

CURA



 **Formula**

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

- I** Scarica il manuale del prodotto direttamente dal web:
- GB** Pls. download the products' instruction manual from the website:
- F** Merci de bien vouloir telecharger le manuel d'instructions sur la page:
- D** Bitte entladen Sie die Betriesanleitung vom den folgenden website:
- E** Por favor, descárgate el manual de instrucciones de nuestros productos de la web:
- BG** Моля, изтеглете наръчника на потребителя от следния адрес:
- HR** Molimo download-ajte nstrukcijski priručnik sa internetske stranice:
- SLO** Prosimo, da si naložite navodila o uporabi na strani:
- CZ** Stáhněte si prosím návod k použití z této webové stránky:
- DK** Download venligst produktets betjeningsvejledning fra følgende hjemmeside:
- SF** Ole hyvä ja lataa tuotteen käyttöohje seuraavalta sivulta:
- LV** Lūdzu lejupielādējiet instrukciju brošūru no adreses:
- PL** Proszę pobrać instrukcję obsługi produktu ze strony:
- P** Por favor, descarga o manual de instruçōes dos nossos produtos na web:
- SK** Prosím stiahnite si manuál produktov a inštrukcie z web stránky:
- S** Download venligst produktets betjeningsvejledning fra følgende hjemmeside:
- H** Kérem, tölts le a terméknek használati utasításait a website-ről:
- N** Last ned instruksjonsmanual for dette produktet på vår webside:
- NL** Aub. Download de product handleiding van de website:
- CN** 请到网页下载产品使用手册:

<http://rideformula.com>

TORX® è un marchio registrato di CAMCAR / TEXTRON INC. Tutti i marchi appartengono ai rispettivi proprietari.
TORX® is a registered trademark of CAMCAR / TEXTRON INC. All trademarks are the property of their respective owners.
TORX® est une marque déposée de CAMCAR / TEXTRON INC. Toutes les marques appartiennent aux propriétaires respectifs.
TORX® ist ein registriertes Warenzeichen der CAMCAR / TEXTRON INC. Alle Warenzeichen gehören den respektiven Eigentümern an.
TORX® es una marca registrada de CAMCAR / TEXTRON INC. Todas las marcas pertenecen a los respectivos propietarios.

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

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

ATTENTION! DO NOT INSTALL OR DISASSEMBLE THIS FORMULA SRL PRODUCT ON YOUR OWN!

Always seek the help of a professional mechanic. If you decide to ignore this important message, keep in mind that you are doing so **EXCLUSIVELY** at your own risk.

Note: AS WITH ANY MANUAL, THIS ONE IS SUBJECT TO PERIODIC UPDATES. CONTACT YOUR MECHANIC, OR CHECK FOR UPDATES ON OUR WEB SITE, (www.rideformula.com).

This manual provides information for safe and proper mounting and use of the braking system; and for routine maintenance. By following the procedures 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.

 **ATTENTION:** Carefully follow SAFETY GUIDELINES for proper braking system function.

This may affect the function of the brake.

 **CAUTION:** Directs your attention toward unsafe practices which could result in damage to the equipment or minor injury.

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

GENERAL SAFETY GUIDELINES

- Never put your hands near or inside rotating parts. Protective five-finger gloves that do not reduce sensitivity or your ability to grip should be used during repair.
- Before starting any mounting operation, carefully check for dangerous conditions at the work site. If too dark, use all available light sources and make sure they work properly before beginning work.

- Always wear a properly fitted and fastened helmet while riding. Make sure the helmet is approved in the country of use.
- Wet weather impairs traction and braking, making it much more difficult to control the bike. More attention must be paid while riding in wet conditions in order to avoid accidents.
- Learn and comply with the local rules of the road and cycling regulations. Always ride carefully and responsibly.
- Wear close-fitting clothes that make you easy to see (fluorescent or bright colors).
- If you ride at night, use adequate lights and reflectors that are clean and fitted securely.
- FORMULA braking devices are a high-performance product, offering a stopping power higher than normal brakes. As a result, fewer efforts or lesser effort is required to lock up the wheel when braking. Be careful as a locked wheel can result in loss of control of the bicycle and can cause injuries.
- 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 unpredictable consequences and potentially serious injuries.
- 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.
- 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.
- Only use products recommended in this manual, otherwise you can damage the system and the brakes will be unreliable and potentially dangerous.

- 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!
- TO PROVIDE THE BEST PERFORMANCE, THE BRAKE REQUIRES A BREAK-IN PROCEDURE.
- Do NOT 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.
- Test the brakes and your braking technique on flat and even ground before using the bike in more severe conditions.

