# Brush cutters, Trimmers, Pruners, Hedge trimmers

## Workshop Manual

**101 90 19-26**

# Workshop Manual
# Brush cutters, Trimmers, Pruners, Hedge trimmers

## Supplement for models 322, 325

## List of Contents



**This supplement only takes up elements specific to the above mentioned models.**

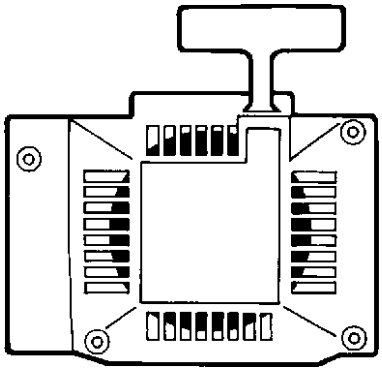
**For complete information when servicing we recommend that the supplement is studied together with the Workshop Manual.**

**(Order. No. 101 89 22-01)**

Husqvarna

# Starter

# 1.

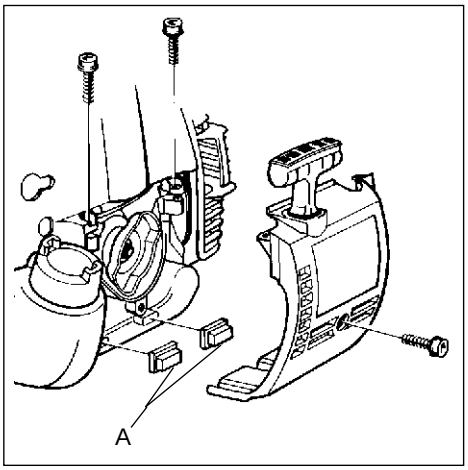


## Contents

# Starter

**WARNING!**

***Protective glasses should be worn when working on the starter to avoid injury to the eyes if, for some reason, the return spring should fly out.***

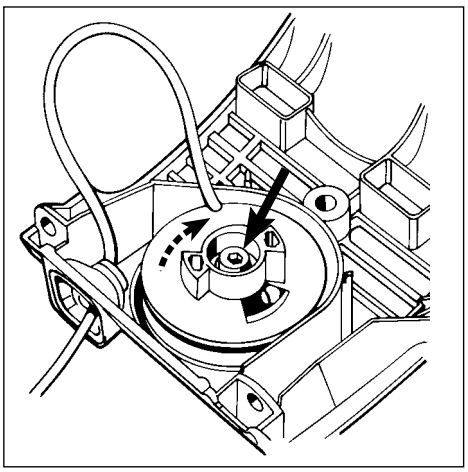



## Dismantling

Remove the 3 bolts and lift out the starter.

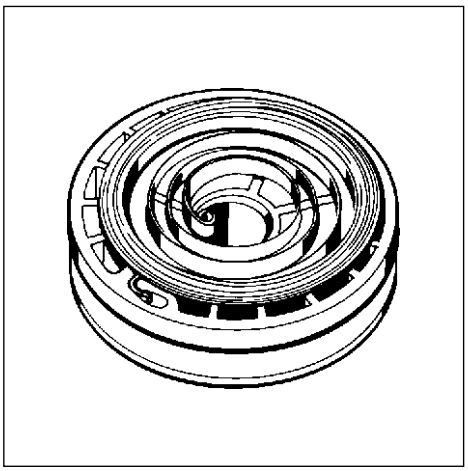
**NOTE!**

Ensure the bushes (A) that guide the starter against the fuel tank are not lost.



Off-load the spring pressure.

Remove the bolt from the centre of the starter pulley and lift off the starter pulley.



## Assembly

Clean all component parts and assemble in the reverse order as stated for dismantling.

Off-load the spring pressure as described in the Workshop Manual.

Remove the bolt from the centre of the starter pulley. Carefully lift the starter pulley out of the starter housing.

**WARNING!**

Use protective glasses. The return spring is tensioned in the starter pulley and can fly out and cause personal injury with negligent handling.

## Assembly

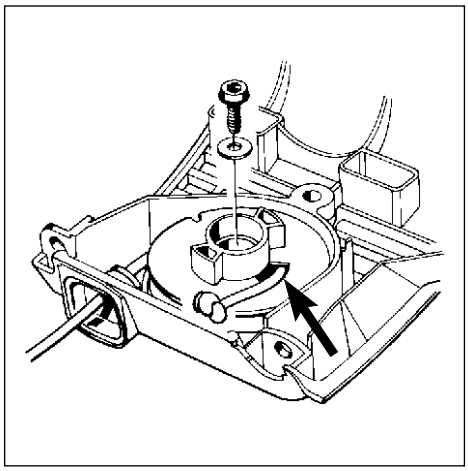
Clean all component parts before assembling.

Replace the return spring/starter pulley and starter cord if necessary.

**NOTE!**

The return spring and the starter pulley are supplied assembled and are fitted in the starter housing as a single unit.

Exercise care when opening the packaging so that the spring does not fly out.



Fit the starter pulley.

Fit a new starter cord.

**NOTE!**

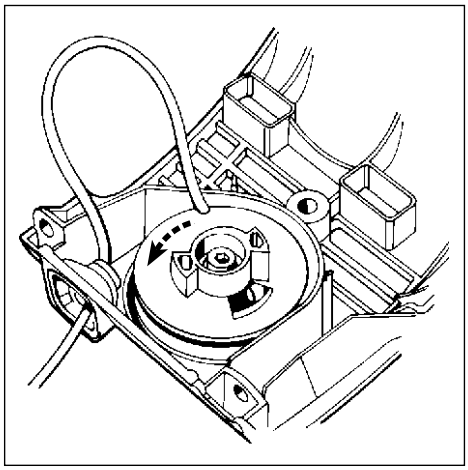
A new starter cord can be fitted without the need of dismantling the starter!

Lubricate the axle spindle with a little grease and fit the starter pulley.

Position the washer and tighten the bolt.

Fit a new starter cord. Slide it into the groove on the starter pulley as shown in the diagram and out through the cord guide in the starter housing.

Make sure the knot on the end of the cord is as small as possible!



Fit the starter handle.

Tension the return spring.

Check the spring tension.

Fit the starter on the engine body.

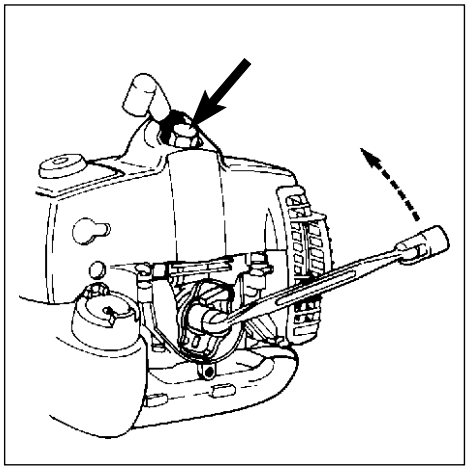
Do not forget the guide bushes for the fuel tank.

Fit the starter handle as described in the Workshop Manual.

Tension the return spring. Pull out the starter cord completely and lift it up through the cut-out in the starter pulley.

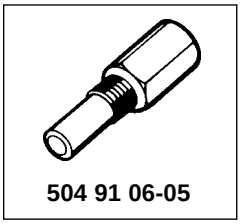
Now turn the starter pulley 6 turns *anticlockwise*.

Check the spring tension. With the cord fully extended it should be possible to turn the starter pulley *at least a further half turn.*



## Replacing the drive pawls

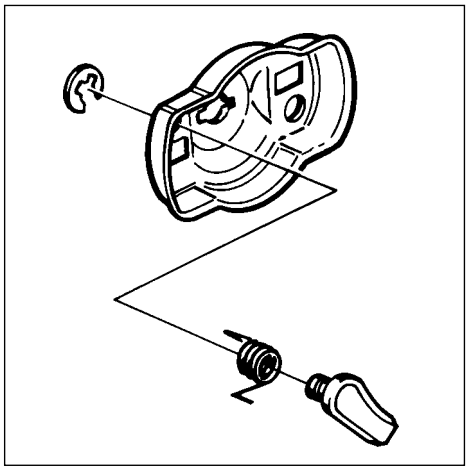
Dismantle the drive cup.



**504 91 06-05**

## Replacing the drive pawls

Fit the piston stop, No. 504 91 06-05 in the spark plug hole and loosen the nut holding the drive cup.



Remove the circlip and replace the drive pawl or spring if damaged.

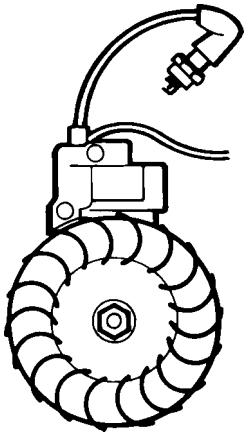
Remove the circlip holding the drive pawl.

Lift off the drive pawl and spring for replacement.

Assemble in the reverse order as stated for dismantling.

# Ignition system

# 2.

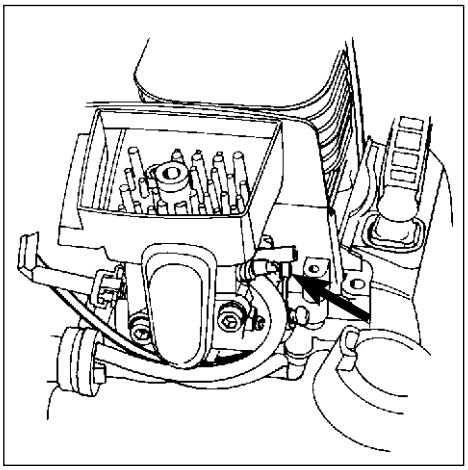


**Contents**

# Ignition system

***The engine is equipped with an electronic ignition system with no moving parts. Consequently, a faulty component cannot be repaired, but must be replaced with a new component.***

***The ignition spark in an electronic ignition system has a very short burn time and can be judged to be weak and is at times difficult to see when troubleshooting.***



## Dismantling

Dismantle the cylinder cover, the guard over the muffler and the spark plug.

