instruction manual

FIFTY YEARS OF SUSPENSION INNOVATION
50
SINCE 1949

BAM
BOMBER AEROSPACE MATERIAL

ORIGINAL
open bath
DESIGN

JR·T
DUAL CLAMP

bomber

MARZOCCHI SINCE 1949 MARZOCCHI SINCE 1949 MARZOCCHI SINCE 1949

INDEX Page

OWNER'S INFORMATION 2
GENERAL 3
SPECIFIC TOOLS 3
GENERAL RULES FOR A CORRECT OVERHAULING AND MAINTENANCE 4
FAILURES, CAUSES AND REMEDIES 4
RECOMMENDATIONS FOR MAINTENANCE 4
INSTALLATION 4
DISC BRAKE SYSTEM ASSEMBLY 6
ADJUSTMENT 7
DISASSEM BLY 7
DISASSEMBLY DIAGRAM 7
REASSEMBLY 11
FORK EXPLODED VIEW 15

The figures and descriptions in this pamphlet are provided as a guide.
We reserve the right to make changes to the products without notice in line with our policy of continuous improvement.

Always respect Nature when riding !

OWNER'S INFORMATION

IMPORTANT: Installing a Marzocchi suspension system is a very delicate operation that must be carried out with extreme care. These installation and maintenance instructions are designed for experienced bicycle mechanics and must be followed exactly as written and specified. Failure to precisely follow these instructions could cause damage to one or more components of the Marzocchi suspension system. This damage may not be readily visible or apparent and could lead to unexpected failure on one or more components of your suspension to such extent that the rider may loose control of the bicycle and suffer severe injury.

The responsibility of the owner

1) The Marzocchi suspension system is designed to absorb the shocks of an uneven road surface in order to give the rider more control over this bicycle. It is not designed to absorb the forces generated by jumps or other acrobatic maneuvers. If you subject the Marzocchi suspension system to repeated jumps or other acrobatic maneuvers, you could cause one or more of the components of the suspension system to unexpectedly break, resulting in a loss of bicycle control and serious injury to the rider.
2) Some of the parts of the bicycle, such as the brakes, steering, tires, wheel assembly and shifters may not have been adjusted at the time the Marzocchi suspension system was installed on the bicycle. Before you ride the bicycle, be sure all the parts of the bicycle were properly adjusted and functioning properly.
3) All of the components of the suspension system must be correctly assembled and tightened exactly to the specified torque values. Periodically check the torque of these components to insure that they are correct. Failure to properly assemble and tighten the components could cause one or more of the components to unexpectedly break, resulting in a loss of bicycle control and serious injury to the rider.
4) There are obvious risks associated with mountain biking and other types of bicycle riding. Despite the use of all safety equipment for the bicycle and the rider, either injuries or damages may occur. This is the responsibility of the rider. To reduce the risk of injury, all activities must be under proper supervision and only after proper training and experience. Good physical condition of the rider and the good state of the bicycle are essential to be a safe and successful rider.
5) Be sure to read and follow all the instructions and warnings which originally accompanied your bicycle. In addition, it is recommended for added safety and protection while riding that a good quality bicycle helmet be worn and that other safety devices such as lights, reflectors, or reflective clothing be used. Some cities and states may require the use of a helmet and other safety equipment. Follow all traffic rules and all other laws about safety equipment and use your bicycle where you are permitted to ride.
6) For any further information you might need, please call or write to this addresses:

LARM
Via Ca' dell'Orbo, 36 -
40055 Villanova di Castenaso (Bologna) - Italy
✆ ++51/6053460 - Fax ++51/6053411

MSC CORPORATION USA
28231 Avenue Crocker - Unit 100
VALENCIA CA, 91355
✆ +1 (805) 257-6630 - Fax +1 (805) 257-6636

It is your responsibility to make sure the assembly instructions in this book are precisely followed.

Always ride safely and carefully.

GENERAL

- The JR. T triple clamp fork is specifically designed for Downhill use.
- Damped by a mechanical spring and hydraulic rebound damping.
- Spring pre-load adjustment controlled via external top mount adjusters.
- Oversized 30 mm stanchion tube secured to the crown and upper plate. The system is equipped with full length slider bushings giving this fork an incredibly smooth stiction free stroke, in addition to the unmatched structural strength.
- Parts subjected to friction are cooled and lubricated by a specially formulated oil.
- Brake cable support kit available on request.

Steer tube: EASTON aluminum steer tubes available in 1 1/8” diameter, non threaded or in CrMo steel with variable butting. Several lengths available in non threaded 1 1/8” and 1 1/4” diameters.
Crown: Forged and CNC-machined T6-6082 aluminum alloy.
Arch: Forged and CNC-machined T6-6082 alloy.
Stanchions: Anodized special aluminum.
Springs: with variable pitch
Sliders: Cast and CNC-machined BAM* aluminum alloy. Left slider equipped with disc brake adapter.
Pilot bushing: Full length bushing composed of a copper base and impregnated with an anti-friction coating.
Seals: Computer designed oil seals guarantee the highest quality seals available.
Oil: Specially formulated oil which eliminates foaming and viscosity breakdown while providing complete stiction-free performance.
Fork leg oil: 160 cc, type EBH 16- SAE 7.5.

