ZÜNDAPP

50 cc

OPERATION AND MAINTENANCE

Important:

Only ZÜNDAPP original spare parts ensure reliability, protect against damage and keep up your guarantee. Therefore always instruct your ZÜNDAPP dealer to fit only ZÜNDAPP original spare parts, if you want to make sure that your machine will run without trouble and have a long life. And remember: if other than ZÜNDAPP original spare parts are fitted, your guarantee becomes invalid.

Welcome to the Ranks of ZÜNDAPP Owners

First of all, let us thank you for the confidence you have placed in us by choosing a ZÜNDAPP machine. Your ZÜNDAPP dealer will already have demonstrated its special features and given you the necessary basic instructions. Nevertheless, we have summarised in this booklet all the important points on operation and maintenance, so that you can study them at home at your leisure. Also included are essential hints which will allow you to correct any minor faults yourself.

We should like to emphasise two important points: Do read this booklet **before** taking the machine out on the road for the first time. It will very decidedly be worth your while. Please remember that your local ZÜNDAPP agents and our own works engineers are always at your service for advice and help with any queries or problems.

Happy Motoring!

ZÜNDAPP-WERKE GMBH
8 München 8
Anzinger Straße 1–3

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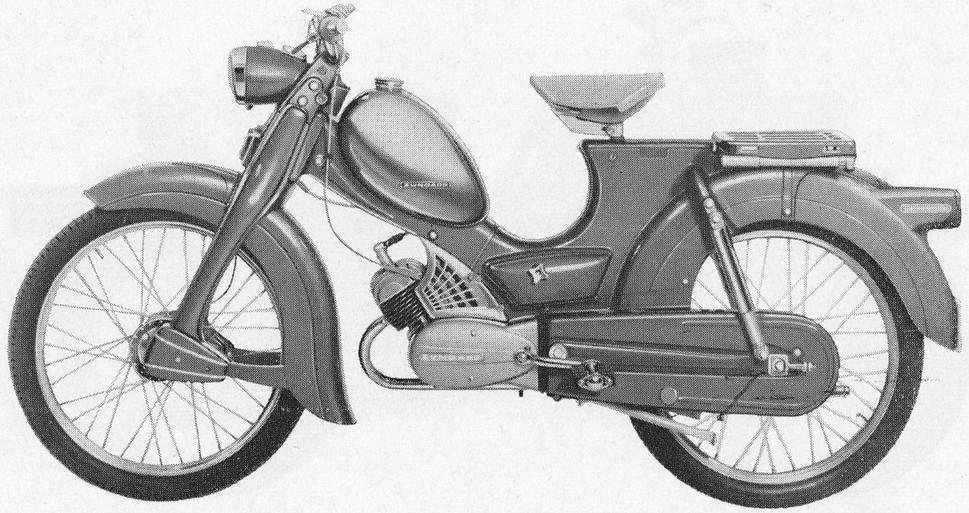
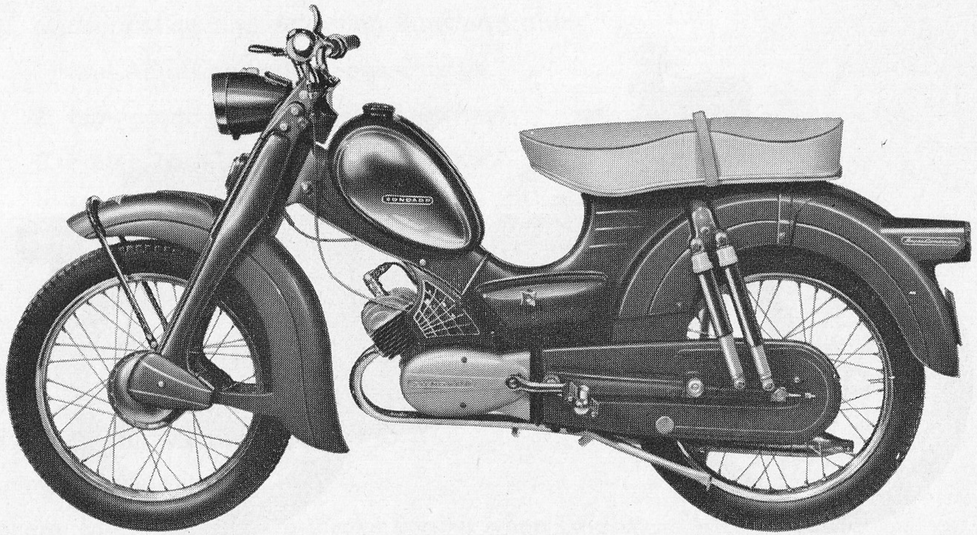
Model 428–004



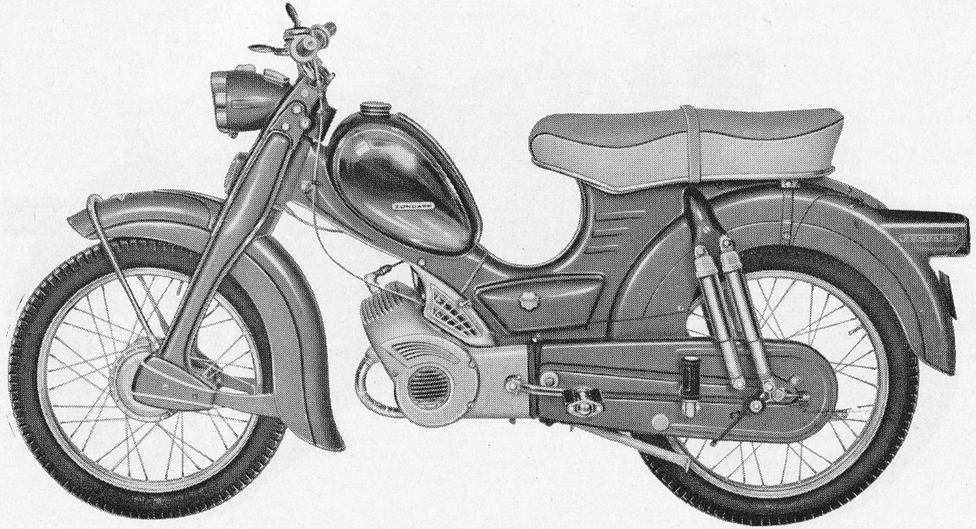
Combinette, 2 speeds / Manual gear change

Pillion Moped
Model 433–007



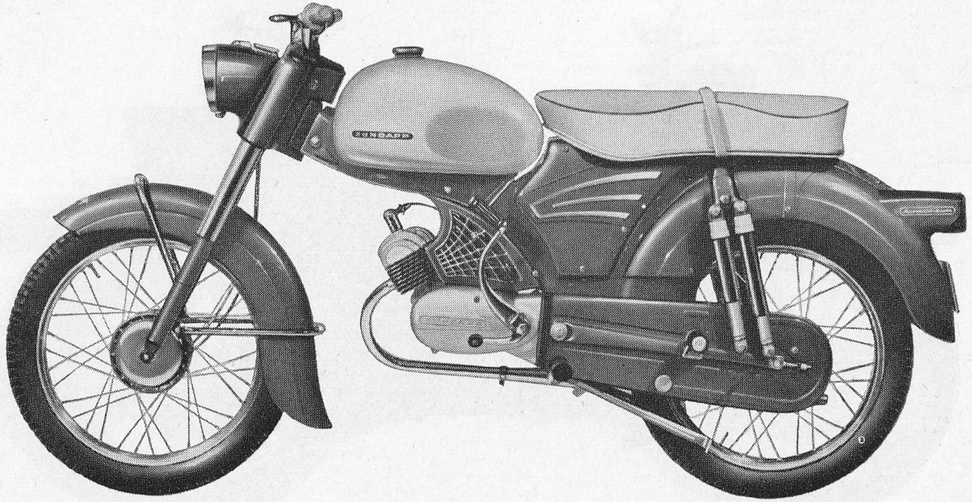
Super-Combinette, 3 speeds / Manual gear change

