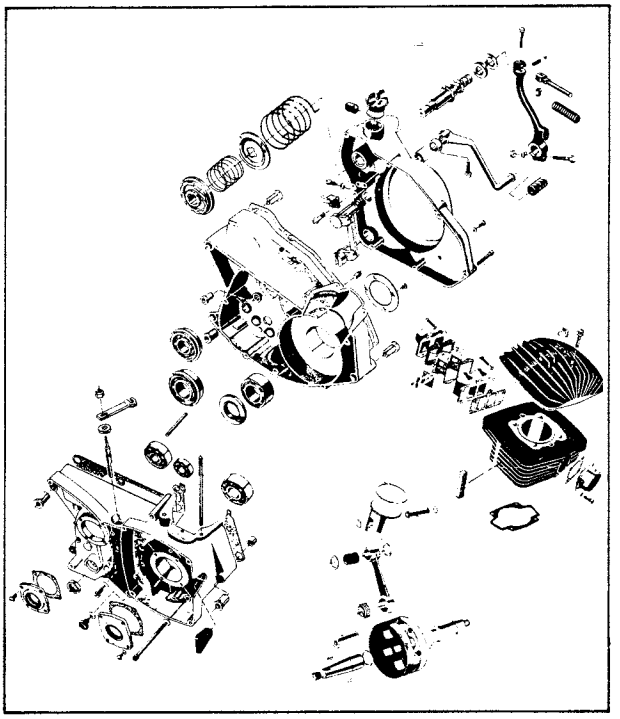
Engine



This chapter covers the engine part of the motor cycle.

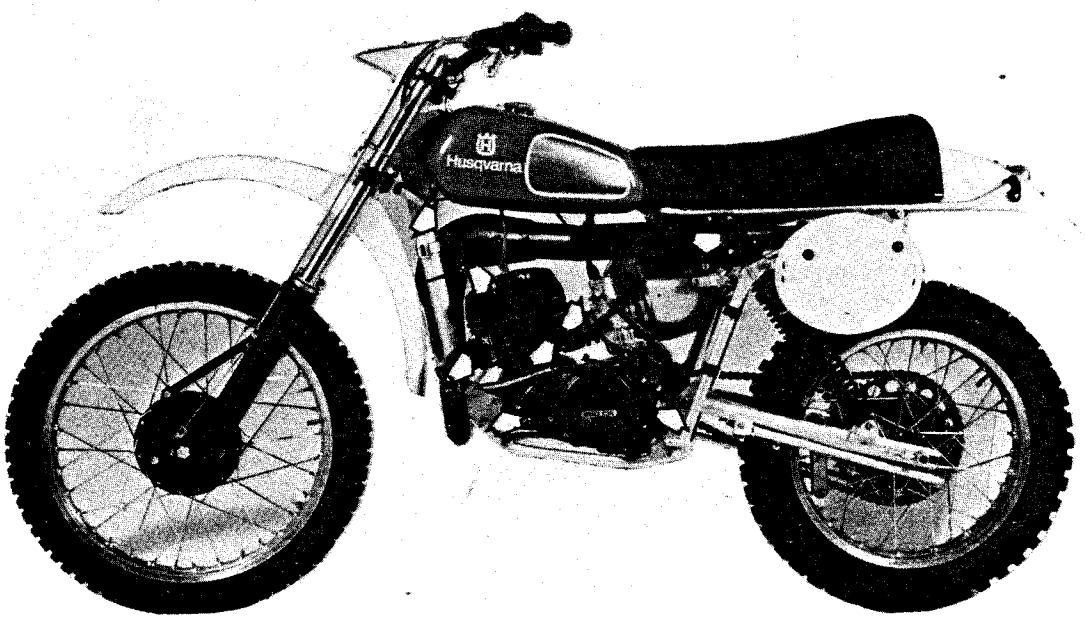
MA. Removing engine from frame

MB. Dissassembling and assembling engine

MC. Repairs engine parts

MD. Transmission cover

Removing engine from frame



Removing engine from ML-frame
Remove the exhaust system by loosening the two screws and unhooking the springs. See fig. 3.1.

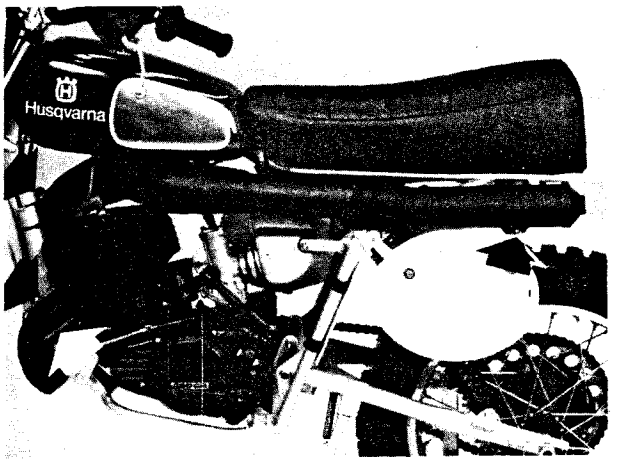


Fig. 3.1

Screw out the three nuts, loosen the clamp and take out the whole air filter.
Remove the carburettor. See fig. 3.2.

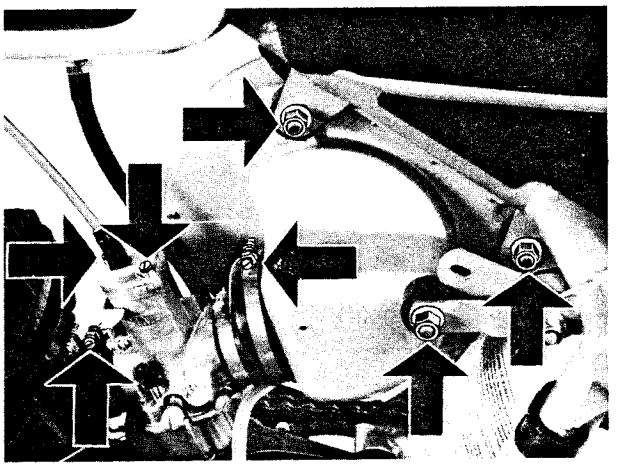


Fig. 3.2

Remove the kill button.
Take off the contacts from the ignition coil and let the cable hang down. See fig. 3.3 and 4.1.
Remove the clutch cable.

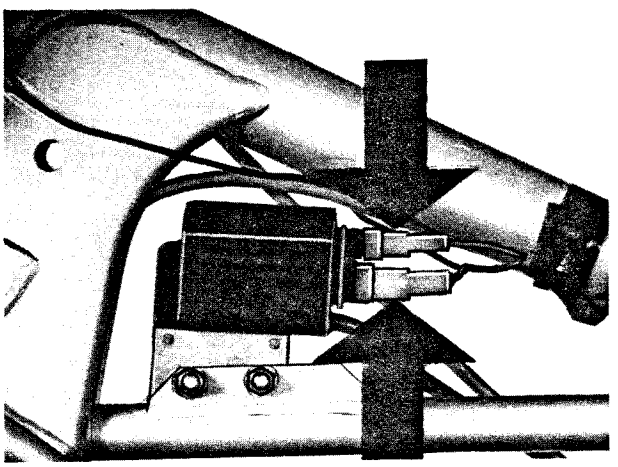


Fig. 3.3

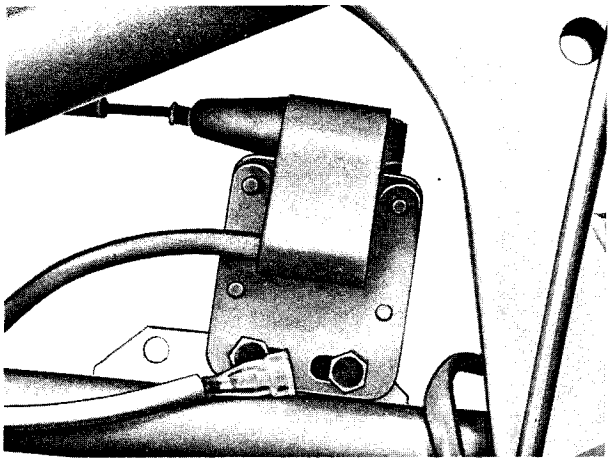


Fig. 4.1

Take off the chain masterlink and remove the chain. See fig. 4.1

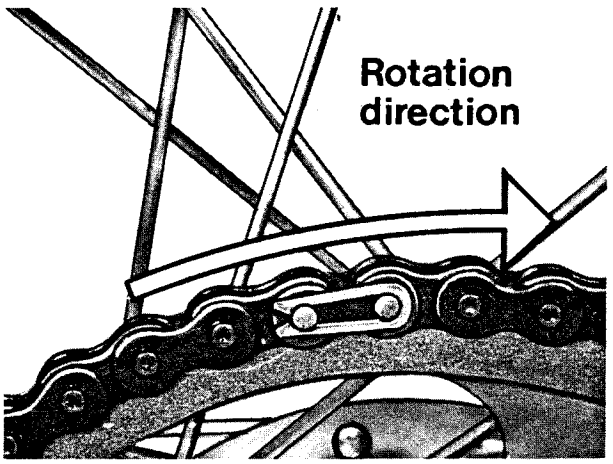


Fig. 4.2

Remove the front engine attaching bolts.
Remove the park stand by loosening the lower rear engine mounting bolt and the park stand attachment holding screw. Unscrew the nut from the rear fork attaching bolt.

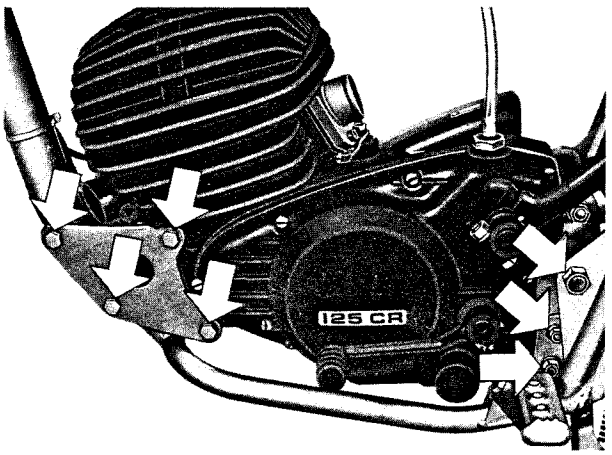


Fig. 4.3

Press out the rear fork attaching bolt until the engine is loose. Lift out the engine from the frame. Unscrew the remaining mounting bolt and remove the clamp plates from the engine.

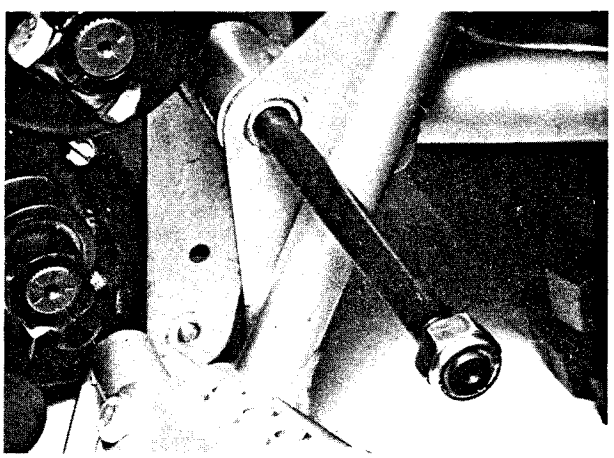


Fig. 4.4

Removing engine from MK-frame
Remove the exhaust system by loosening the two screws and unhooking the springs. See fig. 5.1.

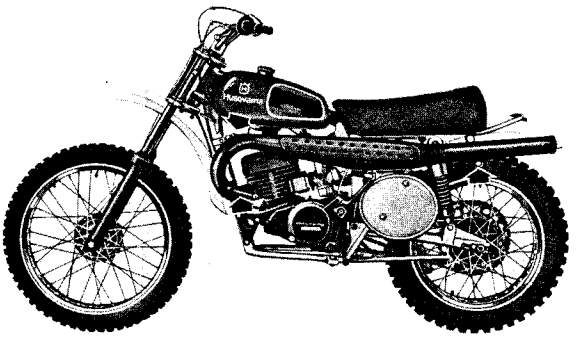


Fig. 5.1

Dismantle the air filter se chapter: Fuel system, part Air filter MK-model.
Remove the carburettor.

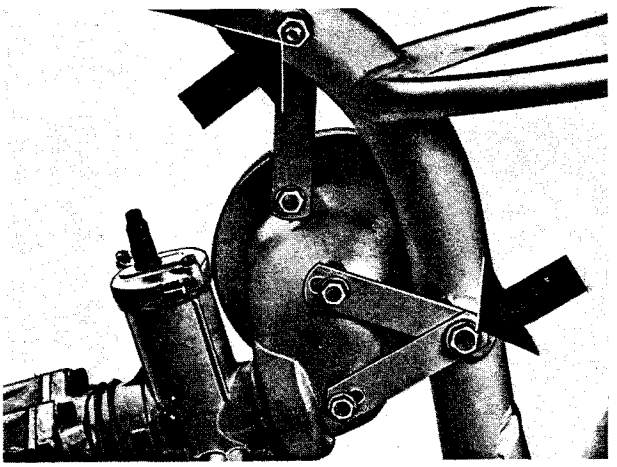


Fig. 5.2

Take off the contacts from the ignition coil and let the cable hang down. See fig. 5.3 and 6.1.
Remove the spark plug connection.

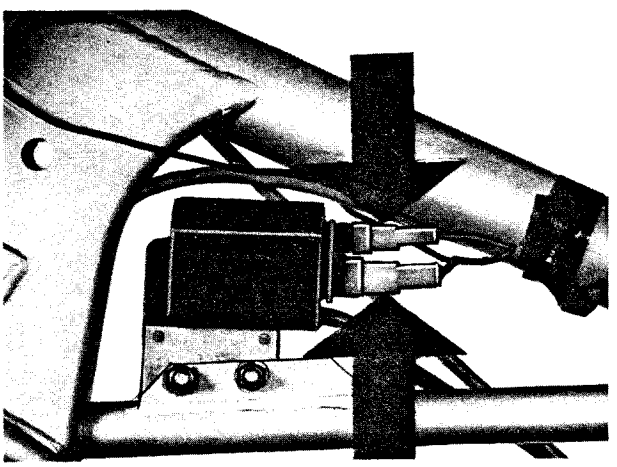


Fig. 5.3

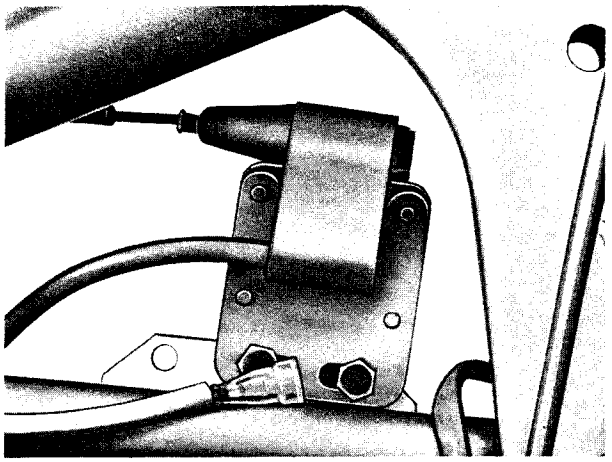


Fig. 6.1

Take off the chain masterlink and remove the chain. See fig. 6.2.

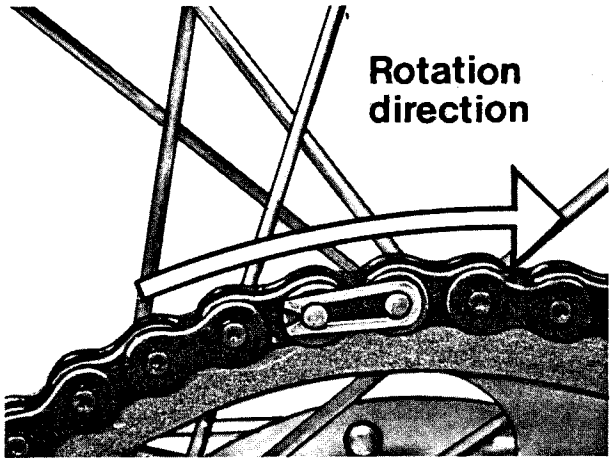


Fig. 6.2

Remove the clutch cable. Remove the engine attaching bolts and lift out the engine. See fig. 6.3.
NOTE! The rear lower bolt shall only be loosened.

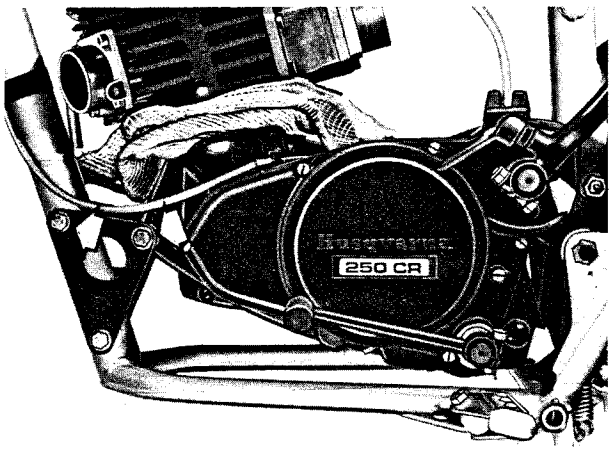
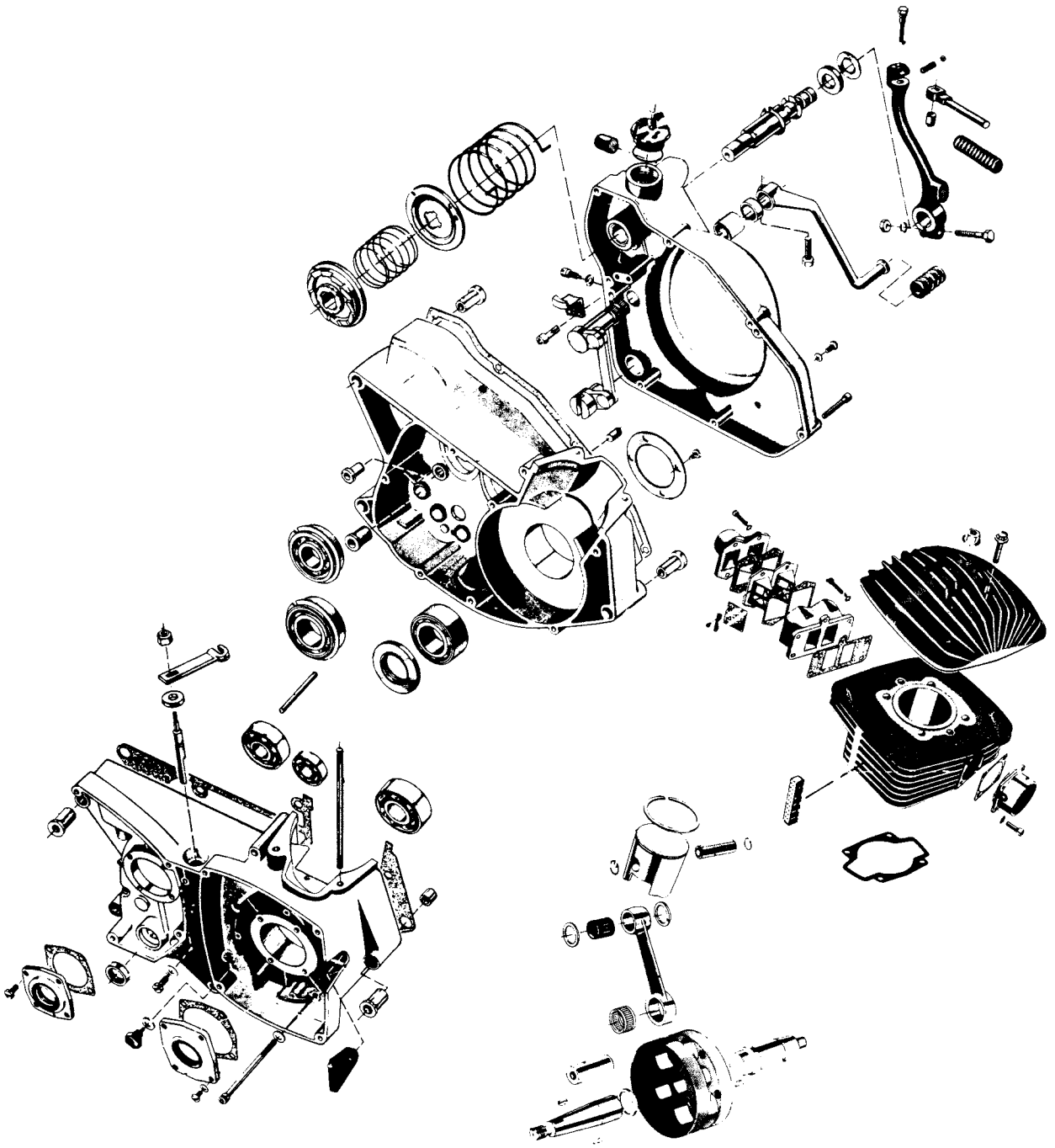


Fig. 6.3

Husqvarna motorcycles

Dissassembling and assembling engine



Disassembling engine
Drain the oil.
Loosen the cylinder head retaining nuts and screws. See fig. 3.1. Take off the cylinder head.

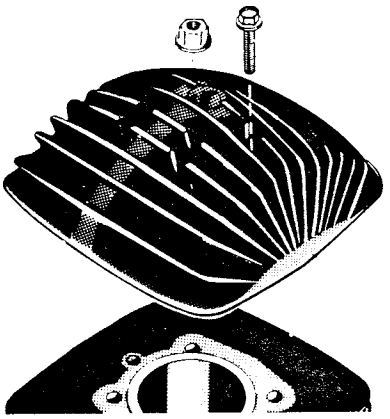


Fig. 3.1

Lift up the cylinder about 5 cm from the crankcase and place a clean rag in the crankcase opening to prevent dirt from entering the crankcase. See fig. 3.2.
Lift off the cylinder with the gasket.

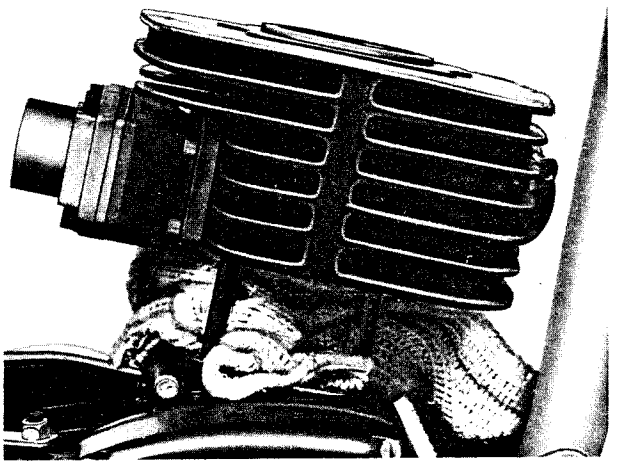


Fig. 3.2

Remove the piston pin circlips and press out the piston pin with a drift. See fig. 3.3.
Remove the needle bearing and the two spacing rings.

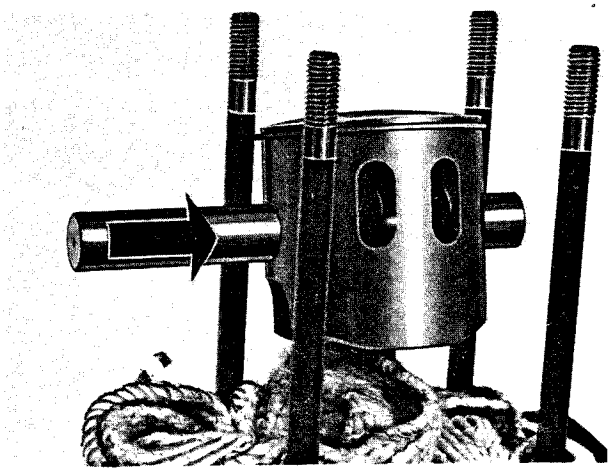


Fig. 3.3

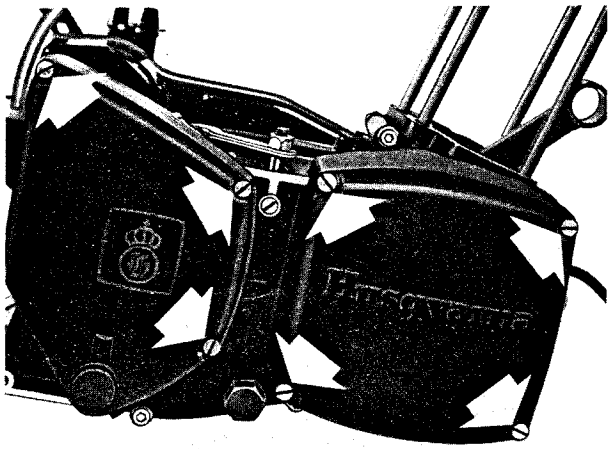


Fig. 4.1

Unscrew the magneto cover and the sprocket cover. See fig. 4.1
Remove the flywheel magneto see chapter: Electrical system.

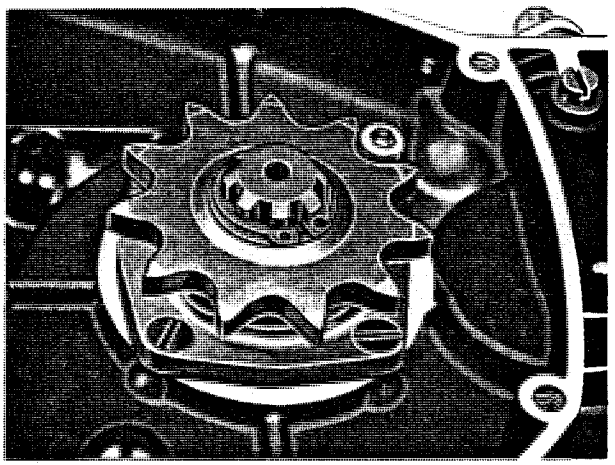


Fig. 4.2

Take off the circlip and remove the sprocket and the distance. See fig. 4.2

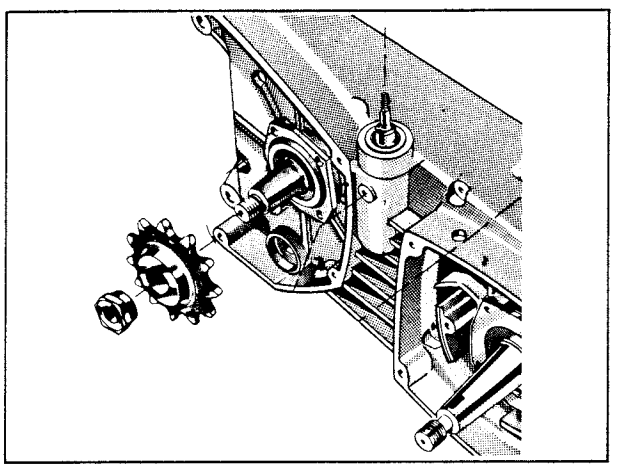


Fig. 4.3

Loosen the nut and pull off the sprocket. Use puller 15 19 275-01 and holder 15 19 278-01. See fig. 4.3
NOTE! The nut has left hand thread.

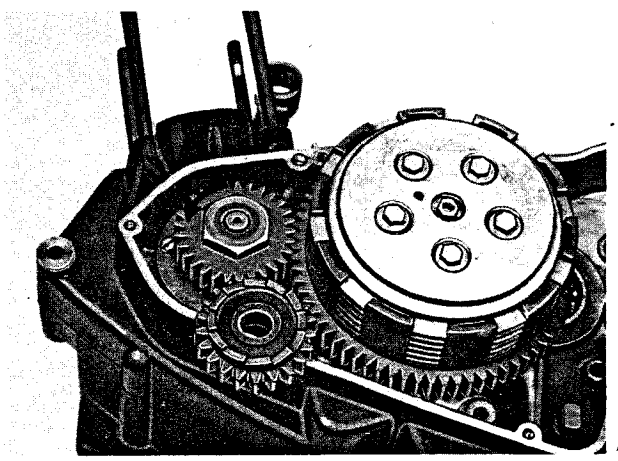


Fig. 4.4

Loosen the attaching screws and lift off the transmission cover.
NOTE! The shift lever and the kick starter pedal must not be removed from the cover.
Use the kick starter gear wheel to hold the drive gear and remove the drive gear nut. See fig. 4.4.

Place the drive gear puller in position and pull off the drive gear. See fig. 5.1
Disassemble the clutch. See chapter: Clutch.
Note! The engine is divisible without removing the clutch.

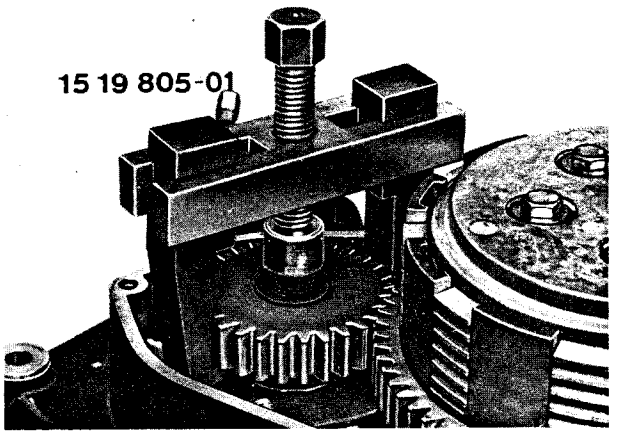


Fig. 5.1

Loosen the crankcase retaining screws. See fig. 5.2 and 5.3
NOTE! 360 RT, 400 cc-, 450 cc- and earlier 250 cc crankcases have two attaching screws in the left crankcase half. See fig. 5.3

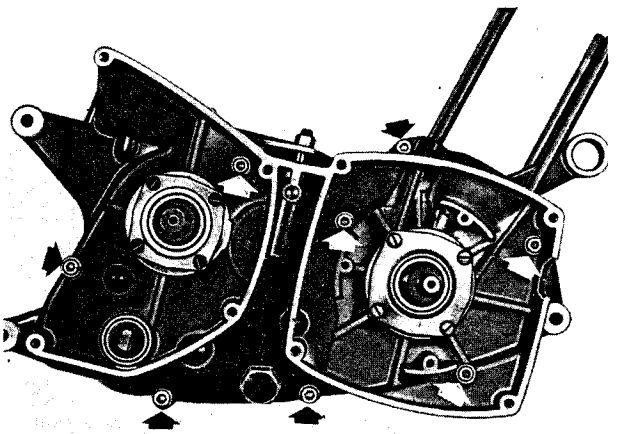


Fig. 5.2

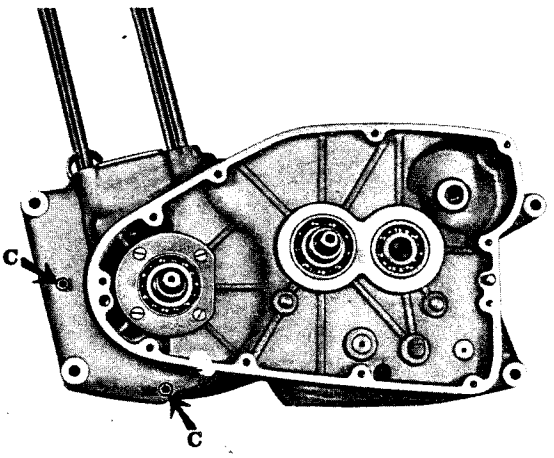


Fig. 5.3

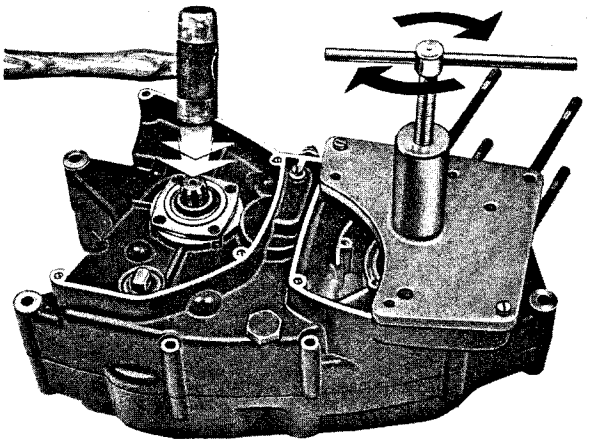


Fig. 6.1

Carefully pull the crankcase halves apart with a crankcase puller. Use a plastic mallet to easily knock down the sprocket shaft and the shifting shaft. See fig. 6.1
Crankcase puller 125 cc: 15 19 280-01
Crankcase puller 125 cc mag: 15 19 837-01
Crankcase puller 175 cc–360 cc: 15 19 810-01
Crankcase puller 360 RT, 400 cc, 450 cc and earlier 250 cc: 15 19 257-01

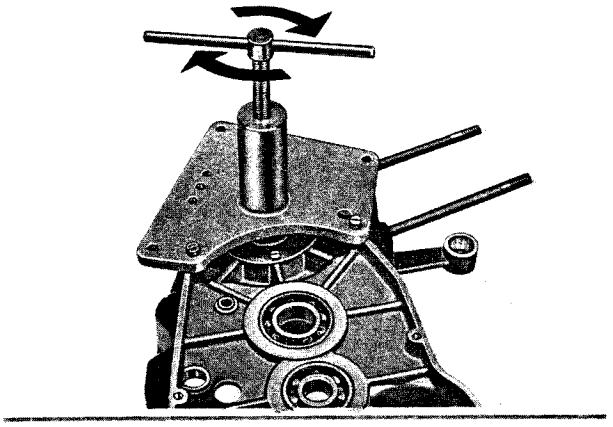


Fig. 6.2

Dismantle the gearbox from the engine See chapter: Gearbox.
Use the crankcase puller and press out the crankshaft from the main bearing. See fig. 6.2.

