

Chemical & Pharmaceutical Solutions



Mono[®] **NOV**

One Company, Unlimited Solutions



Mono is a leading name in the design, manufacture and supply of progressing cavity pumps, parts, grinders, screens and packaged solutions, worldwide. We have 7 international sites and a global distribution network, as well as over 70 years' experience in providing a range of products for the multiple application requirements of today's industries.

Our strong heritage and global success has been recognised, supported and further enhanced by our parent company, National Oilwell Varco (NOV), who are world-leaders in the oil and gas industry.

Mono's expertise extends to supplying customers with a product that will perform to the necessary duty requirements in the food and beverage, mineral, mining, waste water, pulp and paper, oil and gas, and of course chemical and pharmaceutical industries.

Why Choose Mono?

When selecting a pump to handle viscous, thixotropic, corrosive, free-flowing or liquids containing solids in suspension, the correct materials of construction are paramount. At Mono, we have the experience and the advantages of the progressing cavity pump principle to offer the right solution when you need to transfer these varying fluids.

Low pump speeds help to maintain the characteristics of the product being pumped and for any solids present in the flow, Mono's macerators can prevent pump or pipework blockages and keep your process operational.

Our large client portfolio includes PZ Cussons, GlaxoSmithKline, Pfizer Ltd, International Paints Ltd and CIBA Speciality Chemicals - a representation of our continued success in this industry.



Solutions for the Chemical & Pharmaceutical Industry



Transfer Pumps

Constructed with interchangeable components, sealed pin joints or a Flexishaft drive system, these pumps are designed to ensure reliable operation and a long service life when transferring chemical and pharmaceutical products.



Dosing Pumps

Their smooth action and output proportional to pump speed provides a high degree of accuracy and control. Ideal for applications where intermittent or repeatable batching and dosing is required.



Hygienic Pumps

Manufactured from chemically resistant and hygienic materials, these have a polished stainless steel construction and a one-piece suction chamber to reduce the risk of product contamination.



Widethroat Pumps

Feature an enlarged inlet and screw conveyor to assist viscous products into the pumping element. Dry solids approaching 40%, such as slurries or thick non-flowing pastes can easily be pumped.



Munchers

A range of grinders incorporating cutters to macerate solids within a flow and prevent pump or pipework blockages. Especially beneficial for filtration or recycling systems to crush, crop and shear any solids.



Packaged Solutions

A Muncher can be packaged with a transfer pump or widethroat pump to simultaneously macerate and pump a product, smoothly and efficiently.

Applications

Industrial Chemicals	Pharmaceuticals	Cosmetics
Mixed acids	Solvents	Vegetable oils
Sulphuric acid	Alcohols	Acids
Limestone alkali slurry	Acids	Tallow wax
Silver nitrate	Alkalis	Soap millings
Tallow wax glycerine	Pharmaceutical filter cake	China clay slurry
Corrosive dyes	Biological broths	Gels
Diesel fuel oil	Biological slurries	Creams
Phosphoric acid		Shampoo
Caustic solutions		Conditioners
Ethylene glycol		Handwash
Ferric chloride		Exfolient scrubs
Petroleum spirit		Toothpastes
Alum		Hair gel
Foam protein		Sun cream
Crystalline slurry		Zinc oxide paste
Detergents/surfactants		
Latex		
Paints		
Furane resin		

Support Services

Project management and installation is an area where Mono can offer you additional expertise and support. 3D design of equipment installation into your new or existing plant can be managed by Mono's dedicated team. Qualified engineers, working to health and safety regulations, can install all the necessary equipment quickly to minimise downtime on your production lines.

