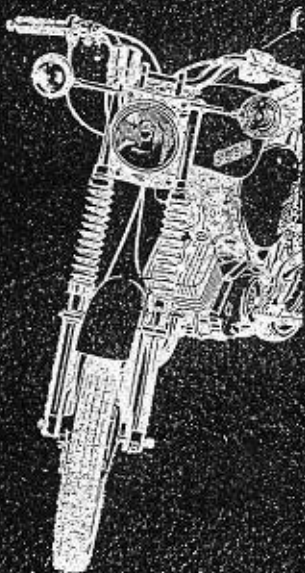




simson

Operating Instructions S 51 and S 70



IFA mobile-DDR

Operating Instructions
for the
Simson Small Motor-Cycles S 51
and
Simson Light Motor-Cycles S 70

With 21 illustrations

VEB FAHRZEUG- UND JAGDWAFFENWERK
„ERNST THÄLMANN“ SUHL
IFA-KOMBINAT FÜR ZWEIRADFahrzeuge

"Simson" small and light motor-cycles are products from VEB Fahrzeug- und Jagdwaffenwerk Ernst Thälmann Suhl, IFA-Kombinat für Zweiradfahrzeuge - German Democratic Republic

These Operating Instructions were written by a group of engineers in the employ of the manufacturer.

The manufacturer reserves the right to modify or deviate from specifications of series-products in the interest of technical progress, modern shaping and in order to comply with legal requirements.

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VEB FACHBUCHVERLAG LEIPZIG
Dead line: January 15, 1986
Total production: Druckerei August Bebel Gotha
SG 157/5/1987
BA S 51 und S 70, englisch

Dear Customer,

We congratulate you on the acquisition of your new "Simson" small respectively light motor-cycle.

It will be a reliable companion for thousands of kilometres on the road; the matured technical conception and construction according to the rules of good workmanship will be the guarantee for this.

In order to facilitate the study of the present booklet, we have formulated all interesting facts as short as possible. **These are the most important pieces of information for the expedient use of the vehicle.**

The checking, adjusting and mounting operations represented in the illustrations are applicable to all Types of the Series S 51 and S 70, even when they are demonstrated on one vehicle type only.

General requirements will be known to you from the diving school, traffic instructions or private study. We hope that our recommendations will contribute to the fact that your vehicle is always ready for operation. The strict observance of these recommendations is also a precondition for raising guarantee claims. For special questions and requirements, the widely branched network of "Simson Services" will always be at your disposal.

We wish you

"bon voyage at any time"

VEB Fahrzeug- und Jagdwaffenwerk

Ernst Thälmann Suhl

IFA-Kombinat für Zweiradfahrzeuge

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1. Technical Data

1.1. General Technical Data for the Types S 51 and S 70

| | |
|--|--|
| Cycle | two-stroke petrol engine |
| Piston stroke | 44 mm (1.7 in.) |
| Lubrication | mixture lubrication 1 : 50 |
| Cooling | relative wind |
| Sparking plug | ZM 14-260 (spark gap 0.016 in.) |
| Type of carburetter | 16 N 3-4 (S 51) 16 N 3-5 (S 70) |
| Needle position | 4th notch from top |
| Air filter | FLP 61/1 (wet air) |
| Clutch | multi-plate oil bath clutch with Belleville spring |
| Type of change-speed gear | mechanical, driving-key type |
| Driving chain | simple roller chain 086-1-110 |
| Tyre inflation pressure | |
| Tyres 2 ³ / ₄ - 16 R | |
| front/rear (solo) | 125/180 kPa (1.25/1.80 kp/cm ² ; 18/25 lb/in ²) |
| front/rear (pillion rider) | 125/250 kPa (1.25/2.50 kp/cm ² ; 18/35 lb/in ²) |
| Tyres | |
| 2.75 - 16 R K 35 | |
| 2.75 - 16 R K 32 | |
| front/rear (solo) | 125/180 kPa (1.25/1.80 kp/cm ² ; 18/25 lb/in ²) |

