

Evoluzione - Evoluzione 9.5

MANUALE ISTRUZIONI

OPERATING MANUAL

MANUEL D'INSTRUCTIONS

BETRIEBSANLEITUNG

MANUAL DE INSTRUCCIONES

 **FORMULA**

LIMITED WARRANTY



Congratulations on your purchase of this genuine Formula product. If any component of the this new Formula product (hereinafter referred to as "warranted item") is found to be defective in materials or workmanship within the terms and conditions of this Limited Warranty (the "Agreement"), the defective component will be repaired or replaced, at the option of Formula (hereinafter referred to as "Formula"), free of charge, within thirty (30) days after receipt of the product by Formula.

- 1. NOT COVERED.** This warranty does not cover damage resulting from accidents, alteration, neglect, misuse or abuse, contamination, lack of reasonable or proper maintenance, corrosion, improper assembly, repairs improperly performed or replacement parts improperly installed, use of replacement parts or accessories not conforming to Formula's specifications, use of component parts not manufactured or supplied by Formula, modifications not recommended or approved in writing by Formula, or normal wear and deterioration occasioned by the use of the product. This warranty also does not cover any expenses related to the transportation of the warranted item to or from an authorized Formula Service Center, risk of loss of the item while in transit, labor costs to remove the product, or compensation for inconvenience or loss of use or profits while the product is not in service.
- 2. PURCHASER.** This warranty is made only with the original purchaser of the product and does not extend to any third parties. The rights of the Purchaser under this warranty may not be assigned.
- 3. TERM.** This limited warranty shall apply only in those instances where the defect in material or workmanship appears within twelve (12) months of the date of purchase of the warranted items by the original Purchaser. This term shall not be extended for any items repaired or replaced under warranty.
- 4. ENTIRE AGREEMENT.** This warranty supersedes any and all oral, express, implied or written warranties, statements or undertakings that may previously have been made, and contains the entire agreement of the parties with respect to the warranty of this product. Any and all warranties not contained in this Agreement are specifically excluded.
- 5. DAMAGES.** Except as expressly provided by this warranty, Formula SHALL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ASSOCIATED WITH THE USE OF THE WARRANTED ITEM OR A CLAIM UNDER THIS AGREEMENT, WHETHER THE CLAIM IS BASED ON CONTRACT, TORT OR OTHERWISE. The foregoing statements of warranty are exclusive and in lieu of all other remedies. Some states do not allow the exclusion or limitation of incidental or consequential damages, so thus limitation or exclusion may not apply to you.
- 6. DISCLAIMER.** ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ALL IMPLIED WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OF TRADE, BY STATUTE OR OTHERWISE, IS HEREBY STRICTLY

LIMITED TO THE TERM OF THIS WRITTEN WARRANTY. This Agreement shall be the sole and exclusive remedy available to the Purchaser with respect to this purchase. In the event of any alleged breach of any warranty or any legal action brought by the purchaser based on alleged negligence or other tortuous conduct by Formula, the Purchaser's sole and exclusive remedy will be repair or replacement of defective materials as stated above. No dealer and no other agent or employee of Formula is authorized to modify, extend or enlarge this warranty. The performance of any warranty service under this Agreement is not an admission or agreement that the design or manufacture of a product is defective.

- 7. PROCEDURE.** In the event of a defect covered by this warranty, the purchaser should contact an authorized Formula Service Center or :

To be honored, claims must be submitted within the twelve (12) month warranty period and within thirty (30) days of discovery of the defect or nonconformity. The determination whether the defect is covered by this warranty is within the sole discretion of Formula. Formula reserves the right to discontinue products and to change specifications for existing products at any time without notice and shall not be obligated to incorporate new features into products previously sold, even if those products are returned under a warranty claim. Formula may replace defective parts with similar parts of similar quality in the event that identical parts are unavailable

The purchaser must obtain advance authorization in writing before returning any product to a Formula Service Center for warranty inspection. A return authorization number will be issued and must conspicuously appear on the outside of the product's packaging. The issuance of an authorization number does not constitute acceptance of the claim, which will be evaluated by the Service Center upon its inspection of the product.