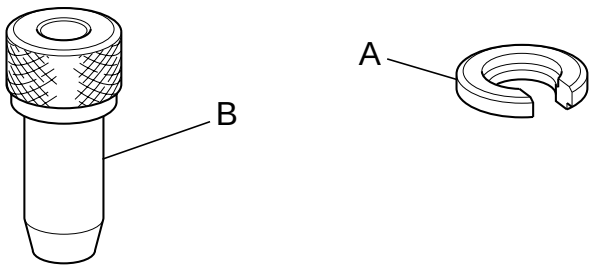
* **BAM: Bomber Aerospace Material.**
Special alloy developed from aerospace material.

The fork is supplied with:
– Warranty card
– Owners manual
– Technical Specifications.

Size:
– travel: 130 mm (5.1 inches)
– crown to axle length: 504.2 mm
– crown to upper plate length:
Jr.T = 172.8 mm;
Jr.T-PRO = 220.8 mm
– stanchions outer diameter: 30 mm
– fork leg distance between centers: 130 mm
– cantilever boss distance between centers: 80 mm
– pilot bushing length: 92 mm

SPECIFIC MARZOCCHI TOOLS

Ref.	Item.	Description and use
A	536003AB	Slider protector: to remove the oil seal from the slider
B	R 5068	Oil seal press: to press oil seal into the slider



These are the specific tools necessary for an overhaul, you may find it necessary to use common tools found in your shop.

GENERAL RULES FOR CORRECT OVERHAULING AND MAINTENANCE

1. Where specified, assemble and disassemble the shock absorption system only using the MARZOCCHI or LARM special tools, as shown in the table below.
2. On reassembling the suspension system, always use new seals.
3. If two screws are close to each other, always tighten using a 1-2-1 sequence. In short, screw the first screw just up to the point it is well tightened, then tighten the second screw and then go back to the first one and screw it tighter.
4. Clean all metal parts with a special, preferably biodegradable solvent, such as trichloroethane or trichloroethylene.
5. Before reassembling, lubricate all parts in contact with each other using silicone fat spray.
6. Always grease the lip seal rings before reassembling.
7. Use wrenches with metric size only. Wrenches with inch size might damage the fastening devices even when their size is similar to that of the wrenches in metric size.

FAILURES, CAUSES AND REMEDIES

This paragraph reports some failures that may occur when using the fork. It also indicates possible causes and suggests a remedy. Always refer to this table before doing any repair work.

FAILURES	CAUSES	REMEDIES
Excessive oil build up on stanchions	1. Oil seal is worn out 2. Stanchion tube is scored 3. Excessive dirt on oil seal	1. Replace oil seal 2. Replace oil seal and stanchion tube 3. Clean the oil seal seat and replace it
Oil leaking through the bottom of slider	O-ring on the pumping rod screw is damaged	Replace the O-ring
Fork has not been used for some time and is locked out	Oil seals and dust seals tend to stick to stanchion tube	Raise dust seal and lubricate stanchion tube, dust seal and oil seal with silicone grease
Excessive play of stanchions in the sliders	Pilot bushings worn out	Replace pilot bushings

RECOMMENDATIONS FOR MAINTENANCE

MARZOCCHI forks are based on advanced technology, supported by year-long experience in the field of professional mountain biking. In order to achieve best results, we recommend to check and clean the area below the oil seal and the stanchion tube after each use and lubricate with silicone oil.

INSTALLATION

Installing the Jr. T fork on a bicycle is a very delicate operation that should be carried out with extreme care.
The installation should always be checked by one of our Technical Service Centers.

WARNING: “A-Head Set” headset/Steer tube mounting and adjustment must be carried out in compliance with the headset manufacturer’s instructions. Improper installation may jeopardize the safety of the rider.
The steer tube is interchangeable in Jr. T crown as it is secured to the crown by a clamp fastened with two screws. Steer tubes should be changed following installation instructions completely. Be sure to install correct steer type (A-Head Set), diameter and length for the frame on which it should be fitted. If necessary check with one of our Technical Service Centers for proper fit.

WARNING: In case of improper installation of the steer tube into the crown, the rider could lose control of his/her bicycle, thus jeopardizing his/her safety.

MOUNTING THE FORK ON THE FRAME

FIG. A
Remove the upper plate (36) from steer tube and fork legs by loosening the 3 fastening bolts (37).

FIG. A

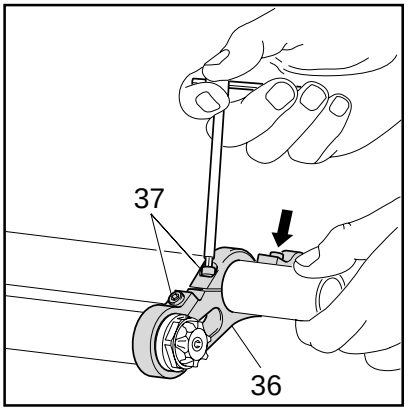


FIG. B
Assemble the fork to the frame complete with headset. Fit the upper plate (36) into the upper stanchions and the steer tube.

