

Suspension

Refer to *Safety Precautions* on page 19.

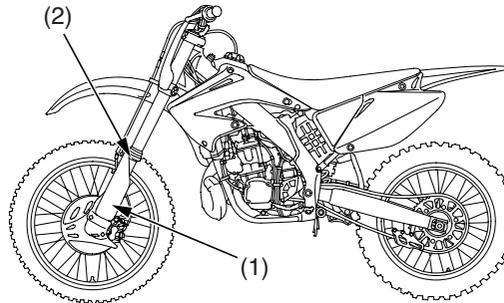
Loose, worn, or damaged suspension components may adversely affect the handling and stability of your CR. If any suspension components appear worn or damaged, see your Honda dealer for further inspection. Your dealer is qualified to determine whether or not replacement parts or repairs are needed.

Front Suspension Inspection

- When your CR is new, break it in for approximately one hour to ensure that the suspension has worked in (page 15).
- After break-in, test run your CR with the front suspension at the standard setting before attempting any adjustments.
- For optimum fork performance, we recommend that you disassemble and clean the fork after riding your CR for 3 hours. See page 83 for fork disassembly.
- Replace the fork oil every 3 races or 7.5 hours of running. See page 62 for oil level adjustment after changing the fork oil.
- Replace the damper fork oil every 9 races or 22.5 hours of running. See page 86 for damper fork oil replacement.
- Use Pro Honda HP Fork Oil 5W or an equivalent which contains special additives to assure maximum performance of your CR's front suspension.
- Periodically check and clean all front suspension parts to assure top performance. Check the dust seals for dust, dirt, and foreign materials. Check the oil for any contamination.

- Refer to *Suspension Adjustment Guidelines* (page 100). Make all rebound and compression damping adjustments in one-click increments. (Adjusting two or more clicks at a time may cause you to pass over the best adjustment.) Test ride after each adjustment.
- If you become confused about adjustment settings, return to the standard position and start over.
- If the fork is still too stiff/soft after adjusting compression damping, determine which portion of the travel is still too stiff/soft. This is an important step that will help you solve suspension problems.

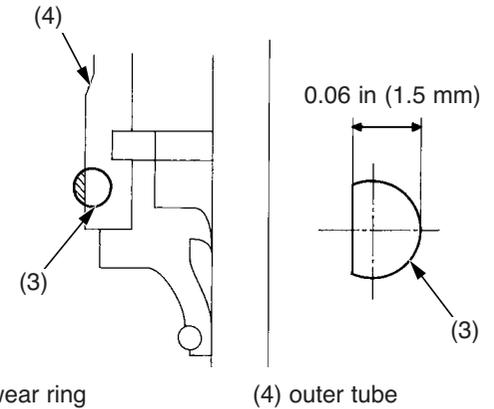
1. Make sure that the fork protectors (1) and dust seals (2) are clean and not packed with mud and dirt.
2. Check for signs of oil leakage. Damaged or leaking fork seals should be replaced before your CR is ridden.



(1) fork protector

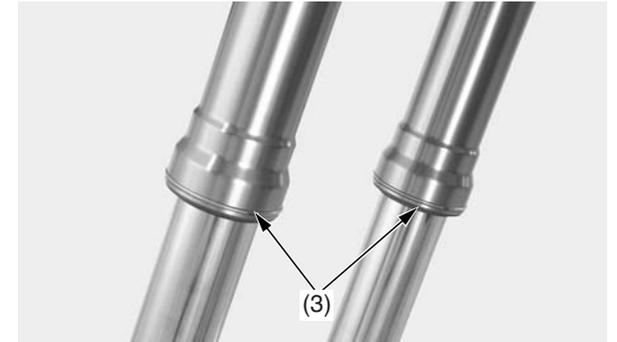
(2) dust seal

3. Inspect the wear rings (3) for wear or damage. Replace the wear ring if it is 0.06 in (1.5 mm) or flat with the outer tube (4). Install the wear ring with its end gap facing rearward.



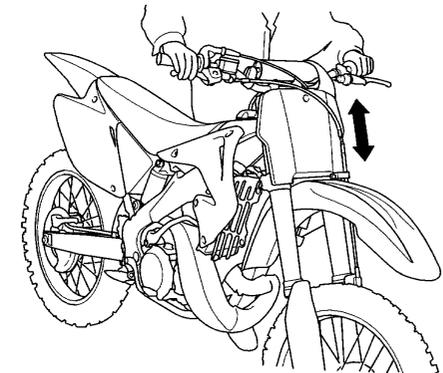
(3) wear ring

(4) outer tube



(3) wear rings

4. Make a quick check of fork operation by locking the front brake and pushing down on the handlebar several times.



Rear Suspension Inspection

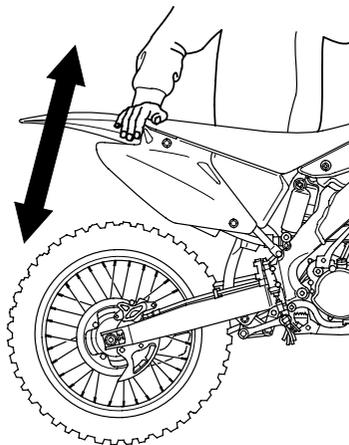
The swingarm is controlled by one hydraulic shock absorber with an aluminum reservoir for oil and nitrogen gas pressure. The gas pressure in the reservoir is contained within a rubber bladder.

The shock absorber's spring preload and damping adjustments (compression and rebound) should be adjusted for the rider's weight and track conditions (page 99).

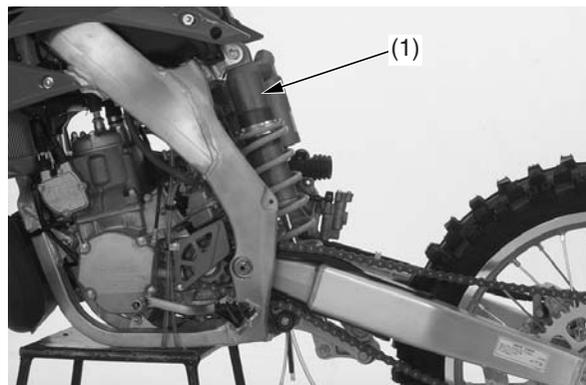
Do not attempt to disassemble, service, or dispose of the damper; see your Honda dealer. The instructions found in this owner's manual are limited to adjustments of the shock assembly only.

- When your CR is new, break it in for approximately one hour with the standard suspension settings before attempting to adjust the rear suspension.
- Make all compression and rebound damping adjustments in the specified increment or turns described in pages 96. (Adjusting two or more increments or turns at a time may cause you to pass over the best adjustment.) Test ride after each adjustment.
- If the rear suspension is too stiff/soft, adjust it by turning all the compression and rebound adjusters according to the procedures described in page 96. After adjusting the adjusters simultaneously, suspension may be fine-tuned by turning one of the compression and rebound damping adjusters in one click increments.
- If you have a problem finding an acceptable adjustment, return to the standard position and begin again.

1. Bounce the rear of the motorcycle up and down and check for smooth suspension action.



2. Remove the subframe (page 32).
3. Check for a broken or collapsed spring.
4. Check the shock for a bent shaft or oil leaks.



(1) rear shock absorber

5. Push the rear wheel sideways to check for worn or loose swingarm bearings. There should be no movement. If there is, have the bearings replaced by your Honda dealer.

Suspension

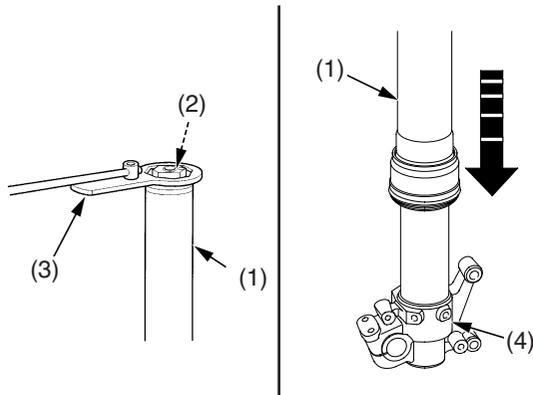
Recommended Fork Oil

viscosity (weight)	5 W
suggested oil	Pro Honda HP Fork Oil or equivalent

Fork Oil Change

Refer to *Suspension Removal* on page 83.

1. Clean the fork assembly, especially the sliding surface of the slider and dust seal.
2. Hold the outer tube (1), then remove the fork damper (2) from the outer tube using a lock nut wrench (3). Gently slide the outer tube down onto the lower end of the slider (4).

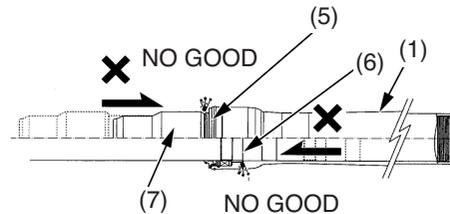


(1) outer tube
(2) fork damper

(3) lock nut wrench
(4) slider, lower end

NOTICE

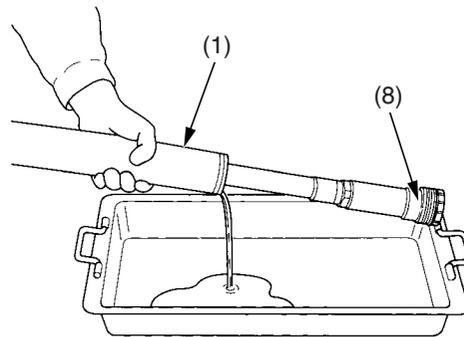
The outer tube can drop on the slider and damage the fork dust seal and guide bushing when the fork damper is removed. To avoid damage, hold both the outer tube and slider when removing the fork damper.



(1) outer tube
(5) dust seal

(6) guide bushing
(7) slider

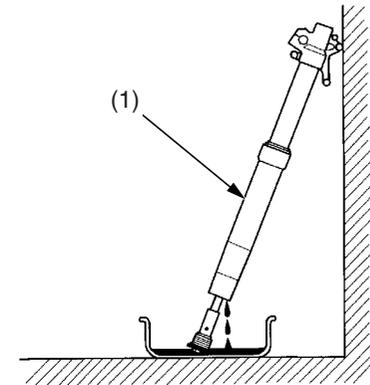
3. Pour the fork oil from the outer tube (1). Pour the fork oil from the oil hole (8) of the fork damper.



(1) outer tube

(8) oil hole

4. Drain the fork oil by turning the outer tube (1) upside down. (About 12 cm³ of fork oil will be left in the outer tube when it is left inverted for about 20 minutes at 20°C/68°F.)

