

INSTALLING, BEDDING-IN & MAINTAINING YOUR NEW APOLLO SERIES BRAKE CALIPERS

Contents	
SECTION 1	Installation Instructions
SECTION 2	Bedding-in & Driving Tips
SECTION 3	Maintenance & Servicing Guidelines

WARNING

By purchasing this brake caliper as an individual component and not part of a manufacturer developed brake kit the purchaser expressly acknowledges, understands and agrees that they alone bear the full responsibility for ensuring that the chosen product is suitable for their intended application and is fit for purpose. Care must be exercised by the purchaser to ensure that the chosen brake caliper is compatible with other components of the vehicle's braking system and that the specified caliper operating conditions for the caliper model chosen are not exceeded under any circumstance when in use. Considerations may include, but are not limited to, selecting the appropriate combined caliper piston area/displacement to complement the vehicle's master cylinder displacement, respecting to the minimum specified clearances between the caliper and nearby structures on the vehicle whilst accounting for the full range of travel of the steering and suspension systems, ensuring proper alignment of the caliper over the brake rotor by the use of shims or otherwise, ensuring the caliper and brake rotor are parallel, observing the other technical guidance as set out in this instruction manual.

Your vehicle's brakes are a SAFETY CRITICAL system. Failure to install this product correctly could lead to poor braking performance or potentially complete brake system failure, which may result in serious harm or death to yourself and other persons.

The technical guidance set out in this instruction manual is intended to serve as a guide only and should not be regarded as an exhaustive list of all the considerations required to design a fully functioning and safe brake system using the products contained herewith for the individual application in question. The technical guidance set out in this instruction manual is intended to inform professional brake technicians who possess a high level of competency in the design and installation of performance brake systems, have the required engineering competency to design suitable complementary hardware to affix the products contained herewith, and adhere to safe general working practices whilst working on vehicle brake systems. By proceeding to install the products contained herewith you expressly acknowledge and agree to the aforementioned warnings and assume full liability for ensuring that the products contained herewith are installed safely and are fit for purpose. EBC Brakes and its affiliates accept no liability for any damages resulting from failure to observe the aforementioned warnings and EBC Brakes makes no guarantees that the products supplied herewith are suitable or safe for the individual application in question.

If you require further assistance and/or technical advice, please contact EBC Brakes directly and NOT the original reseller who you purchased the product from. EBC Brakes have a dedicated technical team to assist you, however we ask that allow up to 24 hours for a reply to account for global time zones. You can contact EBC technical by e-mailing: kits@ebcrakes.com.

DISCLAIMER OF WARRANTY

100% of EBC's brake calipers are tested for leaks after final assembly using an automated testing sequence and EBC Brakes maintains a database in which the test data of every EBC manufactured brake caliper ever produced is recorded against a unique serial number printed on the caliper as unequivocal proof that this supplied caliper met EBC's standard performance criteria upon leaving our manufacturing facility in England. EBC therefore guarantee that the supplied brake caliper does not leak from new, however EBC offers no warranty and accepts no liability for leaks or defects resulting from: improper installation, improper servicing/maintenance (for example leaks evident from the bleed nipples after they have been tampered with by the customer, or any leaks evident from the pistons or fluid cross-over pipe after replacement of fluid seals or following any evidence of tampering by the customer). If there is any evidence that the supplied brake caliper has been tampered with in any way before it reaches you, or you have any doubts to its authenticity, contact EBC Brakes immediately on kits@ebcrakes.com.

EBC offers the enclosed brake caliper with a **2 year** warranty against corrosion of metal components and against corrosion of the hard anodised aluminium caliper body. This 2 year warranty does not apply to the coloured paint top coat.

EBC offers no warranty and accepts no liability for any damage resulting from any type of motorsport/race use.

"Like any painted finish, to preserve the paints appearance the product must be handled with care. When removing and replacing wheels, take care not to collide with the caliper which may chip the painted finish. If any brake fluid is spilled on the caliper, rinse thoroughly with brake cleaner followed by soapy water immediately. Brake fluid is highly corrosive and will damage painted finishes in minutes. Brake dust is also highly abrasive, do not scrub calipers aggressively to remove stubborn brake dust for risk of scratching the paint. Instead soak with soapy water to ease dust away from the caliper, then rinse off with a hose or pressure washer before cleaning with a soft non-scratch cloth. For customers wishing to add an additional protective layer to the caliper paint, EBC recommends that an 'alloy wheel sealant' or 'alloy wheel armour' product may be applied to the painted region of the caliper, however always select a high-temperature sealant that will withstand caliper operating temperatures in service, which may be as high as 200°C.

