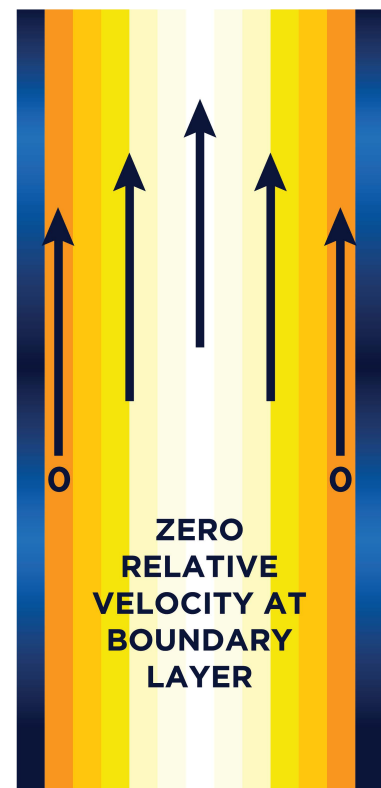


## Discflo Corporation leads the field in engineering pump solutions for hard-to-pump applications.

Their unique pumping mechanism is based on the effect of a boundary layer and viscous drag principle, which produces a pulsation-free laminar flow. This technology creates a low-to-no maintenance system by minimizing contact between the pump and the raw material being pumped. The results speak for themselves. Wear on the disc pump components is greatly reduced resulting in pump longevity, reducing operational costs and saving hundreds of thousands of dollars in parts, maintenance and product loss. The powerful combination of superior abrasion resistance, gas-entrained pumping ability and non-emulsifying laminar flow make the Disc pump the ideal choice for the toughest applications.

- Low NSPH
- No Radical Loads
- No Impingement
- No Close Tolerances
- Non Pulsating, Laminar Flow
- No Degradation or maceration of product
- Lack of vibration due to Gas or air entrainment



# Discflo in the Food and Beverage Industry

The Disc Pump offers the food, dairy and beverage industries exceptional productivity and low Life Cycle Costs in the most difficult applications. Its unique non-impingement pumping mechanism, the Discpac, make it a superior alternative to centrifugal, progressive cavity, lobe and screw pumps for pumping delicate and shear sensitive products, as well as for handling abrasive, corrosive, viscous and/or high solids slurries. Disc Pumps can handle delicate foodstuffs, such as corn, soft fruits and sugar crystals, without damaging the product. They can also pump shear sensitive products, like animal fats and dairy products, with no emulsification.



## CASE STUDY

**Part Maintenance annual savings of \$91,000  
High Temperature Hot Tallow Mixture**

Tyson Foods Beef Processing, Nebraska & Iowa. The new Discflo pumps are positioned to deliver a hot Tallow mixture from the cone-shaped bottom of a tall stainless steel tank to the top of a 25' tall second tank. The suction side NPSHa ran as low as 48" and as the tank would occasionally empty, it would often drop to zero causing a momentary dry run vapor lock condition. The existing pumps and the previous pump attempts were suffering from severe damage caused by the abrasive nature of the product, contributing to a dry run condition and requiring as often as a monthly pump replacement. Discflo provided Model 403-12-2HHD Slurry pump. After a 90-day trouble-free trial, the end user purchased 5 additional identical pumps for the same application to install in other plant locations. The pump has continued to process this demanding application for 6 months without issue. **Prior to the Discflo pump installation, the customer averaged parts maintenance cost of \$45,000 every 6 months. The only cost incurred after installation represented pump inspections, only to determine no part replacements were needed. This maintenance cost has now been reduced to \$500, for an annual savings of 91,000.**

# Discflo in the Oil & Gas + Petrochemical Industry

Discflo's Disc Pumps have been solving the pumping problems of the oil industry for over 20 years. The powerful combination of superior abrasion resistance, gas-entrained pumping ability, and non-emulsifying laminar flow make the Disc Pump the ideal choice for some of the toughest applications. Our pumps are currently being used for multiphase offshore and onshore service, sub-sea operations, tank transfer, environmental clean-up operations, crude oil processing and pumping oil/water emulsions.

