

Use and maintenance manual

E

DUCATI *SUPERBIKE*

1098 / 1098S

E

We would like to welcome you among Ducati enthusiasts, and congratulate you on your excellent choice of motorcycle. We are sure that you will use your Ducati for longer journeys as well as short daily trips, but however you use your motorcycle, Ducati Motor Holding s.p.a wishes you an enjoyable ride.

We are continuously working to improve our Technical Assistance service. For this reason, we recommend that you follow strictly the instructions in this manual, especially those regarding the running-in period. In this way, you can be sure your Ducati motorcycle will continue to be a pleasure to ride.

For repairs or advice, please contact one of our authorized service centres.

We also provide an information service for all Ducati owners and enthusiasts for any advice and suggestions you might need.

Enjoy the ride!



Notes

Ducati Motor Holding S.p.A. cannot accept any liability for errors that may have occurred in the preparation of this manual. All information in the manual is valid at the time of going to print. Ducati Motor Holding S.p.A. reserves the right to make any modifications required due to the ongoing development of their products.

For safety and reliability, to avoid invalidating the warranty and to maintain the value of your motorcycle, use only original Ducati spare parts.



Warning

This manual is an integral part of the motorcycle and, if ownership of the motorcycle is transferred to a third party, the manual must be handed over to the new owner.

Table of contents

E	General indications	6
	Warranty	6
	Symbols	6
	Useful road safety information	7
	Riding with a full load	8
	Identification data	9
	Controls	10
	Position of the motorcycle controls	10
	Instrument panel	11
	LCD – Main functions	13
	LCD – How to set/display parameters	15
	The immobilizer system	36
	Code card	37
	Immobilizer override procedure	38
	Duplicate keys	40
	Ignition switch and steering lock	
	Left-hand handlebar switch	42
	Clutch lever	43
	Right-hand handlebar switch	44
	Throttle twistgrip	44
	Front brake lever	45
	Rear brake pedal	46
	Gearchange pedal	46

4

Adjusting the position of the gear change and rear brake pedals 47

Main components and devices 49

Location 49
Fuel tank filler cap 50
Seat lock and helmet holder 51
Sidestand 53
Steering damper 54
Front fork adjusters 55
Shock absorber adjusters 57
Changing motorcycle track alignment 59

Riding the motorcycle 61

Running-in precautions 61
Pre-ride checks 63
Starting the engine 64
Moving off 66
Braking 66
Stopping the motorcycle 67
Parking 67
Refuelling 68
Toolkit and accessories 69
USB DAQ (for 1098S only) 70

Main Use and Maintenance Operations 71

Removing the fairing 71
Checking and topping up the coolant 75
Checking the brake and clutch fluid level 76
Checking brake pads for wear 78

Lubricating cables and joints 79
 Adjustment of the throttle cable free play 80
 Charging the battery 81
 Checking the chain tension 82
 Lubricating the drive chain 82
 Changing the high and low beam bulbs 83
 Changing the parking light bulb 85
 Rear turn signal indicators 86
 Number plate light 86
 Headlight aim 87
 Rear view mirror adjustment 88
 Tubeless tyres 89
 Checking the engine oil level 91
 Cleaning and renewing the spark plugs 92
 General cleaning 93
 Storing the motorcycle 94
 Important notes 94

Maintenance 95

Programmed maintenance plan: operations to be carried out by the dealer 95
 Programmed maintenance plan: operations to be carried out by the dealer 98

Technical data 99

Overall dimensions (mm) 99
 Weights 99
 Engine 101
 Timing system 101
 Performance data 101
 Spark plugs 102
 Fuel system 102

Brakes 102
 Transmission 103
 Frame 104
 Wheels 104
 Tyres 104
 Suspension 105
 Exhaust system 105
 Available colours 105
 Electrical system 106

Periodic maintenance record 110

For United States of America version Only 111

Reporting of safety defects 111
 Safety warnings 111
 Noise emission warranty 111
 Noise and exhaust emission control system information 111
 Tampering warning 112
 Riding safety 113
 Protective apparel 114
 Vehicle identification number (VIN) 114
 Label location 115
 California evaporation emission system 117
 Ducati limited warranty on emission control system 117

Routine maintenance record 120

General indications

E

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 servicing that requires any particular technical expertise.

Our highly qualified staff have access to the specialised tools required to perform any servicing job to the highest professional standards, using only Ducati original spare parts as the best guarantee for perfect interchangeability, smooth running and long service life.

All Ducati motorcycles come with a Warranty Booklet. However, the warranty does not apply to motorcycles used in competitions. If any motorcycle part is tampered with, modified, or replaced with parts other than original Ducati spare parts during the warranty period, the warranty is automatically invalidated.

Symbols

Ducati Motor Holding S.p.A. advises you to read this manual carefully in order to familiarise yourself with your motorcycle. If in doubt, please contact a Ducati Dealer or Authorized Service Centre. You will find the information in the manual useful on trips (which Ducati Motor Holding S.p.A. hopes will be smooth and enjoyable), and it will help you obtain top performance from your motorcycle for a long time. This booklet uses a set of symbols with special meanings:



Warning

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



Important

Risk of damage to the motorcycle and/or its components.



Notes

Additional information about the current operation.

The terms **right** and **left** are relative to the direction of running of the motorcycle.

Useful road safety information



Warning

Read this section before riding your motorcycle.

Many accidents are the result of the inexperience of the rider. Always make sure you have your licence with you; you need a valid licence that entitles you to ride a motorcycle. Do not lend your motorcycle to persons who are inexperienced or do not hold a valid licence.

Riders and passengers must **always** wear appropriate clothing and a safety helmet.

Do not wear loose clothes or accessories that could become tangled in the controls or limit your field of vision.

Never start or run the engine in an enclosed space.

Exhaust gases are toxic and may lead to loss of consciousness or even death within a short time.

The rider should keep his/her feet on the footrests when the motorcycle is in motion.

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

Obey the legal requirements and observe national and local regulations.

Always respect the speed limits where these are indicated, and **never** exceed the speed allowed by the particular visibility, road and traffic conditions.

Always signal your intention to turn or change lane in good time, using the appropriate turn signal indicators.

Be sure you are clearly visible and avoid riding within the blind spot of a vehicle in front of you.

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

Always turn off the engine when refuelling. Be extremely careful not to spill fuel on the engine or on the exhaust pipe when refuelling.

Do not smoke when refuelling.

While refuelling, it is possible to inhale noxious fuel vapours.

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 if leaving your motorcycle unattended. The engine, exhaust pipes and silencers remain hot for a long time.



Warning

The exhaust system might be hot even after engine is switched off; take special care not to touch exhaust system with any part of your body and do not park the motorcycle next to inflammable material (wood, leaves etc.).

Park your motorcycle where no one is likely to knock against it, and use the sidestand.

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

Riding with a full load

Your motorcycle is designed for travelling over long distances with a full load in complete safety. Even weight distribution is critical for maintaining safety standards and to avoid getting into difficulties when making sudden manoeuvres or riding on bumpy roads.

Information on load capacity

The total weight of the motorcycle in running order with rider, luggage and additional accessories should not exceed 390 kg.

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

Secure the luggage firmly to the motorcycle structure.

Luggage incorrectly secured may cause the motorcycle to become unstable.

Never attach bulky or heavy objects to the top yoke or front mudguard, as this would cause dangerous instability.

Do not insert objects into gaps in the frame, where they could interfere with moving parts.

Check that the tyres are inflated to the pressure indicated on page 89 and that they are in good condition.

Identification data

All Ducati motorcycles have two identification numbers, one for the frame (fig. 1) and one for the engine (fig. 2).

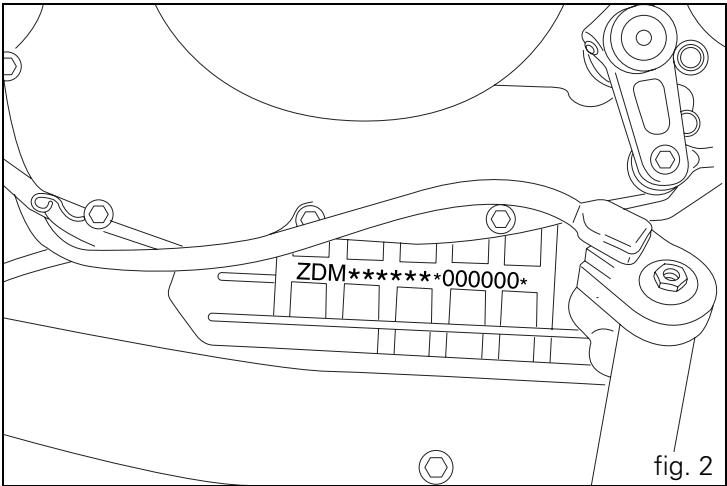
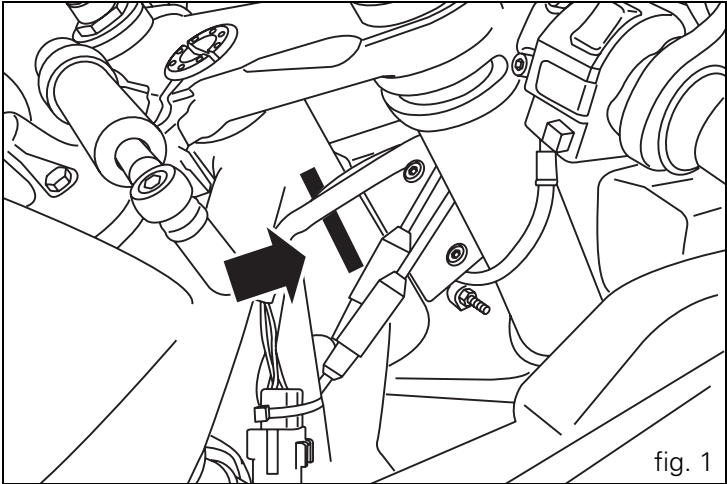
Frame number

Engine number



Notes

These numbers indicate the motorcycle model and should be quoted when ordering spare parts.



E

Controls

E



Warning This section shows the position and function of the controls used to drive the motorcycle. Be sure to read this information carefully before you use the controls.

Position of the motorcycle controls (fig. 3)

- 1) Instrument panel.
- 2) Key-operated ignition switch and steering lock.
- 3) Left-hand handlebar switch.
- 4) Clutch lever.
- 5) Rear brake pedal.
- 6) Right-hand handlebar switch.
- 7) Throttle twistgrip.
- 8) Front brake lever.
- 9) Gearchange pedal.

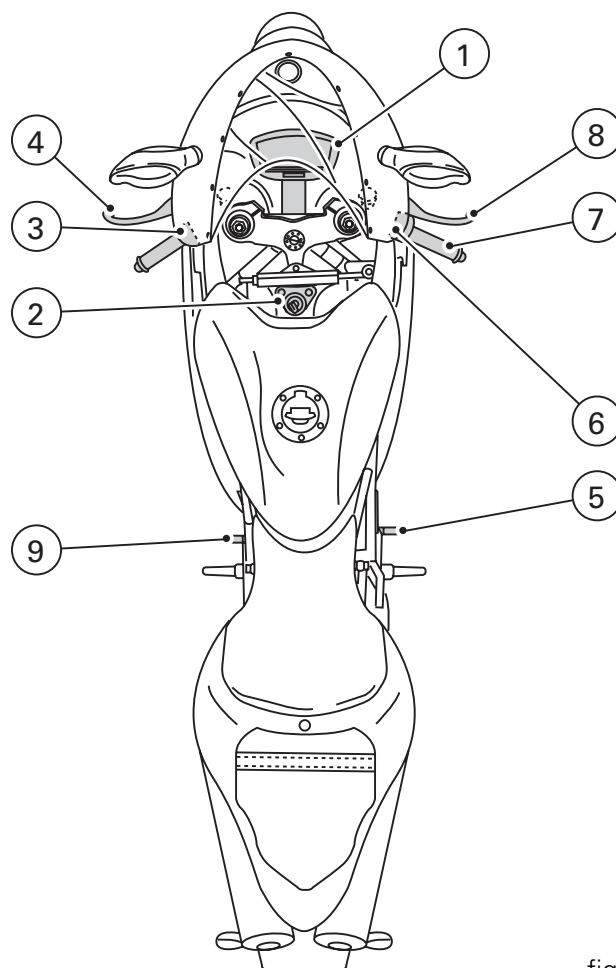






fig. 3

Instrument panel (fig. 4)

- 1) **LCD**, (see page 13).
- 2) **Tachometer** (rpm).
Indicates engine revs per minute.
- 3) **Neutral (N) indicator (green)**.
Illuminates when the gearbox is in neutral.
- 4) **Fuel warning light**  (yellow).
Comes on when there are about 3 litres of fuel left in the tank.
- 5) **Turn indicator light**  (green).
Illuminates and flashes when the turn indicator is in operation.
- 6) **Engine oil pressure light**  (red).
Comes on when engine oil pressure is too low. This light must illuminate when ignition is switched to **ON** and must go out a few seconds after the engine starts. It may come on briefly if the engine is very hot, but should go out again as engine speed increases.

Important

Do not use the motorcycle if the light (6) stays on, or engine damage may result.

- 7) **High beam light**  (blue).
Comes on when high beam is on.

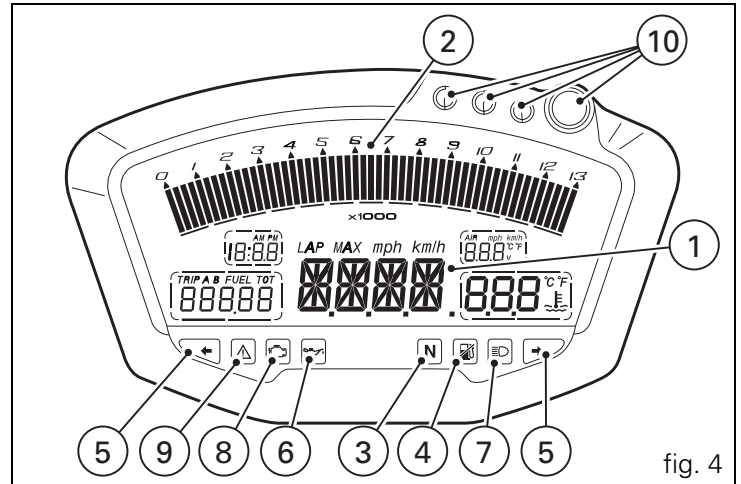



fig. 4

- 8) **EOBD light**  (amber).
This light is lit steadily if the engine control unit has found errors and has therefore blocked the engine. The light doubles as an indicator for the immobilizer override procedure using the throttle twistgrip. When no errors are present, the light should come on when the ignition switch is set to **ON** and should go out after a few seconds (normally after 1.8 – 2 sec.).
- 9) **“Motorcycle Diagnostics” light**.
Comes on when there is a problem with the motorcycle diagnostics.
- 10) **Limiter light**.

11) Control buttons A and B.

Button used for displaying and setting instrument panel parameters. It has two positions, A "▲" and B "▼".

12) High beam FLASH button (fig. 5).

The button that normally has the full beam flash function can be used for the LAP and USB DAQ functions.

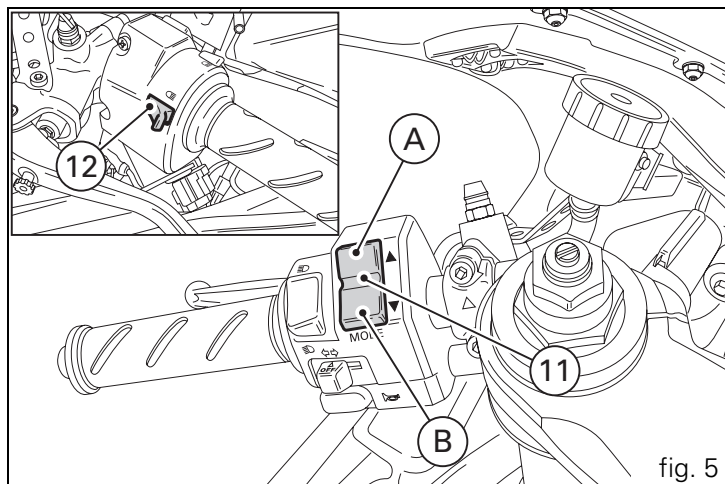


fig. 5

LCD – Main functions



Warning

Any adjustments to the instrument panel must only be carried out when the motorcycle is stationary. Never operate the instrument panel controls while riding the motorcycle.

- 1) **Speedometer.**
Indicates road speed.
- 2) **Odometer.**
Shows total distance travelled.
- 3) **Trip meter.**
Shows the distance travelled since the last reset (TRIP A and TRIP B).
- 4) **Fuel reserve trip counter.**
Shows distance travelled in on the reserve fuel.
- 5) **Clock.**
- 6) **Lap time.**
- 7) **Rev counter (RPM).**
- 8) **Recording of lap time, maximum speed and maximum rpm.**
- 9) **Battery voltage indicator (BATT).**
- 10) **Air temperature indicator.**
- 11) **Coolant temperature indicator.**
Indicates engine coolant temperature.



Important

Stop riding if the temperature reaches maximum value, otherwise engine damage could result.

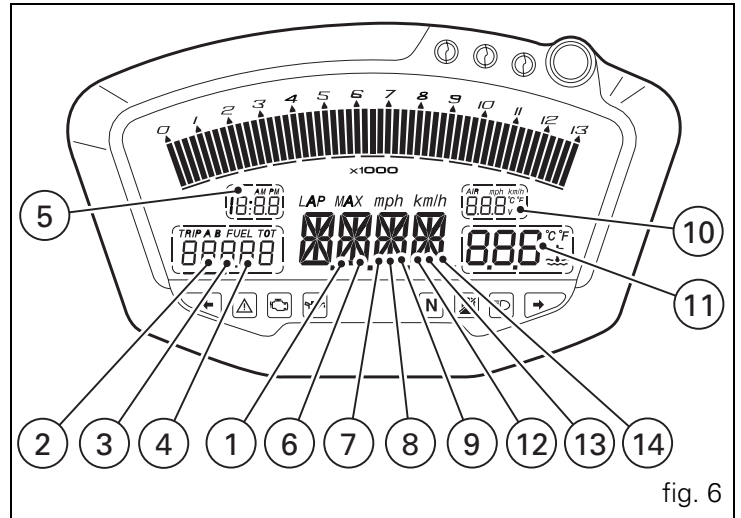


fig. 6

12) **Servicing indicator (SERV)** (fig. 6).

The message "SERV" indicates that the service interval (distance) has been reached. The message is displayed only at Key-On for 5 seconds. The counter is reset at a DUCATI Authorised Workshop during the maintenance operations.

13) **Immobilizer indicator (CODE)** (fig. 6).

The message "CODE" appears when the key code is wrong or not recognized, and flashes after an error signal from the immobilizer system has been reset by performing the immobilizer override procedure using the throttle twistgrip (see page 38).

14) **DAQ (USB)** (fig. 6).

Indicates that the USB DAQ has been activated.



Important

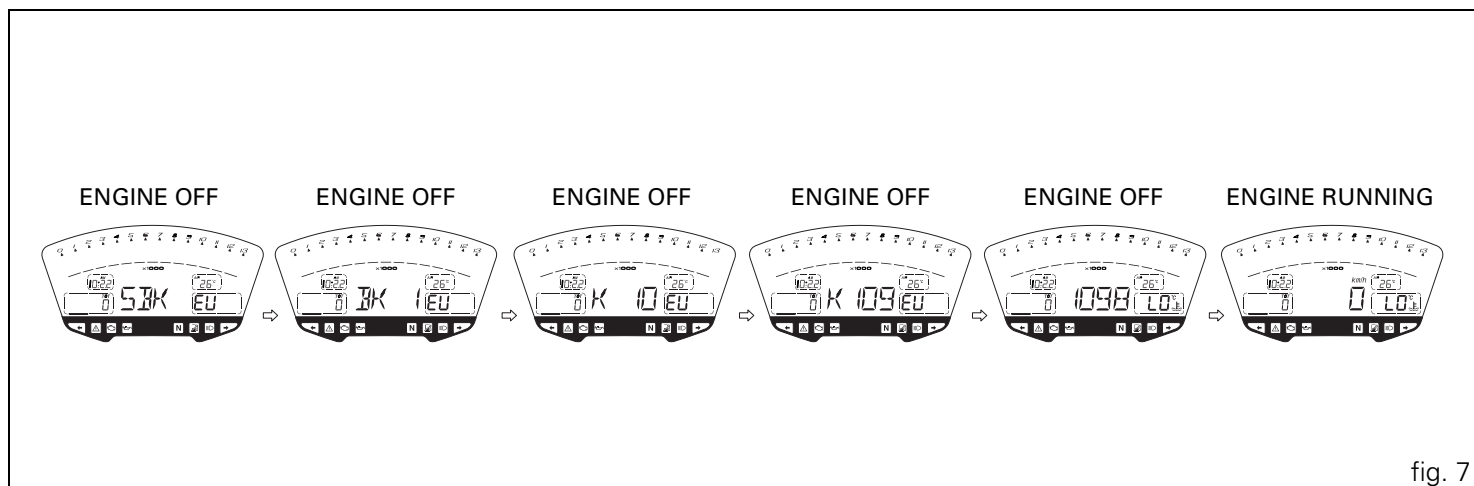
The instrument panel is part of the on-board electronic injection/ignition system diagnostics. The related menus are for use by trained personnel only. If you accidentally access this function, turn the key to **OFF** and have the motorcycle inspected at an authorized Ducati Service Centre.

LCD – How to set/display parameters

At switch-on (key from **OFF** to **ON**) the instrument panel activates all the digits of the LCD for 1 second and switches on the warning lights in sequence.

It then reverts to “normal” mode and, in place of motorcycle speed, shows the model and, for 2 seconds, also the version (EU, UK, USA, CND, FRA, JAP).

The model is displayed cyclically until the engine is started.



At Key-On the instrument panel always shows the following information (de-activating the previously activated functions):

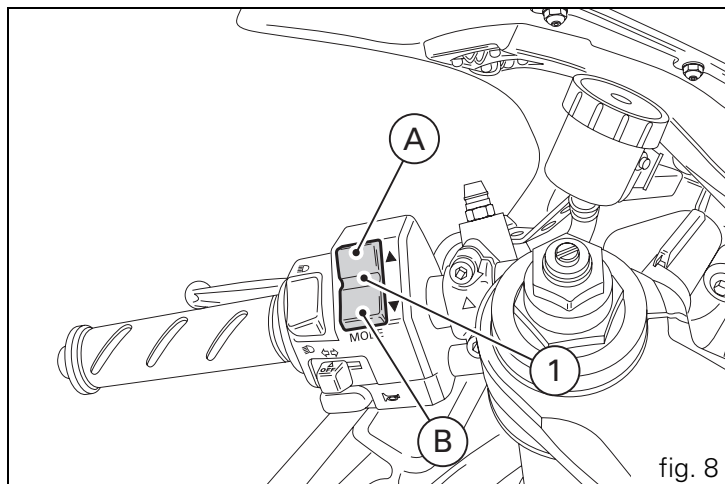
Odometer
Air temperature
Clock
Speed
Coolant temperature
Engine rpm

At this point, with button (1, fig. 8) in position A "▲" it is still possible to switch from the odometer function to the following functions:

TRIP A
TRIP B
TRIP FUEL (only if active)
before returning to **TOT** (odometer).

If, however, you press button (1, fig. 8) in position B "▼" the system goes into the MENU and displays the following functions in sequence:

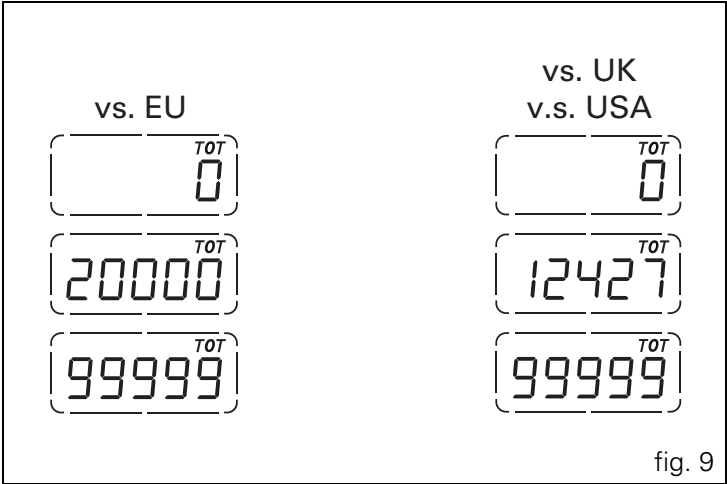
Error (only if active)
BATT
RPM
LAP (OFF or ON)
LAP MEM
USB (OFF or ON)
Erase USB
TIME Set
CODE (only if active)



Important
This menu is active only if the speed of the motorcycle is less than 20 km/h. If this menu is on the display and the speed of the motorcycle exceeds 20 km/h, the instrument automatically exits the menu and returns to the initial display. It is possible to exit the menu at any time, however, by pressing button (1, fig. 8) in position A "▲" for 3 seconds.

Total distance travelled indicator (odometer)

At Key-On the system automatically enters this function.
The reading is saved permanently and cannot be reset.
If it exceeds 99999 km (or 99999 miles), the reading
"99999" remains displayed permanently.



E

Trip meter “TRIP A”

While in this function, if you press button (1, fig. 8) in position B “▼” for 3 seconds, the reading is reset. If the reading exceeds 999.9, it is reset and the count restarts automatically.

If the system’s units of measurement are changed at any time with the “Setting Special” function, the reading in this function is reset and the count restarts from zero in the newly set unit of measurement.

