Installation and Troubleshooting Guide

This installation is to be completed by an Authorized Dealer or Professional Service Technician. For questions regarding installation or warranty, call Technical Support at (800) 648-3976. Do not return to the Dealer or Distributor where the part was purchased. Contact Sierra Directly for Return Goods Authorization.

SIERRA P/N: 18-99414

This unit replaces P/Ns: 583289 and 583379.
This unit replaces CDI P/N: 133-3379

WARNING! This product is designed to be installed by a professional marine mechanic. Dometic cannot be held liable for injury or damage resulting from improper installation, abuse, neglect, or misuse of this product.

INSTALLATION

1. Disconnect the Negative battery cable.
2. Remove the flywheel according to the service manual for your engine.
3. Disconnect the old Timer Base from the Power Pack.
4. Loosen the retainers holding the old Timer Base down and remove the old Timer Base
5. Install the new linkage bushing in the Timer Base arm of the new Timer Base according to the service manual for your engine.
6. Lubricate the inside area of the new Timer Base where the White slip ring goes and the area where the inside of the new Timer Base contacts the upper bearing carrier.
7. Install the White slip ring on the new Timer Base.
8. Compress the White slip ring and seat the new Timer Base into the bearing carrier.
9. Make sure the Timer Base is fully seated and secure the slip ring using the retainers removed during disassembly.
10. Connect the linkage to the new Timer Base.
11. Re-install the Stator and flywheel according to the Service Manual for your engine.
12. Reconnect the Negative battery cable.
13. Adjust the ignition timing according to the Service Manual for your engine.

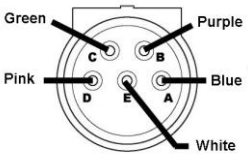
TROUBLESHOOTING

NO SPARK ON ANY CYLINDER:

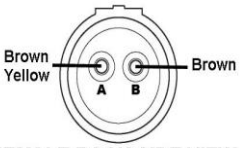
1. Disconnect the Black/Yellow stop wire from the Power Pack and retest. If the engine's ignition has spark, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present).
2. Disconnect the Yellow wires from the Rectifier and retest. If the engine now sparks, replace the Rectifier.
3. Check the cranking RPM. A cranking speed of less than 250 RPM may not allow the system to spark properly. This can be caused by a weak battery, dragging starter, bad battery cables, or a mechanical problem inside the engine.
4. Check the Stator and Timer Base Resistance and DVA as shown below:

Read from	Read to	OEM Ohms	SIE Ohms	DVA (Connected)	DVA (Disconnected)
Brown (Stator)	Brown/Yellow (Stator)	510-620 Ω	500-620 Ω	150-400 V	150-400 V
White (Common)	Blue (#1 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Purple (#2 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Green (#3 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Pink (#4 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum

5. Check wire pin-out as follows:



WIRE SIDE MALE



FEMALE BACK SIDE VIEW

6. Check the Stator input diodes connected inside the Power Pack using a meter set to diode scale. If the readings show a short or open, replace the Power Pack.

Red meter lead	Black meter lead	Reading
Orange/Blue (#1 Primary)	Blue (#1 Timer Base Input)	110 Ω (a)
Orange/Purple (#2 Primary)	Purple (#2 Timer Base Input)	110 Ω (a)
Orange/Green (#3 Primary)	Green (#3 Timer Base Input)	110 Ω (a)
Orange (#4 Primary)	Pink (#4 Timer Base Input)	110 Ω (a)
White (Common)	Black (Ground)	Shorted
Brown (Stator)	Black (Ground)	Reading*
Brown/Yellow (Stator)	Black (Ground)	Reading*
Black (Ground)	Brown (Stator)	Open*
Black (Ground)	Brown/Yellow (Stator)	Open*

(a) Use a comparison reading as different brands of meters will give different readings. The typical range is 90-150 Ω for the Orange Primary wires. You should have approximately the same resistance readings on all tests with the Orange Primary wires. If one of the SCR's inside the Power Pack is shorted or open, the readings will be quite a bit different.

