Pumps are literally the heart of fluid movement in the commercial/municipal infrastructure. We depend on pumps to move fluids that enhance human comfort, health, safety and productivity.

Grundfos CBS Inc. is poised to meet the industry’s demand for the availability of reliable, energy efficient pumps and has built a network of worldwide distribution and multi-plant manufacturing that offers one of the finest, most complete lines of premium efficient pumps and pumping systems.

To ensure that you are specifying the optimal pump for your applications, we encourage you to contact your nearest Grundfos CBS Inc. branch office, distributor, or representative; or, visit us at www.pacopumps.com. We can provide you with technical and applications expertise to help you choose the pump best suited for any particular application.
OVERVIEW
Grundfos CBS Inc. manufactures and markets the PACO line of pumps, one of the world’s finest and most complete lines of centrifugal pumps and pumping systems.

The materials and workmanship that go into each pump are thoroughly inspected and tested to exacting standards prior to its final assembly and shipment.

We utilize and maintain modern quality control procedures and testing facilities, and the PACO manufacturing plant, located in Brookshire, Texas, is ISO 9001 certified.

OUR COMMITMENT
Grundfos CBS Inc. is committed to advancing pump technology and providing its customers with the most efficient pumps on the market.

Using computer aided design technology and intensive engineering efforts, we have developed the industry’s leading premium efficient, “SMART” centrifugal pumps.

The innovative design of our pump and impeller produces a higher operating efficiency – up to 91 percent – and provides a wider band of best operating efficiency, even during conditions of off-design operation.

The double volute design – which offsets radial thrust forces on the shaft and impeller and reduces radial load – has been extended throughout the product line, including the End Suction, Inline, and Double Suction Split Case pumps.

Quite simply, the PACO line of pumps is the smart choice for lower initial cost, longer pump life, reduced operating and maintenance costs, maximum reliability, and quieter operation.

SUPERIOR CUSTOMER SERVICE AND SUPPORT
Grundfos CBS Inc. has an established network of sales and service representatives throughout the world who are dedicated to providing customers with superior service and product support.

Our offices are staffed with experienced pump specialists who are trained and have extensive knowledge in pump applications and pumping system assessment.

Comprehensive sales literature available for each product illustrates the quality of our pumps and provides required engineering data.

We are committed to providing you with tools and software for all your pump needs. Hydraulic selection software, energy savings analysis tools, engineering calculations, CAD drawings, dimension sheets, specifications manuals, and parts guides are just a click away at www.pacopumps.com.
HVAC
Building owners and managers throughout the world have come to depend on the PACO line of pumps for their quality, reliability, and premium design efficiency in providing chilled water, condenser water, hot water circulating, boiler feed, deaeration service, and condensate return systems.

For all heating, ventilating, and air conditioning (HVAC) applications, our products are the smart choice: energy-efficient designs lower operating costs, a double volute design lowers maintenance costs, and design simplicity lowers the overall product costs.

PLUMBING
Grundfos CBS Inc. produces a full line of pumps designed to meet the plumbing requirements for all types of structures in the commercial building services industry.

From water pressure booster systems and drainage sump pumps to wastewater removal and sewage transport, our pumps can be trusted to deliver dependable results during peak demand.

RECREATION
The PACO line of pumps are used worldwide to move water for visual effect and recreational enjoyment and for the circulation of water: from the thrill of a water slide to the enjoyment of an Olympic-sized swimming pool.

These pumps are also used to create a mood: from the tranquility of a brook or waterfall to the excitement of a simulated volcanic eruption.

Hotels, resorts, condominiums, office buildings, theme parks, universities, and municipalities rely on the PACO line of pumps from Grundfos CBS Inc. for the filtration, circulation, and general aesthetics of their waterscapes, lakes, streams, swimming pools, fountains, and water slides.

The PACO line of pumps are also NSF-50 certified for use in commercial swimming pools and spas.

