

Owner's manual

DUCATI996SPS

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Hearty welcome among Ducati fans! Please accept our best compliments for choosing a Ducati motorcycle. We think you will ride your Ducati motorcycle for long journeys as well as short daily trips. Ducati Motor s.p.a wishes you smooth and enjoyable riding.

We are steadily doing our best to improve our "Technical Assistance" service. For this reason, we recommend you to strictly follow the indications given in this manual, especially for motorcycle running-in. In this way, your Ducati motorbike will surely give you unforgettable emotions.

For any servicing or suggestions you might need, please contact our authorized service centres.

Enjoy your ride!

Ducati Motor S.p.A. declines any liability whatsoever for any mistakes incurred in drawing up this manual. The information contained herein is valid at the time of going to print. Ducati Motor S.p.A. reserves the right to make any changes required by the future development of the above-mentioned products.

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For your safety, as well as to preserve the warranty, reliability and worth of your motorcycle, use original Ducati spare parts only.



Warning

This manual forms an integral part of the motorcycle and - if the motorcycle is resold - must always be handed over to the new owner.

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GENERAL



Warranty

In your own interest, and in order to guarantee product reliability, you are strongly advised to refer to a Ducati Dealer or Authorized Workshop for any servicing requiring particular technical expertise. Our highly skilled staff have access to the implements required to perform any servicing job at best, using Ducati original spare parts only as the best guarantee for full interchangeability, smooth running and long life.

All Ducati motorcycles come with a "Warranty Card". However, warranty does not apply to the motorcycles used in competitions. No motorcycle part may be tampered with, altered, or replaced with parts other than original Ducati spare parts during the warranty period, or the warranty will be automatically invalidated.

Symbols

Ducati Motor S.p.A. advises you to read this manual carefully so as to become familiar with your motorcycle. In case of any doubts, please call a Ducati Dealer or Authorized Workshop. The information contained herein will prove useful on your trips - and Ducati Motor S.p.A. wishes you smooth, enjoyable riding - and will help you keep the performance of your motorcycle unchanged for a long time.



Warning

Failure to comply with these instructions may put you at risk and lead to severe injury or death.



Important

Possibility of damaging the motorcycle and/or its components.



Note

Additional information concerning the job being carried out.

*The terms **right** and **left** are referred to the motorcycle viewed from the riding position.*

Useful information for safe riding



Warning

Read this section before riding your motorcycle.

Accidents are frequently due to inexperience. Always make sure you have your licence with you when riding; you need a valid licence to be entitled to ride your motorcycle.

Do not lend your motorcycle to inexperienced riders or who do not hold a valid licence.

Both rider and pillion passenger must **always** wear a safety helmet.

Wear proper clothing, with no loose items or accessories that may become tangled in the controls or limit your zone of vision.

Never start or run the engine indoors. Exhaust gases are poisonous and may lead to loss of consciousness or even death within a short time.

Both rider and pillion passenger should keep their feet on the footpegs when the motorcycle is in motion.

Always hold the handlebars firmly with both hands so you will be ready for sudden changes of direction or in the road surface. The pillion passenger should **always** hold on to the suitable belt on the rear seat with both hands.

Ride within the law and observe national and local rules.

Always respect speed limits where these are posted.

However, **always** adjust your speed to the visibility, road and traffic conditions you are riding in.

Always signal your intention to turn or pull to the next

lane in good time using the suitable turn indicators.

Be sure you are clearly visible and do not ride within the blind spot of vehicles ahead.

Be very careful when tackling road junctions, or when riding in the areas near exits from private grounds, car parks or on slip roads to access motorways.

Always turn off the engine when refueling.

Be extremely careful not to spill gasoline on the engine or on the exhaust pipe when refueling.

Do not smoke when refueling.

While refueling, you may inhale noxious gasoline vapors.

Should any gasoline drops be spilled on your skin or clothing, immediately wash with soap and water and change your clothing.

Always remove the key when you leave your motorcycle unattended.

The engine, exhaust pipes, and mufflers stay hot for a long time.

Park your motorcycle where no one is likely to hit it and use the side stand.

Never park on uneven or soft ground or your motorcycle may fall over.

Carrying the maximum load allowed

Your motorcycle is designed for long-distance riding, carrying the maximum load allowed in full safety. Even weight distribution is critical to preserving safety features and avoiding trouble when performing sudden manoeuvres or riding on bumpy roads.

Information about carrying capacity

The total weight of the motorcycle in running order including rider, pillion passenger, luggage and additional accessories should not exceed 310 Kg/683 lb.

Arrange your luggage or heavy accessories in the lowest possible position and close to motorcycle centre.

Be sure to secure the luggage to the supports provided on the motorcycle as firmly as possible. Improperly secured luggage may affect stability.

Never fix bulky or heavy objects to the handlebar or to the front mud guard as this would affect stability and cause danger.

Do not insert any objects you may need to carry into the gaps of the frame as these may foul moving parts.

Make sure the tyres are inflated to the proper pressure indicated at page 54 and that they are in good condition.

Accessories

The motorcycle is supplied with canvas cover, paddock stand and racing kit including carbon exhaust and special EPROM chip to be installed in CPU.



Important

Have the racing kit installed at a Ducati Dealer or Authorized Workshop. Installing this kit removes compliance with road homologation specs and the motorcycle may only be used on track.

Identification data

All Ducati motorcycles have two identification numbers, for frame (fig. 1.1) and engine (fig. 1.2).

Frame number

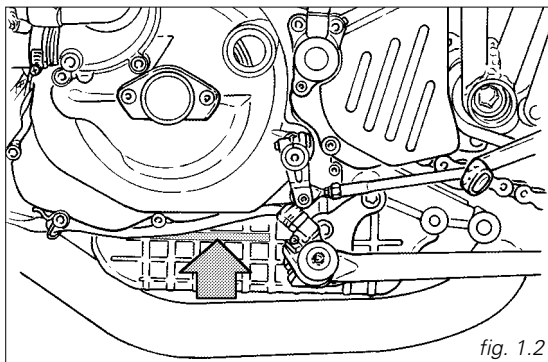
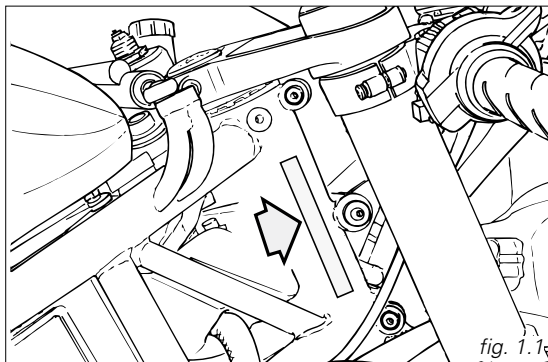
Engine number



Note

These numbers identify the motorcycle model and are required when ordering spare parts.

This exclusive model has been produced in a limited series. Each motorcycle is identified by a serial number etched on a silver plate fixed to steering head.



CONTROLS

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Warning

This section details the position and function of all the controls you need to drive your motorcycle. Be sure to read this information carefully before you use the controls.

Position of motorcycle controls (fig. 2)

- 1) Instrument panel.
- 2) Key-operated ignition switch and steering lock.
- 3) Left switch.
- 4) Clutch lever.
- 5) Cold start button.
- 6) Right switch.
- 7) Throttle twistgrip.
- 8) Front brake lever.
- 9) Gear change pedal.
- 10) Rear brake pedal.

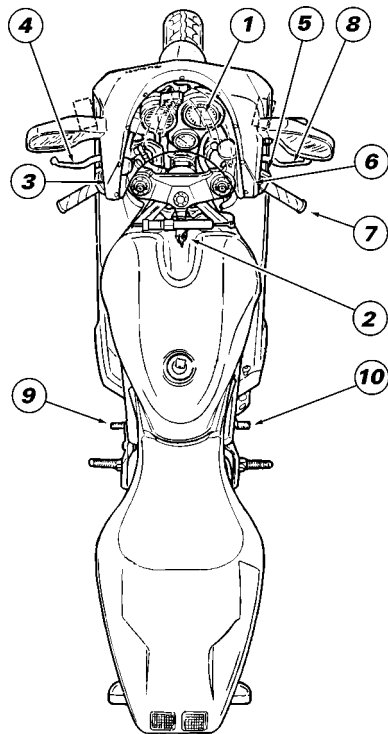


fig. 2

Instrument panel (fig. 3)

1) **Speedometer** (km/h or mph).

Gives road speed.

a) **Odometer** (km or miles).

Gives total distance covered.

b) **Trip meter** (km or miles).

Gives distance covered since last resetting.

c) Trip meter **resetting knob**.

Turn to reset trip meter to "0000".

2) **Engine revolution meter** (rpm)

Indicates engine rpm.

3) **Green light N**.

Comes on when gearbox is in neutral.

4) **Yellow light** .

Comes on when there are about 4 liters (1.05 US Gall.) fuel left in the tank.

5) **Green light** .

Comes on and flashes when a turn indicator is on.

6) **Red light** .

Comes on when engine oil pressure is too low. It comes on when the ignition is switched to **ON** and normally goes out a few seconds after engine starts.

Important

If this light (6) stays on, stop the engine or it may suffer severe damage.

7) **Blue light** .

Comes on when right high beam is on.

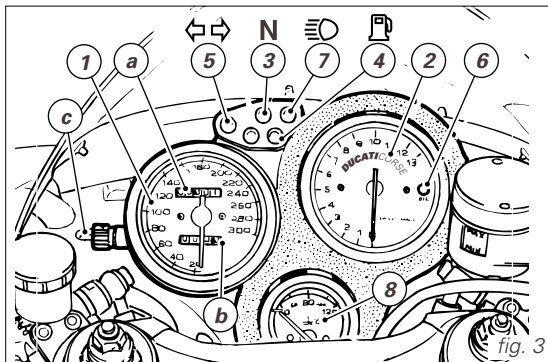
8) **Water temperature indicator** .

Indicates engine coolant temperature.

Important

Stop riding if the temperature reaches the max. value, otherwise the engine might damage.

When parking light is on, the instrument panel is lighted.



Keys (fig. 4)

Your Ducati was delivered with two universal keys for ignition, steering lock and seat catch and a key identification plate (1).



Note

Separate the two keys and keep the identification plate in a safe place.

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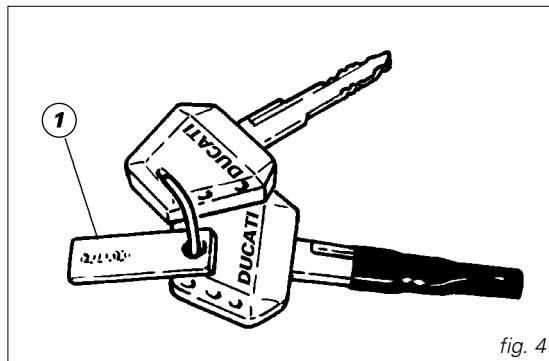


fig. 4

Key-operated ignition switch and steering lock

(fig. 5)

It is located in front of the fuel tank and has four positions:

- A) **ON**: lights and engine enabled;
- B) **OFF**: lights and engine disabled;
- C) **LOCK**: steering locked;
- D) **P**: parking light and steering lock.



Note

To move the key to the last two positions, press it down before turning it. Switching to (B), (C) and (D), you will be able to take the key out.

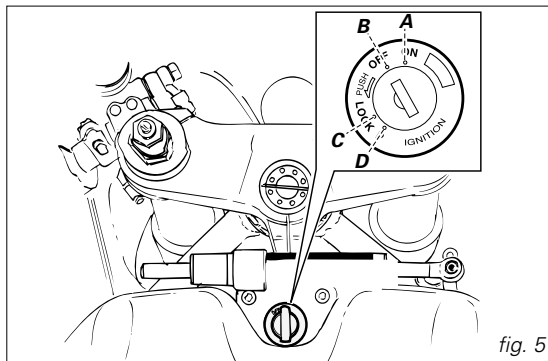





fig. 5

Left switch (fig. 6)

1) **Switch**, light switch, 3 positions:

Down  = light off;

Centre  = front and rear parking light, number plate light and panel lights on;


Up  = headlamp, front and rear parking light, number plate light and panel lights on.




Note

This device is not fitted on the Australia and Japan versions.


2) **Dip switch**, light dip switch, two positions:


position  = low beam on;

position  = high beam on.


3) **Switch**  = 3-position turn indicator:


centre position = off;

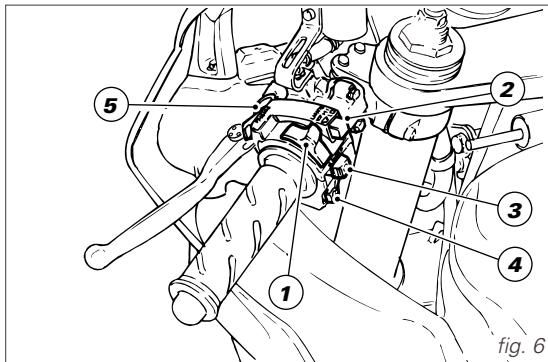
position  = left turn;

position  = right turn.

To cancel turn indicators, return switch to central position and push in.

4) **Button**  = warning horn.

5) **Button**  = high-beam flasher.



Clutch lever (fig. 7)

Lever (1) disengages the clutch. The clutch lever is provided with a dial adjuster (2) for lever distance adjustment from the twistgrip on handlebar.

To set lever distance, push lever fully forward and turn the dial adjuster (2) to one of its four positions.

Remember that position no. 1 gives maximum distance between lever and twistgrip, whereas lever and twistgrip are closest when adjuster is set to position no. 4.

