



Date: April 19, 2022
Contact: Technical Services
Subject: NHTSA Recall 22V217 - Brake bleeding campaign

Recall Communication:  **Campaign Code:** PP2ZZQ2201

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Affected Models: A specific range of:

2020 Piaggio MP3 500
2021 Piaggio MP3 500

Concern: Piaggio Group Americas (PGA) has identified the possibility of non-conformity in the zinc plating surface treatment on the brake hose terminal fittings. This can cause a chemical reaction with the brake fluid itself and result in excessive travel from the front or rear brake lever. This situation can cause reduced braking or stopping ability and can lead to a loss of control or a crash, increasing the risk of injury.

Cause: A non-conforming zinc plating process on the brake hose fittings causes hydrogen gas to escape into the brake fluid, leading to a loss of braking ability.

Correction: A brake system fluid replacement with comprehensive bleed (if necessary) must be performed based on the results of an initial test described in this bulletin. **Two different claiming coupons are available based on the test results. If a vehicle passes the test, only a limited bleed procedure to replace the brake fluid is required (Coupon 1). If a vehicle fails the test, then a comprehensive bleed procedure and fluid replacement is required (Coupon 2)**

Please prioritize the repair following the guidelines below:

Customer vehicles: Perform recall at first available opportunity

Vehicles in stock: Perform recall at the PDI stage before sale to customer

Please note that after the initial test is performed and the repair made under either Coupon 1 or Coupon 2, the vehicle must be left alone for 24 hours and the test repeated to verify results and document with final photos. Six photos are required when finishing each claim; (3 “before” photos taken during the initial test and 3 “after” photos taken during the final test, after repairs are made)

All affected vehicles are blocked from warranty registration until the campaign has been completed in the PWM warranty system.

Note: It is imperative to perform this recall before the vehicle is sold and/or leaves the dealership. Using the PWM warranty system, click on “Campaigns”, then “Campaign Reports” to view ALL VINS in your inventory that require a technical update or recall. This list can be filtered by searching for a specific Campaign Description, a Frame number, the Campaign start date or Coupon state. This recall has the description, “**Brake Fluid Replacement and brake system bleeding**”. Customers can also check for themselves if their vehicle is subject to this recall by using this site: http://static.piaggio.com/recall/form-piaggio_en.html

Checking your entire inventory for campaigns:



Campaign reports

Search Parameters

Campaign description: To

Frame number: To

Campaign Start Date: To

Coupon state:

Statistics

Total vehicles involved	Redemption (Carr. out/total)	In Stock	Sell-Out	Sell out repaired by other Dealer	Total	Interventions
133	58% (77 Vehicles)					
suspended		0% (0 Vehicles)	0% (0 Vehicles)	0% (0 Vehicles)	0% (0 Vehicles)	

Owner Notification: Each owner of a vehicle included in this recall will be notified by first class mail. In this letter PGA will describe the details of the concern, the cause, and the correction addressed by this recall. In addition, PGA asks that each owner contact their respective Piaggio/Vespa dealer to arrange for an appointment to have the parts and labor required of this recall completed.

Please make every effort to accommodate your recall customers within your existing service schedule. In addition, PGA has provided each recall customer with details of the TREAD Act Reimbursement program. In short, this program provides a plan to reimburse a customer who has already paid for the same repair or update as described in the recall documents. **A copy of the Owner Notification and the TREAD Act Reimbursement letters are included at the end of this bulletin.**

Important Note: Under the National Traffic and Safety Act of 1966 as amended, if there has been a recall campaign, dealers must assure that all new vehicles and new items of replacement equipment are free of safety defects and comply with all applicable Federal Motor Vehicle Safety Standards at the time of delivery to the customer. **This means that dealers may not deliver new motor vehicles or new items of replacement equipment to consumers unless the safety defect or noncompliance has been remedied before delivery.**

VIN Identification (For individual VINS):

1. Go to the Dealer Portal <https://dealerportal.piaggiogroup.com/> and enter your Username and Password. From the left hand menu, click on **“Piaggio Business Service”**
2. From the Piaggio Business Service page, choose the tab **“Piaggio Warranty Management”**
3. Select **“Other functions”** in left-hand main menu, then **“Vehicle History”** in the sub-menu.
4. Enter the VIN number next to **“Frame number”** and click **“Retrieve Data”**
5. Click the box next to **“Active Campaigns”** to view any recalls or technical updates that **apply** to the VIN. This recall has the description, **“Brake fluid replacement and brake system bleeding”**.

6. The status of the campaign can be determined from the status column.
Status examples are shown below:

TO DO: a claim for the campaign has not be entered

SUSPENDED: a dealer in the network has entered a claim for the campaign, but has not “carried out” the claim. Please contact the warranty administrator-
Patricia.Pena@us.piaggio.com

PERFORMED: a claim for the campaign has been entered and carried out by a dealer

Warranty Claiming:

1. From the PWM warranty system menu, click on “**Campaigns**”. Under the heading “**Enter Campaigns**” enter the VIN next to “**Frame number**” and click “**Search**”.
2. Under “**Campaign Code**”, click on the **underlined ID code** for this campaign.

➤ **Brake fluid replacement and brake system bleeding**

Please choose either Coupon 1 or 2 based on test results on page 5 of this bulletin

3. Under “**Serv. Coup. Data**”, enter the **KM/Mi.** of the vehicle.
4. Click the “**SAVE**” icon at the top of the claim.

Important note: In order to begin the payment process, Campaign submission must be followed by “**Carrying-Out**” the recall or technical update campaign. This is the last step in the claim process, confirming that the work was actually performed by your dealer. “**Carrying-out**” recalls or updates is done under the function “**State Management**” in PWM. On claims found under State Management, you must click on the Wrench icon under the column “Perform work” for the respective claim. All types of claims (Normal warranty claims/ Technical update claims /Recall claims) are carried out under State Management.

