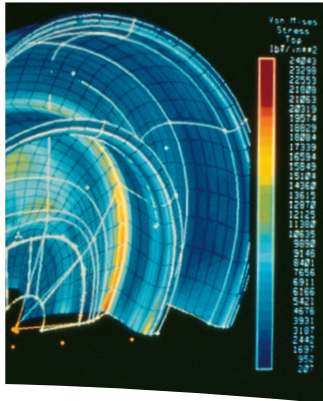
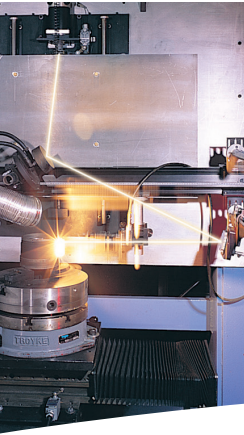




LC Chemical Slurry Pump



Experience In Motion



Pump Supplier to the World

Flowserve is the driving force in the global industrial pump marketplace. No other pump company in the world has the depth or breadth of expertise in the successful application of pre-engineered, engineered, and special purpose pumps and systems.

Life Cycle Cost Solutions

Flowserve provides pumping solutions that permit customers to reduce total life cycle costs and improve productivity, profitability and pumping system reliability.

Market-Focused Customer Support

Product and industry specialists develop effective proposals and solutions directed toward market and customer preferences. They offer technical advice and assistance throughout each stage of the product life cycle, beginning with the initial inquiry.

Broad Product Lines

Flowserve offers a wide range of complementary pump types, from pre-engineered process pumps to highly engineered and special purpose pumps and systems. Pumps are built to recognized global standards and customer specifications.

Pump designs include:

- Single-stage process
- Between bearings single-stage
- Between bearings multistage
- Vertical
- Submersible motor
- Positive displacement
- Nuclear
- Specialty

Product Brands of Distinction

ACEC™ Centrifugal Pumps

Aldrich™ Pumps

Byron Jackson® Pumps

Calder™ Energy Recovery Devices

Cameron™ Pumps

Durco® Process Pumps

Flowserve® Pumps

IDP® Pumps

Lawrence Pumps®

Niigata Worthington™ Pumps

Pacific® Pumps

Pleuger® Pumps

Scienco™ Pumps

Sier-Bath® Rotary Pumps

TKL™ Pumps

United Centrifugal® Pumps

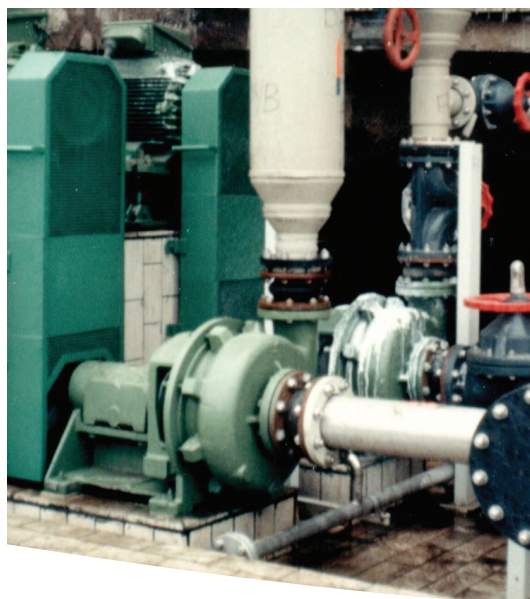
Western Land Roller™ Irrigation Pumps

Wilson-Snyder® Pumps

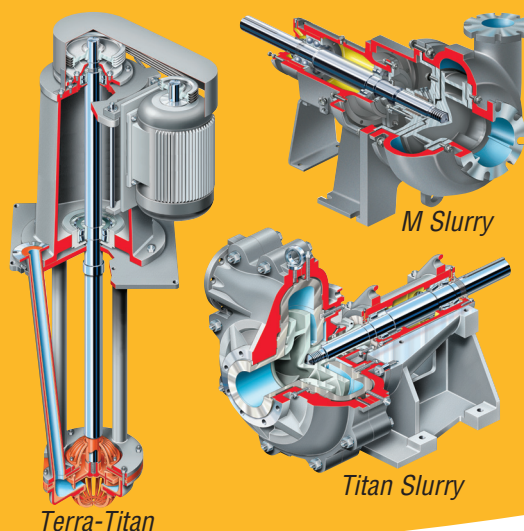
Worthington® Pumps

Worthington Simpson™ Pumps

LC Chemical Slurry Pump



Complementary Pumps



Engineered to Handle the Toughest Duties

The LC chemical slurry pump is engineered to withstand the rigor of applications that are both abrasive and corrosive. Intended for aggressive, continuous duty, the LC's features and materials are the direct result of industry specific experience and over 40 years of innovative slurry pump development.