When you operate lever (1), you will disengage the engine from the gearbox and therefore from the driving wheel. Using the clutch properly is essential to smooth riding, especially when moving off.



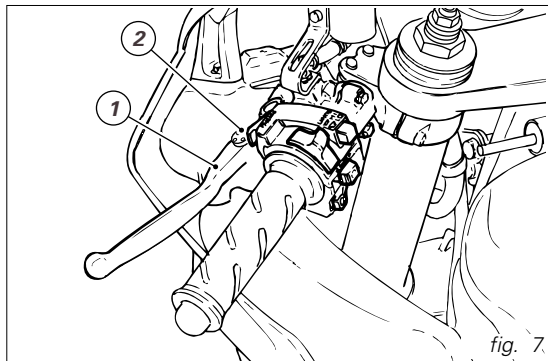
Warning

Set clutch lever when motorcycle is stopped.



Important

Using the clutch properly will avoid damage to transmission parts and spare the engine.

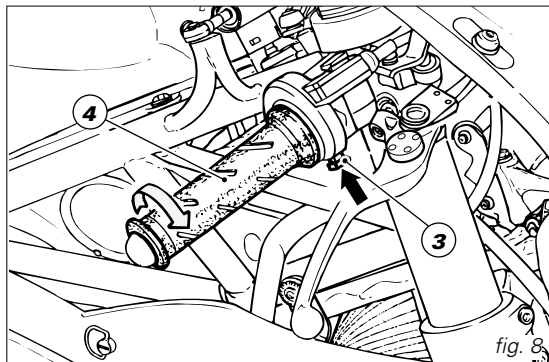


Cold start button (fig. 8)

This device is on the throttle twistgrip. Push the button (3) to enable control. In this way, the throttle control (4) will lightly turn, thus increasing the engine rotation speed. Use this device to start the engine from cold (page 33).


Important


Move the button (3) back to rest position once the engine is warm. Turn the throttle twistgrip (4) clockwise (slow down). Never use this device when the engine is warm.




Right switch (fig. 9)

G) Switch for **ENGINE STOP**, two positions:

position  (**RUN**) = run.


position  (**OFF**) = stop.

Warning

This switch is mainly intended for use in emergency cases when you need to stop the engine quickly. After stopping the engine, return the switch to the  position to enable starting.

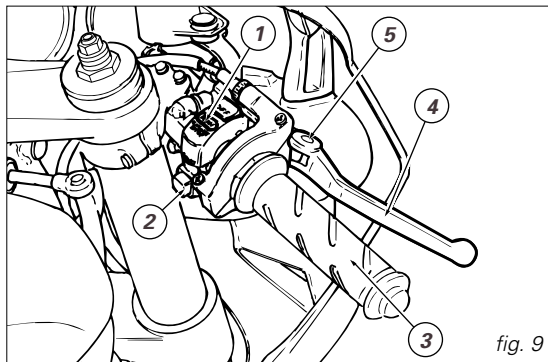
Important

Stopping the engine using switch (1) after riding with the lights on and leaving the ignition key in the **ON** position, may run the battery flat as the lights will remain on.

2) Button  = engine start

Throttle twistgrip (fig. 9)

The twistgrip (3) on the right handlebar opens the throttles. When released, it will spring back to the initial position (idling speed).

**Front brake lever** (fig. 9)

Pull in the lever (4) towards the twistgrip to operate the front brake. The system is hydraulically operated and you just need to pull the lever gently.

The brake lever is provided with a dial adjuster (5) for lever distance adjustment from twistgrip on handlebar.

**Warning**

Please read the instructions on pages 31 and 32 before using these controls.

Rear brake pedal (fig. 10)

Push down on the pedal (1) with your foot to operate the rear brake.

The system is hydraulically operated.

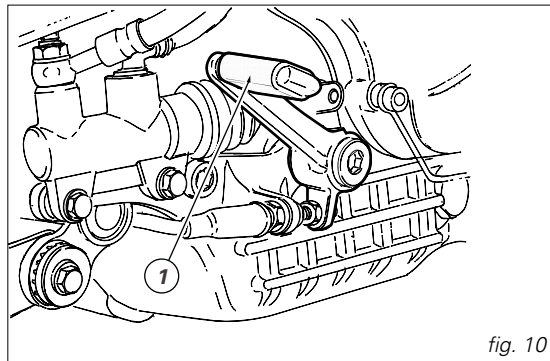


fig. 10

Gear change pedal (fig. 11)

The gear change pedal is at rest when in the central position **N**, is moved up and down to change gears and then returns to the central position.

down = push down on the pedal to engage 1st gear and to shift down. The **N** light will go out.

up = lift the pedal to engage the 2nd gear and then the 3rd, 4th, 5th and 6th gear. Each time you move the pedal you will engage the next gear.

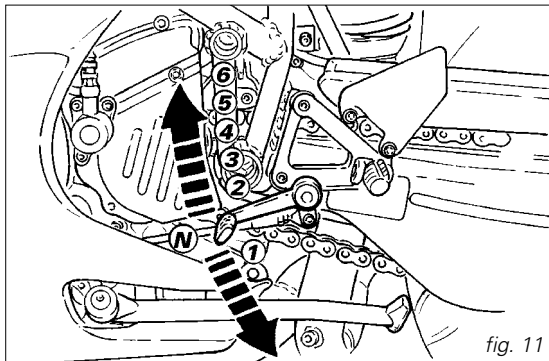


fig. 11

Adjustment of gear change and rear brake pedals

Gear change and rear brake pedals can be set in a preferred position relative to footpegs to better suit the riding style of every rider.

To set the gear change pedal, lock linkage (1) and loosen check nuts (2) and (3).

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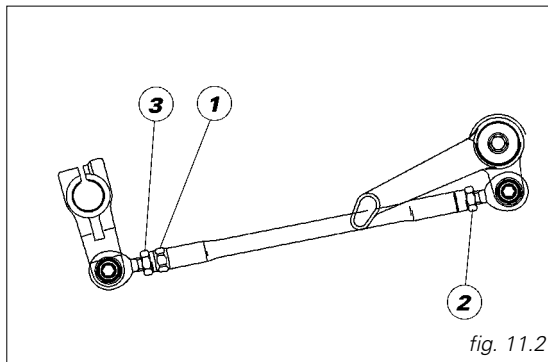


Note

Nut (2) has a left-hand thread.

Apply an open-end wrench to the hexagon portion of linkage (1) and rotate linkage until the gear change pedal is in the desired position.

Tighten both check nuts until they contact linkage.



To set the rear brake pedal:

loosen check nut (4).

Turn travel adjuster (5) until pedal is in the desired position.

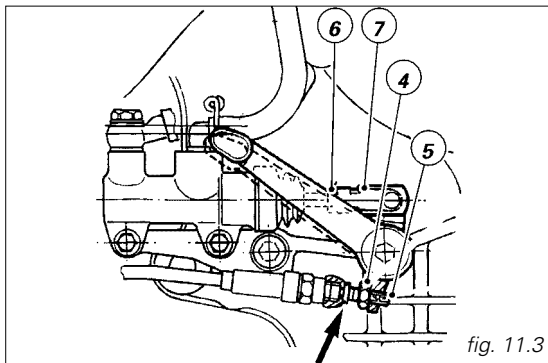
Tighten check nut (4).

Work the pedal by hand to make sure it has about $1.5 \div 2 \text{ mm}$ / $0.059 \div 0.079 \text{ in.}$ free play before brake is actuated.

If not so, set master cylinder rod length as follows: loosen the check nut (6) on the rod.

Tighten rod into fork (7) to increase free play or loosen it to decrease play.

Tighten the check nut (6) and check play again.



MAIN COMPONENTS AND DEVICES

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Location (fig. 12)

- 1) Tank filler plug.
- 2) Seat catch.
- 3) Side stand.
- 4) Hook for helmet fastening cable.
- 5) Steering damper.
- 6) Rear view mirrors.
- 7) Front fork adjusters.
- 8) Rear shock absorber adjusters.
- 9) Motorcycle track alignment linkage.

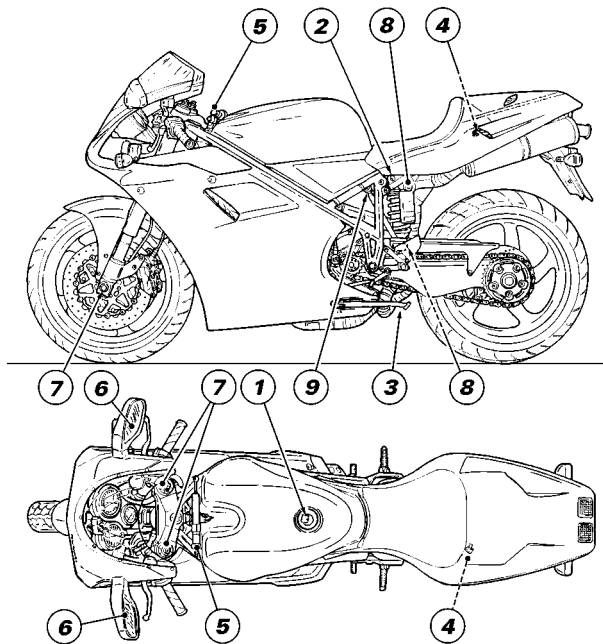


fig. 12

Tank filler plug (fig. 13)

Opening

Lift the protection lid (1) and fit the ignition key into the lock. Turn the key clockwise 1/4 turn to unlock. Lift the plug.

Closing

Refit the plug with the key in it and push it down into its seat. Turn the key anticlockwise to its initial position and take it out. Close the lock protection lid (1).



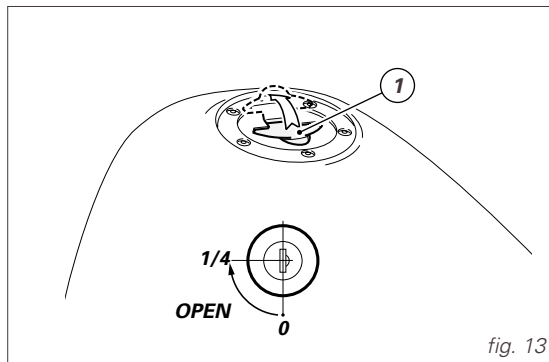
Note

The plug can only be closed with the key in. In turn, the key can only be taken out after the plug has been closed.



Warning

Always make sure you have properly refitted (see page 35) and closed the plug after each refueling.



Seat catch and helmet hook

Opening (fig. 14.1)

Fit the ignition key into the lock (1) and turn the key clockwise.

Pull gently the tail guard (2) outwards and lift it until it rests onto the fuel tank.

On the rear end of the compartment underneath the seat, there is the helmet fastening cable. Insert the cable (A) into the helmet and insert the ends of the cable into the hook. Leave the helmet hanging outside (fig. 14.2) and refit the seat.



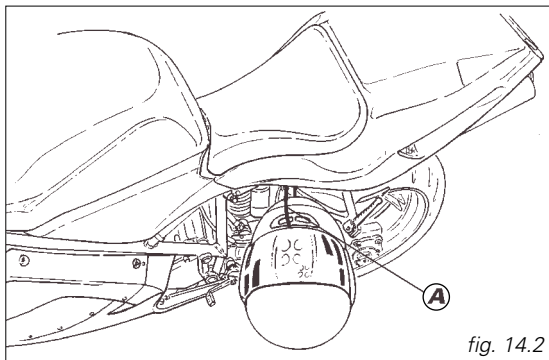
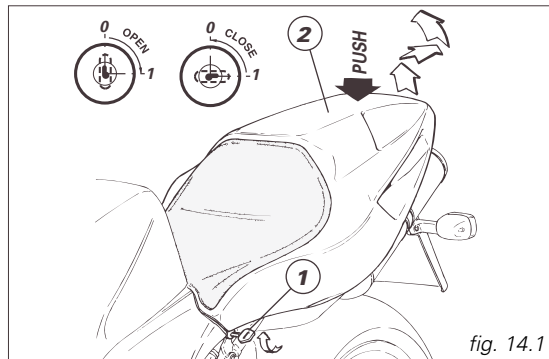
Warning

This system is intended to lock your helmet safely when you park your motorcycle. Never leave the helmet hanging from the hook when riding or it may get in the way and make you lose control of the motorcycle. Inserting the cable under the subframe from the left side will enable you to lock the seat. With the cable in any other position, the seat will not lock properly.

Closing

Arrange all parts properly inside the compartment under the seat.

Lower the tail guard to its horizontal position. Press on the rear end (2) of the seat until you hear the catch click. Pull the tail guard gently up to make sure it is firmly secured to the frame.



Side stand (fig. 15)

Important

Before lowering the side stand, make sure that the bearing surface is hard and flat.

Do not park on soft or pebbled ground or on asphalt melt by the sun heat and similar or the motorcycle may fall over.

When parking in downhill road tracts, always park the motorcycle with its rear wheel facing downhill. To pull down the side stand, hold the motorcycle handlebars with both hands and push down on the thrust arm (1) with your foot until it is fully extended. Tilt the motorcycle until the side stand is resting on the ground.

Important

Do not sit on the motorcycle when it is supported on the side stand.

