

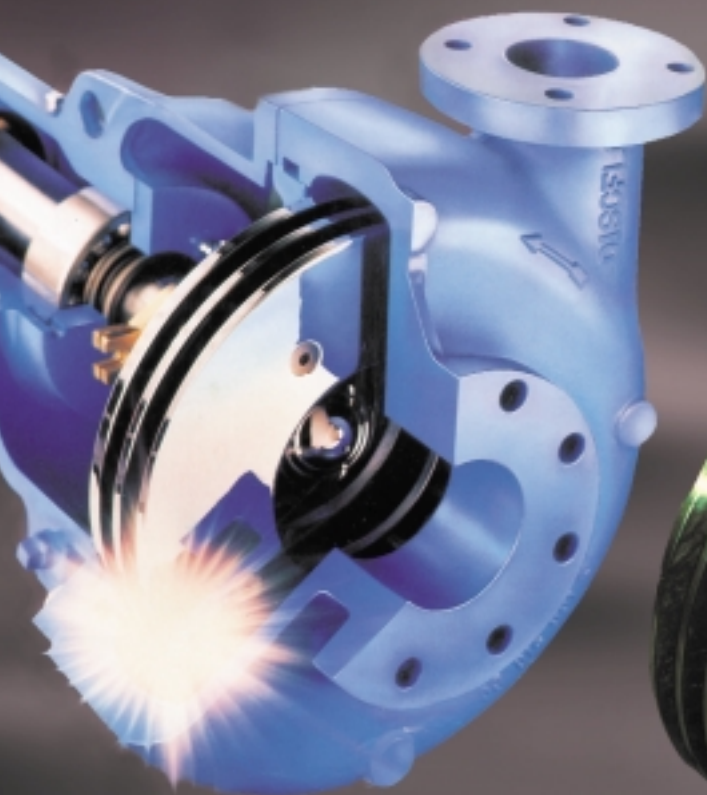
**DISCFLO**



***A Revolution  
in Pump  
Technology***

***A QUANTUM LEAP***

***State-of-the-Art Disc Technology  
For Long Lasting,  
Low Maintenance  
Pumps***



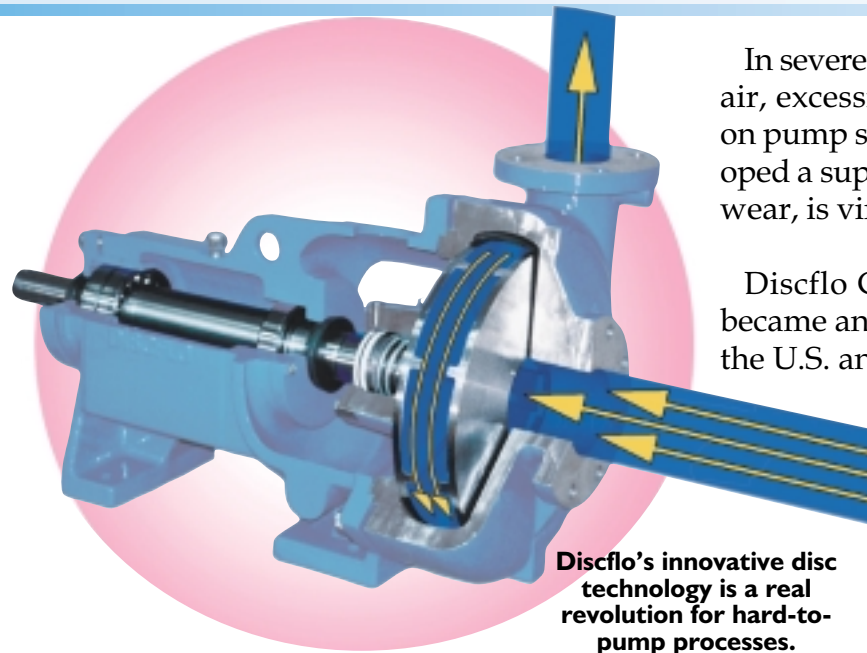
***ABRASIVES***

***VISCOSITY***

***SOLIDS***

***ENTRAINED AIR***

# A Quantum Leap



Discflo's innovative disc technology is a real revolution for hard-to-pump processes.

In severe applications where abrasion, viscosity, entrained air, excessive wear and corrosion problems wreak havoc on pump systems and degrade products, Discflo has developed a superior alternative that dramatically reduces pump wear, is virtually clog free, and prevents product damage.

Discflo Corporation was founded in 1982 and quickly became an industry leader in the hard-to-pump market in the U.S. and throughout the world.

Our record of success in the highly competitive pump market is a result of breakthrough, state-of-the-art pump technology and a commitment to providing the most efficient and economical solutions to the toughest pumping problems.

## - No Close Tolerances

The Disc pump is not a centrifugal pump, positive displacement, gear, or lobe pump. Unique in design, the Disc pump bridges the performance gaps of conventional pumps and is capable of outperforming all of them in many applications.

## - No Radial Loads

The Disc pump uses a new and patented technology that isn't available in any other pump. The technology of the Disc pump harnesses the natural power of **boundary layer and viscous drag**.

## - No Impingement

**Boundary Layer** - a boundary layer of fluid molecules collects, and rotates with the discs. This creates a natural, protective buffer that separates the pump from the fluid.

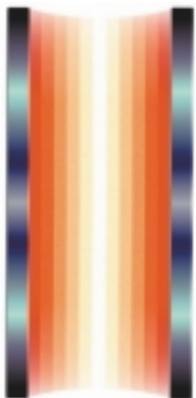
## - Non Pulsating

**Viscous Drag** - Through viscous drag, the fluid is pulled through the pump without impingement. The boundary layer attracts and drags successive layers of fluid molecules into layered flows of parallel streams. This is the simple principle of viscous drag and in the Disc pump it is a powerful dynamic force that "pulls" the fluid through the pump in a smooth laminar, non-turbulent flow.

## - Laminar Flow



Rotary discs provide non-impingement pumping — that means less wear and greater protection for your product.



The non-impingement and laminar flow pumping of the Disc pump is similar to the flow through an ordinary pipe. The layers of fluid at the walls are stationary (relative to the rotating discs), creating a protective boundary layer. Viscous drag pulls layers into flows of smooth laminar streams.

With no impingement device to damage your product and a boundary layer of protection for the pump, the Disc pump effectively eliminates the root cause of clogging, cavitation, excessive wear, and product damage that plague the performance of conventional pumps. Discflo is more reliable and efficient in handling tough applications and a lot more cost effective. It simply lasts longer, requires fewer (if any) repairs, and doesn't damage your product.

# *This is the Future of Pump Technology*

## The Discpac

### — For Non-turbulent Pumping

- It is the Discpac that makes the Disc pump so revolutionary. All other pumps use some type of impingement device — relying on the force of impact to push the fluid through the pump. This impact is hard on shear-sensitive products, and it creates pulsation that wears the pump and damages piping. The non-impingement operation of the Disc pump makes it different than any other pump on the market today.
- The Disc pump uses a series of parallel discs called the Discpac. As the discs rotate, they create a boundary layer and viscous drag force that pulls the product smoothly into the pump. There is no destructive impact with an impingement device.



**Titanium pumps used for handling hazardous chemicals are on their way to a manufacturing plant in South Carolina.**



## Versatility

### — To Handle Any Job

- The Discpac can be designed for the gentlest possible pumping of shear-sensitive solids and gaseous froths. At the same time it can handle aggressive slurries with heavy viscosities and highly abrasive solids content.
- The Disc pump can be designed with over-size suction and discharge.
- A wide variety of metal and non-metallic materials are available for the pump and its components and over a dozen configurations including API-610 and ANSI 2000 using Disc technology.

## Cutting Edge Technology and Design Excellence

### — No Reduced Performance Efficiencies

- No close tolerances and no impingement device mean no metal-to-metal component wear.

### — Less Wear - No Pump Vibration

- Smooth flow through the pump saves wear and tear on the entire pump system (and your product). It also eliminates pump vibration and excessive noise.

### — Low NSPH Requirements

- Laminar flow means low NPSH! It prevents reduction in head and capacity and further reduces noise and vibration. The NPSHr is about half to one-third of a centrifugal pump in the same service conditions.

### — Open Design - Virtually Clog-free

- The straight-forward design of the Disc pump conserves space and makes assembly and disassembly quick and easy. The open design prevents clogging. Optional pull out back.