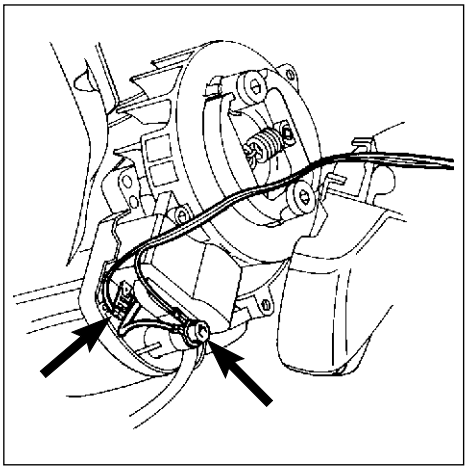
Unhook the throttle cable and remove the bolts holding the clutch cover.

## Dismantling

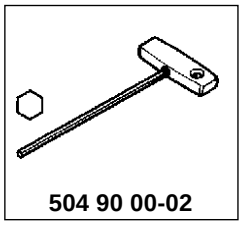
To gain access to the ignition system the following components must be dismantled:

Cylinder cover, guard over the muffler, and the spark plug.

Unhook the throttle cable from the carburettor.



Remove the clutch cover and loosen the short-circuiting cable from the ignition module.

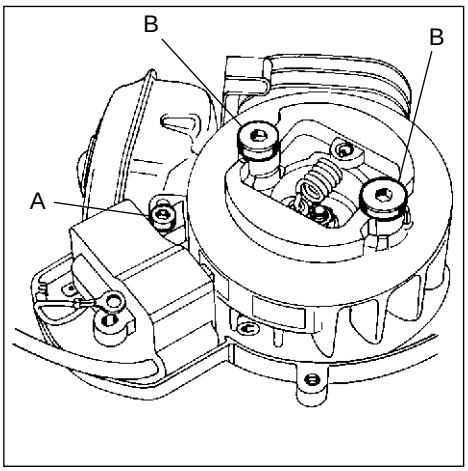


**504 90 00-02**

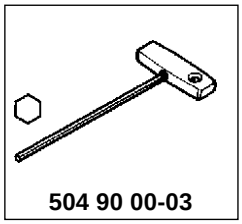
Remove the three bolts holding the clutch cover.

Remove the complete clutch cover with the shaft from the engine.

Loosen both the short-circuiting cable lugs from the ignition module.



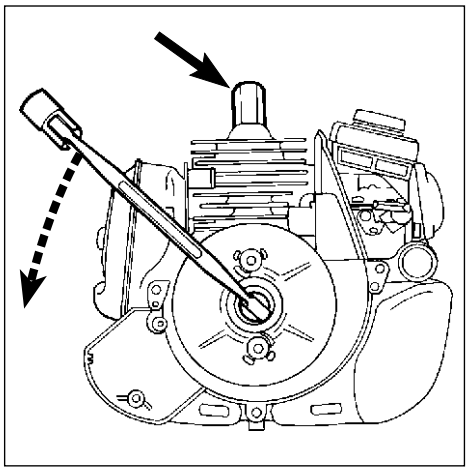

Dismantle the ignition module and the centrifugal clutch.



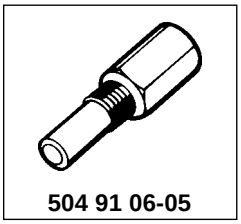
**504 90 00-03**

Remove the remaining bolts (A) securing the ignition module as well as the bolts (B) holding the centrifugal clutch.

Lift off the clutch and ignition module.



Fit the piston stop No. 504 91 06-05 and remove the nut holding the flywheel.

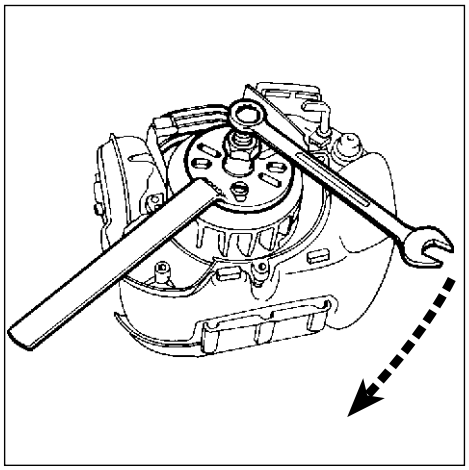


504 91 06-05

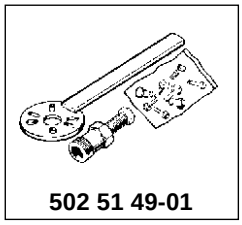
Fit the piston stop No. 504 91 06-05 in the spark plug hole.

Make sure the piston stop is screwed down to the bottom.

Remove the nut holding the flywheel.



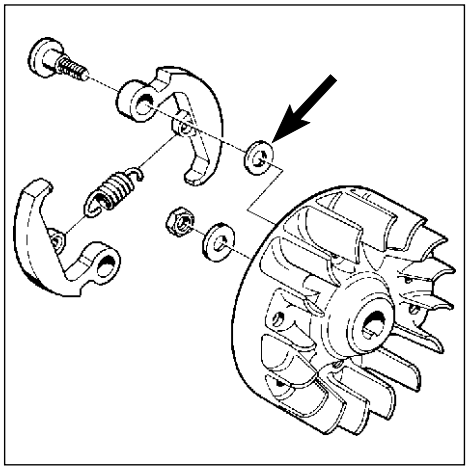
Dismantle the flywheel.



502 51 49-01

Dismantle the flywheel from the crankshaft using puller No. 502 51 49-01.

Gently hit the puller screw with a hammer if the flywheel sits hard on the crankshaft.



## Assembly

Check that the key and keyway show no signs of damaged.
Fit the centrifugal clutch.

**NOTE!**

Do not forget the washers between the flywheel and the centrifugal clutch.

## Assembly

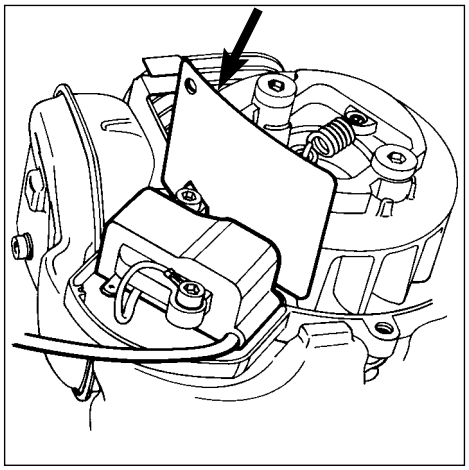
Check that the cast key in the flywheel and the keyway in the crankshaft are not damaged.

If the crankshaft has two keyways, the flywheel should be fitted to the right-hand keyway seen from the end of the shaft.

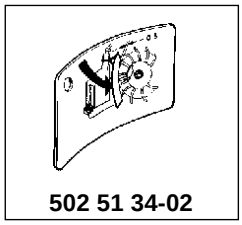
Fit the centrifugal clutch.

**NOTE!**

Do not forget the washers between the flywheel and the centrifugal clutch.



Fit the ignition module and adjust the spark gap to 0.3 mm.



502 51 34-02

Fit the ignition module.

To simplify the adjustment of the spark gap, do not fit the short-circuiting cables yet. This should be set to 0.3 mm between the permanent magnets in the flywheel and the ignition module.

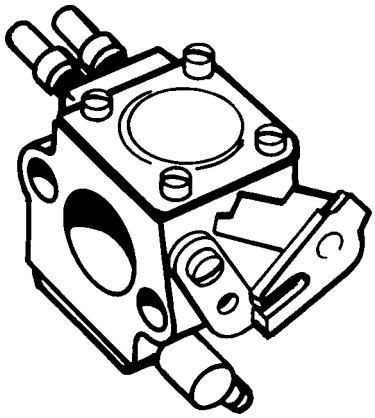
Now fit the short-circuiting cables and other components in the reverse order as stated for dismantling.

**NOTE!**

Do not forget the rubber bushes between the clutch cover and fuel tank.

# Fuel system

# 3.



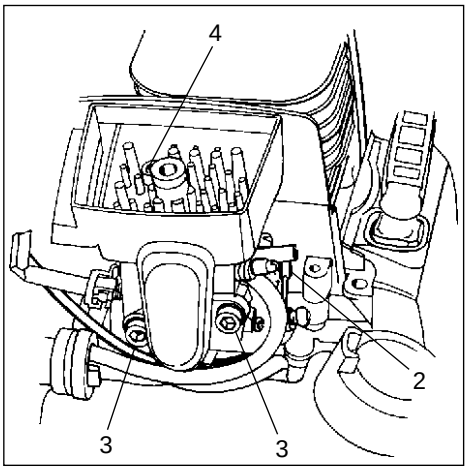
## Contents

# Fuel system

***The fuel system comprises, in addition to the fuel tank and the carburettor, also the air filter, fuel filter and tank venting.***

***All these components interact so that the engine receives the optimum mixture of fuel and to make it as efficient as possible. Extremely small adjustments to the carburettor setting or air filter blockage have a great effect on how the engine runs and its efficiency.***

***The carburettor on our models can come from several manufacturers, but the operation and repair techniques are essentially the same.***




## Carburettor

### Dismantling

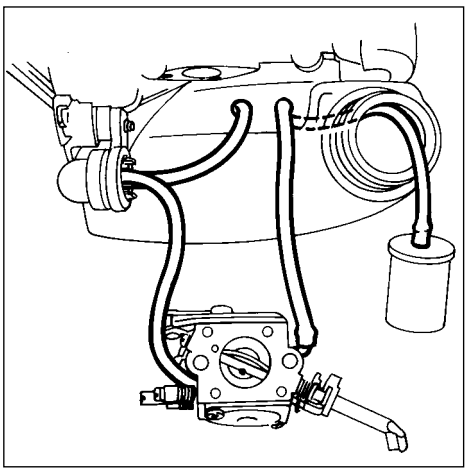
Dismantle the cylinder cover and blow out the carburettor compartment with compressed air.

Dismantle the carburettor.