The product should be securely packed to prevent damage during shipment and must be accompanied by a letter specifying or including the following items of information:

- a. dated receipt or other proof of date of retail purchase;
- b. a copy of this warranty;
- c. Formula part number;
- d. detailed description of the problem experienced with the product, including a chronology of efforts made to correct the problem;
- e. identification of the components used in conjunction with the product;
- f. estimate of product usage: (i.e. accumulated time in service); and
- g. your name, address, and written authorization to ship the repaired product back to you freight collect ("C.O.D.").

- 8. OTHER RIGHTS.** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

- 9. APPLICABLE LAW.** Any disputes arising out of this Agreement or the use of this product will be governed by the laws of the country of Italy and will be decided by the Courts of Prato Italy.

- 10. WARNING.** This warranty is subject to the Italian laws.

GENERAL INDEX

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- 1.2 Mounting of the open system

2.0 Operation instructions

- 2.1 Lever reach adjustment of the open system
- 2.2 Correcting the fluid level of the compensation reservoir
- 2.3 The lenght adjustments

3.0 Maintenance



S.1 GENERAL RULES

This manual provides information for a safe and proper mounting and use of the braking system and for its rational maintenance.

The strict respect of its rules assures the braking system the best performances, a duty economy and a longer lifetime and allows to avoid the commonest causes of accidents which may occur during operation and maintenance.

- ***WARNING: Read the SAFETY RULES with care and inform the charged staff adequately to grant a proper use of the braking system.***

In this handbook, within each paragraph, there are the following safety notices:

- ***CAUTION: directs your attention to unsafe practices which could result in damages to the equipment.***
- ***WARNING: directs your attention to unsafe practices which could result in personal injury or damages to the equipment.***

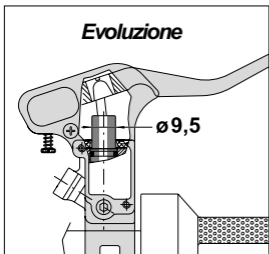
S.2 GENERAL SAFETY RULES

- **FORMULA's brakes have been designed to be exclusively used on two-wheel vehicles driven by human propulsion. Any other application may result in personal injury and voids the warranty by raising the manufacturer FORMULA from any and all responsibilities for possible damages.**
- **The operator charged with the installation shall be skilled, know well the braking system and have read both this operating manual and the relevant enclosed documents from front to back.**
- **Do not introduce 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 of the working site. When the site is darkened, use all available light sources and make sure they are efficient before starting working.**
- **Concentrate and take the due precautions before using components which could cause damages.**
- **When using the bike, it is advisable to wear a helmet and to drive with care and sense of responsibility.**

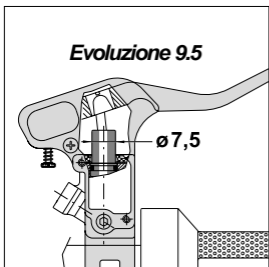
S.3 BRAKING SYSTEM SAFETY RULES

- **The brake disc shall be assembled on wheels suitable for the use type. A wheel with spokes of insufficient section or with radial coupled spokes may collapse under the action exerted by the braking system and result in serious personal injury or accidents.**
- **Frequently check the spoke tension and condition. A damaged spoke may break suddenly, interfere with the braking system and result in serious personal injury or accidents.**
- **The bike frame or fork shall be suitable for mounting the braking system. Only in this case, the correct dimensioning of the supports and the suitable positioning of the elements which form it is assured.**
- **Do not install the braking system by using adapters or supports supplied by other manufacturers. This will void the braking system warranty immediately. Use only parts manufactured or recommended by FORMULA.**
- **FOR THE MAXIMUM EFFICIENCY OF THE BREAKING SYSTEM, ALLOW IT TO SET SUITABLY.**

Evoluzione



Evoluzione 9.5



FOREWORD

To facilitate the distinction between both types of brakes **Evoluzione** and **Evoluzione 9.5** please find here-after the relevant two dimensioned sketches that will allow you to determine which type the brake fitted on your bike belongs to, considering that dimensions are preponderant for such acknowledgement.

It is very important before performing any adjustment or part substitution to have undoubtedly ascertained the type your brake belongs to.

Recommended lubricants and cleaning products

Hydraulic brake fluid

Use only DOT 3, DOT 4 hydraulic brake fluid from sealed containers.

Do not leave the container open over a period of time because this product absorbs the moisture in the air, which alters its physical characteristics. Formula recommends to replace the fluid in the system every 2 years.

