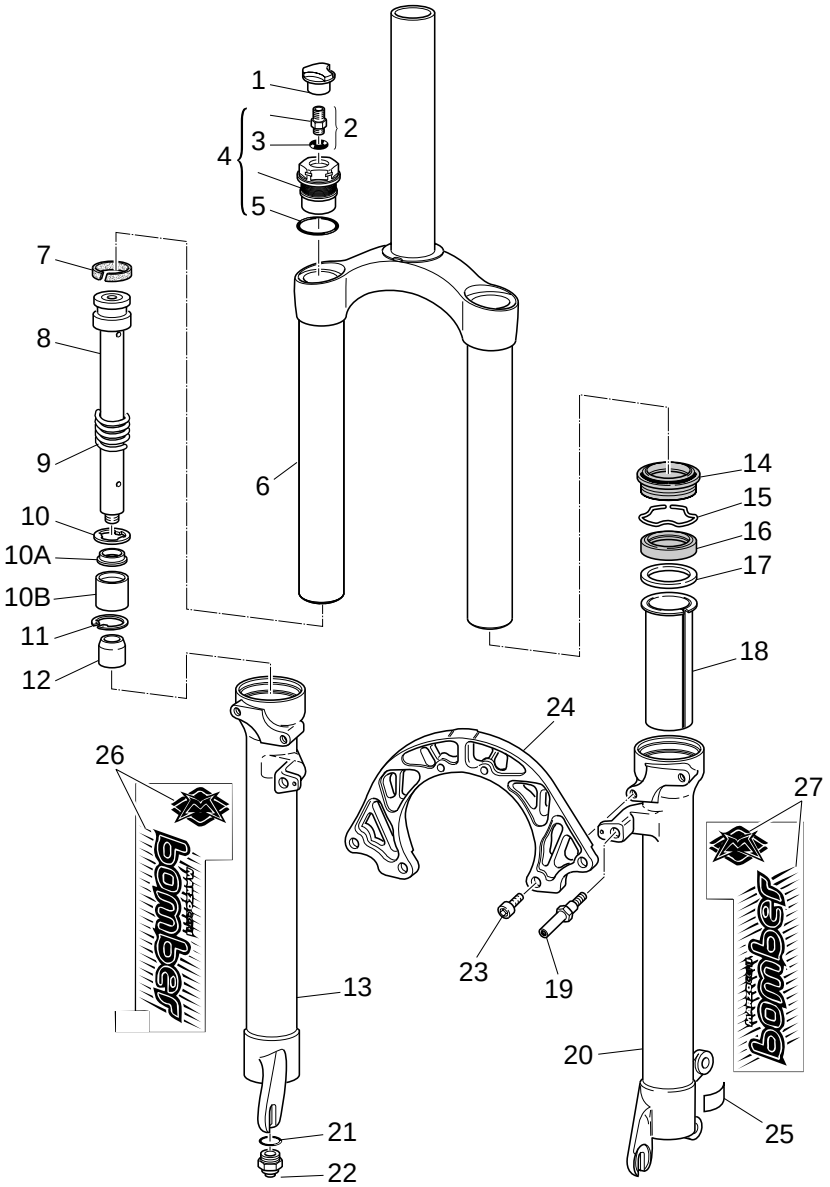
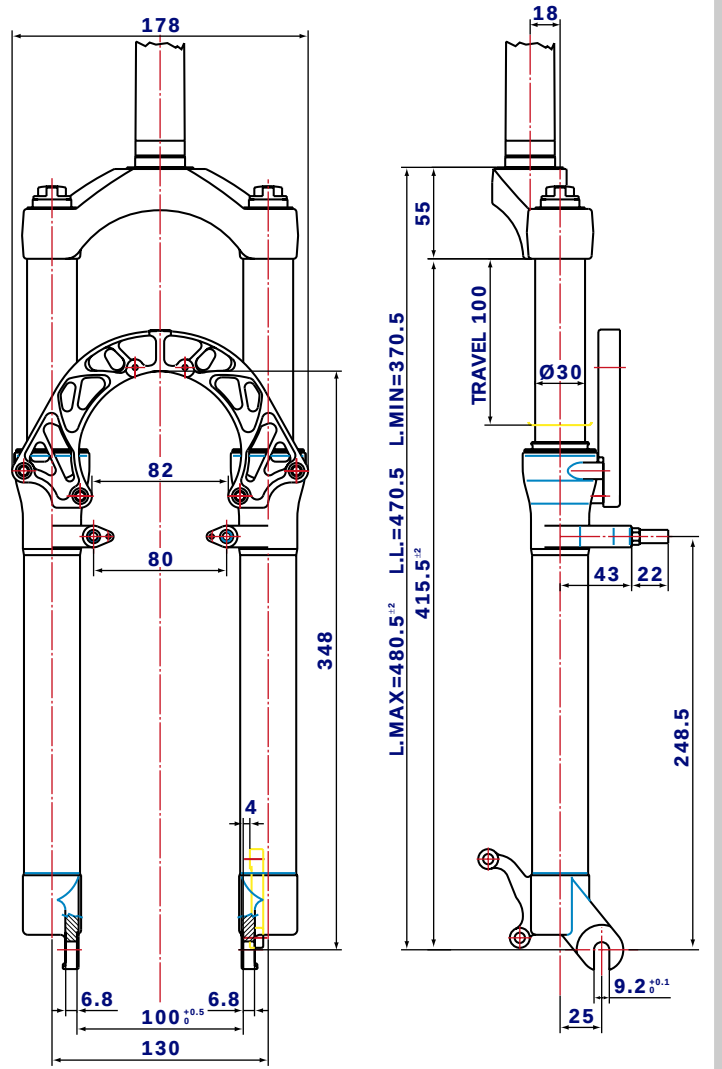
Z3