BRAKING SYSTEM SAFETY RULES

- All maintenance operations must be carried out solely by authorized FORMULA personnel.
- FORMULA braking devices 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 declines any and all responsibility for the safety of this product if used for an application other than which it is intended.
- 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 for additional details and recommendations.
- Do not change or modify the parameters of the braking system to obtain other performances than those established by the manufacturer.
- 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.

- 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 (pp. 22-23-24-25-26-27-29-30).
- 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 important 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, do NOT 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 of liability. Only use original FORMULA products.
- Do NOT 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.
- Do NOT 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 Formula mineral 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.
- **WARNING:** All FORMULA brake systems requires a break in (bedding in) period to obtain top performance. We recommend running the bike on a flat surface at a speed of 30 Km/h and braking it at least 50 times allowing it to come to a full stop (taking the required precautions) before considering the system broken in and fully efficient.
- The efficiency of the brakes depends on many factors which FORMULA 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.

NOTE ON HEALTH AND ENVIRONMENT

FORMULA declares that the braking system and the spare parts it deals with are manufactured with asbestos-free friction material. They are also in compliance with regulations and laws in force concerning health and environmental protection. Do not inhale the powder they produce and carefully wash your hands before eating and drinking.

ENVIRONMENTAL NOTE



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

- 1) The packaging material does not require special disposal precautions because it is not considered dangerous; we urge you to recycle paper and plastic.
- 2) It is also recommended to recycle of the metal parts after use.
- 3) In regards to the brake FORMULA MINERAL OIL, it is recommended to follow the instructions in the safety sheet available from: <http://www.rideformula.com>.

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

FOREWORD

Oil for hydraulic system

Use Formula mineral brake fluid only (Formula Mineral Oil).

Generic lubricants

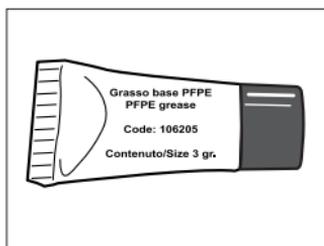
For gasket lubrication, use FORMULA BASE PFPE grease, part no. 106205.



Loctite® for screw lock

We recommend using medium strength Loctite® (Loctite® 222 or 242) (where indicated) 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.



⚠ 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 ASSEMBLY

1.1 Brake disc installation

⚠ WARNING! DO NOT TRY TO DISASSEMBLE OR ATTEMPT TO MODIFY THIS NEW FORMULA SRL PRODUCT!

Service on this product must be performed only by qualified professional mechanics who are familiar 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.

⚠ WARNING: Consult THE SAFETY REGULATIONS found in this manual (pp. 16-17-18).

⚠ CAUTION: For disc installation, use a dynamometric (Torque) wrench suitable for the given tightening torque.

⚠ 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.

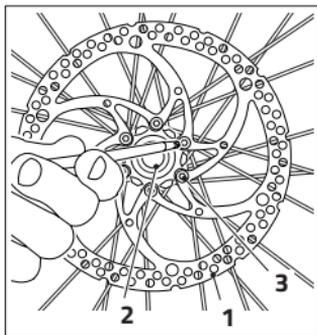
⚠ CAUTION: When removing the screws, always make sure to reapply medium strength Loctite® and ensure the torque settings are correct by using a torque wrench.

The range of FORMULA disc brakes includes the following models:

I.S. MONOLITHIC BRAKE DISC

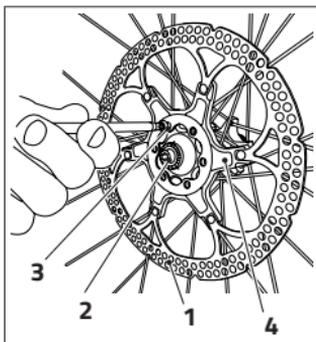
Place brake disc **1** (with the markings facing outwards) on hub **2** of an assembled wheel.

Make sure the arrow on the disc indicates the correct direction of rotation. Tighten the 6 screws supplied **3** 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.



I.S. TWO PIECE BRAKE DISC

Place brake disc **1** (with the markings facing outwards) on hub **2** of an assembled wheel. Make sure the arrow **4** on the disc flange indicates the correct direction of rotation. Tighten the **6** MS screws **3** 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.



TWO PIECE BRAKE DISC WITH CENTER LOCK ROTOR

Place the hole of the disc **1** in the splined hub **2** pushing it fully into place.

Place it with the markings facing the operator.

Fully tighten the ring nut **3** using the special wrench specified below.

