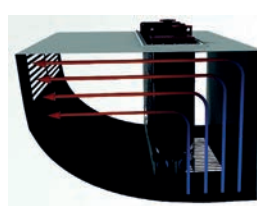
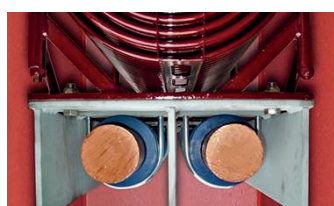


SERVI MARINE EQUIPMENT



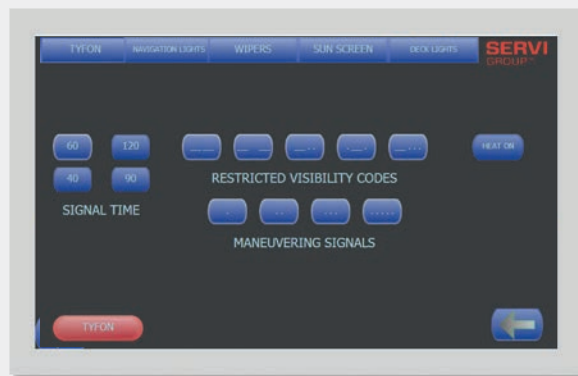
Pneumatic and electrical windscreen wipers, control systems, coolers, horns, sunscreens, cathodic protection systems ...



SERVI VISION CONTROL

- Servi Vision Control is the most reliable and advanced control system made for wipers you can find in the market today and still for an affordable price.
- SVC can communicate and cooperate with most of other type of control system.
- Maximum amount of wipers 250.
- You can have your own logo or your own design on the touch screens.
- You can choose between various type of ways to control your wipers, navigation lights, horns, deck lights, heaters, sunscreens, pumps and interior light with dimmers etc.

- Examples:**
- Touch screens
 - Buttons
 - Foot pedals
 - External screens (HMI / Windows) or combinations of these



SERVI VISION CONTROL

- Servi Vision Control light is a control system mostly made for work vessels, smaller passenger and pleasure boats. But also to bigger cargo vessels and fishing vessels.
- SVCL can communicate and cooperate with many other type of controls including our SVC.
- Up to 9 wipers to be controlled
- You can choose between various type of ways to control your wipers, navigation lights, horns etc.

- Examples:**
- Touch screens
 - Buttons
 - Foot pedals
 - External screens (HMI / Windows) or combinations of these



SERVI PNEUMATIC STRAIGHT LINE WIPER

ATEX CERTIFIED WIPERS USED ON OIL RIGS WORLD WIDE

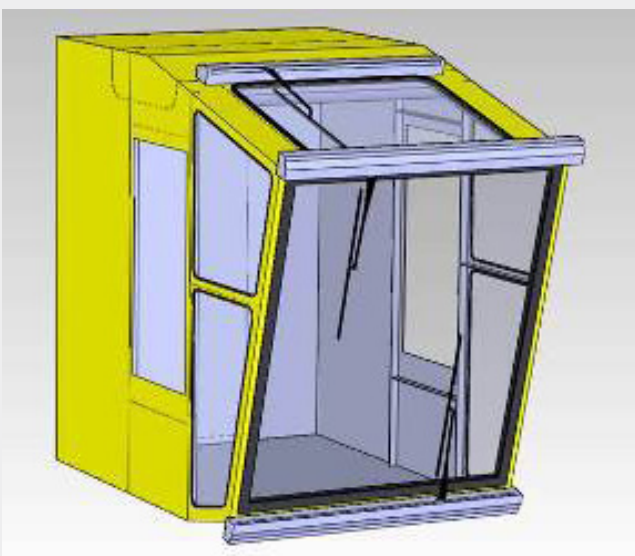


Servi Pneumatic Wiper for use on driller floor or any other location where there is a demand for explosion proof equipment.

The Pneumatic Wiper System has been tested by the laboratories of CMR Gexcon to meet the ATEX conformity of EN 13463-1 and will be marked Ex II 2G c T6

Servi has manufactured these systems for the International Oil industry for more than 20 years. The first installation took place on the Heidrun platform back in 1993.

Our systems are to be found on oil rigs around the world and generation Mk3 meet the strongest demand for safe operations onboard.



