KTM MOTORCYCLES

REPARATURANLEITUNG
REPAIR MANUAL
MANUEL DE RÉPARATION

MOTOR
ENGINE
MOTEUR

125 LC2

ART. NR. 3.205.09 6. 96

TECHNIK INFORMATION
TECHNICAL INFORMATION

Abt.: KD Nr.: 9812/30/02-D WH 14.12.98

Betrifft: Kolbenschäden an LC 2 und STING Modellen

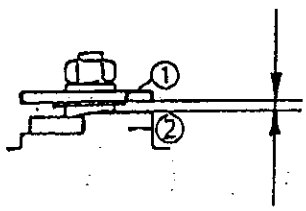
Untersuchungen von Kolbenschäden an KTM LC2 und STING Modellen zeigen ein einheitliches Schadensbild. Als Ursache für diese Beschädigungen gelten die mangelhafte Entlüftung der Schmierölpumpe sowie eine unsachgemäße Einstellung des Pumpenhubes als sicher.

In Garantiefällen wird der KTM Kundendienst künftig jeden Kolbenschaden auf Schmiermangel untersuchen sowie Einstellung und Funktion der Schmierölpumpe überprüfen.

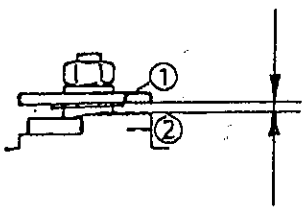
Bevor die Einstellung des Schmierölpumpenhubes vorgenommen wird, muß die eindeutige Identifizierung von LC2/Sting als 80 km/h Version oder LC2/Sting als 100 km/h Version sichergestellt sein.

Die angegebenen Werte sind jeweils bei **maximalem Pumpenhub** einzustellen!

Der Einstellwert für **80 km/h Versionen** (Fahrzeuge ohne Ölseilzug) muß zwischen **0,55mm und 0,65mm** liegen.



Der Einstellwert für **100 km/h und „offene" Versionen** (Fahrzeuge mit Ölseilzug) muß zwischen **0,15mm und 0,25mm** liegen.



Diese Einstellwerte werden mit einer Fühlerlehre gemessen und durch Ausgleichscheiben (beilegen oder wegnehmen) erreicht. Die Schmierölpumpe immer entlüften! Detailerläuterungen sind im Reparaturhandbuch für LC2/Sting zu finden.

WICHTIG: Beim Einschieben der Fühlerlehre dürfen Anschlagscheibe und Kulissenring nicht bewegt werden.

Der max. Pumpenhub kann durch Ausschrauben der Zündkerze und Weiterdrehen des Motors durch kurzes Antasten des Starterknopfes erfolgen.

KTM Kundendienst

i.A.

Mattighofen - Postfach 91 - Austria
Tel. 07742/6000 - Fax 07742/6000-54 - DVR 0010946
Firmenbuchgericht Landesgericht Ried i. Innkreis, Firmenbuch-Nr. 102019d

INTRODUCTION

THIS REPAIR MANUAL OFFERS A EXTENSIV REPAIR-INFORMATIONS. HOWEVER, THE RIGHT TO MODIFICATIONS IN THE INTEREST OF TECHNICAL IMPROVEMENT IS RESERVED WITHOUT UPDATING THE CURRENT ISSUE OF THIS MANUAL.

A DESCRIPTION OF GENERAL WORKING MODES COMMON IN WORK SHOPS HAS NOT BEEN INCLUDED. SAFETY RULES COMMON IN THE WORK SHOP HAVE ALSO NOT BEEN LISTED. WE TAKE IT FOR GRANTED THAT THE REPAIRS ARE MADE BY QUALIFIED PROFESIONALLY TRAINED MECHANICS.

READ THROUGH THE REPAIR MANUAL BEFORE BEGINNING WITH THE REPAIR WORK.

⚠ WARNING ⚠

STRICT COMPLIANCE WITH THESE INSTRUCTIONS IS ESSENTIAL TO AVOID DANGER TO LIFE AND LIMB.

! CAUTION !

POINTS OUT MOUNTING TIPS IN ORDER TO PREVENT DAMAGE TO MOTOR PARTS.

„NOTE" POINTS OUT USEFUL TIPS.

WARNINGS: DO NOT WASH PARTS IN GASOLINE! GASOLINE IS EXPLOSIVE AND POISONOUS! USE ONLY FIREPROOF SOLVENT, IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND WARNINGS.
READ AND UNDERSTAND THE OWNER'S HANDBOOK THAT APPLIES TO THE MOTORCYCLE YOU ARE WORKING ON.

USE ONLY **ORIGINAL KTM SPARE PARTS** WHEN REPLACING PARTS.

THE KTM HIGH PERFORMANCE ENGINE IS ONLY ABLE TO FULFILL THE DEMAND TO YOUR REQUIREMENTS IF THE MAINTENANCE WORK IS PERFORMED REGULARLY AND PROFESSIONALLY.

TÜV CERT
FOR QUALITY SYSTEM
ISO 9001
REG.NO. 12 100 6061

KTM AUSTRIA'S CERTIFICATE OF ACHIEVEMENT FOR ITS QUALITY SYSTEM ISO 9001 IS THE BEGINNING OF AN ON- GOING TOTAL RE- ENGINEERED QUALITY PLAN FOR A BRIGHTER TOMORROW.

KTM SPORTMOTORCYCLE AKTIENGESELLSCHAFT
5230 MATTIGHOFEN, AUSTRIA

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1.0 SPECIAL TOOLS

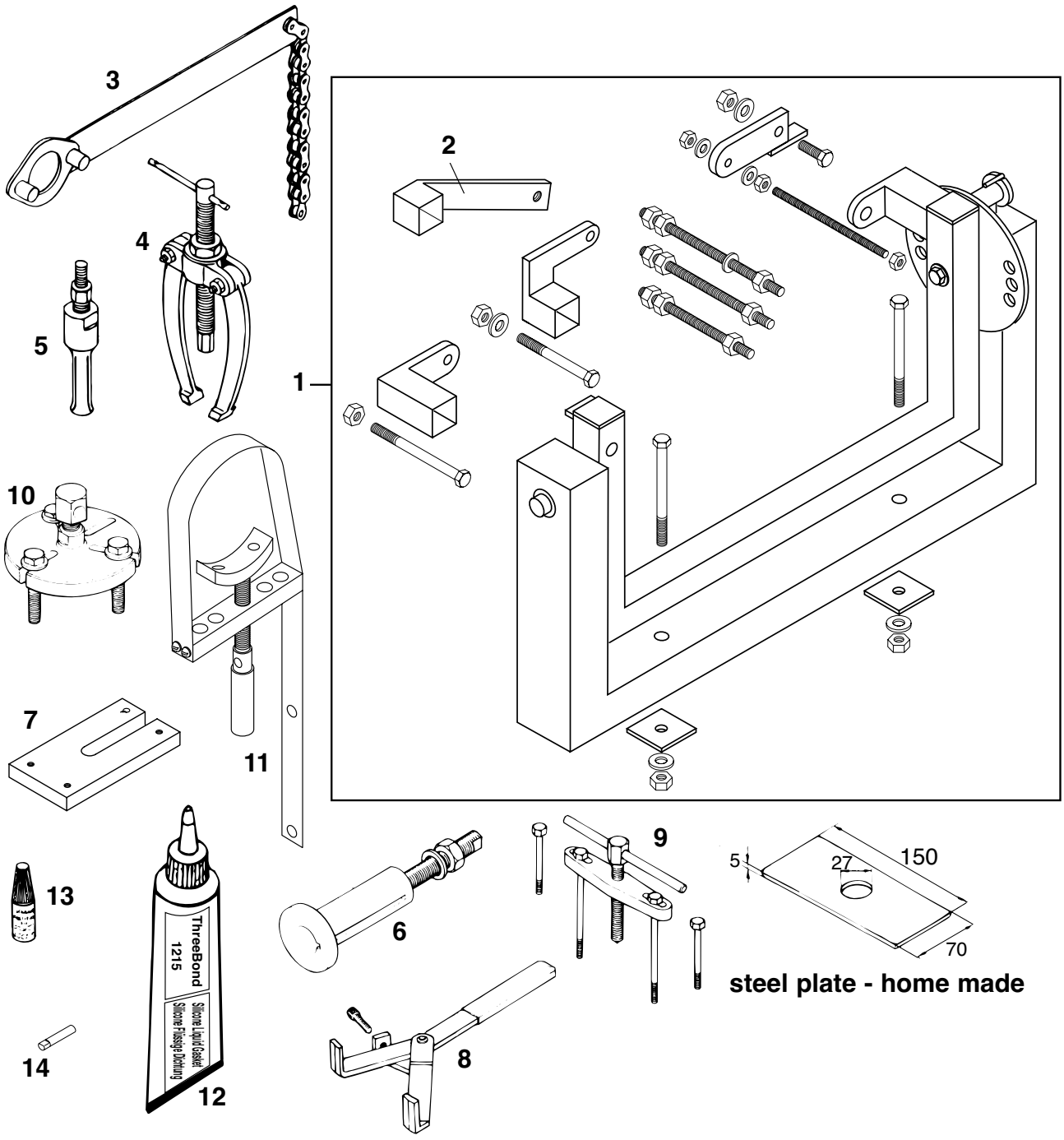
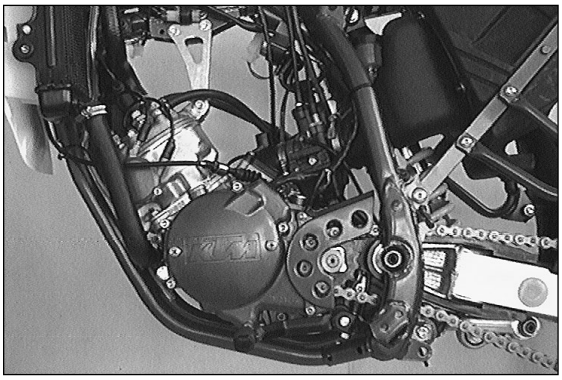
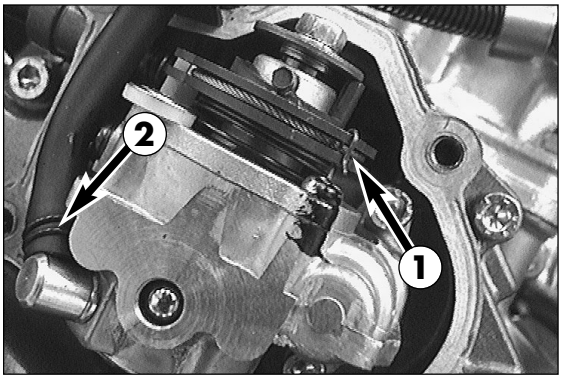


FIG.	PART NR.	DESCRIPTION
1	560.12.001.000	Repair stand '96
2	560.12.001.050	Bracket 125 LC 2
3	510.12.012.000	Chain sprocket holder
4	151.12.017.000	Bearing extractor
5	151.12.018.000	Internal bearing extractor 12 – 16 mm
6	511.29.008.000	Mounting tool crankshaft
7	511.29.004.000	Locking fork
8	511.29.003.000	Clutch holder
9	511.29.028.000	Partition tool
10	511.29.009.000	Flywheel puller
11	511.29.012.000	Flywheel holder
12	090.98	Silicon gasket (Three-Bond)
13	6.899.785	Loctite 242 blue
14	511.29.034.000	Key for mixture regulating screw

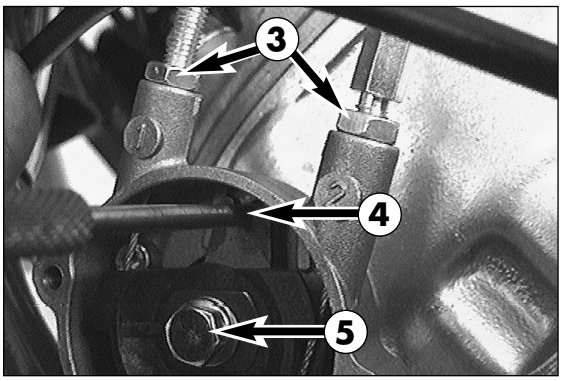
2.0 REMOVING ENGINE



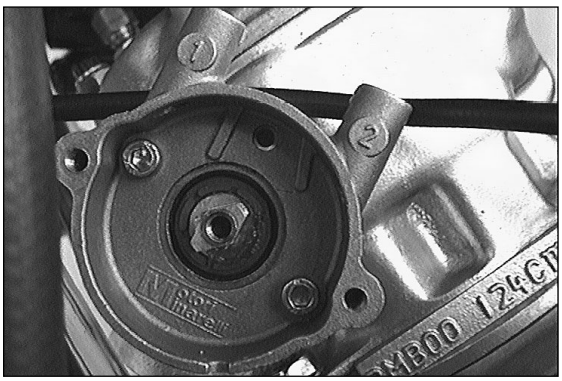
- Clean the motorcycle.
- Take off seat, side covers and tank with spoilers.
- Remove drain plug at water-pump cover and drain cooling liquid; disconnect radiator hoses.
- Take off exhaust manifold, carburetor and chain.
- Disconnect battery and electric leads.
- Unhitch clutch cable.
- Disconnect the hoses for carburetor heating at the carburetor's end.



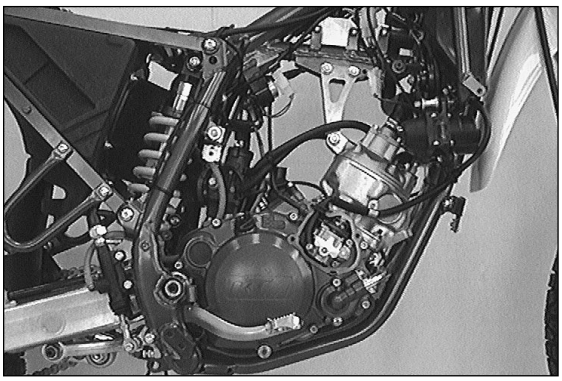
- Remove cover of oil pump together with gasket.
- Remove clip ❶ and unhitch cable.
- Slide back clamp ❷ and disconnect oil line. Seal oil line with a suitable plug.



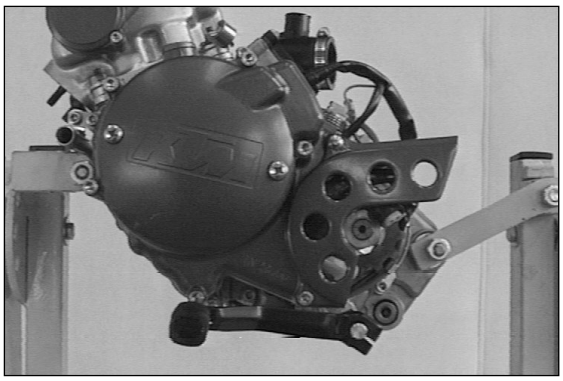
- Take off left cover of control flap.
- Loosen counter-nuts ❸ and turn in both adjusting screws.
- Insert a pin (Ø 4 mm) through the mark in the cable disk and into the bore ❹ in order to block the cable disk.
- Loosen screw ❺.



- Take off cable disk and unhitch cables.
- Turn out both adjusting screws all the way and pull cables out of cable housing.

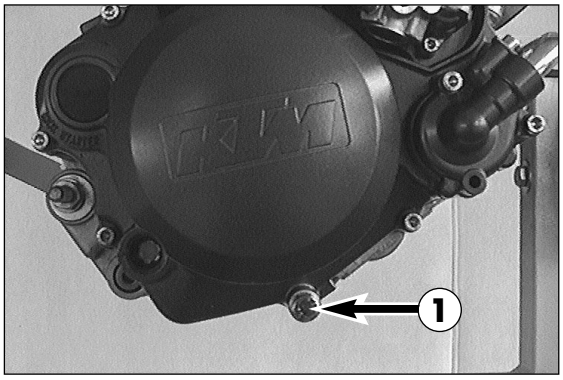


- Remove engine screws, engine-retaining panels and swingarm pivot. Heave engine to the right out of the frame.



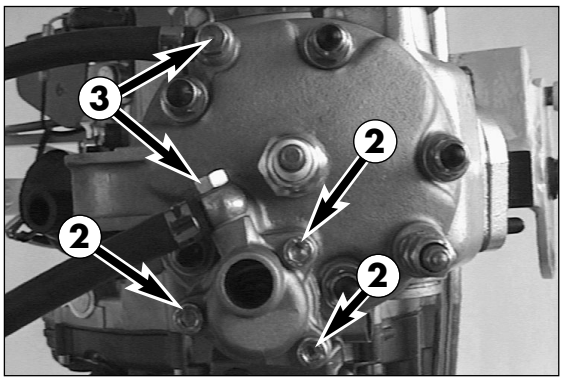
3.0 DISMANTLING THE ENGINE

– Fix engine in assembly stand.
– Remove shift lever.



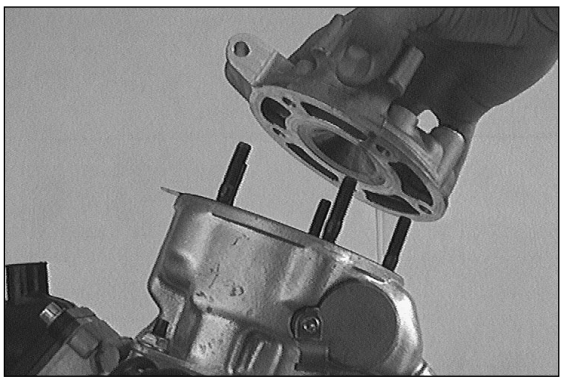
3.1 Draining transmission oil

– Remove transmission-oil drain plug ❶ and let transmission oil flow out.

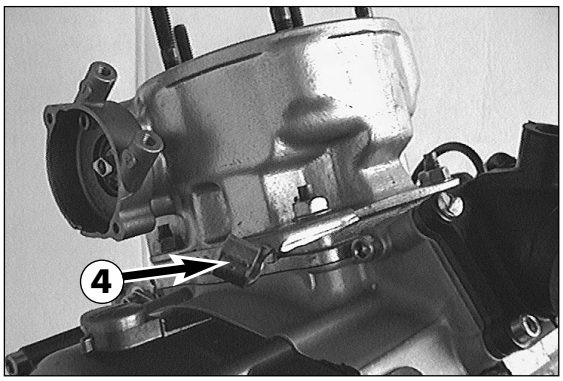


3.2 Cylinder head

– Unscrew spark plug
– Loosen screws ❷ and take off thermostat cover together with gasket.
– Take out thermostat and O-ring.
– Loosen two banjo bolts ❸ and remove hoses for carburetor heating.

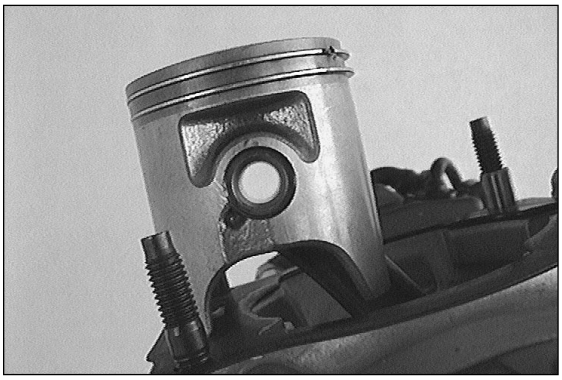


– Remove five cap nuts and washers.
– Take off cylinder head together with gasket.

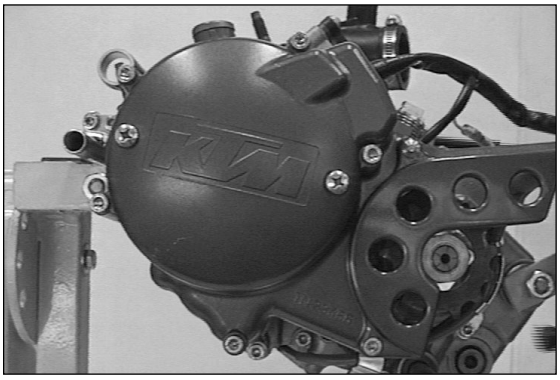


3.3 Cylinder, Piston

– Loosen the four collar nuts at the cylinder base.
– Remove clutch cable guide ❹, cylinder and cylinderbase gasket.
– Remove two dowels.

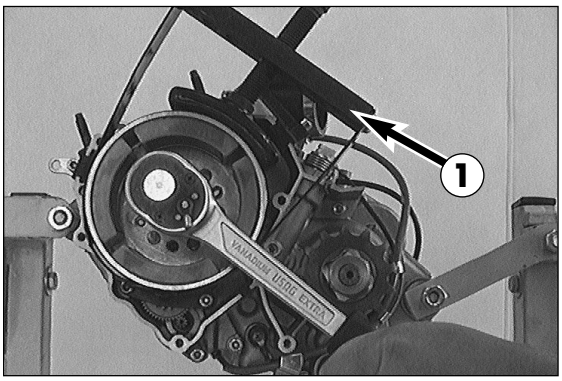


– Remove piston-pin retainer and push piston pin out of piston without forcing it out violently.
– Remove piston.
– Take piston-pin bearing out of conrod eye.

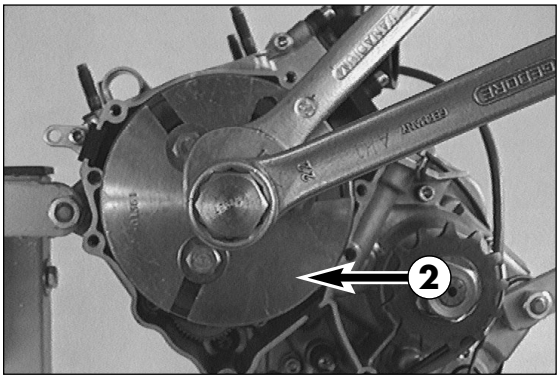


3.4 Ignition system

– Remove all screws of the ignition cover and take off ignition cover along with gasket.
– Remove two dowel pins.



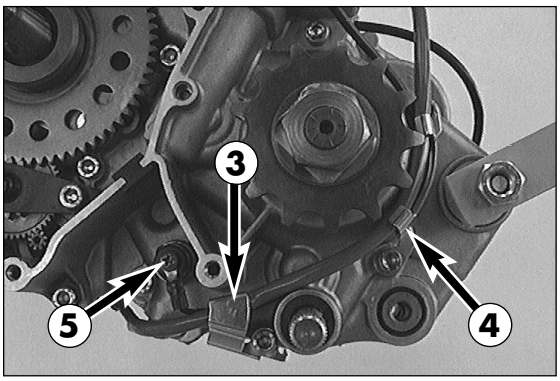
– Steady crankshaft by means of rotor holder ❶ and loosen hexagon nut of rotor at the same time.
– Remove hexagon nut and washer.



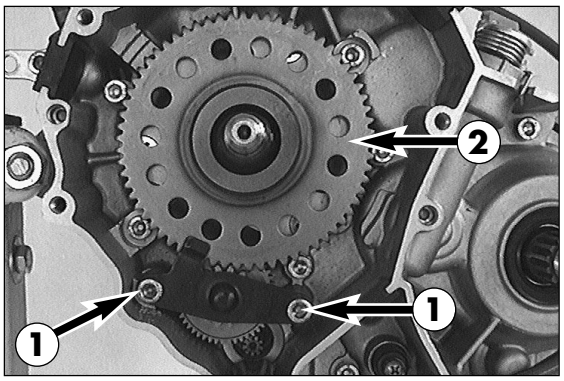
– Mount rotor extractor ❷ and pull off rotor.
– Take woodruff key out of crankshaft.

! CAUTION !

TURN THE THREE SCREWS OF THE ROTOR EXTRACTOR INTO THE ROTOR ONLY BY HAND AND UNTIL FEELING A SLIGHT RESISTANCE. OTHERWISE, THE SCREWS WOULD BE PRESSING ONTO THE ROLLERS OF THE FREE-WHEEL CLUTCH AND DESTROY IT.
NEVER HIT ROTOR WITH A HAMMER OR OTHER TOOLS. THIS MIGHT CAUSE PARTS OF THE ROTOR MAGNET TO COME OFF.

