RENNKIT

Converting 997 Carrera Lid to Turbo Lid

Convert standard 997 Carrera Lid to the 997 Turbo Lid with eRam Wing Actuation

Note: Content below is predominantly from a forum thread describing installation of the lid and wing assembly from a 997 Turbo to a Carrera S with the author's permission.

The Turbo lid is the same for 997.1 and 997.2 models. Similarly, it will fit both 997.1 and 997.2 Carrera models. The cabriolet wing however, extends a full inch further than the coupe wing. A narrower aftermarket air intake is needed. The airbox is 1/4 inch too wide on the right side and in the way of the hydraulic cylinder on the wing on the right side. A good option is the Fabspeed dual cone intake, which also provides a nice intake growl.

When looking for a Turbo lid and wing assembly, try to make sure you get one that includes the wing blade itself (retails at $6383 alone!), fan, shroud, lighting, latch, etc. Finding one with working hydraulics is NOT necessary however, and the purchaser should negotiate a lower price. Original deck lids off of Turbos always have a part number of 997.512.**2**21.00 (whether a 997.1 or .2). The replacement deck lids in parts diagrams may have different number: 997.512.**9**21.00. The deck lid I used for the following 2009 S conversion has the 221 part number. A part diagram will show the 921 version has two lamps, the 221 version only has one lamp mounted in the center (as you will see in photos in later posts). Coincides with a change in the wiring harness number from 997.622.670.00 to 997.622.670.01, the newer harness adds a connector for a second light.

Optionally replacing the cowl panel between the back window and deck lid is possible. Turbos utilize a brake light in the wing thus they do not have the brake light in the cowl panel. Swapping out this panel is described as well. The high mounted brake light does all of the right things too. Its behavior is slightly different that the normal Carrera that switches to the light in the spoiler when the spoiler is up. Instead, the Turbo lid will default to the deck lid duck tail (just below the wing) light, with the light below the rear window always disabled...if you keep it and don't replace that panel.

The electrical connector from the Turbo lid is plug-and-play. The wiring harness plugs right in and powers the eRam actuators, fan and light(s). The wing will raise and lower at the same highway conditions as the stock Carrera spoiler, and it responds to the spoiler up/down button as well.

It is not necessary to change the stock hinges to the Turbo hinges. A Turbo lid comes with two dampers installed with a different left-side hinge. Fortunately, a single damper in perfect health holds up the lighter deck lid (because of the lighter eRams) so there is no need to change out the left hinge to the Turbo hinge.

Below are part numbers that may be needed depending upon the used Turbo lid purchase. Check other sources such as AutoAtlanta or Sunset Porsche for parts at a discount. Your local dealer may offer price matching which makes it easier to return something.

- 997.512.221.00 Deck lid from an original Turbo
  OR
  997.512.921.00 Deck lid from parts catalogs
- 996.512.987.00 Adjustable bumper (2)
- 997.624.056.05 Fan assembly (includes sleeves and spacers)

- 900.378.223.09 Fan bolt (4)
- 997.632.201.00 Lamp
- 997.622.670.00 Wiring harness (1 lamp)
  OR
  997.622.670.01 Newer wiring harness (2 lamps?)
- 997.631.052.01 Red center brake light
- 997.110.171.01 Intake duct left
- 997.110.172.01 Intake duct right
- 999.591.712.40 Intake duct retainer (2)
- 997.504.445.01 Upper panel from an original Turbo (no upper brake light slot)
  OR
  997.504.345.01.GRV Upper panel from parts catalogs (no upper brake light slot)

Note on Intake Ducts: If the factory airbox is modified to fit the eRams, these are needed as the openings dump out in the wrong place. It's possible to leave the ducts off since the openings in the deck lid are a better matchup for the factory airbox intakes. With a Fabspeed dual-cone intake, the ducts drop the air right on top of the cones.

Below is a typical donor deck lid. Note the hydraulics are in place and it includes the latch and the single lamp in the center. The wiring harness is not included.

Disassembly

Once a donor Turbo lid with wing assembly is obtained, disassemble and clean before sending to a paint shop for a Porsche-quality finish to match your car.

Remove the wing, which must be extended. If the hydraulics are operational, there are two ways to do this.

1. The easiest and safest way is to move the lid near the car, use the proper harness to hook it up temporarily and then extend it using the dash switch.