## Carburettor

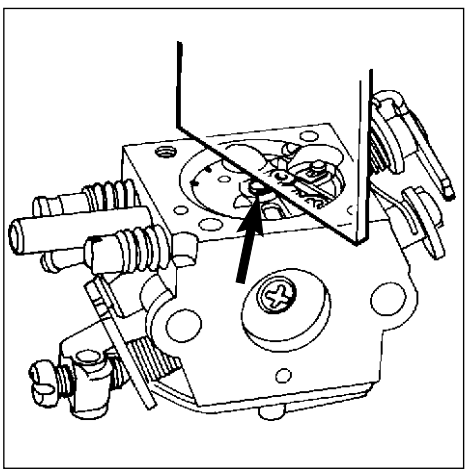
### Dismantling

1. Remove the cylinder cover and blow out the carburettor compartment with compressed air.
2. Disconnect the throttle cable from the lever arm on the carburettor.
3. Loosen the carburettor bolts.
4. Remove the bolt holding the air filter holder.



Lift off the carburettor and note how the fuel hoses are fitted.

Lift off the carburettor and note how the fuel hoses are fitted.



The carburettor is made by Zama.

The design, operation and servicing are the same as for the Walbro carburettor.

Basic setting of the carburettor:

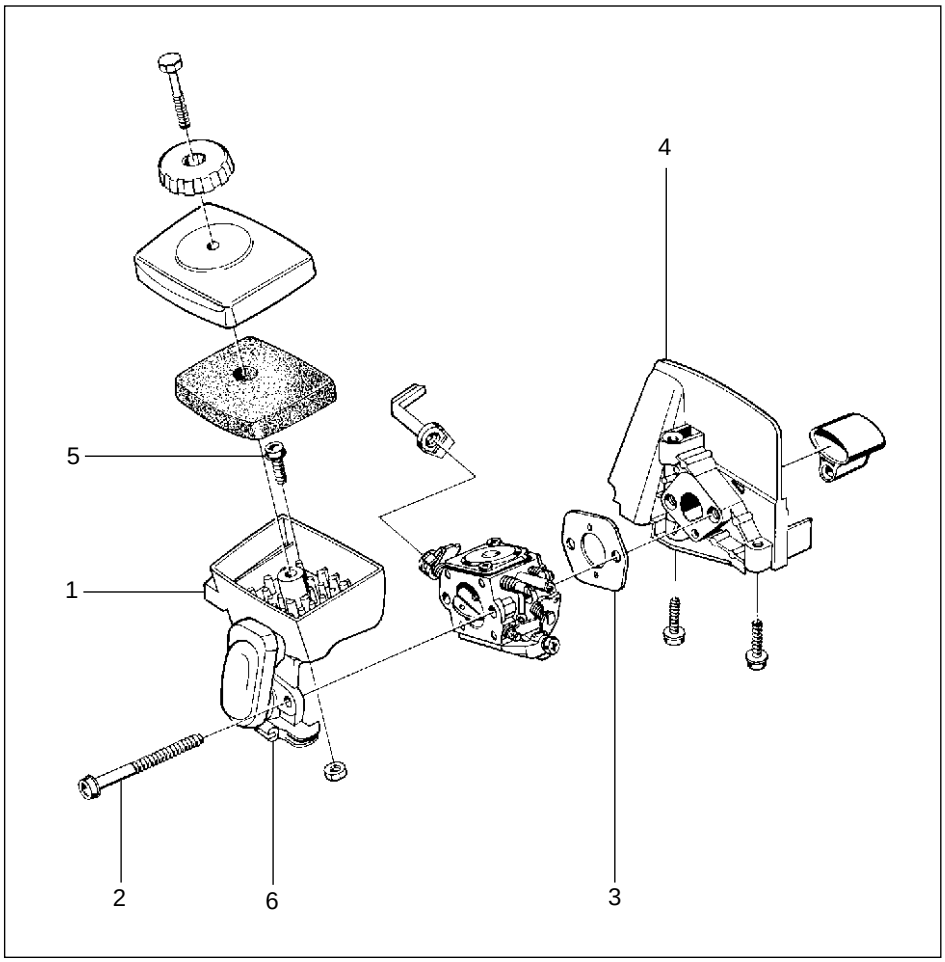
H = 2

L = 1

The carburettor is made by Zama.

It has the same design and operation as Walbro, which means even the servicing is carried out in the same way.

The lever arm should lie level with the carburettor housing's gasket surface.




### Assembly

1. First fit the fuel hoses on the carburettor.

**NOTE!**

The hose, with the fuel filter in the tank, should be fitted on the carburettor's inlet side (pump chamber).

2. Hold the air filter holder (1) in position on the carburettor.
3. Slide in the carburettor bolts (2).
4. Place the gasket (3) in position and secure the entire carburettor package against the distance piece (4). Tighten the carburettor bolts crosswise.

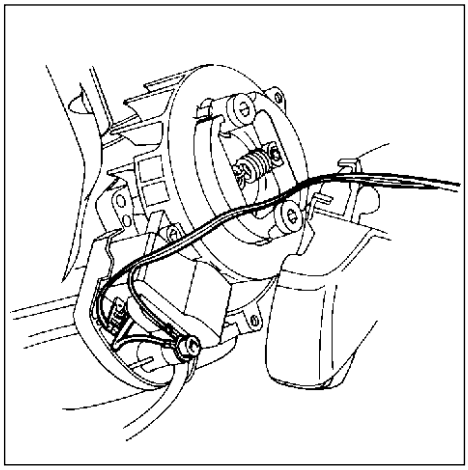
**NOTE!**

Do not forget the bolt (5) that holds the air filter holder against the distance piece.

5. Connect the throttle cable to the lever arm on the carburettor.

   Ensure the wire locates correctly in the groove in the clutch cover and in the guide on the air filter holder (6).

Assemble the other components in the reverse order as stated for dismantling.



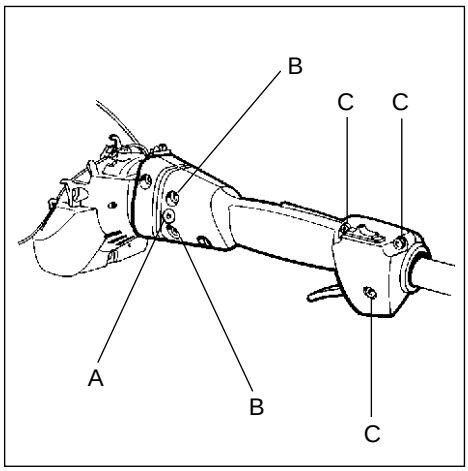
## Throttle

Separate the engine body and clutch cover.

## Throttle

In order to carry out the service and repair work to the throttle efficiently it is recommended that it is dismantled from the engine and shaft.

Separate the engine body and the clutch cover (see chapter “Ignition system”).



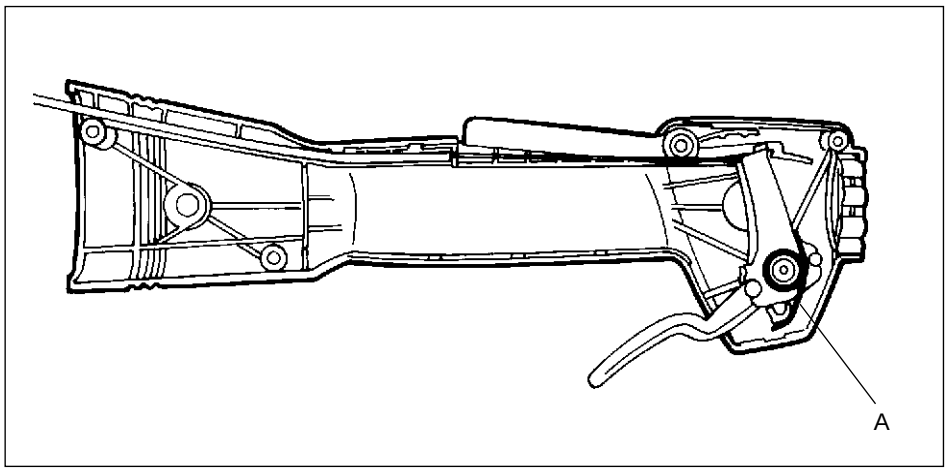

Pull off the shaft with the throttle from the clutch cover.

Remove the throttle from the shaft.

Remove both bolts (A) (one on each side).

Loosen the bolts (B) and pull off the shaft with throttle from the clutch cover.

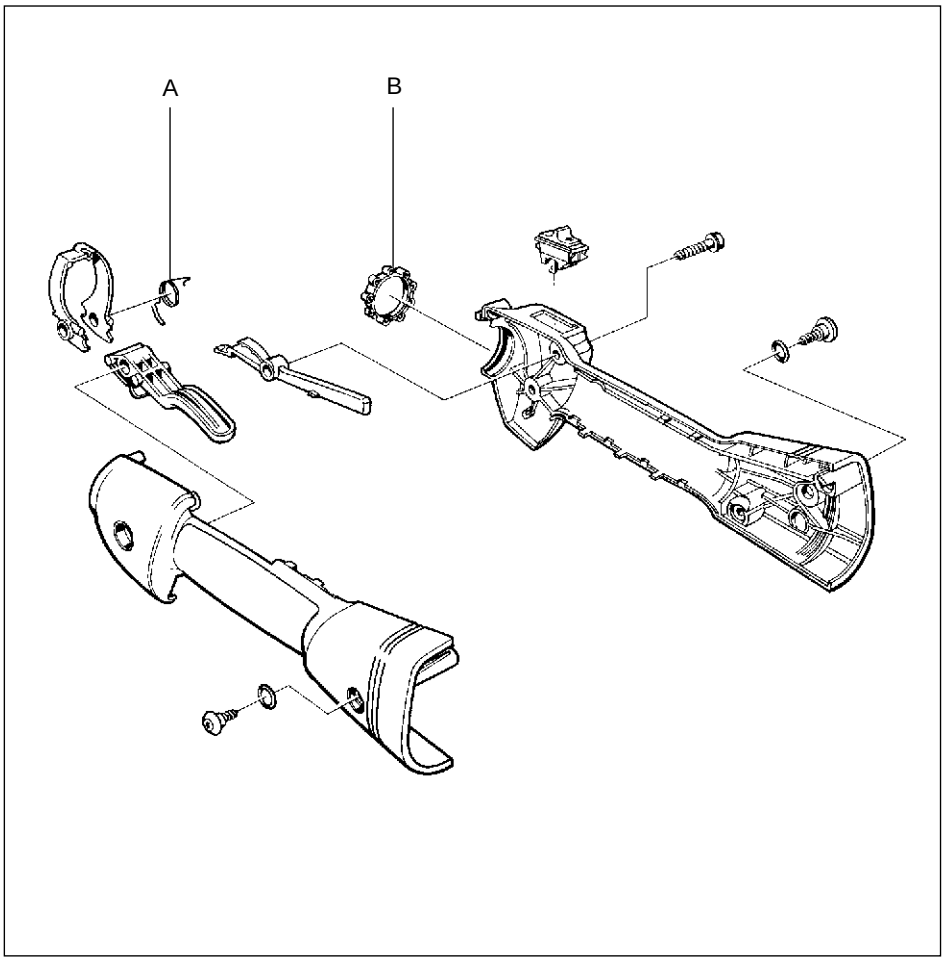
Loosen the 3 front bolts (C) (approx. 2 turns) that keep the throttle halves together and pull the throttle off of the shaft.




