reduces vibration.
Direct connecting impeller; no stub shaft required.

Enclosure Options:
• TEFC
• EXPLOSION PROOF
• CHEM-DUTY
• WASHDOWN
• ENERGY-EFFICIENT
• STAINLESS STEEL
Close-Coupled Model Dimensions

Unit Width Height

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<th>B in (mm)</th>
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Fluid Head

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MODEL/SIZE (INLET x OUTLET)

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Notes:
(1) Frames 264-326: 2.50/94 adjustment ± 0.025.4
(2) Frames 145-215: 2.05/91 adjustment ± 0.095.5
(3) Dimensions X, A & C apply to pumps with clamp connection.
Capacity Curves

Based on water at 70°F. (22°C.)

Maximum Inlet Size  ● = Best Efficiency Point

60 Hz

50 Hz

CUBIC METERS PER HOUR

TOTAL HEAD IN METERS

TOTAL HEAD IN FEET

US GALLON PER MINUTE

20 Hz

20 Hz

20 Hz

20 Hz

3500 RPM

2900 RPM

20 Hz

20 Hz

20 Hz

20 Hz

1750 RPM

1450 RPM

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Waukesha Cherry-Burrell offers three single stage and one multistage high-pressure 200 Series centrifugal pump models. Designed for use in membrane filtration systems (reverse osmosis and ultra filtration), they can accommodate high system pressure inlet conditions to 1000 PSI producing a smooth, pulse-free high discharge pressure for reduced membrane wear and increased product quality.

FEATURES:
• Sanitary design for food and dairy processing service.
• Strong cast iron bearing frames, that provide support for the pump independent of the motor.
• Coupling alignment is assured by motor flange adapter resulting in longer pump life by reducing coupling wear, bearing loads and improving shaft seal performance.
• Large bearings with non-wearing labyrinth seals for longer life; low maintenance.
• Balanced double mechanical shaft seals that are the same size as used on all 200 series pumps; reducing inventory costs.
• Mounted on heavy plate steel bases with adjustable sanitary legs.

High Pressure Centrifugal Pumps

SPECIFICATIONS:
Model 2065HPLV
Inlet Size: 2.0”  Discharge: 1½”
Max Head: 165 Ft. TDH
Max Flow: 175 GPM*
Max Discharge Pressure: 600 PSI

Model 2085HPLV
Inlet Size: 2.0”  Discharge: 1½”
Max Head: 330 Ft. TDH*
Max Flow: 140 GPM*
Max Discharge Pressure: 700 PSI

Model 2085HP
Inlet Size: 2½”  Discharge: 2”
Max Head: 340 Ft. TDH*
Max Flow: 400 GPM*
Max Discharge Pressure: 700 PSI

Model MS 85 Multistage
Inlet Size: 2½”  Discharge: 1½”
Max Head: 600 Ft. TDH*
Max Flow: 250 GPM*
Max Discharge Pressure: 1250 PSI

*At 3500 RPM

Casing: 316SS
Port Connections: Sanitary S-Line (Clamp)
Backplate: 316L Stainless Steel
Impeller with Integral Shaft: 316L Stainless Steel
Impeller Retainer: 316L Stainless Steel
Shaft Seal: Double Mechanical - Type 4
Rotary Seal Material: Silicon Carbide inboard / Carbon outboard
Stationary Seal Material: Silicon Carbide inboard / Purebide (Siliconized graphite) outboard
Elastomers: Fluoroelastomers FDA approved
Finish: All product contact surfaces polished to 150 grit (32 Ra)
Base Mounting: Carbon Steel
WFI Pumps

Pure Water Pumping
Pumping water for injection (WFI) is a mandate for a reliable barrier between the product being pumped inside and threats of contamination outside. Waukesha heavy-duty, centrifugal pumps are particularly adaptable to this application. Their design, construction and materials are aimed specifically to satisfy sanitary requirements. To accommodate WFI, modifications to the seal area prevent leakage of contaminants into the pumpage and thus any compromise to product integrity.

Although the term “WFI” describes the high purity, pyrogen-free fluid used in pharmaceutical products, the same high pump standards are required for producing high purity, deionized water for industrial uses, such as rinses and cleansers for electronic integrated circuitry.

Versatile Seal Options
Double seals are available with or without the factory installed flush system. The flush system includes controls for pressure, temperature and flow rate. A uniquely positioned temperature probe in the Waukesha flush system measure temperatures at the seal area rather than simply of the coolant. Single or double mechanicals seals, such as John Crane Type 9, may be used with the Waukesha WFI close coupled pumps. In addition, Chesterton 241 cartridge seals are optional for base mounted pumps. In addition, hard seal face materials, such as silicon carbide or tungsten carbide, may be specified to minimize particle generation. For high temperature service, including steaming during sterilization, Viton or EPDM elastomers are available.

Sanitary Surface Finishes
All wetted parts are manufactured of 316L stainless steel. WFI applications require smoother product contact surfaces to minimize microscopic cracks or pockets that might trap impurities or foster bacterial growth. The standard finish for the Waukesha WFI centrifugal is 32 Ra (150 grit); additional polish is option up to a 20 Ra (240 grit). Electro-polish is also available.

NOTE
Dimensions of close coupled and pedestal models are the same as those on pages 9 through 11.
Waukesha Cherry-Burrell Warranty

Seller warrants its products to be free from defects in materials and workmanship from a period of one (1) year from the date of shipment. This warranty shall not apply to products which require repair or replacement due to normal wear and tear or to products which are subjected to accident, misuse or improper maintenance. This warranty extends only to the original Buyer. Products manufactured by others by furnished by Seller are exempted from this warranty and are limited to the original manufacturer’s warranty.

Because of Waukesha’s constant program of improvement, specifications are subject to change without notice.
Now QuickShip covers even more Centrifugal pump models!

For emergency or special orders, you can get our standard* centrifugal pump with either a TEFC or Washdown motor within 3 days!

QuickShip

With the addition of the Washdown motors, the QuickShip program now covers the majority of the centrifugal product line. The 3-day shipment is guaranteed, or we pay the freight on the order. The QuickShip program can help you:

- Minimize system downtime
- Meet project deadlines
- Eliminate expediting headaches
- Provide superior service to your customers!

THIS PROGRAM IS designed for emergency service or special orders requiring immediate shipment rather than the standard stock or long-lead-time pump projects.

*All standard close coupled 200 series, except the 210S with type 1 seals and S-line connections.

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ISO 9001 CERTIFIED

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