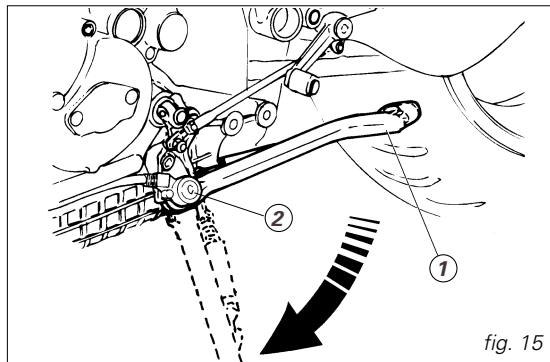
To move the side stand to its rest position (horizontal position), tilt the motorcycle to the right and, at the same time, lift the thrust arm (1) with your foot.

Note

Check for proper operation of the stand mechanism (two springs, one into the other) and the safety sensor (2) at regular intervals.

Warning

The motorcycle can be started only if the side stand is up as its safety device prevents engine start when the stand is down.



Steering damper (fig. 16)

The steering damper is before the tank and is secured to the frame and the steering head.

It gives improved steering accuracy and stability, thus also improving motorcycle road behavior under any riding conditions.

Turn the knob (1) clockwise for a harder setting (2), counter clockwise for a softer setting (3).

A click identifies the different settings.

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Warning

Never attempt to set knob (1) while riding, or you may lose control of the motorcycle.



Important

In case the steering damper position is changed, the steering damper must be adjusted (see page 48).

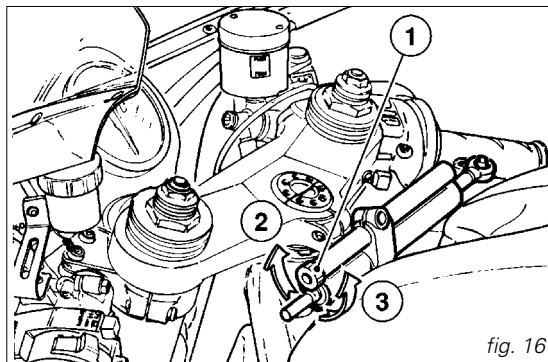


fig. 16

Front fork adjusters

The front fork has rebound and compression damping adjusters.

This adjustment is done using the outer adjusters:

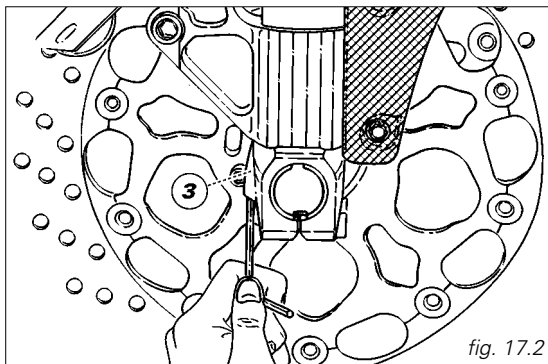
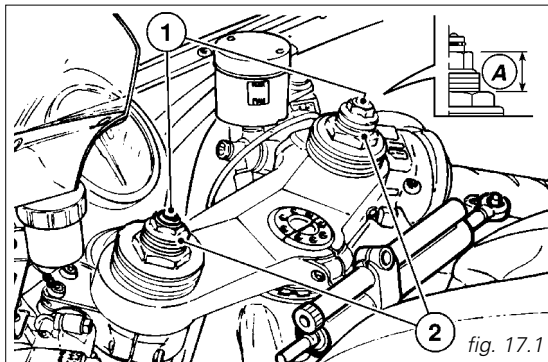
- 1) (fig. 17.1) to adjust rebound damping;
- 2) (fig. 17.1) to adjust inner springs preload;
- 3) (fig. 17.2) to adjust compression damping.

Put and secure the motorcycle in vertical position.

Turn the adjuster (1) on fork leg top with a 3-mm (0.12-in.) Allen wrench to adjust rebound damping.

To reach the adjuster (3), insert a 3-mm (0.12-in.) Allen wrench into the hole as shown in fig. 17.2.

As you turn the adjusting screws (1 and 3), you will hear them click. Each click identifies a setting. Turn the screw all the way in to set the hardest damping (position 0). This will be your starting point. Now turn the screw anticlockwise and listen for the clicks that identify setting positions no. "1", "2" and so on.



STANDARD factory setting is as follows:

compression: 10 clicks;

rebound: 12 clicks.

Max. setting for softest damping adjustment is 24 clicks for rebound and 28 clicks for compression.

To change the preload of the spring inside each fork leg, turn the hex. adjusting nut (2) with a 22-mm (0.87-in.) hexagon wrench.

Preload setting range (A, fig. 17.1) is from 0 to 18.5 mm/0 to 0.73 in.

Factory setting is 10 mm/ 0.39 in.

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Important

Adjust both fork legs to same settings.

Shock absorber adjusters (fig. 18)

The shock absorber has outer adjusters that enable you to adjust your motorcycle to the load.

The adjuster (1) located on the left side, on the connection holding the shock absorber to the swingarm, controls rebound damping.

The adjuster (2) on the shock absorber expansion reservoir controls compression damping.

Turn the adjusters (1 and 2) clockwise to increase damping, anticlockwise to reduce it.

STANDARD setting:

turn the adjusters (1 and 2) all the way in (clockwise) then slacken them 14 clicks.

Two ring nuts (3), located on the top section of the shock absorber are used to adjust the outer spring preload.

To change spring preload, slacken the upper ring nut.

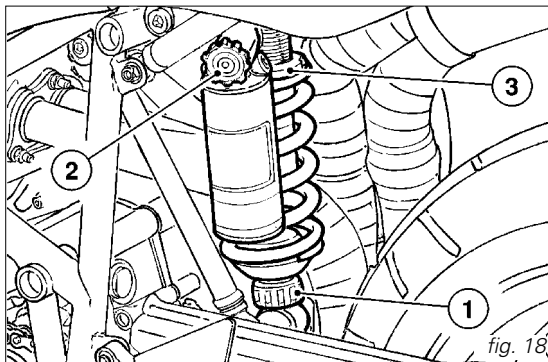
Then **tighten** or **slacken** the lower ring nut to **increase** or **decrease** spring preload as required.



Warning

Use a specific pin wrench only to turn the preload adjusting nut. Be careful when turning the nut to avoid hurting your hand hitting motorcycle parts. The pin may slip out of the nut recess while carrying out such operation.

The shock absorber is filled with gas under pressure and may cause severe damage if taken apart by unskilled persons.



Changing motorcycle track alignment (fig. 19.2)

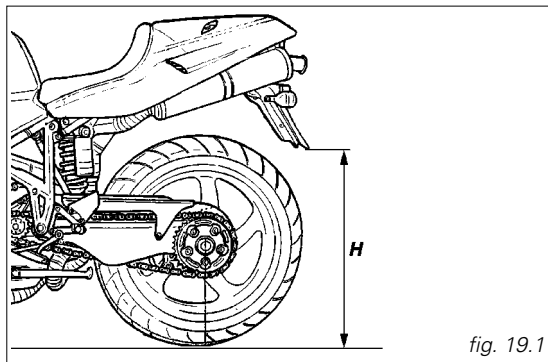
Motorcycle track alignment is the result of tests carried out under different riding conditions by our technical staff.

Modifying factory setting is a very delicate operation, which may lead to serious damages if carried out by unskilled people.

Before changing standard setting, measure the reference value (H, fig. 19.1).

The rider can modify track alignment according to his/her needs by changing working position of the rear shock absorber, increasing/decreasing the distance between the centers of linkage (2), loosening the nuts (3) of the ball joints (1).

When finished, tighten the nuts (3).



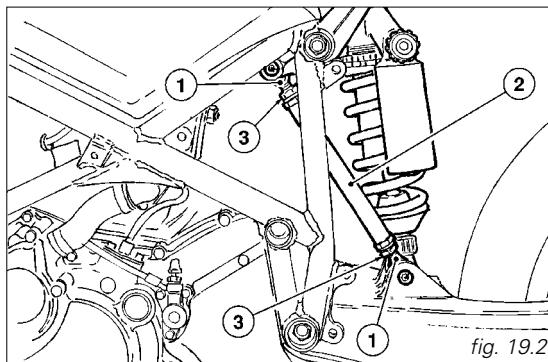
Note

Please note that the lower nut (3) has left threading.



Warning

Length of linkage (2), included between the two joint center lines (1), should not exceed 261 mm/10.27 in.



DIRECTIONS FOR USE

Running-in recommendations

Max. rotation speed (fig. 20)

Rotation speed for running-in period and during standard use (rpm):

- 1) up to 1000 km - 621 miles;
- 2) from 1000 to 2500 km - 621 to 1553 miles;
- 3) after 2500 km - 1553 miles.

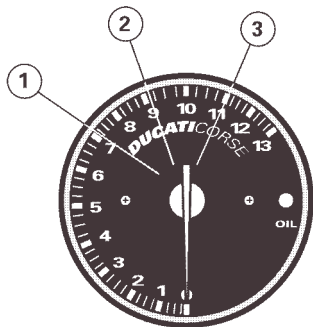


fig. 20

Up to 1000 km/621 miles

During the first 1000 km/621 miles, keep an eye on the revolution meter. The indicator must not exceed: 6500-7000 rpm.

During the first hours of riding, it is advisable to run the engine at varying load and rpm, though still within recommended limit.

To this end, roads with plenty of bends and even slightly hilly areas are ideal for a most efficient running-in of engine, brakes and suspensions.

For the first 100 km/62 miles, use the brakes gently. Do not brake violently or keep brake applied for too long. This will enable a correct break-in of friction material on brake pads against brake discs.

For all mechanical moving parts of the motorcycle to adapt to one another and above all not to adversely affect the life of basic engine parts, it is advisable to avoid harsh accelerations and not to run the engine at high rpm for too long, especially uphill.

Furthermore, the drive chain should be inspected frequently. Lubricate and tighten it as required.

From 1000 to 2500 km/621 to 1553 miles

At this point, you can squeeze some more power out of your engine, being careful, however, never exceed: 9000 rpm until covering the running-in distance (2500 km/1553 miles). Following these recommendations strictly, will extend the life of your engine and reduce the likelihood of overhauls or tune-ups.

After 2500 km/1553 miles

After running-in, never exceed 11000 rpm during the motorcycle standard use.



Important

During the whole running-in period, the maintenance and service rules recommended in the warranty card should be observed carefully. Failure to comply with these rules will release Ducati Motor S.p.A. from any liability whatsoever for resulting engine damage or shorter engine life.

E

Pre-ride checks



Warning

Failure to carry out these checks before riding, may lead to motorcycle damage and injury to rider and passenger.

Before riding, perform a thorough check-up on your bike as follows:

Fuel level in the tank

Check fuel level in the tank.
Fill tank if needed (page 35).

Engine oil level

Check oil level in the sump through the sight glass. Top up with recommended oil if needed (page 56).

Brake and clutch fluid

Check fluid level in the relevant reservoirs.

Coolant level

Check coolant level in the expansion reservoir. Top up if necessary (page 43).

Tyre condition

Check tyre pressure and condition (page 54).

Controls

Work the brake, clutch, throttle and gear change controls (levers, pedals and twistgrips) and check for proper operation.

Lights and indicators

Make sure lights, indicators and horn work properly.
Replace any burnt-out bulbs (page 50).

Key-operated locks

Check that fuel filler plug and seat catch locks are closed firmly.

Stand

Make sure side stand operates smoothly and is in the correct position (page 23).



Warning

In case of malfunctioning, do not start the motorcycle and call a DUCATI Dealer or Authorized Workshop.

Starting the engine



Note

Follow the “High ambient temperature” procedure to start the engine when it is warm.




Warning

Before starting the engine, become familiar with the controls you will need to use when riding.

Regular ambient temperature

(10 to 35°C / 50 to 95°F):

1) Move the ignition key to **ON** (fig. 21.1). Make sure both the green light **N** and the red light  on the instrument panel come on.



Important

The oil pressure light should go out a few seconds after the engine has started (page 11).

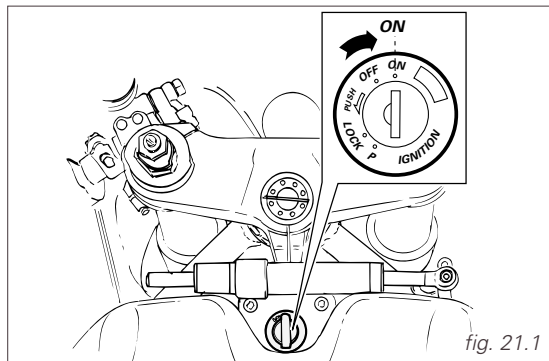
If the light stays on, stop the engine and check oil level.

Never start the engine when oil pressure is too low.



Warning

The side stand must be fully up (in a horizontal position) as its safety sensor prevents engine start when down.



2) Press the button (1, fig. 21.2) on the throttle control.
3) Check that the stop switch (3, fig. 21.3) is positioned to **○ (RUN)**, then press the starter button (4).
Let the engine start without using the throttle control.

Important

Never operate the electric start button more than 5 seconds at a time. If needed, allow 10 seconds before attempting to restart the engine.

4) Turn the twistgrip (2, fig. 21.2) clockwise (slow down), the button (1) will automatically disable.