FIG. B

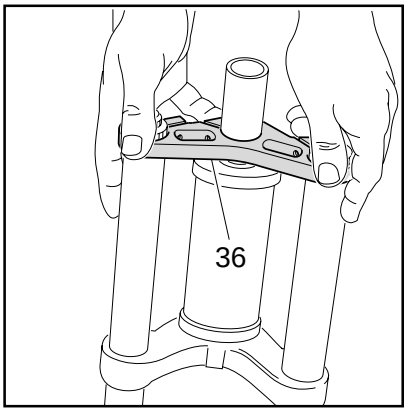


FIG. C
The stanchions edge (13) must be aligned with or slightly lower than the upper plate (36).
If fork legs overprotrude, fit some spacers to the plate close to the steer tube (35).

FIG. C

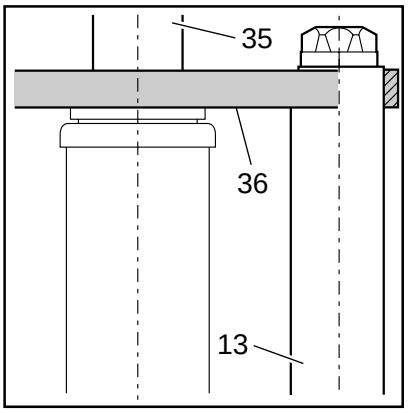


FIG. D
Fit the handlebar support and the A-Head Set cap over the upper plate (36) and then adjust the steering.
Now finally tighten the 3 bolts (37) on the upper plate.

⚠ **IMPORTANT**: Loosen the 3 screws (37) on the upper plate before adjusting the steering. Tighten the above bolts at the required torque when finished.

FIG. D

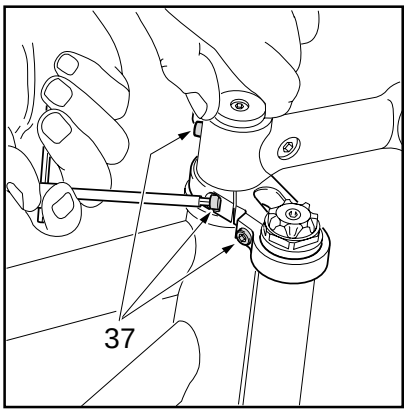


FIG. E

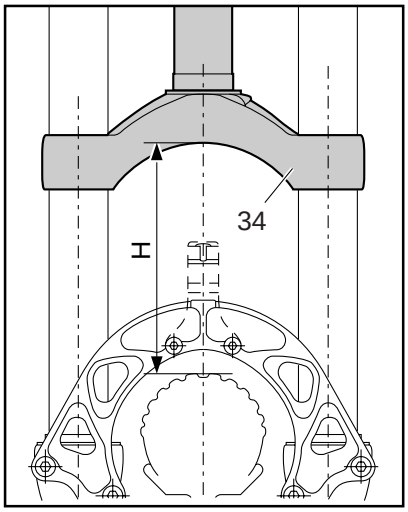


FIG. E
If the crown (34) position with respect to the stanchion tubes (13) has been changed for any reason, adjust the original distance.
– Distance "H" between crown and tyre edge (when inflated) should not be lower than total travel (130 mm) + 3 mm.

WARNING: if steering crown is improperly matched with stanchions, it may touch the tyre and cause severe injuries to the rider.

FIG. F

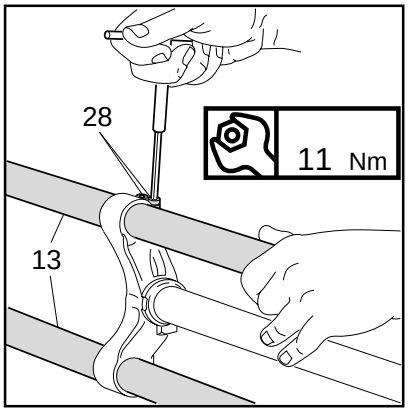


FIG. F
Tighten the 4 stanchions fastening screws (28) onto the crown at 11 Nm.

WARNING: do not overtighten the screws holding the stanchions to the crown as this may distort the stanchion tubes and weaken the whole structure.

After any installation always check for the following:
– proper torque of bolts fastening stanchion tube onto crown;
– proper torque of bolts fastening stanchion tube onto lower crown and upper plate;
– proper torque of bolts fastening brake arch onto slider.

For recommended torque settings, see the table below:

Thread diameter	Tightening torque	
	Nm	lb ft
M4	4	2.9
M5	9	6.6
M6	11	7.5

DISC BRAKE SYSTEM ASSEMBLY

Assembling the brake caliper onto the slider is a very delicate operation that should be carried out with extreme care. Improper assembly might overstress the caliper supports which might break.
This system should be assembled by specialized technicians in a position to fully understand and properly follow the instructions given by the manufacturer.

