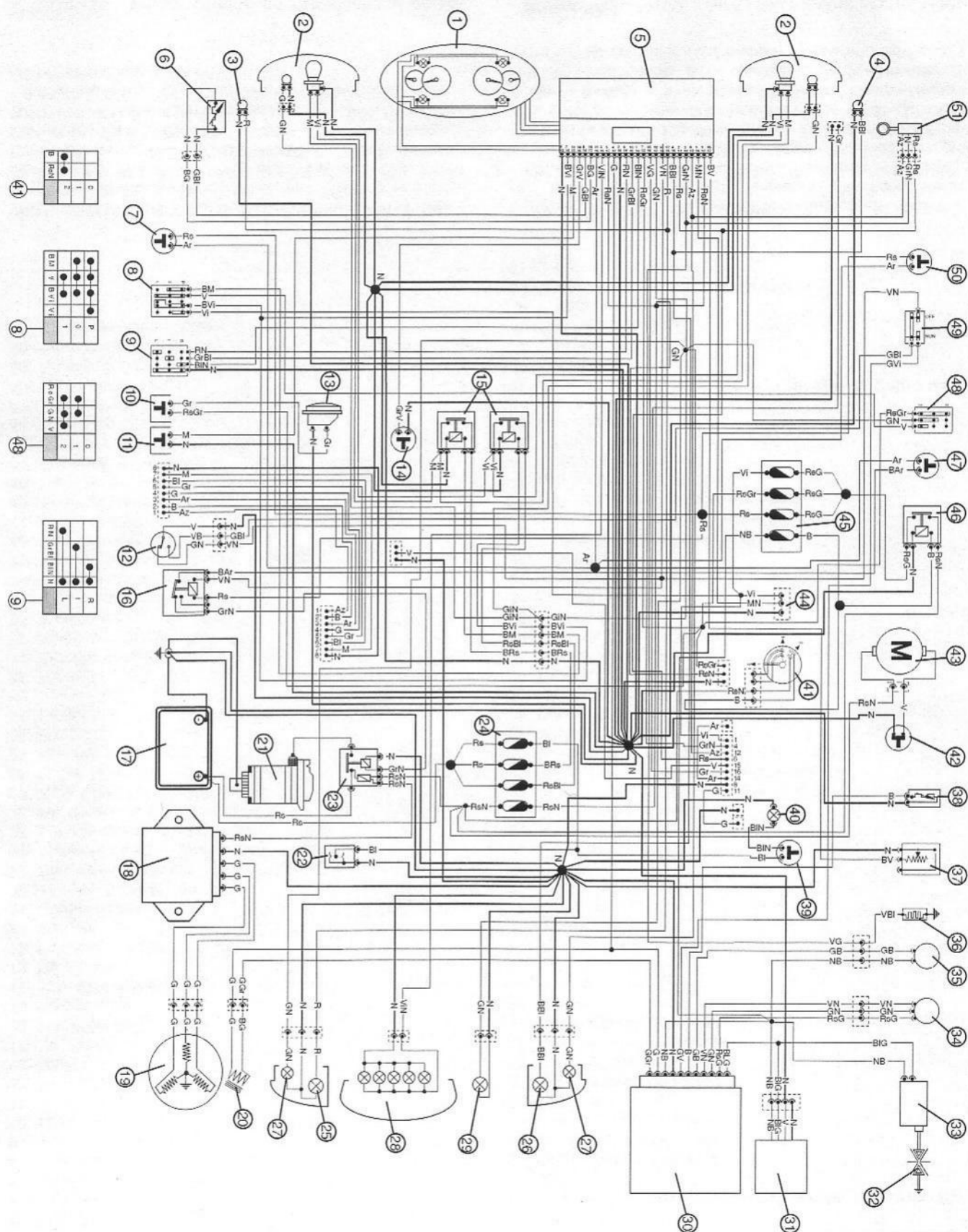




Electrical equipment diagram Esquema instalación eléctrica

1. Analogue instrument panel assembly
2. Headlight, 2 x 12V-35/35W bulbs, 2 x 12V/3W bulbs
3. Left-hand front turn indicator, 12V-10W bulbs
4. Right-hand front turn indicator, 12V-10W bulbs
5. Digital instrument panel assembly
6. Outside temperature sensor
7. Rear brake light button
8. Lights switch
9. Turn indicators switch
10. Horn button
11. Emergency button
12. Side stand switch
13. Horn
14. Reset button
15. Headlight relay switch
16. Switch relay
17. 12V-12Ah battery
18. Regulator
19. Flywheel magneto
20. Pick-up
21. Starter motor
22. 12V electrical socket
23. Starting relay switch
24. Fuse holder (2 x 15A, 1 x 20A, 1 x 7.5A)
25. Left-hand rear turn indicator
26. Right-hand rear turn indicator
27. Rear light (2 x 12V-5W bulbs)
28. Brake lights (5 x 12V-2.3W bulbs)
29. Number plate light (12V-5W)
30. Electronic control unit
31. Fuel pump
32. Spark plug
33. HV coil
34. Throttle sensor
35. Automatic starting device
36. Thermistor
37. Fuel level transmitter
38. Radiator temperature sensor
39. Helmet compartment lighting button
40. Helmet compartment lamp
41. Ignition switch
42. Thermal switch
43. Electric fan
44. Available for accessories
45. Fuse box (1 x 15A, 1 x 10A, 2 x 7.5A)
46. Main relay switch
47. Start button
48. Lights on/off switch
49. Engine stop button
50. Front brake light button
51. Wheel revolution sensor

WIRE COLOUR CODING: B=White - BI=Blue - G=Yellow - Mr=Brown - N=Black - BV=White-Green - GN=Yellow-Black - Gr=Grey - Rs=Pink - R=Red - Vi=Purple - V=Green - VN=Green-Black - BN=White-Black - GrN=Grey-Black - RN=Red-Black - BBI=White-Blue - BR=White-Red - GV=Yellow-Green - GrBI=Grey-Blue - A=Light blue - Ar=Orange - BIN=Blue-Black - BIR=Blue-Red - BIV=Blue-Green - BVi=White-Purple - GBI=Yellow-Blue - GRs=Yellow-Pink.

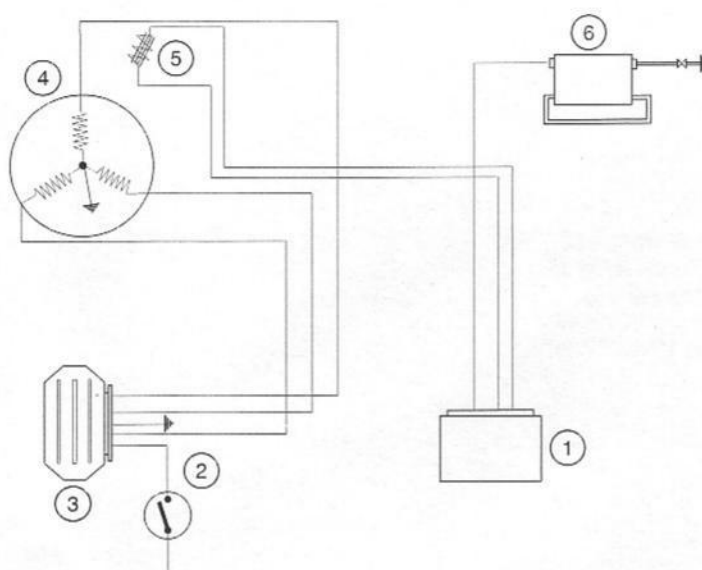
Warning - When working on the electrical equipment, be sure to properly connect the wires leading to the electronic ignition device. Pay attention to the polarity and colours of the connectors.

