R1 Mega

RX The One

MANUALE ISTRUZIONI OPERATING MANUAL MANUEL D'INSTRUCTIONS BETRIEBSANLEITUNG MANUAL DE INSTRUCCIONES



2010

GB

WARNING! BEFORE INSTALLING AND USING THIS NEW FORMULA SRL PRODUCT IT IS CRITICAL TO YOUR SAFETY THAT YOU READ AND STRICTLY ADHERE TO THE INSTRUC-TIONS IN THIS MANUAL. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY, DEATH AND INVALIDATE YOUR LEGAL RIGHTS.

KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE AS IT CONTAINS IN-FORMATION CRITICAL TO YOUR SAFETY.

WARNING! DON'T TRY TO DISASSEMBLE OR MODIFY IN ANY WAY THIS NEW FORMULA SRL PRODUCT!

SERVICE ON THIS PRODUCT MUST BE PERFORMED ONLY BY QUALIFIED PROFESSIONAL MECHANICS WHO ARE FAMILAR WITH AND UNDERSTAND THE TECHNICAL DETAILS OF HOW THIS PRODUCT WORKS.

IF YOU DECIDE TO IGNORE THIS IMPORTANT SAFETY WARNING, YOU ARE DOING SO AT YOUR OWN RISK AND AT NO LEGAL LIABILITY TO FORMULA SRL OR ITS DISTRIBUTORS.

Note: AS FOR ANY MANUAL, THIS ONE MAY BE UPDATED. CONTACT YOUR MECHAN-IC, OR CHECK OUR WEB SITE REGULARLY, (www.formula-brake.com) TO RECEIVE ANY SUCH UPDATES.

This manual provides information for safe and proper mounting and use of the braking system; and for its routine maintenance. By following the rules contained in this manual you will ensure that the braking system has the best performance and operating life, along with avoiding the most common causes of accidents that may result from improper operation and maintenance.



WARNING: Carefully follow SAFETY RULES for proper braking system function.

In this handbook you will find the following safety notices:



CAUTION: Directs your attention toward unsafe practices which could result in damages to the equipment.



WARNING: Directs your attention toward unsafe practices which could result in personal injury or damages to the equipment.

GENERAL SAFETY RULES

- FORMULA SRL brakes have been designed for use on two-wheel vehicles with human propulsion only. Any other application is dangerous and may result in the failure of this product.
 FORMULA SRL declines any and all responsibility for the safety of this product if used for an application other than which it is intended.
- FORMULA SRL brakes are a high-performance product, offering superior braking over normal Brakes. As a result less braking force is required to lock up the wheel. Be aware that a locked wheel can make you lose control and can be the cause of an accident and injury. In-depth knowledge about the function and features of this product are required before use.
- The user is responsible for learning and using the correct braking technique; consult the Owner's Manual of the bicycle, ask a professional bicycle dealer for advice, or contact Formula srl

for additional details and recommendations.

- Test the brakes and your braking technique on flat and even ground before using the bike in more severe conditions.
- Brakes are essential for the safe use of a bicycle. The improper setup and use of the brakes can
 make you lose control and cause an accident, with the potential to cause serious injury.
- Do not place your hands close to or within moving parts; always use strong five-fingered gloves ensuring sensitivity and a powerful grip.
- Do not change the parameters of the braking system to obtain other performances than those established by the manufacturer.
- Before starting any mounting operations, carefully check for dangerous conditions at the work site. If too dark, use all available light sources and make sure they work properly before starting work.
- Concentrate and take the due precautions before using components which could cause damage.
- When using the bike, it is advisable to wear a helmet and to ride with care and a sense of responsibility.
- All specialized maintenance operations must be carried out solely by personnel authorized by FORMULA SRL.
- Don't touch the surface of the disc rotors with your bare hands as the natural oils on your skin can compromise performance. Always wear clean latex gloves when handling the disc rotors.
- Disc brakes get very hot when used. WARNING: NEVER touch the caliper or the rotor immediately after use. Make sure the brakes have cooled down before working on them.
- Before use, check to ensure the front brake lever is on the side of the handlebars you are
 accustomed to having it on. If the lever is on the other side, sudden braking can cause you serious injury. Have a professional mechanic swap the position of the levers if they are incorrect.
- A high braking load (total weight over 100 Kg and an incline of over 15%) will mean a necessary reduction in your speed and the use of both brakes when braking.