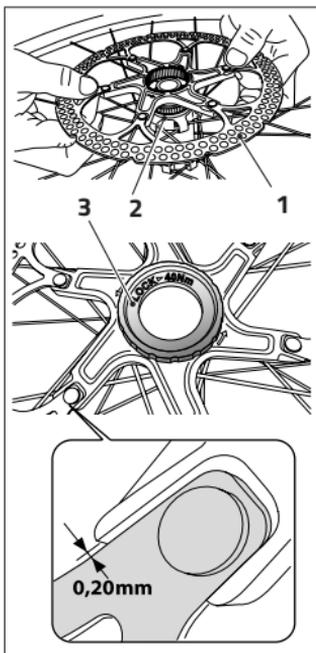
Tighten the ring nut to **40 Nm±5%**.

In the split disc, check the play in the mating point between the brake disc rotor's arms and the seats inside the disc on a regular basis.

Force the disc in one direction and insert graduated rods of a thickness gauge in the empty space on the opposite side.

FORMULA considers a play that is the sum of **0.20 mm** as shown in the figure as acceptable.

Replace the brake disc if this value is not present.



MONOLITHIC BRAKE DISC WITH CENTER LOCK ADAPTER

Place the hole of the disc **1** in the splined hub **2** pushing it fully into place.

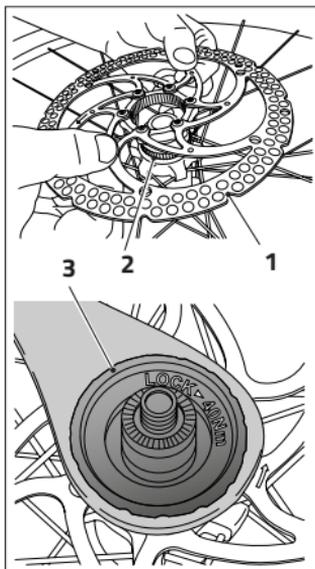
Place it with the markings facing the operator.

Fully tighten the ring nut **3** using the special wrench.

Tighten the ring nut to **40 Nm±5%**.

If the disc needs to be replaced, hold the adapter in place and tighten the six screws crosscrossing using a torque setting of **4,5 Nm±5%**.

Always use original screws with Loctite®.



1.2 Pump Installation

The pump has a right and a left collar, installation must be performed with arrow **(1)** upwards.

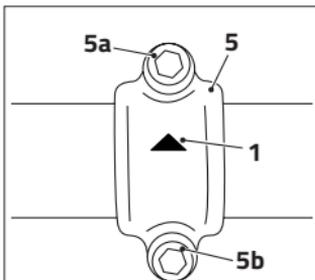
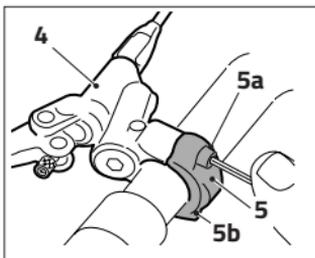
For this reason the usage side must be specified in the order.

Installation phases are:

-Insert pump body **4** in the handlebar, positioning it as shown and orienting it with the desired tilt.

-Fasten pump body **4** by fitting collar **5** with the "ARROW" sign upwards (as shown in the figure), tighten first upper screw **5a** with a tightening torque of **2.5/3 Nm±5%** and then screw **5b** with a tightening torque of **2.5/3 Nm±5%** using a 4 mm inner hex wrench.

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 brake hose or a hose that is in contact with moving parts of the bicycle can compromise the braking action 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.

1.3 Installing the caliper

 **ATTENTION:** never install the FORMULA calipers using adapters or supports made by other manufacturers. Failure to heed this precaution will void the warranty. Use only parts manufactured by FORMULA mounted on forks or frames provided to avoid accidents and serious injury.

 **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 FORMULA disc brakes.

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

Fit the caliper to the fork, proceeding as follows:

INTERNATIONAL STANDARD MOUNT OR SIMILAR

⚠ WARNING! DO NOT DISASSEMBLE OR ATTEMPT MODIFY, THIS NEW FORMULA SRL PRODUCT!

Service on this product must be performed only by qualified professional mechanics who are familiar with and understand the technical details of how this product works.

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

⚠ CAUTION: For disc installation, use a dynamometric wrench suitable for the given tightening torque.

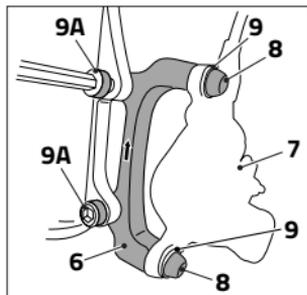
⚠ CAUTION: When removing the screws, always make sure that medium strength Loctite® is applied when reassembling, and that the correct torque wrench settings are used.