Remove the bolts that hold together the throttle and carefully separate the two halves.

Note how the different components are fitted. Pay special attention to which way the return spring (A) is turned.

The stop contact can be pried off using a small screwdriver if it needs to be replaced.




Assembly of the throttle is carried out in the reverse order as stated for dismantling.

Position the components in the left-hand throttle half.

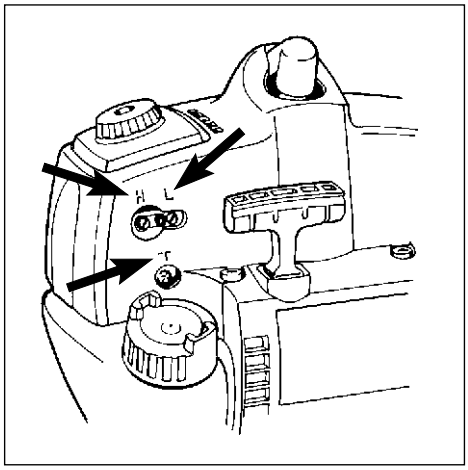
Make sure the return spring (A) is turned the right way.

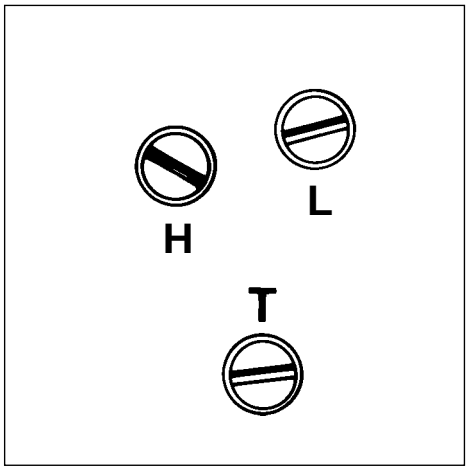
Check that the throttle cable and short-circuiting cable are pressed down correctly in respective channels so that they are not crushed when the two throttle halves are bolted together.

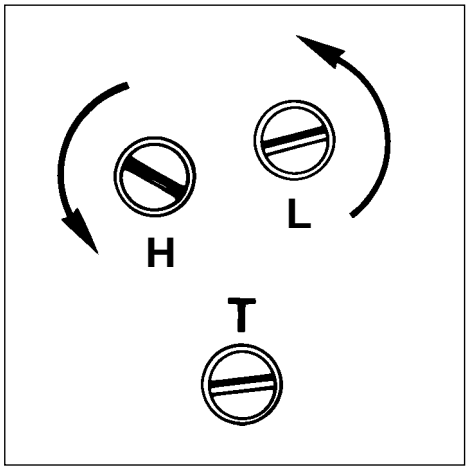
Do not forget to place the vibration element (B) in position before the throttle halves are put together. Lubricate the vibration element using soapy water. This facilitates fitting the throttle onto the shaft.

Fit together the throttle halves using the 5 bolts, but do not tighten them fully until the throttle has been slid into position on the shaft.

Assemble other components in the reverse order as stated for dismantling.




## Carburettor setting

**WARNING!**

The clutch and clutch cover must, under all circumstances, be fitted when testing running the engine after adjusting the carburettor.

Otherwise there is a risk that the clutch can become loose and cause serious personal injury.

### Function

The carburettor has the task of delivering a combustible air/fuel mixture to the cylinder.

*The amount* of mixture is controlled by the throttle.

*The mixture's composition* of petrol and air is controlled by using the adjustable needles “H” and “L”.

The needles must be correctly adjusted so that the engine can give maximum power at different speeds, run smoothly when idling and react quickly when accelerating.

The carburettor setting can vary a little depending on the humidity, temperature and air pressure.

L = Low speed needle

H = High speed needle

T = Idle speed adjuster screw

- The fuel quantity in relation to the air flow permitted by the throttle opening is adjusted by the L and H needles. Turning the needles clockwise gives a leaner fuel mixture (less fuel) and turning them anticlockwise gives a richer fuel mixture (more fuel). A *leaner* mixture gives *higher* revs while a *richer* mixture gives *less* revs.
- The T-screw regulates the position of the throttle while the engine is idling. Turning the screw clockwise gives a higher idling speed while turning it anticlockwise gives a lower idling speed.

### Basic setting

The carburettor is set to its basic setting when test run at the factory. The basic setting is “richer” than the optimal setting (the max speed is 600–800 r/min under the recommended max. speed) and should be kept during the engine's first working hours. Thereafter the carburettor should be finely adjusted.

Some carburettors are fitted with plastic sleeves with a limiter, so-called CARB- and EPA-versions for USA. This type of carburettor can also be found on other markets for certain models. When making carburettor adjustments as set out below the adjustment range for the H and L needles can be too small. In such cases the plastic sleeves must be removed (using pliers) in order for satisfactory adjustment to be made.

### Fine adjustment

Fine adjustment of the carburettor should be carried out after the engine has been “run-in”.

- The air filter should be clean and the cylinder cover fitted when adjustments are made.

  First adjust the L needle, then the H needle and finally the idling speed's T-screw.

  The following speed recommendations apply:

  Idling speed = 2 500 r/min.

### Max speed

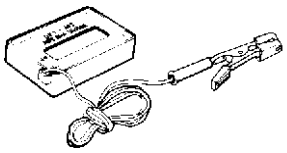
Models 322 and 325 are equipped with an ignition system with speed control 12 500 r/min.

When checking the speed on a trimmer no part of the cord should be extended.

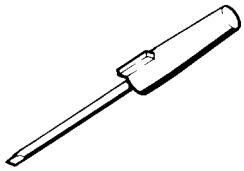
Check the speed using the tachometer 502 71 14-01.

- Carefully screw in (clockwise) the L and H needles until they bottom. Then screw out the H needle 2 1/2 turns and the L needle 1 turn.

  Use the special screwdriver 501 60 02-02.
- Start the engine and run warm for 10 minutes.



**502 71 14-01**



**501 60 02-02**

**NOTE!**

If the cutting equipment rotates while idling the T-screw should be turned anticlockwise until it stops.

#### Low speed needle L

Find the highest idling speed by slowly turning the low speed needle clockwise and anticlockwise. When the highest speed has been found, turn the L needle 1/4 turn anticlockwise.

#### High speed needle H (does not apply to engines with a speed limiter)

**NOTE!**

If machines are equipped with a speed-controlled ignition system the engine cannot be adjusted to max. speed, but must be set according to the instructions for CARB/EPA (see page 17).

The high speed needle H affects the engine's power and speed. A too lean H needle setting (H needle screwed in too far) gives too little fuel to the engine resulting in damage to the engine.

Run the engine at full throttle for about 10 seconds. The H needle is set correctly when the engine “splatters” a little.

If the muffler smokes heavily, at the same time as the engine “splatters” a great deal, the setting is too “rich”. Turn the H needle clockwise until you find the setting that sounds right.

**NOTE!**

A tachometer should always be used to find the optimal setting.

The recommended max. speed must not be exceeded.

#### Idling speed T-screw

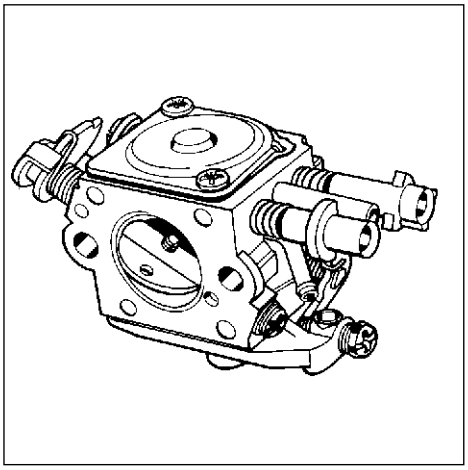
Let the engine idle for about 30 seconds or until the speed has stabilised. Adjust the idling speed T-screw until the engine idles without stopping.

- Turn the screw clockwise if the engine stops.
- Turn the speed anticlockwise to lower the speed.

#### Correctly adjusted carburettor

A correctly adjusted carburettor means that the engine accelerates without hesitation and it splatters a little at full throttle.

- A too lean adjusted L needle can cause starting difficulties and bad acceleration.
- A too lean adjusted H needle results in lower power, bad acceleration and/or damage to the engine.
- A too rich setting of the “L” and “H” needles give acceleration problems or a too low working speed.



## Carburettor in E-TECH and CARB-EPA designs (CARB-EPA only applies in the USA)

On this type of carburettor the H and L needles can be adjusted within extremely tight limits to, amongst others, comply with stringent demands with regard to the hydrocarbon and nitrogen oxide content in the exhaust fumes.

The needles on these carburettors are fitted with plastic sleeves with limiters.

The engine must be loaded when making adjustments after replacing the needles or the entire carburettor. This is achieved by fitting a Trimmy Fix with a trimming cord of a specific length and diameter. The stated speed is then a great deal lower than with “normal” carburettor adjustment when the engine runs unloaded at max speed.