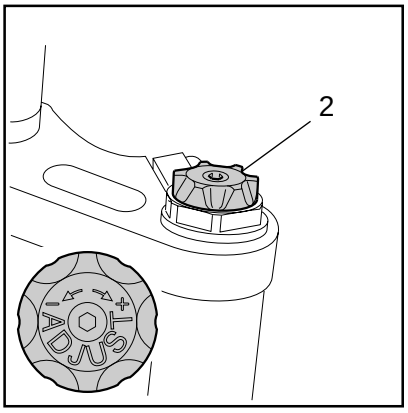
ADJUSTMENT

IMPORTANT: both fork legs should be adjusted on the same position.

SPRING PRELOAD (FIG. G)

Spring preload determines COMPRESSION damping and is adjusted by turning the adjuster knob (2) on the top of the fork legs. From the factory Jr. T is preloaded at its minimum level, i.e. adjuster knob completely unscrewed counterclockwise. However, springs are slightly preloaded to counteract static loads. By turning the adjustment knob clockwise, the preload is increased up to the maximum value equal to 15 mm's of spring preload. This adjustment is essential in order to have the right Jr. T response for the rider's weight and riding style.

FIG. G

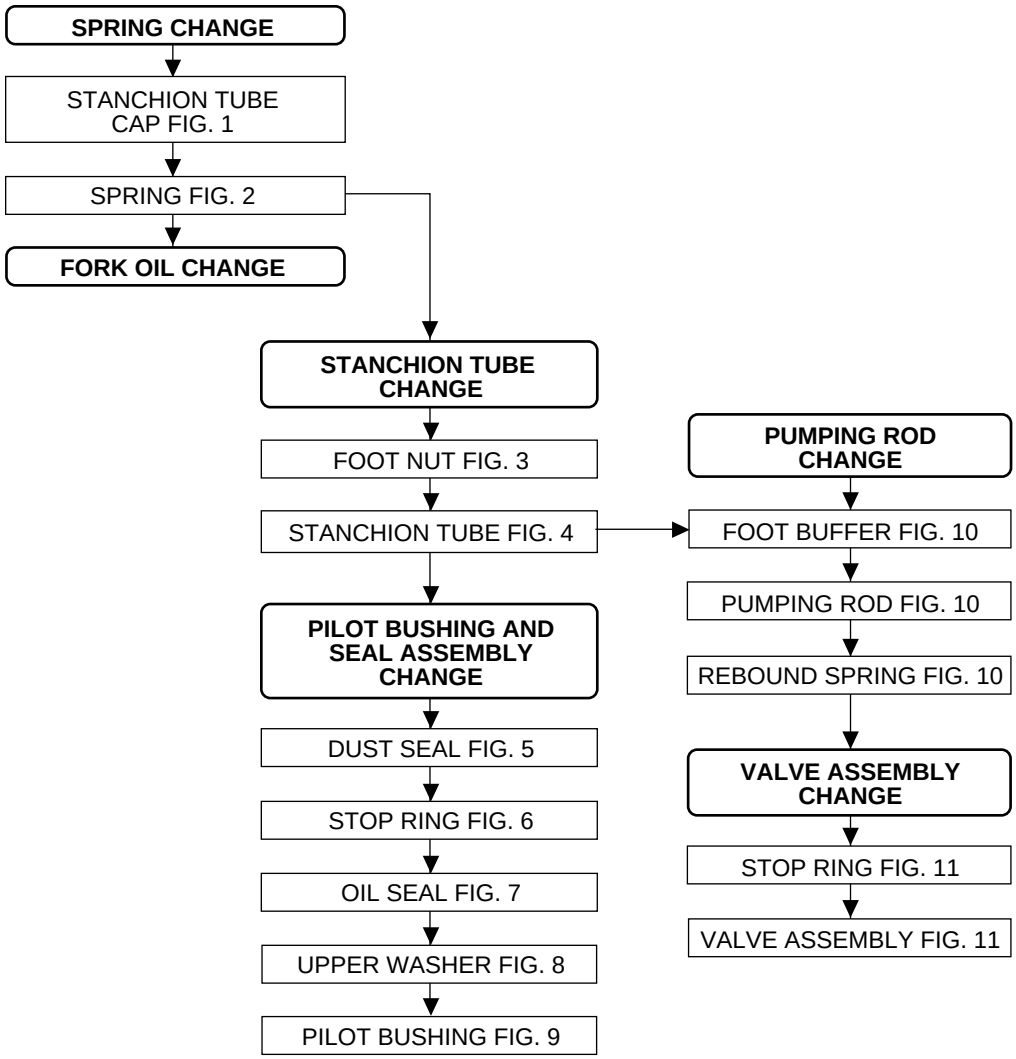


DISASSEMBLY

GENERAL

– The reference numbers given in this section relate to the components shown in the fork exploded view on page 15.
– Operations refer to the fork legs already removed from the upper plate and from the crown and disassembled from the brake arch.
– Before starting any operation, please read the diagram below. It shows the quickest procedure and the exact sequence in which it should be disassembled. Locate the part you need to remove in the diagram, then look at the arrows to determine which other parts you will need to remove first.