Significant Benefits

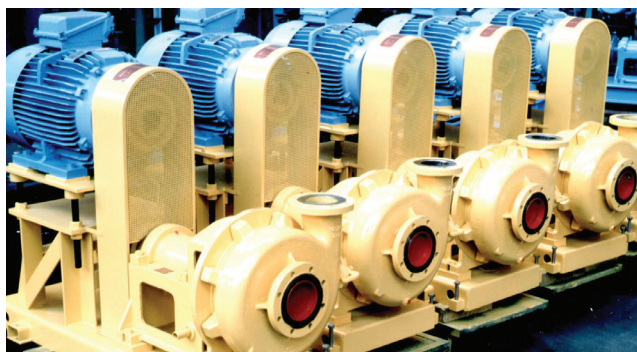
- Reliability
 - Concentric casing
 - Tangential discharge
 - Thick wall wear allowance
 - Choice of impeller design
 - Rugged power frame
- Versatility
 - Multiple configurations
 - Multiple drive options
 - Choice of materials
 - Multiple shaft sealing options
 - Multiple discharge orientations
- Ease of Maintenance
 - Inspection holes
 - Tapered shaft
 - Lifting lugs
 - Casing drain
 - Three-part epoxy paint

Applications

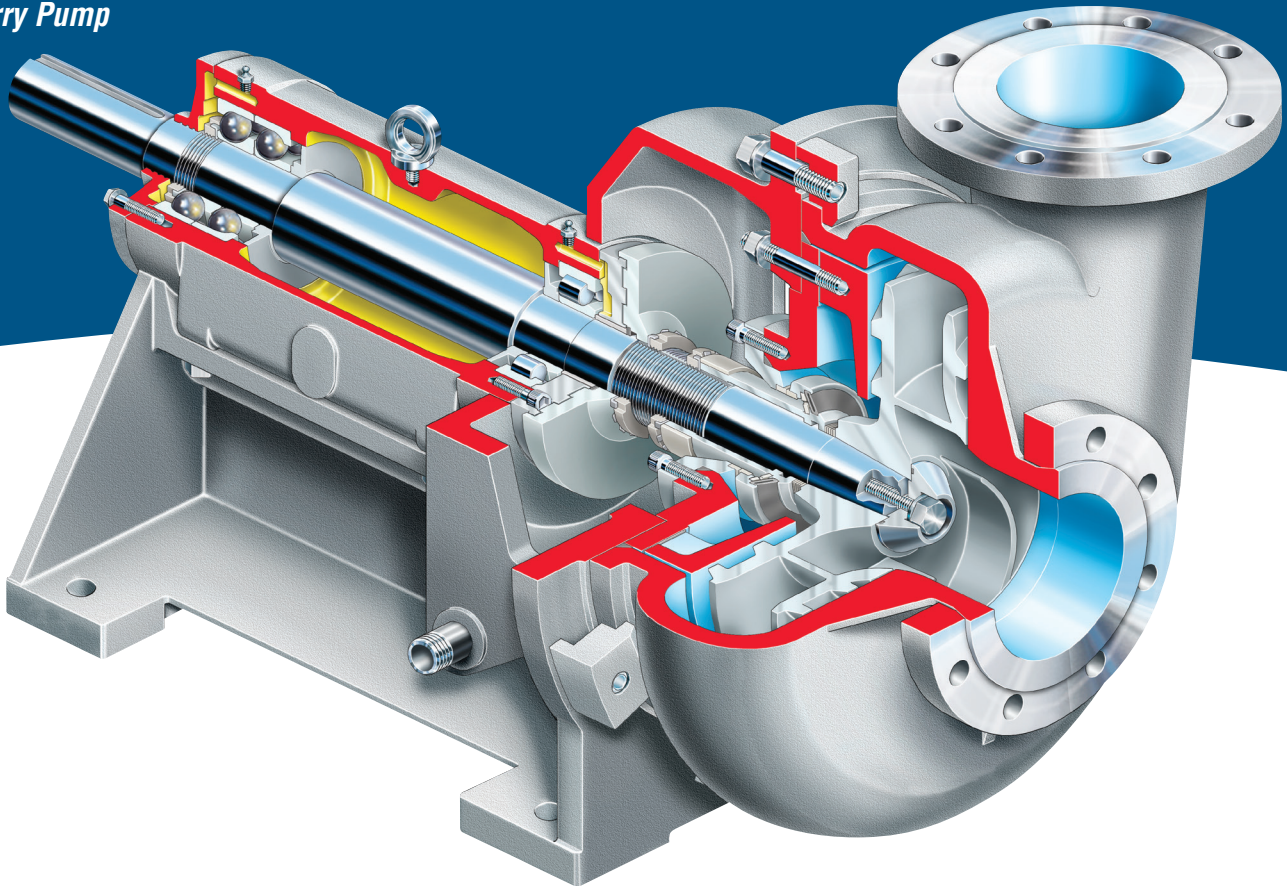
- Mineral processing
 - Phosphoric acid and derived industries
 - Aluminum (sodium aluminate, aluminahydroxide, muds)
 - Calcium carbonate
 - Zinc, cobalt and lead treatment
- Hydrocarbon processing
- Chemical processing
- Water resources
- Steel and primary metals processing
- General industry
- OEM