Fig. 1

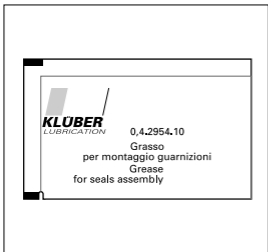


Fig. 2

WARNING

The fluid in the brake system, besides possibly damaging the paintjob, is extremely hazardous in case of contact with the eyes or skin. In case of accidental contact flush abundantly with water. Never mix DOT 5 with DOT 3 or DOT 4, this may result in a very aggressive combination that is destructive for rubber seals.

Grease

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

WARNING

Use of inappropriate type of grease may compromise the integrity of the seals and cause damage to the system which may cause severe accidents.

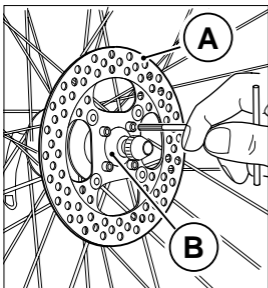


Fig. 3

1.0 INSTALLATION

1.1 Mounting the brake disc

WARNING: read the safety rules

Place the disk brake **A** (fig. 1) on the hub **B** of a pre-assembled wheel, minding the rotation sense given by the arrow **C** stamped on the disk flange, and lock it with the specific **M5** screws supplied which you shall have care to tighten crosswise with a torque of $5,75 \text{ Nm} \pm 5\%$. Accurately clean the disk from any trace of grease or oil with alcohol (Isopropyl alcohol).

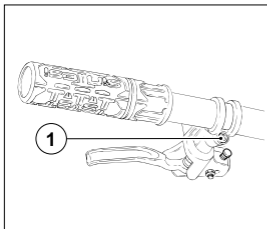


Fig. 4

1.2 MOUNTING OF THE OPEN SYSTEM

Proceed followingly:

- Place the pump body on the bar in the desired position and lock it in place with the screw (1) using a tightening torque of $6 \text{ Nm} \pm 5\%$.

If the tube length needs to be adjusted see paragraph 2.3, if not proceed with the positioning of the tube on the bicycle, taking the following in consideration:

- the tube needs to be attached to the fork or frame in a way that does not interfere with the free flow of fluid through the tube;
- the tube should not make curves smaller than a 40 mm diameter and should not interfere with any moving part of the bicycle;
- for easy assembly of the tubes on the bicycle, formula has developed a custom tube holder zip tie which can be ordered as an accessory.

WARNING

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

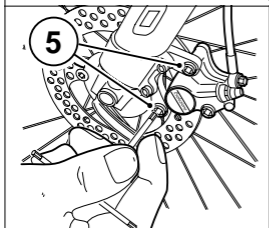
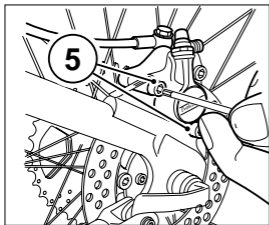


Fig. 5

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

CAUTION

Only a correct mounting of the system and it's various support elements ensures the safety of the cyclist and the exceptional performance of FORMULA disk brakes.

Mount the caliper on the fork or frame by using the screws (5, fig. 5) that come with the system.

- First apply a light adhesive on the screws and fix at $9 \text{ Nm} \pm 5\%$ ($6.6 \text{ lb.ft} \pm 5\%$), torque.

WARNING

Never install the FORMULA brake system with adapters that are not supplied by FORMULA. This will void the warranty.

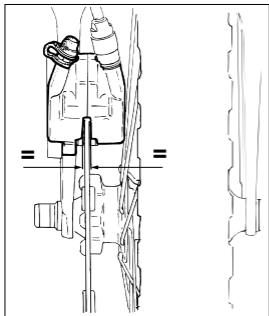


Fig. 6

Mount the wheel and fix it with the fasteners, turn it slowly to check that the disk is in the center of the brakepads and none of the pads rub on the disk (fig. 6).

Warning

The brake system needs a break in period. FORMULA suggests to brake at least a hundred times before you can consider it broken in and the brakes is fully efficient.

