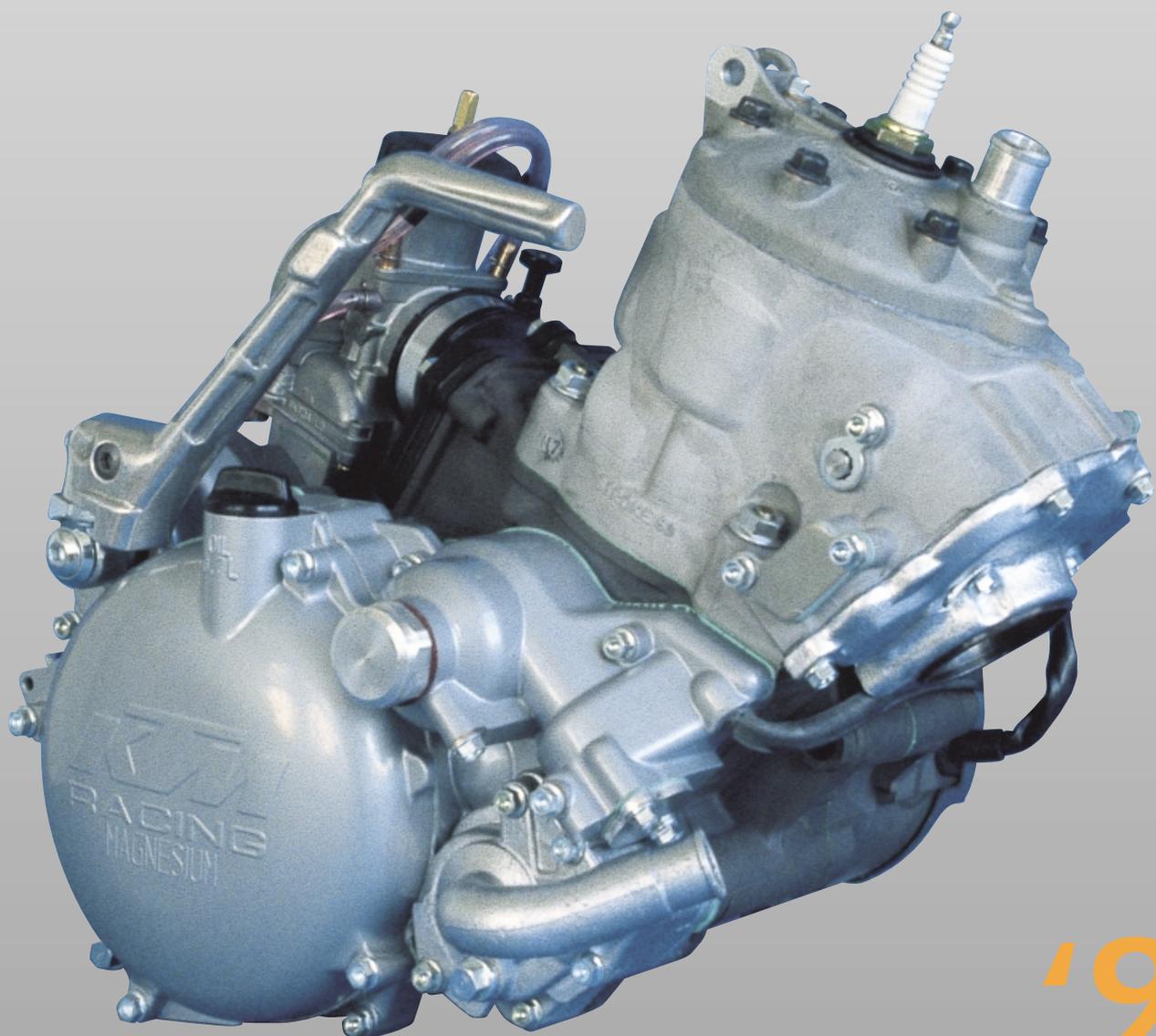




REPARATURANLEITUNG
REPAIR MANUAL
MANUALE DI RIPARAZIONE
MANUEL DE RÉPARATION
MANUAL DE REPARACIÓN

MOTOR
ENGINE
MOTORE
MOTEUR
MOTOR

125 / 200



'98

7. 97

ART. NR. 3.205.27

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(see at the end of this repair manual)

INTRODUCTION

THIS REPAIR MANUAL OFFERS EXTENSIVE REPAIR-INSTRUCTIONS AND IS AN UP-TO-DATE VERSION THAT DESCRIBES THE LATEST MODELS OF THE SERIES. 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 PROFESSIONALLY 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 !

NON-COMPLIANCE WITH THESE INSTRUCTIONS CAN LEAD TO DAMAGE OF MOTORCYCLE COMPONENTS OR RENDER MOTORCYCLES UNFIT FOR TRAFFIC !

„NOTE” POINTS OUT USEFUL TIPS.

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

THE KTM HIGH PERFORMANCE ENGINE IS ONLY ABLE TO MEET USER EXPECTATIONS IF THE MAINTENANCE WORK IS PERFORMED REGULARLY AND PROFESSIONALLY.

FOR TECHNICAL DATA SEE LAST SECTION OF THIS MANUAL. UP-TO-DATE INFORMATION IS PUBLISHED IN OUR UPDATED SPARE PARTS CATALOGUES.



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 AG
5230 MATTIGHOFEN, AUSTRIA

ALL DESIGN AND ASSEMBLY MODIFICATION RIGHTS RESERVED.

1.0 General

Chap.	Component / Component unit	Page
1.1	Special tools	1-2

1.1 Special tools

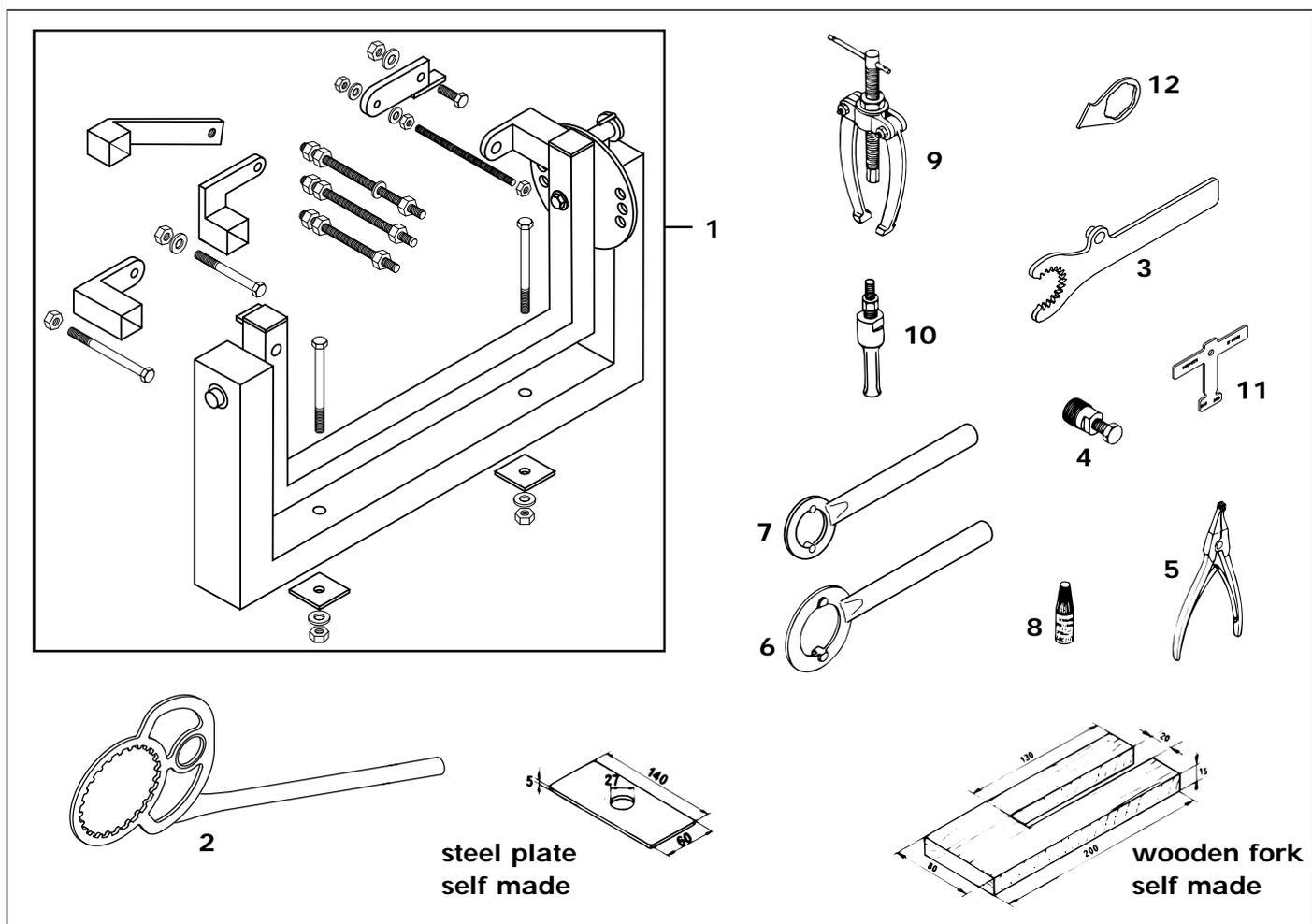
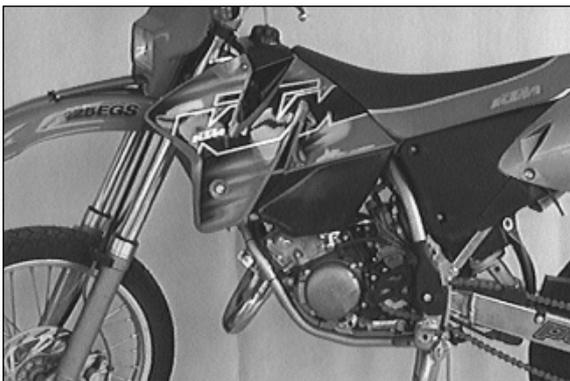


FIG.	PARTNO.	DESCRIPTION
1	560.12.001.000	UNIVERSAL MOUNTING RACK '96
2	503.29.003.000	CLUTCH HOLDER 125/200
3	503.29.004.000	HOLDER FOR PRIMARY GEAR
4	546.29.009.044	MAGNETIC PULLER M27X1 KOKUSAN
5	510.12.011.000	SPECIAL CIRCLIP PLIER
6	546.29.012.100	HOLDING SPANNER ROTOR KOKUSAN 2K-3
7	546.29.012.000	HOLDING SPANNER ROTOR KOKUSAN 2K-1/2K-2
8	6 899 785	LOCTITE 242 BLUE 6CCM
9	151.12.017.000	BEARING EXTRACTOR
10	151.12.018.200	INTERN. BEARING PULLER 5-7 MM
11	503.29.022.000	ADJUSTING PLATE FOR CONTROL FLAP
12	503.29.038.000	HOLDING PLATE FOR LOCATING DRUM

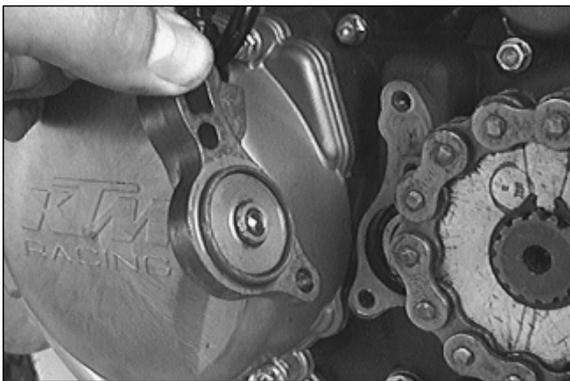
2.0 Removing engine, Refitting engine

Chap.	Component / Component unit	Page
2.1	Removing engine	2-1
2.2	Refitting engine	2-2



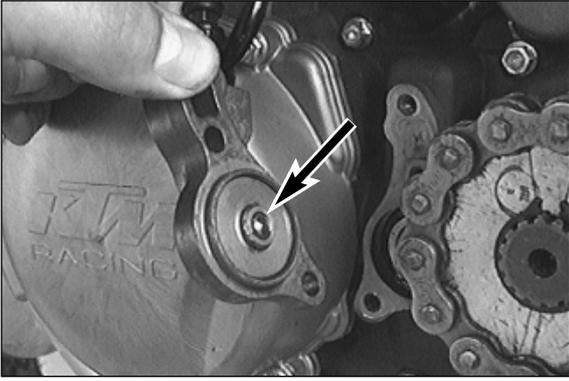
2.1 Removing the engine

- Thoroughly clean the motorcycle.
- Use a suitable supporting device to jack up the motorcycle.
- Remove the seat and the tank with the spoilers.
- Drain the cooling liquid.
- Remove the exhaust system and the engine brace.
- Disconnect the radiator hoses at the engine.
- Remove the carburetor.



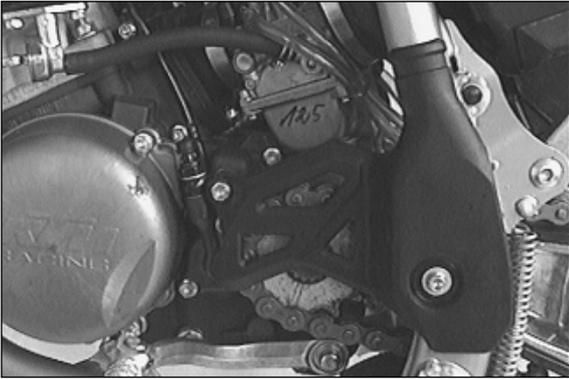
- Remove the engine sprocket cover and the chain.
- Disconnect the electrical wires.
- Remove the driving cylinder of the clutch together with the attached wire. Do not lose the ball in the pressure piston.
- Pull the push rod out of the housing.
- Unhook the return spring of the foot brake pedal from the clutch cover.
- Undo the engine mounting screws.
- Remove the swingarm pivot and pull the swingarm backwards.
- Lift the engine out of the frame on the left side.

NOTE: THE CYLINDER HEAD AND THE CYLINDER CAN BE REMOVED WITHOUT PREVIOUSLY REMOVING THE ENGINE. IT IS ALSO POSSIBLE TO WORK ON THE CLUTCH, THE PRIMARY DRIVE AND THE SHIFT DRUM LOCATING DEVICE WITHOUT PREVIOUSLY REMOVING THE ENGINE. THE WATER PUMP CAN BE REMOVED AND INSTALLED WITHOUT PREVIOUSLY REMOVING THE CLUTCH COVER.



2.2 Installing the engine

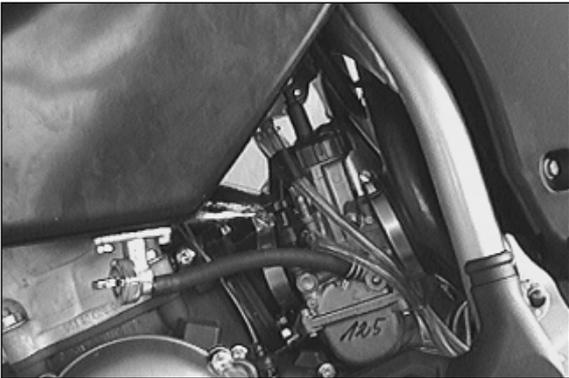
- Lift the engine into the frame from the left side, slightly grease and mount the swingarm pivot.
- Twist in the engine mounting screws.
- Mount the engine brace.



- Connect the electrical wires.
- Oil the push rod and insert it into the main shaft.
- Mount the driving cylinder of the clutch together with a new gasket and fasten it with a screw. Don't forget the ball!

NOTE: AN APPROPRIATE GASKET MUST BE USED FOR THE DRIVING CYLINDER OF THE CLUTCH TO MAKE SURE THAT THE CLUTCH RELEASE WORKS PROPERLY. FOR THIS PURPOSE MEASURE DIMENSION „Y“ (SEE CHAPTER 5.18).

- Mount the chain and the engine sprocket cover.



- Mount the carburetor.



- Connect the radiator hoses to the engine and fill the cooling system with a mixture of 40 % antifreeze and 60 % water. For this purpose twist out the bleeder screws at the cylinder head and at the right radiator. Retighten the screws as soon as the cooling liquid that emerges is free of air bubbles.
- Mount the exhaust system.
- Mount the tank with the spoilers and the seat.
- Remove the plug at the clutch cover and fill in 0.7 l engine oil 20W-40.
- Fix the breather tube to the frame.

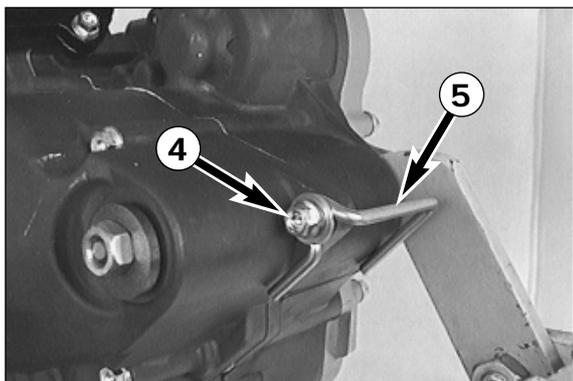


- Check the electrical system for faultless operation.
- Adjust the carburetor.
- Test ride.

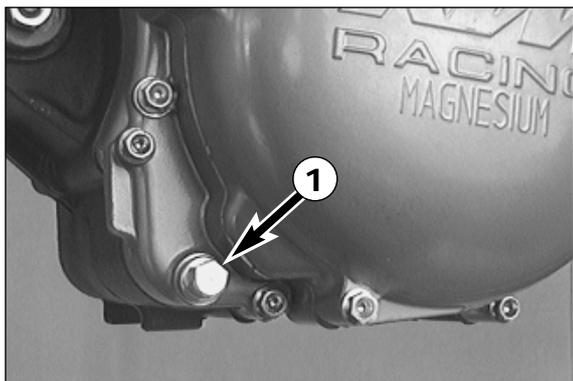
- After the test ride, check the engine, the cooling system and the exhaust system for leaks.

3.0 Dismantling engine

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3.1	Drain engine oil	3-2
3.2	Cylinder head, cylinder, piston	3-2
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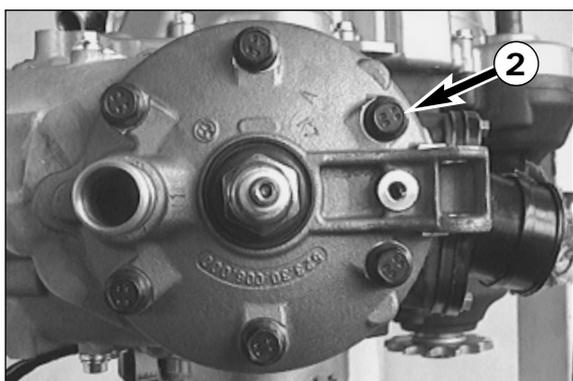


- Thoroughly clean the engine.
- Clamp the engine into the mounting rack.
- Remove the kickstarter and the shift lever.
- Remove screw ④ and take off wire hanger ⑤.