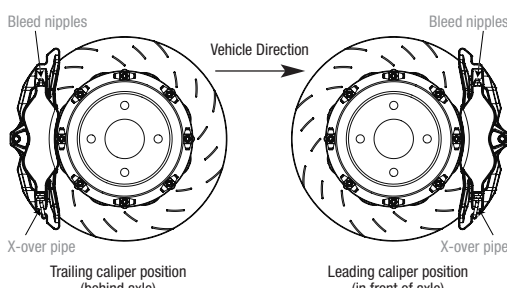
SECTION 1 Installation Instructions

Caliper Handling

Check the hand of the caliper by observing the casting number machined into the piston face. Whether the caliper is right/left hand will be denoted at the end of the casting number, for example "4101R". (The right/left hand side of the vehicle is referenced to the driver sitting in the drivers seat).

Leading or Trailing Axle Position

The caliper orientation must always be such that the bleed nipples point up with the fluid cross-over pipe at the bottom. Calipers not installed close to the vertical may present a problem during bleeding.



Brake Rotor Rotation

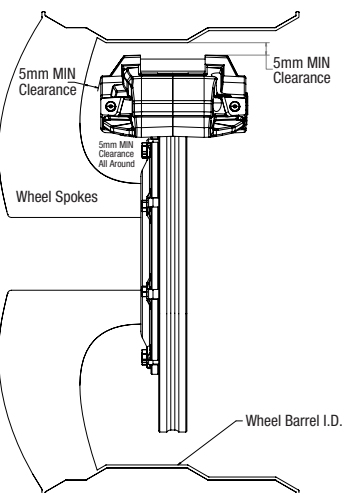
Ensure the arrow machined into the caliper piston face points in the same direction as the brake rotor rotation. For calipers with differential piston bores, the rotor must always pass over the smallest piston first.

Wheel Clearance

In most applications, the supplied new brake caliper will have a larger envelope than the caliper it replaces. Fitment of bigger brakes can give rise to wheel clearance issues.

A minimum clearance of 5.0mm between the caliper and the wheel rim must be respected at all costs.

This means 5.0mm minimum clearance between the outboard 'logo' face of the caliper and the wheel spokes, and 5.0mm minimum clearance between the top profile of the caliper and the wheel barrel.



During hard driving, the hub bearing, wheel rim and suspension components all exhibit some degree of flex. EBC has specified the **absolute minimum** clearance of **5.0mm** to prevent the brake caliper from coming into contact with the wheel rim

during operation. If achievable, a clearance of **7.0mm** is recommended. Failure to respect the specified minimum clearance and/or any damage resulting will invalidate your brake caliper warranty.

DO NOT modify the caliper body in any way to achieve the required clearance. Modification of the caliper is extremely dangerous and any such modification will invalidate your warranty.

NOTE: In some instances, wheel spacers may be used to increase clearance between the caliper logo face and the wheel spokes. Fitment of wheel spacers will widen the track of your vehicle and will likely require subsequent re-alignment of the tracking and suspension geometry after fitment. Before widening the track of your vehicle, clearance on the wheel arch must be checked by moving the suspension through its full bump to rebound movement and by turning the steering from lock-to-lock. It is the sole responsibility of the customer to ensure that the widening of the track will not cause the wheels to rub at any point during the suspension and steering's full range of motion. For further guidance contact the manufacturer of the wheel spacers directly. EBC Brakes takes no responsibility for issues arising as a result of the fitment of wheel spacers.

NOTE: Aftermarket rims are often much more generous on brake caliper clearance than original manufacturer rims. Forged rims in particular often offer much greater clearance. For example, a 330mm rotor will likely fit under a 17" aftermarket rim, but won't fit inside a 17" original rim. If the top of the caliper fouls on the wheel barrel then an aftermarket rim may be the only option to clear the bigger brakes since this problem cannot be alleviated using wheel spacers.

