

# CK-SH35, CK-SHMAG and CK-SHCDI Single Horizontal LVG Carb Kit

## -Installation Instructions-



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|---|--|
| 1. Carburetor 42 mm (CKC-22)                      | 18. Crankcase Ventilator Tube (CKC-10)         |
| 2. Brush Guard (CKC-100)                          | 19. Rev Limiter Assembly 4350 (CKC-46)*        |
| 3. Intake Manifold 3-Hole x 2-Hole (CKC-59)       | 20. Rev Limiter Gasket (CKC-16)*               |
| 4. Flange 42mm (CKC-25)                           | 21. Tapping Screw 10 x 1 Hex Cap 2 ea (F-S19)* |
| 5. Intake Gasket 5-Hole (CKC-17)                  | 22. Heat Shrink Butt Connector (EL-23)*        |
| 6. Bolt 5/16 x 3/4 Skt. Cap 2 ea (F-B64)          | 23. Ring Connector 2 ea (EL-31)*               |
| 7. Bolt 6 mm x 80 mm 3 ea (F-B52)                 | 24. Throttle Cable (CKC-89)                    |
| 8. Lock Washer 5/16 2 ea (F-W04)                  | 25. Carburetor Kit Owner's Manual (CKC-01)     |
| 9. Lock Washer 1/4 3 ea (F-W29)                   |  |
| 10. Brush Guard Spacer 2 ea (F-M08)               |  |
| 11. Threadlock 242 (A-210)                        |  |
| 12. Governor Lock 11 mm (CKC-12)                  |  |
| 13. Air Filter (CKC-08)                           |  |
| 14. Air Filter Adaptor or Velocity Stack (CKC-20) |  |
| 15. Air Pre-filter (CKC-09)                       |  |
| 16. Set Screw 1/4 (F-S11)                         |  |
| 17. Hose Clamp (A-45)                             |  |

\*This part is not needed for CDI or Black Death motors

**Tools required:** US hex wrench set, 12 mm socket, 10 mm wrench, 7/16 wrench, flat head screw driver, philips screw driver, side cutters, torque wrench, tape measure, pliers, wire crimper, hair dryer or torch, and drill.

**Instructions** - Read each section and the Mikuni manual carefully before beginning. You are responsible for the correct use, installation, and service of this carburetor. BPS is not liable for installation or any subsequent damage to the motor due to use, installation, jetting adjustment or maintenance of this carburetor.

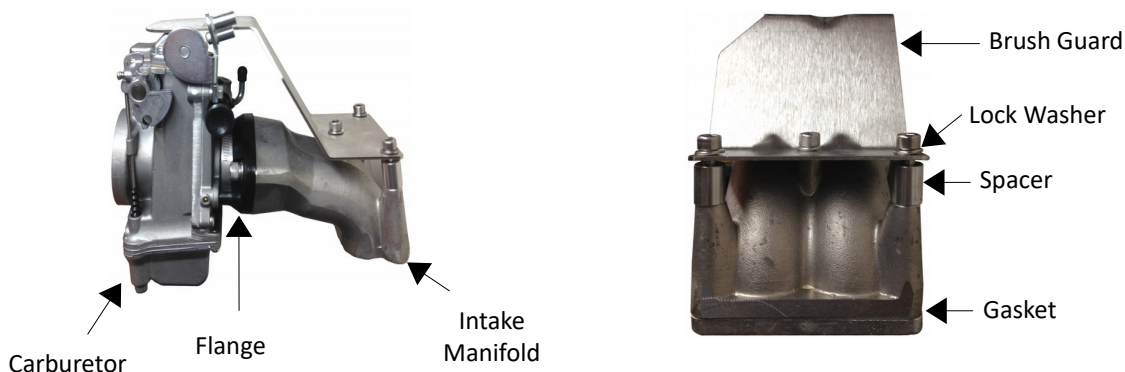
## Step 1 – Remove Stock Engine Carburetor

1. Loosen the two screws from the front panel.
2. Remove the air filter assembly, carburetor linkage, carburetor, carburetor cross brace, vent hose coming from the valve cover, and fuel line. Be sure to cover the intake with a rag to prevent debris from entering the engine.
3. Tape the gray carburetor solenoid valve wire to prevent it from shorting out.
4. Remove the four bolts that hold on the rear governor, throttle assembly and governor arm.
5. Remove the rear governor, throttle assembly and governor arm.
6. Remove cross brace, bend and replace.

## Step 2 – Attach Carburetor and Brush Guard

(Uses parts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11)

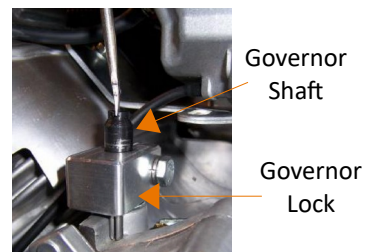
1. Attach the rubber flange to the intake manifold using two each 5/16" socket head bolts and two 5/16" lock washers.
2. Using the three 6 mm x 80 mm socket head bolts, 1/4" lock washers and two brush guard spacers attach the brush guard to the intake manifold.
3. Place the intake manifold gasket onto the intake manifold.
4. Screw manifold and brush guard into engine. Be sure to apply the threadlock to the screws.
5. Place carburetor onto flange and tighten the clamp firmly.



## Step 3 – Attach Governor Lock

(Uses part 12)

1. Place the governor lock onto the governor shaft with the slot facing the front of the engine with the spring pin pointing downward.
2. Place a flat head screwdriver into the top of the governor shaft. Twist the screwdriver counterclockwise while twisting the governor lock clockwise. Tighten the bolt to 25 inch pounds.



Once the governor lock is on, the governor shaft should not rotate.