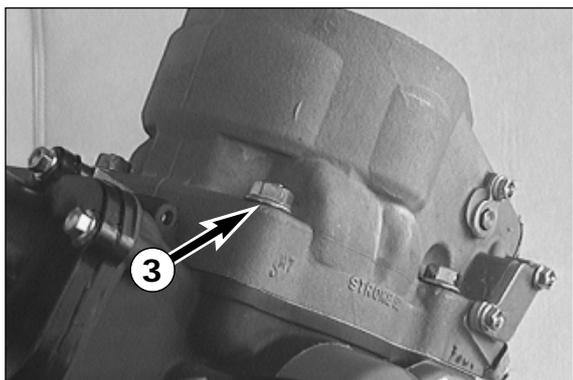
3.1 Draining the gear oil

- Twist out the drain plug ① and drain the gear oil.

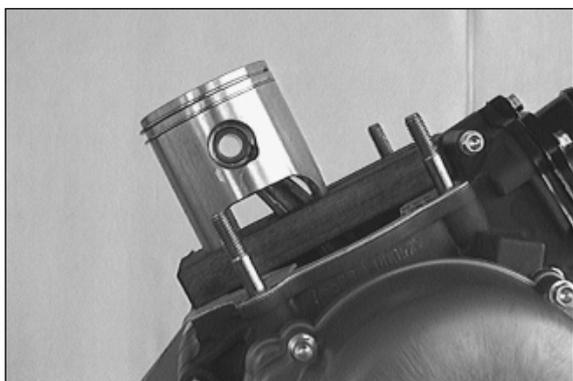


3.2 Cylinder head, cylinder, piston

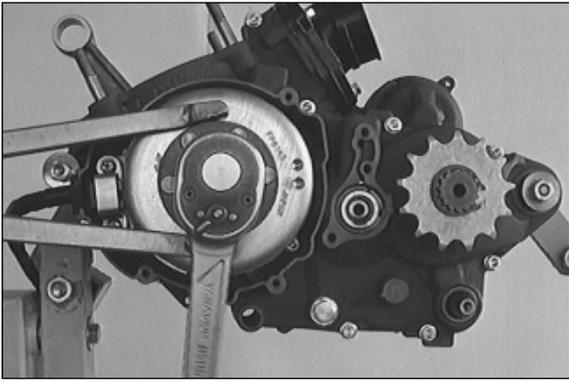
- Undo the 6 screws ② and remove the cylinder head together with the gasket.
- Take the O-ring out of the groove in the cylinder.



- Remove the 4 collar nuts ③ at the cylinder base and remove the cylinder.

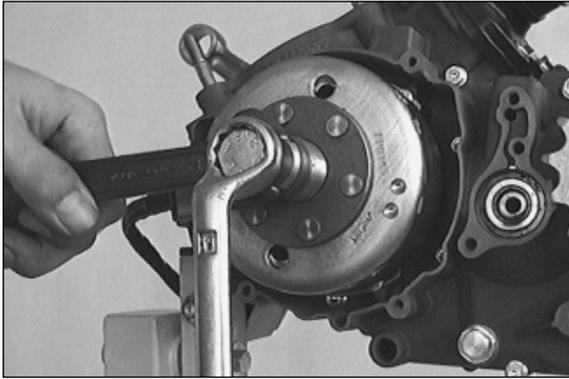


- Cover the crankcase.
- Place the piston onto an appropriate wooden support and remove both piston pin retainers.
- Press the piston pin out of the piston without applying excessive force. An appropriate mandrel can be used if necessary.
- Remove the piston and take the piston pin bearing out of the conrod eye.
- Remove the cylinder base gaskets.

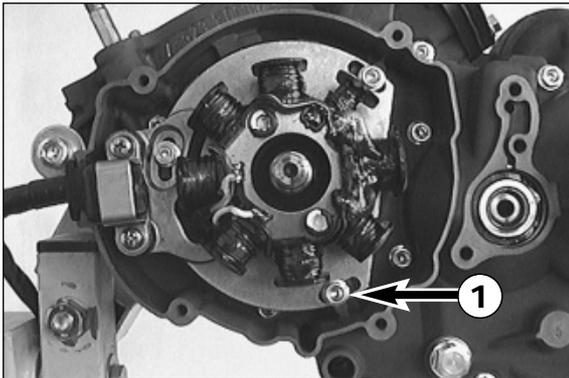


3.3 Ignition

- Remove 4 screws and take off the ignition cover together with the gasket.
- Hold the rotor with the special tool and undo the hexagon nut.
- Take the hexagon nut and the detent edged ring off the crankshaft.



- Twist the rotor extractor into the thread of the rotor (LH thread) and remove the rotor.

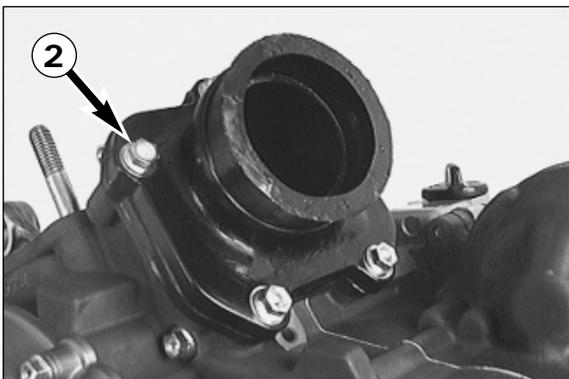


- Remove the 3 collar screws ❶ and take the stator out of the housing.
- Take the woodruff key out of the crankshaft.



3.4 Engine sprocket

- Use a pair of circlip pliers to take the circlip off the countershaft.
- Take the engine sprocket, the distance bushing and the O-ring off the countershaft.

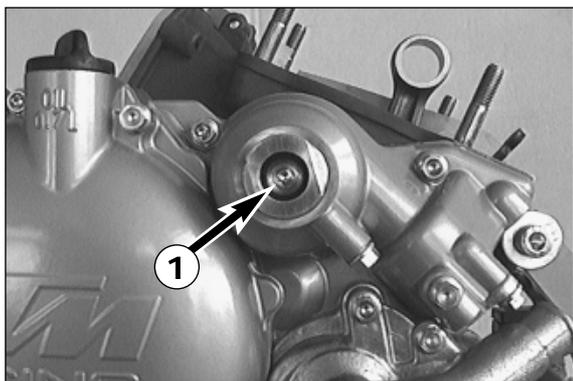


3.5 Reed valve housing, intake flange

- Remove 5 screws ❷ together with the corrugated washers, remove the intake flange and the reed valve housing.

3

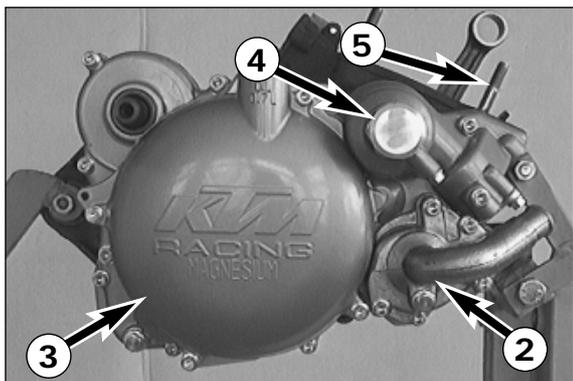
4



3.6 Clutch cover

NOTE: THE FOLLOWING STEP NEED NOT BE PERFORMED UNLESS YOU INTEND TO TAKE THE CENTRIFUGAL TIMER OUT OF THE CLUTCH COVER.

- Remove the cover ④ of the centrifugal timer together with the seal ring and undo screw ①.

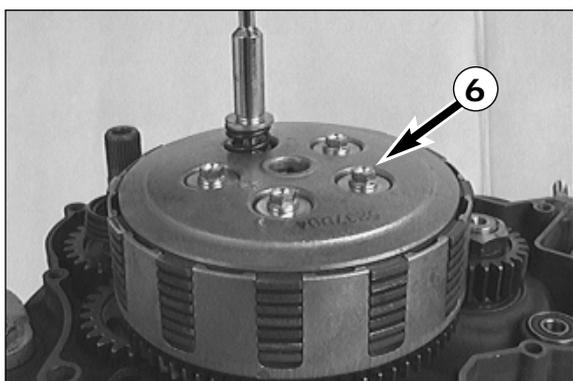


- Remove all screws of the clutch cover, then take off the clutch cover itself.
- Remove the clutch cover gasket and pull the dowels out of the housing.

NOTE: THE WATER PUMP COVER ②, THE EXTERIOR CAP ③ AND THE HEXAGON CAP NUT ④ NEED NOT BE REMOVED. THE WATER PUMP AND THE CENTRIFUGAL TIMER ARE LEFT IN THE CLUTCH COVER.

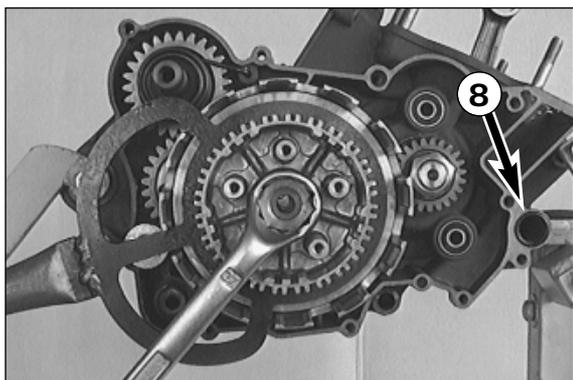
! CAUTION !

WHEN REMOVING THE CLUTCH COVER MAKE SURE THAT THE ROCKER ARM ⑤ OF THE EXHAUST CONTROL DOES NOT JAM IN THE HOUSING AND IS NOT DAMAGED.

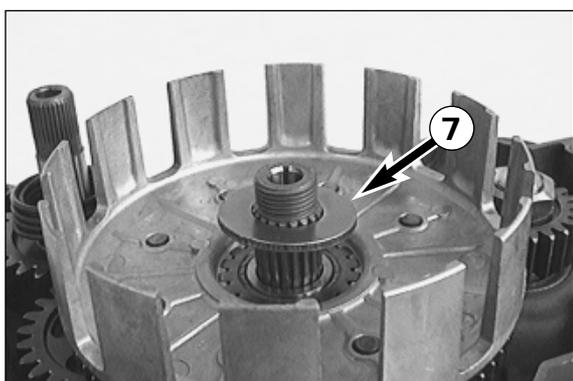


3.7 Clutch, primary drive

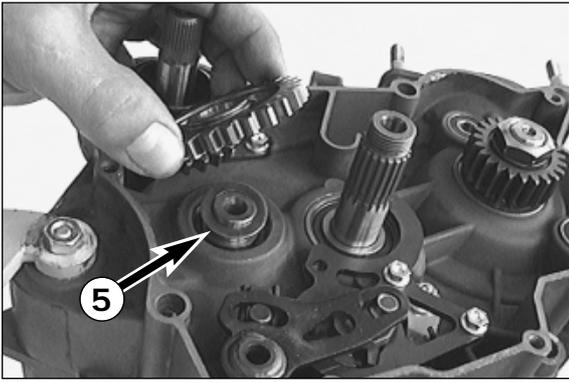
- Undo the 5 screws ⑥ in diagonal order so as to prevent jamming of the clutch discs when the springs relax.
- Remove screws, spring retainers and springs.
- Take the pressure cap and the disc package out of the outer clutch hub.
- Pull the thrust bearings out of the main shaft.



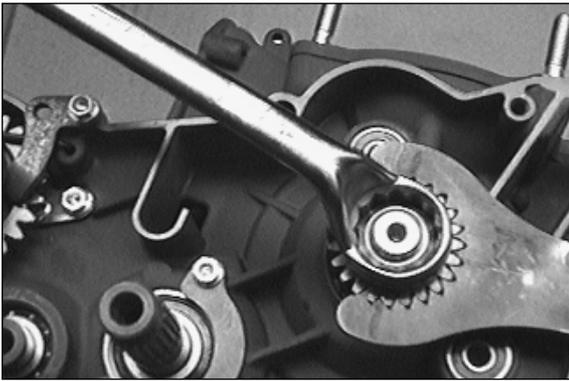
- Take the O-ring ⑧ out of the housing.
- Open the lock washer of the inner clutch hub.
- Mount the clutch holder on the inner clutch hub and undo the hexagon nut.
- Remove the clutch holder.
- Take the hexagon nut, the detent edged ring and the inner clutch hub off the main shaft.



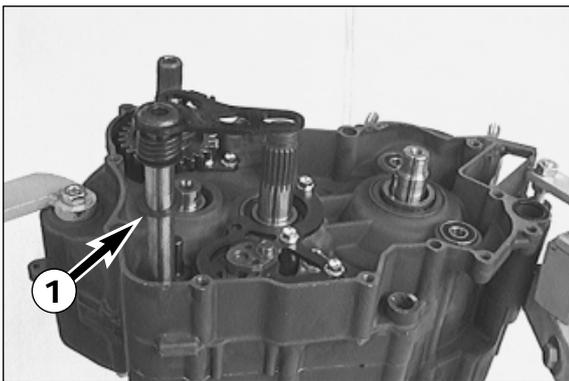
- Take the supporting disc ⑦ and the outer clutch hub together with the bearing off the main shaft.



- Remove the intermediate starter gear and the stop disc ⑤ below.

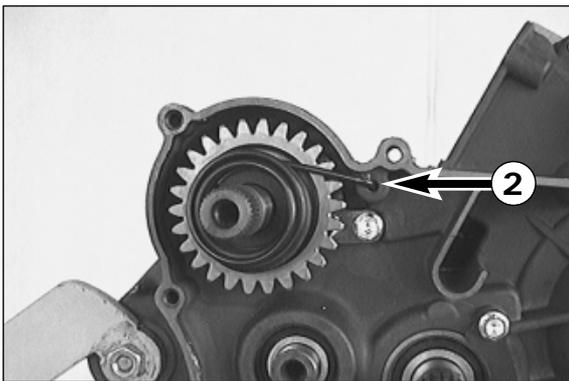


- Mount the primary gear holder and undo the hexagon nut (LH thread).
- Remove the primary gear holder.
- Take the hexagon nut, the detent edged ring and the primary gear off the crankshaft.
- Take the woodruff key out of the crankshaft.

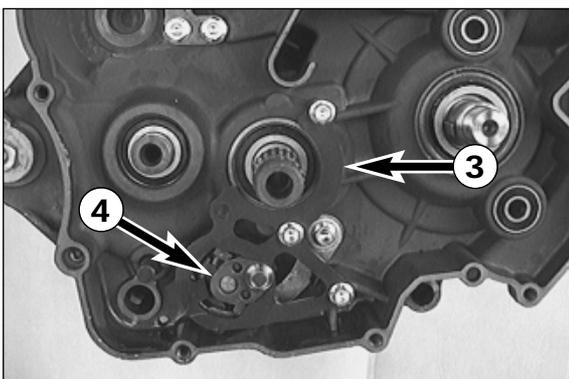


3.8 Shift drum locating, kickstarter

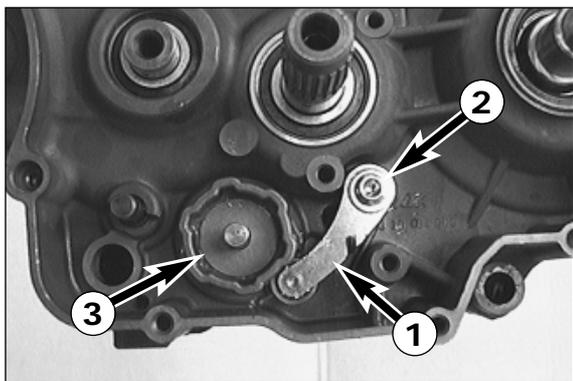
- Simply pull the shift shaft out of the housing. Keep in mind the stop disc ①! (It can be left in the housing).



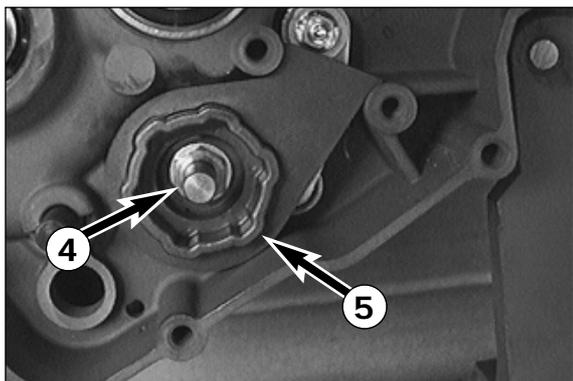
- Carefully unhook the kickstarter spring from bore ② (pretensioned spring!) and release it.
- Rotate the kickstarter shaft approximately 1/4 turn counterclockwise and pull it out of the housing. Keep in mind the stop disc behind!



- Undo 3 screws and remove the gear shifting gate ③ together with the ratchet carrier ④.



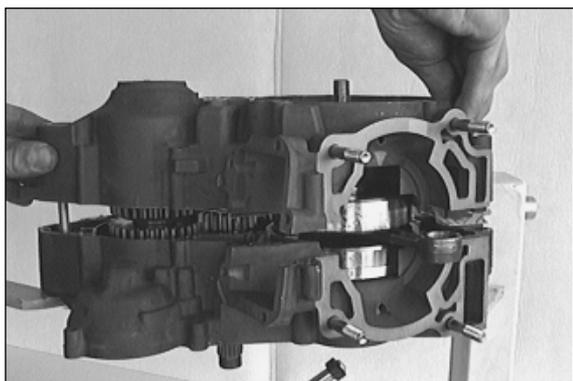
- The locking lever ① need not be removed unless the engine housing is exchanged.
- For this purpose, undo screw ②, then remove the locking lever together with the spring.
- Take the washer ③ out of the locking drum.



- Hold the locking drum with the special tool, undo screw ④ and remove the screw together with the washer.
- Pull the locking drum ⑤ off the shift roller.

! CAUTION !

THE LOCKING DRUM MUST BE HELD WITH THE SPECIAL TOOL TO PREVENT DAMAGING OF THE BUSHINGS ON THE DRIVING PINS OF THE SHIFT FORKS.



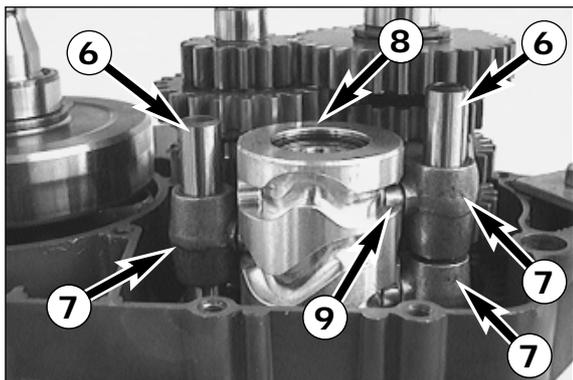
3.9 Dividing the engine housing

- Swing the ignition side upwards and remove all 12 housing screws.
- Undo the engine mounting device at the mounting rack.
- Lift the left housing half by the lifting points of the housing, using appropriate tools, or separate it from the right housing half by lightly tapping the countershaft with a plastic hammer.

! CAUTION !

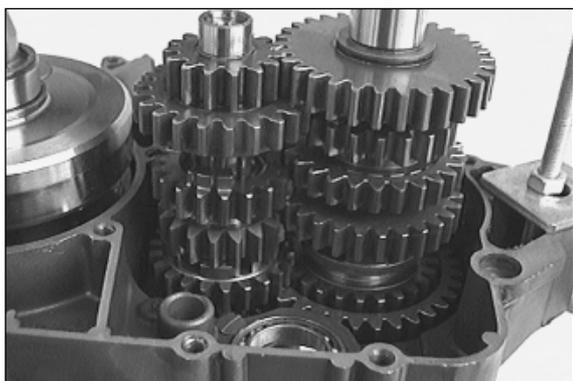
TO PREVENT DAMAGING OF THE SEALING SURFACES, DO NOT USE A SCREWDRIVER OR SIMILAR TOOL TO LEVER THE HOUSING HALVES APART!

