

Mono[®]

a Halliburton company

THE HYGIENIC S AND SL RANGE



Mono[®]


The S Range

Capacities from 3m³/h to 57m³/h - 20 models

1. Rotors

- Manufactured by Mono
- Standard and exotic materials to suit all hygienic applications
- Over and undersize rotors for differing product temperatures
- Range of coatings to improve wear resistance



2. Stators

- Manufactured by Mono
- Range of white and black food approved elastomers to meet application requirements

Optimum Pump Performance – Guaranteed

- Pump performance is very dependent upon the fit and geometry of both rotor and stator
- By controlling the manufacturing process of these critical components Mono ensures that the pump performs to its published criteria

3. End Covers

- 7 different port fittings available (see coding sheet on page 6)
- S Range end cover is self draining
- Stainless steel 316 material is standard
- 240 grit finish for S Range



4. Flexishaft®

- 5 Year Warranty
- Manufactured by Mono since the early 1970's
- Manufactured in titanium or stainless steel and coated with Halar®

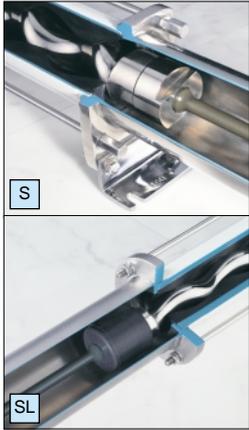


Improved Hygienic & Lowest Whole Life Cost Option Design

- This design removes the need for pin/gear/cardan shaft joints as the Flexishaft takes up the eccentric motion of the rotor
- Eliminates need for joint lubrication so removing any likelihood of product contamination
- Significantly reduces operating costs associated with pin/gear and cardan shaft designs

The SL Range

Capacities up to 11m³/h - 7 models



5. Rotor/Flexishaft/ Drive Shaft Joints

- Two designs – S and SL Range
- No lubrication required
- Solid, rigid joint
- No moving/wearing parts
- No dynamic seals

6. Body

- For the SL models there are bloc and bearing housing options
- For 6 SL models there is one body and one bearing housing assembly
- S Range models are available as bearing housing designs only
- Stainless steel body is available for both S and SL designs



7. Suction Chamber

- One piece stainless steel polished suction chamber component for S Range, SL range is bead blast
- 7 different port fittings
- Can be rotated in 90° increments
- Optional C.I.P. bypass port
- 240 grit internal finish for S Range

8. Tie Bars/Support Feet

- Separate support feet on all models
- Tie bars on all models
- Eases assembly and maintenance procedures

9. Gland

- Single or double mechanical seal
- Cartridge option
- Seal location under inlet to assist cleaning
- Gland drain