Pillion Moped
Model 433–009



Super-Combinette, fan-cooled, 3 speeds / Manual gear change

Sports Mokick
Model 515–017



Sport-Combinette, 3 speeds / Pedal gear change

Sports Mokick
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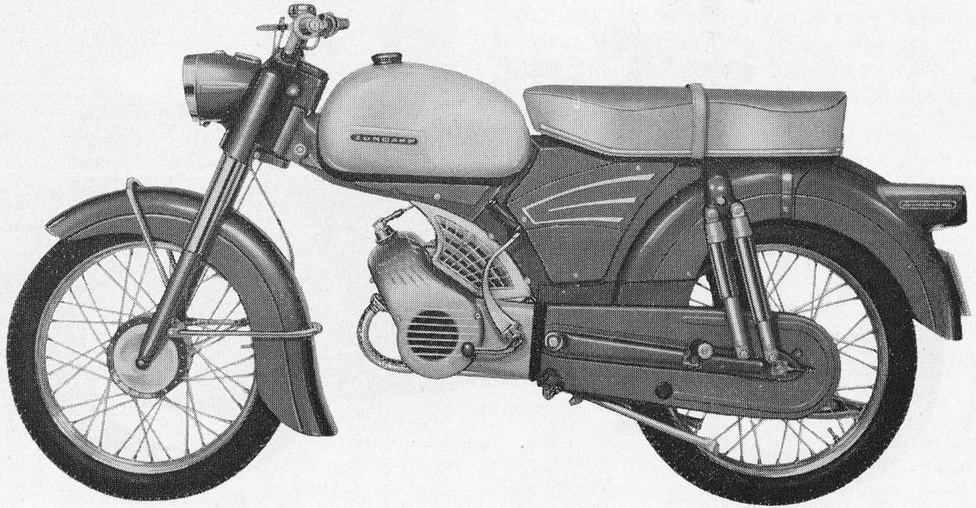
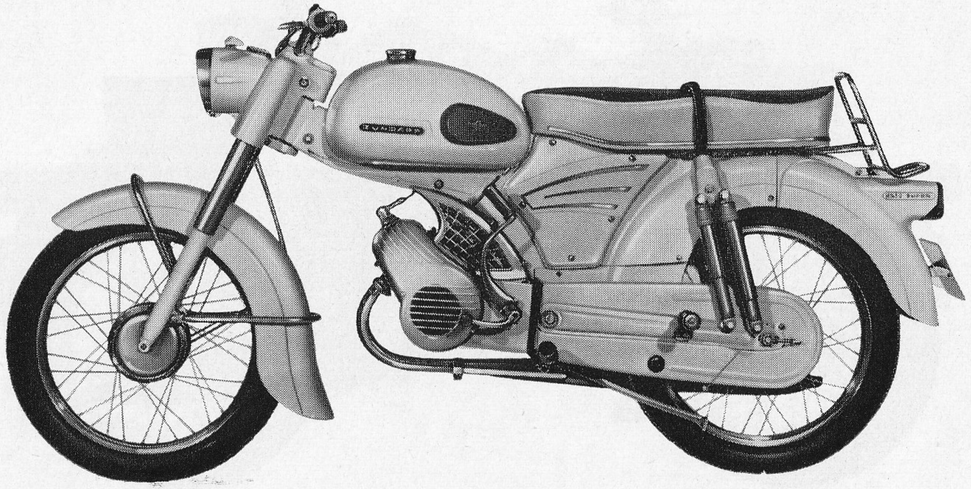


Sport-Combinette, fan-cooled, 3 speeds / Pedal gear change

Light Motor Cycle
Model 515–033



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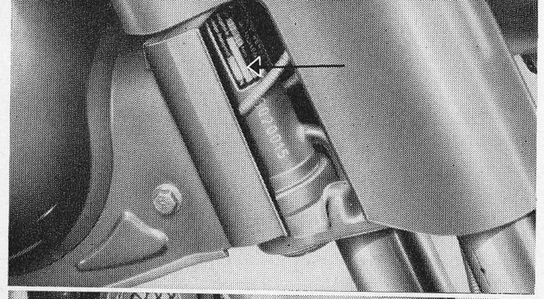
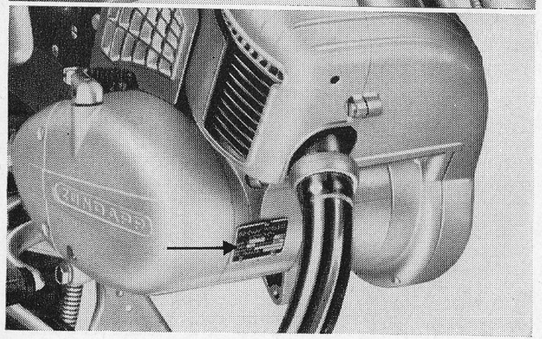




Engine Number

Frame No.

Important Note

Please do not forget to fill in the form below after taking delivery of your machine; the information is very important to you. When writing to us, always quote the details below, together with the mileage reading. Do not send in the page itself.

Name of Owner

Adress of Owner

Date of first licensing

General Technical Description

Two-Stroke Engine — Mode of Operation

The ZÜNDAPP two-stroke engine works on the well-tried reverse scavenging principle. The fuel/air mixture drawn in by the up stroke of the piston via the carburettor is pre-compressed in the crankcase during the piston down-stroke, then passes via two overflow ducts into the cylinder, where it is compressed during the subsequent piston upstroke and expands and burns on being ignited by the spark from the plug. During the following down (or working) stroke of the piston, the burnt gases are swept out into the open via exhaust port, exhaust pipe bend and silencer.

Transmission

The pressure created by the expansion of the gases is transmitted via piston, gudgeon pin and connecting rod to the crankshaft and converted into the rotary drive. Between crankshaft and clutch, a speed reduction gearing reduces the revolutions and produces an increase in torque. Power transmission to the change gears can be disconnected by operating the clutch. The selector gearing further alters engine revolutions and rotary torque according to the reduction stage (i. e. gear) selected.

The Carburettor

In association with the air filter, the carburettor produces the desired fuel/air mixture or, in other words, it converts the liquid fuel into a mixture which can be ignited by the spark.

The carburettor consists of two main components:

the float housing and

the carburettor housing

The float housing contains the float, linked by a clamping spring to the float needle. Its purpose is to keep the fuel in the carburettor at a uniform level. When the fuel tap is opened, fuel flows into the float housing and raises the float complete with needle. The top end of the needle is ground to a taper which, in association with the float housing cover, shuts off the flow of fuel from the fuel feed pipe when the correct level has been reached. Pressing the priming button pushes down the float complete with needle valve, allowing more fuel to flow into the float chamber through the open valve.

Purpose of the carburettor is to ensure a supply of the correct fuel/air mixture for any engine speed. This is achieved by its various jet systems.

Correct jet sizes and carburettor settings are determined and fixed at the works, and should not be altered. After cleaning the carburettor, only the idling speed and the Bowden cables should be re-set.

Air Filter

This has the important task of cleaning the air essential for proper combustion of the fuel.

Sparking Plug

In association with the ignition system, the spark supplied by the plug ignites the fuel/air mixture at exactly the right moment (ignition point). Careful checking and cleaning of the plug and measuring electrode gap are therefore jobs of great importance.

Chassis Frame

A ZÜNDAPP speciality, the chassis frame forms the indestructible backbone of the machine. It is made from high-grade pressure die-castings (not sheet metal) by the latest production methods. The engine air is drawn through the frame, which also houses the silencer system and the air filter.

Suspension

The efficient front wheel suspension and a well-designed arrangement of spring legs and hydraulic shock absorbers at the rear give exceptional riding comfort. The rear wheel suspension automatically adjusts itself to the load carried, and requires no maintenance.

This suspension design ensures the good riding and roadholding characteristics typical of ZÜNDAPP machines.

Taking Over Your Machine

Before taking over and riding your machine, please check that:

1) the gearbox is filled with the correct quantity of oil (see Servicing Instructions, para. 2);

2) front and rear knock-out spindles and nut 41 (fig. 12) on chain tensioner have been correctly fitted and tightened (see Maintenance Jobs, para. 7, 8 and 9);

3) all nuts, bolts and screws are secure;

4) all Bowden cables have been set correctly (see Maintenance Jobs, para 6);

5) the brake linkage has been fitted and set correctly (see Maintenance Jobs, para. 11);

6) headlamp, rear light and stop light are working properly (see Getting the Machine Ready, para. 6);

7) tyre pressure is correct (see Servicing Instructions, para. 3);

8) gears are easy to engage;

9) all moving parts, and the chain in particular, have been lubricated with the right grade of oil or grease.

Getting the Machine Ready

1. **Fuel and Fuel Tank**

   Mixtures incorporating special two-stroke oil supplied ready made in tins have proved particularly suitable in practice and should therefore be used in preference to the petroil from two-stroke mixture garage pumps.
   When using ordinary engine oils, we recommend the addition of Desolit (or equivalent), following the instructions provided on the container.
   Even so-called self-mixing oils should be thoroughly mixed with the petrol **before** pouring them into the tank.
   Mixture ratio: 25 parts petrol to 1 part oil (25 : 1).
   To fill the tank, turn filler cap 1 (fig. 3) anti-clockwise. Always keep the filler cap clean, and make sure no impurities get into the tank while filling up.

2. **Fuel Tap**

   Before starting the engine, always remember to open the fuel tap 2 (fig. 1) on the right-hand side of the tank.

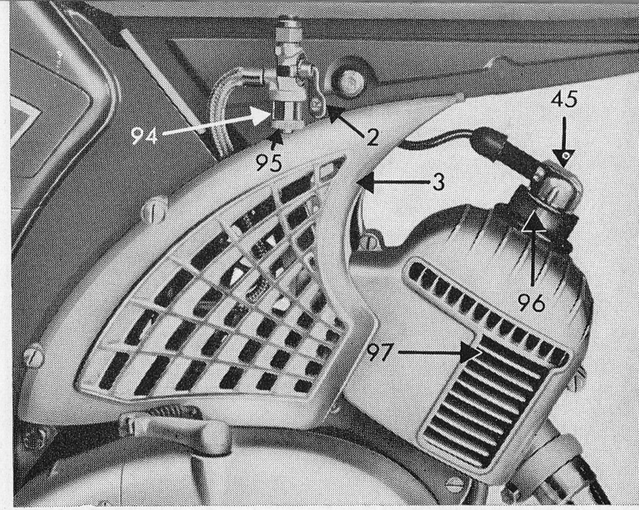


Fig. 1

2 = Fuel tap
3 = Carburettor casing
45 = Spark plug with removable interference suppressor
94 = Condensate trap
95 = Knurled screw
96 = Rubber cap
97 = Opening for plastic slide in blower-fan cap

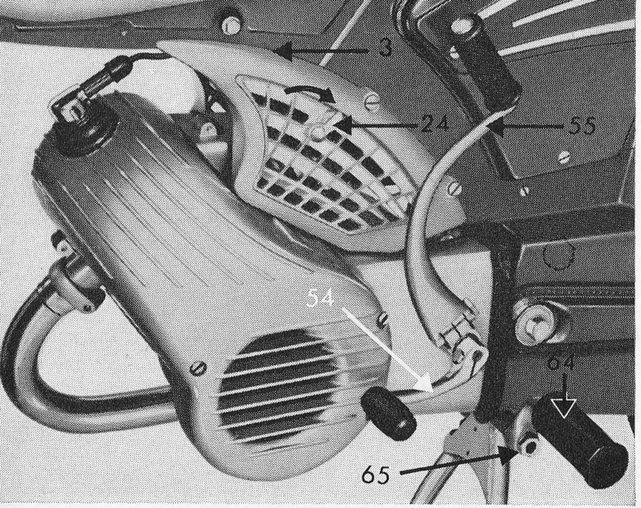


Fig. 2

3 = Carburettor cover panel
24 = Choke lever for air slide (move in direction of arrow)
54 = Gear change pedal
55 = Kick starter
64 = Footrest
65 = Nut

The twin-arm three-way tap (2) is marked A and R (A = open; R = reserve). When the letter A points up, the tap is open; in the vertical position the tap is closed.

