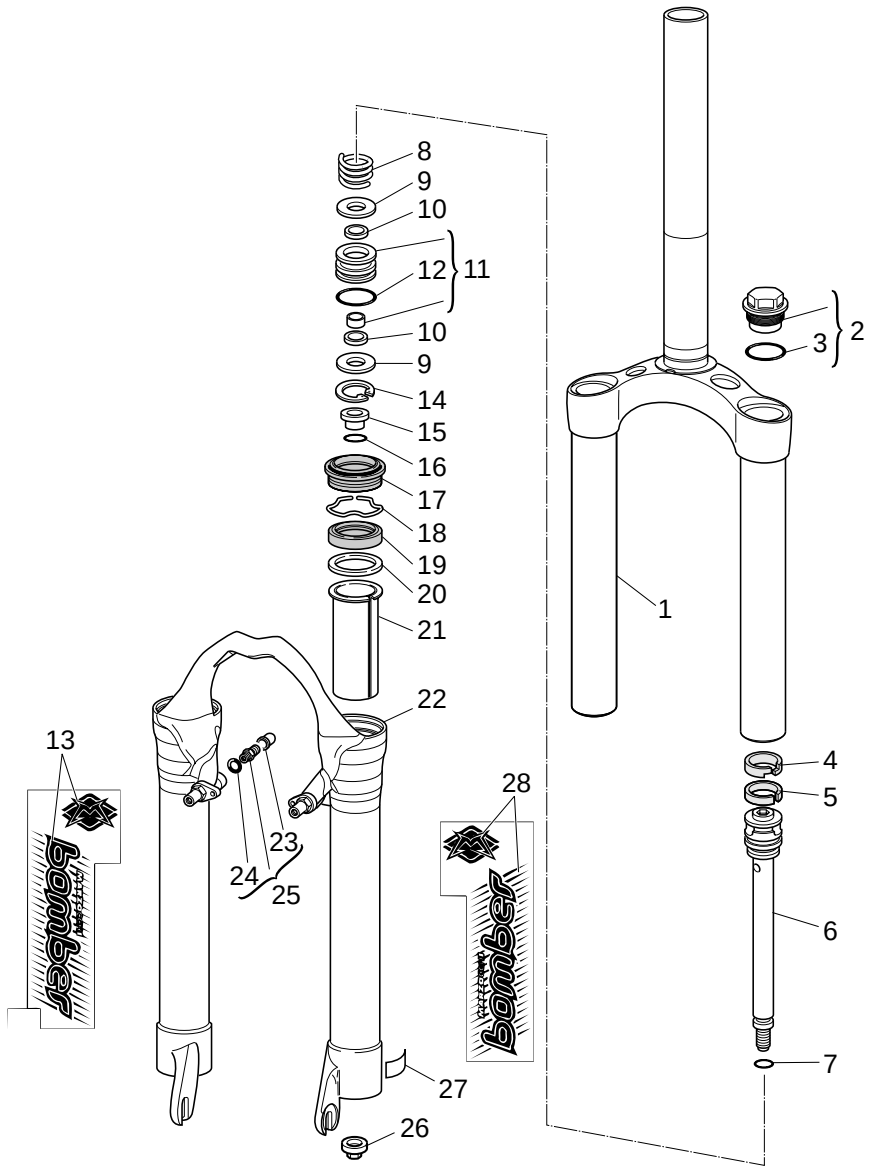
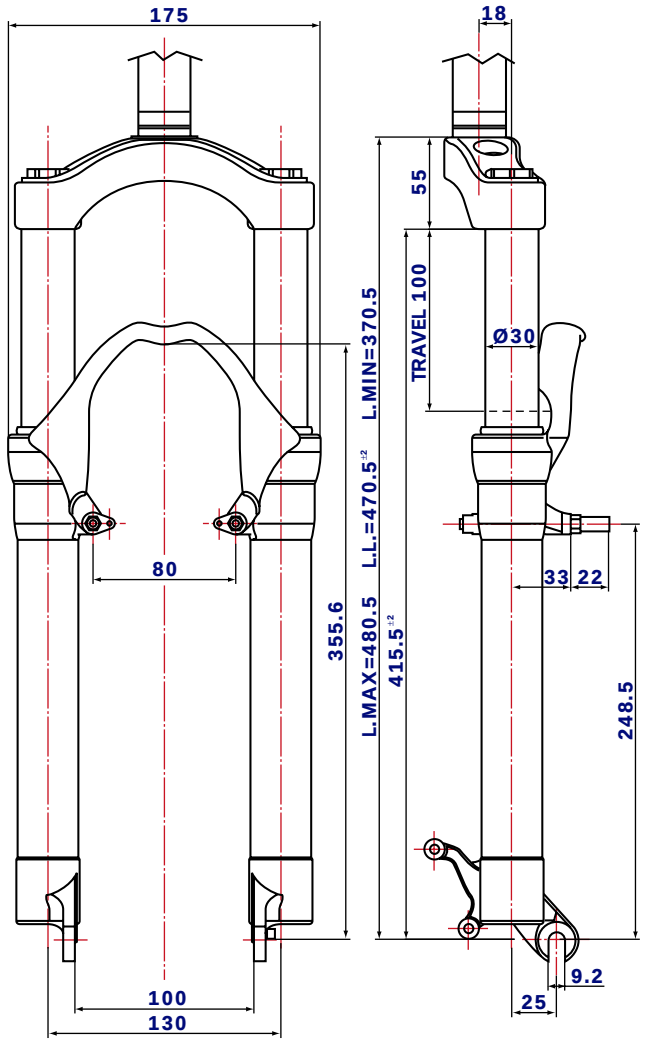
Z1