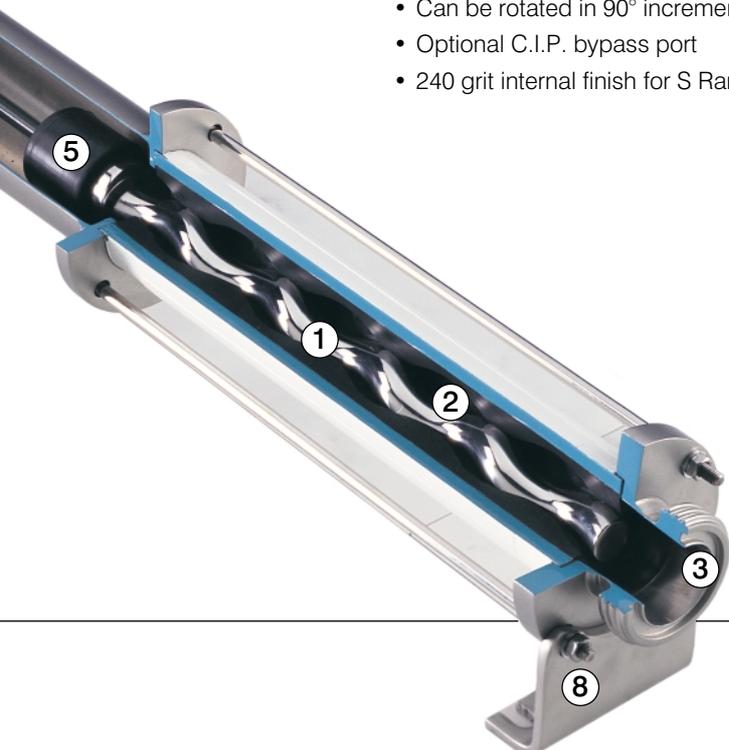
10. Drive Shaft

- Two piece shaft assembly on SL designs
 - eases maintenance procedures
 - bearing shaft in mild steel
- Single shaft design for S Range
- Wetted shaft in stainless steel or more exotic material to suit the application
- Mechanical seal as standard
- Keyways to BS4235 (1982) and ISO R773

Approvals

- The S and SL designs meet various food approved requirements including European, 3A and AFDA standards.

Halar® is a registered trademark of Ausimont. Inc, USA



The Hygienic S and SL Range



Peanut Butter

One of the UK's leading peanut butter manufacturers' is using an SS042 to deliver highly abrasive peanut butter to eradicate serious wear damage which was causing frequent maintenance problems on previously installed rotary lobe pumps.

The stainless steel pump with CIP facility to enable the pump to be easily cleaned in-situ on a daily basis, operates at a speed of 167rpm and a pressure of 2 bar to deliver the peanut butter at a rate of 2.5m³/h. A gentle pumping action keeps component wear rates low.

At the plant, which only closes down for maintenance once a year, the pump operates at least 12 hours a day, sometimes seven days a week, with a total daily output of over 19,000kg of peanut butter.

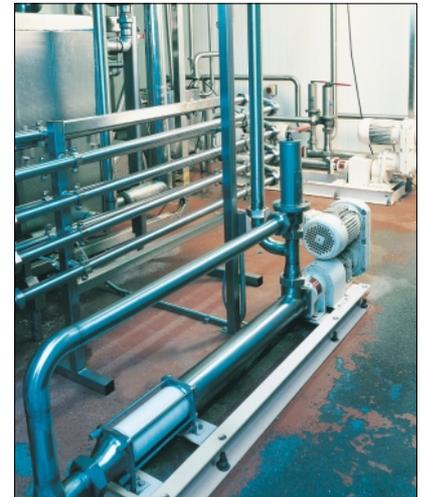
Cream/Butter Oil

Six S Range pumps have been incorporated in a £1.2m state-of-the-art production facility equipped by a dairy OEM for a butter oil manufacturer.

The customer processes cream to form a hydrous milk fat used in the manufacture of chocolate. Three of the pumps are used to transfer cream with a 40% fat content into the oil processing system for concentration. A fourth pump handles a higher fat content cream, another pumps melted butter and the sixth discharges the butter oil from storage tanks into a packaging line.

The pumps operate at temperatures up to 75°C, capacities up to 14.5m³/h and pressures up to 2 bar and delivers from 2,500 to 14,000 l/h.

The pump design is ideal for handling shear sensitive products. In this customer's case, the pumps prevent churning of the cream and a variable speed facility provides accurate flow control around the plant.



Liquid Coffee Whitener

Minimising maintenance costs, ensuring the effectiveness of cleaning cycles and a high level of performance, were crucial considerations for a manufacturer of instant coffees, teas and hot chocolates.

An SSL21 has been installed to pump liquid coffee whitener at 600 l/h from a storage vessel to a spray dryer at a temperature of 65°C to be converted into powdered form. Due to the hygienic environment in which the pump is installed, the customer also required the pump to be suitable for cleaning in place and ensure that it was suitable for the rigorous external cleaning processes carried out with high pressure hoses.

