

Manual No. 3033.2 E/2

SACHS Engine 504/1

505/1

Version USA

FICHTEL & SACHS AG · D-8720 SCHWEINFURT

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Technical Data

| | | | | | |
|----------------------------------|---|------------|------------------------------------|-----------------|---------------------|
| Designation: | SACHS 504/1 | | SACHS 505/1 | | |
| Displacement: | 47 cc (2.87 in. ³) | | | | |
| Output: | meets legal requirements | | | | |
| Transmission lubrication: | 200 cc (7/16 pt.) | | 250 cc (9/16 pt.) | | |
| | SACHS Special transmission oil or other oils listed under „checking the oil“ page 5 | | | | |
| Ignition: | Magneto ignition-generator | | | | |
| | PAGANI | | BOSCH | | BOSCH |
| | 6 Volt 23/15 Watt | | 6 Volt 27/10 Watt | | 6 Volt 22-5/10 Watt |
| | 6 V 23 W | | 6 V 22 W | | 6 V 22 W |
| Headlight: | 6 V 23 W | | 6 V 22 W | | 6 V 22 W |
| Taillight: | 6 V | | 6 V 5 W | | 6 V 5 W |
| Brake light: | 6 V 15 W | | 6 V 10 W | | 6 V 10 W |
| Ignition timing: | 2.5 – 3 mm (.10 – .12 in.) BTDC | | | | |
| Contact breaker gap: | 0.35 ± 0.05 mm (.014 ± .002 in.) | | 0.4 ± 0.05 mm (.016 ± .002 in.) | | |
| Spark plug: | BOSCH W 175 T 1 or BERU 175/4 with SAE connector electrode gap. 0.5 mm (.020 in.) | | | | |
| Carburetor: | BING 10 mm dia.(.39 in.), BING-design. 85/10/101 (HD 50) | | | | |
| | BING 12 mm dia.(.47 in.), BING-design. 85/12/101 (HD 52) | | | | |
| | Main jet | needle jet | jet needle | needle position | Slide |
| 50/52 | 2.17 | 2 | 11 | No. 2 | |

Fuel

Use only two-stroke mixture of oil to gasoline in the ratio 1:50 (do not leave engine idling while filling tank).

gasoline: any brand name gasoline (regular)

lubricating oil: SACHS Special engine oil in cans (F & S Order No. 0263 005 100) or two-cycle oil, if need be other brand name SAE 30 or 40 oil from leading petroleum companies.

Example:

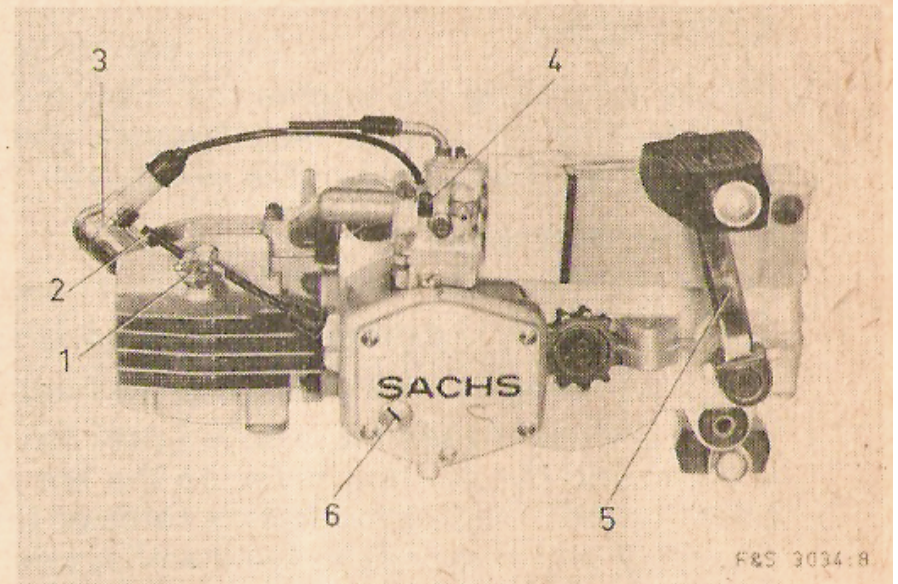
Mix well 1/2 pt. of brand-name oil with 3 gal. of gasoline or use 1 can of SACHS Special engine oil self-mixing (contents 250 cc (1/2 pt.) premixed) in 2.6 gal. of gasoline.