FLYLIGHT 100



Z3 FLYLIGHT 100



GENERAL

- *Special air/oil damped cross-country fork.*
- *Each leg uses pressurized air blown through a special valve fitted on stanchion cap as damping medium.*
- *Rebound damping is controlled by an adjuster fitted to inner pumping rods fixed to the bottom of each slider.*
- *Stanchions fitted into steering crown by cryofit technique. Full length bushings guarantee superior rigidity.*
- *Parts subjected to friction are splash-lubricated by a specially formulated oil collected on the bottom of each leg.*

Steer tube: *in CrMo steel with variable butting. Several lengths available in threaded or non threaded 1 1/8" diameters. EASTON aluminum steer tubes available in non threaded 1 1/8" diameter.*
Crown: *Forged and CNC-machined BAM* aluminum alloy.*
Arch: *Forged and CNC-machined BAM* aluminum alloy.*
Stanchions: *anodized EASTON aluminum.*
Sliders: *Forged and CNC-machined BAM* aluminum alloy.*
Air valve: *"Schraeder" type with cap. Use Marzocchi pump to blow required air.*
Pilot bushing: *Full length bushings 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 break down while providing complete stiction-free performance.*
Fork leg oil: *type EBH 16 - SAE 7.5.*
100 c.c each leg.

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

INSTRUCTIONS

GENERAL RULES FOR CORRECT OVERHAULING AND MAINTENANCE

1. *Where specified, assemble and disassemble the shock absorption system using the MARZOCCHI special tools only.*
2. *On reassembling the suspension system, always use new seals.*
3. *If two screws are close one to the 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 or special oil for seals.*
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
Oil leaking through the top of slider	1. Oil seal is worn out 2. Stanchion tube is scored 3. Excessive dirt on slider oil seal	1. Replace oil seal 2. Replace crown and stanchions assembly and oil seals 3. Clean the oil seal seat and replace it
Oil leaking through the bottom of slider	O-ring for cartridge / slider seal 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
Pressure drop	1. Inflating valve loose or damaged 2. Valve seal damaged	1. Tighten spreading some medium-strong glue or change the valve 2. Change the seal
The fork reaches its end of stroke easily	Valve at the bottom of the stanchion damaged	Change valve
Fork rebounds too fast even though the adjuster is set to hardest damping	1. Piston ring(s) damaged 2. Valve at the bottom of the stanchion damaged	1. Change piston ring(s) 2. Change valve
Excessive play of stanchions in the sliders	Pilot bushings worn out	Replace bushings
Fork rebounds too fast in any adjuster position	Dirt inside legs	Clean carefully and change oil
Fork is noisy during use	Pilot bushings poorly lubricated	Pour lubrication oil at the bottom of the fork legs after cleaning
Compression damping too soft, though pressure in the legs is OK	Air is leaking from the bottom into the top section of stanchion	Loosen fork leg cap just enough to let air out of the upper section of stanchion. Tighten cap and check pressure.

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 dust seal and the stanchion tube after each use and lubricate with silicone oil.

***Polished** forks should be treated with bodywork polish at regular intervals to preserve their original finish.*

INSTALLATION

Installing the Z3 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:** Steer tube/headset mounting and adjustment must be carried out in compliance with the headset manufacturer's instructions either when a threaded steer tube or an "A-Head Set" steer tube is installed. Improper installation may jeopardize the safety of the rider.*

The Z3 fork is supplied with a proper steer tube to comply with type (A-Head Set or threaded), length and diameter of the frame on which it should be fitted. The steer tube is pressed into the crown. To replace it, contact one of our Technical Service Centers with the required tools.

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

Check the torque of the bolts fastening the brake arch to the sliders at regular intervals (11 Nm).

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.

ADJUSTMENTS

FORK LEG PRESSURIZATION (Fig. A)

Blow pressurized air through the valves (2) on the stanchion caps to set COMPRESSION damping. Z3 is set at the factory to a standard value of 2.5 bar. To change the pressure value, remove the protection cap (1) and depressurize each leg. Fully tighten the pump connection (P) on valve (2) and pressurize until the required value is reached. Unscrew the connector and refit the cap (1). This adjustment is essential in order to have the right Z3 response for the rider's weight and riding style.