Applications

Fruit Filling

A producer of a famous range of cakes and pastries is using, for the first time, a hygienic SSL32 pump to gently convey shear sensitive fruit fillings from the storage vessels to the filling machine.

The customer required a pumping system that would not destroy the consistency of the shear sensitive fruit filling as this is critical to the quality of the final product. Incorporating a helical rotor turning within a resilient stator, the SL pump produces a gentle pumping action at a capacity of 750 l/h and pressures up to 2 bar, which ensures the integrity of the fruit mixture.

The streamlined internal design of the SL pump facilitates product flow, improves the effectiveness of the cleaning cycle, minimises product retention and reduces the risk of contamination. The product contact surfaces are manufactured from food approved materials with all internal stainless steel surfaces polished to a bead blast finish.



Fruit Concentrate

A pharmaceutical, food and drink industry OEM has incorporated five SS072 pumps in a new system designed to facilitate the expansion of bulk storage at one of the UK's leading manufacturers of fruit juices.

The new system pumps chilled bulk orange and apple concentrate from road tankers into five 25,000kg capacity storage silos. The pumps are then reversed and the concentrate is delivered along a 3" diameter pipe to the mixing room.

The pumps also play a key part in the daily cleaning of the silos and pipework. The cleaning solution is pumped at rate of 40,000 l/h at pressures up to 9 bar.

Maize and Wheat

Mono also sell other pump models into Hygienic applications, which are worth detailing in this brochure. Several types and makes of hygienic pumps were put on trial by this customer who processes maize and wheat to produce a range of glucose and starch ingredients for the food and drink industries.

A key requirement was to handle highly viscous material and to transfer it along several hundred metres of pipework. The 12 pumps from the W Range and Industrial E Range are in use at a number of stages and all feature nitrile rubber stators and hygienic stainless steel shafts and rotors.

The nine Widethroat models operate at speeds of between 123rpm and 196rpm, delivering the products at capacities of 4m³/h to 40m³/h at pressures of 3 to 8 bar.

Three moulded to metal E Range models act as gluten separator feed pumps, operating at 167rpm to deliver the product at 40m³/h and 8 bar pressure.