- Remove the housing half and the gasket.
- Keep in mind the stop disc of the main shaft (can stick to the inside of the housing).

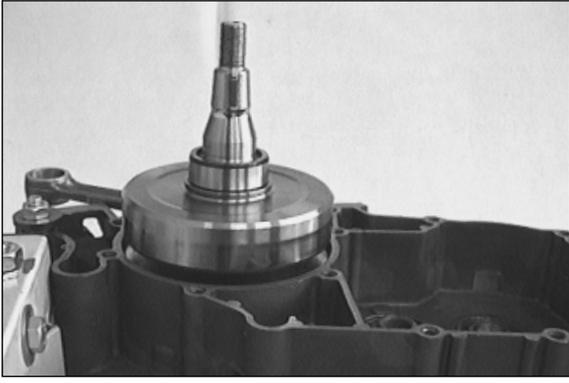


3.10 Shift mechanism, transmission

- Pull out the shift rails ⑥ and swing the shift forks ⑦ including rollers ⑨ sideways.
- Pull the shift roller ⑧ out of the grooved ball bearing.
- Take the shift forks ⑦ out of the housing.

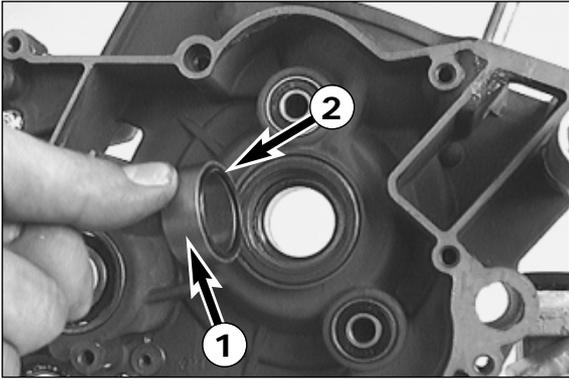


- Pull the complete main shaft and the countershaft together out of the bearing seats.



3.11 Crankshaft

- Pull the crankshaft out of the bearing seat (if necessary lightly tap it with a plastic hammer).



- Take the distance bushing ❶ and the O-ring ❷ out of the right crankshaft seal ring.
- Clean all parts. Check for wear and exchange worn components.

NOTE: ALL GASKETS, SHAFT SEAL RINGS, O-RINGS AND BEARINGS SHOULD BE EXCHANGED ON THE OCCASION OF EACH COMPLETE ENGINE OVERHAUL.

4.0 Servicing on individual components

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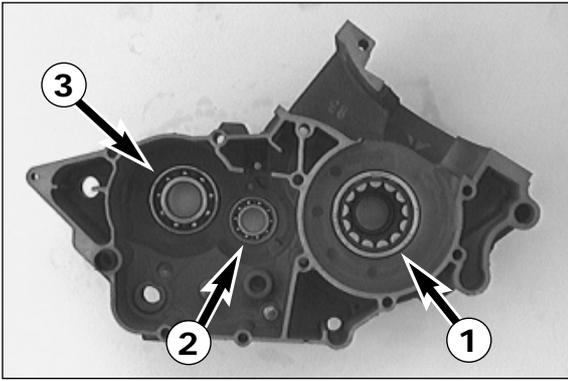
Engine housing

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

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

BEARINGS OR SHAFT SEAL RINGS SHOULD NOT BE HAMMERED INTO THEIR SEATS. IF NO SUITABLE PRESS IS AVAILABLE, USE A SUITABLE MANDREL AND HAMMER THEM IN WITH GREAT CARE. COLD BEARINGS WILL PRACTICALLY DROP INTO THEIR SEATS AT AN ENGINE HOUSING TEMPERATURE OF 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 housing half

Remove the shaft seal rings and use a hot plate to heat the housing half to a temperature of approximately 150° C.

NOTE: AT A TEMPERATURE OF 150° C IT IS USUALLY SUFFICIENT TO TAP THE HOUSING HALF ONTO A PLANE WOODEN SURFACE AND THE BEARINGS WILL SIMPLY DROP OUT OF THE BEARING SEATS. HOWEVER, IN SOME CASES IT IS NECESSARY TO PRESS THE BEARINGS OUT OF THEIR SEATS. TO PREVENT DAMAGING OF THE BEARINGS, THE DEVICE USED TO PRESS IN THE NEW BEARINGS MUST BE DESIGNED IN SUCH A WAY THAT IT TOUCHES ONLY THE OUTER RING OF THE BEARING.

ROLLER BEARING OF THE CRANKSHAFT ①

Apply a suitable mandrel on the outside to press the roller bearing inwards. Insert a new roller bearing from the inside and press it all the way into the seat.

GROOVED BALL BEARING OF THE MAIN SHAFT ②

Apply a suitable mandrel on the outside to press the grooved ball bearing inwards. Insert a new grooved ball bearing from the inside and press it all the way into the seat.

! CAUTION !

TO PREVENT DAMAGING OF THE HOUSING, NEVER APPLY TOO MUCH FORCE WHEN PRESSING IN GROOVED BALL BEARINGS.

GROOVED BALL BEARING OF THE COUNTERSHAFT ③

Apply a suitable mandrel on the outside to press the grooved ball bearing inwards. Insert a new grooved ball bearing from the inside and press it all the way into the seat.

SHAFT SEAL RING OF THE COUNTERSHAFT ④

Insert a new shaft seal ring from the outside and press it in flush. Do not forget the stop disc (position it on the grooved ball bearing of the countershaft before mounting).

SHAFT SEAL RING OF THE SHIFT SHAFT ⑤

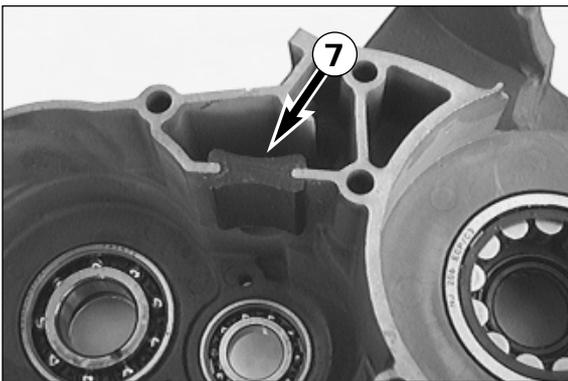
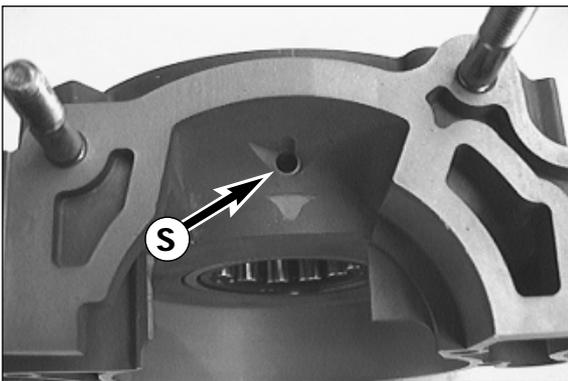
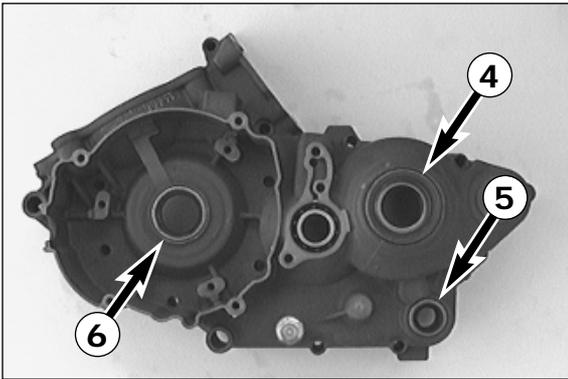
Insert a new shaft seal ring from the outside and press it in flush.

SHAFT SEAL RING OF THE CRANKSHAFT ⑥

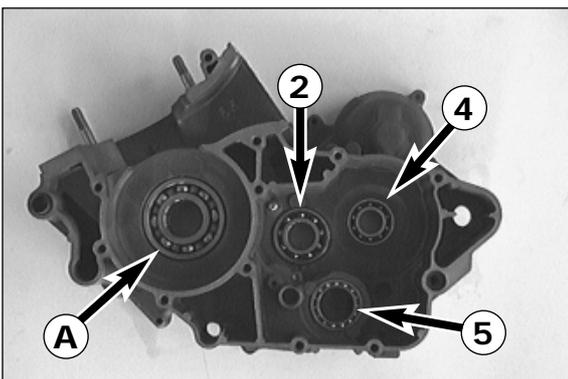
Insert a new shaft seal ring from the outside and press it in flush.

LUBRICATION BORE OF THE CRANKSHAFT ROLLER BEARING ⑦

Check for obstructions and clean the bore with compressed air, if necessary.



Check if the oil guiding rubber ⑦ of the left housing half is correctly mounted (i.e. with the narrower end of the guide slots facing inwards) and apply a small quantity of grease to fix it in the housing. Brittle or hard oil guiding tubes must be replaced.



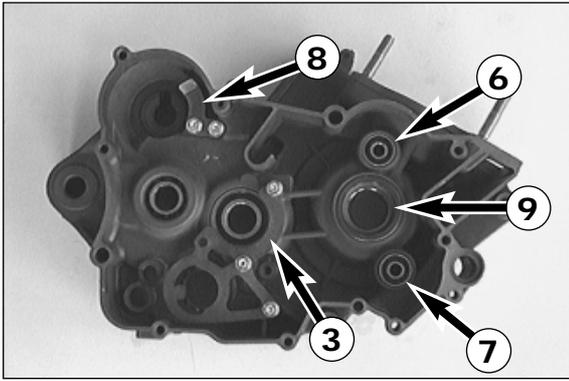
4.2 Right housing half

Remove the shaft seal rings and use a hot plate to heat the housing half to a temperature of approximately 150° C.

NOTE: AT A TEMPERATURE OF 150° C IT IS USUALLY SUFFICIENT TO TAP THE HOUSING HALF ONTO A PLANE WOODEN SURFACE AND THE BEARINGS WILL SIMPLY DROP OUT OF THE BEARING SEATS. HOWEVER, IN SOME CASES IT IS NECESSARY TO PRESS THE BEARINGS OUT OF THEIR SEATS. TO PREVENT DAMAGING OF THE BEARINGS, THE DEVICE USED TO PRESS IN THE NEW BEARINGS MUST BE DESIGNED IN SUCH A WAY THAT IT TOUCHES ONLY THE OUTER RING OF THE BEARING.

GROOVED BALL BEARING OF THE CRANKSHAFT ④

Press the old grooved ball bearing inwards from the outside. Insert a new grooved ball bearing with the open side of the ball cage facing downwards (i.e. towards the exterior) and press it all the way into the seat.



GROOVED BALL BEARING OF THE MAIN SHAFT ②

Apply a suitable mandrel on the outside to press the grooved ball bearing inwards. Insert a new grooved ball bearing from the outside and press it in flush (i.e. flush with the bearing surface of the gear shifting gate ③).

GROOVED BALL BEARING OF THE COUNTERSHAFT ④

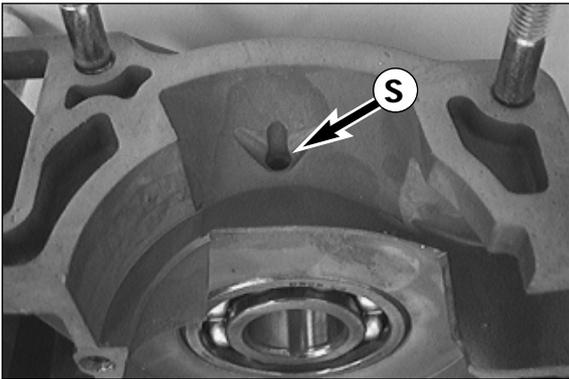
Apply a suitable mandrel on the outside to press the old grooved ball bearing inwards. Insert a new grooved ball bearing from the inside and press it all the way into the seat.

GROOVED BALL BEARING OF THE SHIFT ROLLER ⑤

Apply a suitable mandrel on the outside to press the old grooved ball bearing inwards. Insert a new grooved ball bearing from the inside and press it all the way into the seat.

! CAUTION !

DO NOT APPLY EXCESSIVE FORCE WHEN PRESSING THE GROOVED BALL BEARINGS FLUSH WITH THE COLLAR IN THE HOUSING. THE COLLAR WALL IS VERY THIN AND CAN EASILY BE DAMAGED!



GROOVED BALL BEARING OF THE CENTRIFUGAL TIMER ⑥

Use an interior extractor and a Ø 6 mm insert to pull the grooved ball bearing out of the housing. Press a new grooved ball bearing all the way into the seat.

GROOVED BALL BEARING OF THE WATER PUMP SHAFT ⑦

Use an interior extractor and a Ø 6 mm insert to pull the grooved ball bearing out of the housing. Press a new grooved ball bearing all the way into the seat.

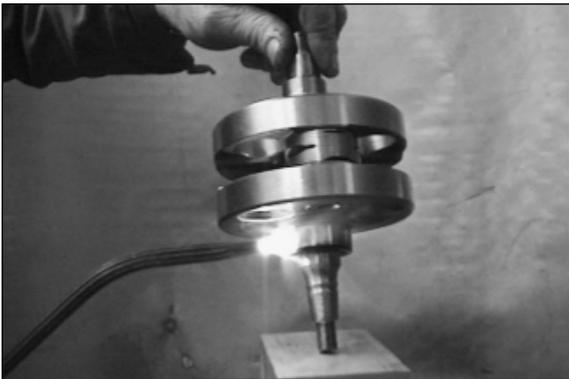
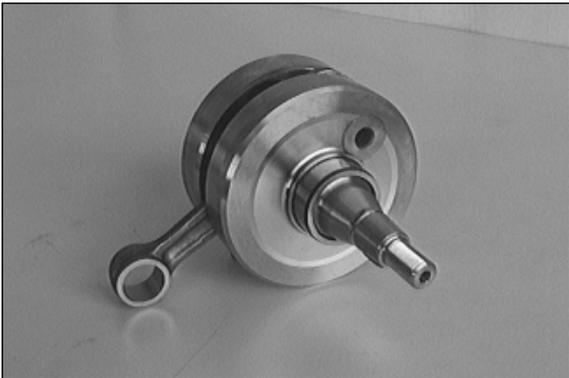
KICKSTARTER RELEASE PLATE ⑧

When exchanging the release plate keep in mind to apply Loctite 242 to both screws.

SHAFT SEAL RING OF THE CRANKSHAFT ⑨

Insert a new shaft seal ring from the outside and press it in flush, the open side facing inwards.

Then check the LUBRICATION BORE FOR THE GROOVED BALL BEARING ⑤ of the crankshaft for obstructions.



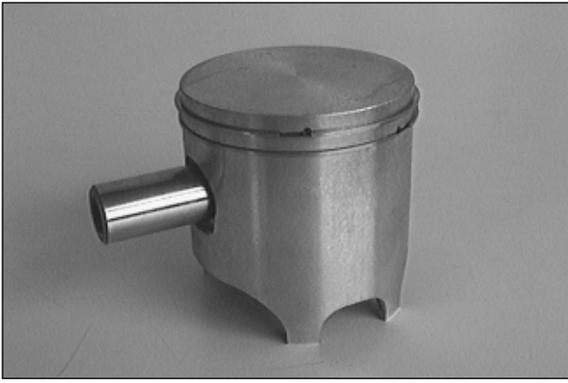
4.3 Crankshaft

- When replacing the roller bearing, the inner crankshaft ring must also be renewed. Heat the inner ring until it drops out of its seat.
- Before pressing the new inner ring in position, an intermediate plate must always be placed between the two crank webs. The plate must be such as to be supported on both sides, so that the crankshaft remains free.
- Heat new inner ring to approx. 150° C and press into position. Make sure inner ring is heated quickly.

! CAUTION !

NEVER CLAMP THE CRANKSHAFT WITH A STUD OR WEB IN THE VICE, AND NEVER TRY TO KNOCK THE BEARING INNER RING FREE. THE CRANKSHAFT WEBS MAY BE COMPRESSED AND THE CON-ROD PLUG AND BEARING MAY BE DAMAGED, THEREBY MAKING THE CRANKSHAFT UNUSABLE.

NOTE: DISTANCE ADJUSTMENT OF THE MAIN BEARINGS IS NOT REQUESTED.



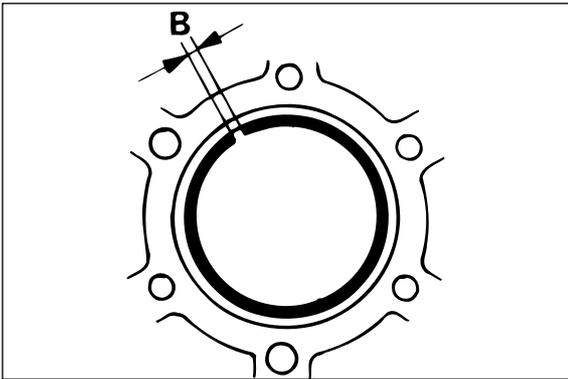
4.4 Piston

If a used piston is to remain in service then the following should be checked:

1. PISTON RUNNING SURFACE: Check for pressure marks (seizing marks) minor friction marks can be removed with a fine abrasive stick.
2. PISTON RING GROOVES: The piston rings must not get jammed in the grooves. For cleaning the grooves, use an old piston ring or abrasive paper (grain size 400).
3. THE PISTON RING LOCATING PINS must be firmly seated in the piston and must not be worn out.
4. Check PISTON RINGS for wear and check end gap.

4

4

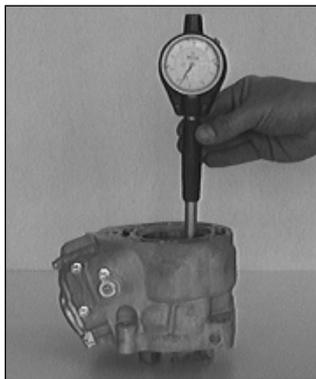
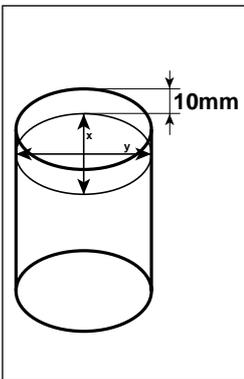


4.5 Piston ring end gap

- Insert piston ring into the cylinder and adjust. Piston ring must be approx. 10 mm (0.5 in) from top of cylinder.
- The end gap  can now be checked with a feeler gauge.

END GAP MAX. 0.40 MM (0.015 IN)

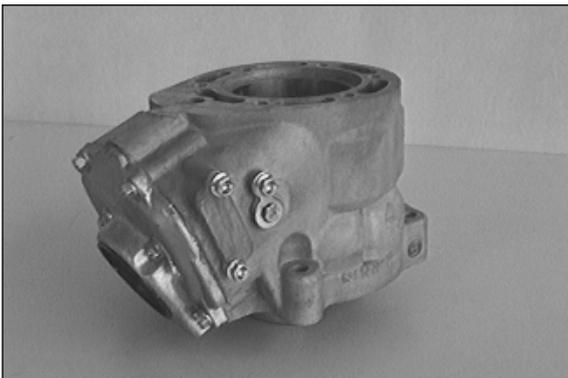
IF THE END GAP IS GREATER CHECK PISTON AND CYLINDER FOR WEAR. IF PISTON AND CYLINDER WEAR ARE WITHIN THE PERMITTED TOLERANCE LIMITS, REPLACE THE PISTON RING.