**** This measurement is with the meter set to the Diode scale. Where you see the term "Reading" represents a reading on the meter. Actual meter readings will vary depending on the type of meter.***

7. Check the DVA on the Black/Yellow kill wire coming out of the Power Pack. You should have a reading of at least 150 DVA or more. The Stator and Timer Base should be connected to the Power Pack for this test. If you do not, check the DVA on the Stator and Timer Base. If the DVA on the Stator and Timer Base is good but the DVA on the Black/Yellow Kill wire coming out of the Power Pack is low, the Power Pack is likely faulty.

NO SPARK OR INTERMITTENT ON ONE OR MORE CYLINDERS:

1. Check the Resistance and DVA of the Stator and Timer Base:

Read from	Read to	OEM Ohms	SIE Ohms	DVA (Connected)	DVA (Disconnected)
Brown (Stator)	Brown/Yellow (Stator)	510-620 Ω	500-620 Ω	150-400 V	150-400 V
White (Common)	Blue (#1 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Purple (#2 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Green (#3 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Pink (#4 Timer Base)	30-50 Ω	38-48 Ω	0.6 V Minimum	0.6 V Minimum

2. Check the DVA on the Orange Primary wires from the Power Pack while connected to the Ignition coils. You should have a reading of at least 150 V or more. If the reading is low on one cylinder, disconnect the Orange Primary wire from the Ignition coil for that cylinder and connect it to a Pack Load resistor. Retest. If the reading is now good, the Ignition coil is likely faulty. A continued low reading usually indicates a bad Power Pack.
3. Swap the Ignition coil with one that is sparking correctly.
4. Rare causes include a weak Trigger magnet. If possible, try another flywheel.
5. Check the Power Pack resistance given below:

Read from	Read to	Ohms
Orange/Blue (#1 Primary)	Blue (#1 Timer Base Input)	110 Ω (a)
Orange/Violet (#2 Primary)	Purple (#2 Timer Base Input)	110 Ω (a)
Orange/Green (#3 Primary)	Green (#3 Timer Base Input)	110 Ω (a)
Orange (#4 Primary)	Pink (#4 Timer Base Input)	110 Ω (a)
White (Common)	Black (Engine Ground)	Shorted
Brown (Stator)	Black (Engine Ground)	Open or M range
Brown/Yellow (Stator)	Black (Engine Ground)	Open or M range

Note: Use a comparison reading as different brands of meters will give different readings. The typical range is 90-150 Ω for the Orange Primary wires. You should have approximately the same resistance readings on all tests with the Orange Primary wires. If one of the SCR's inside the Power Pack is shorted or open, the readings will be quite a bit different.

ENGINE WILL NOT STOP (KILL):

1. Disconnect the Black/Yellow wire at the Power Pack. Connect a jumper wire to the stop wire from the Power Pack and short it to engine ground. If this stops the Power Pack from sparking, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present). If this does not stop the Power Pack from sparking, replace the Power Pack.

MISS AT ANY RPM:

1. Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the miss clears, replace the Rectifier.
2. In the water or on a Dynamometer, check the DVA on the Orange wires from the Power Pack while connected to the Ignition coils. You should have a reading of at least 150 DVA or more, increasing with engine RPM until it reaches 300-400 DVA maximum. A sharp drop in DVA right before the miss becomes apparent on all cylinders will normally be caused by a bad Stator. A sharp drop in DVA on less than all cylinders will normally be the Power Pack or Timer Base.
3. Connect an inductive tachometer to each cylinder in turn and try to isolate the problem. A high variance in RPM on one cylinder usually indicates a problem in the Power Pack or Ignition coil. Occasionally a Timer Base will cause this same problem. Check the Timer Base DVA (see **NO SPARK ON ANY CYLINDER**).
4. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem.
5. Check the Trigger and Charge coil flywheel magnets for cracked, broken, or loose magnets.

POWER PACK OR TIMER BASE REPEATEDLY BLOWS ON SAME CYLINDER:

1. Check the Timer Base wires for shorts to engine ground as a shorted Timer Base wire can destroy a SCR inside the Power Pack.
2. In contrast, a shorted SCR inside the Power Pack can destroy a Timer Base. Check the Timer Base resistance and DVA (see **NO SPARK ON ANY CYLINDER**).
3. Replace the Ignition coil on the cylinder dropping spark.