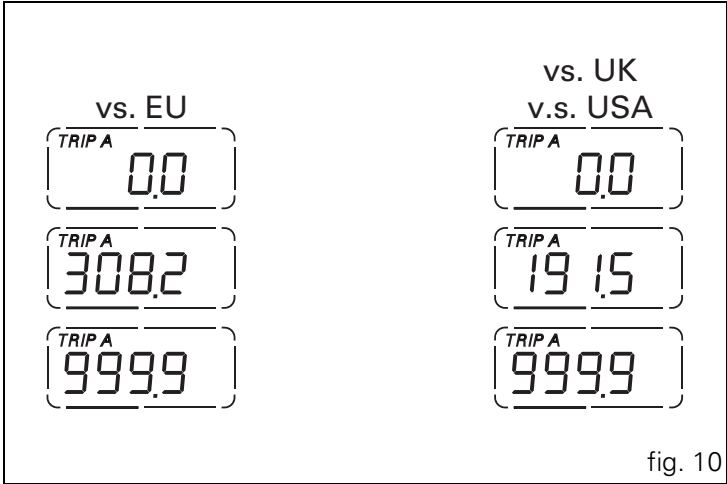


fig. 10

Trip meter “TRIP B”

While in this function, if you press button (1, fig. 8) in position B “▼” for 3 seconds, the reading is reset. If the reading exceeds 999.9, it is reset and the count restarts automatically.

If the system’s units of measurement are changed at any time with the “Setting Special” function, the reading in this function is reset and the count restarts from zero in the newly set unit of measurement.

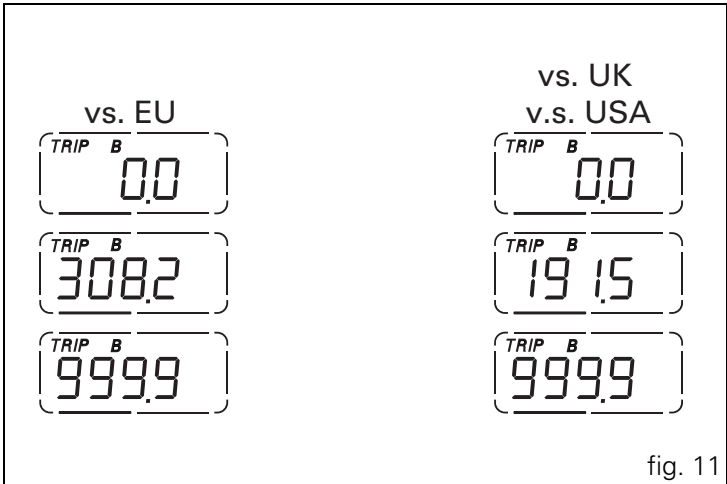


fig. 11

“TRIP FUEL” (distance travelled on reserve fuel) indicator

When the fuel warning light comes on, the TRIP FUEL meter is activated automatically, regardless of the function displayed. If the fuel level remains in reserve, the reading is saved even after Key-Off. The count stops automatically when the fuel level rises above reserve. If the reading exceeds 999.9, it is reset and the count restarts automatically.

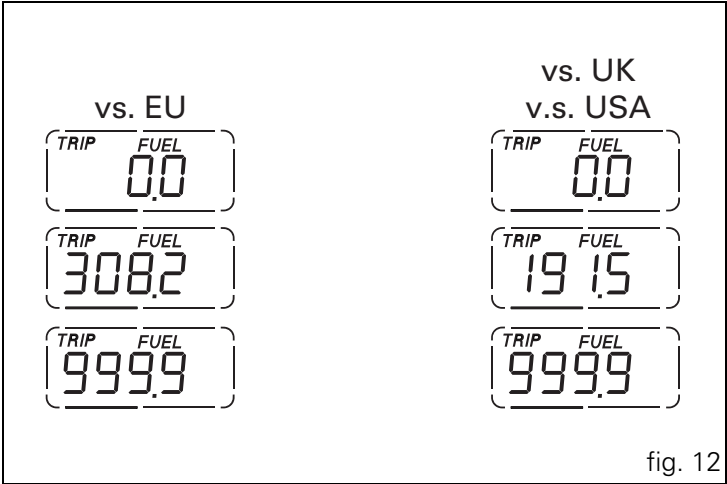


fig. 12

Air temperature indicator

Shows the outside air temperature. Display limits: -39 °C to +124 °C. In the event of a sensor FAULT (-40 °C, +125 °C or disconnected) a series of dashes “- - -” is displayed steadily and the engine diagnostics warning light (9, fig. 4) comes on.

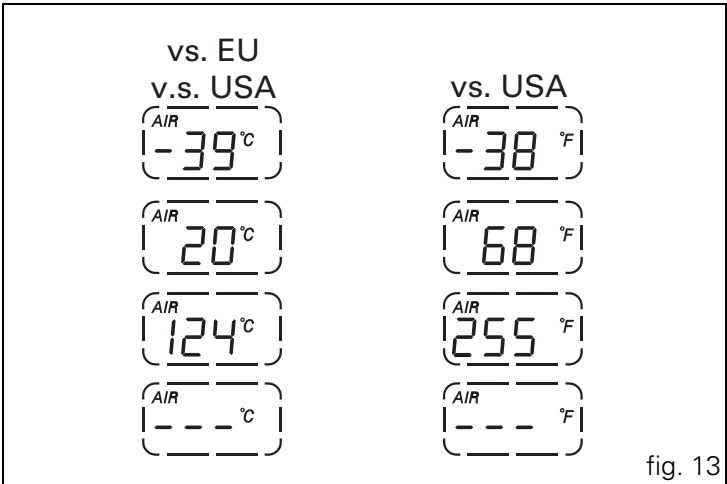
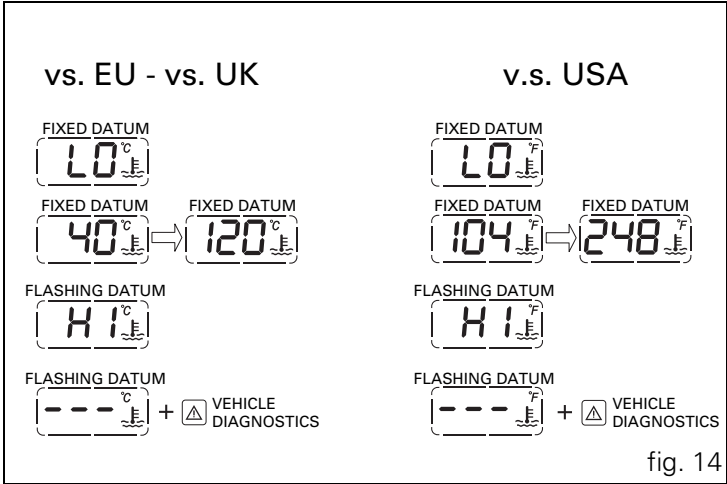


fig. 13

E

Coolant temperature indicator

Displays engine coolant temperature:
if the reading is less than or equal to -40 °C (-104 F°), the display shows a series of flashing dashes ("—") and the Engine Diagnostics warning light comes on (9, fig. 4);
if the reading is between -39 °C (-102.2 F°) and +39 °C (+102.2 F°), the display shows the fixed message "LO";
if the reading is between +40 °C (+104 F°) and +120 °C (+248 F°), the display shows the fixed reading;
if the reading is between +121 °C (+249.8 F°) and +124 °C (+255.2 F°), the display shows the flashing message "HI";
if the reading is greater than or equal to +125 °C (+257 F°), the display shows a series of flashing dashes ("—") and the Engine Diagnostics warning light (9, fig. 4) comes on.
In the event of a sensor FAULT, a series of flashing dashes ("—") appears and the Engine Diagnostics warning light (9, fig. 4) comes on.



Servicing indicator (SERV)

Indicates that the servicing limit has been reached.

The message "SERV" appears on the display at the following intervals:

after the first 1000 km on the odometer;

every 12000 km on the odometer.

The message is displayed only at Key-On for 5 seconds.

When the message appears, contact a Ducati dealer or authorised service centre.

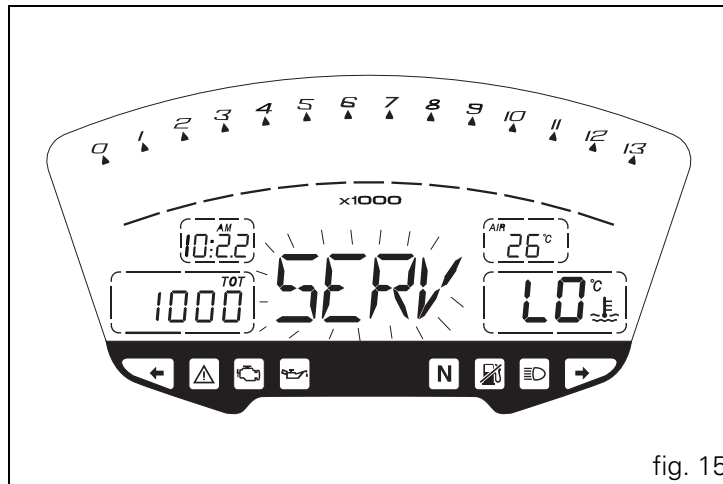


fig. 15

E

E

Battery voltage indicator (BATT)

To display this function, go into the menu and select the “BATT” page.

The battery voltage reading is displayed as follows:

if the reading is between 12.1 and 14.9 Volts, it remains fixed;

if the reading is between 10.0 and 12.0 Volts or between 15.0 and 16.0 Volts, it flashes;

if the reading is less than or equal to 9.9 Volts, the flashing message “LO” appears on the display and the Motorcycle Diagnostics warning light (9, fig. 4) comes on;

if the reading is greater than or equal to 16.1 Volts, the flashing message “HI” appears on the display and the Motorcycle Diagnostics warning light (9, fig. 4) comes on.

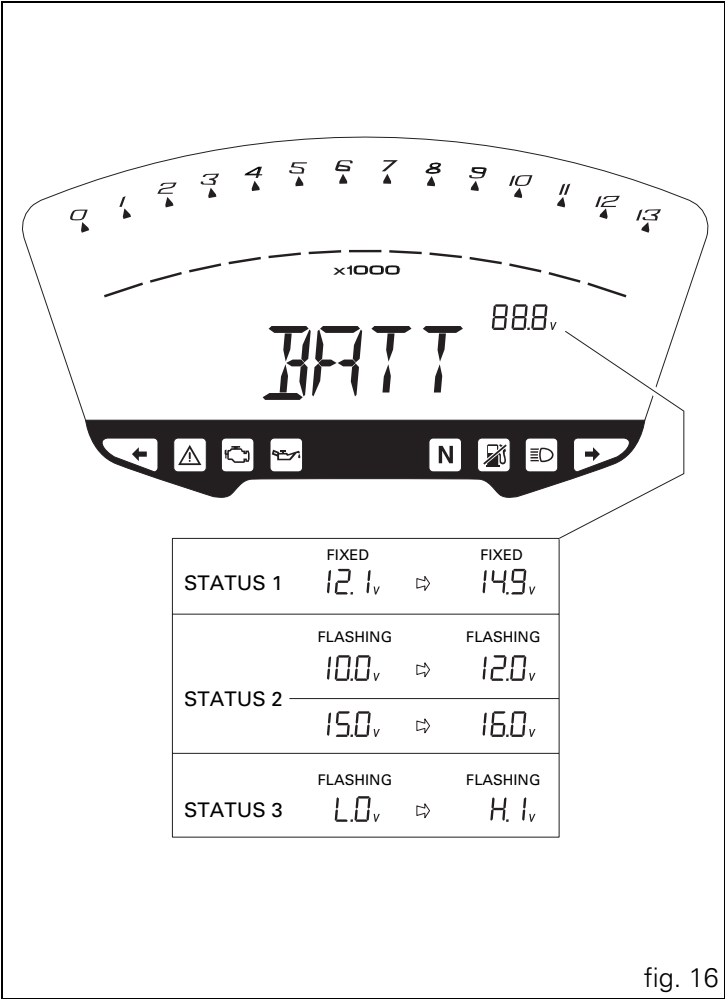


fig. 16

Adjusting engine idle speed (rpm)

To display the function, go into the menu and call up the "RPM" page.

As well as the top rev counter scale, the display also shows engine rpm numerically so that you can adjust the idle speed more precisely.

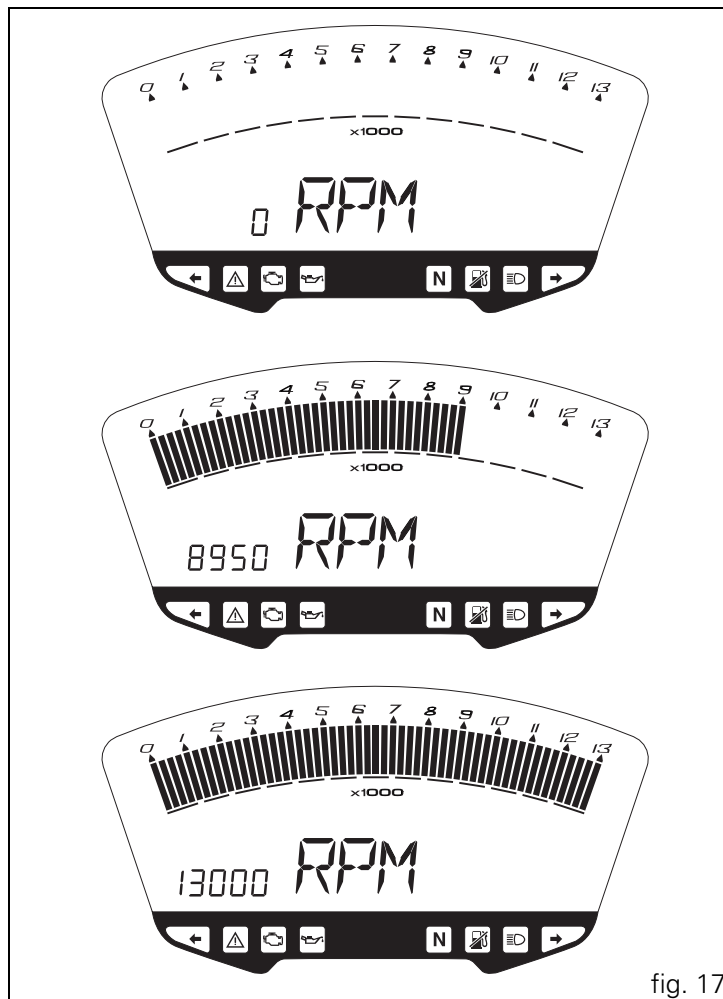


fig. 17

Lap time display

To activate this function, go into the menu and set the "LAP" function to "On" by keeping button (1, fig. 8) in position B "▼" for 3 seconds.

START and STOP the timer by pressing the high beam FLASH button (12, fig. 5) on the left-hand switch.

When the LAP function is active, each time you press the FLASH button, the display will show the lap time for 10 seconds, before reverting to normal mode.

You can save a maximum of 30 laps in the memory.

If the memory is full, each time you press the FLASH button, the display will not save any more lap times and will display the flashing message "FULL" for 3 seconds until the memory is reset.

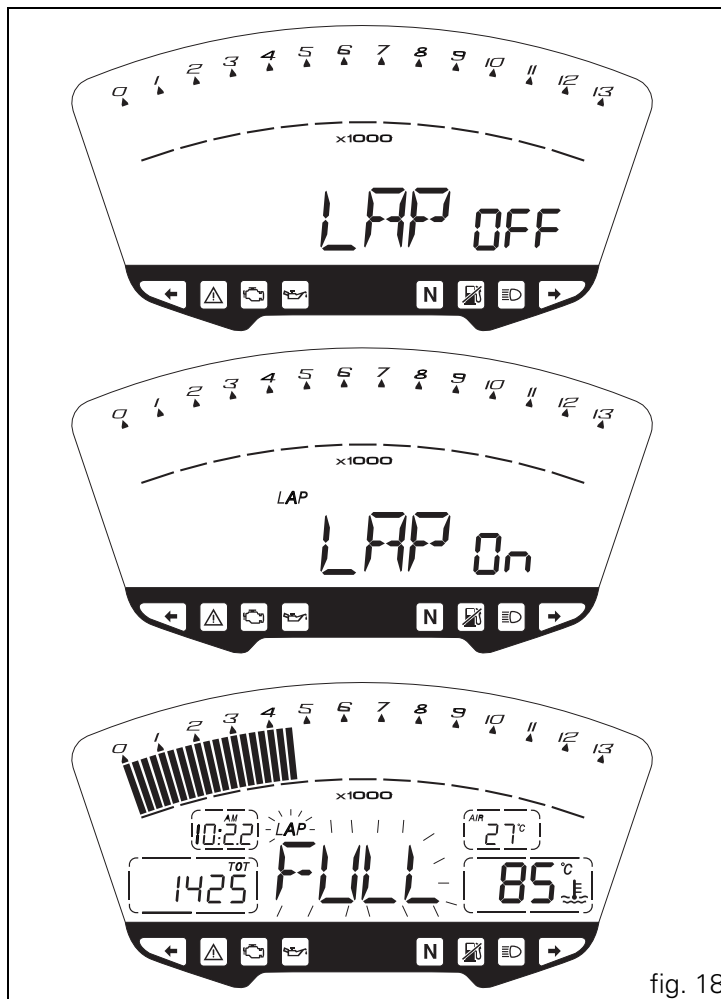


fig. 18

When you switch the LAP function off using the menu, the lap in progress is not saved.

If the LAP function is active and the display is suddenly switched off (Key-Off), the LAP function is switched off automatically (even if the timer was ON, the lap in progress is not saved).

If the timer is not stopped, when it reaches 99 minutes, 59 seconds and 99 hundredths, it restarts from 0 (zero) and continues until the function is switched off.

If, however, the LAP function is switched on and the memory has not been cleared, but the less than 30 laps have been saved (e.g. 18 laps), the display will save any remaining laps until the memory is saturated (in this case, it will save a further 12 laps).

In this function, lap time only is displayed, but other data are also saved (MAX speed, MAX rpm, limiter if reached) for viewing at a later date in the Lap Memory function.

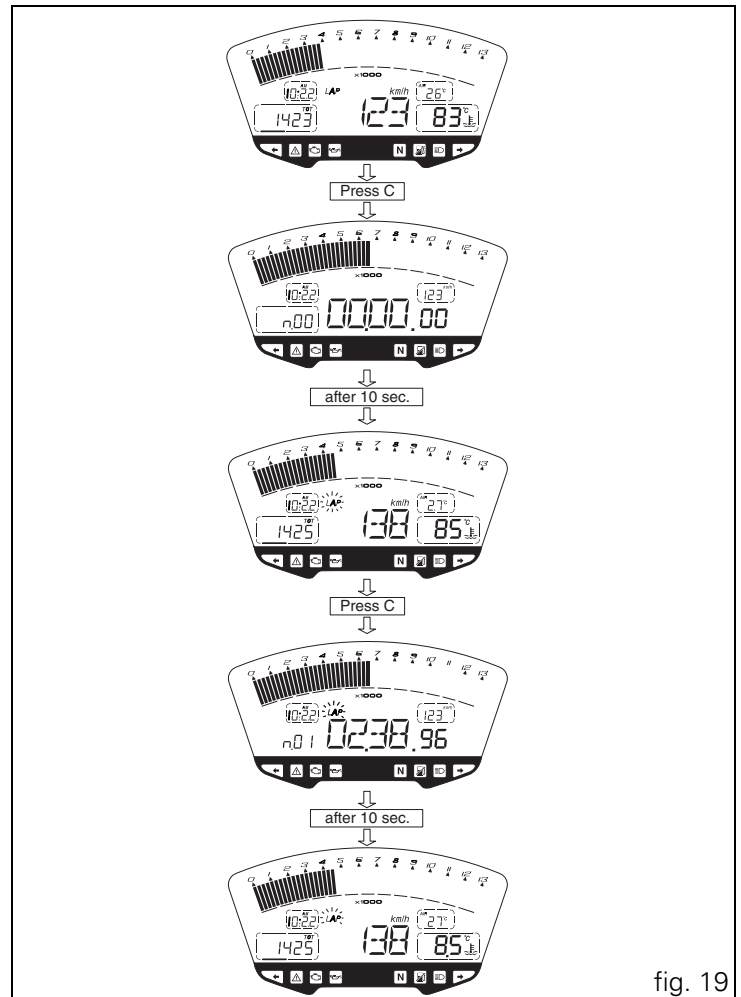


fig. 19

Visualizzatore dati memorizzati (LAP Memory)

Displays the data saved with the LAP function: lap time, MAX speed and MAX rpm.

To display the saved times, go into the menu and select the "LAP MEM" page.

From this page, if you hold button (1, fig. 8) in position B "▼" for 3 seconds, the data for the first lap will appear. The display will show the lap number, lap time, MAX speed and the MAX rpm reached for the lap in question.

If you switch the button (1, fig. 8) to position B "▼", the display scrolls through the 30 saved times, before returning to the 1st lap.

If you hold the button (1, fig. 8) in position B "▼" for 3 seconds while displaying the saved times, the display immediately resets all the saved times. In this case, if the LAP function was active, it is switched off automatically. The MAX speed saved is the speed shown on the display in Lap function.

During saving, if the MAX speed shown exceeds 299 km/h (186 mph), the speed reached is displayed (e.g. 316 km/h). If there is no reading in the memory, the 30 times are shown, with the displaying "00.00.00", MAX rpm = 0 and MAX speed = 0.

During the lap, if the engine reaches one of the two thresholds before the limiter or the limiter itself, the respective warning lights (10, fig. 4) come on during viewing of the saved times.

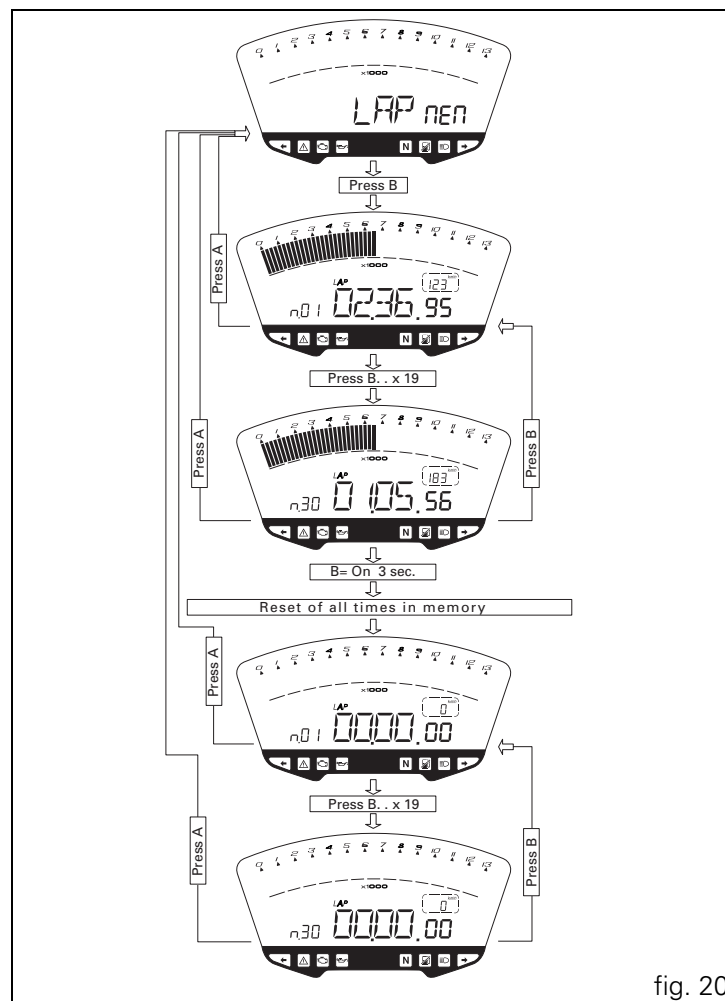


fig. 20

USB DAQ

This function activates the USB DAQ (see page 66): the DAQ must be connected to the motorcycle wiring.

To activate the DAQ, go into the menu and set the USB DAQ to "On" by holding the button (1, fig. 8) in position B "▼" for 3 seconds.

START and STOP the lap separator by pressing the high beam FLASH button (12, fig.5) on the left-hand switch.

If the USB function is active and the display is suddenly switched off (Key-Off), the function is switched off automatically.

E

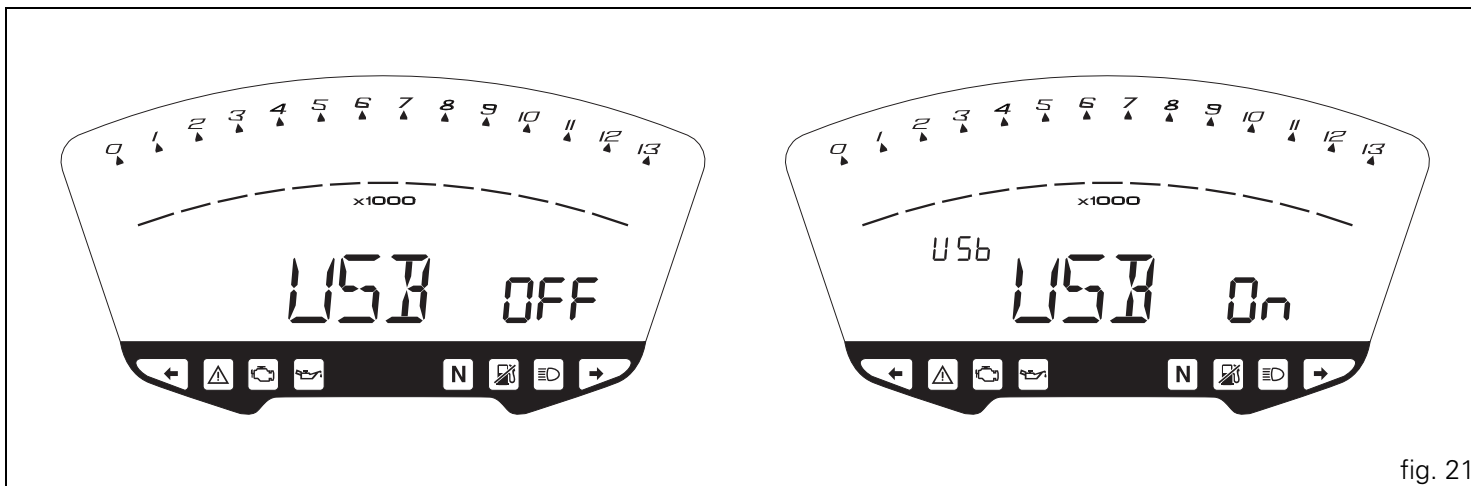


fig. 21

Erase USB

This function enables you to delete the data saved on the USB DAQ: the DAQ must be connected to the motorcycle wiring.