X

FLY


8
9
10
12
11
10
9
14
15
16
17
18
19
20
21
22
13
23
24
25
28
27
26
1
2
3
4
5
6
7
bomber
bomber

Z1 X FLY



GENERAL

- *Special air/oil damped cross-country fork.*
- *Each leg uses pressurized air blown through a special valve behind each slider as damping medium.*
- *Rebound damping is controlled by an adjuster reachable from the bottom of each slider.*
- *Stanchions fitted into steering crown by cryofit technique. Full length bushings guarantee superior rigidity.*
- *Sliders and brake arch are an integral assembly for weight reduction and improved rigidity.*
- *Parts subjected to friction are splash-lubricated by a specially formulated oil collected on the bottom of each leg.*

Steer tube: *EASTON aluminum steer tubes available for 1 1/8" diameter, threadless.*
Crown: *Forged and CNC-machined BAM* aluminum alloy.*
Arch: *Forged and CNC-machined BAM* aluminum alloy.*
Stanchions: *EASTON aluminum.*
Sliders: *Cast and CNC-machined BAM* aluminum alloy.*
Air valve: *"Schraeder" type with cap. Use Marzocchi pump to blow required air.*
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 break down while providing complete stiction-free performance.*
Fork leg oil: *type EBH 16 - SAE 7.5.*
75 c.c each leg
Lubrication oil: *7 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, as shown in the table below.*
2. *On reassembling the suspension system, always use new seals.*
3. *Clean all metal parts with a special, preferably biodegradable solvent, such as trichloroethane or trichloroethylene.*
4. *Before reassembling, lubricate all parts in contact with each other using silicone fat spray or special oil for seals.*
5. *Always grease the lip seal rings before reassembling.*
6. *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 oil seal and stanchion tube 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	Seal pack at the bottom of the stanchion damaged	Change seals
Fork rebounds too fast even though the adjuster is set for hardest damping	1. Piston ring(s) damaged 2. Seal pack at the bottom of the stanchion damaged	1. Change piston ring(s) 2. Change seals
Excessive play of stanchions in the sliders	Pilot bushings worn out	Replace bushings
Fork rebounds too fast in any adjuster position	Dirt inside fork legs	Clean carefully and change oil
Fork is noisy during use	Pilot bushings poorly lubricated	Pour lubrication oil into the bottom of the stanchions 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 top 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 X FLY 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. Improper installation may jeopardize the safety of the rider.*

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.*

***WARNING:** Brake supports feature fixing pins or - as an option - bolts. Never remove these pins (or bolts), as they help keep brake arch-sliders-assembly locked securely together.*

ADJUSTMENTS

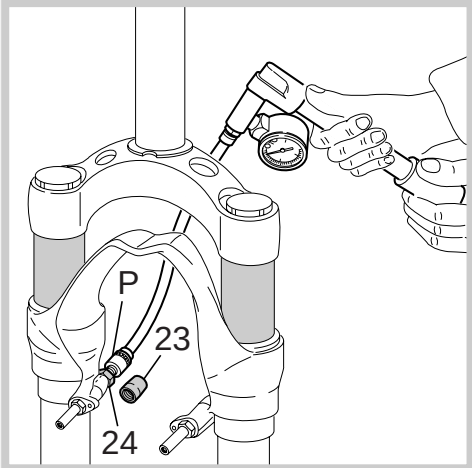
FORK LEG PRESSURIZATION (Fig. A)

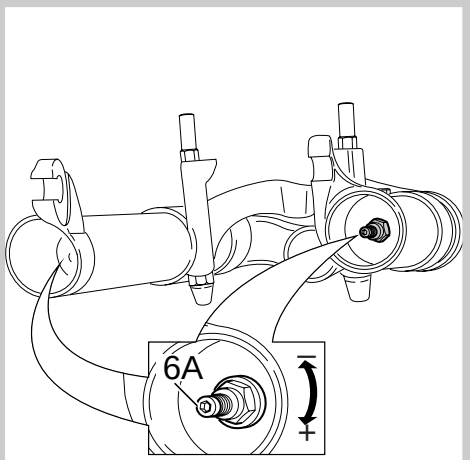
Blow pressurized air through the valves (24) at the rear end of sliders to set COMPRESSION damping. X FLY is set at the factory to a standard value of 2.5 bar. To change the pressure value, remove the protection cap (23) and depressurize each leg. Fully tighten the pump connection (P) on valve (24) and pressurize until the required value is reached. Unscrew the connection and refit cap (23). This adjustment is essential in order to have the right X FLY response for the rider's weight and riding style.

REBOUND ADJUSTMENT (Fig. B)

Each fork leg is equipped with an adjuster screw (6A) for REBOUND damping. Turn the adjuster with the 2.5 mm Allen wrench supplied with the fork. When turned, the adjuster - integral with the inner pumping rod - will change the area in which fluid flows, thus determining the rate of compression & rebound damping.
To adjust, always start from the minimum damping setting, i.e. with the screw fully turned clockwise.