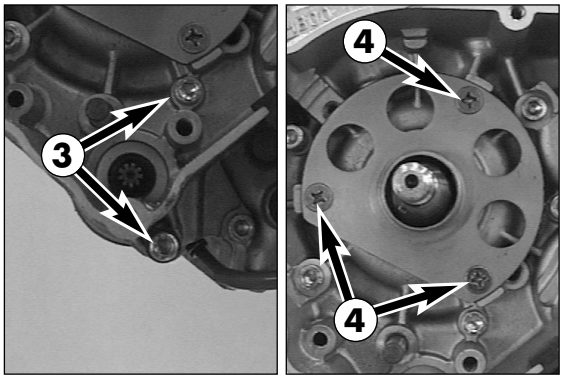


– Remove 3 allan head screws and take off retaining panels ❸ and ❹.
– Disconnect neutral switch ❺.
– Dismount neutral switch and cable.

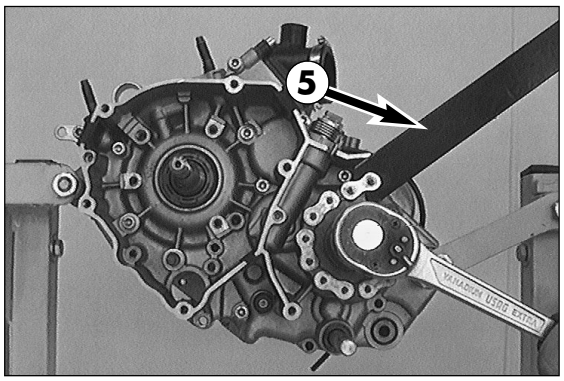


3.5 Electric starter drive, electric starter motor

– Loosen two screws ❶ and remove retaining panel.
– Remove freewheel gear ❷.
– Remove outer stop disk, reduction gear and inner stop disk.

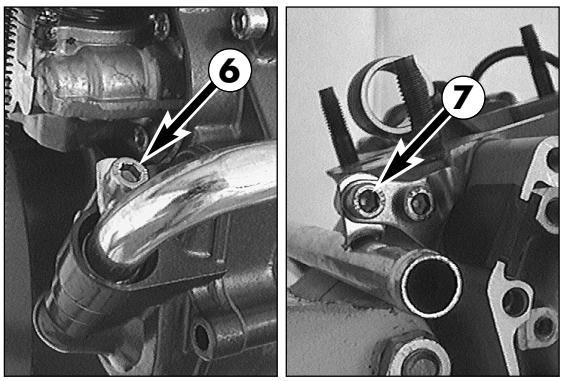


– Loosen screws ❸ and dismount electric starter motor along with O-ring.
– Loosen screws ❹ of the bearing bracket and remove bearing bracket.



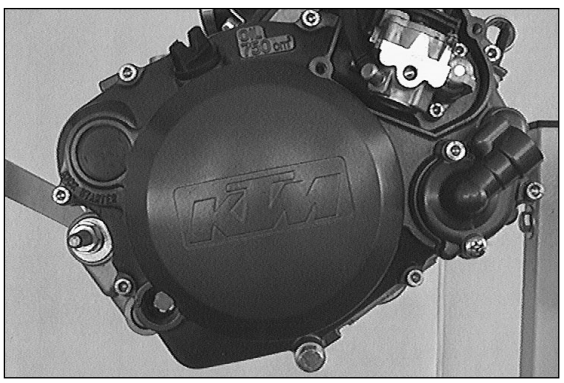
3.6 Sprocket

– Bend lock washer to straighten it.
– Steady sprocket with holding tool for sprocket ❺ and loosen hexagon nut.
– Remove sprocket and distance sleeve.



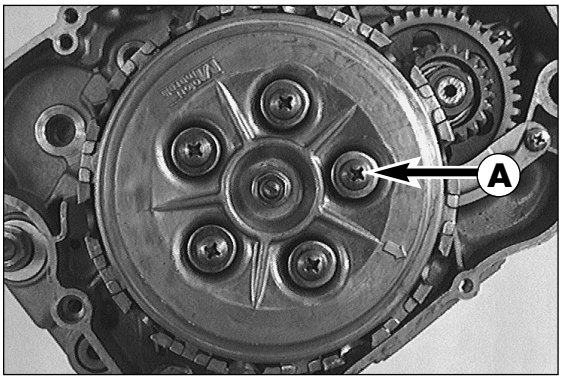
3.7 Water pipe

– Remove screws ❻ and ❼.
– Remove water pipe along with O-ring.

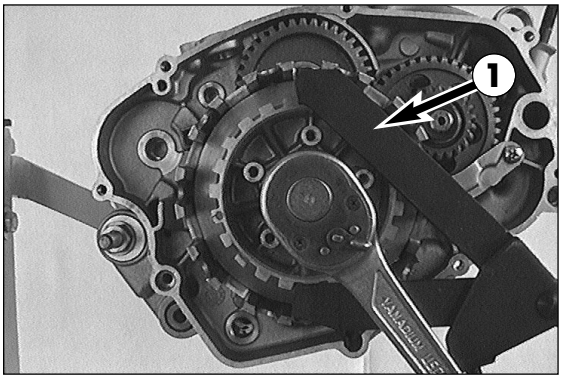


3.8 Clutch

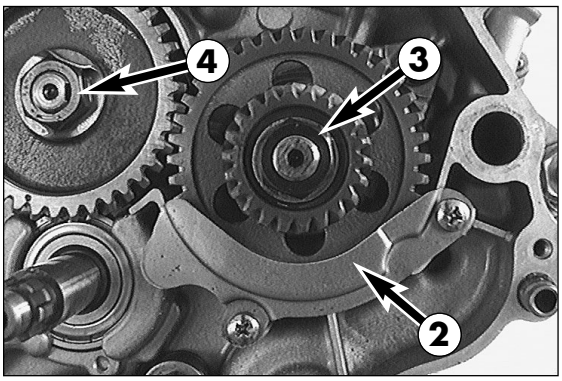
– Remove all screws of the clutch cover and take off clutch cover along with gasket.
– Remove two dowels from the housing.



– Loosen the five screws Ⓐ in a crosswise manner so that the clutch disks will not get jammed when the springs are released.
– Remove screws, spring retainers and springs.
– Remove pressure cap with outer push rod.
– Remove disk package.
– Tilt engine and take ball with the push rod disposed behind it out of the main shaft.

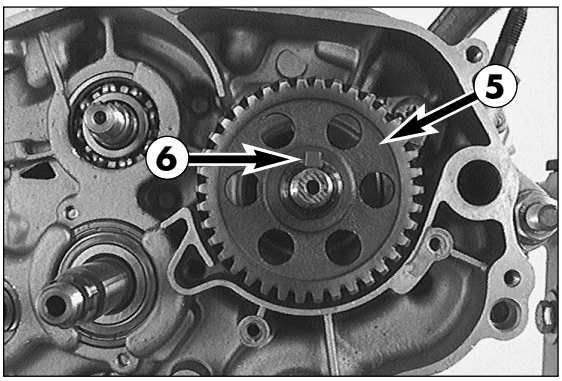


– Unlock lock washer of the inner clutch hub, slide clutch holder ❶ onto the inner clutch hub and loosen hexagon nut.
– Remove clutch holder, hexagon nut and lock washer.
– Remove inner clutch hub and spacing washer.
– Take outer clutch hub together with stop disk and spring washer off the main shaft.

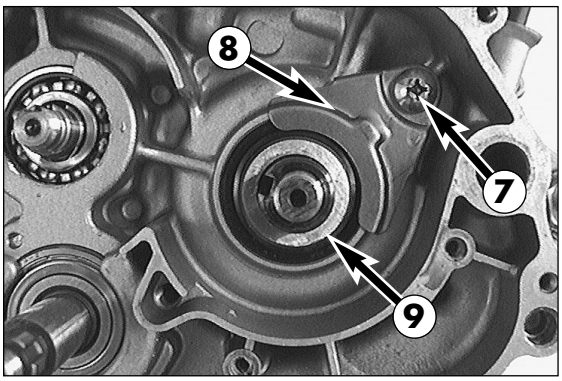


3.9 Primary drive

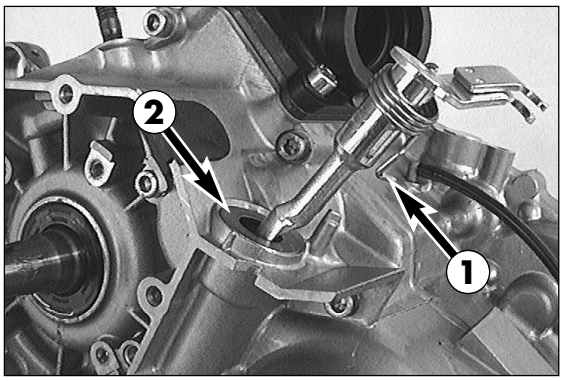
– Loosen two screws, and remove baffle plate ❷.
– Unlock lock washer.
– Block crankshaft with blocking fork, and loosen hexagon nut of the primary gear ❸ and hexagon nut of the balancer-shaft gear ❹.
– Remove primary gear along with shim.
– Remove balancer-shaft gear along with lock washer.
– Take featherkey out of groove.



– Remove balancer-shaft drive gear ❺.
– Take featherkey ❻ out of groove.

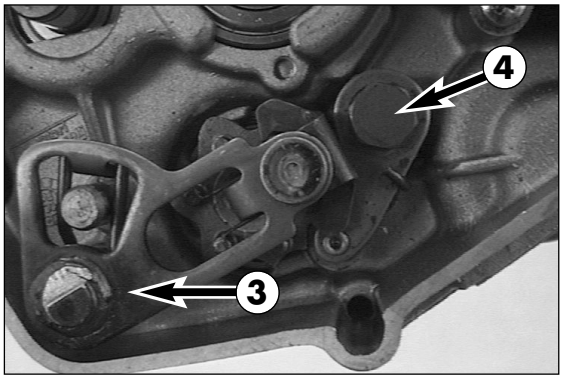


– Loosen screw ❼.
– Take off sealing ring holder ❽ and distance sleeve ❾.



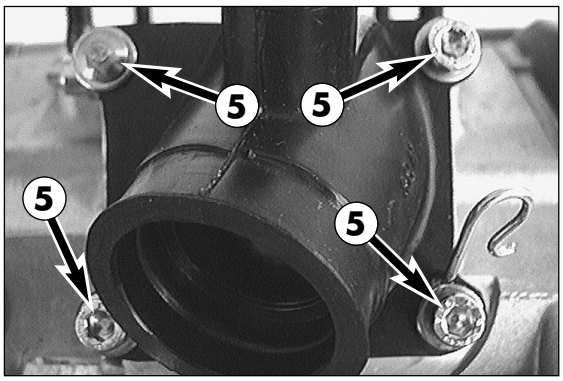
3.10 Clutch release shaft

– Unhitch return spring ❶ at engine case.
– Remove release shaft, return spring and disk ❷.



3.11 Shifting shaft

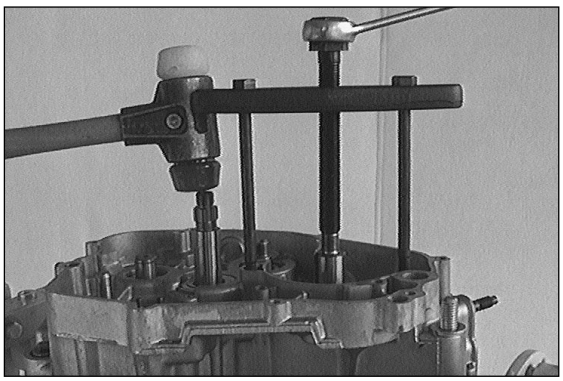
– Pull shifting shaft ❸ out of housing.
– Loosen screw ❹ and remove locking lever with locking spring.



3.12 Intake flange

– Loosen four screws ❺.
– Remove intake flange, reed valve housing and gasket.
– Remove transmission vent hose.

NOTE: FOR LOOSENING THE TEAR-OFF SCREW, IT IS BEST TO USE A CHISEL.

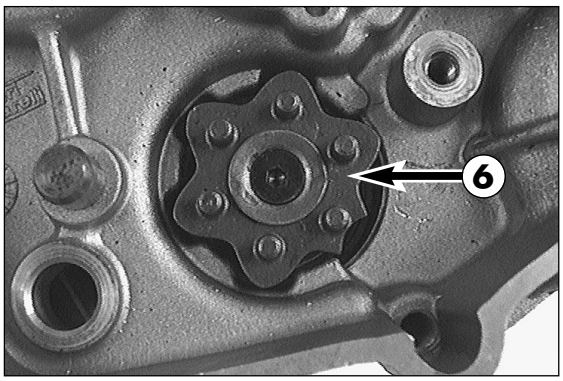


3.13 Separate the engine casing halves

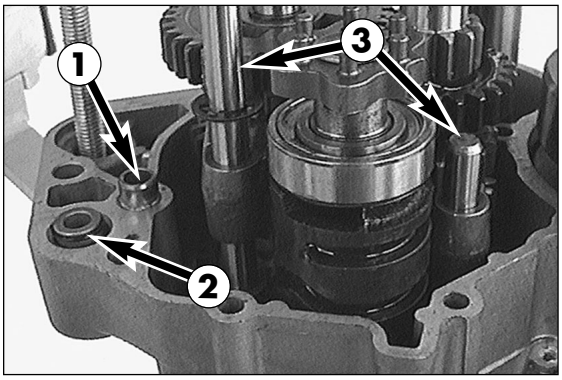
– Remove all screws of the engine case.
– Mount engine case separating tool on the right half of the engine case.
– Loosen engine fixture on assembly stand.
– Separate engine case by turning in the spindle. At the same time, use plastic hammer to tap lightly and alternately on the main shaft and on the front engine mounting hub.

! CAUTION !

MOUNT THE ENGINE CASE SEPARATING TOOL IN A WAY THAT IT IS PARALLEL TO THE CASE SEALING AREA.
WHEN YOU SEPARATE THE ENGINE CASE, TURN THE SHIFT ROLLER ❻ IN A WAY THAT IT WILL NOT TOUCH THE ENGINE CASE (SEE PICTURE).
ANY LEVERING APART BY MEANS OF SCREWDRIVERS OR THE LIKE MUST BE AVOIDED AS THIS MIGHT EASILY CAUSE DAMAGE TO THE SEALING AREAS.

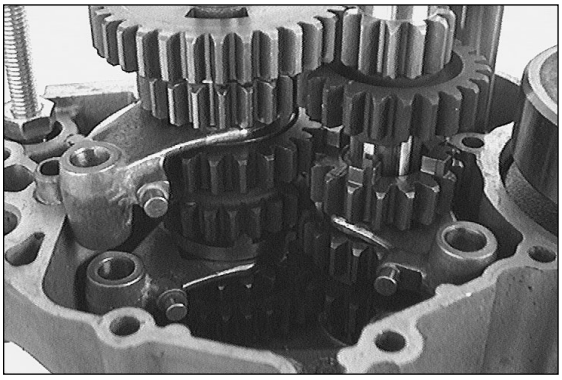


– Remove right half of casing.
– Dismount engine case separating tool.

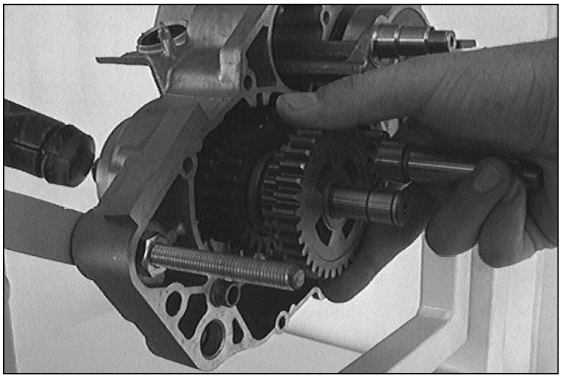


3.14 Transmission, shift mechanism

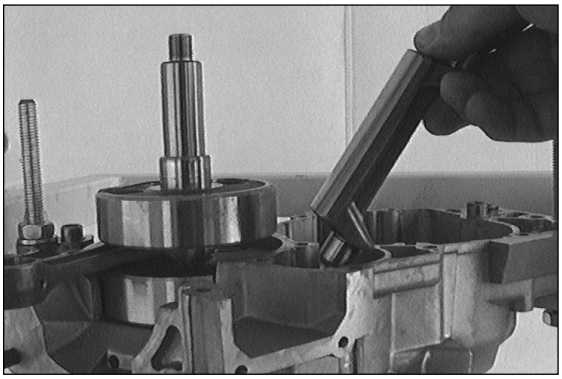
– Remove dowel ❶ and absorber sleeve ❷.
– Pull out shift rails ❸ and swing shift fork sidewards.
– Pull out shift roller.



– Remove shift forks.

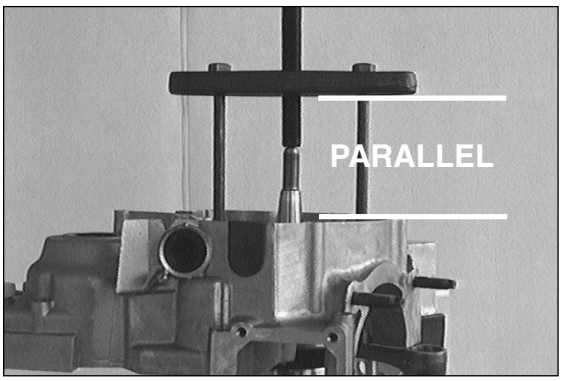


– Use a plastic hammer to tap lightly on the countershaft and remove both transmission shafts.



3.15 Balancer shaft

– Pull balancer shaft out of bearing by hand.



3.16 Crankshaft

– Mount engine case separating tool on the side of the ignition and push crankshaft out of bearing.

! CAUTION !

MOUNT THE ENGINE CASE SEPARATING TOOL IN A WAY THAT IT IS PARALLEL TO THE CASE SEALING AREA. OTHERWISE YOU MIGHT DAMAGE THE ENGINE CASE.

4.0 SERVICING ON INDIVIDUAL COMPONENTS

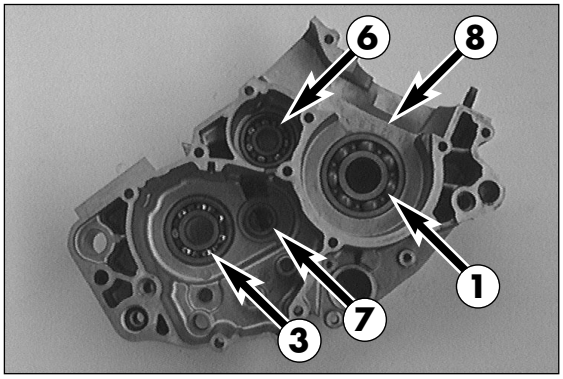
Engine crankcase

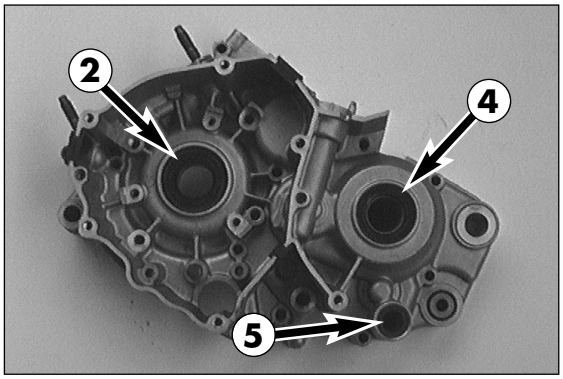
NOTE: READ THROUGH THE FOLLOWING SECTION BEFORE COMMENCING WORK. THEN DETERMINE THE ASSEMBLY SEQUENCE SO THAT THE CRANK-CASE HALVES ONLY NEED TO BE HEATED UP ONCE BEFORE REPLACING THE BEARINGS.

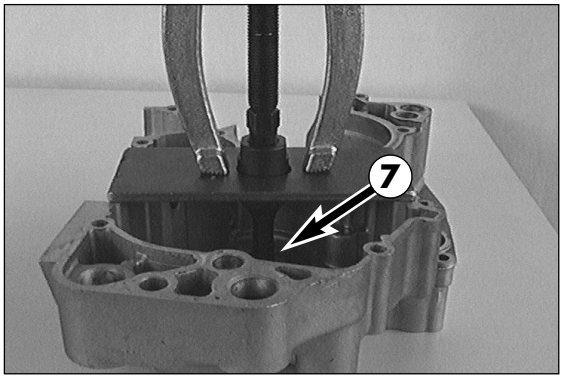
HAVING FIRST REMOVED THE BUSH-DOWELS, IN ORDER TO EXPEL THE BEARINGS OR REMOVE THEM WITH LIGHT MALLET BLOWS, THE HOUSING HALVES MUST BE PLACED ON A SUITABLY LARGE PLANE SURFACE, SUPPORTING THE WHOLE OF THE SEAL AREA WITHOUT DAMAGING IT. A WOODEN PANEL IST BEST USED AS A BASE.

IN THE ABSENCE OF A SUITABLE PRESS, BEARING OR PAKKING RINGS SHOULD ONLY EVER BE REMOVED WITH THE GREATEST CARE USING A SUITABLE MANDREL. COLD BEARING WILL PRACTICALLY DROP OUT OF THEIR SEATING WHEN THE HOUSING TEMPERATURE REACHES APPROX. 150° C.

AFTER COOLING, SHOULD THE BEARINGS FAIL TO LOCK IN THE BORE, THEY ARE BOUND TO ROTATE AFTER WARMING. IN THAT EVENT THE HOUSING MUST BE REPLACED.







4.1 Left casing half

– Heat casing half to 100-150° C by means of a heating plate.

GROOVED BALL BEARING OF CRANKSHAFT ❶
Press old grooved ball bearing inwards. Press in new grooved ball bearing up to the stop.

SHAFT SEAL RING OF CRANKSHAFT ❷
With the sealing lip pointing inwards, press in shaft seal ring from outside so that it is flush.

GROOVED BALL BEARING OF COUNTERSHAFT ❸
Press in grooved ball bearing from inside up to the stop.

SHAFT SEAL RING OF COUNTERSHAFT ❹
Press in new shaft seal ring so that it is flush.

SHAFT SEAL RING OF SHIFTING SHAFT ❺
Press in new shaft seal ring so that it is flush.

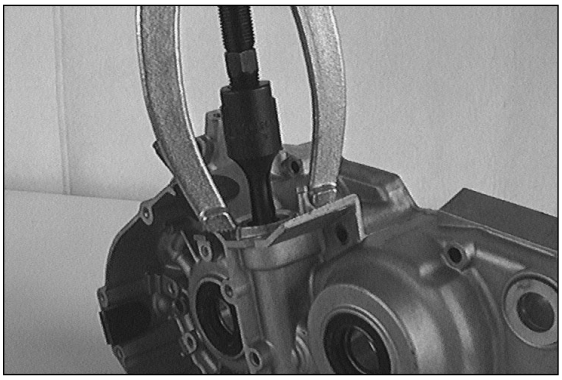
GROOVED BALL BEARING OF BALANCER SHAFT ❻
Use internal extractor to pull old grooved ball bearing out of seat. Press in new bearing up to the stop.

NEEDLE BEARING OF MAIN SHAFT ❼
Use internal extractor to pull old bearing out of casing. Press in new needle bearing from the inside up to the stop.

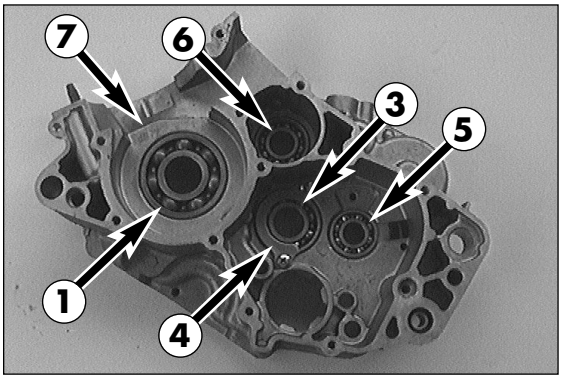
NOTE: TO BE ABLE TO APPLY THE BEARING EXTRACTOR VERTICALLY, A STEEL PLATE (SEE SPECIAL TOOLS) MUST BE PLACED ON THE CASE SEALING AREA.

Once the casing half has cooled, check all bearings for their snug fit.

Finally, verify that lubricating bore ❽ for the grooved ball bearing of the crankshaft is free from obstructions.



NEEDLE BUSH OF CLUTCH RELEASE MECHANISM
Take sealing ring out of bore. Use internal extractor to pull needle bush out of its seat. Press in new needle bush up to the stop and mount sealing ring.



