



## STaSIS Engineering Alcon Monobloc Brake Kit

### Front Brake Kit Installation Instructions: 2 piece rotor, Alcon Monobloc caliper

Qty.	Description
1	Alcon floating rotor vaned left
1	Alcon floating rotor vaned right
1	STaSIS vented rotor hat left
1	STaSIS vented rotor hat right
1	Alcon caliper differential bore left
1	Alcon caliper differential bore right
2	STaSIS caliper mounting bracket
4	M12 x 1.75 socket head cap screw
4	M12 Serrated Belleville washer
1	Goodridge DOT/TUV brake line kit with caliper adapters
1	Motul 5.1/RBF600 Brake Fluid (500ml)
1	Brake Pads

### Installation Guidelines

- Torque all fasteners to specification. Do not use an impact wrench.
- The rotors are side-specific, rotational direction is labeled. Open portion of crescents face toward the direction of rotation.
- The rotors have been dynamically balanced by machining the outer edge. Flat spots along the outer diameter are normal and will not affect the performance of the rotor.
- Tighten hydraulic connections with a line wrench.
- Bleed brakes properly to assure proper brake operation; the use of a power bleeder is recommended.
- Ensure all ABS sensor and Pad wear sensor plugs are reconnected.
- Proper pad bedding is essential to proper brake operation.
- Initially drive the car with low braking force to check brake operation; then follow all steps listed in the bedding process outlined at the end of this instruction manual.
- During bedding do not thermally shock the rotors with aggressive braking before the rotors have come up to temperature. Cracks on new rotors can form due to thermal shock. Gradually increase brake pressures as instructed in the bedding procedure.
- After bedding brakes re-torque wheel nuts to proper torque specifications.
- If vibration occurs during normal usage, check for abnormal pad wear deposits on the rotor. Double check all fasteners and repeat the bedding process 2-3 cycles until the pad deposits on the rotor becomes uniform.
- If the vehicle is driven in adverse weather conditions, STaSIS Engineering recommends annual cleaning and inspection of the rotor crescents. A common source of vibration can be attributed to dirt completely filling in the crescents on the inboard side of the rotors which in turn will not allow the pad to function properly.
- Brake rotor wall thickness wear limit is 1.0 mm per side of rotor. Rotor face runout limit +/- 0.010 in, when taking measurement make sure rotor is tightened down to the hub at all 5 bolt locations.



## STaSIS Brake Kit Limited Warranty

### Lifetime Limited Warranty

Stasis Engineering warrants its line of Alcon based brake kits against manufacturing and material defects for the lifetime of its operation to the original retail purchaser (referred to as "consumer" herein). This warranty cannot be transferred to another individual or entity and is limited to the following listed terms and conditions-

- Included Warranty Card must be returned after installation for warranty terms to be in effect. If no warranty card is on file for the consumer requesting the warranty, all terms will be null and void.
- Limited warranty covers parts against manufacturing, material, and workmanship defects.
- Brake pads are considered wear items and are not covered after installation and initial use.
- Warranty claims for brake system vibration and noise from the rotors must be evaluated and inspected by STaSIS Engineering for approval.
  - Due to the high performance aspects of this brake system, STaSIS Engineering recommends annual inspection and cleaning of the rotors and pads. If excessive pad deposits are found, the consumer is recommended to follow the bedding procedure cycle until the vibration has dissipated. See cleaning and bedding instructions.
  - Brake system vibrations attributed to uneven pad deposits, pad deposits of dissimilar material (changing the pad compound), overheating, and/or improper cleaning of rotors and pads, is not covered under this warranty.
  - Brake rotor wall thickness wear limit is 1.0 mm per side of rotor. Warranty coverage does not apply to any rotors with over 0.75mm of wear per side
- For brake system vibration issues deemed not to be covered under this warranty, STaSIS Engineering offers a rotor surface grinding service.
  - Consumers must schedule service directly with STaSIS Engineering, parts must be returned with a STaSIS issued RMA number which is issued when scheduled.
  - Service consists of a surface grind on both sides of 2 brake rotors. Grinding will remove all traces of pad material on the surface and the depth of grind is minimal and will not affect service life. Cost to consumer - \$249.00 per pair plus any applicable shipping charges.
  - Rotor grinding service requires a minimum of 7-10 days service time.
  - Consumer will be advised of any added costs from worn or damaged parts requiring replacement before re-assembly.
- Caliper piston seals are warranted against leakage and faulty functionality for 30 days after the purchase date. If there are piston retraction issues after usage, piston seal rebuild kits are available to the consumer - \$130.00 per kit per pair of calipers. A complete caliper rebuild service is also offered through STaSIS Engineering - \$350.00 per pair.
- Corrosion damage due to environmental conditions is not covered under the lifetime warranty
- STaSIS Engineering reserves the right to make changes to the design of the assembly without assuming any obligation to modify or update any products previously manufactured.
- Warranty will be honored based on the evaluation and the discretion of STaSIS engineering. All warranty requests honored by STaSIS will include all return shipping costs at the calculated ground shipping rate. If expedite service is requested, customer must cover the cost difference.