Description	Cause	Dealer progressive number	Type of request	Perform Work
Motorized		56	Warranty	
Motorized		60	Warranty	
Motorized		59	Warranty	

Labor reimbursement and necessary parts:

Coupon 1 Brake fluid replacement (Passes initial test) service coupon for replacement of the brake fluid, (reimbursement of brake fluid, the O-Ring and the labor required)

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- Minutes of labor: 110 minutes
- Reimbursement for brake fluid and O-Ring: \$OIL150*

Pages 8-23 refers to bodywork removal and Replacing brake fluid for all three masters (front, rear, pedal)

Coupon 2 Replacing brake fluid and Bleeding brake system (Fails initial test) service coupon for the replacement of the brake fluid and comprehensive bleeding of the brake system, (reimbursement of the brake fluid, the O-Ring and the labor required)

- Minutes of labor: 335 minutes
- Reimbursement for brake fluid and O-Ring: \$OIL150*

Pages 23-44 -Bodywork removal and foot pedal pushrod check/adjustment

Pages 45-56-Component removal and Rear brake bleeding

Pages 56-63 -Component removal and Front brake bleeding

Pages 63-66- Activation of ABS valves via PADS with manual bleed afterwards.

Pages 67-69- Pedal circuit - bleeding through front servo valve

Pages 69-70 – Total Brake fluid replacement (front left caliper, front right caliper, rear caliper)

* Piaggio has included a flat rate of \$7.50 in the service coupon, identified by the code \$OIL150, to cover the cost for the purchase of approximately 500 cc of brake fluid and O-Ring.

We also remind you that the O-Rings to carry out the tests (one per vehicle) will be sent to the dealer by P&C.

IMPORTANT

The service coupons must include a number of photos included as attachments.

Instructions for each photo are given in the procedure. **6 photos are required when**

finalizing each claim in STATE MANAGEMENT (3 “Before” and 3 “After” photos).

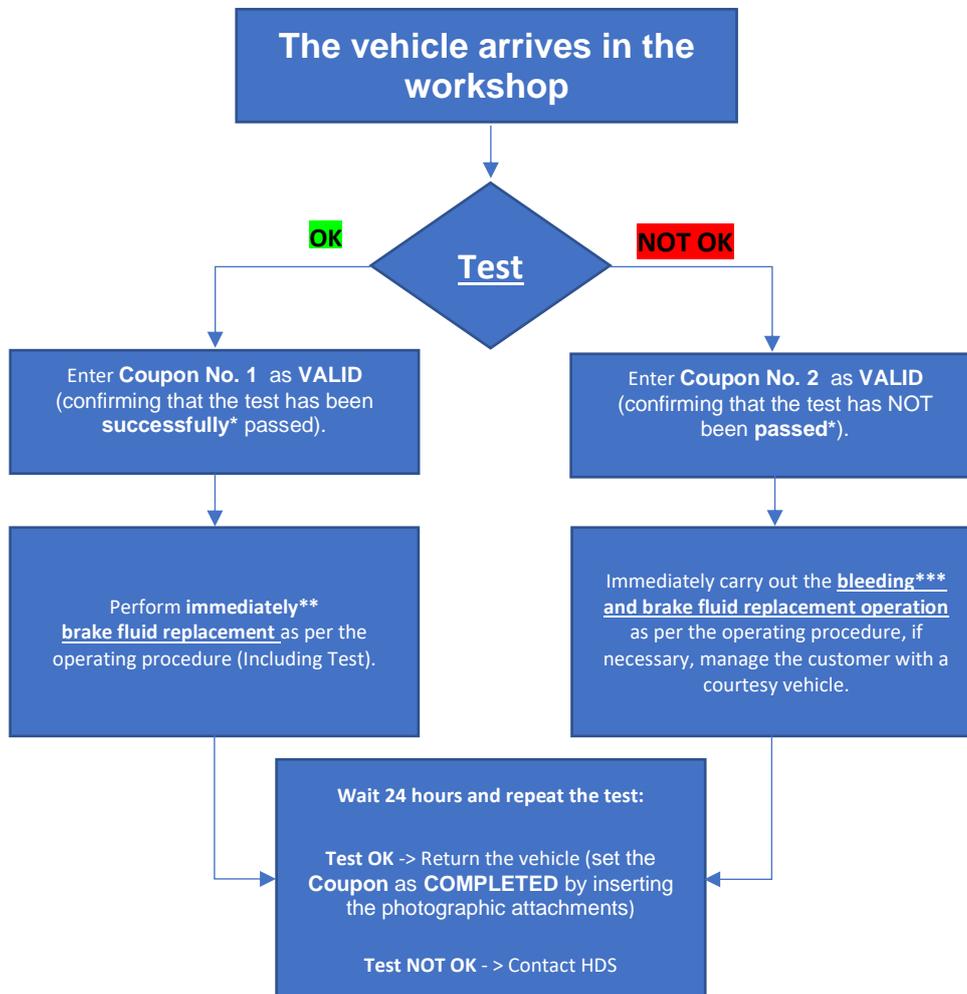
Photos are not entered when the claim is first submitted, only when finishing the claim to declare the work is complete.

TEST PROCEDURE

Below is an operational diagram to aid workshop operations

- Test OK** -> The three checks must be met
1. Distance measured to the right-hand lever \geq 95 mm
 2. Distance measured to the left-hand lever \geq 95 mm
 3. Brake pedal consistent

Tests NOT OK -> Any of the three measures fail



* The dealer will be responsible for analysing the outcome of the test.

** If the customer cannot leave the vehicle immediately in the workshop, schedule the intervention within a maximum of 6 days; illustrating to the customer, as also reported in the online use and maintenance booklet (<https://dealerportal.piaggiogroup.com>), that the efficiency of the braking system must be checked before each use.

*** The bleeding procedure must only be performed on the part of the system that did not pass the Test;

e.g.:

1. Left-hand lever + Right-hand lever + Pedal-> NOT OK -> perform the complete bleeding procedure + complete replacement of fluid
2. Left-hand lever -> NOT OK -> Bleeding of rear brake + complete replacement of fluid
3. Right-hand lever -> NOT OK -> Bleeding of front brake + complete replacement of fluid
4. Pedal -> NOT OK -> Bleeding of combined braking system + complete replacement of fluid

Warning: for points 2 and 3 (one of the two levers NOT OK) the control must always be performed on the pedal after having restored the manual circuit.

MP3 500 OPERATING PROCEDURE

LEVER TESTS - Preliminary checks.

Pull the rear brake lever (left lever) and hold in position by fitting the O-ring, p/n 006731, onto the lever and handgrip as shown in the photo.



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Hold the fixed jaw of the vernier calliper against the handgrip as shown in the photo.



N.B: To show the position of the vernier calliper more clearly, this photo has been taken with the counterweight removed.

Measure the distance between the outer edge of the handgrip and the end of the brake lever.

Minimum permissible distance: 95 mm



N.B: The measurement must be made with the vernier calliper perfectly aligned with the direction of movement of the lever.