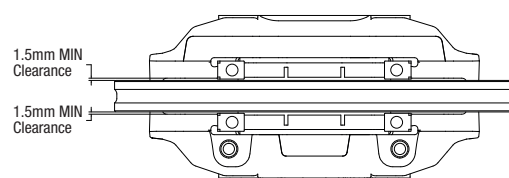
Suspension & General Clearance

When developing a big brake kit using the enclosed product or following the installation of one, clearance between the new brake components and the suspension must be carefully checked prior to driving the vehicle. Cycle the suspension through its full travel from bump-to-rebound. Turn the steering from lock-to-lock, including turning the steering whilst at the bump and rebound limits of the suspension. There must be an absolute minimum of **4.0mm** clearance between the brake system and surrounding structures at all times.

Brake Rotor Clearance

The caliper must be positioned such that there is at least 2.5mm of clearance between the outside diameter of the brake rotor and the inside of the caliper bridge. See separate enclosed drawing titled **Caliper Bracket Design Instructions** for further details and diagrammatic representation of required clearances. When hot the brake rotor can expand in diameter by up to 2.0mm, hence the minimum specified clearance must be respected at all costs to prevent the brake rotor rubbing

on the caliper body. The rotor must never touch the caliper at any point or this will rapidly cause the caliper to overheat.



The caliper must be centred over the rotor to +/- 0.5mm such that there is a minimum clearance of at least **1.5mm** between the caliper body and the front/back faces of the rotor, as shown by the diagram above.

Pad Position on Rotor Annulus

EBC calipers use a shim system as depicted in the enclosed drawing titled **Caliper Bracket Design Instructions** which permit the raising/lowering of the position of the pad in the caliper. This allows fine tuning of the position of the pad on the rotor annulus. The pad must be positioned such that the top edge of the pad friction material sits 1.0mm in from the outside diameter of the brake rotor. Add/remove spacer shims from the pad abutment plates to fine tune the position of the brake pad within the caliper.

Pad Selection

No one friction material can perform optimally under all different driving conditions. Some materials are more 'road focussed' with a higher emphasis placed on low noise, good cold performance and low dust. Other more 'track focussed' materials offer higher on-track performance whilst making sacrifices in other areas that makes them less suitable for use on the road. Whatever the application, EBC only uses common pad shapes in our brake calipers which opens up a large range of materials for the customer to choose from, with EBC also able to supply our wide range of pad materials that cover all use cases.

For fast road use/light track use EBC recommend our **YellowStuff™** material. **YellowStuff™** offers excellent cold bite, low noise and low disc wear yet is also suitable for light track use. For heavier and more powerful vehicles EBC recommend either **BlueStuff™** or **OrangeStuff™** pads, which are both more track focussed materials and offer greater levels of performance. For the most demanding

applications and for ultimate track/race use EBC recommends using our **RP-1™** material. However, unlike many other 'track' materials on the market, all of the above EBC materials **CAN BE USED SAFELY ON THE PUBLIC ROAD** as all of the above materials offer good bite from cold, with even **RP-1™** offering good performance when used on the public road, yet this race developed material offers unparalleled braking performance when pushed hard on track.

PADS SHOULD ALWAYS BE REPLACED BEFORE THEY BECOME WORN TO THE LAST 2MM OF FRICTION MATERIAL. Never wear pads down to the backing plate.

EBC Racing has a dedicated technical support team to guide you in your pad selection, please contact us and a member of our team will be happy to steer you towards the right material for your application: kits@ebcrakes.com.

Brake Noise

Some friction materials are inherently noisier than others. It is also a fact that high-performance brake systems generally tend to be noisier than the stock brakes they replace. There are however several ways that the level of noise can be reduced and EBC Racing has a range of 'tuning kits' to help remedy brake noise, if the noise cannot be solved by simply applying a shim or switching to another friction material, please get in touch and EBC's technical experts will do our best to find a solution for you: kits@ebcrakes.com.

Customers should however note that the use of shims to reduce brake noise will also marginally degrade pedal feel. Shims are, to a small degree, compressible. Introducing anything compressible between the brake pad and the pad/rotor interface will affect brake system response. Generally, EBC recommends to apply shims for road use, but to remove shims for track use where maximum pedal control and shortest pedal travel is prioritised over having a brake system that is quiet.