CRANE OPERATOR CABIN



DRILLERS CABIN

SERVI PNEUMATIC STRAIGHT LINE WIPER



WIPER CERTIFIED FOR GAZ ZONE 1

- Heavy duty design for Offshore and hazardous areas.
- Pneumatic power and control for maximum safety and reliability.
- Easy mounting and maintenance.
- Wiping area up to 4000 x 1300 mm
- Auto self parking
- Can be mounted in any position
- Systems delivered to International Offshore Oil industry since 1993.



SERVI WINDOW WASH SYSTEM

Wash systems with 24, 50, 100 or 200 litre tanks, powered and controlled by compressed air.

DET NORSKE VERITAS

ACKNOWLEDGEMENT OF RECEIPT - EC

ACKNOWLEDGEMENT NO. 83888-2010-CE-NOR

This Acknowledgement consists of 2 pages

This is to confirm that the Technical File for the following product(s):

Pneumatic Straight Line Wiper

with type designation(s)

See page 2

Manufactured by

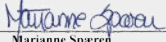
PMC Servi AS
Haugenveien 10, Postboks 3230
1402 Ski

has been received and stored according to


the conformity assessment procedure described in Article 8.1 (b) (ii), of Council Directive 94/9/EC (ATEX) of 23 March 1994, category 2 non-electrical equipment.

Further details are given overleaf

Place and date
Høvik, 2010-09-02
for DET NORSKE VERITAS AS





Marianne Spøren
Certification Manager



This Acknowledgement is valid until
2020-09-02

*Note: The acknowledgement is subject to terms and conditions overleaf. Any significant changes in design or construction may render this acknowledgement invalid.
 The digitally signed and electronically distributed document is the original and valid acknowledgement. Ref: www.dnv.com/digitalsignatures
 If any service reference has to be changed or added to have been issued by any member of the DNV Veritas Group, the DNV Veritas Group will be responsible to each member for the product shall state or identify. The compensation shall not exceed an amount equal to the sum of the charges for the service in question, provided that the maximum compensation shall never exceed USD 300 000. In this provision, 'the member' shall mean the DNV Veritas Group member as well as all its subsidiaries, branches, offices, employees, agents and any other entity or person of the DNV Veritas Group.*

Ack. No.: 83888-2010-CE-NOR
Project No.: PRJC-256794-2010-PRC-NOR

Jurisdiction
DNV is appointed by the Directorate for Civil Protection and Emergency Planning as Notified Body (No. 0575) under the terms of the Norwegian regulation "Forskrift om utstyr og sikkerhetssystem til bruk i eksplosjonsfarlig område", dated 1996-12-09 and Article 9 of Council Directive 94/9/EC (ATEX), as amended.

Acknowledgement history: This is the original Acknowledgement.

Product description
The following types are covered by the Acknowledgement:

Product Description	Type Designations	Category	Product Group	Product Sub Group
Pneumatic Straight Line Wiper	-	2	Ex equipment	Non-electrical

Technical documentation:
The following documentation has been received and stored:

Document No	Document Name
E0717 Rev.2 PMC Servi AS	Technical File

Terms and conditions
The product liability rests with the manufacturer, his representative or, in the absence of a representative, the importer, in accordance with the General Product Safety Directive 2001/95/EC. The following conditions may render this acknowledgement invalid:

- Changes in the design or construction of the product.
- Changes or amendments to the referenced directive(s).
- Changes or amendments in the standards which form the basis for documenting compliance with the essential requirements of the directive(s).

Conformity declaration and marking of product
In order to fully meet with the requirements of the Directive and legally affix the CE mark, the manufacturer must take all measures necessary to ensure that the manufactured product comply with the technical documentation and with the requirements of the Directive and finally draw up an EC declaration of conformity.

END OF ACKNOWLEDGEMENT

WYNN ELECTRICAL WIPERS AND CONTROL SYSTEMS



Right Choice, Right Product

Whatever the situation, your field of vision can be greatly improved by the correct choice of wiper system.

Wynn/Hepworth maintain their own salt water test rig, on which newly developed products are tested. During the manufacture process, products are taken at random from the production line and are subjected to a comprehensive 3.000 hour non-stop test cycles. This is equivalent to over 18 million wipes, or 125 days and nights' continuous use. This procedure helps to ensure that only the highest quality products, in terms of design, innovation and manufacturing excellence leave our premises. The quality and reliability of components is critical for peak performance. Continual sourcing of materials of the highest calibre ensures that critical performance levels are always maintained and where possible improved.