NOTE: Take a photo of the position of the left hand lever when pulled completely before the procedure, and attach to the service coupon. Photo 1

Repeat the procedure for the front brake lever (right lever) to measure the distance between the outer edge of the handgrip and the end of the lever when the lever is pulled completely.

Minimum permissible distance: 95 mm



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NOTE: Take a photo of the position of the right-hand lever when pulled completely before the procedure, and attach to the service coupon. Photo 2

If possible, pull the two levers of the manual brake master cylinders forcefully at the same time.



While holding the levers, check the travel of the combined braking system pedal.

N.B: To ensure accurate test results, the pressure in the combined braking system circuit must not exceed the pressure values in the manual braking circuits to the levers.

With an efficient pedal, the perceived actuation stroke will essentially be that relating to the recovery of mechanical play and a very short stroke of the piston.



This means that the hydraulic compression of the pedal will be barely noticeable.

NOTE: Take a photo of the position of the combined braking system pedal when pressed completely before the procedure, and attach to the service coupon.

The photos for the preliminary checks described above were taken on a vehicle in proper working order. Photo 3

Brake fluid replacement- Coupon 1

Remove the windscreen, removing the 4 fastener screws with the relative spacers.



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Remove the 4 fastener screws and the protective grille of the radiator.



Remove the Y-shaped cover, detach the respective fastener lugs.



Remove the 2 fastener screws and the lower cover of the windscreen mount.



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Open the glove box and unscrew the 2 fastener screws indicated.



Remove the 2 front fastener screws of the windscreen mount complete with the relative washers.



Remove the windscreen mount, removing the remaining 4 fastener screws with the relative shaped spacers.



Remove the fastener screw and remove the right hand centre access panel.



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Remove the silencer guard, unscrewing and removing the 2 fastener screws with the relative metal flange rings.



Loosen the screw of the metal clamp fastening the silencer to the exhaust pipe.



Loosen the check nut of the silencer fastener system.



Remove the fastener screw of the bracket.



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Remove the pin and remove the retainer bracket.



Remove the mounting screw of the silencer with the relative washers, and detach and remove the silencer from the exhaust pipe.



Remove the split pin and the relative cap.



Engage the parking brake and remove the nut with the spacer.



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Remove the lower fastener bolt of the shock absorber.



Remove the upper fastener bolt of the shock absorber.



Remove the right hand shock absorber with the 4 spacers.



Remove the screw with the washer.



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Remove the plastic guard panel, unscrewing the remaining 2 upper screws.



Remove the speed sensor, unscrewing the 2 fastener screws.



Remove the second fastener screw of the stand.



Remove the 2 fastener nuts of the carrier arm.



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Lift the mudguard and detach and remove the carrier arm.



Remove the rear wheel, unscrewing and removing the 5 fastener screws with the relative washers.



Rear brake fluid replacement

Connect the container for collecting fluid to the rear calliper bleed nipple.



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Remove the 2 screws and the lid of the left front reservoir complete with gasket.



Operate the rear brake lever repeatedly.
Keep the master cylinder under pressure.



Open the bleed nipple of the rear calliper, discharging the fluid under pressure.
Tighten the bleed nipple.



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Operate the master cylinder and repeat the bleeding sequence, draining the original brake fluid.

Keep an eye on the brake fluid level in the reservoir to avoid the intake of air.



Continue filling the rear brake circuit until approximately 120 cc has been drained into the collector container.



Fill the rear master cylinder reservoir to the max. level.



Fit the cover of the rear reservoir.



Front brake fluid replacement

Open the reservoir of the front master cylinder (right side reservoir)



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Change the brake fluid in the left front caliper circuit.

Refill the right master cylinder reservoir, draining the used fluid under pressure from the bleed nipple of the left front calliper.



N.B: Do not operate the lever of the master cylinder repeatedly while the bleed nipple is open.

Continue filling the left front brake circuit until approximately 120 cc has been drained into the collector container.



N.B: The photo illustrates the position of the steering where the reservoir of the front master cylinder offers the best filling conditions.

Change the brake fluid in the right front caliper circuit.

Refill the right master cylinder reservoir, draining the used fluid under pressure from the bleed nipple of the right hand front calliper.



N.B: Do not operate the lever of the master cylinder repeatedly while the bleed nipple is open.

Continue filling the right hand front brake circuit until approximately 120 cc has been drained into the collector container.



N.B: The photo illustrates the position of the steering where the reservoir of the front master cylinder offers the best filling conditions.

Combined/Pedal braking system fluid replacement

Remove the fastener screw of the combined braking system master cylinder reservoir and top up to the max. level.



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Pull the two brake levers forcefully and hold to pressurise the manual brake master cylinders.



At the same time, press the combined braking system master cylinder pedal.



Then, bleed the front servo pump.



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Replace the brake fluid.

Fill the combined braking system master cylinder reservoir, adding 4 times the volume of new fluid necessary to fill the reservoir system to flush the system, draining the fluid contained in the circuit under pressure from the bleed nipple of the front brake servo pump.



N.B: Do not operate the pedal repeatedly while the bleed nipple is open.

Refit the rear wheel with the 5 screws and the relative washers.

Tighten the screws to a torque of 20-25 Nm.



Continue with the reassembly of the carrier arm, paying attention to the correct application of all the tightening torques.



Pay attention to the correct positioning of the gasket and to the correct fastening of the slip joint clamp screw.

Tightening torque 16÷18 Nm.

N.B: Lack of torque leads to sealing problems.
Excessive torque blocks the joint with abnormal stresses on the exhaust system.



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Refit the remaining bodywork components.



Once the operations are completed, the vehicle must be kept in the workshop for 24 hours without moving it or operating the brake levers or pedals.

At the end of the 24 hours, the checks (**Tests**) already performed at the beginning of this procedure must be repeated, in order to document the outcome of the test and then attach the photos to the check coupon:

TEST - Final checks

1. Take a photo illustrating the travel measured for the RH lever with the vernier calliper (minimum permissible value **95 mm**), and attach to the service coupon.
2. Take a photo illustrating the travel measured for the LH lever with the vernier calliper (minimum permissible value **95 mm**), and attach to the service coupon.
3. Carry out the pedal firmness test, taking a photo of the values measured and attaching it the service coupon.

If the required values of not attained, technical support must be contacted to determine the cause of the problem.