BRAKING SYSTEM SAFETY RULES

- Before each use, check all fasteners for correct torque. Torque ratings are supplied in this
 manual and an appropriate torque wrench is required to perform this check.
- The brake rotors must be installed on wheels that are suitable for this type of brake system. A
 wheel with an insufficient spoke section or with a radial spoke lacing can break under normal
 use of the braking system and cause serious injury or an accident. Check with your wheel
 manufacturer BEFORE installation to ensure compatibility.
- Check the spoke tension and condition frequently. A damaged spoke may break suddenly and interfere with the braking system. This may result in serious personal injury or accidents. The bike frame or fork must be suitable for mounting the braking system.
- The frame and the fork of the bicycle must be suitable for this type of braking system. The support, size and position of the components will only function properly if the system is intended for use with disc brakes.
- It is critical to cross-check your frame and fork manufacturers' manuals on all the parts critical to the braking system and verify that the torque ratings match the ratings found in this manual. In the case of inconsistency of the values, don't install

the braking system.

- · Make sure the bicycle is clean before doing any maintenance on the brakes.
- Never install the brakes using adapters or supports supplied by other manufacturers. Doing so will void the warranty and release Formula srl of liability. Only use original Formula srl products.
- Only use products recommended in this manual, otherwise you can damage the system and the brakes will be unreliable and potentially dangerous.
- Don't let brake fluid or other oils or grease used for lubricating the bicycle come into contact
 with the disc rotors. If this does happen, clean the discs using isopropyl alcohol ONLY.
- Don't let brake fluid or lubricants come into contact with the brake pads. If this does happen, the brake pads will be contaminated and MUST be replaced before the next use.
- Only use DOT 4 brake fluid from a new bottle. NEVER use old fluid, or fluid that has been bled out of the system. Old fluid can contain water and this will compromise the performance and function of the system.
- All new brakes, new brake pads and new discs have to bed in. This requires at least 50 applications of the brakes at a speed of 30 Km/h before the brakes reach the maximum performance. Make sure you are in a zone where there is no road traffic to bed the brakes in.
- Before every ride, make sure there are no fluid leaks in the system by applying the lever and holding it down as far as it will go. Check the hose connections and the brake fluid reservoir for any leaks. Consult a professional mechanic if there are fluid leaks. A fluid leak can cause a serious accident!
- THE BRAKING SYSTEM MAY NOT HAVE THE HIGHEST BRAKING EFFICIENCY WHEN NEW, THEREFORE A BREAK IN PERIOD AND LONGER STOPPING DISTANCES SHOULD BE ALLOWED FOR UNTIL THE SYSTEM IS BROKEN IN AND OPERTAING NORMALLY.
- The efficiency of the brakes depends on many factors which FORMULA SRL has no control
 over. These include the speed of the bike, the wheel-terrain contact, the brake lever application force, the correct installation and maintenance of the brakes, the hydraulic brake fluid, the
 levers, the brake shoes or pads, the condition of the bike, the weight of the rider, the correct
 braking technique, the weather conditions, the type and conditions of the terrain, and many
 other factors.
- We recommend using medium strength Loctite (Loctite 222 or 242) on all threaded fasteners. After applying Loctite and fitting the fastener, clean any excess Loctite with a cloth. Let the Loctite dry for at least 24 hours BEFORE use.

ENVIRONMENTAL NOTE

In order to safeguard the environment, please refer to these simple instructions for the correct disposal of Formula srl products.

- The packaging material does not require special disposal precautions because it is not dangerous in any way; we suggest recycling paper and plastic.
- 2) It is also recommended to dispose of the metal parts after use.
- In regards to the brake liquid DOT4, it is recommended to follow the instructions in the safety sheet available from: http://support.formula-brake.com.