Laminar Flow Advantage: Discflo pumps' success lies in its unique laminar flow pumping mechanism and open, no-close-tolerance design. Our pumps are ideal for pumping: multiphase fluids; oil/water emulsions; viscous slurries to 100,000 cPs; high-solids fluids to 80% solids; abrasive and/or corrosive fluids; large and stringy solids up to 8" in diameter; and high temperature/pressure applications. We have served many Fortune 500 companies, including Texaco, British Petroleum, Arco, Mobil, Chevron and Maersk.

## CASE STUDY

### **Discflo Pumps streamline multi-phase flow (heavy crude oil- water – gas - sand) Replacement of twin-screw pumps. Campo Quifa – Colombia**

Due to the presence of heavy crude oils (8-15 ° API) in the basins of the Eastern Plains from the Colombian Quifa field, the operational conditions of the crude pumping station were a challenge for the traditional applications of positive displacement pumping using Twin-screw Pumps. The presence of solids, sand, water and other pollutants typical of the crude oil in this field, as well as entrained gas and very large viscosity ranges bound together the most undesirable conditions for a traditional screw pump. The continuous wear of the screws and mechanical seals required a halt in production to replace parts which generated high life cycle costs. The result, a high economic impact on the operation and sustainability in this pumping station. Our Discflo pumps have high tolerance to solids, entrained gas, broad ranges of viscosity (water, light crude oil, medium crude oil, heavy crude oil and extra heavy crude oil), and lower requirements of NPSH. **Based on our pumps TECHNOLOGY, the replacement of the twin-screw pumps by Discflo increased pumping capacity & system efficiency while reducing downtime and the overall costs in the life cycle for this application.**



# Discflo in Pharmaceutical Manufacturing Industry

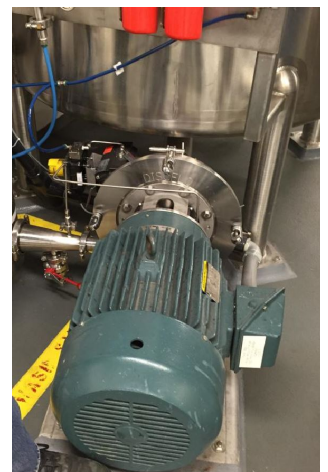


## CASE STUDY

Discflo pumps are unique in that they do not use centrifugal force or positive displacement. Instead, they operate on the boundary layer/viscous drag forces that produce a laminar flow with very low pulsation. This is significant for two reasons. First, laminar flow conditions provide the best protection for shear-sensitive and delicate pharmaceutical products. Non-impingement and laminar flow pumping has almost zero impact on the product. Second, laminar flow means lower NPSHr. Disc Pumps have NPSH requirements that are about 1/2 to 1/3 of that required by conventional pumps plus the curve is stable through to shut off. Discflo pumps have proven ideal for a range of pharmaceutical applications, including centrifuge feed, crystal slurries, solvents, emulsions, filter press, abrasive slurries and thixotropic and/or dilatant fluids.

When ESI arrived on the scene at a large pharmaceutical plant in Ireland, a progressive cavity pump was being used for centrifuge feed of a delicate and expensive crystal slurry. The pump was leaky, unreliable, and causing unacceptable product damage. The company was experiencing terrible losses and looked to ESI Technologies for help. ESI recommended a pump from Discflo Corporation to the pharmaceutical company. A Disc pump ANSI model 402-14-2HHDL was installed a little over a year ago (in 2001) with a double mechanical seal and a variable speed drive. The disc pump can be inadvertently deadheaded and the suction valve closed so it was the perfect choice for a company looking for a pump that could run dry without damaging the solution or the valuable product. Phil Soltan of ESI Technologies sums up the benefits as he sees them: "For pharmaceuticals, it all comes down to this: the smoother the flow, the better the product quality and yield." The Discflo pump installed at the pharmaceutical company in Ireland has improved product quality, eliminated leaks, and increased reliability. *Although the product and production details are proprietary, the engineer who installed the pump under trial reported that production increased and processing time was reduced by 15%. Savings amounted to about \$3000 per batch and the pump paid for itself in about one week's time.*