Brake Lines

Fitment of different calipers and/or larger rotors may require longer brake lines. **DO NOT SIMPLY ASSUME YOUR EXISTING BRAKE LINES WILL FIT.**

After installing the brake line always check for safe routing by turning the steering from lock-to-lock and cycling the suspension through its full range of travel. Ensure the brake line stays at least 1" away from all other components at all times, especially the brake rotor. Ensure the line cannot be pulled taut and is not excessively baggy. Ensure the line is not bent into tight radius" at any point throughout the suspension and steering travel. If any of the above conditions are not met, realign the brake line or replace with a suitable component.

Brake Fluid

Only use high quality glycol based brake fluids. **DO NOT USE SILICONE BASED BRAKE FLUIDS.** EBC recommends EBC's **BF307+ DOT 4 Racing Fluid** for both road and race use. Never use old brake fluid that has been previously opened to the atmosphere. For normal road use the brake fluid must be changed every 2 years or 20,000 miles, whichever comes sooner. Brake fluid must be changed much more frequently following any form of track use, with the fluid being changed no less frequent than every 12th event, down to every single event for race cars seeking maximum performance.

Bleeding the Brakes

It is possible to bleed the brakes without specialist equipment with 2 people, one person at the bleed nipple and the other person depressing and releasing the brake pedal. However, EBC also recommend the use of some pressure bleeders, which make bleeding the brakes a simple operation and possible with just 1 person.

NEVER USE PRESSURISED BRAKE BLEEDING EQUIPMENT THAT EXPOSES THE BRAKE FLUID TO THE PRESSURISED ATMOSPHERE. Some budget brake bleeders have a hand pump to build pressure that pumps pressurised air into the same container as the brake fluid, these are strongly not advised as this type of pressure bleeder risks introducing unwanted air and water molecules into the brake fluid. Alternatively, some higher quality bleeders have a separate sack for containing the pressurised air, meaning the brake fluid and pressurised air are not mixed together and do not come into direct contact. Such pressurised bleeding systems pose far less of a risk to introducing air and water into the brake fluid, which would otherwise degrade performance.

WITHOUT pressure bleeding equipment (2-person manual method):

1. If upgrading from regular DOT 4 fluid to EBC BF307+, use a syringe to first remove as much of the old brake fluid from the reservoir as possible.
2. Top the now empty reservoir up to 'max' with fresh/new BF307+ brake fluid. Check the reservoir fluid level often throughout the bleed procedure to ensure it never runs dry.
3. Begin with 1 person in the driving seat and the second person at the caliper bleed nipple furthest away from the master cylinder (usually a rear caliper).
4. Pump the pedal slowly and smoothly 3 times to fill the master cylinder, then on the third depress of the pedal hold firm pressure.

5. The second person then opens the nipple, allowing the pressurised fluid to flow out into a container. You may see some bubbles of air in the expelled fluid, good, as you must get all those air bubbles out of the system. You may also see the fluid lighten in colour as the new fluid gets pulled through. As soon as the pressurised fluid has stopped flowing close the nipple. The brake pedal must not be released until the bleed nipple is closed otherwise air may get sucked back into the system.
6. Repeat steps 4-5 till no more air bubbles are visible in the expelled brake fluid.
7. Move to the second furthest caliper from the master cylinder, repeating the above process till the caliper is bled of air. Keep repeating this process getting closer to the master cylinder each time, until all calipers have been bled. (If the caliper to be bled has 2 bleed nipples, open the outer most bleed nipple first and then bleed the inboard side of the caliper second).
8. Now go back to the furthest caliper from the master cylinder and re-bleed each caliper in sequence to make absolutely sure no air remains in the brake system.
9. Once the system has been bled, re-tighten the bleed nipples to the manufacturer specified torque. EBC calipers all have a bleed nipple tightening torque of 17Nm.

