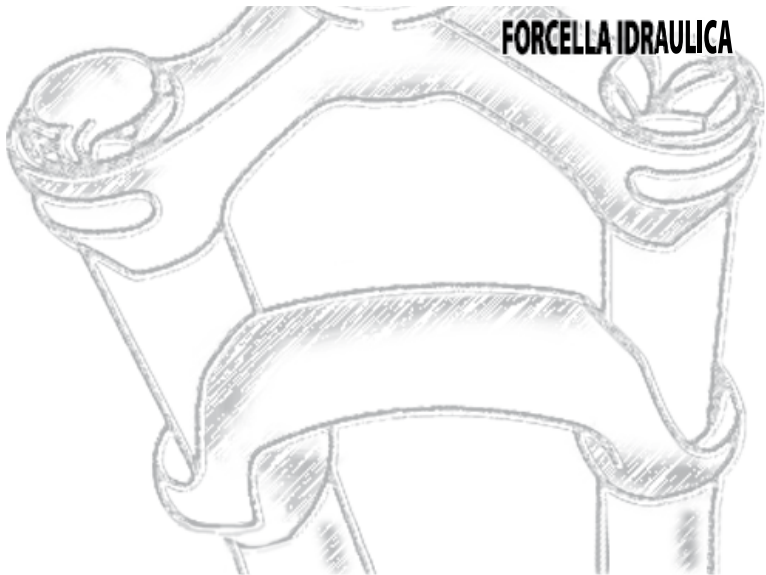


FORMULA THIRTYTHREE

FORCELLA IDRAULICA



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

2012

Manuale di istruzioni originali

- 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 instruções 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, töltsse le a termékek 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://support.formula-brake.com>

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.

WARNING! 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 warning, keep in mind that you are doing so EXCLUSIVELY at your own risk.

Note: AS WITH ANY MANUAL, THIS ONE MAY BE UPDATED. CONTACT YOUR FORMULA SRL DEALER, OR CHECK OUR WEB SITE, (www.formula-brake.com) TO RECEIVE ANY SUCH UPDATES.

This manual contains information for the safe use, proper mounting and maintenance of THIRTYTHREE forks. Following the rules contained in this manual will ensure the safe use and longest life of your THIRTYTHREE forks.

Carefully follow the SAFETY GUIDELINES to assure appropriate use and service of THIRTYTHREE forks.

In this handbook you will find the following safety symbols:



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 serious injury or death.

It is impossible to anticipate every situation that may occur while riding a bicycle. This manual makes no representation about the safe use of the bicycle under all conditions. There are risks associated with the use of any bicycle that cannot be predicted or avoided. By choosing to ride a bicycle, you assume the responsibility for that risk. Read and understand your bicycle owner's manual before using your bicycle.

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 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.
- All maintenance operations must be carried out solely by personnel authorized by FORMULA SRL.
- Ensure that the quick release is tightened correctly. Bounce the bike on the ground from a height

- of about 10cm/4" to ensure that there are no loose parts. Riding with an improperly adjusted wheel quick release can allow the wheel to wobble or fall off the bicycle causing injury or death.
- Before riding, verify that the brakes on your bicycle are installed and adjusted correctly. Improperly installed and adjusted brakes may cause a crash and result in property damage, serious injury, or death.
- Make sure cables and hoses do not impede the steering of the bicycle.
- If mounting the bicycle in a rack designed to hold the fork by its dropouts, avoid tilting the bicycle to either side. Doing so could cause structural damage to the fork. Be sure the bike is fastened securely, with the quick-release mechanism tight and the rear wheel properly secured. If the bicycle ever tilts on, or falls from a bicycle rack, do not ride it until it has been examined by an authorized dealer, service center, or by FORMULA srl. A structurally damaged fork leg or dropout failure can cause a sudden loss of control, resulting in serious injury or death.
- 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.
- THIRTYTHREE forks do not include reflectors for public road use. THIRTYTHREE forks are designed for use in competitive off-road riding and racing. Proper reflectors meeting the Consumer Product Safety Commission's (CPSC) requirements should be installed if the fork will be used on public roads.
- Always wear a properly fitted and fastened helmet while riding. Make sure the helmet is approved in the country of use.
- 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.