**The Most Dynamic, Durable Pump Ever Developed for Hard-to-Pump Applications!**

# Light-Years Ahead in Fluid Handling

## ABRASIVES

Because of the protective “boundary layer,” abrasives don’t grind and wear the surfaces of the rotary disc assembly. Even in very abrasive service such as fly ash or TiO<sub>2</sub> there will be little or no wear. There is no efficiency loss as a result of rotor wear.



These rocks (1-1/2 - 4”) were trapped inside the casing of a Disc pump with a 2” discharge for several days as the pump continued to operate. Even after a beating like this, the interior of the pump suffered no damage.

**Discflo pumps suffer little wear even in very abrasive applications.**  
– Durability like that only comes from a Disc pump.

## SUPERIOR PRODUCT PROTECTION

Just imagine the impact of no-impact pumping on your shear-sensitive and delicate products, not to mention *your bottom line*.

In a Disc pump there is no impact from blades or other impingement devices - only fluid-on-fluid in a non-turbulent flow through the pump. Discflo pumps are in a class by themselves in the protection of delicate and shear-sensitive products. In many cases product damage can be completely eliminated. It’s one of our biggest success stories and has made Discflo the pump of choice for many applications in pulp and paper, food processing, chemical manufacturing, and a host of other industries where product integrity is critical.

Product losses were eliminated at a juice plant in the United States. The juice contains very delicate and shear-sensitive gelatin fruit spheres. All previous pumps tried in the application degraded the product. Losses ranged from 20 to 40 percent. With the non-impingement laminar flow of the Disc pump, product losses fell to zero.



**Nothing has less impact on your product.**  
– Disc pumps won’t smash, pulverize, emulsify, shear, grind, tear, shred, or otherwise destroy your product.

## VISCOSITY

There isn’t another pump in the world that’s as powerful as the Disc pump when it comes to viscous product. With viscous drag, the fluid literally moves itself through the pump. The Disc pump *actually becomes more efficient with increasing viscosities*. The pump easily moves fluids with viscosities up to several 100,000 cPs. At viscosities greater than 350 cPs Disc pumps need less power than similar-sized centrifugal pumps.



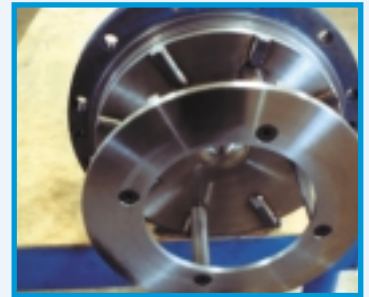
A major U.S. paper recycling plant uses a Discflo for stock with consistencies of 8 to 18%. Discflo is the only pump that can do it without dilution. The ability to handle high viscosities can eliminate storage and vacuum systems, and save water and power, too.

**Yes, you read that right . . .**  
– viscosities of several hundred thousand cPs.

## SOLIDS

Up to 80% solids by volume can be pumped without clogging. The pump has a unique open design and requires no close tolerances so even large and stringy solids won’t get trapped or tangled inside.

A chicken processing plant couldn’t find a pump that could handle their poultry waste without clogging. Then they found Discflo. Chicken parts, bones and even whole chickens pass easily through it’s open, no-close tolerance design.



**With no impingement device or close tolerances . . .**  
– even large and stringy solids don’t get trapped.

## ENTRAINED AIR AND GAS

So gentle is the non-impingement, laminar flow of Discflo pumps, bubbles don’t implode. They pass through the pump like solids. The pump handles fluids containing as much as 70% entrained air or gas. This means no foaming, frothing or vapor-locking.

**For hard-to-pump applications, nothing out-performs a Discflo pump. Nothing.**

# A Quantum Leap in Efficiency and Cost Savings

## LITTLE MAINTENANCE REQUIRED

The pump wears so slowly that spare parts and maintenance requirements are reduced dramatically, over 90% in many applications.

## DISC PUMPS NEED FEW (IF ANY) SPARE PARTS

The Disc pump comes with no recommended spare parts list, simply because it rarely needs them.

## THERE IS LITTLE-OR-NO DOWNTIME

Regularly scheduled maintenance for normal bearing lubrication and seal flush is generally all that's needed to keep the pump operating.

Unplanned downtime due to pump failure is rare.

## NOTHING COMES CLOSE TO A DISC PUMP IN PROTECTING SHEAR-SENSITIVE AND DELICATE SOLIDS!

In case after case, end users have reported dramatic yield increases. Discflo virtually eliminates product losses in many applications.

## HEAVY DUTY SHAFT – NEAR- ZERO RADIAL AND AXIAL LOADS

There is less than 0.002-inch shaft deflection under the full-load, full-speed pumping. This extends the life of the shafts, seals, sleeves, and bearings. The bearings in a Disc pump will last in excess of 80,000 hours with proper lubrication.

## ENERGY EFFICIENT

In most applications, energy requirements are about the same as most other conventional pumps. However, the Disc pump uses less power than other pumps when handling highly viscous material. Because of the viscous drag principle it becomes more efficient as viscosity rises.



After seven years continuous service handling abrasive fly ash, this Discpac shows no appreciable signs of wear.

The Disc pump is so durable that as long as the seal is protected you can run it bone dry and as long as there's seal flushing you can even deadhead the discharge and starve the suction at normal operating speeds,

- without damaging the pump.

## UNPARALLELED ECONOMY

The Disc pump is competitive in initial capital costs, but in hard-to-pump applications, it has a life-cycle cost significantly lower than all other competitors.

The pump is designed to handle viscous, abrasive, air-entrained and shear-sensitive fluids. In these applications, conventional pumps require parts and repairs in their first year of service that exceed their initial purchase price, two or three times over.

The Discflo's non-impingement design suffers so little wear that repair and part requirements are dramatically reduced, often by as much as 90%.

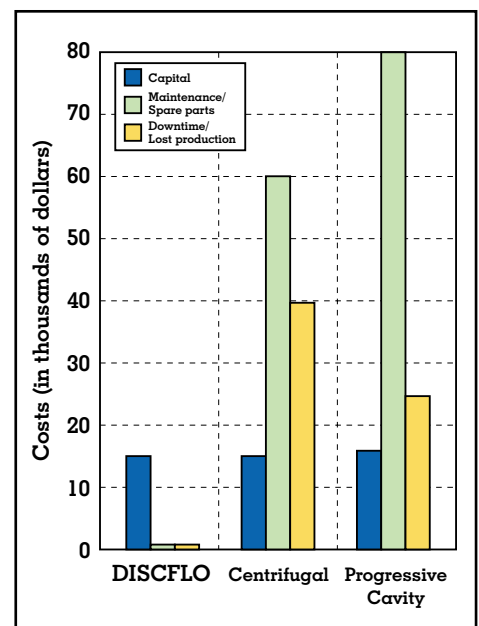
Non-impingement pumping produces higher product yields of better quality, because it doesn't damage or emulsify shear-sensitive solids.

Look at the total costs of buying and operating a pump and take into consideration downtime, labor, spare parts, and changes in product yield or quality, you will find that there is no better buy than a Discflo Disc pump.

## WE SELL PUMPS NOT PARTS

Less than five percent of our revenues come from purchases of parts for repair.

And because of reduced wear the Disc pump simply lasts longer.



The Disc pump - over its lifetime - will cost many times less than any other type of pump in the same service.

# DISC PUMPS IN ACTION

## Applications for Food, Pharmaceutical and Bio-med Industries

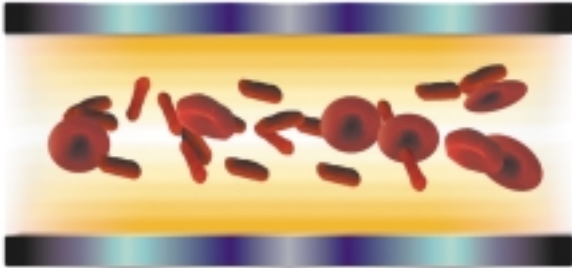
### ***Meets 3-A Sanitary and International Hygiene Standards and USDA Requirements***

Applications for the Discflo pump in the food and pharmaceutical industries are extremely diverse.

The pump is effective and economical in the following hard-to-pump applications - raw and cooked corn, dairy sludge, liquid sugar, molasses, beer waste, par-boiled rice, potato and starch, ice cream, orange pulp, avocado waste, grapes, chicken waste, even whole chickens, live fish, pharmaceuticals, blood and cells, to name just a few.



## SP SERIES DISC PUMPS



Even fragile blood cells are not damaged in the Disc pump because of its no-impact pumping and non-pulsating, laminar flow.