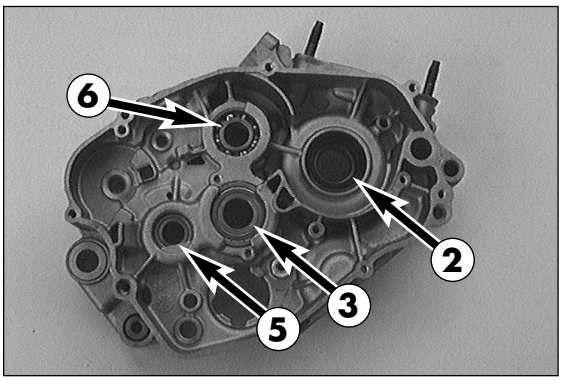
4.2 Right casing half

– Heat casing half to 100-150° C by means of a heating plate.

GROOVED BALL BEARING OF CRANKSHAFT ❶
Press old grooved ball bearing inwards. Press in new grooved ball bearing up to the stop.

SHAFT SEAL RING OF CRANKSHAFT ❷
With the sealing lip pointing inwards, press in shaft seal ring from outside so that it is flush.

GROOVED BALL BEARING OF MAIN SHAFT ❸
Remove retaining panel ❹ and press out bearing towards inside. Press in grooved ball bearing from inside up to the stop. Coat screws of retaining panel with Loctite 242 and mount retaining panel.

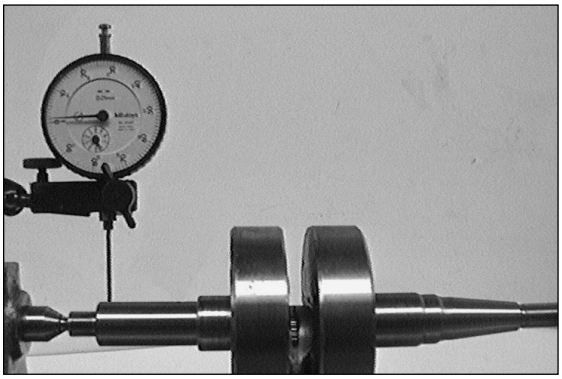


GROOVED BALL BEARING OF COUNTERSHAFT ❺
Press in new grooved ball bearing from inside up to the stop.

GROOVED BALL BEARING OF BALANCER SHAFT ❻
Press old grooved ball bearing towards inside. Press in new bearing up to the stop.

Finally, verify that LUBRICATING BORE ❼ for the cylindrical-roller bearing of the crankshaft is free from obstructions.

Once the casing half has cooled, check bearings for their snug fit.



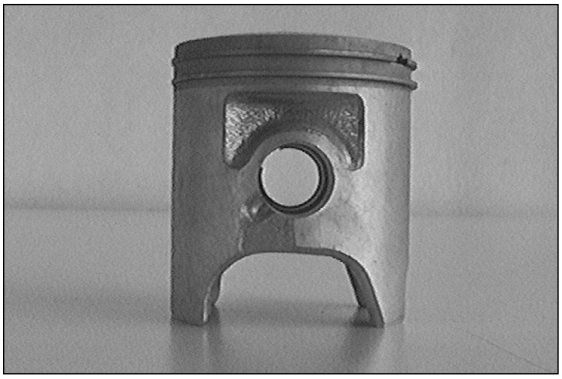
4.3 Crankshaft

If the same crankshaft is to be used, check crankshaft journals for any eccentricity. For this purpose, place crankshaft on a roller stand or the like and use a test gauge to check the crankshaft journals at the outer end for any eccentricity.

Crankshaft journal runout: max. 0,03 mm

Check radial and axial clearance at conrod bearing.

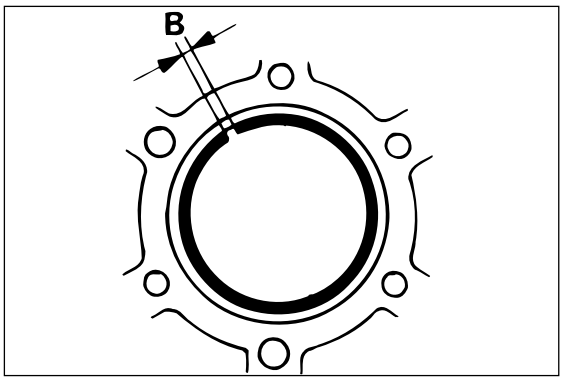
Radial clearance: max. 0,04 mm
Axial clearance: max. 0,7 mm



4.4 Piston

If a used piston is to be used again, be sure to check the following items:

– Examine piston bearing surface for any possible pressure marks (piston jamming); light jamming can be remedied with a fine emery stone.
– The piston rings must not jam in the grooves. To clean the grooves, you may use an old piston ring or abrasive paper.
– The piston-ring anti-rotation protection elements must be fitted snugly in the piston and must not be worn.
– The piston pin must not be discolored, nor should it have pronounced score marks.

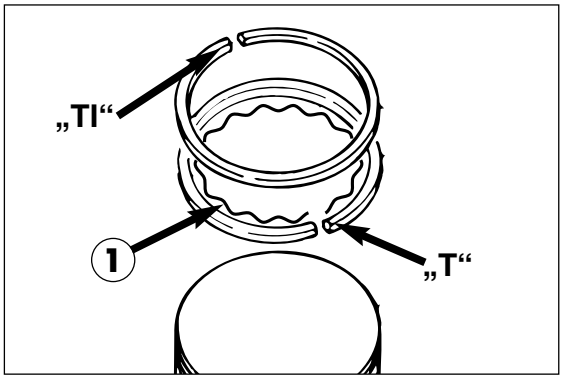


4.4.1 Checking piston-ring end gap

– Check piston rings for wear.
– Check piston-ring end gap ❽.
– For this purpose, position piston ring with piston approx. 10 mm under the cylinder's upper edge.
– Measure end gap ❽ with a feeler gauge.

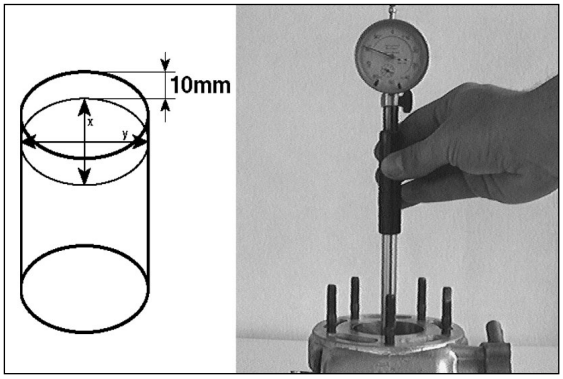
END GAP: max. 0,45 mm

– If the end gap is greater, check piston and cylinder for wear. If piston and cylinder wear are within the tolerances, replace the piston ring.
– Take out spring ring from behind the lower piston ring and check it for fracturing.



4.4.2 Assembly instructions for piston rings

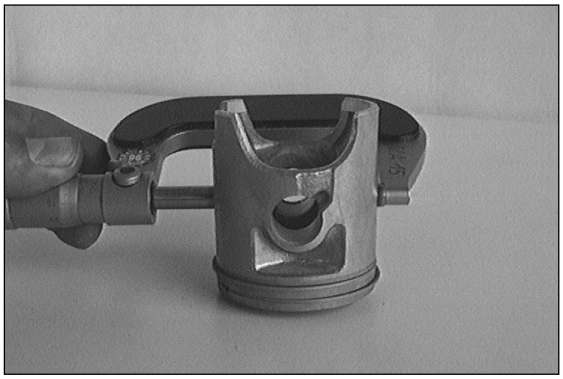
– Mount spring ring ❶ in lower ring groove.
– Mount rectangular ring with its labeling „T“ facing upwards (in the direction of the piston head) in the lower ring groove.
– Mount keystone ring with its labeling „TI“ facing upwards (in the direction of the piston head) in the upper ring groove.

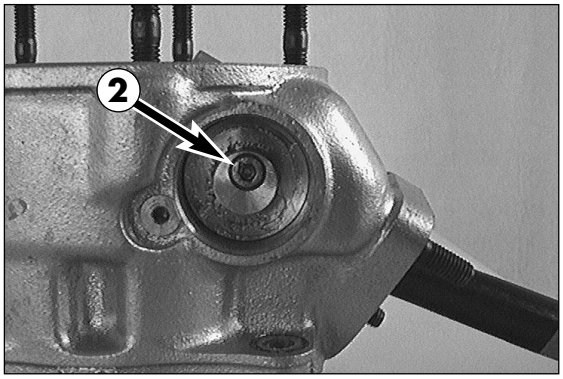


4.5 Measuring of piston and cylinder, piston mounting clearance

– In order to ascertain cylinder wear, the cylinder is measured in the middle of the bearing surface by means of a micrometer gauge.
– Measure cylinder diameter in X and Y axes in order to detect a possible oval shape.
– The piston is measured at the piston skirt, transversely to the piston pin as shown in the picture.
– The piston mounting clearance is obtained by subtracting the piston diameter from the cylinder diameter.

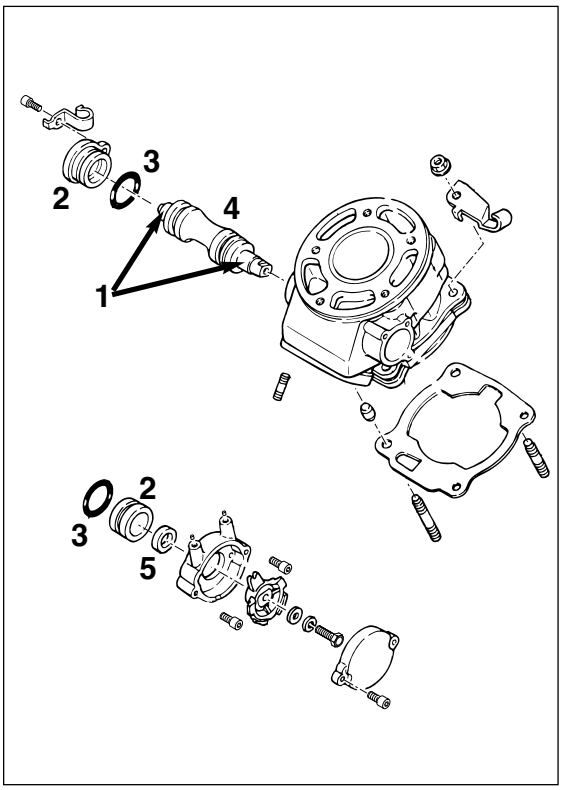
PISTON MOUNTING CLEARANCE: 0,045 - 0,050 mm





4.6 Exhaust control

– Remove two allan head screws on left side and take off the cable housing.
– Remove right cover of control roller.
– Block control roller with the helve of a hammer and loosen hexagon socket screw ❷.
– Pull portions of control roller out of the cylinder, i.e., the left portion to the left and the right portion to the right.



Clean all exhaust control components and check them for wear and damage.

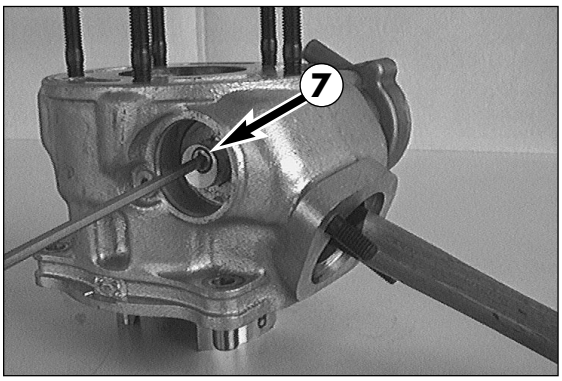
CONTROL ROLLER ATTACHMENT ❶
Check it for play in bearing bushes.

CONTROL-ROLLER BEARING BUSHES ❷
Must be fitted in the cylinder without play.

Replace O-RINGS ❸ OF CONTROL ROLLER

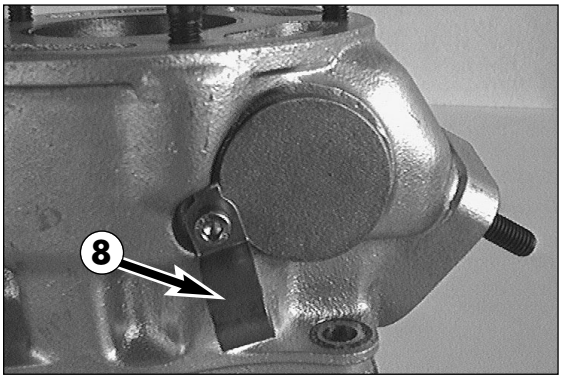
CONTROL ROLLER ❹
Clean; remove sooty carbon deposits; control roller must not graze in the exhaust port.

CONTROL-ROLLER SHAFT SEAL RING ❺
Check it for damage and tightness and replace it if necessary.

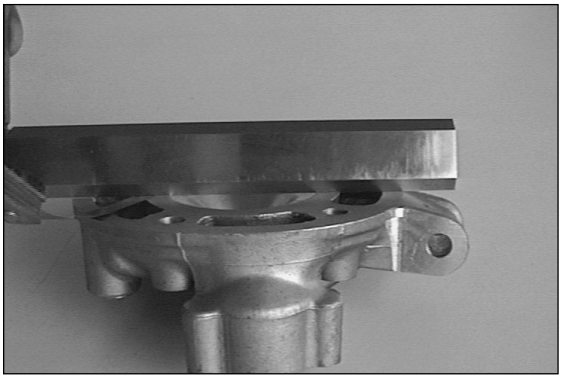


4.6.1 Preassembling of cylinder

- Apply a thin layer of Molykote grease on control-roller connecting screw, O-rings, bearing bushes and attachment sites of control roller.
- Grease shaft seal ring of control roller.
- Install right and left portions of control roller (make sure that dowel pin fits correctly).
- Install screw ❼. To tighten it, block control roller with a hammer's helve.



- Mount right cover of exhaust control with clip for oil hose ❽.
- Fix cable housing with 2 screws.

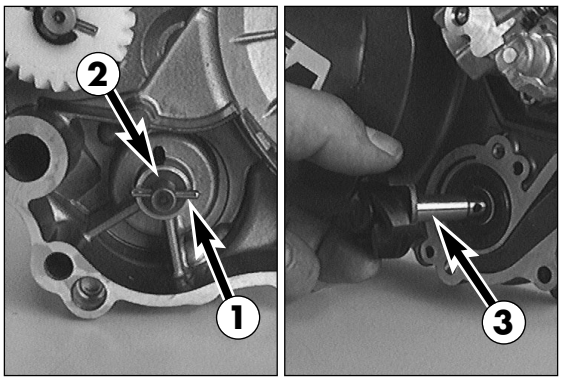


4.7 Cylinder head

- Check sealing area toward the cylinder for distortion by using a straight- edge and a feeler gauge.

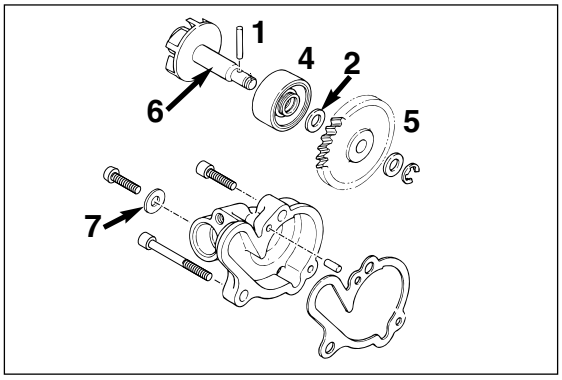
DISTORTION: max. 0,03 mm

NOTE: IN CASES OF LIGHT DISTORTION, THE CYLINDER HEAD CAN BE RESURFACED ON A GLASS PLATE. IN CASES OF GREATER DISTORTION, THE CYLINDER HEAD MUST BE REPLACED.



4.8 Water pump

– Remove water-pump cover along with gasket and dowel pin.
– Remove lock washer, stop disk and water-pump wheel from the inner side of the clutch cover.
– Remove pin ❶ and inner stop disk ❷; pull water-pump shaft ❸ out of casing.
– Clean all components and check them for wear.

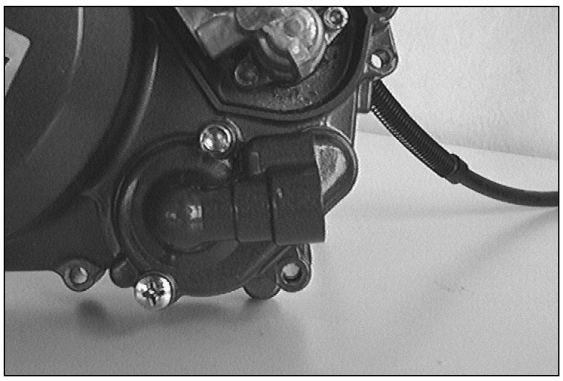


SHAFT SEAL RING ❹
Check it for damage and tightness.

WATER-PUMP WHEEL ❺
Check it for missing or worn teeth.

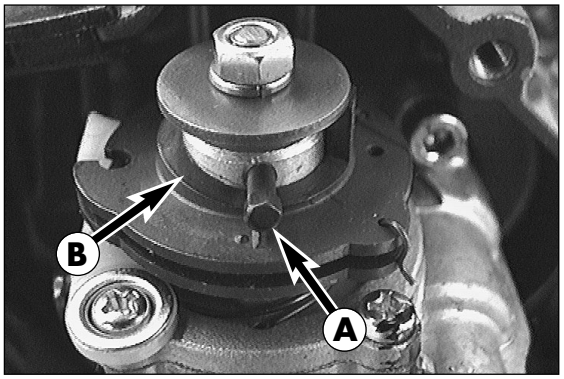
WATER-PUMP SHAFT
Check it at stem ❻ for score marks.

Replace SEALING RING OF DRAIN PLUG ❼.



4.8.1 Preassembling of water pump

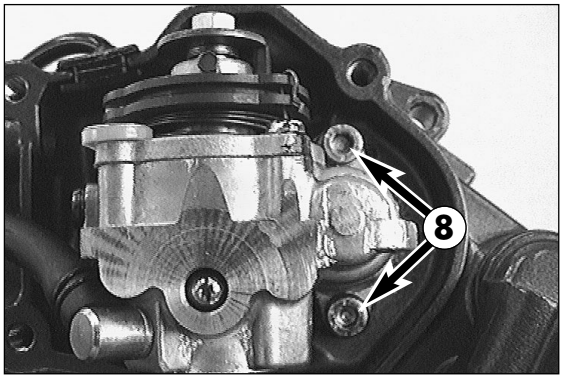
– Grease shaft seal ring of water pump and mount water-pump shaft.
– Mount stop disk, pin and water-pump wheel.
– Mount outer stop disk and lock washer.
– Verify that the dowel pin has been mounted.
– Put new gasket in place and mount water-pump cover.



4.9 Oil pump

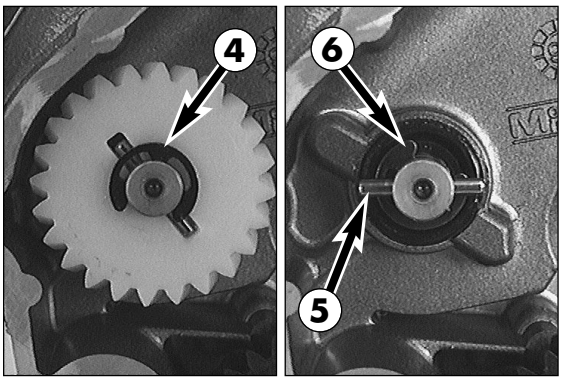
NOTE: AT THE OIL PUMP ITSELF, NOTHING BUT THE WEAR OF THE SHAFT-LIFTING DISK AND ITS STOP BOLT CAN BE CHECKED. IF ONE OF THESE COMPONENTS IS DEFECTIVE, THE ENTIRE OIL PUMP MUST BE REPLACED.

– Check lower end of bolt Ⓐ for wear.
– Check stopping face of bolt Ⓑ for wear and notching.



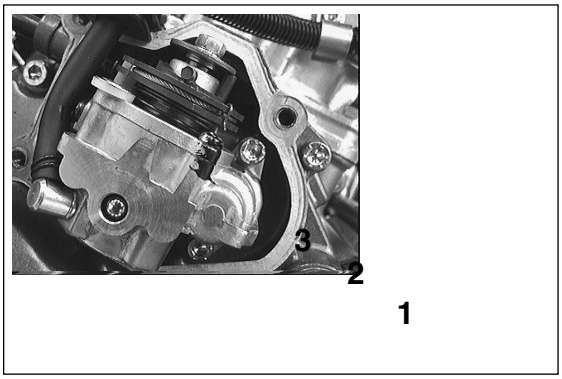
4.9.1 Replacing the oil pump

– Remove two allan head screws ❽ and pull oil pump off the oil-pump drive shaft.
– Clean sealing areas.
– Grease worm gearing of oil-pump drive shaft.
– Fill new oil pump with oil and mount it together with a new gasket.



4.9.2 Oil pump drive

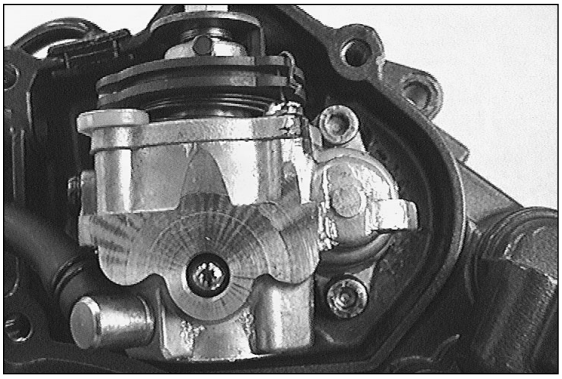
– Dismount oil pump (see 4.9.1).
– Remove circlip ❹ and pull oil-pump drive gear off the shaft.
– Take needle ❺ out of oil-pump drive shaft and remove lower circlip ❻.
– Pull oil-pump drive shaft towards the outside and out of the casing.



SHAFT SEAL RING OF OIL PUMP ❶
Check it for tightness and possible damage. Press in new shaft seal ring with its open side facing the casing's inner side so that it is flush.

GUIDE BUSHING OF OIL-PUMP SHAFT ❷
It must be fitted snugly in the clutch cover. It must not have any pronounced score marks on its inner side.

OIL-PUMP DRIVE SHAFT ❸
Check its stem for score marks.

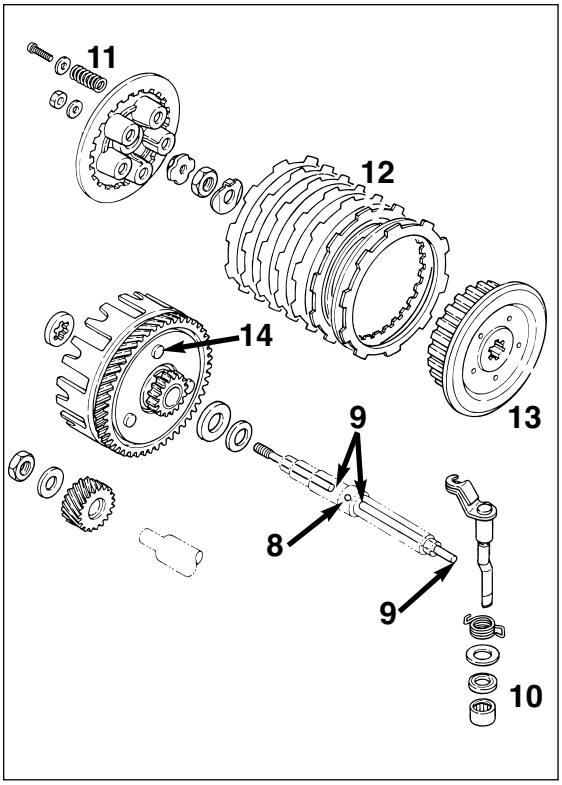


4.9.3 Preassembling the oil pump

– Grease guide bushing and shaft seal ring of oil pump.
– Push oil-pump drive shaft into the guide bushing from outer side.
– Put new gasket in place and fix oil pump with 2 screws.
– Mount inner circlip and slide needle into shaft.
– Mount oil-pump gear with its collar facing downwards.
– Mount outer circlip.

! CAUTION !

