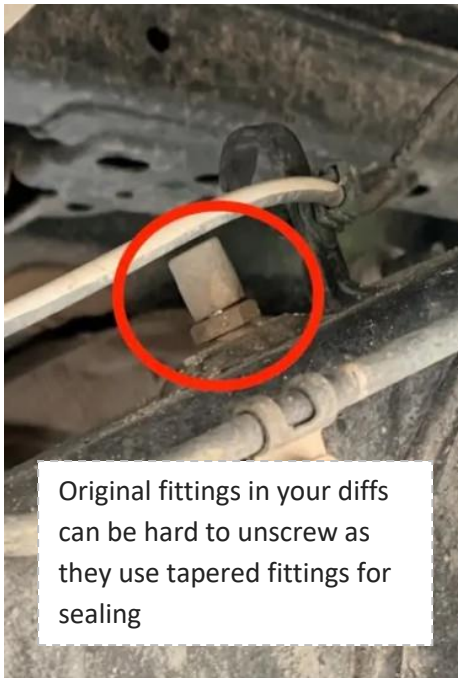


DIFF BREATHER INSTALLATION GUIDE



Step 1: Removing and replacing the Factory Breathers

Start by locating the existing breather vents on your axles (and other driveline components if applicable). Differential breather valves are typically small caps or fittings on top of the axle housing (often on the axle tube or differential casing). Their job is to vent pressure as the diff heats up, but factory breathers usually sit only a short distance above the axle – fine for road use, but inadequate when submerged off-road. Many stock breathers are simple one-way valves (so they can release pressure but then close to prevent siphoning in water). For effective extended breathers, we replace these with open two-way fittings and run hoses to higher ground.



Original fittings in your diffs can be hard to unscrew as they use tapered fittings for sealing



Our fittings come pre-installed with an o'ring and only require light force to seal

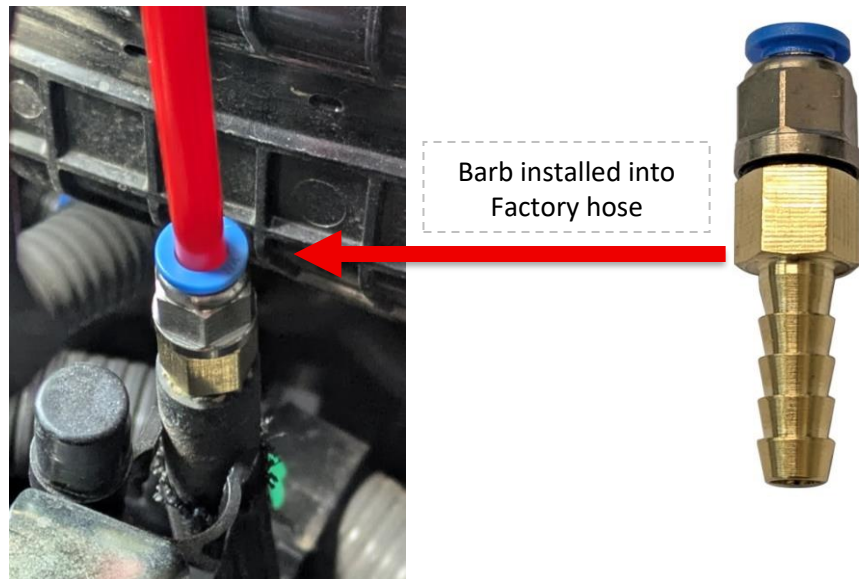


We recommend using an allen key in the center to tighten into the diffs.

- **Removal:** Unscrew or pop off the factory breather. In many 4WD models (Toyota, Nissan, etc.), the breather is a threaded piece (commonly 1/8" BSP thread) that can be unscrewed with a spanner. On some models (e.g. late-model Ford Ranger, Mazda BT-50), the breather uses a metric thread (M8) these can also be unscrewed and replaced with the corresponding M8 adapter from your vehicle specific kit. Use a spanner that fits snugly, and take care not to drop any dirt into the open hole. If the breather is a push-in style cap or a barb pressed into the housing, you may need to pry it off with pliers or a flat screwdriver – they often pop out along with a small spring/valve mechanism

Certain vehicles already have factory breather lines installed which makes it very easy to adapt to if your kit was purchased with the optional barb fittings.