Important

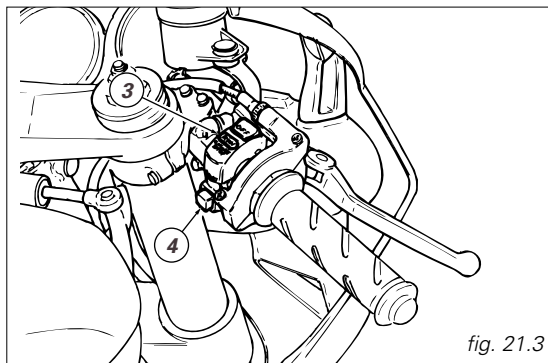
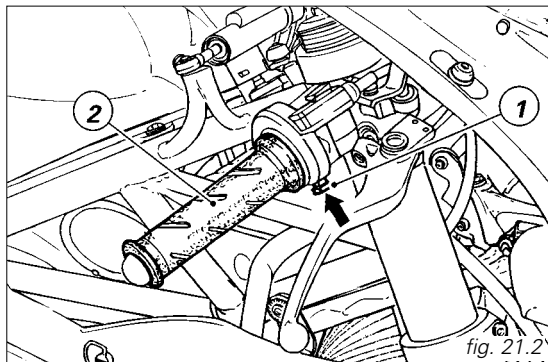
Do not rev up the engine when it is cold. Allow some time for oil to warm up and reach all points that need lubricating.

High ambient temperature (over 35°C/95°F):

Follow the same procedure, however, do not use the button (1).

Cold ambient temperature (below 10°C/50°F):

Follow the procedure for "Regular ambient temperature", however allow 5 minutes for the engine to warm up.



Moving off

- 1) Disengage the clutch squeezing the control lever.
- 2) Push down on gear change lever sharply with the tip of your foot to engage the first gear. Once released, the lever will spring back to its original position.
- 3) Speed up engine, by turning the throttle twistgrip and slightly releasing the clutch lever at the same time. The motorcycle will start moving off.
- 4) Let go of clutch lever and speed up.
- 5) To shift to second gear, close the throttle to slow down engine, disengage the clutch right away, lift the gear change lever and let go of clutch lever. Repeat the same procedure to shift to 3rd, 4th, 5th and 6th.

To shift down, release the twistgrip, pull the clutch control lever, shortly speed up to help gears synchronize, shift down and release the clutch.

The controls should be used correctly and timely: when riding uphill do not hesitate to shift down as soon as the motorcycle tends to slow down, so you will avoid lugging the engine and stressing the motorcycle abnormally.

Important

Avoid harsh accelerations, as this may lead to carburettor flooding and transmission snatching. The clutch lever should not be pulled longer than necessary after gear is engaged, or friction parts may overheat and wear out.

Braking

Slow down in time, shift down to engine-brake first and then brake applying both brakes. Pull the clutch lever before stopping the motorcycle, to avoid sudden engine stop.

Warning

Use both brake lever and pedal for effective braking. Using only one of the brakes will give you less braking power.

Never use brake controls harshly or violently or you may lock the wheels and lose control of the motorcycle.

When riding in the rain or on slippery surfaces, braking will become less effective. Always use the brakes very gently and carefully when riding under these conditions. Any sudden manoeuvres may lead to loss of control.

When tackling long, high-gradient downhill road tracts, shift down gears to use engine braking. Apply one brake at a time and use brakes sparingly. Keeping the brakes applied all the time would cause the friction material to overheat and reduce braking power dangerously. Underinflated tyres reduce braking efficiency and affect handling and road holding while turning.

Stopping the motorcycle

If you let go of the throttle twistgrip, the motorcycle will slow down gradually and smoothly. Then, shift down releasing the clutch, and finally change from first to neutral. Apply brakes and you will bring the motorcycle to a complete stop.

To switch the engine off, simply turn the key to **OFF** (page 12).

E

Important

Never leave the key in the **ON** position when engine is stopped, or this will damage the electric components.

Warning

Using padlocks or other locks designed to prevent motorcycle motion, such as brake disc locks, rear sprocket locks, and so on is dangerous and may impair motorcycle operation and affect the safety of rider and passenger.

Parking

Stop and park the motorcycle on the side stand (see page 23).

To avoid theft, turn the handlebar fully left and block it by pushing in the ignition key and turning it to the **LOCK** position (fig. 22.1).

If you park in a garage or other facilities, make sure that there is proper ventilation and that the motorcycle is not near a source of heat or sparks.

You may leave the parking lights on by turning the key to position **P** (fig. 22.1).

Important

Do not leave the key turned to **P** for long periods or the battery will run down. Never leave the ignition key in the switch when you are leaving your bike unattended.

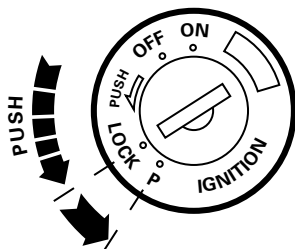


fig. 22.1

Refueling (fig. 22.2)

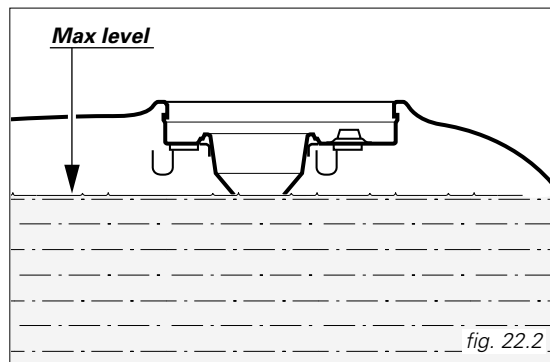
Never overfill the tank when refueling. Fuel should never be touching the rim of filler recess.



Warning

Be sure there is no fuel trapped in the filler recess.

E



MAINTENANCE

E

Tool kit and accessories (fig. 23)

Located in area (1) under the tail between CPU and heat guard are:

- an Owner's manual;
- a helmet fastening cable;
- a tool bag for usual maintenance and checks.

To reach this compartment, the tail guard must be lifted by opening the catch (page 22).

The tool bag (fig. 24)

holds:

- 1) 14-mm (0.55-in.) box wrench;
- 2) 10/8/6/5/4-mm Allen wrench;
(0.39/0.31/0.24/0.20/0.16-in.)
- 3) rear eccentric wrench;
- 4) front wheel spindle wrench;
- 5) extension for rear eccentric wrench;
- 6) box wrench for spark plugs;
- 7) tommy bar;
- 8) double-bit screwdriver.
- 9) helmet cable.

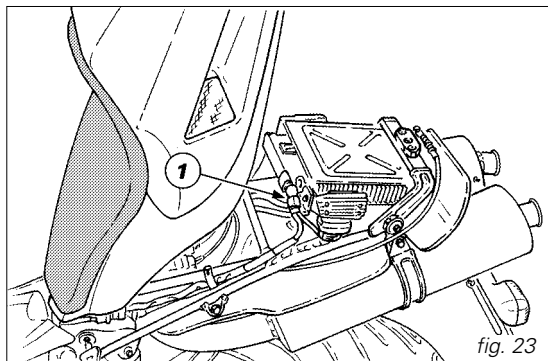


fig. 23

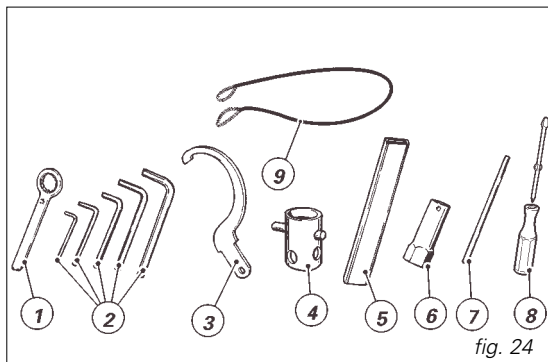


fig. 24

Routine maintenance

The maintenance schedule below specifies maintenance operations to be carried out at regular intervals according to **time (months)** or **miles covered (km or miles)**. It also shows the motorcycle parts requiring special care. Proper maintenance, as specified in the maintenance schedule, ensures long life to your motorcycle, top performance, good reliability and safe riding. The maintenance intervals indicated here are for motorcycles that are not used in demanding conditions, such as riding in town traffic, on dusty ground, long trips on mountain roads, long trips on motorways at high speed, riding in bad weather, and so on. In these cases, maintenance work should be carried out more frequently. Call a Ducati Dealer or Authorized Workshop to obtain more detailed information according to your special needs.

Operation identification symbols:

■) This symbol indicates that the job in question should be entrusted to a Ducati Dealer or Authorized Workshop where highly trained personnel and special equipment are available.

- C) Check and adjust
- L) Lubricate and/or grease
- P) Clean
- S) Replace
- V) Check with engine running

Operations	<i>Pre-delivery</i>	<i>After 1000 km/ 620 miles or 6 months</i>	<i>Every 1000 km/ 620 miles</i>	<i>Every 10000 km/ 6200 miles</i>	<i>Every 20000km/ 12400 miles</i>
Spark plugs		C		S	
Chain: tensioning and lubrication (■)	C/L	C/L	C/L		
Timing belts (■)		C		C	S
General testing	C	C		C	
Flexible cables	C	C	C		
Clutch and brake hydraulic controls (■)	C	C	C		
Cylinder compression (■)				C	
Throttle body: synchronization and idling adjustment		C		C	
Wheel hub bearings (■)				C	
Steering head bearing clearance (■)	C	C		C	
Electric fan	C/V	C/V		C/V	
Air filter		C		S	
Engine oil intake filter (■)		P			P
Fuel filter (■)		S		S	
Engine oil filter (■)		S		S	

Operations	<i>Pre-delivery</i>	<i>After 1000 km/ 620 miles or 6 months</i>	<i>Every 1000 km/ 620 miles</i>	<i>Every 10000 km/ 6200 miles</i>	<i>Every 20000km/ 12400 miles</i>
Valve clearance (■)				C	
Rear wheel rubber cush drive damper (■)				C	
Signaling and light system	V				
Coolant	C	C	C		S
Battery liquid level		C	C		
General lubrication (■)	L	L		L	
Clutch and brake control oil (■)	C	C	C		S
Front fork oil (■)					S
Engine oil (■)	C	S	C	S	
Wear on brake pads (■)		C	C		
Sprocket stop plate (■)				C	
Tyres: wear and pressure	C	C	C		
General cleaning	P				
Fuel tank (■)				P	
Torque of nuts and bolts (■)	C	C		C	

MAIN MAINTENANCE OPERATIONS

E

Removing the fairing

Some servicing operations need the motorcycle fairing to be removed.



Warning

Firmly secure all removed parts when refitting them, otherwise some of them might suddenly come off when riding and you may lose control of your motorcycle.

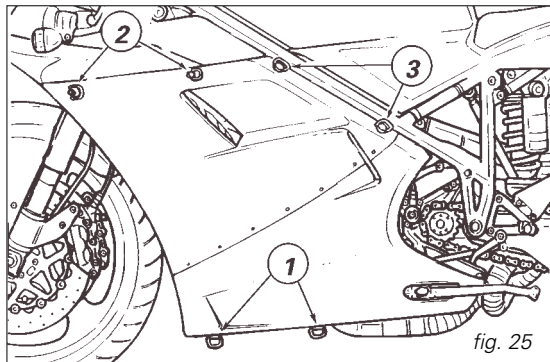


Important

At reassembly always fit nylon washers when tightening fastening screws, not to damage painted parts and Plexiglas headlamp fairing. Some fastening screws are of the self-tapping type; do not overtighten, otherwise threading might damage thus avoiding further use.

Side body panels (fig. 25)

To remove the body panels proceed as follows:
unscrew the two fasteners (1) joining the two body panels together;
unscrew the four headlamp fairing fasteners (2);
unscrew the four frame fasteners (3).



Headlamp fairing (fig. 26.1)

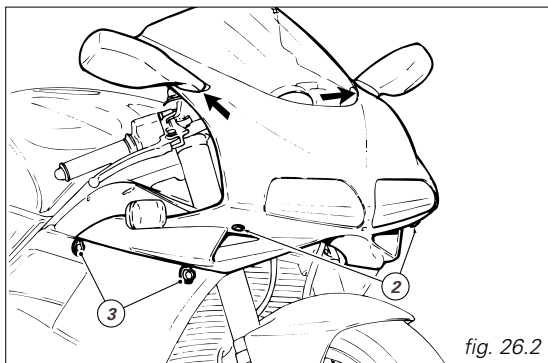
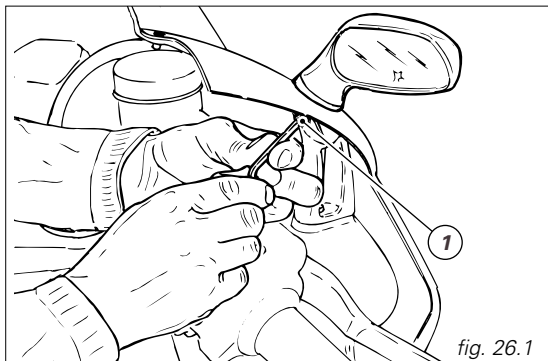
Undo the middle fastening screw (1) of the wing mirrors and remove them from the headlamp fairing supports.

Undo the two fastening screws (2, fig. 26.2) of the headlight support and disconnect the four connectors (3) joining the two body panels together.



Important

At reassembly, apply “medium-strength threadlocker” onto the screw threading (1).



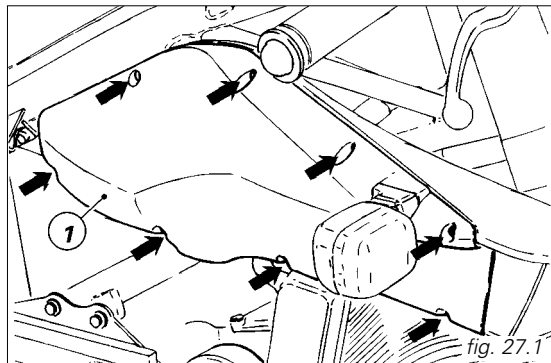
Cleaning and changing air filters (fig. 27.1)

Replace air filters at the required intervals shown in the routine maintenance chart (see page 38). The air box is accessible after removing the body panels and the headlamp fairing (see page 40).