To delete the data, go into the menu and select the "Erase USB" page.

If you hold the button (1, fig. 8) in position B "▼" for 3 seconds and the USB DAQ is not acquiring data, the message "WAIT..." appears on the display for 10 seconds. After 10 seconds, the message "OK" appears for 2 seconds, to confirm that the data has been deleted.

If you hold the button (1, fig. 8) in position B "▼" for 3 seconds and the USB DAQ is acquiring data, the DAQ memory is not cleared and the display shows the message "ERASE FAIL" for 2 seconds.

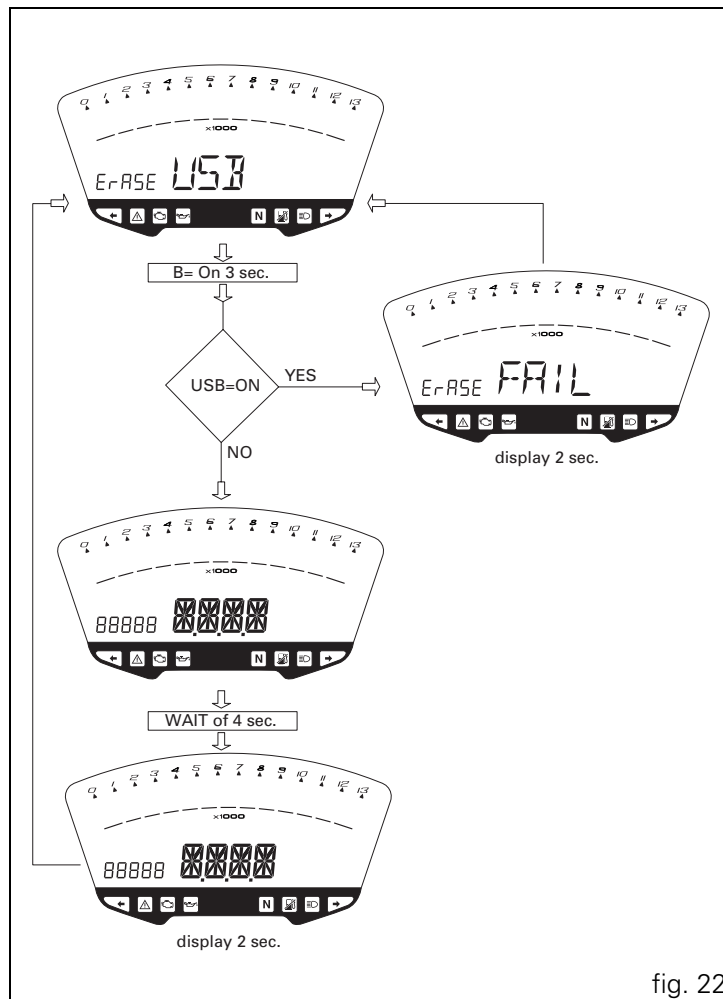


fig. 22

Clock setting

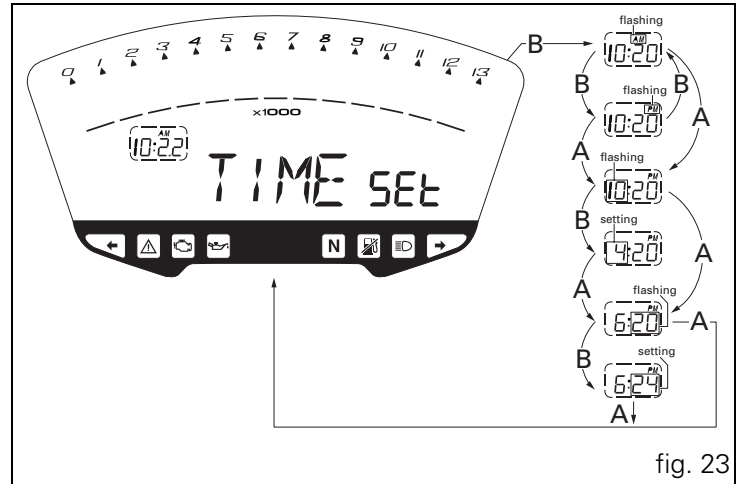
To set the clock, select the "TIME Set" page from the menu. From this page, if you hold the button (1, fig. 8) in position B "▼" for 3 seconds, you go into clock setting mode.

On entering this function, the message "AM" flashes on the display; if you switch the button (1, fig. 8) to position B "▼", the message "PM" flashes on the display; if you switch the button (1, fig. 8) to position B "▼", you return to the previous step (if the time is 00:00, when you switch from AM to PM the time 12:00 will appear).

If you switch the button (1, fig. 8), to position A "▲", you can set the hours, which start flashing. Each time you press the button into position B "▼", the count advances cyclically in steps of 1 hour; if you hold the button down in position B "▼", the count advances cyclically in steps of 1 hour every second (when the button is held down continuously, the hours do not flash).

If you switch the button (1, fig. 8), to position A "▲", you can set the minutes, which start flashing. Each time you press the button into position B "▼", the count advances cyclically in steps of 1 minute; if you hold the button down in position B "▼", the count advances cyclically in steps of 1 minute every second. If the button is held in position B "▼" for more than 5 seconds, the minutes advance by 1 every 100 ms (when the button is held in position B "▼" continuously, the seconds do not flash).

If you switch the button to position A "▲", the system exits setting mode and displays the newly set time.










E












Instrument panel diagnostics












Important
The instrument runs the system diagnostics correctly 60 seconds after the last Key-Off.












Warning
If an error is displayed, always contact an authorised Ducati service centre.






Any anomalous behaviours of the motorcycle are displayed. If there are several errors, they are displayed in rolling mode every 3 seconds.
The table below shows the errors that can be displayed.

Warning light	Error message	Error
	COIL	10.1 Horizontal cylinder coil error
	COIL	10.2 Horizontal cylinder coil error
	COIL	11.1 Vertical cylinder coil error
	COIL	11.2 Vertical cylinder coil error
	INJE	12.1 Horizontal cylinder injector error
	INJE	12.2 Horizontal cylinder injector error
	INJE	13.1 Vertical cylinder injector error

Warning light	Error message	Error
	INJE	13.2 Vertical cylinder injector error
	PUMP	16.0 Fuel pump relay error
	FAN	18.1 Fan relay error
	FAN	18.2 Fan relay error
	STRT	19.1 Starter contactor error
	STRT	19.2 Starter contactor error
	STEP.	21.1 Stepper motor error
	STEP.	21.2 Stepper motor error
	STEP.	21.3 Stepper motor error
	LAMB.	22.1 Lambda heater error
	LAMB.	22.2 Lambda heater error

Warning light	Error message	Error
	EXVL	23.1 Exhaust valve motor error
	EXVL	23.2 Exhaust valve motor error
	EXVL	23.3 Exhaust valve motor error
	EXVL	23.4 Exhaust valve motor error
	EXVL	23.5 Exhaust valve motor error
	TPS	1.1 Throttle position sensor error
	TPS	1.2 Throttle position sensor error
	PRESS	2.1 Pressure sensor error
	PRESS	2.2 Pressure sensor error
	T.WAT	3.1 Engine coolant temperature sensor error
	T.WAT	3.2 Engine coolant temperature sensor error

Warning light	Error message	Error	
	AIR	4.1	Air temperature sensor error
	AIR	4.2	Air temperature sensor error
	BATT	5.1	Battery voltage error
	BATT	5.2	Battery voltage error
	LAMB	6.1	Lambda probe error
	TILT	6.2	Lambda 2 probe error
	DTC	8.0	Traction control unit error (the error can only occur if the bike has been fitted with the traction control kit available from Ducati performance)
	ECU	30.0	Engine control unit error
	PK.UP	34.0	Pick-up sensor error
	SPEE.	36.0	Speed sensor error
	IMMO	37.0	Immobilizer error

Warning light	Error message	Error
	IMMO	37.1 Immobilizer error
	IMMO	37.3 Immobilizer error
	IMMO	37.4 Immobilizer error
	IMMO	37.5 Immobilizer error
	CAN	38.0 CAN line error

Brightness of warning lights

The brightness of warning lights is adjusted automatically by the instrument panel according to the level of external light detected.

Display backlight

The instrument panel backlight is switched on only if the parking lights or low/high beam is on.

In this case the instrument panel, using sensors that measure ambient temperature and light intensity, automatically turn the backlight on or off.

Intelligent headlamp switch-off

This function is used to reduce the consumption of battery power, by automatically switching off the front headlamp. The device is triggered in 2 cases:

- in the first case, if you turn the key from **OFF** to **ON** and do not start the engine within 60 seconds, the headlight is turned off and will be turned on again only when the engine is next switched on.
- in the second case, after normal use of the vehicle with the lights on, if the engine is killed via the **RUN-STOP** button on the RH switch.

In this case, the headlamp is switched off 60 seconds after the engine is switched off, and only switched on again the next time the engine is started.

Intelligent headlamp switch-on

This function allows programmed activation of the headlamp even with the motorcycle off (Key-Off).

Immediately after key-off, the instrument panel remains active for 60 seconds, thus allowing the headlamp to be switched on if the button (1, fig. 8) is switched to position B "▼".

During these 60 seconds, each time the button (1, fig. 8) is switched to position B "▼", the instrument enables you switch on the headlamp for 30 seconds. Each time you switch the button (1, fig. 8) to position B "▼", a further 30 seconds will be added to the switch-on time, up to a maximum of 6 presses (the maximum time is 180 seconds).

After the first time you switch the button (1, fig. 8) to position B "▼", the period of 30 seconds starts, thus switching on the headlamp. Further switch-on time can be added only if you press the button again within these 30 seconds.

If the 30 seconds have elapsed, no further multiples of 30 seconds can be added, and the instrument panel will switch off the headlamp.

To return to this function, you must do at least one Key-On/Key-Off.

If the battery power is interrupted at any time while this function is active, when power is restored the instrument panel will de-activate the function (the instrument panel does not remain active for 60 seconds).

The immobilizer system

For additional anti-theft protection, the motorcycle is equipped with an IMMOBILIZER, an electronic system that locks the engine automatically whenever the ignition switch is turned off.

The grip of each ignition key contains an electronic device that modulates the output signal from a special antenna in the switch when the ignition is switched On. The modulated signal represents the "password" (which is changed at each start-up) by which the ECU recognizes the ignition key. The ECU will only allow the engine to start if it recognises this password.

Keys (fig. 24)

The owner receives a set of keys, comprising:

- 2 black keys (B)

These contain the "code" of the immobilizer system.

Notes

Your Ducati dealer may ask you to produce your Code Card in order to carry out certain servicing operations.

The black keys (B) are the keys for normal use, and are used to:

- start the engine;
- open the lock on the fuel tank filler cap;
- open the seat lock.



Notes

The two keys have a small tag (1) attached, which shows their identification number.

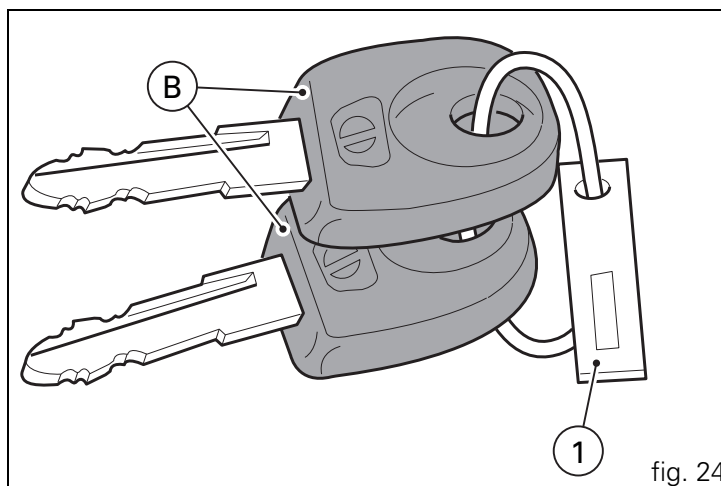


fig. 24



Warning

Keep the keys separate, and store the tag (1) in a safe place.

It is also advisable to use only one of the black keys to start the motorcycle.

Code card

A CODE CARD (fig. 25) is supplied with the keys. This shows the electronic code (A, fig. 26) that must be used if the engine is locked by the immobilizer and consequently does not start when the key is turned to **ON**.



Warning

Keep the CODE CARD in a safe place. We advise the user to keep the code printed on the CODE CARD on his/her person at all times in order to be able to override the engine lock using the procedure described below, in the event of a malfunction of the immobilizer system, signalled by illumination of the amber diagnostic light (9, fig. 4).

This operation is only possible if the electronic code indicated on the code card is known.



Warning

Your dealer will ask you to produce the Code Card in order to re-program or replace a key.

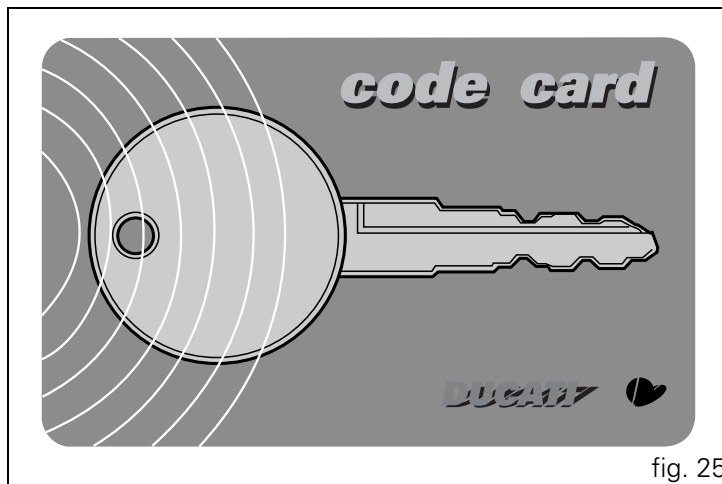


fig. 25

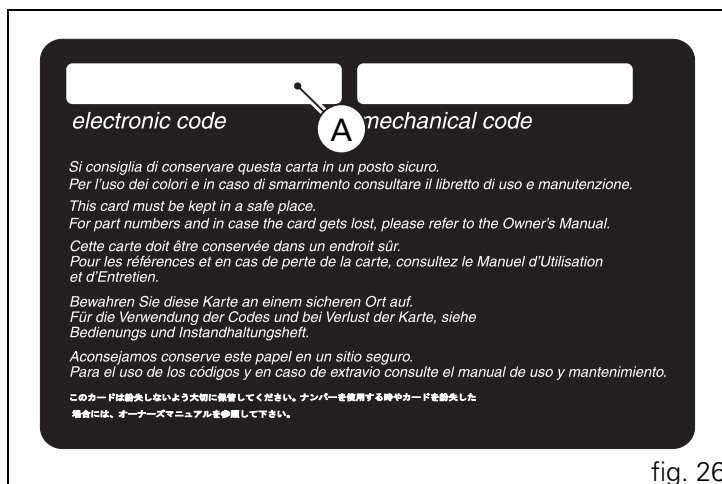


fig. 26

Immobilizer override procedure

Should the immobilizer become locked, you can perform the "Immobilizer Override" procedure from the instrument panel by entering the respective function as follows:
Select the "CODE" page from the menu.

Notes

This menu should be active only if there is at least one immobilizer error.

With this page selected, the initial code is always displayed as "00000". If you hold the button (1, fig. 8) in position B "▼" for 3 seconds, you will access the procedure for entering the electronic code marked on the Code Card.

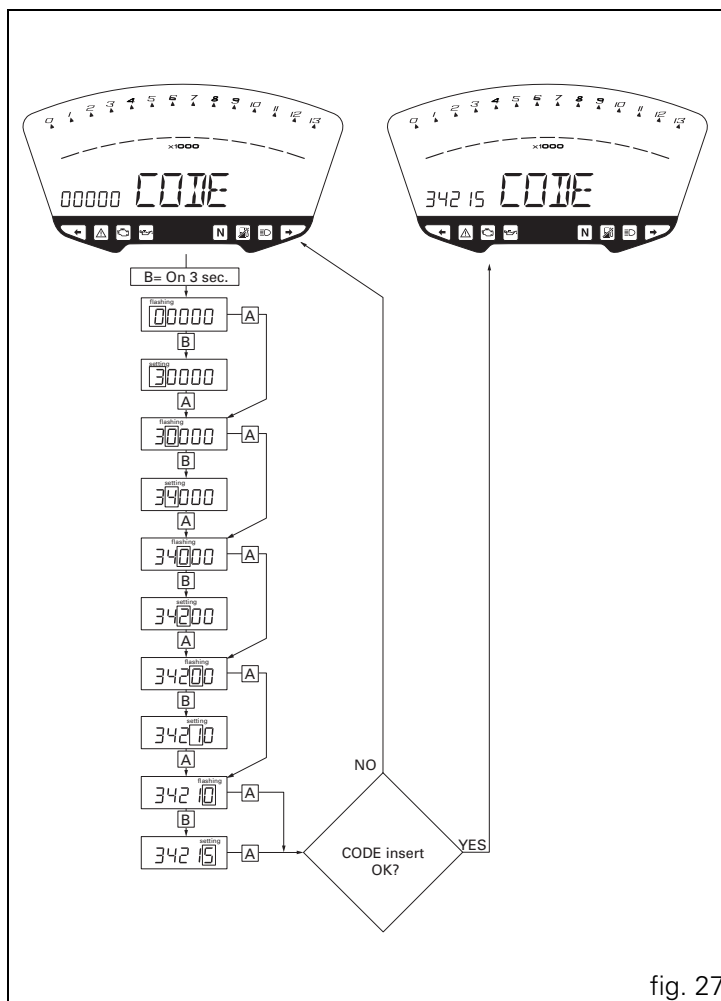


fig. 27

Entering the code:

when you enter this function, the first digit on the left starts flashing.

Button (1, fig. 8):

each time you switch to position B "▼", the number increases cyclically in steps of one digit every second.

If you switch the button to position A "▲", you can set the second digit, which will start flashing. Each time you switch to position B "▼", the number increases cyclically in steps of one digit every second.

If you switch the button to position A "▲", you can set the third digit, which will start flashing. Each time you switch to position B "▼", the number increases cyclically in steps of one digit every second.

If you switch the button to position A "▲", you can set the fourth digit, which will start flashing. Each time you switch to position B "▼", the number increases cyclically in steps of one digit every second.

If you switch the button to position A "▲", you can set the fifth digit, which will start flashing. Each time you switch to position B "▼", the number increases cyclically in steps of one digit every second.

Switch to position A "▲" to confirm the code.

If the code has been entered correctly, the message CODE and the code itself will flash simultaneously for 4 seconds. The motorcycle diagnostics warning light (9, fig. 4) goes off. The instrument panel then automatically exits the menu, thus allowing "temporary" starting of the motorcycle. If the error persists, at the next key-on, the instrument panel will return to an error state and immobilize the engine. If the code has been entered incorrectly, however, the instrument panel will automatically return to the "CODE" menu and display the code "00000".

E

Operation

When the ignition key is turned from ON to OFF, the immobilizer system activates the engine lock. When the ignition key is turned from OFF to ON to start the engine:

1) if the code is recognised, the protection system releases the engine lock. When you press the START (2, fig. 31) button, the engine will start up.

2) if the motorcycle diagnostics warning light (9, fig. 4) comes on and if, when you switch the button (1, fig. 8) to the "▼" position, the "Error IMMO" message appears on the display, the code has not been recognised. In this case, turn the ignition key back to OFF and then to ON again. If the engine still does not start, try again with the other black key. If the engine still does not start, contact the DUCATI Service network.



Warning

Sharp knocks can damage the electronic components inside the key.

Always use the same key throughout the procedure.

Otherwise, the system might be prevented from recognizing the code of the key being used.

Duplicate keys

If you need additional keys, contact your DUCATI Service Centre with all the keys you have in your possession and your CODE CARD.

DUCATI Service will program new keys and re-program your original keys (up to a maximum of 8 keys).

DUCATI Service may ask for proof that you are the legitimate owner of the motorcycle.

The codes for any keys not present during the memory programming procedure are cancelled, to ensure that any keys that may have been lost can no longer be used to start the engine.



Notes

If you sell your motorcycle, do not forget to give all keys and the CODE CARD to the new owner.

Ignition switch and steering lock

(fig. 28.1 and fig. 28.2)

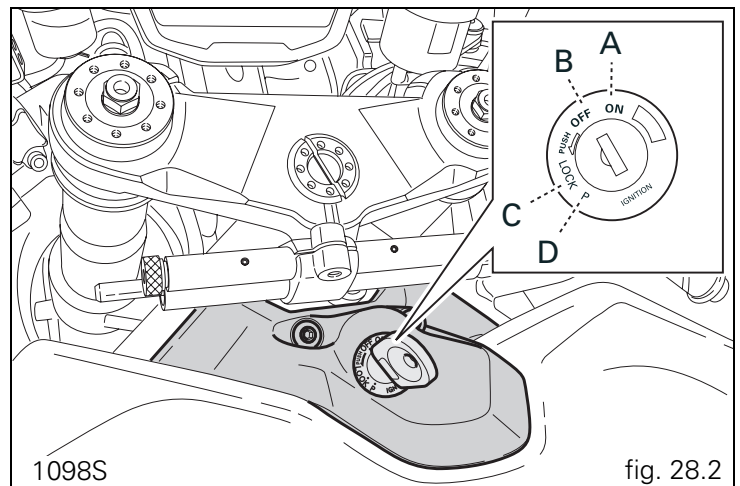
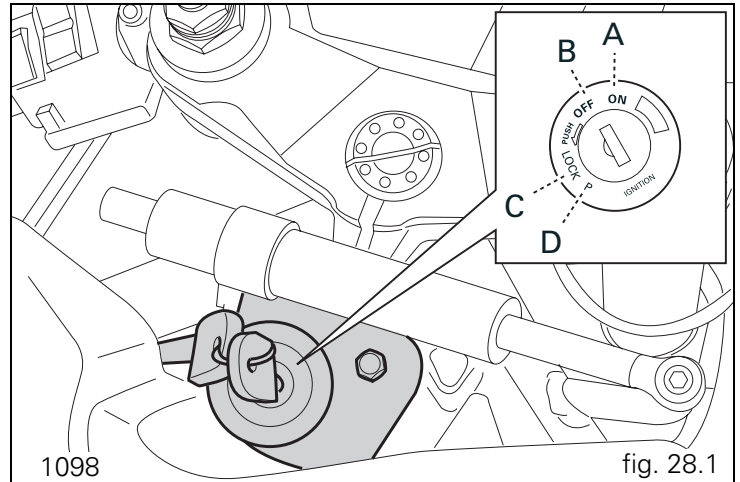
This is located in front of the fuel tank and has four positions:

- A) **ON**: enables lights and engine operation;
- B) **OFF**: disables lights and engine operation;
- C) **LOCK**: the steering is locked;
- D) **P**: parking light on and steering locked.



Notes


To move the key to the last two positions, push it in before turning. The key can be removed in positions (B), (C) and (D).





E

Left-hand handlebar switch (fig. 29)


1) Dip switch, two-position light selector switch:


position  = low beam headlight on;

position  = high beam headlight on.

2) Button  = three-position turn signal:


centre position = off;

position  = left turn;


position  = right turn.


To cancel the indicator, press the lever once it has returned to the central position.

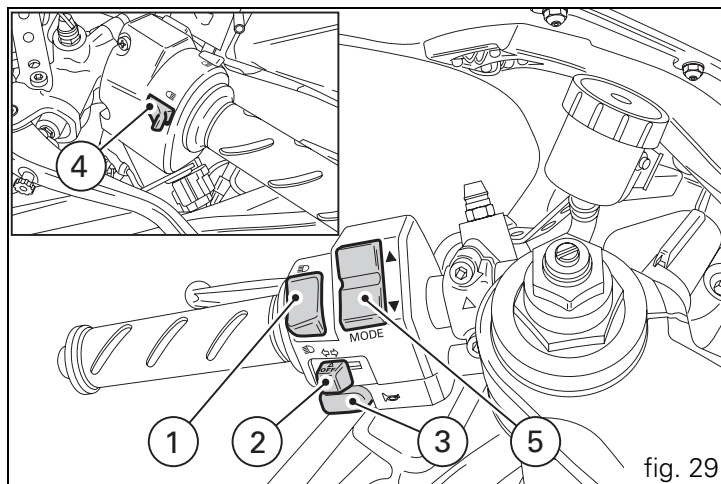
3) Button  = horn.

4) Button  = high beam flash and instrument panel control.

5) Two-position instrument panel control button:

position ;

position .