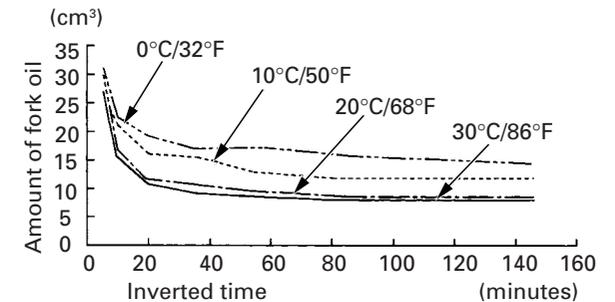


(1) outer tube

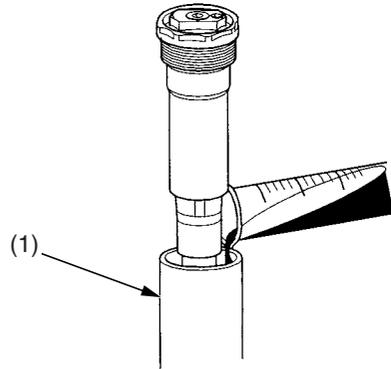
Amount of fork oil left in the fork (within damper and spring)

unit: cm³

minute	5	10	20	35	55	85	145
°C/°F							
30/86	27	15.3	10.6	9.4	8.3	7.9	7.9
20/68	29.4	16.5	11.8	10.6	9.4	8.2	8.2
10/50	28.2	21.2	16.5	15.3	12.9	11.8	11.8
0/32	30.6	22.4	18.8	16.5	16.5	15.3	14.1

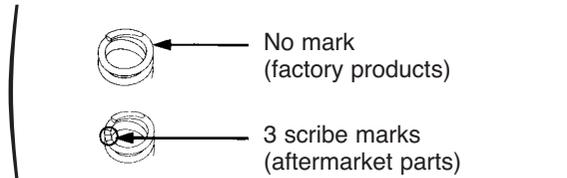


5. Pour the recommended fork oil into the outer tube (1).



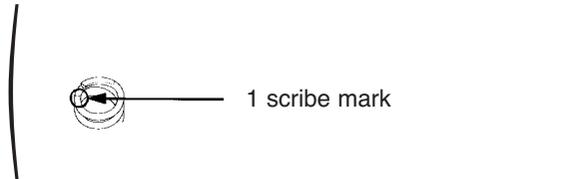
(1) outer tube

Fork Oil Capacity:
Standard (0.44 kgf/mm) Fork Spring



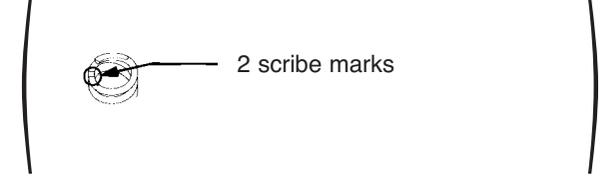
Standard oil capacity	13.3 US oz (394 cm ³)	
Maximum oil capacity	14.5 US oz (430 cm ³)	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.2 US oz (331 cm ³)	Slightly softer as it nears full compression.

Optional Softer (0.42 kgf/mm) Fork Spring



Standard oil capacity	13.5 US oz (399 cm ³)	
Maximum oil capacity	14.7 US oz (435 cm ³)	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.4 US oz (336 cm ³)	Slightly softer as it nears full compression.

Optional Stiffer (0.46 kgf/mm) Fork Spring



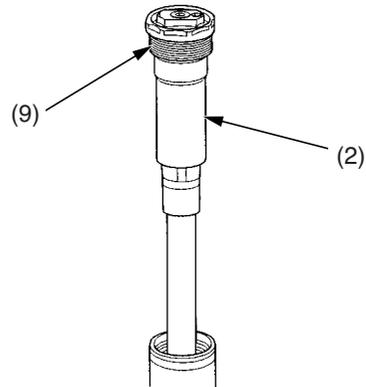
Standard oil capacity	13.2 US oz (389 cm ³)	
Maximum oil capacity	14.4 US oz (425 cm ³)	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.0 US oz (326 cm ³)	Slightly softer as it nears full compression.

Be sure the oil capacity is the same in both fork legs.

(cont'd)

Suspension

6. Check that the O-ring (9) on the fork damper (2) is in good condition. Apply the recommended fork oil to the O-ring.



(2) fork damper

(9) o-ring

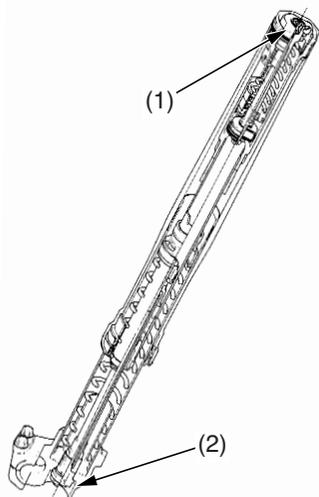
7. Tighten the fork damper using the special tool, to the specified torque:
25 lb·ft (34 N·m, 3.5 kgf·m)

Front Suspension Adjustments

The front suspension can be adjusted for the rider's weight and riding conditions by using one or more of the following methods:

- **Oil volume** — The effects of higher or lower fork oil level are only felt during the final 3.9 in (100 mm) of fork travel.
- **Compression damping** — Turning the compression damping screw adjusts how quickly the fork compresses.
- **Rebound damping** — Turning the rebound damping screw adjusts how quickly the fork extends.
- **Fork springs** — Optional springs are available in softer and stiffer types than the standard rate. (page 131)

The inverted fork on your CR features sealed damper cartridges with dual (separate air and oil) chambers to prevent aeration. The design also isolates the oil in each fork tube/slider, which may contain air bubbles and/or metal particles, from the sealed cartridge to provide more consistent damping.



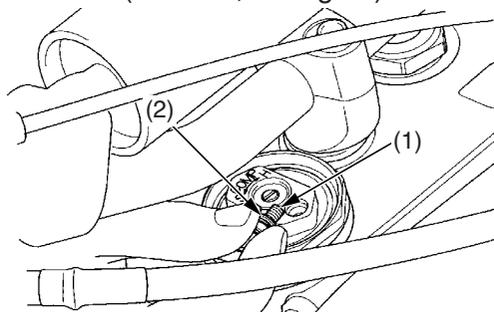
(1) compression damping adjuster
(2) rebound damping adjuster

Front Suspension Air Pressure

Air is an unstable gas which builds up pressure as it is worked (such as in a fork). Air pressure acts as a progressive spring and affects the entire range of fork travel. This means the fork action on your CR will get stiffer during a race. For this reason, release built-up air pressure in the fork legs between motos. Be sure the fork is fully extended with the front tire off the ground when you release the pressure.

The standard air pressure is 0 psi (0 kPa, 0 kgf/cm²). You may relieve accumulated air pressure in the fork legs by using the pressure release screws. The front wheel should be off the ground before you release the pressure. The air pressure should be adjusted according to the altitude and outside temperature.

1. Place an optional workstand under the engine, so that the front wheel is off the ground. Do not adjust air pressure with the front wheel on the ground as this will give false pressure readings.
2. Remove the pressure release screw (1).
3. Check that the O-ring (2) is in good condition.
4. Install the pressure release screw to the specified torque:
0.9 lbf·ft (1.2 N·m, 0.1 kgf·m)



(1) pressure release screws (2) O-ring

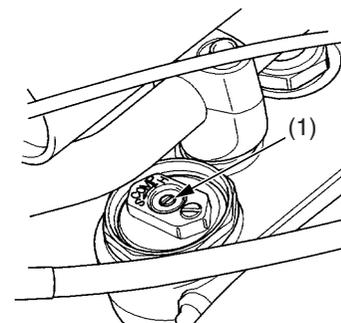
Front Suspension Damping

Compression Damping

Compression damping affects how quickly the fork compresses.

The compression damping adjuster has 16 positions or more. Turning the adjuster screw one full turn advances the adjuster 4 positions.

Always start with the full hard position when adjusting damping.



(1) compression damping adjuster screw

To adjust to the standard position:

1. Turn the compression damping adjuster screw (1) clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster screw counterclockwise 10 clicks. This is the standard position.
3. Make sure that both fork legs are adjusted to the same position.

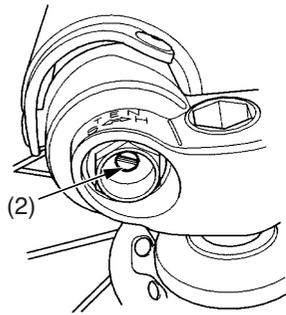
Front Suspension Adjustment

Rebound Damping

Rebound damping effects how quickly the fork rebounds.

The rebound damping adjuster has 16 positions or more. Turning the adjuster screw one full turn clockwise advances the adjuster 4 positions.

Always start with the full hard position when adjusting damping.



(2) rebound damping adjuster screw

To adjust to the standard position:

1. Turn the rebound damping adjuster screw (2) clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster screw counterclockwise 14 clicks. This is the standard position.
3. Make sure both fork legs are adjusted to the same position.

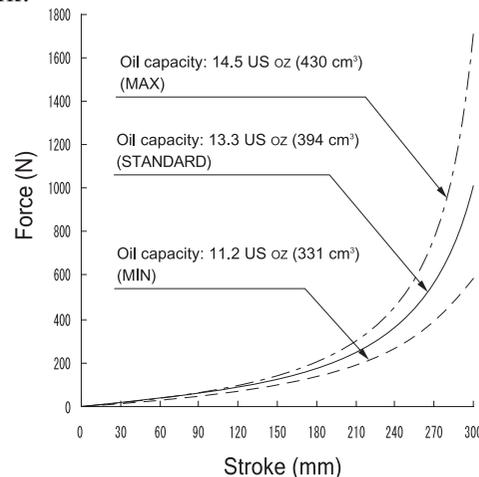
Fork Springs

The fork springs in CR's are about right for riders weighing between 150 and 160 lbs (less riding gear). So if you're a heavier rider, you have to go up on the oil level or get a stiffer spring. Do not use less oil than the minimum specified for each spring or there will be a loss of rebound damping control near full extension. If the fork is too hard on big bumps, turn the damping adjuster counterclockwise 1-turn and lower the oil level in increments of 0.2oz (5 cm³) in both fork legs until the desired performance is obtained. Do not, however, lower the oil level below the minimum oil level.

Minimum oil capacity

Standard spring:	11.2 US oz (331 cm ³)
Softer spring:	11.4 US oz (336 cm ³)
Stiffer spring:	11.0 US oz (326 cm ³)

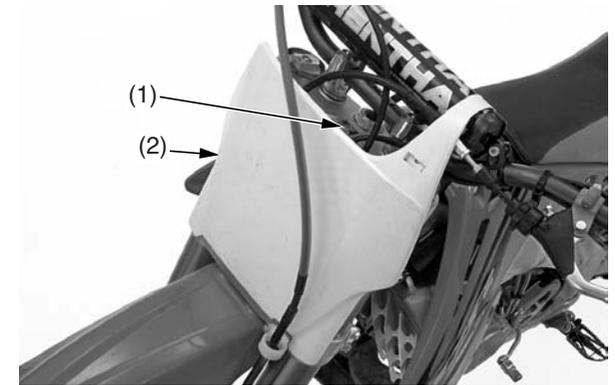
When adjusting oil levels, bear in mind that the air in the fork will increase in pressure while riding; therefore, the higher the oil level, the higher the eventual pressure of any air in the fork.



Front Suspension Disassembly

- If your CR is brand-new, put enough part-throttle break-in time (about one hour) on it to ensure that the suspension has worked in.
- For optimum performance, and extended fork life, the fork should be completely disassembled and cleaned after the first three hours of riding. See the Service Manual or your Honda dealer for this service.

1. Place your CR on the optional workstand or equivalent support with the front wheel off the ground.
2. Remove the number plate bolt (1) and number plate(2).



(1) number plate bolt
(2) number plate

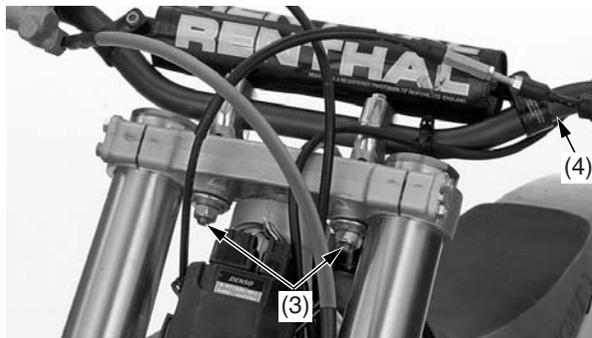
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Front Suspension Adjustments

- Remove the handlebar pad.
Remove the washers/handlebar holder nuts (3), mounting rubbers and handlebar (4).