## Pumping Delicate Crystal Slurry Pharmaceutical ESI Technologies Ireland



# Discflo in the Municipal Water and Wastewater Industry

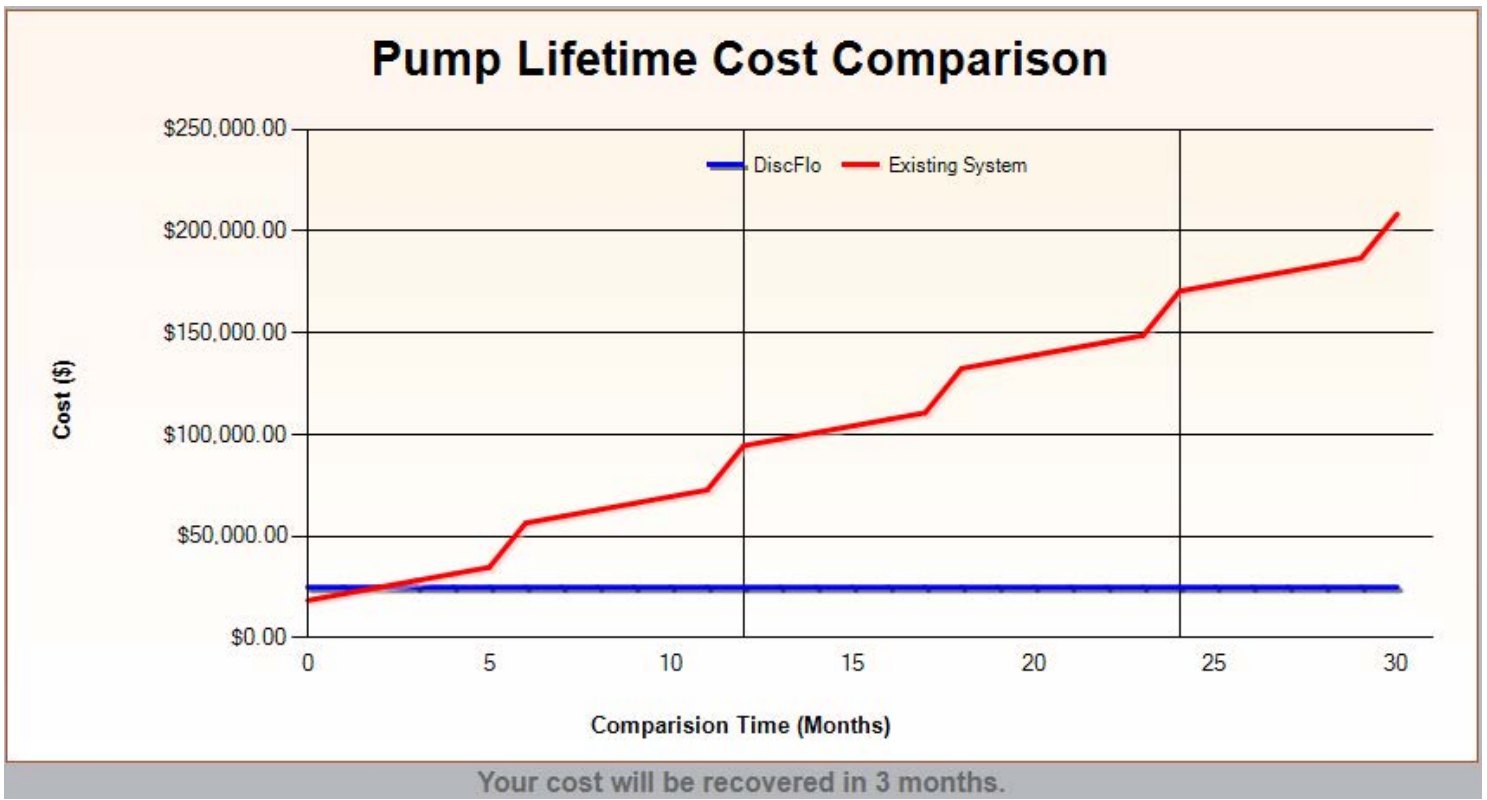
Discflo Pumps have been successfully employed in Municipal Water and Waste-water plants for over 20 years. They offer a superior alternative to centrifugal, progressive cavity, lobe and screw pumps for handling abrasive, viscous and/or high solids slurries, by reducing pump wear and spare parts costs while increasing up-time and reliability. The open, no-close-tolerance design of the Discflo Pump ensures clog-free operation, even when pumping effluent containing large and stringy solids, such as tumbleweed, plastic strapping and rags. These pumps also handle fluids containing high amounts of entrained air, for example anaerobic sludge or DAF sludge, without cavitation. A wide range of standard Discflo Pump models and sizes are available, including over-under, side-by-side, submersible, dry pit, cantilever and sump pump configurations. Flow rates to 5,000 GPM and heads to 1000 ft. TDH are available. A new line of Glass-Lined Pumps was introduced recently for highly abrasive and/or corrosive applications. Call us now to find out more.