Hepworth occupy ISO 9002 certification: whilst also complementing our product range we have type approval from; Germanisher Lloyd, DNV and ABS. A list of products and their type approvals can be obtained if required.

Hepworth Group - leading manufacturer of marine equipment.



STRAIGHT LINE



HEPWORTH
PANTOGRAPH

HEAVY DUTY STRAIGHT-LINE WIPERS

Ideal for large ocean-going vessels or vessels requiring maximum coverage



Advantages

- Type D MkV - Externally mounted motor. Motor housing fully sealed to IP67
- Type C - Internally mounted motor
- Arms with blades up to 39 inch (1000mm) available
- A large wiped window coverage can be achieved
- Reliable operation in extreme temperatures
- 1, 2, 3 or multi speed operation with self parking facility
- Available in 24VDC, 115 and 230 volt, single phase or three phase AC
- Operated by a multi-speed / function control facility
- Induction motor are used for AC supplies



SPECIFICATION **WYNN** STRAIGHT-LINE

The heavy duty Type D (externally mounted motor) and **Type C** (internally mounted motor) straight line wipers offers the most advanced design of linear action window wiping systems for marine and other special applications.

A large wiped window coverage can be achieved, providing maximum view from the ships bridge whatever the weather, in temperatures from as low as -40°C to extreme tropical conditions. High powered AC induction motors provide an efficient, reliable and quiet operation. Incorporating the highest quality 316 stainless steel and other noncorrosive materials throughout, the Type D has the motor outboard so that it is only necessary to bring the electrical cables through the bulkhead. the motor housing is fully sealed to IP67 standards.

Standard controllers are available in 1- 6 ways, with modular systems being supplied where there are more wipers or have a special requirement. Control features can include 1, 2, 3 or multi speed operation, self parking, intermittent wipe, heater switch, master group control and wash/air purge functions.

Single

Stroke: 305 mm - 2260 mm
Blade: Max 1000 mm
Arm: Max 800 mm

Twin

Stroke: Min 585 mm, Max 3500 mm
(over 3500 mm can be supplied upon request)
Blade: Max 2 times 1000 mm
Arm: Max 1200 mm
Wipe speed (fast/slow): 1.4 m per second / 0.7 m per second
AC Motor: Induction type: 100, 115, 230 v
DC Motor: Permanent magnet; 24 v
3-PH Motor: Fast speed / slow speed / intermittent
1-PH and DC: Normal speed / intermittent
8000 motor 3 speed 0.7/1.1/1.4n/sec
De-icing heater: 200watts per metre
Park Sensor: Reed switch
Spary Nozzles: 1 up to 990 mm stroke, 2 if > 1015 mm stroke



SOME OF THE OPTIONS

Type C



Type D MKV



Twin



Twin for 2 windows

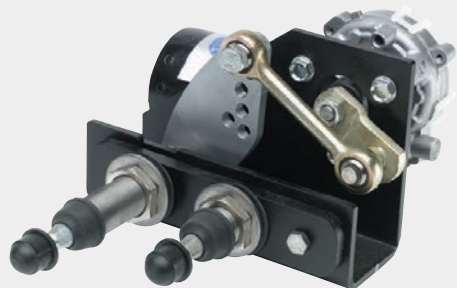


Double arm cover windows up to 2200 mm high



HEPWORTH

Pantograph and Pendulum



- A compact unit
- Pantograph and pendulum
- Arms with blades for windows up to 2200mm height are available
- Fixed or variable arc models available.
- 12, 24, 72v, 96, 110 VDC, 110 - 230 VAC
- Self parking facility
- Insulated earth return and EMC filter are standard
- Operated by various controls including a rotary switch, toggle switch, rocker switch or a multi-speed / function control system



WYNN CONTROLLERS

Supply voltage and some of the controller options from Wynn.



1000 controller

- Up to 4 wipers.
- 1 speed.
- Self park.
- Intermittent.
- Wiper heater.
- Wash.

Available controllers type 1000, 6000 and Cole Hersee (12V also).
115 VAC 1 phase.

Available controllers 1000 and 8000.
115VAC 3 phase.

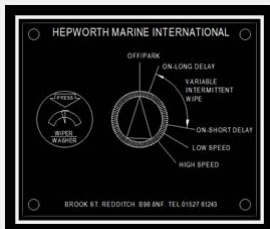
Available controllers 2000 and 8000
230VAC 1 Phase.