| | |
|--------------------------------------|--|
| front/rear (pillion rider) | 125/280 kPa (1.25/2.80 kp/cm ² ; 18/40 lb/in ²) |
| Springing | |
| front | telescopic fork |
| rear | long swing arm with suspension units (depending on the equipment, with or without adjusting device, see Fig. 14) |
| Damping | |
| front | without, but with hydraulic path limitation |
| rear | hydraulic |
| Spring deflection | |
| front | 130 mm (5.1 in.) |
| rear | see Section 1.2. |
| Capacity of the fuel tank | 8.7 l = 15.3 pt. (reserve 0.8 l = 1.4 pt.) |
| Permissible total weight | 260 kg (573 lb) |
| Carrying capacity of luggage carrier | 10 kg (22 lb) |
| Permissible trailed load | 60 kg (132 lb) |
| Permissible maximum speed | 40 km/h (25 mph) |
| Seats with trailer operation | 2 |
| Smallest turning circle diameter | 3.25 m (10.7 ft) |

1.2. Type-specific Technical Data

1.2.1. 50-cm³ Variants

| S 51 | | | | | |
|--|---|---------------------|---|-----|---|
| | N | B 1-3 B 1-4 B 2-4/l | E | E/4 | C |
| Maximum power 2.72 kW (3.7 hp) at 5,500 rpm | × | × | × | × | × |
| Maximum torque 5.0 Nm (3.69 lb-ft) at 4,800 rpm | × | × | × | × | × |
| Cylinder bore 38 mm diameter (1.5 in.) | × | × | × | × | × |
| Compression ratio 9.5 : 1 | × | × | × | × | × |
| Ignition timing 1.8 mm before T.D.C. (0.071 in.) | × | × | × | × | × |
| Number of speeds 4 | × | × | × | × | × |
| 3 | × | × | × | × | × |
| Spring deflection 90 mm (3.5 in.) rear | × | × | × | × | × |
| 85 mm (3.3 in.) | × | × | × | × | × |
| Permissible maxi- 60 km/h mum speed (38 mph) | × | × | × | × | × |

1.2.2. 70-cm³ Variants

| | | S 70 | |
|----------------------------|--|------|-----|
| | | C | E/2 |
| Maximum output | 4.1 kW (5.6 hp) at 6,000 rpm | × | × |
| Maximum torque | 6.7 Nm (4.93 lb-ft) at 5,500 rpm | × | × |
| Cylinder bore | 45 mm in diameter (1.8 in.) | × | × |
| Compression ratio | 10.5 : 1 | × | × |
| Ignition timing | 1.4 mm before T.D.C. (0.055 in.) | × | × |
| Number of speeds | 4 | × | × |
| Spring deflection, rear | 90 mm (3.5 in.) | × | × |
| Maximum speed | 75 km/h (47 mph) | × | × |
| Fuel consumption | 2.5 to 2.8 l/100 km | × | × |
| Unladen weight | 84.0 kg (185 lb) 83.5 kg (184 lb) | × | × |
| Payload | 176.5 kg (388 lb) 176.0 kg (387 lb) | × | × |
| Tyres | 2.75 — 16 R K 35 2.75 — 16 R K 32 | × | × |
| Electrical equip- ment | Section 7 | | |

2. Operating Instructions

2.1. Control Elements

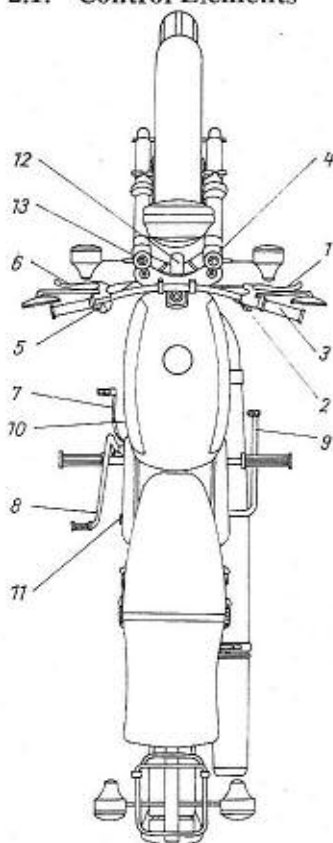


Fig. 1

- | | |
|-------------------------------------|---|
| (1) Hand brake lever | (8) Kick-starter lever |
| (2) Starter lever (see Fig. 4) | (9) Foot-operated brake lever |
| (3) Throttle twist-grip | (10) Fuel shut-off cock |
| (4) Speedometer | (11) Ignition-light switch |
| (5) Combination switch (see Fig. 2) | (12) Identification plate and chassis No. |
| (6) Clutch lever | (13) Speedometer (depending on equipment variant) |
| (7) Gear-shift pedal | |