DISASSEMBLY DIAGRAM



SPRING CHANGE
FIG. 1
Place the stanchion tube (13) in a vice making sure it is not damaged or dented in the process and unscrew the cap (5) with a 26 mm wrench. Remove the cap complete with the O-ring (6) from the stanchion tube.

FIG. 1

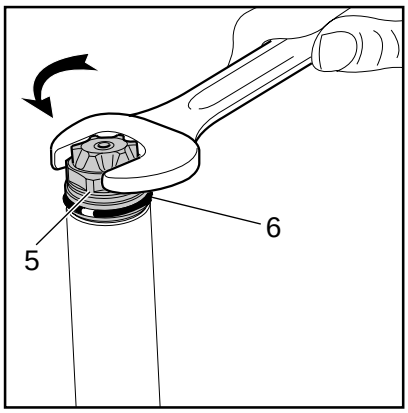
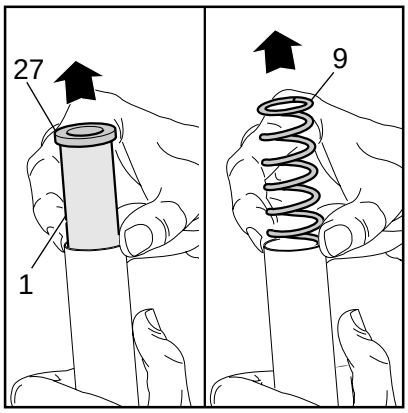


FIG. 2
Push the stanchion tube into the slider and remove the upper washer (27), the preload sleeve (1) and the spring (9).
Let all the oil drain out.

WARNING: Remember to always recycle any used oil.

To change the fork leg oil follow the procedure as described in section "REASSEMBLY" from FIG. 22 to FIG. 25.

FIG. 2



PILOT BUSHING AND SEAL ASSEMBLY CHANGE
FIG. 3
Turn the leg upside-down and place it in a vice with soft jaws.

CAUTION: tighten gently otherwise the slider may damage.
Unscrew the foot screw (22) with a 17 mm socket wrench.

FIG. 3

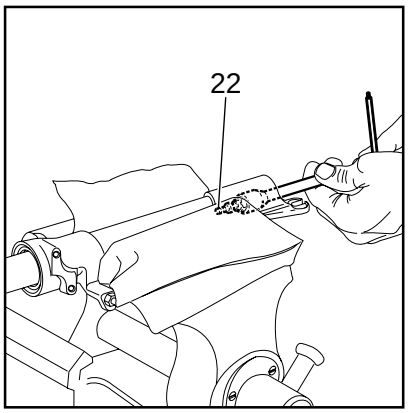


FIG. 4
Pull the stanchion tube (13) out of the slider.

FIG. 4

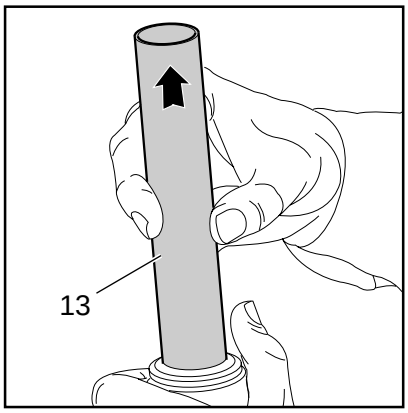


FIG. 5
Use a small screwdriver and remove the dust seal (14) from the slider.

FIG. 5

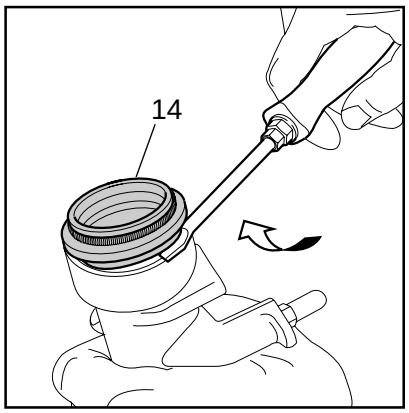


FIG. 6
Remove the stop ring (15) from the slider by placing the screwdriver bit in one of the three openings on the stop ring.

IMPORTANT: when removing the stop ring, make sure not to damage its seat.

FIG. 6



FIG. 7
Fit the slider protector (A) onto the slider and remove the oil seal (16) using a large slot screwdriver.

IMPORTANT: when removing the oil seal, make sure not to damage its seat. Once removed the oil seals should not be used again.

FIG. 7

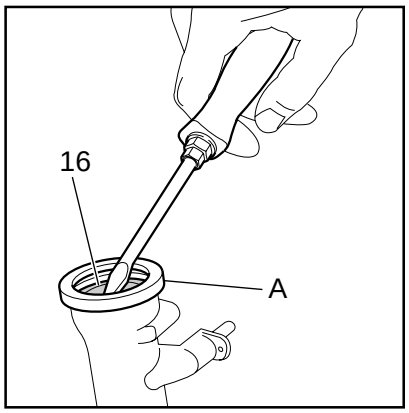


FIG. 8
Remove the upper washer (17) from the slider.

