



Trouble-shooting Guide for DC Thrusters

Post 2005 thrusters
with IPC control system

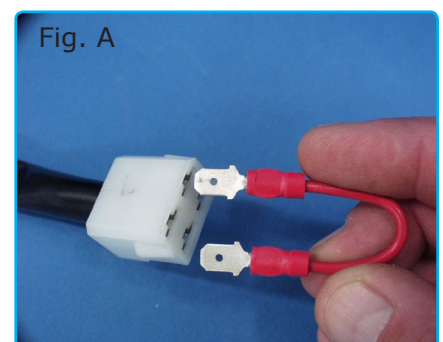


Please read over the owners manuals and familiarize yourself with the product. There is a trouble-shooting section in each manual. This guide is meant to be a supplement to these providing illustrated instructions for more detailed trouble-shooting.

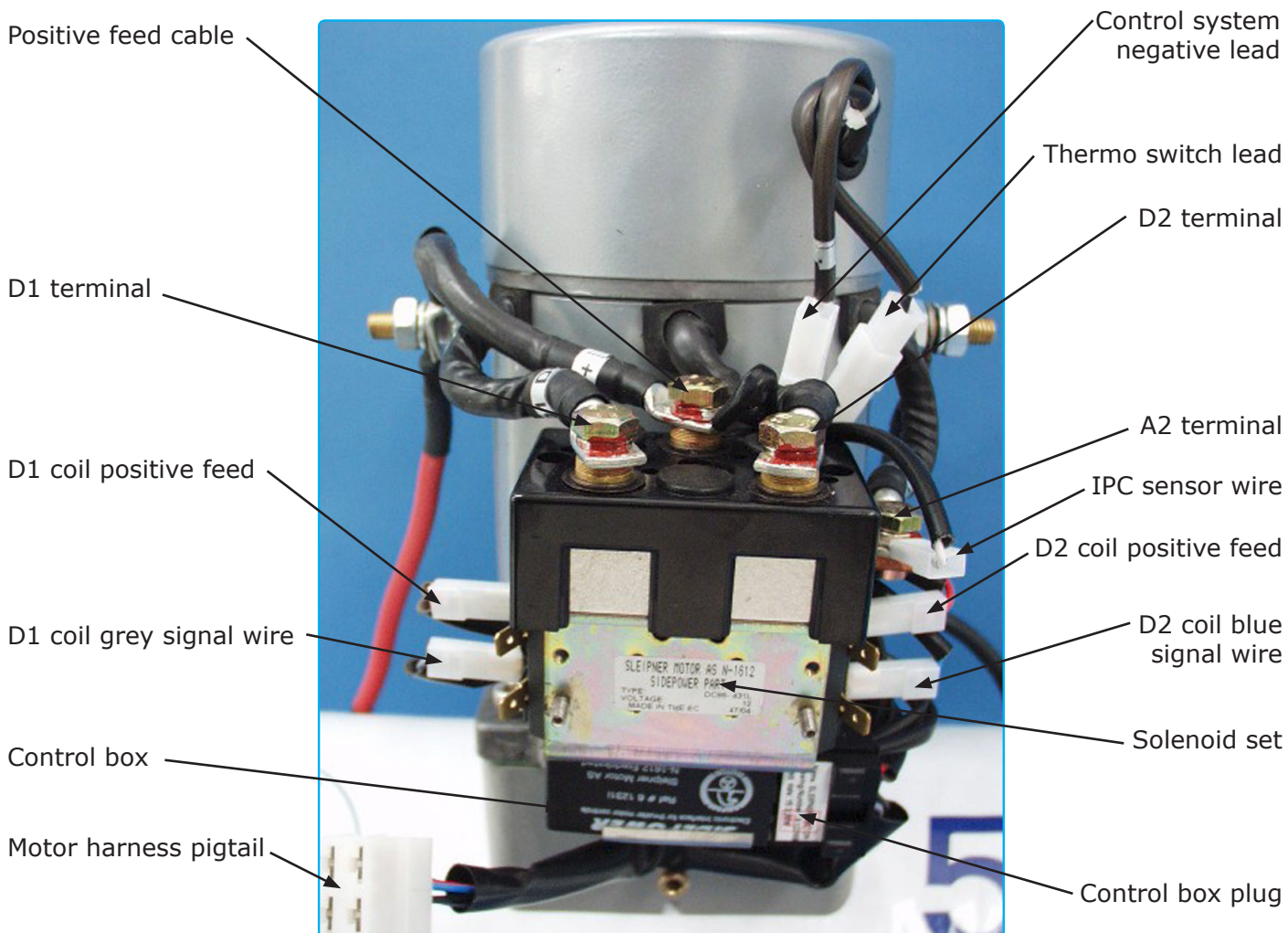
Note: This guide is intended for Thrusters utilizing SIDE-POWER "Plug and Play" wiring only, and not intended for thrusters utilizing SIDE-POWER's Auto-Main Switch or SIDE-POWER's voltage conversion box.