Combination switch

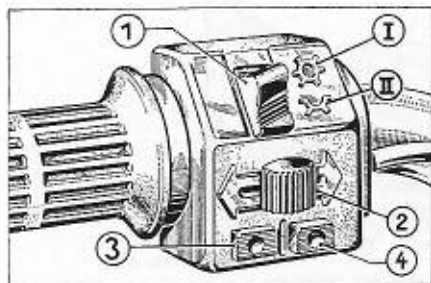


Fig. 2

- (1) Switch for high headlight beam and passing beam
- I High headlight beam
- II Passing beam
- (2) Switch for flashing-light direction indicators
- (3) Push button for horn
- (4) Push button for by-pass light signal

Dimmer switch

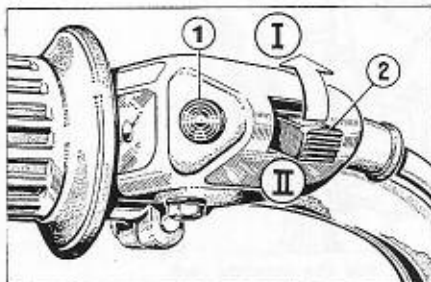


Fig. 3

- (1) Push button for horn
- (2) Dimmer switch (passing beam)
- (I) Switch position "high headlight beam"
- (II) Switch position "passing beam (dimmed light)"

Handle-bar light switch and starter carburettor actuation

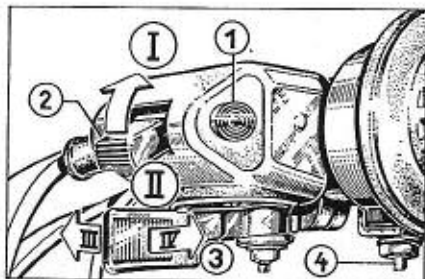


Fig. 4

- (1) Short-circuit switch for ignition
- (2) Handle-bar light switch
- (I) Light switched on
- (II) Light switched off
- (3) Starter lever
- (III) Starting carburettor switched off
- (IV) Starting carburettor switched on
- (4) Adjusting screw for throttle twist-grip

Locked position of the handle-bars

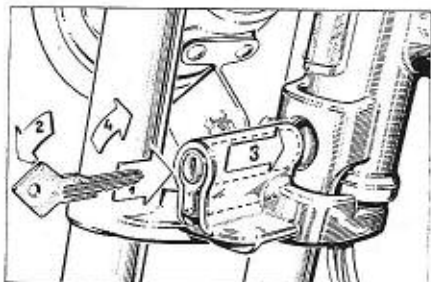


Fig. 5

- (1) Introducing the key into the steering lock
- (2) Turn it through $\frac{1}{4}$ of a revolution to the left
- (3) While the handle bars are turned to the right, push the lock into the catch of the front tube
- (4) $\frac{1}{4}$ of a revolution to the right, lock latched, withdraw the key

Ignition-light switch and tool box cover

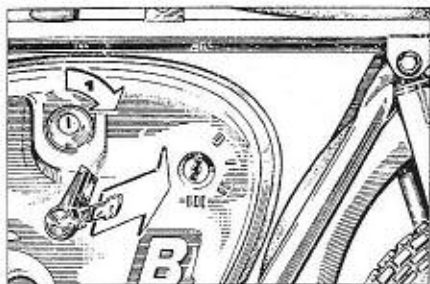


Fig. 6

(1) Turn the safety key through $\frac{1}{4}$ of a revolution to the right and remove the tool box cover downwards

Ignition-light switch positions:

0 Off

II Ignition and light switched on

I Ignition switched on

III Town light switched on

Speed sequence and control openings

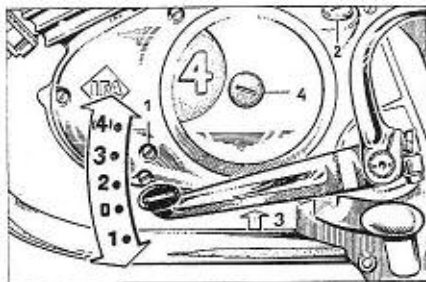


Fig. 7

(1) Oil control screw plug

(2) Screw plug closing the oil filling opening

(3) Oil drain plug

(4) Screw plug closing the opening for roughly adjusting the clutch clearance

Position of the fuel shut-off cock

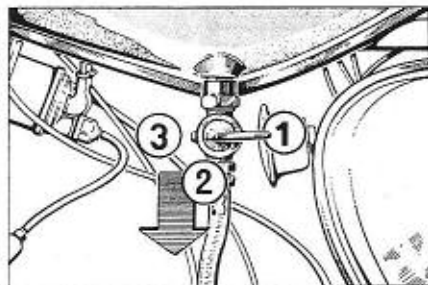


Fig. 8

- (1) Closed
- (2) Open
- (3) Reserve

2.2. Pieces of Technical Advice for Operation

Fuel

| Kilometre reading | 0 to 500 | 300 to ... |
|--|---|-------------------------------------|
| Mixing ratio (minimum amount of refuelling = 5 l) | 1 : 33 (3 % of oil) | 1 : 50 (2 % of oil) |
| Fuel type | petrol ROZ 88 (octane number 88) | petrol ROZ 88 (octane number 88) |
| Lubricant | two-stroke engine oil 20 to 23 mm ² /s (20 to 25 cSt) at 50 °C | |

Lubricants

| | Amount | Grade |
|--|---------------------|---|
| Gearbox | 400 cm ³ | gear oil SAE 80, viscosity 100 mm ² /s (100cSt) at 40 °C or engine oil SAE 30 to 40, viscosity 60 mm ² /s (60 cSt) at 50 °C |
| Telescopic fork (per leg) | 34 cm ³ | hydraulic oil 46 mm ² /s (46 cSt) at 40 °C |
| Contact breaker (except for electronic ignition) | as required | special oil for contact breaker, viscosity 700 mm ² /s (700 cSt) at 50 °C |

How to save fuel

As soon as you have reached the desired travel speed, you may turn back the throttle twist-grip for some distance without that the travel speed will be decreased. In this way you can reduce the fuel consumption, save the engine and ride in a manner that is compatible with the environment. When driving the Enduro vehicles in easy terrain, an increase of the fuel consumption must be taken into account.

Driving with engine speeds which are indicated in the unshaded green range (2) of the speedometer favours a low fuel consumption. Engine speeds in the red range (3) should be avoided.

Tell-tale light of the high headlight beam (1).

2.3. Riding

Information about running in

- "Running in" (for a distance of up to 1,000 km) serves for the mutual adaptation of the moving parts of the vehicle in accordance with their functions.
- During the running-in period, the load on the vehicle should be increased slowly but steadily. Trailer operation and pillion rider on the motor-cycle should be avoided during the first 500 kilometres of road operation.
- Information about refuelling (see Section 2.2.) must be strictly observed.

Fundamentally, during the first 1,000 kilometres, Enduro vehicles have to be operated on paved roads only in order to ensure optimum values of power output of the power plant.

Starting

- Unlock the vehicle (Fig. 5) and engage the neutral.
- Switch on the ignition system (Fig. 6) — this is omitted in variants without ignition-light switch.
- Pull the starter lever to the right (see Fig. 4), the throttle twist-grip is closed.
- Step on the kick-starter and push it downwards,
- after three trials in vain, switch off the starter carburetter, slightly open the throttle twist-grip and repeat the starting trial,
- when the engine readily accepts fuel, again switch off the starter carburetter,

- in the variants without ignition-light switch, starting is performed by means of the kick-starter and switching off by means of the short-circuit button (Fig. 4).
- Starting when the engine is in a hot state is effected without actuating the starter carburetter.