Clutch lever

The lever (1) disengages the clutch. The span adjuster (2) serves to alter the distance of the lever from the handlebar. Lever distance is adjusted by 10 clicks of the knob (2). Turn the knob clockwise to move the lever away from twistgrip, or counter clockwise to move it closer. When the clutch lever (1) is operated, drive from the engine to the gearbox and the rear wheel is disengaged. Correct use of the clutch lever is very important in all riding situations, especially when moving off.



Warning

Set the clutch and brake lever with the motorcycle stopped.



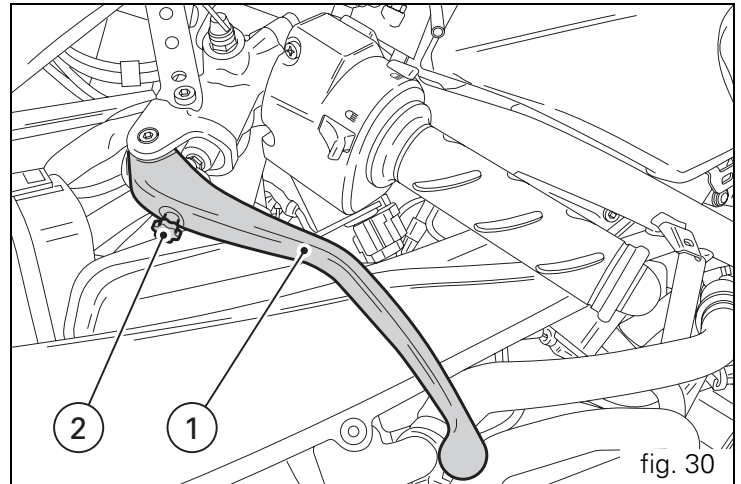
Important

Using the clutch properly will prolong the life of the engine and prevent any damage to components in the transmission.




Notes

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



Right-hand handlebar switch (fig. 31)


1) Two-position **ENGINE STOP** switch

position  (**RUN**) = run;

position  (**OFF**) = stop engine.




Warning

This switch is mainly intended for use in emergencies when you need to stop the engine quickly. After stopping the engine, return the switch to the  position to start the engine.



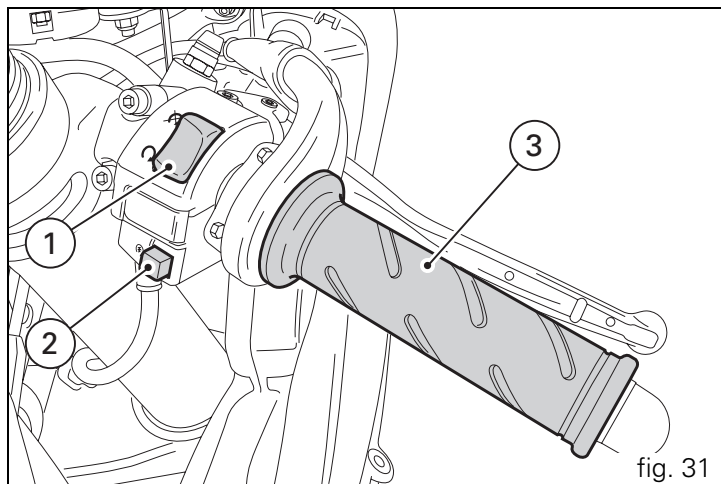
Important

After travelling with the lights on, if the engine is switched off using switch (1) and the ignition key is left in the **ON** position, the battery can be drained since the headlamp remains on.

2) Button  = engine start

Throttle twistgrip (fig. 31)

The twistgrip (3) on the right handlebar opens the butterfly valves in the throttle housing. When released, the twistgrip returns automatically to the initial position (idling speed).



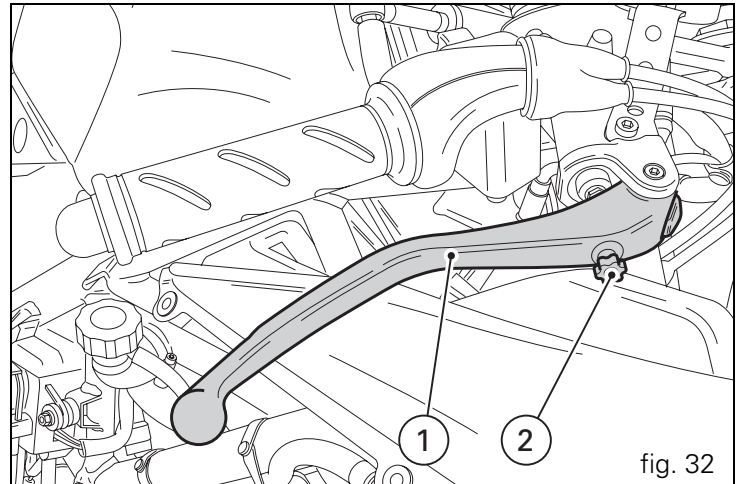
Front brake lever (fig. 32)

Pull the lever (1) towards the twistgrip to operate the front brake. The system is hydraulically assisted and you only need to pull the lever gently.

The brake lever has a knob (2) for adjusting the distance between lever and twistgrip on the handlebar.

Lever distance is adjusted by 10 clicks of the knob (2).

Turn the knob clockwise to move the lever away from twistgrip, or counter clockwise to move it closer.



E

Rear brake pedal (fig. 33)

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

The system is controlled hydraulically.

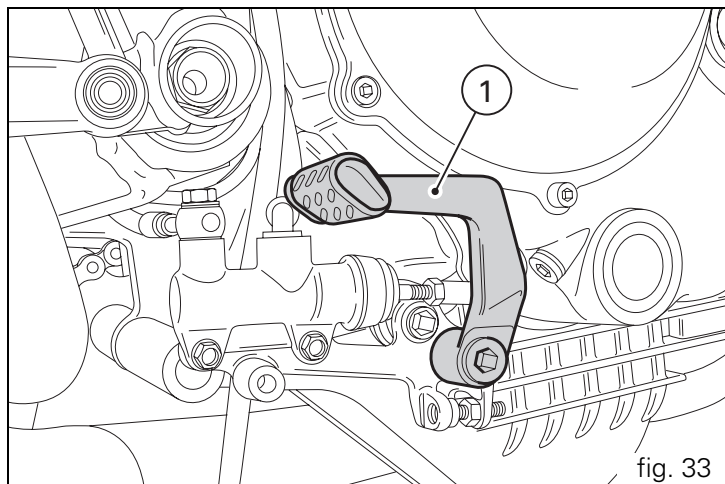


fig. 33

Gearchange pedal (fig. 34)

The gear change pedal is at rest when in centre position N, and automatically returns to the centre position. When in this position, light N (3, fig. 4) on instrument panel comes on.

The pedal can be moved:

down = push down on the pedal to engage 1st gear and to shift down. The N light on the instrument panel goes out.

up = lift the pedal to engage 2nd gear, then 3rd, 4th, 5th and 6th gear.

Each time you move the pedal, you engage the next gear.

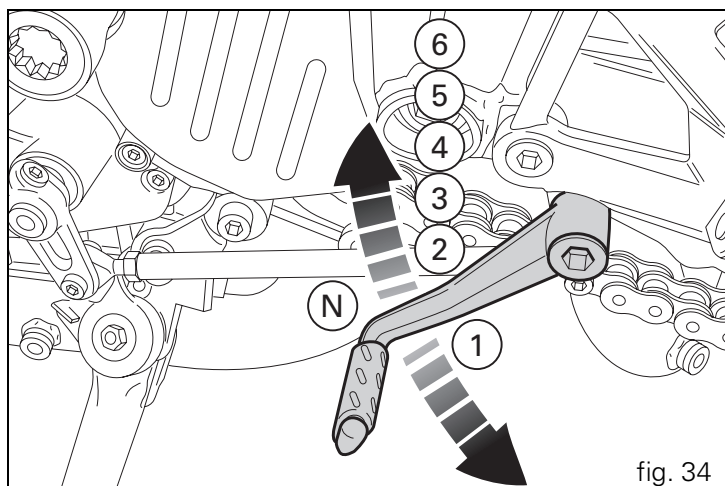


fig. 34

Adjusting the position of the gear change and rear brake pedals (fig. 35 and fig. 36)

The position of the gearchange and rear brake pedals in relation to the footrests can be adjusted to suit the requirements of the rider.

To adjust the position, proceed as follows:
restrain the tie-rod (1) and slacken the locknuts (2) and (3).



Notes

The locknut (2) has a left-hand thread.

Rotate the tie-rod (1) using an open-ended wrench on the flats to move the gearchange pedal to the required position. Tighten both nuts against the rod.

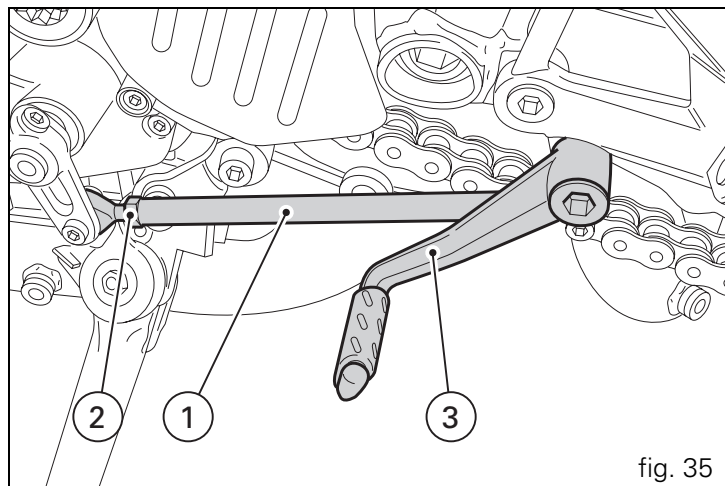


fig. 35

To adjust the position of the rear brake lever, proceed as follows:

Loosen the locknut (4).

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

When finished, torque locknut (4) to 2.3 Nm.

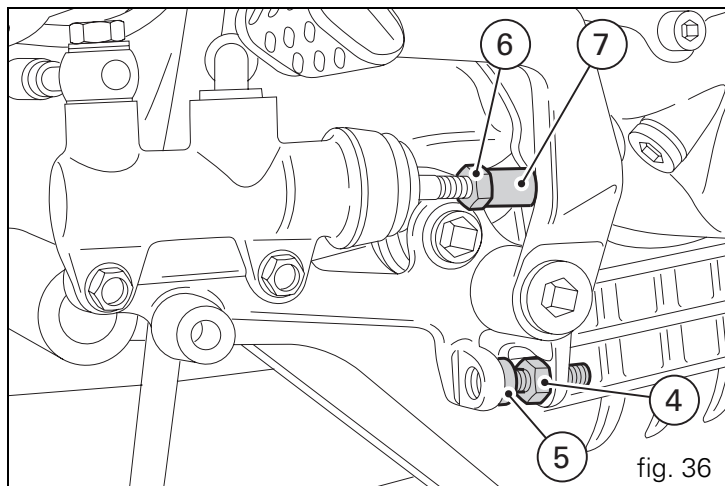
Operate the pedal by hand to check that there is 1.5 – 2 mm of freeplay before the brake bites

If not, adjust the length of the master cylinder pushrod as follows.

Slacken off the locknut (6) on the pushrod.

Tighten the link on the fork (7) to increase play, or unscrew it to reduce.

Tighten counter nut (6) to 7.5 Nm and check the play again.



Main components and devices

Location (fig. 37)

- 1) Fuel tank filler cap.
- 2) Seat lock.
- 3) Side stand.
- 4) Helmet cable pin
- 5) Steering damper.
- 6) Rear view mirrors.
- 7) Front fork adjusters.
- 8) Rear shock absorber adjusters.
- 9) Motorcycle track alignment linkage.
- 10) Exhaust silencer (see note on page 67).
- 11) Catalytic converter.

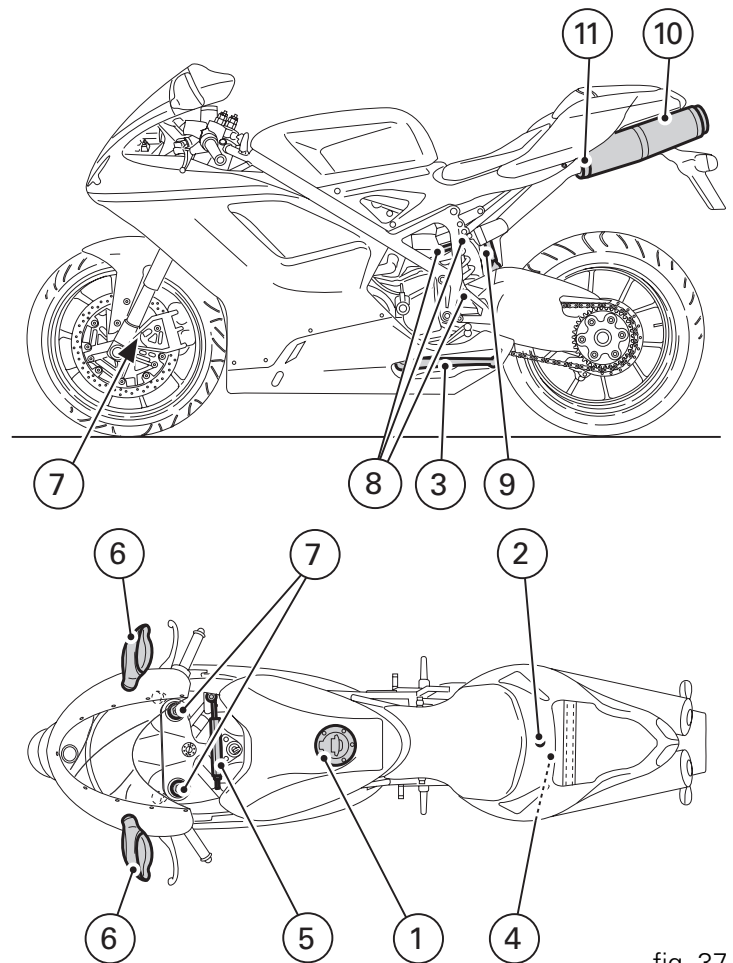


fig. 37

Fuel tank filler cap (fig. 38)

Opening

Raise the cover (1) and insert the key into the lock. Give the key a 1/4 turn clockwise to unlock. Lift the cap.

Closing

Close the cap with the key inserted and push it into its seat. Turn the key anticlockwise to the initial position and remove it. Replace the lock cover (1).



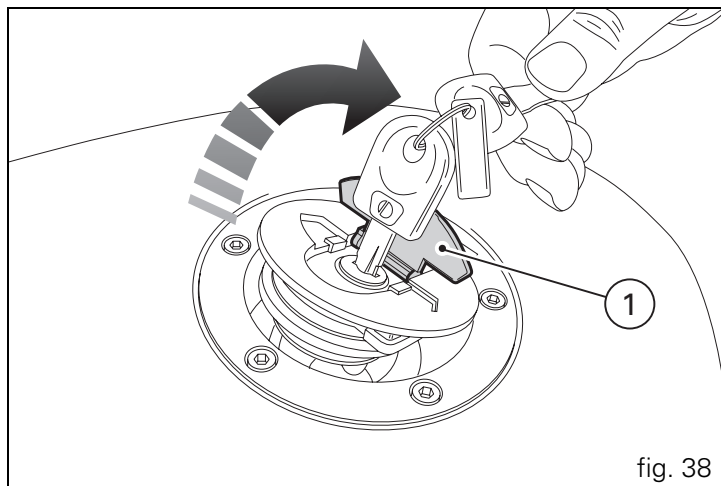
Notes

The cap can only be closed with the key inserted.



Warning

Always make sure you have properly closed the fuel filler cap after refuelling (see page 68).



Seat lock and helmet holder

Opening (fig. 39 and fig. 40)

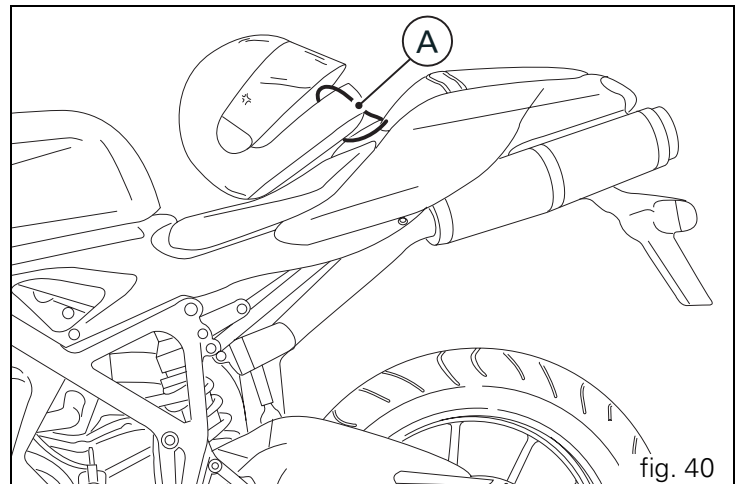
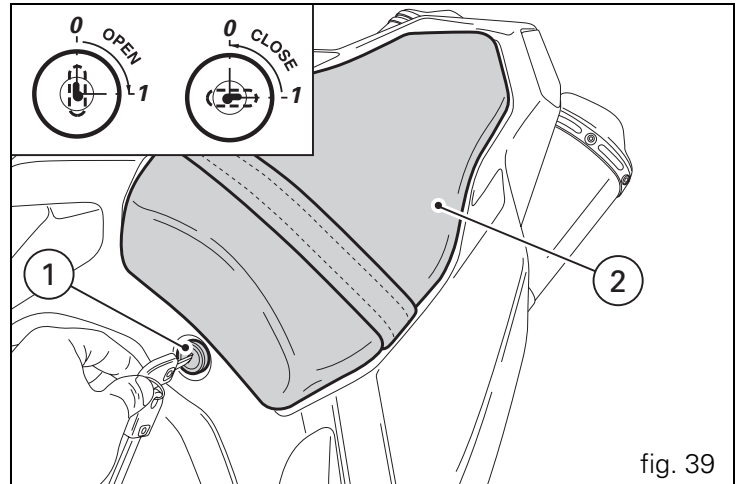
Insert the key into the seat lock (1) and turn it clockwise until the seat hook disengages with an audible click. Slightly raise the rear of the seat (2) and lift it upwards until it can be extracted.

The helmet cable is in the front part of the underseat compartment. Pass the cable (A) through the helmet and fit the ends of the cable into the hook. Leave the helmet (fig. 40) hanging and refit the seat to secure it.



Warning

This device protects the helmet against theft when the motorcycle is parked. Do not leave the helmet attached in this way when riding the motorcycle, as it can interfere with your movements and cause loss of control of the motorcycle. The cable should be passed under the subframe from the LH side. In any other position the cable will interfere with the seat closure.



Closing (fig. 41)

Fit the hooks on the base of the seat under the rear subframe.
Press down on the passenger seat until you hear the lock engage with an audible click.

Make sure the seat is fully engaged by lightly pulling the passenger seat upwards.

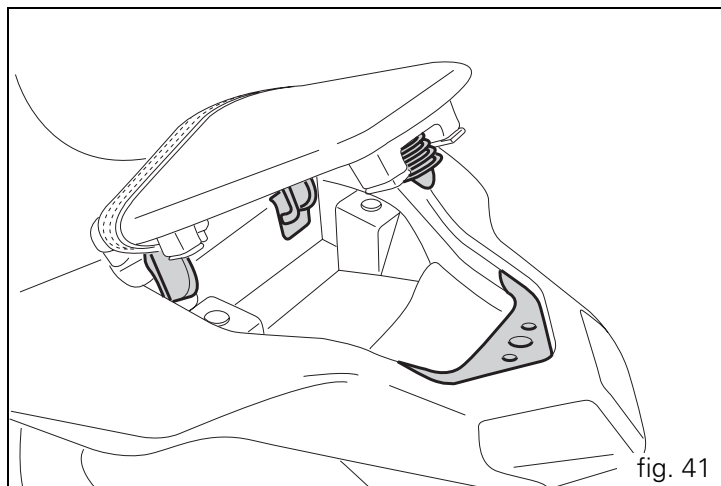


fig. 41

Sidestand (fig. 42)



Important

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

Do not park on soft or pebbled ground or on asphalt melted by the sun etc. or the motorcycle may fall over.

When parking on a slope, always park with the rear wheel on the downhill side.

To pull down the side stand, hold the motorcycle handlebars with both hands and push down the stand (1) with your foot until it is fully extended. Tilt the motorcycle until the sidestand is resting on the ground.



Warning

Do not sit on the motorcycle when it is supported on the sidestand.

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.



Notes

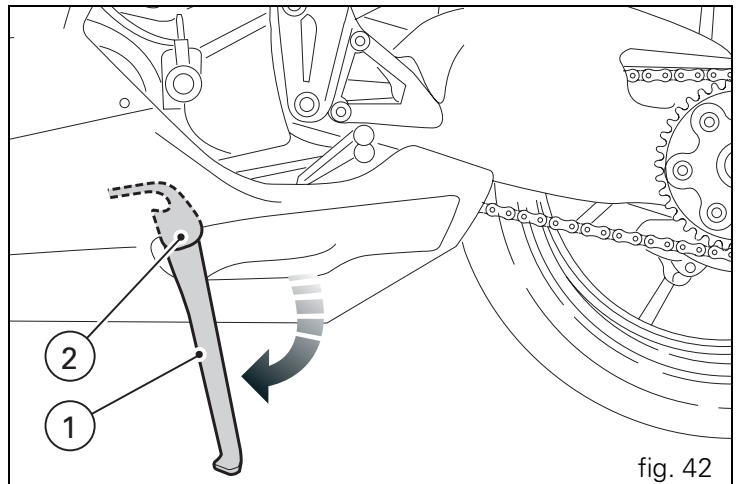
Check for proper operation of the stand mechanism (two draw springs, one inside the other) and the safety sensor (2) at regular intervals.



Notes

The engine can be started with the sidestand down and the gearbox in neutral. If starting with a gear engaged, pull in the clutch lever (in this case the sidestand must be up).

E



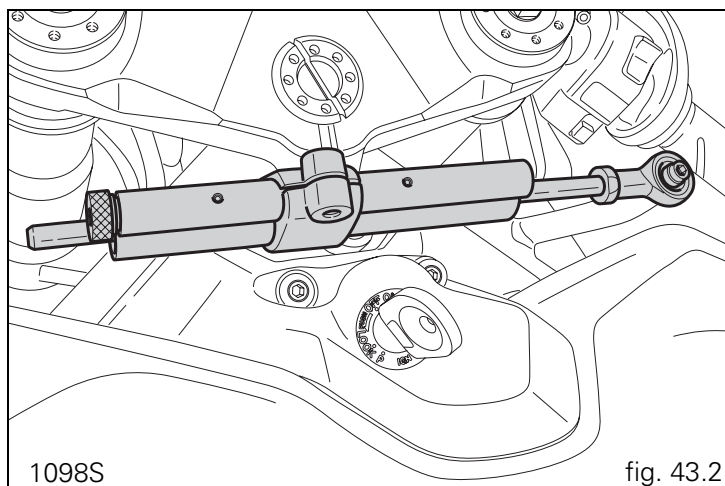
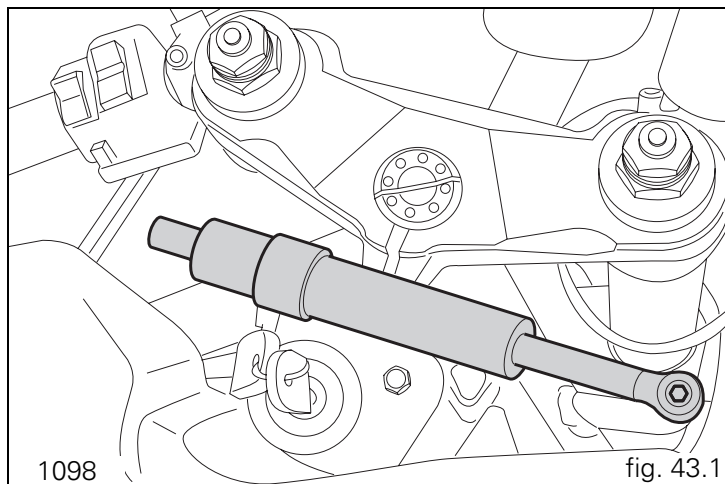
Steering damper (fig. 43.1 and fig. 43.2)

The steering damper is located in front of the tank and secured to the frame and steering head. It helps improve steering accuracy and stability, and thus also improves ride quality in any riding conditions.

(1098S)

Turn the knob (1) clockwise for a harder setting, anticlockwise for a softer setting. Each adjustment position is identified by a click.

Warning (1098S)
Never attempt to adjust the knob (1) while riding, or you may lose control of the motorcycle.