WITH pressure bleeding equipment (1 person method):

1. If upgrading from regular DOT 4 fluid to EBC BF307+, use a syringe to first remove as much of the old brake fluid from the reservoir as possible.
2. Top the now empty reservoir up to 'max' with fresh/new BF307+ brake fluid. Check the reservoir fluid level often throughout the bleed procedure to ensure it never runs dry.
3. Pour BF307+ fluid into the pressure bleeder, build pressure (usually by connecting an air line) then connect the pressure bleeder to the reservoir filler cap.
4. Starting at the caliper furthest away from the master cylinder, open the bleed nipple and allow a generous amount of fluid to flow. You may see some bubbles of air in the expelled fluid, good, as you must get all those air bubbles out of the system. You may also see the fluid lighten in colour as the new fluid gets pulled through. Close the nipple after no more air bubbles can be seen in the expelled fluid.
5. Move to the second furthest caliper from the master cylinder and repeat step 4. Continue to work your way back towards the caliper closest to the master cylinder until all calipers have been bled. (If the caliper to be bled has 2 bleed nipples, open the outer most bleed nipple first and then bleed the inboard side of the caliper second).
6. Now go back to the furthest caliper from the master cylinder and re-bleed each caliper in sequence to make sure no air remains in the brake system.
7. Once the system has been bled, re-tighten the bleed nipples to the manufacturer specified torque. EBC calipers all have a bleed nipple tightening torque of 17Nm.

The following procedure is common to BOTH of the above methods for bleeding the brakes:

After the brakes have been bled, start the vehicle engine to kick start the vacuum booster (if any) then depress the brake pedal firmly and hold for 30 seconds to reveal any leaks. Ensuring the system is leak free, re-fit the wheels and perform a few gentle stops on a quiet stretch of road. Check you have a firm pedal, if the pedal is spongy, repeat the brake bleeding process and see if you can pull out any more air bubbles from the system. If you still have a spongy pedal after repeating the process several times you may have air trapped in the ABS module which can happen if the ABS module has been run dry. Some modern vehicle ABS modules require a special process and equipment to remove air from the ABS module and this can sometimes only be carried out by the vehicle manufacturer. Consult the vehicles handbook or speak to the vehicle manufacturer for further assistance. Also ensure that there are no looping sections in the brake line which will catch air and prevent the system from being fully bled.

Brake fluid is highly corrosive, if it spills onto the brake caliper or surrounding painted surfaces wash off immediately with soapy water. It is also important to remove brake fluid that may still be stuck in the end of the bleed nipple, a tip here is to spray brake cleaner in the top of the nipple to force out any remaining brake fluid, then leave the nipple cover off for a few minutes to allow the brake cleaner to evaporate or blot out any fluid with paper towel. This is an important step since if you get any leaks, you want to be able to quickly establish if this is simply due to a bleed nipple not being tight or whether you have a more serious issue.

It is also good practice to re-bleed the brakes after 300 miles of driving to make sure any small pockets of trapped air following installation are completely removed. Re-bleeding the brakes after a period of use can often further improve pedal feel.

SECTION 2 Bedding-In & Driving Tips

IMPORTANT – New pads and new rotors must always be fitted after installing new brake calipers. Un-even wear of old parts will significantly extend the bed-in time and may create hot spots leading to rotor damage.

New brake calipers, like new pads or rotors, must be bed-in properly to prevent damage. DO NOT go racing or drive hard immediately following the installation of a new brake system before following the bedding-in procedure detailed below.

Leak Test Procedure

Following the installation and bleeding of the new brake system, start the vehicles engine and firmly depress the brake pedal. Hold the pressure for at least 30 seconds. Check the pedal is firm and does not sink under sustained pressure. Look underneath the car and carefully inspect all hydraulic connections for any signs of leaks.

Brake Effectiveness Test Procedure

After completing the leak test, a brake effectiveness test should be performed on a quiet stretch of road starting off at low speeds. Perform 10 stops, gradually increasing speed from 15-to-50 mph whilst simultaneously increasing pedal pressure from 'light' to 'medium' force. Build confidence in your installation with each successive stop. Listen for any unusual noises which may signify rubbing. **DO NOT** get the brakes smoking hot or perform emergency stops, you are only looking to reveal any issues with the installation. After performing the effectiveness test check underneath the car again for leaks or any signs of rubbing. If the brakes are working as expected, **now drive gently for at least 200 miles** to allow the new brake components to mate before continuing to the main bed-in procedure.