If fuel fails to reach the carburettor when the tap is open (engine stops), turn to Reserve (R). The reserve is sufficient for another 12½ to 30 miles (20–50 kms), depending on the model.

3. **Starting the Engine**
(figs. 1, 2 and 3)

To start engine, proceed as follows:

Open fuel tap 2, as described under 2 above, and close throttle by turning twist grip 23 (fig. 3) forward. Next, move choke lever 24 on left-hand carburettor cover panel (fig. 2) in direction of arrow to close the air slide in the carburettor, thus obtaining the rich fuel mixture required when starting from cold. In warm weather or when the engine is already warm, this lever 24 need not be operated.

Insert key into ignition; then the ignition is switched in (only for machines of model range 515 with sports-type frame).

Open throttle twist grip 23 by turning it towards you until you feel a slight resistance. Do not turn beyond this point, or you will open the air slide again.

It is advisable to check the position of lever 24 to see that the choke is closed. If not, repeat correctly as described above.

Check that you are in neutral (see section 4). Now push machine off its stand. In models with pedals, step forward on the pedal.

In models without foot pedals, i. e. those fitted with footrest, move kick starter 55 (fig. 2) into starting position and step back on it.

4. **Gear Selection and Controls**
General

Depending on model, machines are equipped with

a) pedals and manual gear change
b) foot rests, kick starter and manual gear change
c) foot rests, kick starter and pedal gear change.

All engines are fitted with steel ball selector transmission giving 2, 3 or 4 speeds, depending on the model.

Manual Gear Change (figs. 3 and 4)

Manual gear change is by the left-hand twist grip on which the gear selector positions are marked as follows:

0 = Neutral, 1 = 1st gear, 2 = 2nd gear, 3 = 3rd gear, 4 = 4th gear.

Neutral is between 1st and 2nd gear.
The 1st gear is used when starting and going up and down hills. To engage, pull clutch lever 26 (fig. 3), i. e. declutch, then twist the grip 34 forward until the gear engages. Then slowly release clutch lever 26 (engage clutch), while at the same time throttling up by turning the right-hand twist grip towards you. Second gear should be engaged on

reaching a speed of approx. 9 m. p.h. (15 km/h). To go from 1st into 2nd gear, throttle down (turn right-hand twist grip forward), pull clutch lever 26 to declutch and turn twist grip 34 towards you until the 2nd gear engages. Now, again release clutch lever 26 to engage the clutch, while at the same time throttling up. Proceed in a similar manner to change up from 2nd to 3rd gear. Before changing gear, always pull clutch lever 26 (fig. 3) as far as it will go. It is best to pause briefly between selecting the gear and slowly releasing clutch lever 26. This will facilitate proper meshing of gears. When changing gear, particularly downwards, never skip any gear.

Pedal Gear Change (fig. 2 and 3)

The gear change pedal 54 (fig. 2) is fitted to the left-hand side of the engine casing.

Neutral is between 1st and 2nd gear and is easily found by pushing the machine to and fro, and at the same time moving pedal 54 up or down.

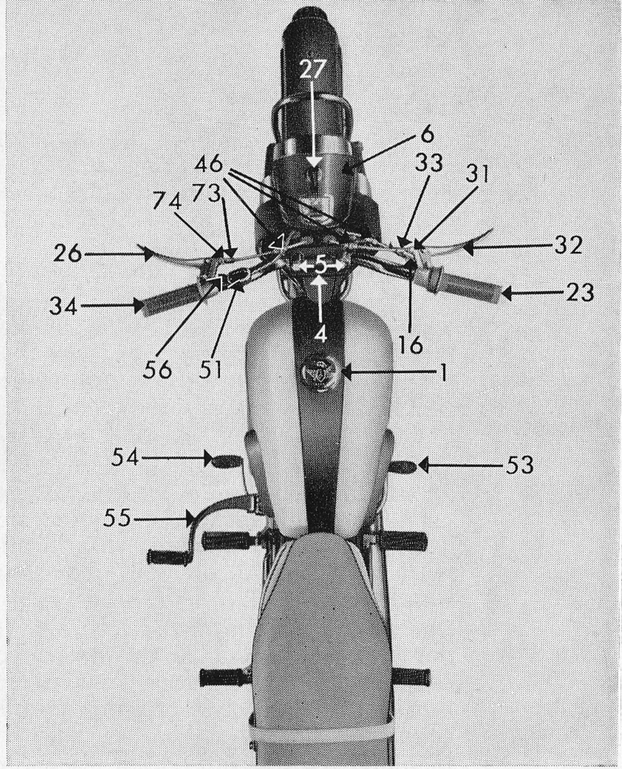
The 1st gear serves for starting and going up and down hills. To change from neutral into 1st gear, pull clutch lever 26 (fig. 3) mounted on the left-hand handlebar to declutch and step on gear pedal 54. Then slowly release clutch lever 26 to engage the clutch, while at the same time throttling up by turning towards you throttle twist grip 23, mounted on end of right-hand handlebar.

Change into 2nd gear on reaching a speed of approx. 9 m. p. h. (15 km/h). Throttle down, declutch by pulling clutch lever, push up pedal 54 with the tip of your toes, then slowly release clutch lever again to engage clutch.

Proceed in a similar manner to change up from 2nd to 3rd and from 3rd to 4th gear. When changing down from 4th to 3rd, from 3rd to 2nd and from 2nd to 1st gear, always first declutch, then **push gear pedal down** and slowly release clutch lever.

Fig. 3

1 = Filler cap
4 = Handlebar mounting cover
5 = Hexagon screws for handlebar mounting
6 = Headlamp housing
16 = Adjuster for throttle cable (concealed)
23 = Throttle twist grip
26 = Clutch lever
27 = Switch (or ignition w. key)
31 = Hexagon locknut for handbrake lever
32 = Handbrake lever
33 = Adjuster
34 = Fixed hand grip or twist grip for gear changing (depending on model)
46 = Oil (filling) holes for Bowden cables
51 = Buzzer horn button (depending on model)
53 = Brake pedal
54 = Gear change pedal
55 = Kick starter
56 = Dipping switch (depending on model)
73 = Adjuster
74 = Locknut on clutch lever



Double-declutching, i. e. throttling up briefly while declutched between engaging gears is good practice. Remember, always pull clutch lever 26 before changing gears.

Never use force to engage any gear!

If a gear proves difficult to engage when the machine is stationary, whether the engine is running or not, wheel the machine forward or back a little and simultaneously engage the gear.

On longer downhill runs, it is advisable to throttle up briefly from time to time to ensure adequate lubrication of cylinder and drive. On no account, ride downhill **for any distance** with throttle twist grip closed or with the clutch slipping.

During the running-in period, i. e. for the first 300 miles (500 km) or so, you should avoid continuous runs at full throttle or extensive cruising in hilly country.

In winter the speeding up of the engine ought to be done carefully in order to give time to the piston and cylinder for balance of the temperature.

To prevent excessive cooling or icing up of the carburettor at high air humidity and low outside temperatures (i. e. particularly in winter), it is advisable to push the plastic slide supplied into opening 97 (fig. 1). This supplies additional warm air to the carburettor.

After the first 300 miles (500 km), you can gradually run the engine at full power. Avoid killing the engine by braking hard without declutching. Always first declutch, shift into neutral, then stop the engine.

5. **Switching Off the Engine**

(figs. 1 and 3)

Before switching off the engine, throttle up once more. Then without throttling down, turn switch 27 (with Combinettes and Super-Combinettes) on headlamp housing 6 (fig. 3) clockwise or withdraw the ignition key to cut out the ignition. When the engine has stopped, close throttle twist grip 23 and fuel tap 2.

Throttling up before switching off ensures that the engine will start more easily next time, particularly in winter, and that any residual combustion gases are ejected from the crank-case, thus preventing corrosion.

6. **Lights and Signals**

a) **Crossed-beam headlamp** (fig. 3)

To switch on the headlamp and rear light, turn switch 27 or ignition key (fig. 3) on headlamp shell to the left. Headlamp and rear light work only when the engine is running.

b) **Bilux (Dipping) Headlamp** (fig. 3)

To switch on headlamp and rear light, turn switch 27 or ignition key (fig. 3) on headlamp shell clockwise. Dipswitch 56 (fig. 3) is mounted on the left-hand handlebar.

c) **Signals**

Buzzer Horn (fig. 3)

The light motor-cycles have a buzzer horn built in below the headlamp shell. It is operated by pressing button 51 (fig. 3) on dipswitch 56 (fig. 3).