*WHENEVER OIL LINES WERE DISCONNECTED FROM THE OIL PUMP, OR WHENEVER THE OIL TANK WAS EMPTY, THE OIL PUMP MUST BE BLED. OTHERWISE, YOU WILL RISK ENGINE BREAKDOWN. NEVER REV UP THE ENGINE DURING BLEEDING, BECAUSE THE OIL PUMP DOES NOT YET SUPPLY ENOUGH OIL TO ALL LUBRICATING POINTS.



4.10 Clutch

BALL ❽
Check it for wear.
PUSH RODS
Check their front ends ❾ for wear.
RELEASE SHAFT, SEALING CUP, AND NEEDLE BEARING ❿
Check them for damage and wear.
PRESSURE SPRINGS ⓫
Minimum length: 32 mm (new: 34,5 mm); if necessary, replace all five of them.
CLUTCH DISKS ⓬
Must be flat.
6 steel disks ≠ 1,3 mm; must not contain any depressions.
7 lining disks, wear limit: ≠ 2,7 mm (≠ new: 2,9 mm)
INNER CLUTCH HUB ⓭
Check inner and outer toothing for wear.
OUTER CLUTCH HUB ⓮
Check rivets for tight fit.
ABSORBING ELEMENTS
The transmission of forces from the primary drive to the clutch is cushioned by rubber elements. Apart from the usual wear tests, also these rubber elements must be checked. Hold gear of the primary drive with one hand. Try to turn the outer clutch hub with the other hand. There must not be any play. If there is any play, the complete outer clutch hub must be replaced.

4.11 Transmission

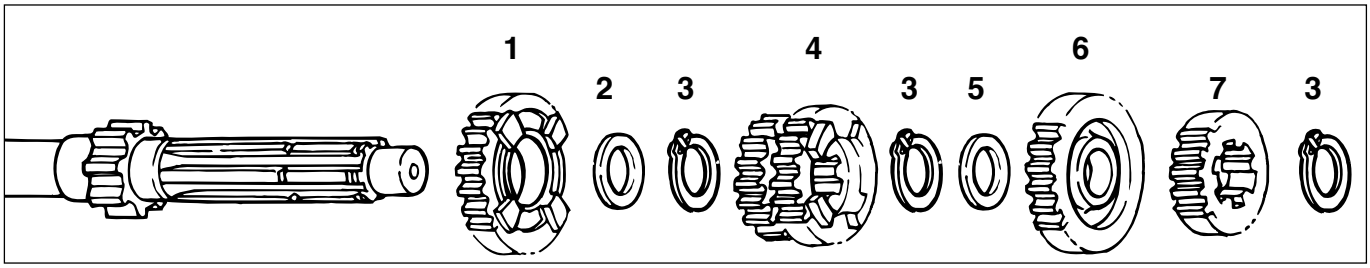
– Fix main shaft and countershaft in a vise (use protecting jaws) and remove gears.
– Clean all components and check them for wear.

Check TOOTH PROFILES of transmission shafts and sliding gears.

Slide SLIDING GEARS onto transmission shafts and verify that they run smoothly on the toothing.

Check MOUNTING POINTS of transmission shafts and idler gears.

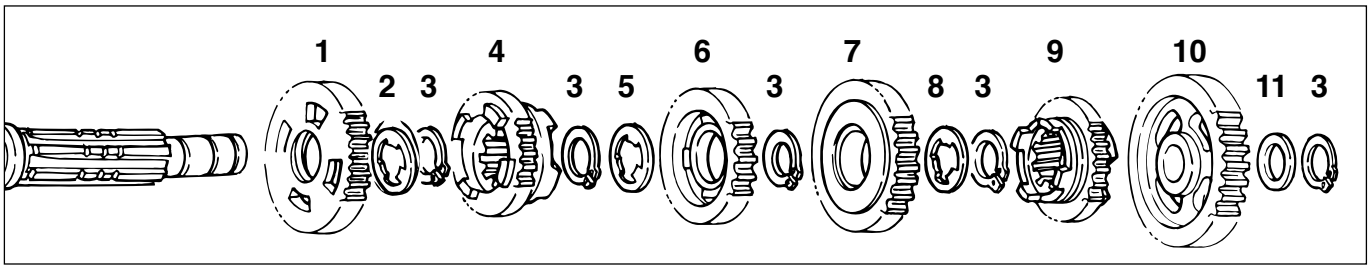
Mount IDLER GEARS on transmission shafts and check them for play.

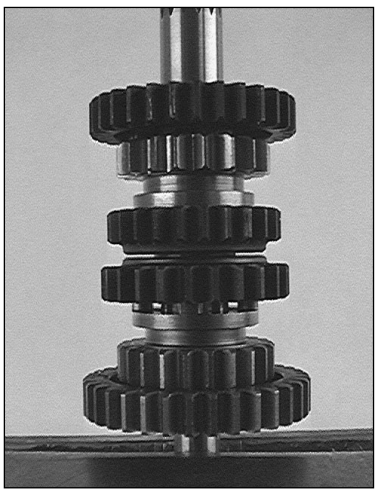


4.11.1 Assembling the main shaft

– Fix main shaft in a vise with gear facing downward (use protecting jaws).
– Slide on 5th-gear idler gear ❶ with sharp edge facing upward.
– Mount stop disk ❷ and circlip ❸ with shift dogs facing upward.
– Mount 3rd/4th-gear sliding gear ❹ with the small gear facing downward.
– Mount circlip ❸ with sharp edge facing downward and stop disk ❺.
– Slide on 6th-gear idler gear ❻ with shift dogs facing downward.
– Slide on 2nd-gear solid gear ❼ and circlip ❸ with its sharp edge facing upward.

NOTE: PRIOR TO ASSEMBLY, OIL GEARS AND SHAFTS PROPERLY AT THEIR MOUNTING POINTS. THEN, VERIFY THAT ALL GEARS ARE RUNNING SMOOTHLY.

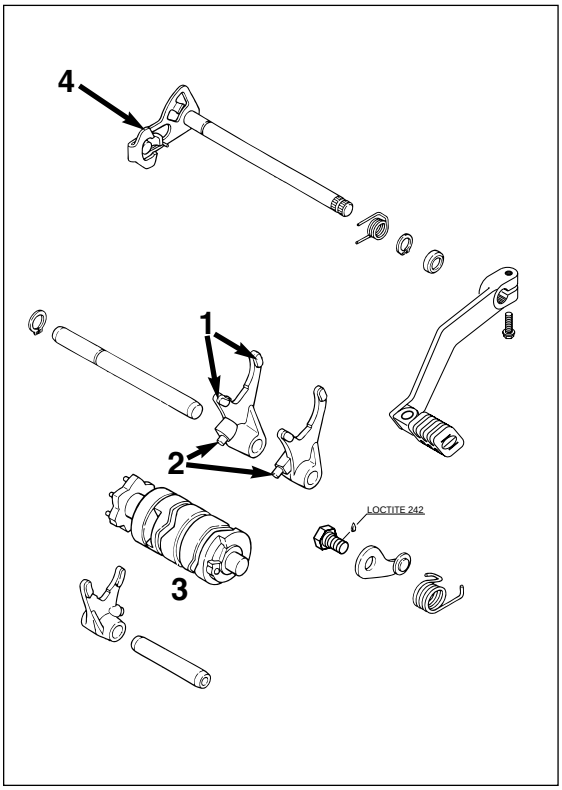




4.11.2 Assembling the countershaft

– Fix countershaft in a vise with its collar pointing downwards.
– Slide on 2nd-gear idler gear ❶ with recess for shift dogs facing upwards.
– Mount stop disk ❷ and circlip ❸ with its sharp edge facing upwards.
– Slide on 6th-gear sliding gear ❹ with its shift groove facing upwards.
– Mount circlip ❸ with its sharp edge facing downwards and stop disk.
– Slide on 4th-gear idler gear ❻ with recess for shift dogs facing downwards.
– Mount circlip ❸ with its sharp edge facing upwards.
– Slide on 3rd-gear idler gear ❼ with recess for shift dogs facing upwards.
– Mount stop disk ❽ and circlip ❸ with its sharp edge facing upwards.
– Slide on 5th-gear idler wheel ❾ with its shift groove facing downwards.
– Mount 1st-gear idler gear ❿.
– Mount stop disk ⓫ and circlip ❸ with its sharp edge facing upwards.

NOTE: PRIOR TO ASSEMBLY, OIL GEARS AND SHAFTS PROPERLY AT THEIR MOUNTING POINTS. THEN, VERIFY THAT ALL GEARS ARE RUNNING SMOOTHLY.

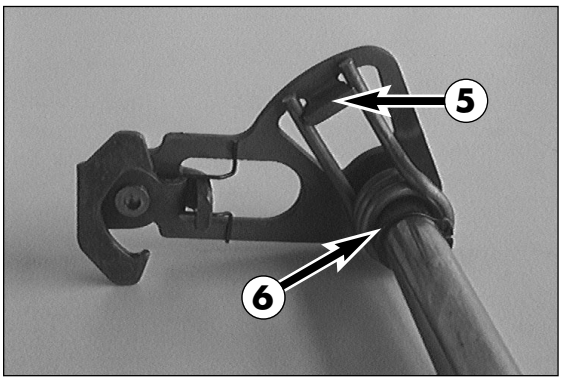


4.12 Shift mechanism

SHIFT FORKS ❶
Check sides for wear. Check driving pin for shift roller ❷ for wear.

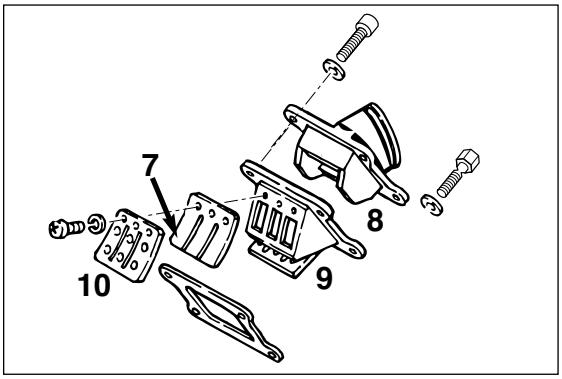
SHIFT ROLLER ❸
Check shift grooves for wear. Check mounts for play.

SLIDING SHEET-METAL PANEL ❹
Check points of engagement for wear. Check return area on the sliding sheet-metal panel for wear (replace it, if there is substantial notching).



4.12.1 Preassembling the shifting shaft

– Slide return spring onto shifting shaft and engage it in the shackle ❺.
– Use circlip ❻ to secure return spring in this position.



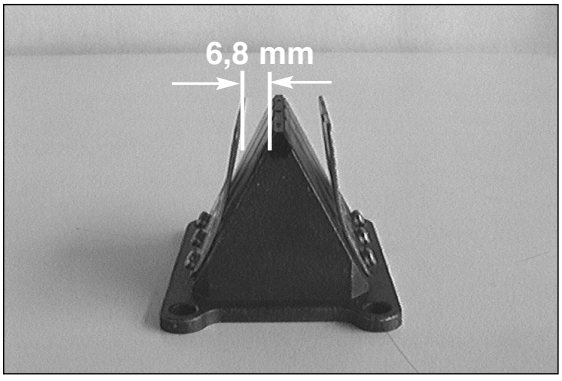
4.13 Reed valve housing, intake flange

REED PADDLES ❼
Check ends in particular for fracturing. There must be only a minimal gap between reed paddles and reed valve housing.

INTAKE FLANGE ❽
Check it for cracks and other damage.

REED VALVE HOUSING ❾
Check sealing areas.

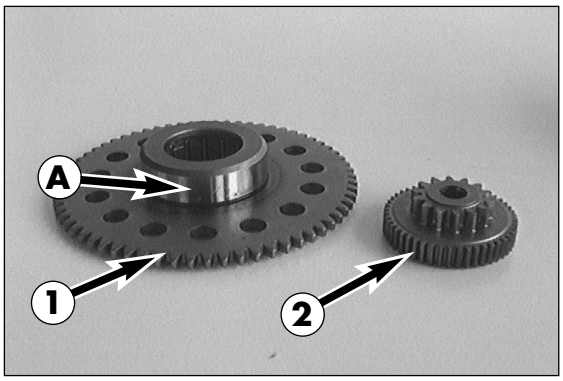
REED VALVE STOP PLATES ❿
The distance between reed valve housing and stop plate must be 6.8 mm. If necessary, bend stop plates accordingly.



NOTE: WHEN USED, THE REED PADDLES WILL GRADUALLY LOSE IN TENSION AND BREAK LOOSE AT THE ENDS, WHICH RESULTS IN A DROP IN PERFORMANCE.

! CAUTION !

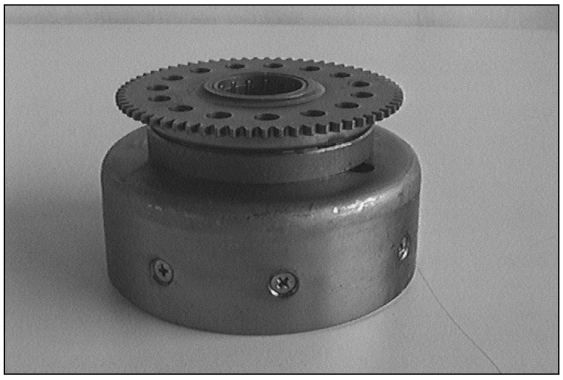
ALL SCREWS OF THE REED VALVE HOUSING MUST BE SECURED WITH LOCTITE 242.



4.14 Electric starter drive

FREEWHEEL GEAR ❶
Check toothing for wear. Check contact face toward freewheel hub Ⓐ for wear and pitting.

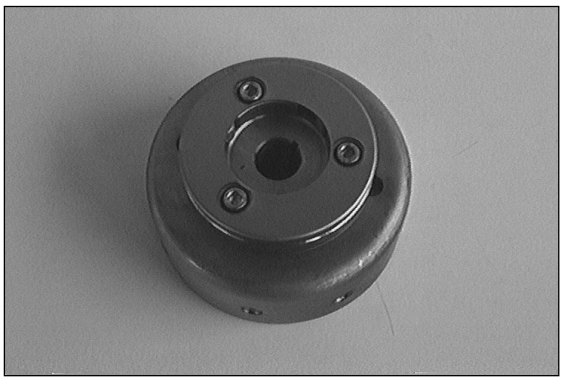
REDUCTION GEAR ❷
Check toothing for wear. Check running smoothness on bearing bolt.



4.14.1 Checking the freewheel

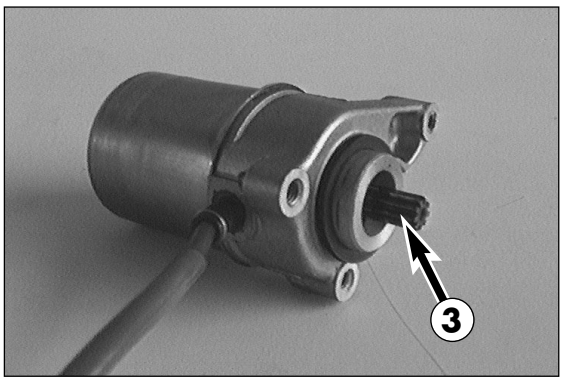
- Insert freewheel gear into freewheel hub.
- It must be possible to rotate the freewheel gear counterclockwise.
- In a clockwise direction, the freewheel gear must be blocked without free travel.

If freewheel gear rotation is out-of-true, of if it can be rotated clockwise, it will be necessary to replace the freewheel hub and the freewheel gear, respectively.



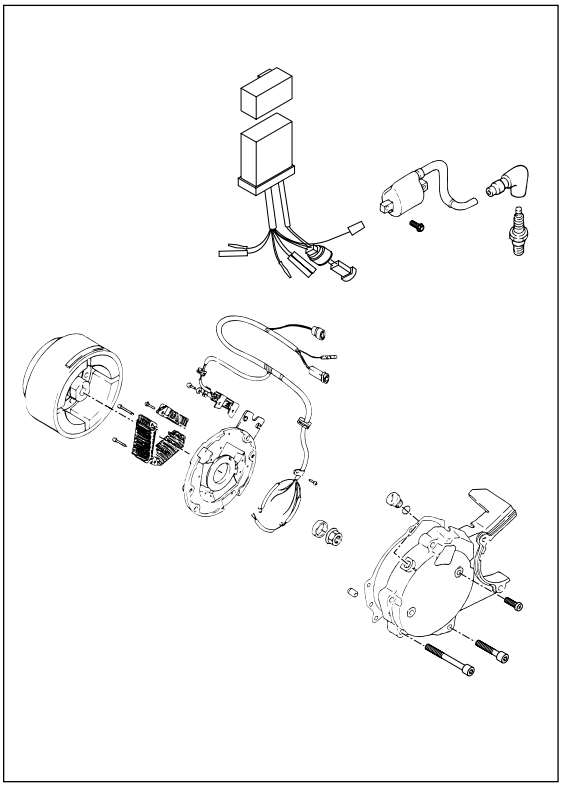
4.14.2 Replacing the freewheel hub

- Loosen the three allan head screws of the freewheel hub and take the freewheel hub off the rotor.
- Mount new freewheel hub. Apply Loctite 242 on said three screws and tighten them to 14 Nm.



4.14.3 Electric starter motor

- Check connecting cable of electric starter motor for damage.
- Check toothing ❸ for wear.



4.15 Ignition system

General information

With the help of the measurements mentioned below only gross errors may be detected. Interturn short circuits which cause weak ignition sparks or a weak generator output can only be detected precisely on an ignition test bench. In the event of malfunction, begin troubleshooting by checking cables and plug with socket connections of the ignition system.
For the measurements, the measuring range of the measuring device must be adapted accordingly.

4.15.1 Spark plug

INSULATOR
Check it for cracks and fracturing.

ELECTRODE GAP: 0,7 mm

! CAUTION !

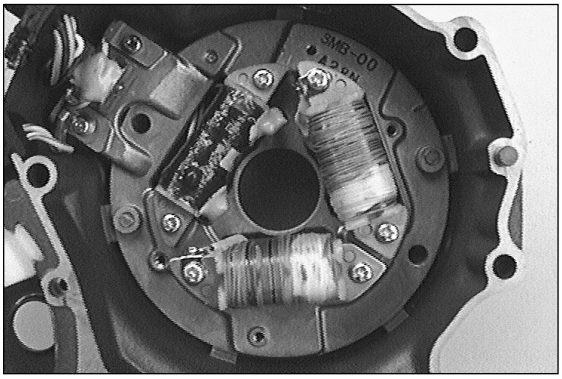
BE SURE TO ALWAYS USE A SPARK PLUG WITH RESISTOR; OTHERWISE THERE MIGHT BE MALFUNCTIONS IN THE CDI UNIT.

4.15.2 Checking stator, pulse generator

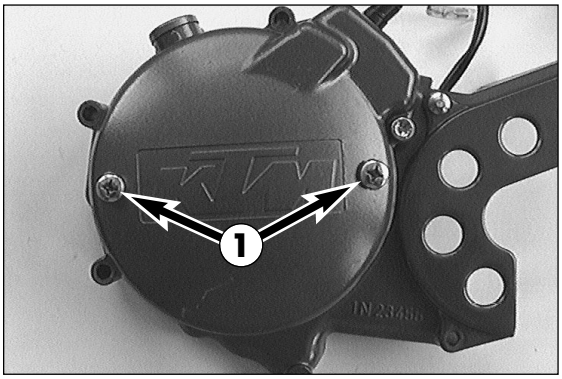
Use an ohmmeter to perform the following measurements:

NOTE: THE MEASUREMENTS MUST BE CONDUCTED AT A TEMPERATURE OF 20° C; OTHERWISE THERE WILL BE CONSIDERABLE DEVIATIONS OF THE MEASURED VALUE.

If the measured values deviate considerably from the desired value, or if there exists continuity between one of the cables and the ground, the ignition system must be replaced.

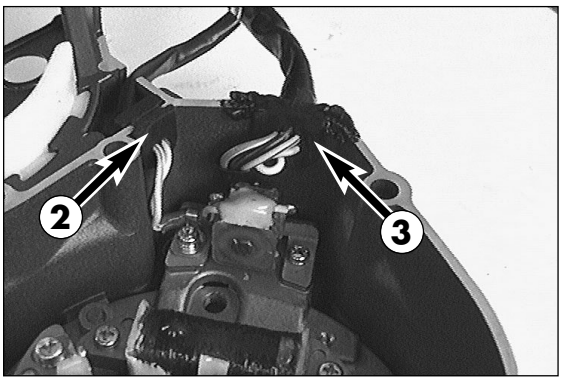


MEASUREMENT	CABLE	RESISTANCE
generator	black – white	0,3 – 0,5 Ω
pulse generator	green/blue – white/red	280 – 420 Ω
ignition-current coil	black/red – green/white	190 – 290 Ω

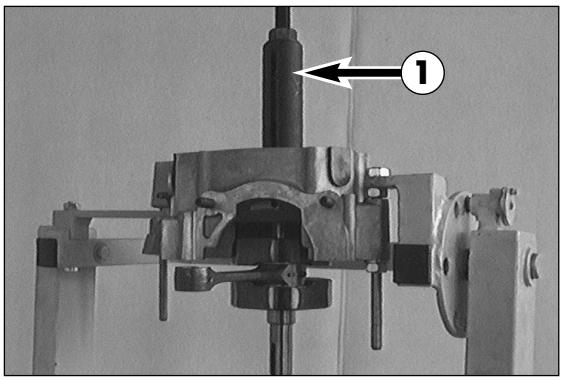


4.15.3 Replacing the stator

– Loosen the two screws ❶, and take out stator together with baseplate and pulse generator coil.



– Place new stator into the ignition cover.
– Coat the two screws with Loctite 242 and tighten them.
– Mount cable passage ❷ in the recess of the ignition cover.
– Coat sealing areas of cable passage ❸ with silicone and mount it in the recess of the ignition cover.



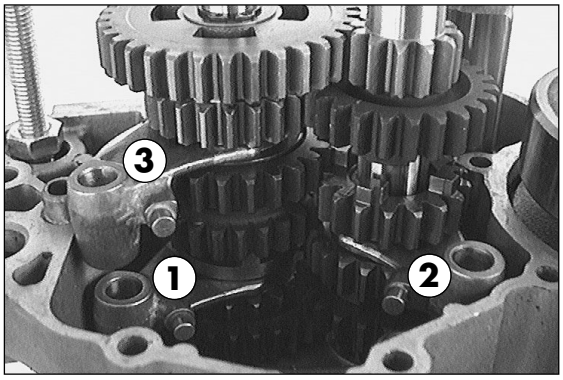
5.0 ENGINE ASSEMBLY

5.1 Crankshaft

– Fix left half of casing in assembly stand.
– Grease shaft seal ring of crankshaft and install crankshaft by using the special-tool ❶.
– Insert two dowels and the absorber sleeve.

! CAUTION !

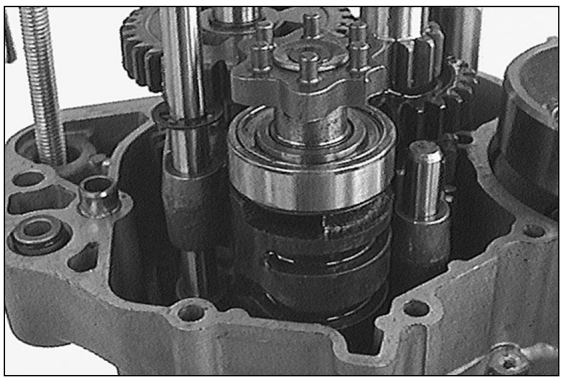
WHEN INSTALLING THE CRANKSHAFT, MAKE SURE THAT THE CONROD IS POSITIONED IN THE DIRECTION OF THE CYLINDER. OTHERWISE IT WILL BE PRESSED AGAINST THE SEALING AREA OF THE CASING AND THUS CAUSE DAMAGE TO THE CRANKSHAFT.



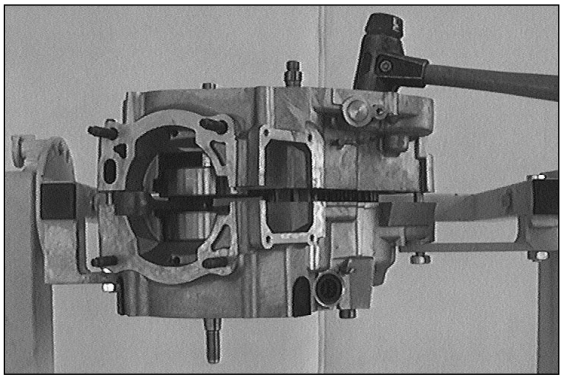
5.2 Shifting mechanism, transmission

– Insert balancer shaft into bearing seat.
– Mount transmission shafts together, and while mounting them turn them a little.
– Mount shift forks with numbers in the positions shown.