WATER
We take an ever-increasing position in delivering water to homes each day: water used to drink, bathe, dispose of our waste, and irrigate our lawns and fields. The PACO line of pumps fully comply with all known state-mandated drinking water regulations, helping to ensure clean, lead-free drinking water.

As providers of pumps and pumping systems to municipal and industrial users for water treatment installations, we share the environmental concerns for water resources. The Clean Water Act and other legislation have increased the demand for high-quality, energy-efficient pumps to service water treatment and wastewater treatment plants.

Grundfos is one of the first pump companies to acquire NSF-61 Certification for Drinking Water System Components. This certification is available for many of the Grundfos CBS Inc. products and ensures that the materials used to manufacture our pumps do not contaminate the water supply.
WASTEWATER
PACO non-clog pumps are used in the collection and treatment of wastewater in urban and rural municipalities across the globe. Treated water is reclaimed and “reused” for irrigation and aquifer protection to conserve clean water resources.

IRRIGATION AND AGRICULTURE
Grundfos CBS Inc. offers a wide range of pumps and pumping systems for professional irrigation of farmland, sports stadiums, golf courses, parks, and vineyards.

The PACO line of premium efficiency pumps help the end user to irrigate their fields more effectively, which increases productivity and reduces energy costs and fuel consumption. These pumps also irrigate a multitude of crops, helping to contribute to the growth of the world’s food supply.

Both electric and engine-driven PACO irrigation pumps are operating in flood and tail waters and sprinkler irrigation systems throughout the world.

GENERAL INDUSTRY
Grundfos CBS Inc. manufactures a diverse selection of pumps designed to handle the most common general service applications found in industry.

The PACO line of Pumps are an excellent choice for typical transfer pumping and booster service applications as well as for non-critical site service in the oil production and refining industries.

The PACO horizontal split case, end suction, and inline pumps are excellent choices for heat rejection applications for automated machinery in manufacturing. Grundfos CBS Inc.’s specialty pumps are used in automotive spray booths to assist in providing the highest quality paint finish for new cars.

In addition, Grundfos offers a full line of pump models and sizes to meet the needs of Original Equipment Manufacturers (OEMs). Our PACO line of pumps features a compact design, reliable operation, competitive pricing, and dependable customer service.

STEEL
Steel mills utilize the PACO line of pumps for steel processing requirements. The double suction split case pumps provide water to spray units for cooling steel during the manufacturing process. Submersible pumps are used for dewatering service from scale pits to remote retention ponds.

POWER
Producing pumps for power plant operations is our specialty. The PACO product line includes pumps for condensate, circulating, screen wash, cooling tower, makeup, service water, heater drain, and ash handling applications.

SEMI-CONDUCTOR
The electronics industry relies on our pumps to help maintain a controlled temperature environment in their offices and clean room manufacturing facility. Our domestic water booster system provides potable drinking water for consumption, and sump and sewage pump systems collect and dispose of the facility’s waste.
The PACO line of pumps are the preferred centrifugal pump choice for many market applications. Extensive product offerings with broad performance ranges make product selection an easy task. A summary of product suitability for various applications can be found on the following pages.

<table>
<thead>
<tr>
<th>PRODUCT TYPE</th>
<th>PRODUCT DESCRIPTION</th>
<th>MARKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACO LC, LCV</td>
<td>Close coupled end suction pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO LF</td>
<td>End suction pumps, frame mounted</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO KP, KPV, KPH</td>
<td>Horizontal split case pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO VL, VLS</td>
<td>Vertical inline pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO VSM, VSMS</td>
<td>Vertical space miser pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO GR, GS</td>
<td>Condensate return pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO MiniFlo, PACOFlo</td>
<td>Booster packages</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO OLN, LN</td>
<td>Low NPSH centrifugal pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO OL</td>
<td>Two stage centrifugal pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO PIP 500/700</td>
<td>Small sewage and effluent pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO NC, NCD</td>
<td>Vertical column non-clog pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO SL, SLD</td>
<td>Vertical column sump pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO QDSC, NSC</td>
<td>Submersible non-clog pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO SM</td>
<td>Submersible sump pumps</td>
<td>HVAC</td>
</tr>
<tr>
<td>PACO NCH, NCF, NCP, NCU, NCVU</td>
<td>Dry-pit non-clog pumps</td>
<td>HVAC</td>
</tr>
</tbody>
</table>
PACO LC, LCV
Close coupled, single stage end suction pumps