THIRTYTHREE FORKS SAFETY GUIDELINES

- THE THIRTYTHREE forks produced by FORMULA srl are designed exclusively for use on two wheel bicycles. THIRTYTHREE forks should not be used for electric bicycles or tandem (multi-person) bicycles. Any other use is to be considered hazardous. FORMULA SRL shall not be held liable for any consequences from improper use.
- If the fork ever loses oil or makes unusual noises, stop riding and have it inspected by FORMULA srl or an authorized dealer. Continuing to use a malfunctioning fork can cause a sudden loss of control, resulting in serious injury or death. Some sounds, such as oil flow, minor clicks, and spring rattle, are considered normal. When in doubt, consult your local Formula dealer.
- THIRTYTHREE forks have a crown / steerer / upper tube assembly. These parts are pressed together through a single precision pressing operation. Replacing any of these parts requires a complete new upper assembly. Never attempt to remove or replace the steerer or upper tubes independently from the crown. NEVER ATTEMPT TO CUT THREADS INTO THE THREADLESS STEERER. Modifying the crown / steerer / upper tube assembly can cause loss of control of the bicycle and serious injury or death.
- Impact, falls, improper or harsh use of the bicycle may compromise the structural integrity of the forks, significantly reducing their lifespan.
- Have the forks regularly inspected by a qualified mechanic for any cracks, deformation, signs of fatigue or wear. Use of penetrating fluid or other visual enhancers to locate cracks on parts is

recommended.

- If inspection reveals any deformation, cracks, signs of impact or stress, no matter how slight, immediately replace the component. Excessively worn components also require immediate replacement.
- The frequency at which inspection is required depends on many factors. Ask a FORMULA srl dealer to recommend an inspection and service schedule that is right for you.
- Use of the product by individuals who weigh more than 82kg/180lbs is not recommended. If you weigh more than 82kg/180lbs be especially careful and have the bike inspected more frequently.
- Parts that have been bent or damaged in an accident, or as the result of impact, must be immediately replaced with genuine FORMULA srl replacement parts.
- The user of THIRTYTHREE forks expressly recognizes that there are risks inherent in bicycle riding, including but not limited to failure of a bike component, resulting in an accident, personal injury or death.
- By purchasing and using these THIRTYTHREE forks the user expressly, voluntarily and knowingly accepts and/or assumes these risks, including but not limited to the risk of passive negligence on the part of FORMULA srl, i.e. hidden, latent or obvious defects and exempts FORMULA srl from liability to the fullest extent permitted by law against any resulting damage.
- Carefully read the THIRTYTHREE forks instructions before use.
- Carefully follow the scheduled maintenance program as indicated in the relative paragraph.
- Always use genuine FORMULA srl replacement parts.

By purchasing and using these THIRTYTHREE fork, the user expressly, voluntarily and knowingly accepts and/or assumes these risks, including but not limited to the risk of passive negligence on the part of FORMULA srl, i.e. hidden, latent or obvious defects and exempts FORMULA srl from liability to the fullest extent permitted by law against any resulting damage.

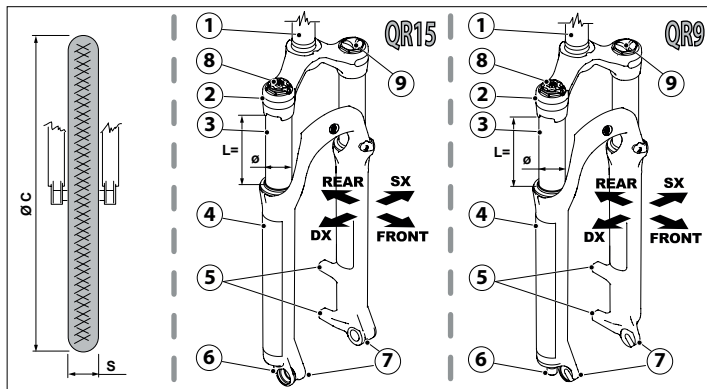


ENVIRONMENTAL NOTES

In order to protect the environment, please follow to these simple instructions to correctly dispose of Formula srl products:

- 1) The packaging does not require special disposal because it is not dangerous in any way; we suggest recycling paper and plastic.
- 2) It is also recommended to recycle the metal parts after use.

For both points mentioned above, it is recommended to dispose of waste following national regulations through specialized waste disposal companies.