⚠ CAUTION: Make sure the washers **9** and threadblocker are present on screws **9a** and **8** before attempting to start assembly. Apply medium-strength threadblocker (if not present).

Place the adapter **6** on the frame (or fork) with the arrow facing the direction in which the wheel turns.

- Insert the screws and washers **9a** tightening them with a 5 mm hex. socket wrench to a torque setting of **9 Nm±5%**.
- Place the caliper on the adapter **6**, making sure the disk enters inside the pads without any interferences and that the caliper **7** is in place.
- Insert (making sure threadblocker is present) the screws **8** with the washers **9** and tighten them but not completely using a 5mm hex. socket wrench.
- Slightly loosen the screws **8** and center the caliper and pads.
- Pull the pump lever 2 -3 so that the caliper can center itself with the disk.
- Keep the pump lever down and tighten the screws to a torque setting of **9 Nm±5%**.

Go to step 4.



FRONT POST MOUNT FORK

⚠ WARNING! DO NOT DISASSEMBLE OR ATTEMPT TO MODIFY, THIS NEW FORMULA SRL PRODUCT!

Service on this product must be performed by qualified professional mechanics only who are familiar 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.

⚠ CAUTION: You must use a torque wrench to assemble the the 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: Make sure the washers are installed before assembling the fasteners.

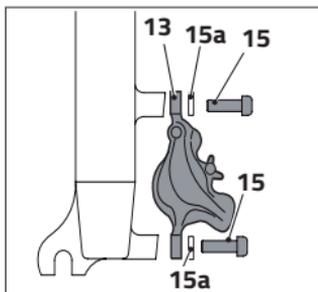
⚠ CAUTION: When mounting the caliper onto the fork, check that the caliper body is not in contact with the fork itself.

IT CAN BE USED FOR ALL FORMULA BRAKE MODELS

This adapter can be used in various applications:

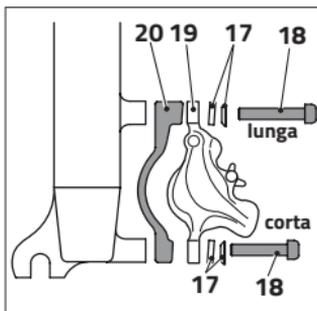
1) Installing directly onto a POST MOUNT fork

- Place the caliper **13** in the fork seat checking insertion without forcing or interference of the pads in the disc and caliper in the seat.
- Insert the screws **15** (apply medium-strength Loctite® if not present) with the relative washers **15a**.
- Pull the pump lever 2–3 times to center. Keep it pulled and tighten the screws with a 5mm hex. socket wrench.
- Tighten the screws to a torque setting of **9 Nm±5%**.
(Go to step 4).



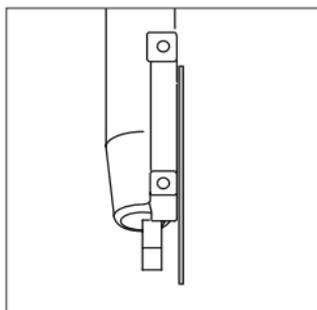
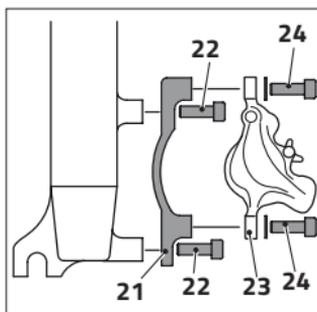
2) Assembly with POST MOUNT adapter FOR 180 Disc

- Insert the special washers **17** on the screws **18** making sure the concave and convex profiles material.
 - Make sure Loctite® is present on the screw (apply medium-strength Loctite® if not present).
 - Put in all the parts, including the caliper **19** and adapter **20** on the screw following the order shown in the figure.
 - Insert the screws, with the entire assembly, in the holes of the fork fitting making sure the arrow faces upwards.
 - Make certain the pads are inserted inside the disc without force or any interference.
 - Tighten the screws with a 5mm hex. socket wrench (do NOT over tighten).
 - Pull the pump lever 2–3 times to center the caliper.
 - Keep the pump lever pulled and tighten the screws **18** with a torque setting of **9 Nm±5%**.
- Go to step 4).**



3) Installing with adaptor on POST MOUNT fork

- Place the adapter **21** in the fork fitting, making sure the arrow faces upwards
 - Insert the screws **22** and tighten with a 5mm hex. socket wrench.
 - Tighten with a torque setting of **9 Nm±5%**.
 - Place the caliper **23** on the adapter making sure the disc is inserted inside the pads without force or any interference.
 - Tighten the screws **24** with a 5mm hex. socket wrench
 - Pull the pump lever 2–3 times to center the caliper.
 - Keep the pump lever pulled and tighten the screws **24** with a torque setting of **9 Nm±5%**.
- (Proceed to step 4).**



- 4)** Slowly turn the wheel and make sure the disc is straight and centered and does not rub against the pads.
Brake 2–3 times to bring the pads in alignment with the rotor.