3. Advice for Care and Maintenance

Chart for Care and Maintenance

| Operations to be performed at odometer readings of | 5,000 | 8,000 | 11,000 | 15,000 |
|--|-------|-------|--------|--------|
| Retighten screws and nuts in the engine and lock them (engine mounting, cylinder cover nuts, carburettor fastening, fastening of the exhaust pipe, clamping screws at kick-starter lever and foot-operated gear-shift lever, fastening of the clutch lever, screws in the clutch cover, oil drain screw plug, nut at drive chain sprocket) | | × | | × |
| Check the ignition system and, if required, readjust it, check the lubricating felt pad for contact breaker (except for the electronic ignitor) | × | × | × | × |
| Check the engine for correct carburettor tuning and carburettor for tightness and, if required, readjust it, also see Section 4. | × | × | × | × |

Operations to be performed at odometer readings of

| | 5,000 | 8,000 | 11,000 | 15,000 |
|---|-------|-------|--------|--------|
| Retighten screws and nuts at the cycle parts (axles, clamping screws at the left-hand slide tube foot and in the lower fork guide, fastening of the upper fork guide, handle-bars mounting, fastening of the mudguards, of the seat and of the luggage carrier, tight fit of the nuts at the swing-arm bearing bolt, suspension unit fastening, clamping screws at the brake levers of the front-wheel and rear-wheel hubs, screws at the rubber element of the engine bearing, tight fit of the clips at the silencer, foot rests, brake pedal, frame connection screws) | × | × | | × |
| Check the steering bearing, if required, re-adjust it | × | × | | × |
| Switch through the electrical equipment and check it | × | × | × | × |
| Check the control elements and re-adjust them | × | × | × | × |
| Check the front wheel and the rear wheel that they are free to move easily | × | × | × | × |
| Check the wheel bearing clearance | | × | | × |
| Tension the drive chain and check the track | × | × | × | × |

| Operations to be performed at the odometer readings of | | | | |
|---|-------------------------------|-------|--------|--------|
| | 5,000 | 8,000 | 11,000 | 15,000 |
| Check the state of charge of the battery and the liquid level | X | X | X | X |
| Check the oil level in the gearbox | | X | | X |
| Clean and oil the wet air filter | | X | | X |
| Clean the exhaust pipe and accessories | X | | X | X |
| Clean the fuel filter and the fuel shut-off cock | X | X | X | X |
| Oil change in the gearbox | | X | | X |
| Grease or oil the chain | X | X | X | X |
| Lubricate the wheel bearings, steering bearings, brake mechanism and tachometer drive | X | X | X | X |
| Oil the bowden cables and tachometer shaft | | X | | X |
| Lubricate the throttle twist-grip | | X | | X |
| Check the tyre inflation pressure, inflate if required | before starting for a ride | | | |

Operations to performed at the odometer readings of

5,000
8,000
11,000
15,000

After having covered a distance of 15,000 km, then the operation of the maintenance specified for the 15,000 km odometer reading have to be repeated every 15,000 km.

Information about the Enduro Vehicles

When Enduro vehicles are frequently operated in easy terrain, it is advisable to perform especially the following maintenance operations:

- Checking the chain tension and, if required, re-adjusting it.
- Checking the properly tight fit of the spokes and, if required, re-tightening them.
- Checking the clearance of the steering bearing and, if required, re-adjusting it.

We should like to point out emphatically that all Enduro vehicles are designed for normal road operation and for solo riding in easy terrain but not for field sports or moto-cross events.

Cleaning the air filter cartridge

The air filter cartridge — which is accessible after removing the right-hand cover — has two functions: cleaning the air and regulating the air throughput. Dirty filters must be cleaned in pure benzine and then they are soaked with new engine oil. Before re-fitting the filter, allow it to emit excessive oil by dropping.

The free space in the intake box (under the right-hand side panel) must not be used for keeping tools or the like.

Lubricating the driving chain

To avoid impermissible wear — the dynamo cover removed, naturally-provide the interior of the chain protective hoses with a respective lubricating grease (anti-friction bearing grease is advisable) or apply engine oil to the chain.

Checking the oil level in the gearbox

Unscrew the oil control screw plug from the clutch cover and place the vehicle on the road wheels. If the vehicle is not inclined, the lubricant should be visible at the lower edge of the control opening.

Preservation of the vehicle if it is inoperative for a prolonged period of time

- Thoroughly clean the vehicle, treat the varnish coat and the chromium-plated parts with suitable agents.
- Demount the battery and re-charge it every 4 weeks.
- Keep the vehicle at a dry place free from frost.
- Unscrew the sparking plug.
Fill in some low-viscosity engine oil (maximum 5 cm³) through the opening in the cylinder head and actuate the kick-starter several times.
Screw in the sparking plug.