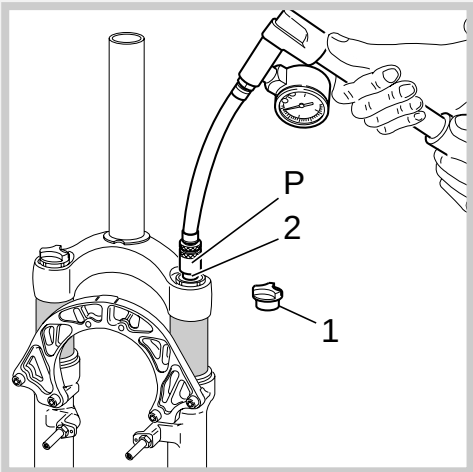
REBOUND ADJUSTMENT VIA INNER PUMPING ROD (Fig. B)

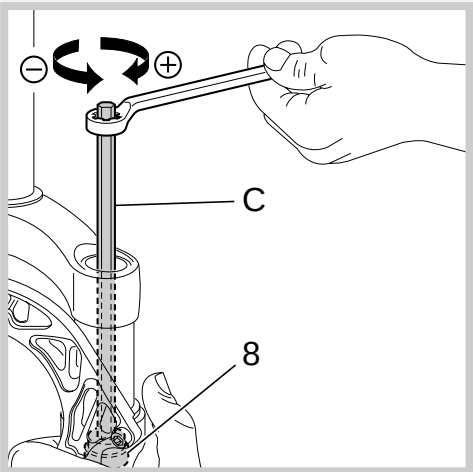
The adjuster controlling REBOUND damping adjustment is accommodated inside the pumping rod (8) fixed to the bottom of each fork leg.

To access the adjuster, unscrew the top cap (4) and push the stanchion tubes fully down (see Fig. 1).

Fit the supplied hexagon rod (C) into the stanchion tube and into the adjuster inner hole. Rotate the adjuster clockwise for harder damping, counterclockwise to soften it.

Refit the cap (4) and tighten it to the specified torque (see Fig. 25).



