

Owner's manual

DUCATI
998s FINAL EDITION

E



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 Holding 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!



Note

Ducati Motor Holding 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 Holding S.p.A. reserves the right to make any changes required by the future development of the above-mentioned products.

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 a transfer of title occurs - must always be handed over to the new owner.

TABLE OF CONTENTS

E

General 6

Warranty 6

Symbols 6

Useful information for safe riding 7

Carrying the maximum load allowed 8

Identification data 9

Controls 10

Position of motorcycle controls 10

Instrument panel 11

Keys 12

Ignition switch and steering lock 13

Left switch 14

Clutch lever 15

Fast idle lever 16

Right switch 17

Throttle twistgrip 17

Front brake lever 17

Rear brake pedal 18

Gear change pedal 18

Setting the gear change and rear brake pedals 19

Main components and devices 20

Location 20

Tank filler plug 21

Seat catch and helmet hook 22

Side stand 24

Steering damper 25

Front fork adjusters 26

Shock absorber adjusters 28

Changing motorcycle track alignment 29

Directions for use 31

Running-in recommendations 31

Pre-ride checks 32

Starting the engine 33

Moving off 35

Braking 35

Stopping the motorcycle 36

Refueling 36

Parking 37

Tool kit and accessories 38

Main maintenance operations 39

Removing the fairing 39

Cleaning and changing air filters 41

Checking the coolant level 42

Checking brake and clutch fluid level 43

Checking brake pads for wear 44

Lubricating cables and joints 45

Throttle cable adjustment 45

Charging the battery 46

Adjusting headstock angle 47

For United States of America version only 70

Routine maintenance record 79

Chain tension inspection 48
Chain lubrication 48
Replacing bulbs 49
Beam setting 53
Rear view mirror adjustment 54
Tubeless tyres 54
Checking engine oil level 56
Cleaning and replacing the spark plugs 57
Cleaning the motorcycle 58
Storing the bike away 59
Important notes 59

Technical data 60

Overall dimensions 60
Weights 60
Top-ups 61
Engine 62
Timing system 62
Performance data 63
Spark plugs 63
Brakes 63
Transmission 64
Frame 65
Wheels 65
Tyres 65
Suspensions 66
Available colours 66
Electric system 66

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GENERAL

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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 Holding 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 Holding 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 suitable gear and 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 fuel on the engine or on the exhaust pipe when refueling.

Do not smoke when refueling.

While refueling, you may inhale noxious fuel vapors.

Should any fuel 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.



Warning

The exhaust system might be hot, even after engine is switched off; pay particular attention not to touch exhaust system with any body part and do not park the vehicle next to inflammable material (wood, leaves etc.).

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 375 Kg.

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.

Identification data

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

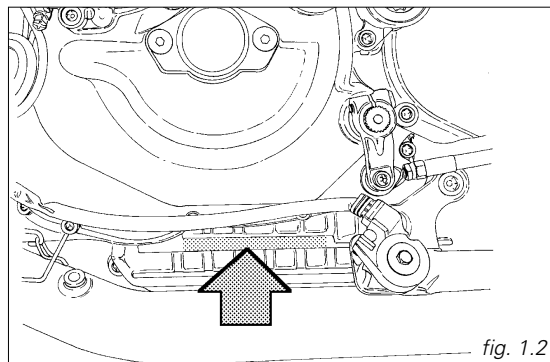
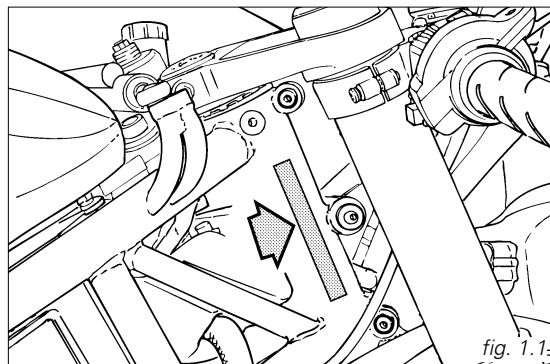
Frame number

Engine number




Note

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



CONTROLS

E  **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) Choke lever.
- 6) Right switch.
- 7) Throttle twistgrip.
- 8) Front brake lever.
- 9) Gear change pedal.
- 10) Rear brake pedal.

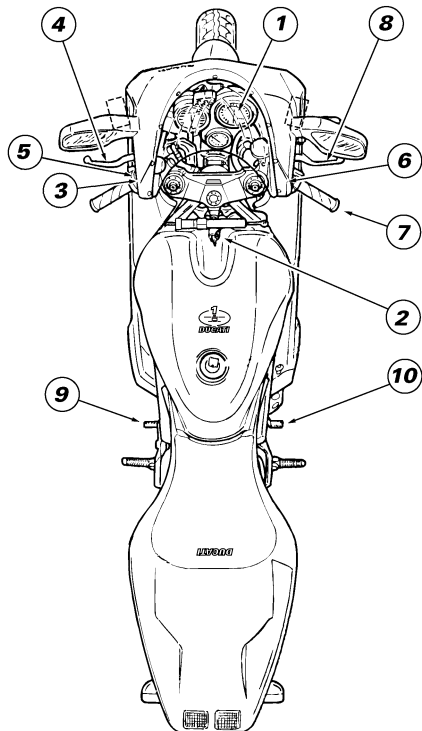


fig. 2

Instrument panel (fig. 4)

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) **Neutral light N (green).**

Comes on when gearbox is in neutral.

4) **Fuel warning light** (yellow).

Comes on when there are about 4 liters fuel left in the tank.

5) **Turn indicator light** (green).

Comes on and flashes when a turn indicator is on.

6) **Oil pressure light** (red).

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. It may shortly come on when the engine is hot, however, it should go out as the engine revs up.

Important

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

7) **High beam light** (blue).

Comes on when right high beam is on.

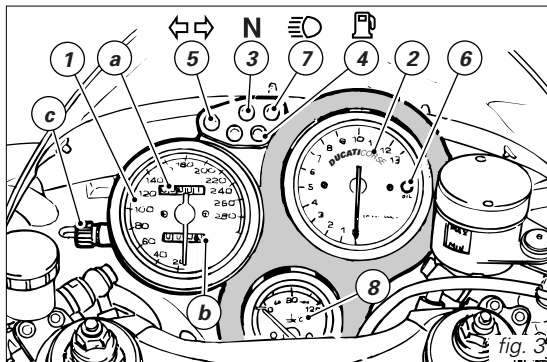
8) **Water temperature indicator**.

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)

Two universal keys are supplied for the ignition, the steering lock, the seat lock and the fuel filler cap and a plate (1) bearing key identification number.



Note

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

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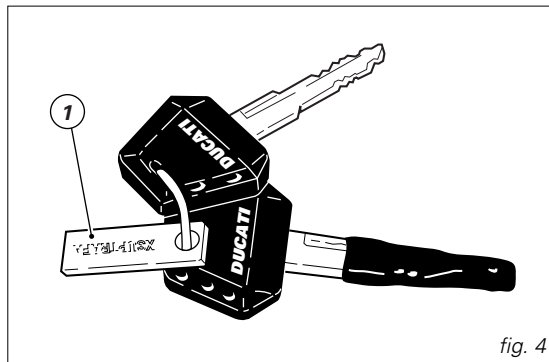


fig. 4

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.

Warning

This model is equipped with an energy-saving CPU. If the key stays ON for a long period but the ignition button is not pressed within 15 seconds, the CPU will stop operating to avoid current absorption. Move the key to **OFF** and then to **ON** again.

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.

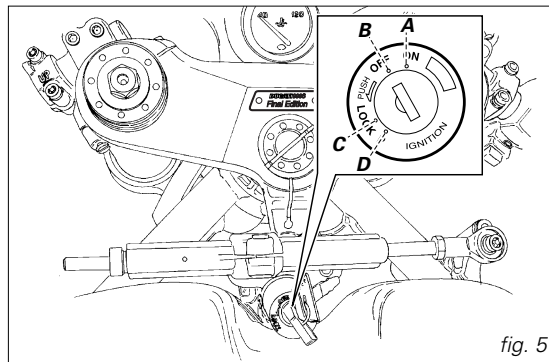








fig. 5

Left switch (fig. 6)

1) **Dip switch**, light dip switch, two positions:
position  = low beam on;
position  = high beam on.

2) **Switch**  = 3-position turn indicator:
centre position = off;
position  = left turn;
position  = right turn.

To disable turn indicators, push in when switch returns to central position.

3) **Button**  = warning horn.

4) **Button**  = passing.

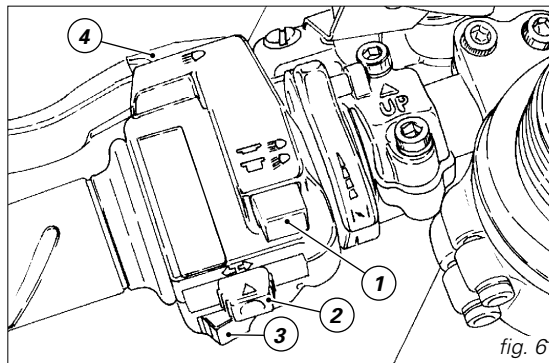


fig. 6

Clutch lever (fig. 7)

Lever (1) disengages the clutch. It features a dial adjuster (2) for lever distance from the twistgrip on handlebar.

To set lever distance from twistgrip, push lever (1) 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.

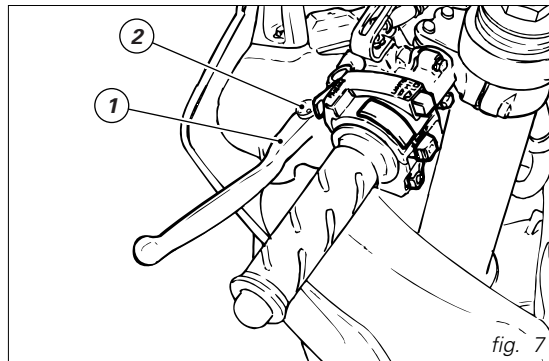
When you pull in the lever (1), you will disengage the engine from the gearbox and therefore from the driving wheel. Using the clutch properly is essential to smooth riding, especially when moving off.

Warning

Set clutch lever when motorcycle is stopped.

Important

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



Fast idle lever (fig. 8)

The fast idle lever (1) is used to start the engine from cold and to increase the engine idle rotation speed after starting. Control positions:

A - (vertical) Control not activated

B - Control fully activated

The lever may also be placed on intermediate positions to match the progressive engine warming up (see page 33).

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Important

Never use this device when the engine is warm.
Do not run with the fast idle control on.

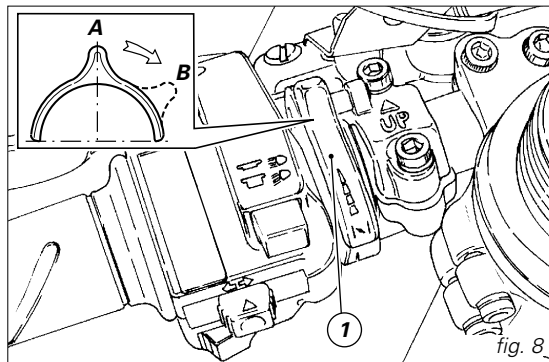


fig. 8

Right switch (fig. 9)

1) Switch for **ENGINE STOP**, two positions:
position \bigcirc (**RUN**) = run.
position \otimes (**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 \bigcirc 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 \odot = 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 page 32 before using these controls.