4.6 Checking cylinder for wear

Measure diameter of cylinder approx. 10 mm (0.5 in) below top of cylinder edge. Check diameter in several corresponding places to see if cylinder is worn oval. Cylinder diameter - piston size

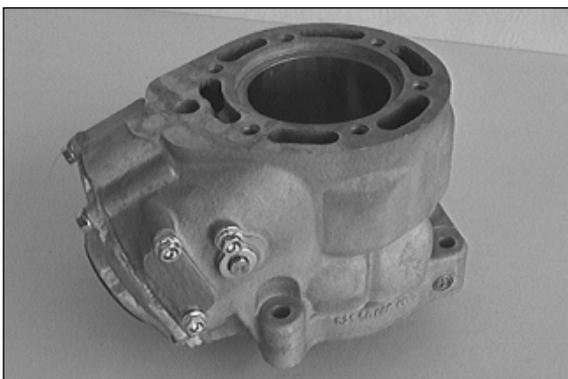
Cylinder diameter 125	Piston size
54.250 - 54.262 mm 1
54.263 - 54.275 mm 2
Cylinder diameter 200	Piston size
64.000 - 64.012 mm 1
64.013 - 64.025 mm 2



If the cylinder diameter is greater than 54.275 mm or 64.025 mm, the Nikasil cylinder must be reconditioned or replaced.

NOTE: FOR RECONDITIONING OF THE OLD CYLINDER ALL EXHAUST CONTROL COMPONENTS MUST BE REMOVED.

RECONDITIONED CYLINDERS ARE AVAILABLE ON ORDER FROM YOUR KTM DEALER. THE PISTON SIZE IS STAMPED INTO THE BOTTOM OF THE PISTON.

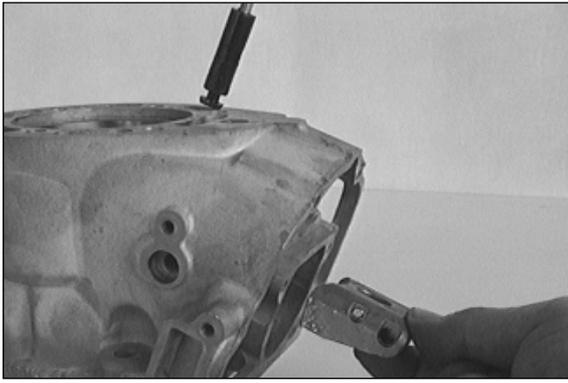


4.7 Nikasil coating of cylinder

Nikasil is the brand name for a cylinder coating process, developed by the piston manufacturer Mahle. The name is derived from the two materials used in this process - a nickel layer into which the particularly hard silicon carbide is inbedded. The main advantages of the Nikasil coating are:

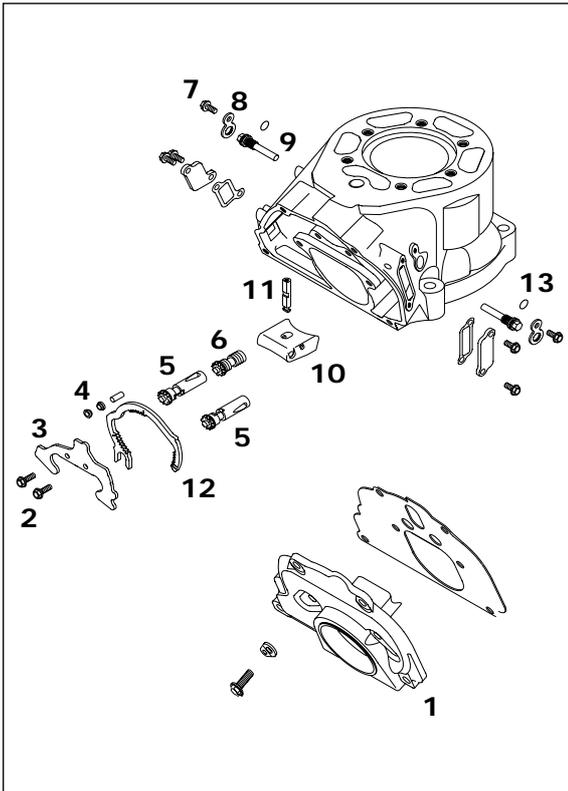
- excellent heat dissipation and thus better power output
- low wear
- low weight of the cylinder.

NOTE: THE WORN COATING CAN BE REGENERATED AT LOW COST PROVIDED THAT THE CYLINDERS RUNNING SURFACE IS FLAWLESS.



4.8 Exhaust control in the cylinder

- Remove the 6 screws and take off the exhaust flange ① together with the gasket.
- Undo 2 screws ② and take the guide plate ③ out of the cylinder.
- Remove 3 collar bushings ④ and the control segment ⑫. To prevent subsequent jamming of the exhaust control, do not damage the bearing surfaces of the collar bushings and the control segment ⑫.
- Take the three roller guides ④ behind out of the cylinder.
- Pull the two control rollers ⑤ and the eccentric shaft ⑥ out of the bores in the cylinder.
- Undo the screws ⑦ to the left and to the right and remove them together with the locking plates ⑧.
- Twist out the left and the right control flap axles ⑨.
- Slightly push the control flap ⑩ upwards through the exhaust port. Turn the lifting bolt ⑪ of the control flap a quarter of a full rotation (for this purpose, it is recommended to twist a M5x40 screw into the thread of the lifting bolt) and pull it upwards out of the cylinder. Now the control flap can be taken out of the cylinder.
- Clean all parts of the exhaust control and check for wear and damage.



CONTROL ROLLERS ⑤

Check bearing for play.

Check the teeth of the control rollers for wear.

CONTROL SEGMENT ⑫

Check the contact surface between the control segment and the roller guides for grooves and exchange them, if necessary.

CONTROL FLAP AXLES ⑨

Check the control flap axles for wear, especially at the pins.

O-RINGS ⑬

Check the O-rings of the control flap axles for wear and brittleness and exchange them, if necessary.

ROLLER GUIDES ④

Check the contact surface between the roller guides and the control roller segment for grooves and exchange them, if necessary.

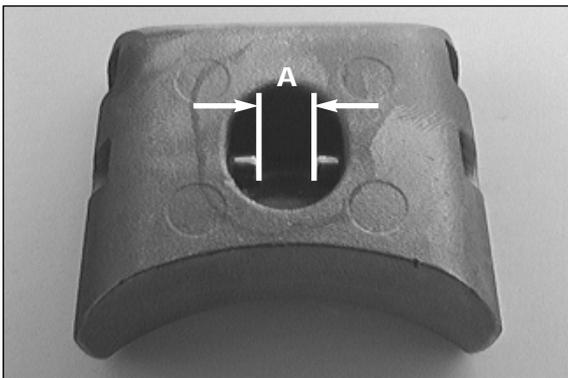
CONTROL FLAP ⑩

Clean the control flap and check the pins in the control flap for tight fit.

Measure the distance **A** between the two pins (see illustration).

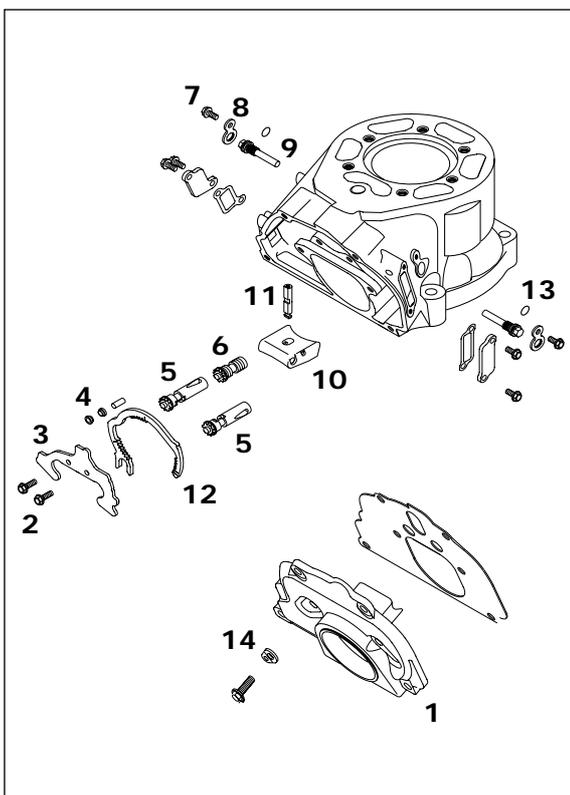
When mounted, the control flap must not scrape against the exhaust port.

DISTANCE **A**: MIN. 5.5 MM (0.22 IN) / MAX. 5.8 MM (0.23 IN)



4

6

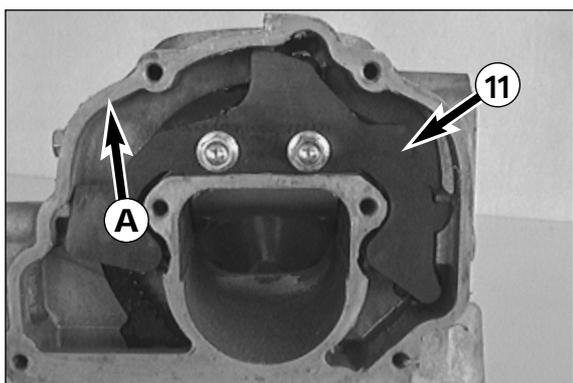
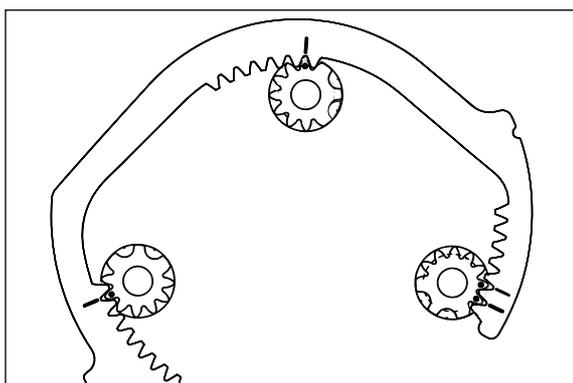
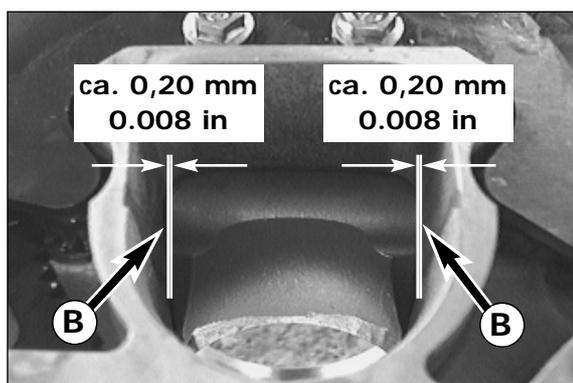


4.9 Preassembling the cylinder

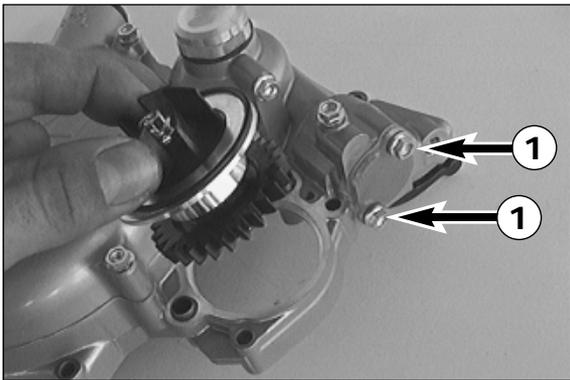
- Insert the control flap 10 into the cylinder through the exhaust port.
- Grease O-rings 13 and control flap axes 9, especially at the pins, align the control flap 10 and mount the left and the right control flap axes without tightening them yet.
- Thoroughly oil the lifting bolt 11 and insert it from above into the bore in the cylinder. Insert the lifting bolt until it engages in the control flap 10. Then rotate it a quarter of a full turn so that the flat section is perpendicular to the direction of travel and faces forward (in the direction of the exhaust port).
- Insert two feeler gauges of identical thickness (approx. 0.2 mm / 0.008 in) between the control flap and the cylinder wall at points B. This distance must be equal on both sides.
- Twist the control flap axes 9 all the way in and then 1/8 of a full turn out again.
- Apply Loctite 242 to two screws 7 and use them to fix the two locking plates 8, thereby taking care to turn the control flap axes 9 as little as possible.
- Remove the two feeler gauges and check control flap for easy operation.
- Thoroughly oil the control rollers 5 and insert them into the bores in the cylinder. Insert the control roller with one mark on the left and the control roller with 2 marks on the right side.
- Thoroughly oil the eccentric shaft 6 of the control flap and mount it in the cylinder. Move the control flap up and down. The eccentric shaft should move with the control flap.
- Grease the pins in the cylinder and mount the 3 roller guides 4 with the large collar facing the cylinder.
- Turn the control rollers and the adjusting roller of the control flap so that the marks are on the outside (facing the control segment).
- Mount the control segment 12 in such a way that the marks on the control rollers coincide with those of the control segment (see illustration).

NOTE: WHEN ALL MARKS ARE ALIGNED, THE CONTROL FLAP MUST BE IN THE BOTTOM POSITION AND THE BORES OF THE CONTROL ROLLERS MUST BE COMPLETELY CLOSED.

- Mount three roller guides 4 with the small collar facing the cylinder.

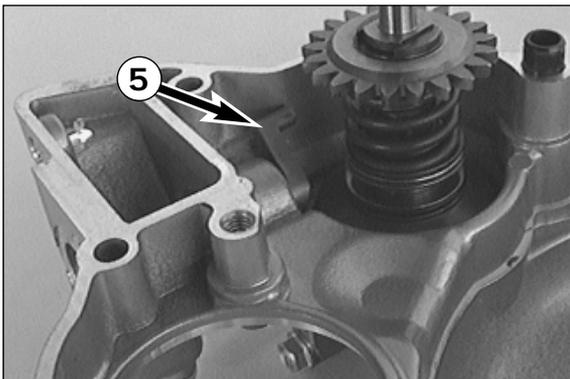


- Mount the guide plate 3, apply Loctite 242 to two screws 2 and use them to fix the guide plate in the cylinder.
- Turn the control segment clockwise. The control flap must open and the bores of the control rollers must be opened.
- Apply a thin silicone coat on the flange facing A of the cylinder and mount a new gasket.
- Apply a thin silicone coat to the flange facing of the cover and fix the cover with the six screws. Don't forget the 2 brackets for the exhaust springs 14.
- Check exhaust control for easy operation.



4.10 Clutch cover

- Remove the 2 screws of the water pump cover and take off the water pump cover.
- Pull the water pump and the O-ring out of the clutch cover.
- Undo 2 screws **1** and remove the closure cap **2** together with the gasket and the copper seal rings.
- Press the grooved ball bearing **3** below out of the clutch cover. For this purpose, push the rocker arm **4** of the centrifugal timer forward (in the direction of the grooved ball bearing).



- Turn the adjusting lever **5** so that it rests against the clutch cover (see illustration).
- Undo the screw **6** and pull the rocker arm **4** off the adjusting lever **5**.
- Undo the collar screw **7** of the centrifugal timer and pull the centrifugal timer inwards out of the clutch cover.
- Pull the adjusting lever **5** out of the clutch cover.
- Clean all parts and check for wear.

4
7

ADJUSTING LEVER **5**

Check the pins of the adjusting lever for wear. Check the bearing surface between the adjusting lever and the needle bushing for wear.

GROOVED BALL BEARING **3**

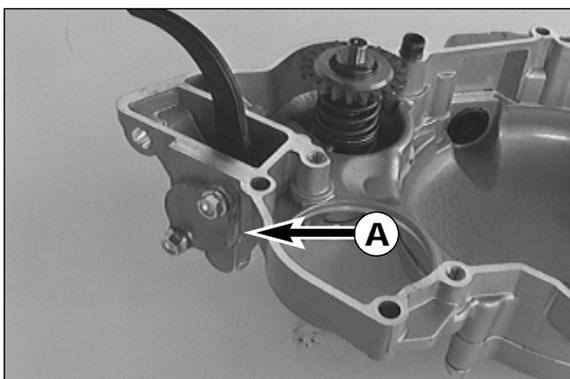
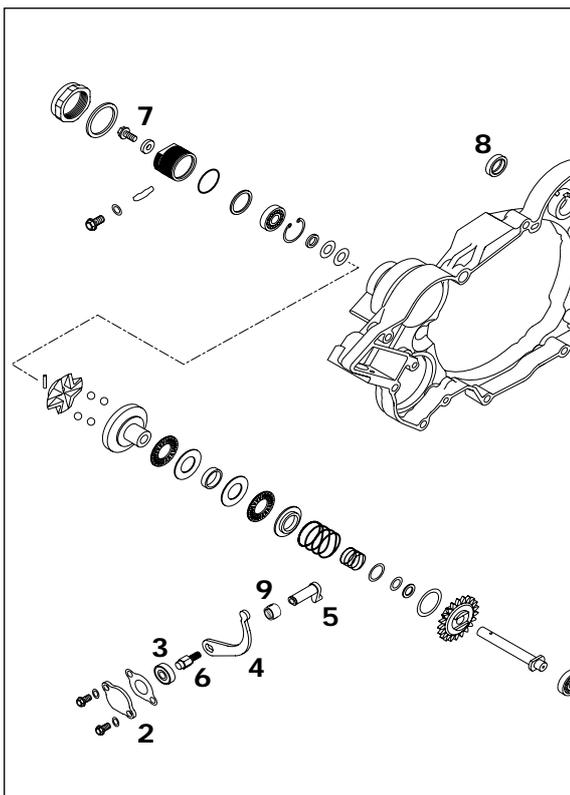
Check for wear.

NEEDLE BUSHING OF THE ADJUSTING LEVER **9**

The bearing bushing of the adjusting lever normally shows no signs of wear. If this is nevertheless the case, it is recommended to replace the entire clutch cover.

SHAFT SEAL RING OF THE KICKSTARTER SHAFT **8**

Lever the used shaft seal ring out of the clutch cover with a screwdriver. Grease the new shaft seal ring and insert it with the open side facing inwards. Press it in flush.



4.11 Preassembling the clutch cover

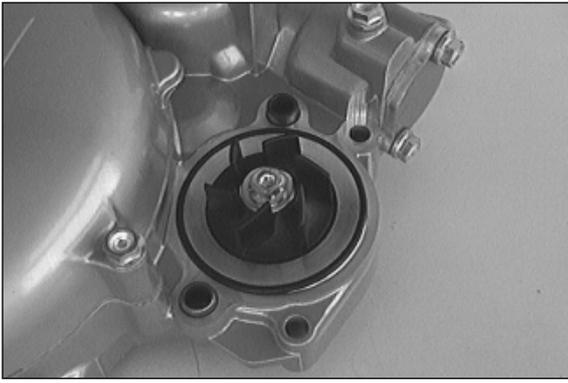
- Grease the bearing **9** of the adjusting lever, insert the adjusting lever **5** into the clutch cover and let it rest against the clutch cover (see illustration).
- Fix the centrifugal timer with the screw in the clutch cover. Secure the screw with Loctite 242.