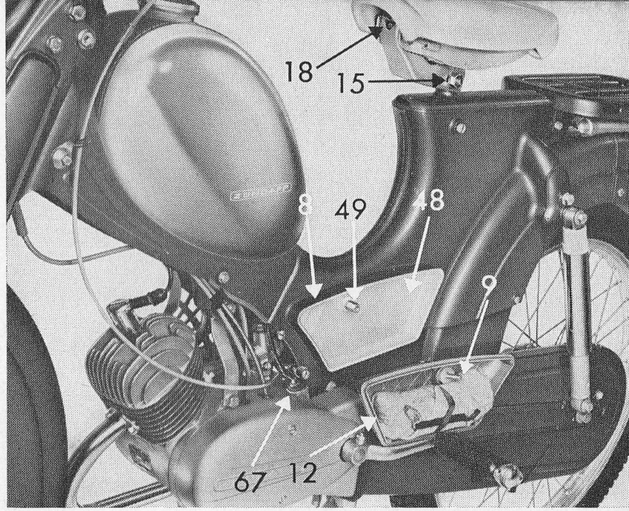


Fig. 4

8 = Toolbox
9 = Locking screw w. lock
12 = Toolbox cover
15 = Nut
18 = Slotted-head screw
48 = Baseplate
49 = Screw for 48
67 = Oil filler plug

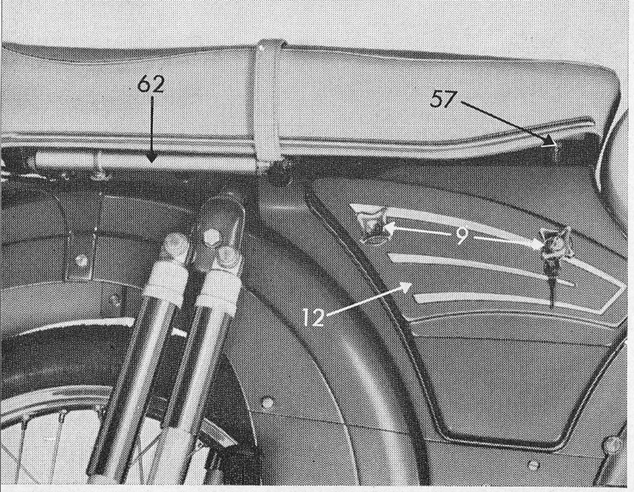


Fig. 5

9 = Screw handle with lock
12 = Toolbox cover
57 = Hexagonal bolt
62 = Tyre pump

Brake Light (fig. 11)

The brake light is coupled automatically with the rear brake and lights up when the brake is on. The brake light switch is mounted under the foot brake.

7. **Lock and Tools** (figs. 4 and 5)

All machines are provided with a handlebar lock as a standard fitting. Mounted on the left-hand side in the headlamp shell, the lock prevents the handlebars from being turned by unauthorised persons. Before locking, turn the handlebar all the way to the right.

Tools are located in the toolbox in the centre of the frame, at the left-hand side (fig. 4), for all machines with "open" frame, and at the right-hand side for all machines (sports models) with "closed" frame (fig. 5).

The toolbox cover 12 is secured with one locking screw 9 on all machines with "open" frame (fig. 4), and with 2 locking screws 9 on all machines with sports-type frames (fig. 5). To release the cover, take off the screw or screws. Locking screws 9 (fig. 5) of sports machines are fitted with a built-in safety lock opened with the key supplied. After taking off cover 12, all tools are readily accessible. The tool set supplied will enable the owner to carry out all maintenance work and simple repairs.

Where the lock is not original equipment, it can easily be fitted at a later stage.

In addition to the tool kit supplied, you should always carry:

Spare sparking plug

Spare bulbs

Insulating tape

Tyre repair kit

On long tours abroad, we also recommend taking a set of the most important spare parts (such as chain, etc.), depending on likely repair facilities in the countries visited.

Saddle, Seat, Handlebars, Footrests

1. **Saddle** (fig. 4)

On machines with "open" frame equipped with saddle, the saddle is adjustable.

Adjusting saddle (fig. 4)
To adjust the saddle distance from the handlebars to suit the rider, slacken fixing nuts 15, and shift saddle forward or back, i. e. closer to or further away from the handlebars. Remember to tighten nuts 15 securely after adjustment.

Adjusting Saddle Springing (fig. 4)
Turn slotted-head screw 18 below the nose of the saddle anti-clockwise to get more "give", clockwise to make the springing harder. This adjustment can be made without taking the saddle off.

2. **Bench Seat**

Bench seats are not adjustable. To take off seat, proceed as follows: Machines with open frame – remove the two rear

fixing screws, slide seat forward and then lift off.

Sports machines ("closed" frames) – take off left-hand fairing panel and unscrew hexagon bolt at the top, left. Then take off the two rear fixing screws and lift off seat.

3. **The Handlebars** (fig. 3)

The handlebars are mounted on Combinettes and Super-Combinettes between headlamp housing and bolted-on bearing cover; by slackening the four hexagon screws 5 (fig. 3), they can be moved forward or back to increase or reduce the distance from saddle or seat. After adjustment, firmly tighten screws 5 on alternate corners. On vehicles of the type range 515 the handlebars are fixed by 2 screws. After moving the handlebar, make sure to re-adjust twist grips, clutch lever, mirror, etc., to suit.

4. **Footrests** (fig. 2)

Footrests 64 can be adjusted after slackening nut 65.

Servicing Schedule and Instructions.

1. **Workshop Inspection and Guarantee Conditions**

To comply with the terms of our works guarantee, machines **must** be properly inspected and serviced at the intervals given below.

Regular inspection prevents accidents and increases road safety.

Please take your machine at the intervals specified below to your ZÜNDAPP dealer or to an appointed ZÜNDAPP service workshop, where all servicing jobs will be carried out according to ZÜNDAPP works instruction by trained staff, charging the costs.

1st Service: within one month of purchase, but not later than after 185 miles (300 km)

2nd Service: within two months of purchase, but not later than after 750 miles (1,200 km)

3rd Service: within three months of purchase, but not later than after 1,500 miles (2,500 km)

After these three initial inspections, we strongly advise you to have further inspections of your machine carried out every subsequent 1,250 miles (2,000 km) by an appointed ZÜNDAPP workshop, where you will be sure of the attention of trained motor mechanics.

ZÜNDAPP appointed workshop use only Original ZÜNDAPP spare parts to ensure that your machine will give you trouble-free service over a long life. Use of other than original ZÜNDAPP spare parts invalidates our guarantee.

1st Service after 185 miles (300 km) or within one month of purchase:

1. Tighten all nuts and bolts (including suction socket and engine mounting).
2. Check and if necessary adjust front wheel brake.
3. Check rear wheel brake; make sure linkage works freely and is not obstructed by exhaust; test brakes with pillion passenger up.
4. Check chain tension and adjust if necessary.
5. Check clutch play and adjust if necessary.
6. Check handlebar clip and tighten if loose.
7. Check and if necessary clean carburettor, air filter and petrol tap.
8. Tighten nut of rear wheel swinging fork bearing as required.
9. Change gearbox oil (use Mobiloil C 80, Esso 80, Shell 80, BP-Energol SAE 80, Aral-BV Gear Oil 80, or equivalent).
10. Clean sparking plug and if necessary adjust electrode gap (0.5 mm — 0.02").
11. Tighten cylinder head nuts, working across on alternate nuts (only when engine is cold).
12. Check front and rear axle.
13. Oil speedo shaft and Bowden cables.
14. Grease front wheel swinging fork, where fitted.
15. Check earthing connection between frame and engine (connection is provided from rear bottom engine mounting via exhaust silencer mounting to frame).
16. Check ignition (1.8 mm = 0.07" before TDC), on KS 50 type 515—033 however 1,1 mm = 0.044".
17. Tighten all spokes.
18. Tighten foot rests.
19. Check and adjust steering bearings as required.

2nd Service after 750 Miles (1,200 km) or within two months of purchase

1. Tighten all nuts and bolts (including suction socket and engine mounting).
2. Check and if necessary adjust front wheel brake.
3. Check rear wheel brake; make sure linkage works freely and is not obstructed by exhaust; test brakes with pillion passenger up.
4. Check chain tension and adjust if necessary.
5. Check clutch play and adjust if necessary.
6. Check handlebar clip and tighten if loose.
7. Check and if necessary clean carburettor, air filter and petrol tap.
8. Tighten nut of rear wheel swinging fork bearing and required.
9. Clean sparking plug and if necessary adjust electrode gap (0.5 mm—0.02").
10. Tighten cylinder head nuts, working across on alternate nuts (only when engine is cold).
11. Check front and rear axle.
12. Oil speedo shaft and Bowden cables.
13. Grease front wheel swinging fork, where fitted.
14. Check earthing connection between frame and engine (connection is provided from rear bottom engine mounting via exhaust silencer mounting to frame).
15. Check ignition (1.8 mm = 0.07" before TDC), on KS 50 type 515—033 however 1,1 mm = 0.044"
16. Check spokes and tighten as required.
17. Check petrol hose for leaks and tight unions.
18. Check lighting system.
19. Check brake pedal for free movement; if necessary, dismantle and oil.
20. Check brake spindle and grease.
21. Tighten pedal gear change lever.

Third Service after 1,500 miles (2,500 km) or within three months of purchase

1. Tighten all nuts and bolts (including suction socket and engine mounting).
2. Check and if necessary adjust front wheel brake.
3. Check rear wheel brake; make sure linkage works freely and is not obstructed by exhaust; test brakes with pillion passenger up.
4. Check chain tension and adjust if necessary.
5. Check clutch play and adjust if necessary.
6. Check carburettor, air filter and petrol tap, and clean as required.
7. Tighten nut of rear swinging fork bearing as required.
8. Change gear oil (use Mobiloil C 80, Esso 80, Shell 80, BP Energol SAE 80, Aral-BV Gear Oil 80, or equivalent).
9. Take off cylinder head, clean exhaust port and overflow ducts.
10. Dismantle and clean exhaust.
11. Clean sparking plug and re-set electrode gap to 0.02" (0.5 mm) as necessary.
12. Tighten cylinder head nuts, working across (only when engine is cold).
13. Check front and rear axle.
14. Oil speedo shaft and Bowden cables.
15. Check earthing connection between frame and engine (rear bottom engine mounting via exhaust silencer mounting to frame).
16. Check petrol hose for tight unions.
17. Check ignition (1.8 mm = 0.07" before TDC), on KS 50 type 515—033 however 1,1 mm = 0.044".
18. Check steering bearings, if necessary adjust and grease, and tighten handlebar clip.
19. Lubricate front wheel swinging fork where fitted.

