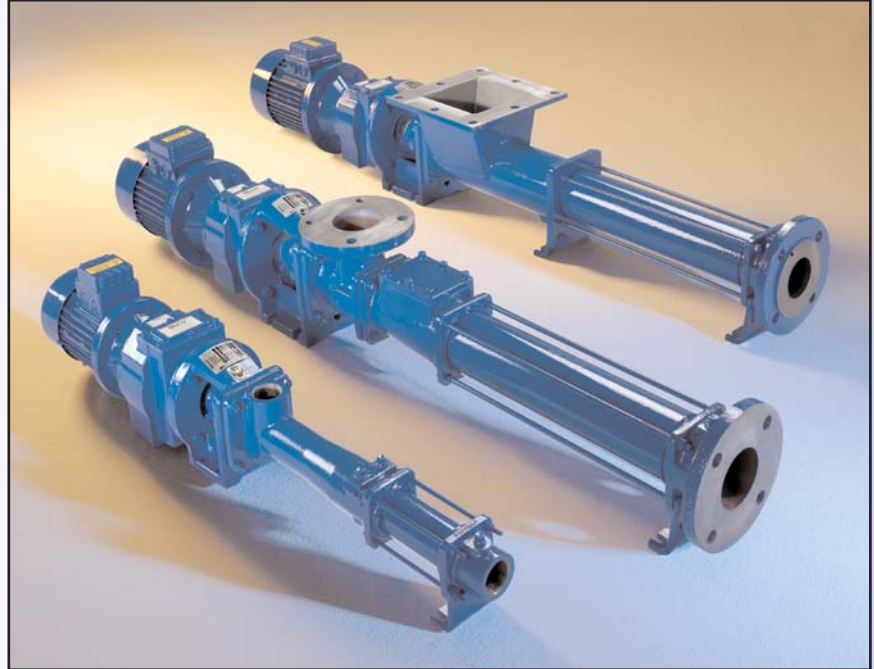


Mono[®]

National Oilwell Varco

COMPACT C RANGE



Mono[®]


The Compact C Range

Overview

The new Compact C range of progressing cavity pumps has been manufactured by Mono to offer you a pump designed to fit into compact spaces, whilst reliably performing to the maximum duty requirements of your application.

Available in cast iron or stainless steel a Compact C Range pump is capable of achieving capacities up to 225m³/h and differential pressures up to 24 bar.