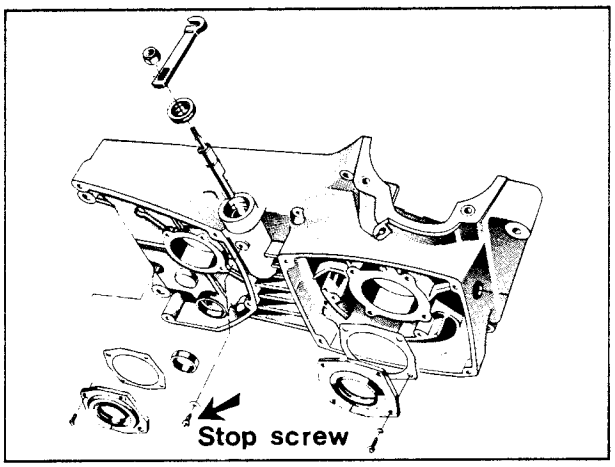


Fig. 6.3

Remove the sealing ring flanges. The declutching shaft is hold in position by the stop screw in the crankcase half. See fig. 6.3.

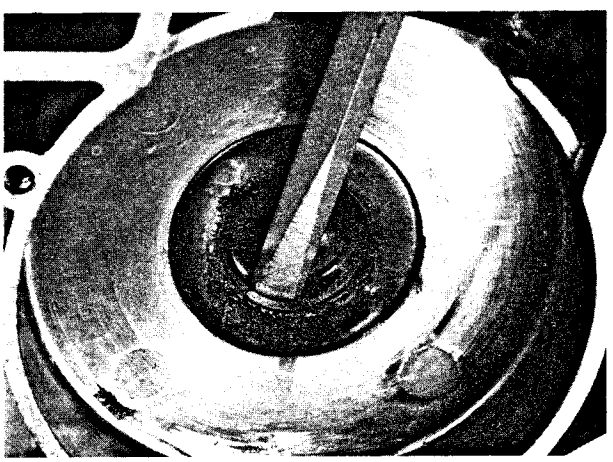


Fig. 6.4

The shifting shaft–and the left side crank shaft sealing rings are pressed direct into the crankcase halves and must be removed with a screwdriver or similar. See fig. 6.4.

Assembling engine
NOTE! When assembling the engine is it very important to lubricate all sliding and rolling surfaces very carefully.

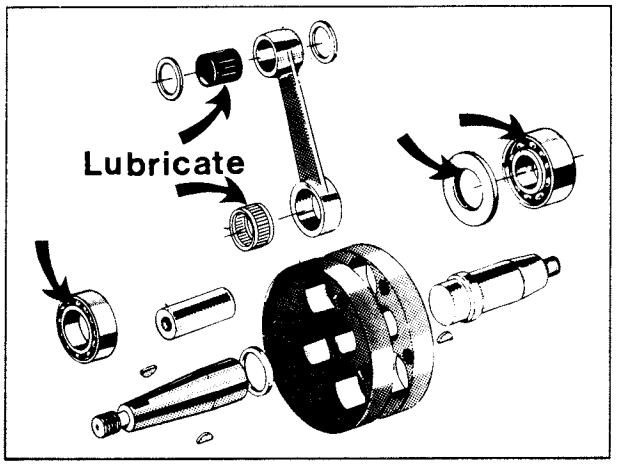


Fig. 7.1

Install the support washer for the left main bearing. Lock the screws with Loctite 241 and tighten to 3 Nm.

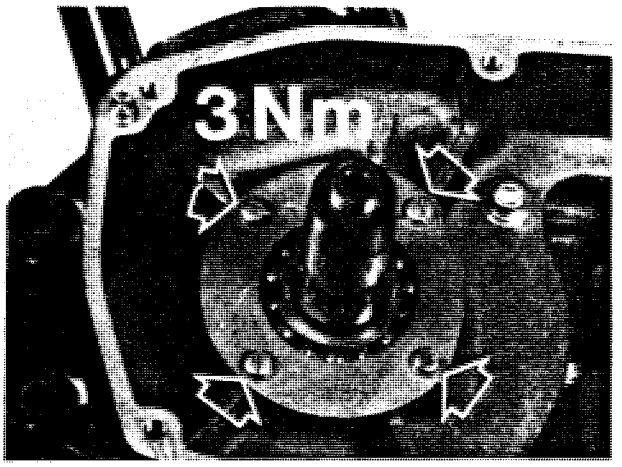


Fig. 7.2

Carefully knock the crankshaft sealing ring in position into the left crankcase half. See fig. 7.3.
NOTE! Both Ø 28 mm and Ø 30 mm sealing rings have been used. Measure the crank shaft so the correct sealing ring is used.

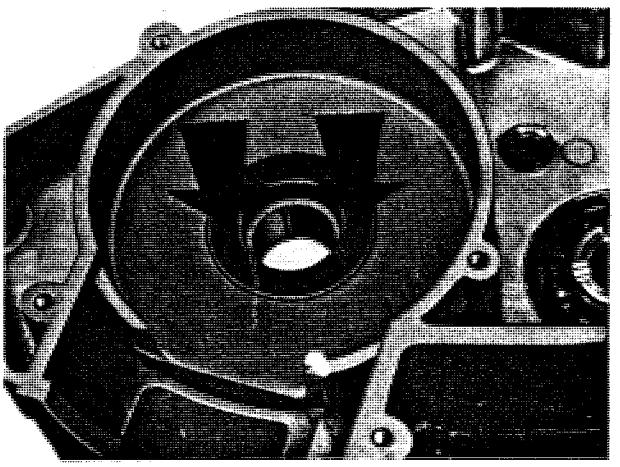


Fig. 7.3

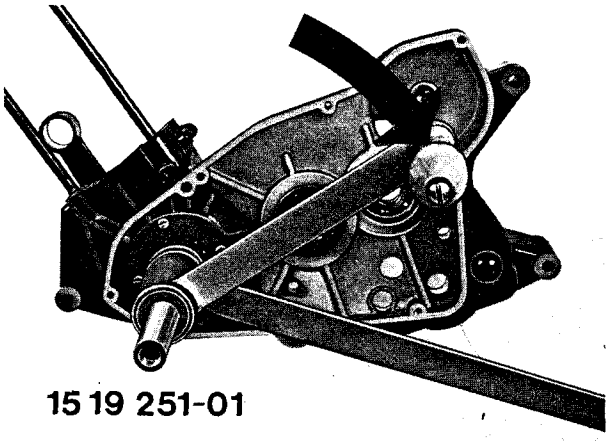


Fig. 8.1

Lubricate the crankshaft and pull it in position in the left crankcase half. Locate the rod through the cylinder barrel opening. See fig. 8.1.

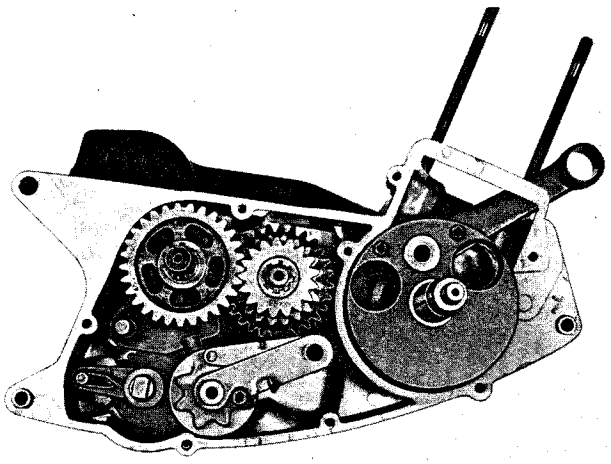


Fig. 8.2

Install the gearbox. See chapter: Gearbox. Put the crankshaft distance washer in position. Apply a new crankcase gasket.

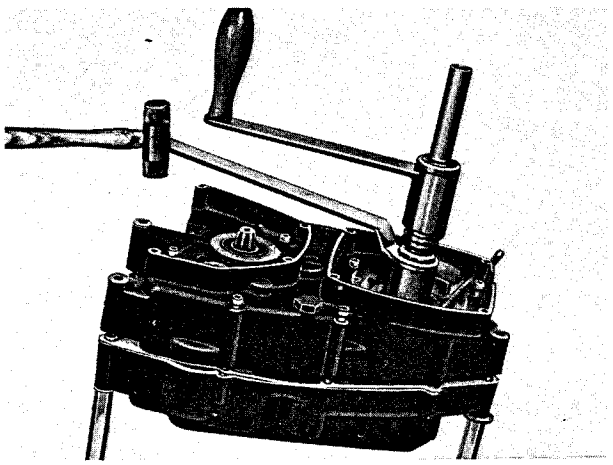


Fig. 8.3

Use a mounting tool and assemble the crankcase halves. Use a plastic mallet to easily knock on the rear part of the crankcase when pressing together. See fig. 8.3.

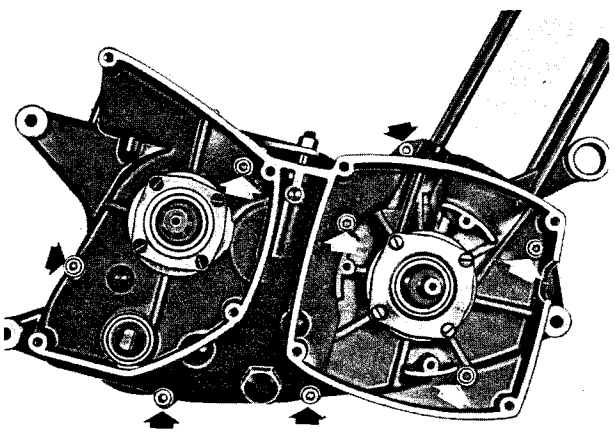


Fig. 8.4

Tighten the crankcase attaching screws to 8 Nm. See fig. 8.4.
NOTE! 450 cc, 400 cc, 360 RT and earlier 250 cc have two retaining screws in the left crankcase half. See fig. 9.1.

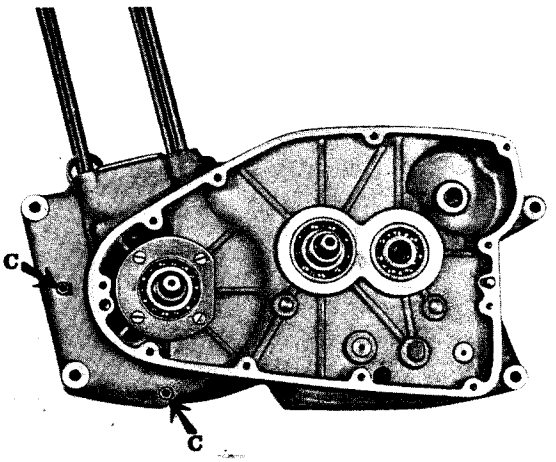


Fig. 9.1

Insert the declutching shaft through the sealing ring. Install the declutching shaft into the crankcase. Press the sealing ring into position and assemble the stop screw. Mount the lever. See fig. 9.2.

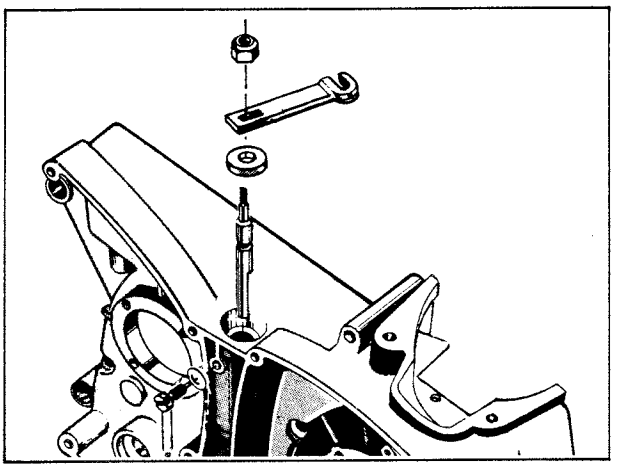


Fig. 9.2

Press new sealing rings into the flanges. Install the flanges with gaskets, screws and washers on the right crankcase half. See fig. 9.3. Lock with Loctite 241 and tighten to 3 Nm.
Note! The sprocket shaft flange has not got any washers.
NOTE! Lubricate the sealing ring leaps very carefully before assembling.

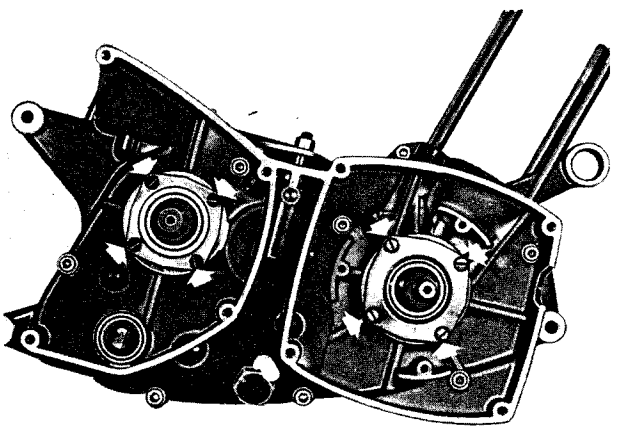


Fig. 9.3

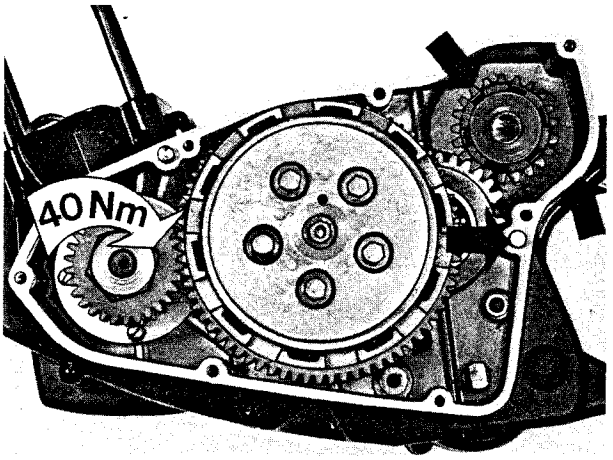


Fig. 10.1

Install the clutch. See chapter: Clutch. Install the drive gear and tighten the nut to 40 Nm. Put the start gear wheel and a new gasket in position

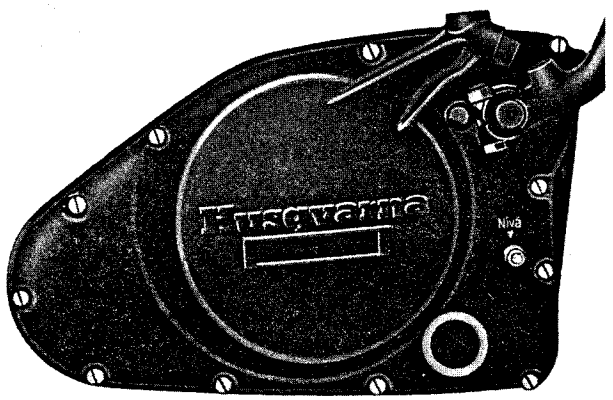


Fig. 10.2

Assemble the transmission cover. See fig. 10.2.

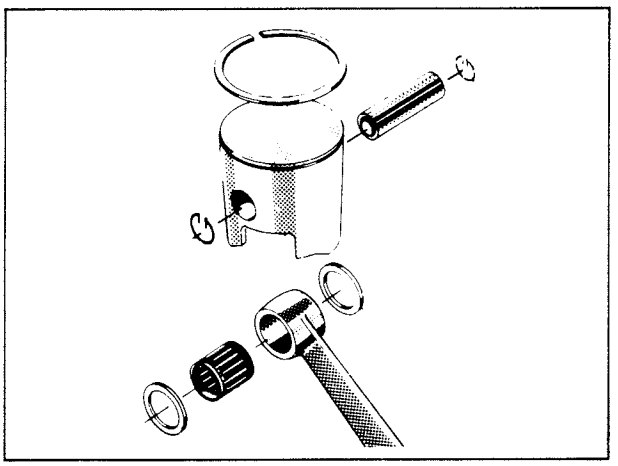


Fig. 10.3

Install the piston pin needle bearing. Assemble the piston. See fig. 10.3.
NOTE! Make sure that the distance rings and the circlips are correct positioned. See fig. 10.4.
Assemble the piston ring.

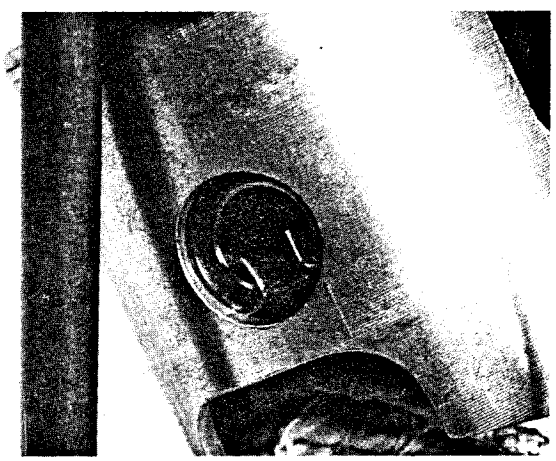


Fig. 10.4

Install a new gasket and assemble the cylinder. Carefully oil the cylinder bore and piston ring and fit the cylinder over the piston. See fig. 11.1
NOTE! make sure that the piston ring is placed correctly in relation to its locking pin and carefully push on the cylinder so as not to damage the piston ring.

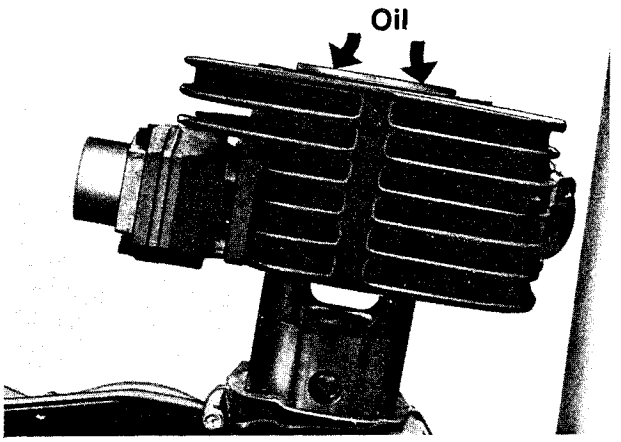


Fig. 11.1

Fit the cylinder head and tighten the four retaining nuts and the two screws moderately.
Then tighten them alternately up. See fig. 11.2.
Tighten the screws to 20 Nm and the nuts to 25 Nm.
NOTE! The cylinder head nuts on 125 cc engines shall only be tightened to 20 Nm.

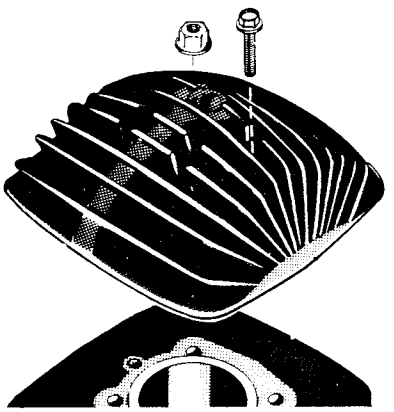


Fig. 11.2

Install the magneto. See chapter: Electrical system.
Assemble the distance ring on the sprocket shaft. See fig. 11.3.

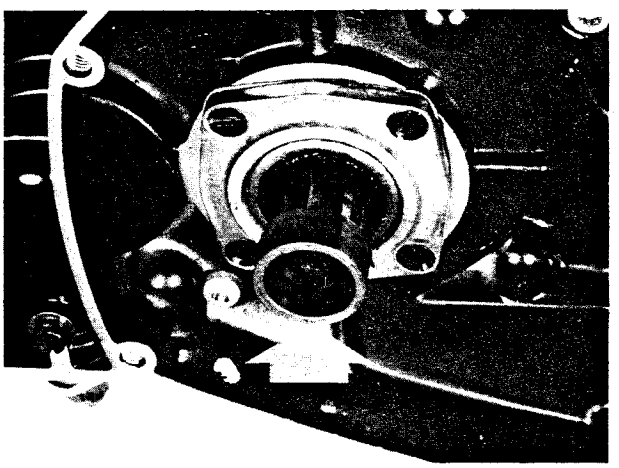


Fig. 11.3

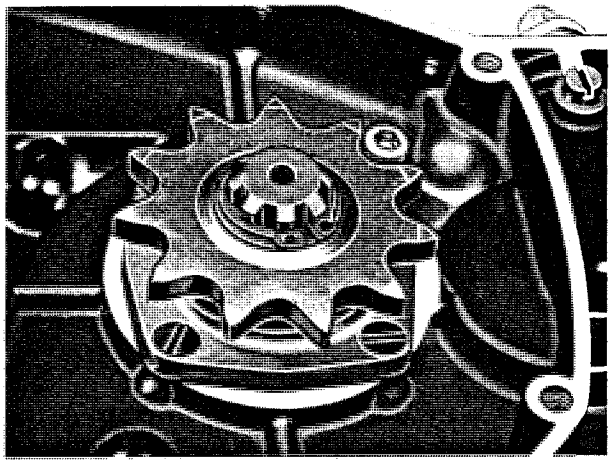


Fig. 12.1

Mount the sprocket. Position the circlip into the groove in the sprocket shaft. See fig. 12.1.

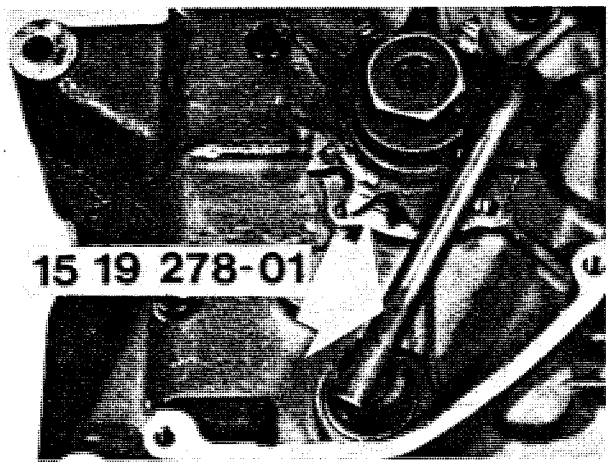


Fig. 12.2

Earlier model sprocket shafts have conical attachment for the sprocket. Before fitting the sprocket grind it in with grinding compound. Wipe the cones free from grinding compound and assemble the sprocket. Tighten the nut to 70 Nm.
NOTE! Left-hand thread.

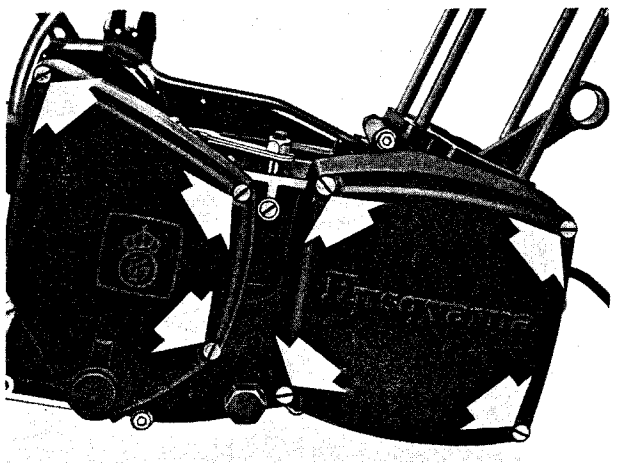
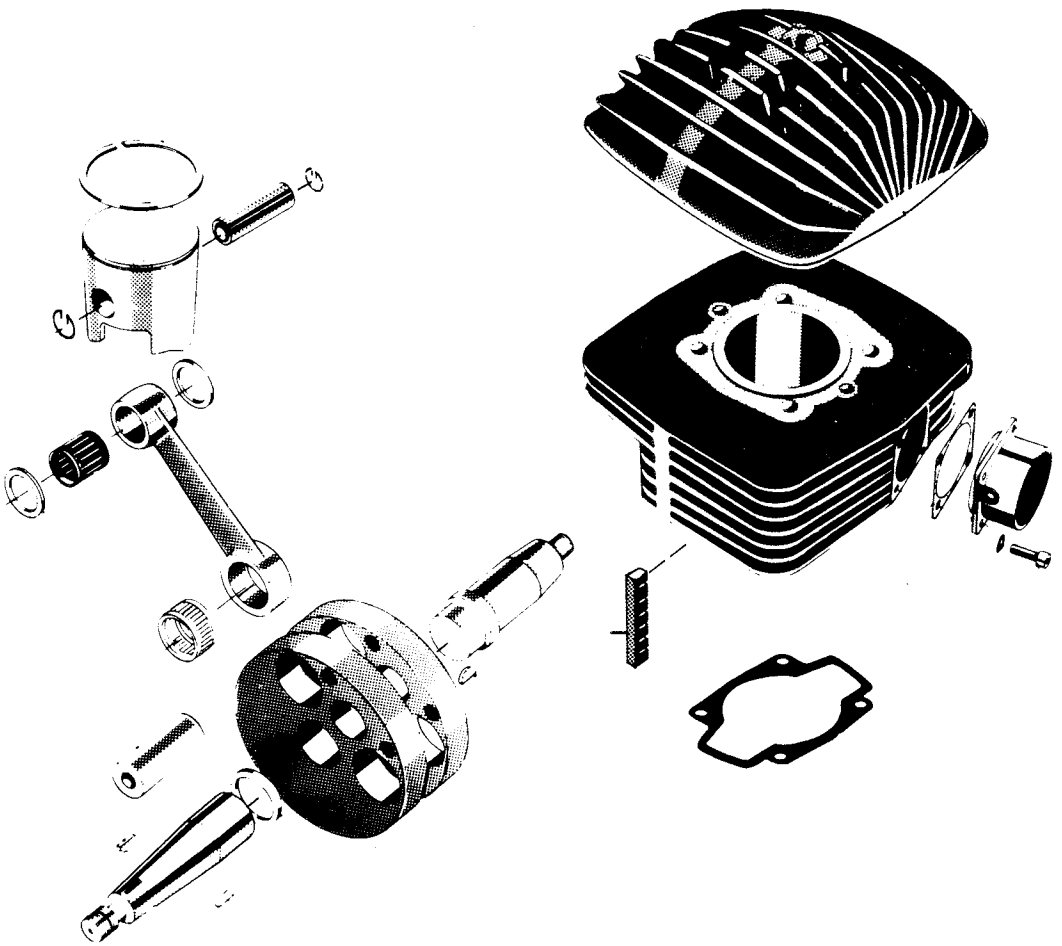


Fig. 12.3

Install the magneto cover and sprocket cover.

Repairs engine parts



Replacing ball bearings
Disassemble the engine completely. See part: Disassembling engine.
Heat the crankcase halves to approximately 200°C. Use an oven or a bunsen burner. Heat slowly and evenly. When the correct temperature is reached, carefully knock out the bearings by knocking the crankcase half easily into a piece of wood.

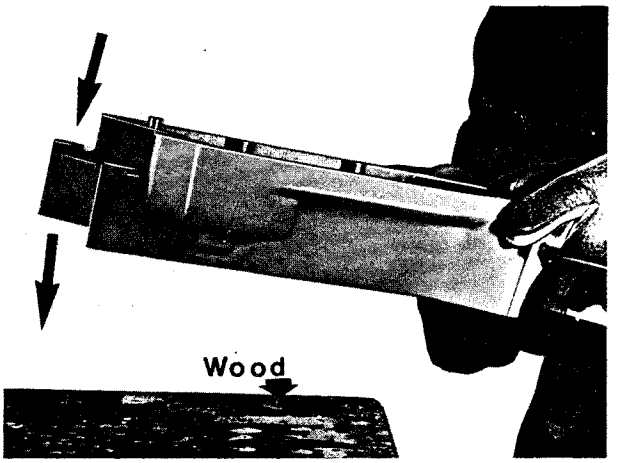


Fig. 3.1

New bearings are positioned while the crankcase halves are still warm.
Before fitting new bearings install the support washer on the left crankcase half and the sealing ring flanges, without any gaskets, on the right crankcase half.
Make sure that the bearings are positioned stuck to the washer respective flanges. See fig. 3.2 and 3.3.

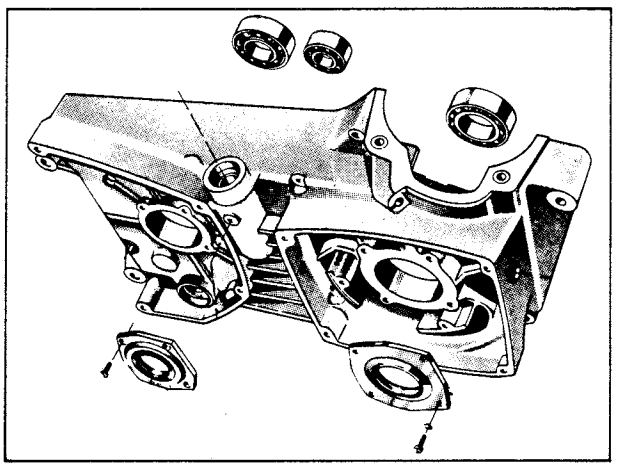


Fig. 3.2

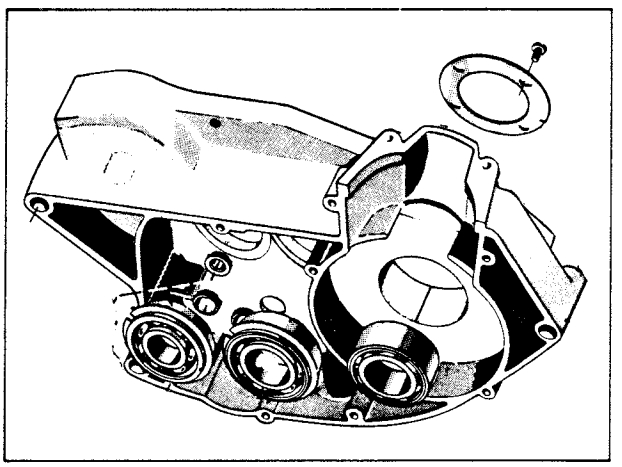


Fig. 3.3

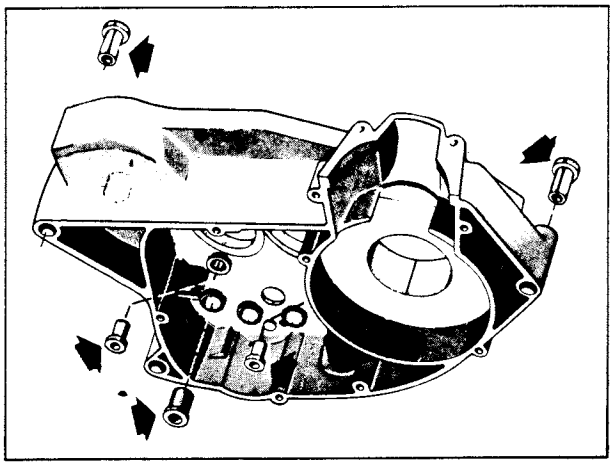


Fig. 4.1

When replacing any of the crankcase bushings is it advisable to heat the crankcase to approximately 150°C.
NOTE! Don't heat to much because then there is risk for the bearings to move from their positions.

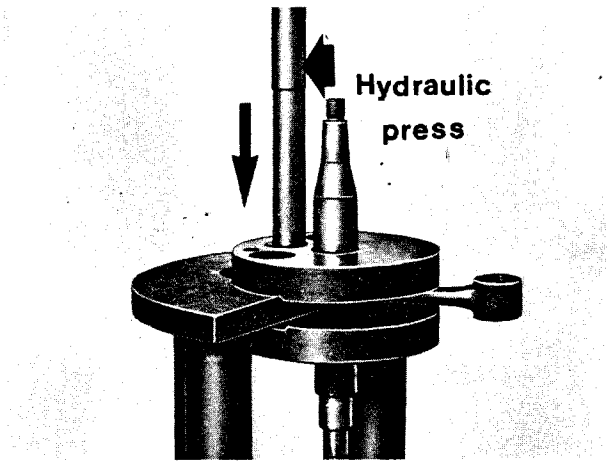


Fig. 4.2

Replacing big end bearing
Press out the crank pin from one of the discs. Place a support under the upper disc. See fig. 4.2.

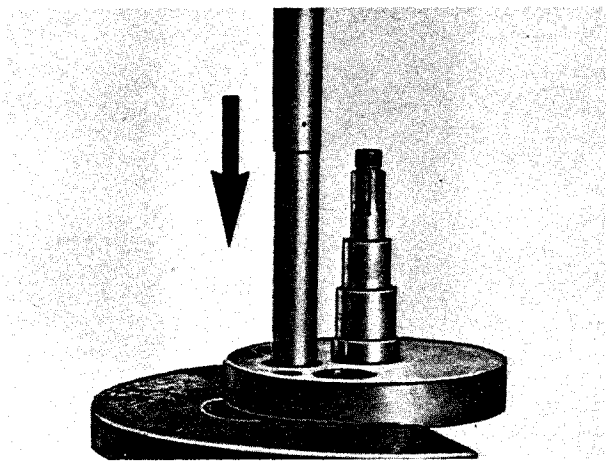


Fig. 4.3

Press out the pin from the other disc in the same manner.
NOTE! Always press the pin inwards when dismantling.