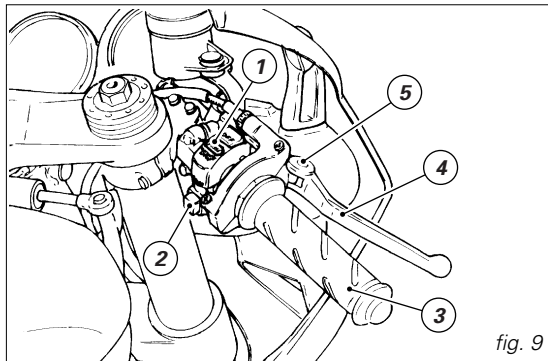
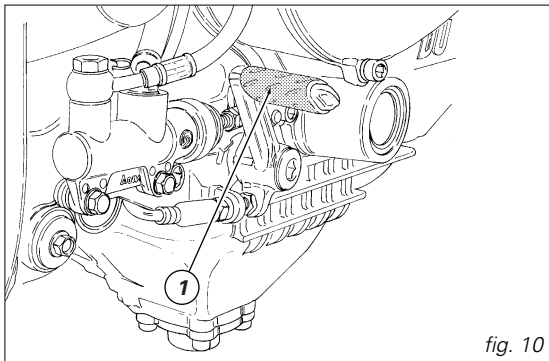


fig. 9

Rear brake pedal (fig. 10)

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

The system is hydraulically operated.

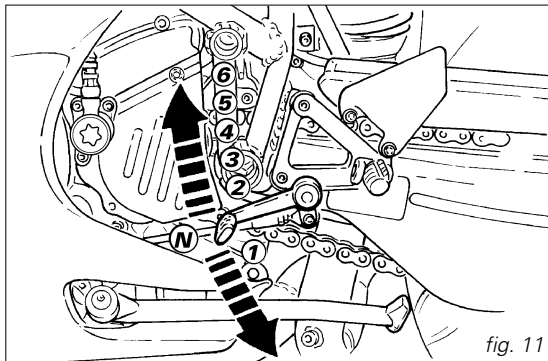


Gear change pedal (fig. 11)

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.



Setting the gear change and rear brake pedals

The gear change and rear brake pedals can be adjusted to suit the preferred riding position of each rider. To set the gear change pedal, lock linkage (1) and loosen the check nuts (2) and (3).



Note

Nut (2) has a left-hand thread.

Fit an open-end wrench to the hexagon portion of linkage (1). Rotate linkage until setting pedal in the desired position.

Tighten both check nuts onto linkage.

To set the rear brake pedal, loosen check nut (4).

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

Tighten check nut (4).

Work pedal by hand to make sure it has 1.5 - 2 mm free play before brake begins to bite.

If not so, set the length of cylinder linkage as follows.

Loosen the check nut (6) on cylinder linkage.

Tighten linkage into fork (7) to increase play, or unscrew linkage to reduce it.

Tighten check nut (6) and check pedal free play again.

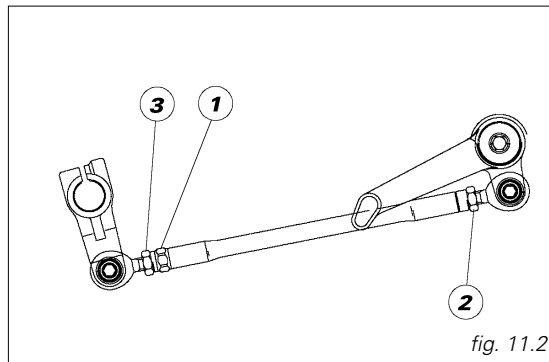


fig. 11.2

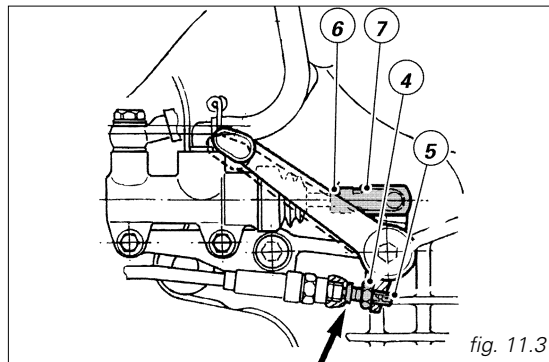


fig. 11.3

MAIN COMPONENTS AND DEVICES

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.

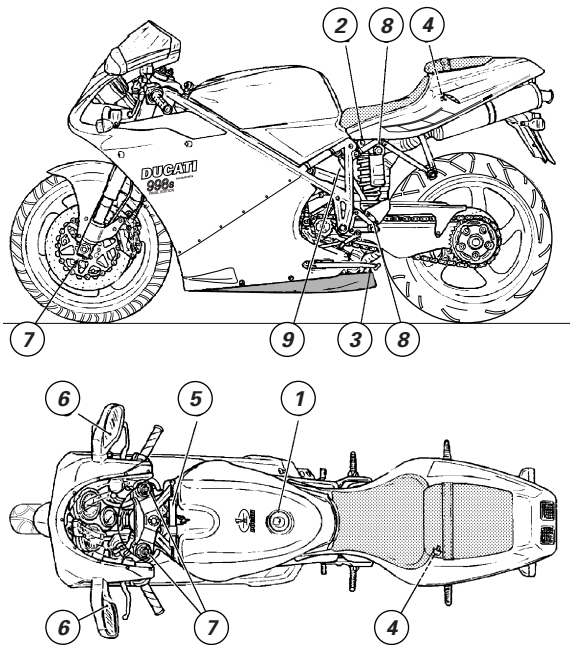


fig. 12

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).



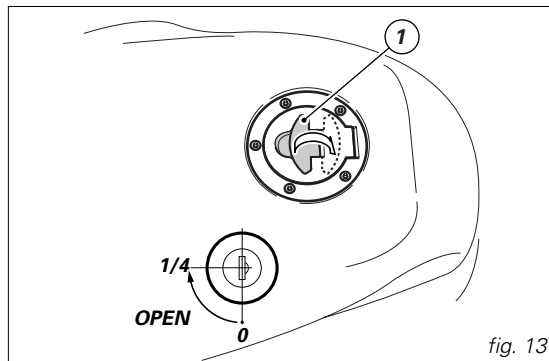
Note

The plug can only be closed with the key in.



Warning

Always make sure you have properly refitted (see page 36) and closed the plug after each refueling.



Seat catch and helmet hook

Opening (fig. 14.1 and fig. 14.3)

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 to lock the seat.

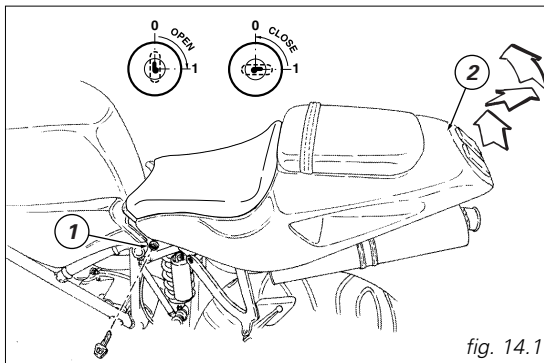


fig. 14.1

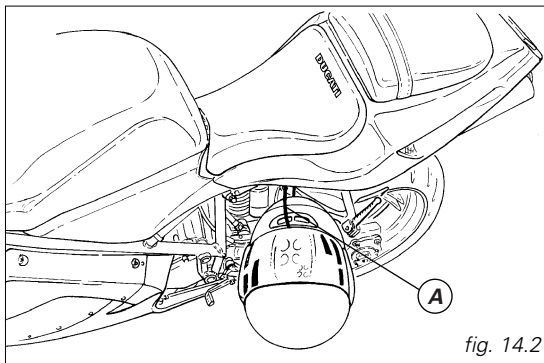


fig. 14.2

Closing

Monoposto (fig. 14.3)

Properly arrange objects in the compartment underneath the seat.

Lower the tail guard and bring it back in horizontal position. Press on the rear end (2) until you hear the catch click in place.

Biposto (fig. 14.4)

Pull gently the tail guard outwards and lower it to its horizontal position. Press on the passenger pillion to allow the clips (3) – integral with the fairing - to catch the pins (4) – integral with the frame, until you hear the catch click.

Pull the tail guard gently up to make sure it is firmly secured to the frame.

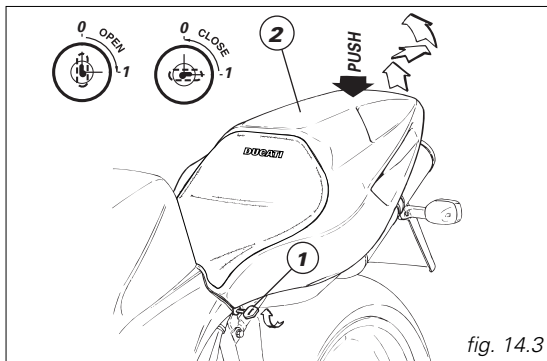


fig. 14.3

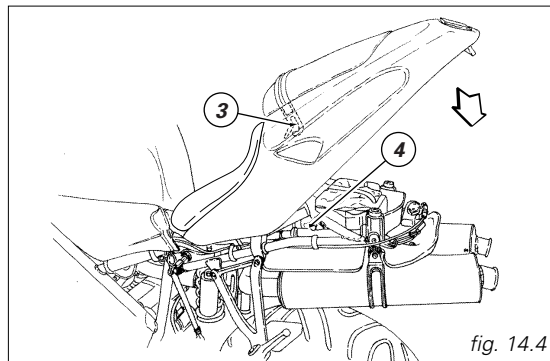


fig. 14.4

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.

Warning

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

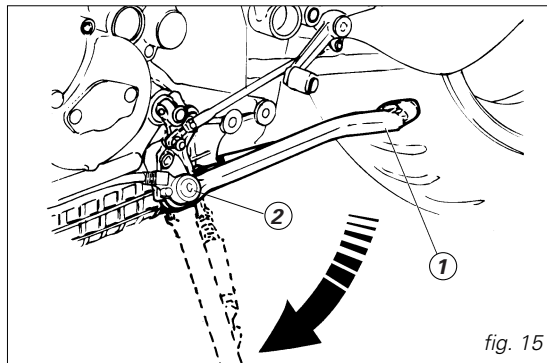
To move the side stand to its rest position (horizontal position), tilt the motorcycle to the right and, at the same time, lift the thrust arm (1) with your foot.

Note

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

Note

It is possible to start the engine with side stand down and the gearbox in neutral. When starting the bike with a gear engaged, pull the clutch lever (in this case the side stand must be up).



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), counterclockwise for a softer setting (3). A click identifies the different settings.

Warning

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

Important

In case the headstock angle is changed, the steering damper must be repositioned (see page 47).