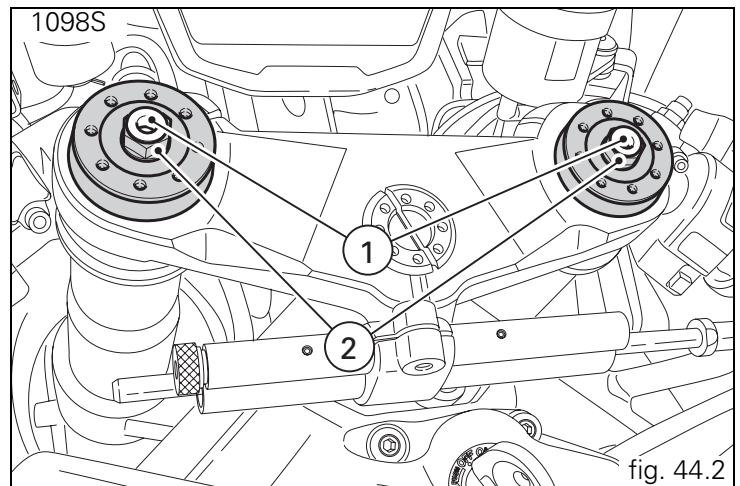
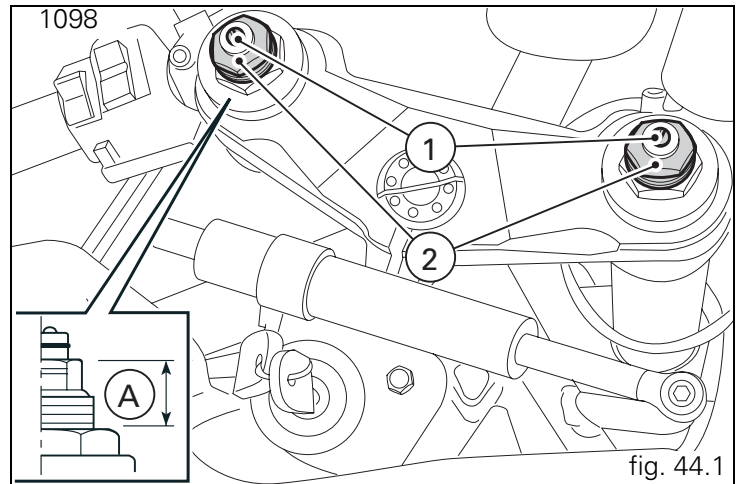
Front fork adjusters

The front fork can be adjusted in rebound, compression and preload.

The settings are adjusted by way of external adjuster screws:

- 1) to adjust rebound damping (fig. 44.1 and fig. 44.2);
- 2) to adjust inner spring preload (fig. 44.1 and fig. 44.2);
- 3) to adjust compression damping (fig. 45.1 and fig. 45.2).

Park the motorcycle in a stable position on its side stand.
To set rebound damping, turn the top adjuster (1) on each fork leg with a small flat screwdriver (1098) or wrench (1098S).
As you turn the adjusting screws (1 and 3), you will hear them click. Each click identifies a setting. The maximum damping is obtained with the adjuster fully tightened to the "0" position. Start with this position and turn counterclockwise. Count the screw clicks, which correspond to position 1, 2 and so forth.



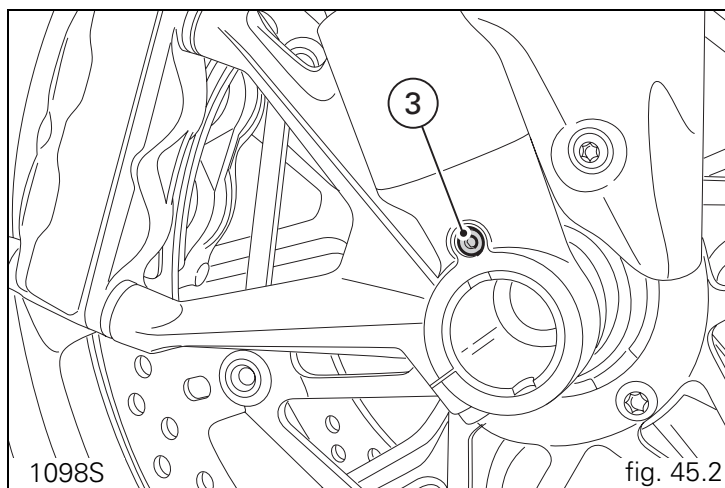
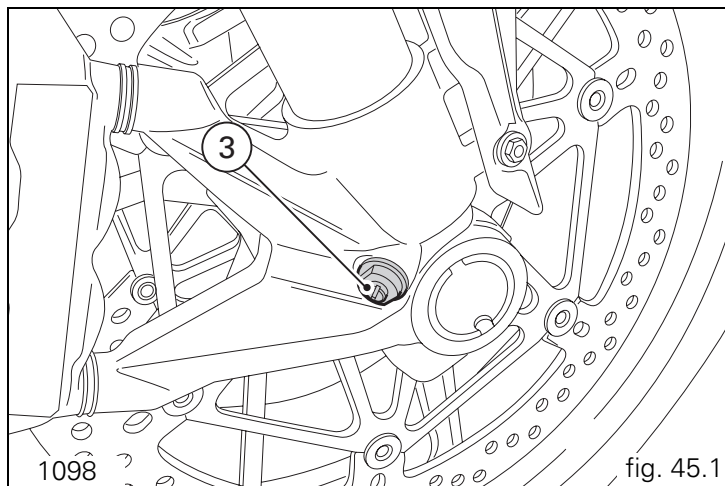
The STANDARD factory settings are as follows:
compression: 3/4 turns (1098), 8 clicks (1098S);
rebound: 12 clicks (1098), 10 clicks (1098S).
Spring preload: (A, fig. 35.1): 18 mm (1098), 8 mm (1098S).

To change the preload of the spring inside each fork leg, turn the hex. adjusting nut (2, fig. 44.1 and fig. 44.2) with a 22 mm hexagon wrench.



Important

Adjust both fork legs to the same setting.



Shock absorber adjusters (fig. 46.1 and fig. 46.2)

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

Adjuster (1), located on the left-hand side at the point at which the shock absorber is fixed 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 stiffen the damping or anti-clockwise to soften it.

(1098)

STANDARD setting:

from the fully closed position (turned fully clockwise), unscrew:

adjuster (1) by 2 turns

adjuster (2) by 2 turns

Spring preload: 28 mm.

(1098S)

STANDARD setting:

from the fully closed position (turned fully clockwise), unscrew:

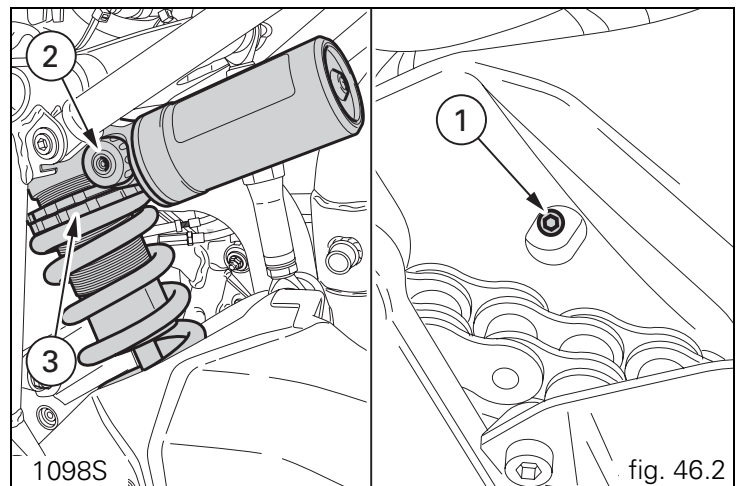
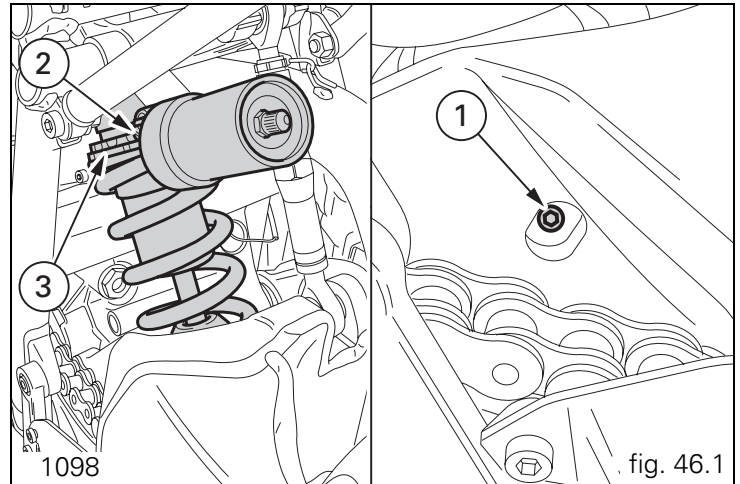
adjuster (1) by 10 clicks;

adjuster (2) by 10 clicks;

Spring preload: 23 mm.

The two nuts (3) on the upper part of the shock absorber serve to adjust the preload on the external spring. To change spring preload, slacken off the upper ring nut.

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



Once the desired spring preload has been set, lock down the upper ring nut.



Warning

E Use a pin wrench to turn the preload adjusting nut. Take special care when turning the nut, to avoid injuring your hand by striking it violently against other parts of the motorcycle if the wrench suddenly slips off the nut while turning.



Warning

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

If you plan to carry a passenger and luggage, adjust the rear shock absorber spring load to the maximum setting to improve the handling characteristics of the motorcycle and to avoid the possibility of ground contact. It may also be necessary to adjust the rebound damping accordingly.

Changing motorcycle track alignment

(fig. 47, fig. 48 and fig. 49)

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

Modifying the frame geometry is a very critical operation, and can be dangerous if carried out by untrained persons. Before changing the standard setting, measure the reference value (H, fig. 47).

The rider can modify track alignment according to his/her needs by changing working position of the shock absorber. To modify the ball joint centre distance (1) first slacken off the locknuts (3).



Notes

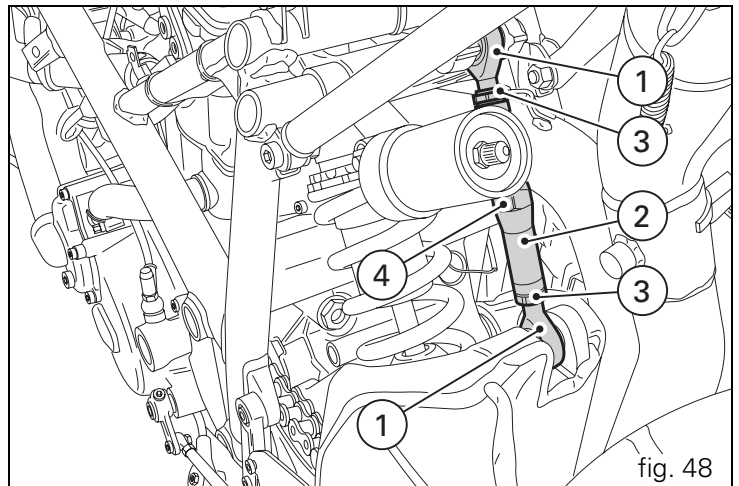
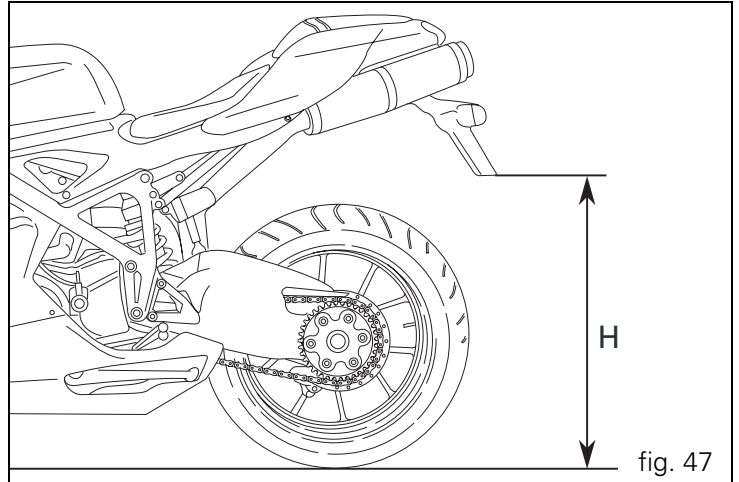
Note that the lower nut (3) has a left-hand thread.

Use an open-end wrench on socket (4) of linkage (2). Once the tie-rod length is adjusted correctly, tighten the nuts (3) to 25 Nm.



Warning

The length of the tie-rod (2) between the centres of the two eyes (1) should not exceed 285 mm.



The maximum distance that the UNIBALL end fitting (A) can be unscrewed from the tie-rod body is 5 threads, or 7.5 mm (B).

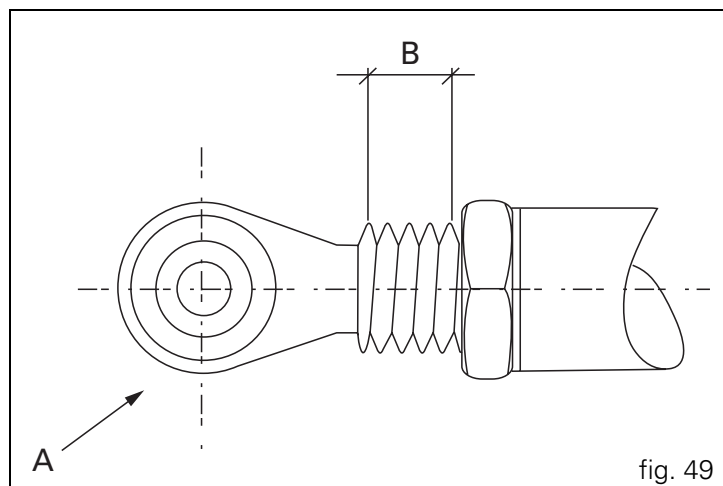


fig. 49

Riding the motorcycle

To allow all the mechanical moving parts in the motorcycle to adapt to one another, and to avoid shortening the life of the main engine components, it is advisable to avoid sudden acceleration and running the engine at high rpm for too long, especially uphill.

It is also advisable to check the drive chain frequently and ensure that it is lubricated as required.

E

Running-in precautions

Max. rpm (fig. 50)

Rpm limits to be observed during the running-in period and in normal use:

- 1) Up to 1000 km;
- 2) From 1000 to 2500 km.

Up to 1000 km

During the first 1000 km, keep an eye on the tachometer.

The revs should never exceed:

5,500 to 6,000 min.

During the first hours of riding, it is advisable to continuously vary the load on the engine and the rpm, though still keeping within the above limits.

For this reason, roads with numerous bends and hilly areas are ideal for running in the engine, brakes and suspension.

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.

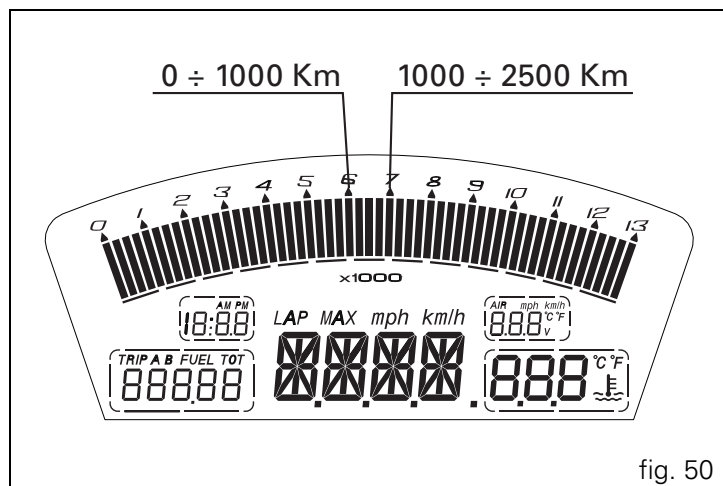
From 1000 to 2500 km

At this point, you can ask for more power from the engine, being careful, however, never to exceed: 7000 min.

Important

Throughout the running-in period, be careful to stick to the recommended maintenance schedule and periodic service intervals indicated in the warranty booklet. Failure to follow these instructions releases Ducati Motor Holding S.p.A. from any liability whatsoever for any engine damage or shorter engine life.

Keeping to the running-in recommendations will ensure longer engine life and reduce the need for overhauls and re-tuning.



Pre-ride checks



Warning

Failure to carry out these checks before starting may result in damage to the motorcycle and injury to the rider.

Before starting, check the following points:

Fuel level in the tank

Check the fuel level in the tank. Re-fuel if necessary (page 68).

Engine oil level

Check the oil level in the sump through the sight glass.

Top up if necessary (page 91).

Brake and clutch fluid

Check fluid level in the related reservoirs (page 76).

Coolant

Check coolant level in the expansion reservoir. Top up if necessary (page 75).

Tyre condition

Check the pressure and condition of the tyres (page 89).

Controls

Operate the brake, clutch, throttle and gear change controls (levers, pedals and twistgrip) to check that they function correctly.

Lights and indicators

Make sure lights, indicators and horn work properly.

Replace any burnt-out bulbs (page 83).

Key locks

Check that the fuel filler cap (page 50) and the seat (page 51) are locked.

Sidestand

Make sure the sidestand operates smoothly and is in the correct position (page 53).



Warning


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

E

Starting the engine

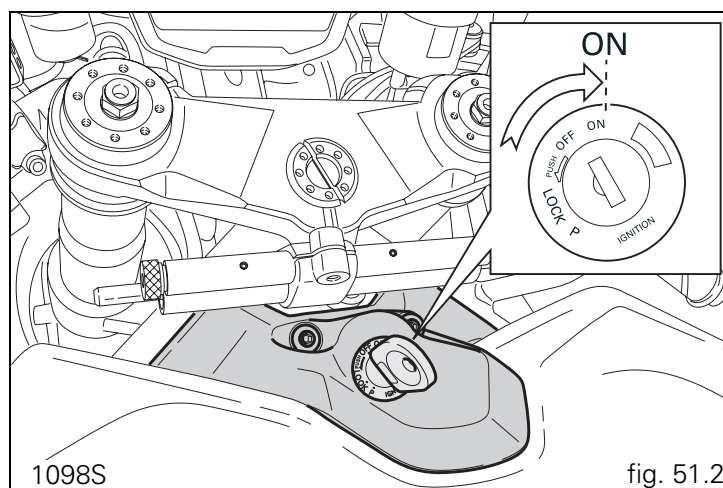
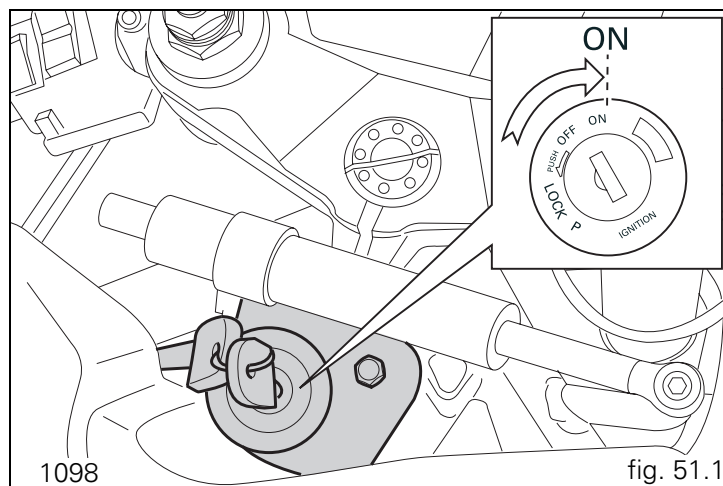
Warning
Before starting the engine, familiarise yourself with the controls that you will use when riding (page 10).

Warning
Never start or run the engine in an enclosed space. Exhaust gases are toxic and may lead to loss of consciousness or even death within a short time.

1) Move the ignition key to **ON** (fig. 51.1 and fig. 51.2). Check that both the green light N and the red light  on the instrument panel come on.


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

Warning
The side stand must be fully up (horizontal position), otherwise the safety sensor prevents engine start-up.



Notes

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

2) Check that the stop switch (2, fig. 52) is positioned to  (RUN), then press the starter button (3, fig. 52).

This model has servo-assisted starting. To use the servo-assisted starting feature, press the start button (3) and release it immediately. When you press button (3) the starter motor runs automatically for a period of time that varies according to the engine temperature. The system disengages the starter motor as soon as the engine starts. If the engine fails to start, wait at least 2 seconds before pressing the start button (3) again.

Allow the engine to start on its own, without turning the throttle twistgrip.

Important

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

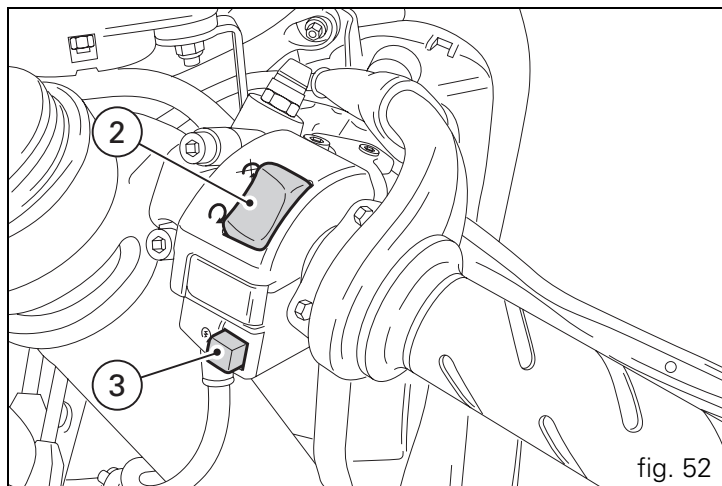


fig. 52

Moving off

- 1) Disengage the clutch by squeezing the clutch lever.
- 2) Push down the gearchange lever firmly with the tip of your foot to engage 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) Release the clutch lever completely and accelerate.
- 5) To shift to the next gear up, close the throttle to reduce engine speed, disengage the clutch, lift the gear change lever and release the clutch lever.

To change down, proceed as follows: release the twistgrip, pull the clutch lever, increase engine speed for a moment to allow the gears to synchronize, shift down and release the clutch.

The controls should be used intelligently and promptly: 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 sudden acceleration, as this may lead to misfiring and transmission snatching. The clutch lever should not be pulled longer than necessary after gear is engaged, otherwise friction parts may overheat and wear out.

Braking

Slow down in time, change down to use the engine brake, then apply 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 the brake controls harshly or suddenly as you may lock the wheels and lose control of the motorcycle. When riding in the rain or on slippery surfaces, braking capacity is significantly reduced. Always use the brakes very gently and carefully when riding under these conditions. Any sudden manoeuvres may lead to loss of control. When riding down long, steep downhill slopes, change down to use engine braking. Apply the brakes intermittently for brief periods only. Keeping the brakes applied continuously causes the friction material to overheat and dangerously reduces braking effectiveness. Under-inflated or over-inflated tyres reduce braking efficiency and may adversely affect safe riding and road-holding on bends.

Stopping the motorcycle

Reduce speed, shift down and release the throttle twistgrip. Change down to engage first gear and then neutral. Apply the brakes and bring the motorcycle to a complete stop. Switch the engine off by turning the key to **OFF** (page 41).



Warning

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

Parking

Stop and park the motorcycle on the side stand (see page 53). To prevent theft, turn the handlebar fully left and turn the ignition key to the **LOCK** position.

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

If necessary, you can leave the side lights on by turning the key to position **P**.



Important

Do not leave the key at **P** for long periods or the battery will run down. Never leave the motorcycle unattended with the ignition key inserted.



Warning

The exhaust system might be hot, even after engine is switched off; take special care not to touch exhaust system with any part of your body and do not park the motorcycle next to inflammable material (wood, leaves etc.).

Refuelling (fig. 53)

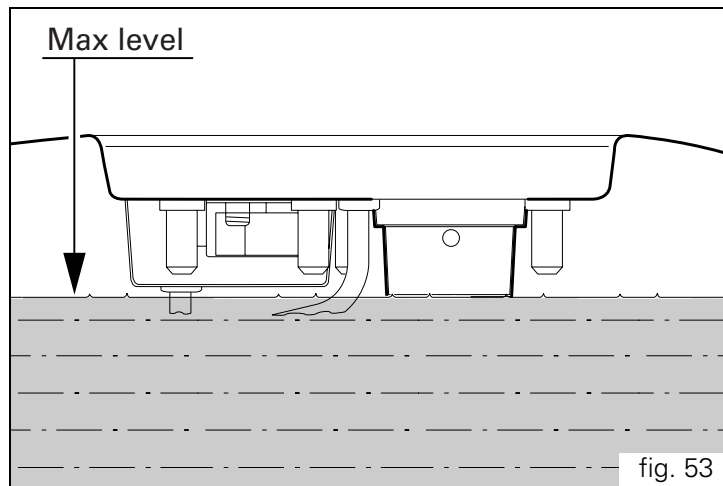
Do not overfill the tank when refuelling. The fuel level should always be below the rim of the filler recess.



Warning

Use fuel with low lead content and an original octane number of 95 minimum (see table "Fluids and lubricants" on page 100).

Check that no fuel is trapped in the filler cap recess.



Toolkit and accessories (fig. 54)

The compartment under the pillion seat contains:
use and maintenance manual;
helmet fastening cable;
toolkit consisting of:

- spark plug wrench;
- Tommy bar for spark plug wrench;
- double-ended screwdriver.