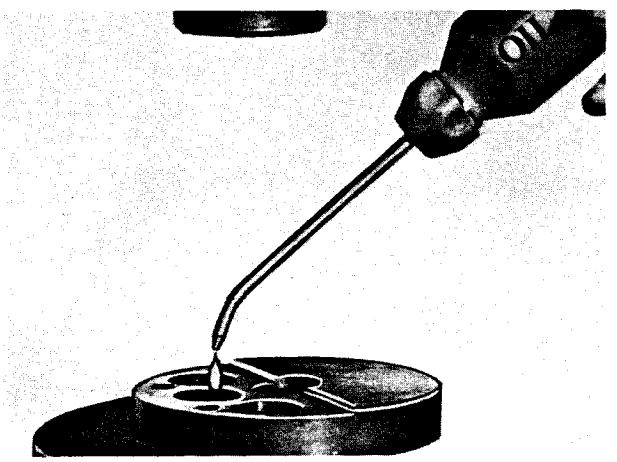


Fig. 4.4

Take out the new parts and lubricate the crank pin and the hole. See fig. 4.4.

Press the crank pin into one of the crank discs from inside.
See fig. 5.1.

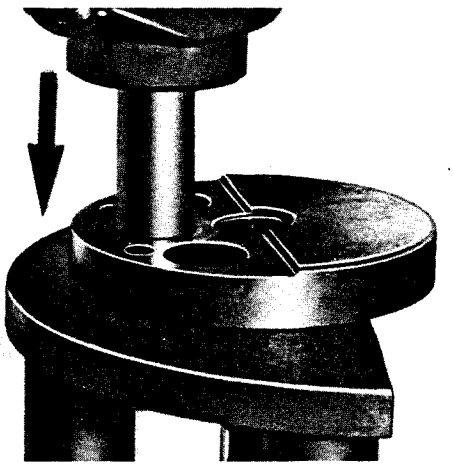


Fig. 5.1

Mount the needle bearing and the connecting rod.
See fig. 5.2. Lubricate the bearing.

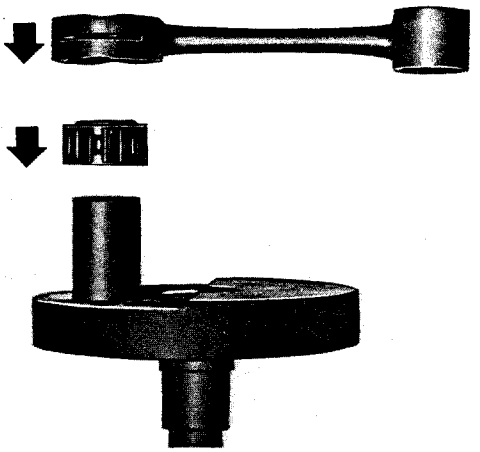


Fig. 5.2

Adjust the other crank disc by means of a rule.
See fig. 5.3.

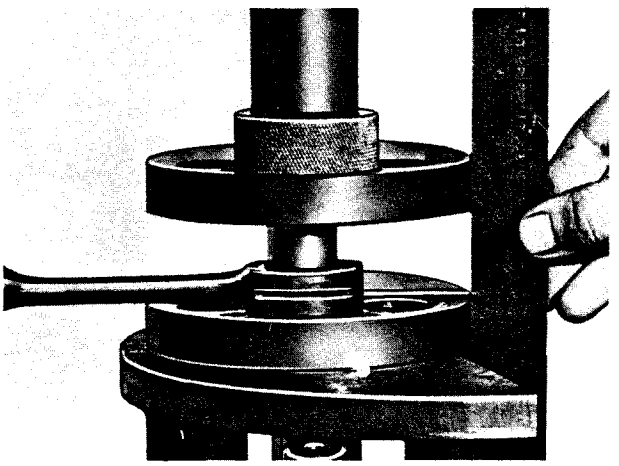


Fig. 5.3

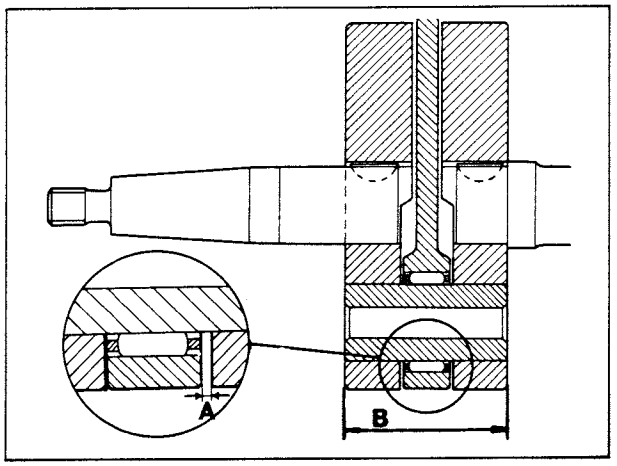


Fig. 6.1

Press on the crank disc until the measurements shown in the table below is obtained. See fig. 6.1.

Model	A	B
125 cc	–	48±0,1
175 cc	–	52±0,1
250 cc	–	52±0,1
250 RT	–	52±0,1
360 cc	min. 0.5	52±0,1
360 RT	min. 0.4	57±0,2
390 cc	min. 0.5	52±0,1
400 cc	min. 0.3	52±0,1
450 cc	min. 0.4	57±0,2

NOTE! The connecting rods on 125 cc, 175 cc and 250 cc are guided by the piston, so in these cases shall the disc be pressed on until measure B is obtained.

The crank shafts are replaced in the same manner.
NOTE! The right crank shaft shall only be pressed on until it is in a position 0.2 mm before the inside level position.
On Automatics shall the right crank shaft be positioned 1 mm from level position.

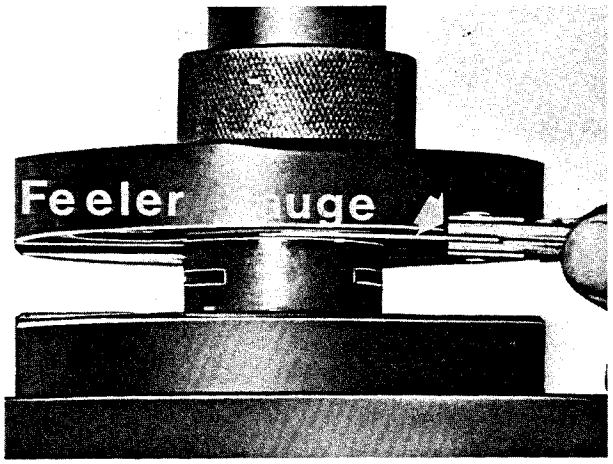


Fig. 6.2

Check the jerks of the crank shaft by means of an indicator clock.
NOTE! The jerks must not exceed 0.02 mm at the bearing positions according to fig. 6.3.

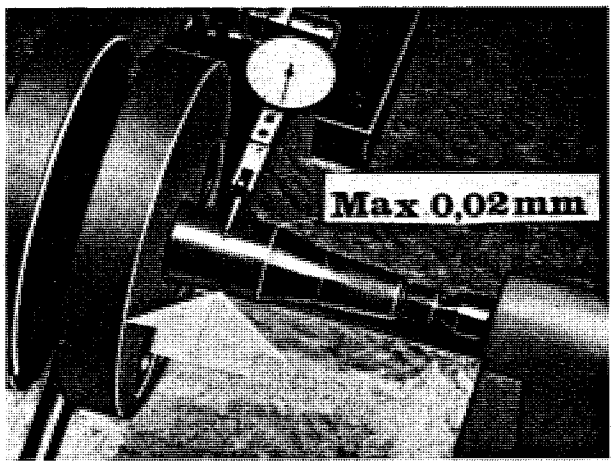


Fig. 6.3

The crankshaft is tuned by knocking the crank discs by means of a lead hammer or the like so that the discs are turning around the crank pin in the correct direction.

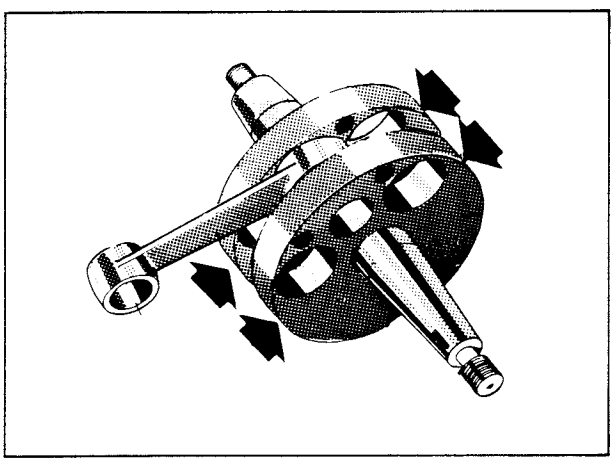


Fig. 6.4

Time for repairs-maintenance
Replace the ball bearings as soon as any play is detected. Check for play by pulling at the ends of the shafts in the radial direction.

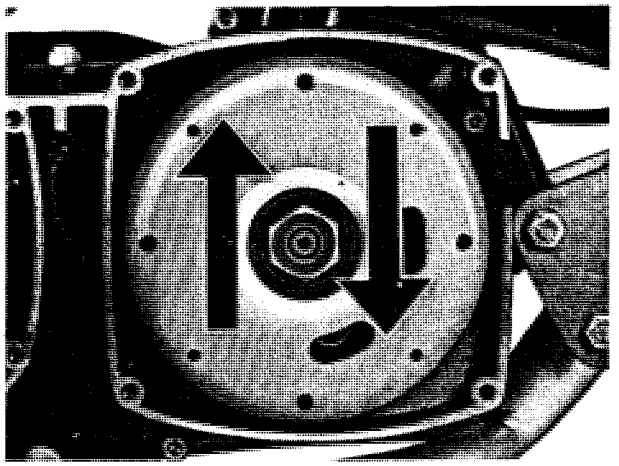


Fig. 7.1

Replace the big end bearing when the radial play amounts to 0,07 mm. Radial play can be measured by means of a vice and a dial indicator.
See fig. 7.2.

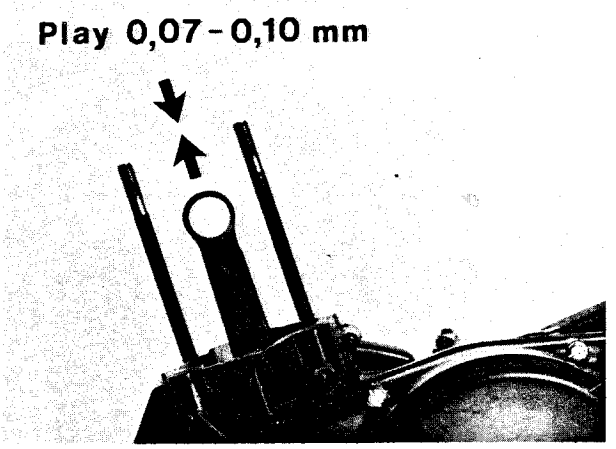


Fig. 7.2

The cylinder should be bored up to oversize when the wear on its top section amounts to 0,15 mm, i.e. when the difference between measurements A and B in fig. 7.3 amounts to 0.15 mm.

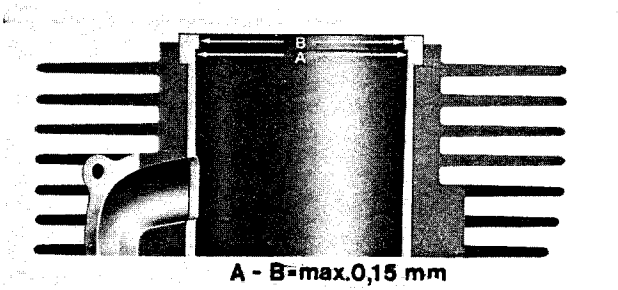


Fig. 7.3

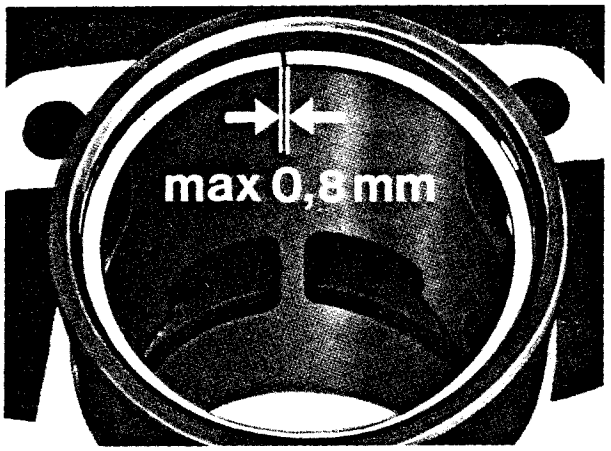


Fig. 8.1

Check the wear on the piston ring by placing it in the lower part of the cylinder bore. Measure the distance between the piston ring ends with a feeler gauge. If this exceeds 0,8 mm it is recommended that new piston ring should be fitted. See fig. 8.1.

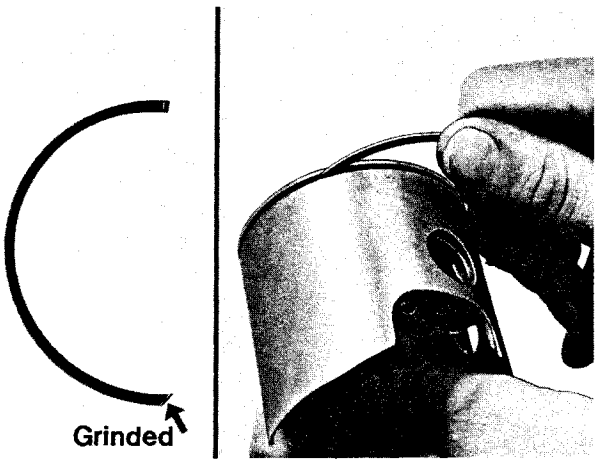


Fig. 8.2

Before fitting the piston ring, carefully remove any carbon deposits from the grooves in the piston. This is preferably done with an old piston ring which is grinded apart. See fig. 8.2.

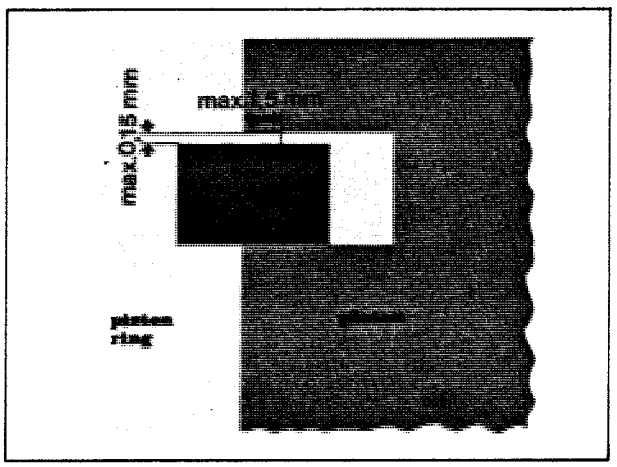


Fig. 8.3

The piston has two points of wear: its ring groove and its skirt.

A. When the play in the ring groove amounts to 0,15 mm to a depth of approx 1,5 mm, replace the piston. See fig. 8.3.

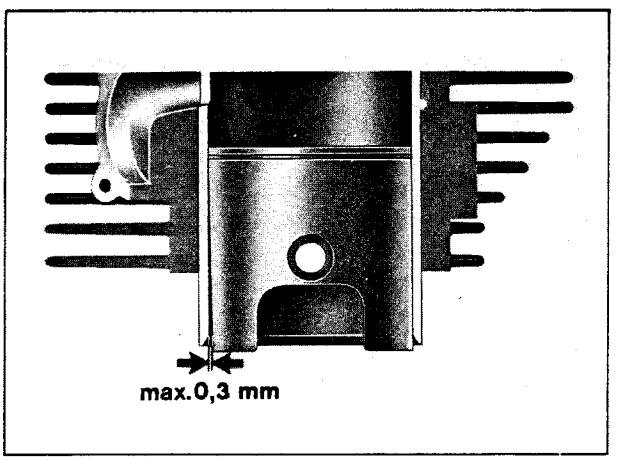


Fig. 8.4

B. When the piston skirt is worn down so that a measurement of approx 0,3 mm can be taken as illustrated in fig. 8.4, scrap the piston.

Before fitting a new piston, check that no free play has occurred in the piston pin needle bearing. Insert the needle bearing and the piston pin into the connecting rod and pull in the radial direction.
See fig. 9.1.

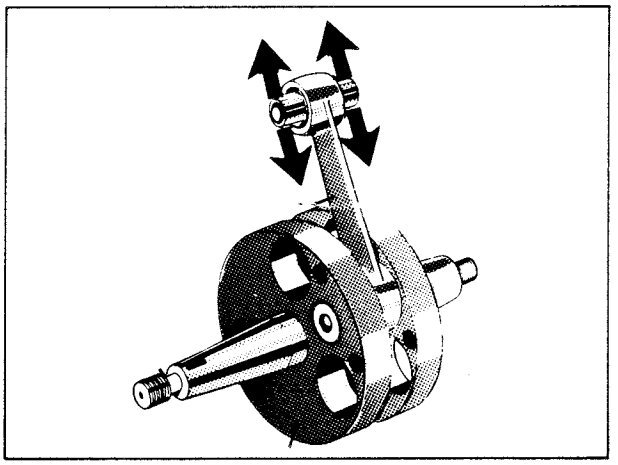


Fig. 9.1

Check that no leak has occurred between the cylinder and the cylinder head. If it has, lap in the cylinder head against the cylinder with fine grinding paste. NOTE! Don't forget to wipe the cylinder and cylinder head free from grinding compound.

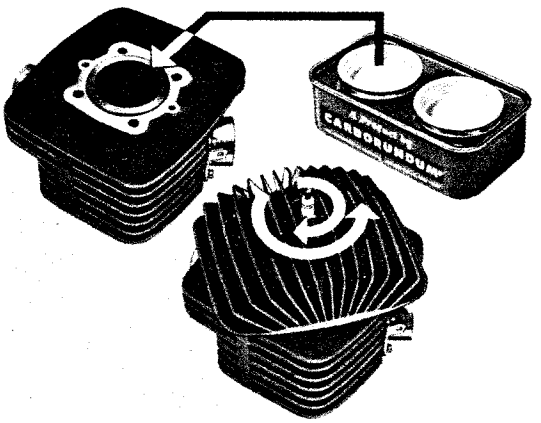
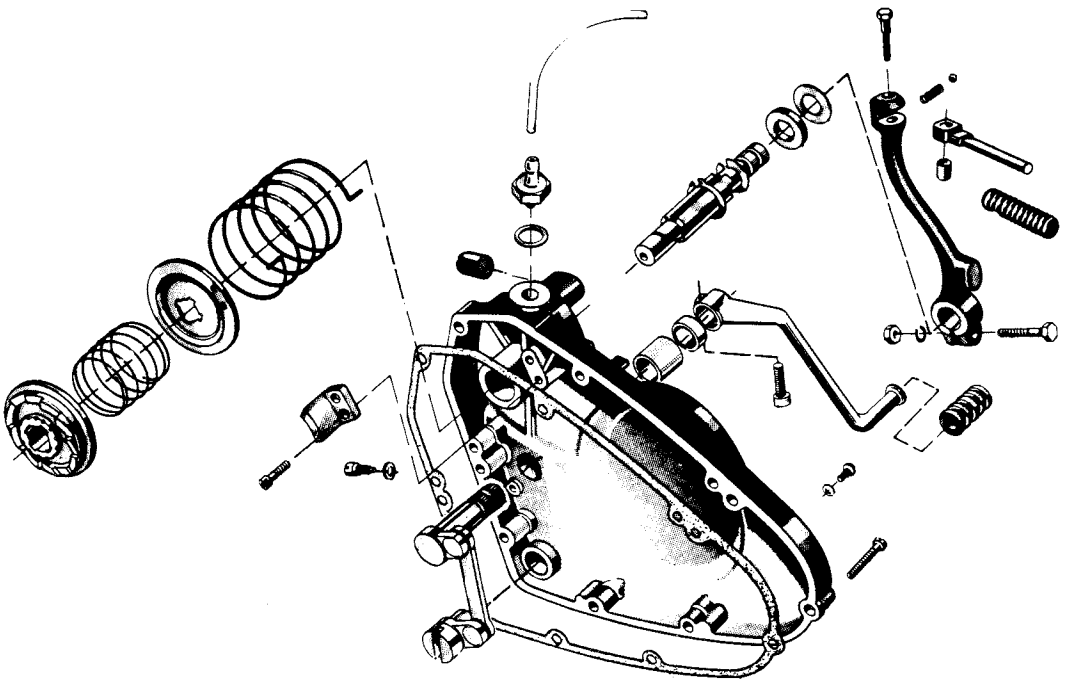


Fig. 9.2

Transmission cover



Dismantling
Remove the shift lever and the kick starter pedal from the transmission cover. Disassemble the transmission cover from the engine. See fig. 3.1.

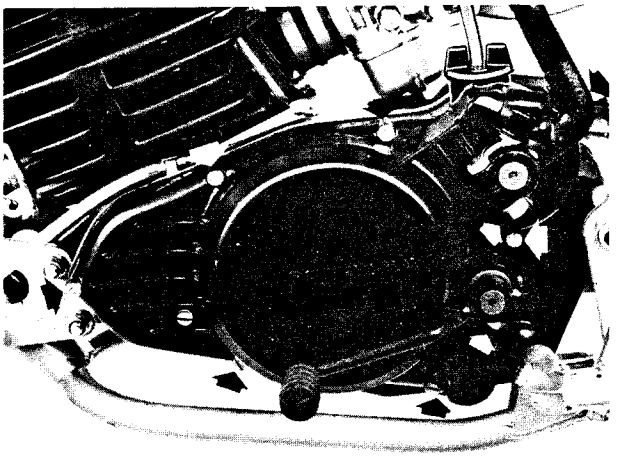


Fig. 3.1

Unscrew the gear links stop screw.

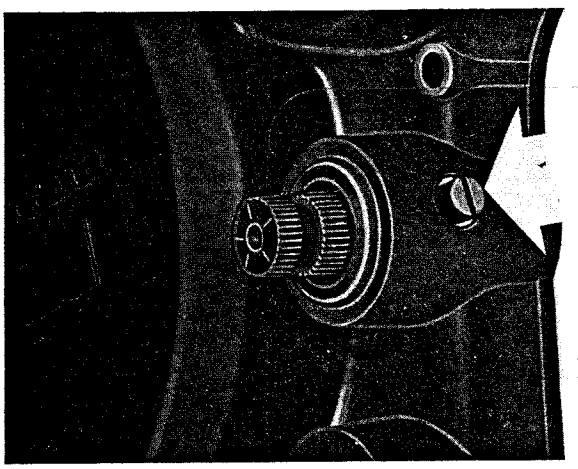


Fig. 3.2

Remove the gear links. See fig. 3.3.

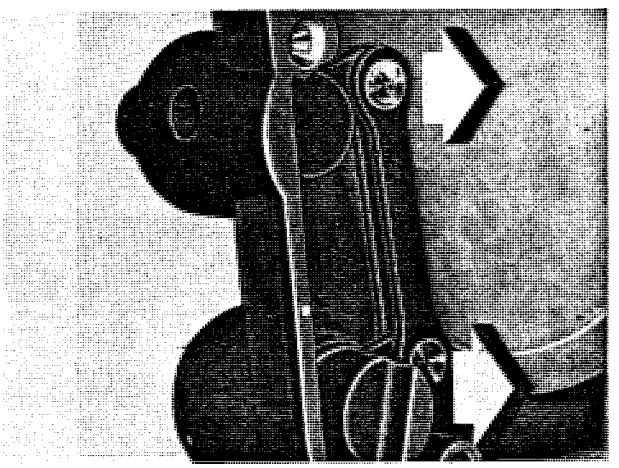


Fig. 3.3

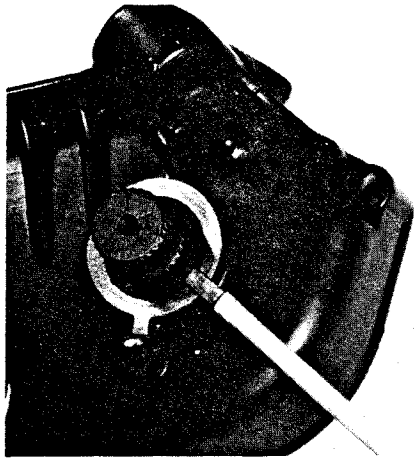


Fig. 4.1

Insert a small screw driver under the rubber gasket and pry it away. See fig. 4.1.

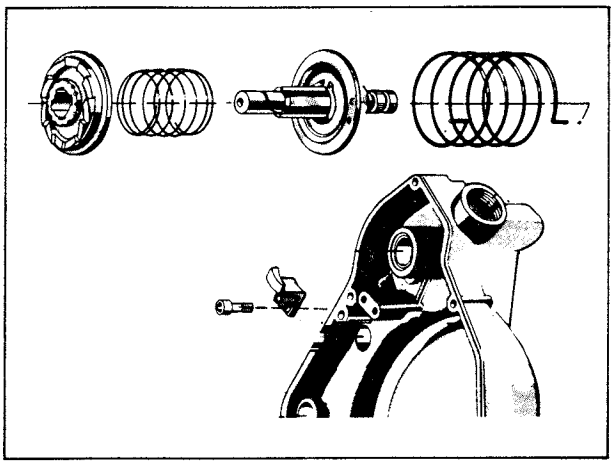


Fig. 4.2

Unscrew the pawl. Remove the driving wheel and the spring. Pull out the kick start shaft with the driving disc and the remaining spring. See fig. 4.2.

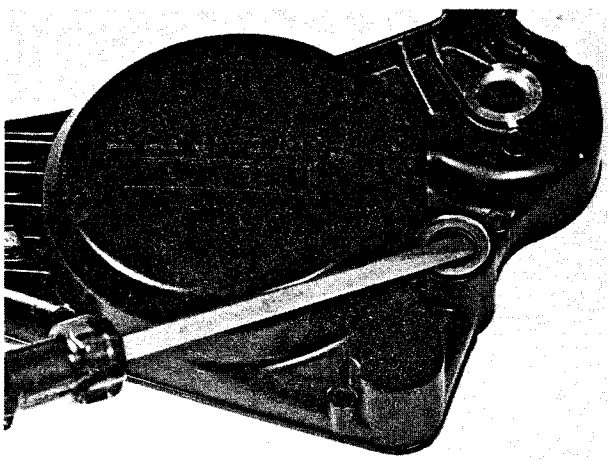


Fig. 4.3

Pry out the old seal with a screw driver.
See fig. 4.3.
NOTE! Make sure that the screw driver only reaches the seal.

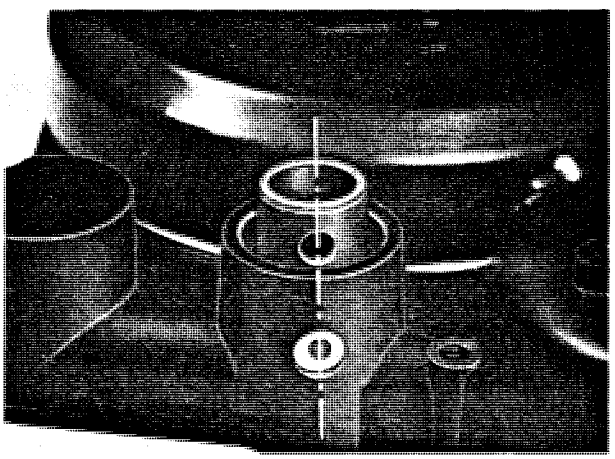


Fig. 4.4

Heat the cover to approximately 150°C. Knock out the old bushing with a 20 mm drift.
Put a new bushing in position while the cover still is warm.
NOTE! See to it that the hole in the bushing is level with the one in the cover.
See fig. 4.4.

Assembling
Insert a new sealing ring for the gear links. See fig. 5.1.

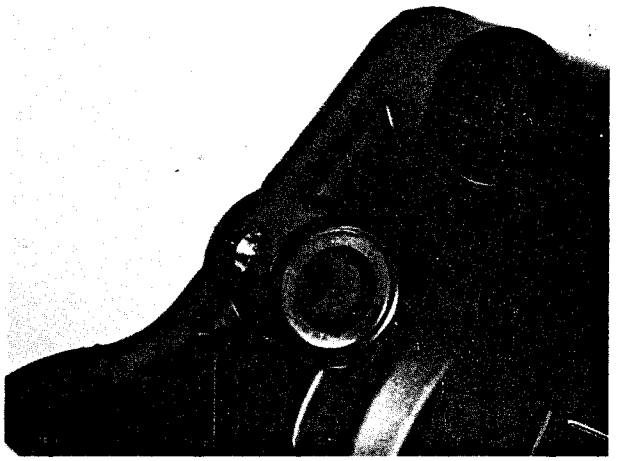


Fig. 5.1

Insert the gear links into the cover.
NOTE! Be careful not to damage the sealing ring. Use a small screw driver to help the sealing ring lips pass the notch of the gear links.
See fig. 5.2.
Assemble the stop screw.

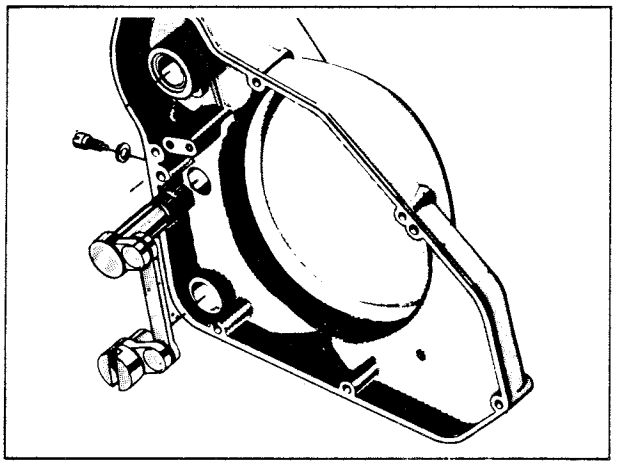


Fig. 5.2

The driving disc is mounted on the kick starter shaft as fig 5.3 shows.

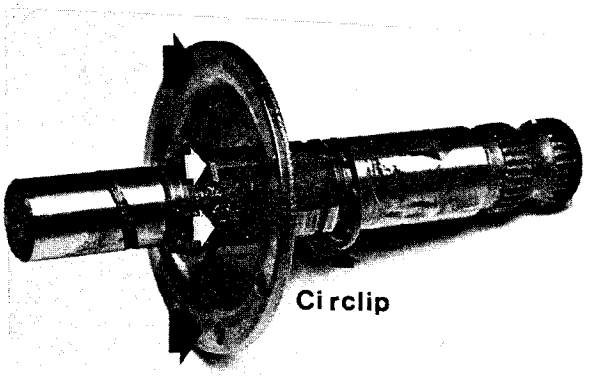


Fig. 5.3

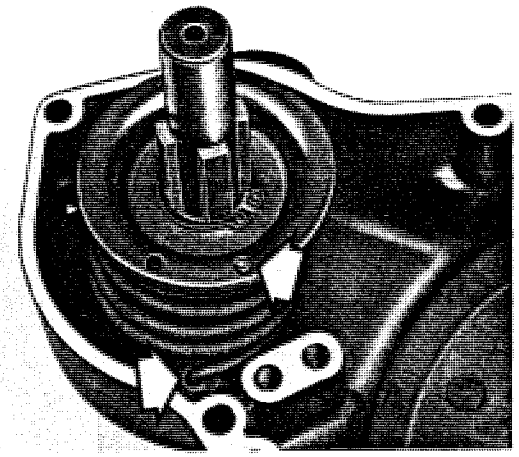


Fig. 6.1

Assemble the kick start shaft, driving disc and spring as shown in fig 6.1.
NOTE! The spring must be mounted in the holes shown in fig. 6.1. The longest spring pin into the cover.

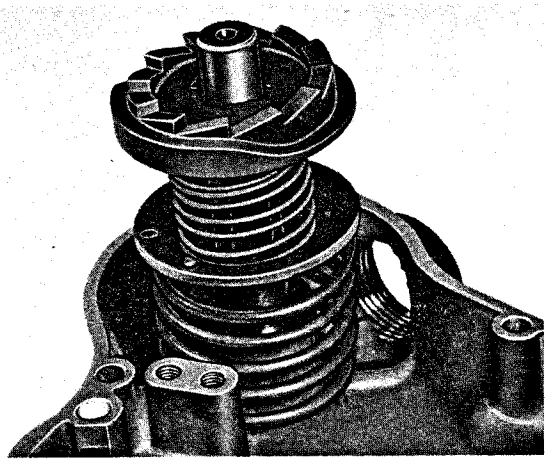


Fig. 6.2

Assemble the driving wheel with the spring and put the pawl in position. NOTE! The driving wheel shall be placed according to fig. 6.2 and 6.3.