NOTICE

Keep the master cylinder upright to prevent air from entering system.

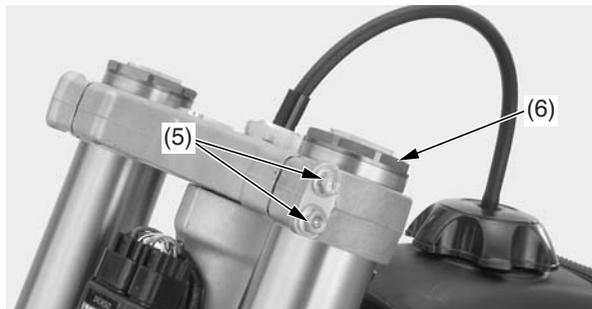


(3) washers/handlebar holder nuts
(4) handlebar

- Loosen the upper pinch bolts (5).
- Loosen the fork damper (6), but do not remove them yet.

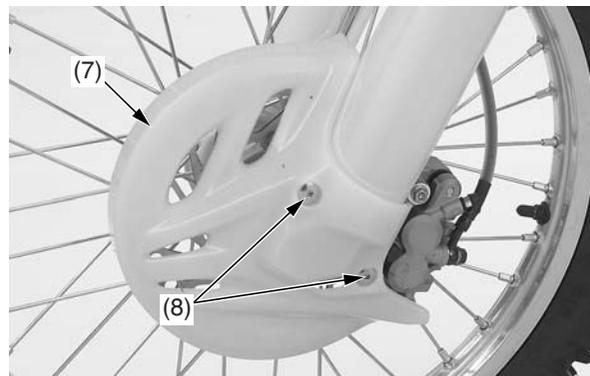
NOTICE

Do not use an adjustable wrench to loosen the fork damper: it may damage them.
Loosen the upper pinch bolts before loosening the fork damper to avoid damping the fork cap.



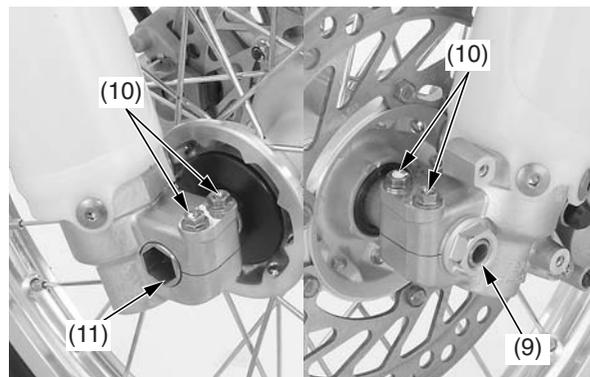
(5) upper pinch bolts (6) fork damper

- Remove the disc cover (7) by removing the disc cover bolts (8).



(7) disc cover (8) disc cover bolts

- Remove the front axle nut (9) and loosen the front axle pinch bolts (10) on both forks.
Pull the front axle shaft (11) out of the wheel hub and remove the front wheel.

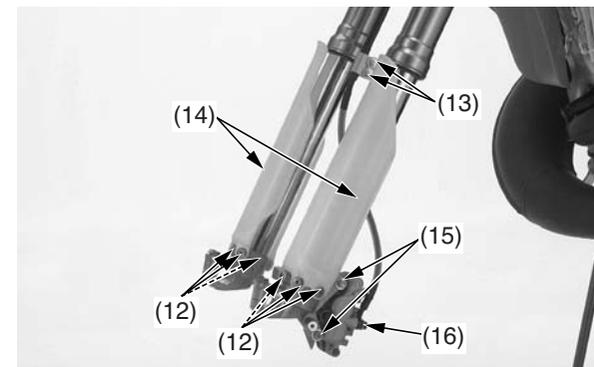


(9) axle nut (11) front axle shaft
(10) axle pinch bolts

- Remove the fork protector bolts (12), brake hose clamp bolts (13) and fork protectors (14).
- Remove the brake caliper bolts (15) and brake caliper (16).

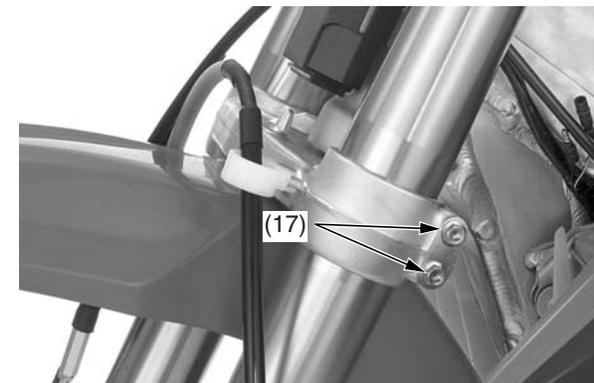
NOTICE

Do not support the brake caliper by the brake hose. Do not operate the brake lever after the front wheel is removed. To do so will cause difficulty in fitting the brake disc between the brake pads.



(12) fork protector bolts (15) brake caliper bolts
(13) brake hose clamp bolts (16) brake caliper
(14) fork protectors

- Loosen the fork leg lower pinch bolts (17), then pull the fork legs down and out.



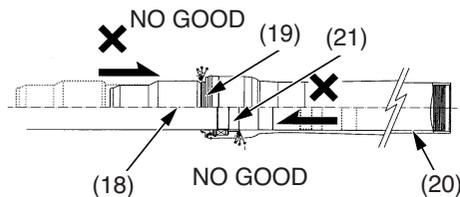
(17) lower pinch bolts

Front Suspension Adjustments

11. Clean the fork assembly, especially the sliding surface of the slider (18) and dust seal (19).

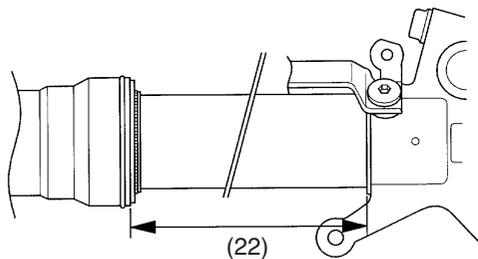
NOTICE

The outer tube can drop on the slider and damage the fork dust seal and guide bushing when the fork damper is removed. To avoid damage, hold both the outer tube and slider when removing the fork damper.



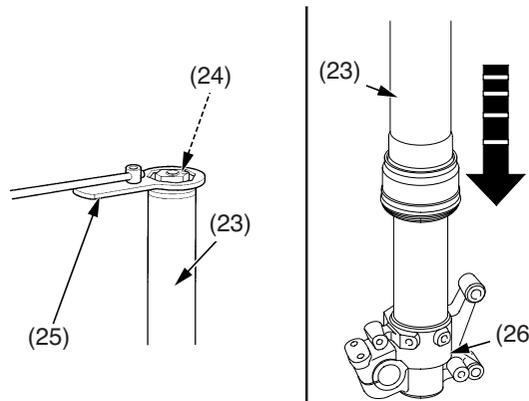
- (18) slider
(19) dust seal
(20) outer tube
(21) guide bushing

12. Record the compression and rebound damping adjuster positions and turn the adjusters counterclockwise until they stop.
13. Measure the length (22) between the axle holder and outer tube and record it before disassembling the fork.



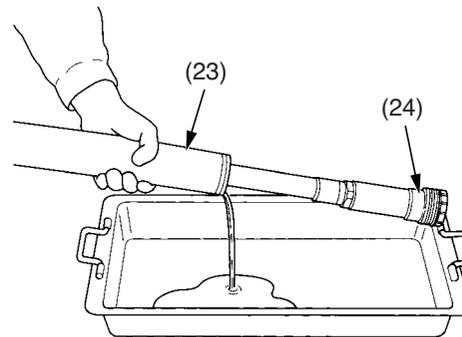
- (22) length

14. Hold the outer tube (23), then remove the fork damper (24) from the outer tube using a lock nut wrench (25). Gently slide the outer tube down onto the lower end of the slider (26).



- (23) outer tube
(24) fork damper
(25) lock nut wrench
(26) slider, lower end

15. Pour the fork oil from the outer tube (23). Pour the fork oil from the oil hole (24) of the fork damper.



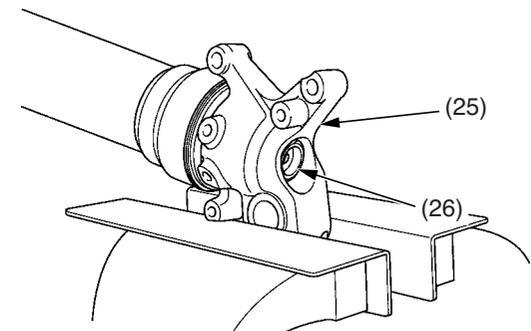
- (23) outer tube
(24) oil hole

16. Temporarily install the fork damper to the outer tube.
17. Set the lower end (axle holder) (25) of the slider in a vise with a piece of wood or soft jaws to avoid damage to it.

NOTICE

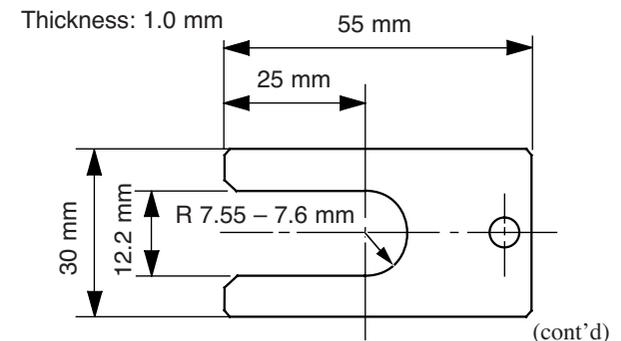
Overtightening the vise can damage the axle holder.

18. Loosen the fork center bolt (26).



- (25) axle holder
(26) fork center bolt

19. Push out the fork center bolt from the axle holder of the slider by pushing the fork damper.
20. Make the mechanic's stopper tool out of a thin piece of steel (1.0 mm thick) as shown if you do not have the special tool.



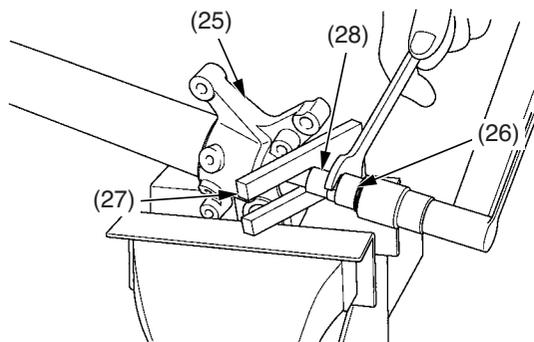
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Front Suspension Adjustments

- Apply pressure to the fork damper and insert a special tool or mechanic's stopper tool (27) between the axle holder (25) and lock nut (28).
- Hold the lock nut and remove the fork center bolt (26) from the fork damper.

NOTICE

Do not remove the lock nut from the fork damper piston rod. If the lock nut is removed, the piston rod will fall in the fork damper and you cannot reassemble the fork damper.

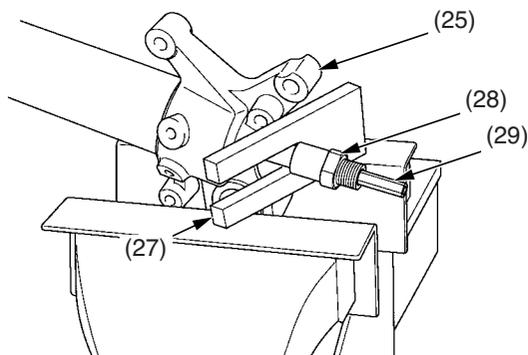


- (25) axle holder
- (26) fork center bolt
- (27) stopper tool
- (28) lock nut

- Remove the push rod (29) from the fork damper.
- Remove the special tool or mechanic's stopper tool between the axle holder (25) and lock nut (28) while applying pressure to the fork cap.