1 TECHNICAL SPECIFICATIONS

The main components and specifications of the FORMULA THIRTYTHREE forks are given below:

Ref	Name
1	Steerer tube
2	Crown
3	Upper tube
4	Lower leg
5	Disc brake posts
6	Rebound knob
7	Dropout
8	Compression adjustment
9	Air valve

Description						Tire	
Ø	Type	Color	Travel			Ø C	S
33	QR9	White	85	100	120	682	56
33	QR15	White				(mm)	(mm)
33	QR9	Black				26,85	2,2
33	QR15	Black				(inch)	(inch)

⚠ WARNING: Do not use a tire if any measurement exceeds the maximum dimensions shown above. Using larger tires is not recommended and can cause serious or fatal injuries.

1.1 Disc brakes

Disc brakes with 203 mm rotors may be used on FORMULA THIRTYTHREE forks. Do not use rotors larger than 203 mm. Install disc brakes and torque all fasteners according to manufacturer's specifications. Install, route and check that all cables or hydraulic hoses are securely fastened to the lower leg and will not move during compression of the fork.



WARNING: Tighten the brake calipers to the brake manufacturer's torque specifications.

1.2 Wheels

Consult the technical specifications provided by the wheel manufacturer to install and secure the wheels to the forks.

1.3 Lubricants

Use grade SAE5 mineral oil for forks. FORMULA recommended IDEMITSU OJ Racing 01. FORMULA recommends BALLISTOL® to lubricate
To lubricate O-rings, FORMULA recommends KLUBER AR34-401.



CAUTION: Do not use lubricants other than those recommended above. Use of other lubricants may damage the fork and make it unsafe.

Threadlocker for screws

Apply a liberal mount (where indicated) of medium strength threadlocker all the way around the thread. After applying, clean any excess threadlocker with a cloth. Let dry at least 24 hours before installing.



WARNING: The threadlocker used for assembly is dangerous to skin and eyes. Consult and adhere to the warnings on the threadlocker container before use.

2 INSTALLATION

⚠ WARNING: Installation of THIRTYTHREE suspension forks requires specific knowledge, equipment and expertise. General mechanical skills are not sufficient to correctly install the THIRTYTHREE suspension forks.

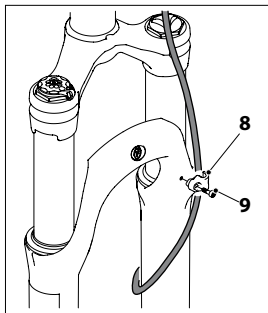
Formula strongly recommends that a qualified service center authorized by FORMULA install the fork on your bicycle. Improperly installed forks can cause damage to the THIRTYTHREE suspension and serious injury or death.

-Formula does not authorize the end user to install the fork on the bike.

⚠ WARNING: Failure to follow these guidelines may result in serious injury or death.

2.1 Installing the hose clamp

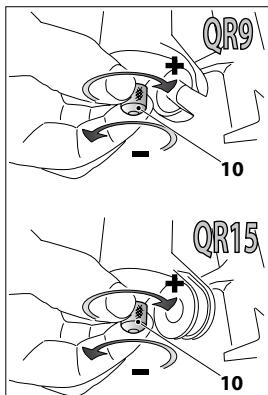
- Secure the disc brake hose to the fork with clamp (8).
- Loosen the screw (9) and move the clamp over the hose (8).
- Tighten to 2/3 Nm.



3 USE

3.1 Suspension Adjustments

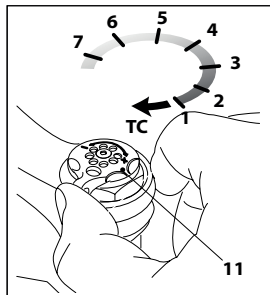
- Use the rebound adjuster (10) to adjust how quickly the fork returns to its extended position after being compressed.
- Correctly setting the rebound speed allows the bicycle to properly track the terrain.
- Rebound that is set to fast will cause the fork to feel springy and uncontrolled and exhibit excessive return speed
- Rebound that is set too slow will not allow the fork to extend quickly enough to prepare for the next bump.
- Turning the adjuster (10) clockwise (toward the + sign) adds hydraulic damping and slows the rebound speed.
- Turning the adjuster (10) counter-clockwise (toward the - sign) removes hydraulic damping and speeds up the fork rebound speed.



3.2 Adjusting hydraulic compression

Lever (11) is used to gradually adjust hydraulic compression.