Main Bedding-In Procedure

Once 200 miles of gentle driving has been completed the pads should have deposited a dull grey transfer layer onto the rotors. The transfer layer is a thin layer of pad material on the rotor surface which is critical to brake system performance. The rotors should have an even dull grey appearance around the entire swept area, any splotches or un-evenness signifies the pad has not yet fully bed in to the rotor and will likely lead to vibration due to 'uneven friction deposits' if the brake system is pushed hard. If the rotors do not have an even dull grey appearance, continue to drive the vehicle gently until an even transfer layer has been established.

Now that the rotors have an even dull grey appearance it's time to **thermally condition** the brake system by conducting the following bedding-in procedure on a quiet and safe stretch of road:

Drive 1 – Perform 15 medium pressure stops from 50mph down to 20 mph (0.4g decel approx.)

Cool Down: After Drive 1 has been completed, drive the car at 50mph for at least 5 miles with minimal brake usage to allow the brakes to cool. Park the vehicle for at least 60 minutes or overnight to allow the brakes to cool fully before Drive 2.

Drive 2 – Perform 15 higher intensity stops from 60mph down to 10mph (0.5-0.6g decel, or half the decel of an emergency stop)

Cool Down: After Drive 2 has been completed, drive the car at 50mph for at least 5 miles with minimal brake usage to allow the brakes to cool. Park the vehicle for at least 60 minutes or overnight to allow the brakes to cool fully before Drive 3.

Drive 3 – Perform 15 hard stops from 60mph down to 10mph (0.6-0.8g decel approx.). You should smell the brakes and you may get some brake fade during this drive, this is known as 'green fade' or 'early life fade' and is perfectly normal and signifies any volatiles left over from manufacture are being burnt off. Once you have pushed through this green fade period the pads will be conditioned for harder braking.

Cool Down: Drive the car at 50mph for at least 8 miles with minimal brake usage to allow the brakes to cool fully before coming to a halt.

DO NOT STOP WITH VERY HOT BRAKES. Whilst the brakes are still hot it is critical not to come to a complete halt and leave your foot on the brake pedal. Doing so will force the pads onto the rotor, leading to hot spots whilst also causing excessive heat to soak into the brake caliper. After a spirited drive, always cool the brakes before coming to a halt. For automatic vehicles coming to a stop with very hot brakes, put the vehicle into park and remove your foot from the brake pedal so the brakes are disengaged.

NOTE: New brake calipers can take up to 300 miles (480 km) to fully bed-in. Immediately following the installation of new brake calipers, the brake pedal may start off feeling slightly 'long', however pedal feel will improve throughout the caliper bed-in period as the rubber seals settle into their final position. If the brake pedal still feels spongy after 300 miles, re-bleed the brakes.

DO NOT SKIP THIS STEP - After 1,000 miles lift the car, remove the wheels and carefully inspect all brake system components and connections for rub marks or damage. Pay particular attention to the brake line and whether it shows any signs of rubbing or leaking.

Track Driving

Although this product has been tested and developed for moderate track use as well as on the public road, the extreme variation in race disciplines and driving styles means EBC offers **NO WARRANTY FOR ANY TYPE OF MOTORSPORT/RACE USE.** It is critical that calipers are not operated above 2000C for extended periods of time on track otherwise seal damage will occur. Always do at least one cool down lap and never leave the brakes engaged when you come into the pits. High caliper temperatures will very quickly damage the fluid seals which must then be immediately replaced.

SECTION 3 Maintenance & Servicing Guidelines

Routine Caliper Cleaning

NEVER SPRAY ACIDIC WHEEL CLEANERS ON THE BRAKE SYSTEM. Strong acid wheel cleaners risk damaging the painted top-coat of the caliper and affecting the brake rotor and pads. If wheel cleaners must be used, choose a product with a neutral pH and try the product on an inconspicuous area of the caliper first. Any cleaning agent should be left on the brake system for the shortest possible time after which it must be thoroughly rinsed off with fresh water.

EBC recommend using soapy warm water instead of wheel cleaners as this is the safest way to clean your calipers without risk of damage.

Brake dust is highly abrasive. To preserve the glossy appearance of your calipers top-coat, allow calipers to soak for several minutes to loosen the brake dust before attempting to rub it off.

Pad Changes

Replace pads before they reach the last 2mm of friction material.