In the case of all three items mentioned above, it is recommended to dispose of the waste following the national directives through specialised companies.

FOREWORD

Recommended lubricants and cleaning products Hydraulic brake fluid

Use only DOT 4 Super hydraulic brake fluid from sealed containers. Don't leave the bottles of DOT fluid open for a long time as this product absorbs moisture in the air and this will change its physical properties, seriously affecting the efficiency of the brakes. Change the oil in the system every year to maximize performance.



WARNING: Besides damaging paint, the brake system's fluid is extremely hazardous if it comes in contact with the eyes or skin. In the event of eye contact flush with fresh water and seek medical assistance immediately. In the event of leakage or accidental contact with the DOT4 brake liquid, please refer to the safety sheet available on the internet at: http://support.formula-brake.com.

Grease

Use silicon grease for EPDM seals. Formula srl recommends: UNISILKON TKN 1011 by KLUBER.



WARNING: Do not use lubricant oils in the area of the operation pin of the piston (shown by the arrow in the figure) because it includes EPDM O-Rings.

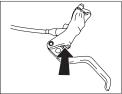


CAUTION: Use of inappropriate type of grease may compromise the integrity of the seals and cause damage to the system and therefore to the user.



WARNING: The Loctite used in some parts found in this product can be dangerous if it comes into contact with your eyes or skin.





1.1 INSTALLING THE BRAKE ROTOR

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If you decide to ignore this important safety warning, you are doing so at your own risk and at no legal liability for Formula srl or its distributors.

WARNING: Consult THE SAFETY REGULATIONS found in this manual.



CAUTION: You must use a torque wrench to install the disc rotor bolts.

WARNING: Ensure the disc rotor isn't hot before working on it by letting it sit for a minimum of 10-15 minutes. Let it cool if necessary.

Place brake disc 1 on hub 2 of an assembled wheel with the markings facing outwards. Make sure the arrow 3 on the disc flange indicates the correct direction of rotation. Tighten the 6 MS screws supplied with a TORX[®] T25 bit/tool. Tighten the 6 screws in a star pattern to a torque setting of 6 Nm±5%. Carefully clean the disc with isopropyl alcohol to remove any traces of grease or oil. Mount the wheel and secure with the original fasteners.

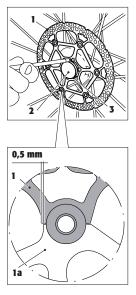


CAUTION: When removing the screws, always make sure to reapply medium strength loctite and ensure the torque settings are correct by using a torque wrench.

The figure shows the acceptable play of **0.5 mm** between the internal spider **1a** and external disc **1**.



WARNING: If the indicated play is greater than **0.5 mm** replace the entire disc rotor assembly.



Installing the pump KIT

- Fit the pump body 4a to the handle bar positioning it as shown in the figure and orientating it in the desired position.
- Fix the pump body 4a by mounting the collar 5a so that the indication "UP" faces the upper part (as shown in the figure). First tighten the upper screw 5 to a torque setting of 2.5/3 Nm±5% and then screw 5b to a torque setting of 2.5/3 Nm±5% using a TORX® T15 (R1) and TORX® T25 (RX) bit.

If the hose length needs to be adjusted, contact the manufacturer, if not proceed with the positioning of the hose on the bicycle, carefully following the instructions given below:

- the hose needs to be attached to the fork or frame in a way that does not interfere with the free flow of fluid through the hose:
- the hose should not make curves smaller than a 20 mm radius and should not interfere with any moving part of the bicycle.



WARNING: An incorrectly mounted hose or a hose that is in contact with moving parts of the bicycle, can compromise braking performance and cause serious accidents.



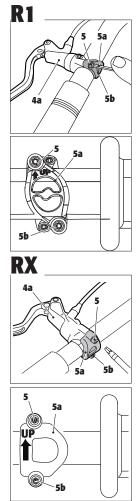
CAUTION: After the brake has been installed, make sure the handle bar turns freely: if the brake hose gets in the way, make the required adjustments so that it does not or contact the manufacturer.