FIG. 8

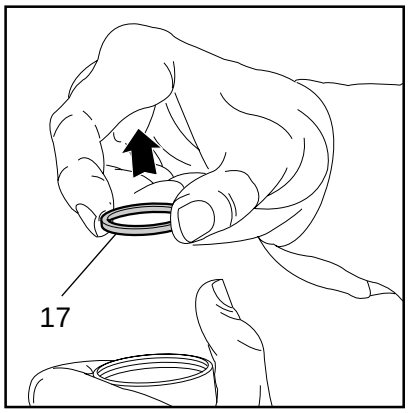
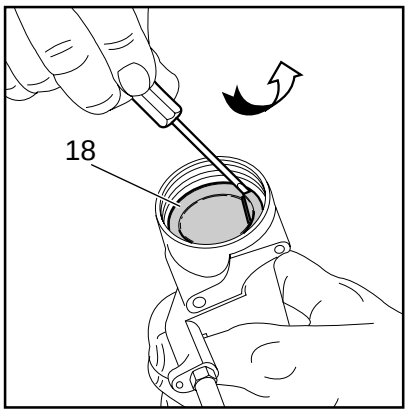


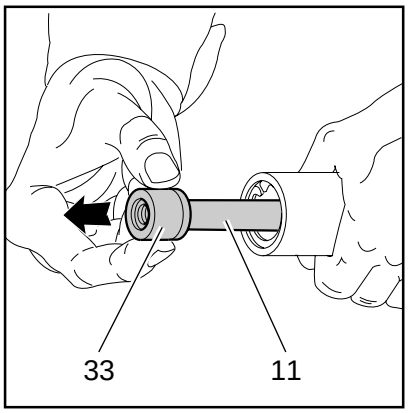
FIG. 9
Fit the bit of a small screwdriver into upper edge slot of the pilot bushing (18) and lift gently. Pull the bushing out of the slider and make all necessary changes.

FIG. 9



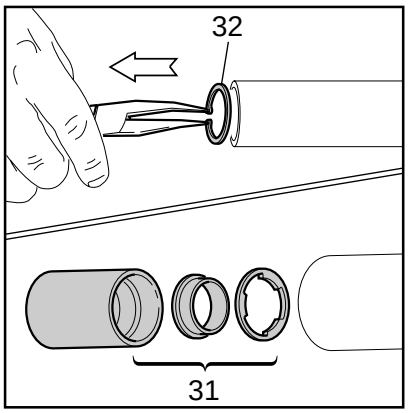
PUMPING ROD CHANGE
FIG. 10
Remove the foot buffer (33) from the pumping rod (11) end.
Withdraw the pumping rod (11) and the rebound spring (12) from the stanchion tube opposite side. Replace the seal ring (26) if damaged or worn out.

FIG. 10



VALVE ASSEMBLY CHANGE
FIG. 11
To check that the valve assembly is operating correctly, it is necessary to work on the inside of the stanchion tube.
Slip off the stop ring (32) using pointed pliers.
Put the valve assembly (31) out of the tube in the same sequence as in the figure.

FIG. 11



REASSEMBLY

CAUTION: before reassembling, all metal components should be washed carefully with inflammable, preferably biodegradable, solvent and dried with compressed air.

PILOT BUSHING AND SEAL ASSEMBLY
FIG. 12
Check that no dirt or debris is between slider and bushing. Insert the pilot bushing (18) into place so that it adheres to the slider.

FIG. 12

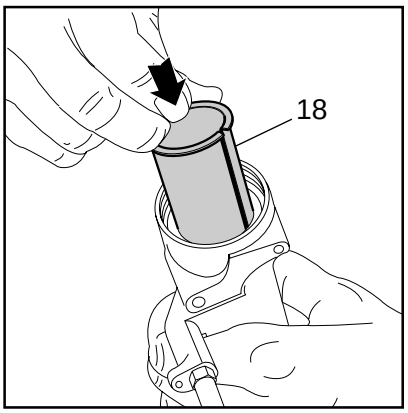


FIG. 13
Fit the upper washer (17) into the slider so that it touches the pilot bushing.

FIG. 13

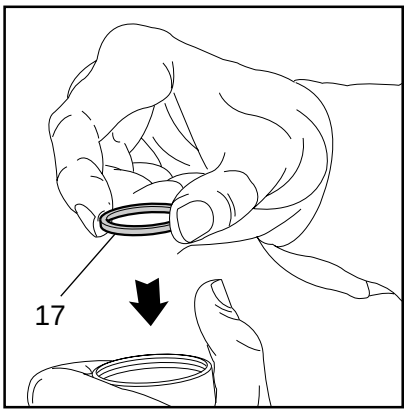


FIG. 14
Lubricate the oil seal (16) and fit it onto the seal press (B) with the hollow side toward the slider.
Press the oil seal until it touches the upper washer by using the above seal press.