Complementary Pump Designs

- Titan Slurry heavy-duty, lined slurry pump
- Type M hard metal slurry pump
- Type R rubber lined slurry pump
- Terra-Titan lined sump pump
- Types MJ and MJC vertical hard metal slurry pumps



LC Chemical Slurry Pump



The LC chemical slurry pump is a horizontal, frame mounted, single stage, end suction design with a tangential discharge nozzle. It is available in 26 sizes on only 5 different frames and available in multiple materials of construction to suit application needs. The LC pump is engineered to withstand high concentrations of abrasive and corrosive solutions, like those found in the phosphoric and derived industries as well as mining and mineral processing.

Operating Parameters

- Flows to 3000 m³/h (13 200 gpm)
- Heads to 75 m (250 ft)
- Pressures to 25 bar (360 psi)
- Temperatures to 140°C (280°F)
- Specific gravities to 1.7

Thick Wall Concentric Casing With Tangential Discharge is radially balanced and provides unobstructed flow to minimize wear

Impeller Counter Vanes provide hydraulic balance and hydro-dynamic relief of the shaft seal. This limits internal recirculation and reduces seal chamber pressure

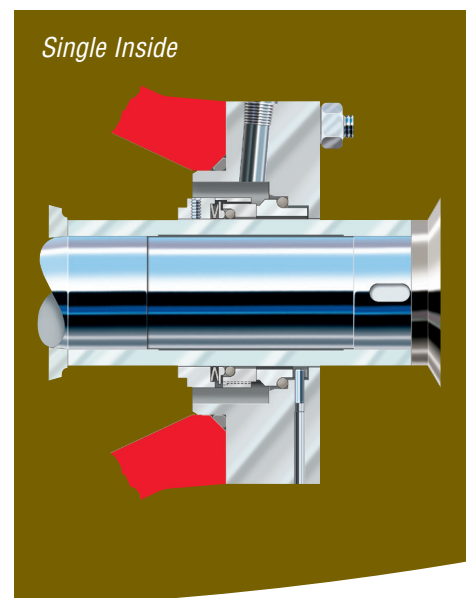
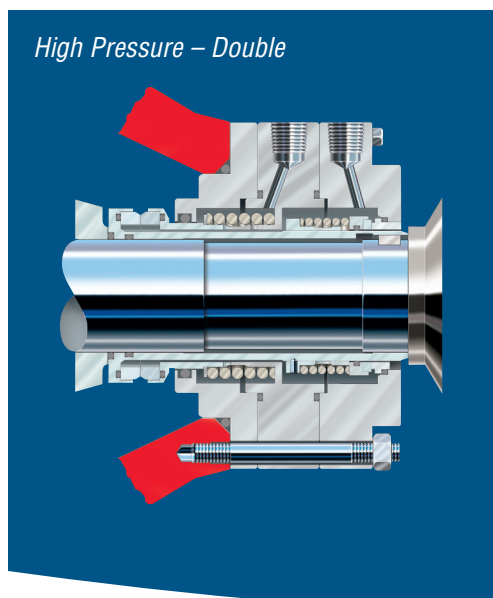
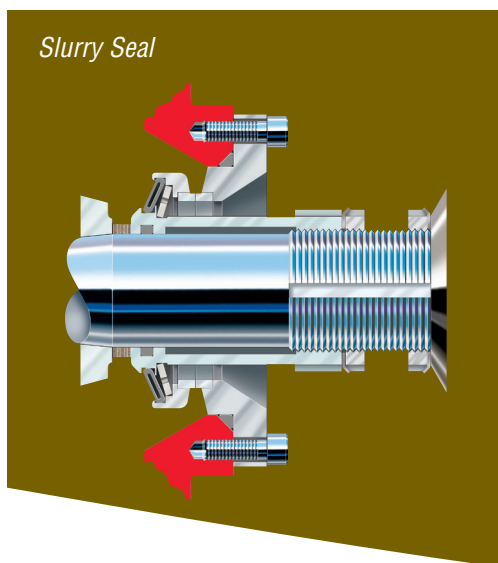
Flanges conform to PN10 and PN 16 (ANSI Class 150) standard. Special flange types available

Rigid, One-Piece Bearing Frame is generously sized to handle belt loads and can be removed easily for maintenance. Allows ample access to seal chamber

Large Diameter Steel Shaft minimizes problems associated with overhang, deflection and vibration. Stainless steel available

Two Angular Contact Outboard Bearings and a single inboard roller bearing mitigate axial and radial thrust. Grease lubrication standard; oil optional