BEDDING IN PROCEDURE:

- ⚠ WARNING:** All FORMULA brake systems require a break in (bedding in) period to obtain top performance. We recommend running the bike on a flat surface 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.

REAR POST MOUNT FORK

- The rear post mount fork is supplied according to the user's requirements therefore it comes with a specific description.

1.4 SPEEDLOCK valve pipe unhooking (calliper side)

Remove protection rubber plug **1**.

Move protection spring **2** from position A to position B, paying attention not to damage it.

Move valve unit **3** towards the calliper, as shown in the figure.

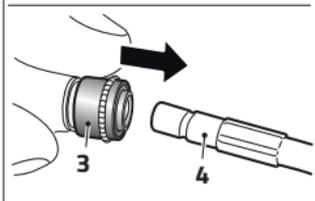
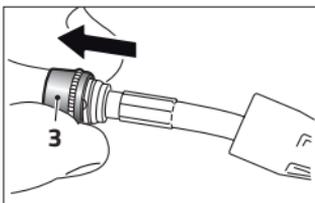
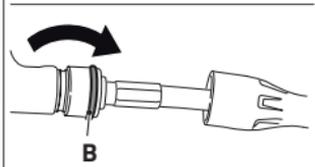
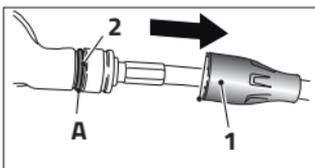
Extract pipe **4** as shown by the arrow.

For refitting repeat the opposite operations described above.

After refitting, check the proper operation of the braking system through a running-in process as described below.

RUNNING IN

- ⚠ WARNING:** The braking system requires a settling period to reach its maximum efficiency. We suggest to perform at least fifty braking actions at 30 km/h, until the bicycle is completely stopped (acting with due care), before considering the system as settled and efficient.



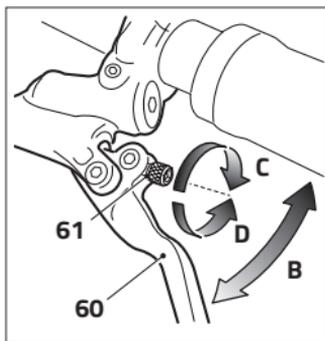
2 SET UP

2.1 Positioning the RACING lever

To adjust the position of lever **60** (distance **B**) according to your needs, use adjustment screw **61** with a 2mm inner hex wrench.

To increase distance **B**, rotate in direction **C**.

Vice versa, to reduce distance **B**, rotate in direction **D**.



3 GENERAL MAINTENANCE OPERATIONS

3.1 PAD REPLACEMENT



WARNING! DO NOT TRY TO DISASSEMBLE OR ATTEMPT TO MODIFY THIS NEW FORMULA SRL PRODUCT!

Service on this product must be performed by qualified professional mechanics only who are familiar 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 for FORMULA SRL or its distributors.

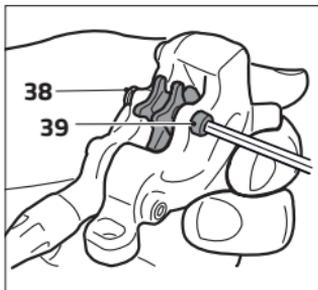


WARNING: Consult THE SAFETY REGULATIONS found in this manual (pp. 3-4-5).

Bring the pistons back to their starting position by levering the worn pads, so that the oil can pass from the calliper to the pump reservoir.

Remove circlip **38** and unscrew pad fastening pin **39**, using a 3 mm Allen wrench.

Remove pads **40** and the spring.



Insert the suitable Formula spacer as shown in the figure.

⚠ WARNING: If Formula spacer does not fit in the calliper seat, drain the braking system to restore the proper amount of oil.

NOTE: Pads are the same for right and left side. Fit new pads **40**.
Screw pad fastening pin **39** using a 3 mm Allen wrench at a tightening torque of **2 Nm±5%**, then refit circlip **38** in its seat.



3.2 PIPE FITTING KIT (cod. FD40024-40)

Extract protection rubber plug **30** from its seat along the pipe, in order to unscrew tightening bush **29** using a 8 mm Allen wrench.

Then remove the pipe from its seat.