The fuel tank cap is designed to insure adequate ventilation. Make no modifications.

Functional and operational elements for SACHS 504/1 and 505/1

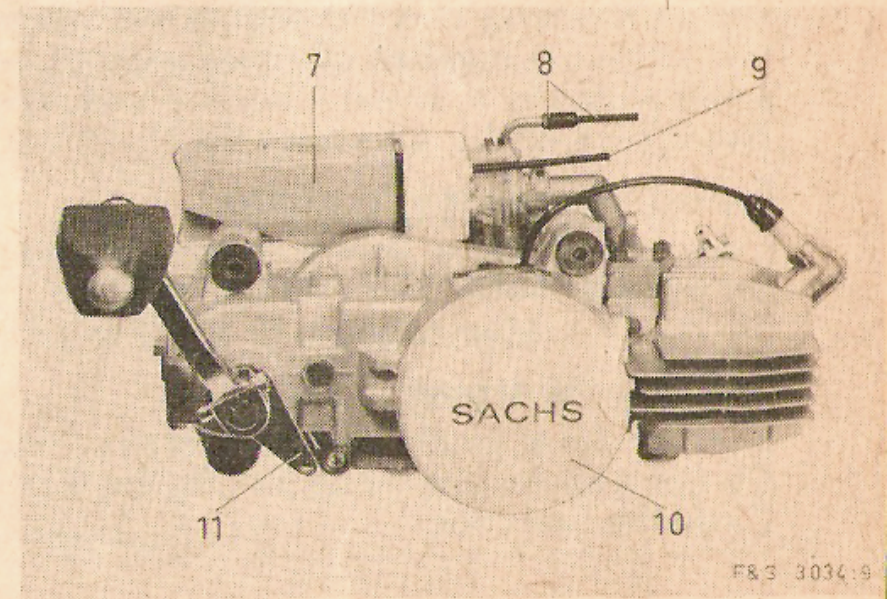
The illustrations on the right show only the SACHS 505/1 engine model, operation and handling of both models, however, are the same.

1. decompression valve (for easy starting)
2. pull cable for start and decompression lever (for starting clutch)
3. spark plug connector
4. priming button
5. pedal (only on 505/1)
6. side cover and oil check plug (for clutch and transmission oil level)
7. intake silencer
8. control cable and adjustment screw for hand throttle
9. choke cable
10. cover plate (ignition)
11. brake lever (only on 505/1)



▲ Figure 1

Figure 2 ▼



ATTENTION!

Before operating the engine the transmission must be filled with the prescribed amount of oil (see lubrication and maintenance plan) and the rubber strip (2, figure 540/4) removed from the ventilation slit in the side cover.

Starting the engine

Open the fuel cock.

For cold starts, i. e., when the engine is cold, push the priming button for 3 . . . 5 sec.

Begin pedaling as with a bicycle, opening the hand throttle at the same time.

When sufficient speed is reached pull the choke lever (only for cold starts, i. e., when engine is cold) and the starting lever on the handlebars until the engine begins to turn over at the same speed, then immediately release the start lever. As soon as the engine starts, runs smoothly and responds to the throttle, release the choke lever.

Do not push the priming button when the engine is warm.

If the priming button has been pushed when the engine was warm or the choke has been left on too long and the engine will not start as a result, close the fuel cock, and turn over the engine a number of times without actuating the start lever, if necessary remove the spark plug, dry it, screw it back in and repeat the starting process.

Avoid high RPM's, otherwise the clutch will engage.

Putting the vehicle into motion

Open the throttle slowly with the engine running. As the engine speed increases the centrifugal clutch will engage and the vehicle will begin to move. When starting up on inclines it is advantageous to assist by pedaling.