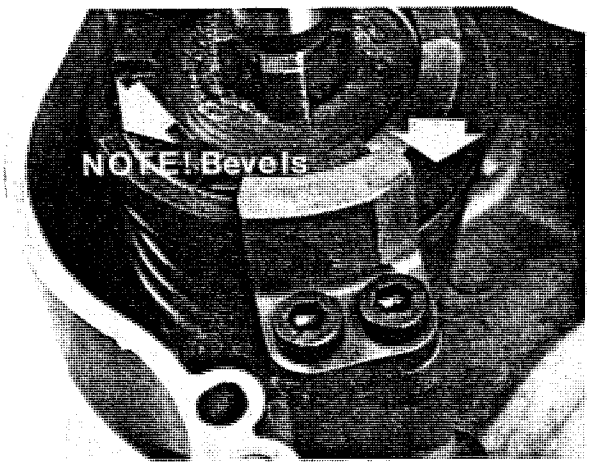


Fig. 6.3

Press a new rubber gasket in position. Use a blunt screw driver. See fig. 6.3.

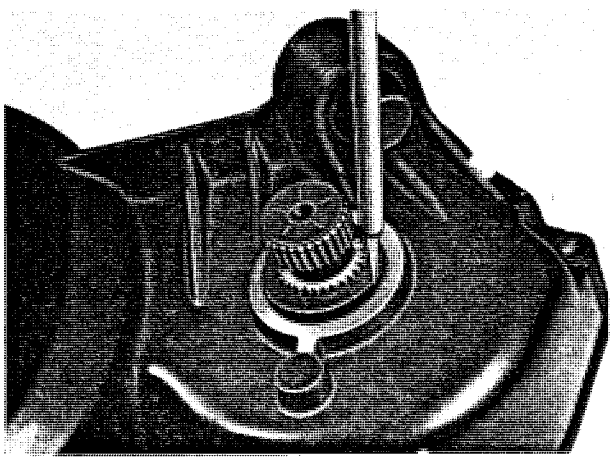


Fig. 6.4

The driving wheel shall start to grab the start gear wheel when the kick starter pedal is in the position shown in fig 7.1.

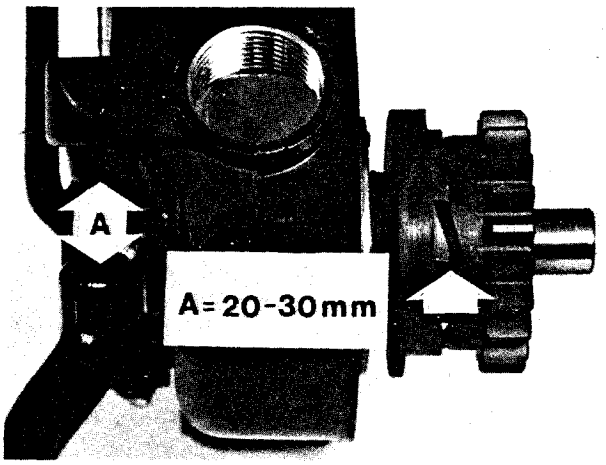


Fig. 7.1

Put a new gasket in position and assemble the transmission cover. Install the shift lever.

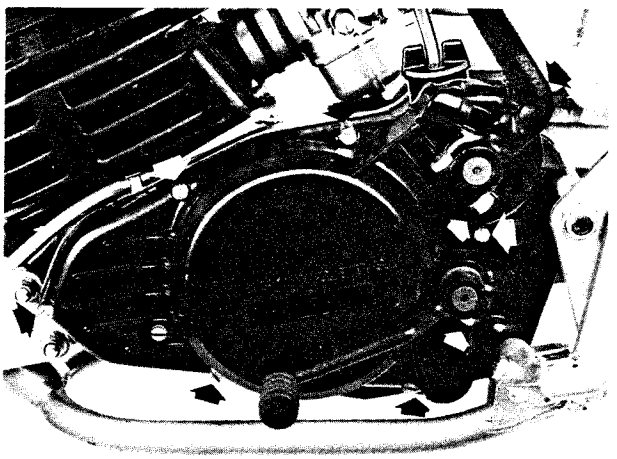


Fig. 7.2

Time for repairs-maintenance

Check regularly that the kick starter shaft gasket and the gear links sealing ring do not leak. Disassemble the kick starter pedal regularly for cleaning and greasing. See fig. 7.3.

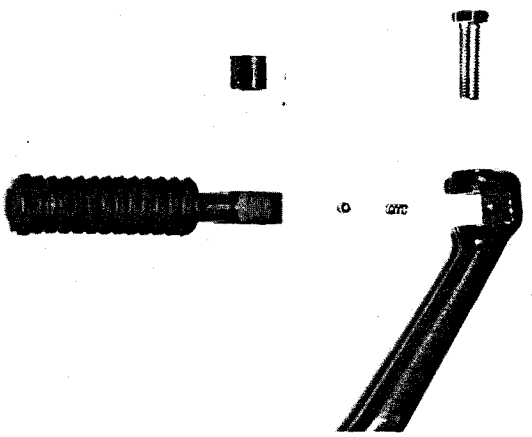
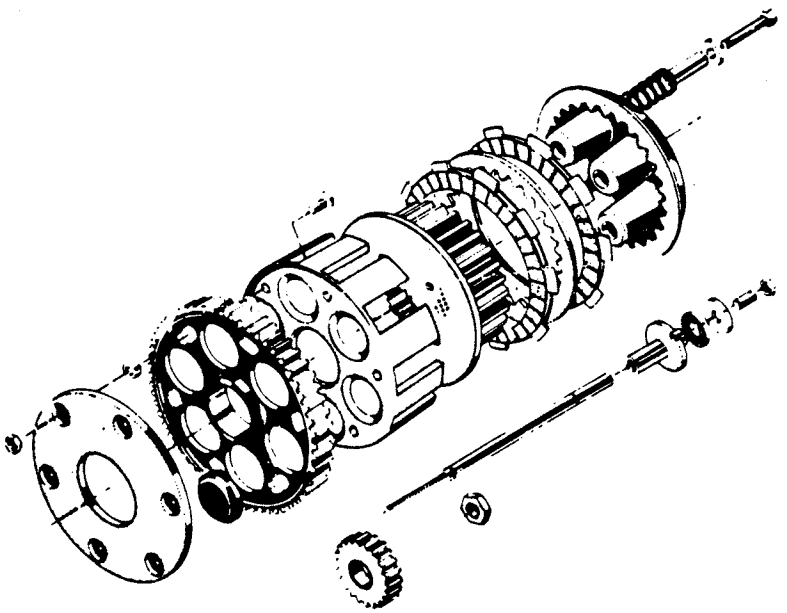


Fig. 7.3

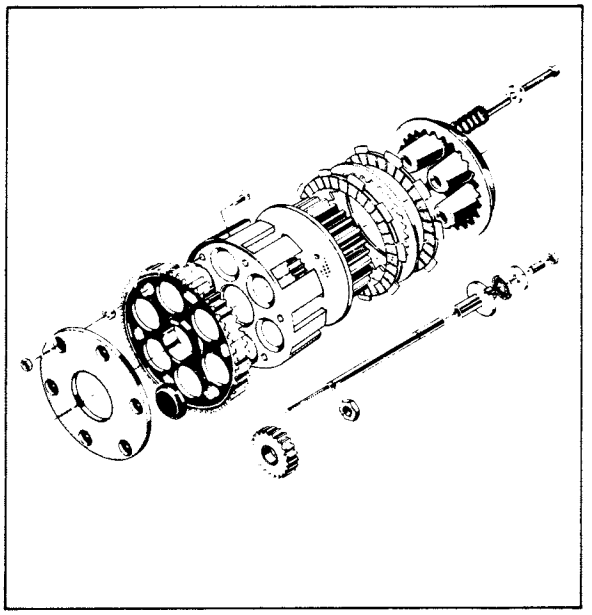
WORKSHOP MANUAL



CLUTCH

C

Clutch



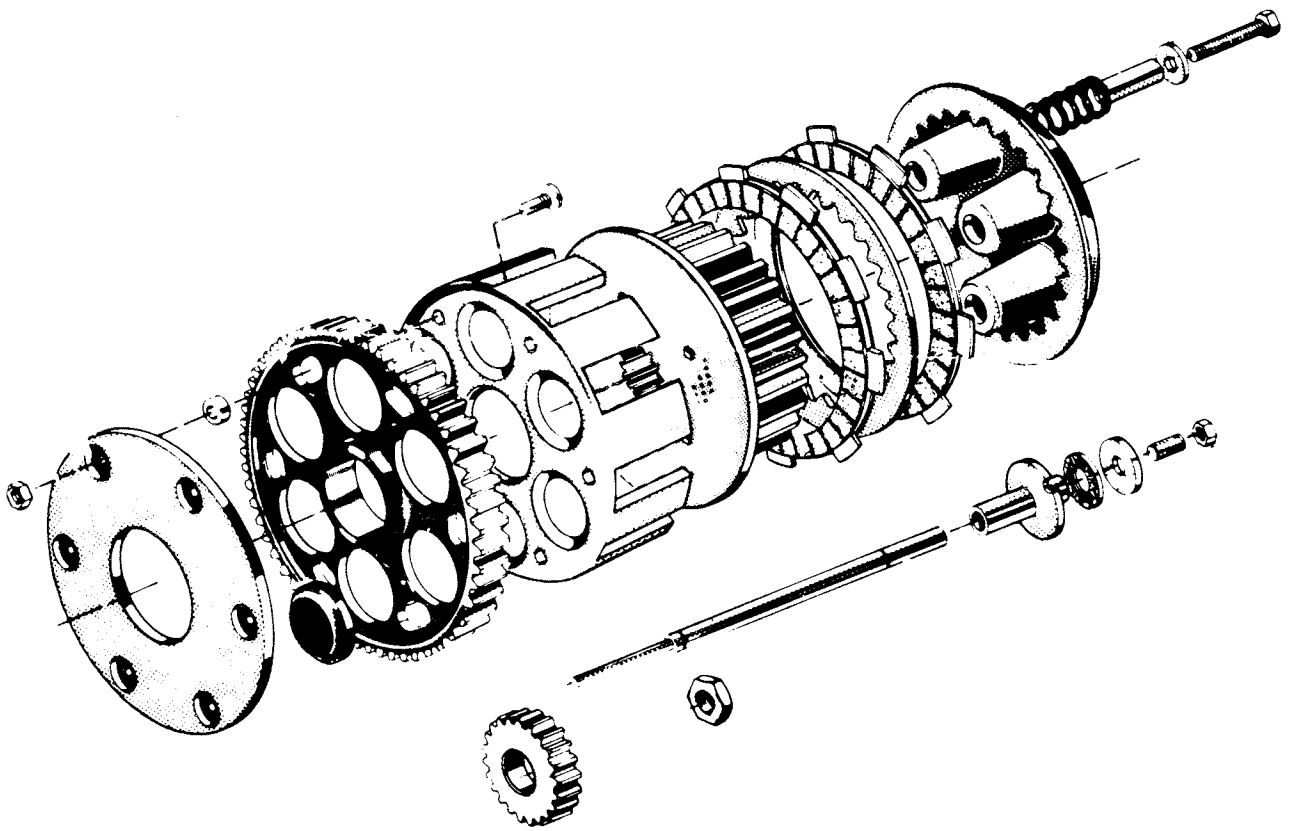
This chapter covers the three different types of clutches that have been mounted on Husqvarna motorcycles since 1974.

C A. Clutch rubber damped
125 CR ML 16000 →
175 CC ML 0001 →
All 250–360 cc ML-models

C B. Clutch Husqvarna small
All 125–175 cc MK-models
125 cc ML 0001–15999
250 CR MK 10500–19499
250 WR MK 19500 →

C C. Clutch Husqvarna big
250 WR MK 0001–19499
All 400–450 cc MK-models
All 250–360 RT SK-models

Clutch rubber damped.



Function
The drive from the engine crank shaft is transmitted to the clutch through a gear drive. The clutch ring has a built-in damping system and the power is continued by eleven aluminium discs, six with linings and five without. The discs are forced apart by a clutch rod which is actuated by a lever on the upper side of the gearbox.

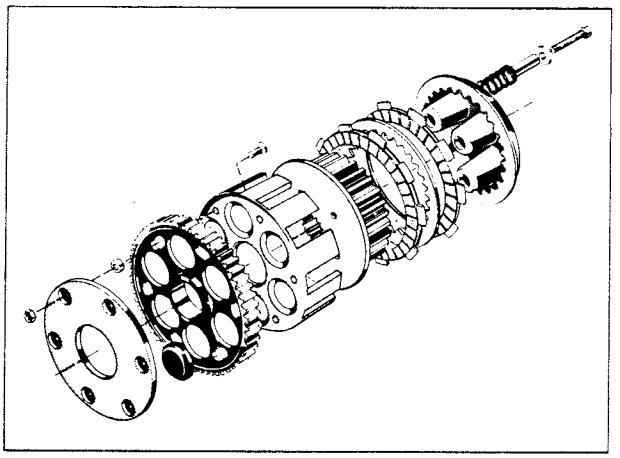


Fig. 3.1

Dismantling
Screw out the spring tension screws and remove the pressure plate with springs, sleeves, washers and screws.
See fig. 3.2.

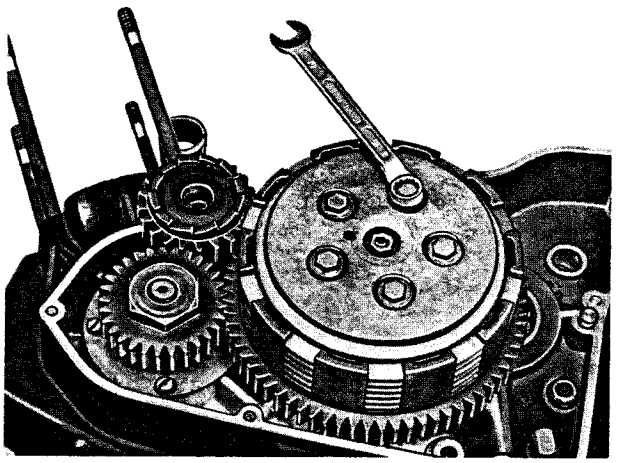


Fig. 3.2

Take out the push rod with the axial bearings, remove the circlip and take out the clutch hub with discs.
See fig. 3.3.
Apart the axial bearing.

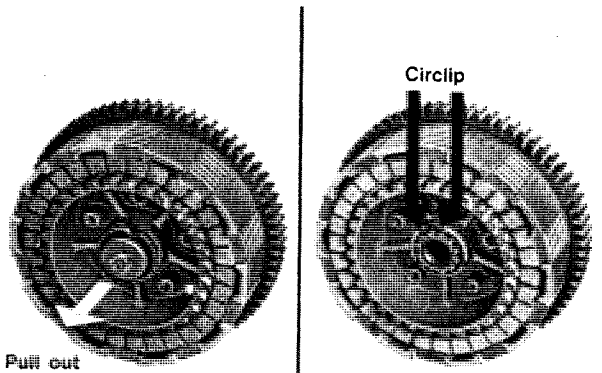


Fig. 3.3

Take out the clutch ring with the washer. See fig. 4.1.

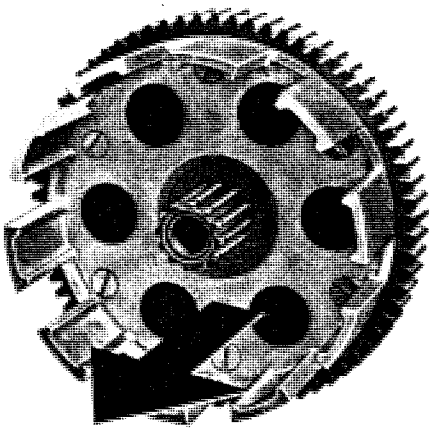


Fig. 4.1

Remove the needle bearing, the internal ring and the washer. See fig. 4.2.

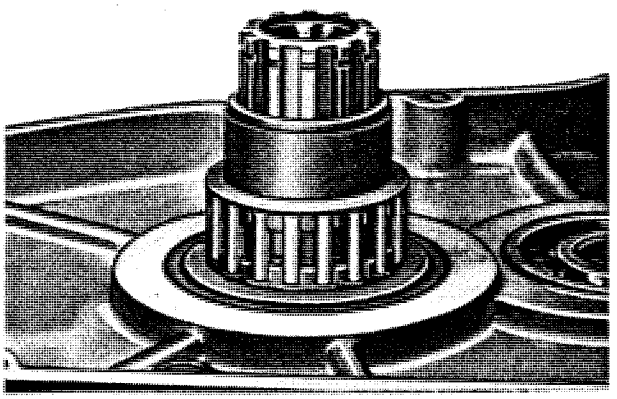


Fig. 4.2

Screw out the six screws and apart the clutch ring. See fig. 4.3.

NOTE! The nuts on the back side are locked with Loctite.
NOTE! Do not disassemble the clutch ring if not absolutely necessary.

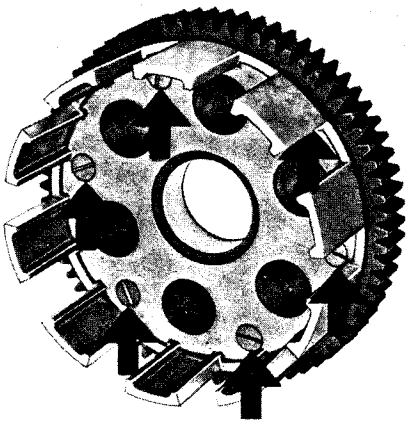


Fig. 4.3

Assembling
Place the cog wheel over the support plate.

NOTE! The cog wheel shall be placed with the widest part of the center ring against the support plate.

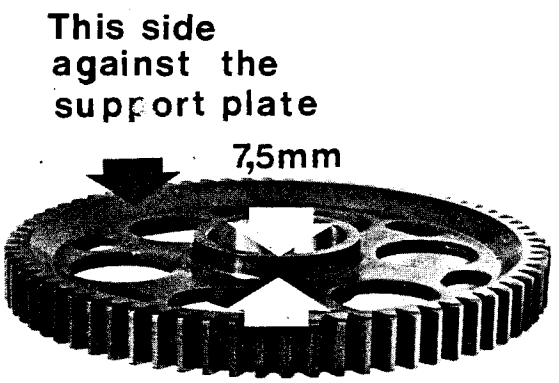


Fig. 4.4

Put the damping elements and the distance rings in position. See fig. 5.1.

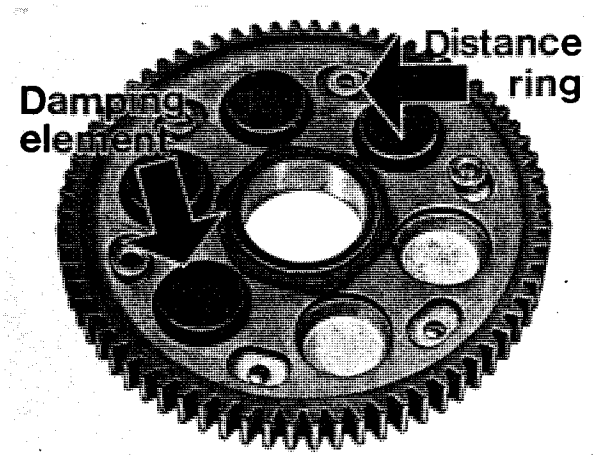


Fig. 5.1

Locate the clutchring over the cog wheel. Insert the six screws.
See fig. 5.2.

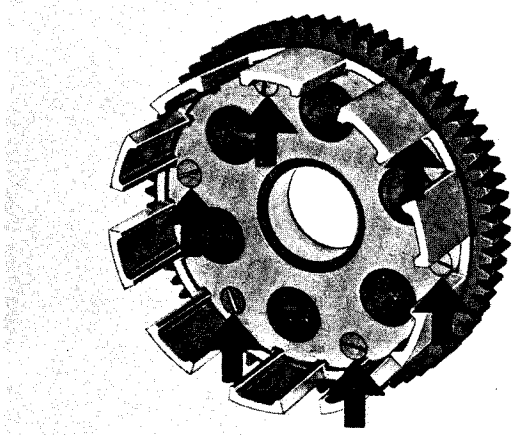


Fig. 5.2

Lock with Loctite 241 and tighten the nuts to 8 Nm.
See fig. 5.3.

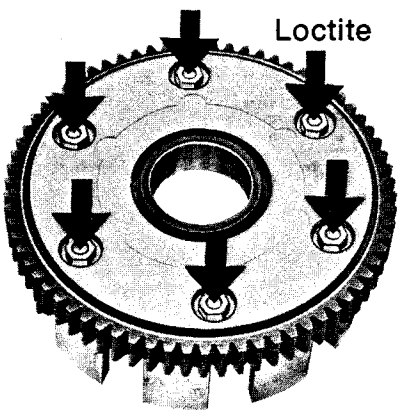


Fig. 5.3

Insert washer, internal ring and needle bearing on the main shaft.
See fig. 6.1.

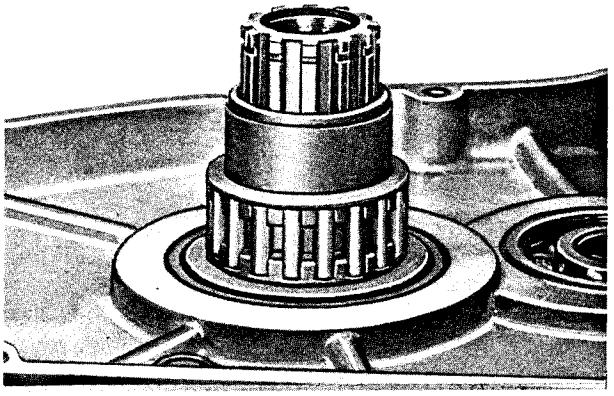


Fig. 6.1

Install the clutch ring and put the washer in position.
See fig. 6.2.

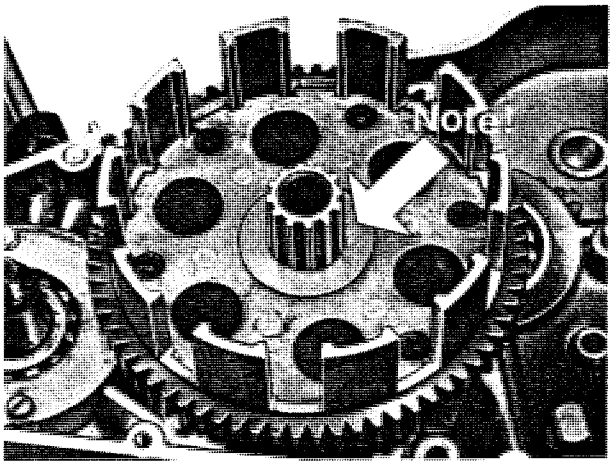


Fig. 6.2

Insert the clutch hub with the circlip.
See fig. 6.3.

NOTE! Make sure that the circlip is correct positioned.

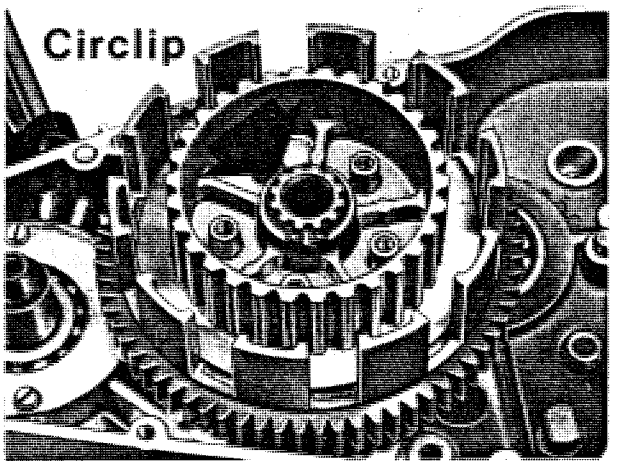


Fig. 6.3

Mount the shaft sleeve with the axial bearing on the push rod.
See fig. 6.4.

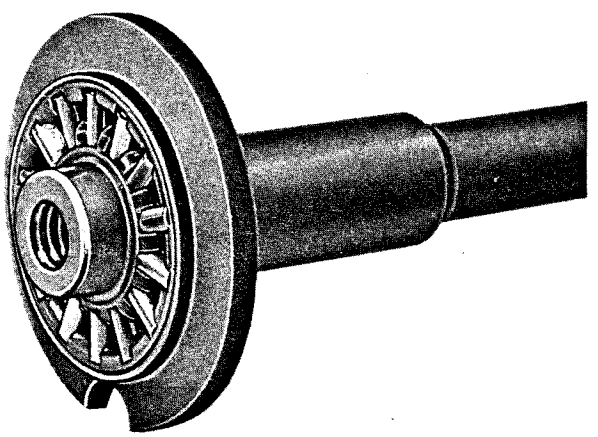


Fig. 6.4

Put the axial washer and the adjusting screw with nut in position.
See fig. 7.1.

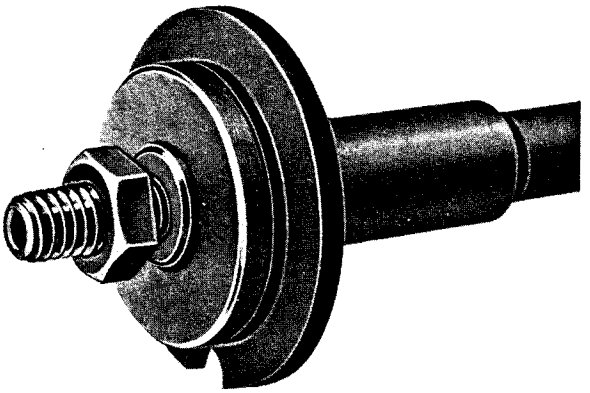


Fig. 7.1

Insert the push rod into the main shaft. Engage the discs. Start with one with lining and mount them alternately up.
See fig. 7.2.

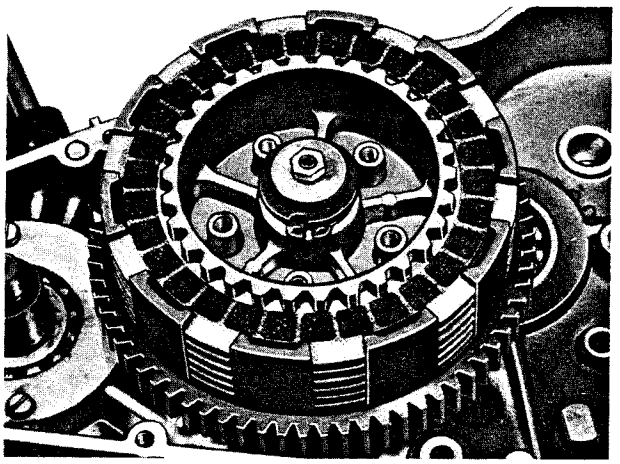


Fig. 7.3

Apply the pressure plate with springs, distance sleeves, washers and screws. Lock the screws with Loctite 225 and tighten to 5 Nm. See fig. 7.3.

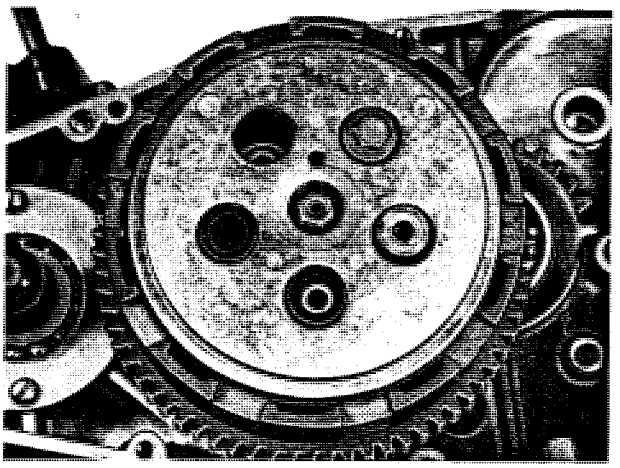


Fig. 7.2

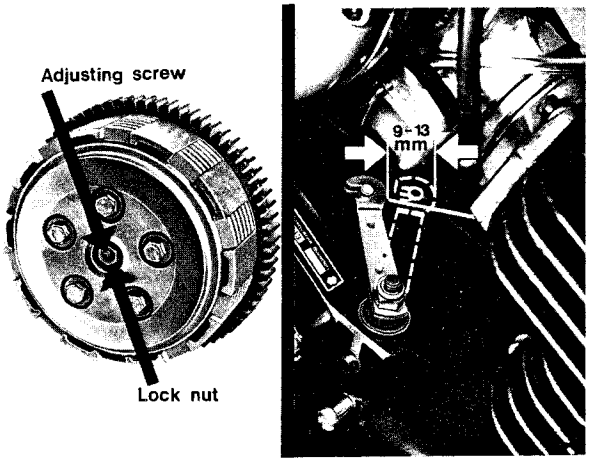


Fig. 8.1

Adjust the play on the clutch lever with the screw on the pressure plate.
See fig. 8.1.

NOTE! When adjusting, lock the shaft sleeve by inserting a peg into the hole in the pressure plate and through the slot in the shaft sleeve.

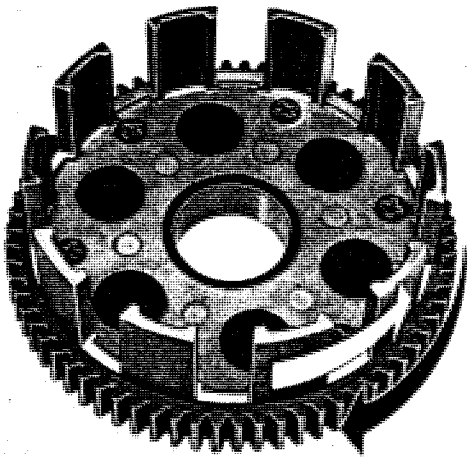


Fig. 8.2

Time for repairs-maintenance
Check that no free play has occurred between the cog wheel and the clutch ring.
See fig. 8.2.
If it has, replace the rubber damping elements with new ones.

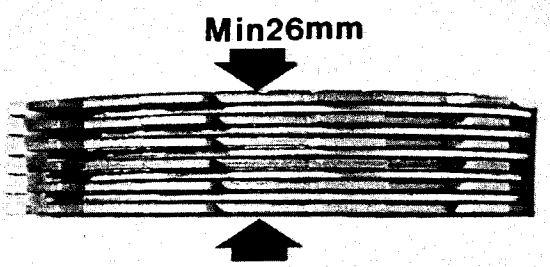
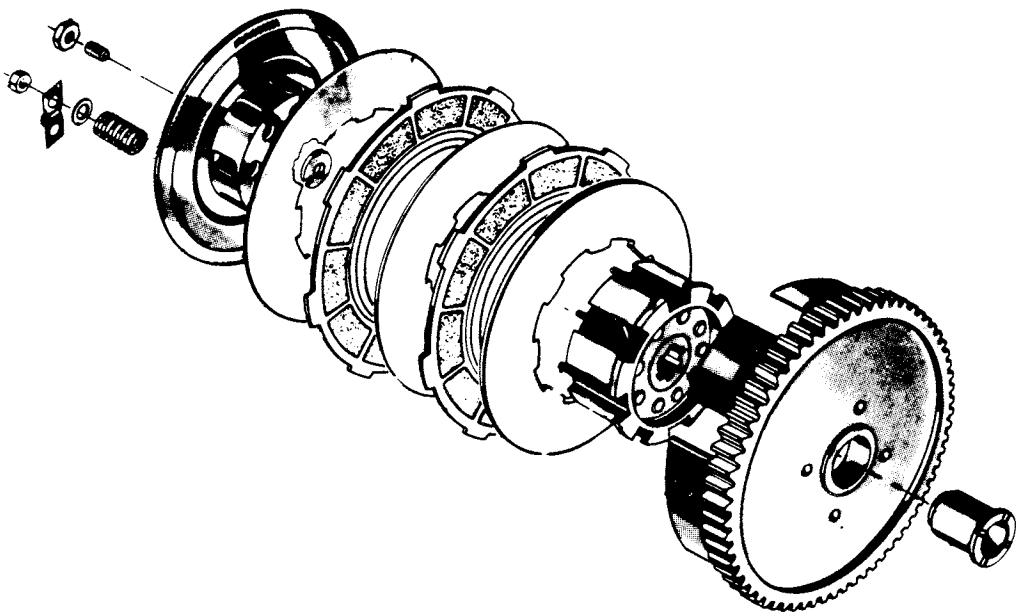


Fig. 8.3

Replace the discs when the whole disc unit is worn down to 26 mm. See fig. 8.3.

Clutch Husqvarna small



Function
The drive from the engine crank shaft is transmitted to the clutch through a gear drive. The power is continued by eleven discs, five with linings and six without. The discs are forced apart by a push rod which is actuated by a lever on the upper side of the gearbox.

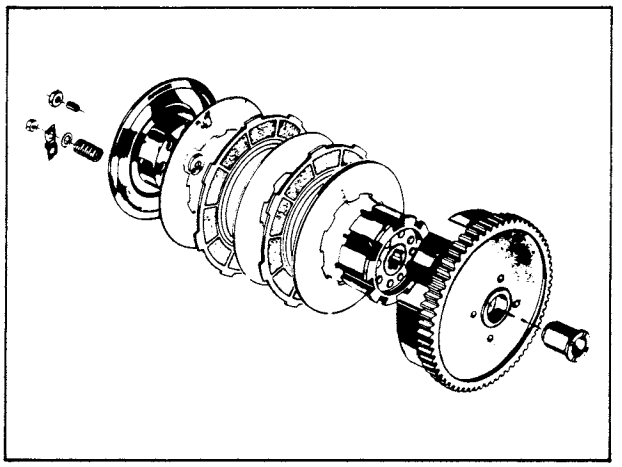


Fig. 3.1

Dismantling
Bend up the lock plate tips and unscrew the eight nuts. Lift off the pressure plate with lock plates, washers and springs. See fig. 3.2.