### Operating Ranges for Standard Configurations

- Suction Pressures: Low NPSHr
- Working pressures: Up to 1400 psi (95 atm)
- Discharge pressures: Up to 1000 ft (240 m) TDH
- Solids size: Up to 3 inches (76 mm)
- Hydraulic flow: 2 to 3000 GPM (0.5-600 m<sup>3</sup>/h)
- Viscosities: Up to 300,000 cPs
- Operating temps: Ambient to 300°F (150°F)
- Drivers: Electric, diesel, hydraulic, air

SP Series Disc pumps can be configured for higher flow rates, larger solid sizes and higher temperature.

- Clean-in-Place and Steam-in-Place systems.
- Close-coupled and frame-mounted models available.
- Variety of sanitary flanges available, including ANSI and DIN.
- Standard pump casing with increased suction size available for highly viscous liquids.
- Electrical motors supplied in all domestic and foreign voltages.
- All metal product areas are 316L stainless steel with minimum 150 grit surface finish to meet 3-A and international hygiene standards, and USDA requirements.
- Two standard seal designs - external-balanced seal with water cascade and water pressure-balanced double seal. Other types of seals are available on request.
- TEFC (Totally Enclosed Fan Cooled) or wash down duty Motor housings. Other styles available on request.
- Matte or electro-polished finish casings.

One of the world's largest snack food suppliers had trouble getting cooked corn through their lobe pumps. Twelve to seventeen percent of their product was being destroyed. After one year of research and in-plant testing, Discflo pumps consistently performed with less than .2% breakage. A very significant 92% savings in product degradation.

# DISC PUMPS IN ACTION

## Applications for Municipal and Industrial Facilities



First of many Disc pump installations at a new water treatment facility on the California/Mexico border.

Disc pumps are an integral part of the state-of-the-art South Bay International Wastewater Treatment Plant at the California/Mexico border.

Until now, the only pump that has been able to handle the high solid and entrained air content in wastewater treatment applications has been the positive displacement pump. But this application is so grueling, pump service life is short and maintenance, non-stop.

Discflo technology eliminates the root causes of pump failure. First, its non-impingement pumping keeps air and gas bubbles entrained in the fluid so there's no foaming or vapor-locking and because there are no close tolerances the pump can handle the wide range of solids

that pass through the system. There are no radial loads and almost no axial loads, and there are no impeller surfaces to wear. The Disc pump needs little or no maintenance and few, if any spare parts.

Discflo saves the average end user tens of thousands of dollars a year in maintenance and spare parts costs.

Discflo pumps have become "standard operating equipment" for tough applications in hundreds of municipal and industrial wastewater treatment facilities in the United States and throughout the world.

Discflo's open design, no close tolerances, and smooth, laminar flow make it the most efficient and economical pump you can buy for problem viscous and abrasive waste sludges.

***No other pump comes close.***

**Disc pumps have saved municipalities tens of thousands of dollars a year in maintenance costs, cut downtime and improved the overall efficiency of their operations.**

**The Discflo pump excels in handling -**

**Viscous and high solid fluids:** All types of municipal and industrial waste sludge.

**Abrasive fluids:** Lime sludge, bio-solids sludge, sand slurries with up to 80% solids, sewage.

**Air or gas-entrained fluids:** DAF sludge and other types of anaerobic slurries and waste.

**Large and/or stringy solids:** Raw sewage containing rags and tumbleweed, waste with plastic strapping.

A Florida water treatment installed its first Disc pump seven years ago to pump lime sludge, an abrasive, viscous (2000 cPs) fluid with high solids content (30-60%) and a specific gravity of 1.5.

Before installing Discflo pumps, the plant operated two progressive cavity pumps. During the course of normal operation, the rotor/stator assembly in these pumps would wear out after 2-3 months. After seven years of service, the Disc pump has not shown any signs of wear. The only maintenance required has been a packing replacement, plus the Disc pump handles higher solid content - pumping from 60-80%.

The superintendent writes, "The city has not only saved thousands of dollars by the use of the Discflo pumps, but the down time has been greatly reduced, therefore improving the overall efficiency of our lime solids removal operation."

The city has since added six more Discflo pumps to its operation. Three are pumping lime sludge to a rotary vacuum dryer and three feed ferric-sulphate to belt filter presses. The performance of the Discflo pumps has been "excellent" according to plant officials and the city is currently in the process of acquiring additional Discflo pumps for the facility.



**"The city has not only saved thousands of dollars . . . the down time has been greatly reduced."**

**- City Superintendent of a Florida wastewater treatment plant.**

# DISC PUMPS IN ACTION

## Applications for Chemical and Petrochemical

The use of Discflo technology in chemical and petrochemical processing has experienced significant growth over the past several years. The pump's proven ability to handle viscous and abrasive slurries without wearing and its no-shear, non-impingement pumping is in demand for some difficult applications and expensive products. In documented case studies, Discflo pumps have reduced the product losses in latex and crystal pumping from a devastating fifty percent to less than a fraction of one percent.

Wherever Discflo pumps are employed to move viscous and abrasive fluids, our customers benefit universally from huge costs savings that come from higher yields, less maintenance, fewer repairs, and reduced downtime.

The project co-ordinator for a leading chemical producer in Kentucky has given the non-metallic Discflo pump very high marks for its performance in a very tough application.

He has tried all kinds of metallic and coated pumps. None could handle the high grade silicon with 15% hydrochloric acid. The Discflo pump was started up November 1997 and has run nonstop. Another benefit has been an increase in the final product quality. "The lower the shear, the less acid in the product," comments the project co-ordinator. "Discflo's low-shear technology

has significantly reduced the acid content of our product. This in turn has reduced the subsequent processing required, saving time and money."



**"Discflo's low-shear technology has significantly reduced the acid content of our product . . . saving time and money."**

**—Product co-ordinator for a Kentucky-based chemical producer**

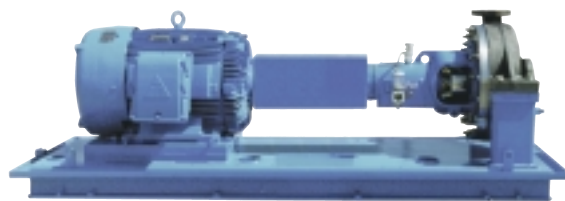
One of the toughest applications for any pump is bromide slurry. The slurry is highly corrosive, non-homogeneous, and shear sensitive. Crystal solids content is typically 30 - 45%; specific gravity around 3.0. At one plant, the Discflo unit replaced a recessed impeller pump, which suffered excessive corrosion problems. Even worse, it was destroying 30% to 60% of the product passing through it by grinding the crystals into sand. The company went searching, hoping to find an alternative that would reduce product damage and withstand corrosion. That alternative



was the Discflo pump. The system started up in March 1998 and has delivered trouble-free performance. More important, crystal losses are minimal - 1% or less.

Discflo Pumps are available in a wide range of metallic and non-metallic materials to handle all types of corrosive and hazardous fluids, including toxic slurries, hot acids and alkalis, even nuclear waste.

Discflo incorporates all of the benefits of Disc technology into high temperature and high pressure process pumps that meet all API-610 and ANSI standards.



*API-610, 8th Edition*



*Discflo ANSI 2000*

Discflo's ANSI 2000 is the only ANSI standard pump in the world that can handle upwards of 70% entrained air or gas.



# DISC PUMPS IN ACTION

## Applications for Pulp and Paper Processing

Problems unique to the pulp and paper market have given Discflo the opportunity to demonstrate its unrivaled superiority in difficult-to-pump applications. Discflo pumps have made it possible to pump medium-to-high density stock up to 18% consistency, without using air removal or fluidation and it does so without performance loss due to wear. No other pump can do this. Disc pumps can handle viscosities of 300,000 cPs and at 350 cPs need less horsepower than a similarly-sized centrifugal. The pump becomes even more efficient at higher viscosities. Also, the Disc pump can deliver higher product yields because there is no shearing of delicate solids.



A top paperboard manufacturer is using Disc pump systems throughout its mill in northern Sweden. Applications include pumping lime slurry, black liquor soap, coating waste and lignin/white liquor. One of the toughest uses was pumping a very abrasive and shear sensitive bentonite solution.

Since installation of the Disc pumps, the plant manager has not purchased any spare parts for these pumps, and has reported no unplanned maintenance or downtime. The investment in Discflo pumps has returned a substantial dividend. The company estimates the savings amount [\$10,000–\$20,000] per pump per year.