Brake fluid bleeding and complete fluid replacement - Coupon 2

Remove the windscreen, removing the 4 fastener screws with the relative spacers.



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Remove the 4 fastener screws and the protective grille of the radiator.



Remove the front fastener screw of the 2 mudguard.



Remove the 2 fastener screws of the front cover, situated inside the wheel housings.



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Remove the 2 upper screws fastening the front cover.



Remove the front cover, unscrewing the 2 Torx screws.



Remove the 2 upper screws fastening the bodywork mount.



Remove the bodywork mount, unscrewing the remaining 2 Torx screws.



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Remove the rear fastener screw of both mudguards.



Remove the upper fastener screw of both mudguards.



Remove both front mudguards, pushing towards the front of the vehicle to detach all the fastener lugs.



Remove the Y-shaped cover, detach the respective fastener lugs.



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Remove the 2 fastener screws and the lower cover of the windscreen mount.



Open the glove box and unscrew the 2 fastener screws indicated.



Remove the 2 front fastener screws of the windscreen mount complete with the relative washers.



Remove the windscreen mount, removing the remaining 4 fastener screws with the relative shaped spacers.



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Remove the 2 mounting brackets, unscrewing the 4 fastener screws and removing the screws together with the relative washers.



Disconnect the headlamp unit connector, releasing the safety lock clip.



Remove the front headlamp unit, unscrewing the 4 fastener screws.



Disconnect the 2 connectors of the front turn indicators.



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Remove the 2 lower fastener screws of the front leg shield.



Remove the 2 upper fastener screws of the leg shield.



Remove the front leg shield, unscrewing the remaining 4 fastener screws.



Remove the rear view mirrors, unscrewing and removing the fastener nuts with the relative washers.



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Remove the centre cover panel of the handlebar carefully, lifting it up from the rear.



Remove the fastener screws and disconnect and remove the handlebar switchgear sets.



Remove the fastener screws of the handlebar cover, situated in the space under the handlebar switchgear sets



Remove the 3 fastener screws of the handlebar cover, situated in the space under the centre cover panel



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Remove the upper handlebar cover, disengaging the 4 fastener tabs.



Disconnect the connector of the ambient temperature sensor.



Remove the lower handlebar cover, loosening the 4 fastener screws.



Remove the dashboard trim panel, unscrewing the 2 fastener screws.



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Remove the 2 fastener screws of the button panel.



Release the 2 clips and disconnect the button panel, disconnecting the 4 electrical connectors.



Remove the cover of the bag holder hook, unscrewing the 2 fastener screws.



Remove the centre fastener screw of the cover panel.



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Remove the cover panel with the knee pads, unscrewing the 4 screws situated inside the suspension compartment.



Remove the fastener screw of the expansion tank cap access cover.



Unscrew the expansion tank cap.



Remove and remove the fastener screw of the expansion tank with the relative washers.



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Release the fastener clip of the reverse switch cable.



Remove the 2 rear fastener screws of the dashboard.



Using a pair of circlip pliers, turn the bezel of the ignition switch anticlockwise to align the word 'ON' with the key slot.



Remove the bezel of the ignition switch complete with metal ring.



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Release the lock tab and disconnect the power connector of the USB port.



Release the lock tab and disconnect the flying lead connector of the dashboard connector.



Release the lock tab and disconnect the dashboard connector.

Remove the complete dashboard, turning it towards the right hand side of the vehicle.



Remove the 3 fastener screws and the battery compartment cover.



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Remove the 2 screws fastening the saddle support system.



Remove the fastener screw and the cover of the internal saddle sensor.



Disconnect the sensor connector.



Remove the seat, undoing the 2 fixing screws.



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Remove the grab handle cover, unscrewing and removing the 4 fastener screws with the relative washers.



Use a screwdriver to prise out the 2 blanking plugs of the holes for the 2 front fastener screws of the grab handle.



Remove the rear grab handle, undoing and removing the 5 screws with the relative washers.



Remove the 2 screws fastening the rear cover.



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Remove the rear cover, detaching the 2 spring clips.



Remove the lower screws of both side covers.



Remove the upper screws of both side covers.



Remove the central screws of the side covers.



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Remove the rear screws of both flanks.



On both flanks, remove the 2 screws near the passenger footpegs.



Remove the 2 screws fastening the centre cover, near the saddle.



Remove the side covers, detaching the 5 clips.



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Disconnect the electrical connector of each rear light unit.



Remove the fastener screw and remove the right hand centre access panel.



Remove the 2 fastener screws of the right hand centre cover.



Remove the fastener screw and remove the left hand centre access panel.



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Remove the 2 fastener screws of the left hand centre cover.



Remove the fuel cap.



Remove the centre cover, detaching the cable for internal saddle sensor and the fuel filler cover release cable.



Remove the fastener plate of the right hand floor mat, unscrewing the 3 fastener screws.



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Remove the right hand floor mat with the 6 spacers for the fastener plate screws.



Remove the front fastener screw of the right hand footboard.



Remove the lower fastener screw of the right hand footboard.



Remove the rear M6 fastener screw of the right hand footboard.



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Remove the upper M6 fastener screw of the right hand footboard with the relative washer.



Remove the right hand rear footrest platform, unscrewing the clamp screw and unscrewing and removing the 2 Torx screws complete with the relative washers.



Remove the 4 screws connecting the underside of the footboard to the footboard.



Lift up the gaiter and remove the upper part of the combined braking system pedal, unscrewing the 2 fastener screws.



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Separate the two parts of the footboard and remove from the vehicle.



Check that the combined braking system pedal is against the retainer bracket of the brake light switch when the pedal itself in the rest position.



Press the pedal to release the brake light switch and reveal the clearance created between the **pedal arm** and the actuator pin of the brake light switch

This photo illustrates an incorrectly adjusted pedal with excessive clearance between the pedal arm and brake light switch(**pushrod too short**)

It is more serious, however, if there is no clearance between pedal arm and brake light switch when the pedal is in the rest position. (**pushrod too long**)



This is extremely dangerous as it may cause the rear brake circuit to remain under pressure even when the pedal is released

In case of an incorrectly adjusted combined braking system pedal, move the gaiter out of the way, loosen the check nut and adjust the length of the master cylinder actuator link with pliers.



