

## CDI P/N: 174-9873-16

This stator replaces the following 6 CYL P/N's: 398-9873A 1, A 3, A 4, A36 and A39.

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

It is recommended that dielectric grease (i.e. CDI 991-9705) be used in the bullet nose connectors to help prevent corrosion.

**NOTE:** Any sign of leakage out of the high voltage coils or bubbling around the battery charge windings indicate a bad stator. Check for burned marks on each pole. If a problem is found on the battery windings, we recommend the rectifier/regulator be closely checked.

### INSTALLATION

1. Disconnect the stator wires from the switch box, engine ground and the rectifier/regulator.
2. Remove the flywheel.
3. Mark the position of the mounting screws in relation to where the stator wires come out of the old stator.
4. Remove the old stator.
5. Orient and install the new stator (using a good thread-locker applied to the bolts) in the same position as the old stator on the engine and install the flywheel, following the service manual instructions.
6. Connect the new stator to the regulator/rectifier (ignore any stripes on the rectifier/regulator as the new stator does not require the Yellow wires to be connected to a particular rectifier/regulator wire).
7. Connect the stator black wire to engine ground.
8. Connect the Red and Blue wires to one switch box and the Red/White and Blue/White wires to the other switch box. SportJet engines may use the switch-boxes with bullet style connections (in this case, use the fork to bullet adapters in the Bullet terminals to connect to the switch-boxes).
9. Replace the flywheel according to the service manual.

### TROUBLESHOOTING

#### NO SPARK ANY CYLINDER:

1. Disconnect Stop/Kill wire AT THE PACKS. If spark returns, there is a problem in the Kill circuit. Check the Stop/Kill switch and engine harness (remember the RPM limiter can stop the engine from firing).
2. Disconnect the rectifier. If the engine has spark, replace the rectifier.
3. Disconnect the red wires from the packs and retest. If the problem is eliminated, and the DVA test above is ok, the pack is usually bad.
4. Check for broken or bare wires on the unit, stator and trigger.
5. Check the stator resistance and DVA output as given below:

WIRE	READ TO	OHMS	DVA (Connected)	DVA (Disconnected)
Blue	Engine GND	500-600	180-400 V	200-400 V (*)
Blue/White	Engine GND	500-600	180-400 V	200-400 V (*)
Red	Engine GND	28-32	25-100 V	25-100 V (*)
Red/White	Engine GND	28-32	25-100 V	25-100 V (*)

(\*) This reading can be used to determine if a stator or pack has a problem. For instance, if you have no spark on any cylinder and the stator's DVA reading is low – disconnect the stator wires and recheck the DVA output. If the reading stays low – the stator is likely bad. If the reading is now within spec – the pack is bad.

6. Check the trigger resistance and DVA output as given below:

BLACK SLEEVE TO	YELLOW SLEEVE TO	Resistance	DVA Reading
Brown wire	White wire	800-1400	4V or more Connected
White wire	Purple wire	800-1400	4V or more Connected
Purple wire	Brown wire	800-1400	4V or more Connected
Brown wire	-	Engine Ground	Open
White wire	-	Engine Ground	Open
Purple wire	-	Engine Ground	Open
-	Brown wire	Engine Ground	Open
-	White wire	Engine Ground	Open
-	Purple wire	Engine Ground	Open

7. Check the center hub triggering magnet in the flywheel. A loose magnet can cause this problem.
8. Check the triggering and charge coil flywheel magnets for cracked, broken and loose magnets.

## NO SPARK ONE BANK:

1. Swap the stator Red and Blue wires from switchbox to the other switchbox. If the spark moves to the other bank, replace the stator.
2. If it stays on the same bank,, disconnect the red wires from the packs and retest. If the problem is eliminated, and the DVA test above is ok, the pack is usually bad.
3. Check the stator resistance and DVA output as given below:

WIRE	READ TO	OHMS	DVA (Connected)	DVA (Disconnected)
Blue	Engine GND	500-600	180-400 V	200-400 V (*)
Blue/White	Engine GND	500-600	180-400 V	200-400 V (*)
Red	Engine GND	28-32	25-100 V	25-100 V (*)
Red/White	Engine GND	28-32	25-100 V	25-100 V (*)

(\*) This reading can be used to determine if a stator or pack has a problem. For instance, if you have no spark on any cylinder and the stator's DVA reading is low – disconnect the stator wires and recheck the DVA output. If the reading stays low – the stator is likely bad. If the reading is now within spec – the pack is bad.

## HIGH SPEED MISS (OVER 2700 RPM) OR WEAK HOLE SHOT:

1. Disconnect the rectifier/regulator and retest. If miss is gone, the rectifier/ regulator is usually at fault.
2. DVA test the red and red/white wires to engine ground at high speed. The voltage should show a smooth climb throughout the RPM range. A sudden drop or decrease in voltage indicates a problem usually found in the stator, although a rectifier can cause the same symptom (while connected to the switchbox). **NOTICE:** Use caution when doing this and do not exceed the rated voltage range of your meter. The readings should show a smooth climb in voltage. If there is a sudden or fast drop in voltage right before the miss becomes apparent, the stator is usually at fault. If there is no indication of the problem, it could be mechanical problem.
3. DVA check the blue and blue/white wires to engine ground and do a running test. The voltage should show a smooth climb and stabilize, gradually falling off at higher RPM's (above 3000). If you see a sudden drop in voltage right before the miss becomes apparent, the stator is likely at fault.
4. For a high speed electrical miss, rotate the stator one mounting hole and retest. If the miss is still present, the stator may be bad.

## COILS ONLY HAVE SPARK WHEN THE SPARK PLUGS ARE OUT:

1. Check for dragging starter or low battery causing slow cranking speed. DVA test stator and trigger.
2. Disconnect rectifier, regulator and retest. If the problem goes away, replace the rectifier and/or regulator.

## INTERMITTANT SPARK ON ONE OR MORE CYLINDERS:

1. Check for low voltage from the stator and trigger.
2. Disconnect the rectifier and retest. If the problem disappears, replace the rectifier.
3. Check the trigger resistance and DVA output as given below:

BLACK SLEEVE TO	YELLOW SLEEVE TO	Resistance	DVA Reading
Brown wire	White wire	800-1400	4V or more Connected
White wire	Purple wire	800-1400	4V or more Connected
Purple wire	Brown wire	800-1400	4V or more Connected
Brown wire	-	Engine Ground	Open
White wire	-	Engine Ground	Open
Purple wire	-	Engine Ground	Open
-	Brown wire	Engine Ground	Open
-	White wire	Engine Ground	Open
-	Purple wire	Engine Ground	Open

(#) This reading can be used to determine if a pack has a problem in the triggering circuit. For instance, if you have no spark on one cylinder and the trigger's DVA reading for that cylinder is low – disconnect the trigger wires and recheck the DVA output. If the reading stays low – the trigger is bad. If the reading is now within spec – the switchbox is bad. NOTE: A defective switchbox can cause the other switchbox to lose spark on one cylinder.

## ALL CYLINDERS HAVE SPARK BUT ENGINE WILL NOT RUN:

1. Disconnect the white/black wires going to each switchbox and check the bias circuit (white/black wire) resistance reference to engine ground on each switchbox. Readings should be approximately 13-15,000Ω. A shorted bias circuit can advance the ignition timing as high as 40 degrees above the set point. If a problem is found in the bias circuit, replace BOTH switchbox as a set.
2. If the bias readings are correct on the pack, index the flywheel and check timing on all individual cylinders. If the timing varies, replace BOTH switchbox as a set.