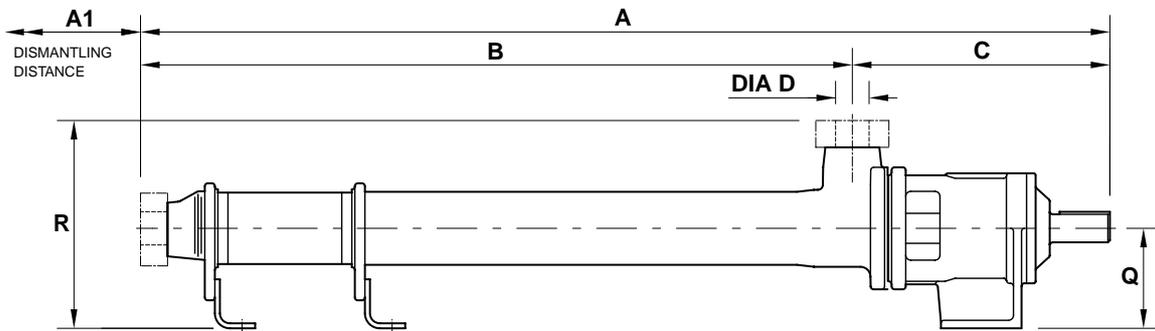


Coding

FEATURES	DESCRIPTION	BASIC PUMP CODING										STD. VARIATION				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BODY MATERIALS	Stainless Steel	S														
PUMP RANGE	Moulded to Metal Hygienic		S													
PUMP DESIGN	High Specification			0												
	Standard Specification			L												
NOMINAL PUMP CAPACITY AT	1.3 m ³ /h @ 1750 rev/min				1											
MAX SPEED	3.3 m ³ /h @ 1750 rev/min				2											
AND ZERO PRESSURE	5.6 m ³ /h @ 1500 rev/min				3											
	10.7 m ³ /h @ 1500 rev/min				X											
	14.4 m ³ /h @ 1000 rev/min				4											
	23.2 m ³ /h @ 800 rev/min				5											
	35.5 m ³ /h @ 700 rev/min				6											
	49.5 m ³ /h @ 600 rev/min				7											
	57.5 m ³ /h @ 500 rev/min				8											
PUMP STAGES	One					1										
	Two					2										
	Four					4										
BUILD OPTIONS	Bearing Housing - Plain Tube Fitting.						M									
	Bloc Construction - Plain Tube Fitting.						*									
DUTY CONDITIONS	Light duty with mark 1 rotor							L								
	Light duty with mark 0 rotor							Z								
	Standard duty with mark 1 rotor							S								
	Standard duty with mark 0 rotor							X								
DESIGN NUMBER	1991 - High Spec. 1997 - Standard Spec.									1						
STATOR MATERIAL	A, J, R, V, W etc									A						
ROTATING PARTS	5, 8										5					
MARKET VARIATIONS	'H'-Std. Bareshaft											/	H			
	'G'-Std. Bloc (to size X only)											/	G			
FULL PUMP CODE TO BE STAMPED ON PUMP NAMEPLATE																

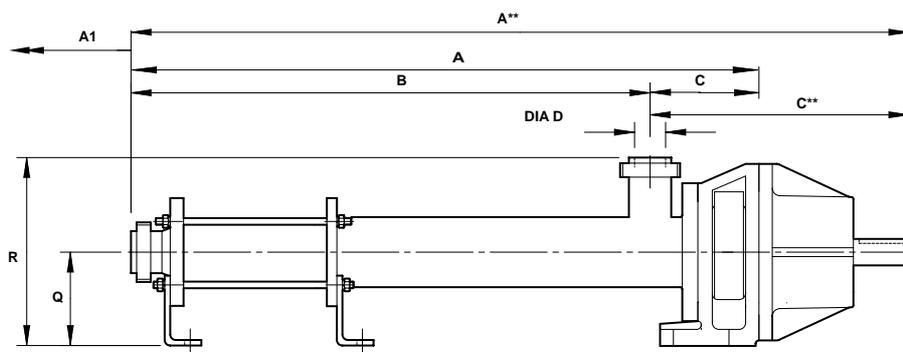
A wide selection of port fittings are available, including DIN 11851, IDF, SMS, RJT, CLAMP, 3A ACME and plain tube

Dimensions



PUMP MODEL	A	A1	B	C	Q	R	Dia D
S031	986	690	730	256	100	231	50
S032	1116	690	880	256	100	231	50
S034	1511	590	1249	262	100	209	62.5/50*
S041	1296	840	1034	262	100	246	65
S042(L)	1500	840	1238	262	100	246	65
S042	1608	960	1309	299	112	264	65
S044	2199	790	1868	331	125	258	75*
S051	1592	1045	1287	305	112	279	75
S052(L)	1852	1170	1547	305	112	279	75
S052	1979	1050	1648	331	125	311	75

PUMP MODEL	A	A1	B	C	Q	R	Dia D
S054	2678	1044	2284	394	150	288	102*
S061	1873	1240	1529	344	125	331	102
S062(L)	2185	1235	1841	344	125	331	102
S062	2359	1410	1965	394	150	359	102
S071	2207	1410	1813	394	150	359	102
S072(L)	2575	1410	2181	394	150	359	102
S072	2740	1580	2319	421	160	391	102
S081	2382	1550	1988	394	150	359	102
S082(L)	2789	1540	2395	394	150	395	102
S082	2966	1720	2545	421	160	391	102