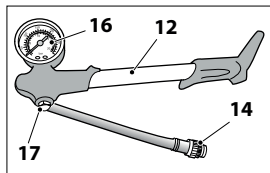
- Regular hydraulic compression is achieved when the lever is in position "7", i.e. open.
- Turn lever (11) clockwise to gradually dampen compression. The fork is locked-out in position "TC".
- When in the locked position, the fork will "unlock" in the event of a harsh bump.
- The positions 1 and 2 are useful when you are climbing and when you ride on mixed tracks with slow bends and sprinting.



⚠ WARNING: NEVER use a locked out fork (position "TC") when going downhill as the suspension will not appropriately react to bumps, potentially causing loss of control of the bicycle and serious injury or death.

3.3 Adjusting the air pressure

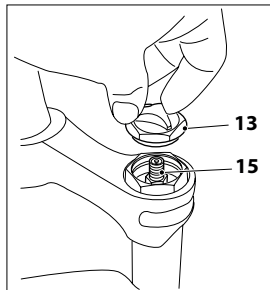
- Use a high pressure pneumatic shock pump (12) to change the pressure in the THIRTYTREE.
- Remove the valve cap (13).
- Connect the end (14) of the pump to fork valve (15) so that pressure gauge (16) will read the pressure.



⚠ CAUTION: Do not over tighten the pump (14) as the seal will be damaged.

⚠ WARNING: The maximum allowable pressure is 200psi.

- If there is no pressure in the fork, the pressure gauge (16) will not read a value.
- Compress the pump (12) a few times to increase the pressure. The pressure should increase slowly.
- If the pressure rapidly increases, make sure the pump is properly connected to the valve (15).
- The pressure can be reduced by pressing the black relief valve (17) on the pump (12).
- Press the relief valve halfway to steadily release pressure.
- Press the relief valve completely down to relieve small amounts of pressure (slight adjustment).
- Detach the pump (12) by unscrewing (14).
- Install the valve cap (13).



⚠ WARNING: When pump (12) is connected, pressure will (16) read 2-8 PSI (0.114-0.55 BAR) less than the actual reading due to the air that enters the pump hose. Consult table 1 to obtain information about the pressure to be used.

RIDER WEIGHT		AIR PRESSURE	
KG	LBS	BAR	PSI
50 - 59	110 - 124	3,0 - 3,4	43 - 47
60 - 69	125 - 149	3,5 - 3,8	48 - 55
70 - 79	150 - 174	3,9 - 4,5	56 - 65
80 - 89	175 - 199	4,6 - 5,1	66 - 73
90 - 99	200 - 224	5,2 - 5,8	74 - 84
100 - 109	225 - 249	5,9 - 6,6	85 - 94
110 - 119	250 - 274	6,7 - 7,5	95 - 109
120 - 130	275 - 286	7,6 - 8,4	110 - 121

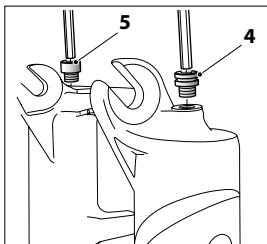
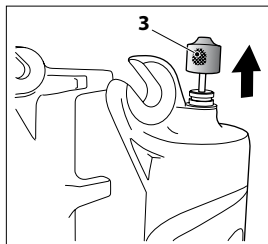
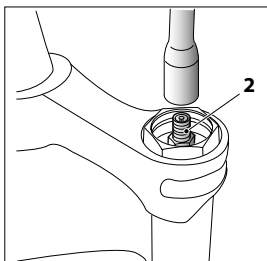
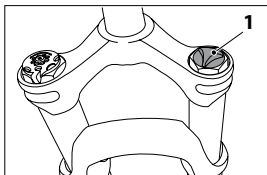
⚠ 4 MAINTENANCE

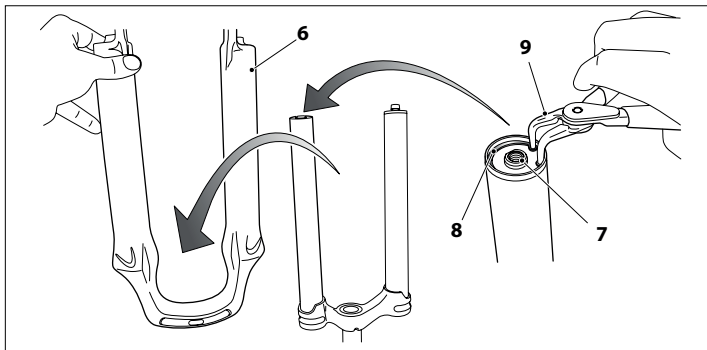
4.1 Modifying fork travel

To modify the travel of the FORMULA THIRTYTHREE fork, add or remove internal spacers.