Installing the caliper

To adapt frames or forks to the various diameters of brake rotors available, FORMULA SRL supplies different adapters which can be mounted between the fork or frame and the brake caliper.



CAUTION: Only correct mounting of the system and it's various support elements will ensure the safety of the cyclist and the exceptional performance of FOR-MULA SRL disk brakes.



Fit the caliper to the fork, proceeding as follows:

INTERNATIONAL STANDARD MOUNT OR SIMILAR



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CAUTION: You must use a torque wrench to assemble the all fasteners.



CAUTION: When removing the screws, always make sure that medium strength loctite is applied when reassembling, and that the correct torque wrench settings are used.

CAUTION: Consult the manual for the adaptors to see which adaptor you need.

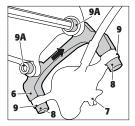
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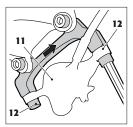
 Attach the adapter 6 to the frame or fork with the arrow facing the direction in which the wheel turns. Tighten screws 9a with a 6 mm Allen wrench to a torque setting of 9 Nm±5%, applying medium strength thread locker, if not present.



CAUTION: Make sure washers **9** are installed before assembling fasteners **8**.

- Place the gripper 7 on the adapter 6. Fully tighten screws
 8 with a 5 mm Allen wrench, applying medium strength thread locker, if not present. Loosen the screws just enough to allow the gripper to move.
- Pull the brake lever 2-3 times so that the caliper 11 centers itself on the disc. Apply pressure to the lever and screw the caliper's fixing screws 12 into the adapter to a torque setting of 9 Nm±5% and apply medium strength Loctite, if not already present.





POST MOUNT COUPLING

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CAUTION: When removing the screws, always make sure that medium strength loctite is applied when reassembling, and that the correct torque wrench settings are used.



CAUTION: Consult the manual to see which adaptors you need.



CAUTION: Make sure the washers are installed before assembling the fasteners.

CAUTION: When mounting the caliper onto the fork, check that the caliper body is not in contact with the fork itself.

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1) Installing directly onto a POST MOUNT fork

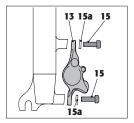
 Fit the caliper 13 to the fork partly tightening screws 15 with a 5 mm Allen wrench (if not already present, apply medium strength Loctite) leaving the caliper free to move.

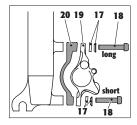
Make sure that the washers **15a** are present between the screws **15** and the caliper **13**.

 Apply pressure to lever so the caliper settles and at the same time tighten the fixing screws 15 to a torque of 9 Nm±5%.

2) Installing with POST MOUNT 180 adaptor

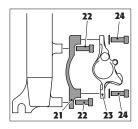
- Fit the special washers 17 onto the screw 18 paying attention to match the concave and convex profiles (if not already present, apply medium strength Loctite) and following the order shown in the figure, insert the screws assembled in caliper 19 and adaptor 20 making sure the arrow points upward.
- Screw the assembly onto the fork without tightening down, leaving the caliper free to move.
- Apply pressure to lever so the caliper settles and at the same time tighten the fixing screws 18 to a torque of 9 Nm±5%.





3) Installing with adaptor on POST MOUNT fork

- Fit adaptor **21** on the fork making sure the arrow is pointing upwards.
- Tighten screws 22 to a torque setting of 9 Nm±5% with a 5 mm Allen wrench applying medium strength Loctite, if not already present.
- Fit caliper 23 on adaptor 21.
- Screw in fixing screws **24** slightly with a 5 mm Allen wrench leaving the caliper free to move. Apply medium strength Loctite, unless this is already present.
- Apply pressure to lever so the caliper 23 settles and at the same time tighten fixing screws 24 to a torque of 9 Nm±5%.