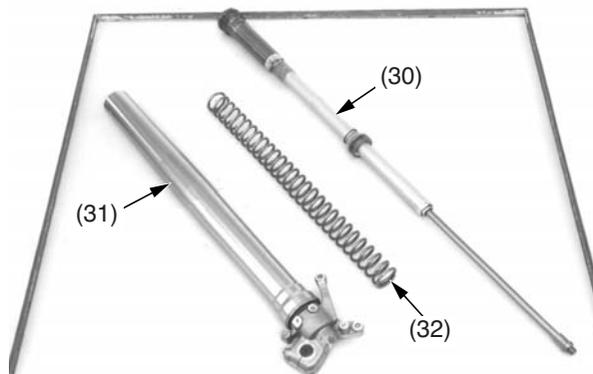
NOTICE

Be careful not to damage the lock nut and fork center bolt hole.



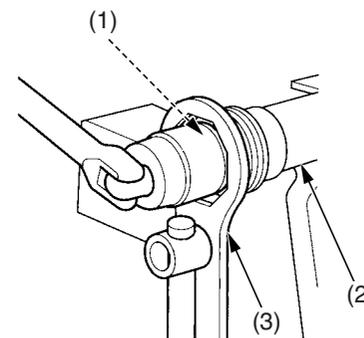
- (25) axle holder
- (27) stopper tool
- (28) lock nut
- (29) push rod

- Remove the fork damper assembly (30) from the fork assembly (31). Remove the fork from the vise. Remove the fork spring (32) from the fork damper.



- (30) fork damper assembly
- (31) fork assembly
- (32) fork spring

Damper Oil Change



- (1) fork cap
- (2) fork damper
- (3) lock nut wrench

NOTICE

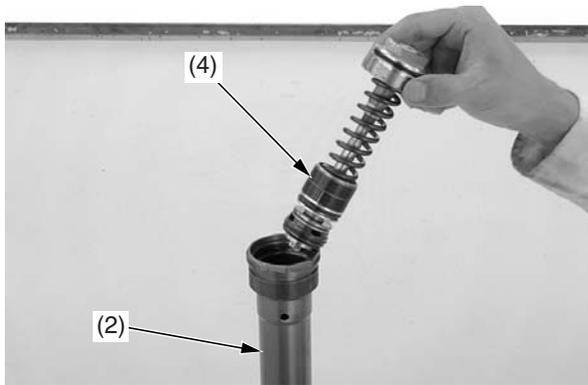
Check the lock nut installation. If the lock nut is removed, the piston rod will fall in the fork damper and you cannot reassemble the fork damper.

- Loosen the fork cap (1) by turning the fork damper (2) using the lock nut wrench (3).

Front Suspension Adjustments

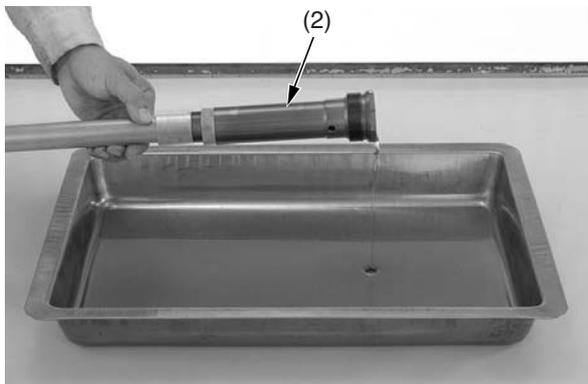
- Remove the fork cap assembly (4) from the fork damper (2).

Be careful not to damage the fork cap bushing. Do not disassemble the fork cap assembly. Replace the fork cap as an assembly if it is damaged.



(2) fork damper (4) fork cap assembly

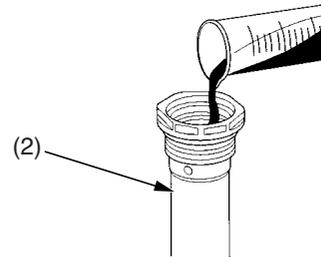
- Empty the fork oil from the fork damper (2) by pumping the damper and rod several times.



(2) fork damper

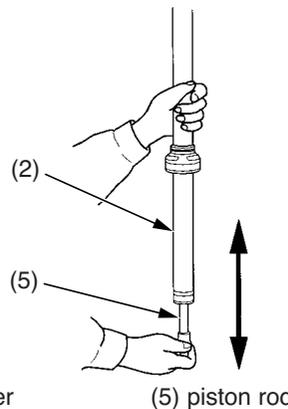
- Clean the fork cap and fork damper threads.

- Extend the fork damper piston rod to maximum. Pour the recommended fork oil into the fork damper.
Recommended Oil:
Pro Honda HP Fork oil 5 W or equivalent
Recommended Amount:
6.6 US oz (195 cm³)



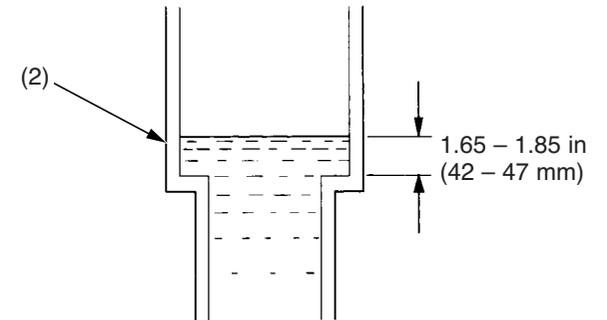
(2) fork damper

- Pump the fork damper piston rod (5) slowly several times to bleed the air from the fork damper (2).



(2) fork damper (5) piston rod

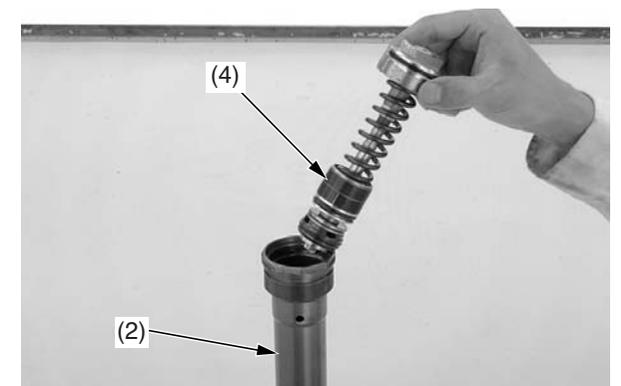
- Extend the fork damper piston rod to maximum. Adjust the oil level of the fork damper (2) as shown.
Oil Level: 1.65 – 1.85 in (42 – 47 mm)



(2) fork damper

- Apply fork oil to the bushing and new O-ring on the fork cap assembly (4). Extend the fork damper piston rod to maximum length and while holding it, install the fork cap assembly to the fork damper (2).

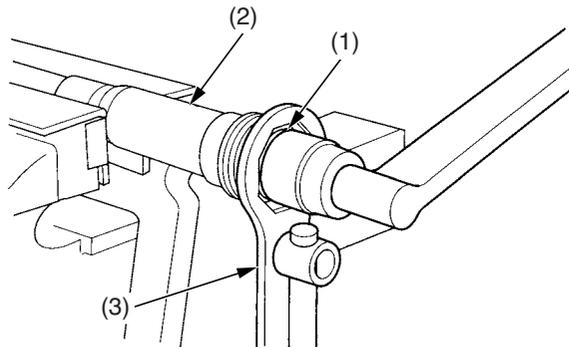
Be careful not to damage the fork cap bushing. If it is difficult to install the fork cap assembly, the fork damper oil level might be higher than standard oil level. Inspect the fork damper oil level again.



(2) fork damper (4) fork assembly (cont'd)

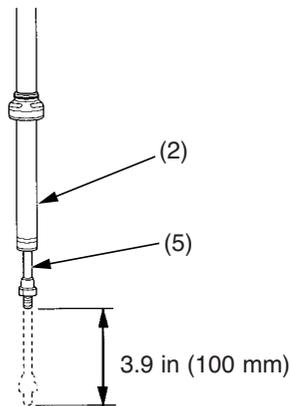
Front Suspension Adjustments

9. Tighten the fork cap (1) while holding the cut out of the fork damper (2) using the lock nut wrench (3) to the specified torque: 22 lbf·ft (30 N·m, 3.1 kgf·m)



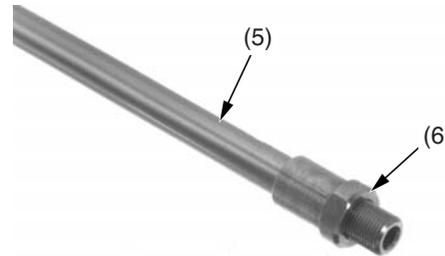
(1) fork cap
(2) fork damper
(3) lock nut wrench

10. Hold the fork damper (2) in an upright position and pump the fork piston rod (5) to 3.9 in (100 mm) slowly several times.



(2) fork damper
(5) piston rod

11. Screw in the lock nut (6) to the fork damper piston rod (5) fully.



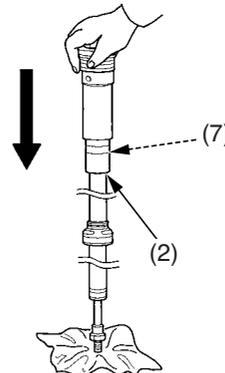
(5) piston rod
(6) lock nut

Turn the rebound adjuster and compression adjuster counterclockwise to the softest position. Check the fork damper piston rod sliding surface for damage. Apply fork oil to the fork damper piston rod sliding surface. Cover the fork piston rod end with soft jaws to prevent fork damage.

NOTICE

Be careful not to bend or damage the fork damper piston rod when the piston rod is stroked.

12. Drain the extra oil off to the fork damper (2) spring chamber (7) by pumping the fork damper piston rod to full stroke.

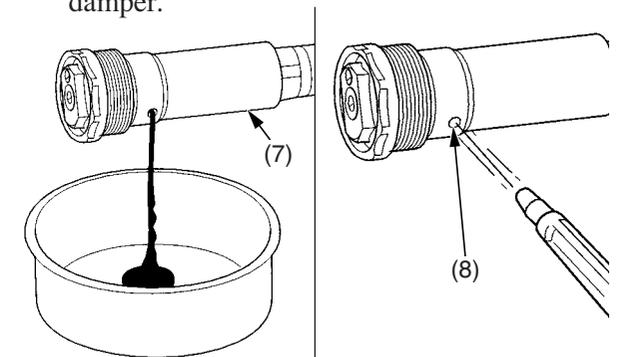


(2) fork damper
(7) spring chamber

13. Drain the extra oil from the fork damper spring chamber oil hole.

By doing this procedure, about 17 cm³ of fork fluid will be drained from the damper spring chamber through the oil hole and cause 178 cm³ of fork fluid to be left in the chamber.

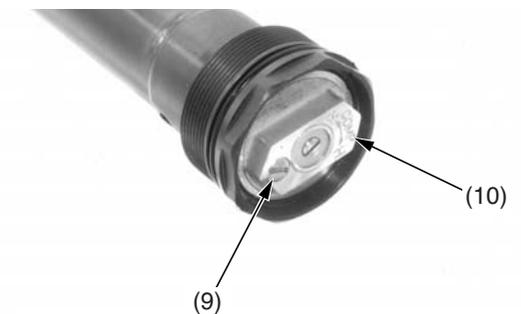
14. Blow out the oil from the fork damper spring chamber (7) using compressed air to the oil hole (8). Wipe the oil completely off the fork damper.