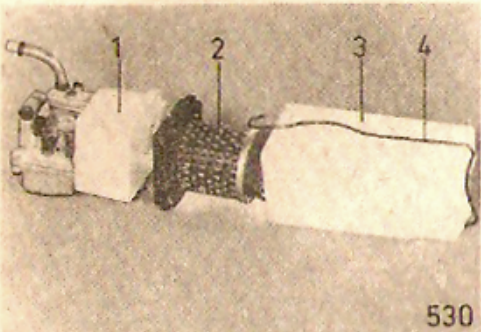
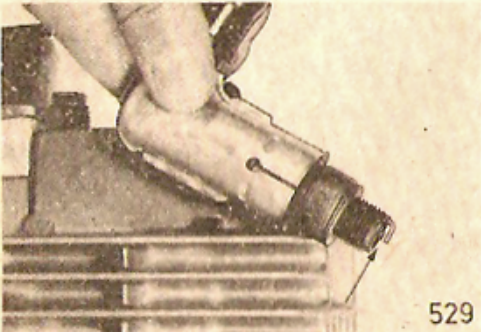
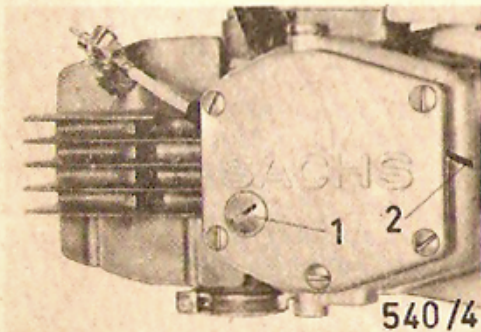
Stopping the engine

Shut off the engine with the short circuiting switch or button.

Do not stop the engine by pulling the start lever.

Close the fuel cock.

LUBRICATION AND MAINTENANCE PLAN

| Maintenance or lubrication position | Lubricant, quantity of lubricant, and maintenance operations | Maintenance | every 600 m | every 1,900 m | every 3,700 m | As required |
|--|---|-------------|-------------|---------------|---------------|-------------|
|  <p>530</p> | <p>Micronic filter in intake silencer When very dirty the micronic filter must be replaced, when only slightly dirty it can be cleaned by carefully blowing out the dust accumulation. Clean the two halves of the intake silencer in solvent.</p> | | X | | | |
|  <p>529</p> | <p>Spark plug Makeshift cleaning can be accomplished by removing the carbon deposits on the porcelain insulator and between the electrodes. Complete cleaning can only be accomplished with a spark plug sand blasting unit. Check the spark gap (0.5 mm, 0.020 in.). Replace the plug when excessively burned.</p> | | | | | X |
|  <p>540/4</p> | <p>Checking the oil Place the vehicle in a level position with the engine warm and remove the oil check plug (1). If the oil level in the transmission is below the bottom of the hole, add SACHS Special transmission oil until oil begins to run out of the hole. SACHS Special transmission oil (F & S Order No. 0263 014 002) or SHELL-Donax T 6 BP-Automatic Transmission Fluid ESSO ATF 55 DEA Fluid 684 (ATF) SUNOCO Transmatic Fluid AQ-ATF 737 A fill as described in section "checking the oil".</p> | | X | | | |