Adjustment must be carried out according to the instructions below after replacing the needles or the entire carburettor on a CARB-EPA approved engine.

The Combi-guard or the spray guard must be fitted when adjusting the H needle.

## After replacing the complete carburettor

1. Check that the plastic sleeve on the H needle is turned as far as possible anticlockwise (richest fuel mixture). The sleeve sits freely on the needle and can be turned without affecting the needle's setting.

   Do not change the L needle setting. This is adjusted at the factory and the plastic sleeve is already fixed on the needle.
2. Fit four trimmer cords Ø 3.3 mm on a Trimmy Fix M10, 531 00 38-69 for models 322L, 322R, 325L, 325L-X, 325R-X.

   Maybe the hole needs to be enlarged a little to make fitting the trimmer cords easier.
3. Cut the trimmer cord to the right length (measure the length to the edge of the Trimmy Fix).

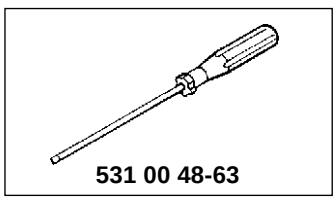
   Model 322L/R, 325L/L-X/R-X: 142 mm

   Fit the Trimmy Fix on the machine.

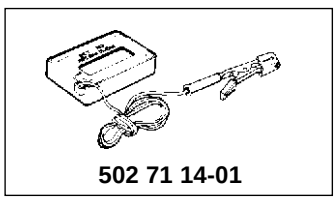
   Model 322C should be used with Trimmy Hit VI and its standard cord (Ø 2.0 mm). Cut the cord ends so that they are 146 mm long.
4. Start the engine. Adjust the idling speed T screw if necessary.
5. Use screwdriver 531 00 48-63 to adjust the H needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

   Adjust the H needle so that the max. speed 8400 ± 200 r/min is set.

   Use the tachometer 502 71 14-01 to check the speed.



**531 00 48-63**



**502 71 14-01**

6. Run the engine warm for 2–3 minutes.
7. Check that the max speed is still 8400 ± 200 r/min. Adjust the H needle if necessary.
8. Check that the plastic sleeve on the H needle is still turned as far as possible anticlockwise (richest fuel mixture).
9. Press in the plastic sleeve using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

## After replacing only the H needle

1. Turn the L needle as far as possible anticlockwise (richest fuel mixture).
2. Remove the plastic sleeve on the H needle and unscrew the needle.
3. Carefully screw in the new H needle to the bottom and then loosen it 2 1/2 turns.
4. Press a new plastic sleeve on the H needle down to the first stop. The sleeve can now be turned without turning the needle.
5. Turn the plastic sleeve as far as possible anticlockwise (richest fuel mixture) without turning the needle.
6. Fit four trimmer cords Ø 3.3 mm on a Trimmy Fix M10, 531 00 38-69 for models 322L, 322R, 325L, 325L-X, 325R-X.

   Maybe the hole needs to be enlarged a little to make fitting the trimmer cords easier.
7. Cut the trimmer cord to the right length (measure the length to the edge of the Trimmy Fix).

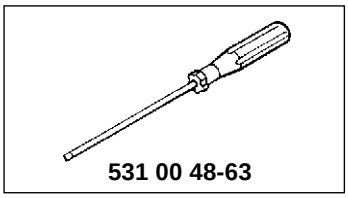
   Model 322L/R, 325L/L-X/R-X: 142 mm

   Fit Trimmy Fix on the machine.

   Model 322C should be used with Trimmy Hit VI and its standard cord (Ø 2.0 mm). Cut the cord ends so that they are 146 mm long.
8. Start the engine. Adjust the idling speed T screw if necessary.
9. Use screwdriver 531 00 48-63 to adjust the H needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

   Adjust the H needle so that the max. speed 8400 ± 200 r/min is set.

   Use the tachometer 502 71 14-01 to check the speed.



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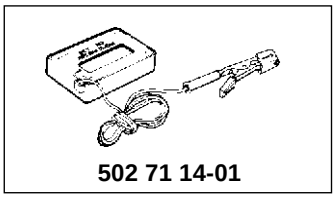


**502 71 14-01**

10. Run the engine warm for 2–3 minutes.
11. Check that the max speed is still 8400 ± 200 r/min. Adjust the H needle if necessary.
12. Check that the plastic sleeve on the H needle is still turned as far as possible anticlockwise (richest fuel mixture).
13. Press in the plastic sleeve using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

## After replacing the H and L needles

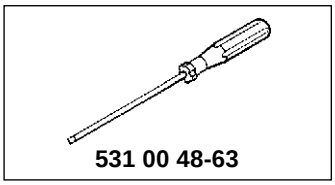
1. Remove the plastic sleeves from both needles and screw out the needles.
2. Carefully screw the new needles in until they bottom.

   Screw out the L needle 1 turn.

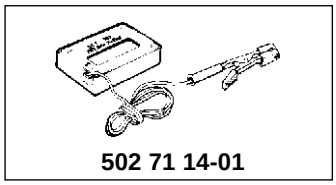
   Screw out the H needle 2 1/2 turns.
3. Press the new plastic sleeves on the needles until the first stop. The sleeves can still be turned without the needles turning.
4. Turn the plastic sleeve on the L needle as far as possible clockwise (leanest fuel mixture).
5. Start the engine and let it idle.
6. Use the screwdriver 531 00 48-63 to adjust the L needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

   Adjust the L needle so that the highest idling speed is obtained.

   Use the tachometer 502 71 14-01 to check the speed.
7. Check that the plastic sleeve on the L needle is still turned as far as possible clockwise (leanest fuel mixture).



**531 00 48-63**



**502 71 14-01**

8. Press the plastic sleeve on the L needle using a punch (Ø 5 mm).

   Now turn the L needle as far as possible anticlockwise (richest fuel mixture).
9. Turn the plastic sleeve on the H needle as far as possible anticlockwise (richest fuel mixture).
10. Fit four trimmer cords Ø 3.3 mm on a Trimmy Fix M10, 531 00 38-69 for models 322L, 322R, 325L, 325L-X, 325R-X.

    Maybe the hole needs to be enlarged a little to make fitting the trimmer cords easier.
11. Cut the trimmer cord to the right length (measure the length to the edge of the Trimmy Fix).

    Model 322L/R, 325L/L-X/R-X: 142 mm

    Fit the Trimmy Fix on the machine.

    Model 322C should be used with Trimmy Hit VI and its standard cord (Ø 2.0 mm). Cut the cord ends so that they are 146 mm long.
12. Start the engine. Adjust the idling speed T screw if necessary.
13. Use screwdriver 531 00 48-63 to adjust the H needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

    Adjust the H needle so that the max. speed 8400 ± 200 r/min is set.

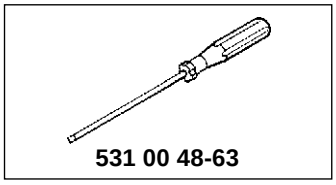
    Use the tachometer 502 71 14-01 to check the speed.

    (Does not apply to model 225H60/H75).
14. Run the engine warm for 2–3 minutes.
15. Check that the max speed is still 8400 ± 200 r/min. Adjust the H needle if necessary.
16. Check that the plastic sleeve on the H needle is still turned anticlockwise as far as possible (richest fuel mixture).
17. Press in the plastic sleeve using a punch (Ø 5 mm).

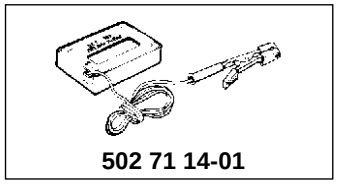
The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

## After replacing only the L needle

1. Turn the H needle as far as possible clockwise (leanest fuel mixture).
2. Remove the plastic sleeve on the L needle and unscrew the needle.
3. Carefully screw in the new L needle to the bottom and then loosen it 1 turn.
4. Press a new plastic sleeve on the L needle down to the first stop. The sleeve can now be turned without turning the needle.
5. Turn the plastic sleeve as far as possible clockwise (leanest fuel mixture).
6. Start the engine and let it idle.
7. Use the screwdriver 531 00 48-63 to adjust the L needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.



**531 00 48-63**



**502 71 14-01**

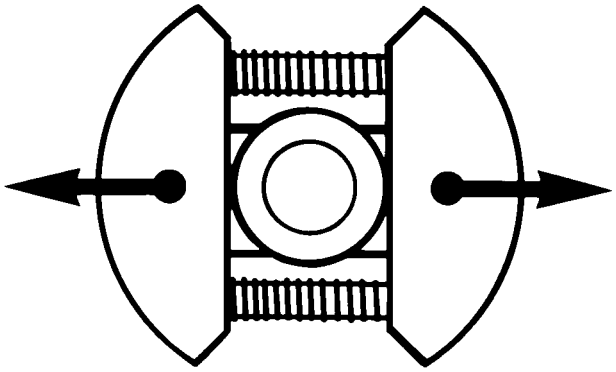
   Adjust the L needle so that the highest idling speed is obtained.