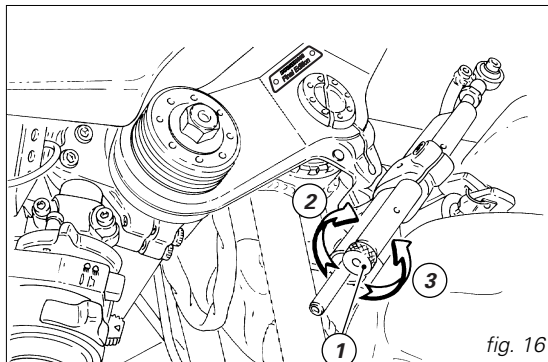


fig. 16

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.

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Put and secure the motorcycle in vertical position.

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

To turn adjuster (3), fit a 3mm wrench through the hole as shown in figure 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.

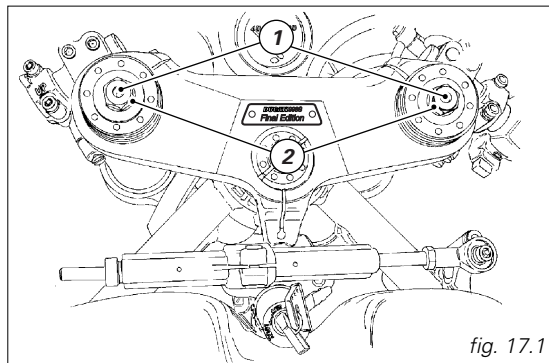


fig. 17.1

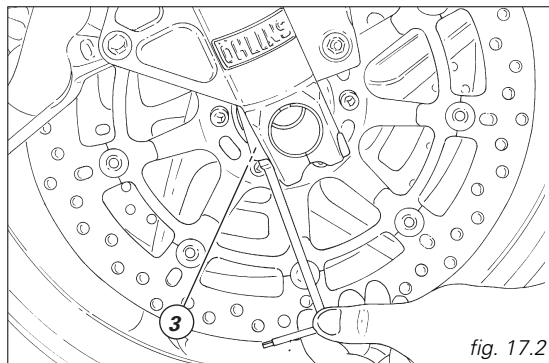


fig. 17.2

STANDARD factory setting is as follows:

compression: 10 clicks;

rebound: 12 clicks.

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

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

Factory setting is 10 mm.



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.

Turn upper ring nut to change spring preload.

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



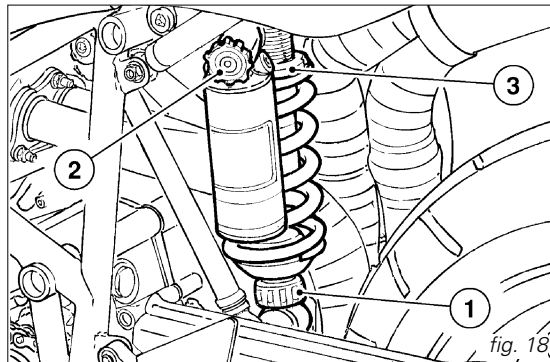
Warning

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.



Warning

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 shock absorber.

Loosen lock nuts (3) to change ball joints (1) distance between centers.

Note

Be careful because lower nut (3) has a left thread.

Fit an open-end wrench to the hexagon portion of linkage (2) and turn.

When finished, tighten the nuts (3) to 25 Nm.

Warning

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

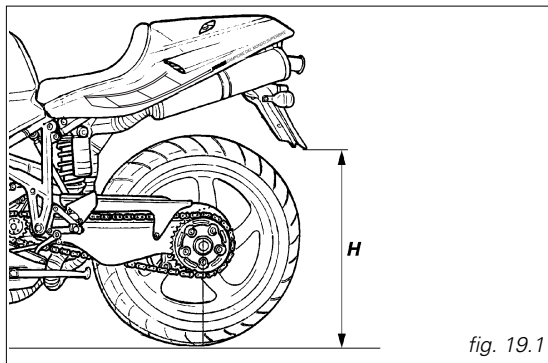


fig. 19.1

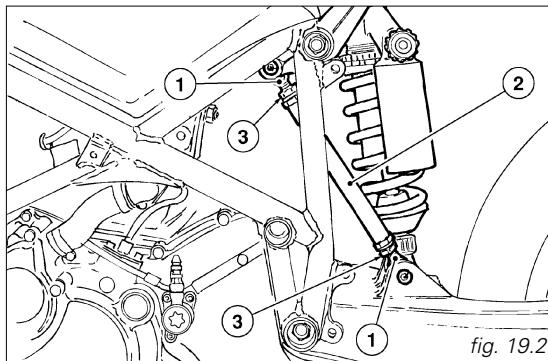


fig. 19.2

UNIBALL articulated head (A) maximum extension is 5 threadings, i.e. 7.5 mm (B).

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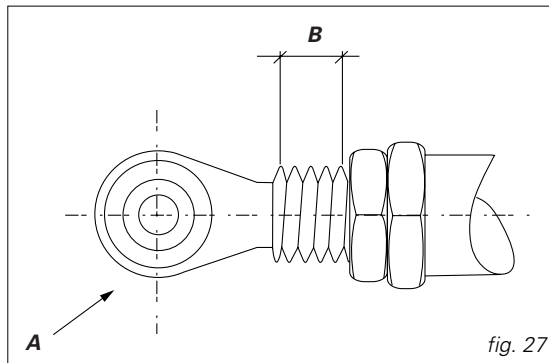


fig. 27

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;
- 2) from 1000 to 2500 km;

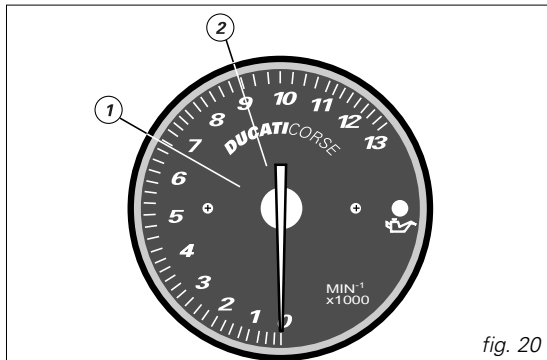


fig. 20

Up to 1000 km

During the first 1000 km, 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, 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 it as required.

From 1000 to 2500 km

You can squeeze some more power out of the engine but remember never to exceed 9000 rpm. Run in the engine in these conditions for 2500 km. The more strictly you follow these indications, the longer and trouble-free will be the life of the engine.

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 Holding S.p.A. from any liability whatsoever for any engine damage or shorter engine life.

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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 36).

Engine oil level

Check oil level in the sump through the sight glass. If necessary, top up with recommended oil (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 42).

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 49).

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 24).



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 °C/50 °F to 35 °C/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. Do not start the engine if oil pressure is insufficient.



Warning

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

2) Move the fast idle lever (1) to (B) (fig. 21.2).

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) Move the fast idle lever (1) to its vertical position (A) (fig. 21.2).

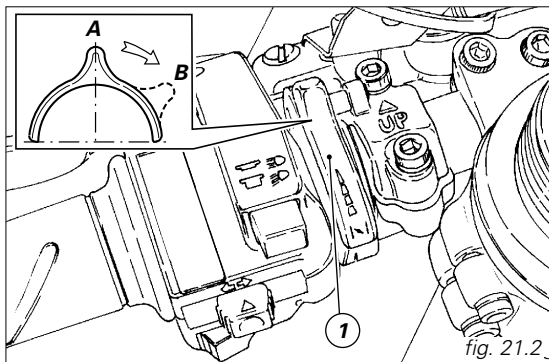
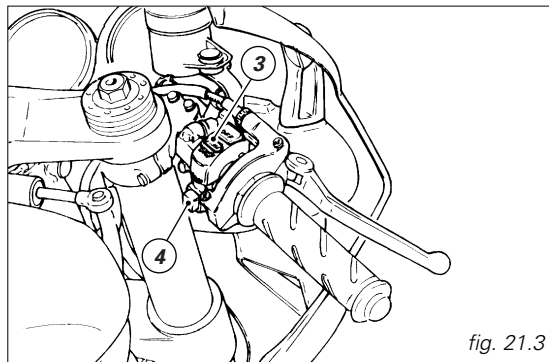
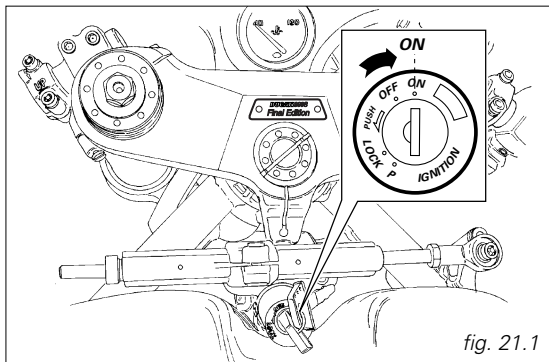


Important

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

High ambient temperature (over 35 °C/95 °F): Follow the same procedure for “Regular ambient temperature”, however, do not use the device (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.
- 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.
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 misfiring 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 may affect safe riding and motorcycle good handling 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 13).

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.

Refueling (fig. 22.1)

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



Warning

Make sure there is no fuel trapped in the filler plug recess.

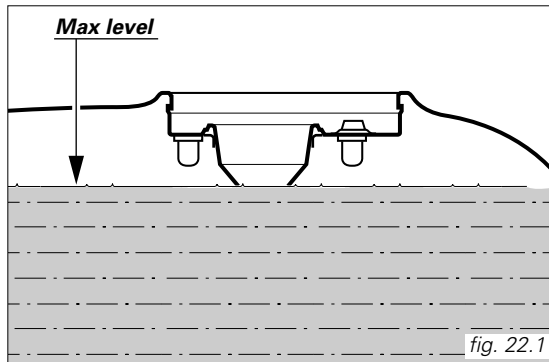


fig. 22.1

Parking

Stop and park the motorcycle on the side stand (see page 24).

To avoid theft, turn the handlebar fully left and block it by turning the ignition key to the **LOCK** (fig. 22.2) position. 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.

You may leave the parking lights on by turning the key to position **P** (fig. 22.2).

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.

Warning

The exhaust system might be hot, even after engine is switched off; pay particular attention not to touch exhaust system with any body part and do not park the vehicle next to inflammable material (wood, leaves etc.).

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.

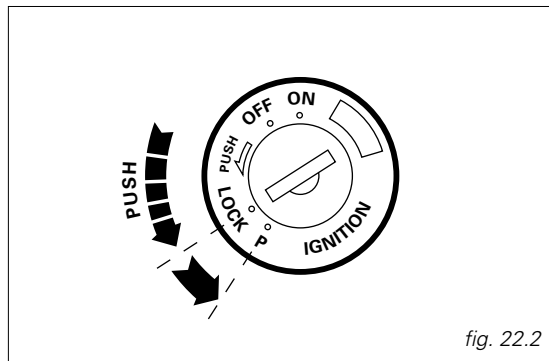


fig. 22.2

Tool kit and accessories (fig. 23)

Under the tail guard, in area (1) are located:

an Owner's manual;

a helmet fastening cable;

a tool bag for usual maintenance and checks.

To gain access to it, it is necessary to open the latch and raise the tail guard (page 22).