**Discflo pumps are the only choice in Pulp and Paper processings toughest jobs.**

**Chemical Recovery:** Green liquor dregs, black liquor soaps, clarifier sludge with up to 80% Solids

**Paper stock and pulp:** Stock up to 18% density can be pumped with no dilution or fluidizer required.

**Paper Coatings:** Polymer emulsions, latexes, kaolin clay slurries, titanium dioxide slurries up to 80% solids, and bentonite solutions.

### The Disc Pump Brings Unprecedented Economy To Pulp and Paper Processing.

- Savings from reduced pump maintenance and downtime.
- The Disc pump can handle the higher viscosities associated with pulp and paper processes without excessive wear or maintenance, and in many cases uses less energy.
- More efficient systems can be put in place that eliminate storage and vacuum systems.
- Savings in water and power resources.
- The unique non-impingement design of the Discflo pump delivers the product with no change in paper freeness.
- Many of our customers have realized savings of tens of thousands of dollars per pump per year.



### No De-Watering

Paper stock is gently processed without impingement through the pump—in effect *pulled* through as a homogeneous liquid and de-watering does not occur.

### Maximum Paper Freeness

Independent tests have confirmed that there is no measurable loss of freeness to paper fiber when processed through a properly-sized Discflo pump.

# DISC PUMPS IN ACTION

## Applications for Oil, Metal, Mining and More

Disc pumps thrive in the severe applications found in the oil, metal, and mining industries. The open design and smooth pulsation-free operation makes handling viscous slurries and highly abrasive solids manageable. The pump can move viscous oils and handle sand mixes, drilling mud, ore sludge, and steel slag, with minimal wear to the pump and virtually zero breakdown. The Disc pump is very valuable in the oil industry because it can pump oil and water emulsions without emulsifying the fluid. This saves in separation costs down-line.

Shell Oil in California has used Discflo pumps since 1987 to pump crude oil. They call it the “magic pump,” because with Discflo, there is no emulsification and more oil ends up in the storage tank. The productivity of the Discflo is impossible to achieve with conventional pumps.



This “magic pump” has solved a big problem inherent in all oil field pumping applications – the pumping of three-phase flow.

**- They call it the “magic pump.”**

When oil comes from the ground, it is a mixture of oil, water, and gas, mixed with sand, mud, and rock. Most pumps can handle the oil with a little sand and mud. Some pumps can handle the oil and water with more sand and mud. But only the non-impingement, laminar-flow pumping of a Disc pump can keep the gases entrained and moving through the pump as a solid mass along with the oil and water. The need to add chemicals to de-emulsify the oil is eliminated.

Disc pumps deliver significant advantages – higher product yields, lower processing costs, and dependable pumping with little or no maintenance. With Discflo, the savings are tremendous. There’s no other logical choice for pumping three-phase flow.

Transferring filter cake slurry to disposal containers was difficult and expensive for a processor in Texas. The slurry was sometimes the consistency of peanut butter. Other times, the steam condensate would not mix, resulting in a two-phase fluid.

Pump failures occurred once or twice a week, costing hundreds of dollars each time in parts and labor. Four or five hours of production time was lost. They were persuaded to try the Disc pump and have never looked back.

The savings in maintenance alone is well over \$50,000 a year. The Discflo pumps paid for themselves in the first three months of operation.

### A Track Record of Success

*For over two decades, Discflo pumps have been bringing new solutions, more efficient alternatives, and new economy to difficult pumping applications. The success of the Discflo pump can be found throughout the world in all types of industries.*

*Disc pumps have a record of success in these and other industries and applications.*

**Metal industry:** Steel slag, quench water, metal powder slurries, acid recirculation.

**Mining and mine dewatering:** Drilling mud, graphite mine tailings, chalk, diamond mining.

**Ceramic, glass and stone:** Rock slurries, fiberglass, ceramic slurries, etc.

**Pharmaceutical industry:** Living cells, plankton, bacteria, whole blood, catalyst solutions.

**Agriculture:** High solids agricultural slurries and sludges with varying solids sizes.

**Utilities:** All types of viscous, abrasive and corrosive fluids in power and utility plants.

**Hazardous materials:** Nuclear waste, organic and inorganic waste sludge.

**Shear sensitive chemicals:** Polymer emulsions, latex, crystals, dilatant and thixotropic fluids.

**Viscous fluids:** Waste sludge, tank bottoms, black beauty, paint skins, oil sludge, asphalt.

**Abrasive fluids:** Borax, drilling mud, sand slurries with up to 80% solids, crystal slurries.

**Air or gas-entrained fluids:** Crude oil, chemical froths, DAF sludge.

**High temperature or pressure processes:** Disc API pumps are designed and manufactured to API-610, 8th Edition.

# SPECIALTY PRODUCT

The Discmixer is based on Discflo's innovative Disc technology. All of the advantages that Disc technology brings to our pumps it brings to our mixer. It is superior when mixing shear sensitive fluids, abrasive slurries and fluids with high solid content.



## No Degradation of Delicate Solids

The Discmixer has no blades, no paddles, no vanes, and non-impingement, pulsation-free fluid movement so there is no degradation of delicate products or damage to shear-sensitive fluids.

## Handles Large and Stringy Solids without clogging

A unique open-ended design allows the Discmixer to handle large and stringy solids, as well as fluctuations in solids size and volume without clogging

## No Radial Loads

There are no radial loads on the shaft during operation, ensuring longer bearing and shaft life.

## Long Life Mixer Components

The Discmixer will need very few spare parts over its lifetime. A heavy duty shaft which has close-to-zero axial loading (except for the weight of the rotor) and no radial loads dramatically extends the life of bearings and seals.

## Low Maintenance/Spare Parts Requirements

Discmixer suffers little-to-no wear even in severely abrasive service due to its non-impingement operation and pulsation-free mixing. Less than 5% of Discflo's business comes from spare parts purchased for repair.

## High Uptime and Reliability - Breakdown is almost unknown!

Discmixer is the most reliable mixer on the market today. Because there is minimal contact between the mixer and the material being mixed, wear on components is greatly reduced and breakdown is almost unknown. No close tolerances, and a non-contact mixing action without pulsation contribute to high uptime by preventing solids from clogging.

## Higher Yields and Improved Quality

When mixing, blending, or suspending delicate and shear-sensitive (e.g. dilatant or thixotropic) products, Discmixer can increase productivity and reduce product losses due to the non-contact mixing mechanism.

## Versatility

The Discmixer is engineered to meet your specific requirements.

- Can be engineered to capacity requirements.
- Full-scale, pilot plant and laboratory models are available.
- Size, number, and arrangement of mixing elements are designed for your specific application.
- Suitable for both batch and continuous mixing.
- Motor sizes from fractional HP to 500 HP
- Variable, single-speed and V-belt drives are available.
- Mixer elements are available in all alloys and various non-metallic materials.
- Shaft is available in a range of non-corrosive stainless steel metallurgies.



# THE DISCFLO PUMP SHOP

## DISCFLO'S DISC PUMPS ARE A CUSTOM-MADE ENGINEERED PRODUCT

Discflo is not a one-pump-fits-all company. We are in the business of providing solutions to difficult pumping problems. For this reason, we have a wide range of pump configurations, materials of construction, and an array of other options that we employ in designing the most effective, efficient pump system for your application.