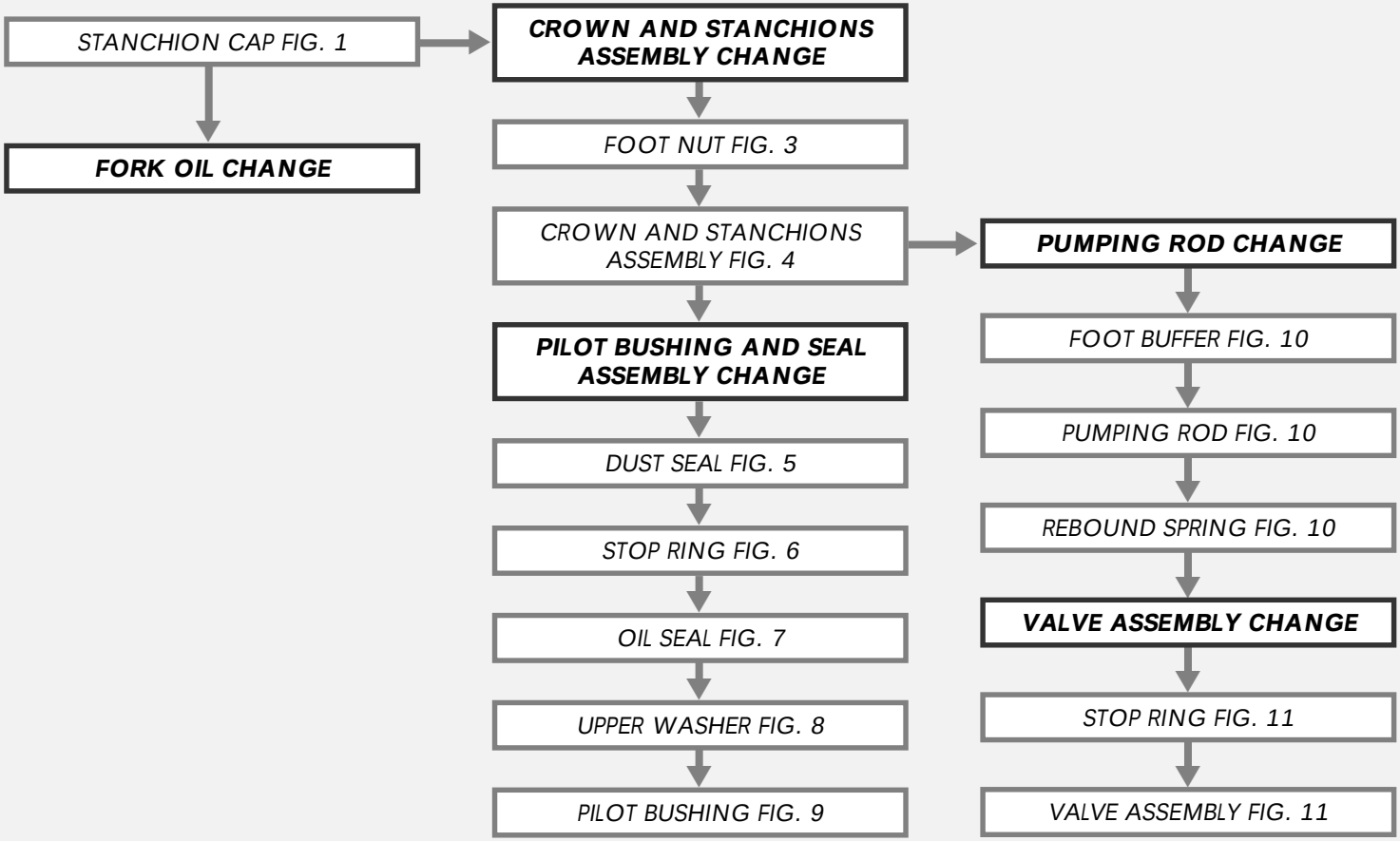


DISASSEMBLY

GENERAL

- *The reference numbers given in this section relate to the components shown in the fork exploded view.*
- *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



REMOVING THE CROWN AND STANCHIONS ASSEMBLY

FIG. 1

Depressurize each fork leg (see sections "ADJUSTMENTS").
Unscrew the caps (4) with a 21 mm socket wrench.
Remove the caps complete with O-ring (5) from the stanchion tubes.

FIG. 2

Push the stanchions (6) into the sliders (13/20) and let all the oil drain out from the fork legs.
Pump the stanchions several times to help oil drain off.

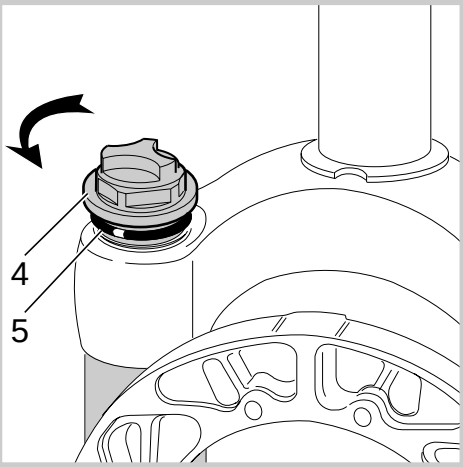
WARNING: *Remember to always recycle any used oil.*

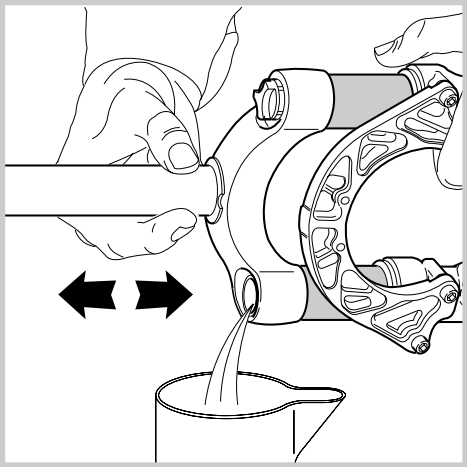
To change the fork leg oil follow the procedure as described in section "REASSEMBLY" from Fig. 23 to Fig. 25.

PILOT BUSHING AND SEAL ASSEMBLY CHANGE

FIG. 3

Turn the fork legs upside-down and unscrew the foot nut (22) complete with O-ring (21) by the use of a 15 mm socket wrench.





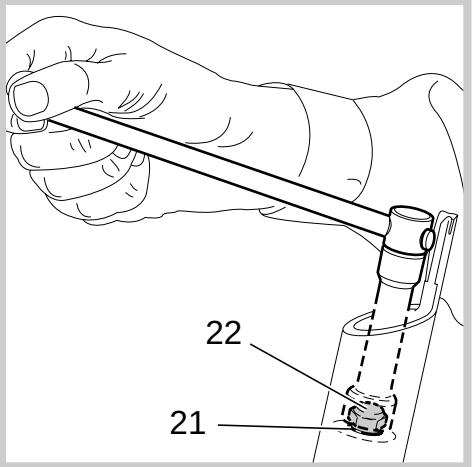


FIG. 4
Withdraw the stanchion tubes and crown (6) complete with pumping rods from the sliders.