Determine the part of pipe to be removed and perform a clean cut using the proper Formula pipe cutter (p/n FD P034-00) or, if it is not available, with a very sharp cutter.

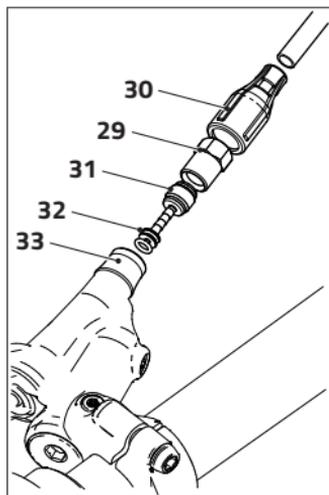
Paying attention to avoid oil spillage, reinsert the new threaded bush **29** and the new biconic element **31** in the pipe.

Insert the new pin **32** complete with O-Ring in the pipe end and firmly press until it fully adheres to the pipe edge.

Refit the pipe on the pump body through tightening bush **29**, paying attention to the correct insertion of the O-Ring in the groove and making sure that pin **32** is in contact with the proper seat in pump body **33**.

Apply a tightening torque of **8 Nm±5%** to tightening bush **29**.

Move protection rubber plug **30** to its initial position.



 **WARNING:** During screw assembly, always make sure to apply the specified tightening torque.

 **CAUTION:** It is essential to use a torque wrench to fit the screws.

 **WARNING:** Pay close attention while using the cutter since its blade is very sharp and could cause severe injuries if not used properly. Do not use blades or hacksaws that might squash or break the pipe and cause fluid leaks and system malfunctions.

A pipe that is too short will reduce bicycle handling and in case of severe cornering may stretch the pipe resulting in its detachment from the pump or calliper. NEVER USE THE BICYCLE with too short or too long calliper-pump connection pipes.

 **WARNING:** If biconic element 31 is not tightened as prescribed, it could loosen during riding and cause pipe detachment with severe consequences for user and people in the vicinity.

 **CAUTION:** At the end of the operation it is necessary to drain the system.

3.3 DRAINING PROCEDURES

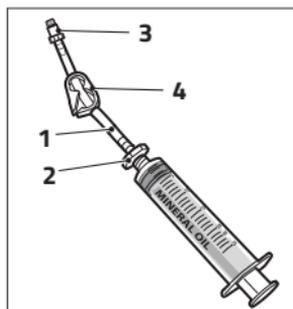
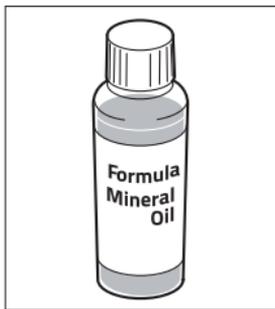
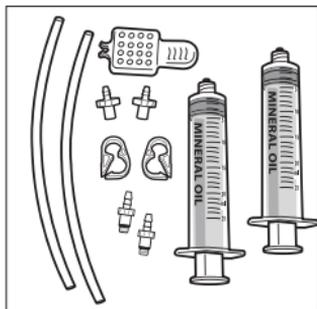
FOREWORD - SAFETY INFORMATION

Draining operation is one of the most important steps to ensure a perfect operation of every hydraulic braking system. Draining allows to eliminate the air in the braking system. The presence of air inside the system reduces its performance.

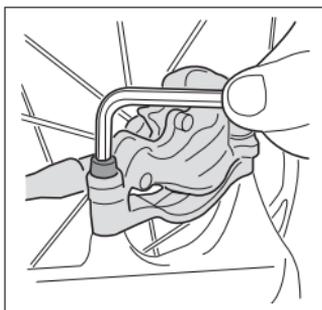
FORMULA RECOMMENDS NOT TO PERFORM DRAINING BY YOURSELF BUT TO ADDRESS TO A MECHANIC TO CARRY OUT THIS DELICATE AND CRUCIAL OPERATION.

If you decide to perform this operation by yourself, follow these instructions with the maximum attention and consider that you operate at your own risk.

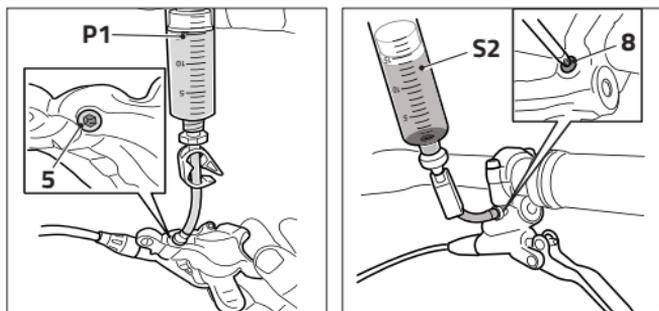
- The package is composed of the components shown in the figure.
- Buy Formula Mineral Oil.
- Fit the two syringes with pipe **1**, fitting **2**, front fitting **3** and locking support **4**.
- Insert 15ml of oil in the two syringes.