**Model MCL  
Cantilever**

*Vertical Sump Pump has "under the surfaces operation" with flooded suction and low NPSHa. Needs no foot valve or self-priming tank.*

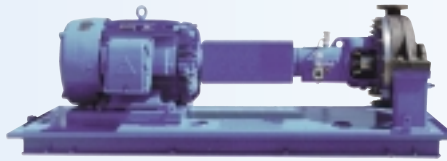


**Model MD  
Direct Coupled**



*Vertical Cantilever pump has no radial loads so it can be manufactured with much longer shafts without having bearing support.*

**Model MSU  
Sump Pump**



**API-610**



**Sanitary Pump**



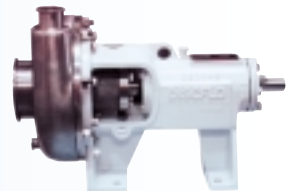
**Model MS  
Submersible**



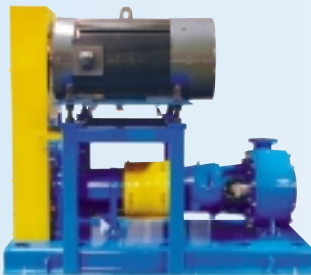
**Model MCC  
Close Coupled**



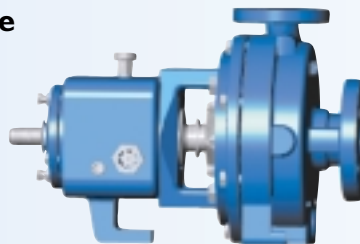
**Dry Pit**



**Citrus Oil Pump**



**Over/Under**



**ANSI 2000**



**Self-Priming**

# SPECIFICS

## Standard Materials of Construction

Part Description	Ductile Iron	316SS	CD4MCu	Alloy 20	Monel	Hastelloy C, C276, B & 22	Titanium
Casing	Ductile Iron	316SS	CD4MCu	Alloy20	Monel	Hastelloy	Titanium
Discpac	Ductile Iron	316SS	CD4MCu	Alloy20	Monel	Hastelloy	Titanium
Lantern Ring	316SS	316SS	CD4MCu	Alloy20	Monel	Hastelloy	Titanium
Stuffing Box Packing	Graphite	PTFE Impregnated Fiber					
	Back to Back Angular Contact						
Shaft, Less Sleeve	316SS	316SS	Alloy20	Alloy20	Monel	Hastelloy	Titanium
Shaft, With Sleeve	SAE 4140				Monel	Hastelloy	Titanium
Shaft Sleeve	316SS	316SS	F255	Alloy20	Monel	Hastelloy	Titanium
Bearing Locknut	Steel						
Bearing Lockwasher	Steel						
Radial Bearing	8", 10" & 12" Single, Deep Groove Ball *** 14" & 20" Cylindrical Roller						
Stuffing Box (Packed Box)	Ductile Iron	316SS	F255	Alloy20	Monel	Hastelloy	Titanium
Seal Box	Ductile Iron				Monel	Hastelloy	Titanium
Bearing Frame	Ductile Iron						
Gland	316SS	316SS	F255	Alloy20	Monel	Hastelloy	Titanium
Oil Sight Gauge	Glass/Steel						
Bearing Isolator Outboard	Stabilized Teflon						
Bearing Isolator Inboard	Stabilized Teflon						
Casing Gasket	Fiber				PTFE		
Casing Drain Plug (optional)	Steel	316SS	F255	Alloy20	Monel	Hastelloy	Titanium
O Ring, Bearing Housing	Viton						
O Ring, Discpac	Viton				PTFE		

*Contact us for specifics on materials of construction, advice on selection, and data on pressure-temperature ratings.*



The Discpac can be designed for the gentlest possible pumping of shear-sensitive and gaseous froth and at the same time handle aggressive slurries with heavy viscosities and high abrasive and solid content.

- Standard sizes: 8, 10, 12, 14, 17 and 20-inch diameters
- Holds from two to twenty discs.
- Custom configurations - the spacing, size, and number of discs in the Discpac can be configured according to fluid conditions, and head and flow rate requirements.
- Smooth surfaces for maximum shear reduction or ribbed High Head discs for higher flow rates and efficiency in some applications.

### Operating and Design Range:

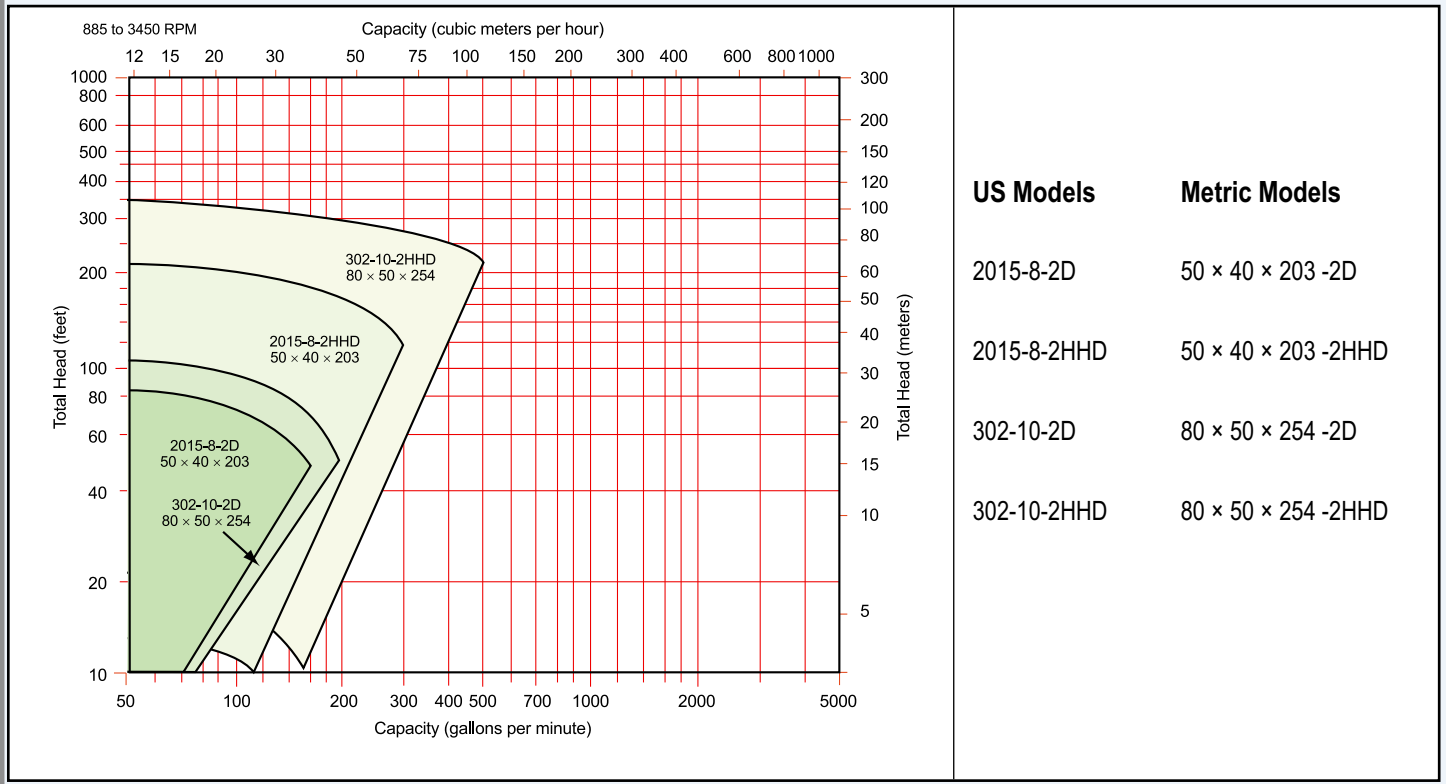
- Hydraulic flow capacities: 2–10,000 GPM [0.5–2250 m<sup>3</sup>/h]
- Discharge pressures: up to 1000+ft TDH [300+ m]
- Discpac diameters from 8-inch [203mm] to 20-inch [508mm]
- Suction pressures: low NPSHr
- Working pressures: up to 1400 psi [95 atm]
- Operating temperatures: to 1000°F [523°C]
- Viscosities: up to 300,000 cPs
- Pump speeds: up to 3600 rpm
- Drivers: electric, diesel, hydraulic, air