NOTE: THE SCREW **7** IS TIGHTENED AFTER MOUNTING THE CLUTCH COVER.

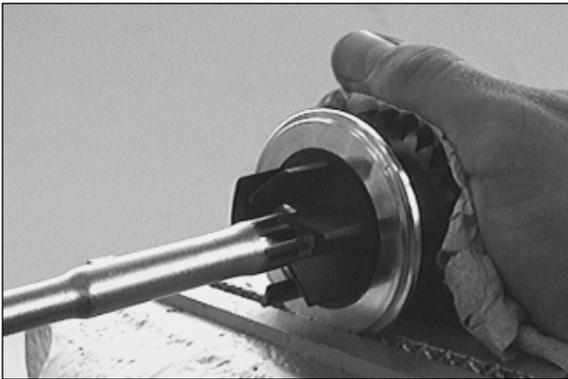
- Hook the pins of the adjusting lever into the track of the centrifugal timer.
- Mount the rocker arm **4** on the adjusting lever **5** and fix it with a screw.
- Insert the grooved ball bearing with the open side of the cage facing inwards into the clutch cover.
- Mount the cover **2** with a new gasket and new copper gaskets.

! **CAUTION** **!**

WHEN ASSEMBLING THE CLUTCH COVER MAKE SURE THAT THE FLAT SECTION **A** IS CORRECTLY ALIGNED TO PREVENT DAMAGING OF THE CLUTCH COVER.



- Insert the preassembled water pump (see chapter 4.13) and the new O-ring into the clutch cover.
- Fix the water pump cover with 2 short screws.



4.12 Water pump

- Clamp the water pump with the water pump wheel facing upwards into the vise (use protective jaws).

! CAUTION !

TO PREVENT DAMAGING OF THE WATER PUMP DRIVING WHEEL, NEVER CLAMP THE WATER PUMP DRIVING WHEEL ITSELF INTO THE VISE.

- Remove collar screw **1** together with the washer and pull the water pump wheel **2** upwards off the water pump shaft **3**.
- Take the water pump shaft out of the vise and pull the water pump shaft out of the water pump housing **4**.

SHAFT SEAL RING OF THE WATER PUMP SHAFT **5**

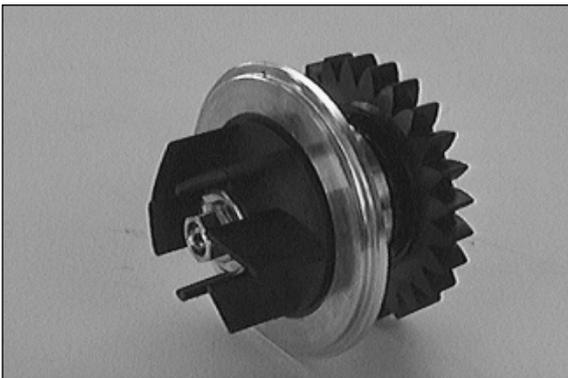
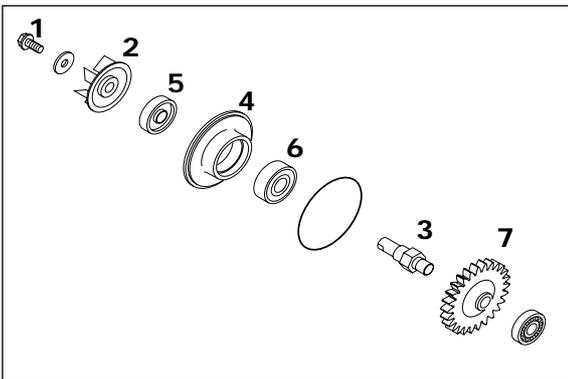
Use a screwdriver to lever the shaft seal ring out of the water pump housing. Apply Loctite 648 to the outside of the new shaft seal ring and press it into the housing with the label facing inwards.

GROOVED BALL BEARING OF THE WATER PUMP SHAFT **6**

The shaft seal ring **5** must be removed to exchange the grooved ball bearing. Use an appropriate mandrel to press the grooved ball bearing out of the water pump housing. Press a new grooved ball bearing all the way into the seat. Apply Loctite 648 to the outside of a new water pump shaft seal ring and insert it with the label facing inwards.

WATER PUMP DRIVING WHEEL **7**

The water pump driving wheel should not turn on the water pump shaft. Check the teeth of the water pump driving wheel for wear.



4.13 Preassembling the water pump

- Grease the shaft seal ring **5** and the grooved ball bearing **6** of the water pump shaft and insert the water pump shaft into the water pump housing **4**.
- Clamp the water pump shaft into the vise.

! CAUTION !

TO PREVENT DAMAGING OF THE WATER PUMP DRIVING WHEEL, NEVER CLAMP THE WATER PUMP DRIVING WHEEL ITSELF INTO THE VISE.

- Put the water pump wheel **2** on the shaft, apply Loctite 242 to the screw **1** and mount screw and washer.

4.14 Kickstarter

KICKSTARTER GEAR **7**

Check the bearing for play and grooves.

INTERMEDIATE KICKSTARTER GEAR **8**

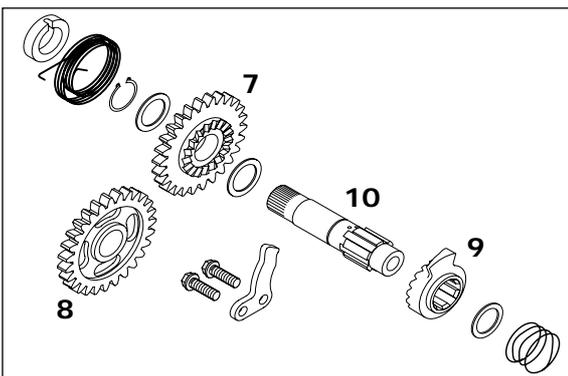
Check the bearing for play and grooves.

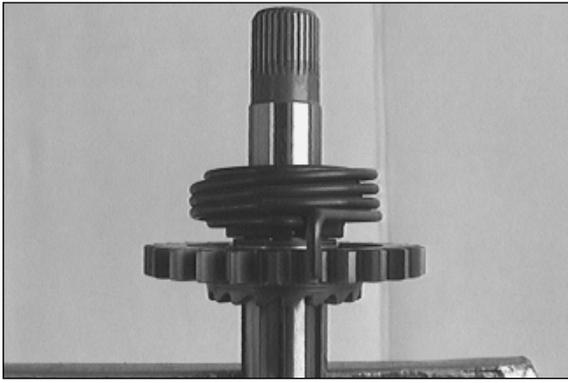
LOCKING PAWL **9**

Check for wear and damage.

KICKSTARTER SHAFT **10**

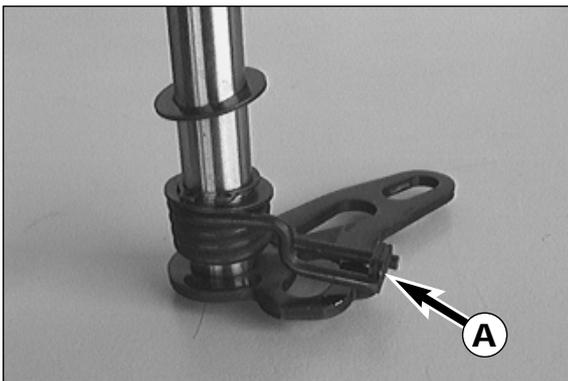
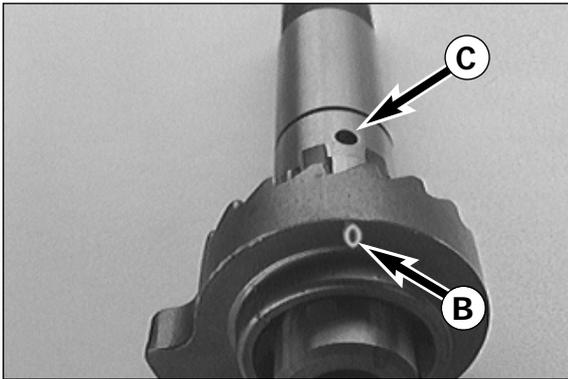
Check for wear and damage, paying particular attention to pivot points and teeth. Check the lubrication bores for free passage.





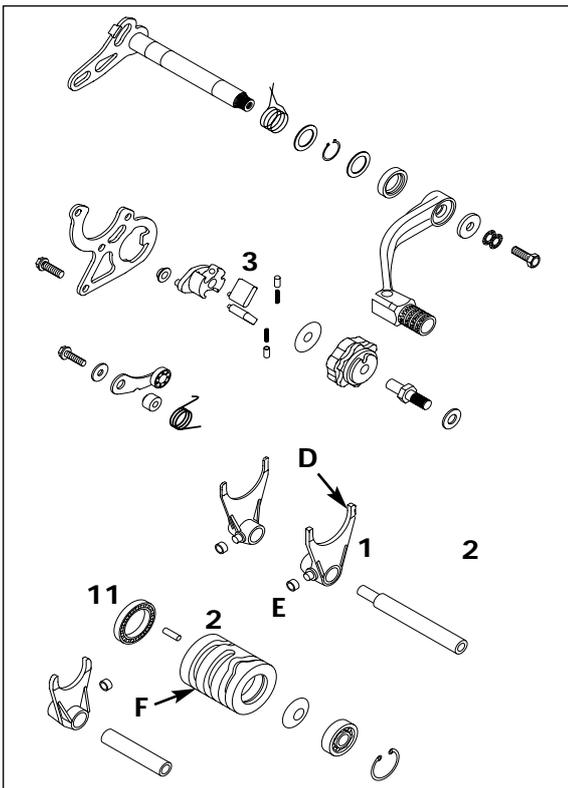
4.15 Preassembling the kickstarter shaft

- Mount the locking pawl on the kickstarter shaft. Ensure that the mark **B** on the locking pawl coincides with the bore **C** in the kickstarter shaft.
- Clamp the kickstarter shaft into the vise (use protective jaws) with the teeth end facing upwards.
- Mount the stop disc (17x24x1 mm) and the kickstarter gear with the ratchet teeth facing downwards.
- Put the stop disc (17x24x1 mm) on the shaft.
- Mount the circlip with the sharp edge facing upwards.
- Mount the kickstarter spring; insert the inner end of the kickstarter spring into the bore of the kickstarter shaft.
- Mount the driving hub; the slot must be positioned above the inner end of the kickstarter spring.
- Take the kickstarter shaft out of the vise.
- Mount the ratchet gear spring and the stop disc on the kickstarter shaft.



4.16 Preassembling the shift shaft

- Mount the return spring on the shift shaft; the two legs of the spring must rest against bracket **A** of the shift shaft.
- Put the disc (14,3x20x1 mm) on the shaft, then mount the circlip with the sharp edge facing upwards in the groove of the shift shaft.
- Put on the disc (14,3x20x1 mm).



4.17 Shift mechanism

SHIFT FORKS **1**

Check the blade **D** for wear. The sleeves **E** on the driving pin for the shift shaft must be free of pressure marks.

SHIFT ROLLER **2**

Check the shift grooves **F** for wear.

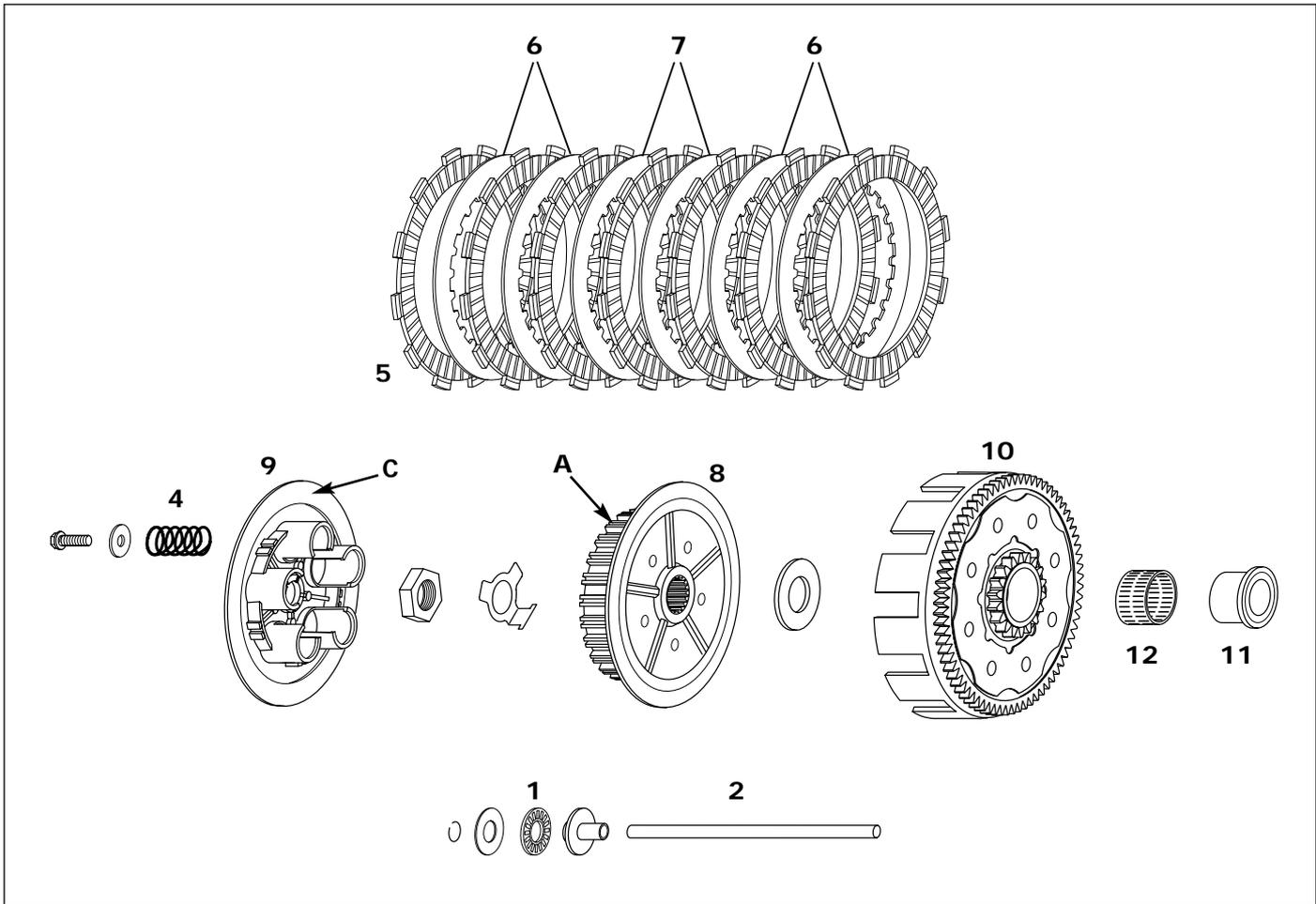
Ensure that the shift roller rests properly in the grooved ball bearing **11**.

RATCHETS **3**

Check the ratchets at the contact surface between the ratchets and the locking drum.

GROOVED BALL BEARING **11**

Check for smooth operation.



4.18 Clutch

The following parts must be checked for wear:

THRUST BEARING ①

PUSH ROD ②

CLUTCH SPRINGS ④

Minimum length 38 mm (1.496 in) (new 39 mm / 1.535 in); if necessary exchange all 5 springs.

7 LINING DISCS ⑤

Minimum thickness: 2.9 mm (0.114 in) (new 3,0 mm / 0.118 in). Discs must be plane.

4 CLUTCH DISCS - ALUMINIUM ⑥

Discs must be plane; check for mechanical damage.

2 CLUTCH DISCS - STEEL ⑦

Discs must be plane; check for mechanical damage.

INNER CLUTCH HUB ⑧

Check the bearing surface of the lining disc for damage.
Check the bearing surfaces ④ of the steel discs at the inner clutch hub. If the grooves are deeper than 0.5 mm (0.02 in) replace the inner clutch hub.

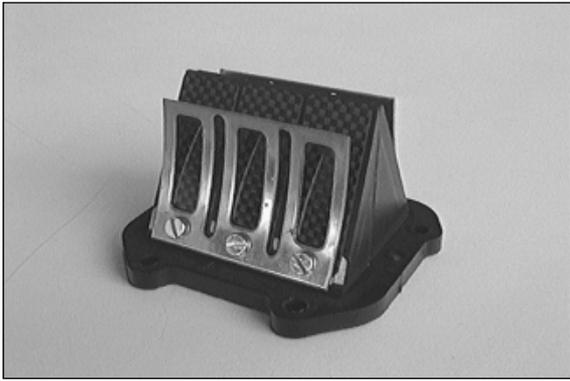
PRESSURE CAP ⑨

Check the bearing surface ③ of the lining disc for damage.

OUTER CLUTCH HUB ⑩

Check the stop faces of the lining discs for wear. The outer clutch hub must be replaced if the grooves are more than 0.5 mm (0.02 in) deep (see below).

Mount the inner ring ⑪ and the needle cage ⑫ and check for play.



4.19 Reed valve housing, intake flange

NOTE: THE REED PADDLES **A** SLOWLY LOSE THEIR TENSION DURING OPERATION, THUS REDUCING THE OVERALL PERFORMANCE. DAMAGED OR WORN REED PADDLES MUST THEREFORE BE REPLACED.

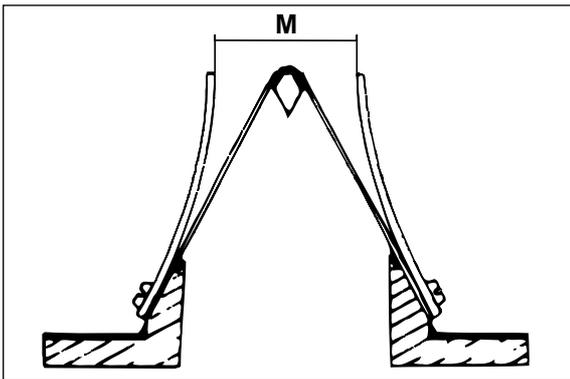
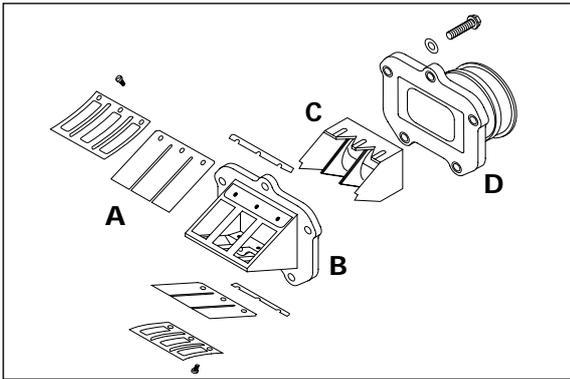
THE ENTIRE REED VALVE HOUSING MUST BE EXCHANGED IF THE SEALING SURFACES OF THE REED VALVE HOUSING **B** ARE ALSO DAMAGED.

! CAUTION !

WHEN MOUNTING THE REED VALVE HOUSING BE SURE TO APPLY LOCTITE 242 TO ALL SCREWS.