1. Grupo instrumento analógico.
2. Proyector delantero N. 2 lámparas 12V-35/35W, N. 2 lámparas 12V-3W.
3. Indicador de dirección delantero izquierdo, lámparas 12V-10W.
4. Indicador de dirección delantero derecho, lámparas 12V-10W.
5. Grupo instrumento digital.
6. Sensor temperatura exterior.
7. Pulsador stop freno trasero.
8. Desviador luces.
9. Conmutador intermitentes.
10. Pulsador claxon.
11. Pulsador de emergencia.
12. Desviador caballete lateral.
13. Claxon.
14. Pulsador reset.
15. Telerruptor faros.
16. Relé desviador.
17. Batería 12V-12Ah.
18. Regulador.
19. Volante magnético.
20. Pick-up.
21. Motor de arranque.
22. Toma de corriente 12V.
23. Telerruptor de arranque.
24. Portafusibles (N. 2 de 15A, N. 1 de 20A, N. 1 de 7,5A).
25. Indicador de dirección trasero izquierdo.
26. Indicador de dirección trasero derecho.
27. Piloto trasero (N. 2 lámparas 12V-5W).
28. Luces stop (N. 5 lámparas 12V-2,3W).
29. Luz matrícula (12V-5W).
30. Central electrónica.
31. Bomba combustible.
32. Bujía de encendido
33. Bobina A.T.
34. Sensor mariposa.
35. Starter automático.
36. Termistor
37. Transmisor nivel combustible.
38. Sensor temperatura radiador.
39. Pulsador iluminación hueco casco.
40. Luz cortesía hueco casco.
41. Conmutador de llave.
42. Termointerruptor.
43. Electroventilador.
44. Preinstalación accesorios.
45. Caja fusibles (N. 1 de 15A, N. 1 de 10A, N. 2 de 7,5A).
46. Telerruptor principal.
47. Pulsador de arranque.
48. Conmutador luces.
49. Parada motor.
50. Pulsador stop en el freno delantero.
51. Sensor vueltas rueda.

COLORACIÓN DE LOS CABLES: B=Blanco - BI=Azul marino - G=Amarillo - Mr=Marrón - N=Negro - BV=Blanco-Verde - GN=Amarillo-Negro - Gr=Gris - Rs=Rosa - R=Rojo - Vi=Violeta - V=Verde - VN=Verde-Negro - BN=Blanco-Negro - GrN=Gris-Negro - RN=Rojo-Negro - BBI=Blanco-Azul marino - BR=Blanco-Rojo - GV=Amarillo-Verde - GrBI=Gris-Azul marino - A=Azul - Ar=Naranja - BIN=Azul marino-Negro - BIR=Azul marino-Rojo - BIV=Azul marino-Verde - BVi=Blanco-Violeta - GBI=Amarillo-Azul marino - GRs=Amarillo-Rosa.

Atención - En las eventuales intervenciones sobre la instalación eléctrica, cerciorarse en modo particular de la correcta conexión de los conductores que llegan a las centralitas electrónicas.

Ignition section
Sección encendido
Secção ignição



04_002

1	IGNITION DEVICE	4	FLYWHEEL MAGNETO
2	IGNITION SWITCH CONTACTS	5	PICKUP
3	VOLTAGE REGULATOR	6	H.T. COIL
1	DISPOSITIVO DE ENCENDIDO	4	VOLANTE MAGNÉTICO
2	CONTACTOS CONMUTADOR DE LLAVE	5	PICK-UP
3	REGULADOR DE TENSIÓN	6	BOBINA A.T.
1	DISPOSITIVO IGNIÇÃO	4	VOLANTE MAGNETE
2	CONTACTOS COMUTADOR DE CHAVE	5	PICK-UP
3	REGULADOR DE TENSÃO	6	BOBINA A.T.

The diagram illustrates a power distribution system with the following components and connections:

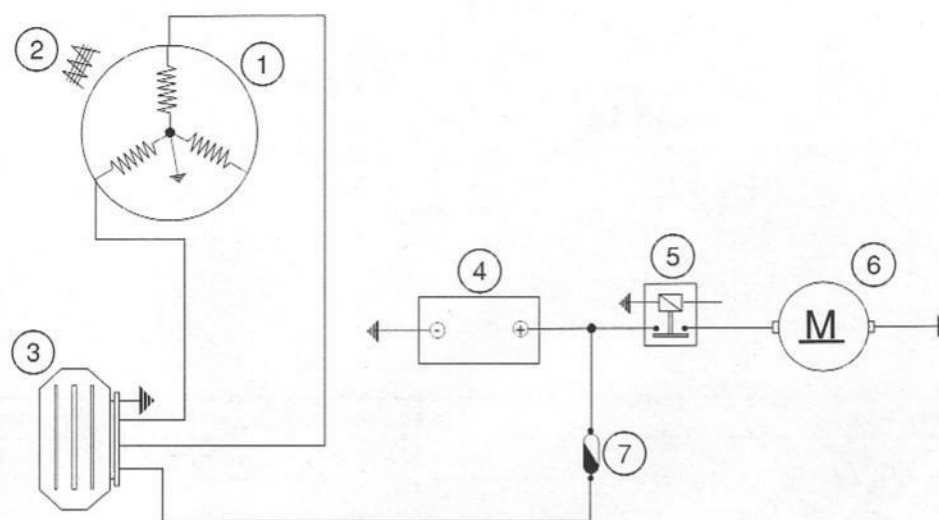
- 1:** A large octagonal transformer or generator symbol on the left.
- 2:** A switch or circuit breaker symbol.
- 3:** A single lamp symbol.
- 4:** A group of three lamp symbols.
- 5:** A group of three lamp symbols.
- 6:** A switch or circuit breaker symbol.
- 7:** A switch or circuit breaker symbol.
- 8:** A switch or circuit breaker symbol.
- 9:** A group of two lamp symbols.
- 10:** A group of two lamp symbols.
- 11:** A group of five lamp symbols in a box.
- 12:** A lamp symbol.
- 13:** A lamp symbol.
- 14:** A switch or circuit breaker symbol.
- 15:** A switch or circuit breaker symbol.
- 16:** A lamp symbol.
- 17:** A lamp symbol.
- 18:** A lamp symbol.

The connections show a complex network of wires, including a main line from component 1, branching lines to various switches (2, 6, 7, 8, 14, 15), and individual lines to each group of lamps (3, 4, 5, 9, 10, 11, 12, 13, 16, 17, 18). Ground symbols are also present throughout the circuit.

4

4 - 5

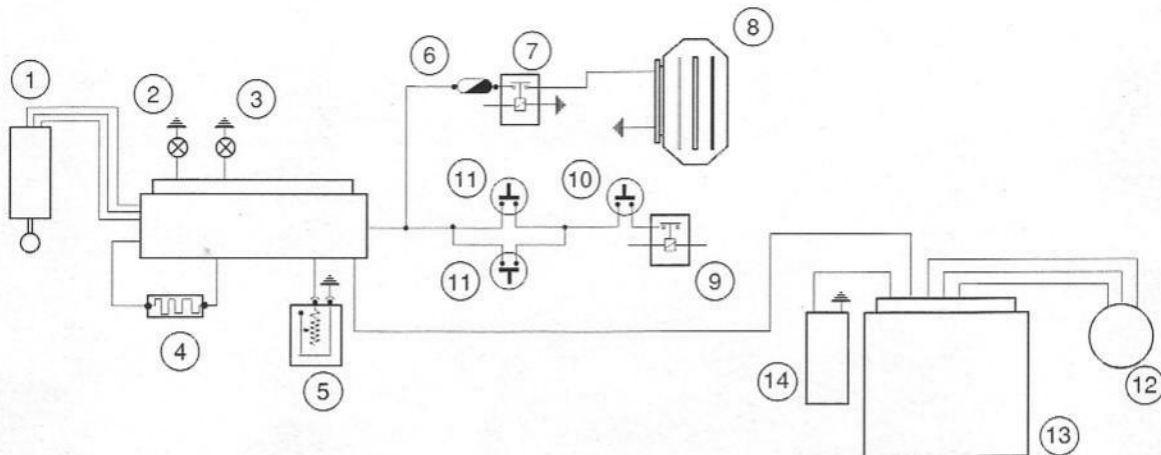
Battery recharge and starting section
Sección recarga batería y arranque
Secção recarga bateria e ignição