NOTE: *Servicing will be easier if you detach the sliders from brake arch (24).*

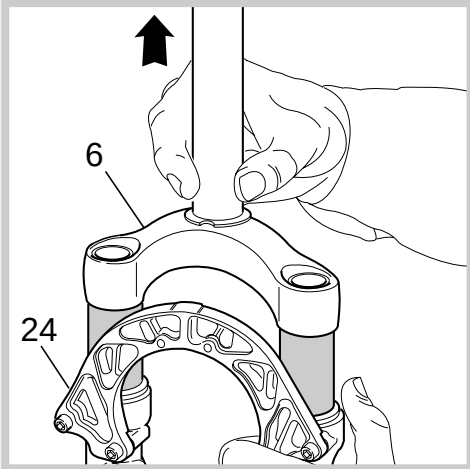


FIG. 5
Remove the dust seal (14) from the top of the slider using a small screwdriver.

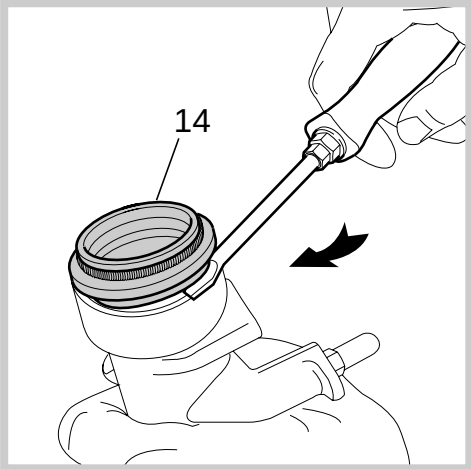


FIG. 6
Remove the stop ring (15) from the slider by placing the screwdriver bit in one of the three openings on the stop ring.

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

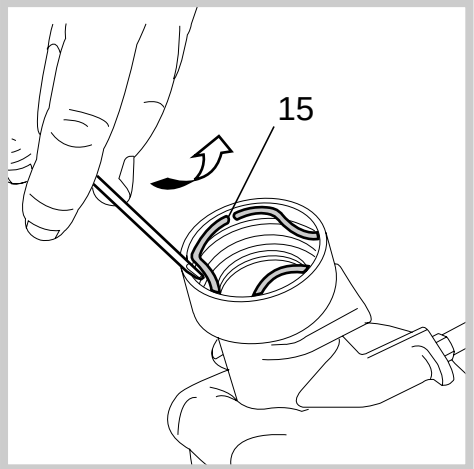


FIG. 7
Fit the slider protector (A) onto the slider and remove the oil seal (16) with the help of a large screwdriver.

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

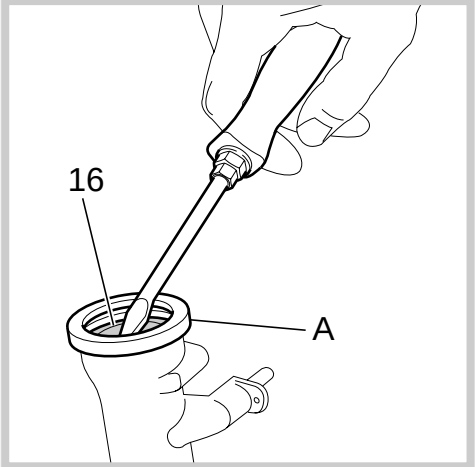


FIG. 8
Remove the upper washer (17) from the slider.

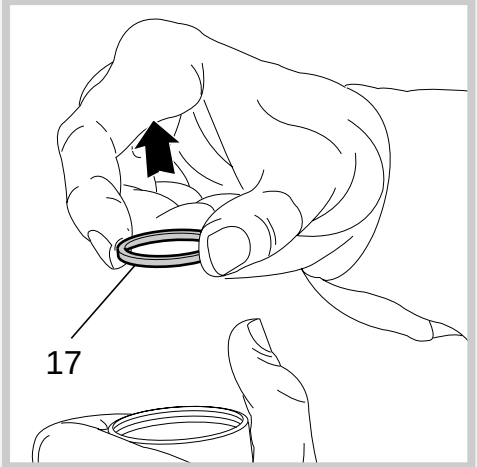
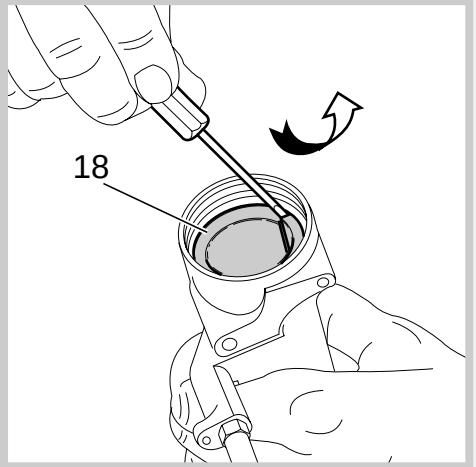


FIG. 9
Fit the bit of a small screwdriver into the upper edge slot of the pilot bushing (18) and lift gently. Pull the bushing out of the slider and make all necessary changes.



PUMPING ROD CHANGE
FIG. 10

Remove the foot buffer (12) from the pumping rod (8) end.
Withdraw the pumping rod (8) and the rebound spring (9) from the stanchion tube opposite side. Replace the seal ring (7) if damaged or worn out.