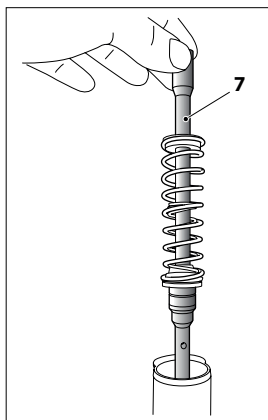
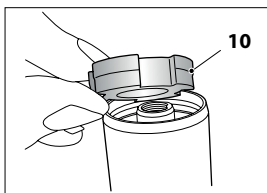
WARNING: Before modifying the travel, bring the pressure in the positive air chamber to 0 (zero). Consult the specific paragraph below. Failure to follow this precaution may cause serious injury.

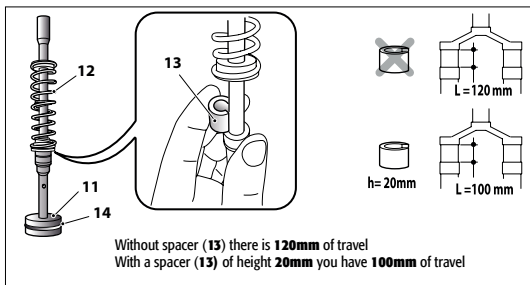
- Remove the air valve cap (1).
- Install the pneumatic pump as directed in paragraph 3.3. Bring the air pressure to **0 (zero)** making sure all the air has been let out.
- Use a 10 mm socket wrench to loosen the air valve (2).
- Turn over the fork and empty the oil present in the cylinder.
- Remove the rebound knob (3) by pulling it up.
- Use a 4 mm hex wrench to loosen the lock screws (4) and (5).





- Remove the lower leg by **(6)** pulling it up.
- Push the piston **(7)** fully inside the cylinder.
- Remove the snap-ring **(8)** with the specific snap ring pliers **(9)**.
- Take off the cap **(10)**.
- Remove the entire sleeve **(7)** with the piston and spring assembly from the cylinder.
- Place the sleeve **(7)** on a table with the piston **(11)** facing down.
- Slide the spring up the assembly **(12)** and put in the desired travel spacers **(13)**, as shown in the picture.

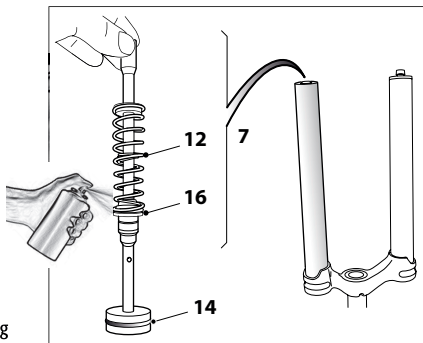




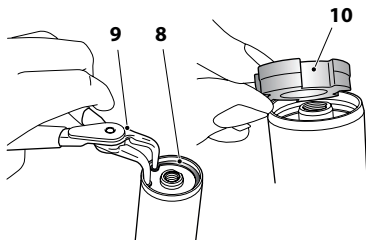
Degrease the part (16) so that the spring group (12) will be blocked.
once the operation is done the spring group should offer a certain resistance while sliding on the bar. In case the part is not degreased properly, during the return of the spring a light noise can be perceived.

WARNING: The travel of the FORMULA THIRTYTHREE fork cannot exceed 120 mm.

- Lubricate the O-Ring (14) with grease (see "Recommended lubricants").
- Install the piston and spring assembly (7) back into the lower leg. The piston assembly should be at the same height as the cylinder.
- Put on the cap (10) securing it with the snap-ring (8) using the specific snap-ring pliers (9). Make sure the snap-ring is fully seated.



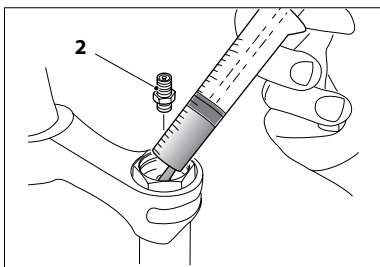
WARNING: Incorrectly positioning the snap-ring (8) may cause the fork to malfunction and therefore may cause serious injury or death.