Recommended Tools for Trouble-shooting:

- Metric Allen Wrenches, 4mm to 12 mm
- Metric wrenches or sockets
- Needle Nose Vise-Grips
(for holding jam nuts when removing battery cables from motor)
- Phillips head screwdriver
- Small jumper wire
(with male quick disconnect terminals if available, Fig. A)
- 12" jumper wire with alligator clips
- Multi-meter (with alligator clips if available)



Identifying thruster parts



If Control Panel does not turn on.

(Light between two On buttons does not light)

1. Check battery power.

- The control panel is powered through the bow thruster. The thruster is usually on its own circuit, meaning the positive and negative battery cables run directly between the thruster and the battery. A fuse should be installed on the positive cable within 72" of the battery, check that it is not blown. A battery switch is usually installed in close proximity to the fuse and battery, check that the battery switch is turned on.



Control panel on

2. Check voltage at the thruster.

- You should read battery voltage at the thruster. If there is no voltage at the thruster there is a problem with the power supply, check the battery, fuse, switch, or cabling.

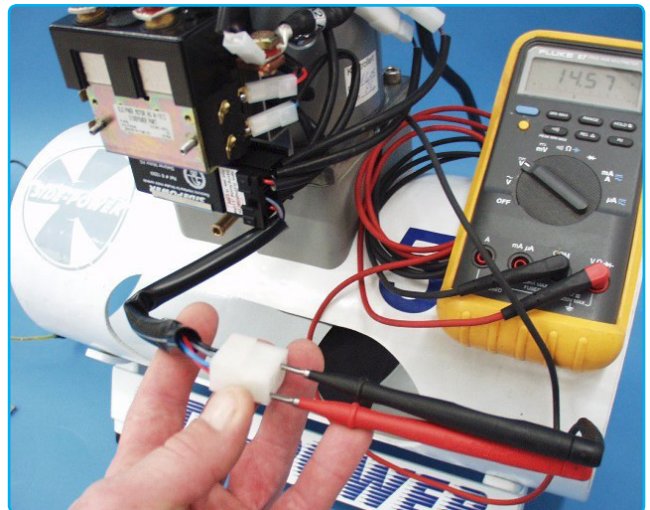


Checking voltage at thruster

3. Check for voltage on the control harness pigtail on motor and at control panel.

- With multi-meter set to DC volts, check from red wire (positive) to black wire (negative) on motor wiring harness pigtail. If there is battery voltage at the thruster battery cables, but no voltage at the motor harness pigtail, then proceed to step 4.

If there is battery voltage on the motor control harness repeat step 3 on control harness at the control panel to ensure there is no fault with the control harness run. If there is battery voltage at control panel then there is a problem with the control panel. Please contact your local Side-Power distributor for service support.



Checking voltage on motor harness

4. Check control system positive and negative.

- Check for voltage between the battery negative stud and red wire on motor harness pigtail.
- **If no voltage is present**, then check that all motor harness and control box plug connections are tight and in place. If the motor harness checks out, then there may be a problem with the control box. Please contact your local Side-Power distributor for service support.



Checking voltage on motor harness to battery negative stud

- **If voltage is present**, locate the control system negative lead and unplug it from the motor harness. With multi-meter set on ohm (Ω), check for continuity between the control system negative lead and the A1 battery negative stud. There should be continuity; ohms will go close to 0 (usually about 0.2 Ω -0.5 Ω).