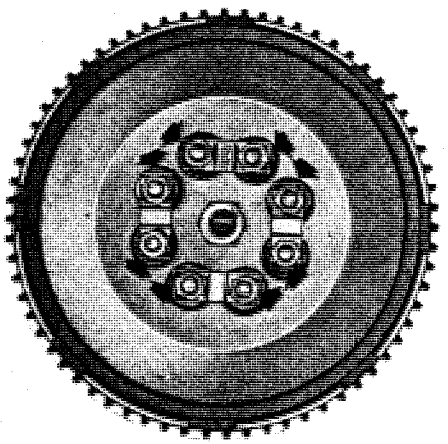


Fig. 3.2

Lift off the discs. Remove the clutch hub. See fig. 3.3.

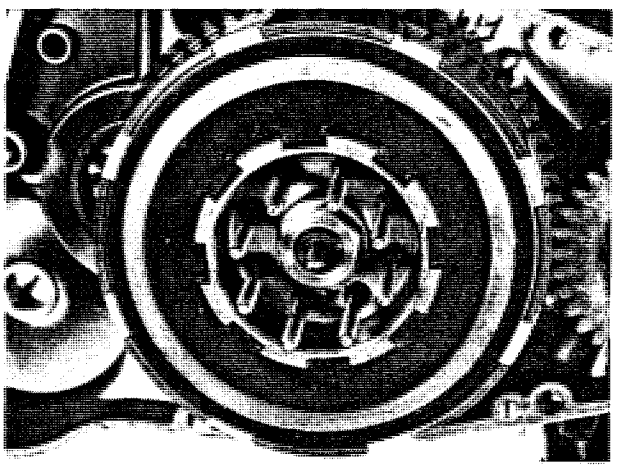


Fig. 3.3

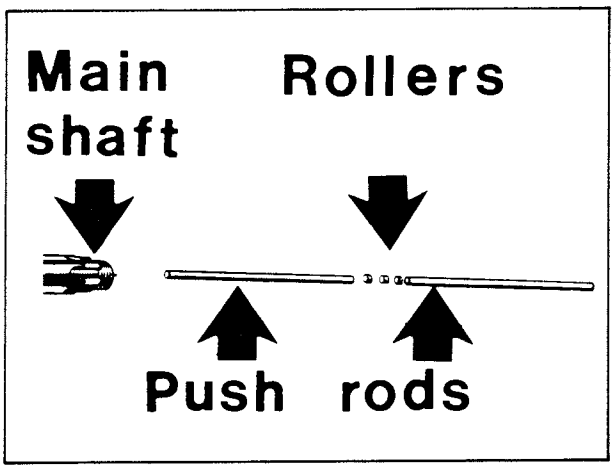


Fig. 4.1

Detach the two push rods and the three rollers from the main shaft.
See fig. 4.1.

Pull off the clutch ring with a puller.
See fig. 4.2.

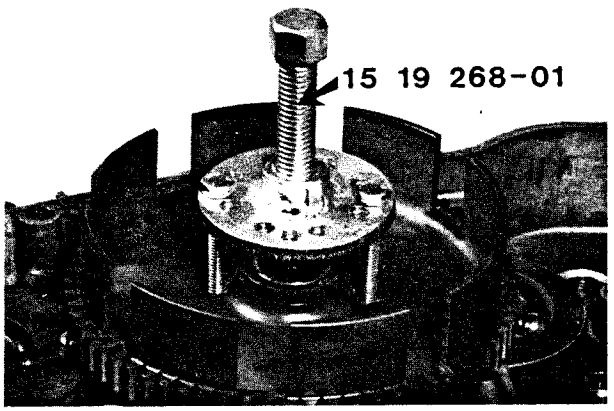


Fig. 4.2

Mounting
Press the clutch ring on the bearing sleeve until the clutch ring is level with the sleeve.
See fig. 4.3.

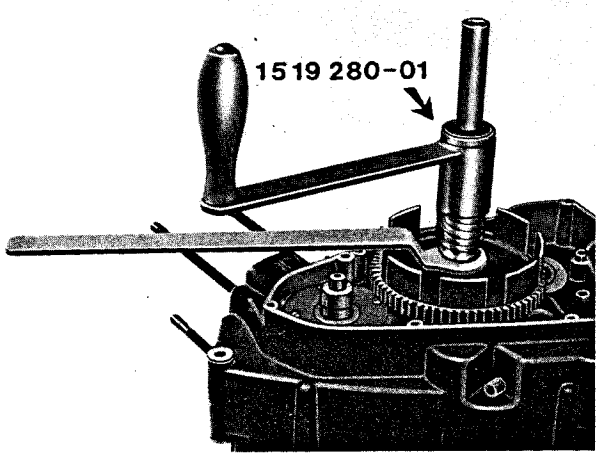


Fig. 4.3

Insert the clutch hub and tighten to 40 Nm.
Bend up the tips of the locking washer.
See fig. 4.4.

NOTE! Remember the support washer behind the hub.

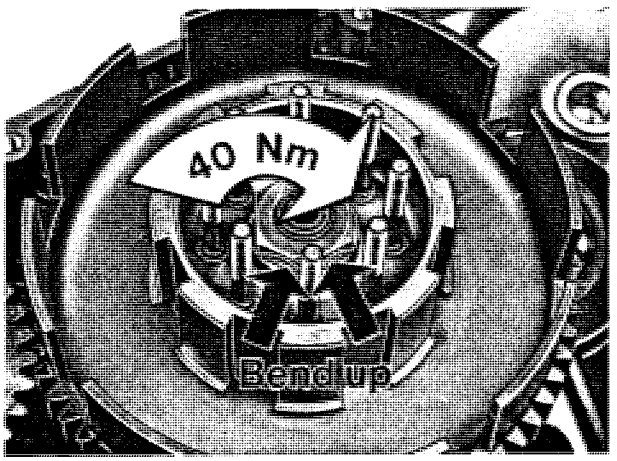


Fig. 4.4

Install the discs. Begin with the thick steel disc. Mount them alternately and finish with a thin steel disc. See fig. 5.1. Insert the push rods and the rollers.

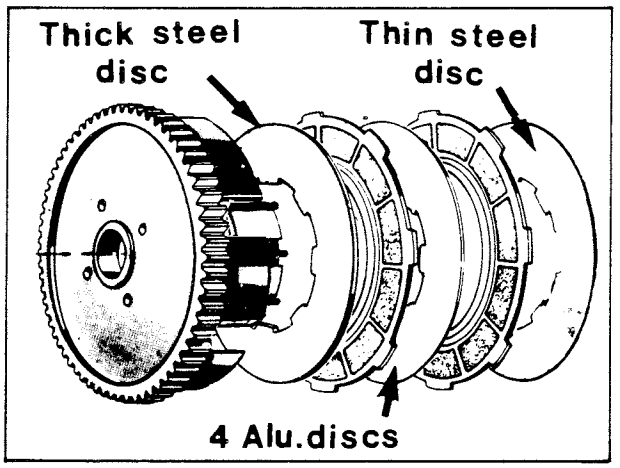


Fig. 5.1

Put the pressure plate with springs, washers and lock plates in position. Attach the nuts. See fig. 5.2.

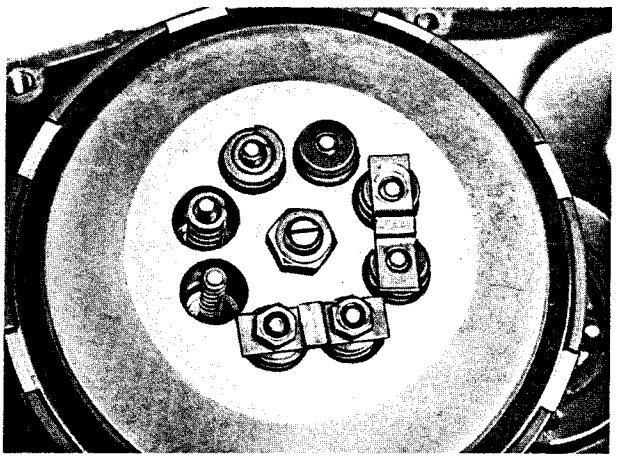


Fig. 5.2

Declutch and check the pressure plate lift. Adjust on the eight nuts until the lift is the same all around the plate. See fig. 5.3.

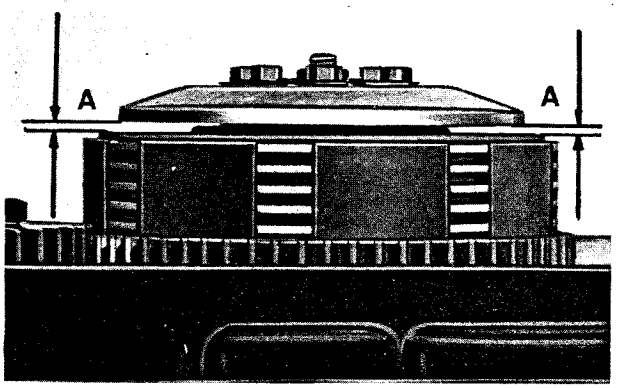
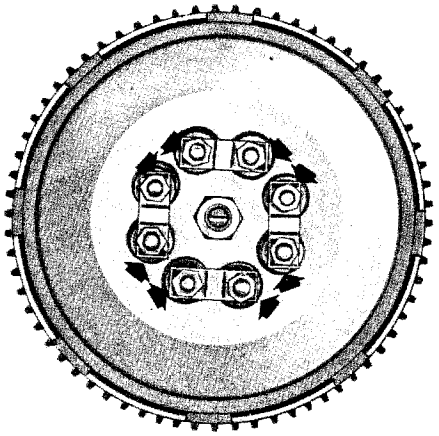
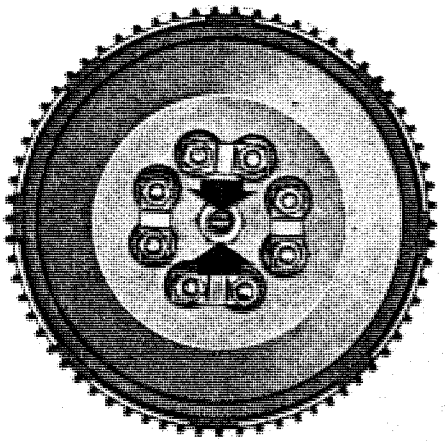


Fig. 5.3



Lock the nuts by bending up the tips on the lock plates.
See fig. 6.1.

Fig. 6.1



Adjust the play on the clutch lever with the screw on the pressure plate.
See fig. 6.2 and 6.3.

Fig. 6.2

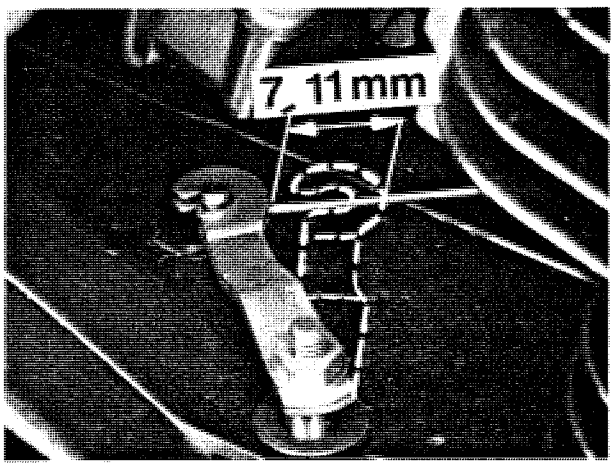
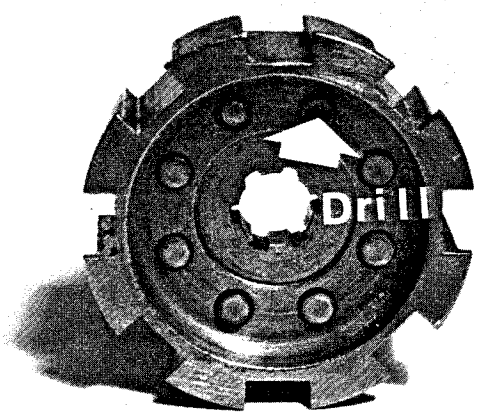


Fig. 6.3



Changing stud – clutch hub
Drill with a 5 mm drill in the riveted end of the stud to a deep of approximately 4 mm.
See fig. 6.4.

NOTE! The drilling must be done exactly in the centre of the stud.

Fig. 6.4

Knock out the stud with a drift.

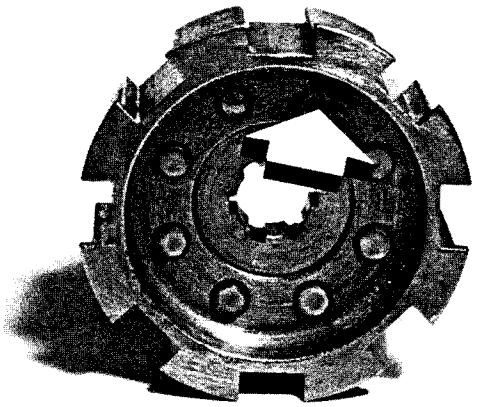


Fig. 7.1

Press a new stud in position and rivet the stud end. Use a strong sleeve with 5 mm internal diameter to support the stud in position.
See fig. 7.2.

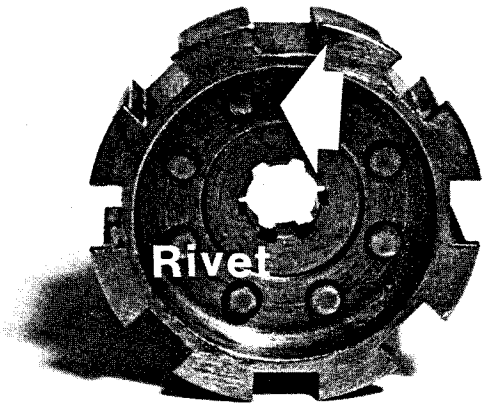


Fig. 7.2

Time for repairs-maintenance
Replace the discs when the whole disc unit is worn down to 25 mm. See fig. 7.3.

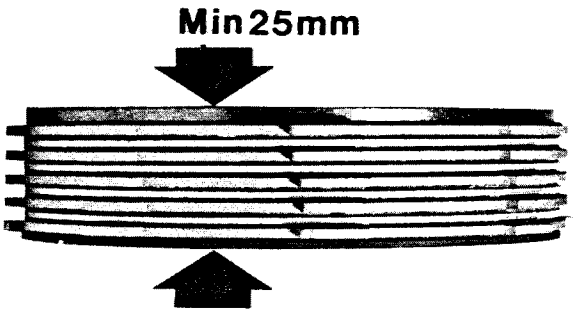
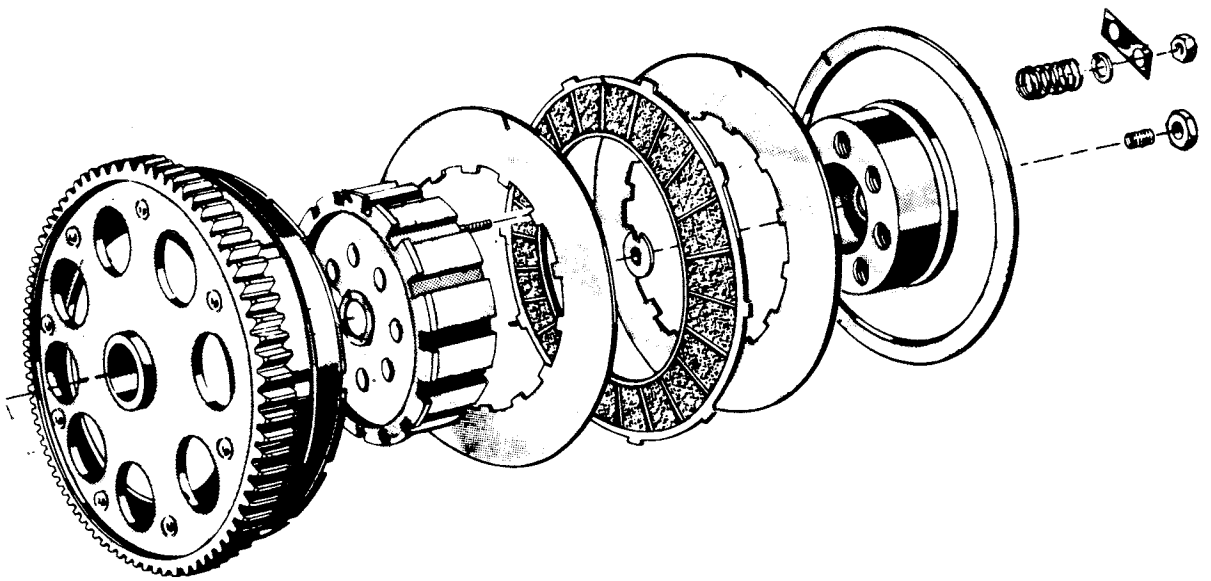


Fig. 7.3

Clutch Husqvarna big



Function
The drive from the engine crankshaft is transmitted to the clutch through a gear drive. The clutch is built into the large drive gear and has five friction discs and six steel discs.
The discs are forced apart by a clutch rod which is actuated by a lever on the upper side of the gearbox.

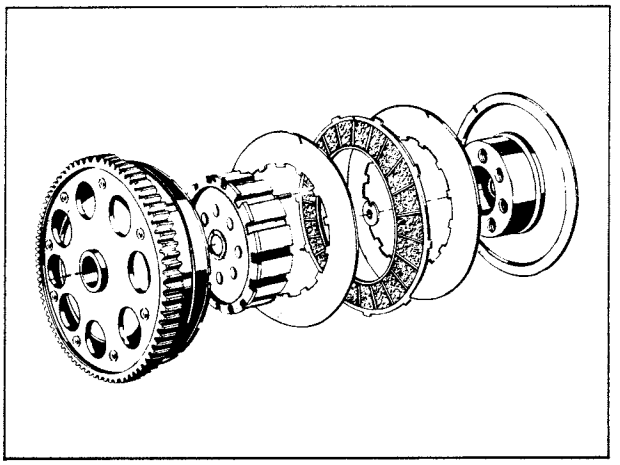


Fig. 3.1

Dismantling
Bend up the lock plate tips and unscrew the eight nuts. Lift off the pressure plate with lock plates, waschers and springs. See fig. 3.2.

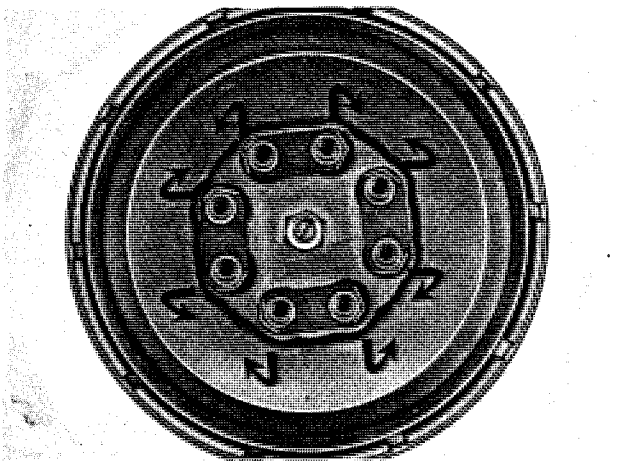


Fig. 3.2

Remove the discs. Remove the clutch hub. See fig. 3.3.

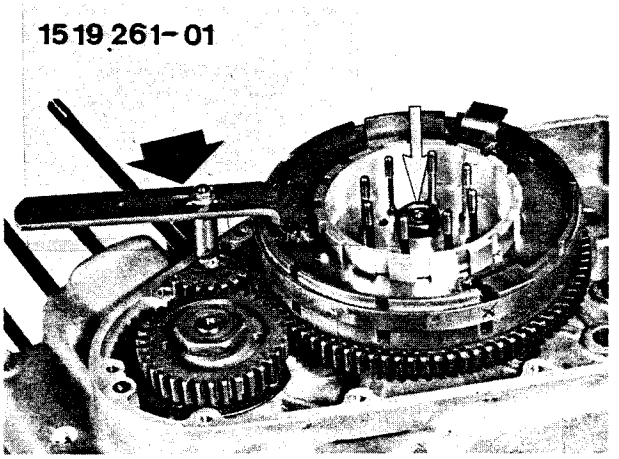


Fig. 3.3

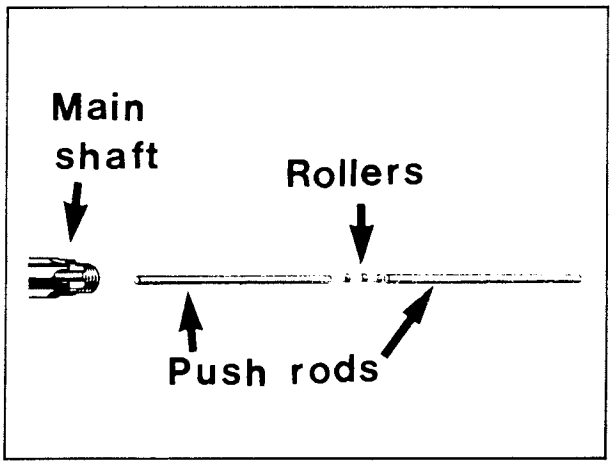


Fig. 4.1

Detach the two push rods and the three rollers from the main shaft. See fig. 4.1.

Pull off the clutch ring with a puller. See fig. 4.2.

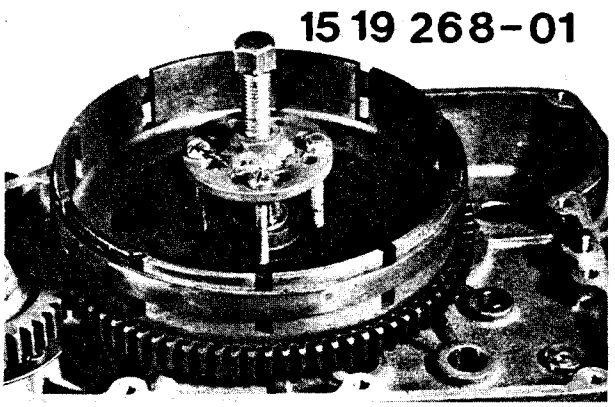


Fig. 4.2

Mounting
Press the clutch ring on the bearing sleeve until the clutch ring is level with the sleeve. Se fig. 4.3.

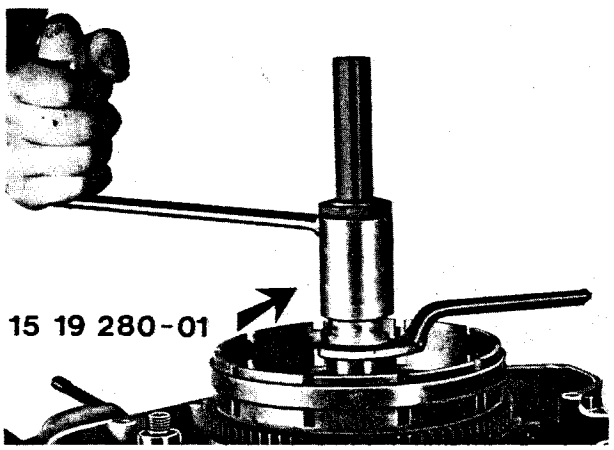


Fig. 4.3

Insert the clutch hub and tighten the nut to 40 Nm. Bend up the tips of the locking washer. See fig. 4.4.
NOTE! Remember the support washer behind the hub.

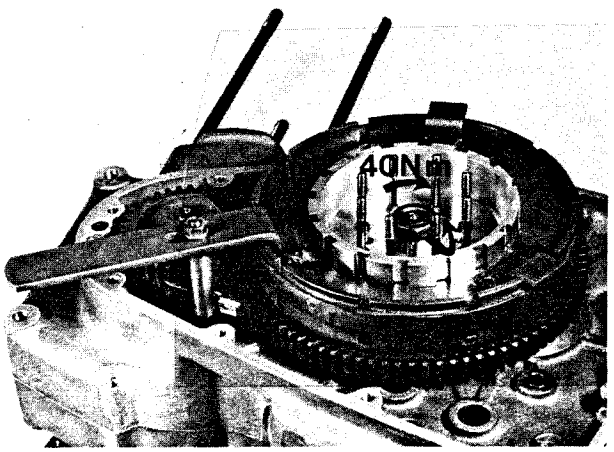


Fig. 4.4

Mount the discs alternately up. Begin and finish with a steel disc. See fig. 5.1.
Insert the push rods and rollers into the main shaft.

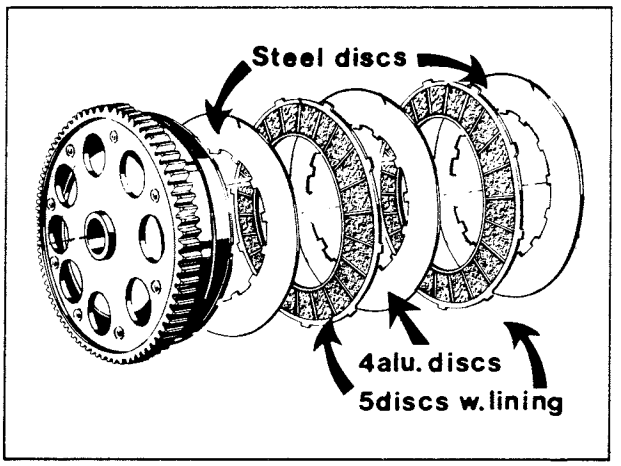


Fig. 5.1

Put the pressure plate with springs, washers and lock plates in position. Attach the nuts. See fig. 5.2.

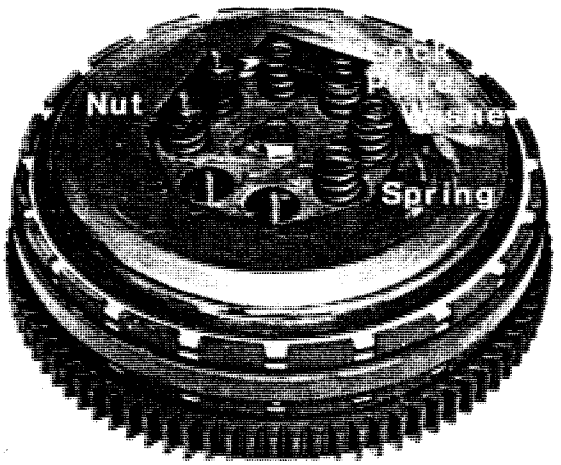


Fig. 5.2

Declutch and check the pressure plate lift. Adjust on the eight nuts until the lift is the same all around the plate. See fig. 5.3.

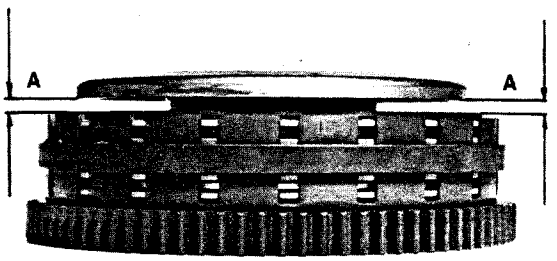


Fig. 5.3

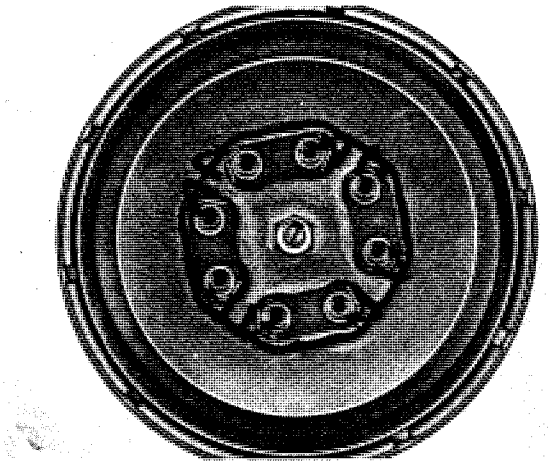


Fig. 6.1

Lock the nuts by bending up the tips on the lock plate. See fig. 6.1.

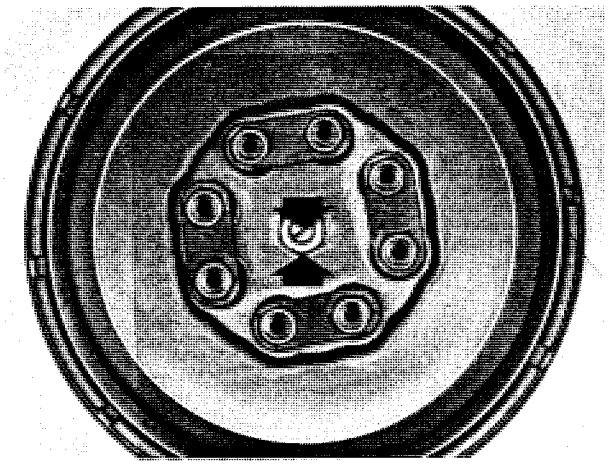


Fig. 6.2

Adjust the play on the clutch lever with the screw on the pressure plate. See fig. 6.2 and 6.3.

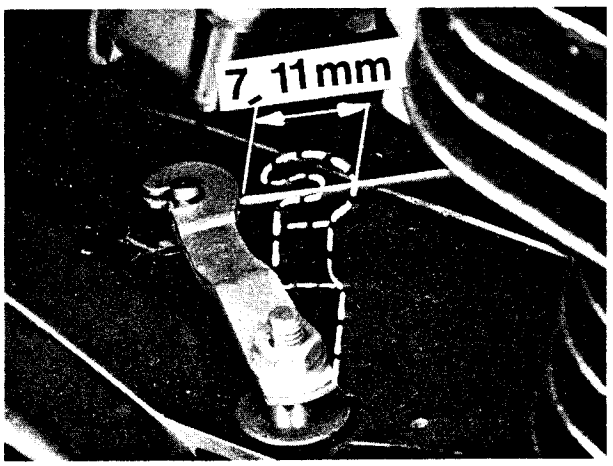


Fig. 6.3

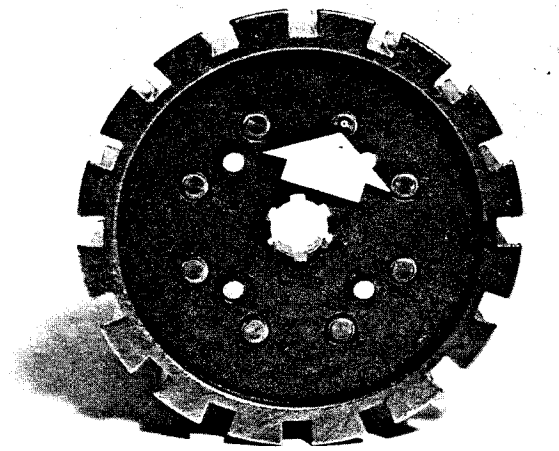


Fig. 6.4

Changing stud – clutch hub
Drill with a 5 mm drill in the riveted end of the stud to a deep of approximately 4 mm. See fig. 6.4.
NOTE! The drilling must be done exactly in the centre of the stud.

Knock out the stud with a drift.

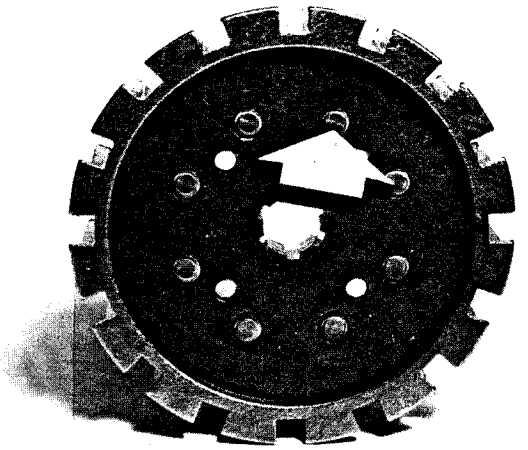


Fig. 7.1

Press a new stud in position and rivet the stud end. Use a strong sleeve with 5 mm internal diameter to support the stud in position. See fig. 7.2.

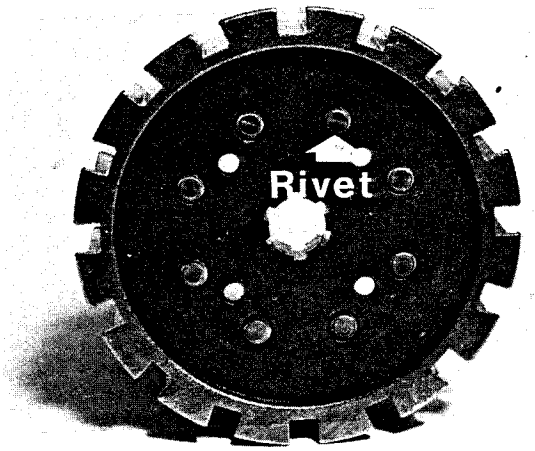


Fig. 7.2

Time for repairs – maintenance
Replace the discs when the whole disc unit is worn down to 28 mm. See fig. 7.3.