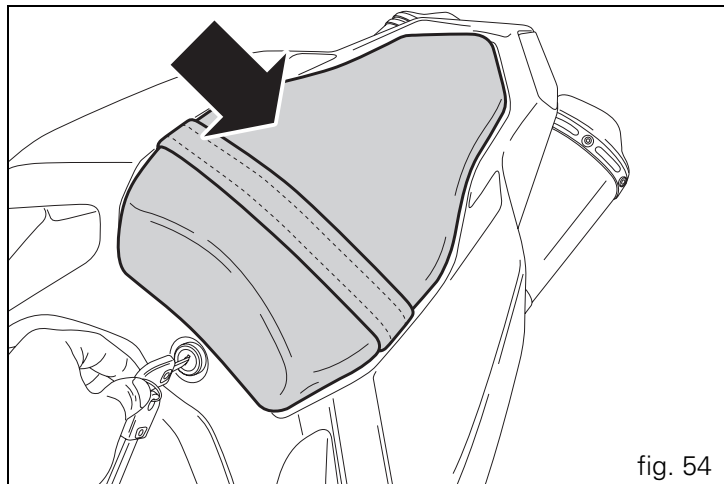
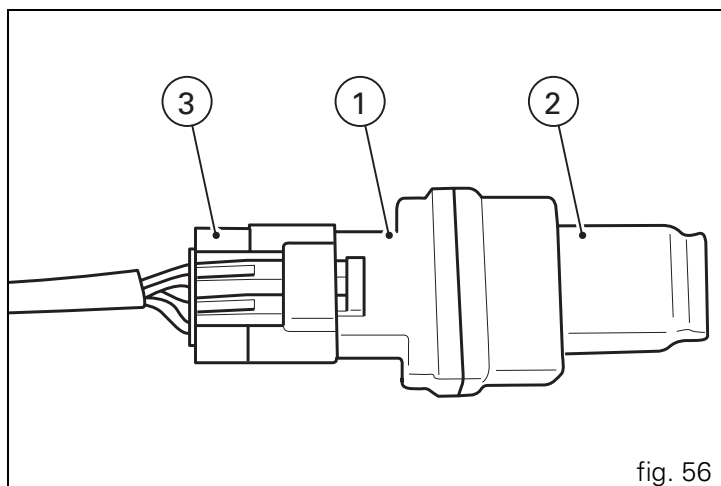
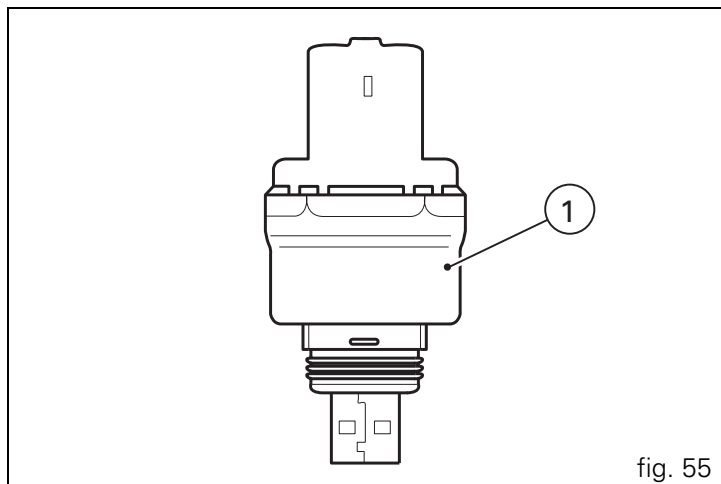


fig. 54

USB DAQ (for 1098S only)

A USB DAQ (1) is supplied in kit form. To use it, place it under the seat with the cap (2) fitted and the (3) from the main wiring harness connected. Refer to the "USB DAQ" procedure in the paragraph "LCD – How to set/display parameters".



Main Use and Maintenance Operations

Removing the fairing

Some parts of the motorcycle fairing have to be removed for certain maintenance or repair operations.



Warning

If parts that have been removed are not refitted correctly they may become loose suddenly while riding and cause you to lose control of your motorcycle.



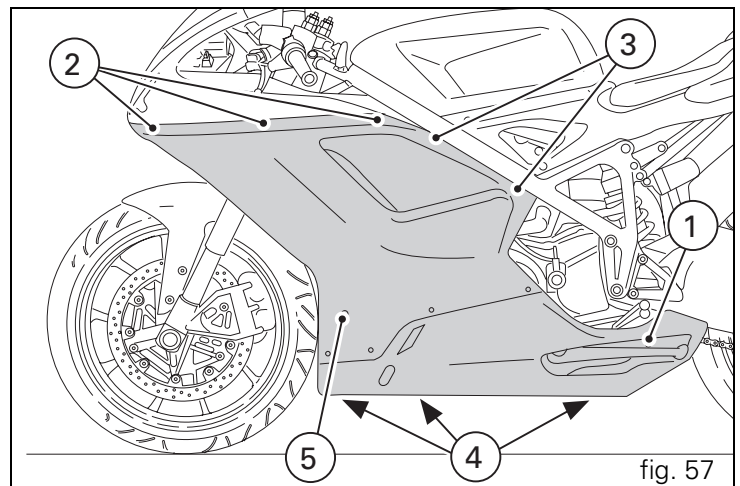
Important

On refitting the headlamp fairing, always refit the nylon washers in correspondence with the retaining screws to avoid damaging the painted parts and the Plexiglas windshield.

Side body panels

Remove the side fairings with the Allen key in the underseat compartment by undoing:

- the two screws (1) securing the body panels to the brackets;
- the six screws (2) securing the body panels to the headlamp fairing;
- the four screws (3) securing the body panels to the frame;
- the two screws (4) under the panels, which join the right panel to the left panel;
- the two screws (5) securing the body panels to the oil cooler;
- the two front screws (6, fig. 58) securing the body panels to the headlamp fairing.





Notes

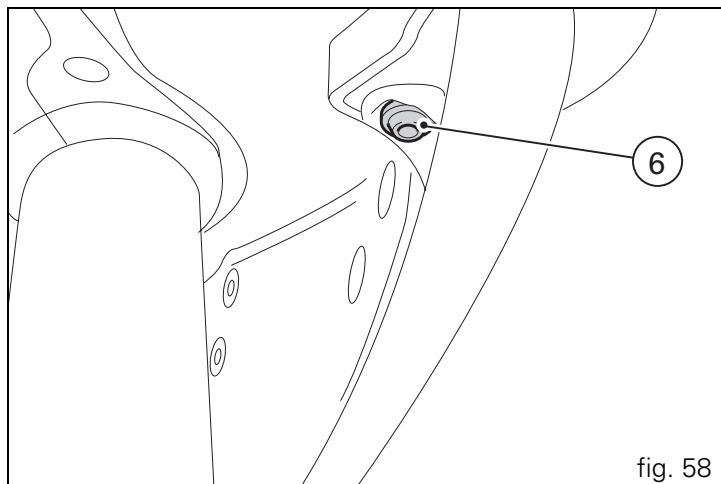
Make sure that the splashguard remains clear of the fastening to the body panels.



Notes

To refit the left body panel, lower the side stand and pass it through the opening in the body panel.

E



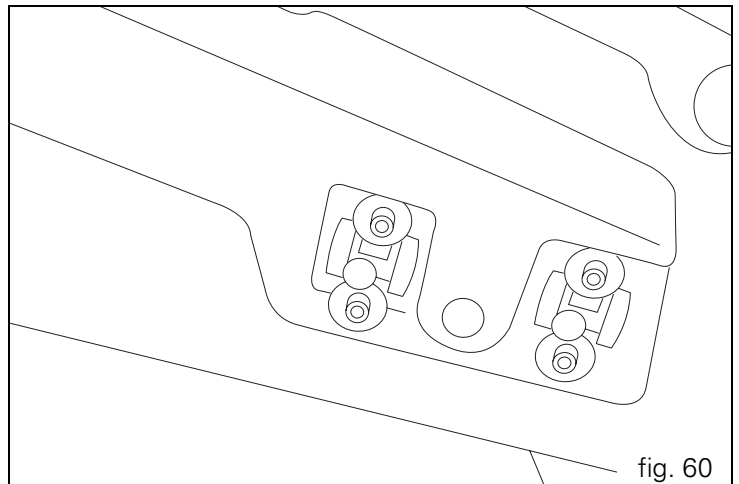
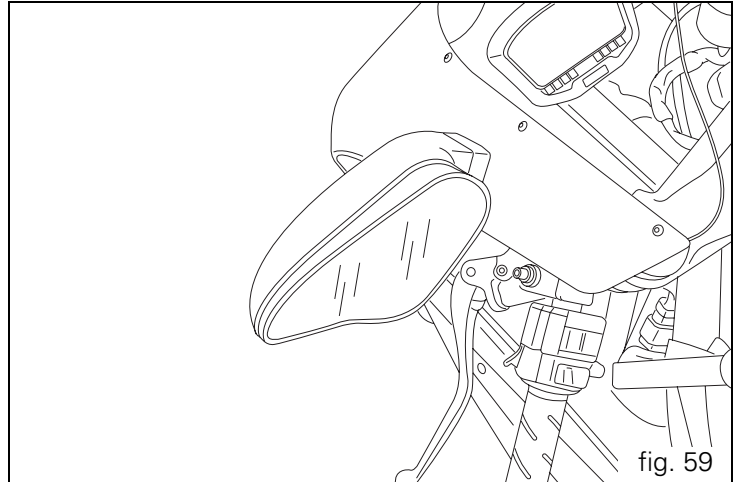
Rear-view mirrors

Unscrew the fastening screws (1) of the rear-view mirror. Release the pins (2) from the retaining clips attached to the headlamp fairing bracket (3). Slip off the rubber gaiter (4) and disconnect the turn signal indicator connectors (5). Repeat the process for the other rear-view mirror.



Important

On refitting, smear the threads of the screws (1) with "medium-strength threadlocker".



Headlamp fairing



Notes

To remove the headlamp fairing, the rear-view mirrors and side body panels must first be removed, as described above.

E

Unscrew the two rear screws (1) securing the headlamp fairing to the headlamp bracket.



Notes

After refitting the headlamp fairing, refit the side body panels and rear-view mirrors.

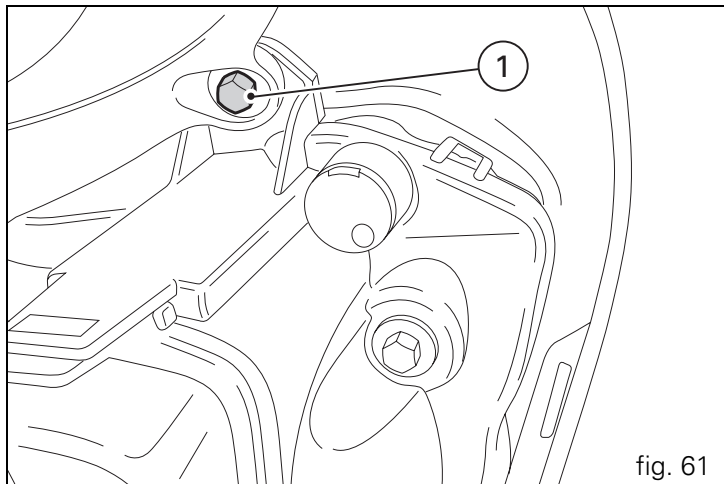


fig. 61

Checking and topping up the coolant

(fig. 62)

Check the coolant level in the expansion reservoir on the right side of the motorcycle. It should be between the two marks (1) and (2). Mark (2) indicates **MAX** level, and mark (1) indicates **MIN** level.

Top up if below the **MIN** level.

Remove right-side body panel (page 71).

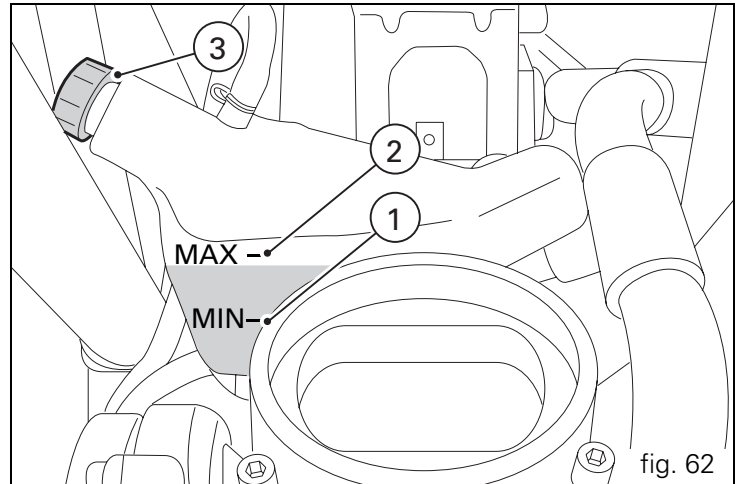
Unscrew the plug (3, fig. 62) and add a mixture of water and SHELL Advance Coolant antifreeze or Glycoshell (35-40% volume) up to **MAX** mark.

Re-attach the plug (3) and reassemble all removed parts. This type of mixture gives the best operating conditions (the coolant starts to freeze at $-20^{\circ}\text{C}/-4^{\circ}\text{F}$).

Cooling circuit capacity: 2.8 dm^3 (litres).

Warning

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



E

Checking the brake and clutch fluid level

The level must not fall below the **MIN** mark on the corresponding reservoir (fig. 63) (the figure shows the front and rear brake fluid reservoirs).

If level drops below the limit, air can get into the circuit and make the system ineffective.

Brake and clutch fluid must be topped up and changed at the intervals specified in the routine maintenance table (see Warranty Card) by a Ducati Dealer or Authorized Workshop.

Important

It is recommended that all brake and clutch hoses be renewed every four years.

Brake system

If there is excessive play on the 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 air bled from the circuit.

Warning

Brake and clutch fluid is harmful to paintwork and plastic parts, so do not allow it to come into contact with them. Hydraulic oil is corrosive and can cause damage and injuries. Never mix oils of different qualities. Check that the seals are in good condition.

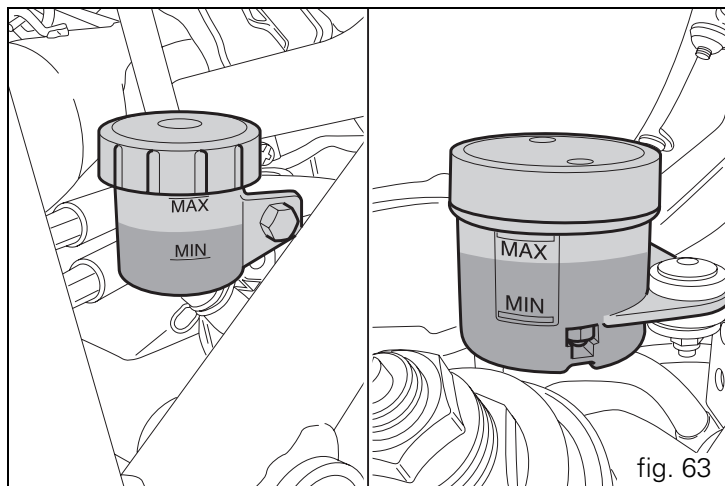


fig. 63

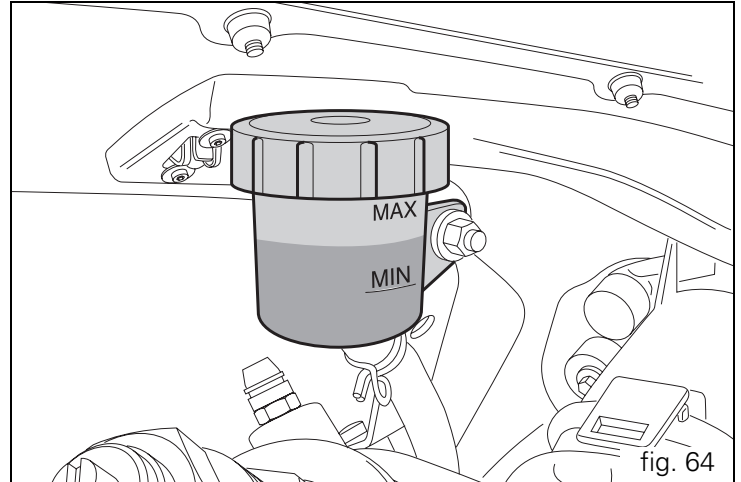
Clutch system

If the control lever has excessive play and the transmission snatches or jams when engaging a gear, then there is probably air in the circuit. Contact a Ducati Dealer or Authorized Workshop, who will check the system and bleed the circuit.



Warning

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



Checking brake pads for wear

(fig. 65.1 and fig. 65.2)

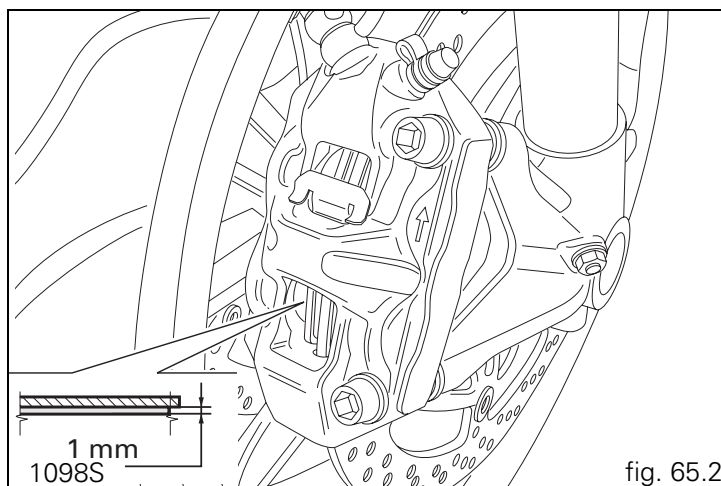
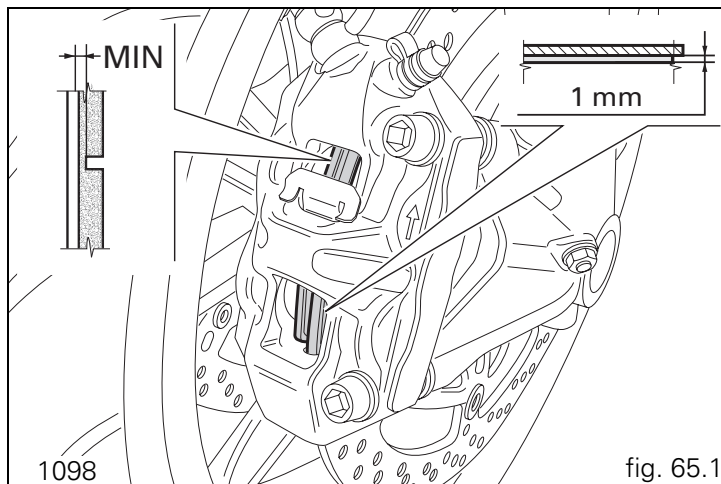
The brake pads are marked with wear indicators so that they can be checked without removing them from the calipers. If the grooves in the friction material are still visible, the pad is still in good condition.

E



Important

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



Lubricating cables and joints

The condition of the outer sheath on the throttle and cold start cables should be checked at regular intervals. The outer cables should show no signs of kinking or cracking. Operate the controls to make sure the inner cables slide smoothly inside the outer cables: if you feel any friction or catching, have the cable replaced by a Ducati Dealer or Authorized Service Centre.

To avoid this inconvenience, in the case of the throttle cable, we recommend opening the throttle control by unscrewing the two fastening screws (1, fig. 66) and greasing the cable ends and pulley with SHELL Advance Grease or Retinax LX2.

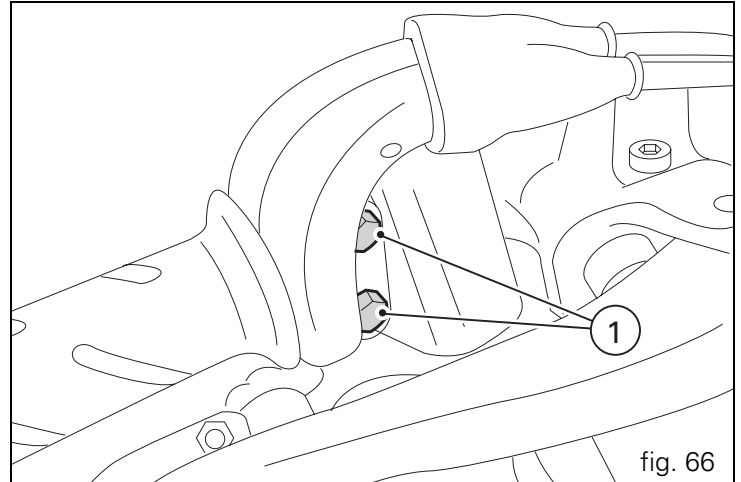


Warning

Close the twistgrip housing carefully, inserting the cable in the race.

Refit the housing and tighten the screws (1) to 10 Nm.

To ensure that the joint on the side stand works smoothly, clean off any dirt and apply SHELL Alvania R3 to all points subject to friction.

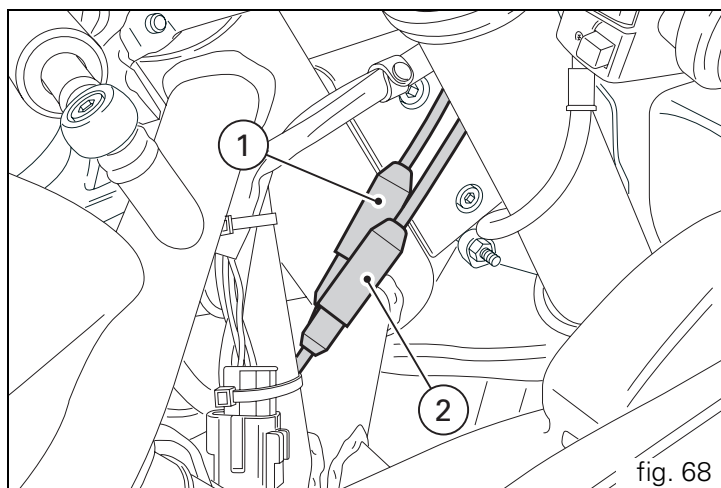
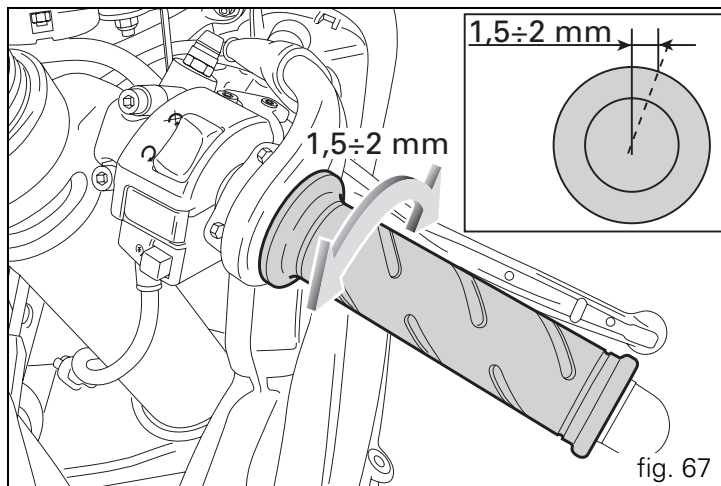


Adjustment of the throttle cable free play

The throttle twistgrip must have free travel of 1.5–2.0 mm (measured on the twistgrip rim) in all steering positions. If necessary, adjust using the adjusters (1 and 2, fig. 68) located on the steering tube on the left side of the motorcycle.

The adjuster (1) is for throttle opening, and adjuster (2) is for throttle closing.

Peel back the sleeves to access the adjusters and slacken the locknuts. Adjust both adjusters by the same amount: turn clockwise to increase free play, anti-clockwise to decrease free play. When finished, tighten the locknuts and replace the sleeves.



Charging the battery (fig. 69)

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

Remove the left-hand body panel (page 71), unscrew the screw (1) and remove the mounting bracket (2). Always disconnect the black negative terminal first, then the red positive terminal (+).



Warning

The battery produces explosive gases: keep it away from heat sources and flames.

Charge the battery in a well-ventilated area.

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



Important

Connect the battery to the charger before switching on: failure to do so can result in sparking at the battery terminals, which could ignite the gases inside the cells. Always connect the red positive terminal (+) first.

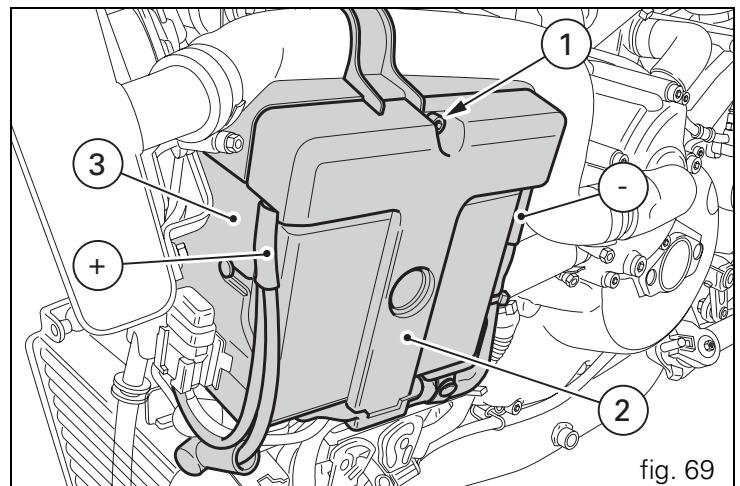
Replace the battery in its holder (3), then connect the terminals. Apply some grease on the fastening screws to improve the conductivity and fasten the bracket (2) with the screw (1).



Warning

Keep the battery out of the reach of children.

Charge the battery at 0.9 A for 5 to 10 hours.



Checking the chain tension (fig. 70)



Important

Have the chain tensioned at a Ducati Dealer or Authorized Workshop.

E

With the motorcycle on the side stand, press down the chain with a finger. Then release and measure the distance between the surface of the shoe and the centre of the pin below it. The reading should be between 33 and 35 mm.



Warning

Correct tightening of the tensioner counter nuts (1) is essential for rider safety.



Important

An incorrectly tensioned chain will cause the rapid wear of transmission parts.

Lubricating the drive chain

The chain fitted on your motorcycle has O-rings that keep dirt out of and lubricant inside the sliding parts.