⚠ ***IMPORTANT:*** *do not force the adjuster (6A) over its limit.*



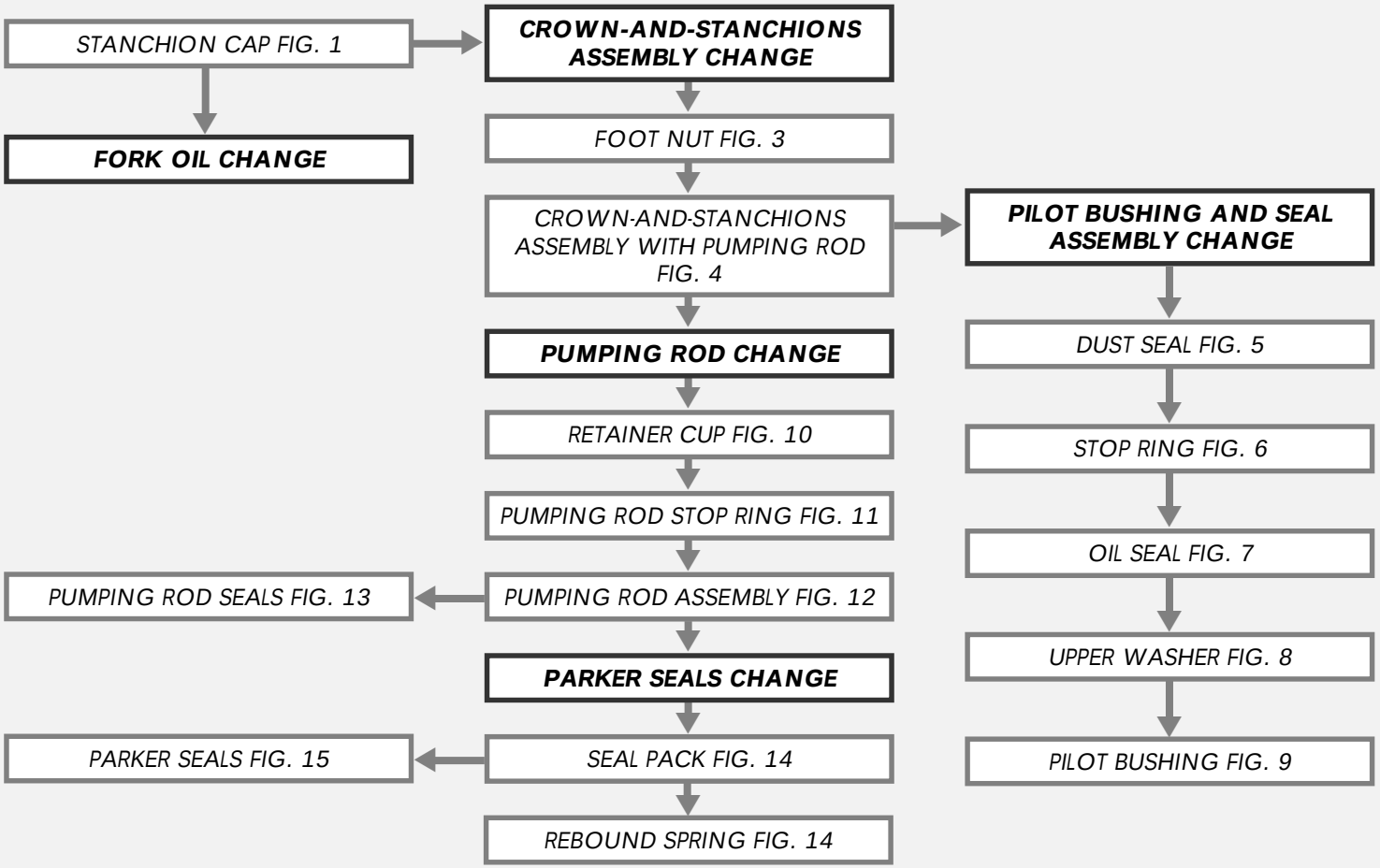


DISASSEMBLY

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

Discharge inner pressure of each fork leg (see Fig. A).

Unscrew the cap (2) with a 21 mm box wrench.

Remove the cap complete with O-ring (3) from the stanchion tube.

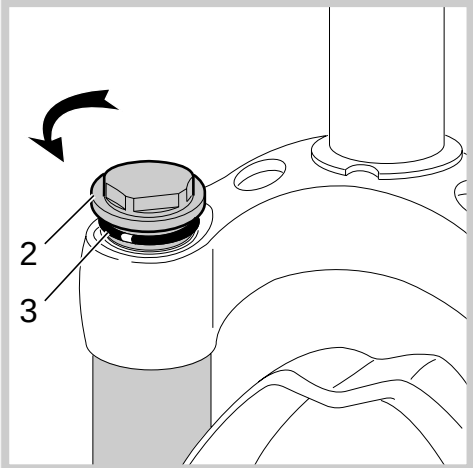


FIG. 2

Push the stanchions (1) into the sliders 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. 30 to Fig. 32.

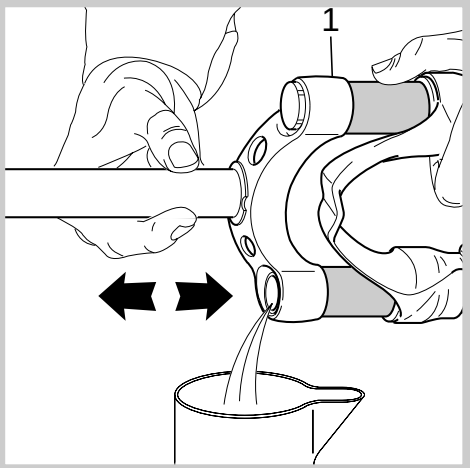


FIG. 3

Unscrew the foot nut (26) with a 10 mm socket wrench. Should this operation be difficult, counteract by inserting an 8 mm Allen wrench from the stanchion top. Insert the wrench end into the pumping rod hex. hole (6) so that the pumping rod cannot turn.