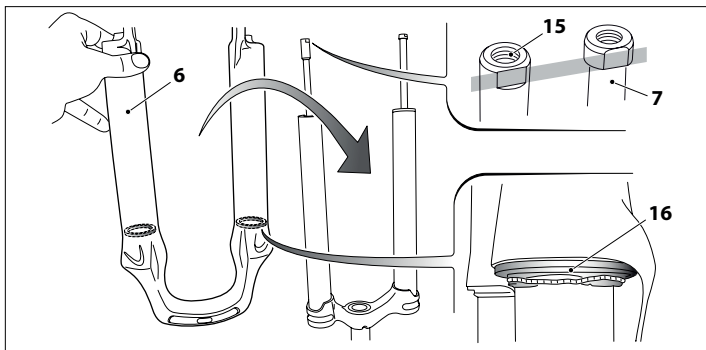
- Turn the fork upright and put **5cc** of Ballistol oil into the air cylinder (2).

⚠ WARNING: Before assembling, make sure the threads of the valve and cap are clean and degreased.

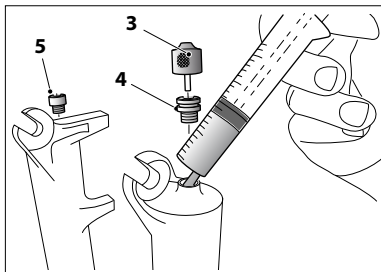
- Apply threadlocker completely around the valve thread (2). Install the valve using a 10 mm socket wrench, tightening to **5-6 Nm**. Use the high pressure pneumatic shock pump to inflate the fork (as directed in paragraph 3.3) to the required pressure.



- Align the keyway on the two piston assemblies (7-15).
- Install the lower legs (6). Be extremely careful not to damage or bend the dust seals (16). Replace them if they are damaged in any way.
- Before placing the lower legs (6) against the piston assemblies (7-15), add **5cc** of Ballistol oil with a syringe, as shown in the figure below.
- Put the lower leg (6) in place.



- Apply medium strength threadlocker around the thread of screws (4-5). Apply grease to the o-rings on the screws.
- Install the screws (4-5) and tighten to **6-7 Nm**.
- Push the rebound knob (3) fully into place, making sure it is secure.
- Actuate the fork a few times to verify it works properly.



4.2 Issues - Causes - Remedies

This chart mentions some issues that may be encountered when using the fork along with the possible causes and remedies.



WARNING: The operations listed below and accompanied by this symbol must be carried out only by authorized service centers.

Fork not using full travel	Oil level too high, air pressure too high	Check oil level (⚠) Reduce air pressure
Fork extends too quickly, violent rebound after bumps	Rebound damping insufficient	Increase rebound damping
Steerer tends to "close" when turning	Excessive rebound damping	Decrease rebound damping
Fork slow during extension or "packs-up" over multiple bumps	Excessive rebound damping	Decrease rebound damping
Bump noise during return but without violent rebound	Excessive rebound damping	Decrease rebound damping
Dust seal leaks oil	Dust seal damaged	(⚠) Replace dust seal
Large amount of oil on upper tubes or oil leaks from bottom of fork	Seals damaged, uppers may be damaged	(⚠) Replace all seals and have uppers inspected
Fork "sticky", does not work like new	Seals dirty, fork requires maintenance	(⚠) Replace all seals
Oil loss from bottom of fork	Bottom nut/screw loose O-ring damaged	Tighten the nut or screw (⚠) Replace O-ring
Loss of sensitivity	Slide bushings worn Oil old	(⚠) Replace slide bushings (⚠) Change oil



WARNING: If the fork ever loses oil, do not use the bike. Find and repair any oil losses before using the bike again.



WARNING: Seals and upper tubes should be kept clean to avoid damage to fork seals and upper tubes.



WARNING: If the fork sags, immediately adjust compression or check the oil level.

Incorrect compression adjustment may cause damage to the fork, serious injury or death.

Only a qualified bicycle technician or authorized suspension service center should adjust the oil level.

READ CAREFULLY!

FORMULA SRL extends to the original purchaser of its forks a limited warranty that the forks 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 SRL 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 SRL 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 SRL 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 THIRTYTHREE forks. Formula Srl shall not guarantee conformity, safety, service life and performance of Formula THIRTYTHREE forks 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.**
 - h. The result of rider mishap or crash.**
- 4. Retailers, wholesalers, importers or anyone else apart from FORMULA SRL 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 in court in Prato.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Formula srl

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w w w . f o r m u l a - b r a k e . c o m

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