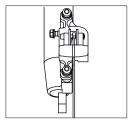
WARNING: Never install the Formula srl brake system with adapters that are not supplied by Formula srl. This will void the warranty. To avoid serious accidents use only parts made by Formula srl and mounted on designed preset forks and frames.

Turn the wheel slowly, making sure that the disk is centred on the pads and that none of the parts comes into contact with the others.

Perform 2 or 3 test braking actions to bring the pads to the correct distance from the disk.



WARNING: The brake system requires a break in period to obtain top performance. We recommend running the bike at a speed of 30 Km/h and braking it at least 50 times allowing it to come to a full a stop (taking the required precautions) before considering the system broken in and fully efficient.



2 SET UP WARNING! DON'T TRY TO DISASSEMBLE OR MODIFY IN ANY WAY THIS NEW FORMULA SRL PRODUCT!

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2.1 Positioning the R1 lever

To position lever **25** (distance **B**) to meet your needs, adjust screw **26** with a 2 mm Allen wrench.



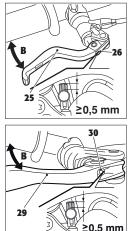
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WARNING: The head of adjuster screw **26** must protrude at least 0,5 mm from the threaded insert.

2.1 Positioning the RX lever

To position lever **29** (distance **B**) to meet your needs, adjust screw **30** with a 2 mm Allen wrench.

WARNING: The head of adjuster screw **30** must protrude at least 0,5 mm from the threaded insert.



3 PAD REPLACEMENT

MARNING! DON'T TRY TO DISASSEMBLE OR MODIFY IN ANY WAY THIS NEW FORMULA SRL PRODUCT!

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WARNING: Consult THE SAFETY REGULATIONS found in this manual.

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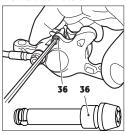
 Loosen the fixing pin 36 of the pads, using a TORX[®] T15 spanner.

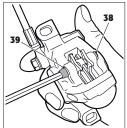


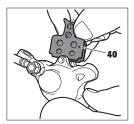
- Remove snap ring **38** and loosen fixing pin **39** of the pads, using a 3 mm Allen wrench.



- Carefully clean the pistons inside the caliper, using a brush soaked in isopropyl alcohol.
- Carefully clean the disc using a cloth soaked in isopropyl alcohol.







- Temporarily put the WORN pads back in position and, using a flat blade screwdriver to push down between the pads, push the pistons fully back inside the caliper.
- Remove the worn pads.
- Insert the new pads with the spring. -

NOTE: the pads are identical and can be placed on the left or right side.

Version R1

- Check the integrity of the anti-loosening ring **37** placed on the fixing pin 36.
- Tighten fixing pin **36** of the pads to a torque setting of 2 Nm±5% with a TORX® T15 spanner.

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- Tighten fixing pin **39** of the pads to a torque setting of 2 Nm±5% with a 3 mm Allen wrench, then put snap ring 38 back in place.



WARNING: When assembling the fasteners, always make sure they are torqued down to the right torque setting.



CAUTION: You must always use a torgue wrench to assemble all fasteners.



CAUTION: Never apply the lever without the pads in place or with the wheel removed. If this does happen you will have to press the brake pads back into the caliper with a clean flat-bladed screwdriver.



CAUTION: When installing new brake pads, be very careful to avoid contamination with oil or grease.



WARNING: After having carried out this operation, make sure the system works properly by performing 50 braking tests. Only use the bike after having made sure the system is working properly. If this is not the case, contact a professional mechanic.



WARNING: Before each use make sure all the screws and bolts are tightened to the correct torque found in the present manual.



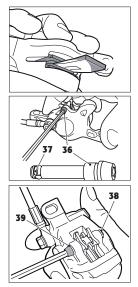
CAUTION: Don't worry if you can hear the brake disc and pad rubbing lightly. This noise will disappear as the brakes are used; new brake pads must bed in to find the correct position on the disc. You may hear a slight rubbing noise after changing the brake pads or if the wheel hasn't been fitted properly.



WARNING: Don't use brake pads supplied by other manufacturers. This would void your warranty. Only use original Formula srl products.