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Adjust the length of the pushrod so that the brake light actuator pin has no remaining clearance with the pedal arm at a distance of approximately 0.40 mm from the end stop rest. (adjust pushrod so pedal arm just touches the end of the switch pin , with the .40mm gauge installed between the switch retainer bracket and pedal arm)



Remove the silencer guard, unscrewing and removing the 2 fastener screws with the relative metal flange rings.



Loosen the screw of the metal clamp fastening the silencer to the exhaust pipe.



Loosen the check nut of the silencer fastener system.



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Remove the fastener screw of the bracket.



Remove the pin and remove the retainer bracket.



Remove the mounting screw of the silencer with the relative washers, and detach and remove the silencer from the exhaust pipe.



Remove the split pin and the relative cap.



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Engage the parking brake and remove the nut with the spacer.



Remove the lower fastener bolt of the shock absorber.



Remove the upper fastener bolt of the shock absorber.



Remove the right hand shock absorber with the 4 spacers.



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Remove the screw with the washer.



Remove the plastic guard panel, unscrewing the remaining 2 upper screws.



Remove the speed sensor, unscrewing the 2 fastener screws.



Remove the second fastener screw of the stand.



Remove the 2 fastener nuts of the carrier arm.



Lift the mudguard and detach and remove the carrier arm.



Remove the rear wheel, unscrewing and removing the 5 fastener screws with the relative washers.



Remove the fastener screw of the air filter box, situated inside the vehicle.



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Remove the 2 remaining fastener screws of the air filter box.



Lift the air filter box and support it adequately in a position allowing easier access to the fasteners of the brake calliper mounting bracket.



Use a screwdriver to straighten the anti-rotation tabs of the fastener screws of the calliper mounting bracket.



Remove the 2 fastener screws complete with anti-rotation devices.



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Remove the fastener screw of the pipe retainer bracket.



Detach the callipers from the disc and place them in the position shown in the photo.



Pull the rear brake lever repeatedly to bring the brake pads into contact with each other.



N.B: This procedure cannot be carried out with very worn pads.

Rear system bleeding

Connect the container for collecting fluid to the rear calliper bleed nipple.



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Cut the cable tie fastening the wiring harness in the zone next to left hand master cylinder handlebar clamp.



Loosen the left hand master cylinder handlebar clamp and adjust provisionally to bring the brake fluid reservoir as close as possible to the horizontal position.



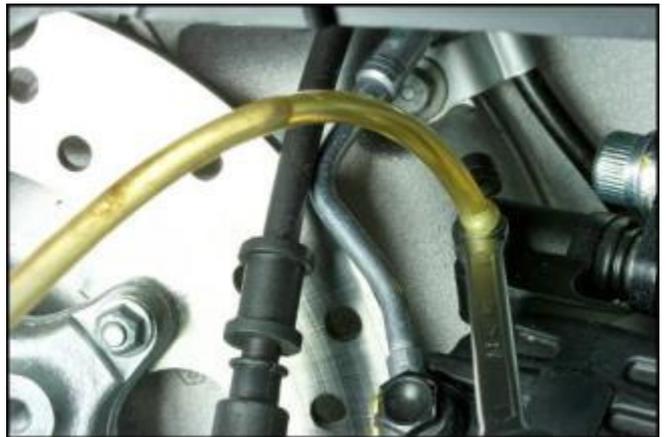
Remove the 2 screws and the lid of the reservoir complete with gasket.
Top up the brake fluid level in the reservoir if necessary.



Pull the rear brake lever repeatedly to generate pressure in the circuit.
Stop pulling the brake lever once the master cylinder is pressurised or if the lever reaches the handgrip.



Open the bleed nipple of the rear calliper and check the escaping fluid for air bubbles.
Tighten the bleed nipple.



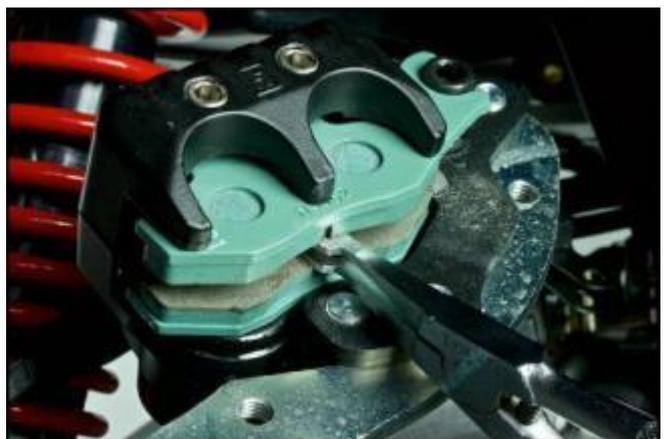
N.B: Hold the calliper in the position shown to keep the bleed nipple at the top and expel air trapped air correctly.

Pull the lever to operate the master cylinder and repeat the bleed sequence while observing the fluid drained from the calliper bleed nipple to check for air bubbles.
Keep an eye of the fluid level in the reservoir and top up whenever necessary so that it does not drop below the minimum level.



Once the fluid drained contains no more air bubbles,
separate the pads with a circlip pliers (Beta 1458)
or an equivalent tool.

N.B: Make sure that there is enough space in the reservoir to receive the volume of fluid sent back from the calliper.
For the best results, separate the pads in one quick movement.



Operate the rear brake master cylinder slowly to bring the pads back into contact with each other.



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Separate the pads again in one, quick and firm movement.



Provisionally fit the callipers onto the rear disc. Operate the rear master cylinder to set take up the clearance between the pads and the disc.



Fill the rear master cylinder reservoir to the max. level.



Fit the lid of the rear master cylinder reservoir, wiping off any spilt brake fluid.

N.B: This procedure ensures that the reservoir is filled to the optimum level.



Disconnect the connectors of the brake switch. Remove the 2 screws and the handlebar clamp U-bolt.



Hold the rear brake master cylinder in a vertical position. Pull the brake lever repeatedly while tilting the master cylinder slightly away from the vertical in all directions. Continue until there is the available travel of the lever reduces perceptibly.

N.B: Pull the lever completely, starting each time from the rest position.



Refit the rear master cylinder onto the handlebar, making sure that the handlebar clamp U-bolt is fitted the right way around and that the clamp itself is adjusted correctly.

The handlebar clamp U-bolt can only fit in one position onto the upper part of the clamp, and the adjustment of the respective fastener screws affects the inclination of the master cylinder unit and the lever relative to the handlebar.

The mount of the master cylinder must be parallel with the handlebar clamp U-bolt.



Manually check the effective travel of the rear brake lever.

