



# Going Down

Few things finish off the look of a trail-built Jeep like a high-mounted air snorkel. While 90-some percent of the Jeeps on the road and trail sporting a snorkel will never put it to its intended use—fording water that threatens to swamp the stock air intake box—there are other advantages to these systems, such as providing a cooler (denser) air intake charge and breathing “above the dust” when traveling in a caravan.

While high-mounted snorkels have been around for a while, there are scant manufacturers producing them. River Raider Snorkel Systems is a new company that has recently stepped into this aftermarket niche with a fresh spin. Based in Chambersburg, Pennsylvania, River Raider Snorkel Systems is producing high-quality aluminum snorkel kits for a variety of off-road vehicles including, the Jeep CJ, YJ, XJ, TJ and the new JK.

The idea came about when owner Kenny Hauk was in search of a snorkel for his own TJ and was dissatisfied with the current available options. The molded plastic snorkels that were being made seemed to him to be too restrictive and did not allow removal of the passenger-side door. Homemade snorkels constructed of PVC or vent pipe lacked the look and quality desired. After several months and half a dozen prototypes, a design was found that not

**The all-new River Raider Snorkel Systems deliver sharp-looking, bulletproof intake designs for the adventurous Jeep set**  
text and photography by Karl Henderson

only looked tough on an off-road vehicle but, more importantly, met the needs of serious off-roaders.

The all-aluminum design is strong, durable and can take all the abuse of the toughest trails without cracking or breaking. The intake design also forces cold air into the engine’s air intake system, creating horsepower gain and improved fuel efficiency due to the colder, denser air charge. The River Raider snorkel can be painted, powdercoated or polished to fit the desired look. The complete kit comes with all-stainless steel nuts and bolts instead of cheap rivets. Factory bolt locations are used to attach the snorkel to the Jeep, thus eliminating the need in most cases to drill additional holes in the vehicle for mounting the unit.

We recently installed a River Raider snorkel system on a JK. Here’s how it went down...

## SOURCE

**River Raider Snorkel Systems**  
www.riverraider.com  
(717) 262-3079



**1.** Remove the factory air box. Disconnect the throttlebody hose, the breather hose and unbolt the box.



**2.** Remove the intake tube from the factory air box.



**3.** This plastic lip on the air box needs to be trimmed flush with the air box surface as shown. Using a utility knife, trim the plastic lip on the old intake location so that the new block-off plate will sit tight against the air box.



**4.** Take the supplied block-off plate and position it over the factory intake hole, then drill the four mounting holes.



**5.** Apply a healthy bead of 100 percent silicone around the block-off plate mating surface to ensure a watertight seal between the plate and the air box.



**6.** When the silicone has “skinned over,” attach it to the air box with the supplied stainless steel hardware.

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**7.** The new intake location will be positioned on the other side of the air box.



**8.** Trim the three plastic ribs on the side of the air box so that they are flush with the box surface.



**9.** Now take the supplied template marked "JK AIR BOX" and position it on the air box. This will show you where to drill the three-inch hole for the new intake.



**10.** Now drill the three-inch hole in the side of the air box.



**11.** Test fit the new intake bracket. Once it fits, drill the four mounting holes.



**12.** Again, apply a healthy bead of 100 percent silicone to ensure a watertight seal between the air box and the intake bracket, then attach the bracket with the supplied stainless steel hardware.



**13.** Reinstall the air box in the engine compartment.



**14.** For ease of installation we recommend that you carefully remove the passenger-side front fender flare. If, however, you have a second set of hands available, it can be done without removal. The antenna and the battery must be removed to continue. For the proper installation of this system, the battery location must be adjusted.



**15.** At the rear of the factory battery tray there are four plastic gussets that must be removed. You can do this with a utility knife.



**16.** Here you see the gussets trimmed flush. This will allow the installation of the new aluminum battery tray.

**(Right) 17.** The new battery tray is secured with supplied stainless steel bolts, lock washers and nuts. Position the aluminum battery tray with the bent tab upright, facing toward the engine. Leave approximately 3/8-inch between the plastic shield (that is between the engine and the battery) and the new battery tray. Now drill the mounting holes down through the battery tray and into the plastic below, and attach with the supplied hardware.



**18.** The factory battery hold-down is re-used, however, it must be drilled out to accept the supplied 3/8-inch carriage bolt and hardware.



**19.** Now turn your attention to this small unit positioned next to the battery tray that has several black airlines attached to it. We are going to lower it approximately one inch. Begin by sliding it off of its mounting post.



**20.** Remove approximately one inch off the top of the mounting post.



**21.** With a utility knife, shave both sides of the mounting post to allow the unit to slide further down.

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**22.** Now reinstall the unit at its new, lower location.



**24.** Using a three-inch hole saw, drill the hole in the fender. You will be cutting through several layers of metal, so be sure you drill at a 90-degree angle to the surface of the fender to ensure that the snorkel will fit properly.



**26.** Next, remove the top two factory bolts on the passenger-side windshield frame. Now you are ready to test fit the aluminum snorkel and attach it with the factory windshield hardware.



**23.** Moving to the outside, take the supplied template marked "JK FENDER" and tape it to the fender as shown. Be sure that the template lines up with the vehicle body lines as indicated. Mark the center of the hole with a center punch, and drill a small pilot hole. Next, apply painter's tape around the area to be drilled to protect the surrounding paint. You will note that some of the plastic shielding will need to be trimmed on the inside of the engine compartment, alongside the inner fender, to allow the three-inch aluminum tube to pass through. This trimming will allow you to clearly see, from inside the engine compartment, the area that will be cut. Be sure to move any wires or hoses out of the way to avoid damage.



**25.** Remember to paint all bare metal to keep rust from forming.



**27.** A supplied aluminum block-off plate is included to cover the factory antenna location. It can be painted to match your vehicle and siliconed in place.



**(Left) 28.** Reinstall the battery in its new location, making sure to secure it with the factory hold-down. Once the battery is secured, slide one end of the supplied rubber intake hose over the end of the aluminum snorkel tube until it is tight against the fender, then secure it with the supplied hose clamp. Route the new intake hose along the battery, turn and go over top of the unit that you lowered, then over to the top of the factory air box.



**29.** Use one of the aluminum connectors, the supplied 90-degree elbow and the stainless steel hose clamps to connect the intake hose to the top of the air box.



**30.** Loosen the factory air intake hose at the throttlebody and turn the hose counterclockwise, facing down toward the new intake location. Use the second supplied 90-degree elbow, the aluminum connector with the rubber spacer (the end of the tube with the spacer connects to the throttlebody hose) and the hose clamps to assemble the throttlebody intake components. Make sure all of your connections are sealed tight.



**31.** Attach this assembly to the throttlebody intake tube and to the air box as shown.

To finish, reinstall the front passenger-side fender flare. The antenna may be reinstalled on the driver-side fender or any other location using an antenna cable extension. (You may try installing the antenna inside of the fender.)



## FINAL NOTE:

Remember that the installation of this snorkel does not turn your Jeep into a submarine. High-water crossings are dangerous and can cause damage to other mechanical and electrical components of your Jeep unless the necessary precautions have been taken. It is the installers' responsibility to ensure that this intake system is installed correctly and properly sealed if it is to function as designed.