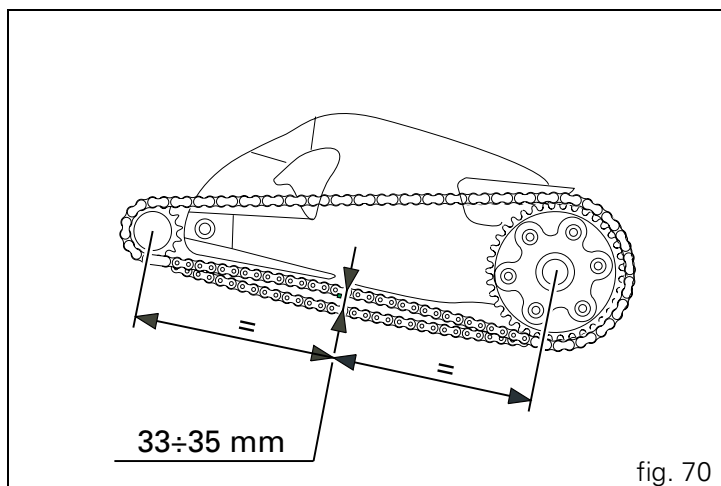
So as not to damage these seals when cleaning the chain, use special solvents and avoid aggressive washing with high-pressure steam cleaners.

After cleaning, blow the chain dry with compressed air or wipe with an absorbent material, then lubricate each link with SHELL Advance Chain or Advance Teflon Chain.



Important

Using non-specific lubricants may cause severe damage to the chain and the front and rear sprocket.



Changing the high and low beam bulbs

Before replacing a burnt-out bulb, make sure that the new one matches the voltage and wattage specifications in the "Electrical System" paragraph on page 106. Always check that the new bulb works before refitting removed parts. Figure 71 shows the position of the low beam (LO), high beam (HI) and parking light (1) bulbs.

Headlight

To gain access to the left-hand bulb, remove the cover (2) (see page 74) by pressing the lever (A).

Rotate the locking ring nut (3) of the upper bulb body anti-clockwise and extract the burnt-out bulb. Replace with a bulb of equal rating.

On refitting, rotate the locking ring nut (3) clockwise to secure the bulb in place.

The right-hand bulb is replaced in the same way.

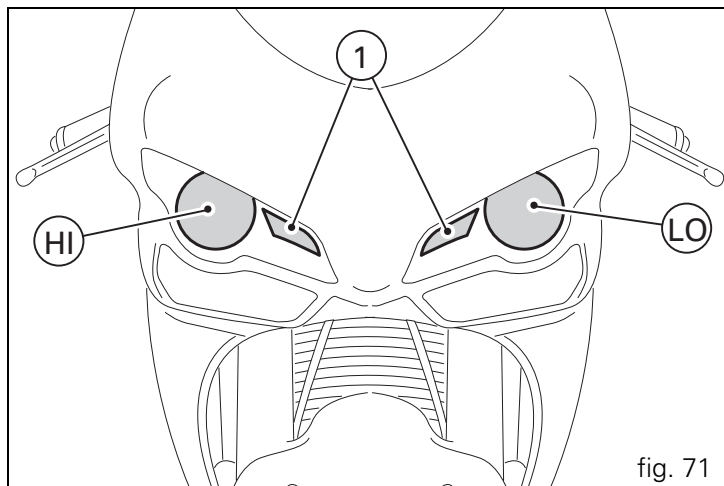


fig. 71

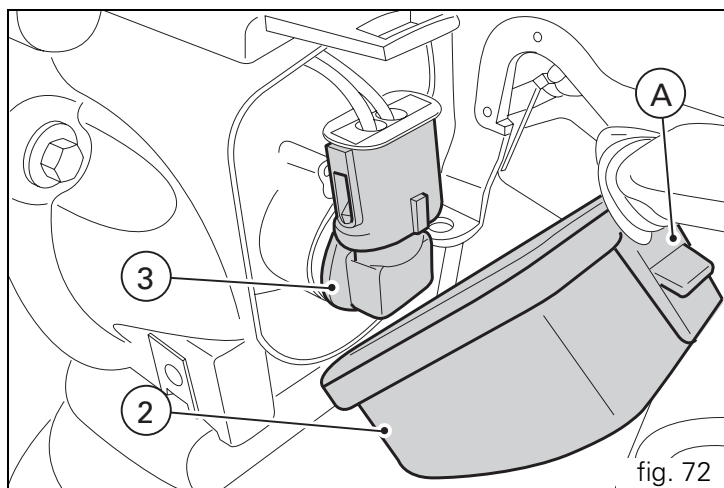


fig. 72



Notes

The main wiring harness cable does not need to be disconnected to replace the headlight bulbs.



Notes

Be careful to hold the new bulb at the base only. Never touch the transparent body with your fingers; this could darken it and thus reduce the brightness.

Refitting

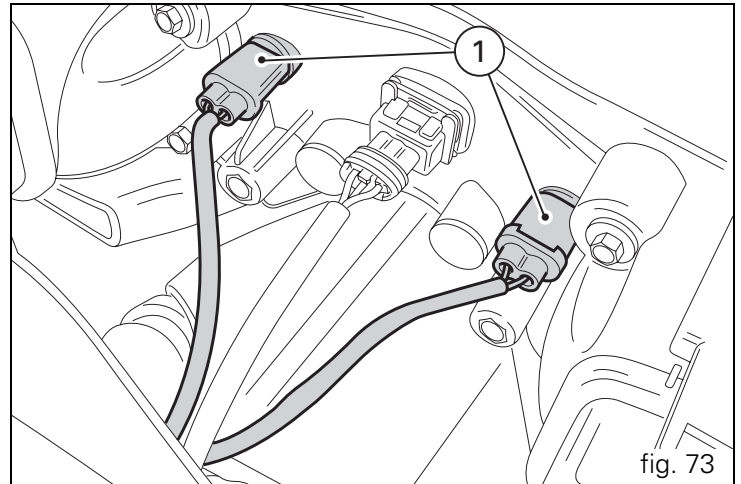
After changing the burnt-out bulb, replace the cover and close it by pressing it against the lever.

Changing the parking light bulb

To reach the parking lights (1), place your hand inside the headlight support and take the bulb-holders out of their seats. Turn the bulb retaining ring (1) anti-clockwise and remove the burnt-out bulb.

Renew the burnt-out bulb.

On refitting, turn the bulbs (1) clockwise to secure.

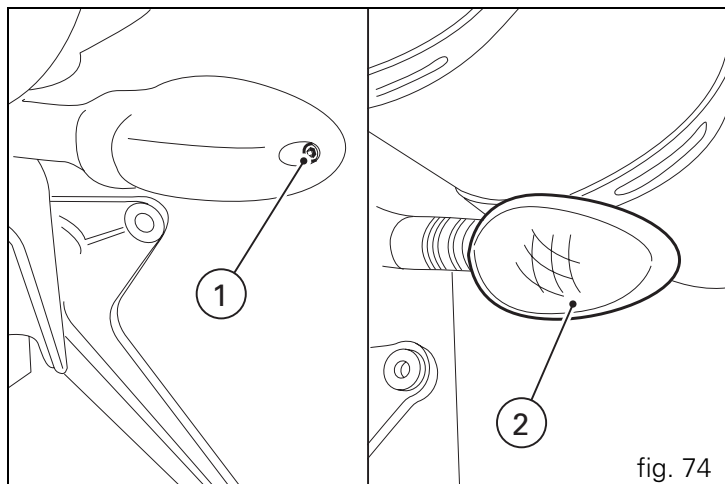


E

Rear turn signal indicators (fig. 74)

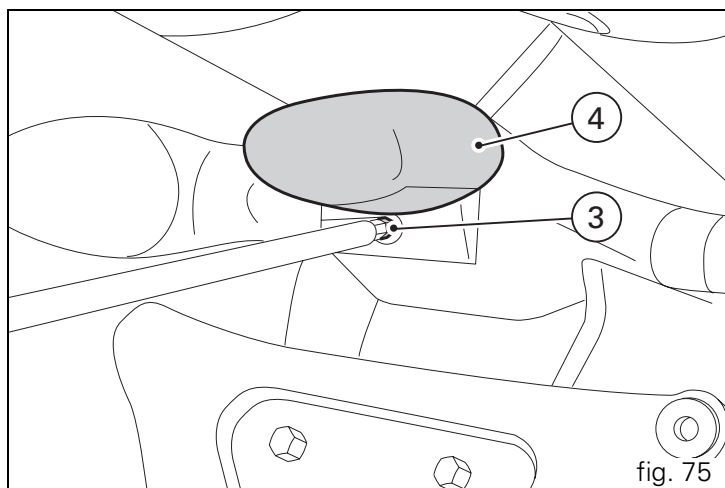
To change the rear turn signal indicator bulbs, give the indicator body (1) a quarter turn, hold it with the lens upward and take it out of the indicator support.

The bulb has a bayonet-type end fitting: to remove it, push it in and turn it counter-clockwise. Push in the new bulb and turn it clockwise until it clicks into place. Refit the indicator body (3) to its support and rotate it by a quarter of a turn.



Number plate light (fig. 75)

To access the number plate light bulb, unscrew the screw (3) securing the cover (4). Remove the bulb and replace it.



Headlight aim (fig. 76)

To check the headlight aim, place the motorcycle upright with the tyres inflated to the correct pressure and one person sitting astride the motorcycle. The motorcycle should be perfectly vertical, with its longitudinal axis at right angles to a wall or screen at a distance of 10 metres. Draw a horizontal line at the height of the centre of the headlamp and a vertical one at the longitudinal axis of the motorcycle. If possible, perform this check in conditions of low ambient light.

Switch on the low beam headlight.

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 centre.



Notes

This procedure is the one specified by Italian regulations for checking the maximum height of light beams. Owners in other countries should adapt this procedure to the regulations in force in the country where the motorcycle is used.

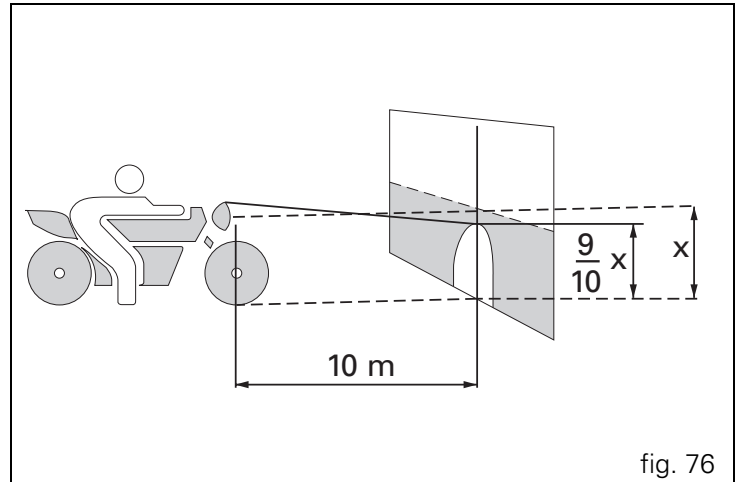
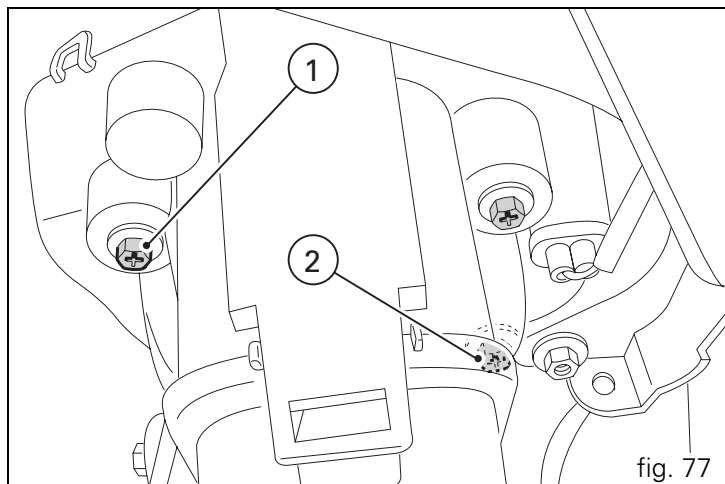


fig. 76

The horizontal position of the left-hand headlamp is set by means of the adjusting screw (1, fig. 77) behind the headlamp. Turn the screw clockwise and the beam will shift to the right; turning the screw anti-clockwise will shift the beam to the left.

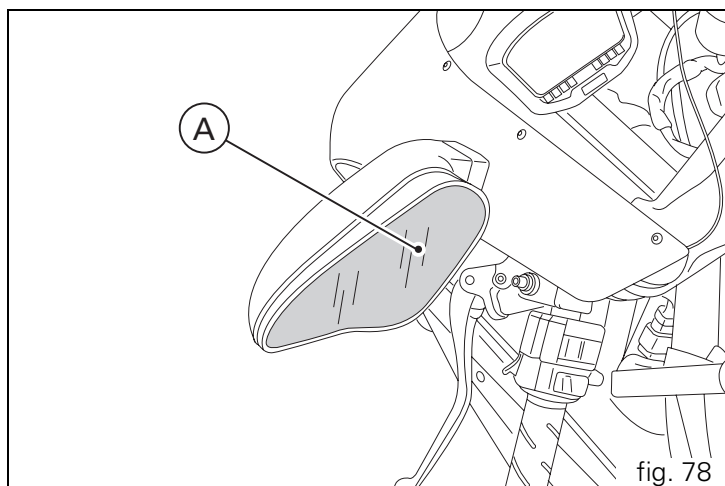
The vertical position of the left-hand headlamp is set by means of the adjusting screw (2, fig. 77) behind the headlamp. Turn the screw clockwise to lower the beam or anti-clockwise to raise it.

Repeat the above procedure to adjust the right-hand headlamp.



Rear view mirror adjustment (fig. 78)

The rear view mirror is adjusted manually by pressing at position (A).



Tubeless tyres

Front tyre pressure:

2.1 bar – 2.3 kg/cm²

Rear tyre pressure:

2.2 bar – 2.4 kg/cm²

Tyre pressures are affected by temperature and altitude variations, so you are advised to check and adjust them whenever you are riding in areas with wide variations in temperature or altitude.



Important

Check and adjust the pressures with the tyres cold. To prevent distortion of the front wheel rim, increase tyre pressure by 0.2 - 0.3 bar when riding on bumpy roads.

Tyre repair or replacement (Tubeless)

In the event of a minor puncture, tubeless tyres will take a long time to deflate, as they tend to keep air inside. If you find that one of the tyres is slightly deflated, check the tyre for slow punctures.



Warning

Punctured tyres must be renewed.

Replace with tyres of the original brand and type.

Be sure to tighten the valve dust caps securely to prevent leaks while riding. Never use tube type tyres. Failure to heed this warning may lead to sudden tyre bursting and to serious danger to rider.

After replacing a tyre, the wheel must be balanced.



Important

Do not remove or alter the position of the wheel balancing weights.



Notes

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

E

Minimum tread depth

Measure the tread depth (S, fig. 79) at the point where the tread is most worn.

It should not be less than 2 mm, and in any case not less than the legal limit.

Important

Visually inspect the tyres at regular intervals for cracks and cuts, especially on the side walls, and bulges or large stains that indicate internal damage. Replace them if badly damaged.

Remove any stones or other foreign bodies stuck in the tread.

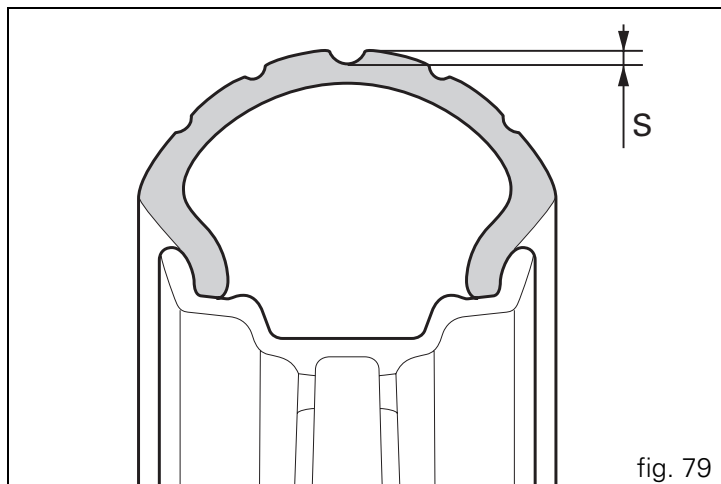


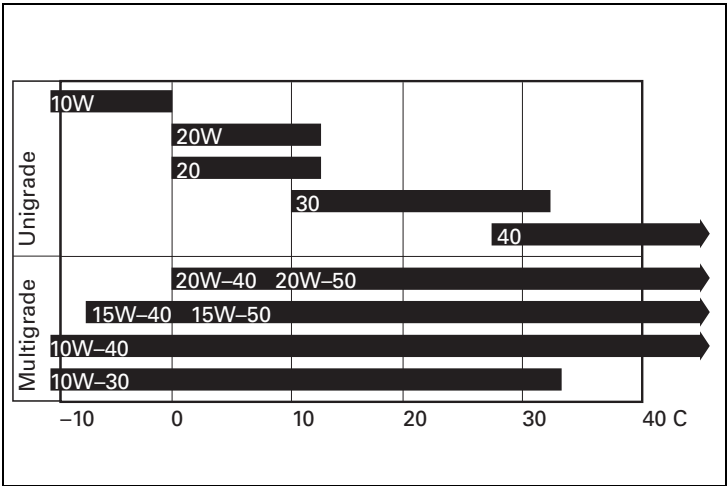
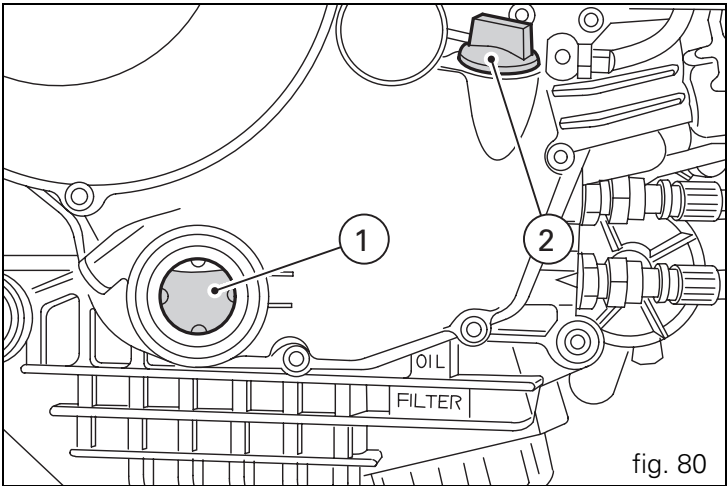
fig. 79

Checking the engine oil level (fig. 80)
Check the engine oil level through the sight glass (1) on the clutch cover. When checking oil level, the motorcycle should be upright and the engine cold. Oil level should be between the marks next to 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. Replace the filler cap.

Important
To replace the engine oil and filters at the intervals specified in the maintenance table in the Warranty Booklet, contact a Ducati dealer or authorized workshop.

Oil 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 renewing the spark plugs

(fig. 81)

Spark plugs are an important part of the engine and should be checked at regular intervals.

Spark plug condition provides a good measure of engine condition.

Have the spark plugs inspected or replaced at a Ducati Dealer or Authorized Workshop. Firstly, they will check the colour of the ceramic insulator of the central electrode: an even brown colour is a sign that the engine is in good running order.



Notes

Secondly, they will check the central electrode for wear and measure electrode gap. Electrode gap should be: $0.6 \div 0.7$ mm.



Important

A gap outside the specified limits will adversely affect engine performance and may lead to difficult starting or erratic idling.

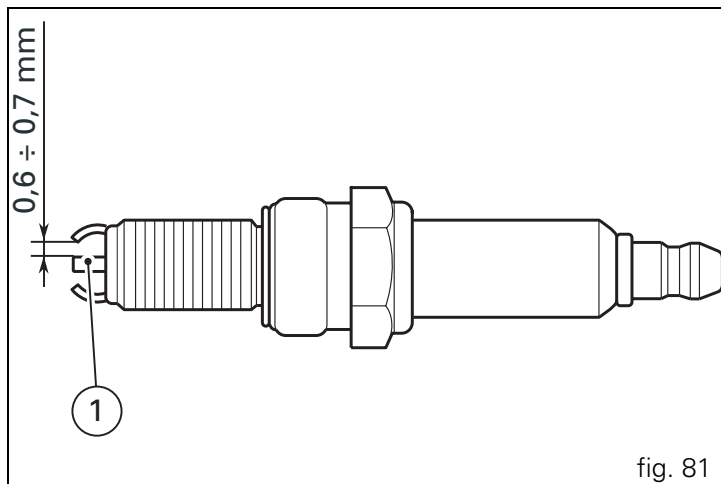


fig. 81

General cleaning

To preserve the original shine on metal surfaces and paintwork, wash and clean your motorcycle at regular intervals depending on the type of use and according to the particular road conditions. Use specific products, where possible biodegradable. Avoid aggressive detergents or solvents.



Important

Do not wash your motorcycle immediately after use, as marks can form due to evaporation of the water on 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 parts of the engine are unusually dirty or greasy, use a degreasing agent, avoiding contact with transmission components (chain, front and rear sprockets, etc.). Rinse with warm water and dry all surfaces with chamois leather.



Warning

There may be loss of braking efficiency immediately after washing the motorcycle. Never grease or lubricate the brake discs as this would cause loss of braking effectiveness. Clean the discs with an oil-free solvent.

Storing the motorcycle

If the motorcycle is to be left unused for a long period, it is advisable to carry out the following operations first:

- clean the motorcycle;
- drain the fuel from fuel tank;
- pour a few drops of engine oil into the cylinders through the spark plug seats, then crank the engine by hand a few times to form a protective film of oil on the cylinder inner walls;
- place the motorcycle on the paddock stand;
- disconnect and remove the battery.

If the motorcycle has been left unused for more than a month, the battery should be checked and re-charged if necessary.

Protect the motorcycle with a special motorcycle cover that will not damage the paintwork or retain moisture.

This type of motorcycle cover is available from Ducati Performance.

Important notes

The legislation in some countries (France, Germany, Great Britain, Switzerland etc.) sets certain noise and pollution standards.

Periodically carry out the required checks and renew parts as necessary, using Ducati original spare parts, in compliance with the regulations in the country concerned.

Maintenance

Programmed maintenance plan: operations to be carried out by the dealer

List of operations and frequency (distance or time interval *)	km x1000	1	12	24	36	48	60
	miles x1000	0,6	7,5	15	22,5	30	37,5
	Months	6	12	24	36	48	60
Change the engine oil		•	•	•	•	•	•
Change the engine oil filter		•	•	•	•	•	•
Clean the engine oil pick-up filter					•		
Check the engine oil pressure				•		•	
Check and/or adjust the valve clearances (1)			•	•	•	•	•
Check the tension of the timing belts (1)			•		•		•
Renew the timing belts				•		•	
Check and clean the spark plugs. Renew if necessary				•		•	
Check and clean the air filter (1)			•		•		•
Change the air filter				•		•	

List of operations and frequency (distance or time interval *)	km x1000	1	12	24	36	48	60
	miles x1000	0,6	7,5	15	22,5	30	37,5
	Months	6	12	24	36	48	60
Check throttle body synchronisation and idle speed setting (1)			●	●	●	●	●
Check the brake and clutch fluid levels		●	●	●	●	●	●
Change the clutch and brake fluid					●		
Check and adjust the brake and clutch control cables			●	●	●	●	●
Check/lubricate the throttle/cold start cable			●	●	●	●	●
Check tyre pressure and wear		●	●	●	●	●	●
Check the brake pads. Renew if necessary		●	●	●	●	●	●
Check the steering head bearings				●		●	
Check the drive chain tension, alignment and lubrication		●	●	●	●	●	●
Check the clutch disc pack. Renew if necessary (1)			●	●	●	●	●
Check coolant level			●	●	●	●	●
Change the coolant					●		
Check operation of electric fans and sealing of coolant circuit			●	●	●	●	●
Check the rear wheel cush drive				●		●	
Check the wheel hub bearings				●		●	
Check the indicators and lighting			●	●	●	●	●
Check tightness of nuts and bolts securing the engine to the frame			●	●	●	●	●
Check the sidestand			●	●	●	●	●
Check tightness of the front wheel axle nut			●	●	●	●	●

List of operations and frequency (distance or time interval *)	km x1000	1	12	24	36	48	60
	miles x1000	0,6	7,5	15	22,5	30	37,5
	Months	6	12	24	36	48	60
Check tightness of the rear wheel axle nut			•	•	•	•	•
Check the external fuel hoses			•	•	•	•	•
Change the front fork oil					•		
Check the forks and rear shock absorber for oil leaks			•	•	•	•	•
Check the front sprocket retaining bolts			•	•	•	•	•
General lubrication and greasing			•	•	•	•	•
Check and recharge the battery			•	•	•	•	•
Road test the motorcycle		•	•	•	•	•	•
General cleaning			•	•	•	•	•

*** Service operation to be carried out in accordance with the specified distance or time intervals (km, miles or months), whichever occurs first.**

(1) Operation to be carried out only at the specified distance intervals.

Programmed maintenance plan: operations to be carried out by the dealer

E	List of operations and frequency (distance or time interval *)	km x1000	1
		miles x1000	0,6
		Months	6
	Check the engine oil level		●
	Check the brake and clutch fluid levels		●
	Check tyre pressure and wear		●
	Check the drive chain tension and lubrication		●
	Check the brake pads. If necessary, contact your dealer to renew pads		●

*** Service operation to be carried out in accordance with the specified distance or time intervals (km, miles or months), whichever occurs first.**

Technical data

Overall dimensions (mm) (fig. 82)

Weights

Running order without fuel:

188 kg (1098);

186 kg (1098S).

Running order without fluids and battery:

173 kg (1098);

171 kg (1098S).

Fully laden:

390 kg.