NOTE: AT THEIR BOTTOM SIDES, THE SHIFT FORKS ARE PROVIDED WITH NUMBERS. WHEN MOUNTING THEM, VERIFY THAT THE NUMBERS ARE FACING DOWNWARD.

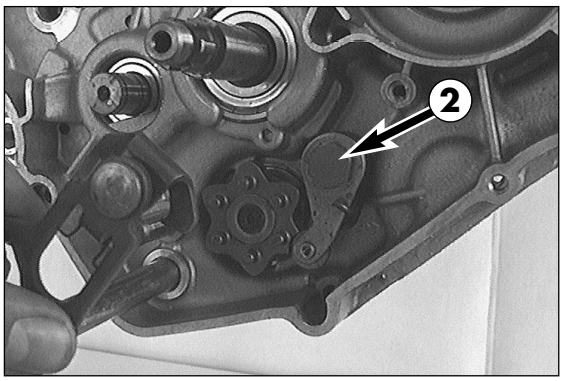


– Install shifting shaft.
– Install shift forks on shifting shaft.
– Oil and mount shift rails.



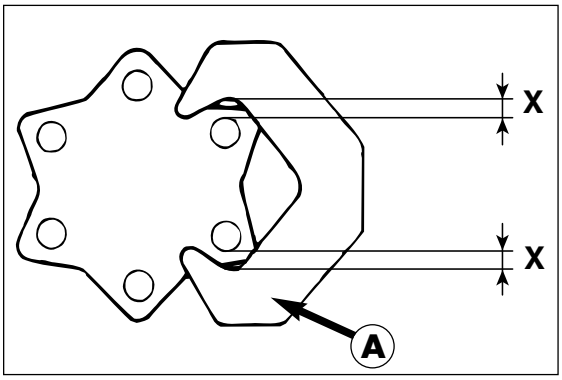
5.3 Assembling the case

– Remove the two nuts of the case fixture.
– Degrease sealing area of the engine case and apply a thin layer of silicone sealant (Three Bond) thereon.
– Grease shaft seal ring of crankshaft and put on casing half. If necessary, use a plastic hammer to tap on it lightly while turning the transmission shafts.
– Grease casing screws in the area of their threads and at the seat-engaging face of their heads. Insert screws and assemble the case.
– Before and after tightening the casing screws to 7-8 Nm, verify that all shafts are running smoothly.
– Fix case in assembly stand.

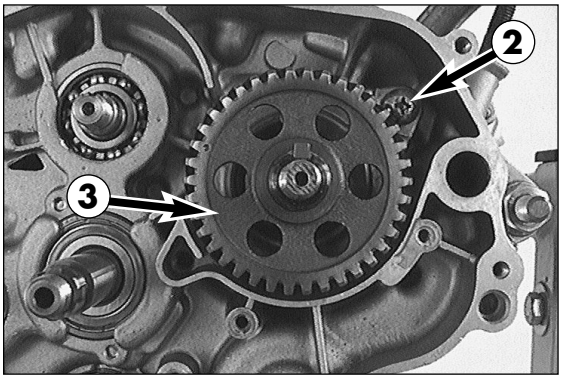


5.4 Shifting shaft, locking lever

– Coat screw ❷ with Loctite 242.
– Mount locking lever with the roller facing the case and install the locking- lever spring.
– Tighten screw.
– Bias locking-lever spring and hang it in the casing shackle.

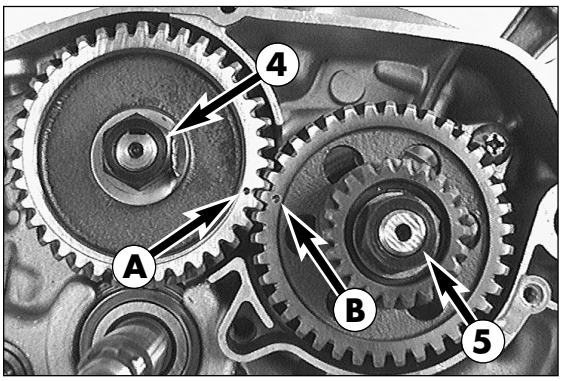


– Oil shifting shaft and mount it in a way that the shift dog ❶ engages the shifting shaft.
– Check free travel of shift dog. The free travel of the shift dog is the distance it travels until the shifting shaft is moved. In this case, the pressure of the return spring can be felt. Starting from the basic position, this free travel ❽ should be the same in an upward and downward direction.
– If necessary, the free travel must be balanced by adjusting the return spring.

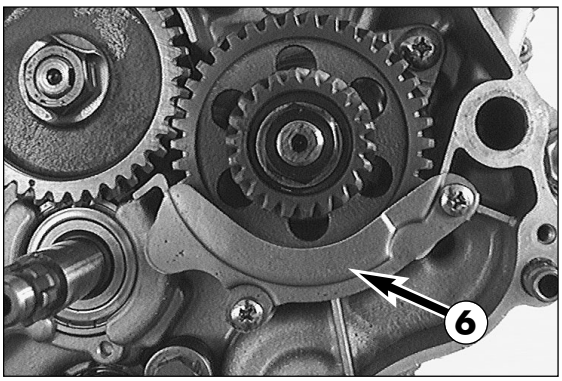


5.5 Primary drive

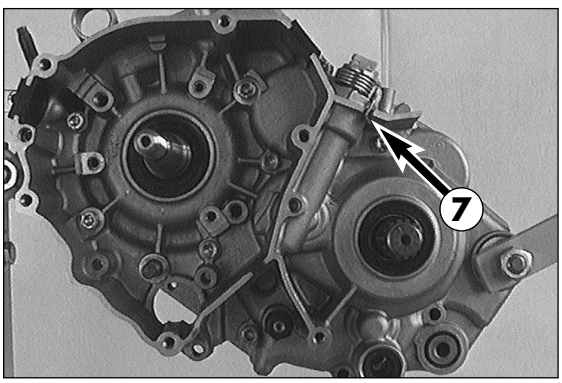
– Oil distance sleeve and slide it on the crankshaft.
– Apply Loctite 242 on screw ❷ and mount sealing ring holder.
– Insert featherkey into crankshaft and mount drive gear of the balancer shaft ❸.



– Insert featherkey into groove and mount balancer-shaft gear in a way that the marks ❶ and ❷ will coincide.
– Block crankshaft by means of the crankshaft blocking fork.
– Mount lock washer and hexagon nut ❹ and tighten hexagon nut ❹ to 55 Nm.
– Secure hexagon nut by bending up the lock washer.
– Mount shim with hexagon nut of the primary gear ❺ and tighten hexagon nut to 80 Nm.

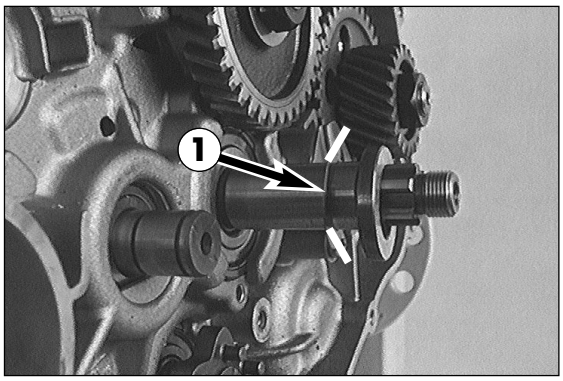


– Apply Loctite 242 on two screws and mount the guide piece ❻.



5.6 Clutch release shaft

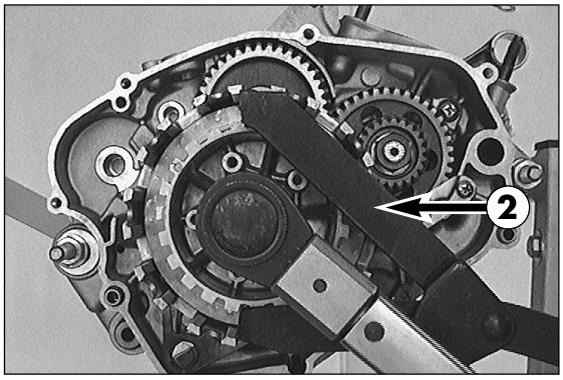
– Mount clutch release shaft with return spring and attach return spring to casing shackle ❼.



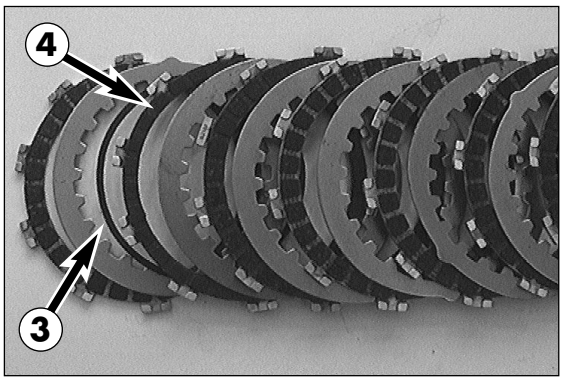
5.7 Clutch

– Slide diaphragm spring and spacing washer onto the main shaft.
– Mount outer clutch hub and internally toothed spacing washer.

NOTE: THE DIAPHRAGM SPRING ❶ MUST BE MOUNTED WITH ITS CONVEXITY POINTING INWARDS (SEE PICTURE).

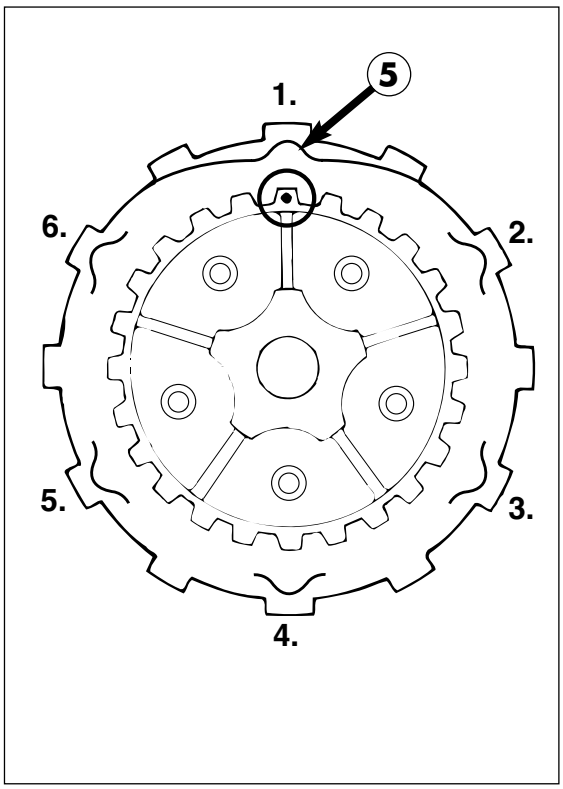


– Mount inner clutch hub, new lock washer and hexagon nut on the main shaft.
– Bend a tab of the lock washer into the recess of the inner clutch hub.
– Slide on clutch holder ❷ and fasten hexagon nut to 60 Nm.
– Remove clutch holder and secure hexagon nut by bending up the lock washer.



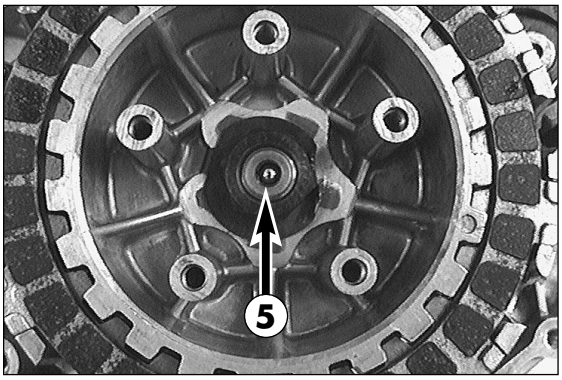
5.7.1 Clutch disks

– Prior to assembling them, oil clutch disks thoroughly.
– Mount a normal lining disk.
– Mount the first steel disk in a way that the nose of the disk coincides with the point marked on the inner clutch hub (see drawing).
– Mount absorbing spring ❸ and narrow lining disk ❹.

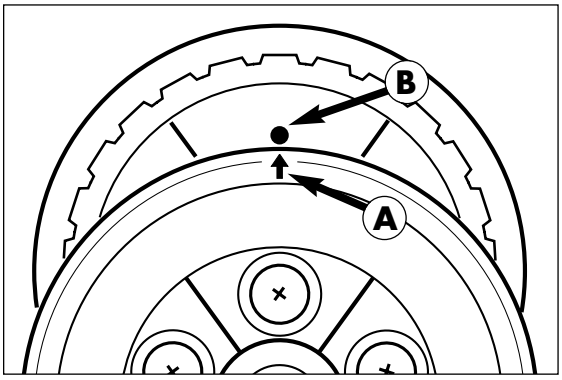


– Each of the noses ❺ of the following steel disks must be turned clockwise by 60° as compared to the previous one (see drawing).

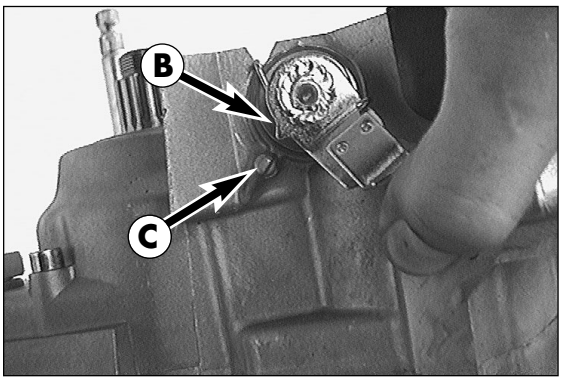
NOTE: AT THEIR OUTER SIDE, EACH OF THE STEEL DISKS HAS A NOSE. THIS NOSE MUST BE TURNED BY 60° AS COMPARED TO THE PREVIOUS STEEL DISK.



– Insert push rod and ball ❺ into main shaft.

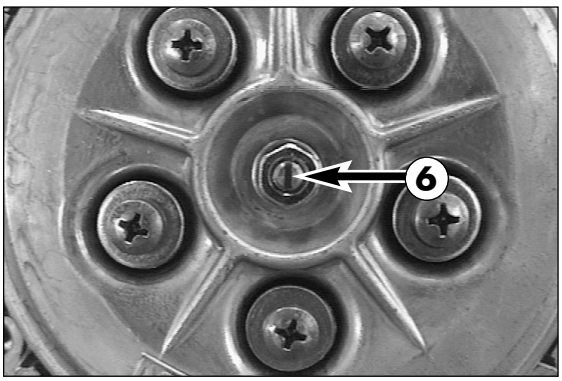


– Put on pressure cap in a way that the arrow mark Ⓐ coincides with the point mark Ⓑ on the inner clutch hub (see drawing).
– Mount clutch springs, spring caps and screws.
– Tighten screws to 6 Nm.

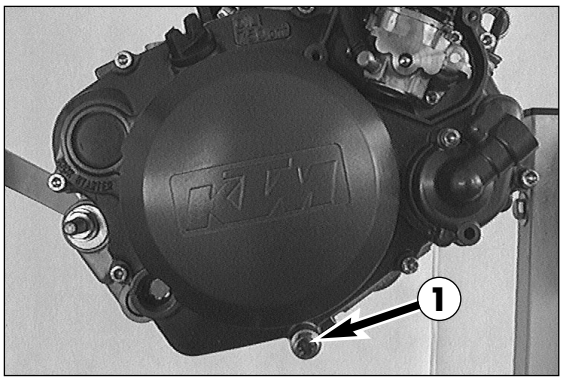


5.8 Adjust the clutch release mechanism

– Turn clutch release lever counterclockwise and up to the stop. Here, the nose of the clutch release shaft Ⓑ must coincide with the mark on the engine case Ⓒ.

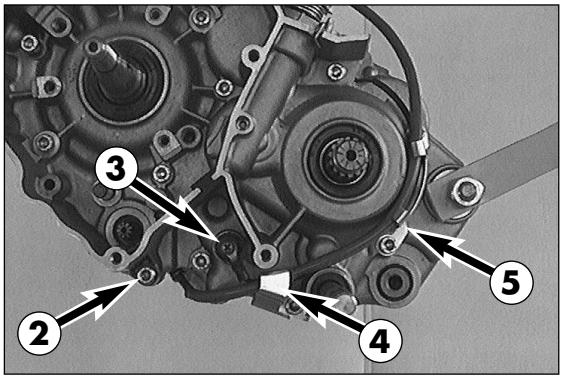


– If the nose of the clutch release shaft Ⓑ does not coincide with the mark on the engine case Ⓒ, the threaded bolt ❻ in the pressure cap must be rotated accordingly.



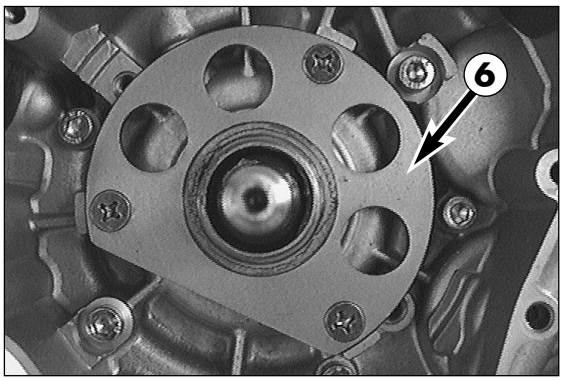
5.9 Clutch cover

– Check if both dowels are installed.
– Put new gasket in place and fix it with some grease.
– Put on the preassembled clutch cover with care and press it on. During this procedure, it is necessary to turn the crankshaft so that the gears of the water pump and the oil pump will mesh.
– Mount screws and tighten them to 8 Nm.
– Mount transmission-oil drain plug ❶ together with a new sealing ring and tighten it to 15 Nm.



5.10 Electric starter motor

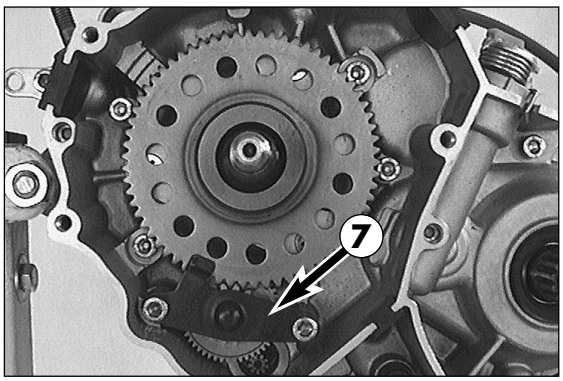
– Lightly oil O-ring
– Mount starter motor and fix it with screw ❷
– Connect ❸ neutral switch cable.
– Mount retaining panels ❹ and ❺.



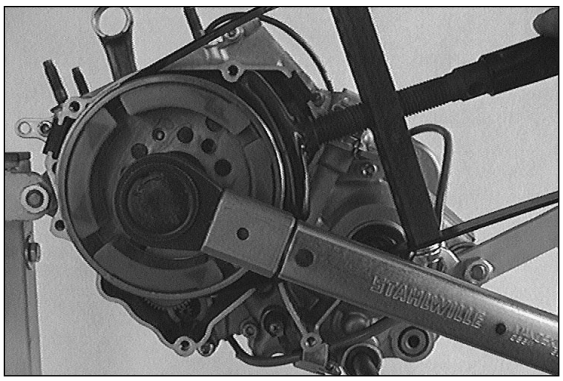
5.11 Starter drive

– Apply Loctite 242 on three countersunk screws and mount bearing bracket for freewheel gear ❻.
– Apply a thin layer of Molykote grease on journal and needle bearing of the freewheel gear and mount freewheel gear.

NOTE: IN ORDER TO CENTER THE BEARING BRACKET, AT FIRST TURN IN THE 3 SCREWS UNTIL FEELING A SLIGHT RESISTANCE; THEN, FASTEN THEM FULLY.

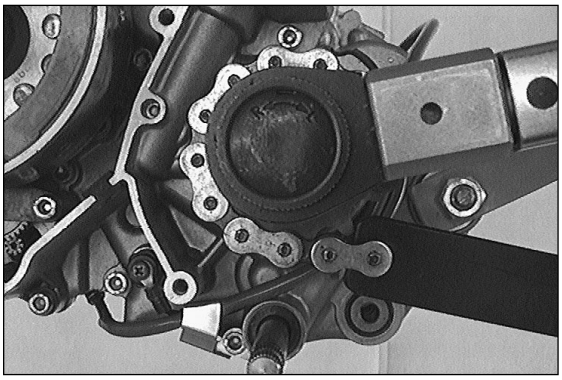


– Mount stop disk and intermediate gear.
– Slide on the outer stop disk.
– Apply Loctite 242 on two screws and mount retaining panel ❼.



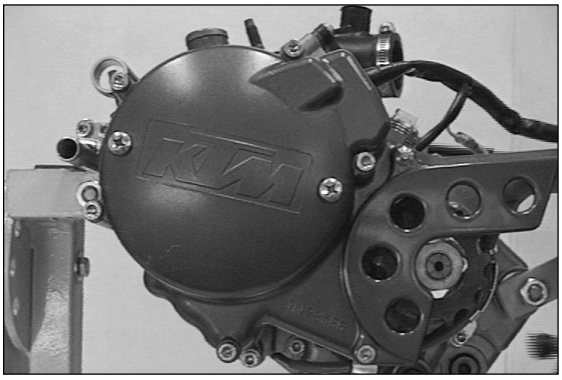
5.12 Rotor

– Place Woodruff key in crankshaft.
– Degrease cone of the crankshaft.
– Apply a thin layer of Molykote grease on the rollers of the freewheel clutch.
– Mount rotor with washer and hexagon nut.
– Block crankshaft with rotor holder and tighten hexagon nut to 80 Nm.



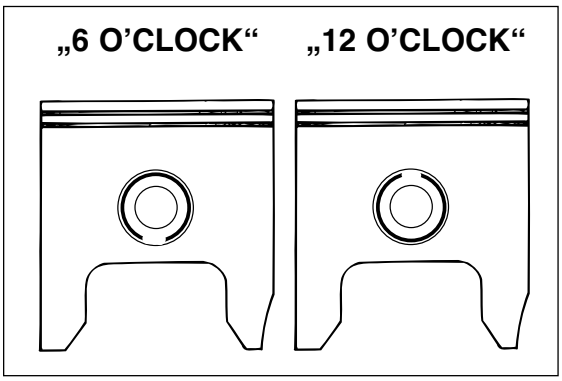
5.13 Sprocket

– Grease shaft seal ring of countershaft.
– Mount sleeve, sprocket, lock washer and hexagon nut.
– Steady sprocket with holding spanner and tighten hexagon nut to 60 Nm.
– Bend up the lock washer.



5.14 Ignition cover

– Verify that both dowels are mounted.
– Put new gasket in place and fix ignition cover with 6 screws.

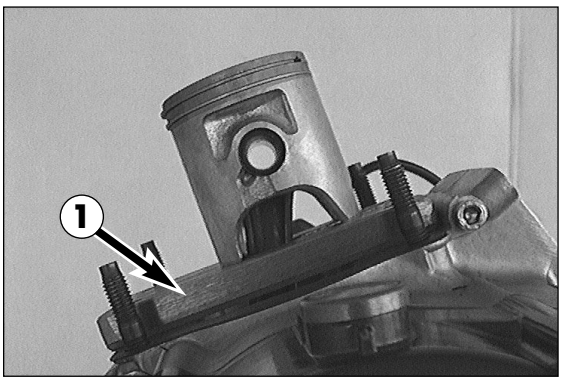


5.15 Piston, cylinder

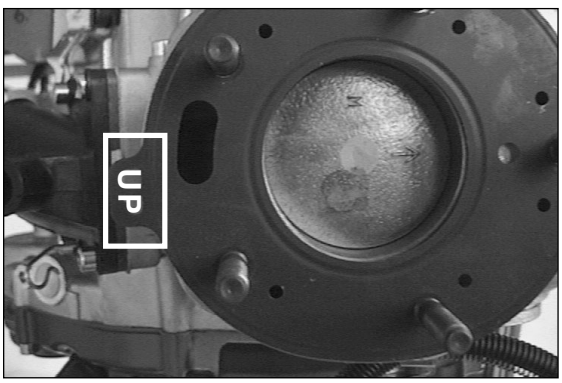
– Insert both dowels into the casing.
– Prior to assembly, oil sliding faces of all components thoroughly.
– Insert needle bearing into the conrod eye, put piston in place (the arrow on the piston head is pointing into the driving direction).
– Mount piston pin and wire circlips (see drawing).