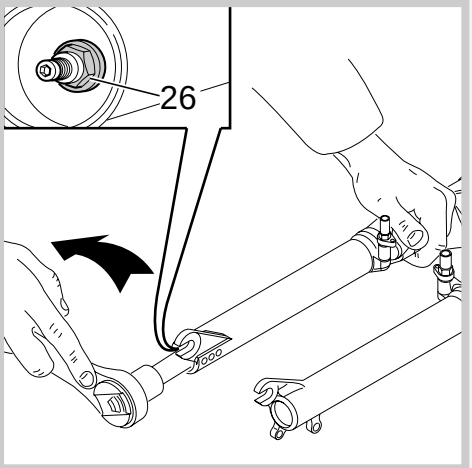
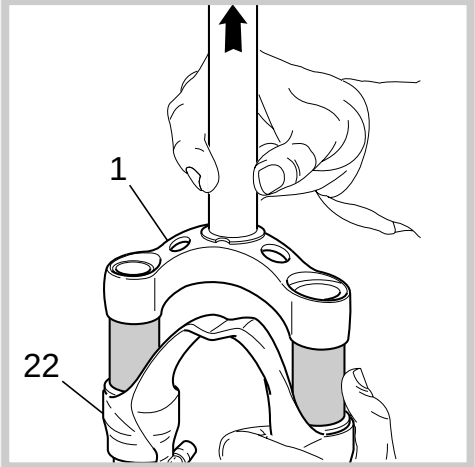


FIG. 4
Pull the stanchion tubes and crown, including pumping rod (1), out of the sliders (22).



PILOT BUSHING AND SEAL DISASSEMBLY
FIG. 5
Remove the dust seal (17) from the slider top.

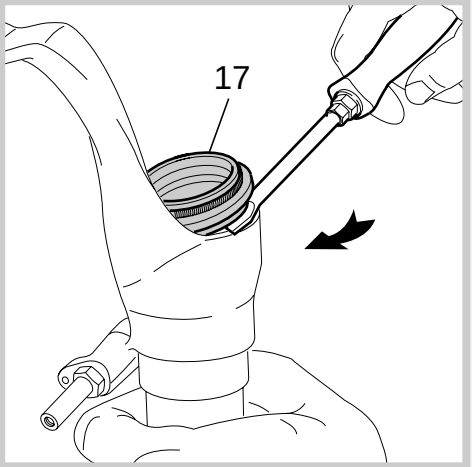


FIG. 6
Remove the stop ring (18) from the slider by placing the screwdriver bit in one of the three openings on the stop ring and carefully lifting the ring out of place.

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

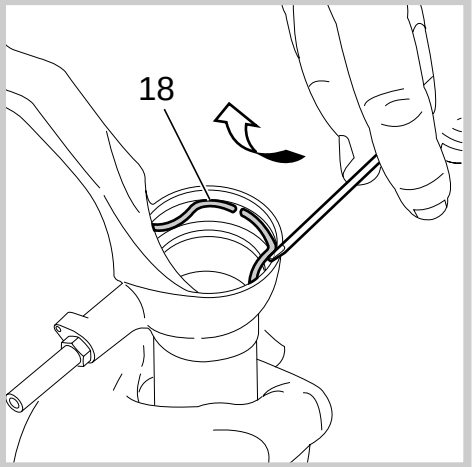


FIG. 7
Fit the slider protector (A) onto the slider and remove the oil seal (19) with the help of a large slot screwdriver.

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

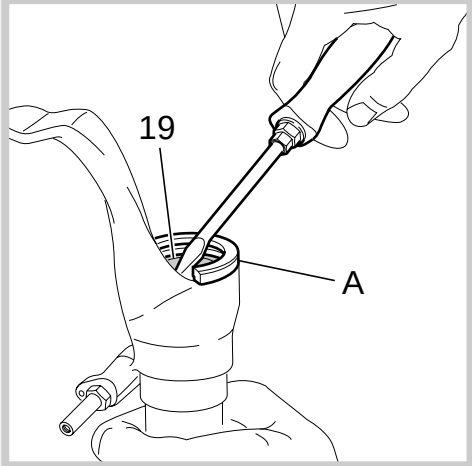


FIG. 8
Remove the upper washer (20) from the slider.