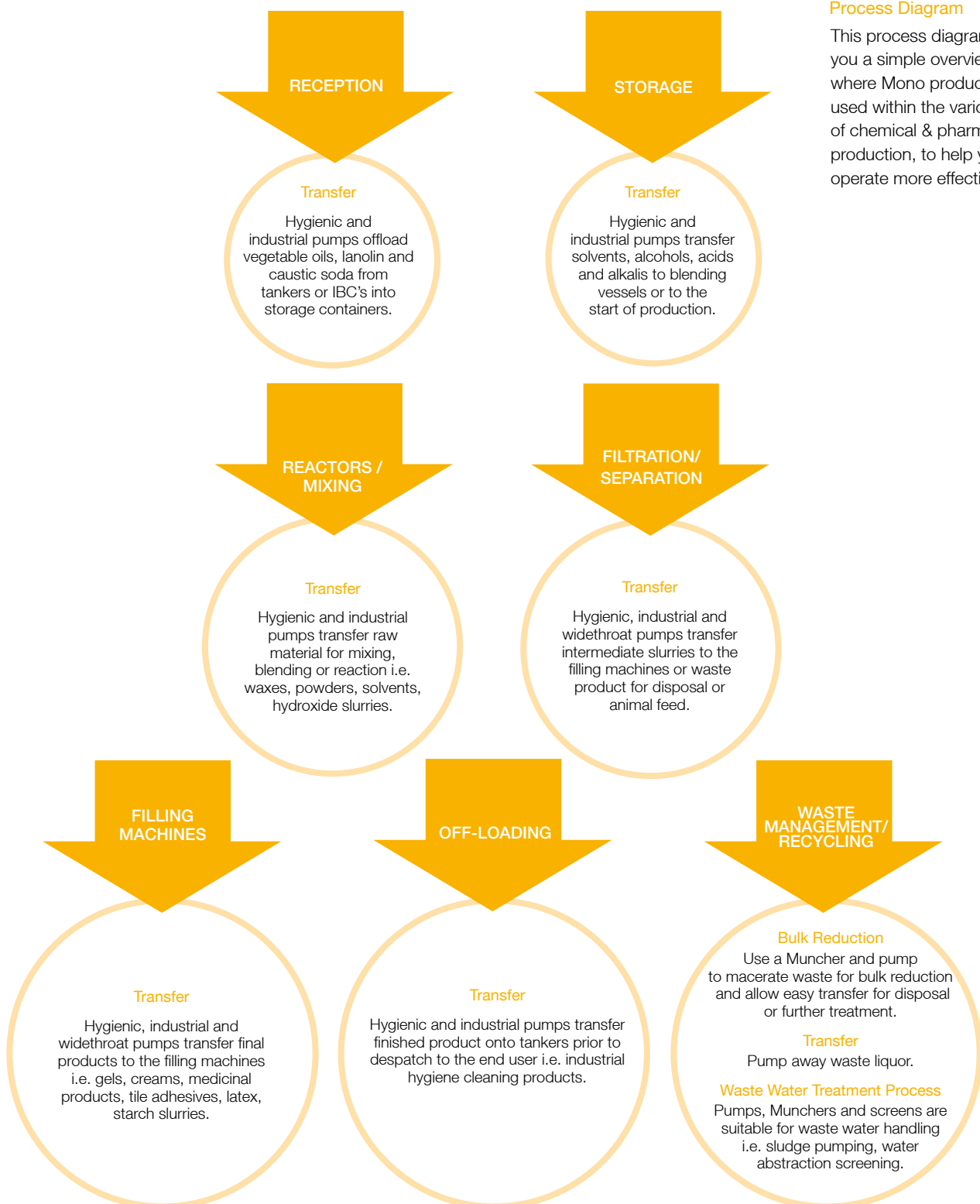
For routine maintenance of Mono equipment, spares can be purchased online at www.mono-pumps.com or direct from Mono or our distributor network. Planned maintenance contracts are also available to help you keep your equipment working to maximum performance.

Contact a Mono engineer for further details or a process evaluation.



Process Diagram

This process diagram gives you a simple overview of where Mono products can be used within the various stages of chemical & pharmaceutical production, to help your plant operate more effectively.



Understanding Your Process Needs



Transfer pump for water softening agents and sodium hydroxide liquor



Widethroat pump transferring pharmaceutical filter cake



A Muncher macerating solids in secondary liquid fuel to prevent blocking pumps and filters

Minimal Product Damage

The large continuous cavities of PC pumps allows suspended solids to be handled with ease. The gentle pumping action also ensures delicate solids, such as crystalline dye slurries, that have to be kept intact are not damaged.