Directions for treating the lead battery

Cells with pure accumulator sulphuric acid of the density 1.25 g/cm³ have to be filled up to 5 mm on top of the upper plate edge. After about one hour, proceed in the following way in case of first charge.

With a charging current of 0.5 A, the battery is to be charged for 27 to 32 hours. With a charging current of 0.8 A, the charging time is 17 to 20 hours. Charging current intensities between 0.5 A and 0.8 A are permitted if a respective conversion of the charging time is effected. The battery is charged when all cells emit air bubbles equally, the charging voltage of 7.5 to 7.8 V (i. e. 2.4 to 2.7 per cell) is reached and the acid density

is 1.28 g/cm³ at 20 °C. During the charging process, the acid temperature must be checked at suitable intervals. The normal value of the acid temperature is about 30 °C. When the acid temperature exceeds 50 °C, charging must be interrupted until the normal value is again present. Filled batteries have to be re-charged with direct current of 1.2 A until three successive measurements — to be carried out at intervals of one hour — do not show an increase of the charging voltage of more than 0.1 V. The cells have to be replenished with distilled water only, observe that the acid level is 5 mm on to of the plate edge.

The box must be protected from fuel and impacts. Since degassing takes place through the central vent ledge via the PVC hose, only use filling stoppers which have two degassing holes below the head otherwise emerging sulphuric acid cause damage to the vehicle. Maintenance is limited to a check of the liquid level, every 14 days in summer and once a month in winter. The connecting poles of the battery must be cleaned with water and a brush, on this occasion, and then they must be slightly greased with acid-free grease. When mounting the battery take care that the battery cables are correctly clamped (black cable to the negative pole) otherwise the rectifier may be damaged.

In winter see to it that the state of charge of the battery is always good because an uncharged battery will freeze up at a temperature of -10 °C and then it is useless.

When the vehicle will be inoperative for a prolonged period of time, remove the battery from the vehicle and keep it in a frost-free room and re-charge it every 4 weeks or hand it over to a special workshop for maintenance.

Notice!

Operating the vehicle without charged battery is not allowed.

4. How to Do it Yourself

Removing and fitting the rear wheel

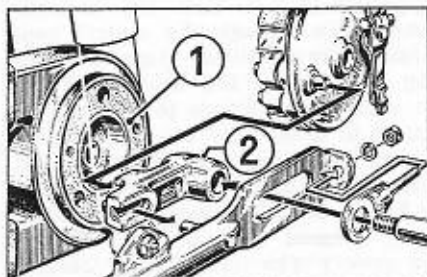


Fig. 11
Representation of the principle of spacer arrangement

- Jack up the vehicle
- Loosen the cable for stop light switch
- Remove the brake setting nut from the brake rod
- Unscrew the floating axle from the left-hand vehicle side

- Remove the spacer (2)
- Pull the wheel from the rear-wheel drive and take it out of the swing arm.

Notice!

After having put the brake shield into the wheel hub, take care that — when fitting the rear wheel — the spacer (2) is properly seated in its catch, the road wheel is properly fitted in the track and the driver bolts are engaged with the elastic ring (1).

Danger of accident!

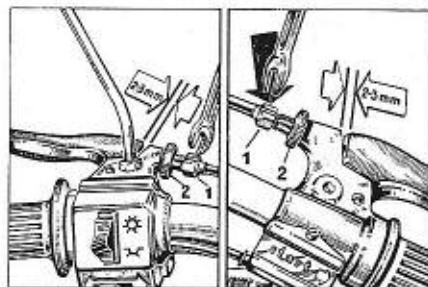


Fig. 12

Re-adjusting the hand brake and clutch

The lever contact surfaces should have a play of 2 to 3 mm (this is equal to 10 to 20 mm at the hand lever end).

Adjustments are made individually with the help of the adjusting screw (1) which is locked by a check nut (2).

Control of the brake pedal clearance

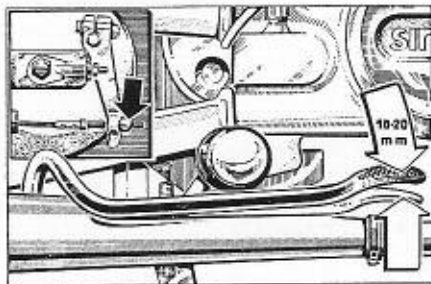


Fig. 13

At the end of the brake pedal lever, a clearance of 10 to 20 mm must be present. Adjustments are made at the rear brake shield.