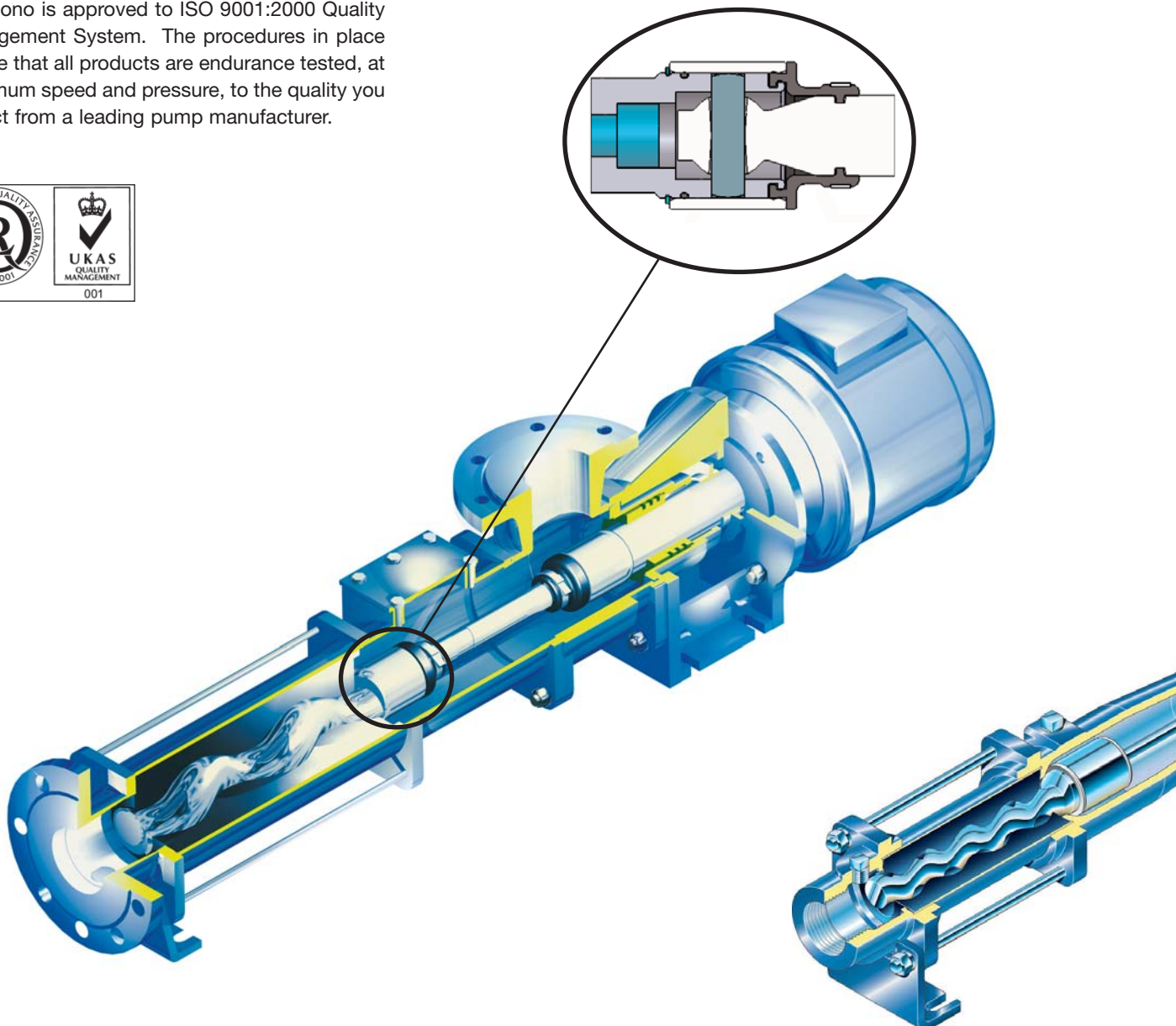
Mono is approved to ISO 9001:2000 Quality Management System. The procedures in place ensure that all products are endurance tested, at maximum speed and pressure, to the quality you expect from a leading pump manufacturer.



Rotor/Drive Joint

The rotor/drive joint design used in the larger Compact C Range models is based on the significant experience gained from thousands of pumps supplied into a wide range of applications.

The sealed pin joint design gives maximum service life.



Capacities up to 225m³/h

Mono Flexishaft®

The smaller C Range models are supplied with a Mono Flexishaft, the solution to the problem of connecting the pump drive shaft to the eccentrically orbiting rotor.

The Flexishaft is manufactured from a toughened stainless steel material using a specific process for Mono and is covered with an abrasion and corrosion-resistant coating.

In operation, the Flexishaft is subjected to a combination of steady state and alternating stresses, well below the elastic limits of the material, to ensure no deformation of the Flexishaft.