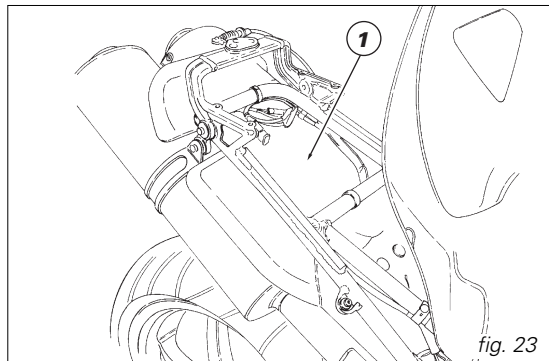


fig. 23

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The tool bag (fig. 24)

holds:

1) 14-mm box wrench.

2) 10/8/6/5/4-mm Allen wrench.

3) Rear eccentric wrench.

4) Front wheel shaft wrench.

5) Extension for rear eccentric wrench.

6) Box wrench for spark plugs.

7) Tommy bar.

8) Double-bit screwdriver.

9) Helmet holder cable.

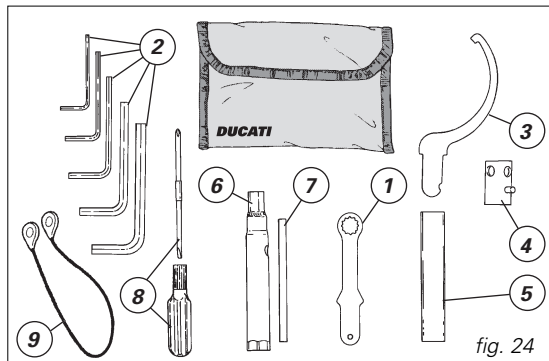


fig. 24

MAIN MAINTENANCE OPERATIONS

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.

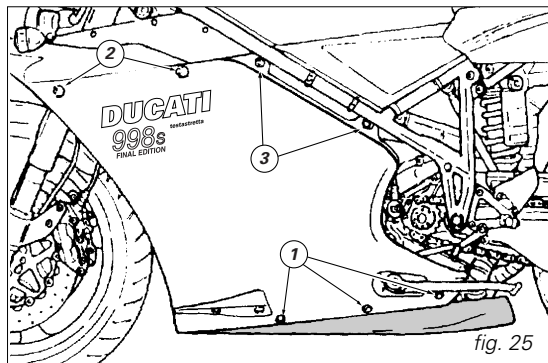


Important

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)

Remove the fairings by removing:
the three couplings (1) on the right and left side of the under fairing;
disconnect the four headlamp fairing couplings (2);
disconnect the four frame couplings (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).

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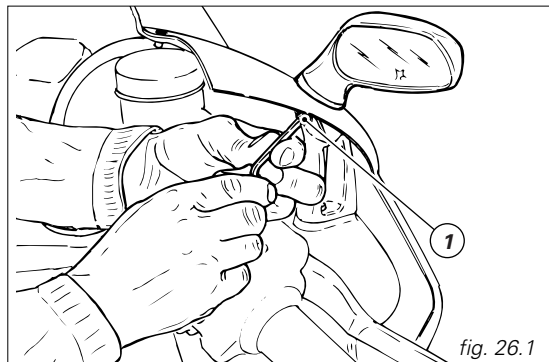


fig. 26.1

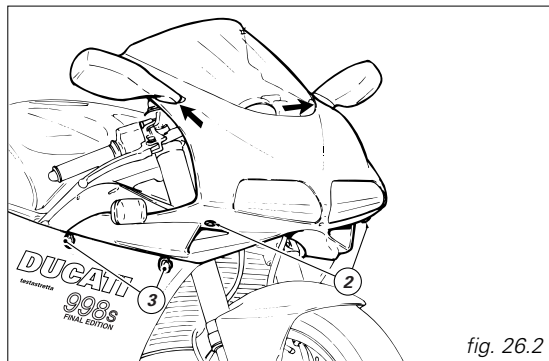


fig. 26.2

Cleaning and changing air filters (fig. 27.1)

Air filters should be changed at recommended intervals as indicated in the scheduled maintenance table (see Warranty Card). To gain access to the cases, remove the fairings and the headlight fairing (see page 39-40).

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. Do not remove the reduction element (4) from its seat.

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.

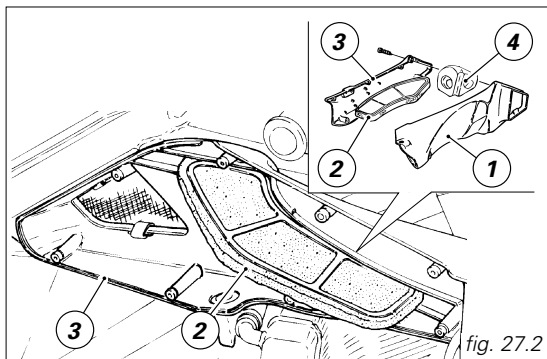
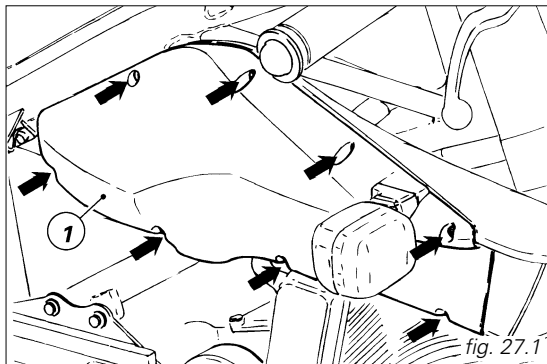
Important

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 (as indicated in fig. 27.2) on the inner cover 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 shown in the routine maintenance chart (see Warranty Card).



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.

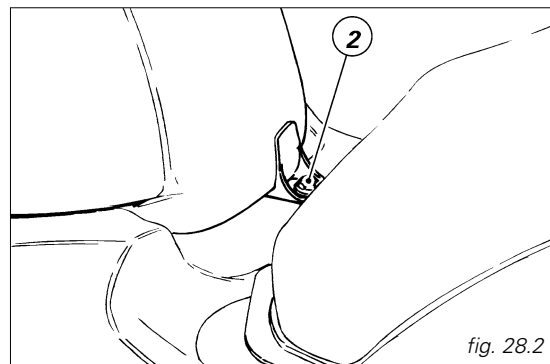
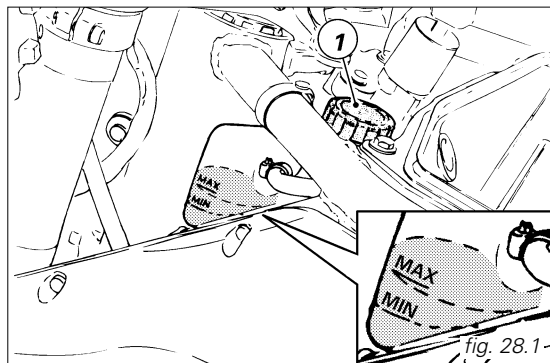
Unscrew the filler (1, fig. 28.1) and add a mixture consisting of water and antifreeze SHELL Advance Coolant or Glycoshell (35-40% of the volume) up to **MAX** mark.

Tighten plug (1) and refit previously 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).

Warning

Place the motorcycle on a flat surface and make sure the engine is cold before proceeding.



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 (see Warranty Card) by a Ducati Dealer or Authorized Workshop.

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

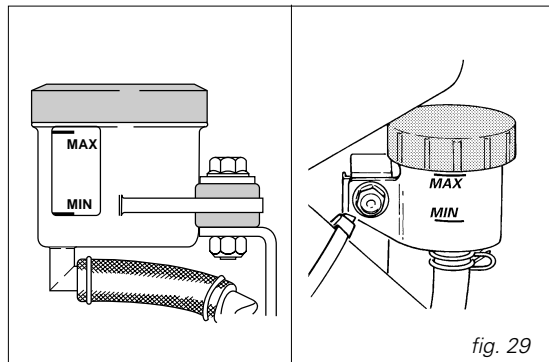
Clutch fluid level in the reservoir tends to increase as the clutch plates friction material wears out. Do not exceed specified level (3 mm above minimum level).

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 for joint 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.

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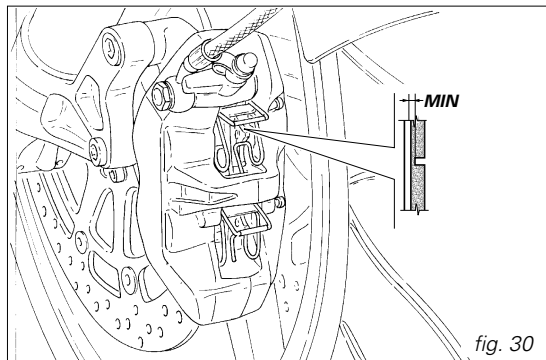


fig. 30

Lubricating cables and joints

The condition of the outer sheath of the throttle/cold start cable 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 end of the Bowden 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

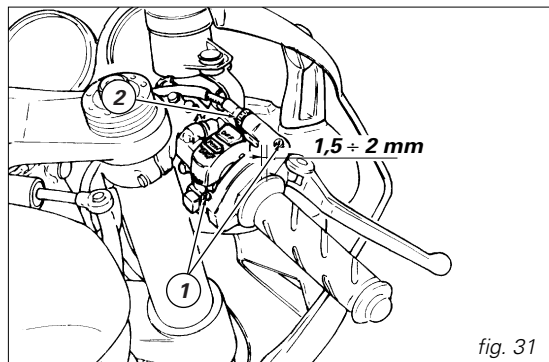
When refitting the cover, be sure to slide the cable onto the suitable pulley.

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 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 39), 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.

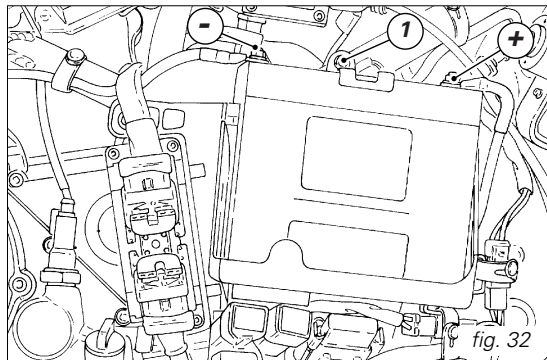
Always connect the red positive terminal (+) first.

Reinstall the battery on its mount and secure the upper bracket with the screw (1). Connect the terminals. Use some grease on the fastening screws to improve conductive capacity.

Warning

Keep the battery out of the reach of children.

Charge the battery at 1 A for 5-10 hours.



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 steering tube end (3) by 180° with a pin wrench.

Check that the hole on the eccentric is centred with the through hole in the steering tube. Look at the arrow etched in the top area of the eccentric to centre both holes accurately.

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



Note

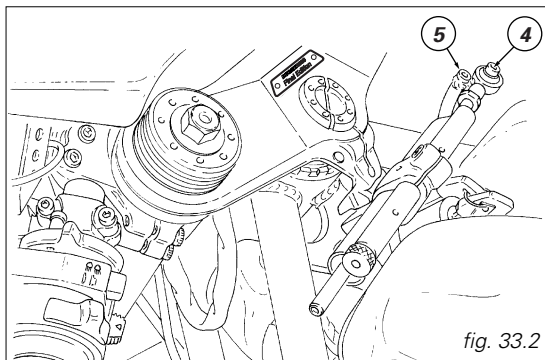
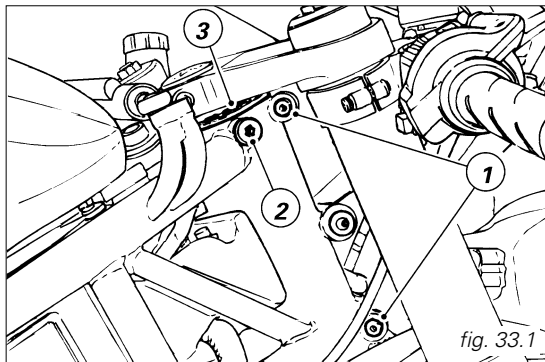
While performing the above, the handlebars should not be fully turned.