(7) spring chamber
(8) oil hole

15. If you can not use compressed air, remove the pressure release screw (9) on the fork cap (10).

Turn the fork damper upside down for 10 minutes and drain the oil from the fork damper spring chamber.

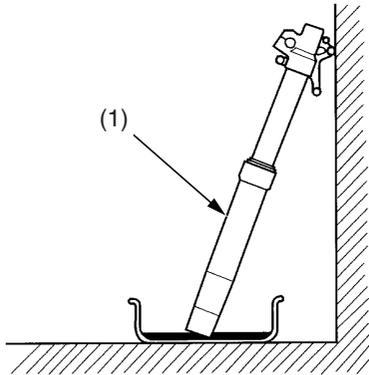


(9) pressure release screw
(10) fork cap

Front Suspension Adjustments

Fork Assembly

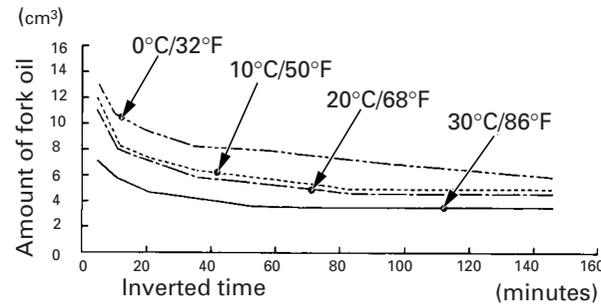
1. Drain the fork oil from the outer tube/slider (1) by placing it upside down. (About 7 cm³ of fork oil will be left in the outer tube/slider when it is left inverted for about 20 minutes at 20°C/68°F)



(1) outer tube/slider

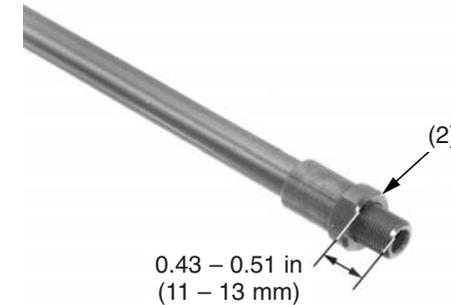
Amount of fork oil left in the fork (without damper and spring) unit: cm³

minute °C/°F	5	10	20	35	55	85	145
30/86	7.1	5.9	4.7	4.2	3.5	3.5	3.5
20/68	10.6	8.2	7.1	5.9	5.6	4.7	4.7
10/50	11.8	8.3	7.2	6.2	5.8	4.9	4.8
0/32	12.9	10.6	9.4	8.2	7.9	7.1	5.9



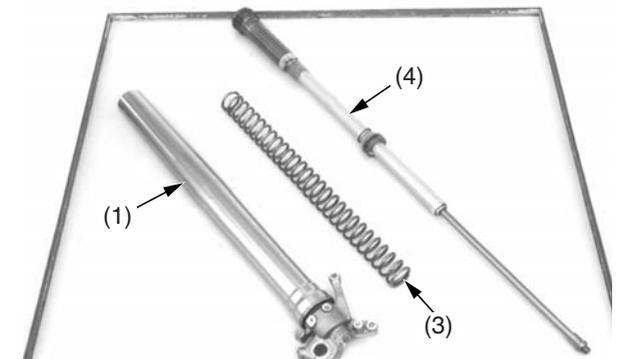
2. Tighten the lock nut (2) fully by hand and measure the thread length. Standard: 0.43 – 0.51 in (11 – 13 mm)

Wipe the oil completely off the fork damper.



(2) lock nut

3. Wipe the oil completely off the fork spring (3). Install the fork spring to the fork damper. Install the fork damper (4) to the outer tube/slider (1).



(1) outer tube/slider
(3) fork spring

(4) fork damper assembly

(cont'd)

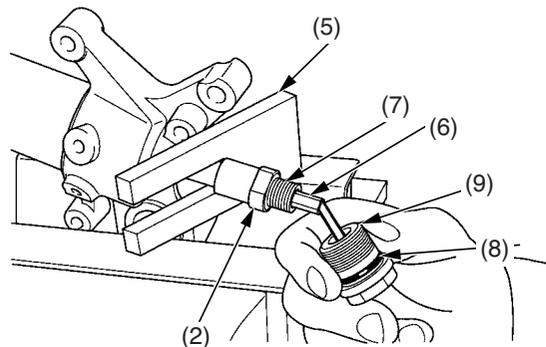
Front Suspension Adjustments

- Set the lower end (axle holder) of the slider in a vise with a piece of wood or soft jaws to avoid damage.

NOTICE

Do not overtighten the axle holder.

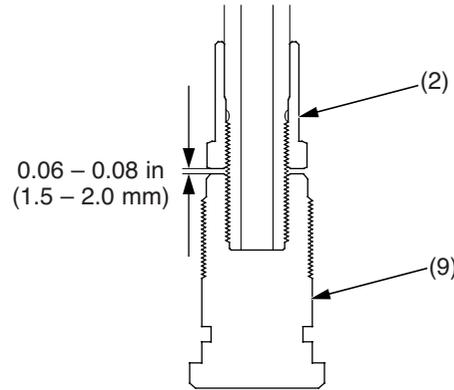
- Temporarily install the fork damper to the fork.
Push out the fork damper piston rod from the axle holder of the slider by pushing the fork damper.
Apply pressure to the fork damper and insert the special tool or mechanic's stopper tool (5) between the axle holder and lock nut (2). Measure the thread length again.
Standard: 0.43 – 0.51 in (11 – 13 mm)
- Install the push rod (6) into the piston rod (7) until it stops. Check the push rod installation by turning the push rod right and left.
- Install the new O-ring (8) to the fork center bolt (9).
Install the fork center bolt to the fork damper piston rod aligning the center bolt adjusting rod to the push rod. Tighten the center bolt fully by hand.



- (2) lock nut
- (5) stopper tool
- (6) push rod
- (7) piston rod
- (8) O-ring
- (9) fork center bolt

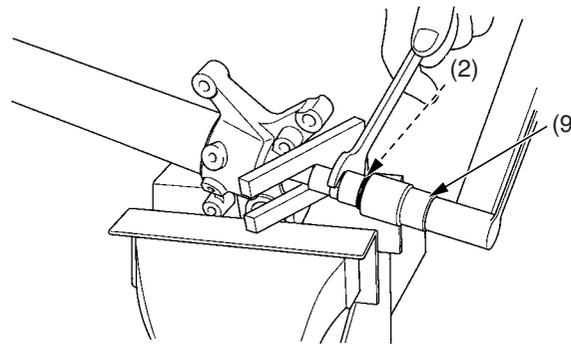
- Make sure that there is clearance between the lock nut (2) and center bolt (9).
Clearance: 0.06 – 0.08 in (1.5 – 2.0 mm)

If the clearance is out of specification, check the lock nut and center bolt installation.



- (2) lock nut
- (9) center bolt

- Tighten the lock nut (2) to the fork center bolt (9) closely by hand. Tighten the lock nut to the specified torque:
16 lbf·ft (22 N·m, 2.2 kgf·m)

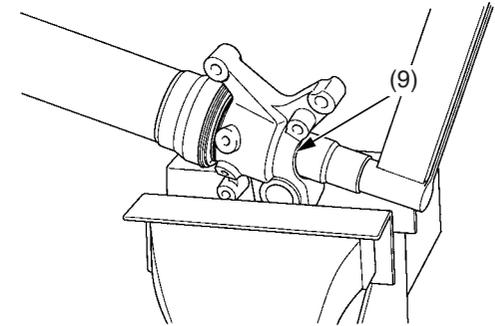


- (2) lock nut
- (9) fork center bolt

- Apply fork oil to the fork center bolt (9) O-ring.

Remove the special tool or mechanic's stopper tool while applying pressure to the fork damper.

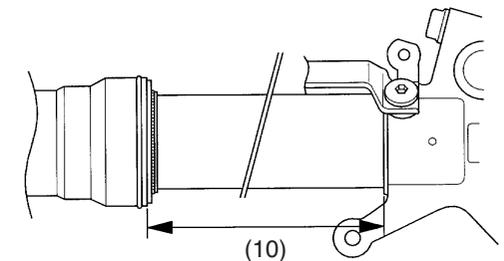
Install the center bolt to the axle holder and tighten it to the specified torque:
51 lbf·ft (69 N·m, 7.0 kgf·m)



- (11) fork center bolt

- Measure the length between the axle holder and outer tube.
Standard: 12.4 in (315 mm)
Compare the length (10) at assembly and at disassembly. They should be the same length.

If the length at assembly is longer than at disassembly, check the center bolt and lock nut installation.

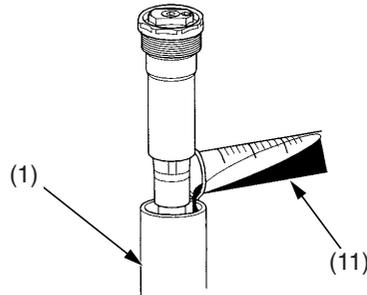


- (10) length

Front Suspension Adjustments

12. Pour the recommended fork oil (11) into the outer tube/slider (1).

Recommended Oil:
Pro Honda HP Fork Oil 5W or equivalent.

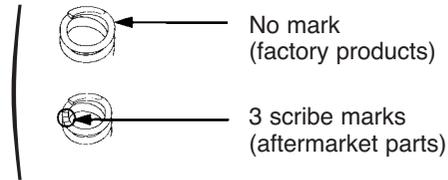


(1) outer tube/slider

(11) fork oil

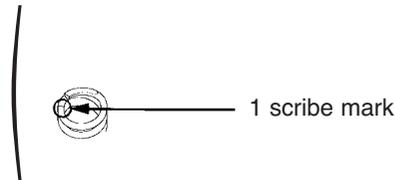
Fork Oil Capacity:

Standard (0.44 kgf/mm) Fork Spring



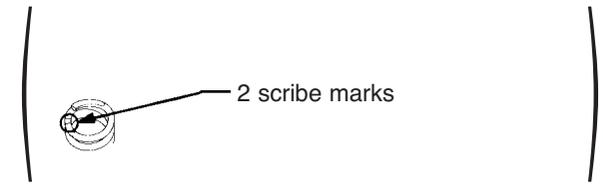
Standard oil capacity	13.3 US oz (394 cm ³)	
Maximum oil capacity	14.5 US oz (430 cm ³)	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.2 US oz (331 cm ³)	Slightly softer as it nears full compression.

Optional Softer (0.42 kgf/mm) Fork Spring



Standard oil capacity	13.5 US oz (399 cm ³)	
Maximum oil capacity	14.7 US oz (435 cm ³)	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.4 US oz (336 cm ³)	Slightly softer as it nears full compression.

Optional Stiffer (0.46 kgf/mm) Fork Spring



Standard oil capacity	13.2 US oz (389 cm ³)	
Maximum oil capacity	14.4 US oz (425 cm ³)	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.0 US oz (326 cm ³)	Slightly softer as it nears full compression.

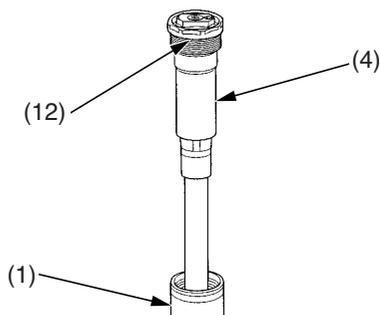
Be sure the oil capacity is the same in both fork legs.

13. Install the fork damper as described in *Damper Oil Change* (page 86 – 88).

(cont'd)

Front Suspension Adjustments

14. Check that the O-ring (12) on the fork damper assembly (4) is in good condition. Apply the recommended fork oil to the O-ring.