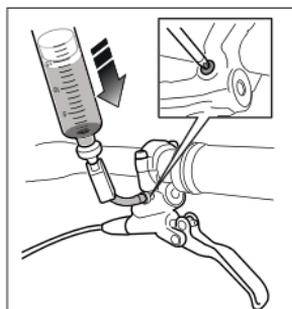
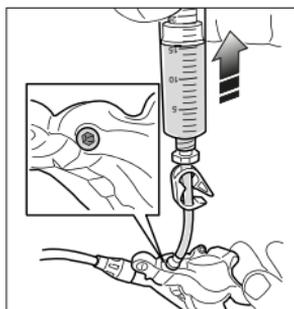
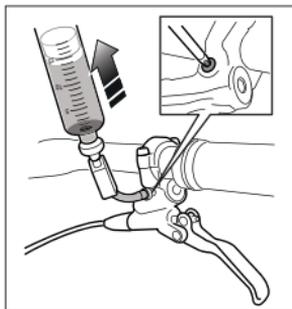
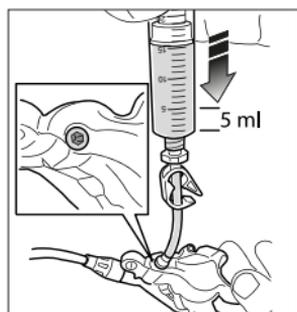
- Disassemble the bicycle calliper, unscrewing the proper screws as shown in the figure.
- Disassemble calliper pads, as explained in paragraph 3.2.
- Insert the suitable Formula spacer in the calliper unit, as shown in the figure.



- Unscrew calliper draining screw **5**. Fit the first syringe **P1** on the calliper.
- Unscrew pump draining screw **8**. Fit the second syringe **S2** on the pump.



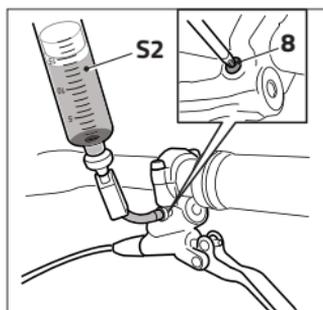
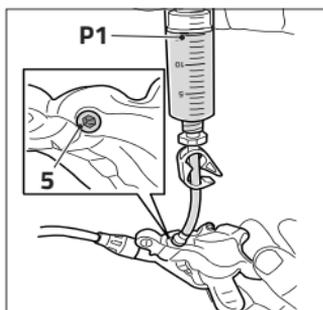
- Press on calliper syringe plunger **P1**, so that oil circulates from syringe **P1** to syringe **S2**.
- Let a minimum amount of **5ml** of oil on calliper syringe **P1**.
- Keep pump syringe **S2** in vertical position, pull the plunger of syringe **P1** to the calliper, this creates a suction depression that draws any air bubbles into calliper syringe **P1**. Interrupt this operation when syringe **S2** on pump side contains **5ml** of oil.
- Repeat this operation for 3-4 times until the air bubbles have completely flown out and are collected in calliper syringe **P1** (when there is no more air in the calliper, syringe suction becomes harder).
- Press and hold the lever and release it slowly while pressing on calliper syringe **P1**. In this way the oil starts flowing.
- Make oil pass from syringe **P1** to syringe **S2** for 2-3 times to make sure that a perfect draining has been performed.
- At the end of draining, slightly press on both syringes at the same time to fill the reservoir.



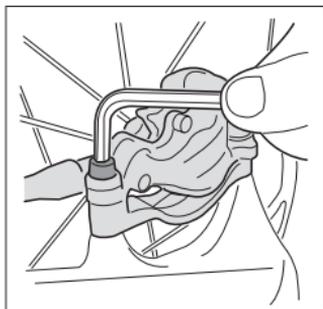
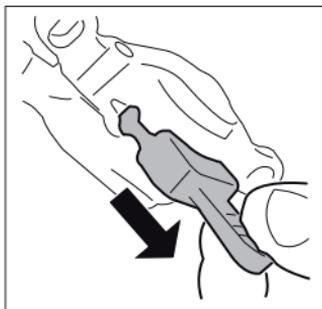
- Remove the first syringe **P1** on the calliper.
- Screw calliper draining screw **5** with a tightening torque of **2 Nm±5%**.
- Clean immediately any oil leaks using a clean cloth and alcohol.