2. **Oil Level in Gearbox** (figs. 4, 6 and 11).
   Screw 66 (fig. 11), marked in red, in the right-hand engine casing panel, serves for checking the oil level.
   With the machine on its stand, slacken the screw. Oil should now just emerge; if not, top up with gear oil (SAE 80). Oil filler plug 67, also marked in red, will be found on the top of the left-hand engine casing (see figs. 4 and 6). Check oil level every 625 miles (1000 km) and top up as required.
   After the 3rd service, change oil every 3,200 miles (5000 km). Take off oil drain plug, also marked in red, on the underside of the engine. Drain oil only while engine is still warm.
   Since it takes some time for the oil to distribute itself evenly throughout gearbox and clutch assembly, the correct oil level can only be determined after a short run.
3. **Tyres and Tyre Pressure** (figs. 4 and 5)
   Frequently inspect tyres and take good care of them.

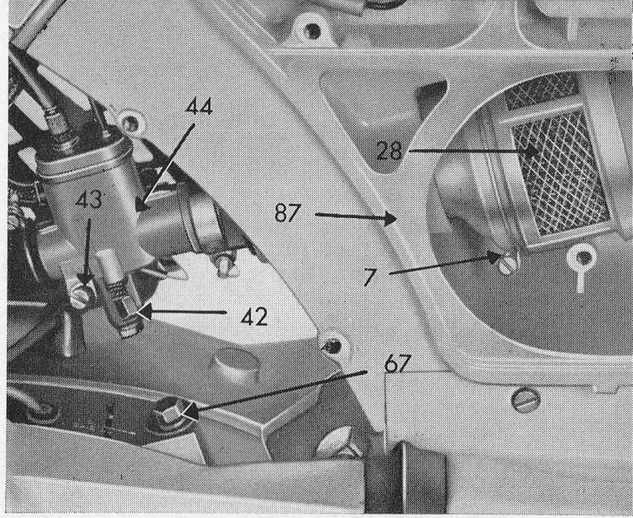


Fig. 6

7 = Clamping ring for air filter
28 = Air filter
42 = Idling speed adjuster
43 = Main jet
44 = Carburettor
67 = Oil filler plug
87 = Plastic gasket

For type 428–004 (Solo-Moped Combinette) tyre pressure should be 1,2 atm (17 lb/sq. in.) in front and 1,8 atm (26 lb/sq. in.) at rear.

For all other types when **riding solo,** tyre pressure should be 1,6 atm (23 lb/sq. in.) in front and 1,8 atm (26 lb/sq. in.) at rear.

When **riding with pillion passenger** up, a tyre pressure of 1,8 atm (26 lb/sq. in.) in front and 2,5 atm (36 lb/sq. in.) at rear is required.

Use either your tyre pump 62 (fig. 5) or the "free air" hose at your filling station.

On machines fitted with a dual bench seat, the tyre pump 62 is fixed to the inside of the seat (fig. 5). On all other machines, the pump is fixed to the left-hand side of the luggage carrier.

The valve of the air pump is protected against dirt by a rubber cap, which must always be replaced after use.

4. **Engine Idling Speed** (figs. 3 and 6)

   If you close twist grip 23 when the engine is running, it should not stop but should continue ticking over steadily. The idling speed can be controlled by adjuster 42 on the carburettor (fig. 6). With the **engine running,** turn in adjuster 42 (clockwise) as far as it will go, close throttle twist grip 23, then slacken adjuster 42 again until the engine will just continue idling steadily. Finally, correct play of throttle cable by means of adjuster 16 (fig. 3).

   Play at the throttle twist grip 23 should be approx. 1 mm (0.04").

5. **Important Note**

   During the first 185 miles (300 km) and later as convenient, check and tighten all nuts, bolts and especially the spoke nipples, but make sure that wheels are not distorted, while this is done. **(Workshop job.)**

   To avoid corrosion damage if the machine is laid up for any length of time, ask your ZÜNDAPP dealer or agent for the necessary laying-up instructions (see also "Protecting Machine and Two-Stroke Engine When Laid up" in this manual).

Simple Repair and Maintenance Jobs

1. **Cleaning Petrol Tap**

   The petrol tap is fitted with a transparent condensate trap 94 (fig. 1) in which water and any fuel impurities collect. From time to time, slacken knurled screw 95 (fig. 1), take off trap and clean it. When re-assembling, make sure seals are fitted correctly.

2. **Cleaning Air Filter** (figs. 4 and 6)

   A clogged air filter 28 reduces engine performance and considerably increases fuel consumption and engine wear, particularly in areas with unsurfaced roads. The filter should, therefore be cleaned at least every 1,250 miles (2000 km).

   In all machines with "closed" frames (sports models), air filter 28 becomes accessible after taking off 5 screws to remove the left-hand fairing panel (fig. 6).

   In all vehicles with "open" frames, unscrew cover screw 9 of toolbox, remove cover 12 and take out tools, slacken screw 49 and take off baseplate 48 (fig. 4) which forms the rear of the toolbox.

   Air filter 28 (fig. 6) can now be easily removed from the filter chamber after unscrewing the clamping ring 7 (fig. 6). To clean air filter 28, rinse it in two-stroke mixture. After cleaning, lightly moisten the filter elements with engine oil.

   Replace filters with great care; carelessly assembled filters adversely affect engine performance and reduce its life. On vehicles with "closed" frames, carefully check correct position of the plastic gasket 87 (fig. 6) before assembling the cover.

   The free space near the air filter must never be obstructed by cleaning rags etc., as this would considerably reduce engine performance.

3. **Cleaning the Carburettor** (figs. 2 and 6)

The carburettor becomes accessible after unscrewing the left-hand carburettor cover 3 (fig. 2). To clean the main jet 43 (fig. 6), unscrew and merely blow through to clear it. Do not attempt to free the jet with a needle or similar sharp object, since this would damage it beyond repair.

Thorough cleaning of the carburettor which involves removal and dismantling should be left to your service garage.

4. **Cleaning the Exhaust**

A clogged exhaust considerably reduces engine performance. It should therefore be cleaned every 1,800 miles (3000 km) by your service garage.

5. **Checking Ignition** (fig. 1)

This is a job which can only be carried out in a service garage (every 1,800 miles = 3000 km), but the sparking plug should be cleaned at frequent intervals with a wire brush.

Pull off socket 45 (fig. 1) and unscrew the plug.

Sparking plug gap should be 0.02″ (0,5 mm) and can be checked with a sparking plug gauge, and adjusted as necessary.

6. **Lubricating and Adjusting Bowden Cables** (fig. 3)

All Bowden cables (fig. 3) should move freely in their outer casings. During the first three regulation services, and later every 625 miles (1000 km), they should be well lubricated. To do this, take off the small caps on the lubricating holes 46 (fig. 3), then inject a little thin-flowing oil (such as grade SAE 20) from an oil can. Remember to replace the caps after lubrication.

a) **Throttle Cable** (fig. 3)

Throttle cable play can be corrected, with the engine running, by means of adjuster 16 (fig. 3) (see also Maintenance Instructions, section 4). Before adjusting, slacken adjuster locknut and tighten again on completion.

b) **Brake Cable** (fig. 3, 8 and 9)

Due to unavoidable wear of brake linings, the front brake must be adjusted from time to time.

To do this, take off hexagon nut 31 (fig. 3) and turn adjuster 33 (fig. 3) out until play on top of lever is reduced to approx. 0.4″ (1 cm). After adjustment, secure locknut 31.

A second adjuster 36 is provided on the lower end of the brake cable and is reset in the same manner. After adjustment, check whether the front wheel turns freely; if not, correct the setting.

Brakes must not be allowed to drag or the lining will wear.

c) **Clutch Cable** (fig. 3)

The clutch must never be allowed to slip. Correctly set, the clutch lever 26 should have free play of approx. 0.4 in. (1 cm) at its outer tip. Clutch cable play is adjusted by tightening or slackening adjuster 73 (fig. 3) in the same manner as described for the brake cable. If this adjustment proves insufficient, have the clutch reset at a garage.

d) **Gear Selection**

Fitting and Adjusting Gear Selector Cable (manual change, fig. 7)

Proceed as follows:
Unhook cable. Turn the rear wheel to put gear selector lever 60 on the engine into 3rd gear position (into 2nd gear position on 2-speed machines). A selector spring in the transmission will automatically put the lever into the correct position as you turn the wheel. Pull gear change twist grip 34 off the handlebar, disconnect clutch cable assembly and suspend it from its nipple 61. Next, run down adjuster 30 on the setting bush. At the other end of the gear cable, hook the cable nipple into the bracket and the Bowden cable sleeve nipple into gear change lever 60 on the engine.