(1) outer tube/slider
(4) fork damper assembly
(12) O-ring

15. Temporarily thread the fork damper (4) into the outer tube (1). Insert both fork legs into the fork clamps. Align the groove in the outer tube with the top surface of the upper fork clamp.
If installing the optional 20 inch wheel, align the top of the outer tube (not the top of the fork cap) with the top surface of the upper fork clamp.
16. Temporarily tighten the fork lower pinch bolts (13) and then tighten the fork damper (4) to the specified torque using the lock nut wrench.
Actual:
25 lbf-ft (34 N·m, 3.5 kgf·m)
Torque wrench scale reading:
23 lbf-ft (31 N·m, 3.2 kgf·m), using 20 in (50 cm) long torque wrench.

When using the lock nut wrench, use a 20-inches long deflecting beam type torque wrench. The lock nut wrench increases the torque wrench's leverage, so the torque wrench reading will be less than the torque actually applied to the fork damper.

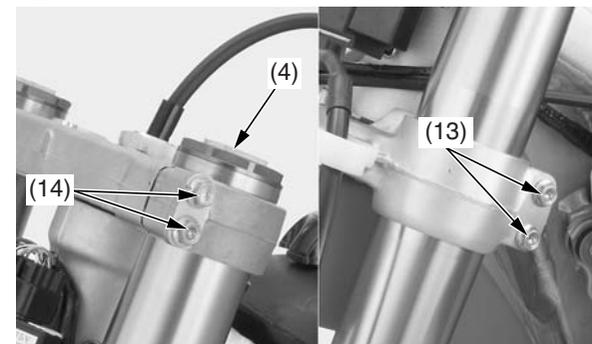
For ease of releasing air pressure after the forks are installed, loosen the lower pinch bolts and position the outer tubes so that the pressure release screws are in front of the rebound damping adjusters.

17. Tighten the fork lower pinch bolts (13) to the specified torque:
15 lbf-ft (20 N·m, 2.0 kgf·m)
18. Tighten the fork upper pinch bolts (14) to the specified torque:
16 lbf-ft (22 N·m, 2.2 kgf·m)

Tighten the bolts alternately in 2 or 3 steps.

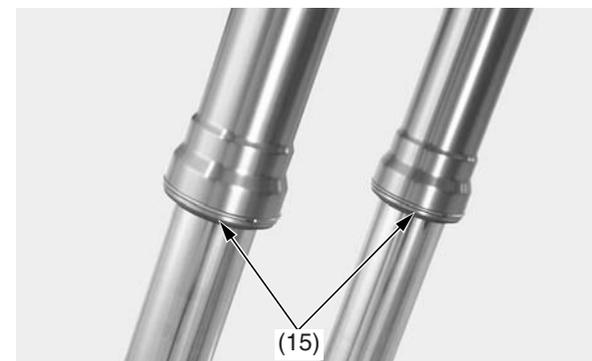
NOTICE

Over-tightening the pinch bolts can deform the outer tubes. Deformed outer tubes must be replaced.



(4) fork damper
(13) lower pinch bolts
(14) upper pinch bolts

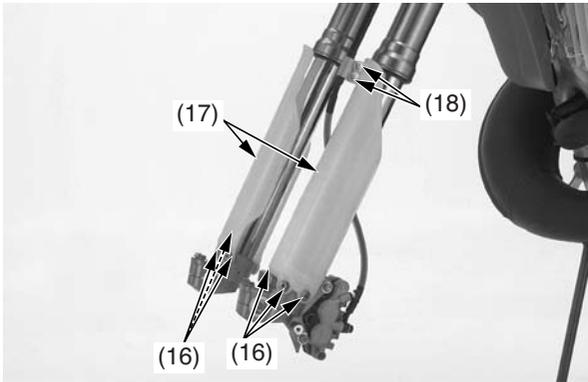
19. Position the wear ring (15) with its end gap facing rearward.



(15) wear ring

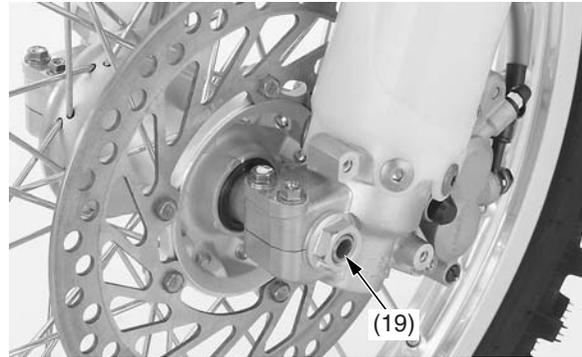
Front Suspension Adjustments

20. Clean the threads of the fork protector bolts (16) and axle holder thoroughly. Apply locking agent to the bolt threads. Install the fork protectors (17), fork protector bolts and brake hose clamp bolts (18). Tighten the fork protector bolts to the specified torque:
5.2 lbf·ft (7 N·m, 0.7 kgf·m)



(16) fork protector bolts (18) brake hose clamp bolts
(17) fork protectors

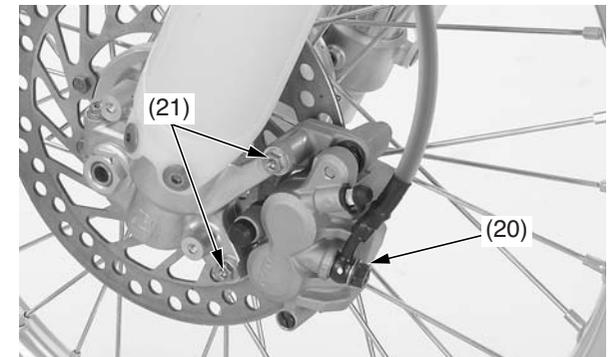
21. Clean the surfaces where the axle and axle clamps contact each other. Install the left and right side collars into the wheel hub. Insert the front axle shaft through the wheel hub from the right side. Make sure the front axle shaft is seated firmly onto the left fork leg clamp inner surface. Tighten the axle nut (19) to the specified torque:
65 lbf·ft (88 N·m, 9.0 kgf·m)



(19) axle nut

22. Align the brake caliper (20) and hose with the left fork leg, making sure that the brake hose is not twisted. An improperly routed brake hose may rupture and cause a loss of braking efficiency. Route the hose carefully.
23. Clean the threads of the brake caliper mounting bolts (21) and brake caliper thoroughly. Apply locking agent to the bolt threads. Install the brake caliper on the slider and tighten the brake caliper mounting bolts to the specified torque:
22 lbf·ft (30 N·m, 3.1 kgf·m)

Fit the brake caliper over the disc, taking care not to damage the brake pads.



(20) brake caliper
(21) brake caliper mounting bolts

(cont'd)

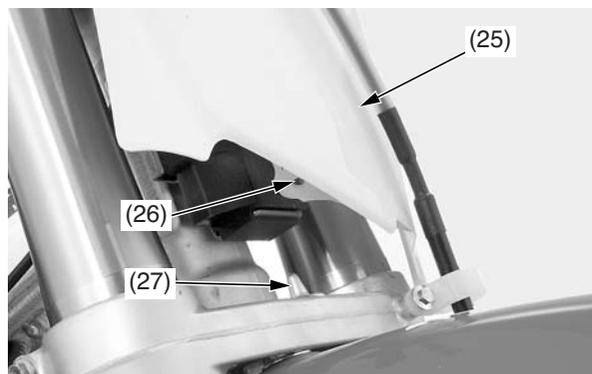
Front Suspension Adjustments

24. Install the handlebar (22) mounting rubbers (23), washers and handlebar holder nuts (24) and tighten the handlebar holder nuts to the specified torque:
32 lbf·ft (44 N·m, 4.5 kgf·m)



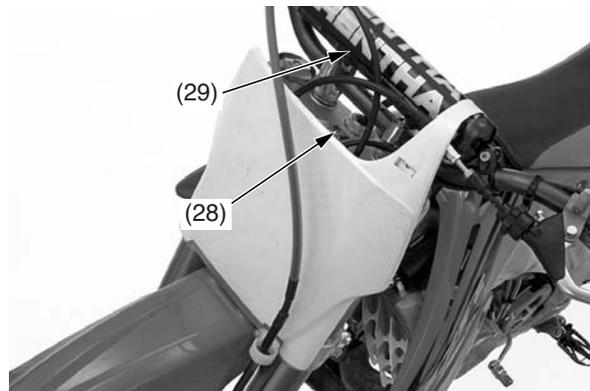
- (22) handlebar
(23) mounting rubbers
(24) washers/handlebar holder nuts

25. Install the number plate (25) by aligning its hole (26) with the tab (27) on the steering stem.



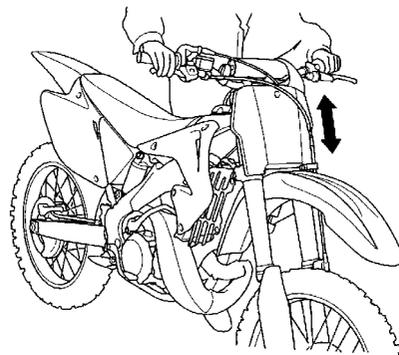
- (25) number plate
(26) hole
(27) tab

26. Install and tighten the number plate bolt (28). Install the handlebar pad (29).

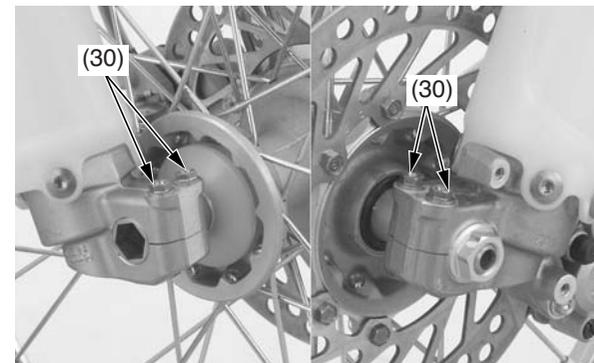


- (30) number plate bolt
(31) handlebar pad

27. With the front brake applied, pump the fork up and down several times to seat the axle and check front brake operation.



28. First, tighten the left axle pinch bolts (30) alternately. While keeping the forks parallel, alternately tighten the right axle pinch bolts to the specified torque:
15 lbf·ft (20 N·m, 2.0 kgf·m)

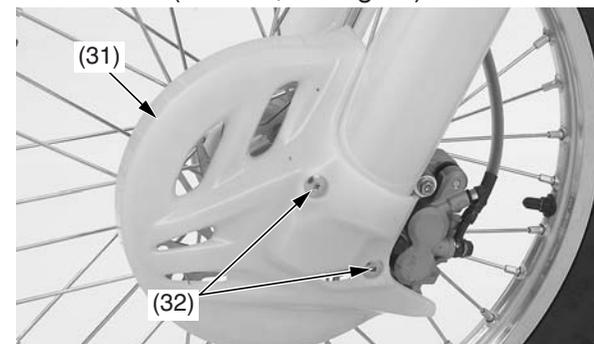


- (30) axle pinch bolts

NOTICE

To avoid damage when torquing the axle pinch bolts, be sure the axle is seated firmly onto the left fork leg clamp inner surface.

29. Clean the threads of the disc cover bolts and axle holder thoroughly.
30. Apply locking agent to the disc cover bolt threads.
31. Install the disc cover (31) and tighten the disc cover bolts (32) to the specified torque:
10 lbf·ft (13 N·m, 1.3 kgf·m)



- (31) disc cover
(32) disc cover bolts

32. Turn the compression and rebound damping adjusters back to their original settings.

The rear suspension can be adjusted for the rider's weight and riding conditions by changing the spring pre-load and the rebound and compression damping.