LUBRICATION AND MAINTENANCE PLAN

We recommend that the following work be performed by a trained mechanic

| | Maintenance every 600 m | every 1,900 m | every 3,700 m | As required |
|---|-------------------------|---------------|---------------|-------------|
| <p>Cleaning and adjusting the carburetor</p> <p>Clean the carburetor housing and the individual parts in solvent. Blow out the jets with compressed air. Turn the adjustment screw on the carburetor so that the throttle cable between the carburetor and the hand twist grip has 1 . . . 2 mm of play.</p> | | | | X |
| <p>Checking and adjusting the ignition system</p> <p>Check and/or adjust the ignition points after the first 300 miles, 600 miles and then every 1,900 miles thereafter.</p> | | X | | |
| <p>Coat the lubricating felt for the ignition point cam with BOSCH Special lubricant grease Ft 1 v 4.</p> | | | X | |
| <p>Ignition timing 2.5 . . . 3.0 mm (.10 - .12 in.) BTDC</p> <p>Markings are engraved on the flywheel and on the housing. "O" is opposite the mark on the housing when the piston is at top dead center. Adjust the ignition points to 0.35 ± 0.05 (.014 \pm .002 in.) (504/1 engine) or 0.40 ± 0.05 (.016 \pm .002 in.) (505/1 engine) with the ignition points on the highest point of the cam lobe.</p> <p>"M" should be opposite the mark on the housing at the moment the points begin to open. When the flywheel is turned slightly the points should begin to open. The ignition timing can be corrected by turning the mounting plate.</p> | | | | X |
| <p>Starting clutch</p> <p>Screw the clutch adjustment screw in until contact with the clutch pressure pin can just be felt, then turn it back $\frac{1}{4}$ turn so that a small amount of play is present between the pressure pin and the adjustment screw. Lock the adjustment screw with the counter nut.</p> <p>Determine the amount of the adjustment screw on the start lever (on handlebars) can be screwed in. Pull out the cable until it reaches its stop and clamp it in place. Adjust the adjustment screw so that the start lever has 1 . . . 2 mm (approx. $\frac{1}{16}$") of play. Lock the adjustment screw with the knurled nut.</p> <p>For start levers without adjustment screw pull out the cable until it reaches its stop and then push back to the point that the cable cover has 1 . . . 2 mm (approx. $\frac{1}{16}$") of play between the decompression valve and the start lever.</p> <p>Clamp the cable in place.</p> | | | | X |

LUBRICATION AND MAINTENANCE PLAN

We recommend that the following work be performed by a trained mechanic

Maintenance
every 600 m
every 1,900 m
every 3,700 m
As required

Decarbonizing the exhaust system and cylinder

The carbon in the combustion chamber and the exhaust port of the cylinder as well as in the exhaust system should be removed at least every 1,900 miles, or more specifically whenever the output of the engine begins to decrease or when the engine tends to run like a four cycle engine in spite of correct carburetor adjustment.

X

Hubs

On hubs with adjustable taper bearings care must be taken that the bearing is not adjusted too tightly. Screw the taper retaining nut down tight while holding the taper shaft in place. After tightening the counter nut check for easy rotation. The wheel should have a small amount of lateral play when it is installed on the vehicle and the axle nuts are tightened down.

Repacking with new grease is necessary after 3,000 to 6,000 miles.

X

When the brakes no longer provide the proper effect, check condition of the hand and/or foot lever, the cable, linkage and brake lever and adjust as required. Oil the joints, bearings and cable. Replace bent or pinched cables. Oily linings must be replaced, even a small amount of oil will decrease the efficiency of the brakes.

Replacement of brake linings.

Winter operation and corrosion protection

If the vehicle is to be used in the winter, considerable damage to the frame and engine can result from salt if counter measures or preventative measures are not taken immediately.

We recommend that the frame and engine be cleaned thoroughly after each trip of any great distance, particularly

- a) when required, brush off the engine housing, the cylinder, the aluminium portions of the hubs as well as all other aluminium parts on the frame (do not use a wire brush) and coat with corrosion protection enamel (F & S Order No. 0269 001 100).
- b) Treat the enamelled and chromed surfaces of the frame with readily available chrome and enamel protective substances.

Preparing the engine for storage

If the engine is not to be used for a longer period of time it may begin to rust.

Before storing the engine, shut off the engine by closing the fuel cock after the final trip.

Allow the fuel remaining in the carburetor to run out until the engine stops. In this manner the formation of gum residue in the fuel line and carburetor can be prevented.