Technical Data
- Flow, Q: max 4,000 gpm
- Head, H: max 400 feet
- Liquid temp.: max 275° F
- Working press.: max 175 psi
- HP range: 1/3 to 125
- Discharge sizes: 1” to 8”

Applications
- Water circulation
- Pressure boosting
- Filter systems
- Cooling systems
- Water supply
- Washing systems
- Other industrial systems

Features
- Compact design
- Standard motor
- Short shaft design
- Vertical or horizontal mount
- Back pull out
- Double volute casing

Optional
- Motor enclosures
- All iron or all lead-free bronze
- Seal materials and configurations
- NSF/ANSI-50 or NSF/ANSI-61 labels

PACO LF
Frame mounted, single stage end suction pumps

Technical Data
- Flow, Q: max 6,500 gpm
- Head, H: max 400 feet
- Fluid temp.: max 275° F
- Working press.: max 175 psi
- HP range: 1/3 to 300
- Discharge sizes: 1” to 10”

Applications
- Water circulation
- Pressure boosting
- Filter systems
- Cooling systems
- Water supply
- Washing systems
- Other industrial systems

Features
- Heavy-duty frame, shaft, bearing
- Wide hydraulic range
- Flexible, coupled design
- Steel or cast-iron base plate
- Back pull out
- Double volute casing

Optional
- Bearing frame lubrication
- All iron or all lead-free bronze
- Seal materials and configurations
- NSF/ANSI-50 or NSF/ANSI-61 labels

PACO KP, KPV, KPH
Split case, double suction pumps

Technical Data
- Flow, Q: max 20,000 gpm
- Head, H: max 730 feet
- Fluid temp.: max 300° F
- Working press.: max 400 psi
- HP range: 1 to 5,000
- Discharge sizes: 2” to 20”

Applications
- Chilled water
- Condensate water
- Commercial pools and water parks
- Direct and indirect cooling water
- Service water
- Water distribution systems

Features
- Wide hydraulic range
- Multiple material constructions and sealing arrangements
- Self-contained bearing housing
- Compensated dual volute design
- Vertical or horizontal mount

Optional
- Bearing housing lubrication
- Materials of construction
- Seal materials and configurations
- NSF/ANSI-50 or NSF/ANSI-61 labels
PACO VL, VLS
Vertical, in-line pumps

Technical Data
- Flow, Q: max 3,900 gpm
- Head, H: max 420 feet
- Fluid temp.: max 275° F
- Working press.: max 175 psi
- HP range: 1/3 to 125
- Discharge sizes: 1.25" to 10"

Applications
- Chilled water
- Condensed water
- Hot water
- Service water
- District heating systems

Features
- Short shaft design
- Same-size suction/discharge connections
- Compensated dual volute design (3" and larger)
- Back pull out
- Small installation footprint
- Low noise

Optional
- Materials of construction
- Seal materials and configurations
- Support stand
- High pressure capabilities

PACO VSM, VSMS
Vertical space miser pumps

Technical Data
- Flow, Q: max 4,050 gpm
- Head, H: max 400 feet
- Fluid temp.: max 275° F
- Working press.: 300+ psi
- HP range: 2 to 125
- Discharge sizes: 4" to 10"

Applications
- Chilled water
- Condensed water
- Hot water
- Service water
- District heating systems

Features
- Top suction/top discharge
- Small installation footprint
- Internal suction baffle
- Suction/discharge connections
- Back pull out
- Short shaft design

Optional
- Materials of construction
- Seal materials and configurations
- Motor enclosures