- **If there is no continuity** between the control system negative lead and battery negative stud, then please contact your local Side-Power distributor for service support

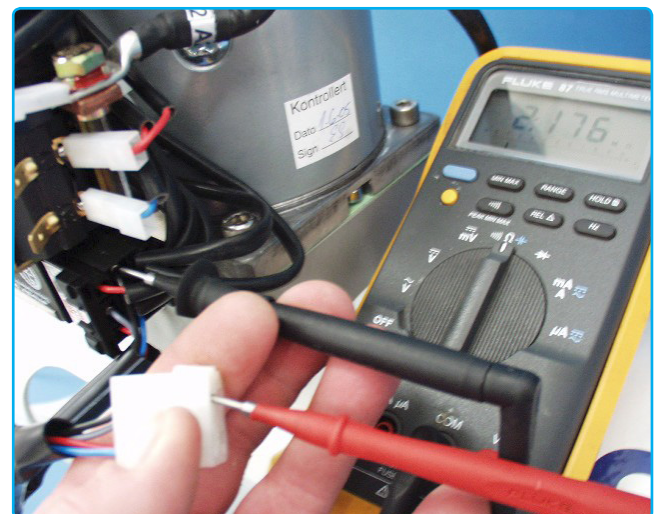


Checking continuity between negative lead and battery negative post

- **If there is continuity** between negative lead and battery negative stud, reconnect control system ground lead to motor harness, then check for continuity between the black wire on the motor harness pigtail and battery negative stud. Set the multi-meter on diode-test position, showing about 0.5V-0.7V. (A diode is fitted on the black wire).

Note: Be sure to have Positive lead connected to motor pigtail and negative lead to control box plug!

If there is no continuity between these two points than the motor harness has been damaged



Checking continuity between black in motor pigtail and control box plug

If control panel does turn on but thruster does not run, or thruster runs in one direction only.

NOTE: The preceding tests are to be performed while the boat is in the water. Please contact your local Side-Power distributor for service support if you have any questions.

1. Bypass control panel and check thruster control box and solenoid operation.

- Remove control panel and unplug wiring harness or unplug control harness from motor harness pigtail, whichever is more convenient. On the four wire Amp connector (wiring harness if disconnected at control panel or motor pigtail if disconnected at motor), with short jumper wire, jump from red to blue for starboard run, and red to grey for port run.

NOTE: Be careful not to jump red to black as this will permanently damage the control box

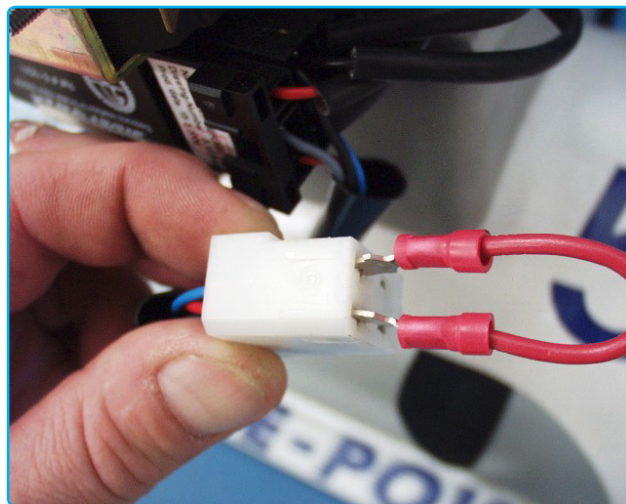
- **If thruster runs** in both directions when jumping red to blue and red to grey on the motor harness pigtail, repeat this test on the control panels harness at the control panel. If the thruster runs then the control panel is likely damaged.
- **If thruster does not run**, or runs in only one direction, at the control panel, but runs in both directions at the motor harness pigtail, then the harness or terminals are damaged.

NOTE: Be sure that all control panels in the system are unplugged when doing this test!

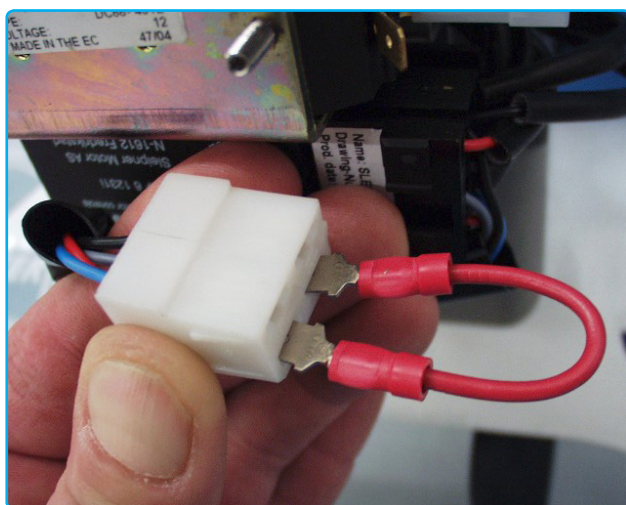
- **If thruster does not run**, proceed to step 2.