In this scenario, all that is required is to remove the factory breather vent at the end of the hose, then insert the barb fitting along with the push in fitting pre-installed, see image below:



- **Challenging Cases:** Be aware that a few vehicles use non-removable or unusual breather designs. For example, some Suzuki, Mitsubishi, and others have plastic breather caps in place or metal barbed vents welded to the axle. In these cases, you have several options:
 - Mitsubishi vehicles use the replacement nylon breather caps which comes with all specific Mitsubishi breather kits



- Slip-On Method: Leave the original breather in place and attach your extension hose over it. A common DIY solution is to push a short length of fuel hose (approx. 1/4" or 6mm ID) over the existing breather nipple, then clamp it tightly. Remove any little cap or flap valve on the nipple first so it can flow freely. You can then attach the kit's hose into the other end of that fuel hose (using another clamp to secure it). This creates a sealed connection from the old breather up to your new extended line. For a more secure and leak free connection use some silicon between both hose connections.



- Tapping Method: A more advanced approach is to drill out and tap the axle housing for a threaded fitting (if the stock breather won't come out). This involves creating threads 1/8" BSP in the hole to accept the new fitting. If you choose to tap the diff housing, take precautions: cover or plug the diff internals while drilling, and change the differential oil afterwards to flush out any metal shavings – this is considered best practice to avoid contamination. Many off-roaders opt to simply use the slip-on hose method to avoid this extra effort, and it works fine for most DIY installs.

Step 2: Mounting the Breather Manifold (Vent Head)

AOB's breather kits include a manifold where the extended hoses will terminate. This component has multiple ports for the hoses and small filters or vents to let air in and out. Choose a high, protected location to mount this manifold, such as high on the firewall or the inner fender of the engine bay, well above the vehicle's wading depth. Mounting it high ensures that even in deep water, the vent openings stay dry.



When mounting the manifold, keep these best practices in mind:

- **Secure Attachment:** depending on kit purchased it will come with mounting self-tapping screws or bolts. If your firewall has a spare threaded hole or nutsert (for example, some vehicles have unused holes or accessory mounting points), that's an ideal spot to bolt on the manifold. Otherwise, you can drill a small pilot hole and use the provided self-tapping screws. Be cautious when drilling: ensure nothing (wires, components) is directly behind

your drill point. Use short screws that won't protrude too far, and double-check hood clearance so the manifold or bolts won't interfere when the hood (bonnet) closes .

- **Orientation:** Mount the manifold upright so that its filters or vents point upward. This helps keep moisture out.
- **Accessibility:** Pick a spot where you can easily route the hoses to and where you can inspect or service the filters later. High on the firewall, toward the driver or passenger side, is common. Just avoid extremely hot areas (like right next to exhaust manifolds or turbochargers) – keep the manifold and lines away from significant heat sources to prevent heat damage to the tubing

Step 3: Routing and Connecting the Breather Hoses

With the new fittings on your axles and the manifold mounted, the next step is to run the Polyethylene tubing (LDPE) from each breather fitting up to the manifold. Proper routing is key to a reliable setup – you want to avoid any kinks, sharp bends, or low spots in the lines, and keep them safe from heat or moving parts.

- Always start from the rear diff as this is the longest run as all other fittings are located in or close to the engine bay.
- **Attach Hoses to the Diff Fittings:** simply cut the tube end cleanly and push it firmly into the fitting until it bottoms out.

You should feel it seat; give it a light tug to confirm it's locked – the internal teeth will grip the tube.

Tip: When cutting the tube, use a straight cut (no angled or ragged cuts) so the push-connect O-ring can seal around it.

- **Secure the Lines:** Use the provided cable ties to anchor the breather hoses along the chosen path. Every foot or two, tie the hose to a stable point (like a brake line, frame member, or existing bracket). This prevents the hose from dangling or getting snagged. Make sure the hose has enough slack near the axle to accommodate suspension travel. Common practice is to follow the rubber brakes lines from the diff as these have plenty of length to allow for full travel of suspension

- **Avoid Heat and Moving Parts:** Keep hoses away from hot exhaust pipes, mufflers, engine components, and sharp edges. If a hose must pass near a heat source, consider using a heat-resistant sleeve or reroute it to the other side of the frame to maintain distance. Likewise, ensure hoses are clear of any pinch points or linkages. A common routing is up into the engine bay along the corner, which keeps lines away from the engine block. Once near the top of the firewall, route the hoses to the manifold location. You can often tuck them alongside other loom or use additional zip ties to secure them out of sight for a neat install.
- **Connecting to the Manifold:** Cut each hose to length so it reaches the manifold without a lot of excess (but leave a little slack to account for engine rocking or slight movements). Labeling which hose is which (front diff, rear diff, etc.) with tape can be handy for future troubleshooting, but it's optional. Push the hoses into the manifold ports.