Shear Sensitive Liquids

The progressing cavity pump principle does not rely on any centrifugal action to generate pressure energy, therefore there are no large changes in velocity, which would damage shear sensitive products such as latex or pharmaceutical creams. The gentle pumping action also does not emulsify oil and water mixtures and reduces the risk of foaming.

Solids or Abrasives in Suspension

The low velocity of the fluid through the pump and the low rubbing velocity of the metal rotor turning within the stator ensures the rate of wear from abrasion is reduced. The resilient nature of the rubber stator also means it can yield to small solids which might become momentarily trapped as the rotor passes over them. Rotors can also be supplied with our range of specialist Duracoat coatings to improve wear from abrasive particles and to also give improved corrosion resistance.

Continuous Dosing

The rotary positive displacement action of the pump ensures a continuous non-pulsing flow. As the discharge capacity of the pump is constant for a given speed of rotation and pressure, accurate dosing or metering of the product can be achieved, specially when combined with a variable speed drive.

Viscous Products

For highly concentrated viscous products such as resins or pharmaceutical cakes, the pumps can be run at low speeds and can also be fitted with enlarged inlets and an auger to help convey the product into the pumping element.

Solids in Suspension

The rolling action of the metal rotor within the resilient stator means any solids that become trapped are released quickly, reducing abrasive wear.

Material Selection

We manufacture the critical components of our pumps, helping us to retain complete control and traceability (where required) of the materials selected. This allows us to select the appropriate wetted parts to cater for aggressive and potentially highly corrosive nature of some chemicals, such as solvents or strong acids and alkalis.

Self-Priming and Suction Lifts

The interference fit between the rotor and stator forms a continuous seal which gives the positive displacement action and allows the pump to self prime. Therefore, unlike other pump technologies, the P.C. pump can suction lift up to 8.5m.

Drive Shaft Connection - Flexishaft

A significant contribution to the history of the progressing cavity pump technology - the Flexishaft connects the rotor to the drive shaft, eliminating the need for double universal joints. As there are no moving parts, the Flexishaft extends the working life of the pump and reduces operational costs.

Pump Blockages

A Muncher can be used to reduce solids within a flow to a small particle size, allowing pumps to transfer product to the next process without the risk of blockages in the system.

Water Treatment

Some chemical plants treat their own waste water for re-use or disposal into the main drainage system. Mono products are widely used by Water PLC's at local treatment works as part of the treatment process.

Europe

Mono Pumps Ltd, Martin Street, Audenshaw
Manchester, M34 5JA, England
T. +44 (0)161 339 9000
E. info@mono-pumps.com

D.M.I EST, 56 rue du Pont
88300 Rebeuville, France
T. +33 (0)3 29 94 26 88
E. dmi-est@dmi-est.fr

Americas

Monoflo NOV, 9700 West Gulf Bank
Houston, Texas 77040, USA
T. +1 281 272 7700
E. inquire@monoflo.com

Monoflo S.A., Ing Huerdo 2239
(1842) Monte Grande
Pcia. de Buenos Aires, Argentina
T. +54 11 4290 9940/50
E. info@monoflo.com.ar

Australasia

Mono Pumps (Australia) Pty Ltd
Mono House, 338-348 Lower Dandenong Road
Mordialloc, Victoria 3195, Australia
T. +1800 333 138
E. ozsales@mono-pumps.com

Mono Pumps (New Zealand) Ltd
PO Box 71-021, Fremlin Place, Avondale
Auckland 7, New Zealand
T. +64 (0)9 829 0333
E. info@mono-pumps.co.nz

Asia

Mono Pumps Ltd, No. 500 YaGang Road
Lujia Village, Malu, Jiading District
Shanghai 201801, P.R. China
T. +86 (0)21 5915 7168
E. monoshanghai@nov.com

www.mono-pumps.com



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