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 and apply some medium-strength threadlocker.



Important

The steering lock can be used only if the steering 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 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

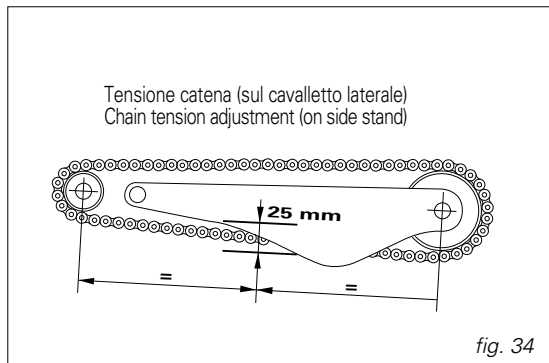
Improper chain tension will lead to early wear of transmission parts.

Chain lubrication

The chain fitted on your motorcycle has O-rings 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 O-ring 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.



Replacing bulbs

Before replacing a burnt-out bulb, make sure that the new one complies with voltage and wattage as specified on page 66, "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.

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 bulbs, the headlamp fairing must be removed first (see page 40). Undo the horn fastening screw and remove the horn. Pull out the bulb holders (5, fig 35.3) from the headlamp support.
Remove the bulb and fit a new one.

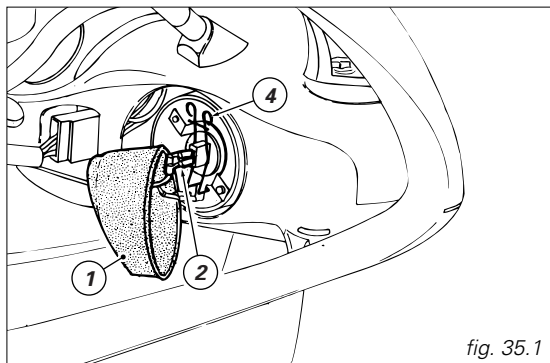


fig. 35.1

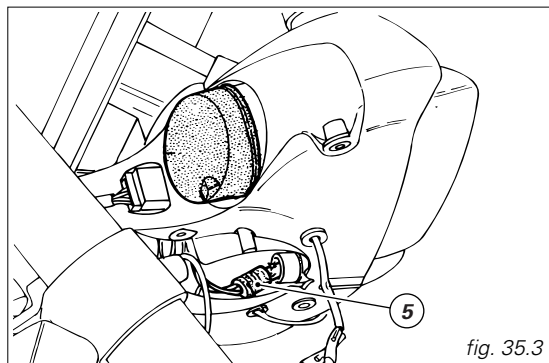


fig. 35.3

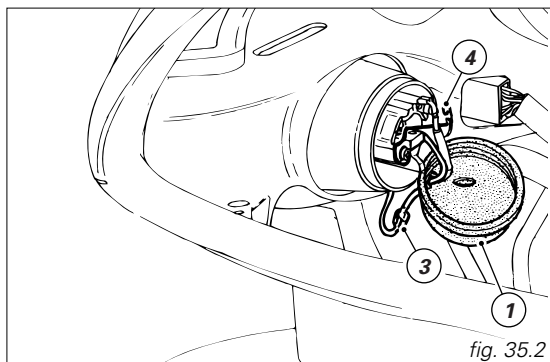
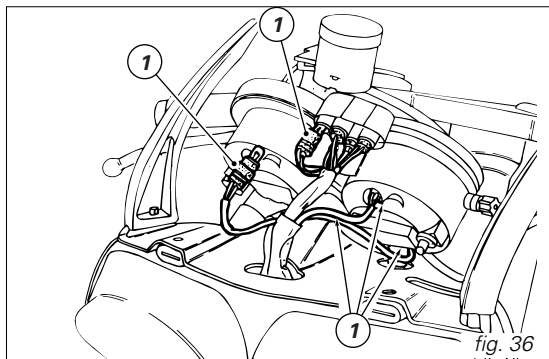


fig. 35.2

Instrument panel (fig. 36)

Remove the headlamp fairing (see page 40) to reach the instrument panel bulbs.

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

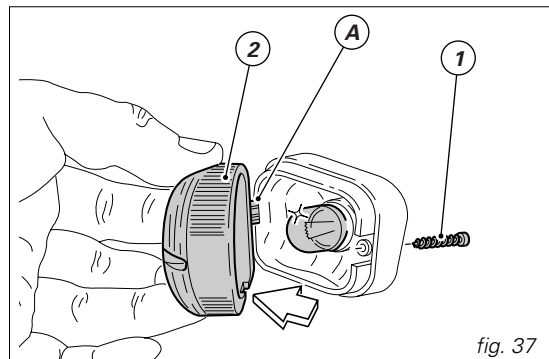


Turn indicators (fig. 37)

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

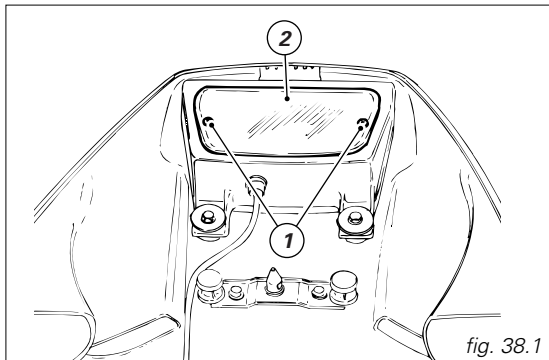
The bulb is of the bayonet-type: press and rotate anti-clockwise to remove; fit the spare bulb by pressing and turning clockwise until it clicks.

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



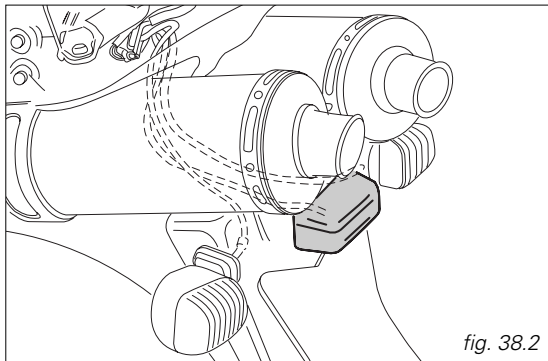
Stop light (fig. 38.1)

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).



Number plate light (fig. 38.2)

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



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 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.

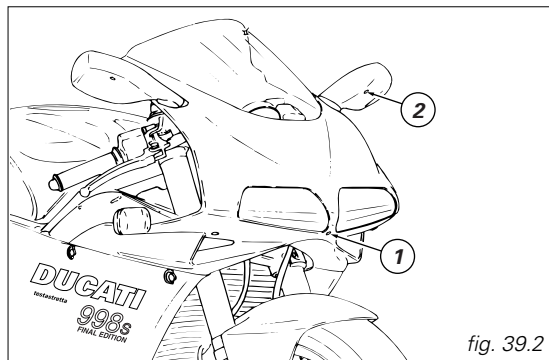
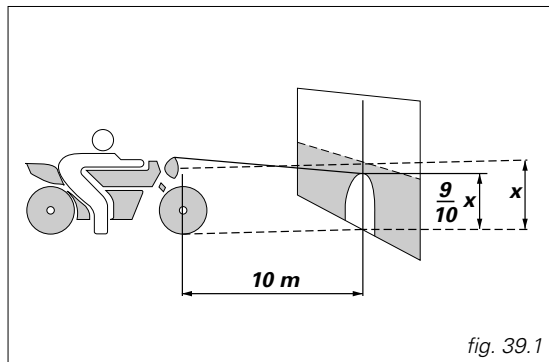
Switch on the low beam. The height of the light spot (measured at the upper limit between dark and lighted-up area) should not exceed $\frac{9}{10}$ th of the height from ground of headlamp center.



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 adjusting screw (1, fig. 39.2) on the beam front; remove protection cap first. Turn the screw clockwise to lower the beam, turn anticlockwise to lift.



Rear view mirror adjustment

Using a cross-section screwdriver, undo the screw (2 fig. 39.2), manually adjust the mirror and tighten the screws.

E

Tubeless tyres

Tyre pressure

Front:

2.1 bar - 2.3 Kg/sq cm

Rear:

2.2 bar - 2.4 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.



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)

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 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.

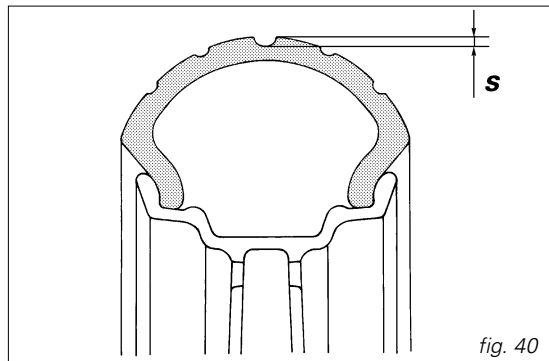


fig. 40

Checking engine oil level (fig. 41)

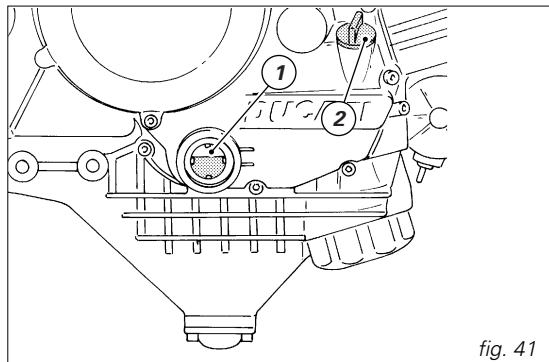
Engine oil level can be checked through the sight glass (1) provided on the clutch cover.

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

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.



E

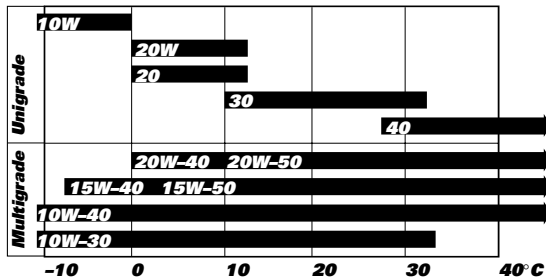
Important

Engine oil and oil filters must be changed by a Ducati Dealer or Authorized Workshop at regular intervals, as specified in the routine maintenance chart (see Warranty Card).

Viscosity

SAE 10W-40

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 and spark plugs 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 0.6-0.7 mm.

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 it 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.