Machined Fit between bearing carrier and bracket provides positive alignment



Numerous Shaft Sealing Systems

The Flowserve LC chemical slurry pump is available with numerous shaft sealing options. These include the following configurations.

- Wet gland packing for light to moderate abrasives
- Single mechanical seal with process or external flush
- Zero emission, double mechanical seal
- High pressure double seal for services to 20 bar (290 psi)
- Rubber coated, high solids seal with product flush and optional quench
- High solids seal with quench containment and a back-up safety seal
- Alumina industry seal

Multiple Drive Arrangements

The LC chemical slurry pump is available with multiple drive arrangements to meet application needs. They include:

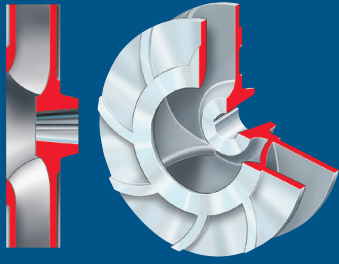
- Direct coupled
 - Direct drive base mounted
- Belt driven
 - Side drive base mounted
 - Direct overhead motor mount
 - Reverse overhead motor mount
 - Side drive base mounted with secondary bearings
 - Reverse overhead motor mount with secondary bearings

LC Materials of Construction

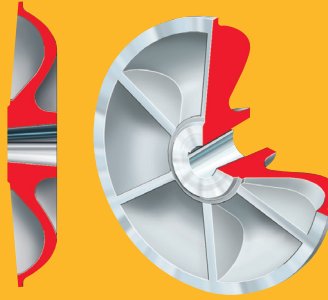
		A1	B3	C2	C3	C4
Component		Grey Cast Iron (EN-GJL-250)	Ferritic Cast Iron 30% chromium, low carbon	AISI 316SS	CD4MCu Duplex SS U55	904L
Casing, Impeller, Cover		Grey Cast Iron	FCI 30% Cr	AISI 316SS	Duplex	904L
Impeller						
Cover						
Shaft		Steel/AISI 1035	Duplex SS			
Sleeve	Packing	AISI 420 Carbon Steel (13% Cr)	FCI 30% Cr	AISI 316L	Duplex	904L
	Mechanical Seal	316L	904L			
Gasket		Klingerit Acid-Resistant				
O-rings		Nitril	Viton			
Deflector		Neoprene				
Bearing Housing		Grey Cast Iron				
Bearing Bracket			Grey Cast Iron			
		–	BELZONA Corrosion Resistant Coating			