FIG. 14

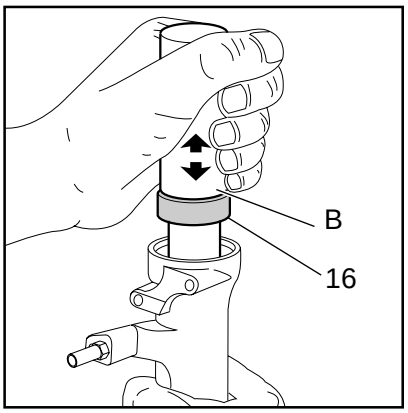


FIG. 15
Insert the stop ring (15) making sure it is properly seated into place.

FIG. 15

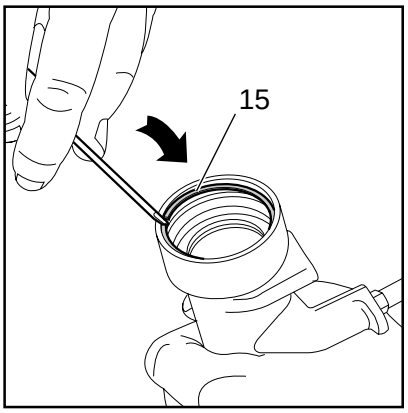
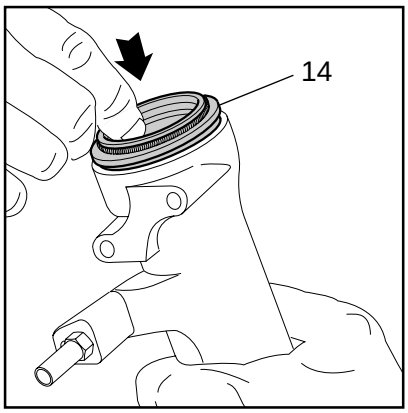


FIG. 16
Lubricate the dust seal (14) and fit it onto the top of the slider.

FIG. 16



VALVE AND PUMPING ROD ASSEMBLY
FIG. 17
After having overhauled or replaced the valve assembly and after having cleaned the inside of the stanchion tube, reassemble. Assemble valve components (31), in correct sequence.
Then fit pumping rod (11), seal ring (26) and rebound spring (12) into the valve assembly (31) and push it until it comes out from the other end.

FIG. 17

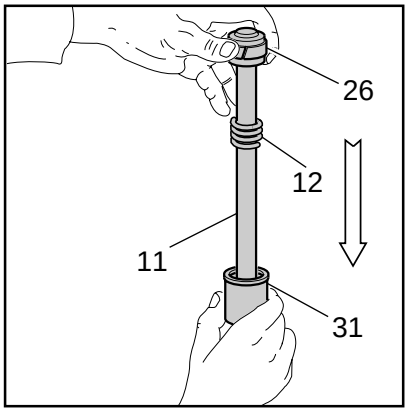


FIG. 18
Reassemble the foot buffer (33) onto the end part of pumping rod (11).

FIG. 18

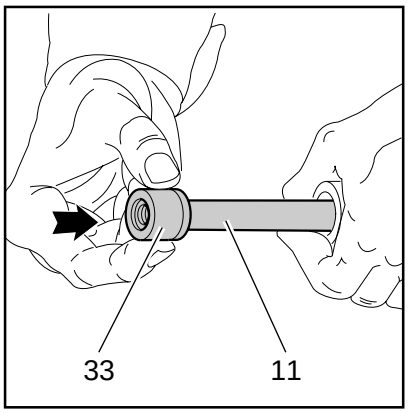
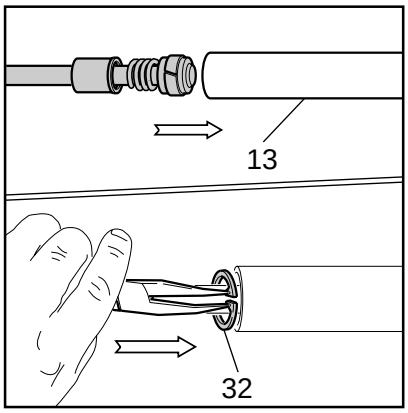


FIG. 19
Fit this assembly into the stanchion tube (13) and properly seat the valve assembly (31).
Insert the stop ring (32).

FIG. 19



STANCHION TUBE ASSEMBLY
FIG. 20
Fit the stanchion tube (13) gently into the dust seal (14).
Rotate the stanchion tube while inserting it into the seal to facilitate installation and reduce the chance of damaging the seals.
Turn the slider over and check that the foot buffer hole is aligned with the slider hole.