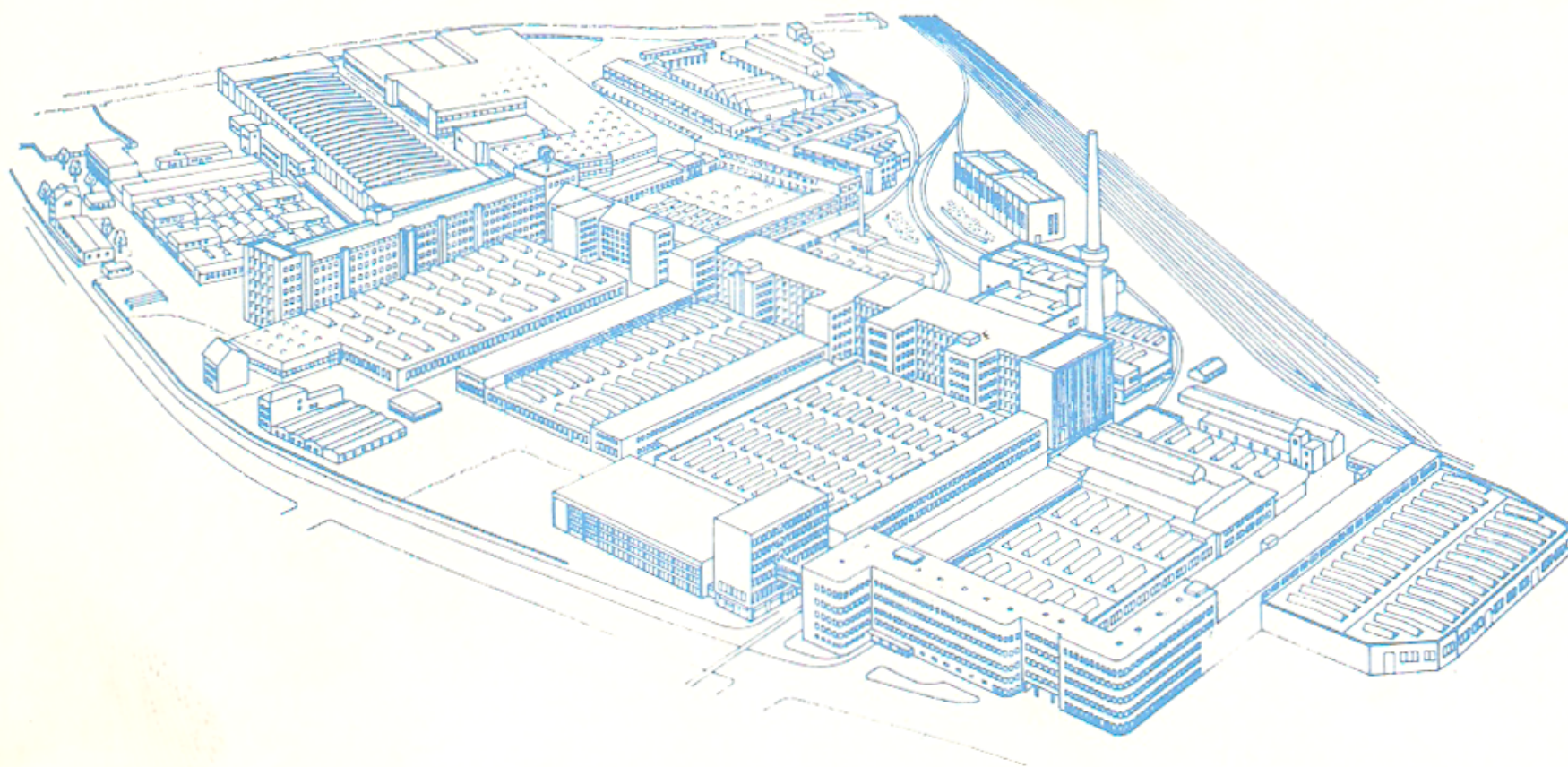
To prepare the bearings, crankshaft and inner cylinder for storage squirt 3 . . . 5 cc's (approx. $\frac{1}{4}$ teas.) of brand name corrosion protection oil (viscosity SAE 30) into the spark plug hole and 8 . . . 10 cc's (approx. $\frac{1}{2}$ teas.) into the carburetor intake, while actuating the starting device a number of times.

For protection of the outside of the engine we also recommend corrosion protection oil from any well known oil company.

Attention!

If the vehicle is stored for any longer time period with the fuel tank filled, the oil-gasoline mixture may separate. In such cases we strongly recommend that the oil-gasoline mixture be remixed by stirring or shaking or that it be drained and replaced.

No guarantee is expressed or implied for damage or impairment of operational function caused by gum residue in the fuel supply and carburetor systems or by rust inside or outside of the engine.



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