**Options and
Technical Data**

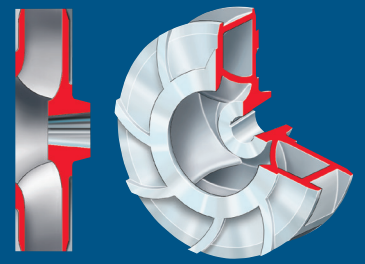
Two Vane Impeller



Vortex Impeller



Blade Impeller



Impeller Options

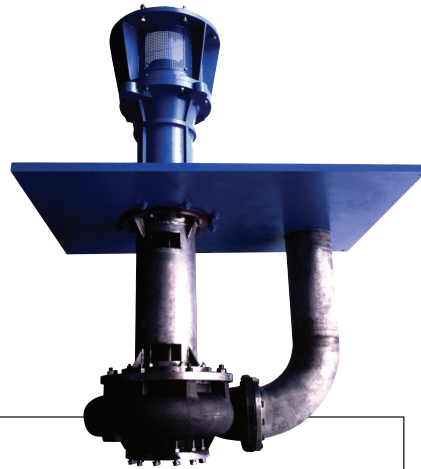
The LC chemical slurry pump is available with multiple impeller designs to meet application needs. They include:

- Channel impeller
 - One and two vane types
 - Large solid particles
 - Small amount of entrained gas
- Vortex impeller
 - Large solid particles and long fibers
 - Large amount of entrained gas
 - Long fibers and tramp solids
- Blade impeller
 - Small solid particles
 - Small amount of entrained gas
 - Good NPSH

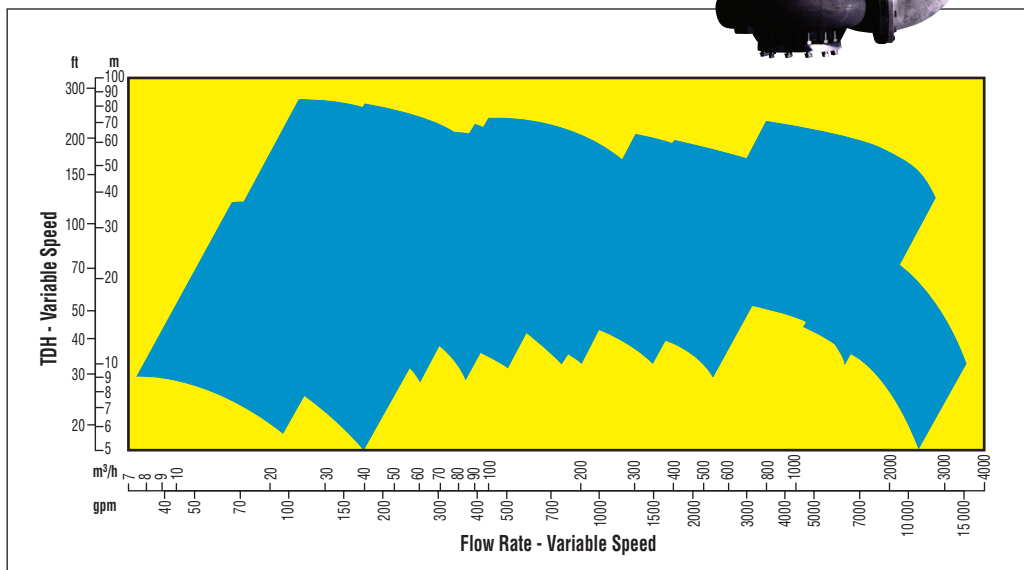
Available Configurations

The same wet end is available in multiple configurations to meet application and installation requirements