! CAUTION !

THE ARROW ON THE PISTON HEAD MUST POINT INTO THE DRIVING DIRECTION. MOUNT WIRE CIRCLIPS IN THE „6 O'CLOCK“ OR THE „12 O'CLOCK“ POSITION.

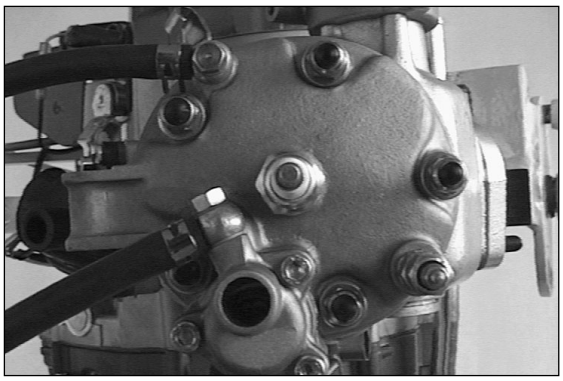


– Put new cylinder-base gasket in place.
– Place piston on blocking fork ❶ and adjust piston rings.
– Put on the preassembled cylinder and remove the blocking fork.
– Tighten collar nuts at the cylinder base crosswise to 30 Nm.

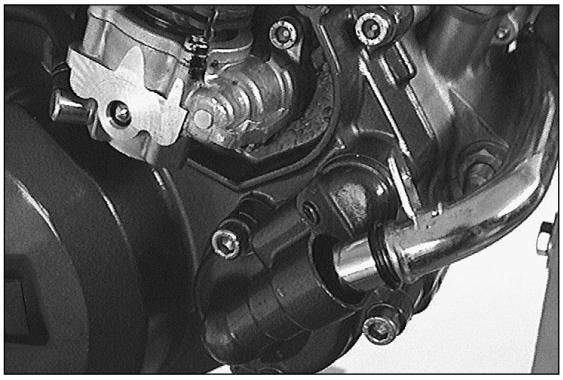


5.16 Cylinder head

– Put new cylinder-head gasket in place (label „UP“ must be legible from above).
– Mount cylinder head, mount washers with cap nuts and tighten them crosswise to 22 Nm.

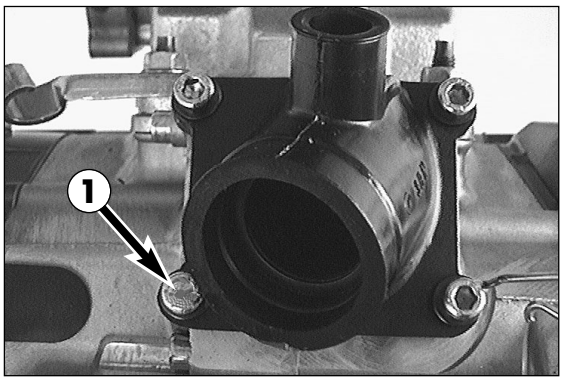


– Install new O-ring and thermostat in the cylinder head.
– Fix thermostat cover with two screws.
– Mount spark plug.
– Connect hoses for carburetor heating.



5.17 Water pipe

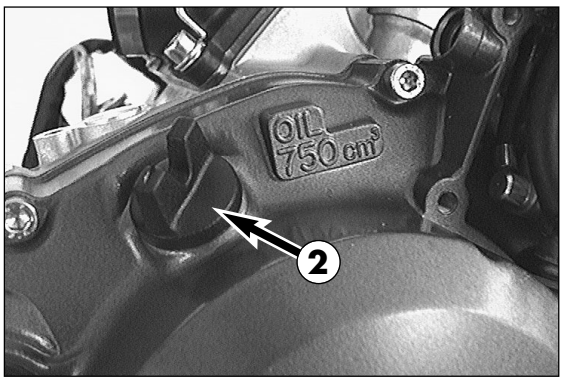
– Oil new O-ring and slide it on the water pipe.
– Insert water pipe into the opening of the clutch cover and fix it with two screws.



5.18 Reed valve housing, intake flange

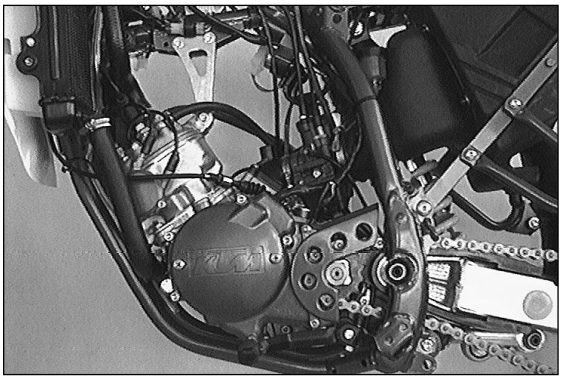
– Put new gasket in place, and position reed valve housing in a way that the thinner reed paddles are facing downwards.
– Mount intake flange, and tighten allan head screws to 8 Nm.
– Tighten new tear-off screw ❶ until the screw head is torn off.

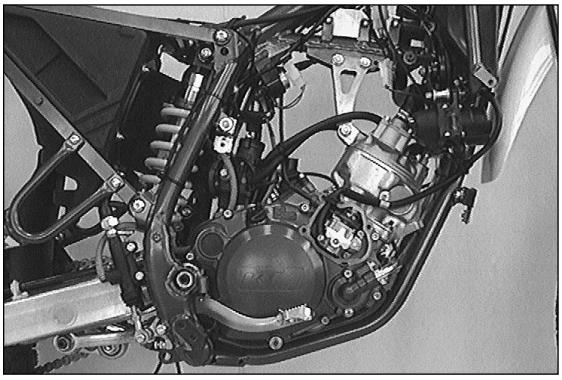
NOTE: THE TWO REED PADDLES HAVE DIFFERENT THICKNESSES. DURING ASSEMBLY, MAKE SURE THAT THE THINNER REED PADDLE IS MOUNTED AS FACING DOWNWARDS.
THE TEAR-OFF SCREW ❶ MUST BE MOUNTED FOR LEGAL REASONS.



5.19 Fill in of transmission oil

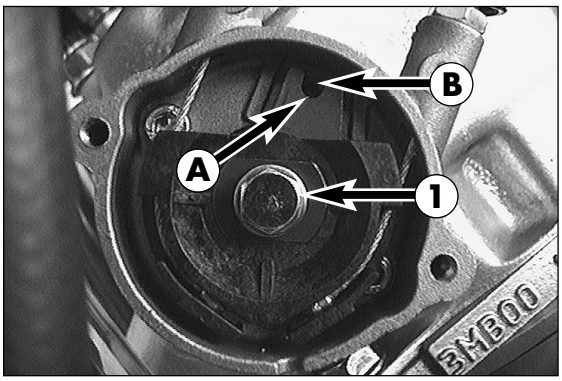
– Remove plug ❷.
– Fill in 0,75 liters of SAE 10W30 engine oil and mount plug.
– Check engine for leaks.





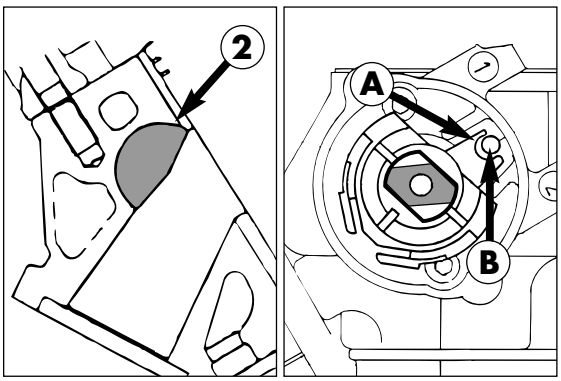
6.0 INSTALLING THE ENGINE

- Heave engine into the frame from the right side.
- Fix engine with engine screws, engine retaining panels and swingarm pivot.
- Connect the hoses for carburetor heating.
- Install the clutch cable.
- Connect electric leads and battery.
- Connect radiator hoses and replenish cooling liquid.
- Mount tank.
- *Install cable disk and adjust control roller (see Chapter 6.1.1).
- Mount exhaust manifold, carburetor and chain.
- *Bleed oil pump (see Chapter 6.2).
- Check exhaust system for leaks.
- Check function of the electric system.
- Correct cooling-liquid level.
- Adjust carburetor (for checking of exhaust gas see Chapter 6.3).
- Test ride.



6.1 Action mode of the exhaust control system

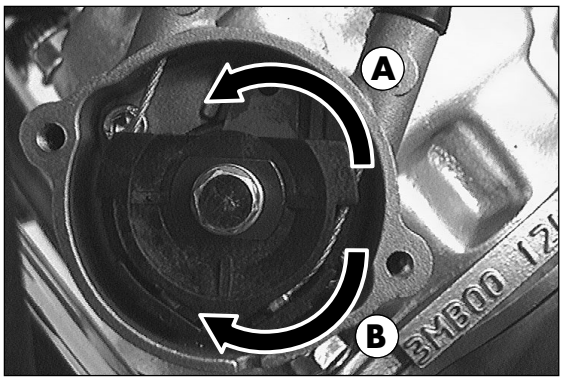
By turning the control roller in the exhaust port, a broader rotational-speed band of the engine can be achieved. Depending on the speed, the control roller is readjusted via 2 cables by a servomotor. The servomotor receives the speed information from a pulse generator in the ignition housing. Whenever the ignition is turned on, a cleaning cycle will be performed. During this cycle a light whirring sound will be audible for 1-2 seconds (also a function check). When the engine is not running, the control roller will remain in its „open“ position. Only when the engine is started will the control roller be „closed“ and be „opened“ again for speeds of 5000 r.p.m. and higher.



6.1.1 Adjust the control roller

- Screw in the 2 adjusting screws into the cable housing and hook in the 2 cables.
- Turn ignition on; so that the control motor will assume its basic position.
- Make sure that the control roller is completely opened (control roller ❷ must not reach into the exhaust port (see left ill.)).
- Fit the cable disk onto the control roller so that the bore in the cable disk and the bore in the cylinder coincides.
- Insert a pin (Ø 4 mm) through the bore in the cable disk Ⓐ and the bore in the cylinder Ⓑ and tighten the screw ❶ with 7 Nm.

- Turn out both adjusting screws evenly until they have no more play. Then, screw in both adjusting screws by a quarter rotation.
- Tighten counter nuts of the adjusting screws.
- Remove pin to perform a check. In this case, the cable disk should turn no more than slightly.
- Mount cover of the control roller.

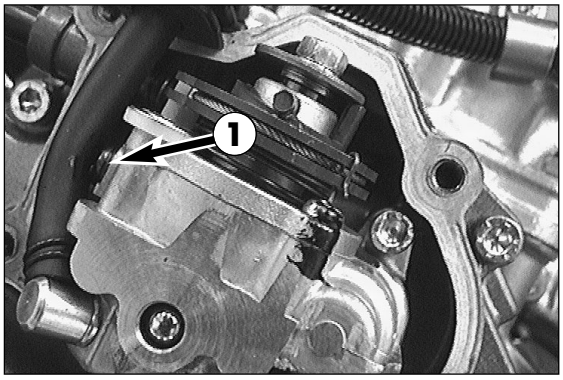


6.1.2 Checking the control roller readjustment

– Dismount left cover of control roller.
– Turn ignition on and pay attention to cable disk motion.

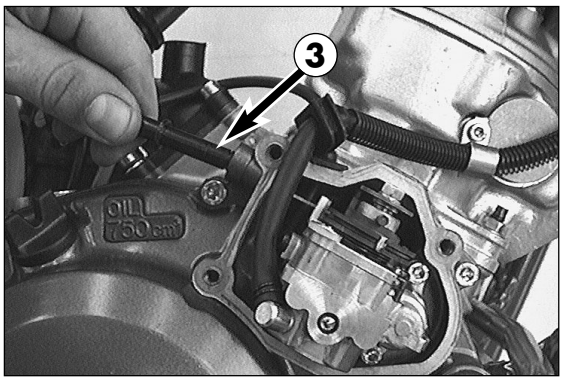
NOTICE: WHEN THE IGNITION IS TURNED ON, THE CONTROL ROLLER IS AT FIRST CLOSED (DIRECTION ❷) AND THEN OPENED (DIRECTION ❶). THIS CLEANING CYCLE AVOIDS JAMMING OF THE CONTROL ROLLER WHEN THE ENGINE IS OPERATED IN THE LOW- SPEED RANGE FOR EXTENDED PERIODS.

IGNITION	SPEED	POSITION OF CONTROL ROLLER
off	0 r.p.m.	open
on	0 r.p.m.	cleaning cycle
on	< 5000 r.p.m.	closed
on	> 5000 r.p.m.	begins to be opened



6.2 Bleeding the oil pump

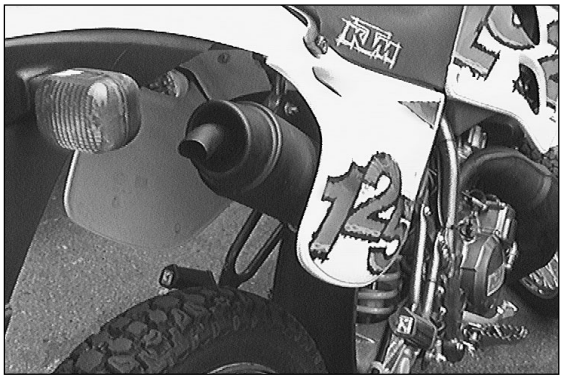
– Remove cover of oil pump.
– Remove bleeder screw ❶. Do not close bleeder screw until oil without air bubbles is discharged.
– Disconnect oil line from oil pump to carburetor and fill it with oil.
– Reconnect oil line.



– Start the engine and set oil pump to maximum capacity by pulling the cable ❸ out. Let engine run at 2000 r.p.m. for approx. 2-3 minutes. This is the only way how to fully bleed the lubricating system.
– Stop the engine and mount oil-pump cover together with new gasket.

! CAUTION !

*WHENEVER OIL LINES WERE DISCONNECTED FROM THE OIL PUMP, OR WHENEVER THE OIL TANK WAS EMPTY, THE OIL PUMP MUST BE BLED. OTHERWISE, YOU WILL RISK ENGINE BREAKDOWN. NEVER REV UP THE ENGINE DURING BLEEDING, BECAUSE THE OIL PUMP DOES NOT YET SUPPLY ENOUGH OIL TO ALL LUBRICATING POINTS.

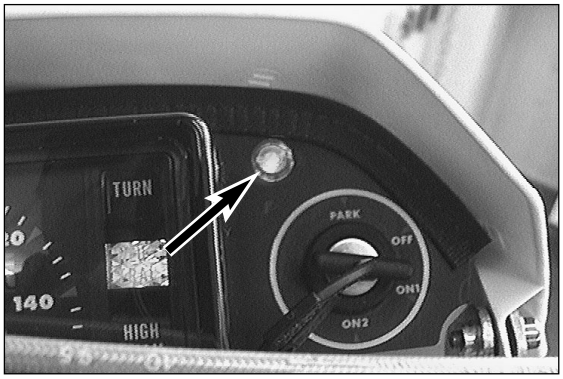


6.3 Checking the exhaust gas

– Bring engine up to operating temperature.
– Insert emission measuring probe into exhaust opening as far as possible.
– Read CO value at idle speed (1500 r.p.m.).

MAX. CO VALUE: 1.5%

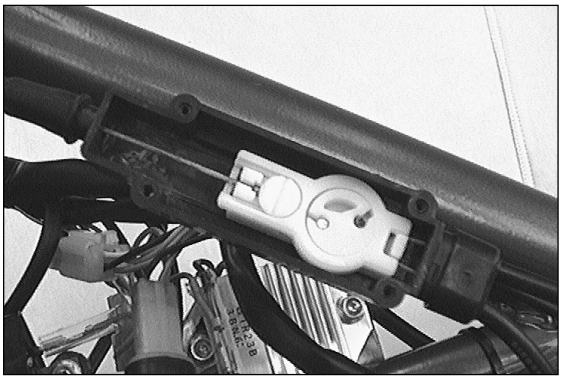
– If the CO value is greater than specified, it must be corrected by turning in the mixture control screw with a special wrench.
– In the course of this process, it might be necessary to readjust the idle speed (approx. 1500 r.p.m.).



6.4 Oil-level switch, oil-level warning lamp

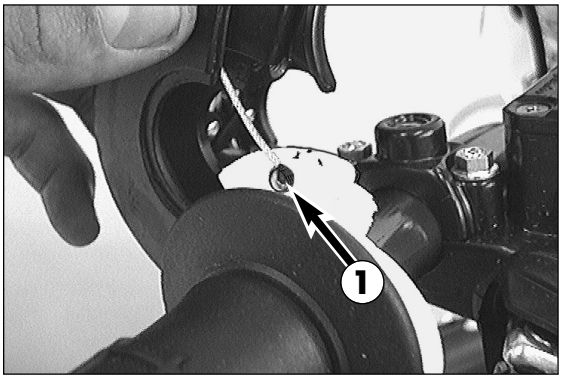
– With the ignition on, the oil-level warning lamp is lit only faintly (glowing).
– When the oil level is too low, the oil-level warning lamp will start emitting a bright light (see picture).

NOTE: THE GLOWING CONDITION OF THE OIL-LEVEL WARNING LAMP INDICATES THAT THE LAMP AND THE OIL-LEVEL SWITCH ARE FUNCTIONING PROPERLY AND THAT ENOUGH OIL IS IN THE OIL TANK.

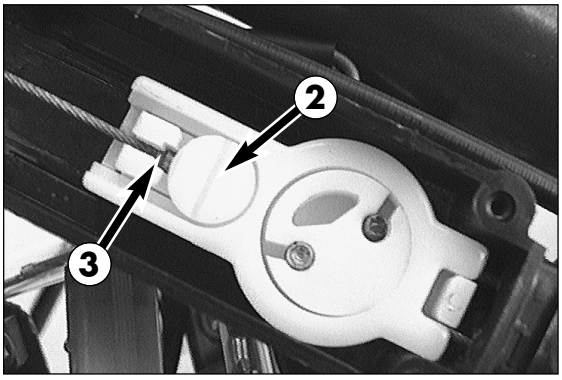


6.5 Replacing cable throttle-grip – cable distributor

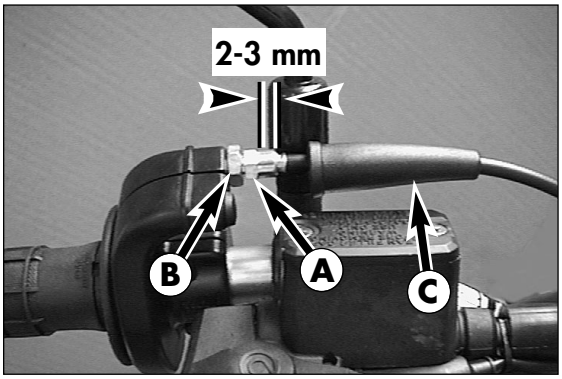
– Dismount seat, spoiler and fuel tank.
– Disconnect cable tie for fastening the cable distributor.
– Remove the four screws and take off cover of cable distributor.



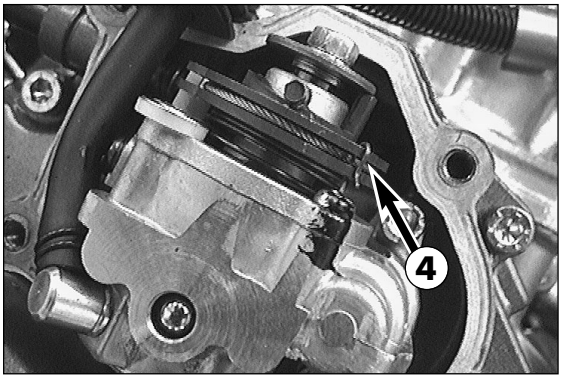
– Slide protection cover ❻ backwards.
– Loosen the counter nut ❽ and turn in the adjusting screw ❹ all the way.
– Remove two allan head screws of the throttle grip and take off the upper half of the housing.
– Unhitch the throttle cable ❶ and take it out of the grip housing together with the adjusting screw.



– Turn screw ❷ around 180° and remove it.
– Unhitch the throttle cable ❸.
– Install a new throttle cable and mount screw in a way that the bevelled side of the screw ❷ presses against the spring in the cable distributor.
– Turn screw around 180°.
– Fix cover of cable distributor with four screws and attach cable distributor to the frame through a cable tie (see page 31).
– Mount fuel tank, spoiler and seat.



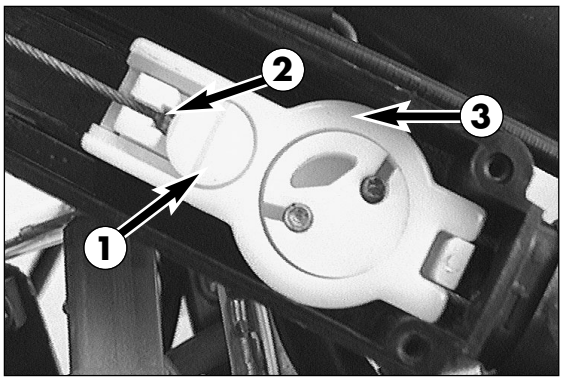
– Install throttle cable at throttle grip and fix housing half of the throttle grip by means of the two allan head screws.
– Turn out adjusting screw ❹ to a position where the outer envelope of the cable can be lifted 2-3 mm off the adjusting screw before encountering resistance.
– Fasten the counter nut ❽ and slide on the protection cover ❻.



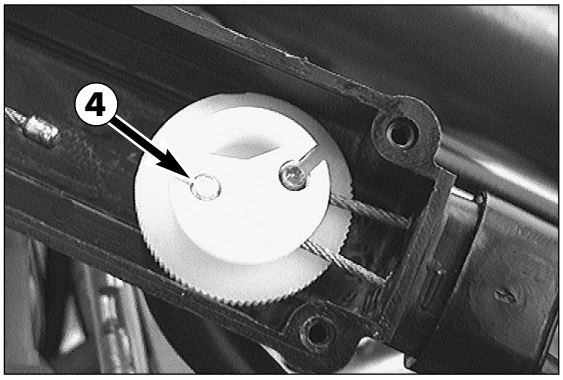
6.5.1 Replacing cable oil-pump – cable distributor.

– Take off seat, spoiler and fuel tank.
– Disconnect cable tie for fastening the cable distributor.
– Remove the four screws and take off cover of cable distributor.
– Remove three allan head screws of the oil-pump cover and take off the cover.
– Remove clip ❹ and unhitch the oil-pump cable.

NOTE: FOR UNHITCHING THE OIL-PUMP CABLE, THE CABLE DISK MUST BE TURNED COUNTERCLOCKWISE AND UP TO THE STOP.



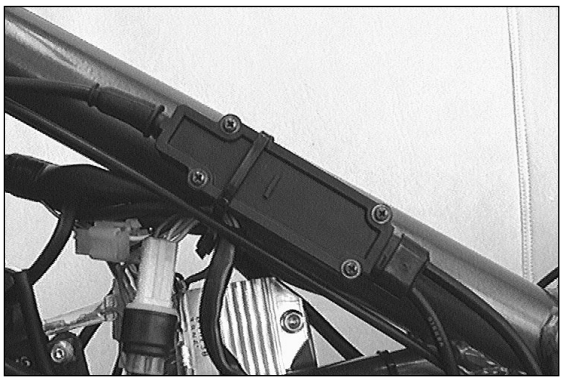
– Turn screw ❶ around 180° and remove it.
– Unhitch the throttle cable ❷.
– Remove the plastic piece ❸.