2. Bypass thruster control box and check thruster solenoid operation.

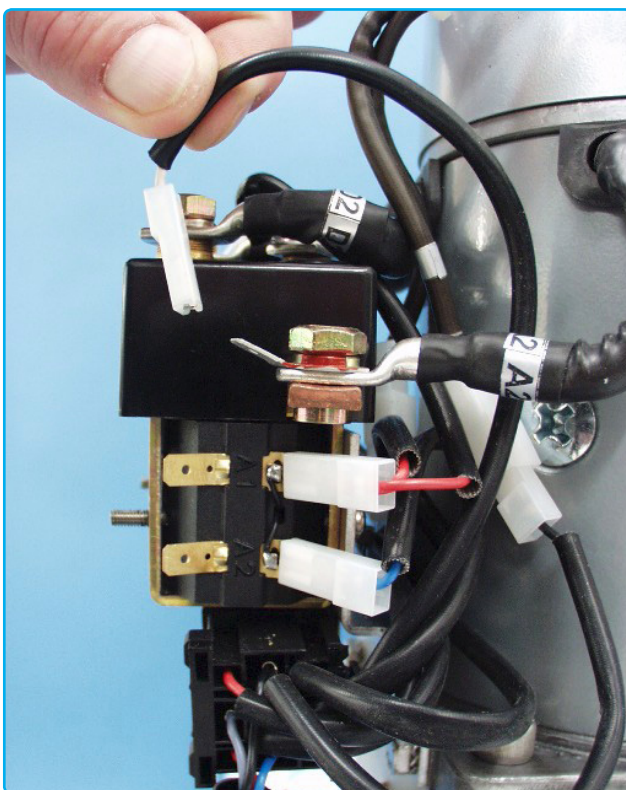
- Disconnect the white IPC sensor wire on the A2 terminal.



Jumping red to blue on motor pigtail



Jumping red to grey on motor pigtail



Disconnecting white IPC sensor wire

With long jumper wire, jump from negative battery stud to D1 coil grey signal wire for port run, and to D2 coil blue signal wire for starboard run.

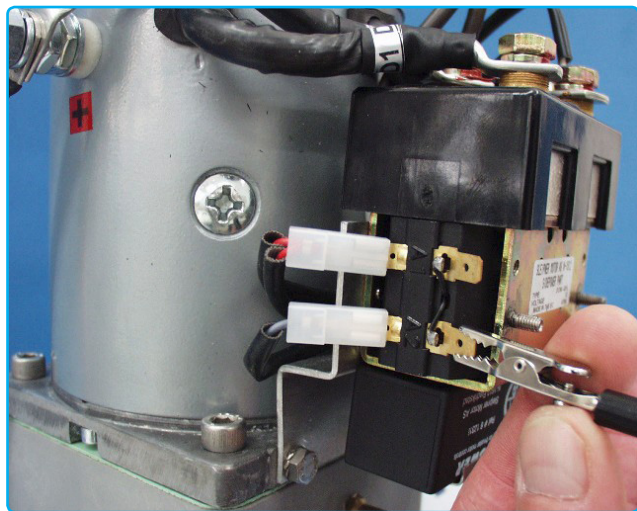
- **If thruster runs properly,**
proceed to step 3.
- **If thruster does not run,**
proceed to step 4

3. Checking the thermo switch.

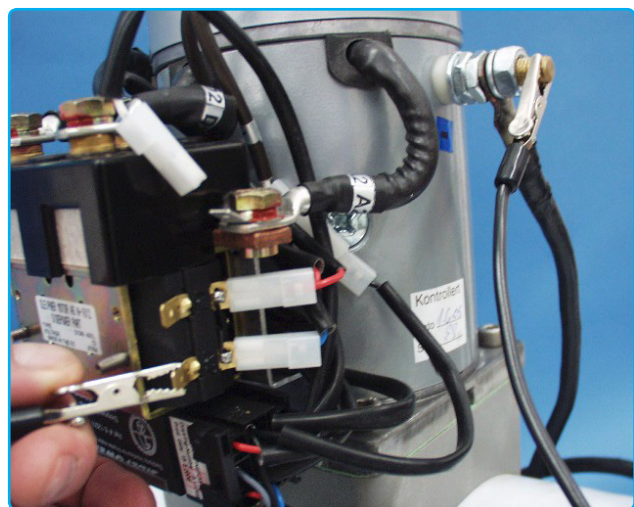
- Locate the thermo switch lead and unplug it from the motor harness. With multi-meter set on ohm (Ω), check for continuity between the thermo switch lead and the battery negative stud. There should be continuity; ohms will go close to 0 (usually about 0.2Ω - 0.5Ω).
 - **If there is no continuity** between thermo switch lead and A1 battery negative stud, then either the thermo switch needs to be replaced or the A1 battery negative stud has been damaged internally. Verify that the A1 Battery negative stud is OK by checking for continuity between A1 and A2. If there is continuity then the A1 battery negative stud is OK.
 - **If there is continuity** between thermo switch lead and battery negative stud then there is a problem with the control box or the motor wiring harness. Please contact your local Side-Power distributor for service support.