⚠ WARNING! Before removing syringe **S2** from the pump, operate the brakes several times and compress the pump to make sure that the membrane is in the correct position.

- Remove the second syringe **S2** on the pump.
- Screw calliper draining screw **8** with a tightening torque of **2 Nm±5%**.
- Clean immediately any oil leaks using a clean cloth and alcohol.



- Remove the suitable Formula spacer from the calliper unit as shown in the figure.
- Fit the pads on the calliper, as explained in **paragraph 3.2**.
- Fit the calliper on the bicycle, as explained in **paragraph 1.3 Calliper installation**.



BEDDING IN PROCEDURE:

-  **WARNING:** All FORMULA brake systems require a break in (bedding in) period to obtain top performance. We recommend running the bike on a flat surface at a speed of 30 Km/h and braking it at least 50 times allowing it to come to a full stop (taking the required precautions) before considering the system broken in and fully efficient.
-  **CAUTION:** When assembling the fasteners, always make sure they are torqued down to the correct torque setting.
-  **CAUTION:** Use a dynamometric wrench provided with the required hexagon or TORX® inserts to install the screws.
-  **ATTENTION:** When transporting the bike with the wheels off, always fit the relevant spacer between the brake pads.
-  **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-blade screwdriver.
-  **CAUTION:** When installing new brake pads, be very careful to avoid contamination with oil or grease.
-  **CAUTION:** Before each use make sure all the screws and bolts are tightened to the correct torque found in the present manual.
-  **CAUTION:** Do NOT worry if you hear the brake disc and pad rubbing lightly. This noise will dissipate as the brakes are used; new brake pads must bed in to find the correct position on the disc. A light friction may occur each time the pads are replaced or when the wheel is incorrectly installed or faulty.
-  **WARNING:** Do NOT use brake pads supplied by other manufacturers. This will void your warranty. Only use original FORMULA products.

4 MAINTENANCE

 **CAUTION:** Consult THE SAFETY REGULATIONS found in this manual (pp. 16-17-18).

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 is not and 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 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.

WHAT PROTECTION DO I RECEIVE FROM THE WARRANTY?

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

WARRANTY CONDITIONS AND LIMITATIONS

1. The manufacturer guarantees its products to be free from defects in materials or workmanship for 24 months from the date of purchase. You must establish proof of purchase with a mandatory document (sales receipt or invoice) showing the date and place of retail purchase of the product in order to obtain warranty service.
2. The validity of this warranty is subject to the following:
 - (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 Dealer from which the product was purchased, with the understanding, however, that the discretion as to the acceptability of the claim is exclusively FORMULA's;
 - (c) Only a FORMULA Dealer can ship 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 cover damages resulting from:

- a. Incorrect transport and installation. Incorrect installation refers to failure to follow the safety guidelines and instructions outlined in the Instructions manual.**
- b. Unintended and inappropriate use of the product. Unintended and inappropriate use refers to use of the product for purposes different from those for which it was specifically designed and manufactured. Some unintended purposes include cross country and UCI sanctioned downhill races.**
- c. Use of materials or spare parts that do not carry the FORMULA trademark for braking systems. FORMULA SRL shall not guarantee conformity, safety, service life and performance of FORMULA braking systems if materials and spare parts that do not carry the FORMULA trademark and/or are non-compatible and/or are not suitable and/or are not expressly authorized are used.**
- d. Lack of appropriate or reasonable maintenance or storage, washing with harsh materials, use of corrosive agents, prolonged exposure to solvents.**
- e. Products on which the serial number and/or production code have been altered, damaged and/or removed.**
- f. Modifications made by persons not duly authorized by FORMULA without being approved by FORMULA.**
- g. Normal wear and tear or deterioration due to the use of the product.**

4. Retailers, wholesalers, importers or anyone else, apart from FORMULA, may not modify this warranty in any way.

5. This warranty does not affect the statutory rights of the consumer or any rights the purchaser may have against the dealer pursuant to the sales contract.

6. The laws of Italy govern all matters arising out of, or relating to this warranty. Any disputes or legal actions by purchaser arising out of, or relating to, this warranty shall be brought before courts in Prato, IT.



Formula

www.rideformula.com

Formula S.a.s. di "Formula Group S.r.l." & C.

Via Erbosa, 63 - 59100 Prato (Italia)

Tel. +39 0574 603 609

Fax +39 0574 611 046

*Information may be enhanced for improvement without prior notice. All rights reserved.
Le informazioni possono essere modificate senza preavviso. Tutti i diritti riservati.*