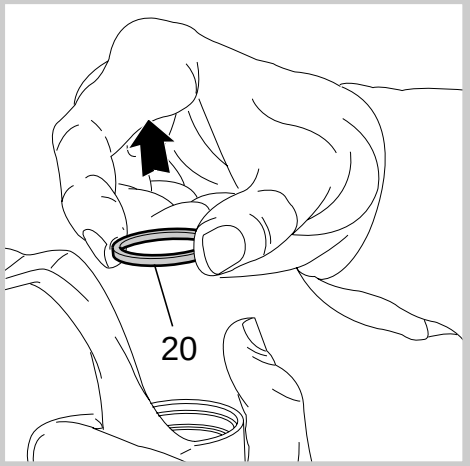
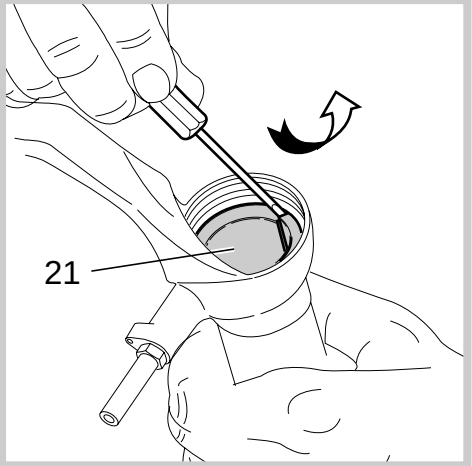


FIG. 9
Fit the bit of a small screwdriver into the upper edge slot of the pilot bushing (21) and lift gently. Pull the bushing out of the slider and make all necessary changes.



PUMPING ROD DISASSEMBLY

FIG. 10

Pull out the retainer cup (15) complete with O-ring (16) from the pumping rod (6) top.

Make sure the adjuster (6A) is properly tightened on the inner rod top (6B). If not so, unscrew the adjuster and spread a medium-strong glue so the adjuster will not become loose during use.

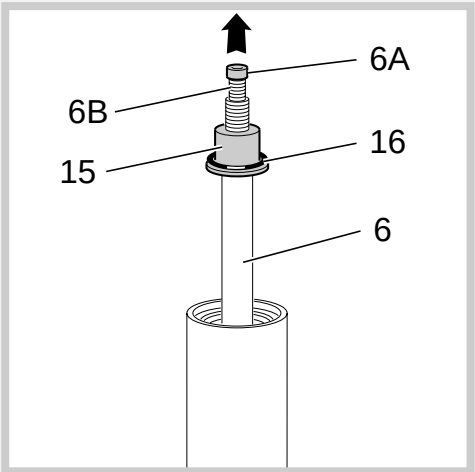


FIG. 11

Remove the stop ring (14) from the stanchion tube bottom with curved bit pincers.

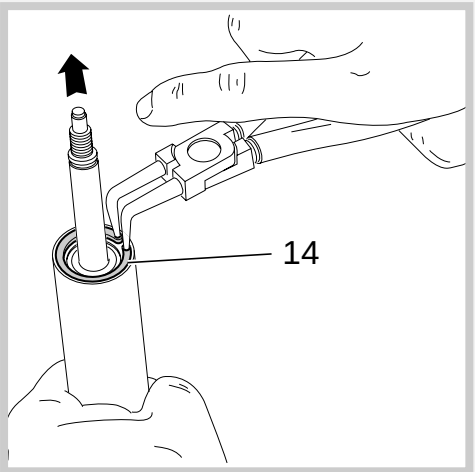


FIG. 12

Push with a rubber drift -inserted from the stanchion top- and remove the pumping rod (6) with rebound spring (8). Remove the O-ring (7) at the pumping rod bottom (6).

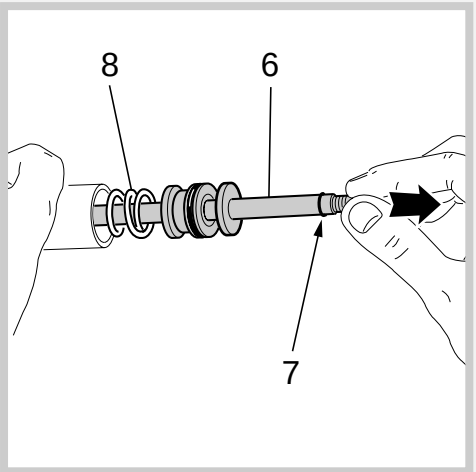
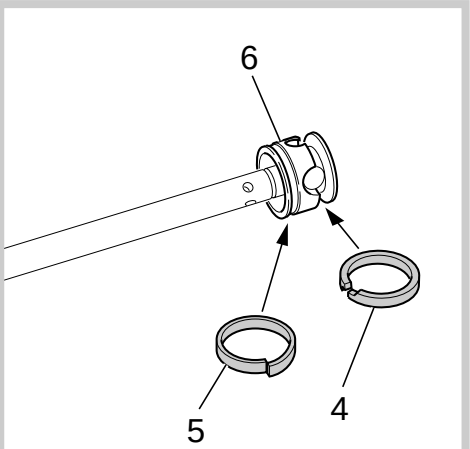


FIG. 13

Two seal rings are fitted on the pumping rod (6). The upper ring (4) is thicker and has fitting joints, whereas the lower ring (5) is slimmer. Make sure the lower ring is in good condition, as it is essential for proper fork operation.



PARKER SEALS DISASSEMBLY

IMPORTANT: *perform this operation only in case of fork complete overhauling or improper operation.*

FIG. 14

Remove the lower washer (9).
Use a proper driver (C) screwed on the pumping rod thread so not to damage seal pack (11).
Pull out the seal pack (11) complete with seals, upper washer (9) and rebound spring (8) from the pumping rod.