4. Check for solenoid output.

- With jumper wire still attached and IPC wire detached from step 2, check for voltage on the A2 terminal.
 - **If no voltage is present** on A2 terminal then the solenoid pack may need to be replaced. Please contact your local Side-Power distributor for service support.
 - **If voltage is present** on A2 terminal then the motor may be damaged. Please contact Your local Side-Power distributor for service support.



Jumping ground to grey on D1 coil



Jumping ground to blue on D2 coil



Checking voltage on A2 with ground to blue jumper attached and IPC wire disconnected.

5. Check the operating voltage

- Once the thruster is operating properly, check the voltage between the battery positive post and the battery negative post while the thruster is running. The voltage will drop initially and then should level off after approximately 5-10 seconds.

The voltage should be no lower than 9.5 for a 12 volt thruster and 19 volts for a 24 volt thruster after the voltage has stabilized.

If the voltage does not stabilize and continues to drop below 9.5 or stabilizes below 9.5 for 12 volt thrusters (19 volts for 24 volt thrusters), then the battery source needs to be checked to ensure the amp capacity is sufficient to run the thruster or the cable run needs to be checked for voltage drop. Please contact your local Side-Power distributor for service support if you have low operating voltage.

Distributors

Argentina

Trimer SA
Buenos Aires
Tel: +54 11 4580 0444
Fax: +54 11 4580 0440
www.trimer.com.ar
trimer@trimer.com.ar

Australia

AMI Sales
Freemantle, WA
Tel: +61 89 331 0000
Fax: +61 89 314 2929
ami@amisales.com.au

Austria

G. Ascherl GmbH
Hard, Bregenz
Tel: +43 5574 899000
Fax: +43 5574 89900-10
www.ascherl.at
office@ascherl.at

Benelux

ASA Boot Electro
Watergang
Tel: +31 20 436 9100
Fax: +31 20 436 9109
www.asabootelectro.nl
info@asabootelectro.nl

Brazil

Electra Service Ltda.
Guaruja
Tel: +55 13 3354 3599
Fax: +55 13 3354 3471
www.electraservice.br.com
albertoni@electraservice.com.br

Bulgaria

Yachting BG
Burgas
tel: +359 56 919090
fax: +359 56 919091
www.yachting.bg
info@yachting.bg

Canada

Imtra Corporation
New Bedford, MA
Tel: +1 508 995 7000
Fax: +1 508 998 5359
www.imtra.com
side-power@imtra.com

China/Hong Kong

Storm Force Marine Ltd.
Wanchai, Hong Kong
Tel: +852 2866 0114
Fax: +852 2866 9260
www.stormforcemarine.com
sales@stormforcemarine.com

Croatia

Yacht Supplier
Icici
Tel: +385 51 704 500
Fax: +385 51 704 600
acy@net.hr

Cyprus

Ocean Marine Equipment Ltd
Limassol
Tel: +357 253 69731
Fax: +357 253 52976
oceanm@spidernet.com.cy

Denmark

Gertsen & Olufsen AS
Hørsholm
Tel: +45 4576 3600
Fax: +45 4576 1772
www.gertsen-olufsen.dk
info@gertsen-olufsen.dk

Estonia/Latvia/Lithuania

Miltec Systems OÜ
Tallin
Tel: +372 5013997
Fax: +372 6442211
www.miltec.ee
tony@miltec.ee

Finland

Nautikulma OY
Turku
Tel: +358 2 2503 444
Fax: +358 2 2518 470
www.nautikulma.fi
nautikulma@nautikulma.fi