04_004

1	FLYWHEEL MAGNETO	5	STARTING RELAY SWITCH
2	PICK-UP	6	STARTER MOTOR
3	VOLTAGE REGULATOR	7	30A FUSE
4	12V-12Ah BATTERY		
1	VOLANTE MAGNETICO	5	TELERRUPTOR ARRANQUE
2	PICK-UP	6	MOTOR DE ARRANQUE
3	REGULADOR DE TENSION	7	FUSIBLE DE 30Ah
4	BATERIA 12V-12Ah		
1	VOLANTE MAGNETE	5	CONTACTOR IGNIÇÃO
2	PICK-UP	6	MOTOR DE ARRANQUE
3	REGULADOR DE TENSÃO	7	FUSÍVEL 30Ah
4	BATERIA 12V-12Ah		

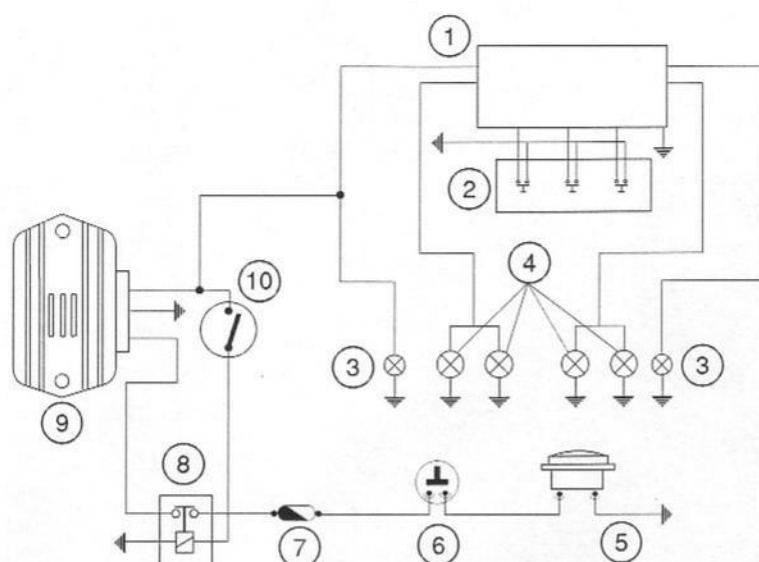
Start inhibitor switches and level indicators
Sección consentimiento e indicadores niveles
Secção consentimentos e indicadores níveis



04_005

1	WHEEL REVOLUTION SENSOR	8	REGULATOR 12V-dc
2	FUEL WARNING LIGHT	9	STARTING RELAY SWITCH RELAY
3	OIL PRESSURE SENSOR	10	START BUTTON
4	OUTSIDE TEMPERATURE INDICATOR	11	BRAKE LIGHT BUTTONS
5	FUEL LEVEL TRANSMITTER	12	THROTTLE SENSOR
6	7.5A FUSE	13	ELECTRONIC IGNITION DEVICE
7	MAIN RELAY SWITCH	14	RADIATOR SENSOR
1	SENSOR VUELTAS RUEDA	8	REGULADOR 12V-cc
2	TESTIGO RESERVA CARBURANTE	9	RELÉ DEL TELERRUPTOR DE ARRANQUE
3	SENSOR PRESION ACEITE	10	PULSADOR ARRANQUE
4	LUZ TESTIGO TEMPERATURA EXTERNA	11	PULSADORES STOP
5	TRASM. NIVEL COMBUSTIBLE	12	SENSOR MARIPOSA
6	FUSIBLE 7,5 A	13	DISPOSITIVO ENCENDIDO ELECTRÓNICO
7	TELERRUPTOR PRINCIPAL	14	SENSOR DEL RADIADOR
1	SENSORES DE ROTAÇÃO DA RODA	8	REGULADOR 12V-cc
2	TESTEMUNHO RESERVA COMBUSTÍVEL	9	RELÊ DO TELERUPTOR DE IGNIÇÃO
3	SENSOR DA PRESS. DO ÓLEO	10	BOTÃO ARRANQUE
4	LUZ INDICADORA TEMPERATURA EXTERNA	11	BOTÕES DE STOP
5	TRANSMISSOR NÍVEL COMBUSTÍVEL	12	SENSOR BORBOLETA
6	FUSÍVEL 7,5 A	13	DISPOSITIVO IGNIÇÃO ELECTRÓNICA
7	TELERRUPTOR PRINCIPAL	14	SENSOR RADIADOR

Turn indicators and horn
Sección intermitentes y claxon
Secção piscas e buzina



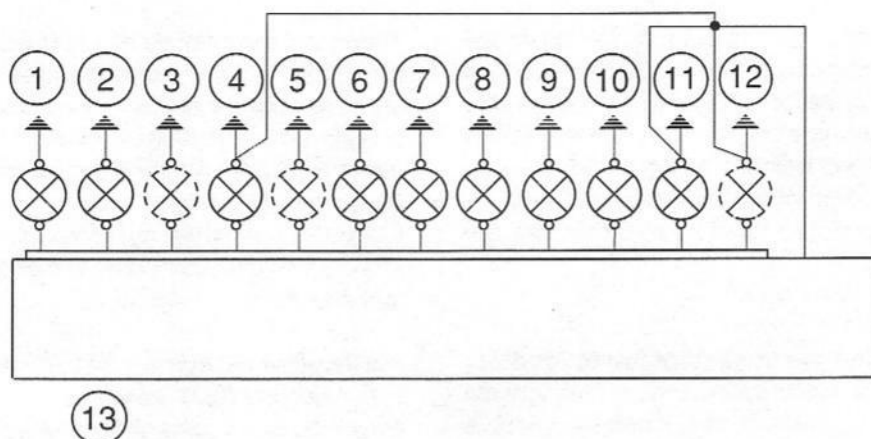
04_006

1	DIGITAL INSTRUMENT	6	HORN BUTTON
2	TURN SIGNAL SELECTOR	7	7.5A FUSE
3	12V-2W TURN INDICATOR WARNING LIGHT BULBS	8	MAIN RELAY SWITCH
4	4 x 12V-10W TURN INDICATOR BULBS	9	VOLTAGE REGULATOR
5	HORN	10	IGNITION SWITCH CONTACTS

1	INSTRUMENTO DIGITAL	6	PULSADOR CLAXON
2	CONMUTADOR INTERMITENTES	7	FUSIBLE 7,5 A
3	BOMBILLO LUZ TESTIGO INDICADORES DE DIRECCIÓN 12V-2W	8	TELERRUPTOR PRINCIPAL
4	4 BOMBILLOS INDICADORES DE DIRECCIÓN 12V-10W	9	REGULADOR DE TENSIÓN
5	CLAXON	10	CONTACTOS CONMUTADOR DE LLAVE

1	INSTRUMENTO DIGITAL	6	BOTÃO BUZINA
2	COMUTADOR PISCAS	7	FUSÍVEL 7,5 A
3	LÂMPADAS INDICADORAS PISCAS 12V-2W	8	TELERUPTOR PRINCIPAL
4	4 LÂMPADAS PISCAS 12V-10W	9	REGULADOR DE TENSÃO
5	BUZINA	10	CONTACTOS COMUTADOR DE CHAVE

Instrument panel
Tablero de control testigos e instrumentos
Esquema de controlo testemunhos e instrumentos