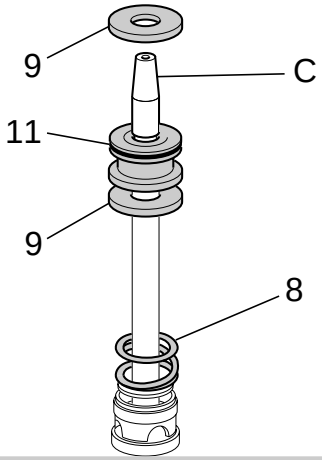
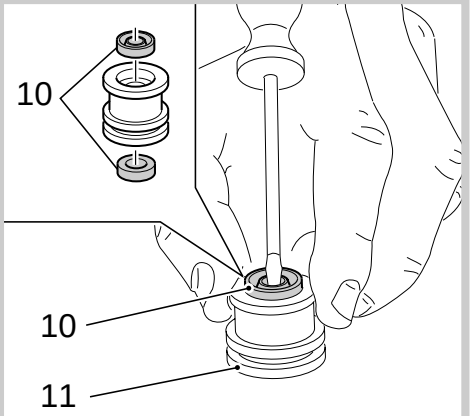


FIG. 15

Remove the upper and lower Parker seals (10) from the seal pack (11) with a small screwdriver.

IMPORTANT: *once removed, Parker seals should not be used again.*

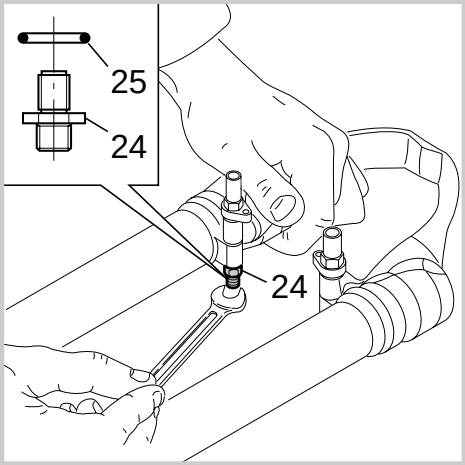


AIR VALVE DISASSEMBLY
FIG. 16

In case of pressure drops, remove the air valve (24) and its O-ring (25) using an 8 mm Allen wrench.

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

When reassembling, slightly lubricate the O-ring (25) and screw the air valve (24) until it stops without forcing.



REASSEMBLY

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

PILOT BUSHING AND SEAL ASSEMBLY

FIG. 17

Check that no dirt or debris is between slider and bushing. Insert the pilot bushing (21) into place so that it adheres to the slider.

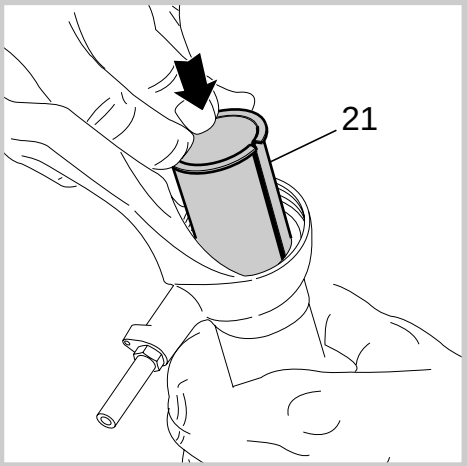


FIG. 18

Fit the upper washer (20) into the slider so that it touches the pilot bushing.

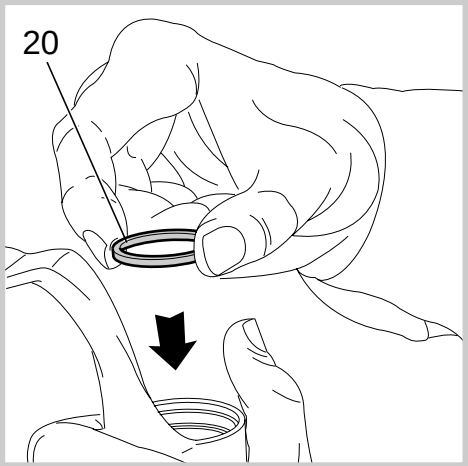


FIG. 19

Lubricate the oil seal (19) and place it onto the seal press (B) with the hollow side toward the slider.

Press the oil seal into place until it touches the lower washer by using the above seal press.

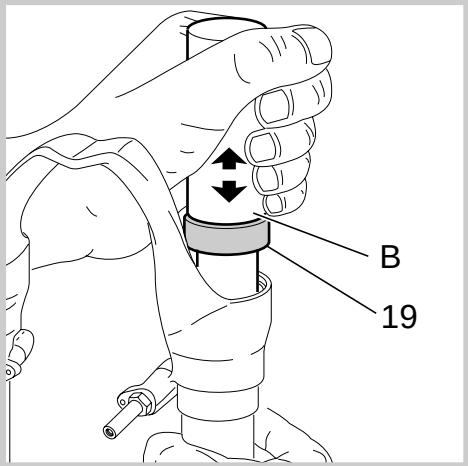


FIG. 20

Insert the stop ring (18) making sure it is properly seated in place.

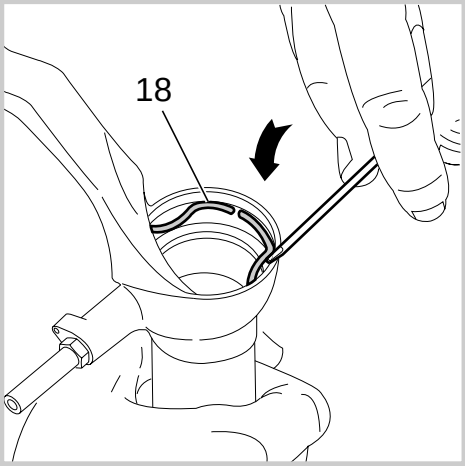
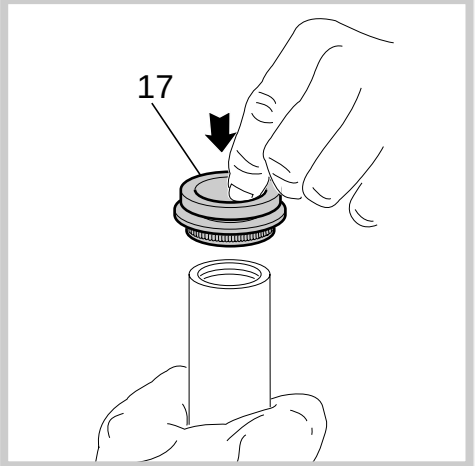


FIG. 21

Lubricate the dust seals (17) and insert them into the top of the slider from the spring end.