PACO GR, GS
Condensate return units

Technical Data
- Flow, Q: max 150 gpm
- Fluid temp.: max 100,000 EDR
- Fluid temp.: max 250° F
- Discharge press.: max 90 psi
- HP range: 1/2 to 10

Applications
- Condensate return

Features
- Receivers
  - GR: cast iron, 15 to 100 gallons
  - GS: 3/16" steel, 14 to 150 gallons
- PACO bronze-fitted pumps
  - Mechanical seal to 210° F
  - 2' to 4' Lo-NPSH bronze impeller
- Level controls
  - Duplex: mechanical float switch with alternator
  - Simplex: mechanical float switch
- Control panels
  - Simplex and duplex NEMA 4 w/UL
  - Typical controls and components

Optional
- Tank fittings and accessories
- Mechanical seal to 250° F
- Custom controls and receivers
PACO MiniFlo, PACOFlo
Packaged water booster systems

Technical Data
Flow, Q: max 6,000 gpm
Head, H: max 600 feet
Fluid temp: max 275° F
Working press.: max 400 psi
HP range: 1 to 60
Manifold sizes: 3” to 10”

Applications
• Commercial pressure boosting
• High-rise/apartment pressure boosting
• Industrial pressure boosting
• Municipal pressure boosting
• Primary/secondary HVAC
• Irrigation
• Water features

Features
• Multiple pump configurations
• Utilizes PACO LC, VL, KP pumps; Grundfos CR pumps; and vertical lineshaft turbines
• Stainless-steel manifolds
• Factory assembled and tested
• PACOMONITOR™ Flow Sensor
• Programmable controllers

Optional
• Custom pump configurations
• Custom controls
• Accessories

PACO OLN, LN, OL
Low NPSH centrifugal pumps

Technical Data
Flow, Q: max 250 gpm
Head, H: max 790 feet
Fluid temp: max 250° F
Working press.: max 300 psi
HP range: 1 to 60
Discharge sizes: 1” to 2”

Applications
• Boiler feed
• Deaerator transfer
• Condensate return
• Pressure boosting
• Washing systems

Features
• Low NPSH requirements
• High performance
• Compact design
• Replaceable case wear rings
• Short shaft design
• Vertical or horizontal mount

Optional
• Materials of construction
• Seal materials and configurations
• Motor enclosures
• Alternate piping positions

PIP500, PIP700
Small sewage and effluent pumps

Technical Data
Flow, Q: max 400 gpm
Head, H: max 500 feet
Fluid temp: max 150° F
HP range: 1/2 to 2
Discharge size: 3”
Solids size: max 2-1/2” dia.

Features
• Automatic level controls
• Oil-filled motors

PACO PIP500
Submersible non-clog pump

Technical Data
Flow, Q: max 70 gpm
Head, H: max 38 feet
Fluid temp: max 120° F
HP range: 1/3 to 1/2
Discharge sizes: 1-1/2” to 2”

Features and Benefits
• Automatic level controls
• Oil-filled motors
• 115 volts, 60 hz
**PACO NC, NCD, SL, SLD**  
Vertical wet-pit column pumps

**Technical Data**
- **Flow, Q**: max 4,500 gpm
- **Head, H**: max 250 feet
- **HP range**: max 150
- **Discharge sizes**: 2" to 8"
- **Solids size**: max 4"

**Applications**
- Commercial sewage
- Municipal sewage
- Industrial sewage
- Drainage
- Effluent sumps
- Hazardous locations

**Features**
- Oversized bearings
- Oil-lubricated mechanical seals
- Moisture sensor probes for leak detection
- Class 1; Div. 1; Groups C & D explosion-proof motors
- Adjustable case wear ring
- Impeller designs to meet application

**Optional**
- Slide rail system
- Materials of construction
- Seal materials and configurations
- Control accessories

---

**PACO QDSC, NSC, SM**  
Submersible sump and and sewage pumps

**Technical Data**
- **Flow, Q**: max 7,100 gpm
- **Head, H**: max 370 feet
- **HP range**: 500
- **Discharge sizes**: 2" to 10"
- **Solids size**: max 4-1/2"