2. Another option is to use a 12 - 14 volt power supply (e.g. batter charger) and apply power directly to the pump motor contacts. Briefly touch the leads to the two male spade terminals. If the wing begins to move out, you have the polarity correct. If the wing does nothing, the polarity is not correct, or the motor / hydraulic system is defective. If the wing bumped out, provide power until the wing is out far enough to access the spanner holes in the chrome hydraulic tubes.

CAUTION: Do not drive the motor too long or damage may occur, including rupturing the hydraulic system and spraying Pentosin fluid (corrosive and flammable) - be extremely careful, wear safety gear and a face shield.

The OEM hydraulics extends the wing only 1.6 inches (~40mm) for the coupe and 2.4 inches (~60mm) for the cabrio, note photos below.

Once the wing extended, look for a small hole just below the wing connection in the chrome cylinder. This cylinder is actually made of nested parts. The outer cylinder rotates independently of the fitting that screws into the wing. This clever design allows the hole to rotate into a "closed" position so that water doesn't flow into the cylinder annulus.

Rotate the outer hole in the cylinder to align with the inner hole on the fitting that screws into the wing. See below; outer cylinder in the “closed” position.

The outer cylinder may not rotate easily. One method is to use duct tape into a half-inch wide strip placed around the cylinder and use a pair of channel lock pliers, applying as little pressure as possible, to rotate it until the holes line up. Another method is to use a Pin Wrench (available here: www.RennKit.com/purchase):

A short piece of heavy pipe over the pin wrench handle may be necessary to get enough leverage to break the threads loose as Porsche used a thread lock compound. See below; holes lined up.

Once the outer and inner holes line up, use a spanner wrench to unscrew the cylinders from the wing (clockwise from above the wing).
Note: There isn't a lot of space to work – take care to protect the finish and not scratch the paint.

Remove the hydraulic rams (3 bolts each side) and power unit (4 acorn nuts). Strip off all other components and wiring from the Turbo lid. It is now ready to prep and send out for painting. Below is a repainted lid, wing and cowl:

CAUTION: Be sure the paint shop masks off the flat black finish inside the grills, otherwise there will be "overspray" inside this area, as shown:

Reassembly of Lid Components

Install all components onto the deck lid before putting the deck lid on the car. Install the brake light in the deck lid spoiler (duck tail). Position to insure the shape matches with the shape of the opening. The two spring-clips simply snap in. Here is a photo from the inside showing on of the clips locked in position:

Install the wiring harness along well-defined channels in the deck lid:

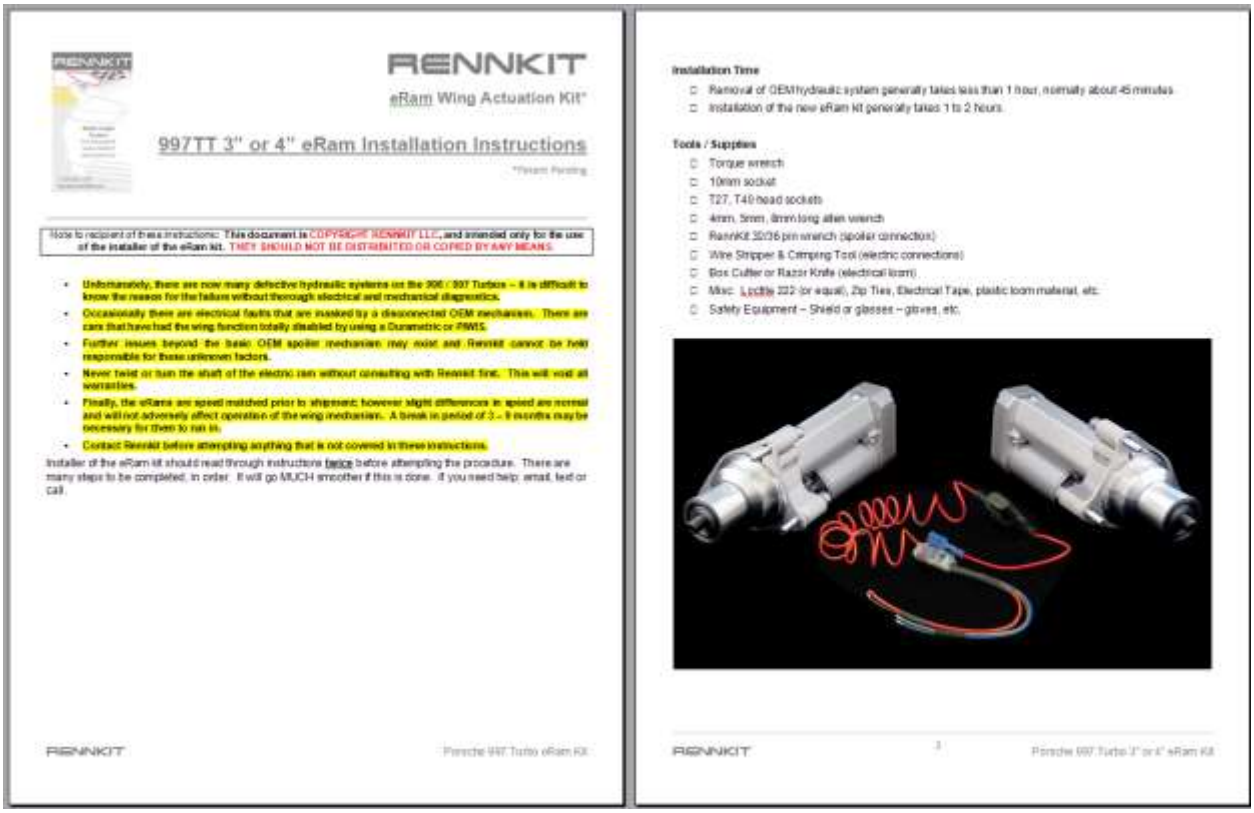
Run the cable for the light out through the opening, plug in the light, and snap into place:

Plug in the brake light:

Install the 2 black rubber bumpers that screw into the bottom edge of the deck lid. They will be adjusted later for final fit.

eRam Installation

Complete instructions are provided for the eRam kit install (first 2 pages shown):



RENNKIT

eRam Wing Actuation Kit*

997TT 3" or 4" eRam Installation Instructions

*Patent Pending

Note to recipient of these instructions: This document is COPYRIGHT RENNKIT LLC, and intended only for the use of the installer of the eRam kit. THEY SHOULD NOT BE DISTRIBUTED OR COPIED BY ANY MEANS.

- Unfortunately, there are now many defective hydraulic systems on the 996 / 997 Turbos – it is difficult to know the reason for the failure without thorough electrical and mechanical diagnostics.
- Occasionally there are electrical faults that are masked by a disconnected OEM mechanism. There are cars that have had the wing function totally disabled by using a Durametric or PIWIS.
- Further issues beyond the basic OEM spoiler mechanism may exist and Rennkit cannot be held responsible for these unknown factors.
- Never twist or turn the shaft of the electric ram without consulting with Rennkit first. This will void all warranties.
- Finally, the eRams are speed matched prior to shipment; however slight differences in speed are normal and will not adversely affect operation of the wing mechanism. A break in period of 3 – 6 months may be necessary for them to run in.
- Contact Rennkit before attempting anything that is not covered in these instructions.

Installer of the eRam kit should read through instructions twice before attempting the procedure. There are many steps to be completed, in order. It will go MUCH smoother if this is done. If you need help: email, text or call.

RENNKIT Porsche 997 Turbo eRam Kit

Installation Time

- Removal of OEM hydraulic system generally takes less than 1 hour, normally about 45 minutes
- Installation of the new eRam kit generally takes 1 to 2 hours.

Tools / Supplies

- Torque wrench
- 10mm socket
- T27, T40 head sockets
- 4mm, 5mm, 6mm long allen wrench
- RennKit 30/36 pin wrench (spoiler connector)
- Wire Stripper & Crimping Tool (electric connections)
- Box Cutter or Razor Knife (electrical loom)
- Misc: Loctite 222 (or equal), Zip Ties, Electrical Tape, plastic loom material, etc.
- Safety Equipment – Shield or glasses – gloves, etc.

RENNKIT 3 Porsche 997 Turbo 3" or 4" eRam Kit

At this point, all of the deck lid internals are assembled except for the ducts and wing. The ducts will be installed just before the deck lid is installed on the car. The wing will be installed after the lid is fitted to the car.