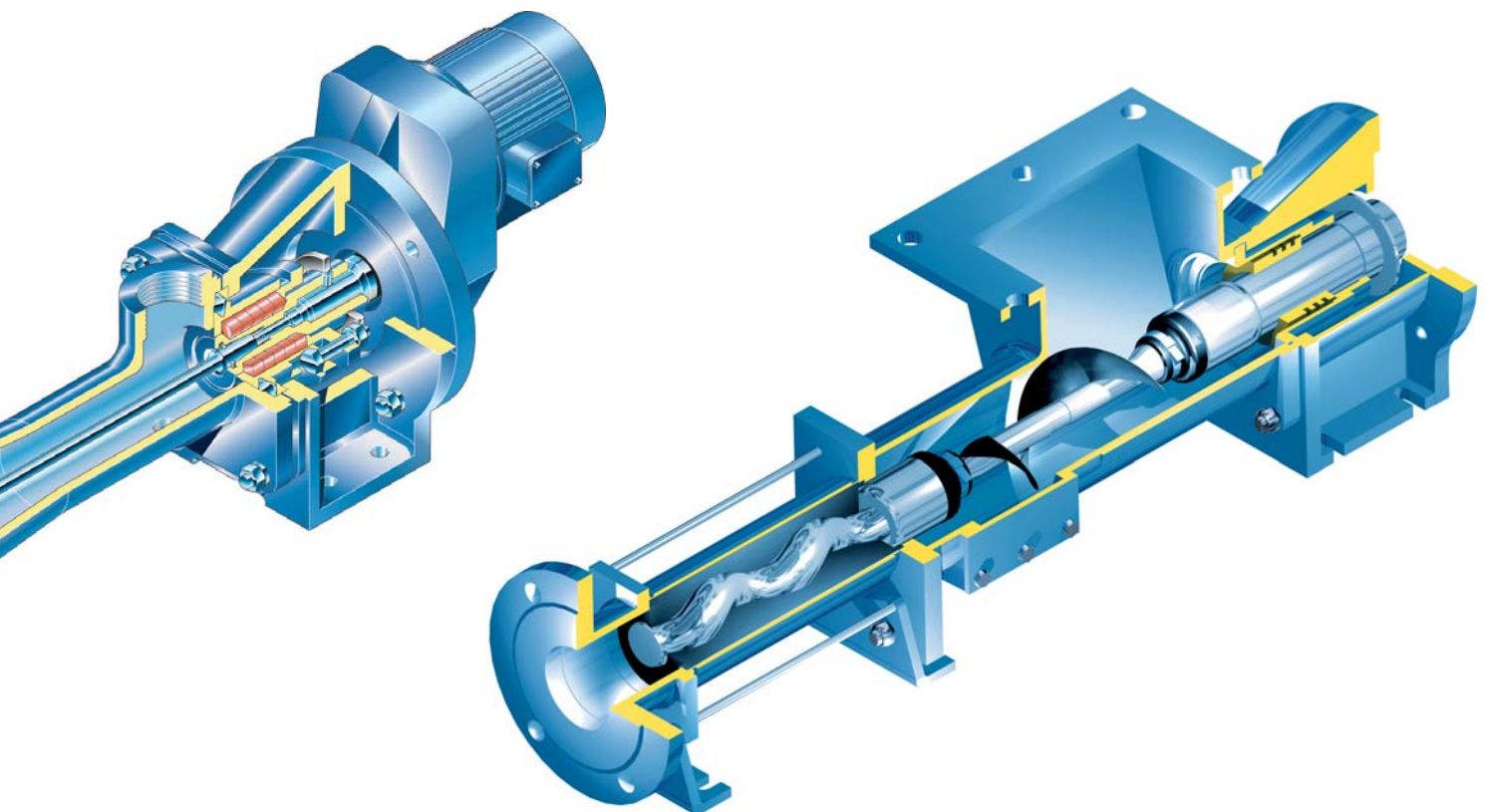
This simple joint design has no wearing parts and because lubrication is unnecessary, product contamination is eliminated.

Gearbox Arrangement

Varying gearbox/motor drive arrangements are flange mounted with a plug-in shaft fixing to facilitate ease of assembly and dismantling.

Square Inlet Option

For sludge applications, where the solids content requires assistance into the pumping element, the Compact C Range can be supplied with a square inlet.