Next, slide twist grip 34 on the handlebar and secure. Bring twist grip 34 into neutral position by turning the rear wheel. Now adjust neutral position of lever 60 on the engine, until it exactly

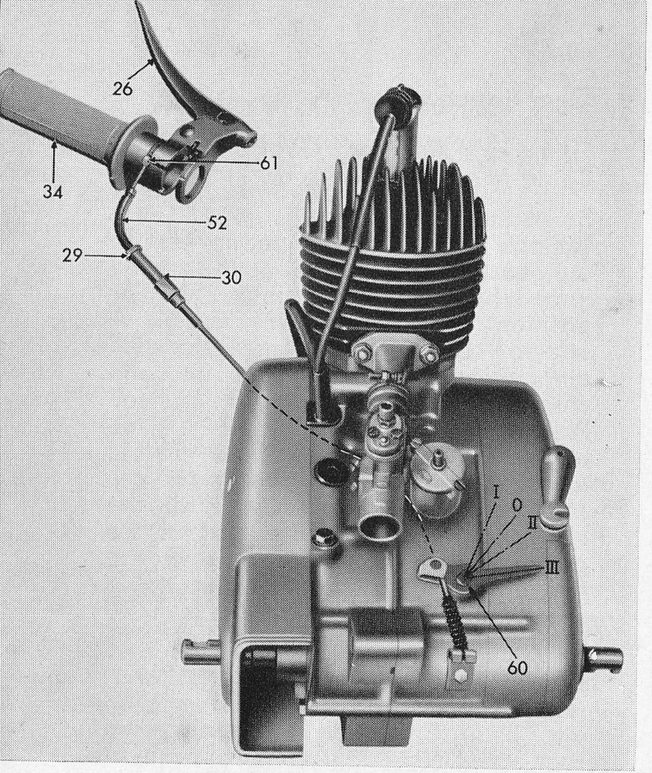


Fig. 7

26 = Clutch lever
29 = Locknut on setting bush
30 = Adjuster on setting bush (gear selection)
34 = Gear change twist grip
52 = Setting bush on gear selector cable
60 = Gear selector lever on engine
61 = Nipple

corresponds to the neutral position of the twist grip 34 by turning adjuster 30 on setting bush 52.

To check the setting:

With the engine running and the twist grip handle 34 in neutral position (red mark) tap gear selector lever 60 on the engine. If the setting is correct, the lever should not move. If it moves, correct by means of adjuster 30 on setting bush 52 until lever 60 will remain motionless. Refit gear selector cable, carry out a repeated check through all

gears, then test neutral gear setting once again. Finally, secure correct setting of adjuster 30 against bush 52 with locknut 29. Correct adjustment of the gear selector should be checked every 300 miles (500 km) or so, and is a job which is best left to the skilled mechanic of your garage.
Incorrect adjustment of the cable shows itself by gears slipping out of engagement.

Setting the Pedal Gear Change Shaft

1. Move pedal gear change shaft to 2nd-gear position
2. Take off intermediate cover on right-hand casing side
3. Take off fixing screws and adjuster bell
4. Shaft should move freely in axial direction
5. Gently push shaft to the left as far as it will go
6. Run down adjuster bell on to shaft until it contacts the housing, **without moving shaft in axial direction**

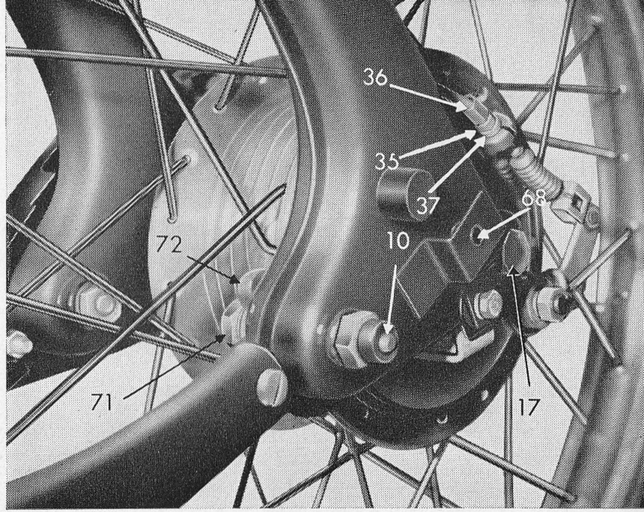


Fig. 8

10 = Lubricating nipple
17 = Knockout spindle
35 = Locknut
36 = Adjuster
37 = Ring
68 = Tapped hole for embellisher cap screw
71 = Support bolt
72 = Brake drum and bracket

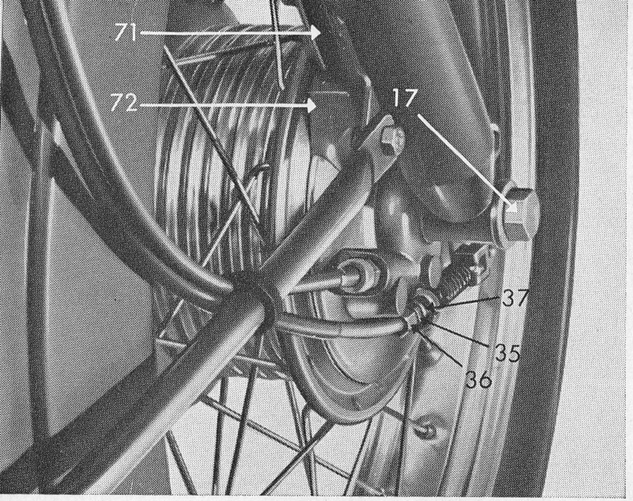


Fig. 9

17 = Knockout spindle
35 = Locknut
36 = Adjuster
37 = Ring
71 = Fixing clip
72 = Brake drum and bracket

7. Take hold of adjuster bell and pull shaft to the right (in direction of travel) as far as it will go
8. Counting the quarter turns, run down adjuster bell on to the housing
9. Slacken off adjuster bell by half the number of quarter turns counted under 8 and secure in this position with the screws provided
10. Make trial run and check gear change
11. Fit intermediate cover.

7. **Taking Off and Fitting Front Wheel Swinging Fork** (fig. 8)

To take off front wheel, proceed as follows:

a) Place machine on stand
b) Uncouple lower cable nipple on front wheel brake
c) Take off fixing screws 68 (fig. 8) on both sides and embellisher caps
d) Unscrew knockout spindle 17 on right-hand side of machine and take off spindle
e) Lift machine by handlebar and ease out front wheel.

When fitting the front wheel, make sure that the support bolt 71 on the right-hand, inside, of the wheel engages in the recess of brake drum 72 (fig. 9).

Telescopic Fork (fig. 9)

1. Place machine on stand
2. Uncouple lower cable nipple on front wheel brake
3. Slacken speedometer spindle
4. Unscrew knockout spindle 17 on right-hand side of machine and take off spindle
5. Lift machine by handlebar and ease out front wheel

When fitting the front wheel, make sure that the fixing clip 71 on the right-hand, inside, of the wheel engages in the recess of brake drum bracket 72 (fig. 9).

8. **Taking Off Rear Wheel** (fig. 10)

Proceed as follows:

a) Rest machine on central stand

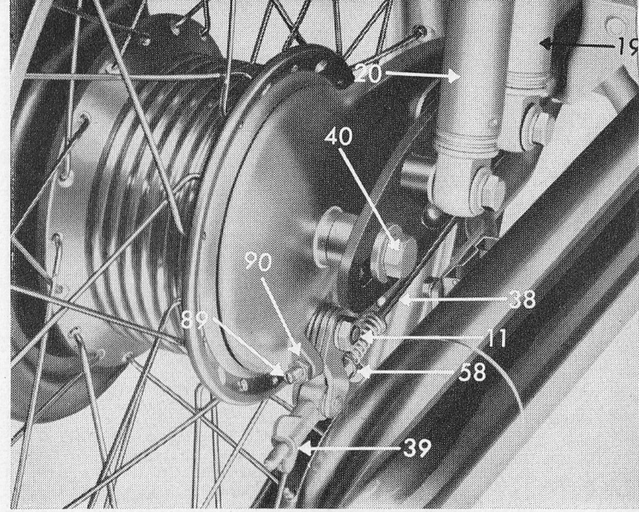


Fig. 10

11 = Locking nut on brake lever
19 = Hydraulic shock absorber
20 = Spring damper unit
38 = Brake linkage
39 = Wingnut
40 = Knockout spindle
58 = Locknut
89 = Rear wheel brake adjuster
90 = Locknut

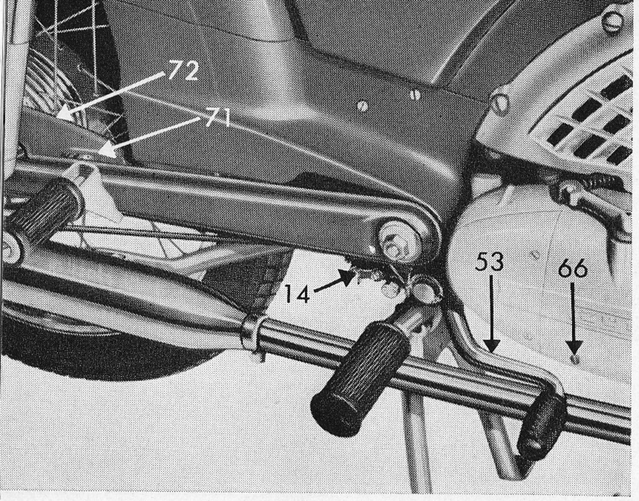


Fig. 11

14 = Brake light switch
53 = Foot brake pedal
66 = Oil level screw
71 = Support bolt
72 = Brake drum and bracket

b) Disconnect brake lever and linkage 38 by unscrewing wing nut 39 (fig. 10) and pulling back connecting clip
c) Release knock-out spindle 40 (fig. 10) on the right-hand side of machine
d) Withdraw knock-out spindle 40 and remove spacer bush
e) Pull rear wheel off chain flange by moving it to the right.

When refitting the rear wheel, make sure that the support bolt 71, mounted on the inside, right hand, of the rear wheel fork engages in the recess on the brake drum bracket 72.
After re-assembly, the knock-out spindle 40 must be tightened securely. Nut 11 (fig. 10), which secures the brake lever, must not be slackened.