   Use the tachometer 502 71 14-01 to check the speed.
8. Check that the plastic sleeve on the L needle is still turned as far as possible clockwise (leanest fuel mixture).
9. Press the plastic sleeve on the L needle using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

# Centrifugal clutch

# 4.



**Contents**

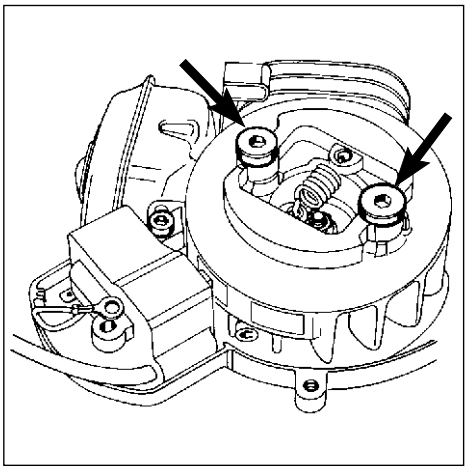
# 4 Centrifugal clutch

***The centrifugal clutch has the task of transferring the power from the engine to the cutting equipment's drive axle. As the name implies, it works according to a centrifugal principle.***

***This means the clutch's friction shoes are thrown outwards towards the clutch drum at a certain engine speed. When the friction against the drum is sufficiently great it drives the drive axle at the same speed as the engine.***

***Some slipping occurs between the clutch and the clutch drum when accelerating as well as in the reversed situation when the cutting equipment jams. Thereby abnormal load changes on the crankshaft are prevented.***

***The engagement speed has been carefully tested so that the engine can idle without the cutting equipment's drive axle rotating.***



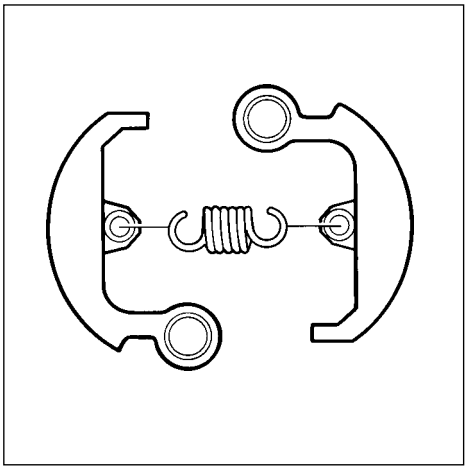
## Dismantling

Dismantle the clutch by following the instructions in the chapter “Ignition system”.

## Dismantling

The centrifugal clutch is bolted to the flywheel.

Follow the detailed instructions in the chapter “Ignition system” when the clutch is dismantled.

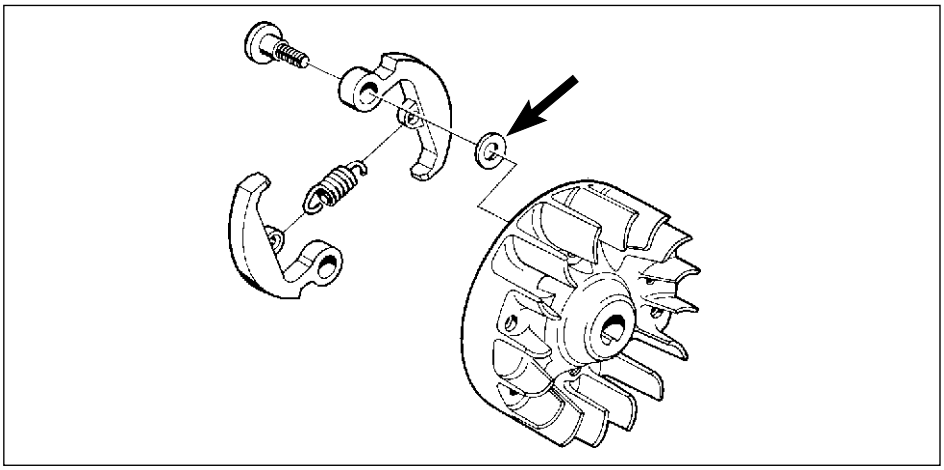


Twist open the clutch and inspect the components with regard to wear or damage.

Twist open the clutch.

Inspect the components with regard to wear or damage.

Pay close attention to the ends of the springs, which in addition to wear can also show signs of crack formation in the material.



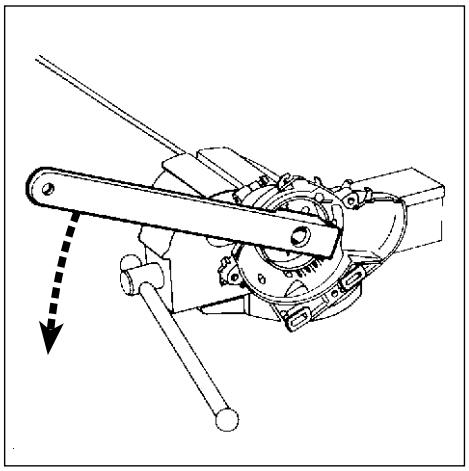
## Assembly

Put together the clutch shoes with the springs.

**NOTE!**

Both clutch shoes should be replaced even if only one of the shoes shows signs of heavy wear. This is to prevent engine vibration due to imbalance in the clutch.

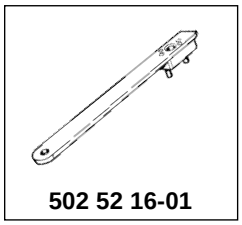
Bolt the clutch on the flywheel. Do not forget the washers between the flywheel and the clutch shoes.



## Replacing the clutch drum and drive axle

Separate the shaft from the clutch cover.

Dismantle the clutch drum using the tool 502 52 16-01.



**502 52 16-01**

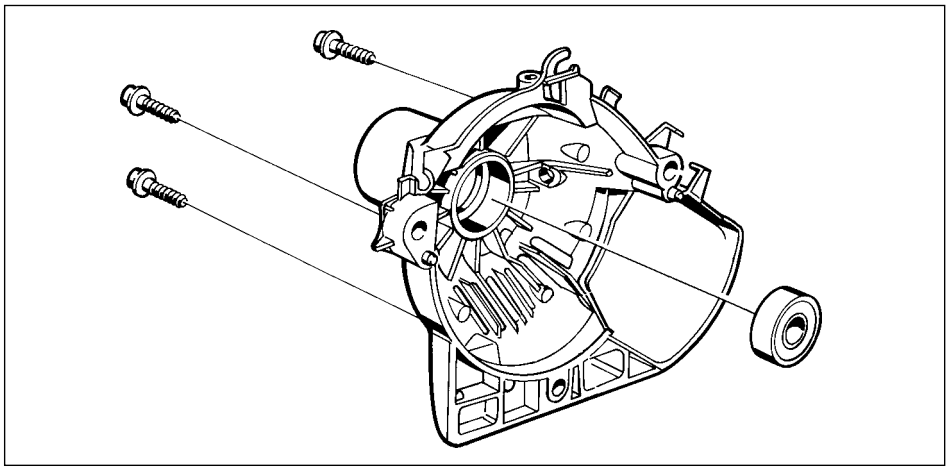
## Replacing the clutch drum and drive axle

Separate the shaft from the clutch cover.

Pull off the clutch cover complete with the drive axle and clutch drum.

The drum is screwed on the drive axle and can be dismantled using the tool 502 52 16-01.

If the diameter exceeds Ø 64.1 mm, the clutch drum should be replaced.



The bearing journalling the clutch drum in the clutch cover is glued in position using Loctite. To replace the bearing the cover can be heated to approx. 70°C by using a hot air gun so that the glue releases.

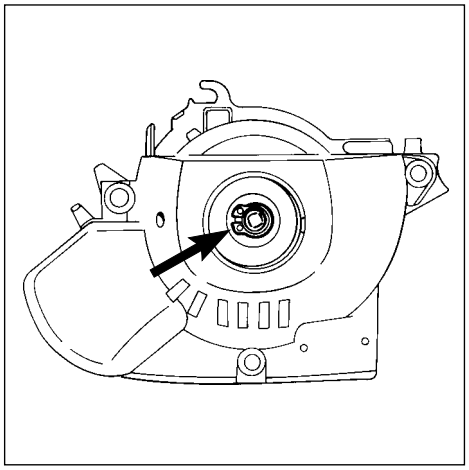
Dismantle the bearing using a suitable punch and hammer.

**NOTE!**

Dismantle the shaft's securing clamp and rubber insert in the clutch cover so that these are not damaged when heating the cover.

Assembly is carried out in the reverse order as stated for dismantling.

Use Loctite intended for mounting bearings when fitting the bearings in the clutch cover.



**Model 322C**

Dismantle the clutch cover and remove the shaft's securing components from the cover.

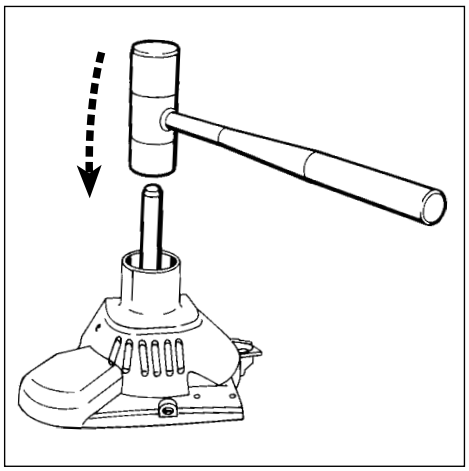
Remove the circlip.

**Model 322C**

Dismantle the clutch cover from the shaft.

Remove the shaft's securing components from the clutch cover.

Remove the circlip holding the clutch drum's axle spindle with the bearing.



Knock off the clutch drum.

Replace the bearing and fit the other components in the reverse order as stated for dismantling.

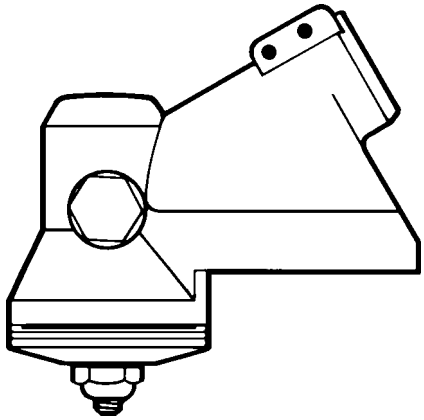
Now knock off the clutch drum using a suitable punch and hammer.

The bearing is replaced in the same way as described above.

Assembly takes place in the reverse order as stated for dismantling.