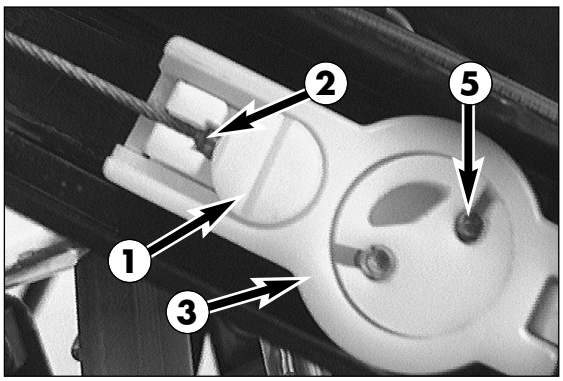
– Unhitch the oil-pump cable ❹ and pull it out of the cable distributor.
– Install a new oil-pump cable.
– Mount plastic piece ❸ and install throttle cable ❷.
– Mount screw ❶ in a way that the bevelled side of the screw presses against the spring in the cable distributor.
– Turn screw around 180°.
– Attach cable at oil pump and mount clip.
– Check gasket of oil-pump cover for damage and replace it if necessary.

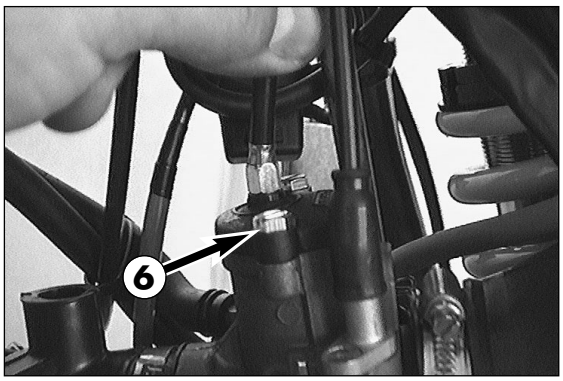
! CAUTION !

WHEN REPLACING THE OIL-PUMP COVER GASKET, YOU HAVE TO DISCONNECT THE OIL LINE LEADING FROM THE OIL TANK TO THE OIL PUMP. AFTERWARDS, IT IS ABSOLUTELY NECESSARY TO BLEED THE OIL PUMP.



– Fix oil-pump cover with three allan head screws.
– Fix cover of cable distributor with four screws and attach cable distributor to the frame through a cable tie.
– Mount fuel tank, spoiler and seat.



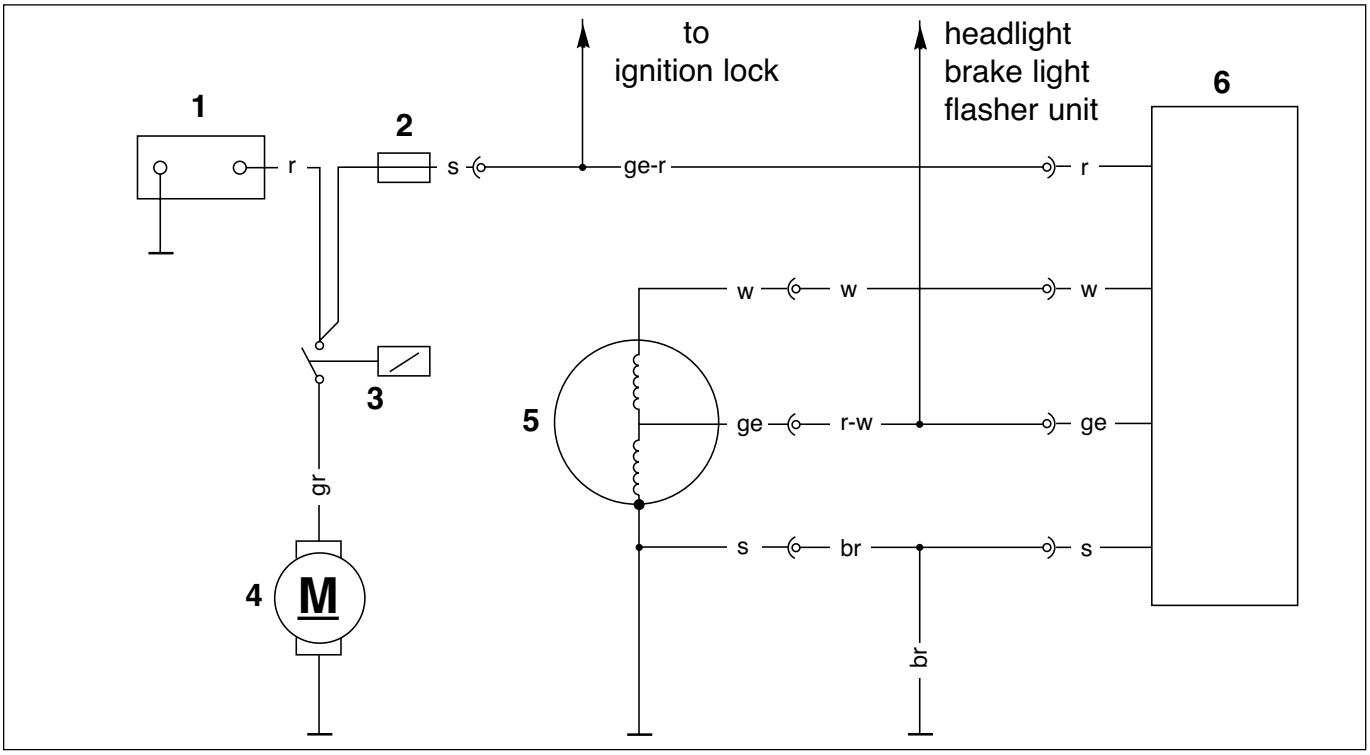


6.5.2 Replacing cable carburetor – cable distributor

– Take off seat, spoiler and fuel tank.
– Disconnect cable tie for fastening the cable distributor.
– Remove the four screws and take off cover of cable distributor.
– Turn screw ❶ around 180° and remove it.
– Unhitch the throttle cable ❷.
– Remove the plastic piece ❸.
– Unhitch throttle cable ❺ at cable disk.
– Remove the two screws ❻ and pull throttle valve out of carburetor.
– Separate throttle cable from throttle valve and pull the cable out of the carburetor cover.
– Install a new throttle cable and mount throttle valve together with carburetor cover.
– Install throttle cable ❺ at the cable disk and mount the plastic piece ❸.
– Install the throttle cable ❷ and mount the screw ❶ in a way that the bevelled side of the screw presses against the spring in the cable distributor.
– Turn screw around 180°.
– Fix cover of the cable distributor with four recessed-head screws, and attach cable distributor to the frame by means of a cable tie.
– Mount fuel tank, spoiler and seat.

NOTE: IT IS NOT NECESSARY TO ADJUST THE TWO LOWER CABLES, AS THEY ARE AUTOMATICALLY ADJUSTED BY THE CABLE DISTRIBUTOR. FOR THIS PURPOSE, IT WILL BE NECESSARY TO TURN UP THE THROTTLE GRIP ONCE ALL THE WAY AS SOON AS ALL CABLES HAVE BEEN INSTALLED.

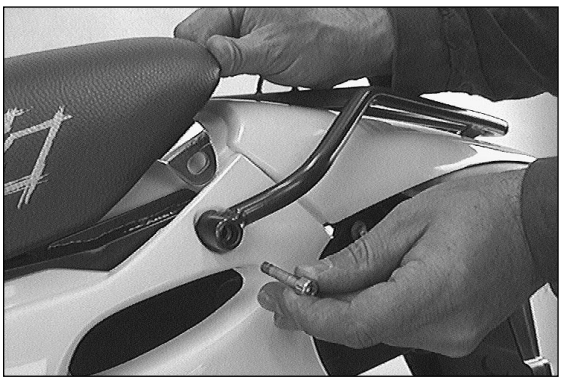
7.0 ELECTRICAL EUIPMENT



❶ BATTERY
❷ MAIN-FUSE
❸ STARTER RELAY
❹ STARTER MOTOR
❺ GENERATOR
❻ VOLTAGE REGULATOR/RECTIFIER

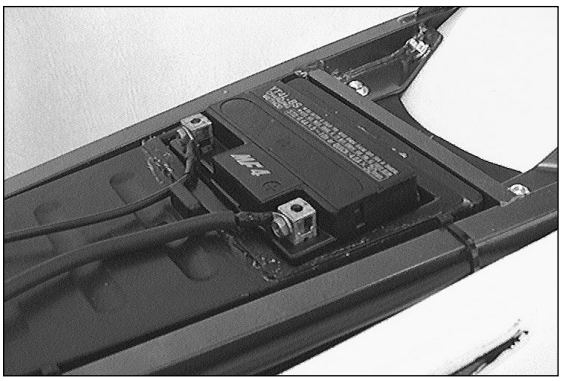
7.1 Charging system

o . . . . . .orange	bl . . . . . .blue
r . . . . . .red	g . . . . . .green
s . . . . . .black	gr . . . . . .grey
v . . . . . .violet	ge . . . . . .yellow
w . . . . . .white	br . . . . . .brown

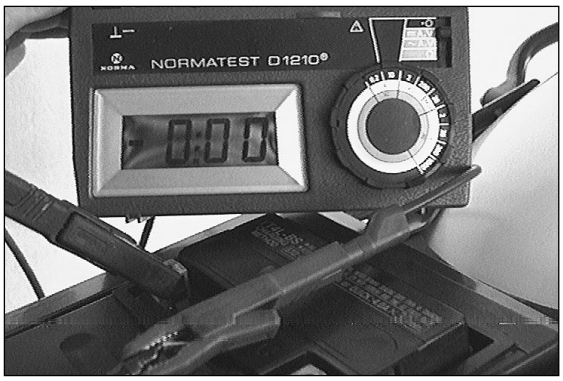


7.1.1 Dismounting the battery

– Remove two allan head screws ❶ and take off seat.



– At first disconnect the negative terminal post of battery, then the positive terminal post.
– Take battery out of holder.



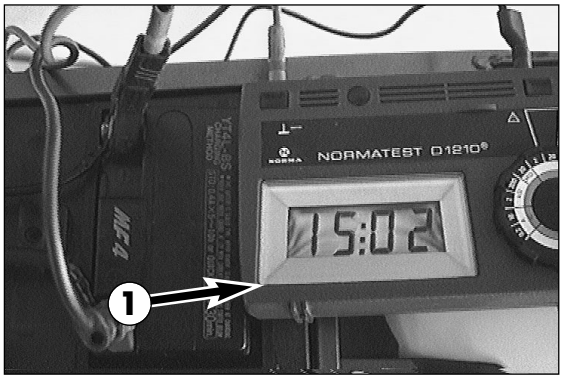
7.1.2 Electric loss test

The electric loss test must be performed before the test of the regulator rectifier.

– Turn ignition off and disconnect ground cable of the battery.
– Connect an amperemeter between ground cable and the negative terminal post of the battery.

DESIRED VALUE: max. 1 mA

– If the value is higher than specified, search for power consumers.



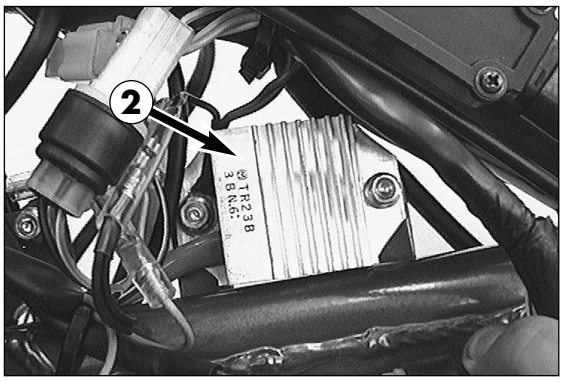
7.1.3 Checking the charging voltage of the regulator rectifier

– Start engine and turn on low beam.
– Connect a voltmeter to the two battery terminals.
– Rev motor up to 5000 r.p.m. and read voltage.

NOTE: THE FOLLOWING VALUES ARE VALID ONLY FOR CHARGED BATTERIES (CHARGE CONDITION: AT LEAST 90%)

DESIRED VALUE: 14-15 V

– If the measured value deviates considerably from the desired value, check plug and socket connections of the charging circuit.
– If the plug and socket connections are o.k., however, if the charging voltage does not correspond to the desired value, replace the regulator rectifier ❷.

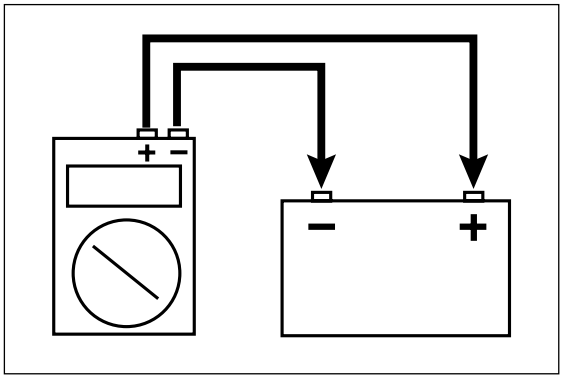


7.1.4 Charging the battery

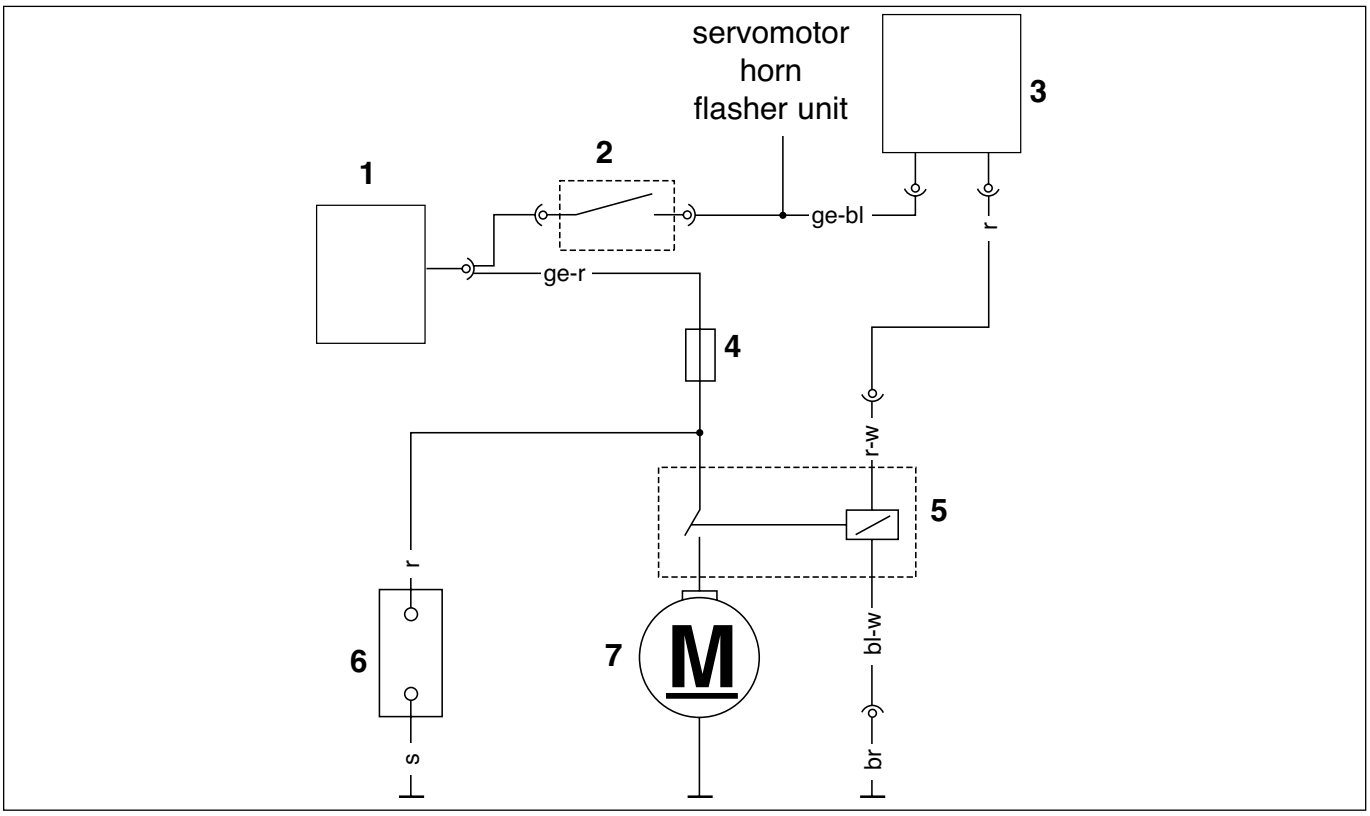
– Dismount the battery and determine the charge condition. For this purpose, use a voltmeter to measure the voltage between the battery terminal posts (off-load voltage). Max. tolerance of the measuring device is 1%.
– To obtain an exact measurement, the battery must not be charged nor discharged during the previous 30 minutes at the least.
– If the charge condition cannot be determined, the battery may be charged in compliance with the specifications written on the battery.

! CAUTION !

– NEVER REMOVE THE FILLING STRIPS
– WHEN CHARGING THE BATTERY, CONNECT IT AT FIRST TO THE CHARGER; THEN, TURN CHARGER ON.
– WHEN CHARGING IT IN CLOSED ROOMS, ENSURE GOOD VENTILATION. DURING CHARGING THE BATTERY WILL PRODUCE EXPLOSIVE GASES.
– IF THE BATTERY IS CHARGED FOR TOO LONG OR WITH AN OVERLY HIGH VOLTAGE, ELECTROLYTE WILL ESCAPE THROUGH THE SAFETY VALVES. AS A CONSEQUENCE, THE BATTERY'S CAPACITY WILL BE REDUCED.
– FAST-CHARGING OPERATIONS SHOULD BE AVOIDED, IF POSSIBLE.



Off load voltage Volt	Charging level %	Charging time 0,3 A	Charging voltage
>12,7	100	—	max. 14,4 V
~12,5	75	4 h	
~12,2	50	7 h	
~12,0	25	11 h	
~11,8	0	14 h	
<11,5	0	20 h	

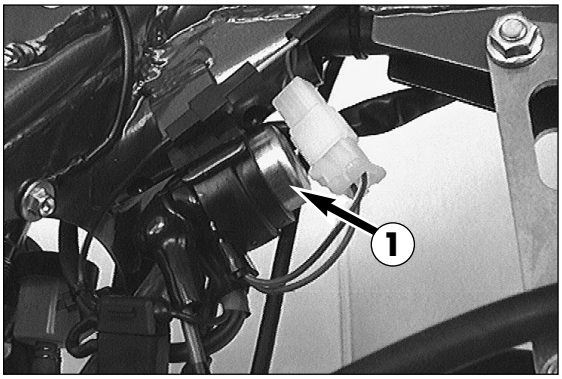


❶ VOLTAGE REGULATOR/RECTIFIER
❷ IGNITION LOCK
❸ EMERGENCY-OFF SWITCH
❹ MAIN FUSE
❺ STARTER RELAY
❻ BATTERY
❼ STARTERMOTOR

7.2 Electric starter system

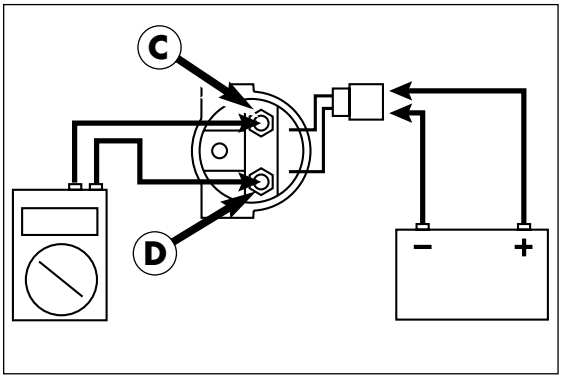
CONTROL CIRCUIT: The current flows from the battery ❻ via the main fuse ❹ to the ignition lock ❷, and when the ignition is turned on, it is passed on to the emergency-off switch ❸.
The activated emergency-off switch ❸ switches it through to the starter pushbutton. When the starter pushbutton is actuated, the starter relay ❺ switches the battery voltage through to the electric starter motor ❶.

o . . . . . .orange	bl . . . . . .blue
r . . . . . .red	g . . . . . .green
s . . . . . .black	gr . . . . . .grey
v . . . . . .violet	ge . . . . . .yellow
w . . . . . .white	br . . . . . .brown



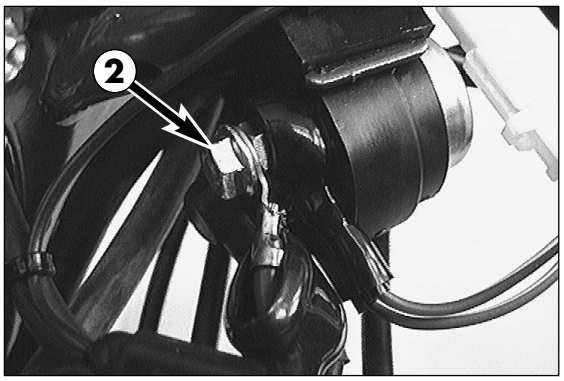
7.2.1 Checking the starter relay

– Dismount seat and disconnect negative terminal post of battery.
– Remove fuel tank and spoiler.
– Disconnect the two thick cables and the 2-pole connector of the starter relay ❶.
– Dismount the starter relay together with the rubber retainer.



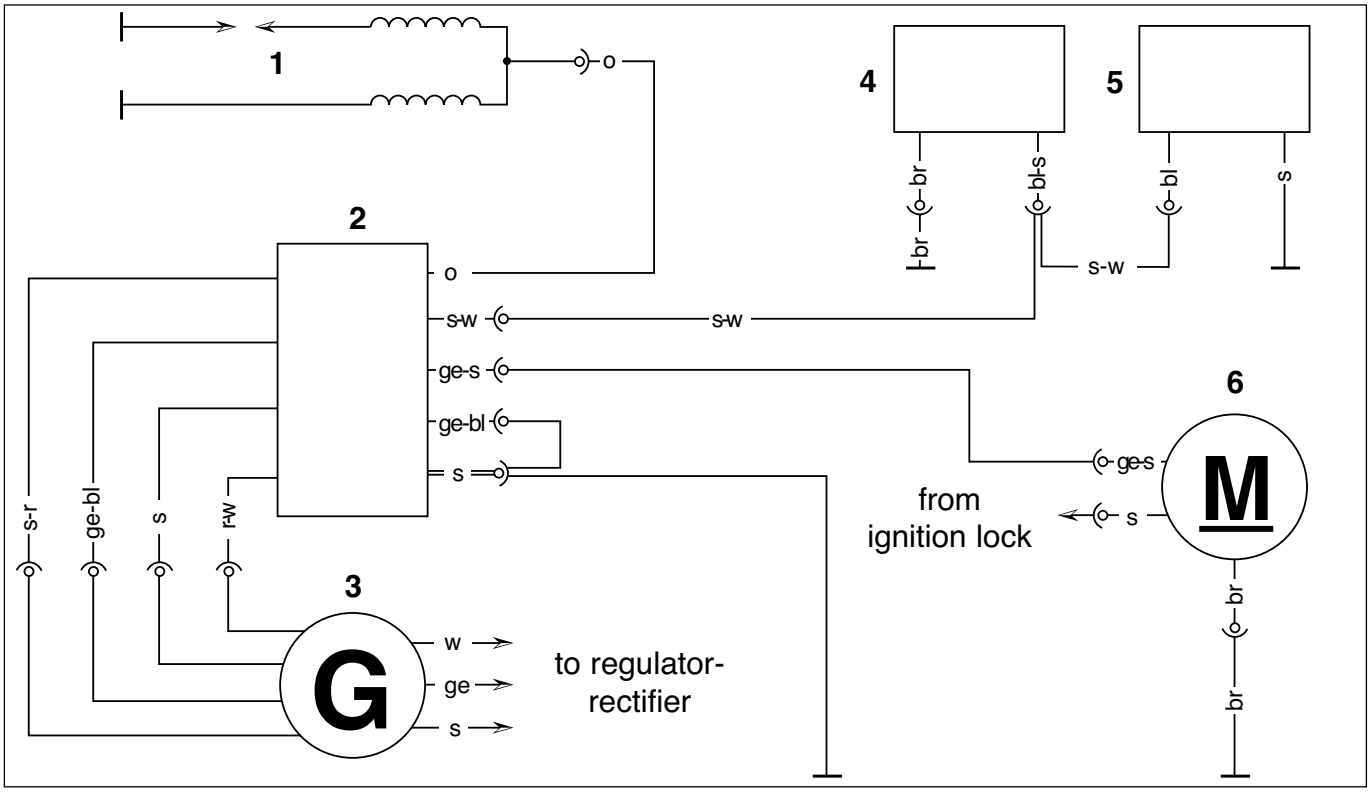
– Connect starter relay to a 12V battery as shown in the drawing.
– Use an ohmmeter to check the continuity between terminals ❸ and ❶.