Undo the eight fastening screws of the outer cover (1, fig. 27.1). Remove the cover but leave it hanging from the turn indicator cable.

Remove the filter (2, fig. 27.2) from its seat on the inner cover (3).

Clean the filter cartridge with compressed air or fit a new one, if needed.



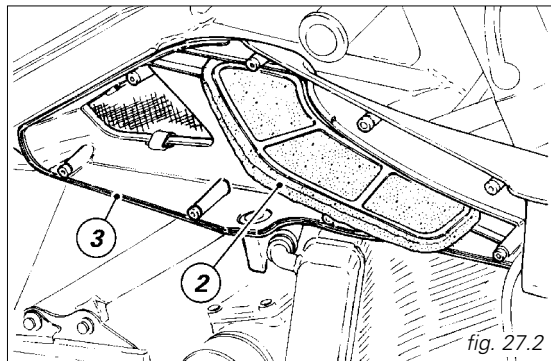
Important

A dirty filter will reduce air intake, increase fuel consumption, reduce engine power, and foul the spark plugs. Do not use the motorcycle without filter or suspended matters could get into the engine and cause damage.

Install the filter properly into its seat on the inner cover (fig. 27.2) and refit all the parts you have removed.

Important

If you are using the motorcycle on dusty or very wet roads, replace filter more frequently than recommended intervals.



Checking the coolant level (fig. 28.1)

Check the coolant level in the expansion reservoir, on the LH side of the motorcycle.

The coolant level must be between the **MAX** and **MIN** marks.

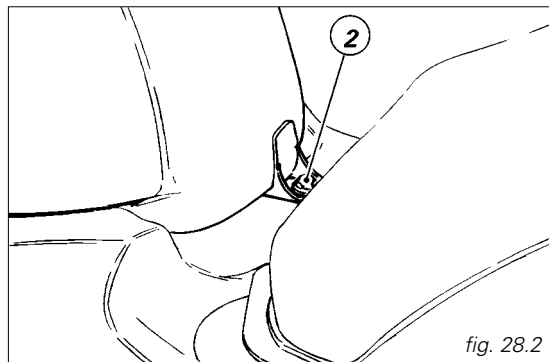
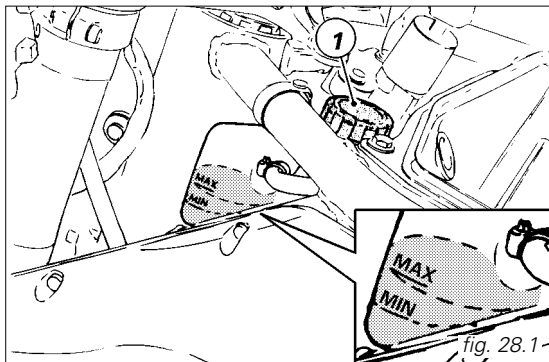
Top up if the level is too low.

Remove the l.h. body panel and the fuel tank. Lift the tail guard and undo the rear screw (2, fig. 28.2). Remove the tank from its front clamping by pulling the tank backwards. Move it to the right leaving fuel tubing connected.

Unscrew the filler (1, fig. 28.1) and add a mixture consisting of water and antifreeze SHEEL Advance Coolant or Glycoshell (35-40% of the volume) up to **MAX** mark.

Refit the filler (1) and reassemble all removed parts. This mixture improves operating conditions (coolant will start freezing at $-20^{\circ}\text{C}/-4^{\circ}\text{F}$).

Coolant circuit capacity: 3.5 cu dm (liters) / 0.92 US Gall.



Checking brake and clutch fluid level

Fluid level should never fall below the **MIN** mark on each reservoir (fig. 29). If level drops below the limit, air might get into the circuit and affect the operation of the system involved.

Brake and clutch fluid must be topped up and changed at the intervals specified in the routine maintenance chart (page 38) by a Ducati Dealer or Authorized Workshop.

E

Important

It is recommended all brake and clutch tubes be changed every four years.

Clutch system

If the control lever has exceeding play and the transmission snatches or jams as you try to engage a gear, it means that there is air in the circuit. Contact a Ducati Dealer or Authorized Workshop to have the system inspected and air drained out.

Warning

Clutch fluid level in the reservoir tends to increase as the clutch plates friction material wears out. Do not exceed specified level (3 mm/0.12 in. above minimum level).

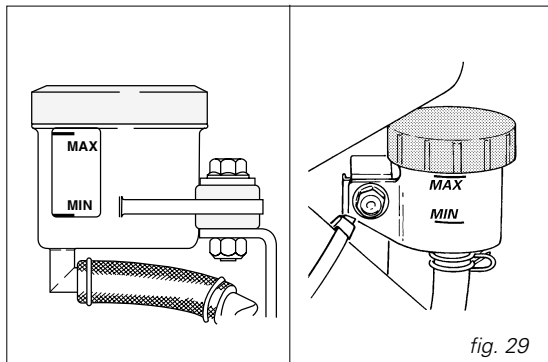
Brake system

If you find exceeding play on brake lever or pedal and brake pads are still in good condition, contact a Ducati Dealer or Authorized Workshop to have the system inspected and any air drained out of the circuit.



Warning

Do not spill any brake and clutch fluid on the paintwork or on plastic parts or they will damage. Hydraulic oil is corrosive; it may cause damages and lead to severe injuries. Never mix different quality oils. Check seals for proper sealing.



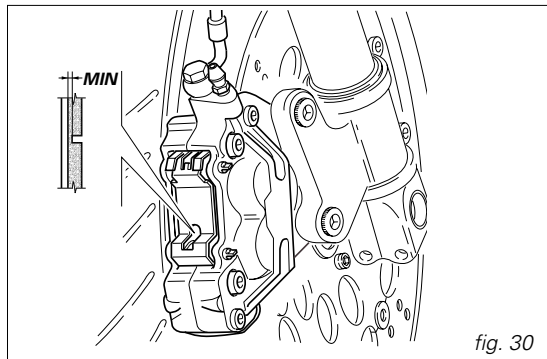
Checking brake pads for wear (fig. 30)

To facilitate inspection without removing the pads from the calipers, brake pads have a wear mark. If the grooves in the friction material are still visible, the pad is still in good condition.



Important

Have the brake pads replaced at a Ducati Dealer or Authorized Workshop.

E

Lubricating cables and joints

The condition of the outer sheaths of the throttle and fast-idle cables should be checked at regular intervals. The sheaths should show no signs of squeezing or cracking.

Work the controls to make sure the cable slides smoothly inside the sheath: if you feel any friction or hard spots, have the cable replaced by a Ducati Dealer or Authorized Workshop.

To prevent these failures, smear the ends of the flexible cables with SHELL Advance Grease or Retinax LX2 at regular intervals.

For the throttle cable, it is best to open the device by unscrewing the two fastening screws (1, fig. 31) and then grease the cable ends and the pulley.

Warning

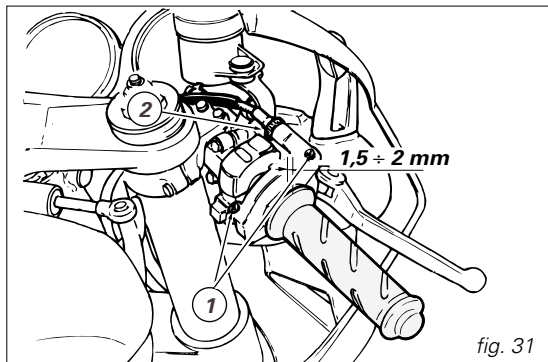
When refitting the cover, be sure to slide the cable onto the suitable pulley.

Refit the cover and tighten the screws (1).

To ensure smooth operation of the side stand joint, clean off any dirt and apply SHELL Alvania R3 at all points exposed to friction.

Throttle cable adjustment

The throttle twistgrip must have a free play of 1.5 - 2 mm / 0.06-0.09 in. measured at the edge of the twistgrip, at all positions of the handlebars. If it needs adjusting, use the suitable adjuster (2, fig. 31) provided on the throttle control.



Charging the battery (fig. 32)

Before charging the battery, it is best to remove it from the motorcycle.

Remove the r.h. body panel (page 40), undo the screw (1) and remove the upper bracket.

Always disconnect the black negative terminal (-) first, and then the red positive terminal (+).

Warning

Batteries develop explosive gases: keep it away from heat sources and flames.

Charge the battery in a ventilated room.

Connect the battery charger leads to the battery terminals - red to positive terminal (+), black to negative terminal (-).

Important

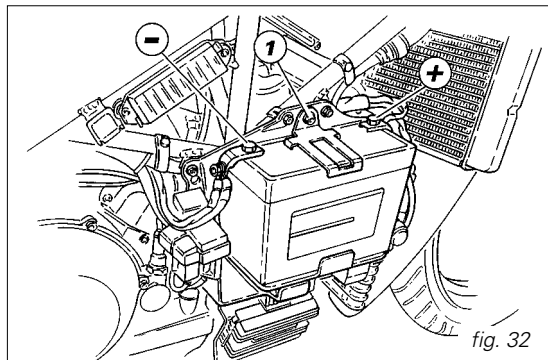
Make sure the charger is off when you connect the battery to it, or you might get sparks at the battery terminals that could ignite the gases inside the cells.

Always connect the positive terminal (red) first (+).

Refit the battery on its mount and secure the top bracket with screw (1). Connect the terminals. Grease the terminal screws to improve conductivity.

Warning

Keep the battery out of the reach of children. If battery is not charged, it is subjected to early wear. Charge the battery at 1.5 A.



Adjusting headstock angle (fig. 33.1)

Loosen the two screws (1) on the frame r.h. side to adjust the headstock angle.

Fully unscrew the screw (2) and turn the headstock end (3) by 180° with a pin wrench.

Fully screw the screw (2). Grease the screw threadings (1) with SHELL Retinax HDX2 and tighten to 22 Nm.

E



Note

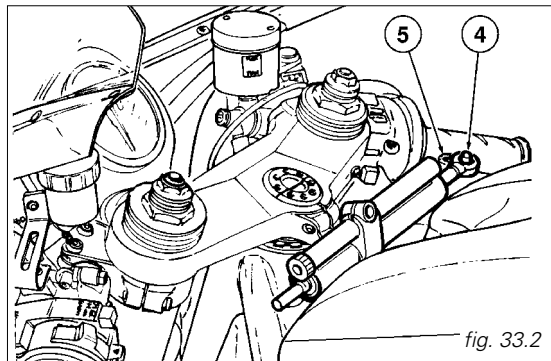
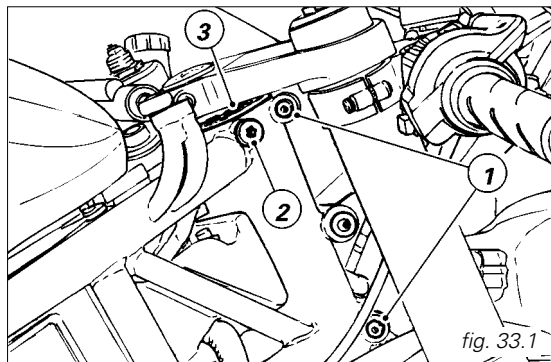
While performing the above, the handlebars should not be fully turned.

When finished, the steering damper must be repositioned. Undo the screw (4, fig. 33.2). Move the damper rod joint to the frame hole (5). Tighten the screw (4) previously removed.



Important

The steering lock can be used only if the headstock tube is positioned at 24°30'.



Chain tension inspection (fig. 34)

With the motorcycle on the side stand, the chain must have a min. distance of 25 mm/0.98 in. from the swingarm.

If this is not the case, contact a Ducati Dealer or Authorized Workshop for proper chain tensioning.



Warning

Correct tightening of the eccentric hub clamping screws is essential to rider and pillion passenger's safety.



Important

Improper chain tension will lead to early wear of transmission parts.

Chain lubrication

The chain fitted on your motorcycle has OR seals that keep dirt out of and lubricant inside the sliding parts. The seals might be irreparably damaged if the chain is cleaned using any solvent other than those specific for OR chains or washed using steam or water jets. After cleaning, blow the chain dry or dry it using absorbent material and apply SHELL Advance Chain or Advance Teflon Chain on each link.



Important

Using non-specific lubricants may lead to severe damage to chain, front and rear sprocket.

E

Tensione catena (sul cavalletto laterale)
Chain tension adjustment (on side stand)

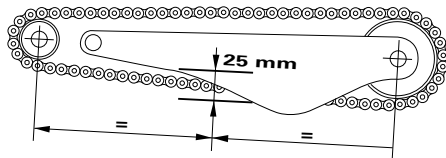


fig. 34

Replacing bulbs

Before replacing a burnt-out bulb, make sure that the new one complies with voltage and wattage as specified on page 70, "Electric System", for that lighting device. Always check for new bulb proper operation before refitting removed parts.

Headlamp

To gain access to headlamp bulbs proceed as follows:

Disassembly:

low beam bulb (fig. 35.1): remove the rubber cover (1). Press the lower quick-release button to disconnect the connector (2).

L.h. high beam bulb (fig. 35.2): disconnect the connector (3) of the white bulb cable from the front wiring, remove the rubber cover (1) from the headlamp body and pull out the bulb cable.



Note

The black ground mass cable connector does not need to be disconnected to replace the headlamp bulbs.

Release the clip (4) that secures the bulb and remove it from the socket (fig. 35.1 and 35.2).