04_007

1	AVAILABLE WARNING LIGHT	8	LEFT TURN INDICATOR
2	DISABLED ENGINE WARNING LIGHT	9	RIGHT TURN INDICATOR
3	ABS WARNING LIGHT	10	INTERRUPTED BRAKE LIGHT INDICATOR
4	HIGH BEAM WARNING LIGHT	11	FUEL WARNING LIGHT
5	LIGHTS-ON WARNING LIGHT	12	OIL PRESSURE WARNING LIGHT
6	HAZARD WARNING LIGHTS INDICATOR	13	DIGITAL INSTRUMENT WARNING LIGHT
7	HAZARD WARNING LIGHTS INDICATOR		
1	LUZ TESTIGO PREDISPUESA	8	TESTIGO INTERMITENTE IZQUIERDO
2	LUZ TESTIGO MOTOR NO HABILITADO	9	TESTIGO INTERMITENTE DERECHO
3	LUZ TESTIGO A.B.S.	10	LUZ TESTIGO BOMBILLO STOP INTERRUPTIDA
4	LUZ TESTIGO LUZ DE CARRETERA	11	TESTIGO RESERVA COMBUSTIBLE
5	LUZ TESTIGO LUCES	12	LUZ TESTIGO PRESIÓN DEL ACEITE
6	LUZ TESTIGO INTERMITENCIA EMERGENCIA	13	LUZ TESTIGO INSTRUMENTO DIGITAL
7	LUZ TESTIGO INTERMITENCIA EMERGENCIA		
1	LUZ INDICADORA PREDISPOSTA	8	TESTEMUNHO PISCA ESQUERDO
2	LUZ INDICADORA MOTOR NÃO HABILITADO	9	TESTEMUNHO PISCA DIREITO
3	LUZ INDICADORA A.B.S.	10	LUZ INDICADORA LMPADA STOP INTERROMPIDA
4	LUZ INDICADORA LUZ ALTA	11	TESTEMUNHO RESERVA COMBUSTÍVEL
5	LUZ INDICADORA LUZES	12	LUZ INDICADORA PRESSÃO DE ÓLEO
6	LUZ INDICADORA PISCA EMERGÊNCIA	13	LUZ INDICADORA INSTRUMENTO DIGITAL
7	LUZ INDICADORA PISCA EMERGÊNCIA		

Electronic ignition

Warning The spark advance cannot be adjusted because the pick-up has no mechanical adjustment and the variable electronic advance is generated by the ignition electronic control unit.

The control unit can be checked without removing it from the vehicle. Check the control unit circuits using a multimeter at the connector terminals.

Stop the engine before carrying out any checks on the electrical equipment which involve the disconnection of wires (checks on the ignition circuit connections and devices). The ignition control unit may suffer serious damage if the engine is running during the checks. When refitting the parts, make sure that each wire is reconnected to the related terminal by observing the connector polarity.

Checks to be carried out in case of faulty ignition

In case of faulty or failed operation of the ignition system, and if the cause cannot be found by a simple visual inspection, replace the electronic control unit with another of the same type and certainly working. Stop the engine before carrying out the disconnections. If the replacement restores the ignition system to proper operation, the fault is to be found in the control unit, which will have to be replaced. Refer to the table below for the tests to be conducted on the electronic control unit.

If failed or faulty operation persists, proceed to check the generator, the pick-up and the HV coil.

Encendido electrónico

Atención El avance del encendido no puede ser regulado puesto que el pick-up no prevee regulaciones mecánicas y el avance variable electrónico es realizado por la centralita de encendido.

Es posible efectuar el control de la centralita sin quitarla del vehículo, y verificando los circuitos en los bornes a través de un tester.

Todas las operaciones de control de la instalación que requieran desconexiones de cables (verificaciones de las conexiones y de los dispositivos pertenecientes al circuito de encendido) deben ser efectuadas con el motor apagado; en caso contrario la centralita podría dañarse irremediablemente.

Durante el montaje sucesivo de las piezas prestar atención en conectar correctamente cada cable respetando la polaridad del borne.

Verificaciones que se deben realizar en caso de irregularidad de encendido.

En el caso de falta o funcionamiento irregular del encendido, con causas no identificables con un examen visivo, es necesario primero sustituir la centralita con una correspondiente y funcionante. Si la sustitución restablece el funcionamiento del encendido, el problema debe ser atribuido a la centralita. Para la realización de los tests en la centralita referirse a la tabla.

En el caso que continúe sin funcionar es necesario proceder a las comprobaciones en el generador, en el Pick-Up, en la bobina A.T.

CIRCUIT CIRCUITO		CORRECT MEASUREMENT RESULTADO CORRECTO
Pick-Up / Pick-Up		~ 200 Ω
H.V. coil Bobina A.T.	Primary Primario	~ 3 Ω
H.V. coil Bobina A.T.	Secondary Secundario	~ 15.000 Ω

Recharging system

Checking for leakages

- 1) Before checking the output voltage, ensure that no liquid is leaking from the battery.
- 2) Turn the ignition key to the "OFF" position and disconnect the cable from the battery negative (-) terminal.
- 3) Connect an ammeter between the previously disconnected cable and the negative (-) terminal of the battery.
- 4) With the ignition key still in the "OFF" position, the ammeter reading should be 0 A.

Checking the charging voltage

Warning Before carrying out the check, ensure that the battery is in good condition.

- 1) Place the vehicle on the centre stand.
- 2) With the battery properly connected to the circuit, position the multimeter terminals between the battery terminals.
- 3) Start the engine taking care to leave all lights out. Rev up the engine while measuring the voltage.

VOLTAGE RANGING FROM 14.0 TO 15.0 V AT 5,000 rpm.

Sistema de recarga

Busca de eventuales dispersiones

- 1) Verificar que la batería no presente pérdidas de líquido antes de controlar el voltaje de salida.
- 2) Girar la llave de encendido en la posición OFF, desconectar el cable del polo negativo (-) de la batería.
- 3) Conectar un amperímetro entre el cable antes desconectado y el polo negativo (-) de la batería.
- 4) Con la llave de encendido todavía en OFF, la lectura debe ser 0 A.

Control del voltage de carga

Atención Antes de efectuar las comprobaciones, asegurarse que la batería esté en perfectas condiciones.

- 1) Colocar el vehículo sobre el caballete central.
- 2) Con la batería conectada correctamente al circuito colocar los terminales del tester entre los polos de la batería.
- 3) Arrancar el motor recordandose de tener apagadas las luces, aumentar los giros del motor y contemporaneamente medir la tensión.

VOLTAGE COMPRENDIDO ENTRE 14,0 Y 15,0 V A 5000 r.p.m.

Sistema de recarga

Procura de eventuais dispersões

- 1) Verificar que a bateria não apresente perdas de líquido antes de proceder à verificação da voltagem na saída.
- 2) Girar a chave de ignição na posição OFF, desconectar o cabo do pólo negativo (-) da bateria.
- 3) Conectar um amperímetro entre o cabo desligado anteriormente e o pólo negativo (-) da bateria.
- 4) Com a chave de ignição mantida sempre em OFF, a leitura obtida pelo amperímetro deve ser de 0A.

Verificação da voltagem de carga

Atenção Antes de executar a verificação, certificar-se que a bateria esteja em boas condições.

- 1) Posicionar o veículo sobre o cavalete central.
- 2) Com a bateria correctamente conectada ao circuito, posicionar os terminais do tester entre os pólos da bateria.
- 3) Partir o motor tendo o cuidado de manter as luzes apagadas, aumentar as rotações do motor e contemporaneamente medir a tensão.

VOLTAGEM COMPREENDIDA ENTRE 14,0 E 15,0 V A 5000 rpm

Ignition coil

Inspection

- 1) Remove the right-hand side panel and the central member.
- 2) Unscrew the HV coil fixing screw.
- 3) Disconnect the two primary circuit terminals and measure the resistance of the HV coil primary circuit.