Chain tension, wheel track and suspension unit adjustment (depending on type)

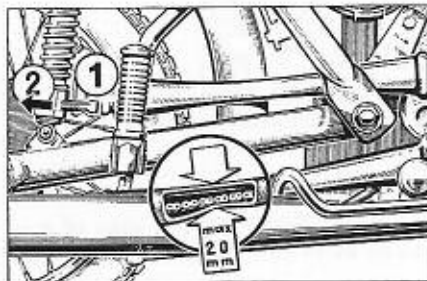


Fig. 14

Suspension unit adjustments:

- (1) Solo operation
- (2) Operation with pillion rider

The sag of the chain (lower chain half) should be about 20 mm when the vehicle is loaded with one person. Correction is effected by adjusting the chain tensioner while the floating axle is loosened and the nut is loosened.

The track is checked by placing a straight lath against the road wheels.

If replacement of the chain is necessary, remove the dynamo cover and drive sprocket and fasten the new chain to the chain to be relaced and then turn the rear wheel (note: the chain lock is inside).

Adjustment of the stop light

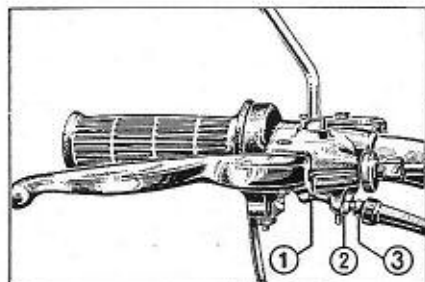


Fig. 15

The front wheel stop light switch (3) is adjusted in such a way that — when the brake lever is not actuated — the actuating pin (1) is put in place (stop light is not burning). The check nut (2) ensures the stop light switch adjustment.

The rear wheel stop light switch is adjusted at the rear stop shield by turning (from outside).

Fuse replacement

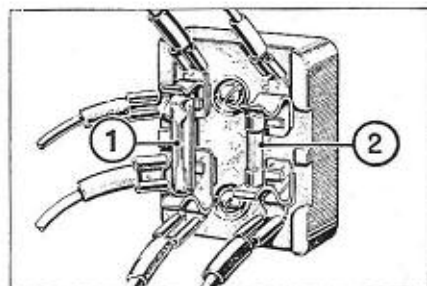


Fig. 16

- (1) Fuse link 8 A
- (2) Fuse link (F)
(fast) 3.15 A

The fuse box is accessible after removing the left-hand side panel (Fig. 6).

Carburettor tuning

The carburettors of the 16 N 3-series are adjusted by the manufacturer with respect to noxious gases according to the legal regulations of the GDR and the idling mixture regulating screw is sealed. The breaking of this seal is **only allowed** by SIMSON authorised workshops.

The idling speed can be corrected by means of the ambient air screw which is accessible (vertically close by the starter carburettor). Adjustment of the throttle twist-grip with the present cable setting screws in idling is not permitted and the accelerator cable control must have a play of 2 to 3 mm in idling position.

Headlamp adjustment

Whenever possible, have the headlamp adjusted in a special workshop (x-value: 20 cm).

Adjusting procedure (in emergency cases)

- Place the fully loaded vehicle on plane ground at a distance of 5 m directly before a wall (the imagined longitudinal axis of the vehicle forms an angle of 90° with the vertical wall area).
- Mark the height of the headlamp centre on the wall with a cross.
- With dimmed light — and with the headlamp — correctly adjusted — the upper limit of the bright area appearing on the wall (light-dark limit) must be 5 cm below the marking.
- Necessary corrections are effected by new adjustment of the headlamp (two fastening screws at the lower fork guide).

Replacement of the electric bulbs

Headlamp

- Take out the headlamp by loosening the screw below the headlamp.
- Remove the lamp socket plate from the reflector.
- Replace the electric bulb by a new one (grip it with a clean rag).

Rear stop light

- Loosen the fastening screws of the rear light cap and remove the cap.
- remove the electric bulb from the bayonet socket.