Remove the OEM Carrera Lid

Use high quality masking tape to protect the edges:

Disconnect the electrical connector to the right of the right side hinge. Do not to pull hard on individual wires. The connector may be difficult to unplug. Push the release and wiggle / pull on the connector housing and bundle. It may be easier to press down on the spring metal release using a stubby screw driver through the slot shown below. It is a strong spring clip, but when firmly pressed, will release. The connector also has an o-ring seal that makes it tight.

Remove the lid from the hinges. Remove the two bolts on each side that attach the deck lid to the hinge. This is likely a two person job.

Note: Remove all masking tape to avoid damage to the paint.

Optional - Cowl Installation

Instructions to change the upper cowl panel which removes the existing Carrera high-mount 3rd brake light. With the lid off, replacing the cowl is much easier. Remove the 3 dark Torx bolts at the bottom of the panel.

There are two nuts holding the cowl in and must be accessed from inside the car. First, remove the vertical carpeted panel just below the window. There are clips at the top holding it in. Pull this panel straight out, preferably with plastic trim removal tools in order to avoid scratching the glass or tint film. Insert a tool, or two along the top edge and pull straight out, it should unsnap with some effort.

Below are the clips along the top edge - as removed. Pull lightly from the bottom, with excess force the clips will be bent (but they bent back easily).

There are two recesses that house the nuts holding the outer panel on. To remove, it is helpful to have a second set of hands to hold the panel steady from the outside while you remove the nuts. Be sure to keep the panel fully engaged against the car when removing each nut, to keep the bolt as far downward as possible. This helps keep the bolt as close to the opening as possible so the nut is not dropped inside the recess. It would be difficult to recover and i might rattle.

With the bolts removed, carefully lift the panel and unplug the light connector before lifting too far. Place towels to rest the panel against at this point to make sure nothing gets scratched.

To slide the connector out, unsnap the light first. Two hands help with all of the different snaps. Several black snaps have to be disengaged, then the white spring-loaded clips can be released. Squeeze the releases on the connector. Slide the light out of the way. It can be replace it as soon as the connector is removed. Remove the Carrera cowl panel.

Wrap the connector and wire in padded electrical tape or similar to prevent rattling when stowed away in the recess under the Turbo cowl panel. Installation of the Turbo cowl panel (without 3rd brake light) is the reverse process.

It is possible to adjust the gaps on the panel, both horizontally and vertically. Install it firmly enough to hold in place, but as close to the back window as it will go so it doesn't risk colliding with the new deck lid once installed. The gaps can be adjusted later - once the new deck lid is mounted. The screws are harder to get to but are reachable. Be careful to protect the surrounding area when doing the final adjustment and tightening since there is limited access to the Torx bolts.

Install the Deck Lid

Prior to installing the Turbo deck lid, use masking tape along the edges of the new deck lid. Normally this is a two person job.

With the hinges up, and a helper holding the deck lid up, carefully place the new deck lid into the slots in the hinges attempting to minimize sliding around. Align the bolt holes in the new deck lid with the marks left by the bolts from the other deck lid. The lift assist should still be connected holding the right hinge firmly in place. Start with the bolts in the right side first, tighten firm, but not over tight, in the exact same place as before:

Next, put the left side bolts in and tighten until firm. Check that both sides are still in proper placement and tighten enough that the deck lid is not loose. Carefully test that the deck lid is firmly held on both sides, then gently lower it. DO NOT fully close the deck lid.

If retaining the original air intake box, or have an aftermarket air intake, check for a clearance problem. Check on all edges of the deck lid to insure clearance on the top and fenders on both sides. With the deck lid nearly closed, check for misalignments. If the upper Turbo cowl panel was installed, it should be positioned as close to the rear window, a wide gap is visible. Perform deck lid alignment first, then move the upper panel down to match up.

Only loosen/adjust/tighten the minimum number of bolts needed each time and after a couple of tries everything should start lining up.

Once you are certain that gaps are aligned, nothing is going to bump and the latch is lining up correctly - gently shut the deck lid. Adjust the bumpers at the bottom edge to align the lid with the fenders. With the lid closed check for uneven gaps or vertical misalignments with the fenders and upper panel. Adjust the upper cowl panel into place to align the gap once the deck lid is well aligned.