Resistance: ~ 3 Ω

- 4) Remove the spark plug cap from the spark plug.
- 5) Measure the resistance between the negative terminal of the HV coil primary circuit and the spark plug cap.

Resistance: ~ 20,000 Ω

- 6) If the resistance is not as specified, remove the HV cable with the coil cap and then repeat the measurement directly on the cable.

Resistance: ~ 5,000 Ω

Removal and reinstallation

- 1) Remove the saddle.
- 2) Remove the three battery holder fixing screws and shift it laterally. Unscrew the HV coil fixing screw.
- 3) Disconnect the HV coil wires and remove the spark plug cap from the spark plug.
- 4) To install the coil, follow the removing procedure in reverse order.

Bobina de encendido

Comprobaciones

- 1) Quitar el lateral izquierdo y el elemento central.
- 2) Quitar los tornillos de fijación de la bobina A.T.
- 3) Desconectar los dos bornes del circuito primario y medir la resistencia del circuito primario de la bobina A.T.

Resistencia: ~ 3 Ω

- 4) Quitar el capuchón de la bujía de la misma bujía;
- 5) Medir la resistencia entre el borne negativo del primario de la bobina A.T. y el capuchón de la bujía;

Resistencia: ~ 20.000 Ω

- 6) Si el valor de la resistencia no se encontrara entre los límites especificados, Quitar el cable A.T. con el capuchón de la bobina y repetir el control de la resistencia directamente en el cable.

Resistencia: ~ 5.000 Ω

Desmontaje y montaje

- 1) Quitar el sillín.
- 2) Quitar los tres tornillos de fijación del portabaterías desplazarlo lateralmente, luego destornillar los tornillos de fijación de la bobina A.T.
- 3) Desconectar los cables de la bobina A.T. y separar el capuchón de la bujía de la misma bujía.
- 4) Para instalar la bobina repetir las operaciones en secuencia contraria al desmontaje.

Bobina de ignição

Inspeção

- 1) Remover a lateral esquerda e o elemento central.
- 2) Soltar o parafuso de fixação da bobina A.T.
- 3) Desconectar os dois terminais do circuito primário e medir a resistência do circuito primário da bobina A.T.

Resistência: ~ 3 Ω

- 4) Remover o cachimbo da vela.
- 5) Medir a resistência entre o terminal negativo do primário da bobina A.T. e o cachimbo da vela;

Resistência: ~ 20.000 Ω

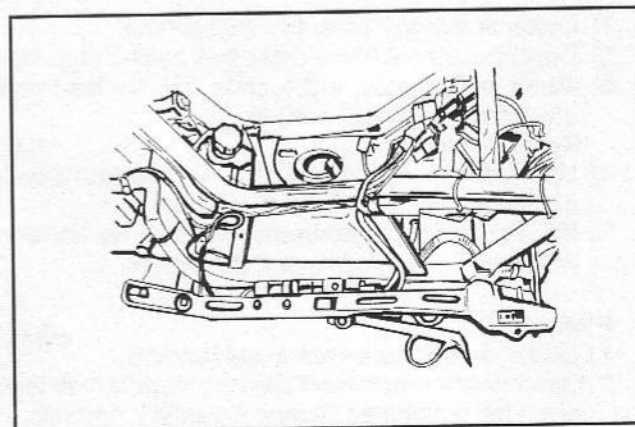
- 6) Se o valor da resistência, medida desta forma, não estiver compreendido nos valores especificados, remover o cabo A.T., completo de cachimbo da bobina e repetir a verificação da resistência directamente no cabo.

Resistência: ~ 5.000 Ω

Remoção e nova instalação

- 1) Remover o selim
- 2) Soltar os três parafusos de fixação do porta bateria e desencostá-lo lateralmente; em seguida soltar o parafuso de fixação da bobina A.T.
- 3) Desconectar os cabos da bobina A.T. e separar o cachimbo da vela da própria vela.
- 4) Para a instalação da bobina repetir na sequência inversa as operações de desmontagem.

4



04_009

Alternator stator and pick-up

Specifications

ITEM	STANDARD VALUE
Pickup	~ 200 Ω
Resistance of three stator windings	~ 0.6 Ω

Checking the stator winding

Warning The check can be carried out with the stator in place.

- 1) Remove the frame central cover.
- 2) Disconnect the connector with three yellow wires.
- 3) Measure the resistance between each of the yellow terminals and the other two.

Resistance: ~ 0.6 Ω

- 4) Ensure that there is insulation between each of the yellow wires and earth.
- 5) If any of the measurements is not as specified, replace the stator.

Pickup

- 1) Remove the frame central cover.
- 2) Detach the pick-up connector and measure the resistance between the White/Yellow and Yellow terminals.

Resistance: ~ 200 Ω

Estator del alternador y pick-up

Datos técnicos

ITEM	VALOR ESTANDARD
Pickup	~ 200 Ω
Resistencia de los 3 devanados del estator	~ 0,6 Ω

Comprobación del devanado del estator

Atención La comprobación se puede realizar con el estator instalado.

- 1) Quitar la cobertura central del bastidor.
- 2) Desconectar los bornes con tres cables amarillos.
- 3) Medir la resistencia entre cada uno de los bornes amarillos y los otros dos.

Resistencia: ~ 0,6 Ω

- 4) Verificar que haya aislamiento entre cada uno de los cables amarillos y la masa.
- 5) En el caso se encontraran valores no correctos proceder con la sustitución del estator.

Pickup

- 1) Quitar la cobertura central del bastidor.
- 2) Desconectar el borne del pick up y medir la resistencia entre los terminales Blanco Amarillo y Amarillo.

Resistencia: ~ 200 Ω

Estator do alternador e pickup

Dados técnicos

ITEM	VALOR PADRÃO
Pickup	~ 200 Ω
Resistência dos 3 enrolamentos do estator	~ 0,6 Ω

Verificação do enrolamento do estator

Atenção A verificação pode ser executada com o estator instalado regularmente.

- 1) Remover a cobertura central do chassi.
- 2) Desconectar o conector com três cabos amarelos.
- 3) Medir a resistência entre cada terminal amarelo e os outros dois.

Resistência: ~ 0,6 Ω

- 4) Verificar que haja isolamento entre cada cabo amarelo e a terra.
- 5) No caso em que se encontrassem valores incorretos, proceder com a substituição do estator.

Pickup

- 1) Remover a cobertura central do chassi.
- 2) Desconectar o conector do pickup e medir a resistência entre os terminais Branco Amarelo e Amarelo.

Resistência: ~ 200 Ω

Voltage regulator
Regulador de tensión
Regulador de tensão

Specifications
Datos técnicos
Dados técnicos

ITEM - VOZ - ITEM		STANDARD VALUE VALOR ESTANDARD VALOR PADRÃO
Voltage regulator Regulador de tensión Regulador de tensão	Type Tipo Tipo	Transistorized, unadjustable, three-phase Transistorizado no regulable trifase Transistorizado não regulável trifásico
	Voltage Voltaje Voltagem	> 15 V at 5,000 rpm > 15V a 5000 rpm > 15V a 5000 rpm

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Checking the electrical equipment at the voltage regulator

Warning The check can be carried out with the regulator installed on the vehicle.

- 1) Remove the left-hand rear cover.
- 2) Detach the connectors from the regulator.
- 3) Check the equipment of the vehicle as follows:

Controlo da instalação eléctrica no regulador de tensão

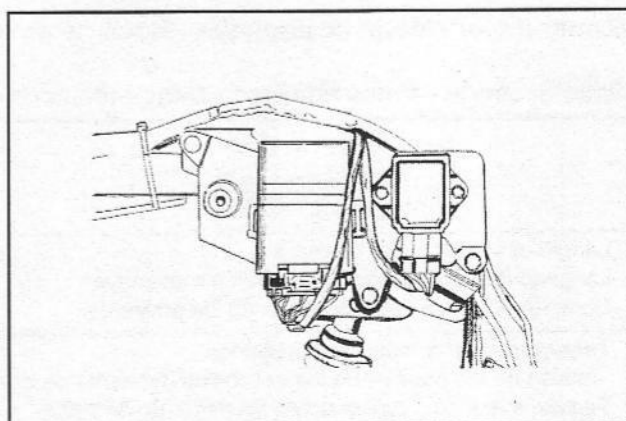
Atenção A verificação pode ser executada com o regulador instalado normalmente.