## STaSIS Brake Kit Limited Warranty

**INDEMNIFICATIONS:** Customer agrees to indemnify, hold harmless STaSIS, the STaSIS authorized dealership, and Audi of America against any and all claims, actions, and damages including injuries to persons and/or death or disease arising or alleged to arise, in whole or in part due to the performance enhancement of the vehicle.

**EXCLUSIONS:** STaSIS only warrants parts sold in, and installed on, automobiles built to United States and Canada specifications. "Defects in material and workmanship" shall not include the effects of normal wear and tear of a part installed on a performance-enhanced automobile.

This Limited Warranty is void if STaSIS or its designated representative determines that the STaSIS part has been subjected to alteration, neglect, misuse or abuse; if any repairs have been attempted by anyone other than STaSIS or its designated representative; or if failure is caused by accident, acts of God or other causes beyond the control of STaSIS. Neglect, misuse and abuse include any installation, operation or maintenance of the automobile or part not in conformity with the instructions contained in the documentation provided with the automobile and part or otherwise available from automobile manufacturer or STaSIS.

**LIMITATIONS:** No agent, dealer, distributor, service company or other party is authorized to change, modify or extend the terms of this Limited Warranty in any manner whatsoever.

**DISCLAIMERS:** STaSIS and its representatives shall not be liable for any injury, loss, cost or other damage, whether incidental or consequential, arising out of any defect covered by this Limited Warranty, including, without limitation, towing charges, rental car fees, labor for installation and removal of the product(s), loss of use of the automobile while it is being repaired, or damages resulting from the enhanced performance of the automobile, even if STaSIS has been advised of the possibility of such damage. The liability for materials and workmanship of STaSIS under this Limited Warranty, if any, shall not exceed the sum of the original amount paid for the defective product. These disclaimers shall be equally applicable to any service provided by STaSIS or its designated representatives.

**LEGAL RIGHTS:** This Limited Warranty gives purchasers of STaSIS parts specific legal rights. Purchasers/consumers may have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply.

## Installation Instructions

- 1) Using some brake cleaner clean the brake line connection at the body flange. Remove all dirt and debris from this area and from the line connection threads so that no dirt will get into the new brake line when it is installed.
- 2) Remove the ABS sensor wire from the holding bracket on the brake caliper to facilitate removing the caliper. You may also find it easier to remove the bracket as well to get to the upper caliper bolt. Remove caliper mounting bolts. These are the bolts holding the caliper mounting bracket to the upright. Save these bolts as they will be re-used. Remove caliper and support it so that the brake line is not under tension.
- 3) Remove the brake rotor. Clean the hub, removing all rust from the rotor mounting surface, the rotor pilot and wheel pilot. Apply some anti-seize to the pilot surface to prevent rotors and wheels from sticking in the future. Do not get any anti-seize on the rotor mounting surface of the hub.
- 4) Sort the parts in the brake kit for right and left side. Brake bleeders go on top. Caliper mounting brackets are universal. The caliper adapters included with the Goodridge line kit are situated with the flat end going into the caliper (with the crush washer) and the pointed end exposed for the stainless steel -3 line.
- 5) Replace the front brake lines. To avoid excessive fluid loss, install the new line immediately after removing the stock one. The new line comes with a plastic plug in the banjo fitting. This will not seal enough to eliminate fluid loss, but a rubber boot should. Otherwise immediately connect the line to the new caliper. Use an 11 mm line wrench on the hard line nut and a 16 mm wrench on the flats on the flex line hose end remove the hard line from the stock flexible line and remove the stock caliper and line from the vehicle completely. Clean the body flange, the spring clip and hard line nut with brake cleaner and install the new flexible line using the stock spring clip under the hard line nut.
- 6) Install brake pads in calipers. Remove cable tie holding anti-vibration spring to caliper cross bolt if present from shipping (Alcon calipers).
- 7) Install caliper mounting brackets using the stock mounting bolts and torque to 92 ft lbs. The bracket will mount to the backside of the upright. Make sure the proper face is mounted against the upright (as indicated on the mounting bracket). The OEM bolts will go through the mounting bracket from the inboard side and thread into the upright.
- 8) The new brake rotors are heavy and will not retain themselves on the hub without the caliper and pads in place. Do not place the rotor on the hub without retaining it by some method or holding it there until you can get the caliper in place and bolted down. The best solution for this is to use a washer and a stock lug bolt to retain the rotor while you install the caliper.
- 9) Place the rotor on the hub. Place the caliper with the pads loaded onto the caliper mounting bracket and install the caliper mounting bolts M12 x 1.75 and torque to 70 ft lbs. If the caliper will not go over the rotor because the pads are too close together you will have to push the pads back using a pad spreader.