## Step 4 – Attach Throttle Cable

(Use part 24)

1. Remove the current throttle cable from your motor
2. Insert the lever end of the throttle cable in the throttle lever of your motor's handle
3. Insert the carburetor end of the throttle cable into the side of carburetor as shown.
4. Tighten or loosen the cable using the cable tension adjuster located on the cable near the lever.
5. If you need to take up additional slack, bend the throttle tube  $\frac{1}{4}$ " as shown. DO NOT OVER BEND.

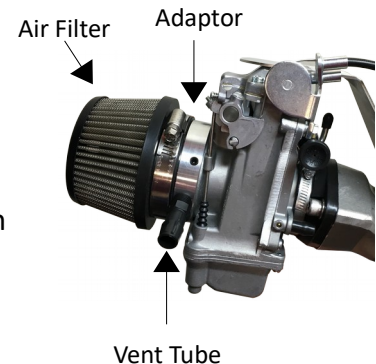
When the cable tension is complete, the engine idles less than 1200 rpm, yet the throttle rotates to its stop at full throttle.



## Step 5 – Attach Fuel Line & Air Filter

(Use part 13, 14, 15, 16, 17, and 18)

1. Attach the fuel line to the carburetor. Tighten in place with the hose clamp.
2. Attach the air filter to the air filter adaptor. Tighten in place with the air filter's clamp.
3. Attach the air filter and air filter adaptor to the carburetor making sure that the hole for the ventilator tube on the adaptor is facing the side of the vent hose that is attached to the valve cover. Tighten in place with set screws  $\frac{1}{4}$ ".
4. Screw ventilator tube in the air filter adaptor and attach the vent hose to the ventilator tube. Tighten in place with hose clamp.
5. Attach the air pre-filter to the air filter.



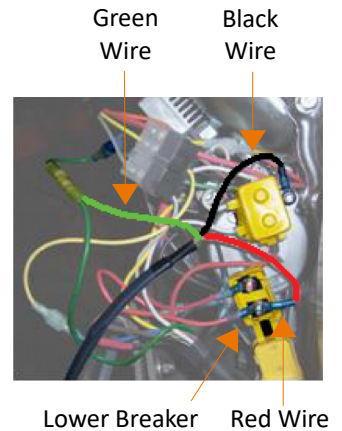
Do not use the air filter cover if it is within  $\frac{3}{4}$ " of muffler. The air filter and carburetor should be covered when stored, especially in cold or wet weather.

## Step 6 – Attach Rev Limiter

(Skip this step for CDI or Black Death motors, uses part 19, 20, 21, 22, and 23)

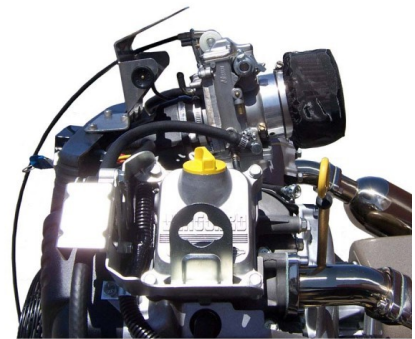
1. Attach rev limiter gasket to the back of the rev limiter.
2. Attach rev limiter to the inside of the boat near transom using self-tapping screws. Do not over tighten the screws. Gasket should be uncompressed to help absorb vibrations.
3. Unscrew the three screws on the wire side cover to remove the wire side cover.
4. Attach a ring connector to the red (white for earlier models) and black rev limiter wires using wire crimpers.

5. Connect the white wire ring connector to the silver circuit breaker stud which is attached to the engine wire harness.
6. Connect the black wire ring connector to the bolt which is holding the circuit breaker. We recommend attaching this ring connector to the upper breaker bolt. This black wire is a ground wire. Do not splice it into other black wires or connect it to the circuit breaker studs.
7. Splice the green wire which connects from the handle to the engine. Attach a butt connector to the engine end of the green wire with crimpers. Attach the other side of the butt connector to the green rev limiter wire and the handle end of the green wire.
8. Shrink the butt connector with a hair dryer.



## Step 7 – Test

1. If you have a fuel line bulb, pump fuel into the carburetor. If you do not have a fuel bulb, you can close the vent on the fuel tank and press in the center of the tank. This will push fuel into the carburetor.
2. Pull out the choke and start the engine. If the engine idle speed exceeds 1200 rpm, the throttle cable is too tight. To create some slack, adjust the cable tension adjuster.
3. Turn the air screw all the way in. Then unscrew the air screw 1 ½ turns to adjust the air mixture.
4. Warm up your engine for 2-4 minutes, set the idle to 1200 rpms using the idle adjust knob.



Carb Kit Installed on a Motor

## Warnings

- If your rev limiter fails, the safety default will shut down the engine and prevent it from starting. If this happens while you are out on the water, disconnect the green wire and start the engine so that you are able to get off the water. Replace the rev limiter immediately.
- The rev limiter's purpose is to restrict a runaway engine, not to set your top engine speed. The rev limiter's life is shortened if you continually rev your engine to the rev limiter max. The rev limiter protects the engine from excessive speeds if you strike an object and the propeller leaves the water.
- Always check the throttle tension and rev limiter before operating. Keep the throttle lever and throttle cable lubricated to prevent freezing.

## Tips & Maintenance

- See the Mikuni manual if you need to make any further carburetor adjustments.
- All motors with a carburetor kit should have a working safety kill switch.
- This carburetor may not meet California air emission standards.
- **Warranty:** You will not be provided Briggs and Stratton warranty service if this carburetor is installed at the time you request warranty service. There is no warranty on this product, expressed or implied.
- **Recommendations:** Replace your fuel filter, use Autolite AP3923 or APP3923 spark plugs, use synthetic oil, use octane fuel 91 or higher, spray WD-40 onto the pre-filter a couple times each season.



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