- 1) Remover a cobertura traseira esquerda.
- 2) Desconectar os conectores do regulador.
- 3) Verificar a instalação do veículo como indicado a seguir:

Control de la instalación eléctrica al regulador de tensión

Atención La comprobación se puede realizar con regulador instalado.

- 1) Quitar la cobertura trasera izquierda.
- 2) Desconectar los bornes del regulador.
- 3) Controlar la instalación eléctrica del vehículo de la siguiente manera:



04_010

ITEM ITEM ITEM	MEASURED BETWEEN WIRES: MEDIDO ENTRE CABLES: MEDIDO ENTRE CABOS:	STANDARD VALUES VALORES ESTANDARD VALOR PADRÃO
Battery connection Conexión batería Conexão bateria	Red - Black - Black Rojo - Negro - Negro Vermelho - Preto- Preto	Battery voltage Voltaje de la batería Voltagem da bateria
Stator Estator Estator	Yellow - Yellow - Yellow Amarillo - Amarillo - Amarillo Amarelo - Amarelo - Amarelo	~ 0,6 Ω

- 4) If any values are not as specified, check the faulty line or component.
5) If the values are as specified and the voltage on the battery does not reach 14.5 ÷ 15.0 V at 5,000 rpm, replace the regulator.

- 4) No caso de valores diferentes dos acima indicados, verificar a peça ou a linha defeituosa.
5) Se os valores medidos resultarem regulares e a tensão na bateria não alcançar 14,5 ÷ 15V a 5000 rpm, substituir o regulador.

- 4) En el caso de valores distintos a los antes mencionados controlar la pieza o la línea defectuosa
5) So los valores leídos resultan normales y la tensión en la batería no alcanza los 14,5 ÷ 15 V rpm, sustituir el regulador.

Starter motor - Motor de arranque - Motor de arranque

Specifications - Datos técnicos - Dados técnicos

ITEM ITEM ITEM	STANDARD VALUE VALORES ESTANDARD VALOR PADRÃO	LIMIT VALUE VALORES LIMITES VALOR LIMITE
Length of starter motor brushes Longitud de las escobillas del motor de arranque Comprimento das escovas do motor de arranque	12,0 ÷ 12,5 mm	6,5 mm
Tension of starter motor brush springs Tensión de los muelles de las escobillas del motor de arranque Tensão das molas das escovas do motor de arranque	680 ÷ 920 g	680 g

Starting relay switch

Inspection

- 1) Lift the saddle and remove the rear brake light support.
- 2) Pull the brake locking levers. The starting relay switch works properly if a click is heard when the start button is pressed after turning the ignition switch to the "ON" position.
- 3) Disconnect the cable from the battery negative (-) terminal, and then the cable from the positive (+) terminal.
- 4) Disconnect the starter motor wire from the relay switch.
- 5) Remove the relay switch.
- 6) Connect an ohmmeter between the two main terminals of the relay switch. The terminals make the contact for supplying power to the starter motor.
- 7) Connect the White wire terminal to the battery positive (+) terminal and the Black wire terminal to the battery negative (-) terminal.
- 8) Check continuity between the relay switch terminals.

Teleruptor de ignição

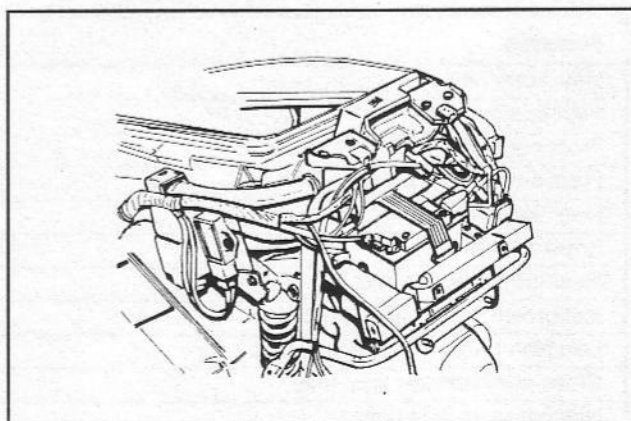
Inspeção

- 1) Erguer o selim e remover o suporte das luzes travagem traseiras.
- 2) Accionar as alavancas de bloqueio dos travões. O relê do teleruptor de ignição funciona correctamente caso se ouça um estalo quando se pressiona o botão de arranque após ter girado o interruptor de ignição para a posição ON;
- 3) Desconectar antes o cabo do pólo negativo (-) da bateria e em seguida aquele positivo (+).
- 4) Desconectar o cabo do motor de arranque do teleruptor.
- 5) Remover o teleruptor.
- 6) Conectar um Ohmmetro entre os dois terminais principais do teleruptor que realizam o contacto para a alimentação do motor de arranque.
- 7) Conectar o terminal do cabo Branco ao pólo positivo (+) da bateria e o terminal do cabo preto ao pólo negativo (-) da bateria.
- 8) Verificar a continuidade entre os terminais do teleruptor.

Telerruptor de arranque

Inspección

- 1) Levantar el sillín y quitar el soporte luz de stop trasero.
- 2) Jalar las palancas para bloquear los frenos. El relé del telerruptor de arranque funciona bien si se oye un golpe cuando se aprieta el botón de arranque después de haber girado el interruptor de encendido en posición ON.
- 3) Desconectar antes el cable en el polo negativo (-) de la batería y luego el del polo positivo (+).
- 4) Desconectar el cable del motor de arranque del telerruptor.
- 5) Quitar el telerruptor.
- 6) Conectar un óhmetro entre los dos bornes principales del telerruptor que realizan el contacto para la alimentación del motor de arranque.
- 7) Conectar el borne del cable Blanco al polo positivo (+) de la batería y el borne del cable negro en el polo negativo (-) de la batería.
- 8) Verificar que haya continuidad entre los bornes del telerruptor.



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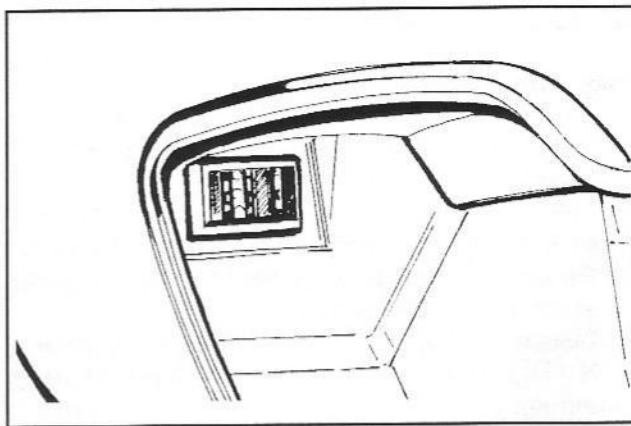
Electrical equipment

Fuses

The electrical equipment is equipped with:

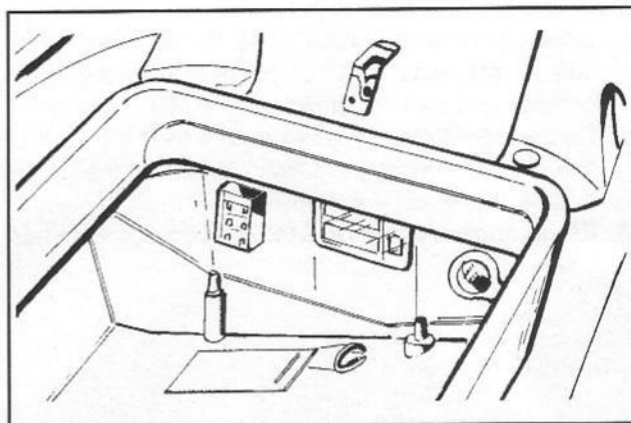
- 5 fuses protecting the electrical socket in the helmet compartment.
- 4 fuses protecting the different circuits behind the door in the left-hand rear section of the shield.