# Angle gear

# 5.



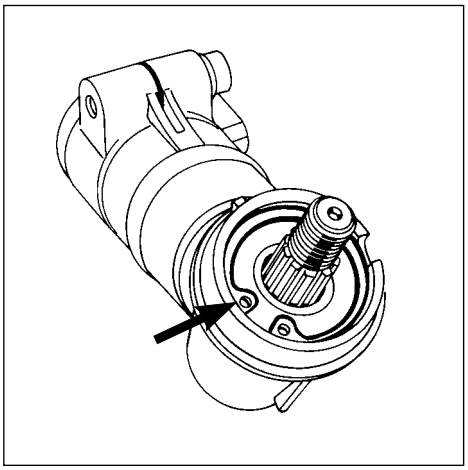
## Contents

# 5 Angle gear

***The angle gear has two purposes:***

***The first is to gear down the engine's high speed to better suit the lower speed a blade or trimmer requires to work efficiently.***

***Secondly, the angle gear contributes towards the operator's working stance so that it is comfortable and at the same time efficient. In other words, the power from the engine via the drive axle shall be angled so that the cutting equipment works parallel with the ground.***



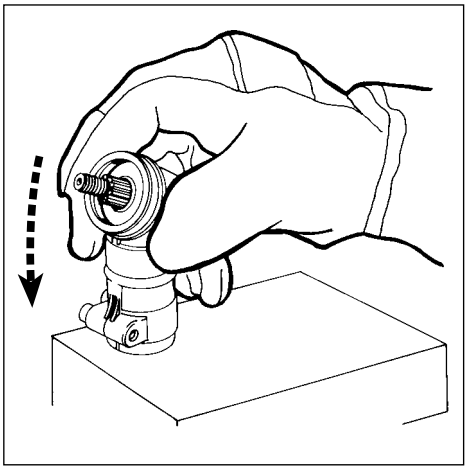
## Dismantling

Remove the angle gear from the shaft.

Remove the circlips holding the bearings on the input respective output axles.

## Dismantling

1. Dismantle the cutting equipment and its guard.
2. Loosen the bolt holding the angle gear on the shaft and remove the angle gear.
3. Remove the circlips holding the bearings on the output axle (illustrated) respective on the input axle by using circlip pliers.



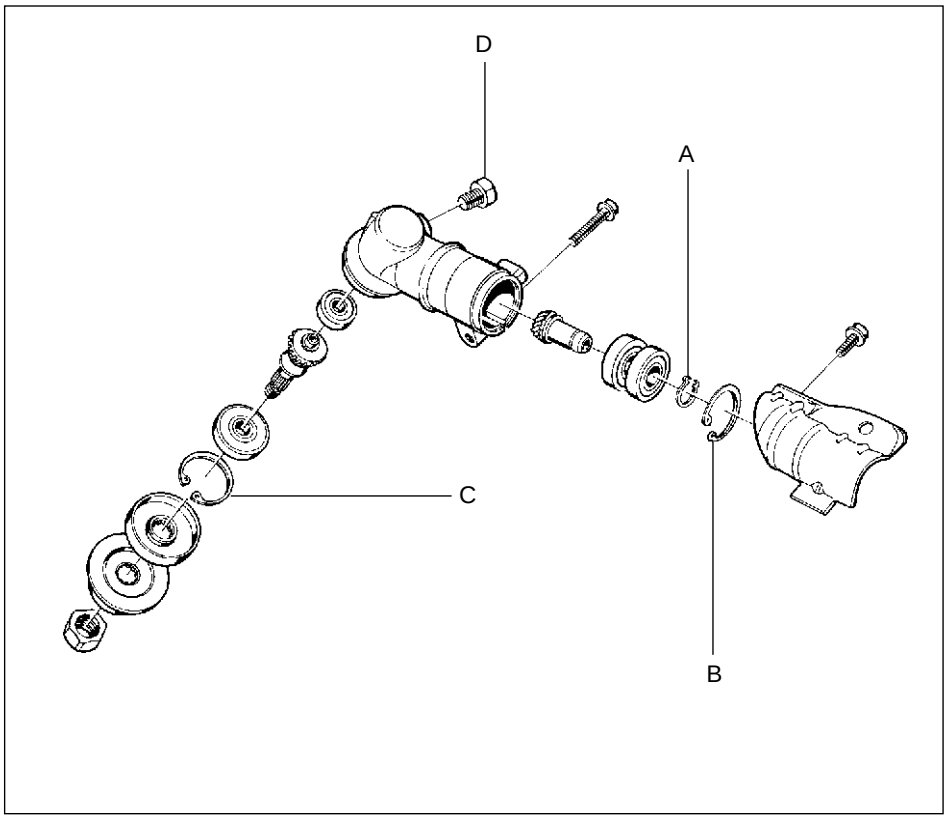
Heat the entire angle gear to approx. 110°C and first dismantle the input axle and then the output axle.

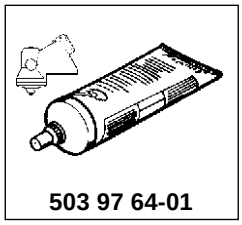
Heat the entire angle gear to approx. 110°C using a hot air gun.

Hit the angle gear against a wooden block so that the input axle with bearing falls out.

Now lift out the output axle.

Wear protective gloves.



503 97 64-01

## Assembly

Clean all component parts and replace those that are worn or damaged.

Fit new bearings on respective axles. It is easier if the bearing is heated to approx. 110°C by using a hot air gun .

**NOTE!**

Do not forget the circlip (A) that holds the bearing on the input axle.

Heat the gear housing to approx. 110°C and insert the output axle first and then the input axle.

Make sure the bearing bottoms in its seating.

Fit the circlips (B) and (C). Make sure they sit correctly in their grooves.

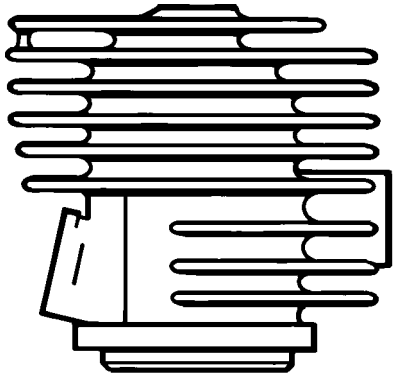
Other components are fitted in the reverse order as stated for dismantling.

**NOTE!**

Do not forget to fill the gear to approx. 3/4 full using gearbox grease 503 97 64-01 once the plug (D) has been removed.

# Cylinder and piston

# 6.



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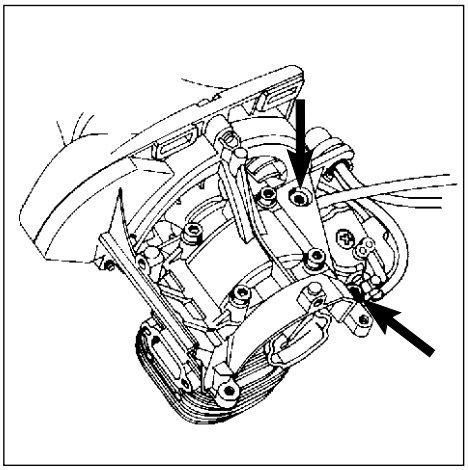
# Cylinder and piston

***The cylinder and piston are two components that are exposed to the most strain in the engine. For example, they should withstand high speed, large changes in heat and high pressure. In addition, they should withstand wear. Despite the hard working conditions, serious cylinder and piston failures are quite unusual. Some of the reasons behind this are the new coating materials in the cylinder bore, new lubricants and improved manufacturing techniques.***

***Cleanliness is extremely important when servicing these components. We therefore recommend that the cylinder and the area around it is cleaned thoroughly before it is dismantled from the crankcase.***



## Dismantling

Dismantle all components around the cylinder including the distance piece fitted to the carburettor.

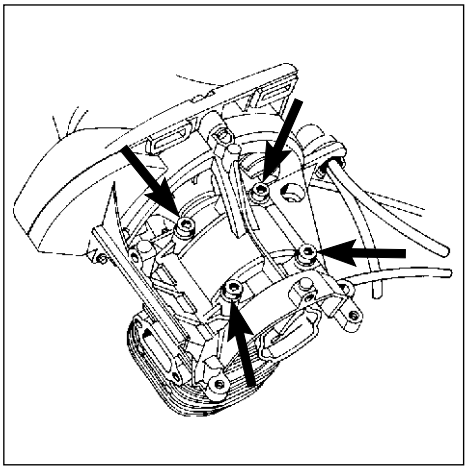
## Dismantling

Dismantle the following components:

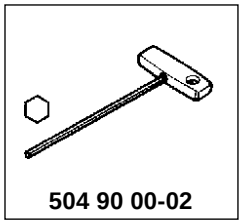
Cylinder cover, muffler grille, muffler with heat guard, starter and spark plug. Fold back the fuel tank.

Now remove the 2 bolts holding the distance piece against the crankcase.

Remove the distance piece with the carburettor attached.

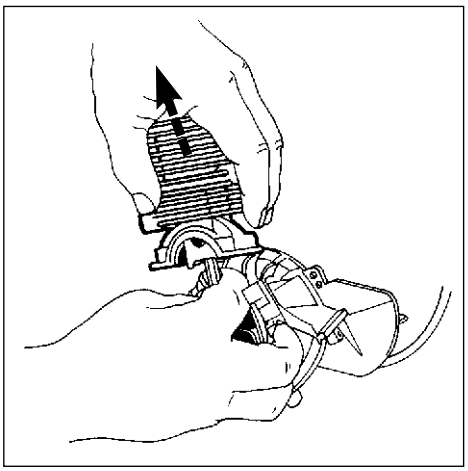


Remove the bolts holding the cylinder.

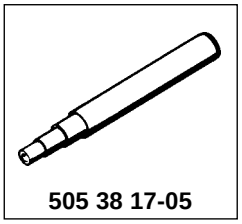


**504 90 00-02**

Remove the 4 bolts holding the cylinder on the crankcase.



Pull off the cylinder and dismantle the piston and connecting rod.

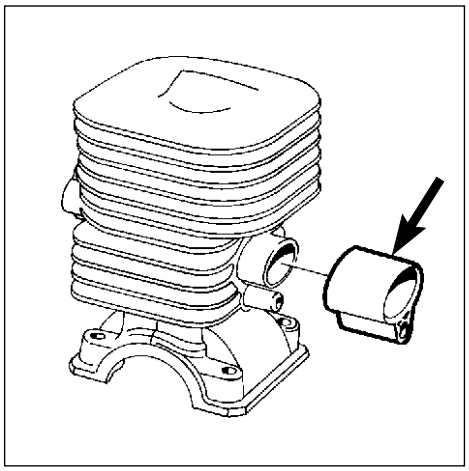


**505 38 17-05**

Pull the cylinder straight up without turning it. If it is turned, there is a risk of the piston ring breaking.