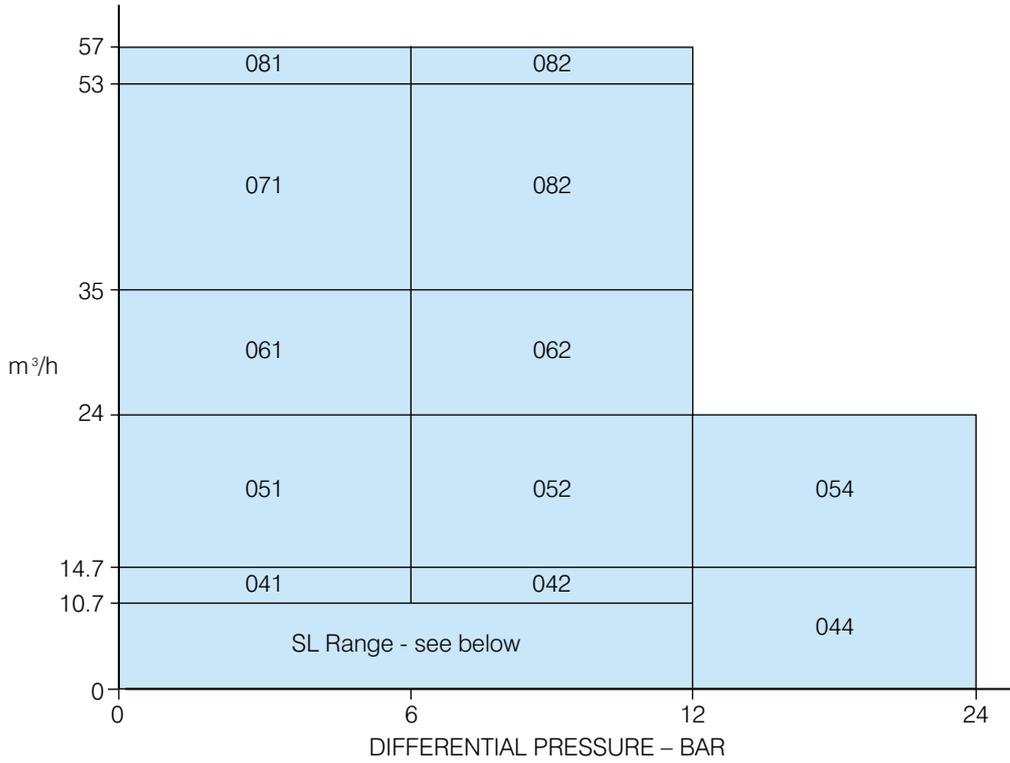
PUMP MODEL	A	A**	A1	B	C	C**	R	Q	Dia D
SL12	579	714	160	479	100	235	193	85	38
SL21	579	714	160	479	100	235	193	85	38
SL22	723	858	300	623	100	235	193	85	38
SL31	657	792	160	550	107	242	205	85	51
SL32	802	937	312	695	107	242	205	85	51
SLX1	745	880	212	632	113	248	218	85	63.5
SLX2	1100	1235	392	873	154	362	255	112	63.5

1. All dimensions are in millimetres and are for guidance only.
2. Shaft diameters are to BS 4506: 1970
3. Keyways are to BS 4235: 1982 Part 1/ISO R773.
4. Dimension A1 is the preferred dismantling space, and is required to remove the stator from the rotor on site.
5. For full certified drawings refer to: Mono Pumps Ltd., Audenshaw, Manchester.
6. (L) signifies light duty design.

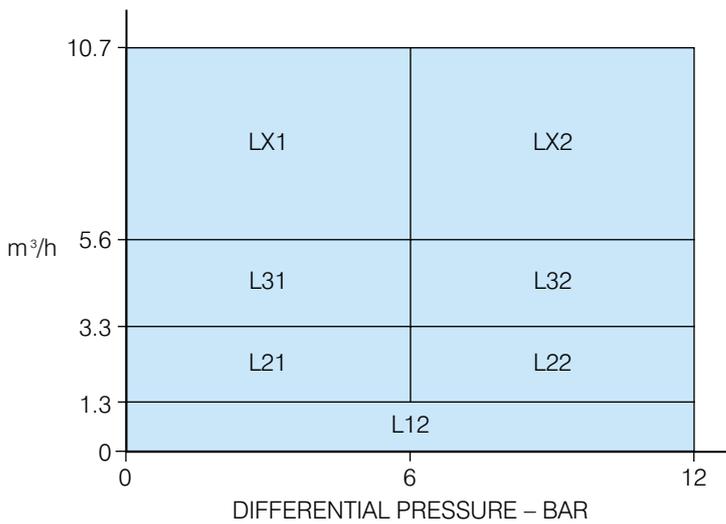
* Based on Tri Clamp Fittings
 ** Bearing Housing Version