Connect the wires to the brake light switch.



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Pull the rear brake lever and hold in position by fitting the O-ring, p/n 006731, onto the lever and handgrip as shown in the photo.



Hold the fixed jaw of the vernier calliper against the handgrip as shown in the photo.



N.B: To show the position of the vernier calliper more clearly, this photo has been taken with the counterweight removed.

Measure the distance between the outer edge of the handgrip and the end of the brake lever. The brake is adjusted correctly if the value measured is equal to or over **95 mm**.



N.B: The measurement must be made with the vernier calliper perfectly aligned with the direction of movement of the lever.

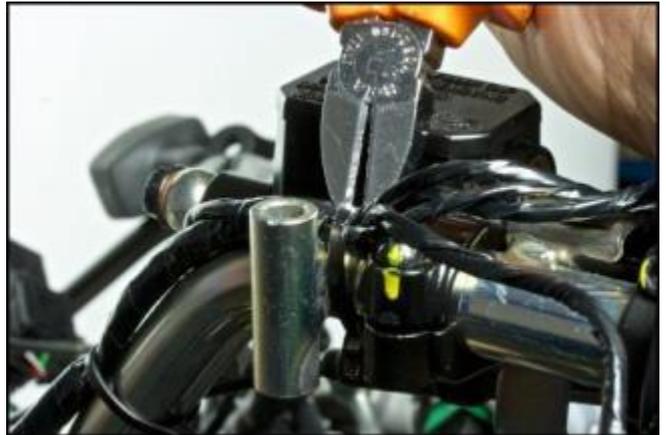
Front system bleeding

Support the vehicle adequately and remove both front wheels, removing the 10 fastener screws and the relative washers.

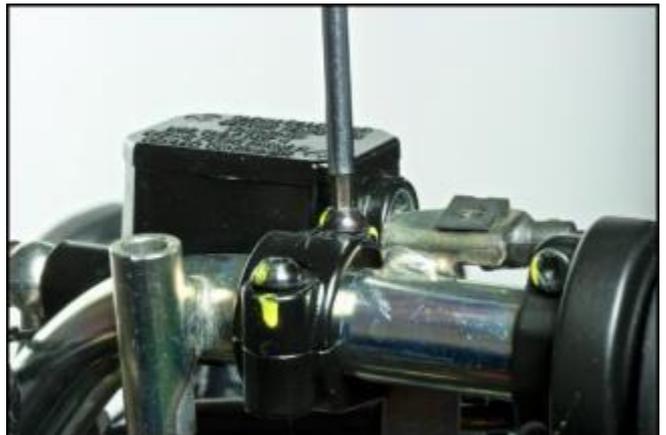


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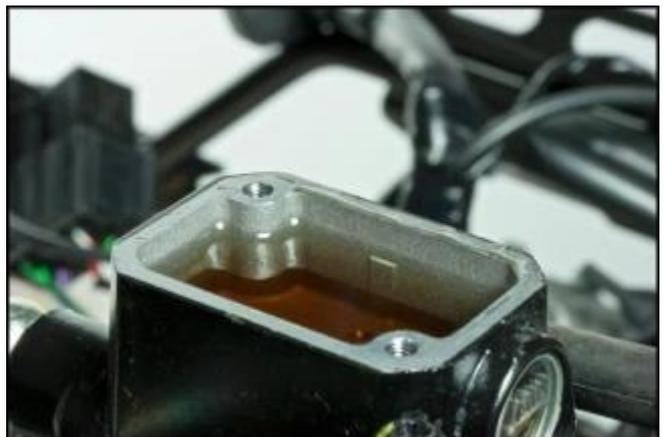
Cut the cable tie fastening the wiring harness in the zone next to front brake master cylinder handlebar clamp (right front master).



Adjust the fastener screws of the handlebar clamp U-bolt to bring the brake fluid reservoir as close as possible to the horizontal position.



Open the lid of the reservoir and top up the fluid level if necessary.



Connect the brake fluid collector container to the front bleed nipple for the left hand circuit.



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Pump the lever a few times and check for air bubbles in the drained fluid.



Top up the reservoir and bleed using the bottom nipple for the right hand circuit.



Remove the upper fasteners of both front callipers and restrain the callipers temporarily in a vertical position.



N.B: Move the brake disc as necessary to attain this position.

Connect the brake fluid collector container to left hand calliper.

Pump the lever a few times and check for air bubbles in the drained fluid.

Repeat the procedure for the right hand calliper.



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Remove the fastener screw of the left hand calliper pipe retainer clamp.



Remove the lower fastener screw of the left hand calliper and separate the pads, pushing the pistons to their respective end stops.

Secure the pads using the shim specific tool 005127Y (alternatively a spacer of 7 mm).



Hold the left hand calliper in a vertical position and pressurise the master cylinder.

While maintaining the pressure, bleed the calliper while holding it in the position shown.



Refit the left hand calliper, tightening the 2 screws to a torque of 22 - 27 Nm.
Fit the pipe retainer clamp and fasten with the relative screw.



Remove the fastener screw of the right hand calliper pipe retainer clamp.



Remove the lower fastener screw of the right hand calliper and separate the pads, pushing the pistons to their respective end stops.

Secure the pads using the shim specific tool 005127Y (alternatively a spacer of 7 mm).



Hold the right hand calliper in a vertical position and pressurise the master cylinder.
While maintaining the pressure, bleed the calliper while holding it in the position shown.



Refit the right hand calliper, tightening the 2 screws to a torque of 22 - 27 Nm.

Fit the pipe retainer clamp and fasten with the relative screw.



For greater safety, repeat the step to check if the fluid drained from the upper bleed nipple of the left hand circuit contains air bubbles.



Repeat the step to check if the fluid drained from the upper bleed nipple of the right hand circuit contains air bubbles.

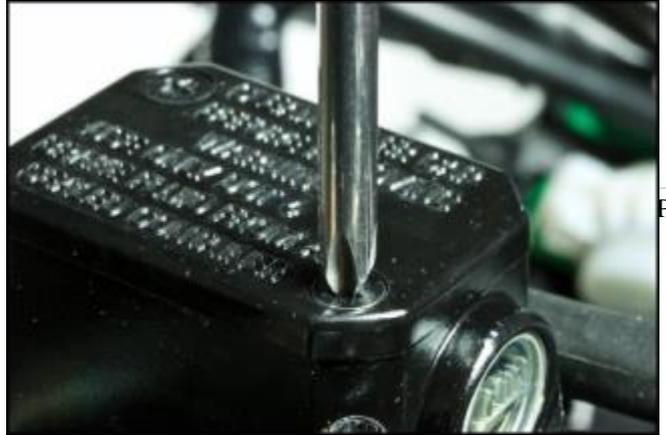


Top the fluid in the right hand reservoir up to the max. level.