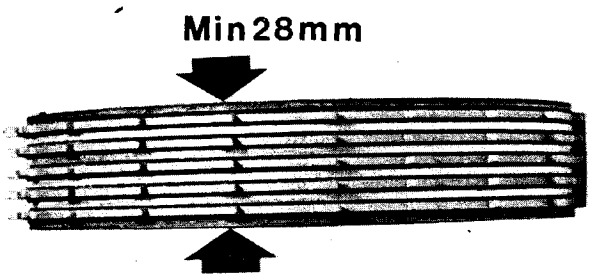
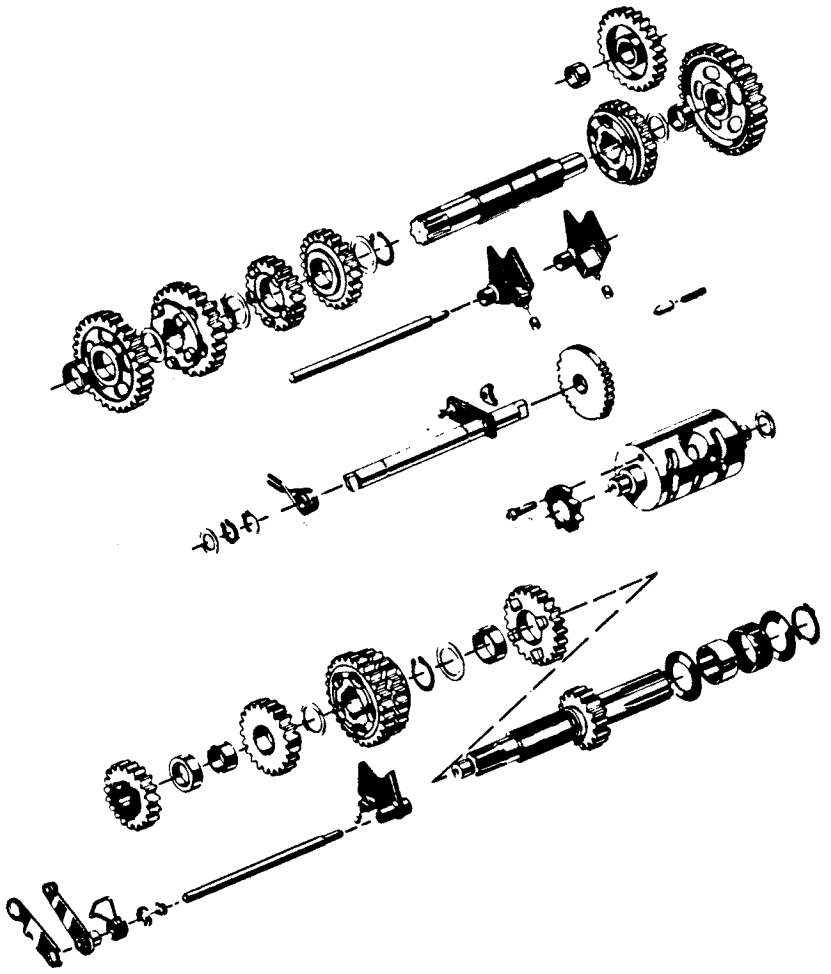


Fig. 7.3

WORKSHOP MANUAL

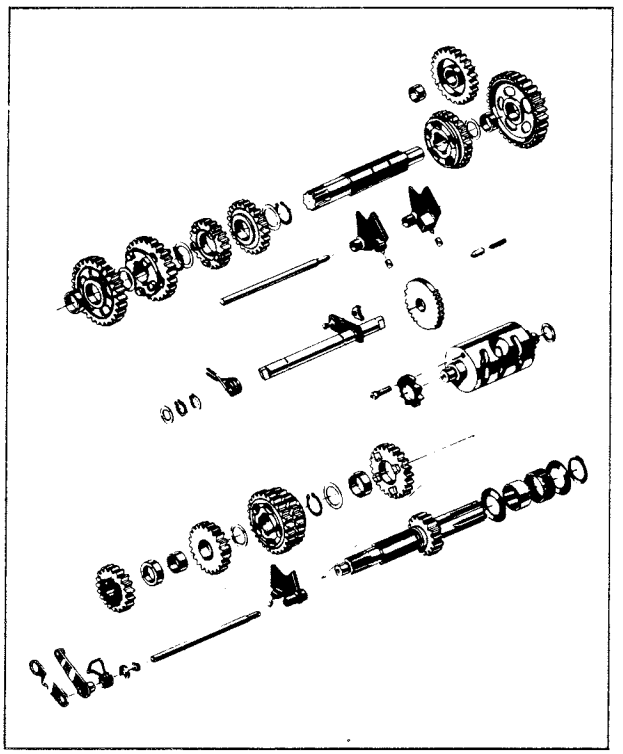


GEARBOX

G

Gearbox

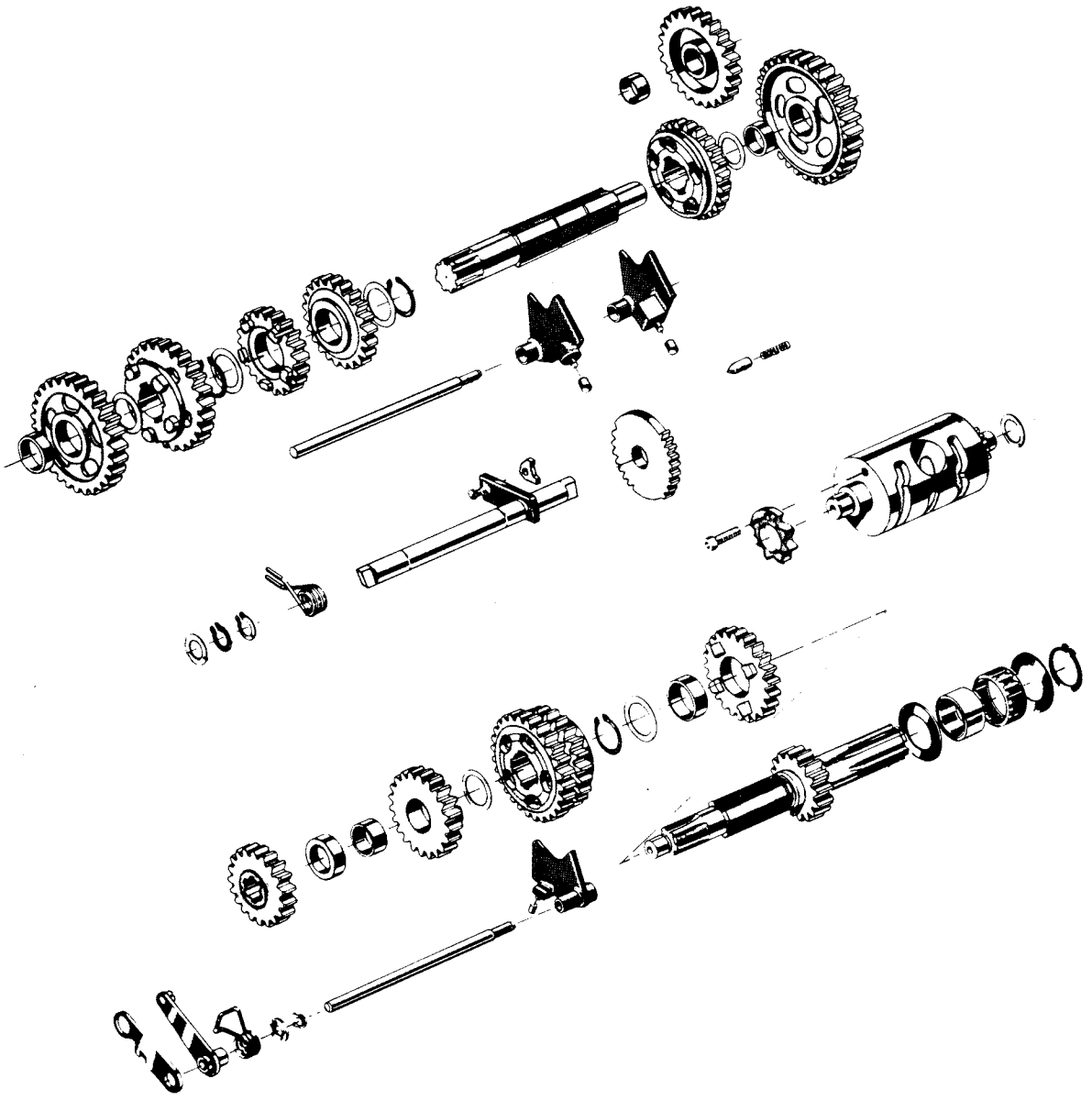
This chapter covers the two different types of gearboxes which have been mounted on Husqvarna motorcycles since 1974.



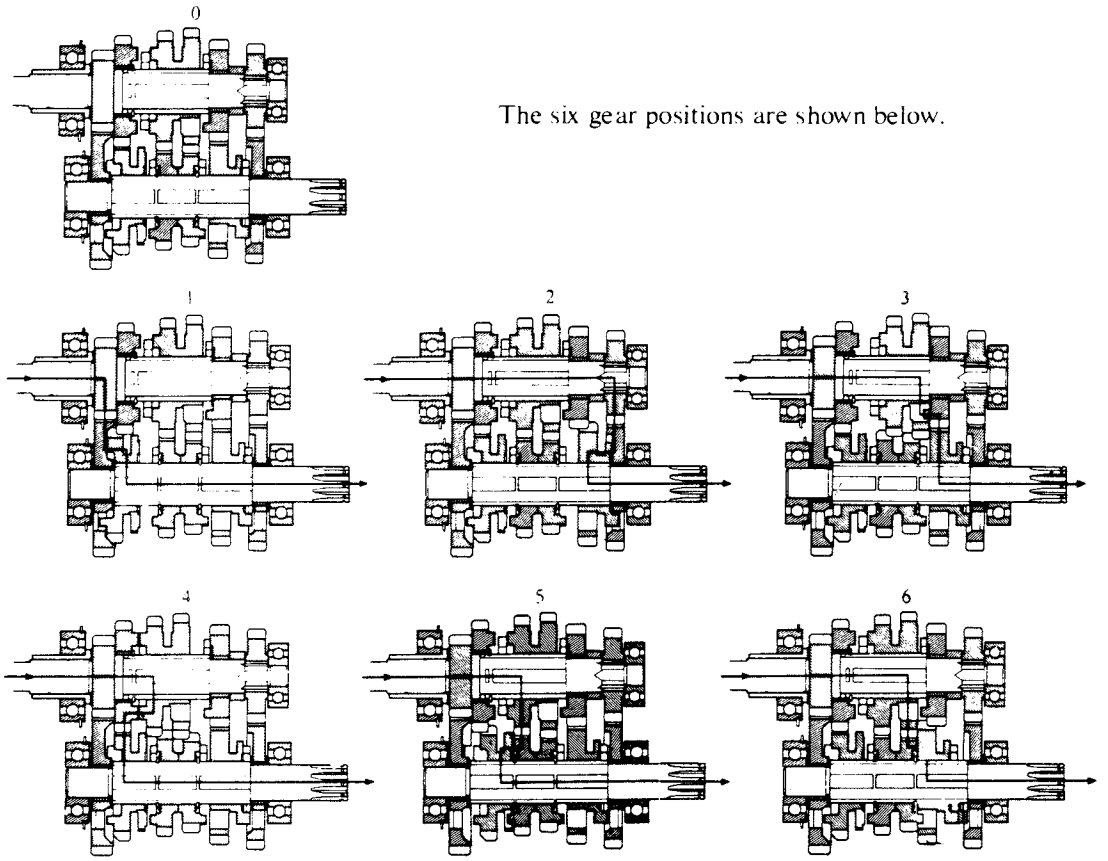
GA. Gearbox six speed
All 125–175 cc models
All 250 WR MK—and ML—models
All 250 CR ML—models
All 360 cc ML—models
400 WR MK 10500 →

GB Gearbox five speed
250 CR MK 0001 →
400 CR MK 0001 →
450 cc MK 0001 →
250 RT and 360 RT

Gearbox six speed



The six gear positions are shown below.



Function
The gearbox has six speeds. The gear wheels, shafts and gear shifter of the gearbox are enclosed in a gearbox housing which is integrally built with the engine. The gearbox housing contains a certain amount of oil which is splashed around by the gear wheels and lubricates the contact surfaces.

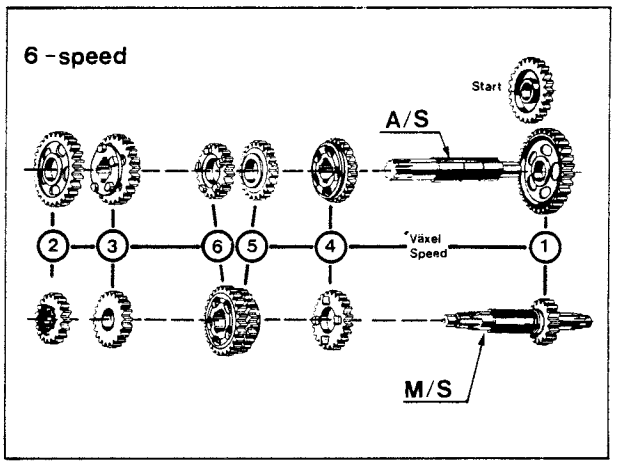


Fig. 3.1

Dismantling
Remove cylinder, ignition system, drive gear and clutch. Apart the crank case halves. See resp. chapter.

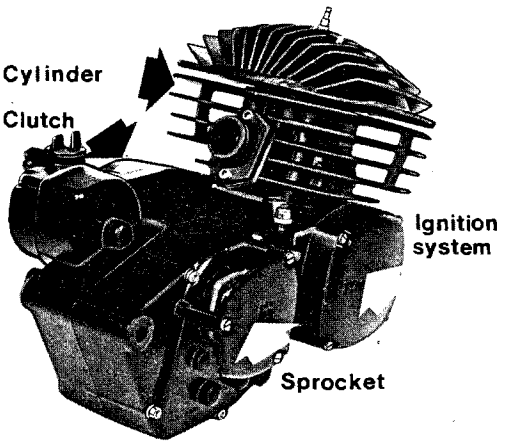


Fig. 3.2

Remove the shifting shaft with washer, pawl and stepfeeder. Take out the ratchet sleeve with spring.

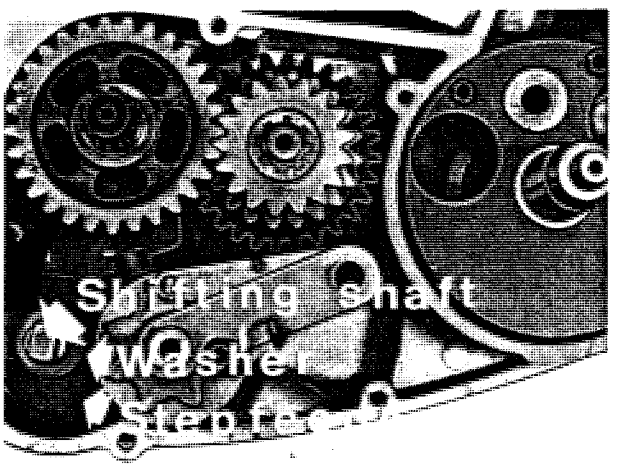


Fig. 3.3

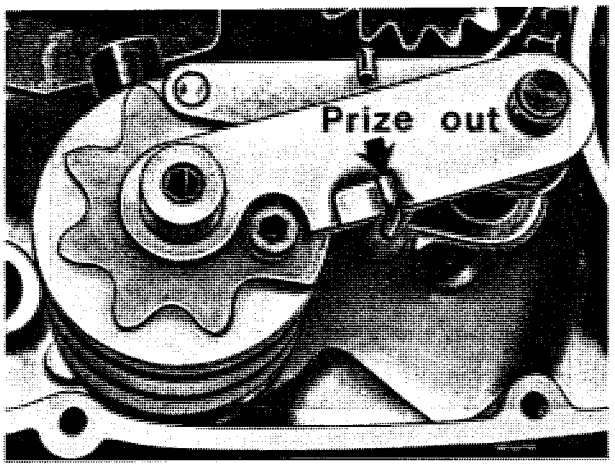


Fig. 4.1

Disassemble the ratchet arm with spring and distance arm. See fig. 4.1.
This does only intend engines with ratchet mechanism type ratchet wheel.
Remove the ratchet screw. This does not intend mag-engines.

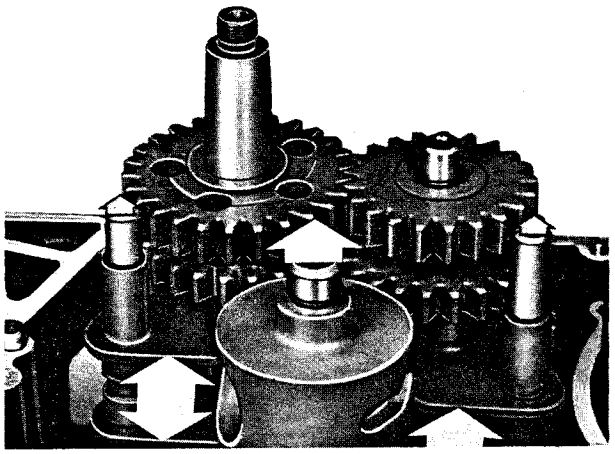


Fig. 4.2

Remove the two gear striker shafts. Take out the linkroller with washer and the gear strikers with guiderollers. See fig. 4.2.

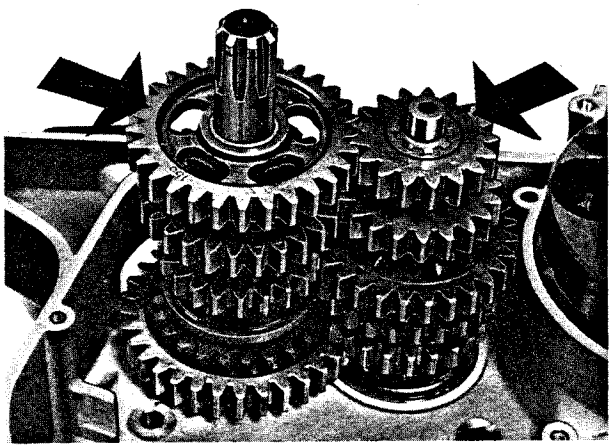


Fig. 4.3

Disassemble all the gear wheels with washers, bushings and circlips. Remove the two shafts.
If necessary, press out the clutch bearing sleeve from the main shaft bearing.
This doesn't intend engines with rubber damped clutch.

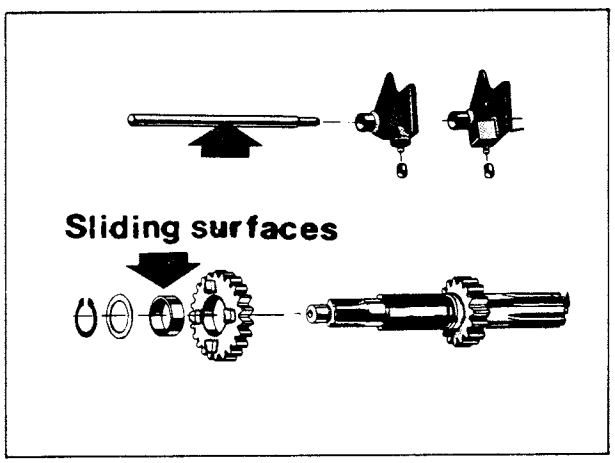


Fig 4.4

Mounting.
When reassembling the gearbox is it very important to lubricate all sliding surfaces very carefully.

Press the clutch bearing sleeve into the main shaft bearing. See fig. 5.1.

NOTE! This does not intend engines with rubber damped clutch.

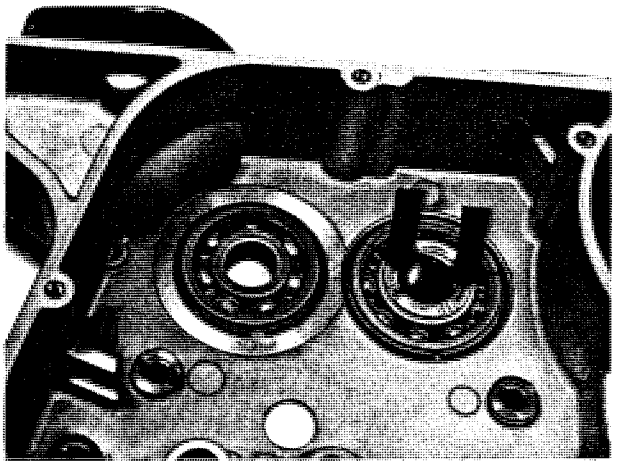


Fig. 5.1

Locate the ratchet sleeve with spring in the crankcase bushing. On mag-engines with ratchet mechanism type ratchet sleeve must this ratchet sleeve also be installed now. See fig. 5.2.

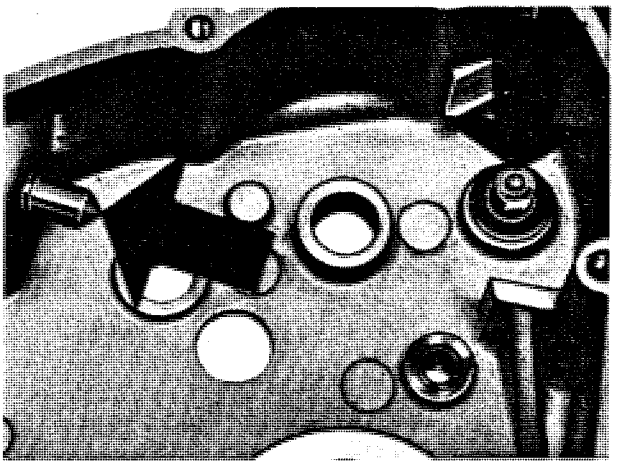


Fig. 5.2

Install fifth and sixth gear wheels with washers and circlips on the sprocket shaft. See fig. 5.3.

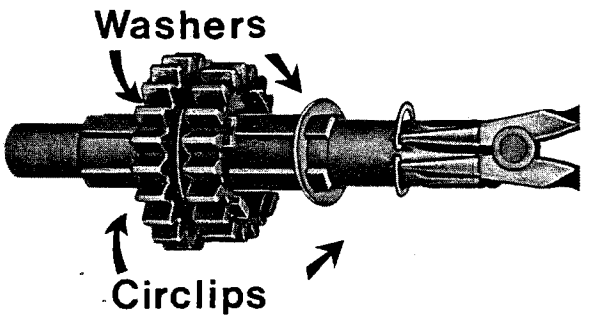


Fig. 5.3

Check that the circlips are correct positioned.
See fig. 6.1.

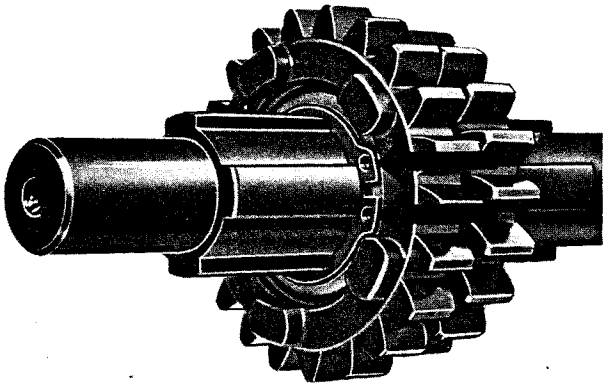


Fig. 6.1

Install the fourth gear wheel and the first gear wheel washer and sleeve.
See fig. 6.2.

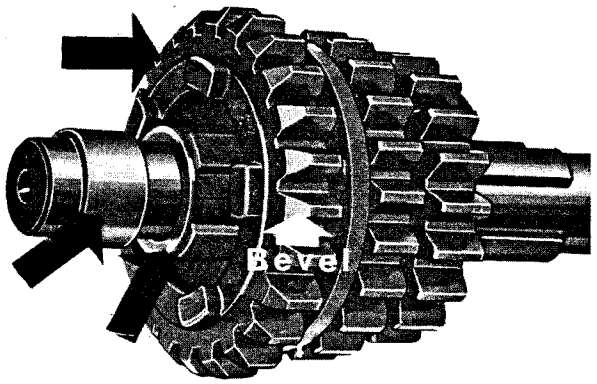


Fig. 6.2

Put the first gear pinion in position and insert the sprocket shaft into the crankcase half.
See fig. 6.3.

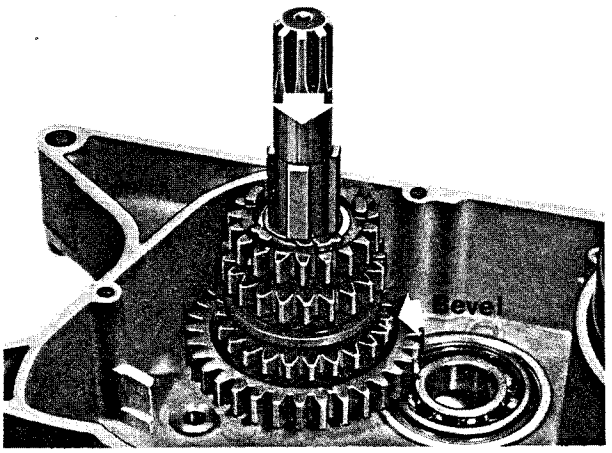


Fig. 6.3

Mount the fourth gear pinion with sleeve, washer and circlip on the main shaft.
See fig. 6.4.
Make sure that the circlip is correct installed.

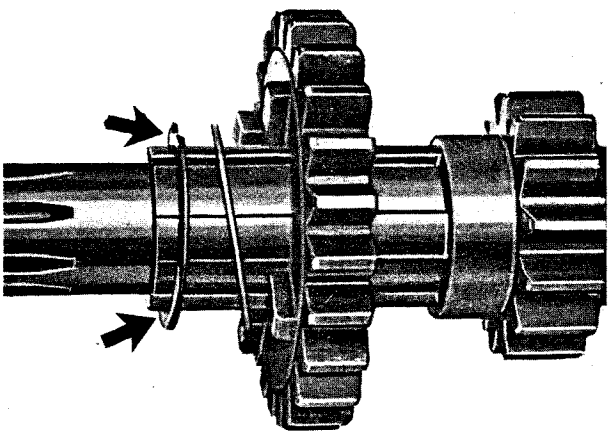


Fig. 6.4

Insert the main shaft into the crankcase half and engage the gear wheels.
See fig. 7.1.

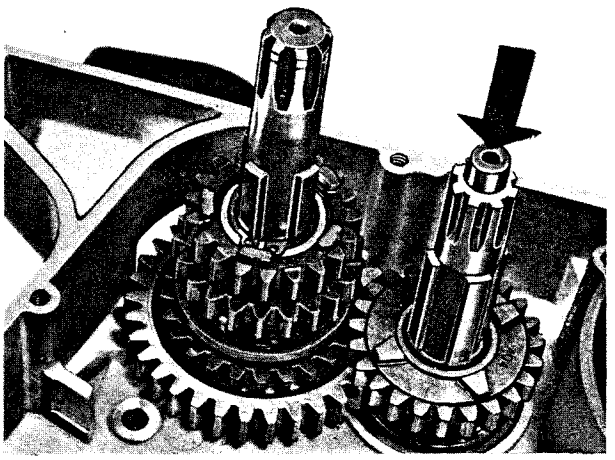


Fig. 7.1

Install the fifth – sixth gear wheel on the main shaft and the third gear pinion on the sprocket shaft.
See fig. 7.2.

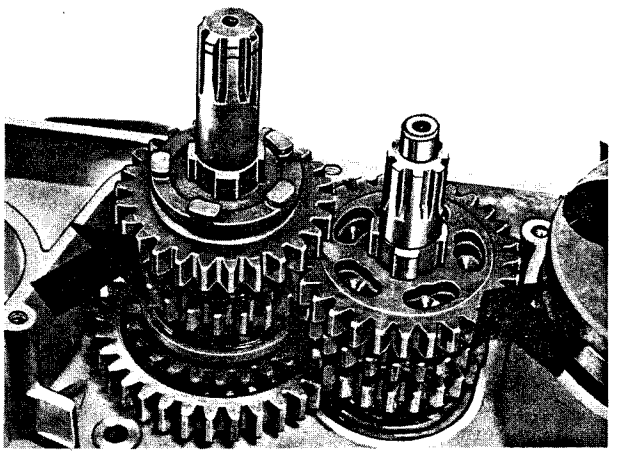


Fig. 7.2

Apply the washers and sleeves on both shafts as shown in fig. 7.3. The widest sleeve on the main shaft.

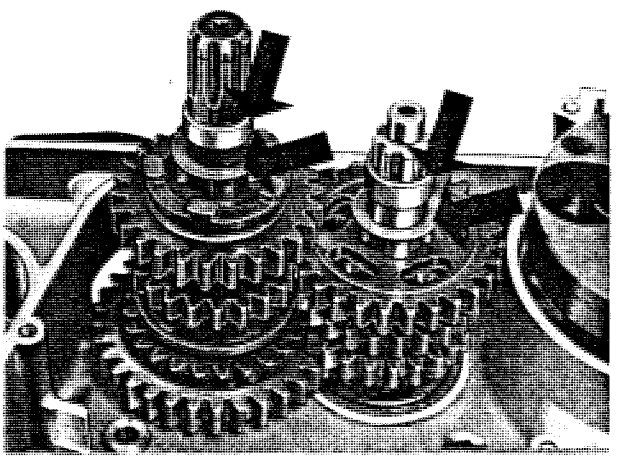


Fig. 7.3

Insert the third gear pinion with spacing ring on the main shaft.
See fig. 8.1.

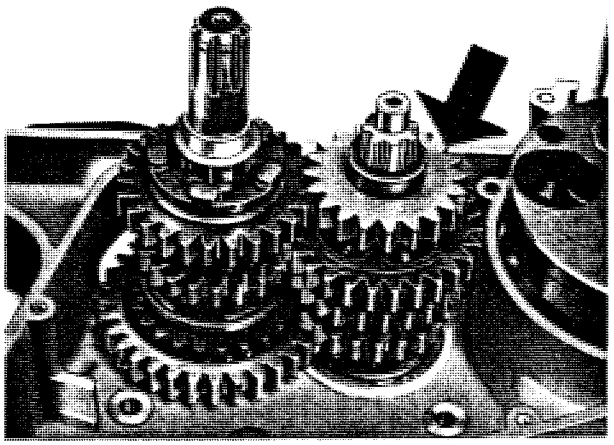


Fig. 8.1

Install the second gear pinions on both shafts as shown in fig. 8.2.

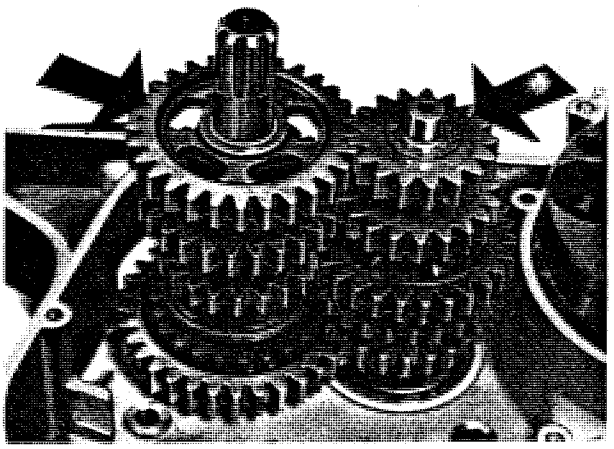


Fig. 8.2

Put the gear strikers in position and install guiderollers on the dowels.
See fig. 8.3.

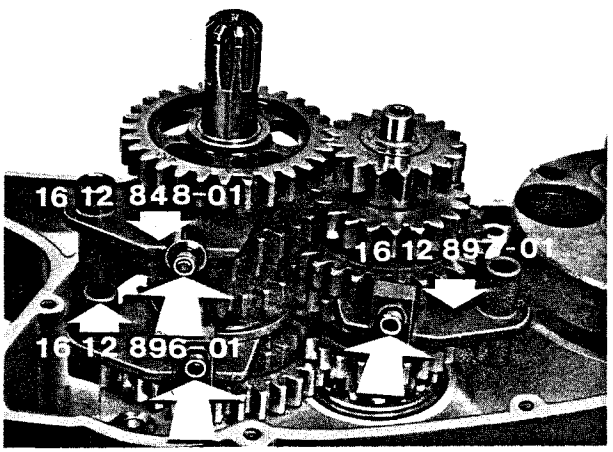


Fig. 8.3

Insert the linkroller as shown in fig. 8.4. Don't forget the washer. On mag-engines with ratchet mechanism type ratchet sleeve must the sleeve be compressed into its bushing when mounting the linkroller.

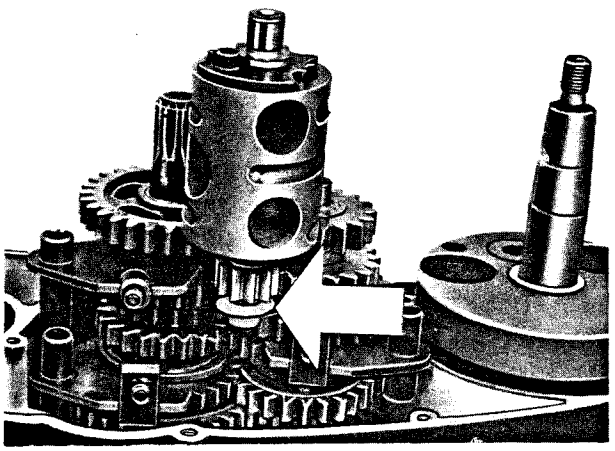


Fig. 8.4

Engage the gear strikers to the linkroller and put the two gear striker shafts in position.
See fig. 9.1.
Turning the linkroller some backwards and forwards makes engaging easier.