Available controllers 1000 and 8000
230VAC 3 Phase.

Available controllers 2000 and 8000

2000 controller

- Up to 6 wipers.
- 2 speed.
- Individual or group switch.
- Self park.
- Intermittent.
- Wiper heater.
- Wash.
- 24VDC-230VAC 1/3 phase



Cole Hersee

- For 1 wiper.
- 2 speed.
- Self park.
- Intermittent.
- Wiper heater.
- Wash.



6000 controller

- Single motor modules.
- Large qty. of wipers.
- 2 speed.
- Self park.
- Intermittent.
- Wiper heater.
- Wash and purge.
- 24VDC - 115/230VAC



8000 controller

- Rack mounted motor modules.
- Large qty. of wipers.
- 3 speed.
- Self park.
- Intermittent.
- Wiper heater.
- Wash and purge.
- 115/230VAC.



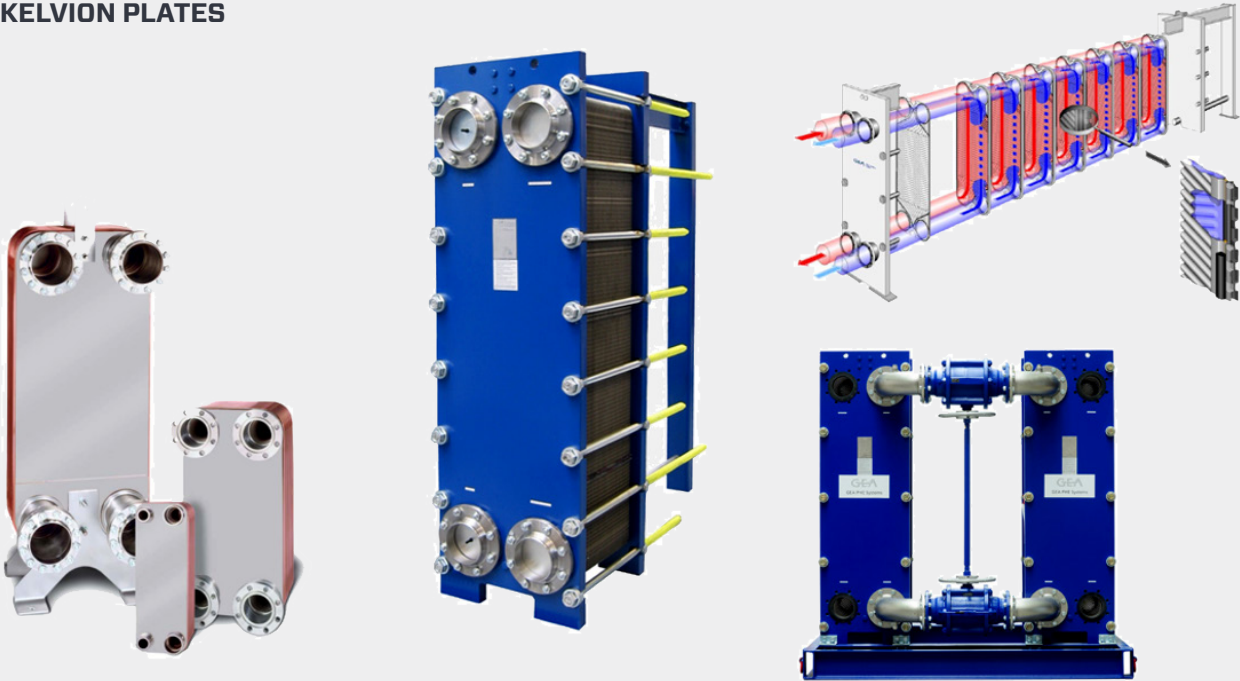
8224 controller.

- For 3 wipers.
- 3 speed.
- Self park.
- Intermittent.
- Wiper heater.
- Wash.
- In comb with 6000 or 8000 keypad.