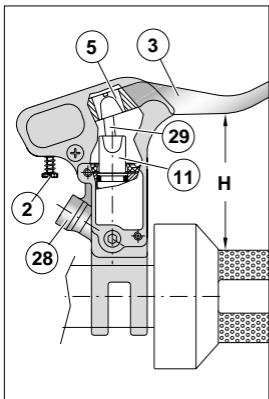


Fig. 7

2.0 OPERATION INSTRUCTIONS

2.1 Lever reach adjustment of the open system

To make the adjustment, use screws 2 and 5:

- use screw 2 to adjust the starting point of the lever in relation to bar (H);
- use screw 5 to bring the cylinder back to the correct position, as during lever adjustment, the cylinder can move so that the circuit no longer communicates with the tank, or excessive backlash may be created between the lever and the cylinder.

With this pump version, the adjustment must not change the starting position of the cylinder. It is therefore advisable to leave a small clearance between parts 5, 29 and 11.

IMPORTANT

Pump adjustments are to be made only once, i.e. when it is installed on the bar in order to accommodate the user's requirements. When the pump is operated, the user simply has to check the oil level when the pads get worn.

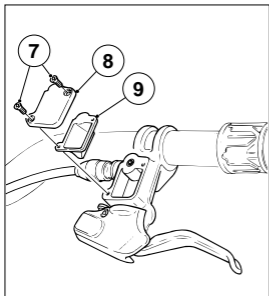


Fig. 8

2.2 Correcting the fluid level of the compensation reservoir

Each pad can perform a 2.5 mm travel (max.) to approach the disk. Therefore when the pad is half-worn, check the oil level as described below:

- position the pump lever horizontally on the handlebar;
- loosen the screws (7) of the reservoir lid (8). Take the lid off;
- take out the rubber diaphragm (9);
- check the fluid level, it may have dropped when adjusting the pads. If necessary fill the reservoir to the brim using only DOT 3, 4 or 5 hydraulic brake fluid;

WARNING

Any other fluid may cause irreparable damages to the system. Use brake fluid from sealed containers.

WARNING

Protect vital parts of the bike from spilling brake fluid by holding a rag around the reservoir, use protective gloves when working with brake fluid.

- reassemble the diaphragm and the lid to the reservoir, wrap a rag around the pump lever to avoid spill of excess fluid on the bicycle or floor (the fluid needs to spill over to be sure no air is trapped in the reservoir);
- clean the pump lever and rotate the pump lever to the desired riding position and fix it.

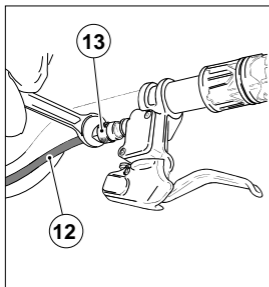


Fig. 9

2.3 Tube length adjustment

(For models with reattachable fittings) If, after installing the system on the bicycle, the tube connecting the pump to the caliper is too long, you can shorten it as follows:

- using an 8 mm forkwrench unscrew the connector (13, fig. 9) on the pump valve. Take the tube off the pump;
- grip the part with the largest diameter, using pliers, and pull the connector plug (14, fig. 10) out of the tube end (12);
- use a screwdriver to widen the the end of the biconal bush (15) and slide it up the tube (12);
- after deciding how much of the tube to cut off, use a supersharp cutter or blade to cut off the excess tube;

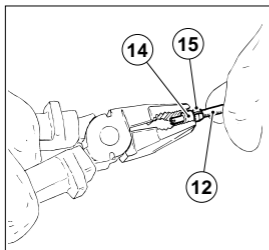


Fig. 10

WARNING

Take good care when using a razor-sharp cutter or blade.

Do not use blades or saws that could crush or lacerate the tube in such a way as to cause loss of fluid or inefficiency of the system.

A TUBE THAT IS TOO SHORT NOT ONLY CAUSES STEERING PROBLEMS but can also cause strain on the tube which may result in the tube getting disconnected from the caliper or pump lever. Correct length of tubes is very important for maximum efficiency of the system.

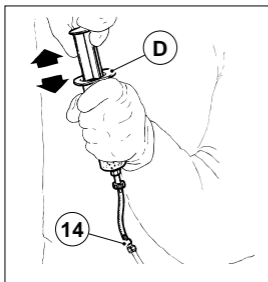


Fig. 11

- replace the needle insert (14) on the end of the tube and replace the biconical bushing (15);
- place the bleeder tube on the syringe (D, fig. 11) and place it on the needle insert (14) on the tube;
- slowly draw out the air in the tube (you will be able to see the bubbles rising in the column of fluid in the syringe)
- release the plunger and repeat as often as needed to remove all air;
- reassemble the tube on the pump and tighten the lock ring (13, fig. 9) by hand on the one-way valve until it stops turning;
- use an 8mm forkwrench to give it another half turn for safety;
- pull on the tube to check that needle insert (14) and biconical bush (15) are correctly mounted in the lock ring (13).

