



Installation and Troubleshooting Guide



NOTE: This installation is to be completed by an Authorized Dealer or Professional Service Technicia. Do not return to the Dealer or Distributor where the part was purchased. Contact CDI Electronics Directly for Return Material Authorization.

CDI P/N: 194-5279 Regulator/Rectifier 2, 3, 4, & 6 Cylinder

This kit will replace all of the 815279, 817411, 830179, 854515, 856747, 856748 and 883072 series regulator/rectifiers, the 194-3072K1 and the (12082A1 regulator, 62351A1 rectifier, and 17602A1 tachometer terminal combination.)

WARNINGS:

- 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.
- DO NOT USE A MAINTAINENCE FREE, AGM OR DRY CELL BATTERIES AS THE USE OF THESE TYPE BATTERIES COULD VOID THE WARRANTY AND DAMAGE THE REGULATOR/RECTIFIER AND OR THE STATOR!!!
- NEVER DISCONNECT THE BATTERY WHILE THE ENGINE IS RUNNING AS THIS MAY DAMAGE THE REGULATOR/RECTIFIER. *If the boat is equipped with a battery switch, make sure that it is a make before break type.*
- SERVICE NOTE: DO NOT REMOVE THE Y JUMPER FROM THE RED WIRES UNLESS THE OLD REGULATOR/RECTIFIER HAD 2 RED WIRES CONNECTED TO IT AS BOTH RED WIRES MUST BE CONNECTED TO 12 VDC IN ORDER FOR THE REGULATOR/RECTIFIER TO WORK.

1. Disconnect the battery negative post.
2. Disconnect and remove the old regulator/rectifier.
3. If the unit being replaced has long Red and Yellow wires; Cut the wires off close to the case of the old regulator/rectifier, and crimp and solder the new terminals on to the wires. Use the wires on the new rectifier/regulator as a guide for terminal selection. Remember, Both Red wires must be connected to battery Positive 12 VDC for the Regulator/Rectifier to work.
4. Use a quality heat-sink compound (CDI P/N: 989-8109) on the back of the regulator when you install the new regulator/rectifier.
5. Connect all wires to the new Regulator/Rectifier, matching wire colors. **Do not remove the jumper on the Red wires unless the old Regulator/Rectifier had Two Red wires connected to it as both Red wires on the new Regulator/Rectifier must be connected to 12 VDC for the new Regulator/Rectifier to work.** A Grey or Black stripe on the stator's Yellow wires can be connected to either Yellow wire of the Regulator/Rectifier.
6. The normal wire connections is shown below:

9 AND 16 AMP STATOR WITH 2 YELLOW WIRES

RECTIFIER/REGULATOR	CONNECT TO
Yellow (2)	Stator Yellow (Stripes on these wires can be ignored)
Grey	Tachometer
Red (With Y jumper installed)	Red wire from the harness to the Positive post of starter solenoid.
Case	Connects through the mounting bolts to engine ground.

40 AMP STATOR WITH 4 YELLOW WIRES

RECTIFIER/REGULATOR # 1	CONNECT TO
Yellow (2)	Stator Short Yellow wires (Stripes on these wires can be ignored)
Grey	Tachometer
Red (Small)	Red wire from the harness to the Positive post of starter solenoid.
Red (Large)	Red wire from the harness to the Positive post of starter solenoid.
Case	Connects through the mounting bolts to engine ground.

RECTIFIER/REGULATOR # 2	CONNECT TO
Yellow (2)	Stator Long Yellow wires (Stripes on these wires can be ignored)
Grey	No Connection
Red (Small)	Red wire from the harness to the Positive post of starter solenoid.
Red (Large)	Red wire from the harness to the Positive post of starter solenoid.
Case	Connects through the mounting bolts to engine ground.

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

INSTALLATION NOTE: *These regulator/rectifiers may cause a small spark when you reconnect the battery and will draw a very small amount of current from the battery (Less than 0.001 amp).*



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TROUBLESHOOTING

BATTERY NOT CHARGING:

1. Check the 25-30 Amp fuse between the Regulator/Rectifier and the battery (if present). Replace and retest if blown.
2. Verify that **Both** Red wires are connected to 12 VDC from the battery. Both wires must be connected to 12 VDC from the battery for the Regulator/Rectifier to work.
3. Remove the flywheel and inspect the heavy battery charge windings for discoloration. If the windings are a dark color, replace the stator.

NO TACHOMETER SIGNAL:

1. At 800-1000 RPM, check DVA output on the Grey wire from the Regulator/Rectifier, you should have at least 8 DVA. A low reading usually indicates a bad regulator if the system is charging the battery.
2. Check the resistance between the Grey wire from the Regulator/Rectifier and engine ground. You should read about 10K Ω . Grey to Red, and Grey to the Yellow wires should be a high reading, usually in the M range.

MAXIMUN OUTPUT TEST

1. Install an ammeter capable of reading at least 30 Amps between the Red wire (Y jumper) and the starter solenoid battery post.
2. Connect a load bank to the battery.
3. In the water or on a Dynamometer, start the engine and bring the RPM up to approximately 4500 in gear.
4. Turn on the load bank switches to increase the battery load to equal 30 Amps.
5. Check the ammeter.
6. If the amperage is low,
 - A) Check the load bank for battery amperage draw.
 - B) Reconnect the ammeter between the Red wire (Y jumper) going to the terminal strip. Retest. You should show about 15 - 20 Amps from the regulator/rectifier.
 - C) If the output is still low, check and clean all connections between the battery and the regulator/rectifier plate.
7. If the amperage is correct, but the battery voltage remains low, replace the battery.

OVERCHARGING

1. Clean all battery terminals, cables and mounting bosses.
2. Check the voltage on the battery with a digital voltmeter and compare it to the dash meter.
3. Compare the voltage at the regulator/rectifier with the voltage at the battery. If the voltage is ok at the regulator/rectifier and not good at the battery, you have a bad connection somewhere. Clean the battery posts and terminals.
4. Replace the battery with a known good marine battery and retest. If the battery voltage remains ok, install a new battery.

BENCH TEST

METER TESTING:

Test the Regulator/Rectifier as follows:.

Red Meter Lead	Black Meter Lead	Ohms
Yellow Stator Leads (each)	Red Regulator Y Jumper	30K – 50K Ω (a)
Yellow Stator Leads (each)	Case	Open, M Ω or OL(Out of Limit)
Red Regulator (w/Barrel Terminal)	Red Regulator Y Jumper	Open, M Ω or OL(Out of Limit)
Case	Yellow Stator Lead (each)	Open, M Ω or OL(Out of Limit)
Case	Red Regulator Y Jumper	Open, M Ω or OL(Out of Limit)
Case	Grey Terminal	10K Ω

(a) If one of the Yellow wires shows a low reading of about 10K Ω , leave the meter connected for a minute. It should change to the 30K – 50K Ω range.