Close the lid of the reservoir, wiping off any spilt fluid.

N.B: This procedure ensures that the reservoir is filled to the optimum level.



Disconnect the connectors of the brake light switch and loosen the fastener nut of the throttle cable sheath.



Remove the 2 screws and the handlebar clamp U-bolt of the right hand master cylinder.



Rotate the right hand master cylinder into a vertical position.
Pull the brake lever repeatedly while tilting the master cylinder slightly away from the vertical in all directions.
Continue until there is the available travel of the lever reduces perceptibly.

N.B: Pull the lever completely, starting each time from the rest position.



Refit the front master cylinder onto the handlebar, making sure that the handlebar clamp U-bolt is fitted the right way around and that the clamp itself is adjusted correctly.

The handlebar clamp U-bolt can only fit in one position onto the upper part of the clamp, and the adjustment of the respective fastener screws affects the inclination of the master cylinder unit and the lever relative to the handlebar.

The mount of the master cylinder must be parallel with the handlebar clamp U-bolt.



Manually check the effective travel of the front brake lever.



Pull the front brake lever and hold in position by fitting the O-ring, p/n 006731, onto the lever and handgrip as shown in the photo.



Hold the fixed jaw of the vernier calliper against the handgrip as shown in the photo.



N.B: To show the position of the vernier calliper more clearly, this photo has been taken with the counterweight removed.

Measure the distance between the outer edge of the handgrip and the end of the brake lever. The brake is adjusted correctly if the value measured is equal to or over **95 mm**.



N.B: The measurement must be made with the vernier calliper perfectly aligned with the direction of movement of the lever.

Connect the brake light switch and tighten the fastener nut of the throttle cable.



Connect PADS to the vehicle's diagnostic socket.



Select ABS diagnosis.



Select adjustments.



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ABS Rear circuit bleeding

- Select Rear bleeding



Before accessing the activation of the modulator, the message intended to prevent any unaware use of the modulator bleeding phase is displayed.



The modulator activities must be linked to the brake lever command activations.



Command the activation of the valves of the rear channel.

When the electric pump is activated and the brake control is soft, perform complete activations of the master cylinder control lever.



When the valves block the delivery of the manual pump, keep the system under pressure.



When the pressure of the electric pump prevails over the manual pump, maintain the pressure by reducing the stroke of the lever as necessary.



At the end of the test, the electric pump stops and when everything is efficient, the manual pump control returns to normal operation.

For added safety, repeat the bleeding procedure a few times.



If the ABS modulator had had air inside, this would have been transferred into the lines between the ABS pump and the caliper.

In this case, if necessary, repeat the bleeding of the rear line starting from the removal of the rear calliper from the disc, up to the bleeding of the vertical axis master cylinder.



ABS – front circuit bleeding

The front brake master cylinder feeds the ABS modulator which in turn feeds the front left and right callipers via dedicated lines.

Activate the valves of each front channel (left and right channels) using PADS

The behavior of the brake lever during the activation of the front channels is similar to the rear channel, but with less evident effects.



If the ABS modulator had air inside, this would have transferred into the lines between the ABS unit and the front callipers, restore them by bleeding from the fittings of the upper branches.



Remove the right hand footboard, unscrewing the 4 fastener screws.



Pedal circuit bleeding

Remove the connector of the brake light switch and the 3 fastener screws of the combined braking system master cylinder bracket.



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Hold the combined braking system master cylinder in a vertical position so that the pedal can be operated manually.



Connect the fluid collector container to the bleed nipple of the front brake servo pump and pump the pedal a few times while checking for air bubbles in the drained fluid.



Refit the bracket of the combined braking system master cylinder, tightening the 3 screws to a torque of 20 Nm.

Connect the wires to the brake light switch.



Remove the fastener screw of the combined braking system master cylinder reservoir and top up to the max. level.



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Pull the two brake levers forcefully and hold to pressurise the manual brake master cylinders.



Press the combined braking system master cylinder pedal.



Bleed the front brake servo pump until the fluid drained contains no more air bubbles.



Once the pedal circuit has been bled completely, carry out the procedure to Replace all the brake fluid.

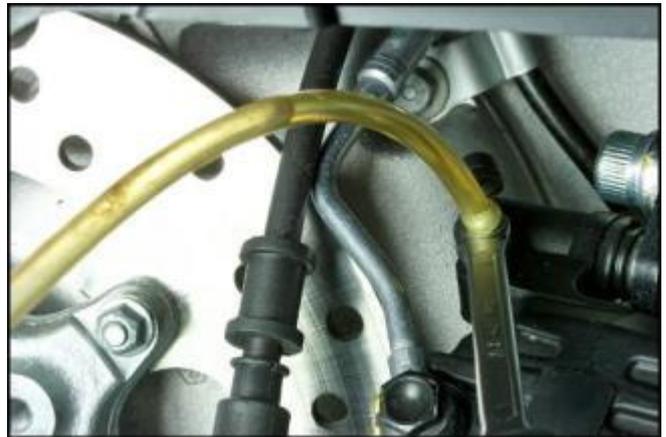
Fill the combined braking system master cylinder reservoir, **adding 4 times the volume of new fluid necessary to fill the reservoir system to flush the system**, draining the fluid contained in the circuit under pressure from the bleed nipple of the front brake servo pump.



N.B: Do not operate the pedal repeatedly while the bleed nipple is open.

Replacing the brake fluid in the Rear caliper circuit.

Refill the left hand master cylinder reservoir, draining the used fluid under pressure from the bleed nipple of the rear calliper.



N.B: Do not operate the lever of the master cylinder repeatedly while the bleed nipple is open.

Continue filling the rear brake circuit until approximately **120 cc** has been drained into the collector container.



Replacing the brake fluid in the left front caliper circuit.

Refill the right hand master cylinder reservoir, draining the used fluid under pressure from the bleed nipple of the left hand front calliper.

N.B: Do not operate the lever of the master cylinder repeatedly while the bleed nipple is open.



Continue filling the front brake circuit until approximately **120 cc** has been drained from the left front caliper into the collector container.