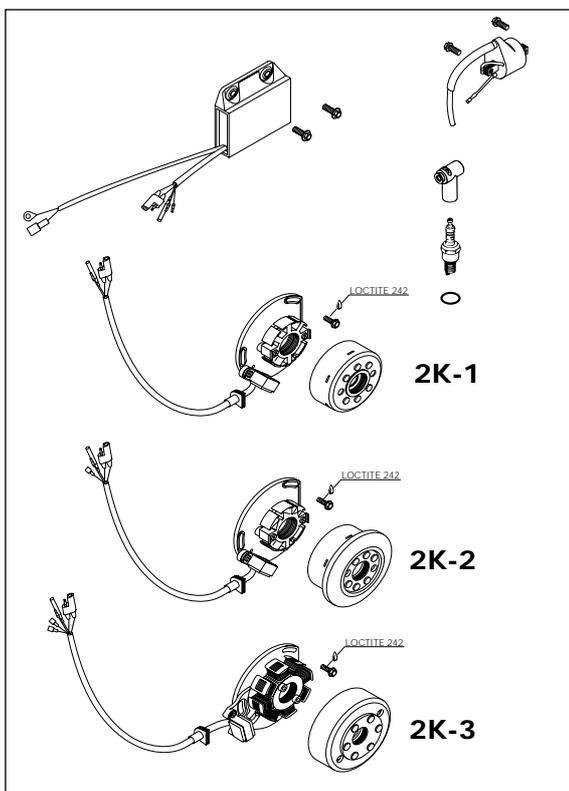
VELOCITY INSERT **C**
Check for tight fit and damage.

INTAKE FLANGE **D**
Check for cracks and other damage.



- Measure distance **M** between the stop plates with a sliding gauge.

DISTANCE **M** = 28 MM (1.1 IN)



4.20 Ignition

General information

The measurements described below will only reveal severe problems. Coil short circuits leading to weak ignition sparks or low generator output, respectively, can only be detected with the help of an ignition test bench. In the case of malfunction always check the cables and the plug and socket connections of the ignition system first.

Make sure to select the correct measuring range when performing measurements.

4.21 Spark plug (125: NGK R6918-B8/200: NGK BR8EG)

ELECTRODE DISTANCE: 0.60 mm (0.024 in)

INSULATOR

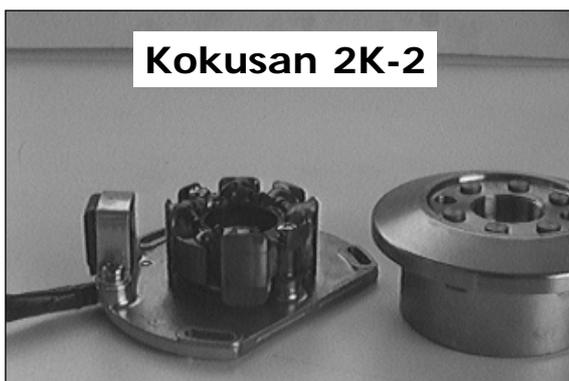
Check for cracks and fissures.

! CAUTION !

ALWAYS USE A SPARK PLUG WITH RESISTOR. OTHERWISE PROBLEMS CAN OCCUR IN THE CDI UNIT.



Kokusan 2K-1



Kokusan 2K-2



Kokusan 2K-3

4.22 Check stator and pulse generator

Use an ohmmeter to perform the following measurements:

IGNITION	MEASURE	CABLE COLOURS	RESISTANCE
2K-1	Pulser coil	red – green	100 Ω ± 20%
	Exciter	black/red – red/white	24,8 Ω ± 20%
2K-2	Pulser coil	red – green	100 Ω ± 20%
	Exciter	black/red – red/white	24,8 Ω ± 20%
	Charge coil	ground – yellow	0,74 Ω ± 20%
2K-3	Pulser coil	red – green	100 Ω ± 20%
	Exciter	black/red – red/white	12,7 Ω ± 20%
	Charge coil	ground – yellow	0,65 Ω ± 20%
		white – yellow	0,16 Ω ± 20%

NOTE: THE MEASURING MUST BE PERFORMED AT A TEMPERATURE OF 20° C. OTHERWISE SIGNIFICANT DEVIATIONS MUST BE EXPECTED.

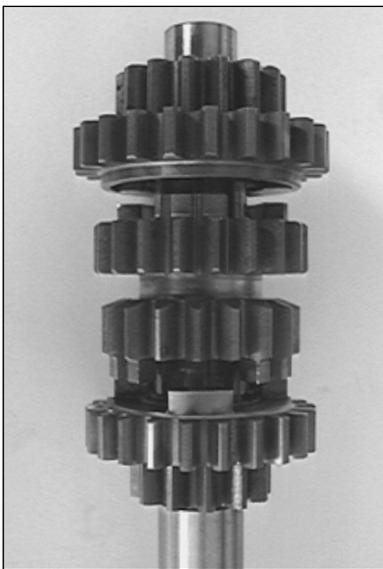
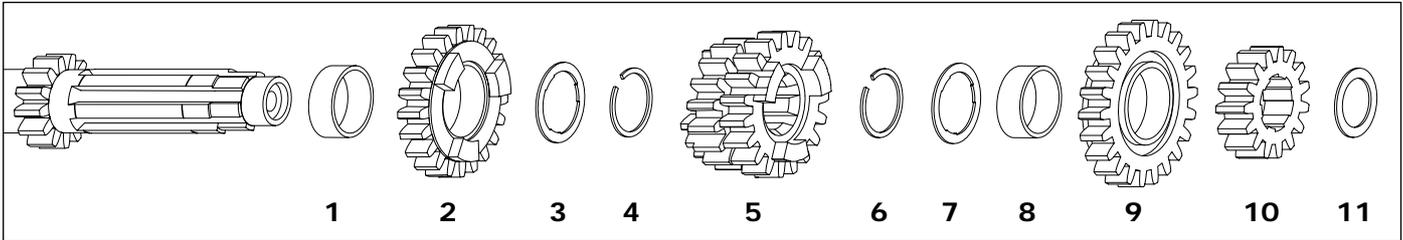
REPLACE THE STATOR AND/OR THE PULSE GENERATOR IF THE MEASURED VALUES DEVIATE SIGNIFICANTLY FROM THE SETPOINT VALUES.

4.23 Transmission

Clamp the main shaft or counter shaft, respectively, into the vise (use protective jaws). Remove the gears and check the following parts for wear and grooves:

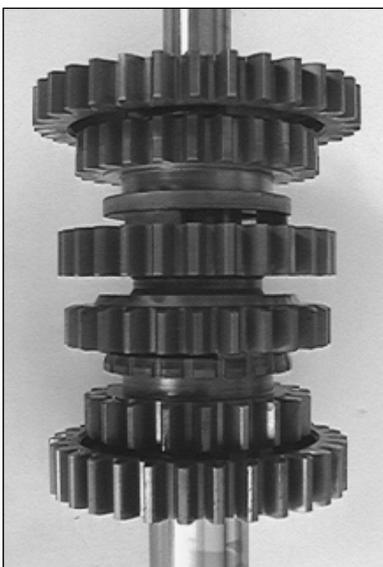
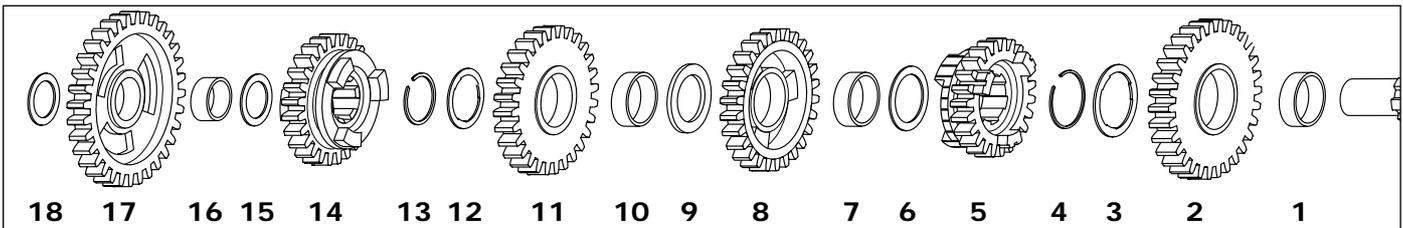
- A) BEARING SLEEVES
- B) PIVOT POINTS OF THE MAIN SHAFT AND COUNTERSHAFT AND PIVOT POINTS OF THE IDLER GEARS
- C) SHIFT DOGS OF THE GEARS
- D) TOOTH FACES OF ALL GEARS
- E) TOOTH PROFILES OF THE MAIN SHAFT AND COUNTERSHAFT AS WELL AS OF THE CORRESPONDING GEARS
- F) CHECK THE PROFILES OF ALL CONTROL GEARS FOR SMOOTH OPERATION

- Thoroughly clean all parts, exchange damaged components.
- New axial securing elements should be mounted whenever repair work is performed.



4.24 Assembling the main shaft

- Clamp the main shaft into a vise (use protective jaws) with the toothed end facing downwards.
- Carefully grease all parts before mounting them.
- Mount the bearing sleeve ① on the main shaft. Then put the 5th idler gear ② on the shaft with the shifting claws facing upwards.
- Put the stop disc ③ (22.2x27.8x1 mm) onto the shaft and mount the axial securing element ④.
- Mount the 3rd/4th sliding gear ⑤ with the small gear facing downwards and mount the axial securing element ⑥.
- Put the stop disc with the internal teeth ⑦ (22.2x27.8x1 mm) onto the shaft.
- Mount the bearing sleeve ⑧ and the 6th idler gear ⑨ with the recess for the shifting claws facing downwards.
- Mount the 2nd fixed gear ⑩ and the stop disc ⑪ (17.2x26x1 mm).
- Then check all gears for smooth operation.

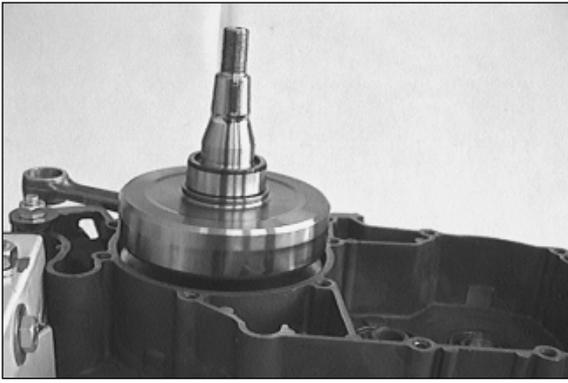


4.25 Assembling the countershaft

- Clamp the countershaft into the vise (use protective jaws!) with the toothed end facing downwards.
- All parts must be carefully greased before mounting.
- Mount the bearing sleeve ① and the 2nd idler gear ② with the recess for the shifting claws facing upwards.
- Mount the stop disc ③ (25.2x32x1 mm) with the internal teeth and the axial securing element ④ on the countershaft.
- Mount the 6th idler gear ⑤ with the shift groove facing upwards, then mount the stop disc ⑥ (22.2x28x1 mm).
- Mount the bearing sleeve ⑦, the 4th idler gear ⑧ and the stop disc ⑨ (22.2x30x2.5 mm).
- Mount the bearing sleeve ⑩, the 3rd idler gear ⑪, the stop disc ⑫ (22.2x27.8x1 mm) with internal teeth and the axial securing element ⑬.
- Mount the 5th sliding gear ⑭ with the shift groove facing downwards and the stop disc ⑮ (17.2x26x1 mm).
- Mount the bearing sleeve ⑯, the 1st idler gear ⑰ with the collar facing upwards and the stop disc ⑱ (17.2x26x1 mm).

5.0 Engine assembly

Cap.	Component / Component unit	Page
5.1	Mounting crankshaft	5-2
5.2	Transmission, shift mechanism	5-2
5.3	Assembly of engine housing	5-3
5.4	Engine sprocket	5-3
5.5	Ignition	5-3
5.6	Shift system	5-3
5.7	Kickstarter	5-4
5.8	Primary drive, clutch	5-5
5.9	Clutch discs, pressure cap	5-6
5.10	Clutch cover	5-6
5.11	Intake flange, reed valve housing	5-7
5.12	Piston, cylinder	5-7
5.13	Adjust dimension „X“	5-7
5.14	Adjust control flap (dimension „Z“)	5-7
5.15	Cylinder head	5-9
5.16	Ignition cover	5-9
5.17	Filling with gear oil	5-9
5.18	Measuring dimension „Y“	5-10



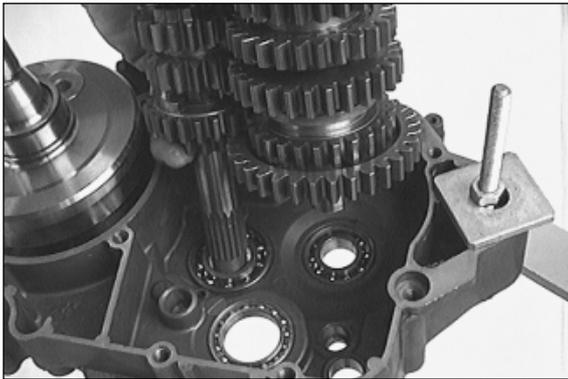
- Clamp the right housing half onto the mounting rack.

5.1 Mounting the crankshaft

- Oil the grooved ball bearing of the crankshaft.
- Insert the crankshaft into the grooved ball bearing from above and carefully push it as far as it will go.

! CAUTION !

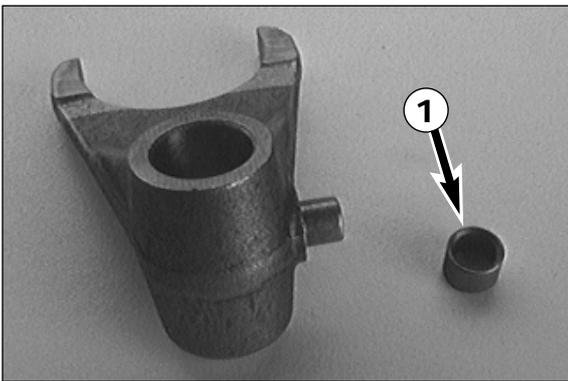
THE CONROD MUST BE DIRECTED TOWARDS THE CYLINDER WHEN THE CRANKSHAFT IS INSERTED!



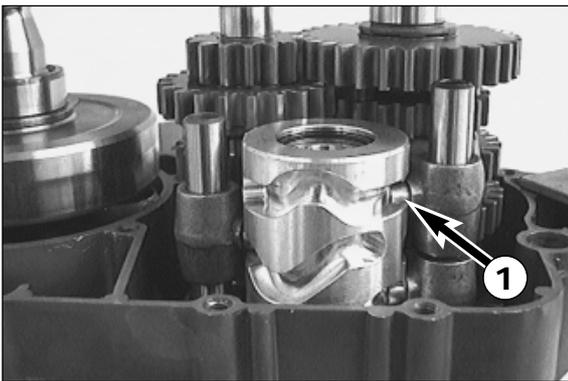
5.2 Transmission, shift mechanism

- Mount the stop disc at the bottom of the countershaft and fix it with grease to prevent it from slipping off the shaft.
- Align the teeth of the main shaft and the countershaft and insert both shafts together into the bearing seats.

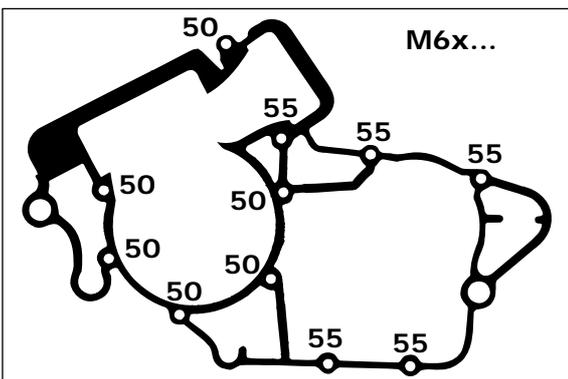
5
2



- Grease the driving pins of the shift forks and mount the rollers **1**.

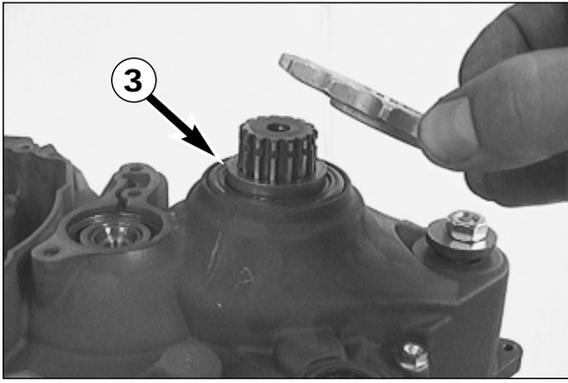


- Oil the blades of the shift forks and hook them into the sliding gears.
- Insert the shift roller into the bearing seat and hook the shift forks into the shift roller.
- Oil the shift rails and insert them into the shift forks (short rail facing the main shaft).



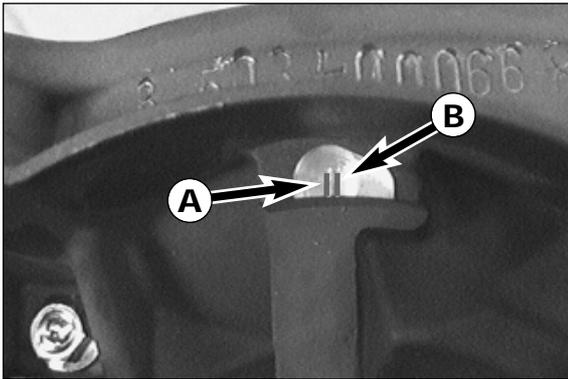
5.3 Assembling the housing

- Remove the engine holder at the mounting rack.
- Make sure that both dowels are properly located in the right housing half.
- Slightly grease the sealing surface of the housing and mount a new gasket.
- Make sure that the rubber is properly inserted into the left housing half and that the sleeves have not slipped off the driving pins of the shift forks.
- Grease the shaft seal rings of the left housing half and put on the left housing half.
- Check the housing gasket for proper fit.
- Grease the threaded sections and the contact surfaces at the heads of the housing screws. Insert the screws and assemble the housing (screw lengths are indicated in the illustration).
- Before and after tightening the housing screws with 8 Nm (6 ft.lb.) check all shafts for easy operation.
- Fix the engine on the mounting rack.



5.4 Engine sprocket

- Oil the O-ring ($\neq 1.78$ mm) and put it on the countershaft.
- Mount the distance bushing ③ in such a way that the O-ring is located in the chamfer.
- Put the chain sprocket onto the countershaft with the collar facing inwards and fix it with the circlip (sharp edge outwards).
- Tap the chain sprocket with a hollow mandrel or a similar tool to slightly pre-tension the O-ring and to press the circlip into the groove.

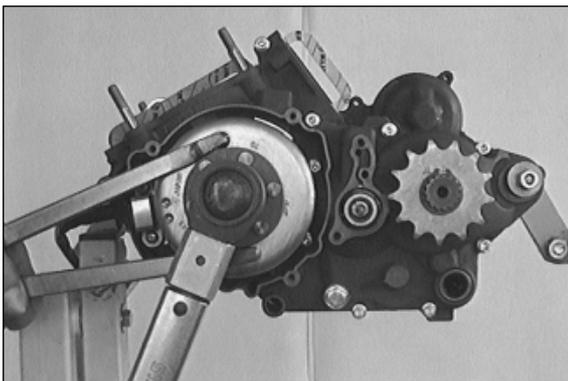


5.5 Ignition system

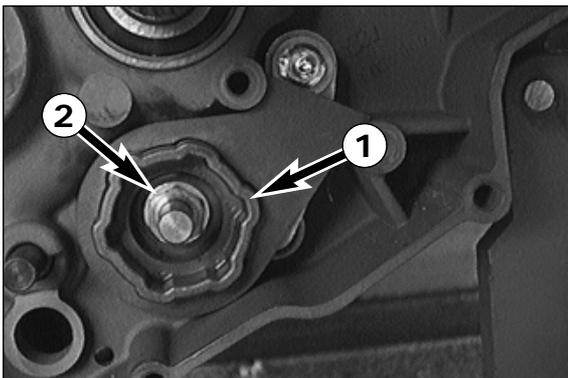
- Insert the woodruff key into the crankshaft.
- Fix the stator in the housing with the 3 screws without yet tightening the screws.
- Turn the stator so that mark of the stator coincides with the middle mark of the housing. Then tighten all three screws of the stator.