Compact C Range



A Mono packaged pumping system comprising pumps and macerators to pump raw sewage



Duty/standby pumps circulating sludge with a high rag content from digesters

Chemicals/Pharmaceutical

Corrosion resistant or rubber coated materials are used to enable a wide range of chemicals to be handled, while the gentle non-emulsifying action allows shear sensitive gels and delicate creams to be pumped.

- Phosphoric acid or caustic solutions
- Diesel fuel oil or petroleum spirit
- Ethylene glycol or shampoo

Waste Water Industry

The Compact C Range is ideal for the waste water industry with a good suction lift capability of over 8 metres, positive displacement for process control and reduced wear for a longer working pump life.

Specific areas of suitability are:

- Water, thickened sludges and slurries and non-flowing de-watered sludges
- Suspended or settled solids and fibrous or raggy solids
- Abrasive particles, sand, gravel and industrial wastes

In addition, polyelectrolytes, lime, acids, carbon slurries, chlorine, digested sewage sludge, filter pressed sludges and aluminium sulphate can also be handled by these pumps.



Efficient pumping of liquids ranging from water softening agents through to sodium hydroxide liquor to fill containers

Applications

Paper and Ceramics

Compact C Range pumps incorporating the Flexishaft offer reliability and minimum maintenance to this demanding industry. Applications include:

- Viscosity liquid from water to thick or non-flowing stock slurries
- Flows containing solids, stocks, pulps, abrasive or silty solutions and coating clays, gypsum and silicate



Slurry mix at this paper mill is pumped in a recirculation loop to a dosing valve and back to a holding tank



The positive displacement action of these pumps prevents build up of manganese for ground water pumping, resulting in continuous operation

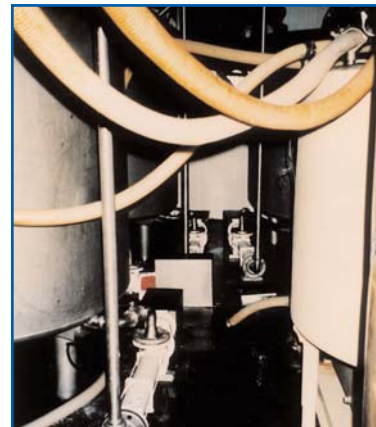


Accurate controlled pumping of hydrated lime solution from slurry mixing tanks to the dosing points