Note

Be careful to hold the new bulb at the base only. Never touch the transparent body with your fingers or it will blacken resulting in reduced bulb brilliancy.

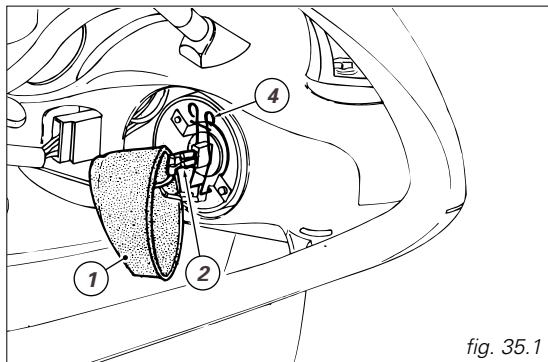


fig. 35.1

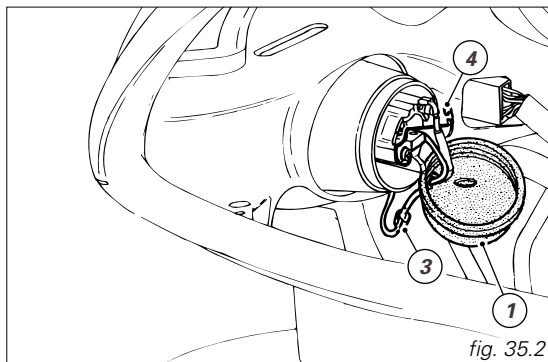


fig. 35.2

Reassembly:

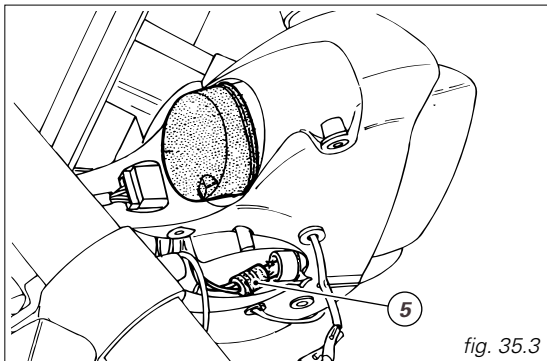
insert the locating pegs of the bulb base into their seats to obtain correct alignment.

Hook the clip (4, fig. 35.2) to the headlamp holders; reconnect the cables and refit the rubber cover (1, fig. 35.2).

To change the parking light bulb, the headlamp fairing must be removed first (see page 41).

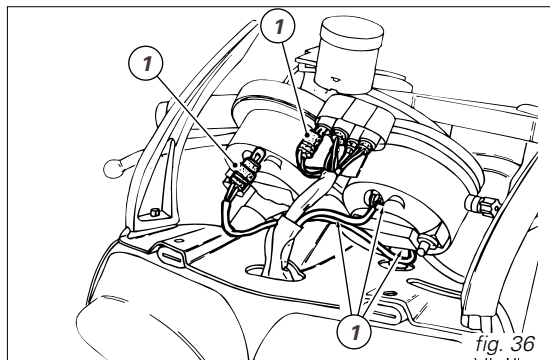
Undo the horn fastening screw and remove the horn. Pull out the bulb holder (5, fig. 35.3) from the rim-reflector assembly.

Remove the bulb and fit a new one.

**Instrument panel (fig. 36)**

Remove the headlamp fairing (see page 41) to reach the instrument panel bulbs.

One or two lamps are fitted under each instrument. Pull out the bulb holder (1) under the instrument involved, remove the bulb and fit a new one.



Turn indicators (fig. 37)

Remove the screw (1) and detach the glass (2) from the body.

The bulb is of the bayonet-type: press and rotate anti-clockwise to remove; fit the spare bulb by pressing and turning clockwise until it clicks.

Refit the glass sliding the small tab (A) into the suitable slot in the indicator body and tighten the screw (1).

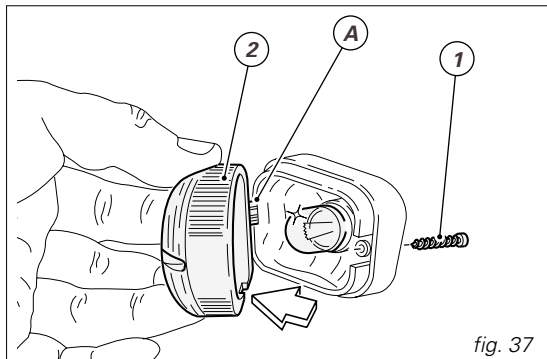


fig. 37

Number plate and stop light (fig. 38)

To expose the number plate bulb, withdraw the lamp holder from the number plate holder, then extract the bulb and replace it.

To replace the stop and parking light bulb, lift the tail guard and unscrew the two screws (1) that secure the glass (2). The bulb is of the bayonet-type: press and rotate anti-clockwise to remove; fit the spare bulb by pressing and turning clockwise until it clicks.

Refit the glass (2).

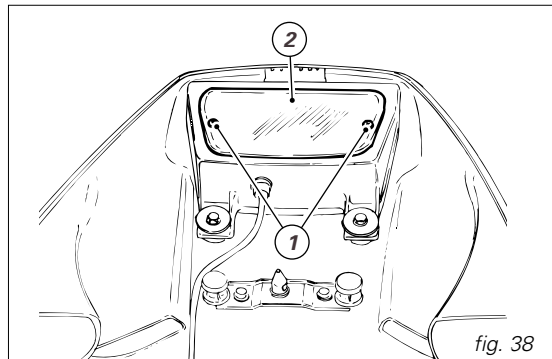


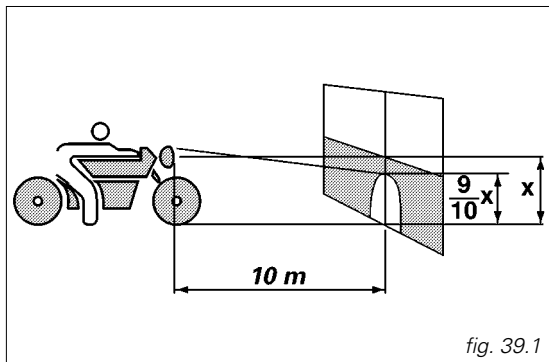
fig. 38

Beam setting (fig. 39.1)

When checking the beam setting, put the motorcycle upright. Tyres should be inflated at the correct pressure and one person should be sitting astride the motorcycle, keeping it at right angles to its longitudinal axis. Place the motorcycle opposite a wall or a screen, 10 meters (394 in.) apart from it, then draw a horizontal line dictated by headlamp center and a vertical one in line with the longitudinal axis of motorcycle.

If possible, perform this check in dim light.

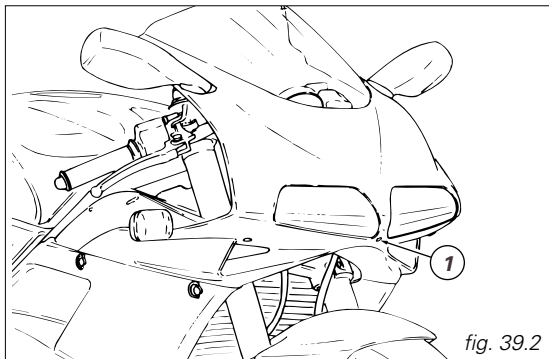
Switch on the low beam. The height of the light spot (measured at the upper limit between dark and lighted-up area) should not exceed 9/10th of the height from ground of headlamp center.



Note

The procedure described here is in compliance with the "Italian Standard" establishing the maximum height of the light beam. Owners in other countries will adapt said procedure to the provisions in force in their countries.

The height of the light beam can be corrected using the screws (1, fig. 39.2), after removing the protection cover. Turn the screw clockwise to lower the beam, turn anticlockwise to lift.



Tubeless tyres

Tyre pressure

Front:

2.2 bar - 2.24 Kg/sq cm

Rear:

2.4 bar - 2.44 Kg/sq cm

As tyre pressure is affected by temperature and altitude variations, you are advised to check and adjust it whenever you are riding in areas where ample variations in temperature or altitude occur.

E

Important

Check and adjust tyre pressure when tyres are cold.

To avoid front wheel rim distortion, when riding on bumpy roads, increase tyre pressure by 0.2 - 0.3 bar.

Tyre repair or replacement (tubeless tyres)

In the event of a tiny puncture, tubeless tyres will take a long time to deflate, as they tend to keep air inside. If you find low pressure on one tyre, check the tyre for punctures.



Warning

A tyre must be replaced when punctured. Replace tyres with recommended standard tyres only. Be sure to tighten the valve caps securely to avoid leaks when riding. Never use tube type tyres. Failure to heed this warning may lead to sudden tyre bursting and to serious danger to rider and passenger.

After replacing a tyre, the wheel must be balanced.



Important

Do not remove or shift the wheel balancing weights.



Note

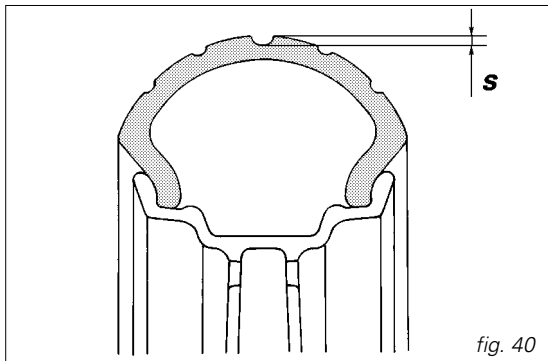
If tyres need replacing, contact a Ducati Dealer or Authorized Workshop to make sure wheels are removed and refitted correctly.

Minimum tread depth

Measure tread depth (S, fig. 40) at the point where tread is most worn down. It should not be less than 2 mm/ 0.078 in. and anyway not below the legal limit.

Important

Visually inspect the tyres at regular intervals for detecting cracks and cuts, especially on the side walls, bulges or large spots that are indicative of internal damage. Replace them if badly damaged. Remove any stones or other foreign bodies caught in the tread.



Checking engine oil level (fig. 41)

Engine oil level can be checked through the sight glass (1) provided on the clutch cover.

When checking oil level, the motorcycle should be upright and the engine warm.

Allow a few minutes for oil to settle to a steady level after stopping the engine.

Oil level should be between the marks near the sight glass. Top up oil level with SHELL Advance Ultra 4, if low. Undo the filler plug (2) and top up to correct level. Refit the plug.

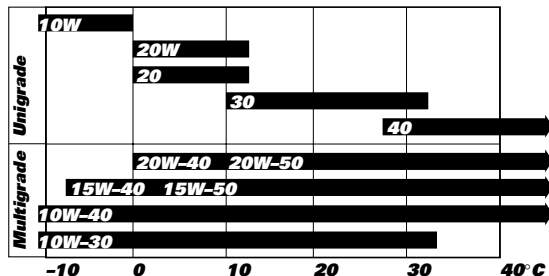
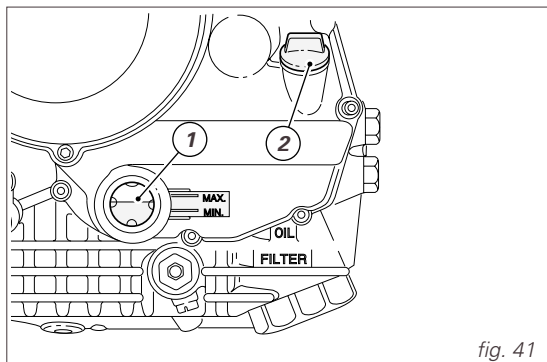
Important

Engine oil and oil filters must be changed by a Ducati Dealer or Authorized Workshop at regular intervals (see page 38), as specified in the maintenance schedule.

Viscosity

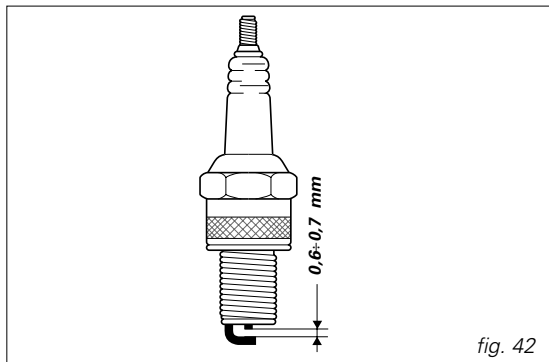
SAE 20W-50

The other viscosity degrees indicated in the table can be used if the local average temperature is within the limits specified for that oil viscosity.



Cleaning and replacing the spark plugs (fig. 42)
Spark plugs are essential to smooth engine running and should be checked at regular intervals. This is done quite easily and quickly and provides a good measure of engine condition.

Remove the l.h. body panel, remove the spark plug caps from the cylinder head using the wrench supplied with the motorcycle.



Check the color of the insulating ceramic material of the central electrode: a light brown, even color is a sign of good engine condition. If color has altered or you find any dark deposits, change the spark plug and report this to a Ducati Dealer or Authorized Workshop.

Check wear on the central electrode. If it looks worn out or has a vitreous appearance, change the spark plug.

Check electrode gap: it should be $0.6 \div 0.7 \text{ mm} / 0.023 \div 0.027 \text{ in.}$

Important

If the gap needs adjusting, be very careful when bending the side electrode. If gap is too wide or too close, engine performance will be affected. This could also cause difficult starting or irregular idling. Clean the electrode and the insulating material accurately using a small metal brush and check seal condition. Clean the seat in the cylinder head. Be careful not to let any foreign matters fall into the combustion chamber.