VALVE ASSEMBLY CHANGE
FIG. 11

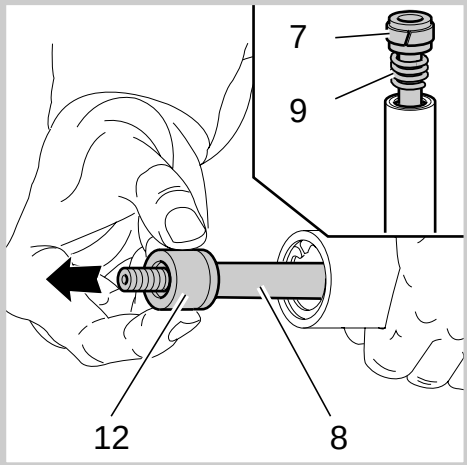
To check that the valve unit is operating correctly, it is necessary to work on the inside of the stanchion tube.
Slip off the stop ring (11) using pointed pliers.
Pull the valve assembly (10) out of the tube with one finger in the same sequence as in the figure.

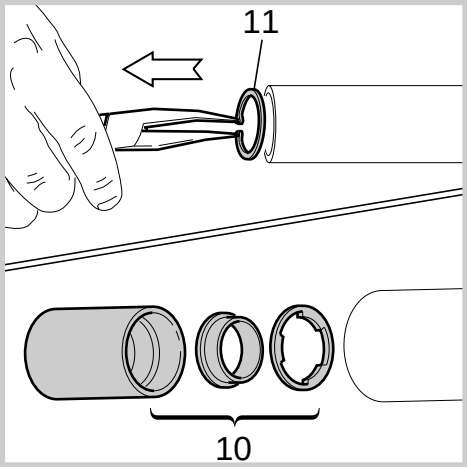
AIR VALVE DISASSEMBLY
FIG. 12

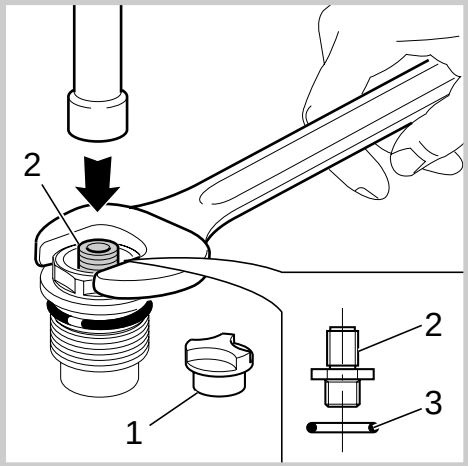
In case of pressure drops, remove the protection cap (1), the air valve (2) and its O-ring (3) using an 8 mm box wrench.

***IMPORTANT:** if the air valve is disassembled with the fork legs still assembled, keep the legs vertical so as to avoid any oil leakage.*

When reassembling, slightly lubricate the O-ring (3) and screw the air valve (2) until it stops without forcing.
Refit the cap (1).







REASSEMBLY

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

PILOT BUSHING AND SEAL ASSEMBLY

FIG. 13

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.

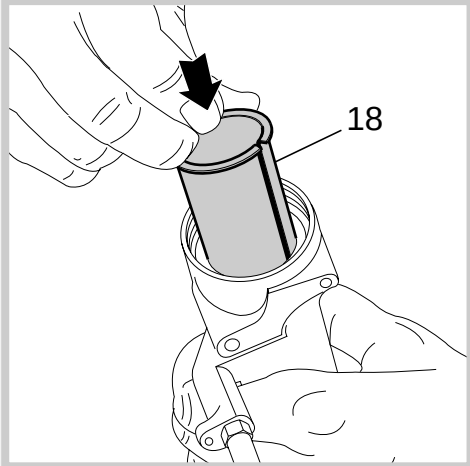


FIG. 14

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

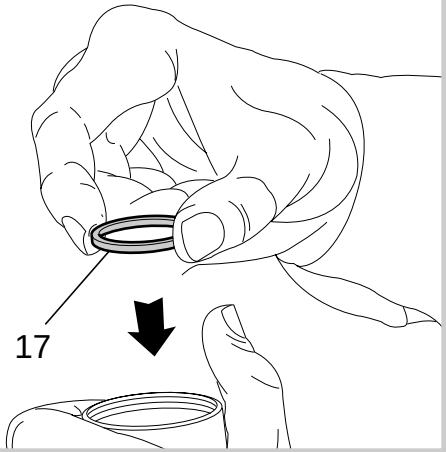


FIG. 15

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.