WARNING

If the lock ring (13) is not tightened as above instructed, the tube may come loose which may have serious consequences.

NOTE

If the user wants to invert the brake levers, it will be necessary to invert the tubes (12) detaching them from their pumps and mounting them to the other. To do this, follow the procedure as described in this paragraph.

3.0 MAINTENANCE

WARNING: read the safety rules

CAUTION: Use only ISOPROPYL ALCOHOL to clean the disk brakes. The use of any other product may cause the user a very hazardous situation.

Periodically clean the caliper in relation to the bike use, the route length, and the weather conditions using a biodegradable degreaser suitable for the caliper.

Carefully clean all moving parts.

CAUTION: Do never touch the disk brake right after it was operated. The non-observance of this rule might cause you severe injury.



CERTIFICATO DI GARANZIA
WARRANTY CERTIFICATE

da spedire in busta chiusa a
to be returned with closed envelope to :

FORMULA

Via Erbosa n° 63
59100 Prato (ITALY)

CERTIFICATO DI GARANZIA

WARRANTY CERTIFICATE

Condizioni di Garanzia / Warranty Conditions

Si approvano espressamente le clausole, delle condizioni di garanzia, 9) Foro competente, 10) Scelta della legislazione in deroga degli art. 1341-1342 cod. civ.

The point 7 and 8 are expressly, according to Art. 1341-1342 civil code.

Nome e Cognome/Name

Indirizzo/Address

Città/City

Stato/State

Cap./Zip

Tel./Phone

Ett./Age

Data di acquisto/Date Purchased

Mod.

Firma/Signature

Timbro del rivenditore/Retailer's stamp

Numero di serie/Seriel number

Conservare compilato/Coupon to be kept fillet-in

CERTIFICATO DI GARANZIA

WARRANTY CERTIFICATE

Condizioni di Garanzia / Warranty Conditions

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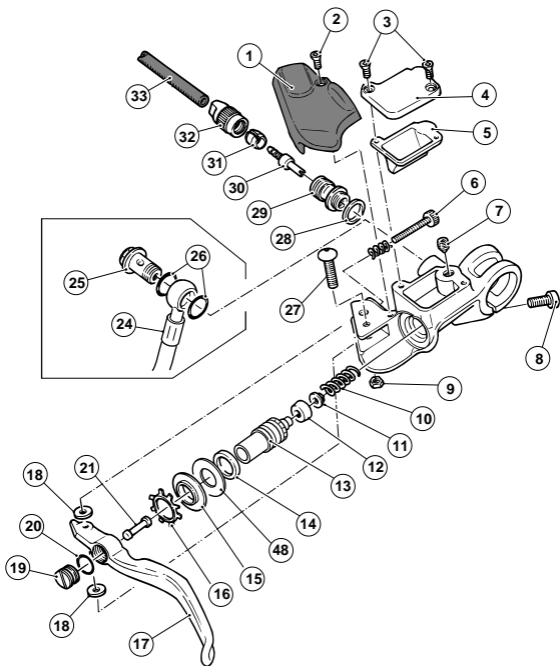
Firma/Signature

Timbro del rivenditore/Retailer's stamp

Numero di serie/Seriel number

Da compilare e spedire/To be filled in and sent





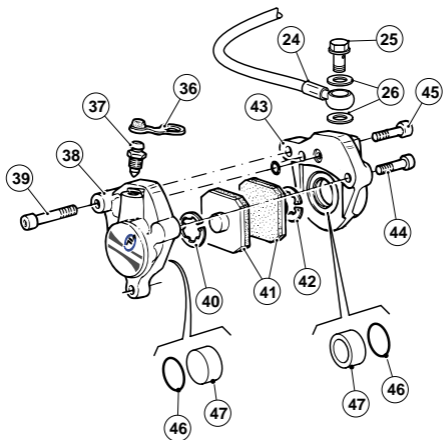
POMPA APERTA

Pumplever with compensation reservoir

Maitre-cylindre à vase d'expansion

Bremsgriffe mit Ausgleichsbehälter

Bomba abierta



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Caliper

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