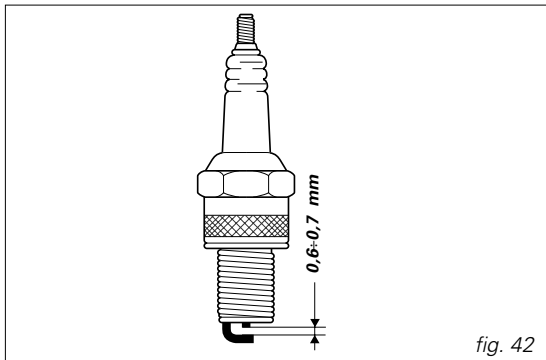


fig. 42

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.

Never grease or lubricate the brake discs. Loss of braking and further accidents may occur. Clean the discs with an oil-free solvent.

Important

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

Never clean the motorcycle using hot or high-pressure water jets. Cleaning the motorcycle with water cleaners may lead to seizure or severe failure of front fork, wheel hub assembly, electric system, front fork seals, air inlets or exhaust silencers and adversely affect the operation of motorcycle safety features.

If needed, 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

Loss of braking may occur immediately after washing the motorcycle.

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;

remove tank drain plug and seal and drain all fuel from 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;

place the motorcycle on the paddock stand; 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 that will protect paintwork and let condensate breathe out.

A special canvas is available from Ducati Performance.

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.

Important - only for Australia

Tampering with noise control system is prohibited.

Owners are warned that the law may prohibit:

(a) The removal or rendering inoperative by any person other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; and (b) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

TECHNICAL DATA

Weights

Dry weight:

198 Kg.

Carrying full load:

375 Kg.



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.

Overall dimensions (mm) (fig. 43)

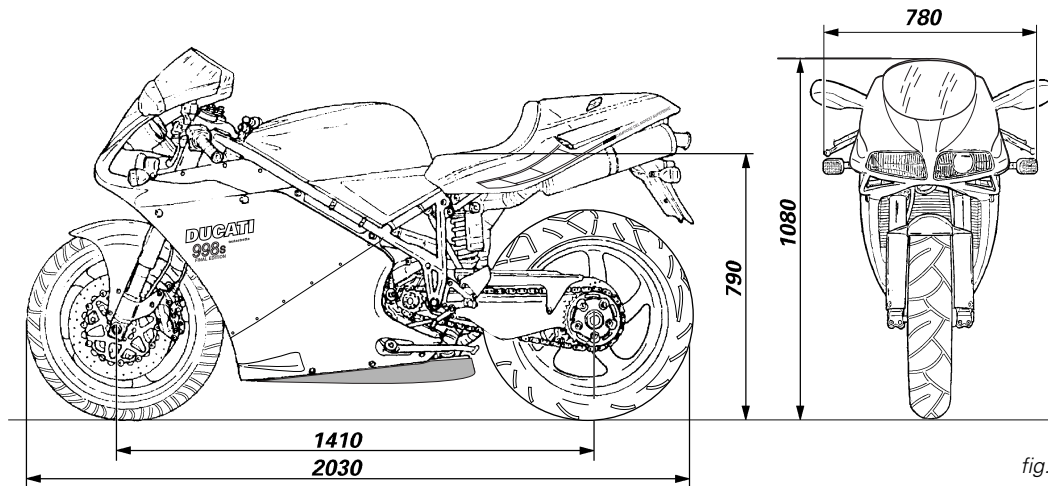


fig. 43

Top-ups	Type of fluid	cu dm (liters)
Fuel tank, including a reserve of 4 cu dm (liters)	Gasoline 95-98 RON	17
Oil sump and oil filter	SHELL - Advance Ultra 4	3.4
Front/Rear brake and clutch circuits	Special fluid for hydraulic systems SHELL - Advance Brake DOT 4	–
Chain	Products for O-ring chains SHELL - Advance Chain or Advance Teflon Chain	–
Speedometer cable	SHELL - Alvania R3 or Retinax LX 2 grease	–
Steering bearings	SHELL - Alvania R3 or Retinax LX 2 grease	–
Protectant for electric contacts	Spray for electric systems SHELL - Advance Contact Cleaner	–
Front fork	SHELL - Advance Fork 7.5 or Donax TA	0.480 (each leg)
Cooling circuit	Antifreeze SHELL - Advance Coolant or Glycoshell 35-40% + water	3.5



Important

Additives to fuel or lubricants are not allowed.

Engine

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

Bore mm:

100

Stroke mm:

63.5

Total displacement cu.cm.:

998

Compression ratio:

1:11.4±0.5

Max. power at crankshaft (95/1/EC) kW/CV:

100/136 at 10.200 rpm

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

10.3 Kgm at 8000 rpm

Max. rotation speed:

10.500 rpm

E

Important

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

Timing system

Desmodromic (type) with four valves per cylinder, operated by eight rocker arms (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) Closing (or lower) rocker shim.

4) Return spring for lower rocker.

5) Closing (or lower) rocker.

6) Camshaft.

7) Valve.

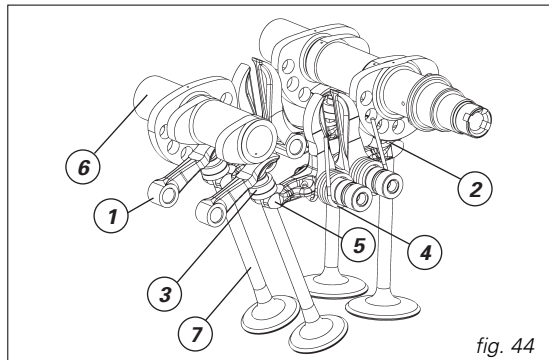


fig. 44

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 (see Warranty Card).

*Max. speed:
over 270 Km/h*

Spark plugs

*Make:
CHAMPION
Type:
RG 4 HC*

Brakes

Front brake

*With double drilled disc.
Material:
steel
Disc diameter:
320 mm
Hydraulically operated by a control lever on right handlebar.
Braking surface:
79 sq cm
Brake calipers with separate pistons.
Make:
BREMBO*

*Type:
34-4 pistons.
Friction material:
TOSHIBA TT 2172
Master cylinder type:
PSC 15.*

Rear brake

*With fixed drilled steel disc.
Disc diameter:
220 mm
Hydraulically operated by a pedal on R.H. side.
Braking surface:
25 sq cm
Make:
BREMBO
Type:
32-2 pistons
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 Holding 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 trestle 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 47).

STANDARD steering setting for road riding is as follows:

Steering head angle:

24°30'

Trail:

97 mm.

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

Steering head angle:

23° 30'

Trail:

91 mm.



Note

With the steering tube set to 23° 30' it is not possible to use the steering lock.

Wheels

Five-spoke, light-alloy rims.

Front wheel

Dimensions:

3.50x17"

Rear wheel

Dimensions:

5.50x17"

Front wheel shaft 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 adjuster for rebound, compression, and preload (for inner springs of fork legs).

Stanchion diameter:

43 mm

Travel along leg axis:

120 mm.

Rear

Of the progressive type, thanks to a rocker arm connecting frame and upper pivot point of the shock absorber. 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 single-sided 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.

Wheel travel:

130 mm.

Available colours

Ducati anniversary red 473.101 (PPG);
metal-color frame and wheel rims.

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-10Ah.

Generator 12V-520W.

Electronic voltage regulator (rectifier), protected by a **40 A** 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 page 49 for relevant instructions.

Fuses

The main fuse box (fig. 45.1) 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.

The fuse located on a side of the battery (fig. 45.2) protects the electronic regulator. Remove the fuse cap (2) to expose it.

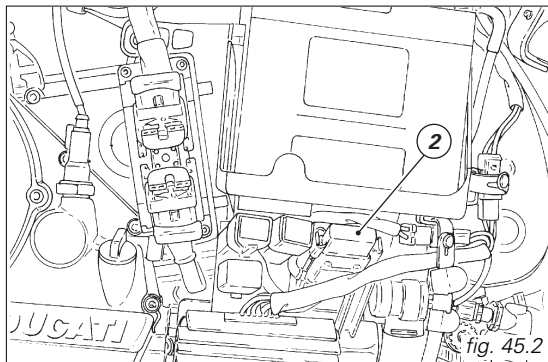
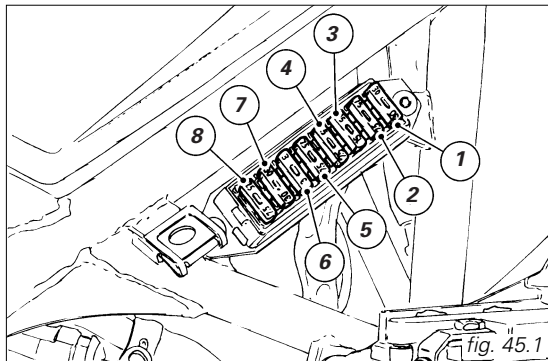
A blown fuse is identified by the interrupted inner filament (3, fig. 45.3).

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.



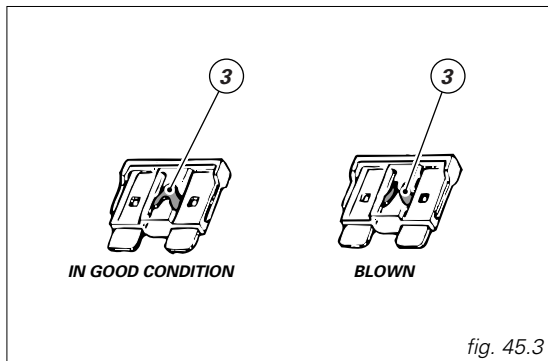


fig. 45.3

Legend of the wiring diagram of electric system/injection

- 1) Right switch
- 2) Key-operated switch
- 3) Ignition relay
- 4) Fuse box
- 5) Flasher
- 6) Water temperature sensor - instrument
- 7) RH electric fan
- 8) Starter motor
- 9) Solenoid starter
- 10) Battery
- 11) Regulator fuse
- 12) Regulator
- 13) Generator
- 14) Rear right-turn indicator
- 15) Tail light
- 16) Number plate lighting bulb
- 17) Rear left-turn indicator
- 18) Fuel tank
- 19) Diagnosis connector
- 20) Injection relay
- 21) Horizontal cylinder coil
- 22) Vertical cylinder coil
- 23) Horizontal cylinder spark plug
- 24) Vertical cylinder spark plug
- 25) Horizontal cylinder injector
- 26) Vertical cylinder injector
- 27) Throttle position sensor
- 28) Timing/engine rpm sensors
- 29) Water temperature sensor - CPU
- 30) Side stand switch
- 31) Injection/ignition unit
- 32) LH electric fan
- 33) Neutral light switch
- 34) Oil pressure switch
- 35) Rear stop light switch
- 36) Front stop light switch
- 37) Left switch
- 38) Air temperature/pressure sensor
- 39) Instruments
- 40) Front left-turn indicator
- 41) Warning horn
- 42) High beam relay
- 43) Headlamp
- 44) Front right-turn indicator

Wire color coding

P Pink
G Green
W White
O Orange
Y Yellow
B Blue
Bn Brown
R Red
V Violet
Gr Grey
Lb Light blue
Bk Black

Legend of fuse box (4)

<i>Pos.</i>	<i>Description</i>	<i>Rat.</i>
1-9	Main switch	30 A
2-10	Fuel pump, injectors, coils	20 A
3-11	Key sense	7.5 A
4-12	CPU power supply	3 A
5-13	High beam and low beam	15 A
6-14	Turn indicators, warning lights, parking lights and instrument panel lights	10 A
7-15	Stop, warning horn	7.5 A
8-16	Cooling electric fan	7.5 A



Note

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

FOR UNITED STATES OF AMERICA VERSION ONLY

USA

Reporting of safety defects

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Ducati North America. If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Ducati North America. To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, D.C. area) or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from the Hotline.