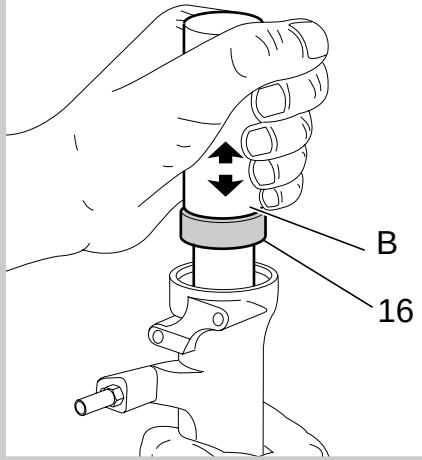


FIG. 16
Insert the stop ring (15) making sure it is properly seated into place.

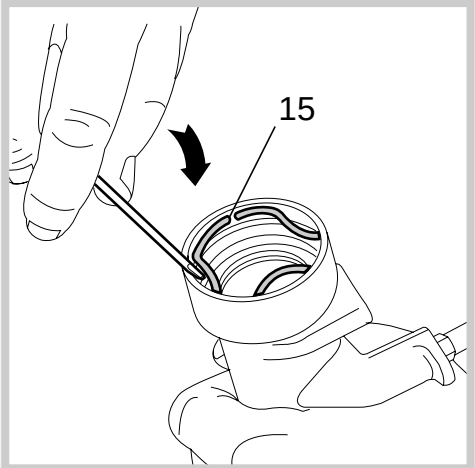
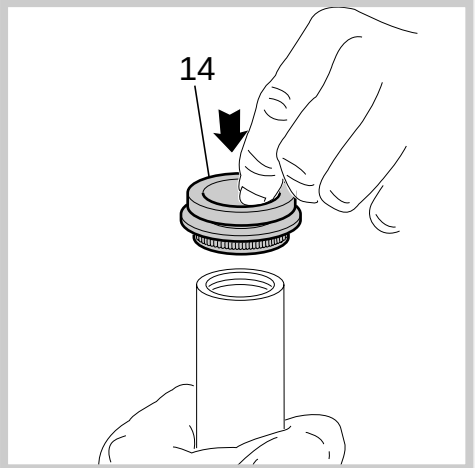


FIG. 17
Lubricate the dust seals (14) and fit them onto the top of the stanchions from the spring end.



VALVE AND PUMPING ROD ASSEMBLY
FIG. 18
After having overhauled or replaced the valve assembly and after having cleaned the inside of the stanchion tubes, reassemble. Assemble valve components (10), in correct sequence.
Then fit pumping rod (8), seal ring (7) and rebound spring (9) into the valve assembly (10).

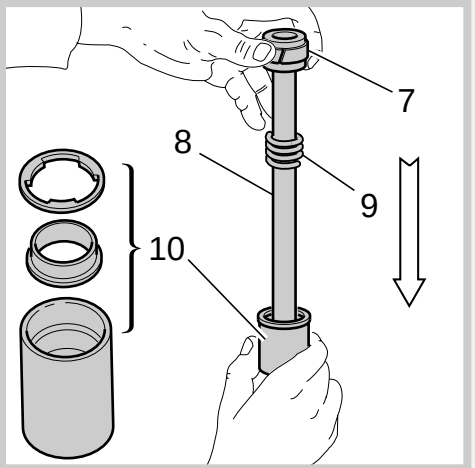


FIG. 19
Reassemble the foot buffer (12) onto the end part of pumping rod (8).

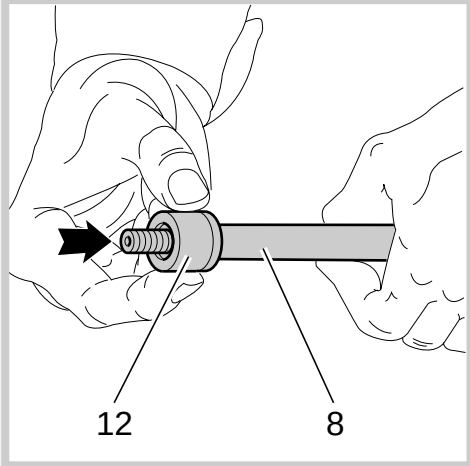
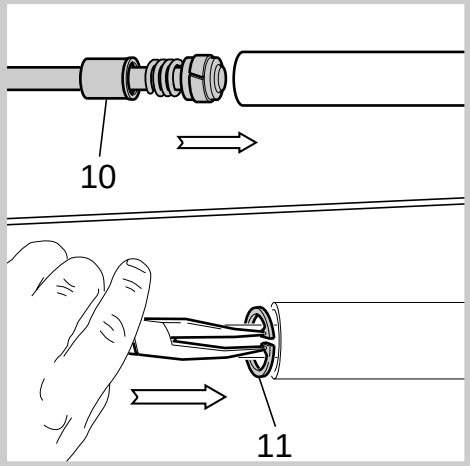


FIG. 20
Fit this assembly into the stanchion tube and properly seat the valve assembly (10).
Insert the stop ring (11).



CROWN AND STANCHIONS ASSEMBLY
FIG. 21
Fit the crown and stanchions assembly with the dust seals (14) in place gently into the seals of sliders (13/20).