9. **Maintenance of Suspension**
(figs. 8 and 10)

Swinging Front Fork Suspension

The swinging front fork suspension is lubricated by grease nipples 10 (fig. 8) on either side. Lubricate with high-pressure grease during the 3 regulation services and thereafter every 650 miles (1000 km).

The Telescopic Front Fork Suspension requires no maintenance (fig. 9).

Swinging Rear Fork

Machines are fitted with two telescopic dampers and two hydraulic shock absorbers. These two separate suspension systems offer the considerable advantage that they automatically adjust themselves to suit the load at any time. The rear suspension requires no maintenance.

10. **Brake Maintenance**
(figs. 3, 8 and 10)

Due to unavoidable wear of brake linings, the brake must be adjusted from time to time.

Front wheel brake adjustment is described above in Section 5 (Bowden cables).

Maintenance of the rear wheel brake includes checking the foot brake lever for easy movement. If the lever does

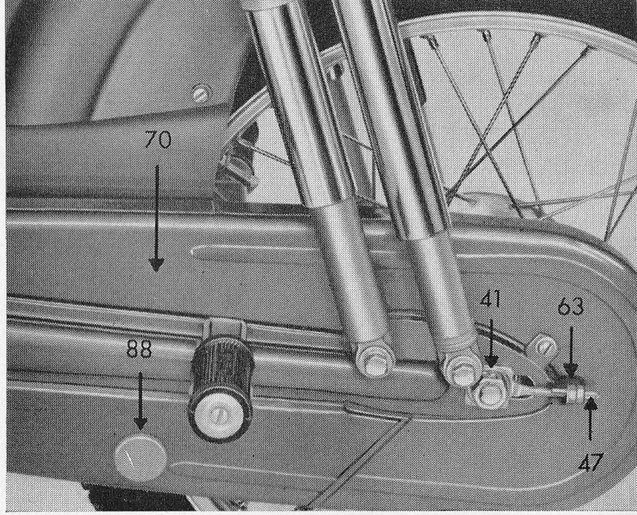


Fig. 12

41 = Chain flange nut
47 = Chain tensioner
63 = Chain tensioning or locknut
70 = Chain case
88 = Rubber plug

not move freely, have it dismantled in the workshop and the bore lubricated with a few drops of oil. When fitting the brake lever, make sure that the rubber seals are seated correctly in the hub and the Seeger circlip in its groove. The profiled end of the lever must correctly engage in the corresponding hole of the follower plate. Open out the ends of the split pin well.

Adjustment of Rear Wheel Brake

(see fig. 10) is by adjuster 89 on the brake lever at the rear wheel brake plate. Slacken locknut 90, then turn adjuster 89 clockwise until the wheel still just turns freely. Then secure locknut 90 again.

The brake lever is adjustable for height by slackening locknut 58 ahead of the compression spring on the brake linkage, and turning wingnut 39.

After adjustment, tighten locknut again securely.

Brake linings must never drag.

In particular, make sure that brake linings are kept free from oil or grease, otherwise the brakes will slip and fail. The brake linkage 38 (fig. 10) must never be bent. When riding downhill, always use both brakes.

11. **Chain Tension** (figs. 10 and 12)

The chain is enclosed in chain case 70 to protect it from dirt. It should be brushed every 600 miles (1000 km) or so in a bath of petrol or paraffin, then lubricated with ZÜNDAPP or other good quality chain grease (this job should be left to the garage).

To tension the chain, slacken knock-out spindle 40 (fig. 10) at the right-hand side of machine and nut 41 (fig. 12) on sprocket flange on left-hand side of machine, as well as chain tensioning nut or locknut 63 on chain tensioner 47 (fig. 12).

Then turn front chain tensioning nut 63 (fig. 12) clockwise until chain tension is correct (about 1/3″ = 1 cm slack). After adjustment, secure nut 63, nut 41 (fig. 12) and spindle 40.

The chain case has an inspection hole, closed by rubber plug 88, to allow checking of chain slack (see fig. 12).

12. **Changing Tyres**

To change tyres without effort or difficulty, proceed as follows:

a) If any air is still in tyre, take off valve cap and

b) unscrew valve, then

c) take off valve retaining nut

d) Press tyre into rim with your foot on one side and lever it away at the other side with the tyre levers.

Never use force or any sharp or pointed tool, otherwise the wire reinforcement or inner tube will be damaged.

Maintenance Schedule (see also Lubrication Plan)

Apart from the jobs listed in the maintenance schedule and lubrication plan, it is good practice to tighten all nuts, bolts, screws and spoke nipples regularly during the first 185 miles (300 km) and later from time to time.
Use only **original ZÜNDAPP spare parts.**

Service period*	Job	Details page
300 miles 500 km	Check Bowden cables, adjust if necessary	32
650 miles 1,000 km	Check brakes, reset if necessary	39
	Check engine idling	30

* Mileage after 3rd service

Service period*	Job	Details page
650 miles 1,000 km	Check chain tension, adjust if necessary; clean and grease chain	40
1,250 miles 2,000 km	Clean carburettor, with particular attention to main jet	32
	Check sparking plug electrode gap	32
	Clean air filter and fuel tap	31
2,000 miles 3,000 km	Check ignition	32
	Clean exhaust system	32

* Mileage after 3rd service

Lubrication Plan

Service period*	Job	Lubr. Points	Lubricant	Details page
650 miles 1,000 km	Throttle, clutch and brake cables	Oiler 46 (fig. 3)	Thin-flowing oil, such as SAE 20	32
	Pivot (front fork)	Grease nipple 10 (fig. 8)	High-pressure grease	38
	Check oil level, if necessary top up	Oil insp. plug 66 (fig. 11) Oil filler plug 67 (fig. 6)	SAE 80	29 29
3,000 miles 5,000 km	Change oil	Oil drain plug (beneath engine) Oil filler plug 67 (fig. 6)	SAE 80 (approx. 350 cc)	29

* Mileage after 3rd service

Cleaning the Machine

Road dust and dirt which your machine picks up have a corrosive effect on all motor vehicle finishes. We recommend frequent washing with plain cold water, which in fact increases the surface hardness of the paintwork. You should, however, avoid strong, hard jets of water when hosing down your machine; also remember to cover dynamo and carburettor with a cloth.

Use of soap, car shampoos or alkaline cleaners can only be recommended if the paintwork is extremely dirty or greasy. When using such preparations, carefully follow the makers' instruction as to mixing, diluting, etc. In practice, a 1–2% solution of household soap in water of no more than 30° C (86° F) has been found highly successful. Also remember to rinse your sponge frequently when using such cleansers, otherwise dust particles will dull the surface finish. After sponging, always rinse with cold water to remove any alkaline deposit. Finally dry the machine with a soft chamois leather. Never wash the machine in the sun, otherwise drops of water will dry and spot the finish.
Cleaning the machine with detergents and other cleansers removes some of the oily substances of the paint finish, and in time the paint will become dry and brittle. It is therefore advisable to polish with wax or oil after washing, using only a polish specially recommended for synthetic enamel.

Machines which are cared for in this way are always easy to clean, because dirt never adheres so stubbornly to the thin wax or oil film as to paintwork affected by alkaline cleaners and the weather.

Chrome is best cleaned with water and then dried with a woollen cloth. If the chrome finish becomes dull in the course of time, use one of the many chrome polishes on the market.

Care of Machines with White Finish

1. For the care of paintwork, use only the special polishes available through the trade, and carefully follow instructions. Never use paint thinners, paraffin, or petroil mixture. The polish can also be used for the chrome parts.
2. Oils or greases are unsuitable for use on paintwork, since they often contain aniline dyes.
3. To remove oil or grease from paintwork, use a soft rag moistened with a little petrol.
4. Any petroil mixture spilled when filling the tank should be carefully wiped off, to avoid any damage of the finish.
5. Carefully follow all the above instructions, otherwise the white finish may yellow as a result of exposure to light and heat.

Protecting Machine and Engine When Laid Up

The following measures will prevent corrosion of engine and frame, and ensure that the machine is ready for the road again immediately when required. For best results, follow the sequence given below:

1. Ride machine for 10–15 km (6–10 miles) to warm up engine.
2. Take off carburettor; then, without switching on ignition, operate kick-starter or step on pedal and pour 50 cc of anti-corrosion oil into air intake.

3. Clean carburettor, air filter and fuel line, then re-assemble.
   The throttle handgrip should remain closed while the machine is laid up.
4. Change oil in gearbox.
5. Take off drive chain. To make re-fitting easier, fix an old piece of chain to the drive sprocket and leave it there. When the time comes to refit the laid-up chain, this can simply be attached to the "leader" chain and pulled into position. To preserve the chain, clean and grease it as described in the operating instructions.
6. Clean all oil from engine and frame parts with brush and kerosene.
7. Wash frame and engine with water and suitable cleanser as sold by the trade. Follow markers' instructions, and do not use a hose for washing. Dry with sponge and chamois leather.
8. Take off dynamo cover and dry cover and dynamo inside and out.
9. Coat all chromed part with acid-free vaseline.
10. Spray the whole machine with a protective oil film (suitable oils obtainable from workshops or dealers).
11. Serve all lubricating points according to lubricating schedule.
12. Lay up machine, raised on stand, in a dry room, garage, etc., chocked up so that tyres are clear of the floor.
13. Reduce tyre pressure to 1 atm (14.5 lb/sq. in.).
14. Cover up the whole machine to protect it against dust.