Food & Beverage

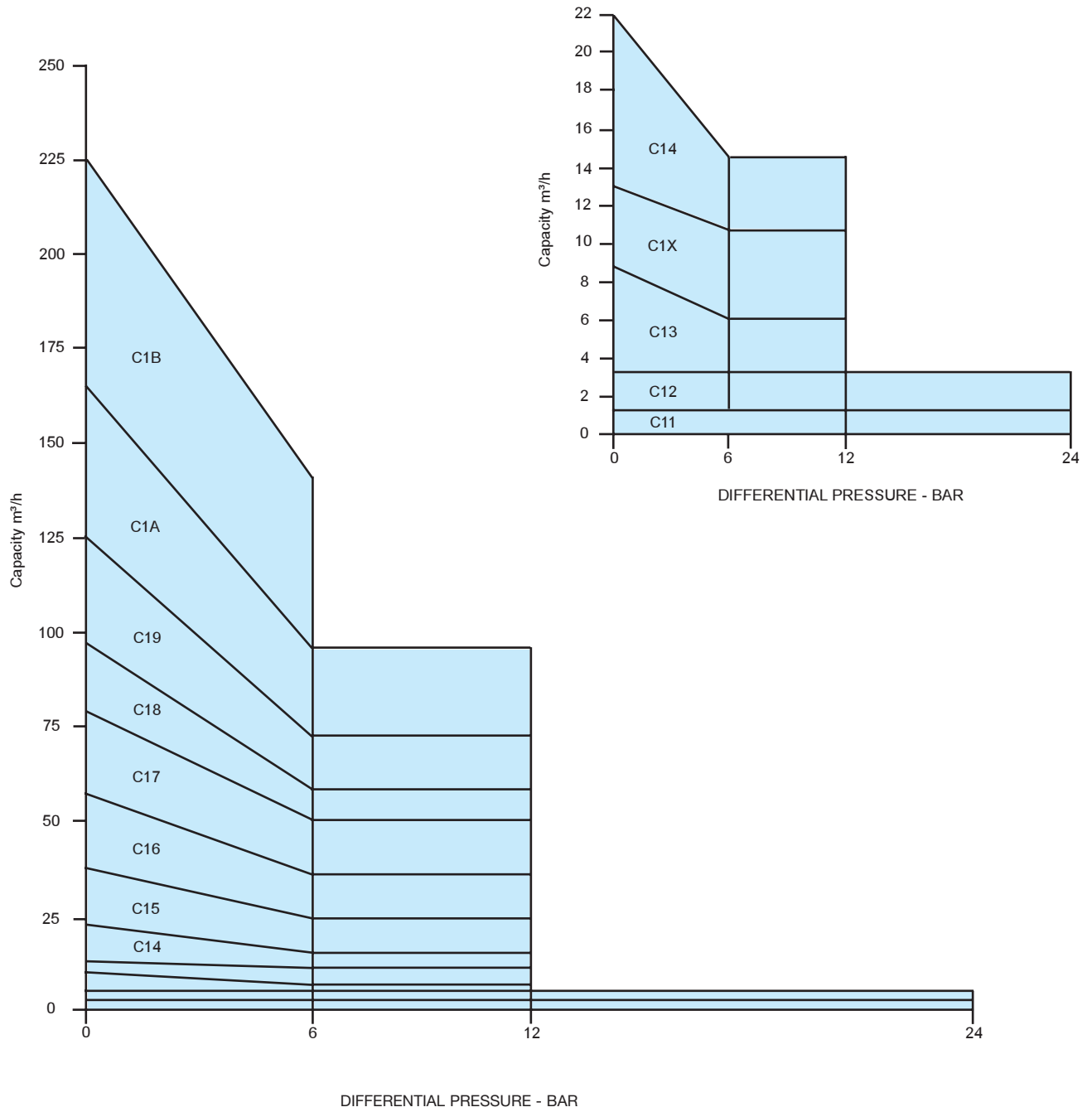
The rotor/stator principle of a progressing cavity pump will handle soft fruit without crushing or damage, whilst the gentle, low pulsation and low shear action treats a variety of liquids carefully:

- yoghurt, sauces, cooking oils, fruit juices, molasses, whey, fruit pulps, pet food



Part of an installation to pump shear sensitive milk curds from the production stage to the refining process

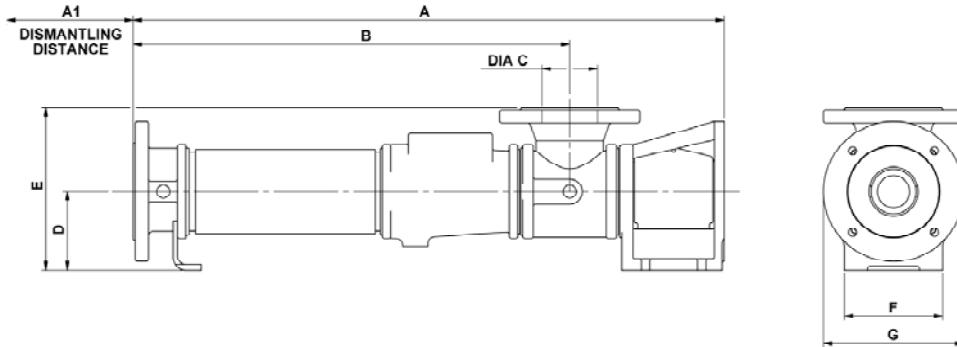
Performance Data



NOTES:

For guidance in selecting a pump, please refer to Mono Pumps Ltd., Audenshaw, Manchester.