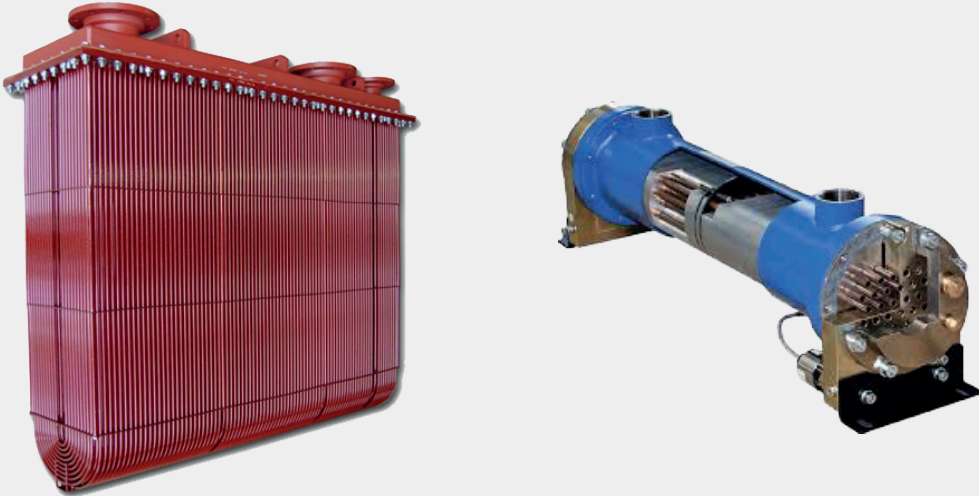
KELVION HEAT EXCHANGERS

SERVI can offer a wide range of plate coolers, box coolers, P-coolers etc.

KELVION PLATES

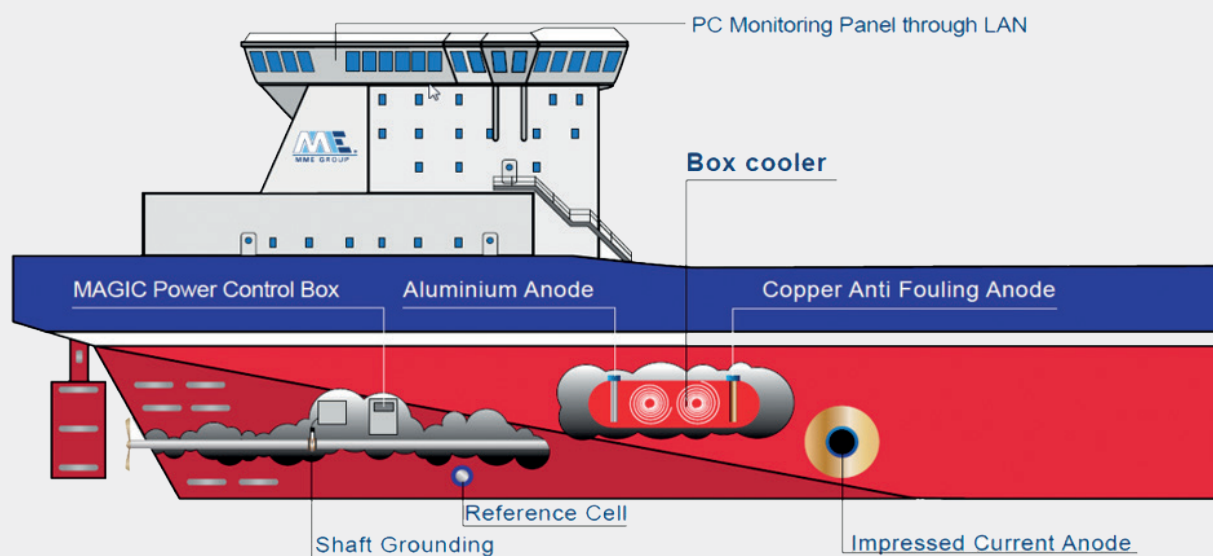


KELVION BOX COOLERS AND P-COOLERS

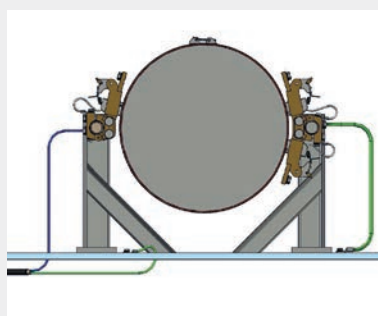
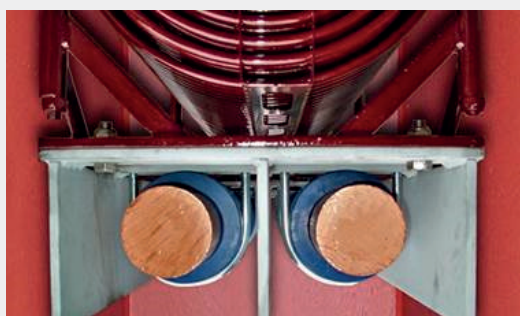


MME ICAF, ICCP AND ANODES

Protect your vessel with equipment from MME / SERVI



From complete system to single anodes.