The table below shows the positions and specifications of the fuses installed on the vehicle.



04_012

Warning - Before replacing a blown fuse, trace and remove the fault that caused the blowing. Never attempt to replace a fuse using a different material (e.g. a length of wire) or a fuse having a greater amperage than prescribed.



04_013

Fuse power supply	Position	Protected circuits
30A Direct current	A	Main fuse (recharging)
20A Direct current	A	Helmet compartment lamp, 12V socket
15A Direct current	B	Accessories
10A Direct current	A	Headlight
10A Direct current	A	Headlight
10A Direct current	B	Accessories
7.5A Direct current	A	Digital instrument panel
7.5A Direct current	B	Horn, parking light, digital/analogue instrument panel
7.5A Direct current	B	Brake light, switch, side stand

List of bulbs

Function	Type	Power consumption
Low beam bulb	halogen	12V-35W
High beam bulb	halogen	12V-35W
Front parking light bulb	all-glass	12V-3W x 2
Front turn indicator bulb	spherical	12V-10W x 2
Rear light bulb	spherical	12V-5W x 2
Brake light bulb	spherical	12V-2.3W x 5
Rear turn indicator bulb	spherical	12V-10W x 2
Instrument panel lighting bulb	all-glass	12V-1.2W x 4
Low/high beam warning light bulb	all-glass	12V-1.2W
Glove compartment light bulb	spherical	12V-5W
Number plate light bulb	cylindrical	12V-5W

Battery (12V-12Ah)

Caution - Battery electrolyte is poisonous and can cause serious burns as it contains sulphuric acid. Avoid contact with the eyes, the skin and garments. In case of contact with the eyes or skin rinse abundantly with water for about 15 minutes and seek immediate medical assistance. If the liquid is ingested immediately drink large quantities of water or milk. Subsequently drink milk of magnesia, beaten egg or vegetable oil. Call a doctor without delay.

Batteries produce explosive gases.

Keep away open flames, sparks and cigarettes. When a battery is charged in closed places ensure adequate ventilation. Always protect the eyes when working in the proximity of batteries. Position the tube between the mudguard and the filter.

Keep out of reach of children.

Installing charged-dry batteries

- 1) - Remove the short closed tube and the plugs. Fill the cells to the upper level with battery acid, specific gravity 1.26 corresponding to 30° Bé at 15°C.
- 2) - Leave the battery to stand for about 2 hours and then top up once again with battery acid.
- 3) - Within 24 hours use battery charger 020333y (single) or 020334y (multiple) to charge the battery at approximately 1/10 capacity until the voltage reaches approximately 2.7V on each cell with specific gravity of about 1.27 corresponding to 31° Bé (stable values). The battery should be charged for between 15 and 20 hours.
- 4) - When the battery is fully charged, top up **with distilled water**, refit the plugs and clean the battery case.
- 5) - After completing the above operations, install the battery on the vehicle. Observe the connections described in point 3) of the heading **Battery re-charge**.

Caution - After installing the battery and in order to provide a vent for the gases forming inside it, replace the short closed tube next to the positive (+) terminal with the corresponding long open tube which is present on the vehicle.

Check that the tube slots are turned to the battery side.

Battery maintenance

The battery is the electrical component which requires the most constant care and accurate maintenance. The main maintenance rules are as follows:

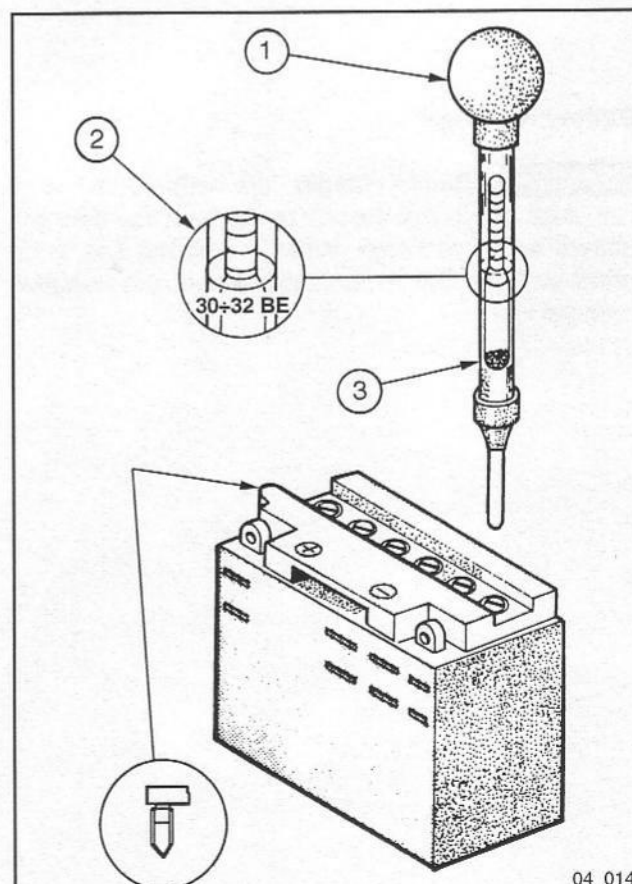
Checking the electrolyte level

Frequently check that the electrolyte reaches the upper level. To top up, only use distilled water.

If you need to top up the battery too frequently, check the vehicle electrical equipment as the battery is certainly working in overload conditions, which will lead to rapid deterioration.

Removal and installation

- Lift the saddle.
- Remove the rear lamp cluster and the rear cover.
- Disconnect the battery negative (-) cable first and then the positive (+) cable.
- Remove the battery strap and pull out the battery.
- To reinstall the battery, follow the same steps in reverse order.



1	HOLD THE TUBE UPRIGHT
2	MEASURE THE LEVEL VISUALLY
3	THE FLOAT MUST BE RELEASED

04_014

Checking the battery charge

After restoring the electrolyte level, check its density with the special hydrometer (see figure).

When the battery is charged, electrolyte density must be between 30 and 32 Bé, corresponding to specific gravity of 1.26-1.28 at a temperature not lower than 15°C. If density has fallen below 20° Bé, the battery is completely discharged and needs recharging. At the end of charging, the voltage of each cell must be 2.6 - 2.8 V. The discharge limit for each cell is 1.8V.

When charging is terminated, check the electrolyte level and density as well as the voltage of each cell. If the vehicle is not used for some time (1 month or more) the battery must be periodically recharged. In three months the battery runs down completely.

When refitting the battery take care not to invert the connections: the ground lead (**black**) is to be connected to the **negative** (-) terminal and the other lead (**red**) must be connected to the **positive** (+) terminal.

Battery recharge

Caution - Before charging the battery remove all cell plugs. Keep free flames or sparks away from the battery during recharge. When the battery has to be removed from the vehicle, disconnect the negative terminal first.

Routine battery charging with the battery off the vehicle must be performed with battery charger 020333y (single) or 020334y (multiple), positioning the battery charge selector in relation to the type of battery and setting a current of 0.5 A for between 6 and 8 hours. Ensure you connect up to the battery with the correct polarity (+ to + and - to -). The plugs must be removed from the battery throughout the charging procedure.

Cleaning the battery

Keep the battery clean, especially the top; coat the terminals with Vaseline.

Warning - Never use fuses having a greater capacity than the one recommended. The use of a fuse of unsuitable capacity may result in serious damage to the whole vehicle or even cause a fire.