C Range Unit Dimensions



MODEL	A	A1	B	C	D	E	F	G	Wt
C1XK	750	135	593	50	85	190	120	165	32
C14A	781	250	551	65	112	227	140	200	34
C14B	986	455	756	65	112	227	140	200	46
C14K	986	455	756	65	112	227	140	200	46
C15A	842	310	622	80	112	232	140	200	50
C15B	1159	570	882	80	125	245	160	250	70
C15K	1102	570	882	80	112	232	140	200	58
C16A	960	365	724	100	125	255	160	250	77
C16B	1355	680	1036	100	150	280	180	300	102
C16K	1272	677	1036	100	125	255	160	250	94

C17A	1110	430	830	125	150	310	180	300	107
C17B	1478	799	1198	125	150	310	180	300	150
C17K	1478	799	1198	125	150	310	180	300	148
C18A	1246	475	966	125	150	310	180	300	113
C18B	1742	880	1374	125	160	320	200	300	170
C18K	1654	883	1374	125	150	310	180	300	172
C19A	1394	530	1079	150	160	345	200	300	175
C19B	1856	990	1541	150	160	345	200	300	286
C19K	1856	990	1541	150	160	345	200	300	270

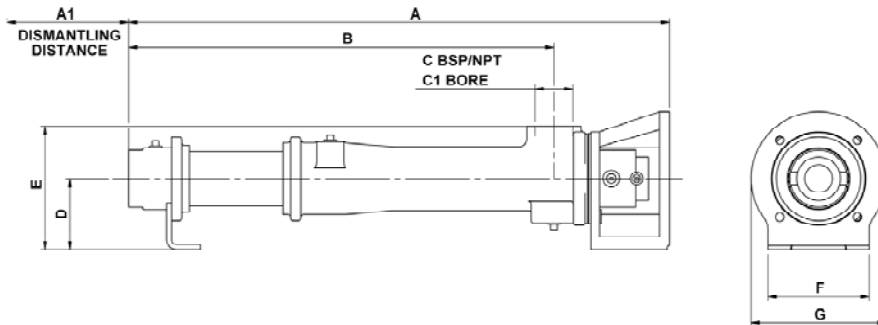
C1AA	1476	610	1161	150	160	345	200	300	215
C1AB	2159	1050	1756	150	225	410	280	350	355
C1AK	2007	1141	1692	150	160	345	200	300	301
C1BA	1794	570	1366	200	225	450	280	350	349
C1BK	2437	1213	2009	200	225	450	280	350	473

All dimensions in millimetres unless otherwise stated and for guidance only.

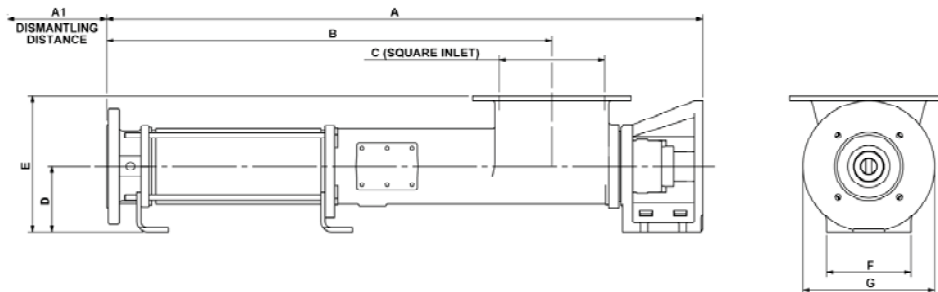
Dimension A1 is the preferred dismantling space.

For full certified drawings, refer to Mono Pumps Ltd, Audenshaw, Manchester.