## CASE STUDY

### **Saving \$1000s in Lime Sludge Disposal Almost zero maintenance over the past 30 yrs of owning Discflo Pumps Claude H Dyal WP, City of Cocoa, Florida**

The Claude H Dyal Water Plant at the City of Cocoa in Florida is saving \$1000s in its lime sludge disposal operations, thanks to Discflo pumps. The sludge is highly abrasive and has a solids content up to 80%, making it one of the toughest materials to pump. The first Discflo unit, a model 403-2HHD pump with a 28% Norchrome high head Discpac, was installed on a trial basis in the summer of 1993. It was used exclusively to pump lime sludge with a 30-60% solids content. After ten months' operation, the pump was disassembled and inspected by the City's maintenance and engineering personnel; it showed no signs of wear on the casing or the Discpac. The pump replaced two progressive cavity pumps that required frequent maintenance. Says City of Cocoa Superintendent, Gary L Heller: "During the course of normal operation, the rotor/stator assembly in the progressive cavity pumps would start wearing out after 2-3 months." The City of Cocoa is very satisfied with the performance of the Discflo system. The original pump is still in operation, however, the solids being pumped now range from 60-80% on a daily basis. "The only maintenance required over the past four years (reported 1997) has been packing replacement," adds Gary Heller. *"We have not only saved thousands of dollars by the use of the Discflo pumps, but the downtime has been greatly reduced, therefore improving the overall efficiency of our lime solids removal operation."* Since purchasing the original Discflo Pumps, the City of Cocoa Dyal Water Plant has purchased 11 more Discflo Pumps for additional Lime Sludge and Lime Slurry applications. Currently the City now has a Discflo Pump at every stage of the Lime water softening operations from the initial lime slurry feed pumps, to pumping the settled lime sludge from the bottom of the clarifiers, to pumping the thickened lime sludge to the dewatering building from the holding tanks. There are current plans to purchase two more Lime Slurry feed pumps as part of a 2018 expansion and upgrade. These pumps have all been in service from time periods range from 3 – 30 years and to date we have yet to replace the wet-end on the pumping units.

# PUMP LIFETIME COST COMPARISON



**Contact Discflo and enter your data into our Cost Comparison tool to see how much you can save using our Disc Pump Technology!**