NOTE: THE LEFT MARKING ① BELONGS TO THE IGNITION SYSTEMS 2K-1 AND 2K-2. THE RIGHT MARKING ② BELONGS TO THE IGNITION SYSTEM 2K-3.

- Insert the cable guide into the housing.



- Mount the rotor.
- Mount the detent edged ring and the nut.
- Hold the rotor with the holding spanner and tighten the hexagon nut with 60 Nm / 44 ft.lb.).



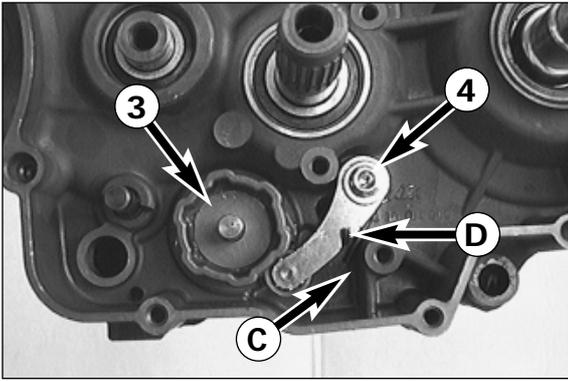
5.6 Shift drum locating device

- Mount the locking drum ① on the shift roller. Keep in mind that the pin of the shift roller must engage in the corresponding recess of the locking drum.
- Mount screw ②. Hold the locking drum with the special tool and tighten the screw.

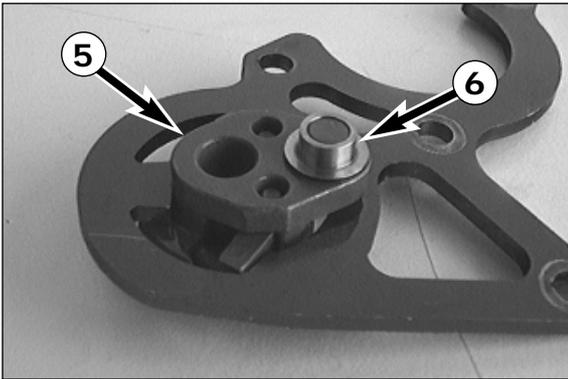
! CAUTION !

THE LOCKING DRUM MUST BE HELD WITH THE SPECIAL TOOL TO PREVENT DAMAGING OF THE BUSHINGS ON THE DRIVING PINS OF THE SHIFT FORKS

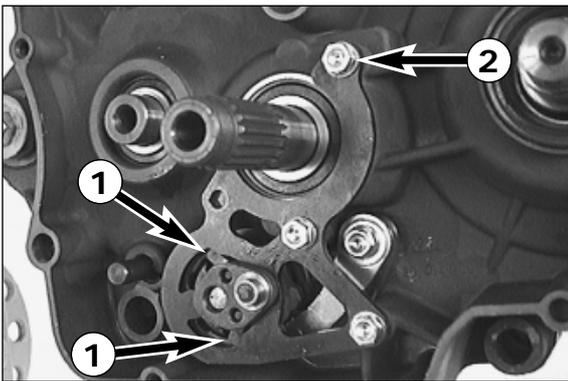
NOTE: IF THE LOCKING LEVER HASN'T BEEN REMOVED, PUSH IT SIDWAYS AGAINST THE RESISTANCE OF THE SPRING WHEN MOUNTING THE LOCKING DRUM.



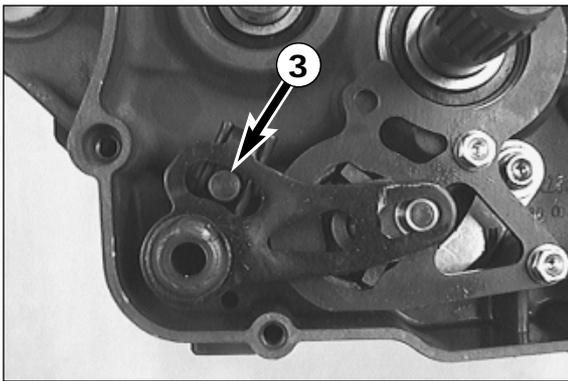
- Mount washer ③.
- Line the washer, the locking lever, the collar bushing (the small collar facing the head of the screw) and the locking spring upon screw ④. Hook the end ① of the locking spring into the locking lever.
- Apply Loctite 242 to screw ④ and use it to fix the locking lever. Make sure that the other end of the locking spring rests against the housing bracket ⑤.



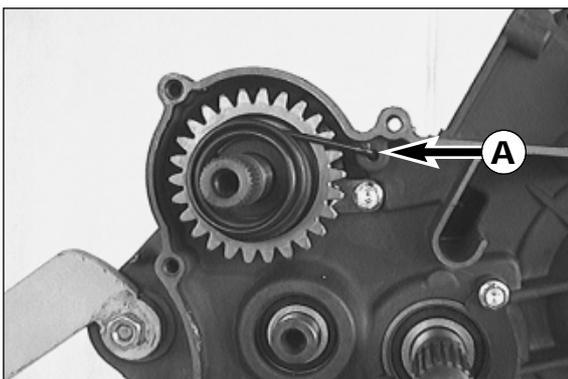
- Insert the ratchet carrier ⑤ into the gear shifting gate as shown in the illustration.
- Use a small quantity of grease to fix the collar bushing ⑥ on the ratchet carrier.



- Mount the ratchet carrier together with the gear shifting gate in the housing. The ratchets ① must be slightly squeezed to insert the ratchet carrier into the locking drum.
- Fix the gear shifting gate with three screws ② on the housing.

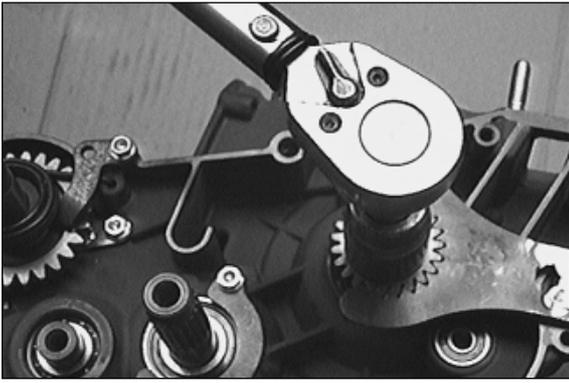


- Grease the shaft seal ring of the shift shaft.
- Oil the shift shaft and insert it into the housing. Do not forget the stop disc! When mounting the shift shaft make sure that both legs of the return spring rest against the prolongation of the shift rail ③.



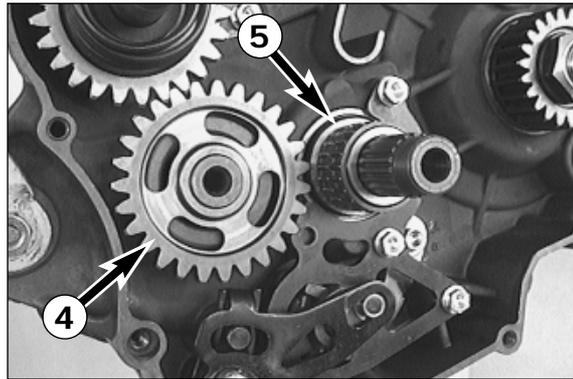
5.7 Kickstarter

- Grease the bearing bore of the kickstarter shaft in the housing.
- Insert the preassembled kickstarter shaft into the housing so that the locking pawl is located on the kickstarter shaft behind the release plate in the housing.
- Pretension the kickstarter spring clockwise and hook it into the corresponding bore in the housing ④.

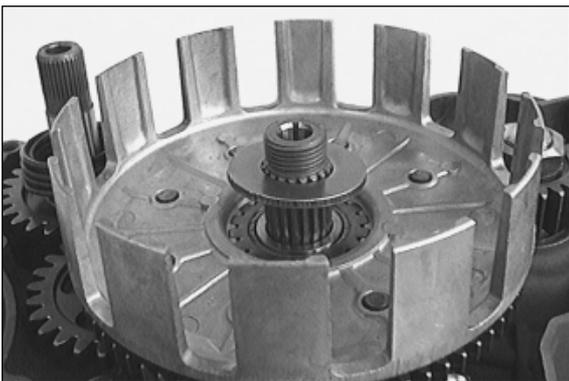


5.8 Primary drive, clutch

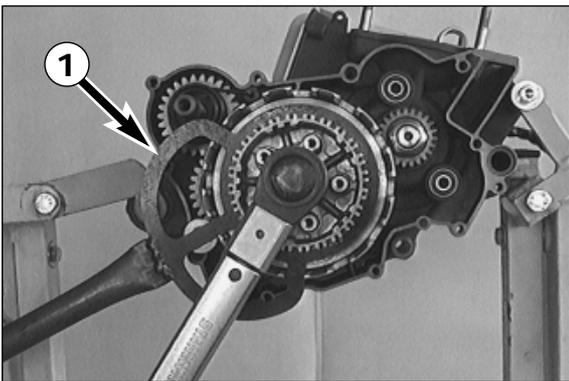
- Grease the shaft seal ring of the crankshaft.
- Put the oiled O-ring (25x2 mm) onto the crankshaft and mount the distance bushing with the chamfer facing the crank web so that the O-ring is located in the chamfer.
- Insert the woodruff key into the crankshaft.
- Put the primary gear onto the crankshaft with the collar facing the housing.
- Mount a new detent edged ring and a hexagon nut (LH thread).
- Mount the holding spanner for the primary gear and tighten the hexagon nut with 180 Nm (133 ft.lb.).



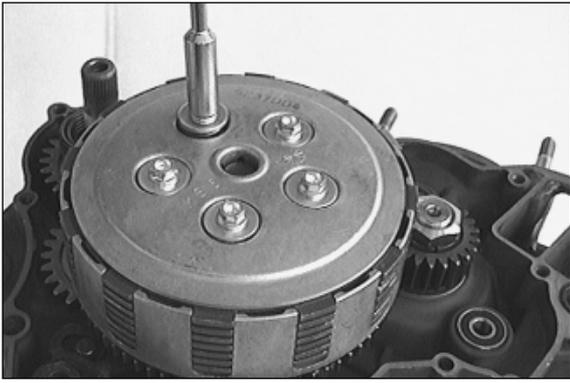
- Put the stop disc (17.2x26x1 mm) and the intermediate starter gear 4 onto the countershaft.
- Oil the bearing of the outer clutch hub 5 and put it onto the main shaft.



- Mount the outer clutch hub and the supporting disc (20x39.6x3 mm) on the main shaft.



- Mount the inner clutch hub, a new lock washer and the hexagon nut on the main shaft.
- Mount the clutch holder 1 and tighten the hexagon nut with 120 Nm (88 ft.lb.).
- Remove the clutch holder and secure the hexagon nut by bending the two brackets of the lock washer upwards.
- The bracket of the lock washer that meshes with the inner clutch hub must be carefully hammered down after tightening the hexagon nut to make sure that it rests properly against the inner clutch hub.

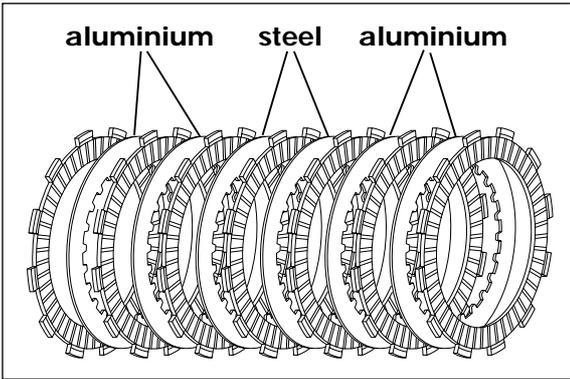


5.9 Clutch discs, pressure cap

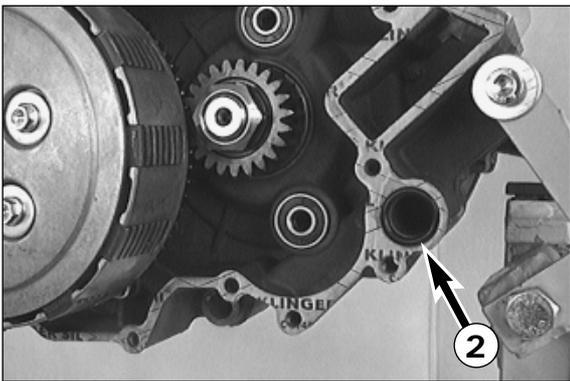
- Oil the thrust bearing and insert it into the main shaft.
- Properly oil the lining discs before mounting them.

NOTE: THESE ENGINES HAVE 4 CLUTCH DISCS OF ALUMINUM AND 2 CLUTCH DISCS OF STEEL. THESE MUST BE MOUNTED IN THE FOLLOWING ORDER:

- | | |
|---------------|--------------------------|
| 1 lining disc | 1 clutch disc (aluminum) |
| 1 lining disc | 1 clutch disc (aluminum) |
| 1 lining disc | 1 clutch disc (steel) |
| 1 lining disc | 1 clutch disc (steel) |
| 1 lining disc | 1 clutch disc (aluminum) |
| 1 lining disc | 1 clutch disc (aluminum) |
| 1 lining disc | |

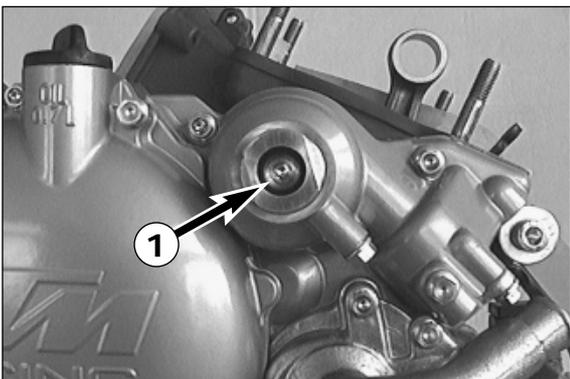
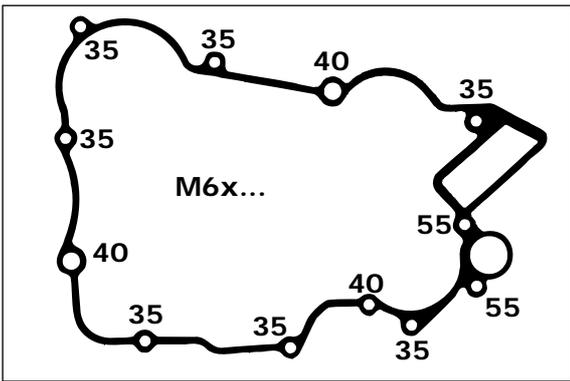


- One of the lining discs must be on top.
- Mount the pressure cap, then the clutch springs, the spring retainers and the collar screws.
- Tighten the collar screws crosswise. Apply a maximum of 6 Nm (4.5 ft.lb.) to prevent damaging of the threads in the inner clutch hub.

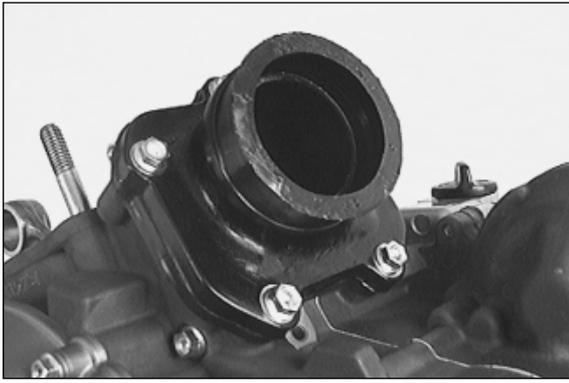


5.10 Clutch cover

- Check if both dowels have been mounted in the engine housing.
- Grease the shaft seal ring of the kickstarter shaft and fix the clutch cover gasket with a small quantity of grease.
- Fix the O-ring ② in the housing with a small quantity of grease.
- Carefully mount the preassembled clutch cover and press it on. Slightly rotate the crankshaft so that the centrifugal timer and the water pump can mesh with the primary gear.
- Mount the collar screws (screw lengths indicated in the illustration) and tighten with 8 Nm (6 ft.lb.).
- Check all shafts for smooth operation.

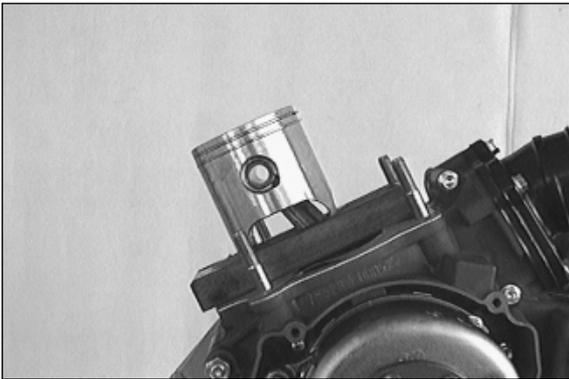


- Tighten the collar screw ① of the centrifugal timer.



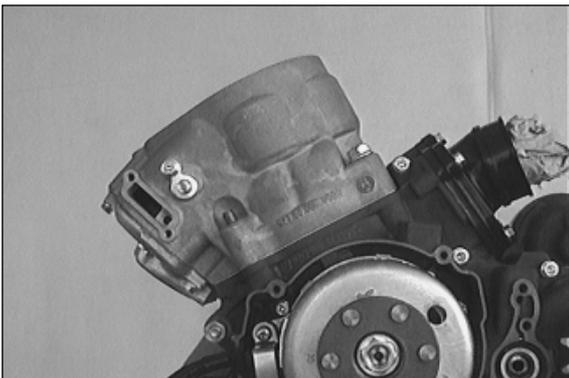
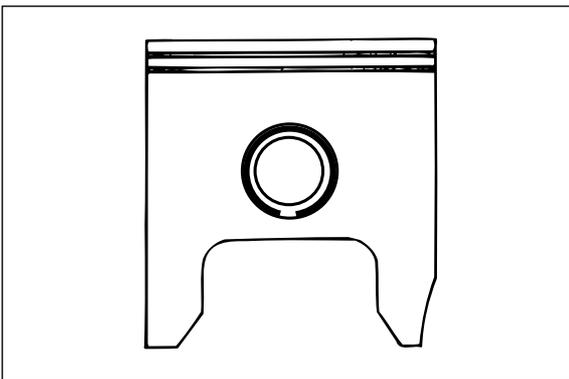
5.11 Reed valve housing, intake flange

- Cut off protruding sections of the housing gasket in the vicinity of the intake flange and the cylinder flange.
- Mount the reed valve housing and the intake flange and fix with 5 collar screws and corrugated washers.
- Close the intake flange with a clean cloth or an appropriate plug.