INDICATION: 0 Ω OKAY
INDICATION: ∞ Ω FAULTY



7.2.2 Checking the electric starter motor

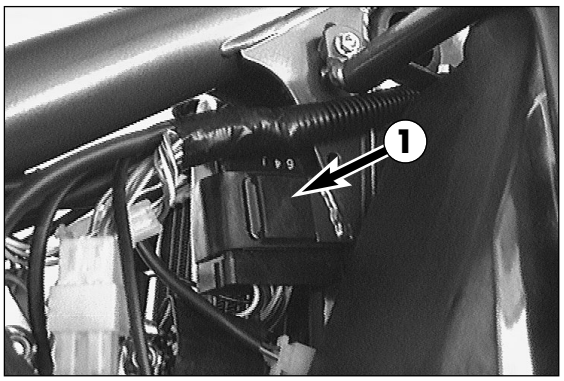
- Turn ignition off.
- Take off seat and fuel tank with spoilers.
- Connect negative terminal post of battery with the housing of the electric starter motor.
- Use a cable to connect the positive terminal post of the battery to the connection of the electric starter motor ❷ at the starter relay (use thick cable).
- When the circuit is closed, the electric starter motor must turn.
- If the starter does not turn, check connection cable of starter motor before replacing the starter motor.



❶ IGNITION COIL
❷ CDI-UNIT
❸ GENERATOR
❹ IGNITION LOCK
❺ EMERGENCY-OFF SWITCH
❻ SERVOMOTOR

7.3 Ignition system

o . . . . . .orange	bl . . . . . .blue
r . . . . . .red	g . . . . . .green
s . . . . . .black	gr . . . . . .grey
v . . . . . .violet	ge . . . . . .yellow
w . . . . . .white	br . . . . . .brown

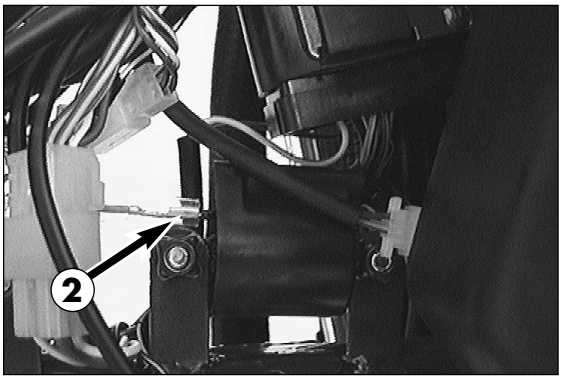


7.3.1 CDI unit

The CDI unit is mounted underneath the tank. Check cables and plug and socket connections of CDI unit ❶.
A function check of the CDI unit can be performed only on an ignition test bench.

! CAUTION !

NEVER TEST CDI UNIT WITH A CONVENTIONAL MEASURING DEVICE. THIS MIGHT DESTROY HIGHLY SENSITIVE ELECTRONIC COMPONENTS.

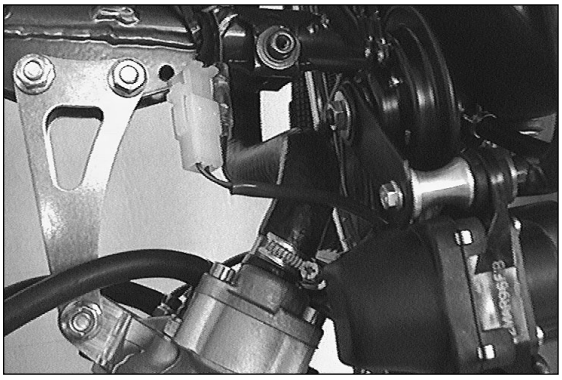


7.3.2 Checking the ignition coil

The ignition coil is mounted underneath the tank. Disconnect connector ❷ and remove spark-plug connector.
Use an ohmmeter to perform the following measurements.

NOTE: THE FOLLOWING MEASUREMENTS WILL CORRESPOND TO THE DESIRED VALUES ONLY AT A TEMPERATURE OF 20° C.

MEASUREMENT	PINS	RESISTANCE
primary coil	connector – ground	0,7 – 1,1 Ω
secondary coil	connector – ignition wire	5,7 – 8,5 kΩ



7.3.3 Checking the servomotor of the exhaust control system

Check the servomotor if the cleaning cycle of the control roller is not executed after the ignition is turned on.

If the cleaning cycle is not executed, the control roller may be jamming, or the servomotor or the cable harness to the servomotor may be defective.

8.0 TROUBLE SHOOTING

If you let the specified maintenance work on your motorcycle be carried out, disturbances can hardly be expected. Should an error occur nevertheless, we advise you to use the trouble shooting chart in order to find the cause of error.

TROUBLE	CAUSE	REMEDY
Engine does not crank	operating error	switch on ignition
	blown main fuse	replace main fuse
	discharged battery	recharge battery, and determine cause of discharge
	defective ignition lock or emergency OFF switch switch on ignition	check ignition lock and emergency OFF switch
Engine cranks but fails to start	emergency OFF switch is set to wrong position. ◯ is visible.	position emergency OFF switch such that ⊗ is visible.
	defective emergency OFF switch	disconnect 4-pole connector of emergency OFF switch (underneath the headlamp mask). Shift to 2nd gear and push your motorcycle. If the engine starts now, the emergency OFF switch needs to be replaced.
	empty fuel tank	refuel your vehicle
	fuel contaminated with water or dirt	dismount fuel tank, carburetor, and fuel lines. Rinse out fuel tank with pure fuel. Clean carburetor with pure fuel and compressed air.
	float is not tight or defective	replace float
	air filter is extremely dirty	clean or replace air filter
	interrupted fuel supply	check function of tank ventilation, clean fuel tap
	flooded engine	for procedure see driving instructions
	sooty or wet spark plug	clean or replace spark plug
	electrode gap too large	adjust electrode gap to 0.7 mm
	worn electrodes	replace spark plug
	defective spark plug	remove spark plug, connect ignition cable, hold spark plug to ground (bare spot on engine) and actuate starter, a strong spark must be producted at the spark plug.
	defective spark plug connector	disconnect spark plug connector from ignition cable, hold it about 5mm away from ground and actuate starter. If there is no spark, have ignition system checked.
	oxidized connectors of CDI unit, pulse generator, or ignition coil	remove seat and fuel tank, clean connectors and treat them with contact spray
	defective pulse generator coil	have ignition system checked
	water in carburetor, or clogged jets	dismount and clean carburetor
	carburetor not fitted properly at intake flange	check carburetor for correct fit
Engine fails to idle	clogged idling jet	disassemble carburetor and clean jets
	incorrect adjustment of adjusting screws on carburetor	have carburetor adjusted
	defective ignition system	have ignition system checked

TROUBLE	CAUSE	REMEDY
Engine fails to rev high	fuel level in carburetor is too high – leaking float needle valve – float is not tight – float has no axial play	disassemble and clean carburetor, and check it for wear replace float needle valve replace float resurface float
	loose carburetor jets	tighten jets
	electronic ignition timing is faulty	have ignition system checked
Engine has too little power	fuel supply partially interrupted or dirty carburetor	clean and check fuel system and carburetor
	control roller fails to move	turn on ignition and check whether the cleaning cycle of the control roller is executed. If not, check control roller for smooth running or check servomotor
	incorrect adjustment of control roller cables	adjust cables
	fuel level in carburetor is too high	disassemble and clean carburetor, and check it for wear
	air filters are extremely dirty	clean or replace air filter
	leaking or deformed exhaust system	check exhaust system for damage
	electronic ignition timing is faulty	have ignition system checked
Engine misfires or backfires into carburetor	fuel shortage	check and clean fuel system and carburetor
	engine takes in unmetered air	check intake flange and carburetor for tight fit
Engine overheats	not enough cooling liquid in cooling system	replenish cooling liquid (see maintenance work), check cooling system for leaks
	radiator fins are extremely dirty	clean radiator fins with water jet
	foam forms in cooling system	replace cooling liquid, use branded antifreeze agent
	bent radiator hose	shorten or replace radiator hose
	defective thermostat	dismantle thermostat and have it checked (opening temperature: 65°C) or replace it
All activated lamps are blown out	defective voltage regulator	remove seat and fuel tank, and check connections, check voltage regulator
battery is discharged	ignition (power consumers) not turned OFF	charge battery according to instructions
	discharge due to residual current	perform electric loss test
	no charge	check connections and components of the charging system

9.0 TECHNICAL DATA – ENGINE KTM 125 LC2

Engine	single cylinder 2-stroke engine with balancer shaft, liquid-cooled
Control	reed valve intake in the Crankcase, exhaust control with servomotor and cylinder
Displacement	124,76 cm^3 (7,6 cubic in)
Bore / Stroke	56 / 50,7 mm (2,2/2 in)
Ratio	12,5 : 1
Fuel	unleaded premium gasoline with ROZ 91
Lubrication	separate lubrication
Engine oil	Shell Advance VSX 2 or 2-stroke engine oil for a mixture ratio 1:50 and for separate lubrication
Crankshaft bearing	two deep-grooved ball bearings
Connecting rod bearing	needle bearing
Piston pin bearing	needle bearing
Piston	light-alloy cast
Piston ring	1 half keystone ring, 1 plain ring
Primary drive	helical gears, 22:73 T
Clutch	multiple disc clutch in oil bath
Transmission	6 speed, claw actuated
Gear ratio	1st gear 34:12 — 4th gear 24:21 2nd gear 30:16 — 5th gear 22:23 3rd gear 24:17 — 6th gear 18:22
Orig. drive ratio	80kmh (49,7 mile/h): 13:50 — 100kmh (62,1 mile/h): 13:45
Transmission oil	0,75 liter (0,2 US gallons) engine oil SAE 10W30
Ignition system	contactless CDI ignition with digital advanced system
Generator	12V / 95W
Spark plug	NGK BR9ES
Spark plug gap	0,7 mm (0,03 in) ± 0,1 mm (0,004 in)
Cooling system	liquid cooled, permanent rotation of cooling liquid through mechanic driven water pump
Cooling liquid	0,8 liter (0,21US gallons), 40% antifreeze, 60% water, at least –25° C (–13°F)
Carburetor	Dell'Orto PHBH 28 VS
Air filter	wet foam type air filter insert

TOLERANCES AND FITTING CLEARANCES		
Crankshaft	axial play run out of crank stud	0,026 - 0,04 mm max. 0,03 mm
Connecting rod bearing	radial play axial play	max. 0,04 mm max. 0,7 mm
Cylinder	bore diameter	max. 56,02 mm
Piston	assembly clearance	max. 0,1 mm
Piston rings	end gap of both compressions rings	max. 0,45 mm
Clutch	clutchspring lenght clutch disks organic clutch disks steel	min. 32,0 mm (new 34,5 mm) min. 2,7 mm min. 1,1 mm

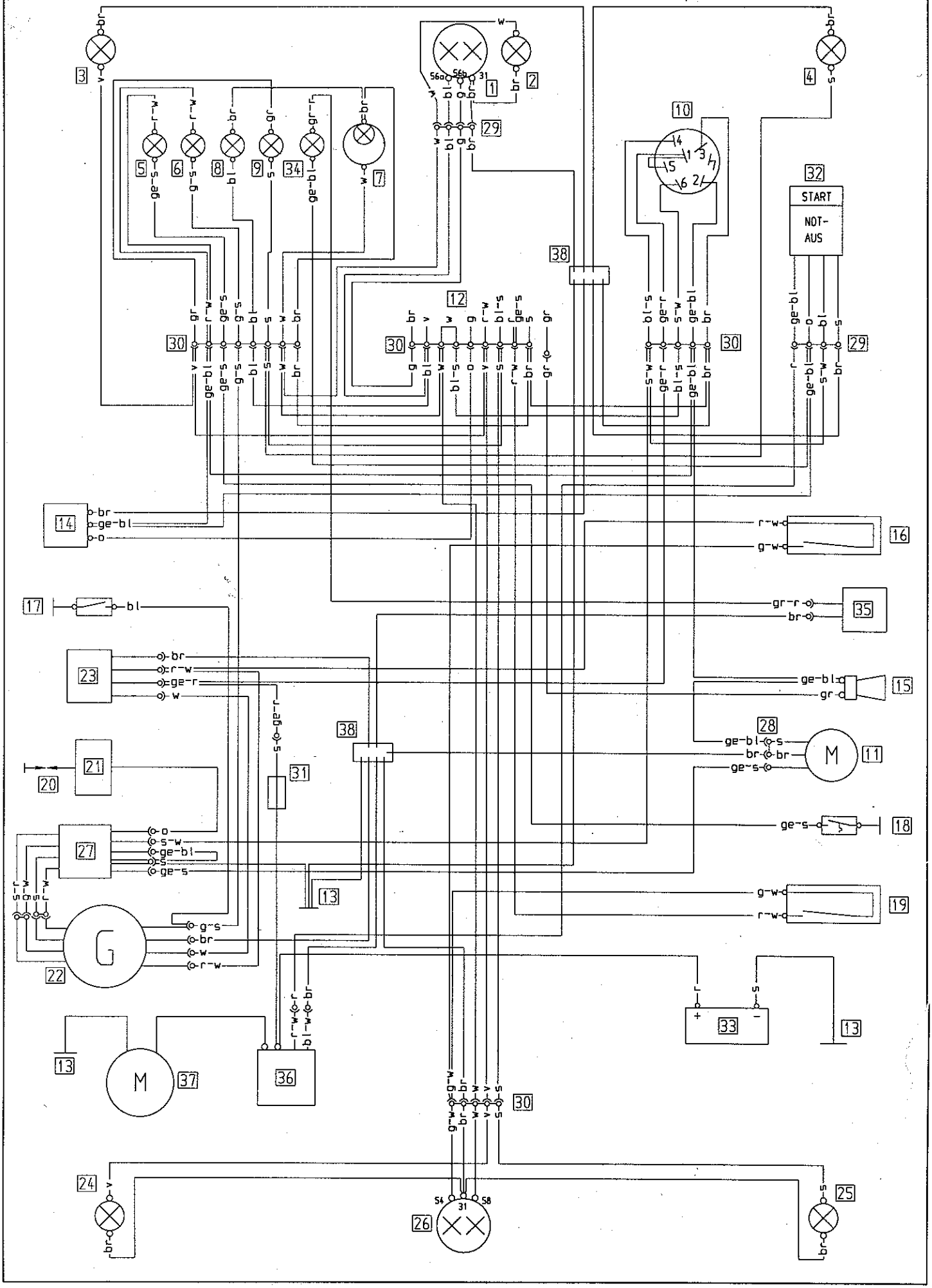
TIGHTENING TORQUES		
Hexagon nut primary gear	M12x1	80 Nm (59 ft.lb)
Hexagon nut balancer shaft gear	M12x1	55 Nm (40,6 ft.lb)
Hexagon nut flywheel	M12x1,25	80 Nm (59 ft.lb)
Hexagon nut for inner clutch hub	M12x1	60 Nm (44 ft.lb)
Oval head screw clutch spring	M5	5 Nm (3,7 ft.lb)
Cap nut cylinder head	M8	22 Nm (16 ft.lb)
Hexagon nut cylinder base	M8	28 Nm (20,7 ft.lb)
Stud cylinder	M8	Loctite242 + 13 Nm (9,6 ft.lb)
Hollow screw carburetor heating	M6	8 Nm (6 ft.lb)
Hexagon nuts exhaust flange	M8	18 Nm (13 ft.lb)
Hexagon nut sprocket	M16x1	60 Nm (44 ft.lb)
Drain screw transmission oil	M8	15 Nm (11 ft.lb)
Allen head screw for one way clutch	M6	Loctite242 + 14 Nm (10 ft.lb)
Hexagon nut engine attachment	M8 M10	40 Nm (29,6 ft.lb) 65 Nm (48 ft.lb)
Other screws engine	M5 M6	7 Nm (5 ft.lb) 8 Nm (6 ft.lb)

BASIC CARBURETOR SETTING	
Carburetor	Dell'Orto PHBH 28 VS
Carburetor setting number	4171
Main jet	132
Needle jet	GM1 264
Idling jet	50
Starting jet	65
Jet needle	83
Needle position from top	III
Mixture.adju. screw open	4 turn
Throttle valve	40

PERIODIC MAINTENANCE SCHEDULE 125 LC2

4.96	KTM rider		KTM dealer			
	before each start	after washing	1st service, after 1000 km (600 miles)	2nd service at 4000 km (2500 miles)	after 4000 km (2500 miles) or once a year	after 20000 km (12500 miles) or after 2 years
Check oil level in oil tank	●		●	●	●	
Check transmission oil level	●		●	●	●	
Change transmission oil						●
Check exhaus control function				●	●	
Check spark plug, replace it if necessary, adjust electrode distance				●	●	
Check intake manifold for leaks and cracks					●	
Drain and clean carburator float chamber		●		●	●	
Check idle setting and emission values when engine is warm			●	●	●	
Check vent hoses of oil tank and transmission for kink-free installadtion			●	●	●	
Clean air filter and air filter box, check air filter boot		●		●	●	
Check sprockets, chain guides and chain for wear	●		●	●	●	
Clean and lube chain	●			●	●	
Check chain tension	●		●	●	●	
Check cooling liquid level	●		●	●	●	
Check quality of antifreeze				●	●	
Check cooling system for leaks	●		●	●	●	
Change cooling liquid						●
Check exhaust system for leakage			●	●	●	
Check exhaust brackets				●	●	
Check brake fluid level front and rear	●		●	●	●	
Change brake fluid						●
Check brake pad thickness	●			●	●	
Check brake discs				●	●	
Check condition and correct instalment of brake hoses	●		●	●	●	
Check freeplay and easy operation of foot brake lever	●		●	●	●	
Check fork for function and tightness	●		●	●	●	
Service front fork completely						●
Check steering head bearing clearance / adjust			●	●	●	
Clean and grease steering head bearings and its seals						●
Check shock absorber for funktion and tightness	●		●	●	●	
Disassemble the Pro Lever suspension system and perform a full maintenance job on it						●
Servicing swingarm pivots						●
Check tightness of spokes and rim join	●		●	●	●	
Check wheel bearings for clearance	●			●	●	
Check tire condition and air pressure	●		●	●	●	
Check cables for damage and easy working	●			●	●	
Lube and adjust cables		●		●	●	
Check the electrical system	●		●	●	●	
Check battery holder and connections				●	●	
Check adjustment of head light				●	●	
Spray ignition lock, emergency OFF switch and light switch with contact spray		●		●	●	
Oil main stand or side stand and check its funktion		●	●	●	●	
Check all screws, nuts and hose clamps for proper tightness	●		●	●	●	
Grease or lube all pivot points and sliding components		●	●	●	●	

KTM MOTORCYCLE SERVICE	Modell: 125 LC2 '96	Kabelstrangnummer: vorne:511.11.075:000 hinten:511.11.076.000	Land: DIV. LÄNDER	Datum, Name: 15.05.96 KE	Kabelstrangbez.: va: 125 LC2 '96 hi: 125 LC2 '96



KTM 125 LC2 1996

Deutsch	Englisch	Italienisch	Französisch
1 Scheinwerfer	1 headlight	1 faro	1 phare
2 Standlicht	2 parking light	2 luce di stazionam.	2 feu de position
3 Blinker li vo	3 blinker left front	3 lampeg. ant. sin.	3 clignoteur a gauche
4 Blinker re vo	4 blinker right front	4 lampeg. ant. dest.	4 clignoteur a droite
5 Temperaturkontrolle	5 temperature control	5 contr. di temperature	5 temoin d.temperature
6 Leerlaufanzeige	6 neutral	6 indicat.marcia folle	6 ind.de point mort
7 Tachobeleuchtung	7 tachometer light	7 luce di tachimetro	7 eclair.comp.vitesse
8 Fernlichtkontrolle	8 high beam control	8 contr. di fare abb.	8 temoin de feux route
9 Blinkerkontrolle	9 blink control	9 contr. di lampeg.	9 temoin de clignoteur
10 Zündschloß	10 ignition switch	10 accensione	10 contact.d'allum.
11 Servomotor	11 servomotor	11 servomotore	11 servo-moteur
12 zum Kombischalter	12 to combinat. switch	12 multicomando	12 commutateur combine
13 Masseanschluß	13 ground connection	13 collegam. di masse	13 prise de masse
14 Blinkgeber	14 blink signal system	14 trasmett. di lampeg.	14 central clignot.
15 Horn	15 horn	15 tromba	15 klaxon
16 Bremslichtsch. vo	16 stoplight switch f.	16 interr.luce arresto	16 cont.de stop av.
17 Leerlaufschalter (N)	17 neutral switch (N)	17 interr.luce folle (N)	17 palpeur de marche (N)
18 Thermoschalter	18 temperature switch	18 interruttore di temp.	18 palpeur de temp.
19 Bremslichtsch. hi	19 stoplight switch r.	19 interr.luce arresto	19 cont.de stop der.
20 Zündkerze	20 spark plug	20 candela	20 bougie
21 Zündspule	21 ignition coil	21 bobina d'accens.	21 bobine d'allumage
22 Generator	22 generator	22 dinamo	22 generateur
23 Regelgleichrichter	23 regulator-rectifier	23 regolat.raddrizzatore	23 regulat.redresseur
24 Blinker li hi	24 blinker left rear	24 lamp. post. sin.	24 clign.a gauche derr.
25 Blinker re hi	25 blinker right rear	25 lamp. post. dest.	25 clign.a droite derr.
26 Brems-Schlußlicht	26 rear-stoplight	26 fanal.post.di freno	26 feu arr.et de stop
27 CDI-Einheit	27 CDI-unit	27 CDI-seatola	27 CDI-unite
28 2-pol.Stecker	28 multip.cont.plug (2)	28 presa a spina (2)	28 connect.multiple (2)
29 4-pol.Stecker	29 multip.cont.plug (4)	29 presa a spina (4)	29 connect.multiple (4)
30 9-pol.Stecker	30 multip.cont.plug (9)	30 presa a spina (9)	30 connect.multiple (9)
31 Hauptsicherung 10A	31 mainfuse 10A	31 fusibile principale 10A	31 fusible principal 10A
32 Starttast.Notaussch.	32 run-off/start switch	32 disinseritor/partire	32 cont.de demar/couper
33 Batterie 12V 3Ah	33 battery 12V 3Ah	33 batteria 12V 3Ah	33 batterie 12V 3Ah
34 Ölstandkontrolle	34 oil-level tell-tale	34 control.d livello d'olio	34 contr.de niveau d'huile
35 Ölstandgeber	35 oil-level sensor	35 livello d'olio trasmetti	35 niveau d'huile transmet.
36 Startrelaise	36 starter relay	36 rele d'avviamento	36 relaise de demarrage
37 Startermotor	37 starter engine	37 mot.d'avviamento elettr.	37 demarreur electrique
38 Parallelverbinder	38 parallel connector	38 parallelo composto	38 parallele connecteur

Deutsch	Englisch	Italienisch	Französisch
bl blau	bl blue	bl blu	bl bleu
br braun	br brown	br marrone	br brun
ge gelb	ge yellow	ge giallo	ge jaune
gr grau	gr grey	gr grigio	gr gris
g grün	g green	g verde	g vert
o orange	o orange	o arancio	o orange
r rot	r red	r rosso	r rouge
s schwarz	s black	s nero	s noir
v violett	v violet	v violetto	v violet
w weiß	w white	w bianco	w blanche

Kontaktbelegung
Start- Notaus- Schalter
(Typ CEV)

ENGINE	r	ge-bl	s-w	br
⊠			•	
○				
$	•			

Kontaktbelegung
Kombischalter (Typ CEV 100826000)

	s	br	v	r-w	bl-s	g	gr	r/ge-s
TURN L				•		•		
TURN R					•	•		
LIGHTS •								
H LO		•						•
H HI			•					•
HORN	•						•	
PASSING		•	•					•

Kontaktbelegung
Zündschloß (Typ CEV 7-pol.)

	1	2	3	4	5	6	7
PARK	•		•	•		•	
AUS			•	•			
EIN	•	•			•	•	
EIN	•	•			•	•	
	•						•

KTM - SPORTMOTORCYCLE AKTIENGESELLSCHAFT
A-5230 Mattighofen • Postfach 91 • Austria
FN 102019 d - Landesgericht Ried im Innkreis