FIG. 20

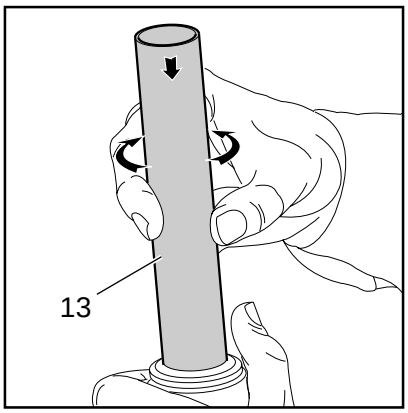
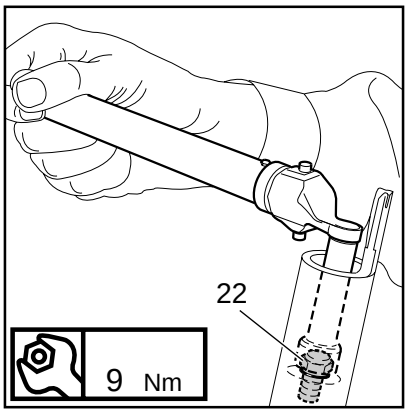


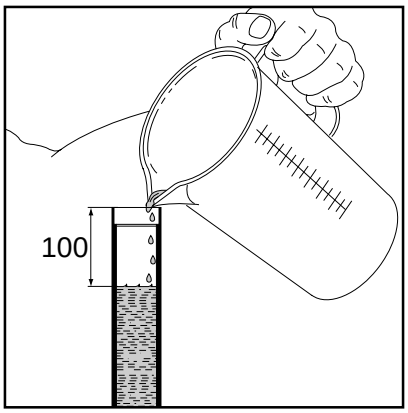
FIG. 21
Clamp the slider in a vice with protected jaws and tighten the screw (22) at 9 Nm with a 17 mm wrench.
Check to see that the stanchion tube slides unrestricted by cycling the fork up and down several times.
The tube should slide freely inside the seal assembly without any side play.
In the event it is too hard or too soft, repeat the previous steps described above checking to ensure that components are not damaged.

FIG. 21



HOW TO FILL WITH OIL
FIG. 22
Pour the oil little by little when the stanchion tube is fully down and then pump with the stanchion tube so as to have a better filling. Check that the oil level is 100 mm/3.93 in. from the top of the stanchion tube, in both legs.

FIG. 22



SPRING AND PRELOAD CAP
FIG. 23
Fit the spring (9) into the stanchion tube.

FIG. 23

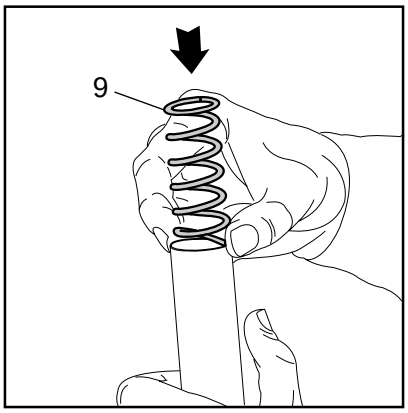


FIG. 24
Fit the preload sleeve (1) and the upper washer (27) into the stanchion tube.

FIG. 24

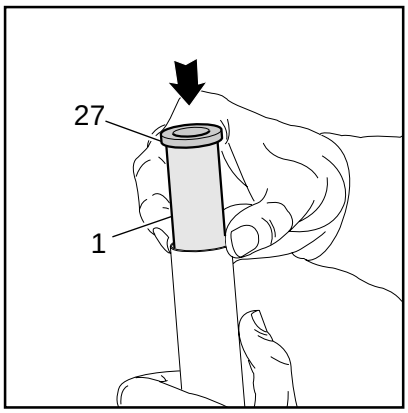
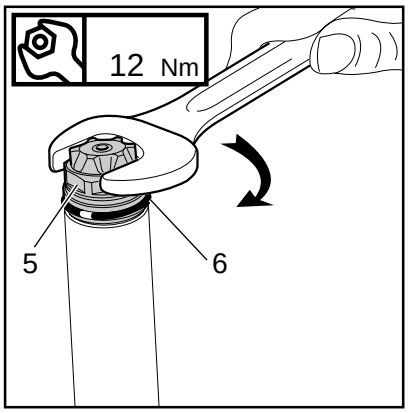


FIG. 25
Lubricate the O-ring (6) on the preload cap (5). Turn the preload adjuster (7) counterclockwise until it is at its minimum setting.
Fit the complete cap assembly into the stanchion tube by hand. Place the stanchion tube in a vice. Be sure it is not damaged or dented in the process and tighten the cap (5) at 12 Nm.
At this point the brake arch can be installed on the fork leg, which should then be installed into the crown and into the upper plate as specified in section “INSTALLATION”.

FIG. 25



FORK EXPLODED VIEW

Ref.	Description
1	Preload sleeve
2	Preload knob
3	Screw
4	Elastic pin
5	Cap
6	O-ring
7	External preload adjuster
8	Internal preload adjuster
8A	Upper washer
9	Spring
10	O-ring
11	Pumping rod
12	Rebound spring
13	Stanchion tube
14	Dust seal
15	Stop ring
16	Oil seal
17	Upper washer
18	Pilot bushing
19	R.H. slider
20	L.H. slider
21	O-ring
22	Foot screw
23	Cantilever boss
24	Arch
25	Screw
26	Ring
27	Washer
28	Screw
29	R.H. sticker
30	L.H. sticker
31	Valve assembly
32	Stop ring
33	Foot buffer
34	Crown
35	Steer tube
36	Upper plate
37	Screw
38	Complete cap
39	Sticker