### Seals:

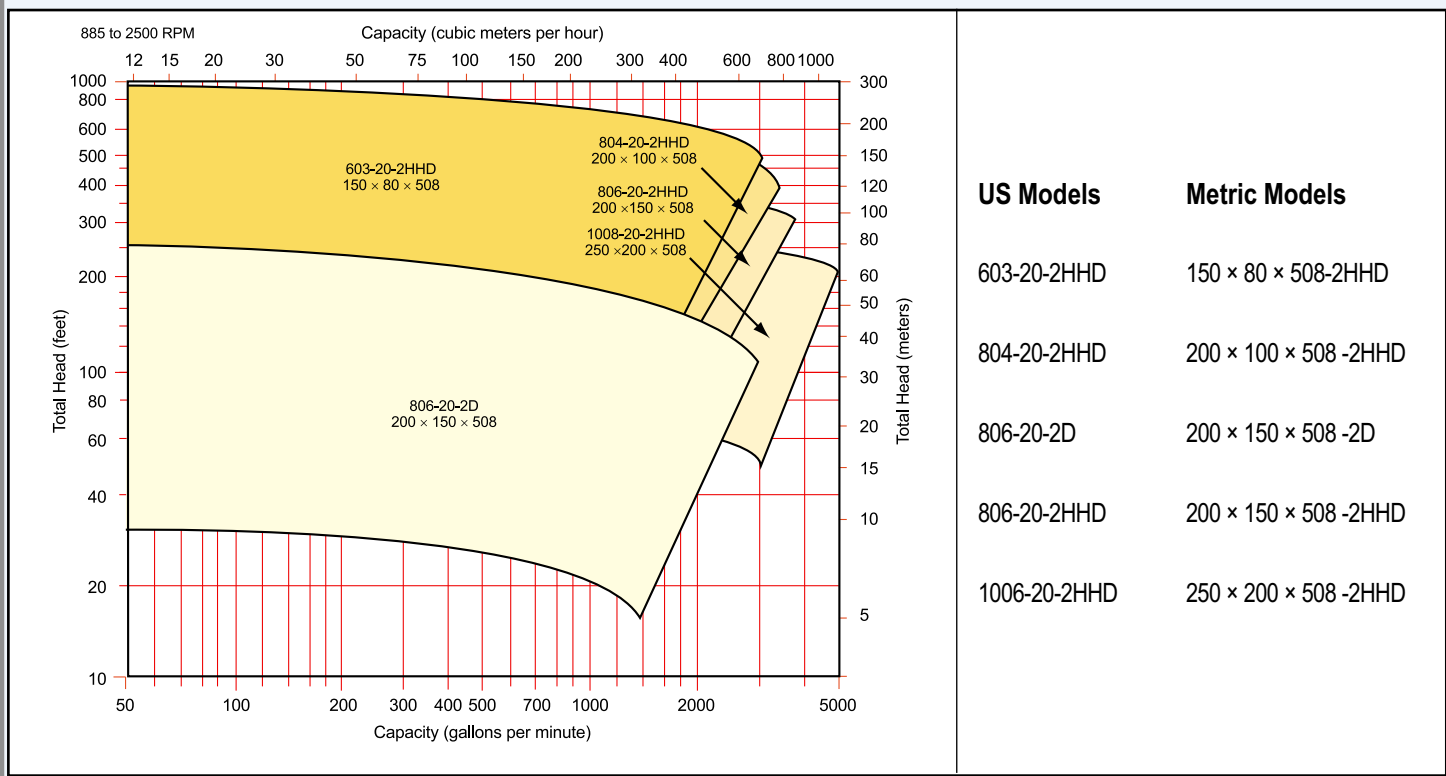
- The Discflo Disc pump is designed to accommodate almost all makes and models of single and double mechanical seals and cartridge seals in both US and metric sizes.