Engine Troubles and Their Causes

1. **Failure to start**

   Possible Cause:

   Fuel tank empty
   Fuel tap closed
   Fuel tap filter clogged
   Float needle sticking
   Carburettor jet clogged
   Choke lever not operated when starting from cold
   Sparking plug dirty
   Sparking plug gap too large (correct setting: 0.02 in. = 0.5 mm)
   Ignition cable defective
   Short-circuit in switch on headlamp
   Contact breaker contacts oily or burnt

2. **Engine starts up, then cuts out**

   Possible Cause:

   Fuel tap closed
   Sparking plug dirty

3. **Engine starts up, but cuts out when throttle is opened**

   Possible Cause:

   Engine still cold
   (Press choke lever once more)

4. **Engine starts up, but carburettor "spits back" when throttle is opened**

   Possible Cause:

   Engine too cold
   Jet clogged
   Fuel pipe clogged
   Suction line not tight
   Ignition timing over-retarded
   Condenser or ignition coil defective
   Sparking plug dirty

5. **Engine runs erratically**

   Possible Cause:

   Air filter dirty
   Sparking plug dirty
   Ignition system defective
   Ignition cable loose
   Sparking plug loose in socket
   Carburettor clogged

6. **Engine pinks**

   Possible Cause:

   Carbon deposit on piston head
   Low-grade fuel

7. **Engine runs hot**

   Possible Cause:

   Unsuitable oil
   Too little oil in fuel mixture
   Exhaust port, exhaust pipe and silencer clogged and narrowed by carbon deposits
   Cooling fins dirty

8. **Engine alternately races and idles**

   Possible Cause:

   Clutch slips, due to absence of play on clutch lever or due to excessive wear of clutch plates

9. **Engine develops insufficient power**

   Possible Cause:

   Ignition insufficiently advanced
   Air filter dirty
   Exhaust port, exhaust pipe and silencer clogged and narrowed by carbon deposits
   Piston rings sticking
   Cylinder head gasket defective
   Cylinder head, exhaust flange or carburettor flange loose
   Filter chamber connections leak

10. **Engine four-stroking**

    Possible Cause:

    Wrong fuel mixture (too much oil)
    Carburettor jet too large
    Jet needle stuck
    Float or seat of float needle not tight
    Air filter dirty
    Ignition timing wrongly set

11. **Excessive fuel consumption**

    Possible Cause:

    Leak in fuel tank or pipelines
    Carburettor jet too large
    Ignition timing over-retarded
    Exhaust system narrowed by deposits

Technical Specification

Model	Combi-nette	Super-Combinette		Sport-Combinette		KS 50	
Type	428–004	433–007	433–009*	515–017 (T)	515–030* (T)	515–015 (T)	515–033* (T)
Engine	265–003	266–004	266–006	267–011 (T)	267–014 (T)	276–008 (T)	276–005 (T)
Cubic capacity cc	50	50	50	50	50	50	50
Bore / stroke mm	39/41,8	39/41,8	39/41,8	39/41,8	39/41,8	39/41,8	39/41,8
Compression ratio	1 : 8,5	1 : 8,5	1 : 8,5	1 : 8,5	1 : 8,5	1 : 8,5	1 : 8,5
Output h.p.	4,2	4,2	4,2	4,2	4,2	4,2	4,2
Revolutions per min.	6500	6500	7200	6500	7200	6500	7200
Type	2-stroke	2-stroke	2-stroke	2-stroke	2-stroke	2-stroke	2-stroke
Gear oil grade	SAE 80	SAE 80	SAE 80	SAE 80	SAE 80	SAE 80	SAE 80
Quantity of gear oil	ca. 350	ca. 350	ca. 350	ca. 350	ca. 350	ca. 350	ca. 350
Petroil mixture	1 : 25	1 : 25	1 : 25	1 : 25	1 : 25	1 : 25	1 : 25
Type of oil in mixture	2-stroke branded oils or engine oils SAE 40						
Average fuel consumption, ltr./100 km abt.	ca. 1,7	ca. 2,0	ca. 2,0	ca. 2,0	ca. 2,0	ca. 1,8	ca. 1,8
Carburettor Bing	1/17/41	1/17/41	1/17/41	1/17/41	1/17/41	1/17/37	1/17/61
Main jet	78	78	78	78	78	82	82
Needle jet	2,20	2,20	2,20	2,20	2,20	2,22	2,20
Needle setting, notch from top	3	3	3	3	3	3	2
Intake silencer	Air intake through frame by drum filter						

* = **fan-cooled engine**

Technical Specification

Model	Combi-nette	Super-Combinette		Sport-Combinette		KS 50	
Type	428–004	433–007	433–009*	515–017 (T)	515–030* (T)	515–015 (T)	515–033* (T)
Electr. Equipment Bosch	6 V/18 W	6 V/18 W	6 V/18 W	6 V/23 W	6 V/23 W	6 V/23 W	6 V/23 W
Ignition timing before t. d. c.	1,8 mm	1,8 mm	1,8 mm	1,8 mm	1,8 mm	1,1 mm	1,1 mm
Sparking plug	Bosch W 260 T 1			Bosch W 260 T 1		Bosch W 260 T 1	
Electrode gap	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm
Head lamp bulb	15/15 W Bilux			15/15 W Bilux		15/15 W Bilux	
Rear lamp bulb	3 W	3 W	3 W	3 W	3 W	3 W	3 W
Stop-light	—	—	—	5 W (T)	5 W (T)	5 W (T)	5 W (T)
Signal	horn	horn	horn	horn	horn	horn	horn
Gear ratios							
1st gear	27,7	29,2	29,2	34,6	34,6	35,4	35,4
2nd gear	13,7	17,5	17,5	18,9	18,9	20,1	20,1
3rd gear	—	11,4	11,4	11,4	11,4	13,2	13,2
4th gear	—	—	—	—	—	10,5	10,5
Primary reduction ratio							
(crankshaft: gearing)	1 : 4,33	1 : 4,33	1 : 4,33	1 : 4,33		1 : 4,33	
1st gear	1 : 2,19	1 : 2,470	1 : 2,470	1 : 2,470		1 : 3,636	
2nd gear	1 : 1,08	1 : 1,476	1 : 1,476	1 : 1,476		1 : 2,058	
3rd gear	—	1 : 0,962	1 : 0,962	1 : 0,962		1 : 1,363	
4th gear	—	—	—	—		1 : 1,080	

* = **fan-cooled engine**

Technical Specification

Model	Combinette	Super-Combinette		Sport-Combinette		KS 50	
Type	428-004	433-007	433-009*	515–017 (T)	515–030* (T)	515–015 (T)	515–033* (T)
Clutch	Multiplate oil bath clutch					Multiplate oil bath clutch	
Drive chain links ½ x 3/16″	114	116	116	116	116	114	114
Chassis							
Suspension: front	Swinging-fork			Telescopic front fork			
rear	1 unit of spring-damper	2 springdampers		2 hydr. dampers			
Brakes	90 mm ⌀	Internal expanding drum brakes 120 mm ⌀					
Wheels	23 x 2¼″	21″ drop base rim suitable for steel cord					
Tyres: front and rear	23 x 2¼″	21″ x 2,75″ special motor cycle pattern with Schrader valve					
Tyres: pressure front							
Solo	1,2 atü	1,6 atü	1,6 atü	1,6 atü	1,6 atü	1,6 atü	1,6 atü
Pillion rider	—	1,8 atü	1,8 atü	1,8 atü	1,8 atü	1,8 atü	1,8 atü
rear							
Solo	1,8 atü	1,8 atü	1,8 atü	1,8 atü	1,8 atü	1,8 atü	1,8 atü
Pillion rider	—	2,5 atü	2,5 atü	2,5 atü	2,5 atü	2,5 atü	2,5 atü
Tank capacity Ltr.	7,7	7,7	7,7	11,5	11,5	11,5	11,5
Reserve Ltr.	0,5	0,5	0,5	1,5	1,5	1,5	1,5
Colour	metallic-blue			granite-grey and carrera-white			

*** = fan-cooled engine**

Technical Specification

Model	Combinette	Super-Combinette		Sport-Combinette		KS 50	
Type	428-004	433-007	433-009*	515–017 (T)	515–030* (T)	515–015 (T)	515–033* (T)
Technical Data							
Net weight kg abt.	65	71	71	76	76	77 (T)	77 (T)
Permissible all-up weight kg	145	230	230	235	235	235	235
Wheelbase cm	121,5	121,5	121,5	123	123	123	123
Length cm	191	186,5	186,5	188	188	188	188
Width cm	57	57	57	57	57	57	57
Height cm	97,5	95,5	95,5	95,5	95,5	95,5	95,5
Seat height cm	82	80	80	80	80	80	80

*** = fan-cooled engine**

Note:
The Combinette and Super-Combinettes of the type ranges 428 and 433 are equipped with treadle crank, all other types with kickstarter.

We reserve the right to make alterations as to text and illustration.

ZÜNDAPP

The hall mark of all ZÜNDAPP products is up-to-date, efficient design, attractive styling, unexcelled quality and first-class finish. You can recognise a ZÜNDAPP product at a glance. They have reached their present high level of development not by hit-and-miss methods, but by an intergrated manufacturing process, comprising an intricate network of special production plant, inspection and quality controls. We at ZÜNDAPP know that we have to live up to our good name, a name which is your guarantee of a quality product. When you buy a ZÜNDAPP product you know you have had your money's worth and that it will give satisfactory service for many years. At ZÜNDAPP, we do not hold with the ordinary standards of mass production. If we have to choose between mass output and quality, we plump for quality every time. The ZÜNDAPP production programme can be summed up in one maxim, unexcelled quality.

Important:

Only ZÜNDAPP original spare parts ensure reliability, protect against damage and keep up your guarantee. Therefore always instruct your ZÜNDAPP dealer to fit only ZÜNDAPP original spare parts, if you want to make sure that your machine will run without trouble and have a long life. And remember: if other than ZÜNDAPP original spare parts are fitted, your guarantee becomes invalid.

W 2712 III* engl.

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