The rear shock absorber assembly includes a damper unit that contains high pressure nitrogen gas. Do not attempt to disassemble, service, or dispose of the damper; see your Honda dealer. The instructions found in this owner's manual are limited to adjustments of the shock assembly only.

Puncture or exposure to flame may also result in an explosion, causing serious injury. Service or disposal should only be done by your authorized Honda dealer or a qualified mechanic, equipped with the proper tools, safety equipment and the official Honda Service Manual.

If your CR is new, put enough part-throttle break-in time (about one hour) on it to ensure that the suspension has worked in.

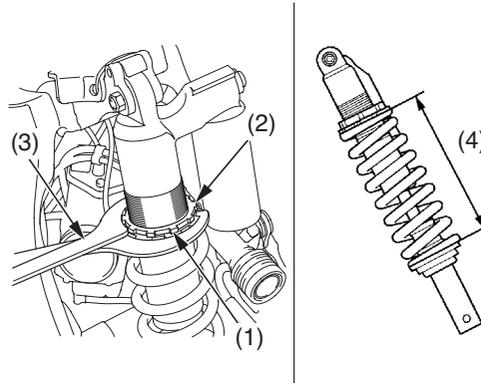
Rear Suspension Spring Pre-Load

Pre-load should be adjusted when the engine is cold because it is necessary to remove the silencer (page 32).

An optional pin spanner is available for turning the lock nut and adjusting nut to adjust spring pre-load.

1. Place an optional workstand under the engine to raise the rear wheel off the ground.
2. Loosen the connecting tube clamp screw and remove the rear subframe's three mounting bolts, then remove the subframe. See page 32.

3. Check that the spring preload is adjusted to the standard length. Adjust as necessary by loosening the lock nut (1) and turning the adjusting nut (2). Each complete turn of the adjusting nut changes the spring length by 1/16 in (1.5 mm).



- (1) lock nut (3) pin spanner
(2) adjusting nut (4) spring length

To increase spring pre-load:

Loosen the lock nut with the optional pin spanner (3) and turn the adjusting nut to shorten the spring length (4). Do not shorten to less than: 9.9 in (252 mm)

To decrease spring pre-load:

Loosen the lock nut with the optional pin spanner (3) and turn the adjusting nut to increase the spring length (4). Do not increase to more than: 10.2 in (259.1 mm)

Each turn of the adjuster changes spring length and spring pre-load. One turn equals: spring length/spring pre-load: 1/16 in (1.5 mm) / 17.2 lbs (7.8 kg)

Pin spanners should be used for turning the lock nut and adjusting nut. See page 131 for optional pin spanners.

Spring preload length (Standard spring)
Standard: 10.2 in (258.1 mm)
Min. : 9.9 in (252 mm)

Spring preload length (Optional spring)
Min. (Softer, 5.0 kgf/mm): 9.7 in (246 mm)
Min. (Stiffer, 5.4 kgf/mm): 9.7 in (247 mm)
Min. (Stiffer, 5.6 kgf/mm): 9.8 in (249 mm)

Rear Suspension Adjustments

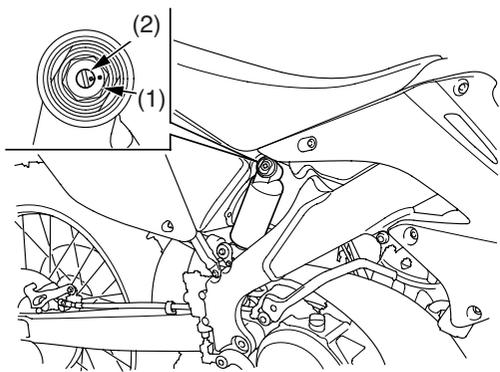
Rear Suspension Damping

Compression Damping

Compression damping may be adjusted in two stages with separate adjusters.

The high speed damping adjuster (1) is effective when damping adjustment is desired for high speed operation. The low speed damping adjuster (2) should be used when damping adjustment is desired at relatively low speeds.

- Both the high and low speed compression damping can be increased by turning the appropriate adjuster clockwise.
- Adjust the high speed compression adjuster in 1/12 turn increments.



(1) high speed damping adjuster
(2) low speed damping adjuster

High Speed Damping:

The high speed damping can be adjusted by turning the hexagonal portion of the compression adjuster.

The high speed compression damping adjuster has 3 1/2 turns or more.

To adjust to the standard position:

1. Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard setting.
2. Turn the adjuster counterclockwise 2 5/12 — 2 11/12 turns and the punch marks are aligned.

Low Speed Damping:

The low speed damping can be adjusted by turning the center screw of the compression adjuster.

The low speed compression adjuster has 13 positions or more.

Turning the adjuster one full turn clockwise advances the adjuster 4 positions.

To adjust to the standard position:

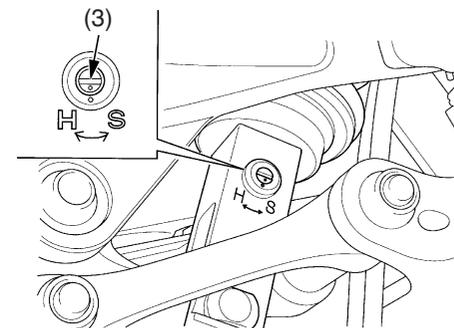
1. Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard setting.
2. Turn the adjuster counterclockwise 7 clicks and the punch marks are aligned.

Rebound Damping

The rebound damping adjuster (3) is located at the lower end of the shock absorber.

It has 17 positions or more. Turning the adjuster one full turn advances the adjuster 4 positions.

- Rebound damping can be increased by turning the adjuster clockwise.



(3) rebound damping adjuster

To adjust to the standard position:

1. Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster counterclockwise 5 – 8 clicks with the punch marks on the adjuster and the shock absorber aligned.

Rear Suspension Race Sag

Setting the proper race sag (ride height) is very important for competition use.

Race sag refers to the amount of rear wheel travel used by your CR at rest, ready to ride, with you on the seat. As a general rule of thumb, the race sag dimension should be about one-third of the maximum travel.

On your CR, ride height is changed by adjusting the rear suspension spring pre-load.

Spring Pre-load & Race Sag Adjustment

The following adjustment procedure establishes the correct starting point for any suspension tuning — the proper rear spring pre-load adjustment for your specific needs.

Your CR should be at normal racing weight, including fuel and transmission oil. You should be wearing all your normal protective apparel. You will need two helpers.

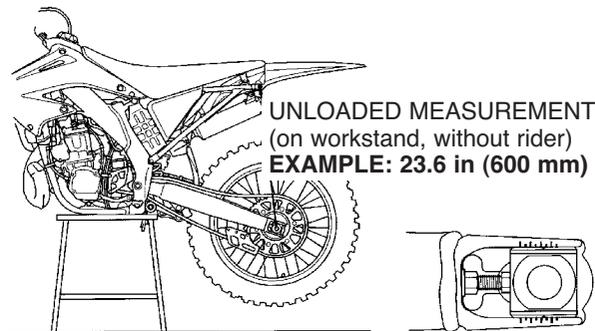
To calculate the proper adjustment, it is necessary to measure between two fixed points — from the top of the most rearward point of the subframe down to the machined edge at the rear of the swingarm, as illustrated — for three different situations:

unloaded: motorcycle on optional workstand with rear suspension fully extended, no rider.

loaded with rider: motorcycle on ground, with rider.

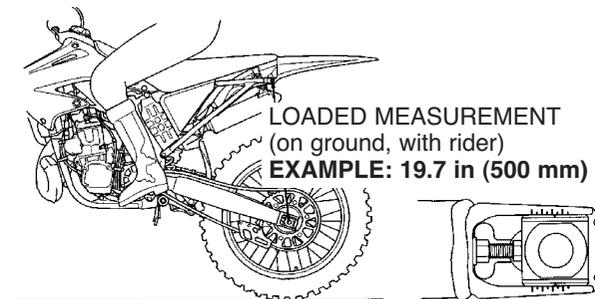
loaded without rider: motorcycle on ground, without rider

1. Support your CR on a workstand with the rear wheel off the ground.
2. Measure the *unloaded* dimension.



3. Measure the *loaded with rider* dimension. Remove the workstand. With two helpers available, sit as far forward as possible on your CR's seat, wearing your riding apparel. Ask one helper to steady your CR perfectly upright so you can put both feet on the pegs. Bounce your weight on the seat a couple of times to help the suspension overcome any stiction and settle to a good reference point.

Ask the other helper to measure the *loaded with rider* dimension.



Race Sag Calculation:

unloaded	23.6 in (600 mm)
—loaded with rider	19.7 in (500 mm)
Race Sag	3.9 in (100 mm)

4. Calculate the *race sag* dimension. To do this, subtract the *loaded with rider* dimension (step 3) from the *unloaded* dimension (step 2).

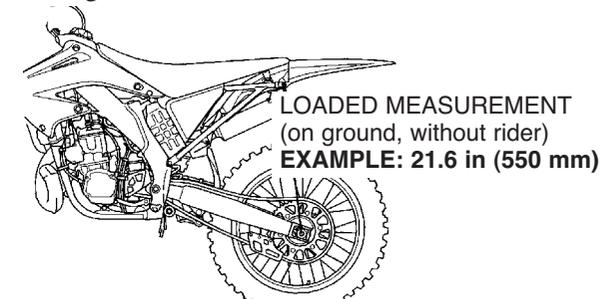
Standard Race Sag: 3.9 in (100 mm)

Adjust spring pre-load as necessary to obtain the desired handling results.

Decreasing the race sag dimension (example: 3.5 in, 90 mm) improves turning ability for tight terrain at the cost of slightly reduced straight line stability.

Increasing the race sag dimension (example: 4.3 in, 110 mm) may improve stability on faster terrain with less turns, but will reduce turning performance slightly and may upset the balance between the front and rear suspension, producing a harsher ride. This will happen if the adjustment shifts the effective wheel travel toward the more progressive end of its range.

5. Measure the *loaded without rider* dimension. Do this with your CR set at the standard race sag.



Free Sag Calculation:

unloaded	23.6 in (600 mm)
—loaded without rider	21.6 in (550 mm)
Free Sag	2.0 in (50 mm)

(cont'd)

Rear Suspension Adjustments

6. Calculate the *free sag* dimension.

To do this, subtract the *loaded without rider* dimension (step 5) from the *unloaded* dimension (step 2).

Free sag indicates the distance your rear suspension should sag from the weight of the sprung portion of your CR.

With the spring pre-load set to obtain the proper race sag, the rear suspension should:
Sag: 0.4 to 1.0 in (10 to 25 mm)

If the rear of your CR sags more than 1.0 in (25 mm) from its own weight, the spring is too stiff for your weight. It is not compressed enough, even though you have the proper race sag adjustment. As a result, the rear suspension will not extend as far as it should.

Spring Rates

If you are lighter or heavier than the average rider and cannot set the proper ride height without altering the correct spring pre-load, consider an aftermarket shock absorber spring.

A spring that is too soft for your weight forces you to add excessive spring pre-load to get the right race sag and, as a result, the rear end of the motorcycle is raised. This can cause the rear wheel to unload too much in the air and top out as travel rebounds. The rear end may top out from light braking, or kick sideways over lips and square-edged terrain. It may even top-out when you dismount your CR.

Because of the great absorption quality of the shock bumper rubber, it may be difficult for you to notice when your CR's suspension is bottoming. Some riders may think the damping or perhaps the leverage ratio is too harsh. In reality, the problem is most likely insufficient spring pre-load or a spring that is too soft. Either situation prevents utilizing the full travel.

Keep in mind that a properly adjusted suspension system may bottom slightly every few minutes at full speed. Adjusting the suspension to avoid this occasional bottoming may cost more in overall suspension performance than it is worth.