KAHLENBERG HORNS

We have electrical and air horn for all size vessels



**MODEL KB-15G-BASE
ELECTRONIC HORN/HAILER**



**Z-320 ELECTRIC HORN
FOR BIGGER VESSELS**



KM-DVM-H AIR HORNS

OBSERVATOR SUNSCREENS



Film specifications

- Sheet thickness 100 µm
- Layers 3
- Visible light transm. 8.3%
- Visible light refl. 8%
- Glare reduction 91%
- UV transmission <1%
- Solar energy refl. 22.4%
- Solar energy abs. 57.0%
- Total energy rej. 63.4%

Film and screen width

Cassette Small

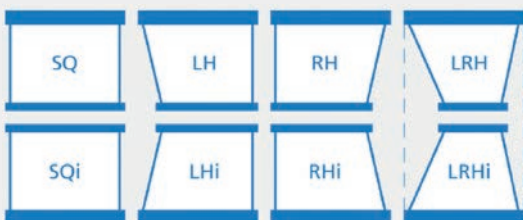
- Manual Cord guided (CRD) - 18mm
- Manual Chain guided (CH) - 22mm

Cassette Large

- Manual Cord guided (CRD) - 25mm
- Electrical Motor guided (E) - 27mm

Compliance

The sunscreens comply with international rules and regulations for bridge division and bridge equipment NEN and IS 8468. All sunscreens are SI approved.



SERVI LIFECYCLE SERVICES (SLS)

Servi Lifecycle Services - A nationwide service available where you are

For more than 100 years, Servi has been delivering Power and Motion Control solutions to the marine, offshore, subsea and onshore sectors, as well as to the energy production sector and the Norwegian Armed Forces. This has made us the preferred service partner for all areas of hydraulics, pneumatics, vacuum, electrical work and mechanics.

With our SLS agreement, preventative and status-based maintenance for the marine, offshore and onshore sectors is safe, simple and profitable.

- 80 hydraulic, pneumatic and electrical engineers
- 50 service engineers
- Oil laboratory
- 7 full service workshops
- 22 service vehicles
- Modern factory in Rissa for cylinders and accumulators
- Modern factory in Kongsberg for valves and blocks
- 2 modern assembly workshops in Trondheim and Ulsteinvik for the assembly of hydraulic systems and window wipers



24/7 service hotline Ulsteinvik
(+ 47) 415 34 100

SERVI GROUP

Rasmus Solbergs vei 1
P.O.Box 3230
1402 Ski

T +47 64 97 97 97
post@servi.no

SERVI AS

Reg. no.:
NO 936 370 446 MVA

Rasmus Solbergs vei 1
P.O.Box 3230
1402 Ski
T +47 64 97 97 97
ski@servi.no

Bergmannsveien 241
3615 Kongsberg
T +47 48 06 56 56
kongsberg@servi.no

Sagmyra 25
4624 Kristiansand
T +47 38 10 22 90
kristiansand@servi.no

Vestre Svanholmen 15b,
4313 Sandnes
T + 47 47 44 19 82
stavanger@servi.no

Storebotn 90
5309 KLEPPESTØ
T +47 55 10 82 20
bergen@servi.no

Torgardsvegen 12
7093 Tiller
T +47 73 80 10 00
trondheim@servi.no

Kvithyllveien 193
7100 Rissa
Norway
T +47 73 85 05 00
cylinderservice@servi.no

SERVI ULSTEINVIK AS

Reg. no.:
NO 979 185 901 MVA

Brendehaugen 24
6065 Ulsteinvik
T +47 70 31 85 50
ulsteinvik@servi.no

Langelandsvegen 2
6018 Ålesund
Tlf +47 924 65 659
bse@servi.no

SERVI HYDRAULIK AB

Lilla Bommen 6
411 04 Gothenburg
SWEDEN

Tel +46 (0)31 745 00 62
E-mail: khg@servi.no