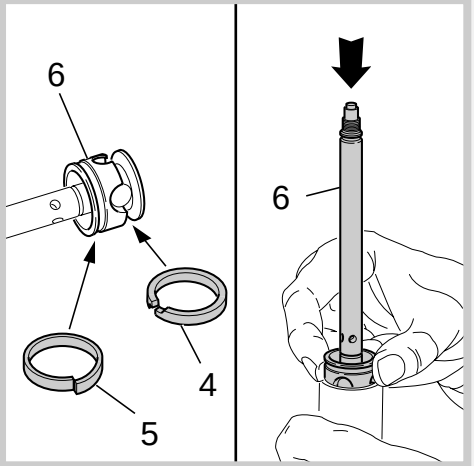
PUMPING ROD

FIG. 22

Fit the lower (5) and upper (4) rings on the pumping rod (6).

Insert the pumping rod into the bottom of the stanchion, ring side first.

Push it into the stanchion, pressing the rings with your fingers.



SEAL PACK

FIG.23

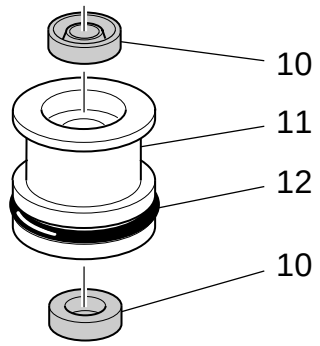
Insert the lower Parker seal (10) with the hollow side downward into the pack (11) from the O-ring seat side. Fit the upper Parker seal (10) with the hollow side upward.
Fit the O-ring (12) duly greased in the pack outer seat.

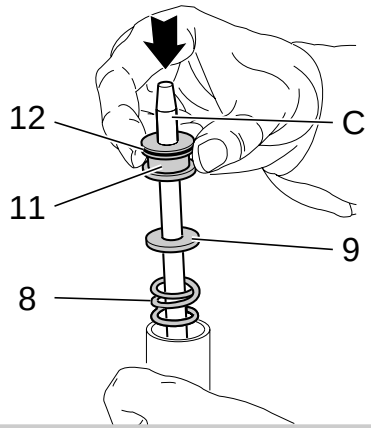
FIG. 24

Screw the driver (C) on the pumping rod. Insert the rebound spring (8), the upper washer (9) and the seal pack (11) with the O-ring (12) side facing inward.

FIG. 25

Push the seal pack all the way into the stanchion and fit the lower washer (9). Fit the outer stop ring (14).
Make sure it is completely seated into the stanchion.





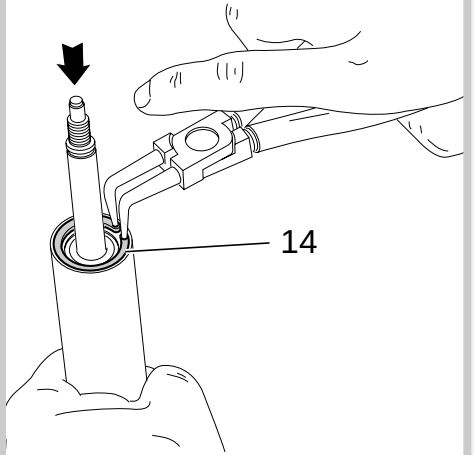
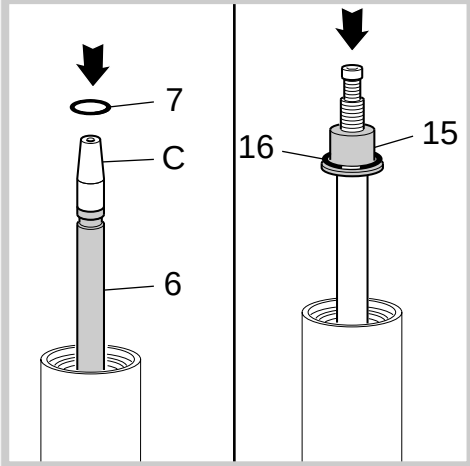


FIG. 26

Fit the O-ring (7) duly greased in its seat in the pumping rod (6). Remove the driver (C) and fit the retainer cup (15) and the O-ring (16) duly greased.



CROWN AND STANCHION TUBE ASSEMBLY

FIG. 27

Pull the pumping rod as far out of the stanchion as you can.

Insert the crown and stanchion tubes assembly with the dust seals (17) in place gently into the sliders seals.

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

Place the dust seals (17) on top of the sliders.

Press the crown and stanchions assembly fully down and check that pumping rod ends (6) are coming out through the bottom of the sliders.