Refit spark plug into cylinder head. Snug it finger-tight until thread is fully seated into the head. Tighten the spark plug to 20 Nm.

If you do not have a torque wrench, you can use the wrench supplied with the tool kit to tighten the spark plug an additional 1/2 turn.

Important

Never use spark plugs with a heat rating other than recommended or a thread length other than standard. Spark plugs should be tightened properly.

Cleaning the motorcycle

To preserve the finish of metal parts and paintwork, wash and clean your motorcycle at regular intervals, anyway according to the road conditions you ride in.

Use specific products only. Prefer biodegradable products. Avoid aggressive detergents or solvents.



Important

Do not wash your motorcycle right after use. When the motorcycle is still hot, water drops will evaporate faster and spot hot surfaces.

Do not use high pressure water jets.

Never aim the nozzle direct at wheel bearings, front fork seals, electric items, air inlets or exhaust pipe ends.

Clean off stubborn dirt or exceeding grease from engine parts using a degreasing agent. Be sure to avoid contact with drive parts (chain, sprockets, etc.)

Rinse with warm water and dry all surfaces with chamois leather.



Warning

Braking performance may be impaired immediately after washing the motorcycle.

Never grease or lubricate the brake discs. Loss of braking and further accidents may occur.

Clean the discs with an oil-free solvent.

Storing the bike away

If the motorcycle is to be left unriden over long periods, it is advisable to carry out the following operations before storing it away:

clean the motorcycle;

undo the drain plug with its seal and empty the fuel tank; pour a few drops of engine oil into the cylinders through the spark plug seats, then crank the engine by hand a few times so a protective film of oil will spread on cylinder inner walls;

use the supplied stand to support the motorcycle; disconnect and remove the battery. Battery should be checked and charged whenever the motorcycle has been left unriden for over a month.

Protect the motorcycle with a suitable canvas available from Ducati Spare Parts Department. This will protect paintwork and let condensate breathe out.

Important notes

Some countries, such as France, Germany, Great Britain, Switzerland and so on, have compulsory emission and noise standards that include mandatory inspections at regular intervals.

Carry out any required inspection and replace any parts using Ducati original spare parts complying with local law.

TECHNICAL DATA

Performance data

Maximum speed in any gear should be reached only after a correct running-in period with the motorcycle properly serviced at the recommended intervals.

Max. speed (rider alone):
over 270 Km/h - 168 mph.

Overall dimensions (mm/in.) (fig. 43)

Weights

Dry weight:

190 kg/419 lb.

Carrying full load:

310 kg/683 lb.



Warning

Failure to observe weight limits could result in poor handling and impair the performance of your motorcycle, and you may lose control of the motorcycle.

E

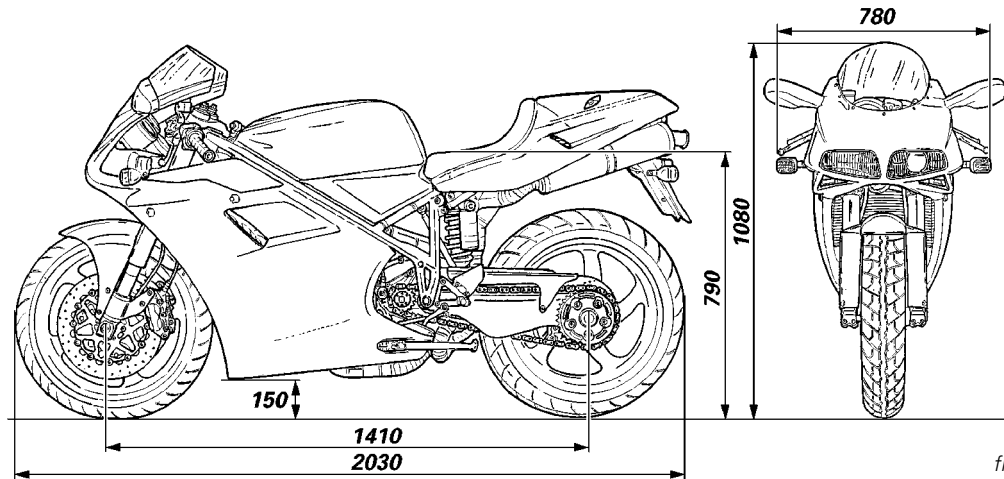


fig. 43



Top-ups	Type of fluid	cu dm (liters) US Gallons
<i>Fuel tank, including a reserve of 4 cu dm (liters) / 1.05 US Gall.</i>	<i>Gasoline 95-98 RON</i>	<i>17/4.5</i>
<i>Oil sump and oil filter</i>	<i>SHELL - Advance Ultra 4</i>	<i>3.8/1</i>
<i>Front/Rear brake and clutch circuits</i>	<i>Special fluid for hydraulic systems SHELL - Advance Brake DOT 4</i>	<i>—</i>
<i>Chain</i>	<i>Specific products for O-ring chains SHELL - Advance Chain or Advance Teflon Chain</i>	<i>—</i>
<i>Tachometer cable</i>	<i>SHELL grease – Alvania R3 or Retinax LX 2</i>	<i>— _</i>
<i>Steering bearings</i>	<i>SHELL grease – Alvania R3 or Retinax LX 2</i>	<i>—</i>
<i>Protectant for electric contacts</i>	<i>Spray for electric systems SHELL - Advance Contact Cleaner</i>	<i>—</i>
<i>Front fork</i>	<i>SHELL - Advance Fork 7.5 or Donax TA</i>	<i>0.480/0.127 (each leg)</i>
<i>Cooling circuit</i>	<i>Antifreeze SHEEL - Advance Coolant or Glycoshell 35-40% + water</i>	<i>3.5/0.92</i>

**Important**

Additives to fuel or lubricants are not allowed.

Engine

Twin cylinder, four-stroke, 90° "L" type, longitudinal.

Bore mm/in.:

98/3.85

Stroke mm/in.:

66/2.59

Total displacement c.c./cu.in.:

996/60.7

Compression ratio:

1:11.5±0.5

Max. power at crankshaft (95/1/CE) kW/HP:

90.4/123 at 9,500 rpm

Max torque at crankshaft (95/1/CE):

10.1 Kgm at 7,000 rpm

Max. rotation speed

11000 rpm.

Important

Do not exceed specified rotation speed limits under any running condition.

Timing system

Desmodromic (type) with four valves per cylinder, operated by eight rockers (4 opening rockers and 4 closing rockers) and two overhead camshafts. It is operated by the crankshaft through spur gears, belt rollers and toothed belts.

Desmodromic timing system (fig. 44)

- 1) Opening (or upper) rocker.
- 2) Opening rocker shim.
- 3) Split rings.
- 4) Closing (or lower) rocker shim.
- 5) Return spring for lower rocker.
- 6) Closing (or lower) rocker.
- 7) Camshaft.
- 8) Valve.

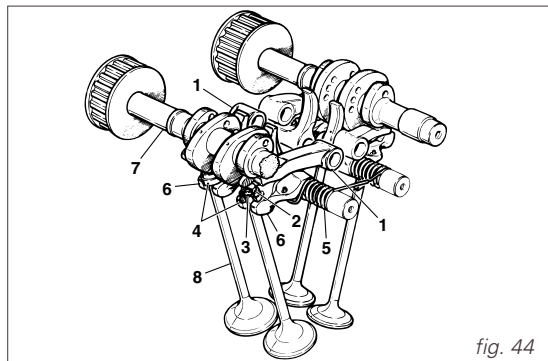
Spark plugs

Make:

CHAMPION

Type:

RA 59 GC



Valve clearances (fig. 45)

Valve clearances with the engine cold must be:

A) Opening rocker

Intake, mm/in.:

$0.05 \div 0.15 / 0.0019 \div 0.0059$

Exhaust, mm/in.:

$0.05 \div 0.20 / 0.0019 \div 0.0078$

E

B) Closing rocker

Intake, mm/in.:

$0.13 \div 0.25 / 0.0051 \div 0.0098$

Exhaust, mm/in.:

$0.08 \div 0.20 / 0.0031 \div 0.0078$

Important

Valve clearance is a key parameter to preserve the performance and lifetime of your engine. Contact a Ducati Dealer or Authorized Workshop to have valve clearance checked at the recommended intervals.

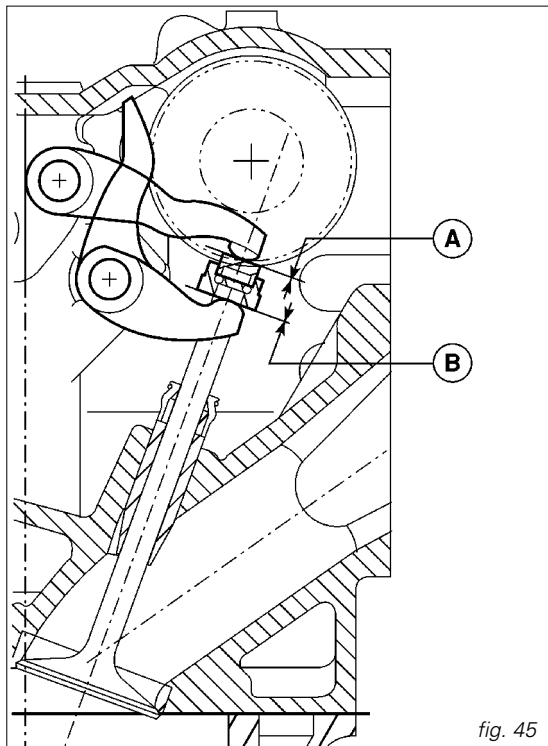


fig. 45

Ignition - injection (fig. 46)

Make: MARELLI – I.A.W. – 1.8

Integrated system for ignition and injection control of the pulsed, sequential type.

System is made up of:

- 1) CPU
- 2) Power modules (one per cylinder)
- 3) Relays
- 4) Battery
- 5) Coils (one per cylinder)
- 6) Injectors (two per cylinder)
- 7) Air temperature sensor
- 8) Absolute pressure sensor
- 9) Pressure regulator
- 10) Throttle position sensor
- 11) Timing sensor
- 12) Timing idle gear
- 13) Flywheel
- 14) RPM sensor
- 15) Coolant temperature sensor
- 16) Fuel pump
- 17) Fuel filter
- 18) Key-operated switch
- 19) Fuse

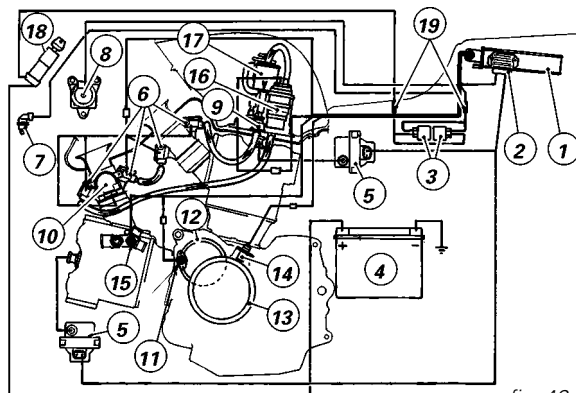


fig. 46

Fuel system (fig. 47)

Fuel system components are fixed to a flange placed underneath fuel tank.

Fuel system is made up of:

- 1) Electric pump
- 2) Fuel filter
- 3) Filler plug recess
- 4) Air separator
- 5) Fuel level sensor
- 6) Pressure regulator
- 7) Tank cleaning plug
- A) Delivery
- B) Return
- C) Breather
- D) Drain

Important

In the event of any fuel system malfunction, contact a Ducati Dealer or Authorized Workshop.

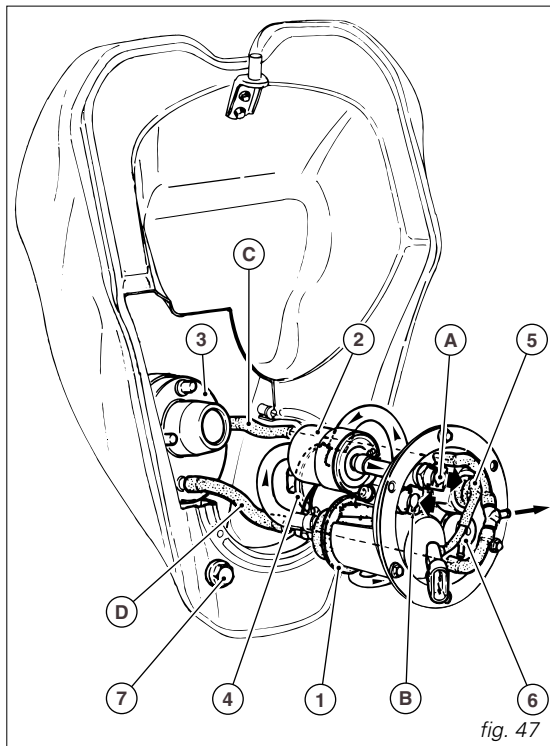


fig. 47

Lubrication (fig. 48)

Forced-feed lubrication by gear pump, mesh filter on intake end, by-pass valve on branch line for pressure regulation, filter cartridge on delivery end with safety valve for the event of cartridge clogging, low pressure indicator on instrument panel.