WARNING: *Be sure to fit the stanchions squarely into the sliders or the sealing surfaces will damage.*

Check to see that the stanchion tubes slide 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 and check components to ensure they are not damaged.
Place the dust seals (14) on top of the sliders.

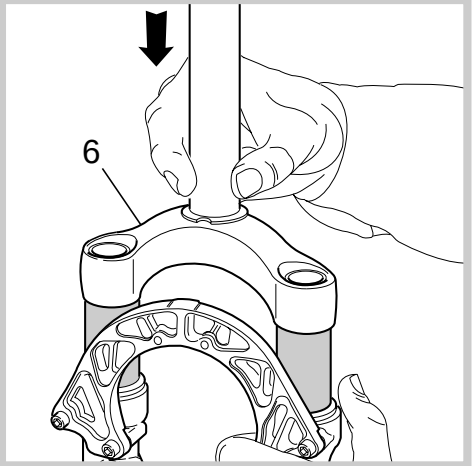
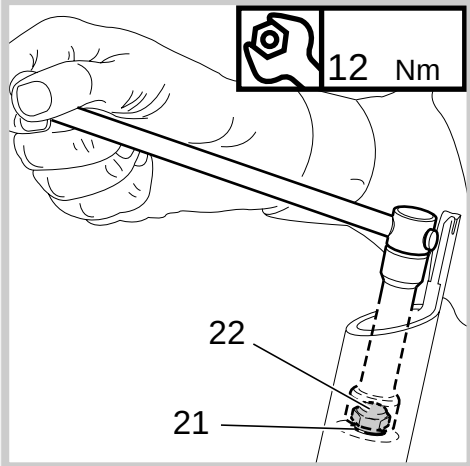


FIG. 22

Grease the O-ring (21) on the foot nut (22) and screw the nut on the pumping rod thread.

Tighten to 12 Nm.

Check to verify that the stanchion tubes slide properly through the stroke by pumping them up and down several times.



HOW TO FILL WITH OIL

FIG. 23

Pour the oil little by little when the stanchion tubes are fully down and then pump with the crown so as to have a better filling.

Check that the oil level is 40 mm / 1.57 in. from the top of the stanchion tube, in both legs.

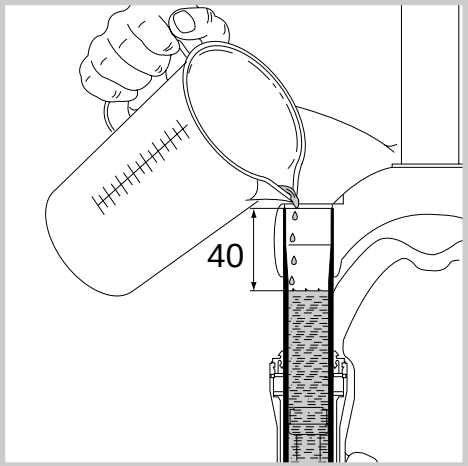


FIG. 24

Lubricate the O-ring (5) on the cap (4).

Lift the stanchions (6) and start the caps (4) in the threads by hand.

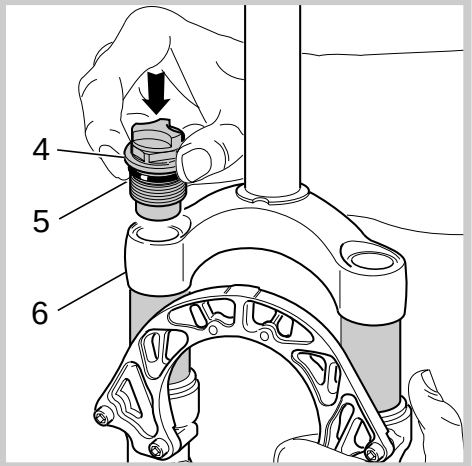
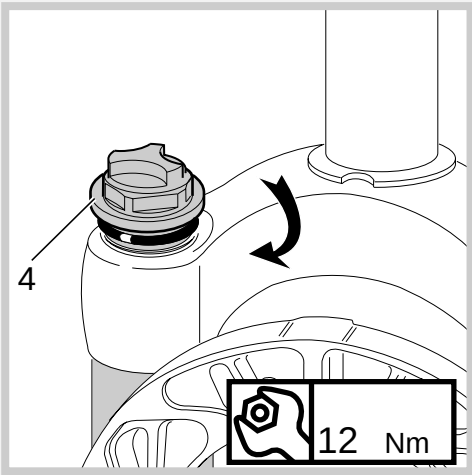


FIG. 25
Tighten the caps (4) to 12 Nm.
Pressurize as described in section "ADJUSTMENTS".



SPECIFIC MARZOCCHI TOOLS

Ref.	Item.	Description and use
A	536003 AB	Slider protector: to remove the oil seal from the slider
B	R 5068	Oil seal press: to press seal into the slider
C	R 4002	Inflating pump
D	R 5085	Hexagon wrench: to set rebound adjuster