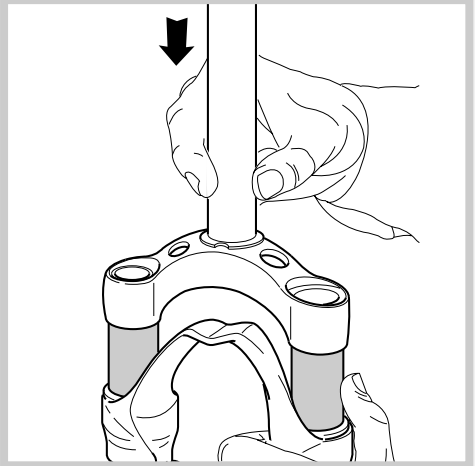


FIG. 28

Turn the legs upside-down and inject 7 c.c. of lubrication oil between pumping rod end and slider with a syringe.

Then push the pumping rod into the stanchion with a rubber drift, making sure the retainer cup (15) is visible from the slider bottom.

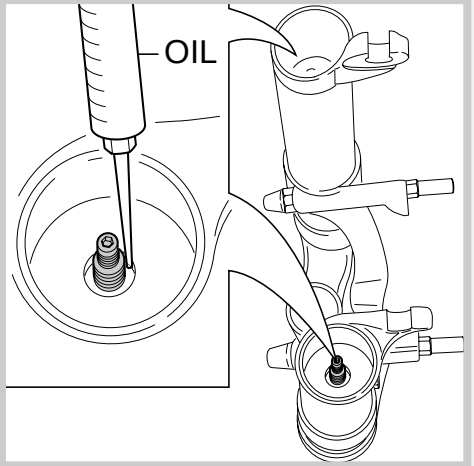
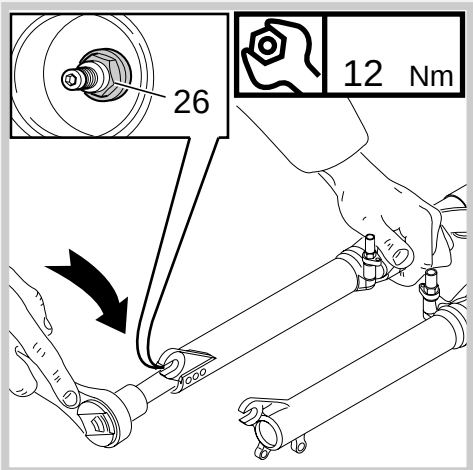


FIG. 29

Screw the foot nut (26) onto pumping rod thread. Tighten the nuts to 12 Nm.

Pump stanchions up and down several times to make sure they slide properly through the stroke. If stanchions are too hard or too loose, repeat the above operations very carefully and check all components for damage.



HOW TO FILL WITH OIL

FIG. 30

Unscrew the adjuster (6A) to the softest damping position and then pour 75 c.c. of oil slowly into the stanchion. Pump crown up and down to facilitate filling.

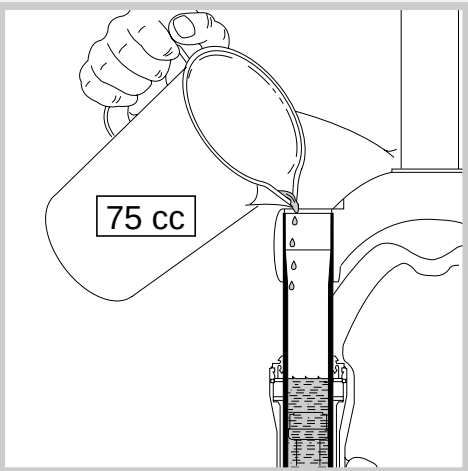


FIG. 31

Lubricate the O-ring (3) on the cap (2). Lift the stanchions and start caps (2) into the threads by hand.

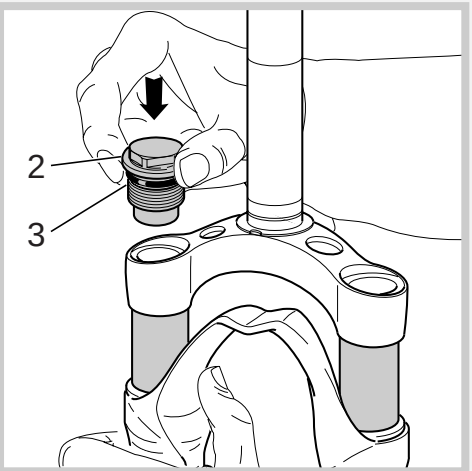
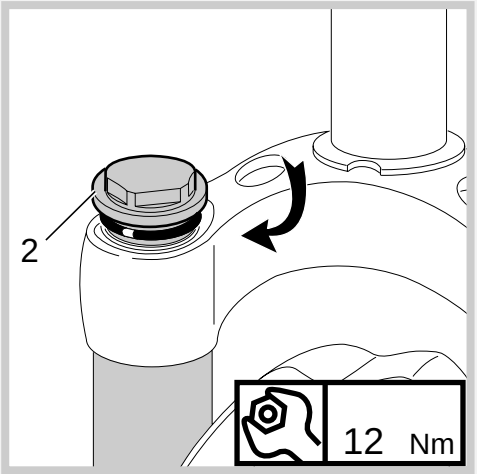


FIG. 32
Tighten the caps (2) to 12 Nm.
Pressurize as described in section ADJUSTMENTS.



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 oil seal into the slider
C	R 5082 CD	Driver to fit seal pack onto the pumping rod
D	R 4002	Inflating pump