Warning - In case of urgent need, the charging time may be reduced to 5-6 hours.

Warning - Normal drinking water contains salts that are harmful for batteries. Use only distilled water.

Warning - To ensure maximum performance the battery must be charged before using the vehicle. Insufficient battery charge or low electrolyte level when first used will result in premature failure of the battery.

The digital section of the instrument panel also includes a liquid crystal display and four control buttons.

The display includes three icons bearing the captions:

- Oil
- Service
- Belt

- The Oil icon calls the rider's attention to the necessity to renew the oil. The icon blinks after the first 1,000 km, and subsequently every 3,000 km.

- The Service icon indicates that the vehicle requires servicing. The icon blinks after the first 1,000 km, and subsequently every 6,000 km. The icon lights up one year after the activation even if the above distances have not been covered.

- The Belt icon blinks when the drive belt needs to be replaced. This occurs every 18,000 km.

Once the vehicle has been serviced at an authorized workshop, all icon warnings must be disabled by pressing the Reset button located under the fairing in the front of the vehicle.

The Reset button sets to zero the mileage counts and, in the case of the Service icon, the year count as well. The year count remains active even if the battery is disconnected for a short time.

A seção digital do painel se completa com um display de cristais líquidos e 4 botões de comando.

O display prevê 3 ícones com os dizeres:

- Oil (óleo);
- Service (revisão);
- Belt (correia).

- O ícone "Oil" avisa o cliente quando é necessário substituir o óleo. Isto ocorre por meio do lampejamento do ícone após os primeiros 1000 Km e em seguida a cada 3000 Km.

- O ícone "Service" serve para lembrar ao cliente da necessidade de efetuar a revisão. Isto ocorre por meio do lampear do ícone após a distância de 1000 Km; em seguida a cada 6000 Km. O acendimento do ícone ocorre também após um ano da ativação, caso não tivessem sido atingidas as distâncias acima descritas.

- O acendimento intermitente do ícone "Belt" avisa o cliente da necessidade de substituir a correia de transmissão. Isto ocorre a cada 18000 Km.

Após a execução dos serviços de manutenção por parte da oficina autorizada, é necessário anular a sinalização do ícone ou dos ícones por meio do botão "Reset" posto na parte dianteira do veículo sob a carenagem.

O botão de "Reset" permite colocar a zero as distâncias quilométricas, e, no caso de "Service" também a contagem do ano. Esta contagem permanece ativa mesmo no caso em que a bateria seja desligada por um breve período de tempo.

4

La sección digital del tablero se completa con un display de cristales líquidos y 4 pulsadores de mando.

El display prevee 3 iconas con la descripción:

- Oil (aceite)
- Service (servicio)
- Belt (correa)

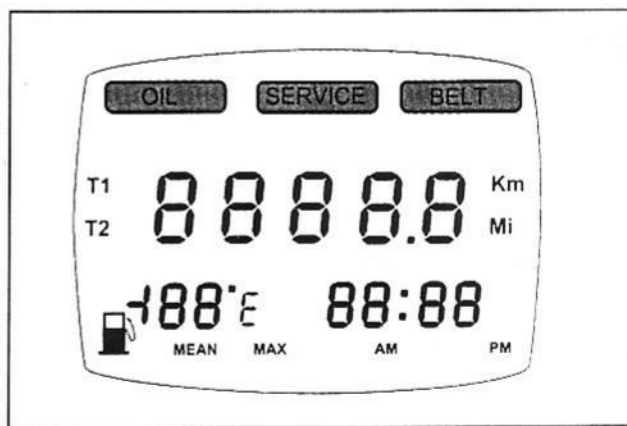
- El icono "Oil" avisa al cliente cuando es necesario cambiar el aceite. Esto ocurre con un destello de el icono después de los primeros 1000kms y luego a cada 3000 kms.

- El icono "Service" recuerda al cliente la necesidad de realizar el servicio de mantenimiento. Esto ocurre con un destello después de haber recorrido 1000 kms; y luego a cada 6000 kms. El icono se enciende también después de un año de actividad, en el caso no se haya alcanzado el recorrido mencionado.

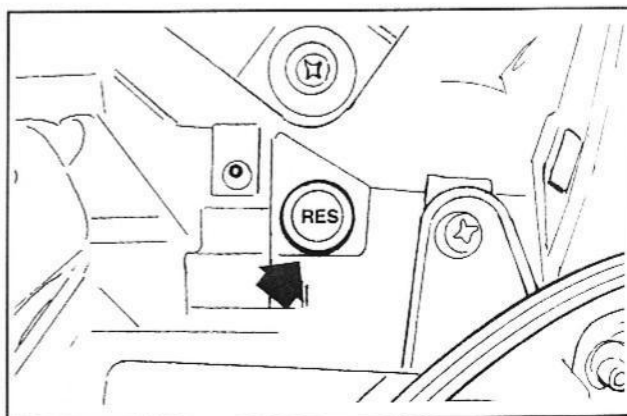
- El encendido intermitente de el icono "Belt" avisa al cliente de la necesidad de cambiar la correa de la transmisión. Esto ocurre a cada 18000 kms.

Después de haber hecho la intervención de mantenimiento por parte del taller autorizado, es necesario anular la señalización de el icono con el pulsador "Reset" ubicado en la parte anterior del vehículo debajo del carenado.

El pulsador "Reset" permite llevar a cero el recorrido en kilómetros, y, en el caso del "Service" también el cómputo del año. Este cómputo queda activo aún en el caso en el cual la batería se desconecte por un breve lapso de tiempo.



04_030



04_031

To reset one of the icons, press the Reset button for less than one second to select the icon preceding the icon to be reset, and then press and hold down the Reset button for at least three seconds to obtain:

- The selection of the icon, which appears constantly lit.
- The blinking of the icon, confirming that it has been reset.

For example, to reset the Service icon, select on the Oil icon and then press the Reset button for at least three seconds. To reset the Oil icon, select the Belt icon and repeat the procedure.

This procedure is necessary because the selection and resetting of the icon are simultaneous actions (for this operation, it is not possible to display the desired function and reset it by pressing the button twice, as this would reset the next icon).

Para anular una de los icono-del icono, es necesario colocarse, apretando el pulsador "Reset" por menos de un segundo, sobre la icona anterior a la que queremos anular, tener apretado el pulsador "Reset" por lo menos 3 " de manera que aparezca:

- La selección de la icona deseada a traves del encendido fijo;
- El destello de dicha icona como confirmación de la anulación;

Por ejemplo, para anular la icona "Service" colocarse sobre "Oil" y tener apretado el pulsador "Reset" por lo menos 3". Para anular "Oil", repetir el procedimiento ya descrito colocandose sobre "Belt".

Es necesario que se respete éste procedimiento, porque la selección de la icona y la anulación son operaciones simultáneas (en ésta operación no es posible ver la función deseada y hacer la anulación en dos presiones de pulsadores distintos porque, si hicieramos éste procedimiento, anularíamos la icona sucesiva).

Para anular um dos ícones, é necessário posicionar-se, pressionando o botão "Reset" por menos de um segundo, sobre o ícone precedente àquele a ser anulado e em seguida manter o botão "Reset" pressionado por pelo menos 3" de modo a visualizar:

- A seleção do ícone desejado por meio de seu acendimento fixo;
- O lampejamento de tal ícone como confirmação de anulação efectuada;

Por ex. Para anular o ícone "Service" posicionar-se em "Oil" e manter o botão "Reset" pressionado por pelo menos 3". Para anular "Oil", repete o procedimento já descrito posicionado-se em "Belt".

É necessário respeitar este procedimento já que a seleção do ícone e o acto de anulação são operações contextuais (para essa operação não é possível visualizar a função e anular com duas pressões distintas do botão porque, seguindo-se esse procedimento, anularíamos o ícone sucessivo).