Always push the pistons all the way back during a pad change. There should be at least a 0.5mm gap between the piston and pad following insertion of new pads, this gap is critical to enable some piston movement that re-energises the fluid seals.

If the caliper uses inner piston dust seals rather than a full dust boot, ensure the sides of the piston are perfectly clean by first cleaning with soapy water to remove the bulk of the dirt and then wiping with **isopropanol** before pushing the pistons back. **DO NOT USE ABRASIVES TO SCRUB THE PISTON OUTER DIAMETER.**

Fluid Seal Replacement Guidelines

Brake calipers require routine servicing to maintain a high level of performance and to ensure they continue to operate safely. The fluid seals must be replaced routinely using genuine spares available from EBC Racing.

EBC Racing use quality high-temperature fluid seals in all our calipers, however it's still important to minimise caliper body temperature to reduce the aging effect of the rubber seal and extend service periods. The rubber seal deteriorates much faster at higher temperatures, hence a properly sized brake rotor and adequate brake ducting are essential to keeping brake system temperatures under control. The following service schedule must be followed on how often to replace fluid seals:

- **Calipers used only on road and that never exceed 180°C** – replace seals every 20,000 miles or 4 years
- **Calipers driven hard on road that routinely reach up to 200°C** – replace seals every 10,000 miles or 2 years or as necessary
- **Calipers driven on track or operated between 200°C - 220°C** – replace seals after every event or after 1 hour of exposure and increase brake cooling
- **Calipers that reach above 220°C** – replace seals immediately and increase brake cooling

EBC Brakes offer a nominal charge caliper reconditioning service at our headquarters in Northampton, UK. EBC advise customers to send their calipers back to EBC headquarters for a factory reconditioning service wherever feasible. A pressure test and full re-commissioning of the caliper is part of this service. For more information contact: kits@ebcrakes.com

For customers outside of the UK, a factory recondition may be unfeasible and for this situation EBC sells a range of genuine EBC spare kits. Always use genuine parts and always ensure the caliper servicing is carried out by a reputable company who has the facilities to pressure test the caliper after re-assembly.

NEVER BUY NON-GENUINE SEALS OR SPARES. Fluid seals are critical to caliper performance and use of a non-genuine part may lead to leaking, poor performance and/or premature caliper failure. Use of non-genuine seals or spares will invalidate your calipers warranty.

Removing Pistons For Seal Replacement

Caliper pistons may be fully removed by gentle application of line pressure. First, fabricate a wooden chock and place in the middle of the caliper to simulate the

brake rotor. Then insert another 2 chocks into either half of the caliper to prevent the pistons from coming fully out, worn pads work well here. Now apply line pressure till all of the caliper pistons are extended but not beyond the fluid seal. Finally, remove the chocks and gently remove the protruding pistons by hand.

When removing old fluid seals, always use a brass spoon or similar blunt and smooth metal object to prevent damaging the seal groove.

Stripping & Degreasing Calipers

When degreasing components of stripped down calipers such as pistons, piston bores and rubber seals, use **ONLY** alcohol based cleaning products such as **isopropanol**. Do not use mineral oil based products e.g. white spirit, otherwise there is a risk of damaging the rubber seals. Do not use any cleaning product that contains silicone for risk of damaging the rubber seals in your caliper and other components of the brake system.

Caliper Re-assembly

Ensure the caliper is totally dry before re-assembly to prevent water from mixing with the brake fluid. Ensure all components are perfectly clean and free from dust prior to re-assembly. Insert the fluid seals into the seal groove taking care to ensure the rubber seal is not twisted. Apply a thin layer of red rotor grease to the seal and caliper bore, as well as applying a layer of red rotor grease to the piston outer diameter to ease assembly. Carefully push the piston back into the caliper bore, rocking the piston gently from side to side to ease assembly. **Pressure test the assembly** using an air line with the wooden chock referred to above along with new pads inserted into the caliper opening to prevent the pistons coming fully out. Listen carefully for leaks, if no leaks are audible submerge the caliper in a depth of water and visually inspect for bubbles that would signify a leak. If the caliper passes the pressure test fully push back the pistons, the caliper is now ready for re-installation.

If you require any further assistance regarding your purchase please contact our dedicated support team at: kits@ebcrakes.com.