Safety warnings

Traffic Rules vary from jurisdiction to jurisdiction. Know the regulations in your jurisdiction before riding this motorcycle.



Warning

This motorcycle is designed and intended for use on streets and other smooth, paved areas only. Do not use this motorcycle on unpaved surfaces. Such use could lead to upset or other accident.

Noise emission warranty

Ducati Motor Holding S.p.A. warrants that this exhaust system, at the time of sale, meets all applicable U.S. EPA Federal noise standards. This warranty extends to the first person who buys this exhaust system for purposes other than resale, and to all subsequent buyers. Warranty claims should be directed to: Ducati North America, Inc., 10443 Bandlely Drive, Cupertino, California, 95014 Tel: 001.408.253.0499 • Fax: 001.408.253.4099.

Noise and exhaust emission control system information

Source of Emissions

The combustion process produces carbon monoxide and hydrocarbons. Control of hydrocarbons is very important because under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but is toxic. Ducati utilizes lean carburetor settings and other systems to reduce carbon monoxide and hydrocarbons.

Exhaust Emission Control System

The Exhaust Emission Control System is composed of lean carburetor settings, and no adjustments should be

made except idle speed adjustments with the throttle stop screw. The Exhaust Emission Control System is separate from the crankcase emission control system.

Crankcase Emission Control System

The engine is equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere. Blow-by gas is returned to the combustion chamber through the air cleaner and the throttle body.

Evaporative Emission Control System

California motorcycles are equipped with an evaporative emission control system which consists of a charcoal canister and associated piping. This system prevents the escape of fuel vapors from the throttle body and fuel tank.

Tampering warning

Tampering with Noise Control System Prohibited. Federal Law prohibits the following acts or causing thereof:

- (1) the removal or rendering inoperative by any person, other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; or*
- (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.*

Among those acts presumed to constitute tampering are the acts listed below:

- (1) Removal of, or puncturing the muffler, baffles, header pipes or any other component which conducts exhaust gases.*
 - (2) Removal or puncturing of any part of the intake system.*
 - (3) Lack of proper maintenance.*
 - (4) Replacing any moving part of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer.*
- This product should be checked for repair or replacement if the motorcycle noise has increased significantly through use. Otherwise, the owner may become subject to penalties under state and local ordinances.*

Problems that may affect motorcycle emissions

If you are aware of any of the following symptoms, have the vehicle inspected and repaired by your local Ducati dealer.

Symptoms:

Hard starting or stalling after starting.

Rough idle.

Misfiring or backfiring during acceleration.

After-burning (backfiring).

Poor performance (driveability) and poor economy.

Riding safety

The points given below are applicable for every day motorcycle use and should be carefully observed for safe and effective vehicle operation.

A motorcycle does not provide the impact protection of an automobile, so defensive riding in addition to wearing protective apparel is extremely important.

Do not let protective apparel give you a false sense of security.

Before changing lanes, look over your shoulder to make sure the way is clear. Do not rely solely on the rear view mirror; you may misjudge a vehicle's distance and speed, or you may not see it at all.

When going up steep slopes, shift to a lower gear so that there is plenty of power to spare rather than overloading the engine.

When applying the brakes, use both the front and rear brakes. Applying only one brake for sudden braking may cause the motorcycle to skid and lose control.

When going down long slopes, control vehicle speed by closing the throttle. Use the front and rear brakes for auxiliary braking.

Riding at the proper rate of speed and avoiding unnecessarily fast acceleration are important not only for safety and low fuel consumption but also for long vehicle life and quieter operation.

When riding in wet conditions or on loose roadway surfaces, the ability to maneuver will be reduced. All of your actions should be smooth under these conditions. Sudden acceleration, braking or turning may cause loss of control.

When the roadway is wet, rely more on the throttle to control vehicle speed and less on the front and rear brakes.

The throttle should also be used judiciously to avoid skidding the rear wheel from too rapid acceleration or deceleration.

On rough roads, exercise caution, slow down, and grip the fuel tank with your knees for better stability.

When quick acceleration is necessary as in passing, shift to a lower gear to obtain the necessary power.

Do not down shift at too high an r.p.m. to avoid damage to the engine from overrevving.

Avoiding unnecessary weaving is important to the safety of both the rider and other motorists.

Do not exceed the legal speed limit or drive too fast for existing conditions. High speed increases the influence of any condition affecting stability and the loss of control.

Operate motorcycle only at moderate speed and out of traffic until you have become thoroughly familiar with its operation and handling characteristics under all conditions. This is a very high performance motorcycle, designed and intended for use by experienced careful riders only!

A new motorcycle must be operated according to a special break-in procedure (see Running in recommendations).



Warning

Before starting engine, check for proper operation of brake, clutch, shifter, throttle controls, correct fuel and oil supply.

Gasoline is extremely flammable and is explosive under certain conditions. Refuell in a well ventilated area with the engine stopped. Do not smoke or allow open flames or sparks when refuelling or servicing the fuel system. Always close the fuel petcock when the engine is not running to prevent flooding of the throttle body. Do not overfill fuel tank (see instructions page 38). Motorcycle exhaust contains poisonous carbon monoxide gas. Do not inhale exhaust gases and never run the engine in a closed garage or confined area. Use only Ducati approved parts and accessories. This motorcycle was not intended to be equipped with a sidecar or to be used to tow any trailer or other vehicle. Ducati does not manufacture sidecars or trailers and cannot predict the effects of such accessories on handling or stability, but can only warn that the effects will be adverse and any damage to motorcycle components caused by the use of such accessories will not be remedied under warranty.

Warning

Do not ride the motorcycle with helmets attached to the hook; the helmets could cause an accident by distracting the operator or interfering with normal vehicle operation.

Protective apparel

Always wear a helmet. Most motorcycle accident fatalities are due to head injuries. For safety eye protection, gloves, and high top, sturdy boots should also be worn.

The exhaust system becomes very hot during operation, never touch the exhaust system. Wear clothing that fully covers your legs. Do not wear loose clothing which could catch on the control levers, footrests, wheels, or chain. Any amount of alcohol will significantly interfere with your ability to safely operate your motorcycle. Don't drink and ride.

Vehicle identification number (V.I.N.);

Every Ducati motorcycle is identified by two identification numbers (see page 9). Figure A specifically shows the identification numbers.

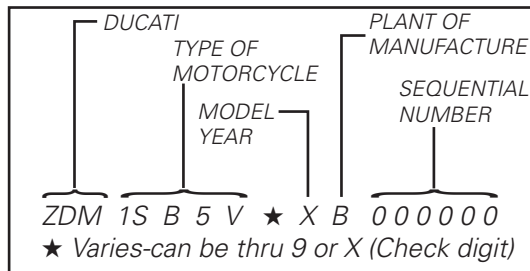


fig. A

Label location (fig. B)

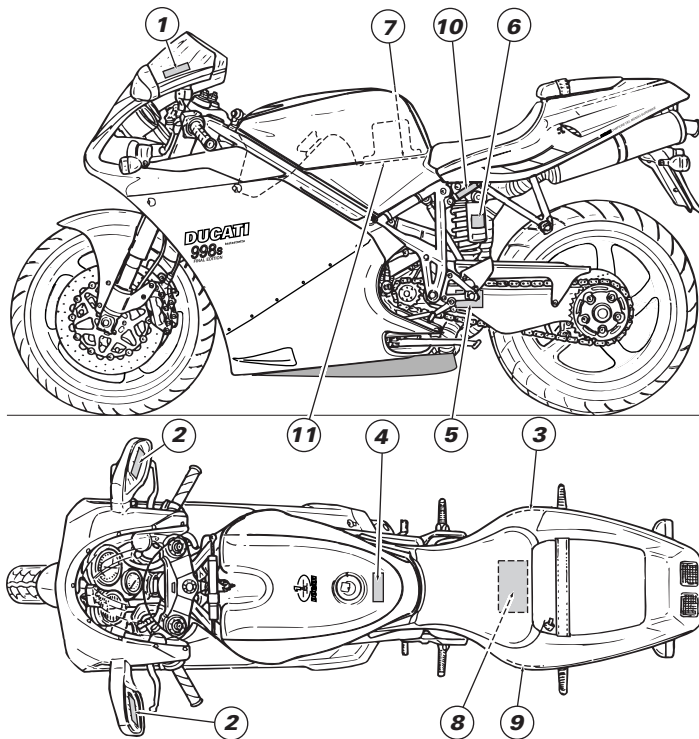


fig. B

WARNING
DO NOT ATTEMPT TO LOOK THROUGH THIS FAIRING. THIS IS NOT A WINDSHIELD. BUT AN AERODYNAMIC FAIRING ONLY. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN A COLLISION OR UPSET AND CONSEQUENT SERIOUS BODILY INJURY. See 001 100 10

1

OBJECTS IN MIRROR ARE CLOSER THAN THEY APPEAR
See 001 100 10

2

Manufactured by **DUCATI**MOTOR spa

DATE: ■ ■

GVWR: ■■■ Lbs (■■■ kg)
GAWR front: ■■■ Lbs (■■■ kg) with ■■■■ tire, ■■■■ RIM at ■■ PSI cold.
GAWR rear: ■■■ Lbs (■■■ kg) with ■■■■ tire, ■■■■ RIM at ■■ PSI cold.
This vehicle conforms to all applicable Federal Motor Vehicle Safety standards in effect on the date of manufacture shown above. Type classification: Motorcycle

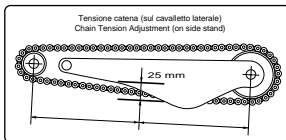
Vehicle I.D. No.: ■■■■■■■■■■

See 001 100 10

3

CAUTION
NEVER FILL TANK SO FUEL LEVEL RISES INTO FILLER NECK. IF TANK IS OVERFILLED, HEAT MAY CAUSE FUEL TO EXPAND AND FLOW INTO EVAPORATIVE EMISSION CONTROL SYSTEM RESULTING IN HARD STARTING AND ENGINE HESITATION.

4

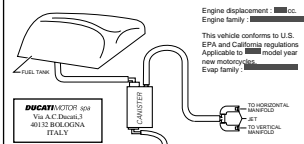


5

WARNING
CONTAINS HIGHLY COMPRESSED GAS. USE ONLY PERFECTLY DRY NITROGEN GAS. OTHER GASES MAY CAUSE EXPLOSION. DO NOT INCINERATE. REFER TO OWNER'S MANUAL FOR REGULATING GAS.