Warning

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

E

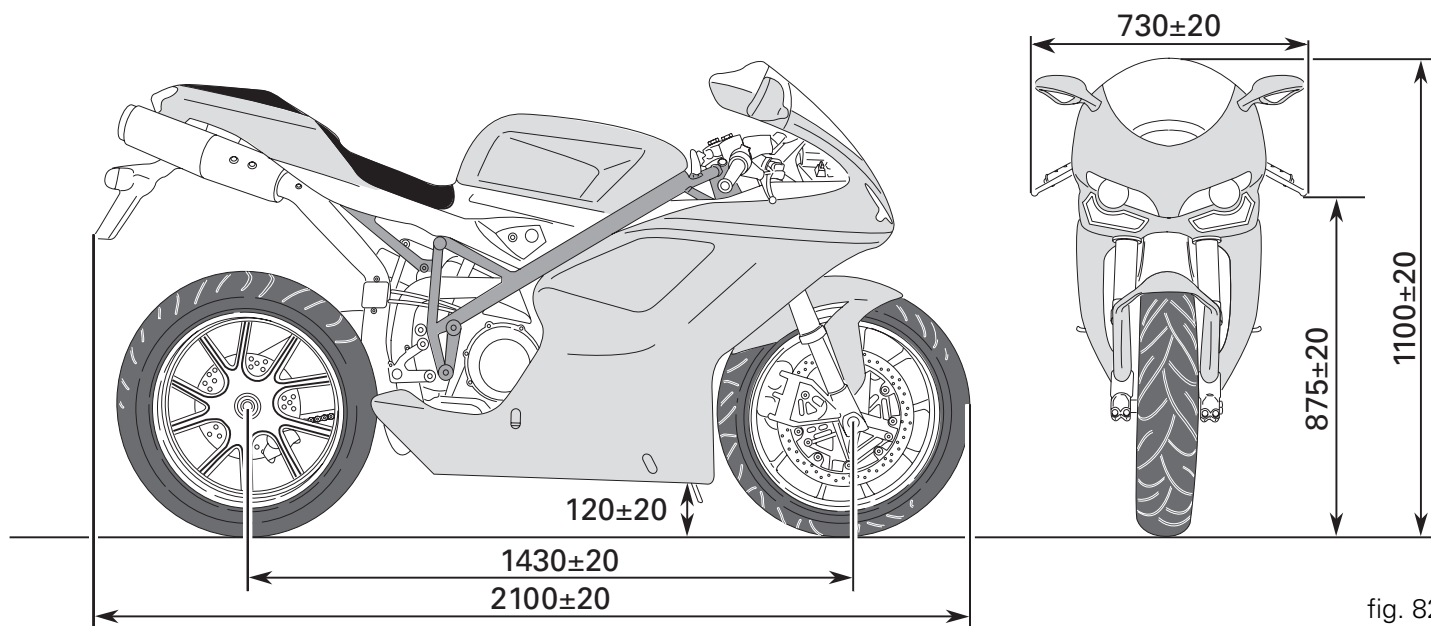


fig. 82

Fluids and lubricants	Type	
Fuel tank, including a reserve of 4 dm ³ (litres)	Unleaded fuel with 95 fuel octane rating (at least)	15.5 dm ³ (litres).
Lubrication circuit	SHELL - Advance Ultra 4	3.7 dm ³ (litres).
Front/rear brake and clutch circuits	Special hydraulic system fluid SHELL Advance Brake Dot 4	—
Protection for electrical contacts	SHELL - Advance Contact Cleaner spray for electric systems	—
Front fork for 1098 only	SHELL - Advance Fork 7.5 or Donax TA	439 cc (per leg)
Front fork for 1098S only	SHELL - Advance Fork 7.5 or Donax TA	155 mm (per leg) oil level
Cooling system	SHELL - Advance Coolant antifreeze or Glycoshell 35-40% + water	2.3 dm ³ (litres).



Important

Do not use additives in fuel or lubricants.

Engine

Longitudinal 90° "L" twin cylinder, four-stroke.

Bore (mm):

104

Stroke (mm):

64.7

Total displacement cm³:

1099

Compression ratio:

12.5±0.5:1

Max power at crankshaft (95/1/EC), kW/HP:

113 kW/154 HP at 9,750 rpm

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

116 Nm @ 8,000 rpm

Max rotation speed, rpm:

10,700



Important

Do not exceed the specified rpm limits in any running conditions.

Timing system

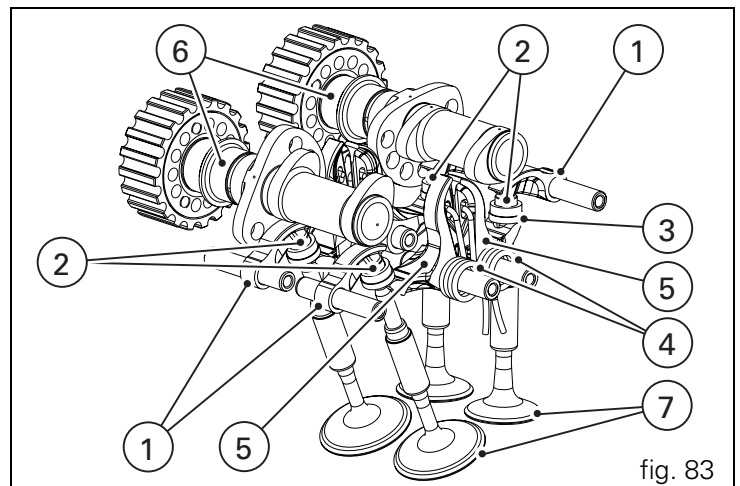
Desmodromic (type) with four valves per cylinder, operated by eight rocker arms (4 opening rockers and 4 closing rockers) and two overhead camshafts. It is operated by the crankshaft through spur gears, belt rollers and toothed belts.

Desmodromic timing system (fig. 83)

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

Performance data

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



Spark plugs

Make:
NGK.
Type:
MAR10A-J.

Fuel system

MARELLI indirect electronic injection
Throttle body diameter:
60 mm.
Injectors per cylinder: 1.
Holes per injector: 12.
Fuel supply: 95-98 RON.

Brakes

Front

With double semi-floating drilled disc.
Braking surface material:
steel.
Flange material:
aluminium.

Disc diameter:

330 mm.

Hydraulically operated by a control lever on right handlebar.

Make of brake callipers:

BREMBO.

Type:

34-4 pistons.

M4-34.

Friction material:

TT 2910.

Master cylinder type:

PR18/19.

Rear

With fixed drilled steel disc.

Disc diameter:

245 mm.

Hydraulically operated by pedal on R.H. side.

Make:

BREMBO.

Type:

P34c pistons.

Friction material:

FERIT I/D 450 FF

Master cylinder type:

PS 11 b.



Warning

The brake fluid used in the brake system is corrosive. In the event of accidental contact with eyes or skin, wash the affected area with copious amounts of running water.

Transmission

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

Final drive ratio:

32/59.

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

Final drive ratio:

15/38.

Total gear ratios:

1st 15/37

2nd 17/30

3rd 20/28

4th 22/26

5th 23/24

6th 24/23

Drive transmitted from gearbox to rear wheel via chain:

Make:

DID.

Type:

525 HV 2.

Dimensions:

5/8"x5/16".

No. of links:

97+1 joining link.



Important

The above gear ratios are approved and should not be modified under any circumstances.

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 replacement of the rear sprocket, contact a Ducati Dealer or Authorized Workshop. Incorrect replacement of this component could seriously compromise your safety and cause irreparable damage to the motorcycle.

Frame

ALS 450 steel tube trellis frame

Steering angle (on each side):
28° 30'.

Wheels

Five-Y-spoke, light-alloy rims.

Front

Dimensions:
MT 3.50x17".

Rear

Dimensions:
MT 6.00x17".

The wheel shaft can be removed.

Tyres

Front

Radial tubeless tyre.

Size:
120/70-ZR17.

Rear

Radial tubeless tyre.

Size:
190/55-ZR17.

Suspension

Front

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

Stanchion diameter:

43 mm with TIO treatment (1098);

43 mm with TIN treatment (1098S);

Travel along leg axis:

127 mm;

120 mm.

Rear

Progressive type, using a rocker arm connecting frame and upper pivot point of the shock absorber.

The shock absorber is adjustable for rebound, compression, and spring preload. At the bottom pivot point it is connected to a light-alloy swingarm. The swingarm hinges on a pivot pin passing through the frame and engine.

This system gives the motorcycle excellent stability.

Shock absorber travel:

59.5 mm.

Wheel travel:

127 mm.

Exhaust system

Equipped with catalytic converter in compliance with Euro 3 emission regulations.

USA model: not catalyzed.

Available colours

Ducati anniversary red code no. F_473.101 (PPG)

red frame with black wheels.

E

Electrical system

The main components of the electrical system are:

Headlight:

bulb type: 2 x **H11 (12 V-55 W)**.

side light:

bulb type: 2 x **H16W (12 V-6 W)**.

Electrical controls on handlebars:

turn indicators:

Front: **LED**.

Rear: **bulb type: R10W (12 V-10 W) orange**.

Horn.

Stop light switches.

Battery, 12 V-10 Ah.

Alternator 12 V-480 W.

Electronic voltage regulator (rectifier), protected by a **30 A** fuse near the battery.

Starter motor, 12 V-0,7 kW.

Tail light and brake light:

LED.

Number plate light:

bulb type: **W5W (12 V-5 W)**.



Notes

See "Replacing bulbs" on page 83 for relevant instructions.

Fuses

The main fuse box (1,fig. 84) is located on the left of the frame. To expose the fuses, take off the protective cover. The cover indicates mounting positions and ampere ratings.

The fuse (2) protects the electronic regulator. Remove the protective cap to access the fuses.

A blown fuse is identified by a broken inner filament (3, fig. 86).



Important

To avoid possible short circuits, switch the ignition key to **OFF** before replacing the fuse.



Warning

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

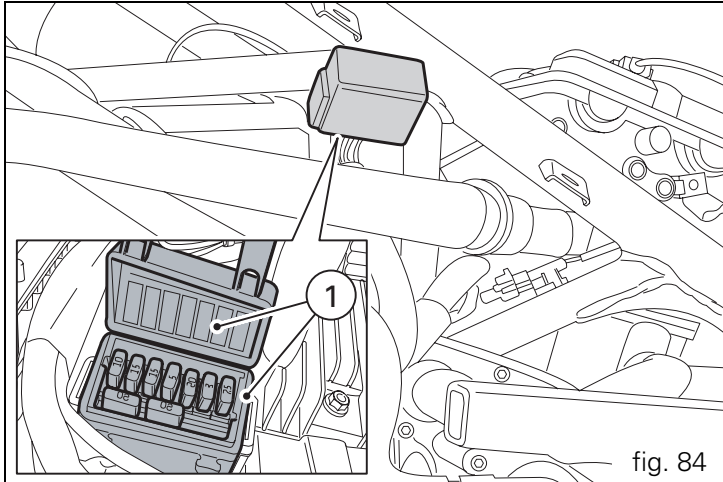


fig. 84

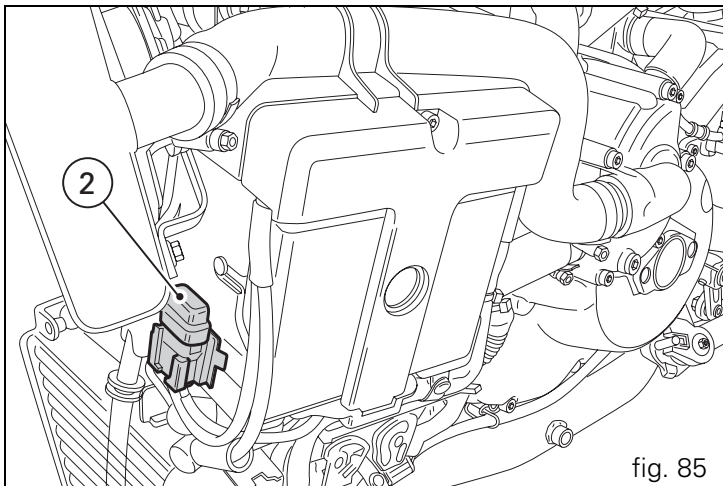


fig. 85

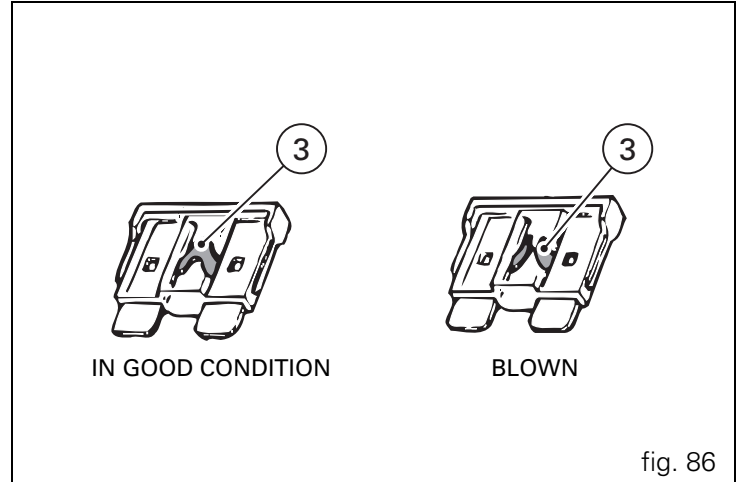


fig. 86

Key to the electrical system / injection system diagram

- 1) Right-hand handlebar switch
- 2) Key switch
- 3) Left electric fan
- 4) Right electric fan
- 5) Starter motor
- 6) Starter contactor
- 7) Battery
- 8) Regulator fuse
- 9) Regulator
- 10) Alternator
- 11) Rear right-turn signal
- 12) Tail light
- 13) Number plate light
- 14) Rear left-turn signal
- 15) Fuel tank
- 16) Stepper motor
- 17) Injection relay
- 18) Self-diagnosis
- 19) Horizontal cylinder coil
- 20) Vertical cylinder coil
- 21) Horizontal cylinder spark plug
- 22) Vertical cylinder spark plug
- 23) Horizontal cylinder injector
- 24) Vertical cylinder injector
- 25) Throttle position sensor
- 26) Rpm/timing sensor
- 27) Coolant temperature sensor
- 28) Speed sensor
- 29) Side stand
- 30) Horn
- 31) Neutral switch
- 32) Oil pressure switch
- 33) Rear brake light switch
- 34) ECU
- 35) Fuses
- 36) Clutch switch
- 37) Front brake light switch
- 38) LH handlebar switch
- 39) Transponder antenna
- 40) Air temperature sensor
- 41) Finish line sensor
- 42) Dashboard
- 43) Lights relay
- 44) Front left turn indicator
- 45) Headlight
- 46) RH side light
- 47) Front right turn signal
- 48) EX-UP motor
- 49) Fan relay
- 50) LH side light
- 51) Data Acquisition
- 52) Lambda sensor

Wire colour coding

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

Legend of fuse boxes (fig. 84 and fig. 85)

Pos.	Device	Val.
1	Key-on	10 A
2	Lights	15 A
3	Device	15 A
4	Instrument panel	5 A
5	Injection	20 A
6	Engine Electronic Control Unit	5 A
7	Fans	7.5 A



Notes

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

E

Periodic maintenance record

E

km	Name of Ducati Service	Mileage	Date
1000			
12000			
24000			
36000			
48000			
60000			

For United States of America version Only

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 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, 10443 Bandle 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.

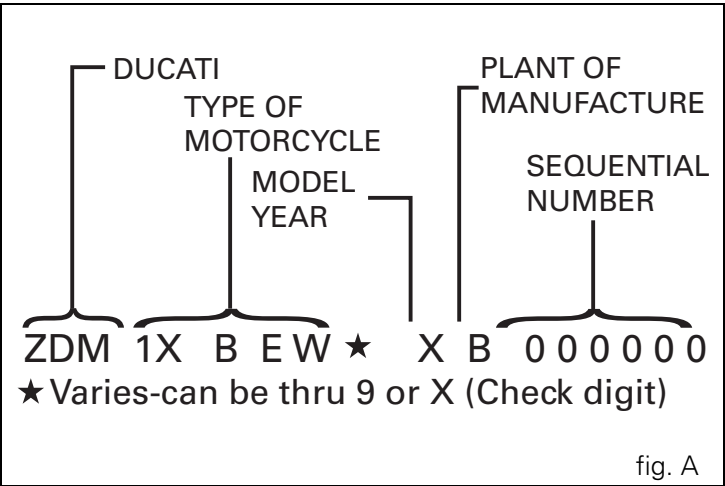
Gasoline is extremely flammable and is explosive under certain conditions. Refuel in a well ventilated area with the engine stopped. Do not smoke or allow open flames or sparks when refuelling or servicing the fuel system.

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 55).
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 (VIN)
Every Ducati motorcycle is identified by two identification numbers (see page 9). fig. A specifically shows the frame identification numbers.



Label location (fig. B)

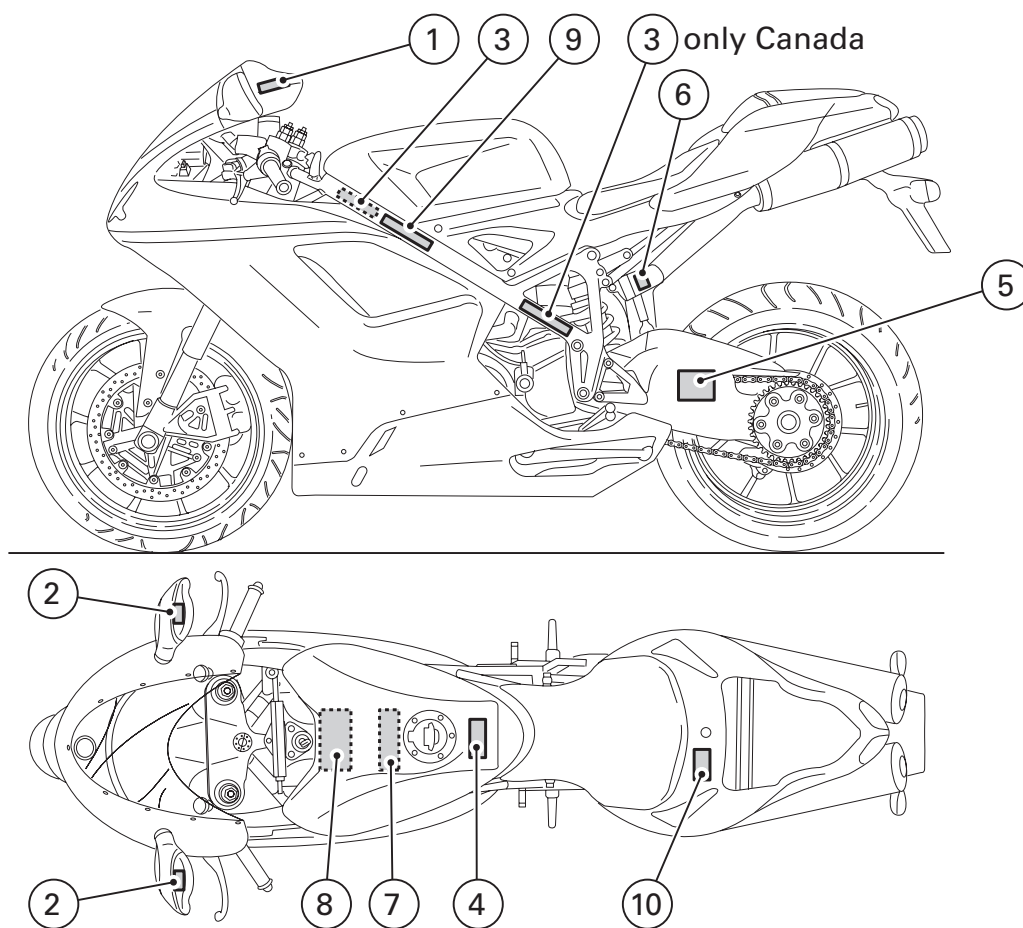


fig. B

10

California evaporation emission system

This system consists of (fig. C):

- 1) Warm air inlet;
- 2) Canister;
- 3) Dell'Orto jet;
- 4) Fuel tank;
- 5) Breather pipe;
- 6) Intake manifolds.



Important

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

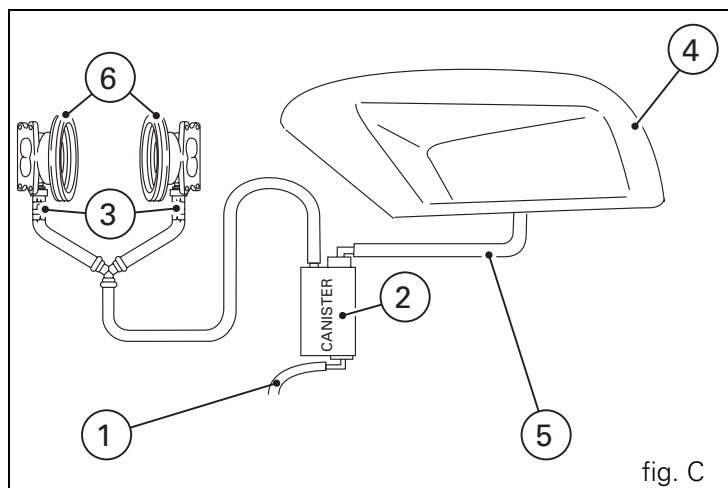


fig. C

Ducati limited warranty on emission control system

Ducati North America, Inc., 10443 Bandley 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 of 30,000 kilometers (18,641 miles) 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 Bandle Drive
Cupertino, California, 95014
Tel: 001.408.253.0449 / Fax: 001.408.253.4099
E-mail: customerservice@ducatiusa.com
Web site: www.ducatiusa.com

Routine maintenance record

USA
m

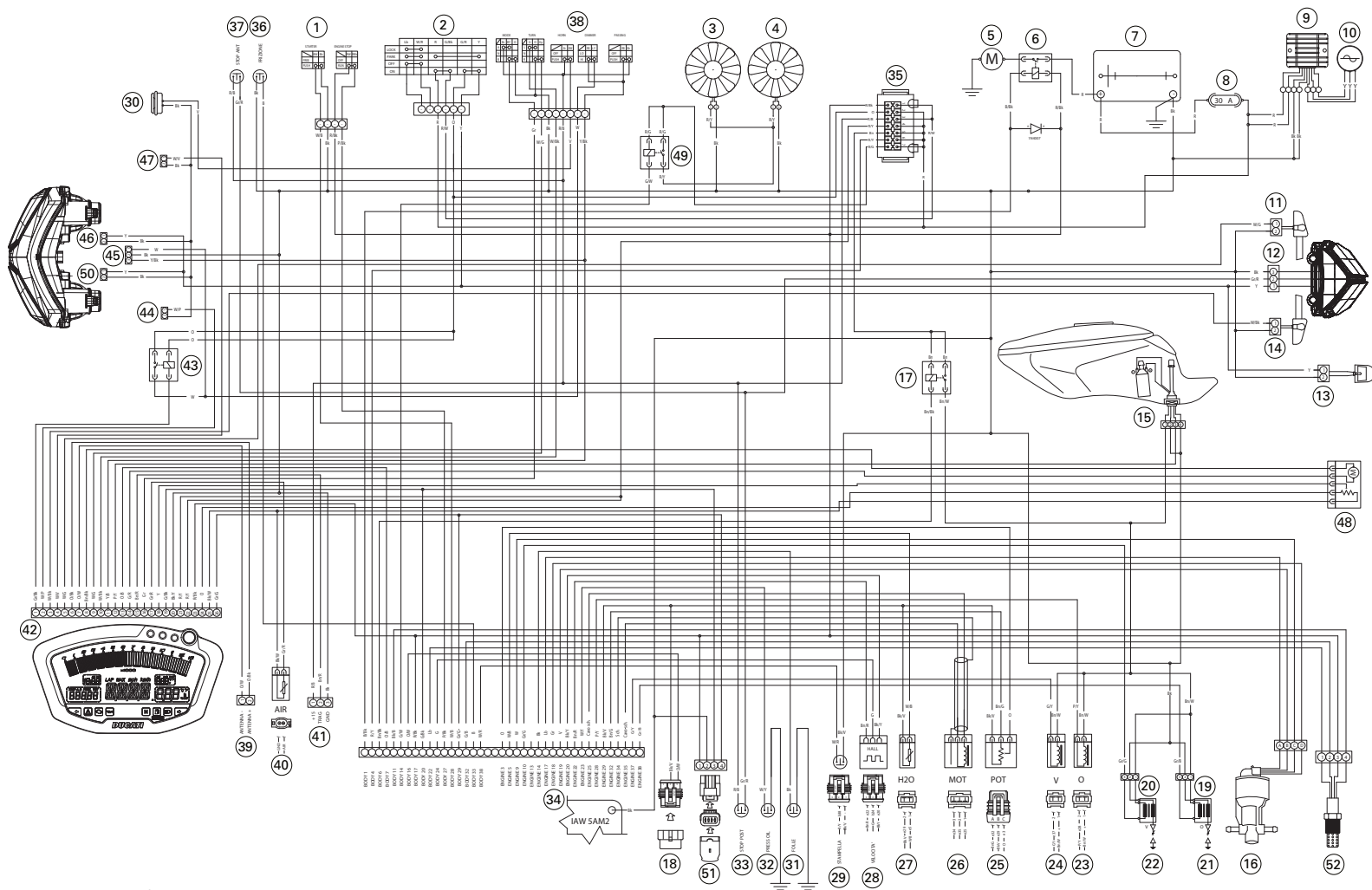
Km	mi	Ducati Service Name	Mileage	Date
1,000	600			
12,000	7,500			
24,000	15,000			
36,000	22,500			
48,000	30,000			
60,000	37,500			

Stampato 10/2006

Cod. 913.7.119.1A



Ducati Motor Holding spa via Cavalieri Ducati, 3 40132 Bologna, Italia
Tel. +39 051 6413111 Fax +39 051 406580
www.ducati.com



1098 / 1098S