CAUTION: When transporting the bike with the wheels off, always fit the relevant spacer between the brake pads.



4 MAINTENANCE



WARNING: Consult THE SAFETY REGULATIONS found in this manual.

The periodic cleaning of this braking system using a suitable biodegradable degreasing product that doesn't damage the system is necessary.



WARNING: ISOPROPYL ALCOHOL is recommended to clean the disc brake. The use of any other product may be hazardous to the user.

WARNING: Do not touch the rotor right after its use as it might cause you severe injury.



WARNING: After carrying out this operation, perform 50 braking tests to make sure the brakes are working properly.

READ CAREFULLY!

FORMULA SRL extends to the original purchaser of its brakes a limited warranty that the brakes are free of defects in material and/or workmanship for a period of two years from date of purchase. The burden of proof of such purchase date shall be the consumer's.

WHAT PROTECTION DO I RECEIVE FROM THE WARRANTY?

FORMULA SRL will, at its discretion, repair or replace the defective product under warranty.

WARRANTY CONDITIONS AND LIMITATIONS

- This warranty applies only to the original owner of the FORMULA SRL products. FORMULA SRL does not warranty any second hand-merchandise;
- The validity of this warranty is subject to the proper application of the following «claims procedures»:
- (a) The claim must be initiated within eight (8) days of discovery of the potential defect;
- (b) Every claim must be submitted to the FORMULA SRL Dealer from which the product was purcahsed, with the understanding, however, that the discretion as to the acceptability of the claim is exclusively FORMULA's;
- (c) Only a FORMULA SRL Dealer can ship to FORMULA SRL the allegedly defective product, with the accompanying documentation.

Failure to comply with these procedures will invalidate the claim; in which case the product will be made available to the owner for thirty (30) days and then destroyed.

- 3. This warranty does not apply to:
- a) Costs and transportation damages directly or indirectly arising out of the application of this

warranty including, but not limited to, the transportation of the product from FORMULA SRL to the owner's domicile, or from the owner's domicile to FORMULA SRL;

- b) Damages to the product resulting from:
- Abuse, alteration, mishandling, misuse including, but not limited to the failure to use the product for the purposes it was designed and manufactured for (such purposes include cross country and downhill UCI organized competitions) and, generally, to follow the warnings and instructions contained in FORMULA's Owner's Manual;
- 2. Repairs performed by anyone other than a FORMULA SRL Dealer;
- 3. Accidents, falls, acts of God, or any cause outside FORMULA's control;
- 4. The use of corrosive agents on the product;
- 5. The prolonged exposure of the product to the elements and/or solvents;
- c) If and to the extent the serial number and/or production code has been deliberately altered, damaged or removed;
- d) In case of modification of the product;
- e) In case of normal wear and tear and, in general, to parts subject to normal wear and tear. Such parts include: discs pistons brake pads washers hoses oil.
- f) In case of damage to the product caused by the use of parts of different manufacturers, and/or not compatible, suitable and/or authorized by Formula srl for use on Formula srl products.
- Retailers, wholesalers, importers or anyone else besides FORMULA SRL may not modify this warranty in any way.
- 7. This warranty does not affect the rights of the consumer afforded by applicable law nor the rights arising out of the sale contract with the retailer. In the absence of any applicable law, however, this warranty will be the consumer's only safegard and neither FORMULA SRL nor any FORMULA SRL Dealer nor any Official FORMULA SRL Importer will be responsible for any incidental, special or consequential damage incurred as a direct or indirect violation of any explicit or implicit warranty of this product.
- 8. The validity and interpretation of this warranty shall be governed by, construed and enforced in accordance with, the internal laws of Italy. Any controversy arising out of this warranty shall be brought in front of the Prato Forum.

PLEASE NOTE: In reference to Article n°. 1341 of the Italian Civil Code, you, the consumer, are hereby explicitly requested to read carefully and understand the ramifications of Clauses 1 through 8 which submit to conditions and limitations some of your legal rights with respect to FORMULA SRL.



Formula srl

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