C Range Unit Dimensions



MODEL	A	A1	B	C	C1	D	E	F	G	Wt
C11B	577	115	444	1 1/4"		85	146	120	160	12.5
C11D	721	250	588	1 1/4"		85	146	120	160	14.3
C12A	577	115	444	1 1/4"		85	146	120	160	12.4
C12B	721	250	588	1 1/4"		85	146	120	160	14.2
C12D	1081	525	944	1 1/2"		85	150	120	160	23.3
C13K	787	250	650	1 1/2"		85	150	120	160	18.8
C13A	604	165	505	1 1/2"		85	150	120	160	16.3
C13B	734	300	650	1 1/2"		85	150	120	160	18.8
C1XA	726	135	569		50	85	190	120	160	27.8



MODEL	A	A1	B	C	D	E	F	G	Wt
C14A	828	250	572.5	165	112	236	140	200	40
C14K	1033	455	777.5	165	112	236	140	200	54
C15A	887	310	631.5	165	112	236	140	200	51
C15K	1147	570	891.5	165	112	236	140	200	59
C16A	1130	365	844	200	125	260	160	250	80
C16K	1442	677	1156	200	125	260	160	250	97
C17A	1307	430	973	240	150	310	180	300	110
C17K	1675	799	1341	240	150	310	180	300	151
C18A	1351	475	1017	240	150	310	180	300	114
C18K	1759	883	1425	240	150	310	180	300	173

All dimensions in millimetres unless otherwise stated and for guidance only.

Dimension A1 is the preferred dismantling space.

For full certified drawings, refer to Mono Pumps Ltd, Audenshaw, Manchester.

Service and Technology

The Mono Group

Mono Pumps Ltd have been manufacturing the progressing cavity pump design since 1935. A wide variety of knowledge is therefore available to offer you solutions for pumping solids or liquids.

Manufacturing facilities are located at the Head Office in Manchester, UK and also Australia and U.S.A. with distribution centres in China and New Zealand. The Mono Group is supported by over 700 authorised distributors throughout the world.



Quality Assurance

Accredited to ISO 9001:2000, Mono's commitment to quality and to the independently measured procedures ensures we meet the customer requirements for a quality product.

In-house production gives Mono full control of accurate manufacturing tolerances for all major parts, including correct material specification and dimensional accuracy.

Mono are the only U.K. manufacturer of stators and rotors for progressing cavity pumps.

Spares

Mono parts are easily available and can be ordered online at www.mono-pumps.com or purchased from Mono and the international distributor network. Same day delivery is available on request to ensure minimum downtime for your pumping equipment.

Project Management

For a total engineered solution, the Mono Projects Team can provide a complete package from the initial design of a pumping system through to mechanical and electrical installation of all associated equipment.

600+ contracts have been successfully installed comprising 3D design, supply, installation and commissioning.