France

Kent Marine Equipment
Nantes
Tel: +33 240 921 584
Fax: +33 240 921 316
www.kent-marine.com
contact@kent-marine.com

Germany

Jabsco GmbH
Norderstedt
Tel: +49 40 535 373-0
Fax: +49 40 535 373-11

Greece

Amaltheia Marine
Athens
Tel: +30 210 2588 985
Fax: +30 210 2588 986
www.amaltheiamarine.com
amalmar@otenet.gr

Iceland

Maras EHF
Reykjavik
Tel: +354 555 6444
Fax: +354 565 7230
www.maras.is
gummi@maras.is

India

Indo Marine Engineering Co. Pvt. Ltd
Pune, Maharashtra
Tel: +91 20 2712 3003
Fax: +91 20 2712 2295
siddharth@indogroup-asia.com

Ireland

Sleipner Motor Ltd.
South Brent
Tel: +44 1364
Fax: +44 1364
andy@sleipne

Israel

Atlantis Marine Ltd.
Tel Aviv
Tel: +972 3 522 7978
Fax: +972 3 523 5150
www.atlantis-marine.com
atlantis@inter.net.il

Italy

Saim S.P.A.
Assago-Milan
Tel: +39 02 488 531
Fax: +39 02 488 254 5
www.saim-group.com

Japan

Turtle Marine Inc.
Nagasaki
Tel: +81 95 840 7977
Fax: +81 95 840 7978
www.turtle-marine.com
info@turtle-marine.com

Malta

S & D Yachts Ltd.
Cali
Tel: +356 21 339 908
Fax: +356 21 332 259
www.sdyachts.com
info@sdyachts.com

New Zealand

Advance Trident Ltd.
Auckland
Tel: +64 9 845 5347
Fax: +64 9 415 5348
www.advancetrident.com
service@advancetrident.com

Norway

Sleipner Motor AS
Fredrikstad
Tel: +47 69 30 00 60
Fax: +47 69 30 00 70
www.side-power.com
sidepower@sleipner.no

Poland

Taurus Sea Power SP. Z.O.O
Gdansk
Tel: +48 58 344 30 50
Fax: +48 58 341 67 62

Portugal

Krautli Portugal Lda.
Lisboa
Tel: +351 21 953 56 00
Fax: +351 21 953 56 01
www.krautli.com
contact@krautli.pt

Russia

Standarte
Starbeyevo
Tel: +7 495 575 67 23
Fax: +7 495 575 39 77
www.standarte.ru
info@standarte.ru

South Africa

C-Dynamics
Cape Town
Tel: +27 21 555 3232
Fax: +27 21 555 3230
www.c-dynamics.co.za
info@c-dynamics.co.za

Spain

Imnasa Marine Products
Girona
Tel: +34 902 300214
Fax: +34 902 300215
www.imnasa.com
imnasa@imnasa.com

Sweden

Sleipner AB
Strömstad
Tel: +46 526 629 50
Fax: +46 526 152 95
www.sleipnerab.se

Switzerland

Marine Parts Technics AG
Volketswil
Tel: +41 1 997 40 90
Fax: +41 1 997 40 94
www.marineparts.ch
info@marineparts.ch

Singapore/Malaysia/ Indonesia/Vietnam/Phillipines

Island Marine Services Pte Ltd
Singapore
Tel: +65 6795 2250
Fax: +65 6795 2250
www.island-marine.com
karl@island-marine.com

Taiwan

Mercury Marine Supply
Kaohsiung
Tel: +886 7 3317 293
Fax: +886 7 3314 232

Turkey

Denpar Ltd.
Istanbul
Tel: +90 212 346 1332
Fax: +90 212 346 1329
seda@denpar.com

UK

Sleipner Motor Ltd.
South Brent
Tel: +44 1364 649 400
Fax: +44 1364 649 399
andy@sleipner.co.uk

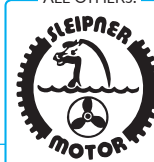
United Arab Emirates

Teignbridge Propellers & Marine
Equipment Co. Ltd.
Dubai
Tel: +971 4 324 0084
Fax: +971 4 324 0153
teignpro@emirates.net.ae

USA

Imtra Corporation
New Bedford, MA

ALL OTHERS:



Sleipner Motor AS
P.O. Box 519,
N-1612 Fredrikstad, Norway
Tel: +47 69 30 00 60
Fax: +47 69 30 00 70
sidepower@sleipner.no
www.side-power.com