A spring that is too firm for your weight will not allow the rear tire to hook up under acceleration and will pass more bumps on to you.

Suspension Adjustments for Track Conditions

Soft Surface

On soft ground, sand, and especially mud, consider increasing compression damping front and rear.

Sand often requires a bit more rebound damping to minimize rear end kick. Although sand bumps are usually larger, there's more distance between them, giving the shock more time to recover.

You may want a little bit stiffer front suspension for sand tracks to help keep the front end up and improve straight-line stability.

In a muddy event, stiffer aftermarket springs front and rear may help, especially if you are heavier than the average rider. Your CR may be undersprung because of the added weight of the clinging mud. This additional weight may compress the suspension too much and affect traction.

Hard Surface

For a fast, hard track with no large jumps, you can probably run the same spring as normal, but run softer damping both ways-compression and rebound. If you run softer rebound damping, the wheel will follow the rough ground and small bumps much better, and you will hook up better. With a lot of rebound damping, the wheel returns very slowly and doesn't contact the ground quickly enough after each bump. The result is a loss of traction and slower lap times.

Suspension Adjustment Guidelines

Follow the procedures described below to accurately adjust your CR, using the methods described on pages 82 - 99. Remember to make all adjustments in one-click increments. Test ride after each adjustment.

Front Suspension Adjustment Adjustments for Type of Track

Hard-surfaced track	Begin with the standard setting. If the suspension is too stiff/soft, adjust according to the chart below.
Sand track	Adjust to a stiffer position. Example: – Turn the compression damping adjuster to a stiffer position. – Install the optional stiff spring. (Adjust compression damping to a softer position and rebound damping to a harder position at this time.)
Mud track	Adjust to a stiffer position because mud build-up increases your CR's weight. Example: – Turn the compression damping adjuster to a stiffer setting. – Install the optional stiff spring.

Adjustments for Too Soft/Stiff Damping

	Symptom	Action
Soft suspension	Initial travel too soft: <ul style="list-style-type: none"> • Steering is too quick. • Front end darts while cornering or riding in a straight line. 	<ul style="list-style-type: none"> – Test stiffer compression damping adjustments in one-click increments. – Test stiffer rebound damping adjustments in one-click increments.
	Middle travel too soft: <ul style="list-style-type: none"> • Front end dives when cornering. 	If suspension isn't stiff in initial travel: <ul style="list-style-type: none"> – Test stiffer compression damping adjustments in one-click increments. If initial travel becomes stiff because of the above adjustment: <ul style="list-style-type: none"> – Reduce the rebound damping in one click increments. – Test softer compression damping adjustments in one-click increments. If that doesn't solve the problem, install the optional stiff spring.
	Final travel too soft: <ul style="list-style-type: none"> • Bottoms on landings. • Bottoms on large bumps, especially downhill bumps. 	If initial and middle travel aren't stiff: <ul style="list-style-type: none"> – Test stiffer compression damping adjustments in one-click increments. If initial and middle travel are stiff: <ul style="list-style-type: none"> – Install the optional stiff spring. If initial travel is stiff after installing the optional stiff spring: <ul style="list-style-type: none"> – Test soft compression damping adjustments in one-click increments. If initial travel is still soft after installing the optional stiff spring: <ul style="list-style-type: none"> – Test stiffer compression damping adjustments in one-click increments. If final travel is still soft after installing the optional stiff spring: <ul style="list-style-type: none"> – Increase the fork oil level in increments of 0.2 oz (5 cm³).
	Entire travel too soft: <ul style="list-style-type: none"> • Front end shakes. • Fork bottoms over any type of terrain. 	<ul style="list-style-type: none"> – Install the optional stiff spring. – Test stiffer compression damping adjustments in one-click increments. – Increase rebound damping in one-click increments.

Suspension Adjustment Guidelines

	Symptom	Action
Stiff suspension	<p>Initial travel too stiff:</p> <ul style="list-style-type: none"> • Stiff on small bumps while riding at full throttle in a straight line. • Stiff on small cornering bumps. • Front end wanders while riding at full throttle in a straight line. 	<ul style="list-style-type: none"> – Test softer compression damping adjustments in one-click increments. – Reduce the rebound damping adjustments in one-click increments. – Check for dirt in the dust seals. Check the fork oil for any contamination. • If the front end dives while cornering, reduce the rebound damping in one click increments. If that doesn't solve the problem, install the optional stiff spring. • If the stiff spring makes the suspension too stiff over the full range of travel: test softer compression damping adjustments in one-click increments until the desired compression damping for initial travel is obtained.
	<p>Middle travel too stiff:</p> <ul style="list-style-type: none"> • Stiff on bumps when cornering. • Front end wanders when cornering. • Stiff suspension on bumps, especially downhill bumps. • While braking, front end dives during initial travel, then feels stiff. 	<p>If initial travel isn't stiff:</p> <ul style="list-style-type: none"> – Test stiffer compression damping adjustments in one-click increments. (This should produce smooth fork action from initial to middle travel.) <p>If initial and middle travel is stiff:</p> <ul style="list-style-type: none"> – Test softer compression damping adjustments in one-click increments. – Reduce the rebound damping in one-click increments.
	<p>Final travel too stiff:</p> <ul style="list-style-type: none"> • Doesn't bottom on landings, but feels stiff. • Stiff on large bumps, especially downhill bumps. • Stiff on large bumps when cornering. 	<p>If initial and middle travel aren't stiff:</p> <ul style="list-style-type: none"> – Test stiffer compression damping adjustments in one-click increments. (This should produce smooth fork action from initial to middle travel.) <p>If final travel is still stiff after the above adjustment, or</p> <p>If initial and middle travel becomes stiff:</p> <ul style="list-style-type: none"> – Install the optional soft spring. – Test softer compression damping adjustments in one-click increments. <p>If the entire travel feels stiff after the above adjustment:</p> <ul style="list-style-type: none"> – Test softer compression damping adjustments in one-click increments until the desired initial travel compression damping is obtained. – Lower the oil level by 0.2 oz (5 cm³).
	<p>Entire travel too stiff:</p> <ul style="list-style-type: none"> • Stiff suspension on any type of terrain. 	<ul style="list-style-type: none"> – Test softer compression damping adjustments in one-click increments. – Reduce the rebound damping in one-click increments. – Lower the oil level by 0.2 oz (5 cm³).

Suspension Adjustment Guidelines

Rear Suspension Adjustment Adjustments for Type of Track

Hard-surfaced track	Begin with the standard settings. If the suspension is too stiff/soft, adjust according to the chart below.
Sand track	Lower the rear end (to improve front wheel stability) by increasing Race Sag (reduce spring preload). Example: – Turn the compression damping adjuster and, especially, rebound damping adjuster to a stiffer setting. – Increase standard Race Sag (+0.2 to 0.4 in/5 to 10 mm).
Mud track	Adjust to a stiffer position because mud build-up increases your CR's weight. Example: – Adjust the compression and rebound damping adjusters to stiffer settings. – Install the optional stiff spring. – Reduce standard Race Sag (–0.2 to 0.4 in/5 to 10 mm).

Symptoms and Adjustment

- Always begin with the standard settings.
- Turn the low speed compression and rebound adjusters in one-click increments, and the high speed compression adjuster in 1/6 turn increments at a time. Adjusting two or more clicks or turns at a time may cause you to pass over the best adjustment. Test ride after each adjustment.
- If, after setting, the suspension feels unusual, find the corresponding symptom in the table and test stiffer or softer compression and/or rebound damping adjustments until the correct settings are obtained as described.

	Symptom	Action
Stiff suspension	Suspension feels stiff on small bumps	1. Test softer low speed compression adjustment. 2. If it still feels stiff, further test softer low and high speed compression adjustments simultaneously.
	Suspension feels stiff on large bumps	1. Test softer high speed compression adjustment. 2. If it still feels stiff, further test softer low and high speed compression adjustments simultaneously.
	Entire travel too stiff	1. Test softer high and low speed compression adjustments and rebound adjustment simultaneously. 2. If it still feels stiff, replace the spring with a softer spring (optional) and begin with the standard settings to softer settings.
Soft suspension	Entire travel too soft	1. Test stiffer high and low speed compression adjustments simultaneously. 2. If it still feels soft, replace the spring with a stiffer spring (optional) and begin with the standard settings to stiffer setting.
	Rear end sways	1. Test stiffer high and low speed compression adjustments and rebound adjustment to stiffer settings simultaneously.
Suspension bottoms	Suspension bottoms at landing after jumping	1. Test stiffer high speed compression adjustment. 2. If it still bottoms, test stiffer high and low speed compression adjustments, and replace the spring with a stiffer spring (optional) if necessary.
	Suspension bottoms after landing	1. Test stiffer low speed compression adjustment. 2. If it still bottoms, test stiffer high and low speed compression adjustments, and replace the spring with a stiffer spring (optional) if necessary.
	Suspension bottoms after end of continuous bumps	1. Test softer rebound dumping adjustment. 2. If it still bottoms, test stiffer high and low speed compression adjustments and softer rebound damping adjustment, and replace the spring with a stiffer spring (optional) if necessary.

Chassis Adjustments

The following suggestions may improve a specific concern. Subtle changes in overall handling may also be noted.

Rear End

If you have a problem with rear wheel traction, raise the rear end of your CR by increasing the rear spring pre-load. Instead of running 3.9 in (100 mm) of sag, you can run 3.5 in (90 mm) so the rear of the bike will sit a little higher. This should produce more traction because of the change to the swingarm and the location of your CR's center of gravity.

If you have a problem with the steering head shaking when you use the front brake hard or if your CR wants to turn too quickly, lower the rear of the motorcycle by reducing the rear spring pre-load. This will increase fork rake and trail and should improve stability in a straight line. The effective suspension travel will be transferred toward the firmer end of wheel travel.

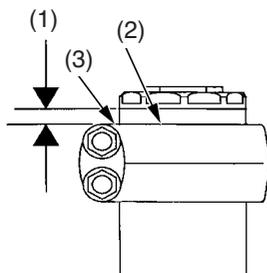
Keep the race sag adjustment (page 97) in the 3.5 – 3.9 in (90 – 100 mm) range.

Fork Height/Angle

The position of the fork tubes in the clamps is not adjustable.

Standard Position

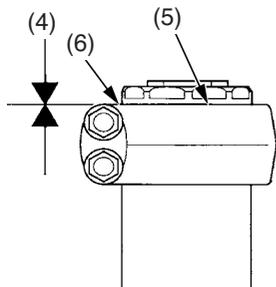
The standard position (1) aligns the index groove (2) with the top of the upper clamp (3).



- (1) standard position
0.3 in (7 mm)
- (2) index groove
- (3) upper fork clamp

Standard Position For Optional Front Wheel

If you install the optional 20 inch wheel, align the top of the fork tube (5) (not the top of the fork cap) with the top of the upper fork clamp (6).



- (4) standard position
for optional front
wheel 0 in (0 mm)
- (5) top of fork tube
- (6) top of upper fork
clamp

Wheelbase

Adjusting your CR's wheelbase can offer subtle changes in overall handling. You may adjust wheelbase by adding or removing links on the drive chain. If you change the wheelbase, be sure to re-check race sag and adjust, if necessary.

In the past, a general rule was lengthen the wheelbase to add straight line stability, shorten the wheelbase to improve turning. However, we suggest you do not lengthen the wheelbase of your CR unless you are racing on a track with more fast sections than normal.

As a general recommendation, keep the wheelbase as short as possible. This positions the wheels closer together, improves turning response, increases weighting (traction) on the rear wheel, and lightens weighting on the front wheel.

With your CR, you will probably find that the standard setting or a shorter wheelbase will offer more overall benefits.