6

VEHICLE EMISSION CONTROL LABEL



7

VEHICLE EMISSION CONTROL INFORMATION

Engine displacement: ■■ cc
Engine family: ■■■■ cc
Engine exhaust control system: ■■■■
Evap family: ■■■■

THIS VEHICLE CONFORMS TO U.S. EPA AND CALIFORNIA REGULATIONS APPLICABLE TO 1998 MODEL YEAR NEW MOTORCYCLES AND IS CERTIFIED TO 14-BE G4M ENGINE FAMILY EXHAUST EMISSION STANDARD IN CALIFORNIA

ENGINE TUNE-UP SPECIFICATIONS

ITEM	SPECIFICATIONS	INSTRUCTIONS
IGNITION TIMING:	■ bTDC at idle speed	No adjustment
IDLE SPEED (RPM):	■■■ - ■■■ rpm	No adjustment
IDLE MIXTURE:	Opening ■■■ mm	No adjustment
VALVE CLEARANCE (in & ex):	Closing ■■■ mm	See Service Manual
SPARK PLUG: CHAMPION ■■■■	OIL: SAE 20W50	
SPARK PLUG GAP (mm): 0.5 - 0.6	FUEL: Unleaded gasoline	

DUCATIMOTOR spa - BOLOGNA - ITALY

8

MOTORCYCLE NOISE EMISSION CONTROL INFORMATION

THIS ■■■■ MOTORCYCLE, ■■■■ MEETS EPA NOISE EMISSION REQUIREMENTS OF ■■ dBA AT ■■ RPM BY THE FEDERAL TEST PROCEDURE. MODIFICATIONS WHICH CAUSE THIS MOTORCYCLE TO EXCEED FEDERAL NOISE STANDARDS ARE PROHIBITED BY FEDERAL LAW. SEE OWNER'S MANUAL. See 001 100 10

9

HELMET HOLDER UNDER THE SEAT

10



11

E

USA

California evaporation emission system

This system consists of (fig. C):

- 1) Warm air inlet;
- 2) Canister;
- 3) Dell'Orto jet;
- 4) Fuel tank;
- c) Breather pipe;
- d) Drain pipe.

Important

In the event of fuel system malfunction, contact Ducati's authorized Service Centres.

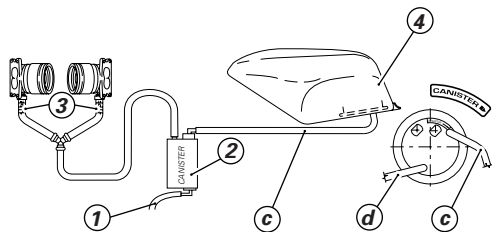


fig. C

Ducati limited warranty on emission control system

Ducati North America, Inc., 10443 Bandlely Drive, Cupertino, California, 95014 warrants that each new 1998 and later Ducati motorcycle, that includes as standard equipment a headlight, tail-light and stoplight, and is street legal:

A) is designed, built and equipped so as to conform at the time of initial retail purchase with all applicable regulations of the United States Environmental Protection Agency, and the California Air Resources Board; and

B) is free from defects in material and workmanship which cause such motorcycle to fail to conform with applicable regulations of the United States Environmental Protection Agency or the California Air Resources Board for a period of use, depending on the engine displacement, of 12,000 kilometers (7,456 miles), if the motorcycle's engine displacement is less than 170 cubic centimeters; of 18,000 kilometers (11,185 miles), if the motorcycle's engine displacement is equal to or greater than 170 cubic centimeters but less than 280 cubic centimeters; or of 30,000 kilometers (18,641 miles), if the motorcycle's engine displacement is 280 cubic centimeters or greater; or 5 (five) years from the date of initial retail delivery, whichever first occurs.

I. Coverage

Warranty defects shall be remedied during customary business hours at any authorized Ducati motorcycle dealer located within the United States of America in

compliance with the Clean Air Act and applicable regulations of the United States Environmental Protection Agency and the California Air Resources Board. Any part or parts replaced under this warranty shall become the property of Ducati.

In the state of California only, emissions related warranted parts are specifically defined by that state's Emissions Warranty Parts List. These warranted parts are: carburetor and internal parts; intake manifold; fuel tank, fuel injection system; spark advance mechanism; crankcase breather; air cutoff valves; fuel tank cap for evaporative emission controlled vehicles; oil filler cap; pressure control valve; fuel/vapor separator; canister; igniters; breaker governors; ignition coils; ignition wires; ignition points, condensers, and spark plugs if failure occurs prior to the first scheduled replacement, and hoses, clamps, fittings and tubing used directly in these parts. Since emission related parts may vary from model to model, certain models may not contain all of these parts and certain models may contain functionally equivalent parts.

In the state of California only, Emission Control System emergency repairs, as provided for in the California Administrative Code, may be performed by other than an authorized Ducati dealer. An emergency situation occurs when an authorized Ducati dealer is not reasonably available, a part is not available within 30 days, or a repair is not complete within 30 days. Any replacement part can be used in an emergency repair. Ducati will reimburse the owner for the expenses, including diagnosis, not to exceed Ducati's suggested retail price for all warranted

parts replaced and labor charges based on Ducati's recommended time allowance for the warranty repair and the geographically appropriate hourly labor rate. The owner may be required to keep receipts and failed parts in order to receive compensation.

II. Limitations

This Emission Control System Warranty shall not cover any of the following:

- A. Repair or replacement required as a result of
 - (1) accident,
 - (2) misuse,
 - (3) repairs improperly performed or replacements improperly installed,
 - (4) use of replacement parts or accessories not conforming to Ducati specifications which adversely affect performance and/or
 - (5) use in competitive racing or related events.
- B. Inspections, replacement of parts and other services and adjustments required for routine maintenance.
- C. Any motorcycle on which odometer mileage has been changed so that actual mileage cannot be readily determined.

III. Limited liability

- A. The liability of Ducati under this Emission Control Systems Warranty is limited solely to the remedying of defects in material or workmanship by an authorized Ducati motorcycle dealer at its place of business during customary business hours. This warranty does not cover inconvenience or loss of use of the motorcycle or

transportation of the motorcycle to or from the Ducati dealer. Ducati shall not be liable for any other expenses, loss or damage, whether direct, incidental, consequential or exemplary arising in connection with the sale or use of or inability to use the Ducati motorcycle for any purpose. Some states do not allow the exclusion or limitation of any incidental or consequential damages, so the above limitations may not apply to you.

B. No express emission control system warranty is given by Ducati except as specifically set forth herein. Any emission control system warranty implied by law, including any warranty of merchantability or fitness for a particular purpose, is limited to the express emission control systems warranty terms stated in this warranty. The foregoing statements of warranty are exclusive and in lieu of all other remedies. Some states do not allow limitations on how long an implied warranty lasts so the above limitation may not apply to you.

C. No dealer is authorized to modify this Ducati Limited Emission Control Systems Warranty.

IV. Legal rights

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

V. This warranty is in addition to the Ducati limited motorcycle warranty.

VI. Additional information

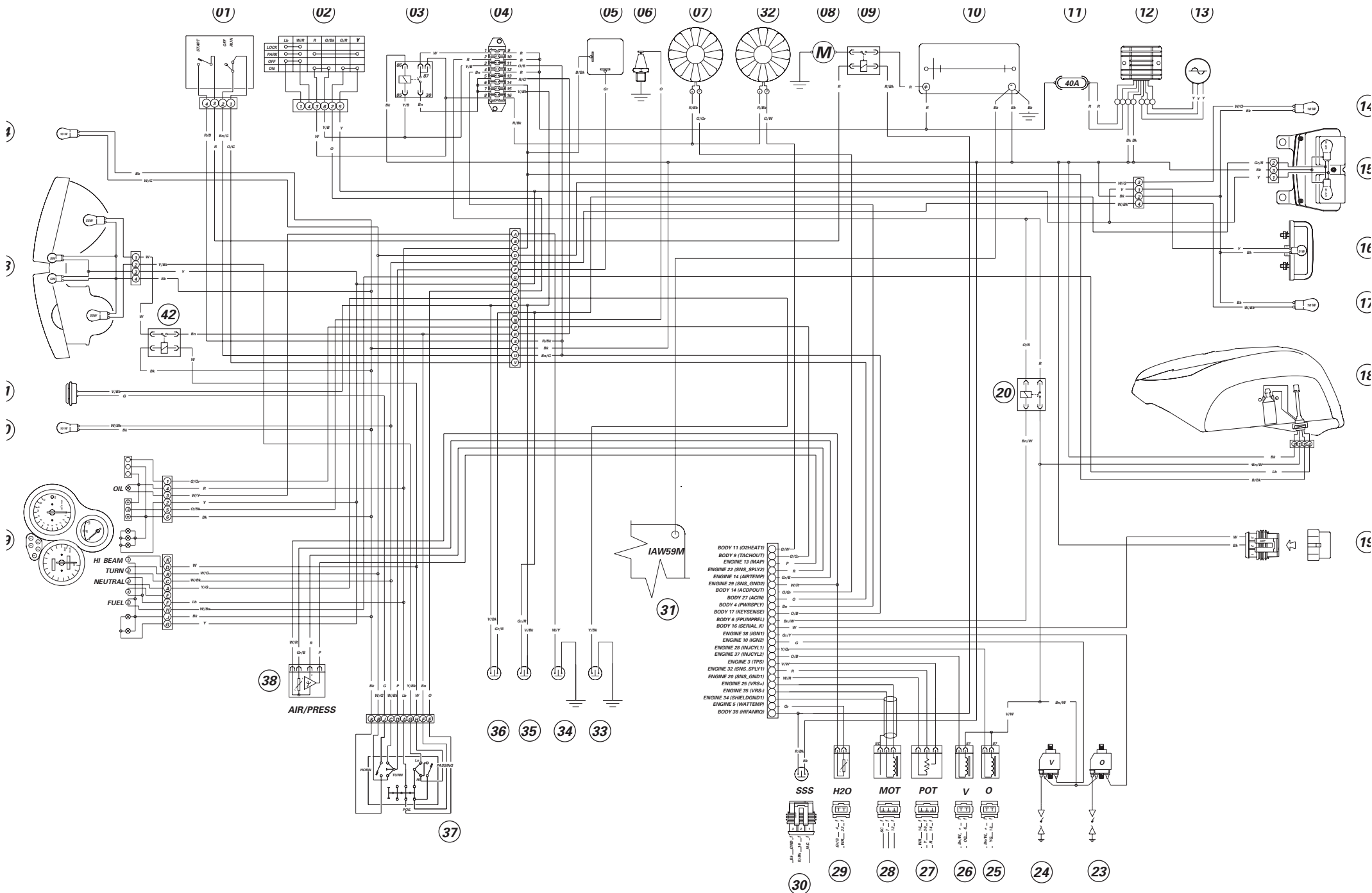
Any replacement part that is equivalent in performance and durability may be used in the performance of any

maintenance or repairs. However, Ducati is not liable for these parts. The owner is responsible for the performance of all required maintenance. Such maintenance may be performed at a service establishment or by any individual. The warranty period begins on the date the motorcycle is delivered to an ultimate purchaser.

Ducati North America, Inc..
10443 Bandlely Drive
Cupertino, California, 95014
Tel: 001.408.253.0499 • Fax: 001.408.253.4099.

ROUTINE MAINTENANCE RECORD

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



TUTTI I CONNETTORI SONO VISTI DA "C"
 ALL CONNECTORS ARE VIEWED FROM "C"
 TOUS LES CONNEXEURS SONT VUS DE "C"
 ALLE STECKER IN SICHT AUS "C"