A sealant has been used on the base of the cylinder instead of a gasket.

Dismantle the piston from the connecting rod (see the Workshop Manual if necessary).



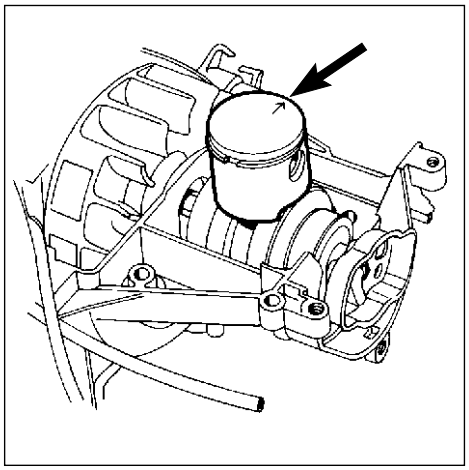
## Assembly

Clean and inspect the piston and cylinder. Check the rubber intake manifold with regard to crack formation or other damage.

## Assembly

Before the piston and cylinder and fitted parts should be cleaned and inspected as instructed in the Workshop Manual.

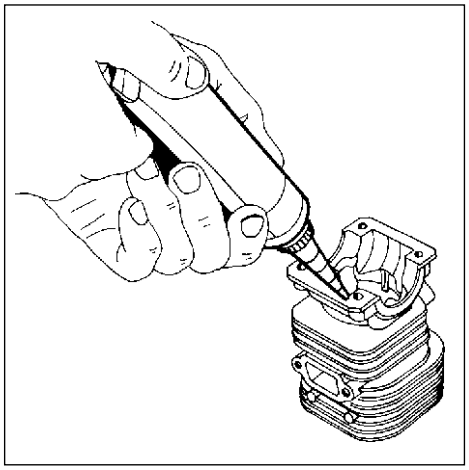
Check that the rubber intake manifold between the cylinder and distance piece has not cracked or shows signs of other damage that can cause leaks.



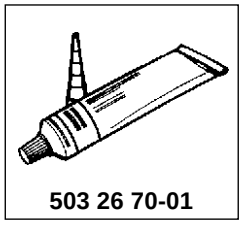
Clean the sealant from the crankcase and fit the piston on the connecting rod.

Clean any sealant or grease from the crankcase.

Fit the piston on the connecting rod so that the arrow on top of the piston points towards the exhaust port. See the instructions in the Workshop Manual.



Clean the contact surface on the base of the cylinder and apply a narrow string of sealant No. 503 26 70-01 to the sealing surface.



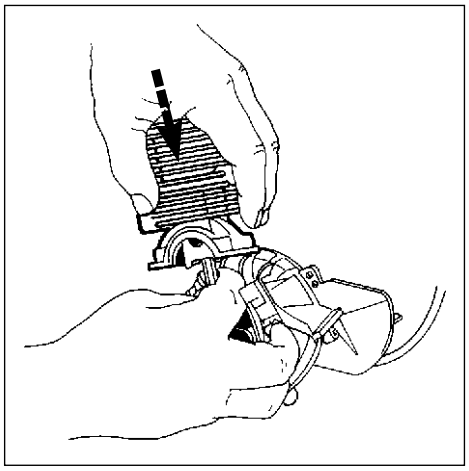
**503 26 70-01**

Clean the old sealant and grease from the contact surfaces on the base of the cylinder.

Apply a narrow string (1 – 1.5 mm) of sealant No. 503 26 70-01 to the contact surface.

**NOTE!**

The sealant does not need to be applied to the bearing's contact surface.



Carefully slide down the cylinder over the piston and tighten the 4 bolts crosswise.

Lubricate the piston with a few drops of oil and carefully slide the cylinder over the piston.

**NOTE!**

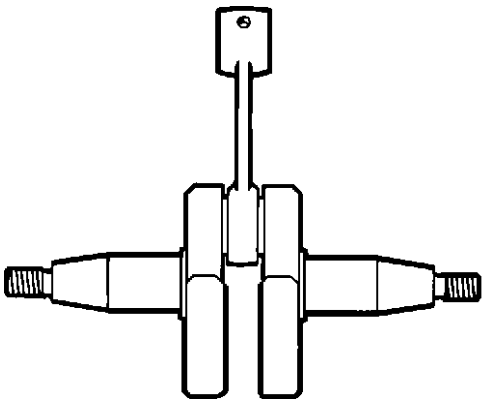
Do not turn the cylinder as the piston ring can easily break.

Tighten the 4 bolts crosswise.

Fit other components in the reverse order as stated for dismantling.

# Crankshaft and crankcase

# 7.



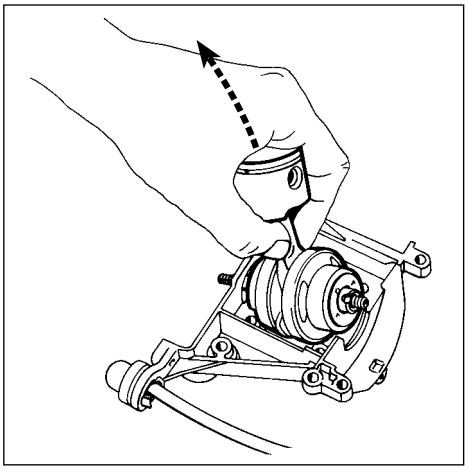
**Contents**

# 7 Crankshaft and crankcase

***The task of the crankshaft is to transfer the up and down motion of the piston to rotation. To do this requires a stable design withstanding immense pressure, rotational and bending strain as well as high rotational speed. In addition the connecting rod is exposed to large acceleration and retardation forces as it moves between top and bottom dead centres. This puts special demands on the bearings that must withstand quick changes in load. Besides, the bearing's roller retainer also must cope with high temperatures and friction. Therefore it is extremely important when servicing, to check the roller retainer for cracking, wear and miscolouration due to overheating.***

***The crankshaft is journalled in the crankcase on heavy-duty ball bearings. In addition to the journalling point for the crankshaft, the crankcase acts as scavenging pump for the fuel/air mixture when this is "sucked" from the carburettor and is forced into the cylinder's combustion chamber. The crankcase must be perfectly sealed so as not to affect this pump function. There cannot be any leakage either from the crankshaft or between the crankcase halves or between the crankcase and the cylinder.***

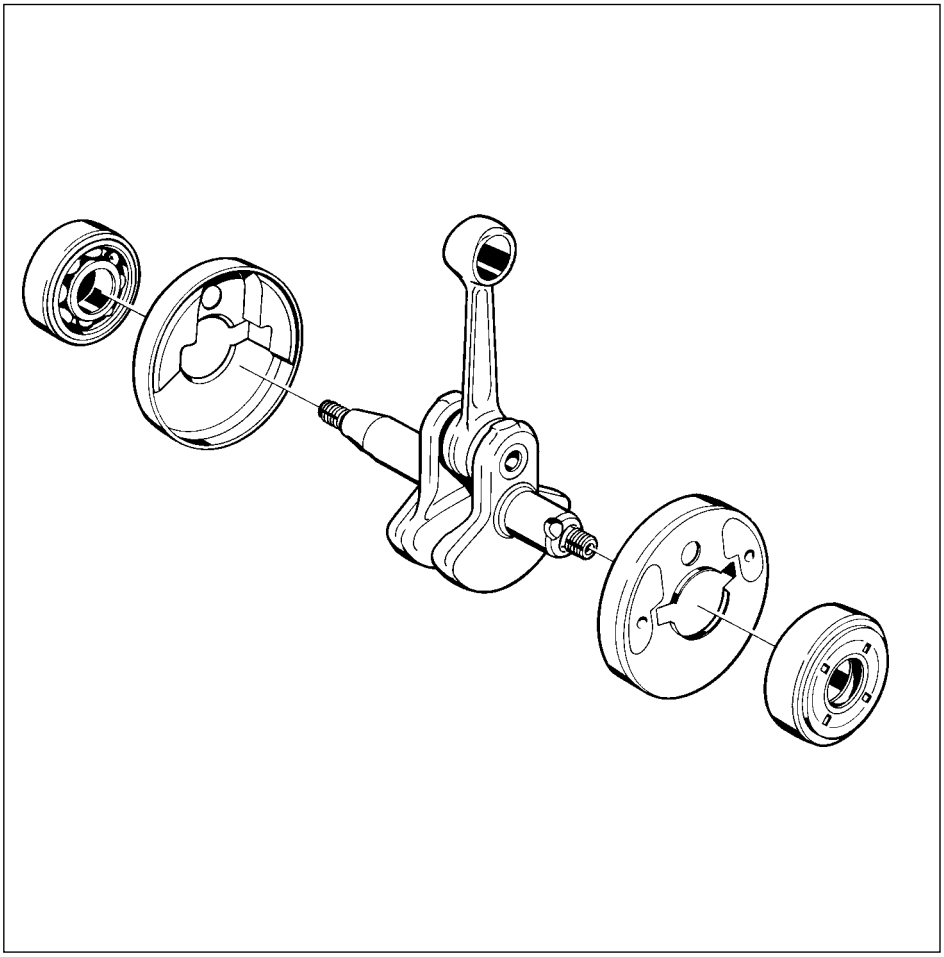
***Always replace the sealing rings and gaskets when servicing the crankcase.***



## Dismantling

Dismantle all components so that only the crankcase and crankshaft remain.

Now lift the crankshaft out of the crankcase.



## Dismantling

Dismantle all components so that only the crankcase and crankshaft remain.

Refer to respective sections if necessary for detailed information.

Now lift the crankshaft out of the crankcase.

Remove the bearings (sliding fit) and the spacers.

## Assembly

Check the crankshaft as set out in the section “Inspecting the crankshaft” in the Workshop Manual.

Clean the contact surfaces in the crankcase.

Fit new bearings on the crankshaft with the open side facing in towards the crank disc.

Lubricate the big end bearings with a few drops of engine oil and position the crankshaft in the crankcase.

Fit all other components in the reverse order as stated for dismantling.

Refer to respective sections in the Workshop Manual if necessary.

Leak test the crankcase in accordance the instructions in the Workshop Manual.