- 10) Assure that the brake rotor spins freely at this point, making sure that the rotor is flush on the hub when you are checking this.
- 11) Remove the plastic plug from the brake line and quickly attach it to the caliper. Using 2 wrenches hold the line so that it curves down and away from the drive shaft with one wrench and tighten the line nut with the other. Once tightened, turn the wheel to verify that the line does not interfere with anything. Correct any interference problems by rotating the line until it positions itself in the proper place. Be certain that the brake line does NOT point towards the half shaft as under full lock the line can contact the drive shaft.
- 12) Wrap a large tie wrap around the upright at the hole where the ABS sensor wire is coming out of so that it is centered on the hole and tighten securely. Wrap the small tie wrap around the ABS sensor wire sleeve and the large tie wrap to support the wire in place of the factory caliper support bracket. If you are installing the Brembo Audi 4 piston calipers, you can reuse the factory ABS and brake wear bracket.
- 13) Optional, but RECOMMENDED: If you are using brake pads without wear sensors you may wish to create a dummy replacement for the pad sensor line. To do this remove the brake pad wear sensor from the stock pads. Cut the lines from the sensor on the OEM brake pads about 3 inches from the connector. Slip a piece of heat shrink insulation over one of the wires and solder the two together. Shrink the insulation over the soldered connection.
- 14) Plug in the pad wear sensor or the pad wear sensor replacement as built above.
- 15) Bleed the brakes using fresh high quality brake fluid. A power bleeder is highly recommended. There are two bleeders on each front caliper. Bleed the outers first until no air, then the inners until no air, wait 10-15 minutes. Power bleed again only this time turn the ignition on/engine off and stroke the brake pedal 5 times when each bleeder is open. This will assure a proper bleed with the ABS equipped system. Tighten all bleeders securely.
- 16) Clean all brake line connections with brake clean and compressed air so that they are clean and dry. Start engine and pressurize brake system several times and check for leaks at all the brake line connections. Correct any leaks before driving the vehicle.
- 17) Check the clearance between the wheels and the new brake calipers. Assure that there is at least 1/8", (0.125") between the wheel and the caliper.
- 18) Verify that all bolts are tight and torque the wheel lug bolts. Test drive the car using the brakes gently.

**WARNING:** Do not test the ultimate performance of the brakes until they are bedded in.

**IMPORTANT:** Make sure to put anti-seize on the threads of the caliper mounting bolts. Check wear of threads each time brake pads are changed, and apply anti-seize before reinstalling calipers. Torque to 70 ft. lbs.

## STaSIS Bedding Procedure

After installing new pads, rotors, or both, it is necessary to properly bed the pad to the rotor before using the brakes to their full capacity.

### What is bedding?

Bedding is the process of depositing a layer of pad material (often called the *transfer layer* or *transfer film*) onto the surface of the rotor. Brake rotors used on OEM style brake systems do not require this transfer layer as the braking system is relying on friction between the pad and the rotor material to slow the vehicle down. On STaSIS rotors, the bond between the pad and the transfer layer is much stronger and the frictional characteristics of the pad/transfer layer interface are far better than those of a pad/rotor interface. It is therefore crucial to bed pads properly to ensure the reliability, performance, and longevity of your STaSIS/ALCON brake system.

### When should I bed pads and rotors?

Bedding is recommended whenever you install new pads or rotors, or experience vibrations while braking.

- For new pads and rotors, bedding allows the manufacturing resins in the pads to burn off slowly to avoid uneven deposits or pad glazing. Bedding also allows the rotors to relieve any thermal stresses incurred during the manufacturing process.
- Vibrations felt through the brake pedal are most commonly a result of uneven pad deposition, which is remedied by re-bedding the existing components.

### Bedding Process

1. Upon initial installation do not bed the rotors immediately. Drive the vehicle with normal to light braking for 1-2 days to allow the pad and rotor surfaces to conform better before bedding in at higher temperatures.
2. Find a suitable road. You will need a relatively straight road with minimal traffic where you can safely (and legally!) reach speeds up to 65 MPH.
3. Once the car has been driven with light braking for a few miles to bring the rotors up to the proper operating temperature, bring the car up to approximately 65 MPH. Gently apply constant pressure (about 10%) to the brakes, bringing the car down to about 20 MPH.
4. Accelerate briskly back to 65 MPH. Apply the brakes again, however this time use more force (about 20%).
5. Repeat steps 2 and 3, each successive time applying more pressure. Your last two brake applications should engage or nearly engage the ABS system.
6. Do not immediately stop the vehicle with your foot on the brakes after step 5, the concentrated heat from the pad sitting on a non-rotating rotor will warp the rotor. Drive vehicle using absolutely minimal brake application to cool the rotors to ambient temperature (freeway driving).
7. Once the system has cooled, repeat the entire process.

After completing two heat cycles on the rotors, check the rotors for an even, slightly hazy coating (often with a slight blue tint). Any spotting or blotches indicate uneven pad deposition. Repeat the process until the rotor surface is even.