- when fitting the rear light cap, pay attention to the proper seat of the rubber sealing and slightly tighten the fastening screws.

Flashing-light direction indicators

- Remove the light emitting pane of the flashing light
- remove the electric bulb from the socket and replace the bulb by a new one.

Tachometer and revolution counter

- Pull the lamp socket out of the indicator downwards
- replace the lamp by a new one.

The required lamps are listed in the wiring diagrams.

5. Repair of Engine Troubles

Engine does not run or runs irregularly

| Cause | Remedy |
|--------------------------------|---|
| Ignition not switched on | switch on the ignition |
| Fuel valve closed | open the fuel valve |
| No fuel in fuel tank | fill in fuel |
| Fuel path clogged | clean the screen in the fuel valve and the passage holes; clean the fuel tank and check the vents |
| Insufficient fuel feed | have the carburettor tuned in an authorised workshop |
| Ignition line loose or damaged | fasten the ignition line or replace it by a new one |
| Sparkign plugs dirty | clean the sparking plug, adjust the correct electrode gap (0.4 mm) or replace the plug by a new one |

| Cause | Remedy |
|---|--|
| Spark plug is loosely fitted | tighten the plug properly (do not forget the sealing ring of the plug) |
| Insulator body cracked | replace the sparking plug by a new one (observe the correct electrode gap) |
| Spark plug overheated | insert a sparking plug with a higher thermal value |
| Spark plug is sooted in operation | insert a sparking plug with a lower thermal value; check your driving habit |
| Contact breaker oiled up or dirty (this does not apply to the electronic ignitor) | clean or smoothen the contact breaker and adjust the correct contact breaker point gap |
| Resistance-type suppressor in sparking-plug terminal defective | replace the sparking-plug terminal by a new one |
| Air filter dirty | clean the air filter |
| Induction path clogged | check the intake muffler |
| Engine draws in secondary air | have the engine checked by an authorised workshop |
| Silencer clogged | dismantle the silencer and clean it |
| Pinking of engine (pinking: a ringing hammering sound in the engine) | use fuel of the specified anti-knock value (use normal petrol with research octane number 88); have the carburettor tuning and ignition timing checked; remove the carbon deposits from piston head and cylinder cover |

Ignition troubles in the electronic ignition system

Caution — high voltage!

Work at the electronic ignition system is only allowed when the engine is stationary and the ignition switched off.

In case of ignition troubles in the electronic ignition system, check the proper contact making of all cable connections of the ignition circuit — especially that of the earth line from terminal 31 of the control unit to the earth point on the housing central part. If the trouble is not removed in this way, an authorised workshop must be charged because measuring and testing instruments are required for the localisation of the fault.

6. Tools and Accessories

The vehicle is provided with:

- tool kit
- small repair box for tyres
- box of electric bulbs for replacement
- air pump (arranged under the seat)

7. Electrical System

The electrical equipment of our S 51/S 70 models are represented in the following circuit diagrams.

For the vehicles S 51 C-GB, S 51 C-GR, S 70 C-GB, S 51 E/Z-GB, S 51 B 1-4 GB, S 70 E-GB (the last mentioned three variants have no revolution counter), the circuit (wiring) diagram of S 51 B 1-3, S 51 B 1-4

is binding. The connection for the front wheel stop light switch and revolution counter is shown in the circuit diagram of S 51 C and S 70 C.

Marking of the cables (translation of the abbreviations)

sw = black

ws = white

rt = red

gr = grey

gn = green

bl = blue

ge = yellow

br = brown

Cable cross-sectional area

In general copper conductors with a cross-sectional area of 0.75 mm^2 are used, except for the feed lines of the 1.2 W electric bulbs where 0.5 mm^2 are used.

Legends of the wiring diagrams

| | |
|-------------------|---------------------|
| Steckverbindung | plugged connection |
| Schraubverbindung | screwed connection |
| Gleichstrom | direct current |
| Wechselstrom | alternating current |

NOTES



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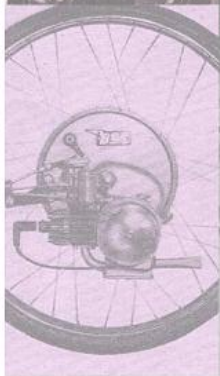
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