Performance Data

S Range



SL Range



Technology and Service



The Flexishaft® – Hygienic Design

The Flexishaft® is a unique solution to the problem of connecting the pump drive shaft to the eccentrically orbiting rotor, completely eliminating conventional universal joint designs. This solution has been the subject of patents by Mono Pumps over the past 30 years and has a 5 year warranty.

As there are no wearing parts in the joints, lubrication is therefore eliminated. The design of this rigid, solid joint dramatically improves the hygienic design of the pump. The added benefit is the significant reduction in maintenance costs compared with other forms of both open and closed pin and gear joint designs.



Further enhancements in design and the use of new materials has enabled us to reduce the Flexishaft® dimensions, making the pump comparable in length to other traditional designs of progressing cavity pumps on the market. The benefit to the user is a pump which can be easily retrofitted onto existing pump foundations coupled with the significant reduction in operating costs as a result of the elimination of wearing, universal joint designs.

Service

At Mono Pumps, our philosophy is to provide full product and technical support that meets with your exact requirements, including quality, availability and price.

The latest technology is used, such as computer based flexible manufacturing systems, computerised bar stores and information systems. We are unique in having three stator manufacturing operations worldwide to ensure that we produce pumps and parts to a consistently high standard in the local area, readily available.

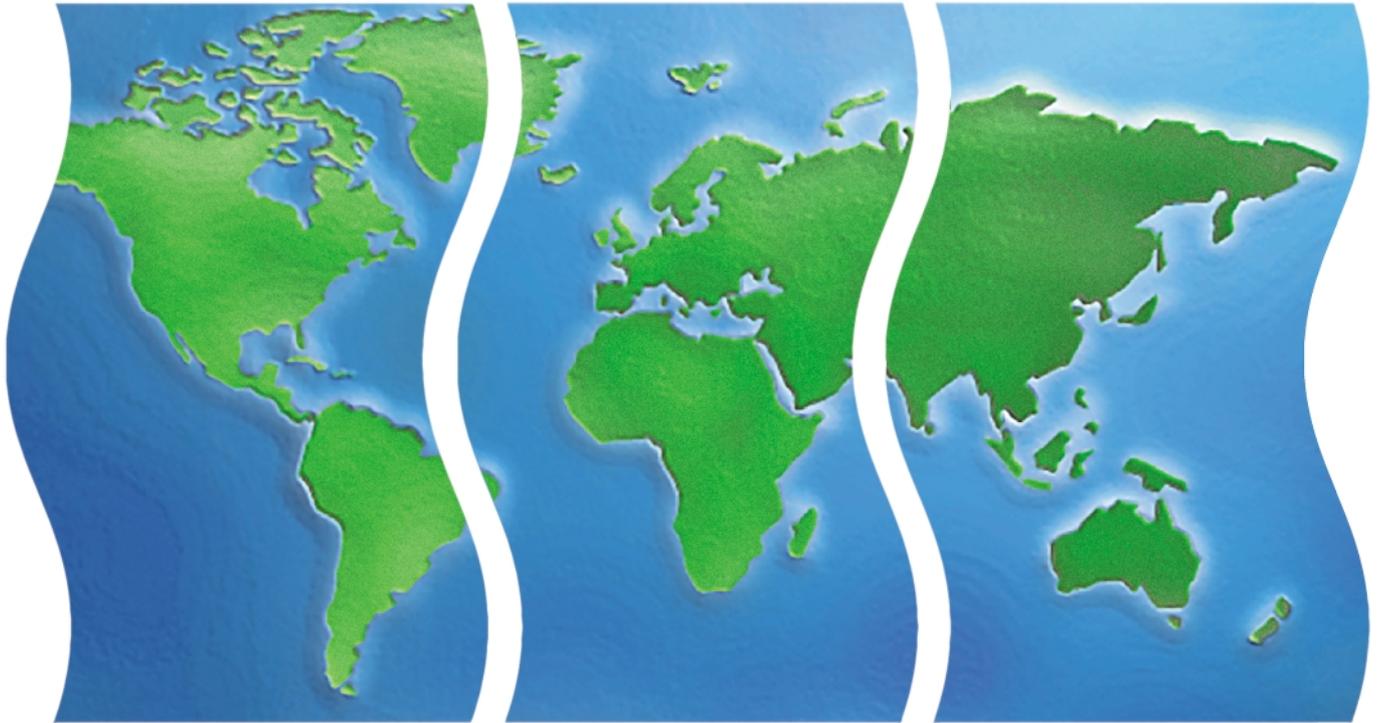