# Composite Curves: 8, 10, 20 inch Discpacs

## For Pumps with Smooth & High-Head Discpacs

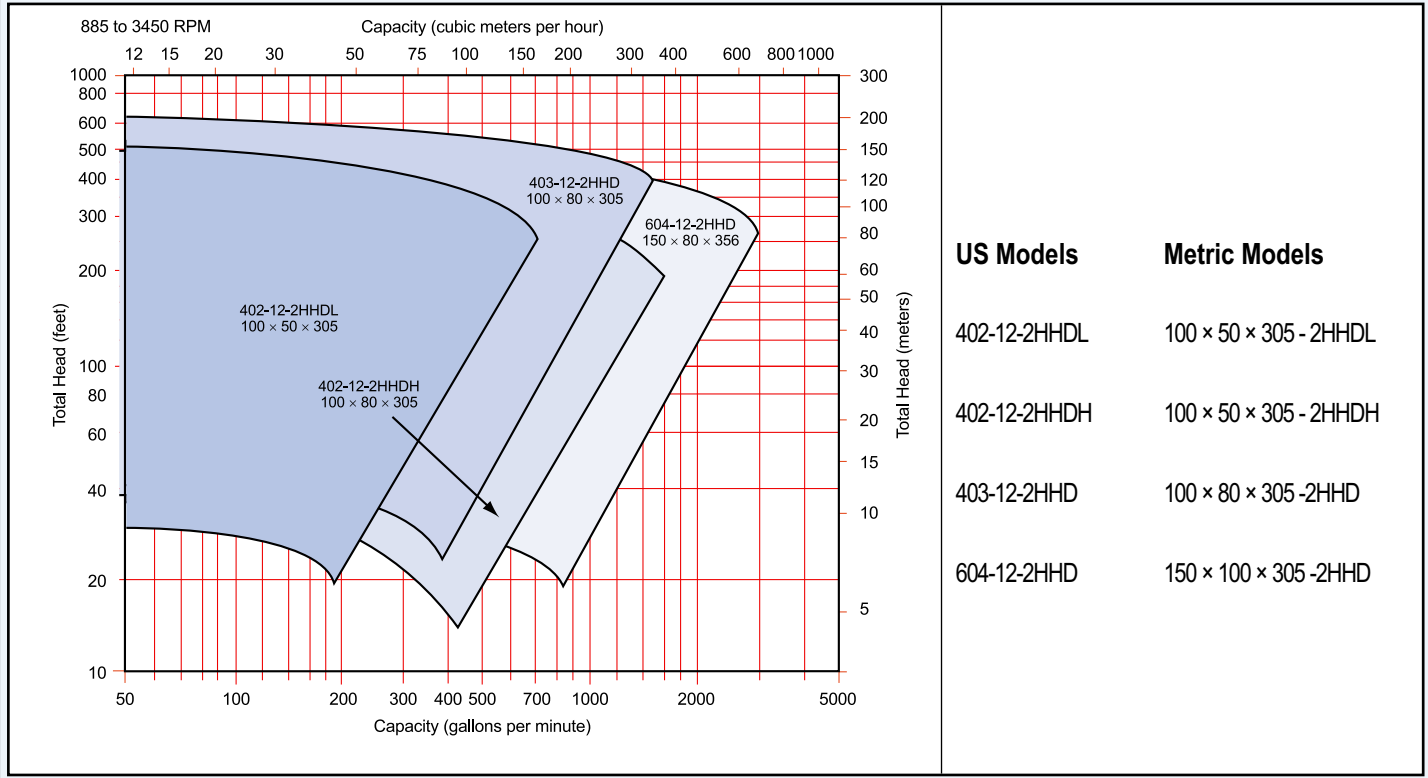


## For Pumps with Smooth & High-Head Discpacs

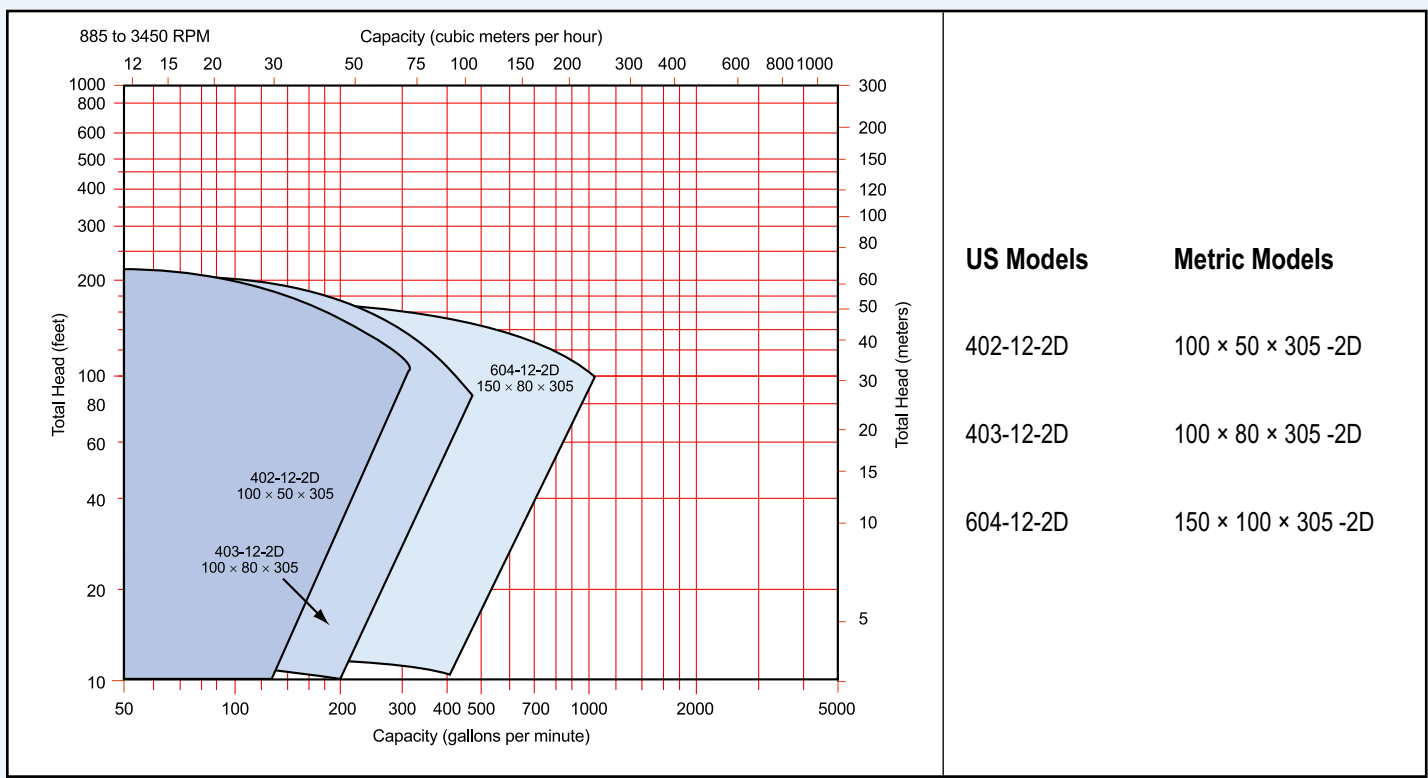


# Composite Curves: 12-inch Discpacs

## For Pumps with High-Head Discpacs

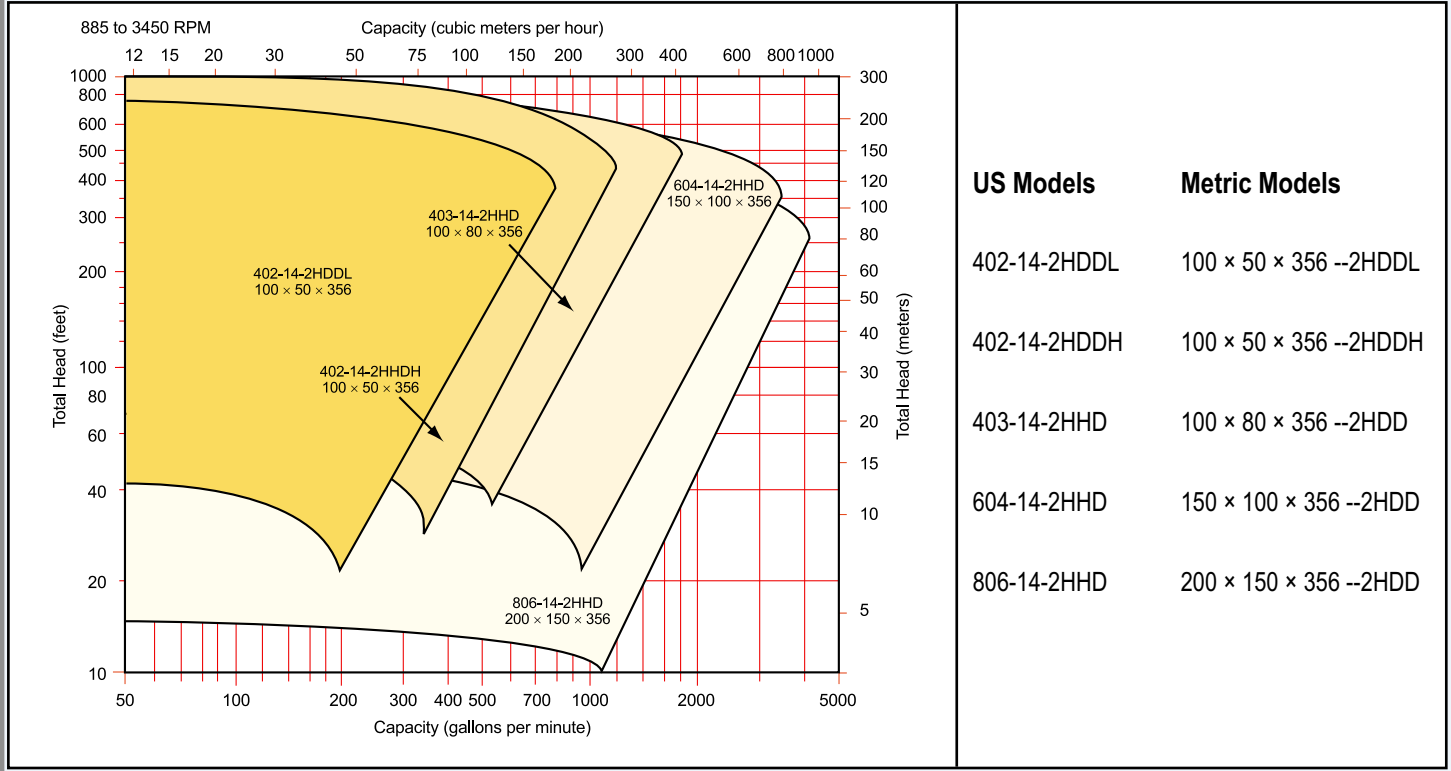


## For Pumps with Smooth Discpacs

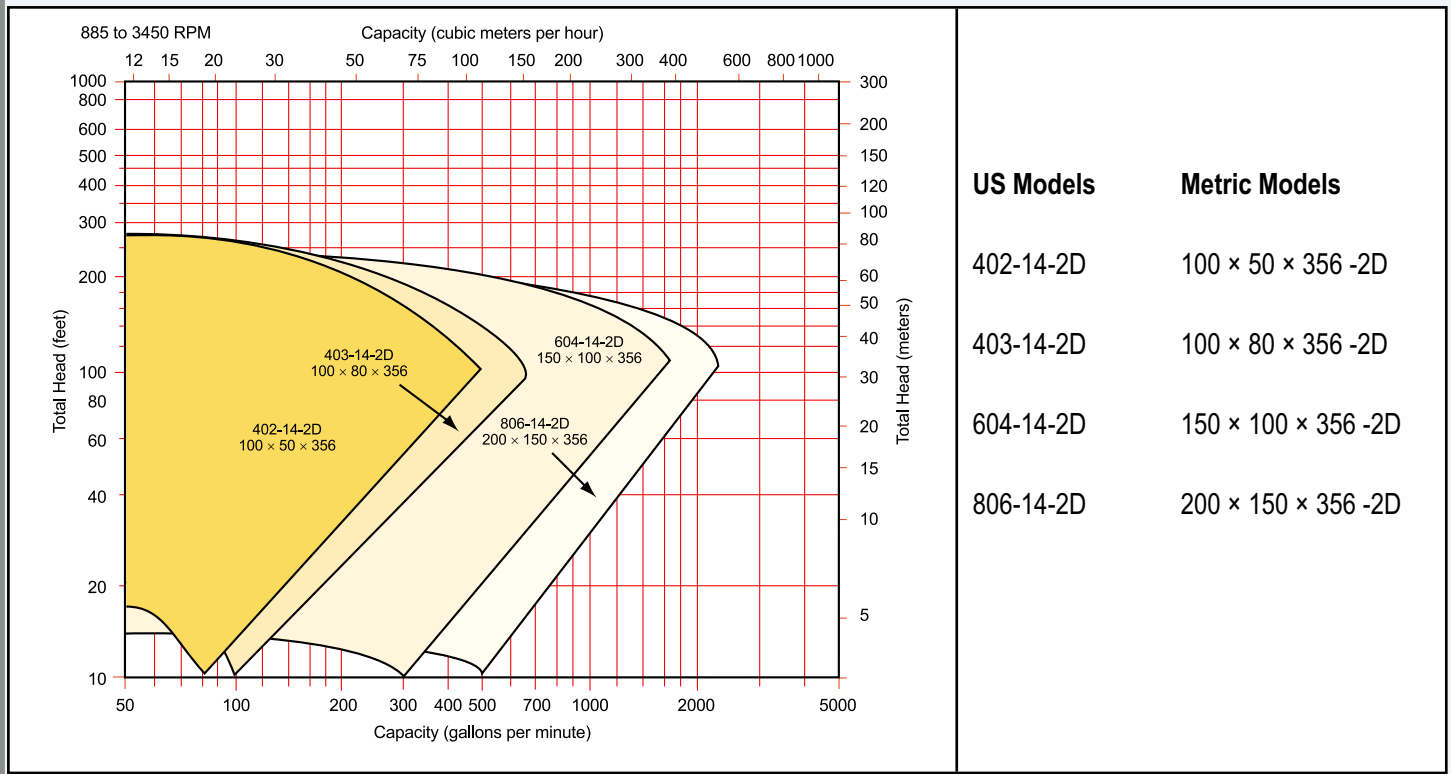


# Composite Curves: 14-inch Discpacs

## For Pumps with High-Head Discpacs



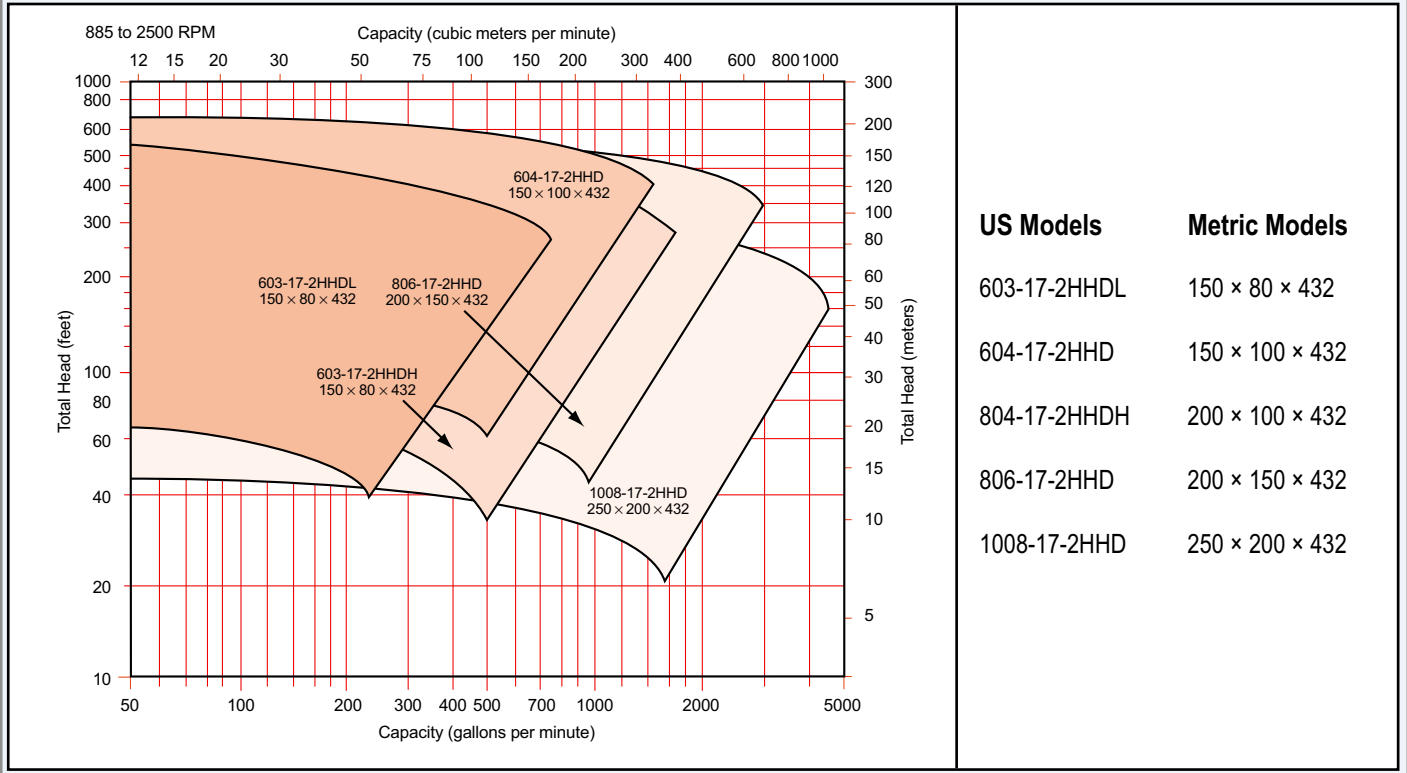
## For Pumps with High-Head Discpacs



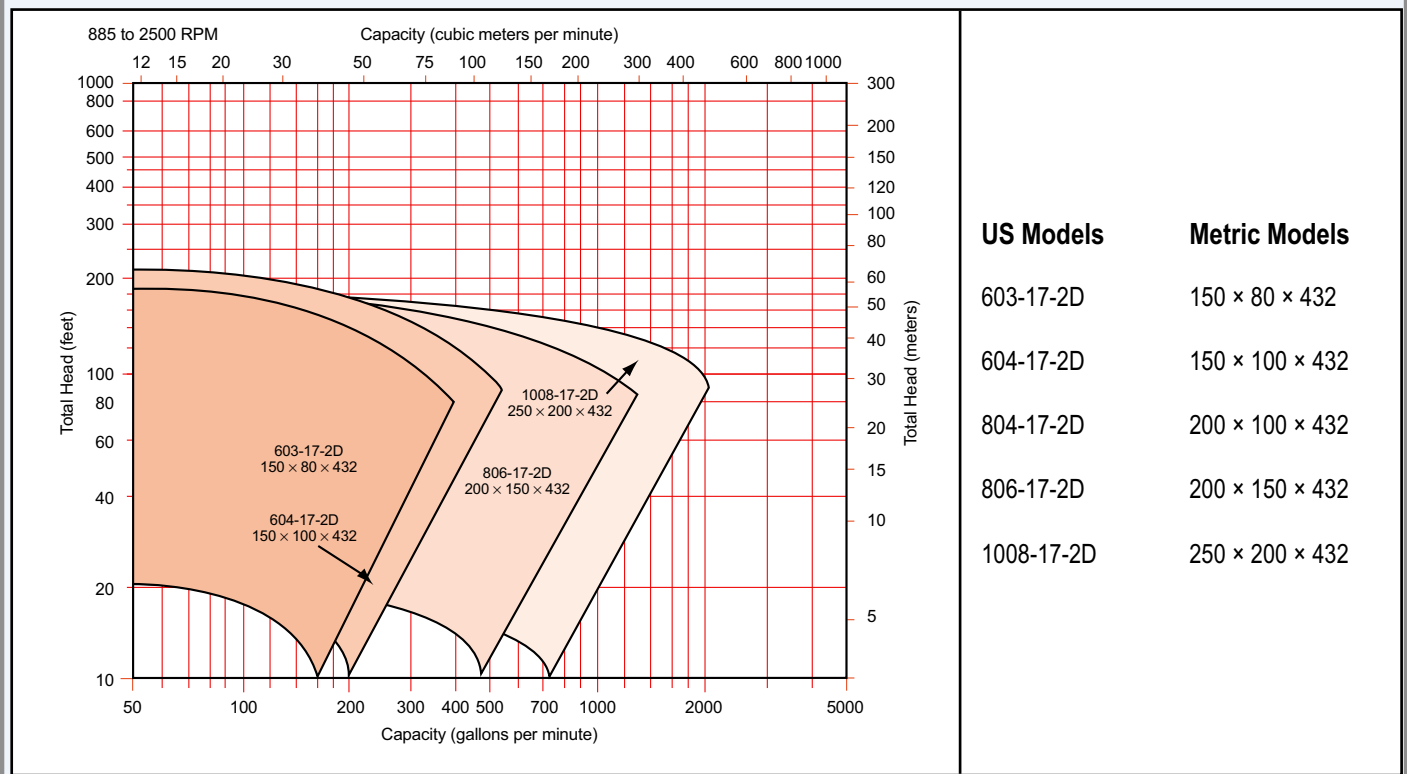


# Composite Curves: 17-inch Discpacs

## For Pumps with High-Head Discpacs



## For Pumps with High-Head Discpacs





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Discflo Corporation is a leading U.S.-based pump manufacturing company and an industry leader in the hard-to-pump market. The manufacturing facilities are located in southern California with distribution outlets worldwide. Discflo holds all patents (US and world -wide) on the innovative Disc technology.

Every pump is manufactured to the highest quality standards at our headquarters in San Diego County. The manufacturing plant is equipped with state-of-the-art machinery, engineering, and assembling equipment. All pumps undergo thorough quality inspection and testing before leaving the plant.



If you've been plagued by high maintenance costs, lost production time, and unacceptable product degradation, maybe it's time to consider a real alternative.

Discflo pumps are different, but have no doubt –

– the success of Disc technology in solving customer problems and reducing operating costs in hard-to-pump applications has been proven again and again - problem after problem - industry after industry.

Contact us for further information or the name of a distributor near you. Distributor information, case studies, press stories and other information is available online at – [www.discflo.com](http://www.discflo.com).

*“To keep doing the same thing over and over again, while expecting different results, is a form of insanity . . .*

*If you want different results, you need to take different actions.”*

- Max Gurth, President & CEO

***A Quantum Leap in Pump Technology***