**Applications**
- Lift stations
- Wastewater treatment plants
- Dewatering
- Industrial waste
- Water features
- Food processing

**Features**
- Oversized bearings
- Short shaft for minimal shaft deflection
- Regreasable, adjustable bearing frames
- Adjustable case and impeller wear rings
- Fabricated steel stand for vertical design

**Optional**
- Materials of construction
- Seal materials and configurations
- Pump accessories
- Impeller designs to meet application

---

**PACO NC/NCD**  
Vertical column wet-pit non-clog pump

**Technical Data**
- **Flow, Q**: max 2,800 gpm
- **Head, H**: max 220 feet
- **HP range**: 125
- **Discharge size**: max 6"
- **Solids size**: max 4"

**Features**
- Simplex and duplex configurations
- Bearing options to meet application
- Stainless-steel pump shaft
- Construction materials to meet application

**PACO SL/SLD**  
Vertical column wet-pit sump pump

**Technical Data**
- **Flow, Q**: max 800 gpm
- **Head, H**: max 125 feet
- **Fluid temp.**: max 150° F
- **HP range**: max 15
- **Discharge sizes**: max 4"

**Features**
- Simplex and duplex configurations
- Highly efficient, semi-open impellers
- Explosion-proof motors and float switches for hazardous locations
- Construction materials to meet application
HVAC PIPING ACCESSORIES

PACO PSD (Suction diffuser)

Features
- Eliminates need for 90° elbow, strainer, flow stabilizer, and reducer
- Simplifies pump installation
- Minimizes costs
- Promotes smooth, even flow profile
- Stainless-steel strainer
- 125# ANSI flanges
- Size 1-1/2" to 14"

PACO CSB (Combination valve)

Features
- Functions as check valve, shutoff valve, and balance valve
- Simplifies pump installation
- Minimizes costs
- Promotes smooth, even flow profile
- Spring-loaded bronze disc minimizes chatter
- Vertical or horizontal orientation
- 125# ANSI flanges
- Size 2" to 14"

AFTER SALES, PARTS AND SERVICE
Grundfos CBS Inc. is committed to after-sales service. Highly trained technicians can assist customers with initial start-up, troubleshooting, service and repair.

Our technicians can evaluate your system’s energy usage with the pumping systems assessment tools and provide recommendations for the engineers and facility operators.

Genuine PACO parts are pre-engineered and pre-packaged to simplify selection, ordering, and stocking. Virtually all required parts for PACO products are available as kits.

ENGINEERING AND TESTING CAPABILITIES
Our state-of-the-art testing facility features hydrostatic test equipment, an engineering testing laboratory, and allows witness testing of pumps without leaving the office via a web-based live feed of test data, along with full control of the test site image.

The PACO line of pumps are capable of handling all types of applications anywhere in the world. The online selection tool available at www.pacopumps.com lets you select the right pump for your application, and our competency center located in Brookshire can design and deliver centrifugal pumps for domestic or international market needs when time demands a quick turnaround.
Being responsible is our foundation
Thinking ahead makes it possible
Innovation is the essence

USA
GRUNDFOS Pumps Corporation
17100 West 118th Terrace
Olathe, Kansas 66061
Phone: (913) 227-3400
Telefax: (913) 227-3500

USA
Grundfos CBS Inc. – PACO Pumps
902 Koomey Road
Brookshire, TX 77423
Phone: (800) 955-5847
Telefax: (800) 945-4777

CANADA
GRUNDFOS Canada Inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Phone: (905) 829-9533
Telefax: (905) 829-9512

MEXICO
Bombas GRUNDFOS de Mexico S.A. de C.V.
Boulevard TLC No. 15
Parque Industrial Stiva Aeropuerto
C.P. 66600 Apodaca, N.L. Mexico
Phone: 011-52-81-8144 4000
Telefax: 011-52-81-8144 4010