Lubrication system is made up of:

- 1) Connection of oil sump breather tube to recovery chamber
- 2) Oil filler plug
- 3) Oil sight glass
- 4) Oil pump gears
- 5) Mesh filter
- 6) Pressure switch
- 7) Oil sump
- 8) Filter cartridge
- 9) Oil delivery tube to heads
- 10) Inlet to horizontal head
- 11) Inlet to vertical head
- 12) Radiator

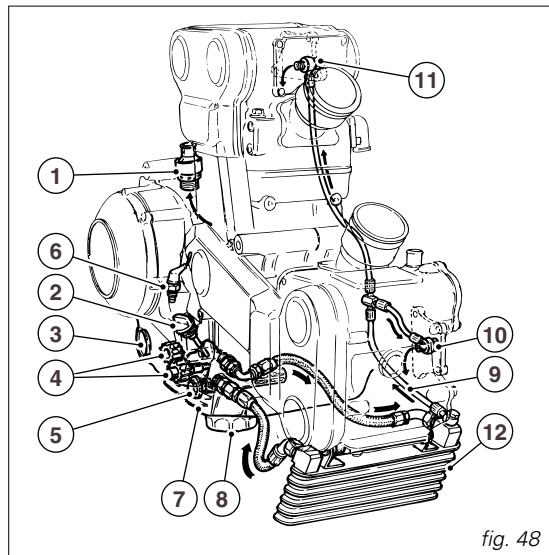


fig. 48

Cooling system (fig. 49)

Liquid cooling with pressurized circuit and mixing thermostat. A centrifugal pump circulates coolant through the circuit and an expansion reservoir takes up excess coolant when it expands from heat.

Cooling system is made up of:

- 1) Coolant pump casing
- 2) Thermostat (starts opening at $75^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / $167^{\circ}\text{F} \pm 36^{\circ}\text{F}$)
- 3) Temperature sensor
- 4) Thermistor
- 5) Radiator
- 6) Solenoid valve
- 7) Thermal switch (turns on solenoid valve at 92°C / 179°F and turns it off at 87°C / 189°F)
- 8) Expansion reservoir
- 9) Filler plug
- 10) Secondary expansion reservoir

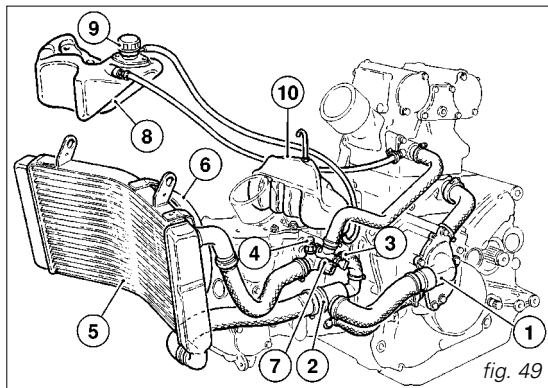


fig. 49

Important

Never run the engine at high speed with the motorcycle standing, or engine may dangerously overheat from lack of air cooling.

Brakes

Front brake

With double floating drilled disc.

Material:

cast iron

Disc diameter:

320 mm/12.6 in.

Hydraulically operated by a control lever on right handlebar.

Braking surface:

88 sq cm/13.6 sq.in.

Brake calipers with separate pistons.

Make:

BREMBO

Type:

30/34-4 pistons.

Friction material:

FERIT I/D 450 FF

Master cylinder type:

PS 16.

Rear brake

With fixed drilled steel disc.

Disc diameter:

220 mm/8.66 in.

Hydraulically operated by a pedal on R.H. side.

Braking surface:

25 sq cm/3.87 sq.in.

Make:

BREMBO

Type:

P2.105N

Friction material:

FERIT I/D 450 FF

Master cylinder type:

PS 11.



Warning

Brake fluid can dissolve paintwork and cause severe eye and skin injuries in the event of accidental spilling. Wash the affected area with abundant running water.

Transmission

Dry clutch operated by a control lever on left handlebar.
Drive is transmitted from engine to gearbox main shaft via spur gears.

Gear ratio:

32/59.

6-speed gearbox with constant mesh gears, gear change pedal on left side of motorcycle.

Front/rear sprocket ratio:

15/36

Total gear ratios:

1st gear 15/37.

2nd gear 17/30.

3rd gear 20/28.

4th gear 22/26.

5th gear 23/24.

6th gear 24/23.

Drive chain from gearbox to rear wheel:

Make:

DID

Type:

525 HV.

Size:

5/8"x5/16"

Links:

94



Important

The above gear ratios are the homologated ones and under no circumstances must they be modified.

However, if you wish to tune up your motorcycle for competitive trials, you may refer to Ducati Motor S.p.A. who will be glad to provide information about the special ratios available. Contact a Ducati Dealer or Authorized Workshop.



Warning

For the replacement of the rear sprocket, contact a Ducati Dealer or Authorized Workshop. The incorrect replacement of this component could seriously endanger your safety and that of your passenger and cause irreparable damage to the motorcycle.

Frame

Tubular trellis frame with upper section made of high-strength steel.

Steering angle (on each side):
27°

For improved performance on track the headstock angle can be changed (see page 48).

STANDARD steering setting for road riding is as follows:

Steering head angle:

24°30'

Trail:

97 mm/3.81 in.

For track riding, setting can be modified to the following values:

Steering head angle:

23°30'

Trail:

91 mm/3.58 in.



Note

When headstock is set to 23°30', steering lock will not operate.

Wheels

Five-spoke light-alloy rims.

Front wheel

Dimensions:

3.50x17"

Rear wheel

Dimensions:

5.50x17"

Front wheel spindle can be removed.

The rear wheel is overhanging with respect to the sprocket hub and secured with a nut and safety clip. In this way, the rear wheel can be quickly replaced.

Tyres

Front tyre

Tubeless, radial tyre.

Size:

120/70-ZR17.

Rear tyre

Tubeless, radial tyre.

Size:

190/50-ZR17.

Suspensions

Front

Hydraulic upside-down fork provided with outer adjusters for rebound, compression, and preload (for inner springs of fork legs).

Stanchion diameter:

43 mm / 1.7 in.

Travel along leg axis:

127 mm / 5 in.

E

Rear

Of the progressive type, thanks to a rocker arm connecting frame and upper pivot point of the shock absorber and an arch connected at the bottom to swingarm. The shock absorber enables the adjustment of rebound and compression damping and spring preload. At the bottom pivot point it is connected to a light-alloy swingarm. The swingarm hinges on a pivot pin passing through the frame and engine.

The whole system gives the bike excellent stability.

Travel:

71 mm / 2.8 in.

Wheel travel:

130 mm / 5.1 in.

Electric system

Basic electric items are:

front headlamp consisting of the following:

12V-55W low beam unit, poly-ellipsoidal with capacitor;

12V-55W high beam unit;

parking light with no. 2 **12V-5W** bulbs.

Instrument panel, **12V-1.2W** warning lights; **12V-2W** instrument lights.

Electrical controls on handlebars.

Turn indicators, **12V-10W** bulbs.

Horn.

Stop light switches.

Battery 12V-16 A.

Generator 12V-520W.

Electronic voltage regulator (rectifier), protected by a **40A** fuse near the battery.

Starter motor, **12V-0.7 kW.**

Tail light, **12V-5/21W** double-filament bulb for stop light and **parking light**; **12V-5W bulb for number plate light.**



Note

See "Replacing bulbs" on pages 50, 51 and 52 for relevant instructions.

Fuses

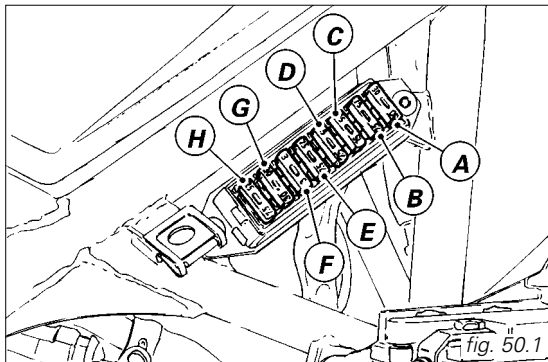
The main fuse box (fig. 50.1) is located on the frame right side.

To expose the fuses, take off the box protective cover. Mounting position and ampere capacity are marked on it.

Two fuses on the right side of the rear sub-frame protect the relays of the injection system (1, fig. 50.2).

The fuse located on a side of the battery (fig. 50.3) protects the electronic regulator. Remove the fuse cap (2) to expose it.

A blown fuse is identified by the interrupted inner filament (3, fig. 50.4).

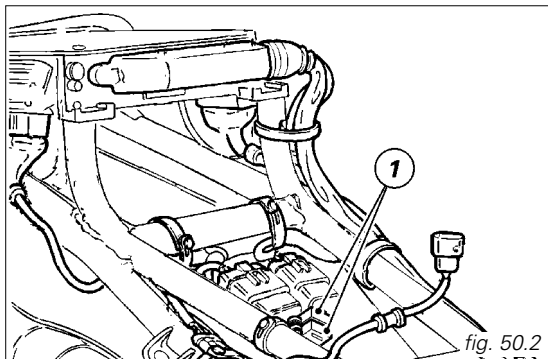


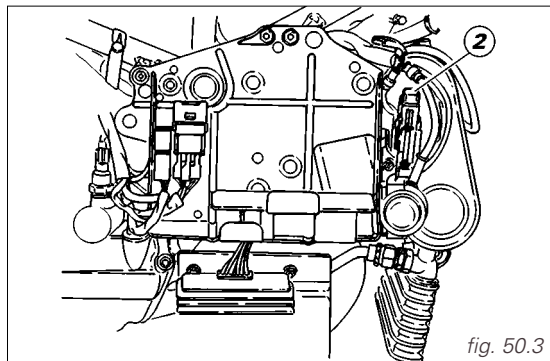
Important

Switch the ignition key to **OFF** before replacing the fuse to avoid possible short circuits.

Warning

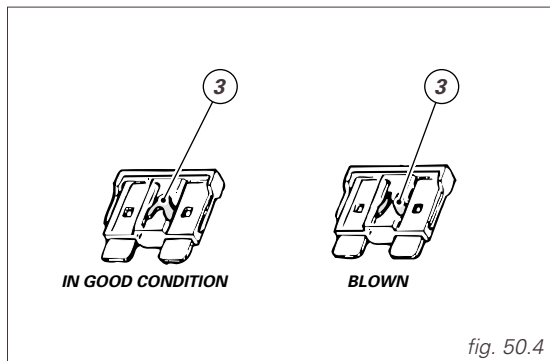
Never use a fuse with a rating other than specified. Failure to observe this rule may damage the electric system or even lead to fire.





Legend of the wiring diagram of electric system/ignition

- 1) Right switch
- 2) Key-operated switch
- 3) Ignition relay
- 4) Fuse box
- 5) Turn indicator flasher
- 6) Solenoid valve relay
- 7) Starter motor
- 8) Starter contactor
- 9) Battery
- 10) Water sensor
- 11) Electric fan relay
- 12) Electric fan
- 13) Rear right-turn indicator
- 14) Tail light
- 15) Number plate lighting bulb
- 16) Rear left-turn indicator
- 17) Fuel tank
- 18) Diagnosis connector
- 19) Vertical cylinder coil
- 20) Horizontal cylinder coil
- 21) Horizontal cylinder spark plug
- 22) Vertical cylinder spark plug
- 23) Power module no. 1
- 24) Power module no. 2
- 25) Injector no. 1
- 26) Injector no. 2
- 27) Injector no. 3
- 28) Injector no. 4
- 27) Throttle position sensor



- 28) Air pressure sensor
- 29) Air temperature sensor
- 30) Timing/engine rpm pickup
- 31) Water temperature sensor
- 32) Engine rpm sensor
- 33) Timing sensor
- 34) Coolant temperature sensor
- 35) Injection/ignition unit (CPU)
- 36) Injection relays
- 37) Injection relay fuses
- 38) Regulator fuse
- 39) Regulator
- 40) Generator
- 41) Safety relay
- 42) Side stand light switch
- 43) Neutral light switch
- 44) Oil pressure switch
- 45) Rear stop light switch
- 46) Front stop light switch
- 47) Left switch
- 48) Instrument panel
- 49) Low beam relay
- 50) Front left-turn indicator
- 51) Headlight
- 52) Front right-turn indicator
- 53) Horn
- 54) High beam relay

Wire color coding

W-Y White-Yellow

P Pink

GR-Bk Grey-Black

Y-G Yellow-Green

G Green

R-G Red-Green

W-R White-Red

O-Bk Orange-Black

V-Bk Violet-Black

Y Yellow

W-B White-Blue

BN Brown

G-W Green-White

O-W Orange-White

R-Bk Red-Black

R-B Red-Blue

GR-R Grey-Red

R Red

G-Bk Green-Black

V Violet

Y-Bk Yellow-Black

GR Grey

G-B Green-Blue

Lb Light blue

Bk Black

Legend of fuse box (4)

<i>Pos.</i>	<i>Description</i>	<i>Rat.</i>
A-1	Main switch	30 A
B-2	Cooling electric fan	7.5 A
C-3	Left switch	3 A
D-3	High beam	15 A
E-5	Low beam	15 A
F-6	Turn indicators, warning lights, tail lights and instrument panel lights	7.5 A
G-7	Stop, warning horn	7.5 A
H-8	Right switch	3 A



Note

The electric system wiring diagram is at the end of this manual.

Routine maintenance record

<i>km</i>	<i>Ducati Service Name</i>	<i>Mileage</i>	<i>Date</i>
1000			
10000			
20000			
30000			
40000			
50000			



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Fax 39.051.406580
Internet: www.ducati.com

913.7.044.1N
Stampato 10/1999



TUTTI I CONNETTORI SONO VISTI DA 'C'
ALL CONNECTORS ARE VIEWED FROM 'C'
TOUS LES CONNECTEURS VUS DE 'C'
ALLE STECKER WERDEN VON 'C' AUS BETRACHTET