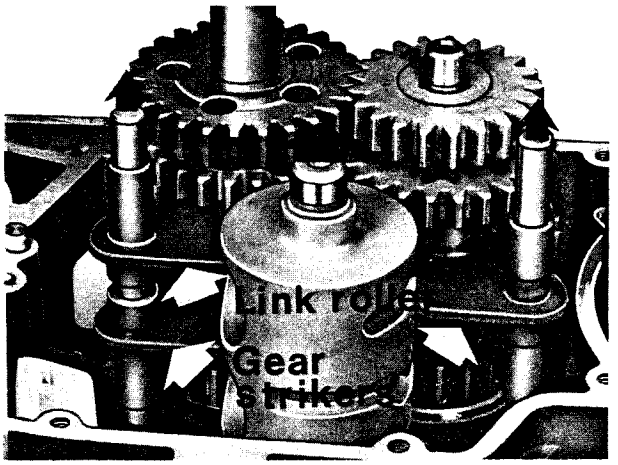


Fig. 9.1

Install the circlip and washer on the front gear striker shaft.
See fig. 9.2.
NOTE! This does only intend engines with ratchet mechanism type ratchet wheel

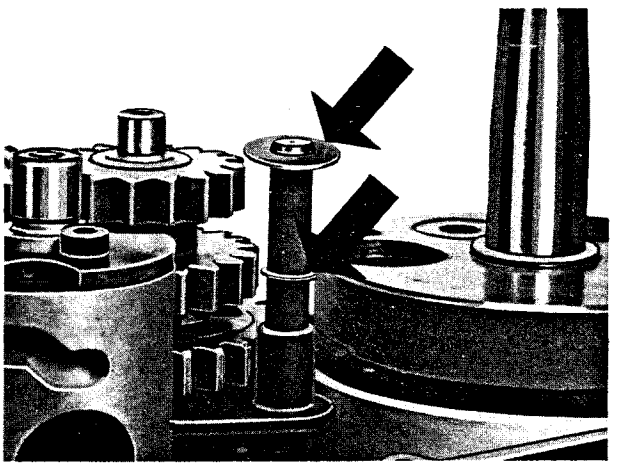


Fig. 9.2

Insert the ratchet arm into the spring.
See fig. 9.3.

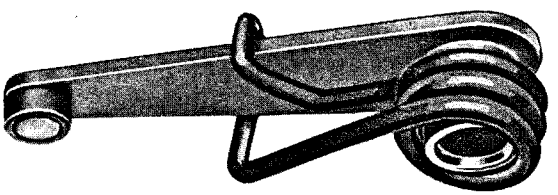


Fig. 9.3

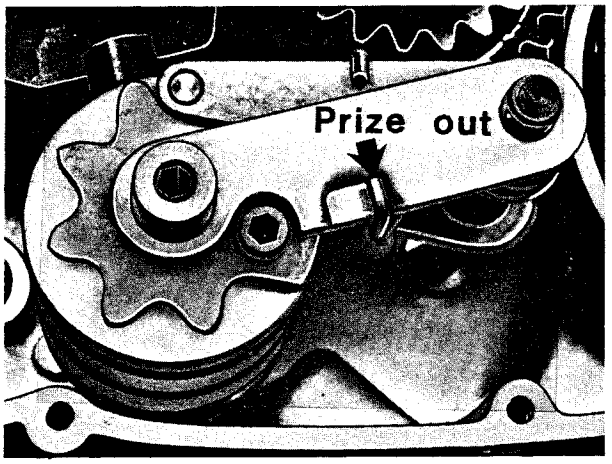


Fig. 10.1

Put the ratchet arm with spring and the distance arm in position as shown in fig. 10.1.

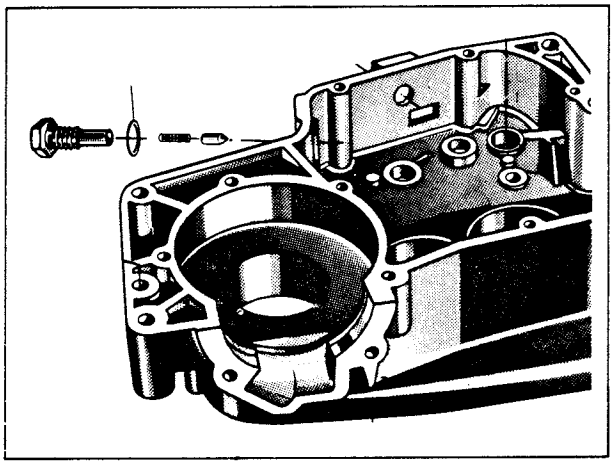


Fig. 10.2

Fit the link roller ratchet sleeve in position.
See fig. 10.2.

NOTE! This does neither intend mag-engines with ratchet mechanism type ratchet sleeve or engines with ratchet mechanism type ratchet wheel.

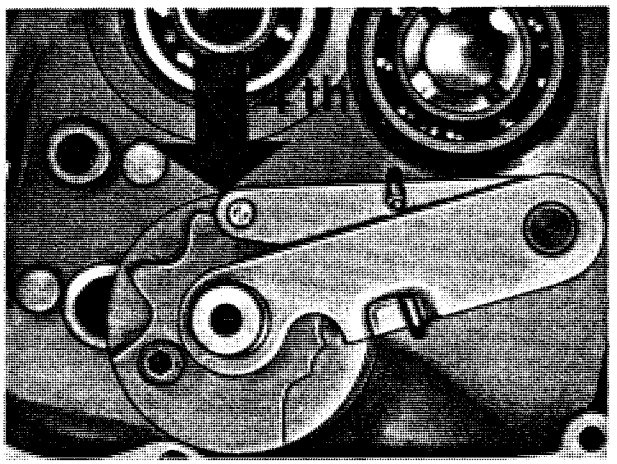


Fig. 10.3

Turn the linkroller to the fourth gear position and let it be there during the rest of the assembling.
See fig. 10.3, 10.4 and 11.1.

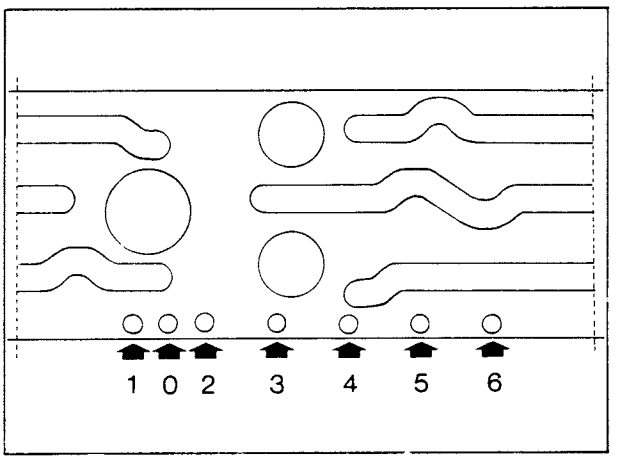


Fig. 10.4

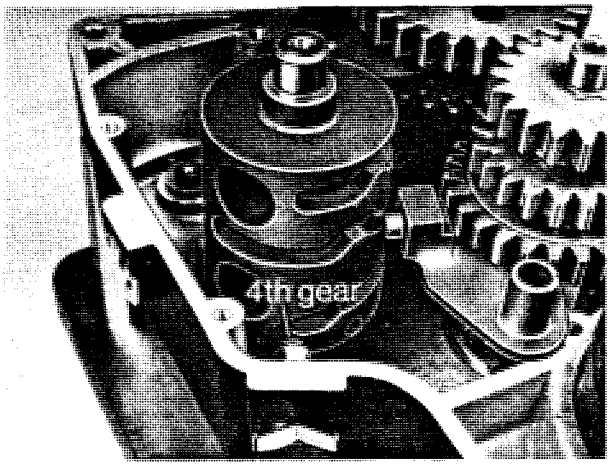


Fig. 11.1

Engage the stepfeeder so that two cogs are visible to the left and one to the right of the linkroller when the linkroller is in the fourth gear position.
See fig. 11.2.

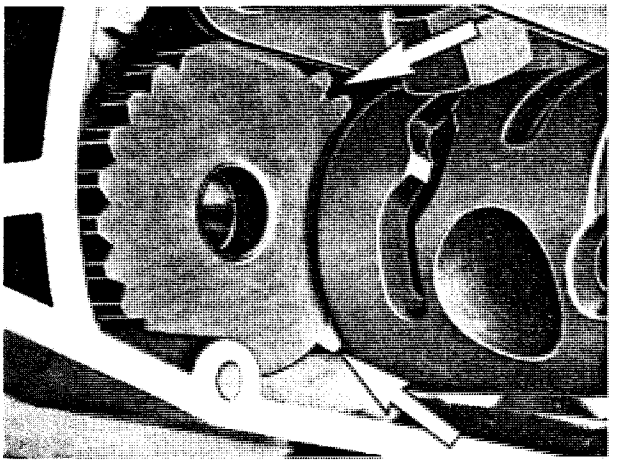


Fig. 11.2

Put the pawl on the shifting shaft.
See fig. 11.3.

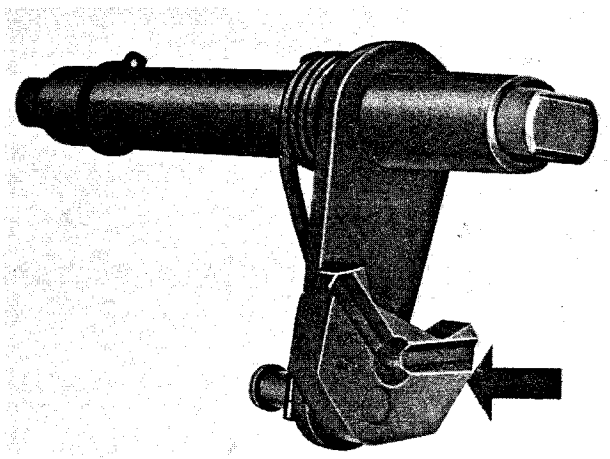


Fig. 11.3

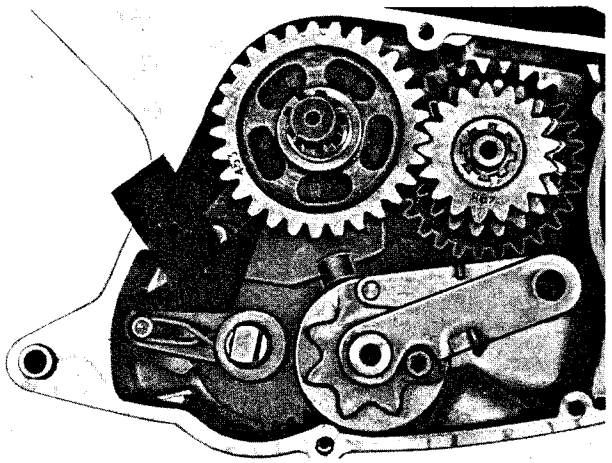


Fig. 12.1

Insert the shifting shaft through the stepfeeder and into the crankcase half. Locate the notch in the pawl against the ratchet sleeve. Install the washer on the shifting shaft.
For the rest of the mounting see chapter: Engine.

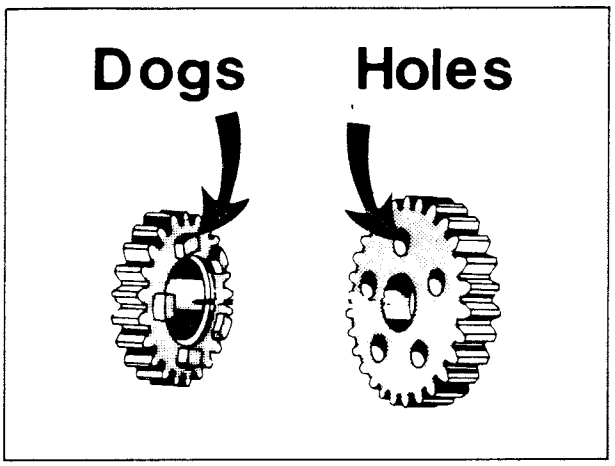


Fig. 12.2

Time for repairs—maintenance
Check that all dogs and holes are in tact. When they are worn round on the edges there is risk for the gear to jump out.

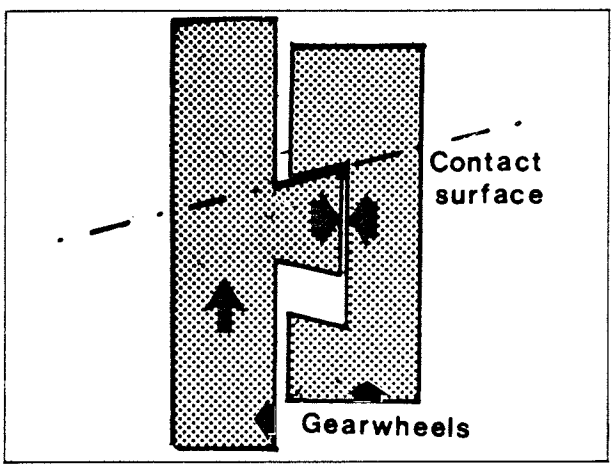


Fig. 12.3

The dogs and the holes of the gear wheels are designed to keep the gear wheels close together when the torque is transmitted.

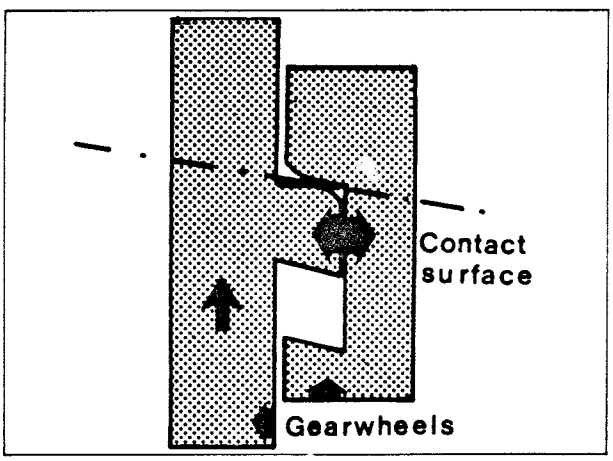
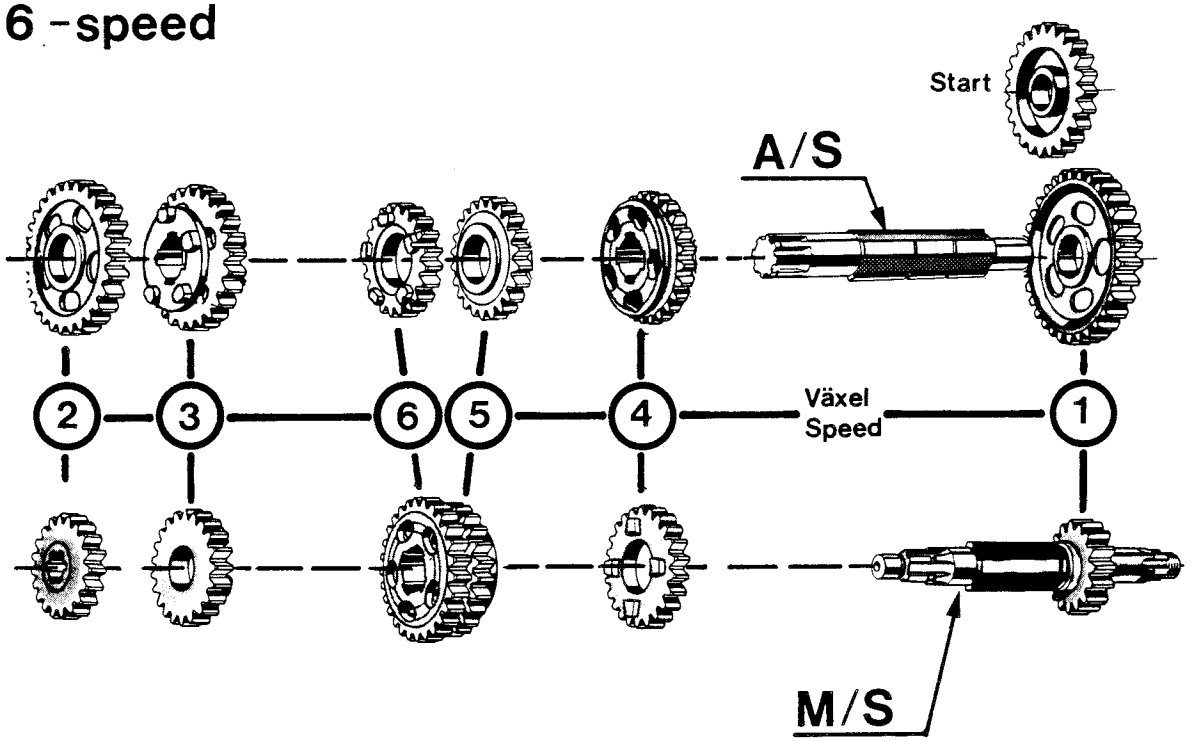


Fig. 12.4

The gear wheels are worn out when the torque doesn't keep the gear wheels together any more.

Husqvarna motorcycles

6 -speed

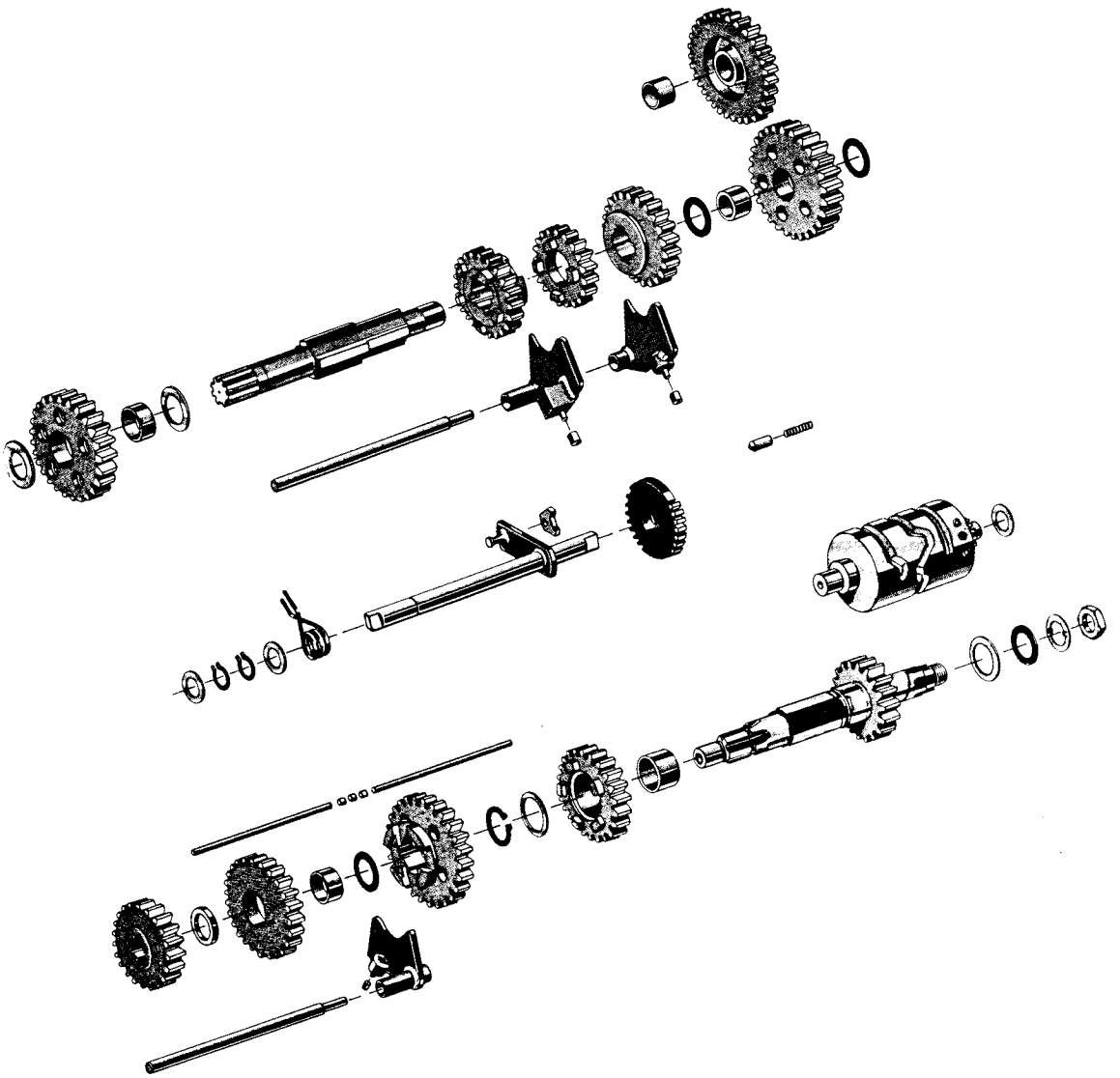


Växellåda Gearbox	Axel Shaft	1		Steg Ratio	2		Steg Ratio	3		Steg Ratio	4		Steg Ratio	5		Steg Ratio	6		Kugghjul Gearwheel start för vevhus for crankcase		
		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no
6-vxl CR 6-sp till/to 2035-0340	M/S A/S	16 31	16 12 400-01 16 12 406-01	1,33	19 28	16 12 402-01 16 12 407-01	1,19	21 26	16 12 403-01 16 12 408-01	1,18	23 24	16 12 404-01 16 12 409-01	1,18	25 22	16 12 405-01 16 12 410-01	1,13	27 21	16 12 405-01 16 12 411-01	250-450 125 MAG	24 24 23	16 12 413-01 16 12 413-01 16 12 482-01
6-vxl CR 6-sp från/from 2035-0341	M/S A/S	15 31	16 12 475-01 16 12 406-01	1,33	18 28	16 12 476-01 16 12 407-01	1,26	21 26	16 12 403-01 16 12 408-01	1,18	23 24	16 12 404-01 16 12 409-01	1,18	25 22	16 12 405-01 16 12 410-01	1,13	27 21	16 12 405-01 16 12 411-01	250-450 125 MAG	24 24 23	16 12 413-01 16 12 413-01 16 12 482-01
6-vxl CR 6-sp "Nya koppl. "New clutch	M/S A/S	15 31	16 12 477-01 * 16 12 406-01	1,33	18 28	16 12 596-01 * 16 12 597-01	1,26	21 26	16 12 403-01 16 12 408-01	1,18	23 24	16 12 404-01 16 12 409-01	1,18	25 22	16 12 405-01 16 12 410-01	1,13	27 21	16 12 405-01 16 12 411-01	250-450 125 MAG	24 24 23	16 12 413-01 16 12 413-01 16 12 482-01
6-vxl WR 6-sp till/to MK-19500	M/S A/S	14 33	16 12 441-01 16 12 442-01	1,46	18 29	16 12 451-01 16 12 453-01	1,30	21 26	16 12 403-01 16 12 408-01	1,18	23 24	16 12 404-01 16 12 409-01	1,18	25 22	16 12 452-01 16 12 410-01	1,19	27 20	16 12 452-01 16 12 454-01	250-450 125 MAG	22 22 21	16 12 883-01 16 12 883-01 16 12 501-01
6-vxl WR 6-sp efter/after MK-19500	M/S A/S	14 33	16 12 495-01 * 16 12 442-01	1,38	17 29	16 12 496-01 * 16 12 453-01	1,32	20 26	16 12 497-01 16 12 408-01	1,25	23 24	16 12 404-01 16 12 409-01	1,24	25 21	16 12 499-01 16 12 498-01	1,24	28 19	16 12 499-01 16 12 500-01	250-450 125 MAG	22 22 21	16 12 883-01 16 12 883-01 16 12 501-01
6-vxl WR 6-sp "Nya koppl." "New clutch"	M/S A/S	14 33	16 12 508-01 * 16 12 442-01	1,38	17 29	16 12 496-01 * 16 12 453-01	1,32	20 26	16 12 497-01 16 12 408-01	1,25	23 24	16 12 404-01 16 12 409-01	1,24	25 21	16 12 499-01 16 12 498-01	1,24	28 19	16 12 499-01 16 12 500-01	250-450 125 MAG	22 22 21	16 12 883-01 16 12 883-01 16 12 501-01

* OBS! Ny splines. Måste monteras med lagerhylsa 16 12 480-01 och distansring 16 12 481-01.
Note. New splines. Must be mounted with bushing 16 12 480-01 and spacer 16 12 481-01.

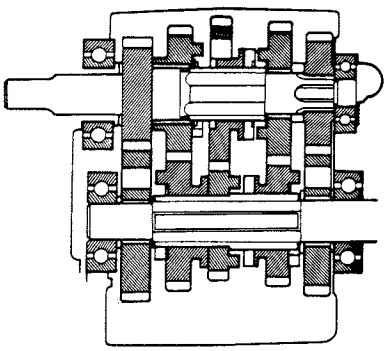
Husqvarna motorcycles

Gearbox five speed

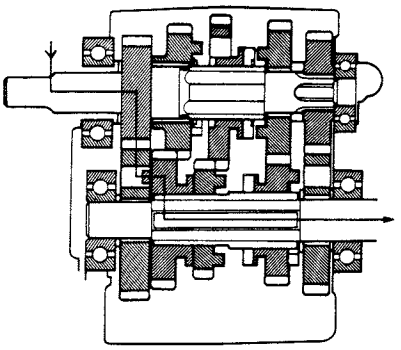


The five gear positions are shown below

0.



1.



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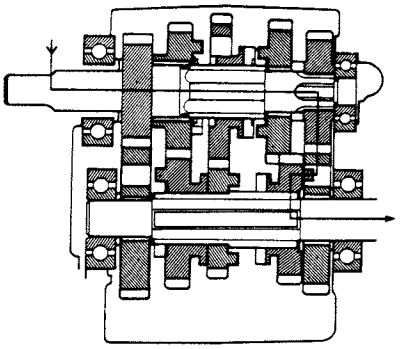
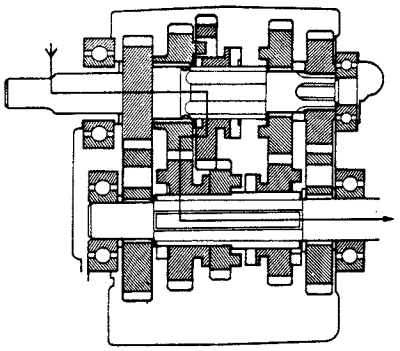
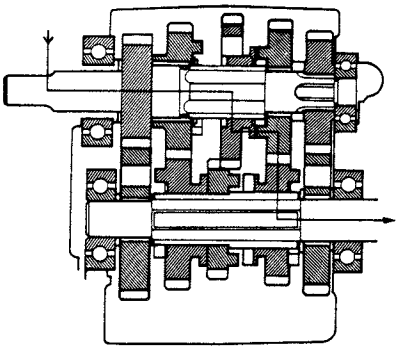


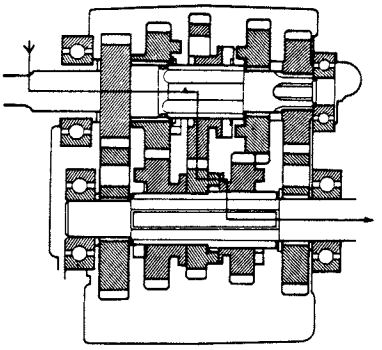
3.



4.



5.



Function
The gearbox has five speeds. The gear wheels, shafts and gear shifter of the gearbox are enclosed in a gearbox housing which is integrally built with the engine. The gearbox housing contains a certain amount of oil which is splashed around by the gear wheels and lubricates the contact surfaces.

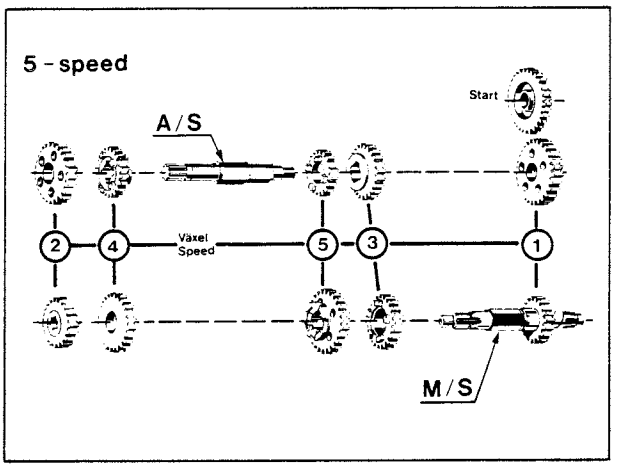


Fig. 3.1

Dismantling
Remove cylinder, ignition system, drive gear and clutch. Aport the crank case halves. See resp. chapter.

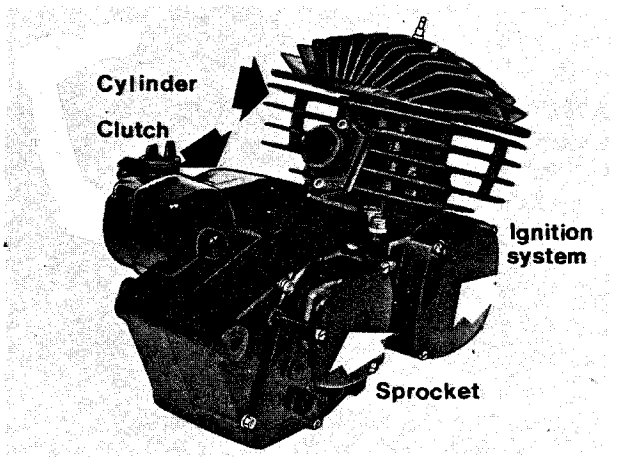


Fig. 3.2

Remove the shifting shaft with washer, pawl and step feeder. Take out the ratchet sleeve with spring.

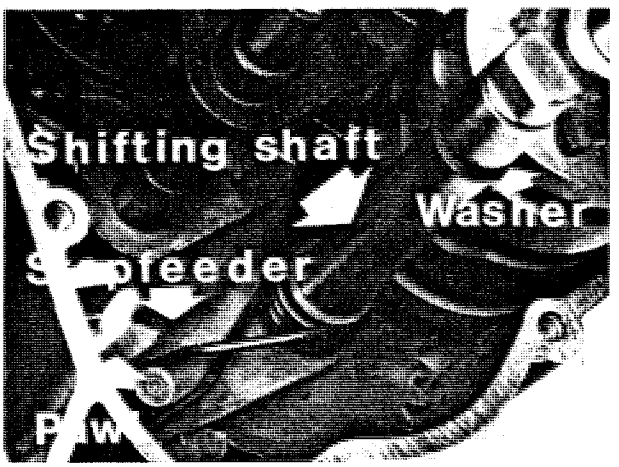


Fig. 3.3

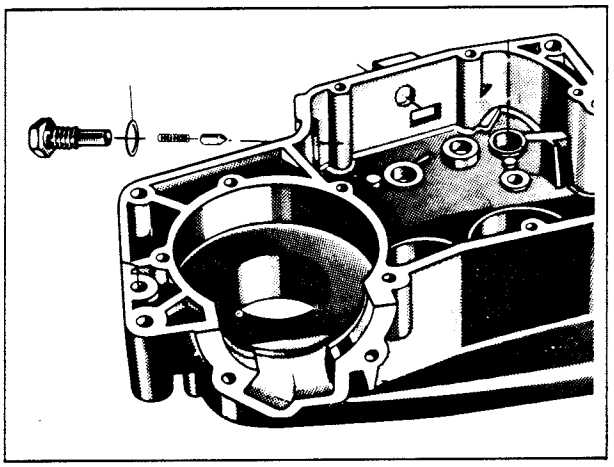


Fig. 4.1

Disassemble the ratchet screw with ratchet sleeve, spring and washer.

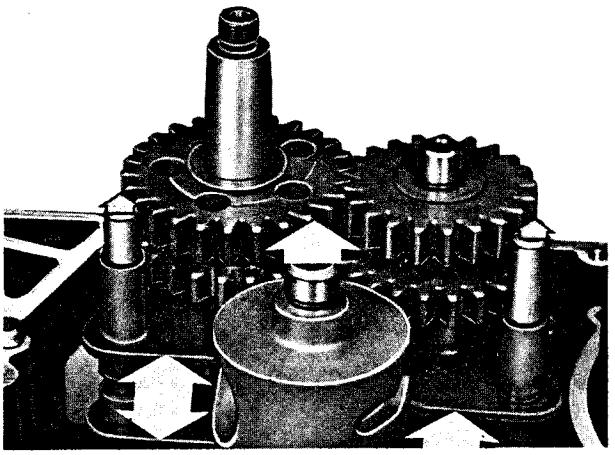


Fig. 4.2

Remove the two gear striker shafts. Take out the linkroller with washer.
Se fig. 4.2.

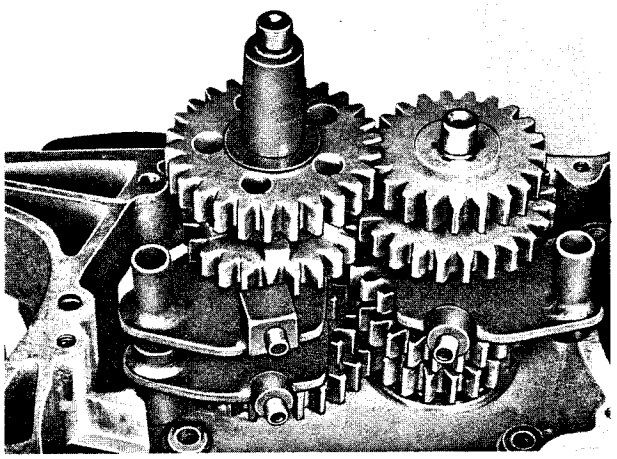


Fig. 4.3

Disassemble all the gear wheels with gear strikers washers, bushings and circlips. Remove the two shafts. See fig. 4.3.
If necessary press out the clutch bearing sleeve from the main shaft bearing.