Maintenance

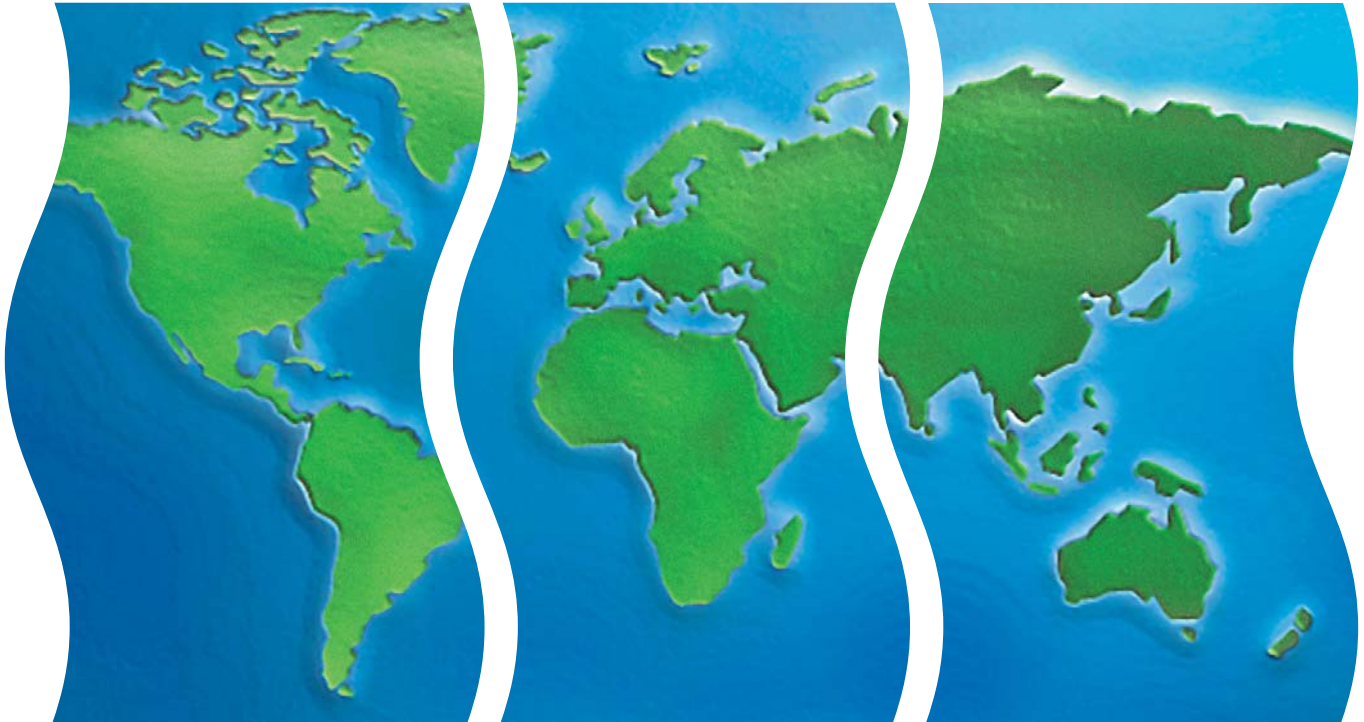
A range of aftersales services are available to ensure your pump continues to operate efficiently, long after installation.

This support includes:

- Planned Maintenance Contracts
- Breakdown Service
- Repair and Refurbishment Facility
- Service Exchange
- Installation and Commissioning
- Laboratory Facilities
- Ex-Stock Replacement Parts

Contact Mono for further information on the service and support we can offer you.

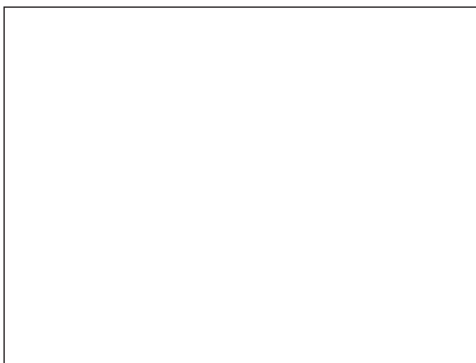
Mono Pumps Around the World



Americas

Monoflo Incorporated
12000 West Little York
Houston
Texas 77041
U.S.A.
Tel: +1 713 466 7999
Fax: +1 713 466 3101
E-mail: inquire@monoflo.com
www.monoflo.com

Your local Authorised Distributor:



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

Europe

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

Published information other than that marked CERTIFIED does not extend any warranty or representation, expressed or implied, regarding these products. Any such warranties or other terms and conditions of sales and products shall be in accordance with Mono Pumps Limited standard terms and conditions of sale, available on request.

© Mono Pumps Limited April 2006
Mono® and Flexishaft® are registered trademarks of Mono Pumps Ltd.
Registered in England No 300721

SLMP/052/01

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

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

Mono Pumps Ltd
Suite 1603-1606, Air China Plaza
No. 36 Xiaoyun Road
Chaoyang District
Beijing 100027
P.R. China
Tel: +86 (0)10 8447 5109
Fax: +86 (0)10 8447 5110
E-mail: monobeijing@natoil.com
www.mono-pumps.com

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

Mono®

National Oilwell Varco