Replacing the brake fluid in the right front caliper circuit.

Refill the right hand master cylinder reservoir, draining the used fluid under pressure from the bleed nipple of the right hand front calliper.

N.B: Do not operate the lever of the master cylinder repeatedly while the bleed nipple is open.



Continue filling the right front brake circuit until approximately **120 cc** has been drained from the right front caliper into the collector container.



After bleeding the braking circuits and changing the brake fluid, reassemble the parts removed from the vehicle by following the steps for removal in reverse order.

After reassembly, the vehicle must be kept in the service centre without moving it or operating the brake levers or pedals for 24 hours.

At the end of the 24 hours, the lever checks already performed at the beginning of this procedure must be repeated, in order to document the outcome of the test and then attach the photos to the check coupon:

TEST - Final checks

4. Take a photo illustrating the travel measured for the RH lever with the vernier calliper (minimum permissible value **95 mm**), and attach to the service coupon.
5. Take a photo illustrating the travel measured for the LH lever with the vernier calliper (minimum permissible value **95 mm**), and attach to the service coupon.
6. Carry out the pedal firmness test, taking a photo of the values measured and attaching it the service coupon.

If the required values of not attained, technical support must be contacted to determine the cause of the problem.

Note that six (6) photos in total must be attached to the service coupon relative to the recall campaign: specifically, photos of the measurements of the two levers and of the measurement to determine pedal firmness taken before the procedure and at the end of the procedure after the 24 hour wait period



Copy of Customer Letter and Tread Act information

Dear Valued Customer:

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IMPORTANT SAFETY RECALL

Regarding your: 2020 or 2021 MP3 500

THIS NOTICE APPLIES TO YOUR VEHICLE VIN: _____

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. The NHTSA identification number of this recall is **22V-217**

REASON FOR THIS RECALL

Piaggio Group Americas (PGA) has decided that a defect, which relates to motor vehicle safety, exists in a specific range of Vespa scooters as noted below

- Select 2020 MP3 500
- Select 2021 MP3 500

In the affected range, PGA has identified the possibility of a non-conformity in the zinc plating surface treatment on the brake hose terminal fittings. This can cause a chemical reaction with the brake fluid itself and result in excessive travel from the front or rear brake lever/pedal. This situation can cause reduced braking and stopping ability and can lead to a loss of control or a crash, increasing the risk of injury. According to vehicle registration records; you are the owner of a vehicle that falls within this affected VIN range.

WHAT WE WILL DO

To address this situation, Piaggio Group Americas will conduct a recall of the aforementioned models within the affected VIN range. **Piaggio Group Americas, through the qualified dealer network will perform a complete brake system flush.** This repair campaign will eliminate any potential safety risk.

The work required by this recall may be completed by your qualified Piaggio/Vespa dealer at no charge to you for the required parts and labor.

WHAT YOU SHOULD DO

With the receipt of this letter, please contact your authorized Piaggio/Vespa dealership **as soon as possible** to schedule an appointment to have the recall completed. Instructions for this recall have been sent to your dealer. Your dealer is best equipped to provide service to ensure that your vehicle is corrected as promptly as possible. Please ensure that these instructions are followed by anyone that uses your vehicle.



If you take your vehicle to your dealer on the agreed service date and they do not remedy this condition on that date or within three (3) days, we recommend you contact our Customer Care helpline at: 212-380-4400.

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After contacting your dealer and the above number, if you are still not able to have the safety defect remedied without charge and within a reasonable time, you may wish to write to: The Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Ave SE, Washington, DC 20590, or call the toll-free Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153); or go to <http://www.safercar.gov>.

Our Customer Care helpline (**212-380-4400**) is available to provide you with further information and any support you may need. Should the vehicle not be in your possession or available to you, please provide the name and address of the purchaser by contacting our Customer Care department or by filling out the form on the following page. This form can be faxed to 212-380-4459.

If you previously had the work required of this recall completed at your own expense, please refer to the attached letter (Tread Act Customer Reimbursement Plan) describing the criteria and procedure to request reimbursement.

Federal law requires any lessor who receives a notification of a determination of a safety-related defect or noncompliance pertaining to any leased motor vehicle shall send the notice to the lessee within 10 days.

We are sorry to cause this inconvenience; however, we have taken this action in the interest of your safety and continued satisfaction with our products. Thank you for your prompt attention to this important matter.

Very truly yours,

Piaggio Group Americas



2020 MP3 500 & 2021 MP3 500—Brake bleeding campaign

VIN # (Full 17 digits): _ _ _ _ _

New Owner Details (if not in your possession)

First Name: _____ Last Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Date of transfer: _____

Vehicle not available for the following reasons: Scrapped: _____ Stolen: _____

Vehicle not available for other reasons: (Please specify)

Print Name: _____

Signature: _____ *Date:* _____



TREAD ACT CUSTOMER REIMBURSEMENT PLAN

Customer Reimbursement for Safety Related Recall Repairs
Effective with Safety related recalls initiated as of January 15, 2003

Piaggio Group Americas (PGA) is initiating a safety related recall for a select range of **2020 MP3 500 and 2021 MP3 500** models that includes your VIN number. If you have previously paid to have the repair or update as described in the recall documentation completed, you are entitled to be reimbursed for that expense.

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You are encouraged to request reimbursement from your respective Piaggio/Vespa dealer. Alternatively, you may submit the request for reimbursement to the following address:

Customer Care
Piaggio Group Americas
860 Washington St, 9th Floor
New York, NY 10014

In every case:

- Repair expenses pertaining to the subject of the safety recall are reimbursable, not consequential expenses such as towing, rental, accommodations, damage repairs, etc.
- Expenses from repair facilities outside of the PGA authorized dealer network will be considered; however, the repair procedure must meet PGA's standards.
- When reimbursing for parts, the Manufacturers Suggested Retail Price (MSRP) will be considered as the guideline for reasonable charges.
- Expenses for repairs performed more than 10 days after the date of the last customer notification letter sent by PGA are not eligible for reimbursement.
- Taxes and hazardous waste disposal, where previously paid, are eligible for reimbursement.

The authorized Piaggio/Vespa dealer will request a copy of the customer notification letter, as well as a copy of the owner's previously paid invoice, and then inspect the vehicle (if still in the possession of the invoice holder) to determine the scope and quality of the previous repair. Claims will be processed within 60 days of receipt.

Best regards,

Piaggio Group Americas