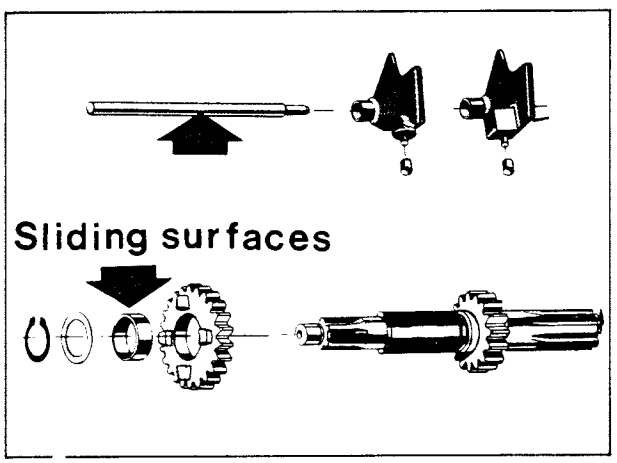


Fig. 4.4

Mounting
When reassembling the gearbox is it very important to lubricate all sliding surfaces very carefully.

Press the clutch bearing sleeve into the main shaft bearing. See fig. 5.1.

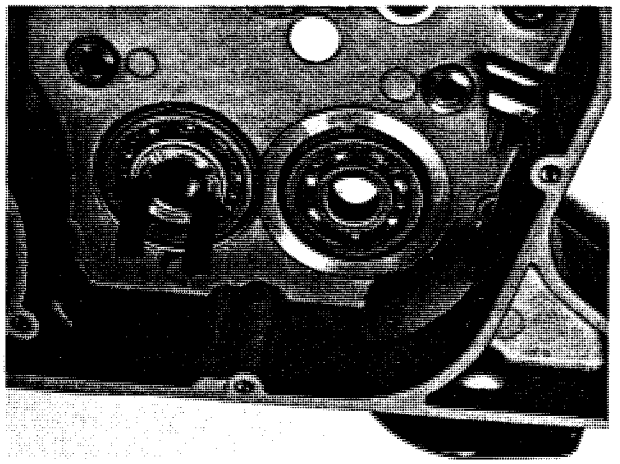


Fig. 5.1

Locate the ratchet sleeve with spring in the crankcase bushing. On mag-engines with ratchet mechanism type ratchet sleeve must this ratchet sleeve also be installed now. Se fig. 5.2.

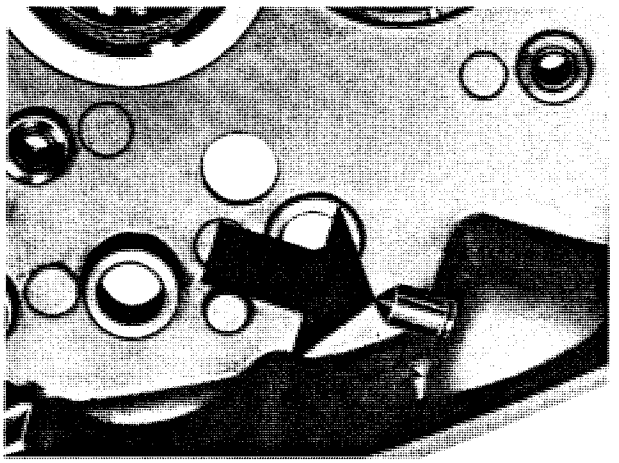


Fig. 5.2

Install the 5:th and the 3:rd gear wheel on the sprocket shaft. Assemble the 1:st gear wheel with the two washers and the bearing sleeve. See fig. 5.3.

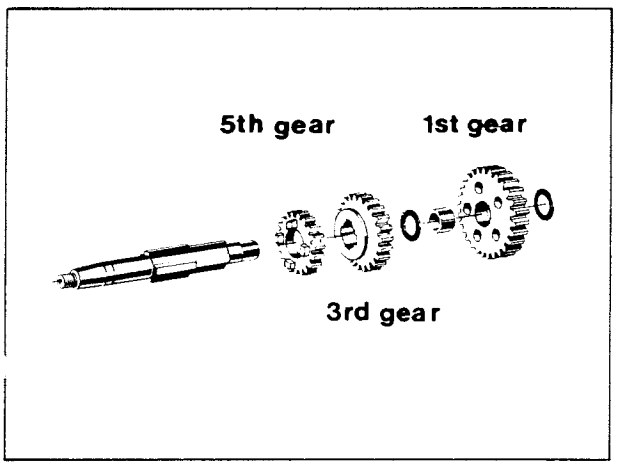


Fig. 5.3

Install the sprocket shaft into the crankcase half. See fig. 6.1.

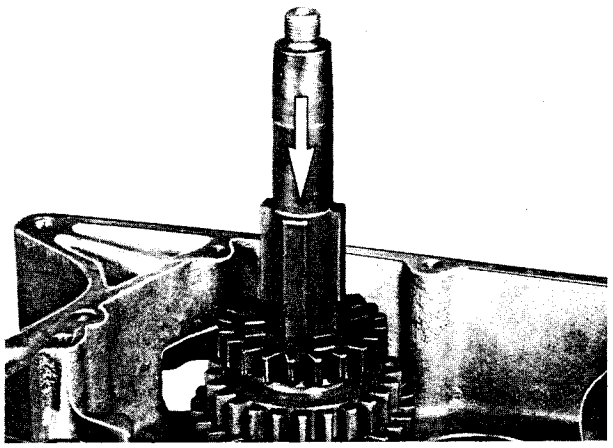


Fig. 6.1

Assemble the 3:rd gear wheel with bearing sleeve washer and circlip on the main shaft. See fig. 6.2.
NOTE! Make sure that the circlip is correct positioned.

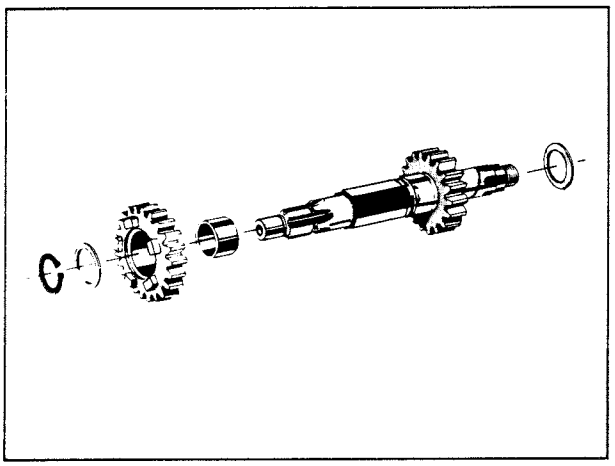


Fig. 6.2

Insert the main shaft into the crankcase half.
See fig. 6.3.

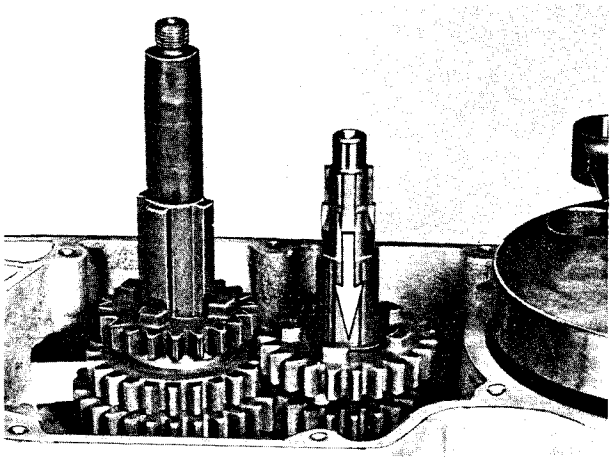


Fig. 6.3

Install the 5:th gear wheel with gear striker on the main shaft.
See fig. 6.4.

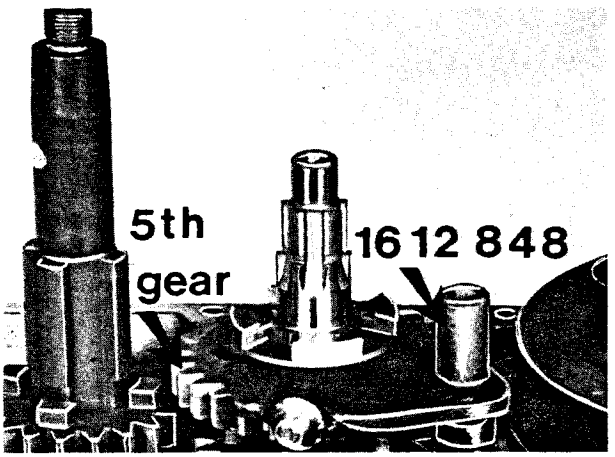


Fig. 6.4

Assemble the 4:th gear wheel on the sprocket shaft.

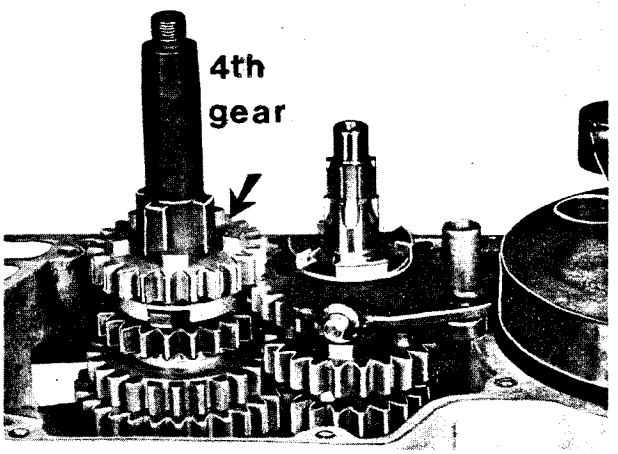


Fig. 7.1

Put the 4:th gear wheel with spacer in position on the main shaft. See fig. 7.2.

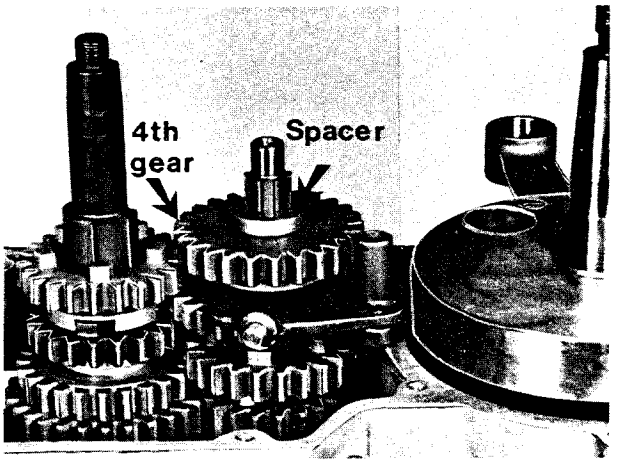


Fig. 7.2

Assemble the 2:nd gear wheel with washers and bearing sleeve on the sprocket shaft. See fig. 7.3.

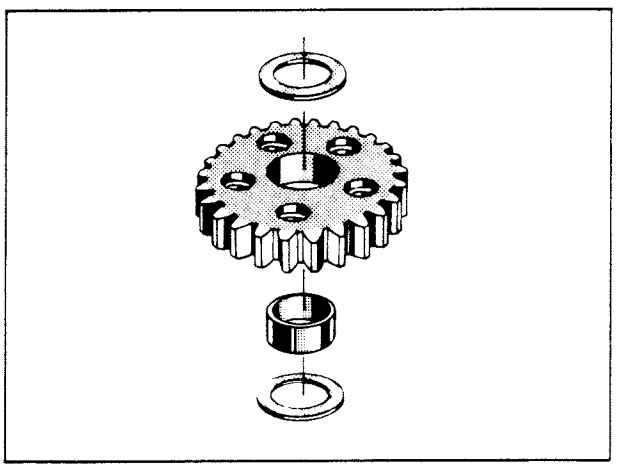


Fig. 7.3

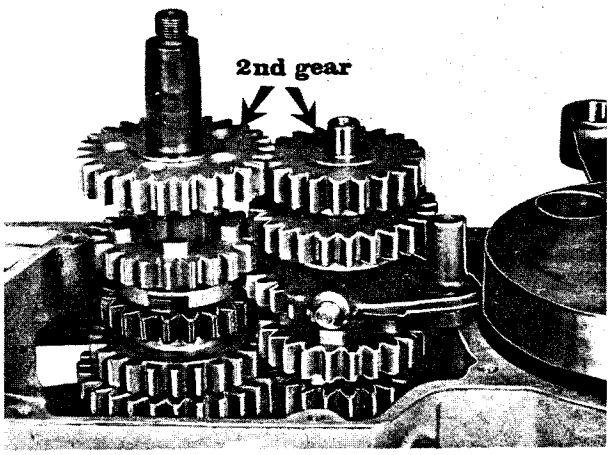


Fig. 8.1

Install the 2:nd gear wheel on the main shaft.
See fig. 8.1.

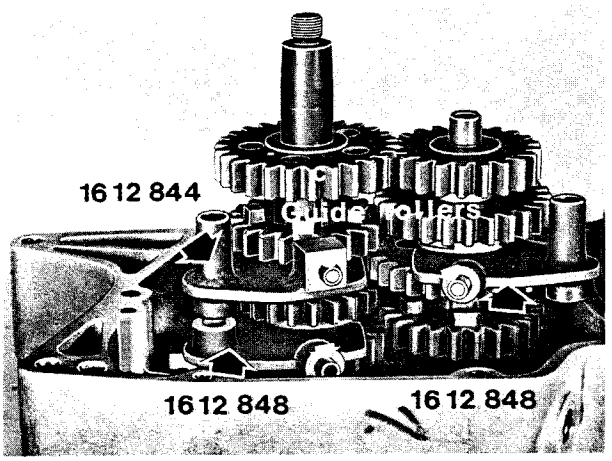


Fig. 8.2

Assemble the gear strikers. Put guide rollers on the dowels.
See fig. 8.2.

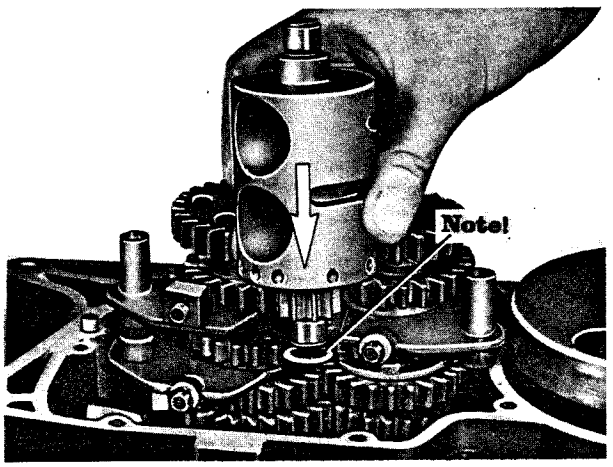


Fig. 8.3

Insert the linkroller into the crankcasse. Don't forget the washer. On mag-engines with ratchet mechanism type ratchet sleeve must the sleeve be compressed into its bushing when mounting the linkroller.

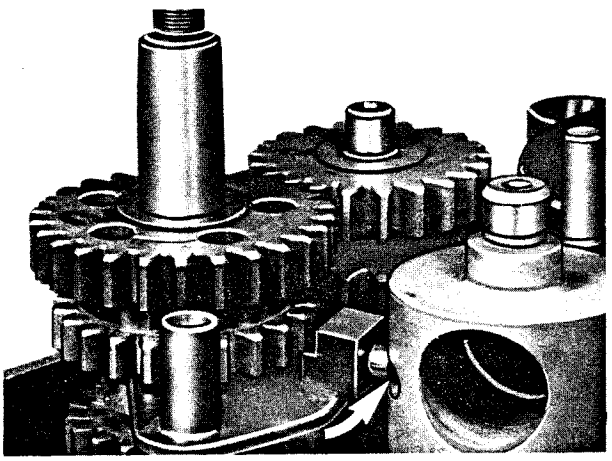


Fig. 8.4

Engage the gear strikers to the linkroller. See fig. 8.4. Turning the linkroller some backwards and forwards makes engaging easier.

Insert the two gear striker shafts through the gear strikers and into the crankcase. See fig. 9.1.

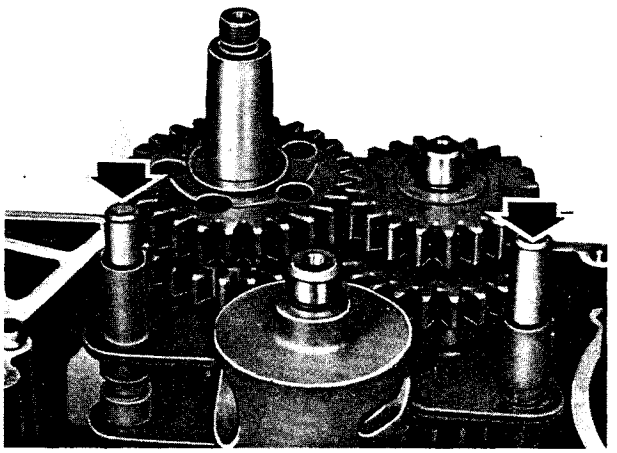


Fig. 9.1

Fit the linkroller ratchet sleeve in position.
This doesn't intend mag-engines with ratchet mechanism type ratchet sleeve.

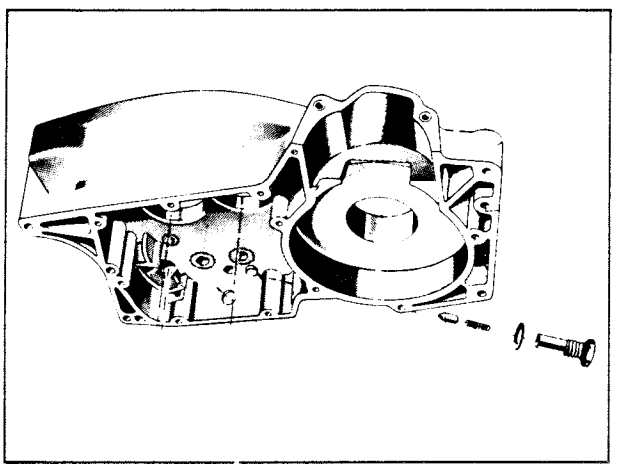


Fig. 9.2

Turn the linkroller to the third gear position and let it be there during the rest of the assembling.

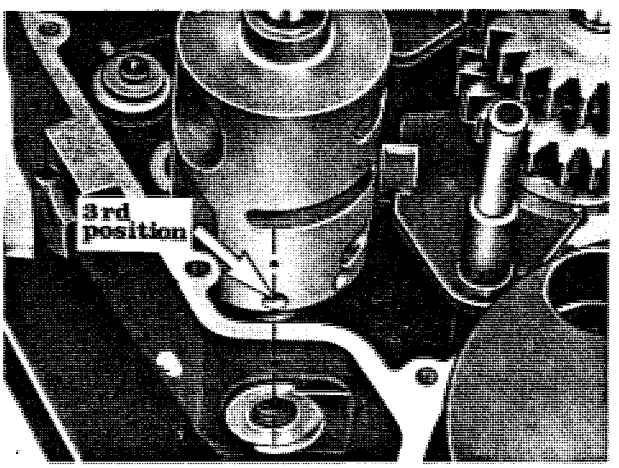


Fig. 9.3

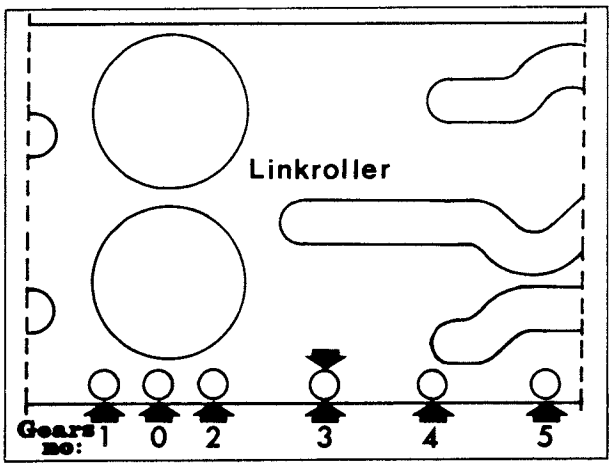


Fig. 10.1

Engage the stepfeeder so that two cogs are visible to the left and one to the right of the linkroller.

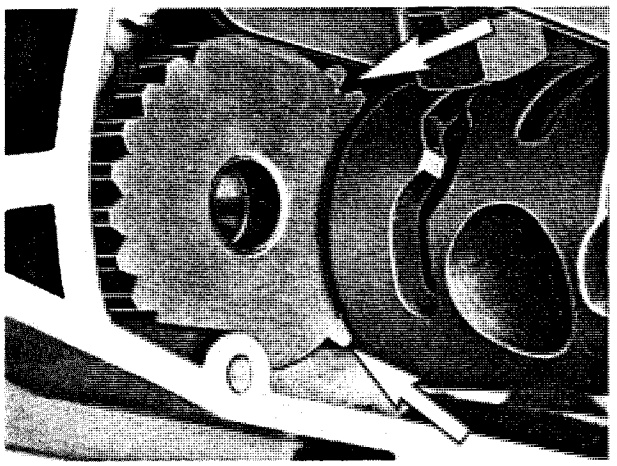


Fig. 10.2

Put the pawl on the shifting shaft.
See fig. 10.3.

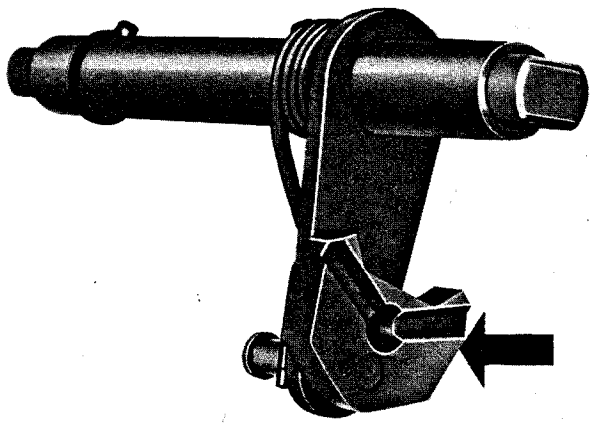


Fig. 10.3

Insert the shifting shaft through the stepfeeder and into the crankcase half. Locate the notch in the pawl against the ratchet sleeve. Install the washer on the shifting shaft.
For the rest of the mounting see chapter: Engine.

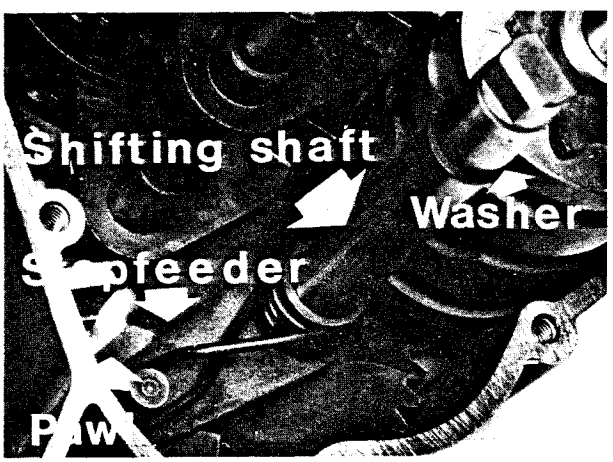


Fig. 10.4

Time for repairs—maintenance
Check that all dogs and holes are intact. When they are worn round on the edges there is risk for the gear to jump out.

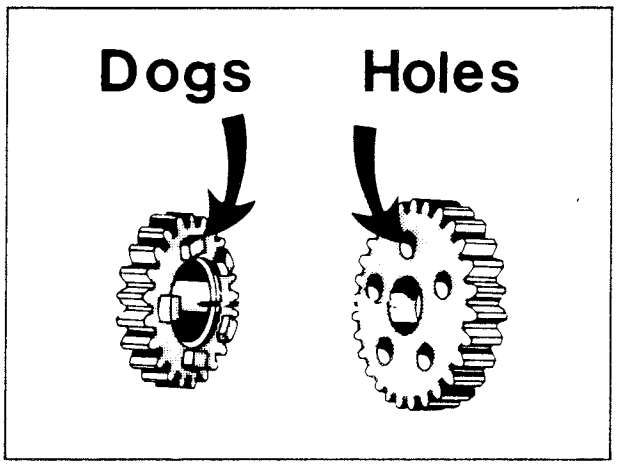


Fig. 11.1

The dogs and the holes of the gear wheels are designed to keep the gear wheels close together when the torque is transmitted.

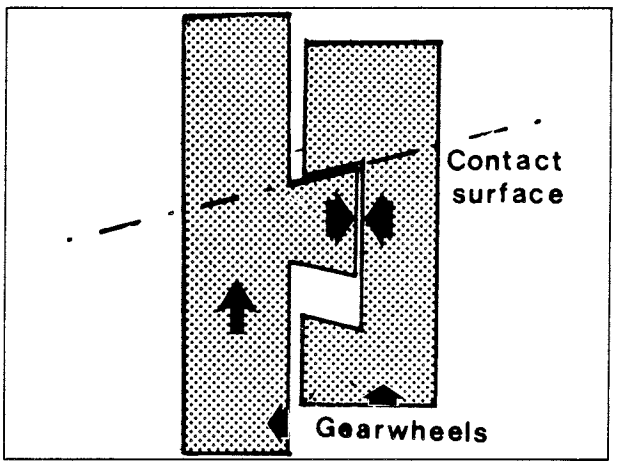


Fig. 11.2

The gear wheels are worn out when the torque doesn't keep the gear wheels together anymore.

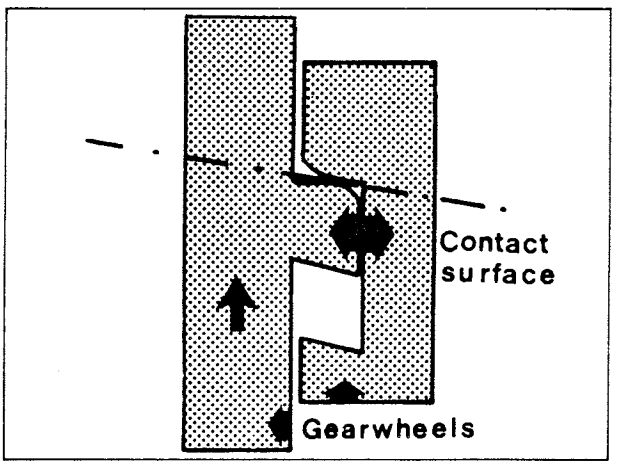
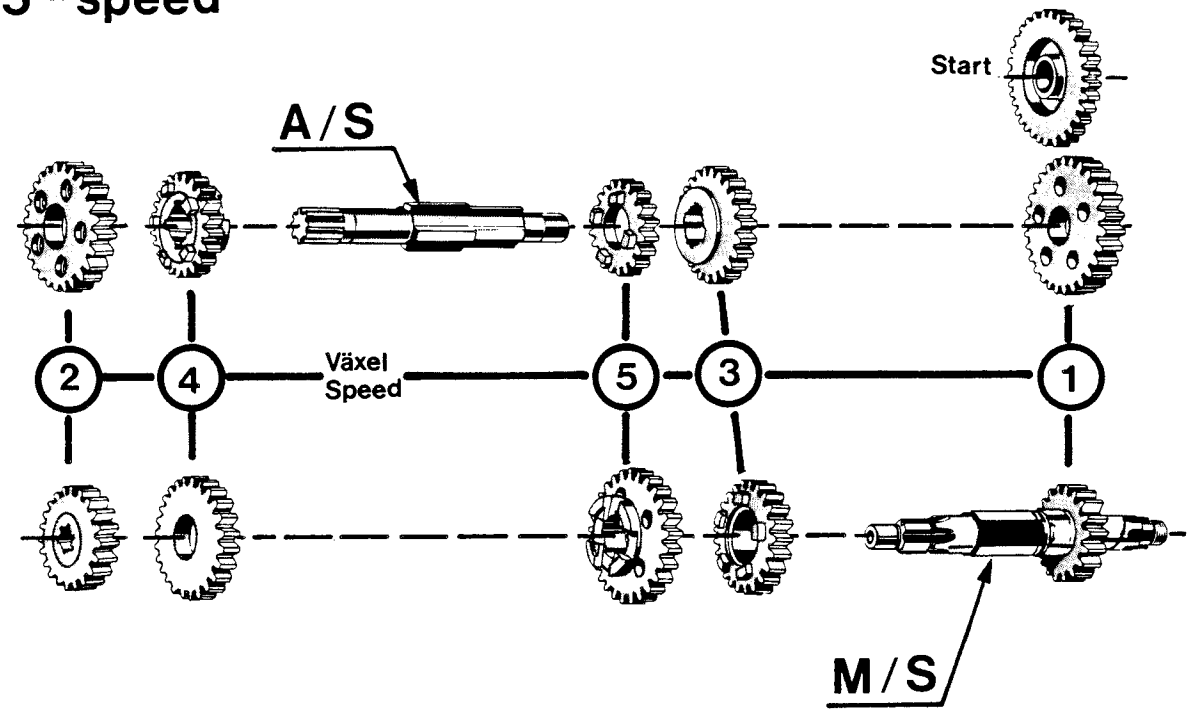


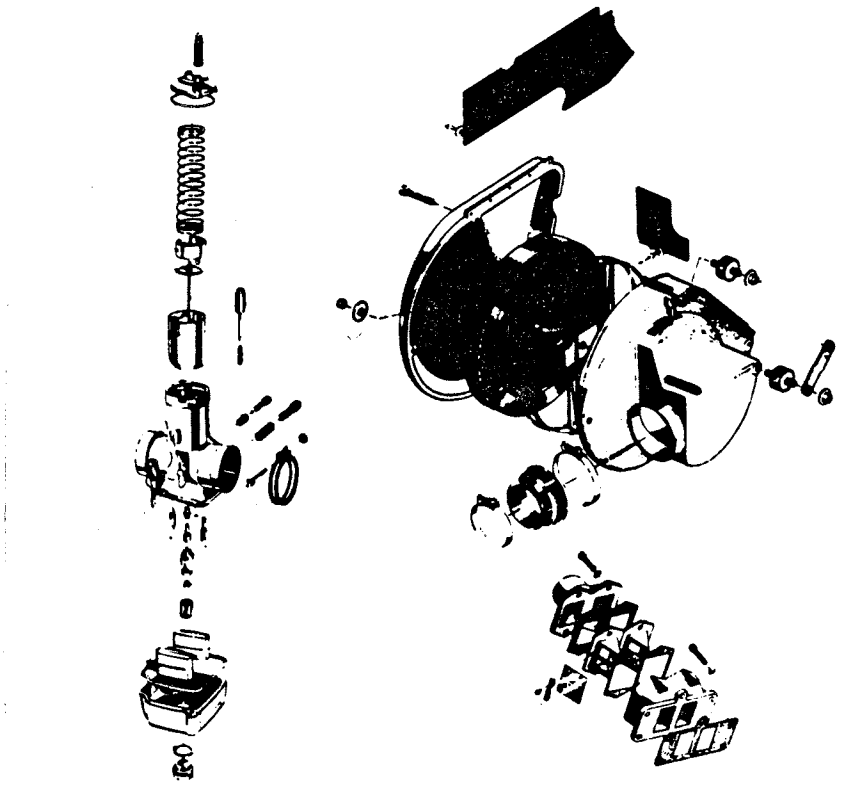
Fig. 11.3

5 - speed



Växellåda Gearbox	Axel Shaft	1		Steg Ratio	2		Steg Ratio	3		Steg Ratio	4		Steg Ratio	5		Kugghjul Gearwheel start		
		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no		z	Det. nr Part no	för vevhus for crankcase	z	Det. nr Part no
5-vxl CR 5-sp	M/S A/S	19 28	16 12 840-01 16 12 858-01	1,19	21 26	16 12 854-01 16 12 859-01	1,19	23 24	16 12 855-01 16 12 860-01	1,18	25 22	16 12 856-01 16 12 861-01	1,19	27 20	16 12 857-01 16 12 862-01	250-450 125	27 27	16 12 872-01 16 12 872-01
5-vxl SC 5-sp	M/S A/S	17 29	16 12 458-01 16 12 460-01	1,31	20 26	16 12 459-01 16 12 461-01	1,25	23 24	16 12 855-01 16 12 860-01	1,18	25 22	16 12 856-01 16 12 861-01	1,19	27 20	16 12 857-01 16 12 862-01	250-450 125 MAG	26 26 24	16 12 462-01 16 12 462-01 16 12 413-01
5-vxl WR 5-sp	M/S A/S	14 33	16 12 875-01 16 12 879-01	1,46	18 29	16 12 876-01 16 12 880-01	1,42	22 25	16 12 877-01 16 12 881-01	1,29	25 22	16 12 856-01 16 12 861-01	1,30	28 19	16 12 878-01 16 12 882-01	250-450 125 MAG	22 22	16 12 883-01 16 12 883-01 16 12 501-01

WORKSHOP MANUAL



FUEL SYSTEM

F