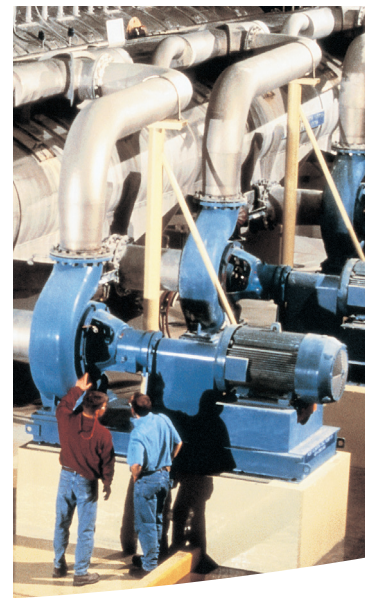
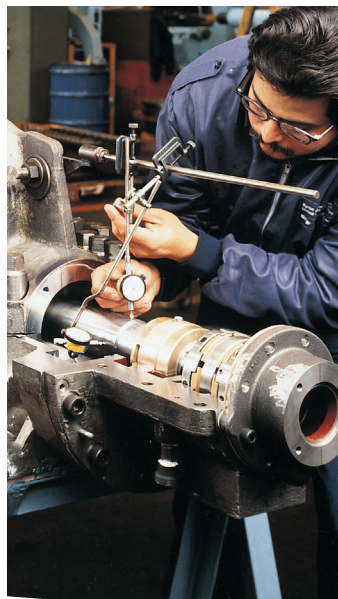
- PL-C cantilever shaft sump
- LC-S vertical suspended lineshaft
- LC-V vertical dry pit close coupled
- LC-Y vertical dry pit long coupled



LC Range Chart



**Global Service
and Technical
Support**



Life Cycle Cost Solutions

Typically, 90% of the total life cycle cost (LCC) of a pumping system is accumulated after the equipment is purchased and installed. Flowserve has developed a comprehensive suite of solutions aimed at providing customers with unprecedented value and cost savings throughout the life span of the pumping system. These solutions account for every facet of life cycle cost, including:

Capital Expenses

- Initial purchase
- Installation

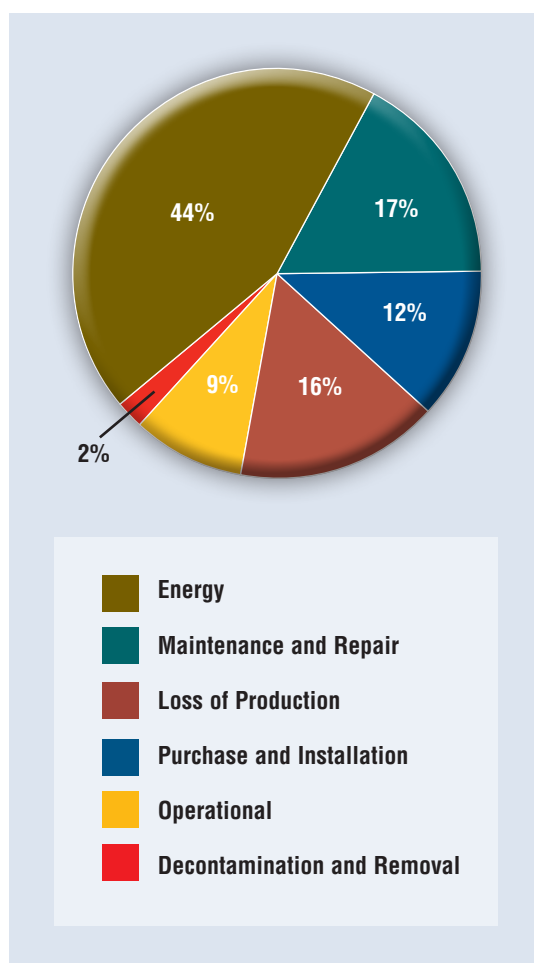
Operating Expenses

- Energy consumption
- Maintenance
- Production losses
- Environmental
- Inventory
- Operating
- Removal

Innovative Life Cycle Cost Solutions

- New Pump Selection
- Turnkey Engineering and Field Service
- Energy Management
- Pump Availability
- Proactive Maintenance
- Inventory Management

Typical Pump Life Cycle Costs¹



¹ While exact values may differ, these percentages are consistent with those published by leading pump manufacturers and end users, as well as industry associations and government agencies worldwide.



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