Attention to detail, combined with a wealth of technical advice and CAPS (Computer Aided Pump Selection) ensures you will receive a product that is quality assured. Mono is approved to ISO 9001 and manufactures products within a Quality Management System which is independently measured against industry recognised standards throughout the world.

With over 700 authorised outlets located throughout the world to provide the local support you need, the Mono Pumps Group can offer you the following services:-

- Pre sales assistance
- Quotations for applications
- Pump availability
- Spares availability
- Trouble shooting
- Warranty and after sales service
- Installation
- Pump refurbishment and service exchange facilities

Mono Pumps Around the World



Americas

Monoflo Incorporated

16503 Park Row
Houston
Texas 77084
U.S.A.
Tel: +1 281 599 4700
Fax: +1 281 599 4733
E-mail: inquire@monoflo.com
www.monoflo.com

Europe

Mono Pumps Limited

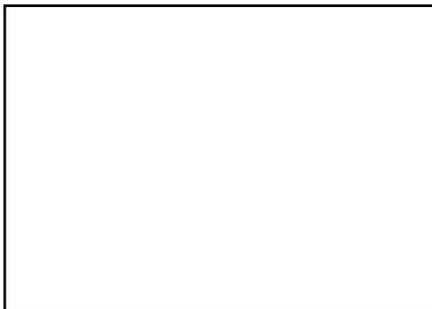
Martin Street
Audenshaw
Manchester M34 5DQ
England
Tel: +44 (0)161 339 9000
Fax: +44 (0)161 344 0727
E-mail: info@mono-pumps.com
www.mono-pumps.com

Australasia

Mono Pumps (Australia) Pty Ltd

338-348 Lower Dandenong Road
Mordialloc
Victoria 3195
Australia
Tel: +61 (0)3 9580 5211
Fax: +61 (0)3 9580 9036
E-mail: ozsales@mono-pumps.com
www.mono-pumps.com

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Mono Pumps (New Zealand) Ltd

P.O. Box 71-021
35 - 41 Fremlin Place
Avondale
Auckland 7
New Zealand
Tel: +64 (0)9 829 0333
Fax: +64 (0)9 828 6480
E-mail: ozsales@mono-pumps.com
www.mono-pumps.com

Please contact the nearest Mono Office for details of your local authorised distributor.

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Created and produced by CICERO Manchester

Mono Pumps Ltd
Martin Street, Audenshaw
Manchester M34 5DQ England
Tel: +44 (0)161 339 9000 Fax: +44 (0)161 344 0727
E-mail: info@mono-pumps.com
www.mono-pumps.com

Mono[®]

a Halliburton company