Check fan clearance to the MAF upon closing the deck lid the first time. Using a Fabspeed carbon fiber intake, the MAF sensor mounted on the end touches the Turbo fan assembly. This is mitigated by removing the plastic shroud on the fan as shown below:

If the Fabspeed intake is stainless, the MAF is positioned differently and provides clearance for the fan. Below are pictures of both the carbon fiber and the stainless intake versions. Note that the MAF mount is closer to the engine and more forward of the fan on the stainless version:


Fabspeed Carbon Fiber (left) and Stainless Steel (right) Y-Tubes

Here are examples of one-sided air filter arrangements with enough clearance for eRams:


Once all gaps and alignments are looking good, check that deck lid bolts are tight (but don't strip!). Tighten exterior Torx bolts and the interior nuts on the inner side of the cowl panel. Reinstall the carpeted panel. Plug in the electrical connector and install the air ducts.

Install the wing – see the RennKit eRam instructions.

Check operation of lid accessories:

- Wing up/down
- Fan
- Interior light(s)

Below are a few 997 Carrera conversions to the Turbo tail:


911


Turbo


Carrera 4S


911

ADDENDUM

Forum Threads

6SpeedOnline

Turbo Wing on 997.2 C2S: http://www.6speedonline.com/forums/997/208788-turbo-wing-997-2-c2s-3.html#post4581314

Turbo wing installed: http://www.6speedonline.com/forums/997/328660-turbo-wing-installed.html

Update: 997TT wing on a non turbo 997... install still going on!: http://www.6speedonline.com/forums/997/149455-update-997tt-wing-non-turbo-997-install-still-going.html

2006 997.1 4s with turbo wing ?: http://www.6speedonline.com/forums/997/329953-2006-997-1-4s-turbo-wing.html

Ok need some help. Turbo deck lid swap: http://www.6speedonline.com/forums/997/282101-ok-need-some-help-turbo-deck-lid-swap.html

Picture of my 997 with Turbo lid as promised: http://www.6speedonline.com/forums/997/284198-picture-my-997-turbo-lid-promised.html

997 Turbo wing on a 997S: http://www.6speedonline.com/forums/997/208779-997-turbo-wing-997s.html

997TT wing on 997 C2S: http://www.6speedonline.com/forums/997/188568-997tt-wing-997-c2s.html

997TT wing pics updated....: http://www.6speedonline.com/forums/997/150386-997tt-wing-pics-updated.html

Turbo wing on 997s?: http://www.6speedonline.com/forums/997/73244-turbo-wing-997s.html

Rennlist;

Installing a wing from a Turbo on my C2S: http://rennlist.com/forums/997-forum/838304-installing-a-wing-from-a-turbo-on-my-c2s-8.html#post13754351

996 turbo spoiler on c4s?: http://rennlist.com/forums/996-forum/934715-996-turbo-spoiler-on-c4s.html

Help about spoiler !!!! Turbo on a 996 carrera2 1998: http://rennlist.com/forums/996-forum/923433-help-about-spoiler-turbo-on-a-996-carrera2-1998-a.html

Can I make an '03 996 Turbo spoiler fit my 99 C2?: http://rennlist.com/forums/996-forum/906874-can-i-make-an-03-996-turbo-spoiler-fit-my-99-c2.html

996 twin turbo trunk and wing on c2 narrow body: http://rennlist.com/forums/996-forum/676049-996-twin-turbo-trunk-and-wing-on-c2-narrow-body-2.html

FACTORY PORSCHE 996 tt wing and trunk fitted on to 996 c2. finally finished: http://rennlist.com/forums/996-forum/722154-factory-porsche-996-tt-wing-and-trunk-fitted-on-to-996-c2-finally-finished.html

Turbo wings on non-Turbo cars?: http://rennlist.com/forums/996-forum/355284-turbo-wings-on-non-turbo-cars.html

Turbo Wing for narrow body?: http://rennlist.com/forums/996-forum/310342-turbo-wing-for-narrow-body.html

996 T/Tail on narrow body 996 cab: http://rennlist.com/forums/996-forum/275602-996-t-tail-on-narrow-body-996-cab-3.html

Any C4S guys install a Turbo Tail?: http://rennlist.com/forums/996-forum/129702-any-c4s-guys-install-a-turbo-tail.html

Renntech

OEM Turbo Spoiler on my C4S Cab: http://www.renntech.org/forums/topic/6669-oem-turbo-spoiler-on-my-c4s-cab/

Turbo Rear Deck Lid+spoiler On C4s: http://www.renntech.org/forums/topic/1604-turbo-rear-deck-lidspoiler-on-c4s/#comment-7047