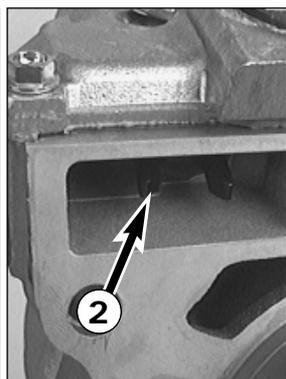
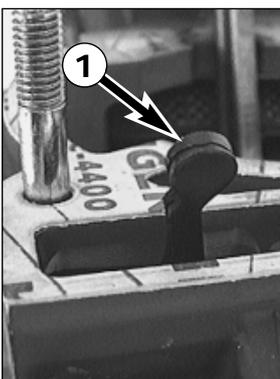


5.12 Piston, cylinder

- Carefully oil the sliding points of all components before mounting.
- Insert the needle bearing into the conrod eye, mount the piston (the arrow on the piston head indicates the direction of the exhaust port).
- Mount the piston pin and the wire circlips with the open side facing downwards (see illustration).
- Mount the cylinder base gaskets (recommended gasket thickness: approx. 0.60 mm / 0.024 in).
- Place the piston on a self-made wooden mounting device and align the piston rings.

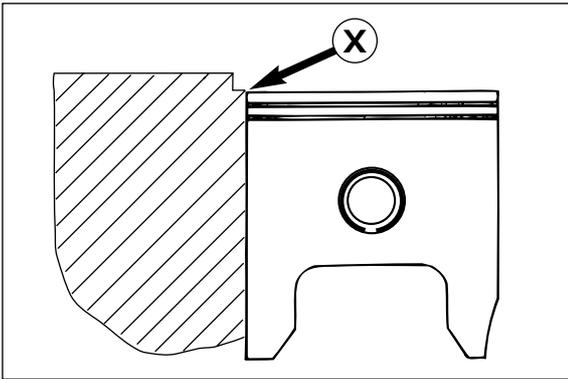


Mount the preassembled cylinder, remove the mounting device and clamp the cylinder crosswise down with two collar nuts.



! CAUTION !

WHEN MOUNTING THE CYLINDER MAKE SURE THAT THE ROCKER ARM **1** OF THE CENTRIFUGAL TIMER IS LOCATED IN THE CORRESPONDING RECESS **2** OF THE CONTROL SEGMENT IN THE CYLINDER. IF NECESSARY REMOVE THE SMALL CAP ON THE RIGHT SIDE OF THE CYLINDER AND CHECK.



5.13 Adjusting dimension „X“

NOTE: DIMENSION „X“ IS THE DISTANCE BETWEEN THE UPPER PISTON EDGE AND THE OFFSET UPPER CYLINDER EDGE WITH THE CYLINDER CLAMPED DOWN AND THE PISTON IN POSITION TDC. DIMENSION „X“ MUST BE ADJUSTED PARTICULARLY CAREFULLY BY INSERTING CYLINDER BASE GASKETS OF DIFFERENT THICKNESSES.

! CAUTION !

IF DIMENSION „X“ IS TOO LARGE, THE COMPRESSION VALUE WILL DECREASE, THUS REDUCING THE OVERALL ENGINE OUTPUT. IF DIMENSION „X“ IS TOO SMALL, THE ENGINE WILL „PINK“ AND OVERHEAT.

- Position the sliding gauge on the cylinder and turn the piston to TDC by turning the flywheel. Read the value indicated by the sliding gauge.

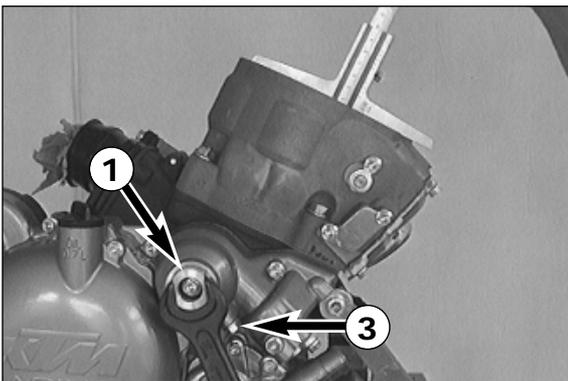
125 CCM: DIMENSION „X“ = 0.60 MM (0.024 IN)
200 CCM: DIMENSION „X“ = 0.55 MM (0.022 IN)

- Adjust dimension „X“ by adding or removing cylinder base gaskets.

NOTE: ADDING OF CYLINDER BASE GASKETS INCREASES AND REMOVING CYLINDER BASE GASKETS REDUCES DIMENSION „X“.

- Mount the two remaining collar nuts at the cylinder base and tighten all 4 collar nuts with 30 Nm (22 ft.lb.).

5
8



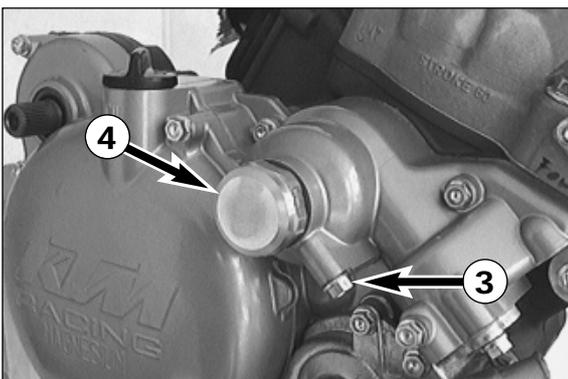
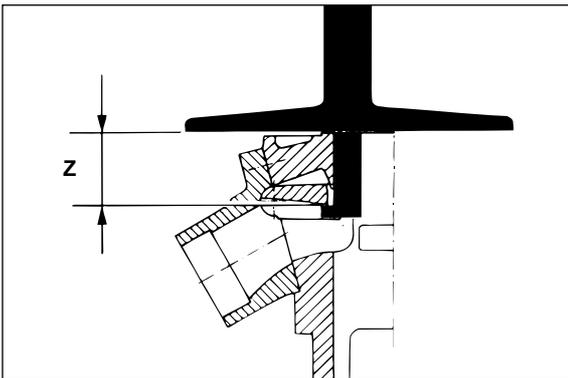
5.14 Adjusting the control flap (dimension „Z“)

NOTE: DIMENSION „Z“ IS THE DISTANCE BETWEEN THE LOWER EDGE OF THE CONTROL FLAP AND THE UPPER EDGE OF THE CYLINDER, MEASURED IN THE MIDDLE OF THE EXHAUST PORT.

125 CCM: Z = 42.0 MM + 0.2 / - 0.6 MM
200 CCM: Z = 46.0 MM + 0.2 / - 0.6 MM

125 CCM: Z = 1.65 IN + 0.008 / - 0.024 IN
200 CCM: Z = 1.81 IN + 0.008 / - 0.024 IN

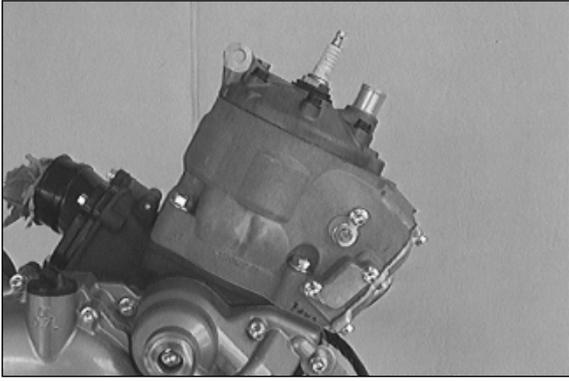
- Twist out the locking screw ③.
- Adjust the depth gauge to the indicated value and fix it in this position.
- Insert the depth gauge into the cylinder.
- Turn the bearing carrier ① at the clutch cover so that the control flap rests against the depth gauge.



- Mount the locking screw ③.
- Mount the hexagon cap nut ④ of the centrifugal timer together with the seal ring.

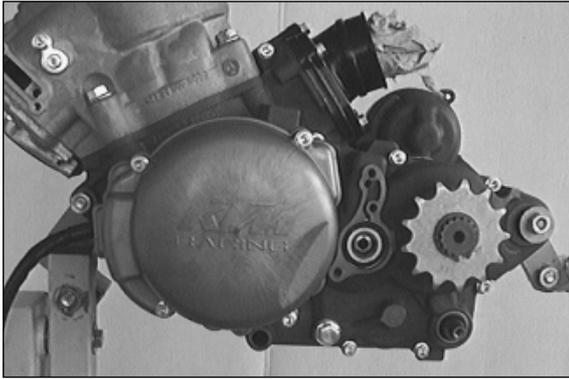
! CAUTION !

WHEN MOUNTING THE HEXAGON CAP NUT MAKE SURE THAT THE BEARING CARRIER OF THE CENTRIFUGAL TIMER IS NOT TURNED ANY MORE. OTHERWISE DIMENSION „Z“ MUST BE ADJUSTED ONCE AGAIN.



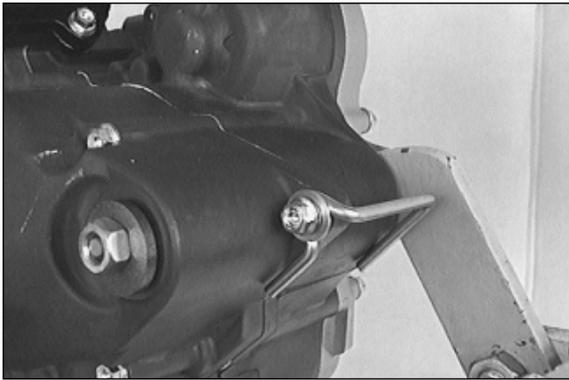
5.15 Cylinder head

- Clean the sealing surfaces of the cylinder and the cylinder head.
- Insert a new O-ring into the corresponding groove of the cylinder and mount a new cylinder head gasket.
- Mount the cylinder head with the water nozzle facing the exhaust side and slightly turn it back and forth to prevent crushing of the O-ring.
- Mount the collar screws with new copper gaskets and tighten them crosswise, taking 3 turns to achieve the total tightening torque of 18 Nm (13 ft.lb.).
- Initially, the screws should only be tightened until the first slight resistance is felt.
- Insert the spark plug and tighten with 20 Nm (15 ft.lb.).



5.16 Ignition cover

- Apply silicone to several points of the gasket to fix it in the ignition cover.
- Fix the ignition cover with 4 collar screws.



- Use the collar screw to mount the wire bracket for the carburetor air hoses on the housing.



5.17 Filling in the gear oil

- Remove the plug at the clutch cover and fill in 0.7 l engine oil (20W-40).
- Mount the plug and check the engine for leaks.

NOTE: IF YOUR ENGINE HAS A HYDRAULICALLY OPERATED CLUTCH, IT IS RECOMMENDED TO FILL IN GEAR OIL ONLY AFTER INSTALLATION OF THE ENGINE AND MOUNTING OF THE DRIVING CYLINDER OF THE CLUTCH.

OTHERWISE THE OIL WILL FLOW OUT THROUGH THE HOLLOW MAIN SHAFT AS SOON AS THE ENGINE IS TILTED.



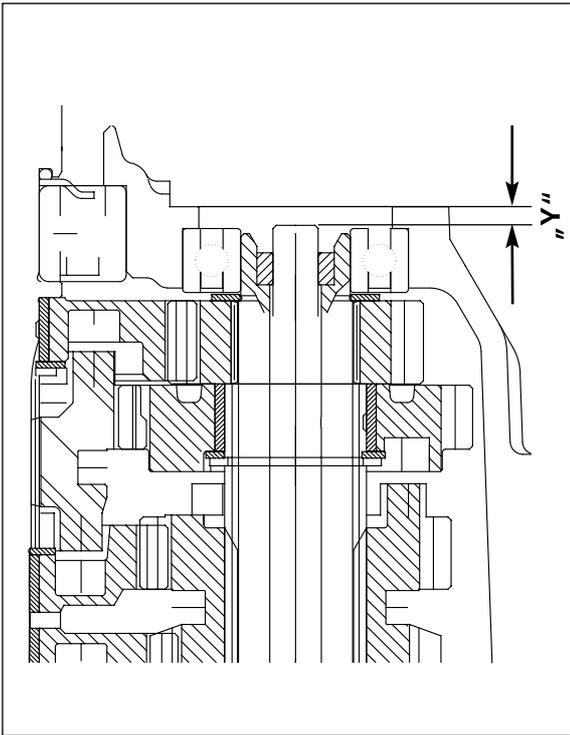
5.18 Measuring dimension „Y“

- Swing the ignition side up.
- Oil the push rod and push it into the main shaft as far as it will go.
- Then use a sliding gauge to measure the distance between the bearing surface of the driving cylinder of the clutch and the push rod.
- Write down dimension „Y“ and use an appropriate gasket (see table) when mounting the driving cylinder of the clutch.

NOTE: THE GASKET OF THE DRIVING CYLINDER OF THE CLUTCH MUST BE APPROPRIATELY THICK TO ENSURE SMOOTH CLUTCH RELEASE. FOR THIS PURPOSE MEASURE DIMENSION „Y“.

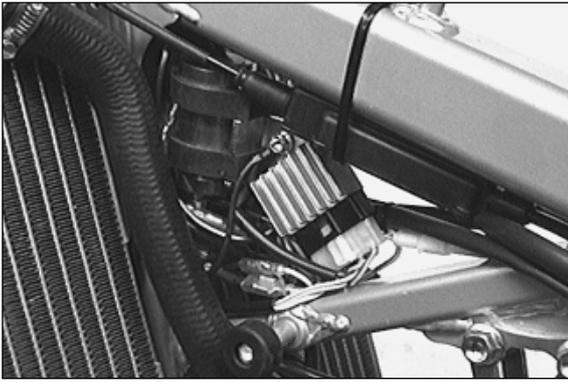
Dimension „Y“	Gasket thickness
2.5 - 2.8 mm (0.1 - 0.11 in)	0.75 mm (0.03 in)
2.8 - 3.0 mm (0.1 - 0.11 in)	0.50 mm (0.02 in)
3.0 - 3.3 mm (0.1 - 0.11 in)	0.30 mm (0.012 in)

- Mount kickstart and shift lever.



6.0 Electrical

Cap.	Component / Component unit	Page
6.1	Checking voltage regulator-rectifier (Shindengen)6-2
6.2	Checking voltage regulator (Kokusan)6-2
6.3	Checking capacitor6-2
6.4	Ignition coil6-2
Wiring diagramms		Cap. 9



6.1 Checking the voltage regulator-rectifier (Shindengen)

- Start the engine and switch on the low beam.
- Connect a voltmeter to the two terminals of the capacitor (red/white cable = positive, brown cable = negative).
- Accelerate the engine to a speed of 5000 r.p.m. and read off the voltage.

NOMINAL VALUE: 14.0 - 15.0 V

In the case of a significant deviation from the nominal value:

- Check the capacitor
- Check the connector between the stator and the voltage regulator-rectifier and the connector between the voltage regulator-rectifier and the cable tree.
- Check the stator.
- Replace the voltage regulator-rectifier.



6.2 Checking the voltage regulator (Kokusan)

A defect voltage regulator can cause different kinds of trouble:

- NO VOLTAGE IN THE CIRCUIT
In this case, the voltage regulator must be disconnected at idle speed. The voltage regulator is defect if the power consumers now work properly. If the power consumers are still not supplied with power, the switch, the wiring harness or the ignition system must be checked for defects.
- EXCESSIVE VOLTAGE IN THE CIRCUIT
The bulbs burn out. In this case the voltage regulator must be replaced.



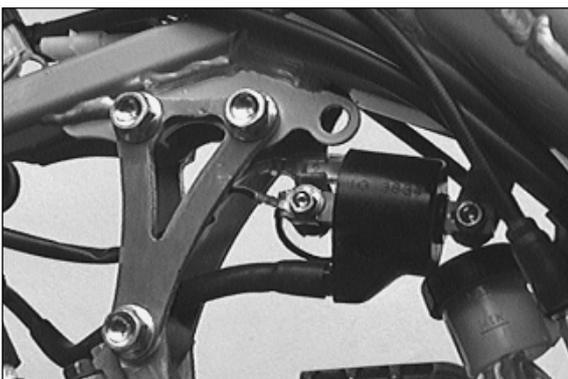
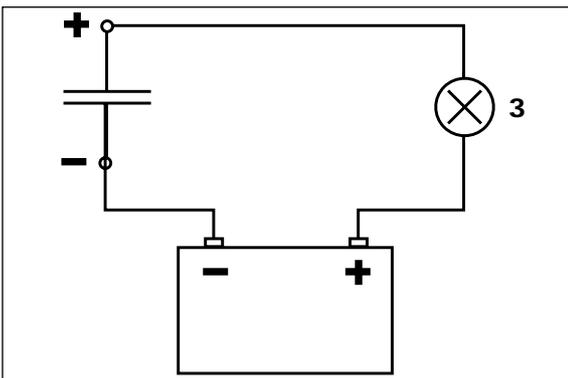
6.3 Checking the capacitor

- Discharge the capacitor by bridging the two terminals with a screwdriver and remove.
- Connect the negative pole of a 12V battery with the negative terminal of the capacitor. The connection between the positive pole of the battery and the positive terminal of the capacitor (marked +) is made with a test lamp .
- When the power circuit is closed, the test lamp must begin to light up. As capacitor charging increases, the brightness of the test lamp must decrease.
- The test lamp must go out after 0,5-2 seconds (depending on the lamp capacity).
- If the test lamp does not go out or does not light up at all, the capacitor is faulty.

! CAUTION !

DISCHARGE THE CAPACITOR BEFORE AND AFTER EACH TEST.

WHEN INSTALLING THE CAPACITOR, MAKE SURE THAT THE TERMINALS ARE CONNECTED IN ACCORDANCE WITH THEIR MARKINGS (CONNECT RED/WHITE CABLE TO + TERMINAL)



6.4 Ignition coil

- Disconnect all cables and remove the spark plug connector.
- Use an ohmmeter to measure the following values.

MEASUREMENT	CABLE COLOURS	RESISTANCE
primary coil	blue/white - ground	0,425 - 0,575 Ω
secondary coil	blue/white - ignition wire	10,8 - 16,2 k Ω

NOTE: THE INDICATED SETPOINT VALUES CORRESPOND TO A TEMPERATURE OF 20° C. REPLACE THE IGNITION COIL IF THE MEASURED VALUES DEVIATE SIGNIFICANTLY FROM THE SETPOINT VALUES.

7.0 Trouble shooting

Cap.	Component / Component unit	Page
7.1	Trouble shooting	7-2

7.1 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 fails to start	Operating error	Open fuel tap, switch o ignition, replenish fuel, do not use choke
	Fuel supply interrupted	Close fuel tap, loosen fuel hose at carburettor, lead into a basin and open fuel tap, – if fuel leaks out, clean carburettor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap
	Electrode distance too great	Reduce electrode distance (0.60 mm)
	Plug fouled by oil, wet or bridged	Clean spark plug or renew
	Ignition wire or spark plug connector damaged	Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system
	Kill button wire or short-circuit switch faulty	Disconnect yellow-black coloured cable from CDI and check ignition spark. If the spark is O.K. repair defective part of cable, ignition lock or ignition switch
	Loose ignition cable connectors	Inspect cable connectors
	Spark too weak	Examine ignition system
Water in the carburetor and jets blocked	Dismantle and clean carburetor	
Engine without idle running	Idle adjusting screw out of adjustment	Readjust idle running or replace idle adjusting screw
	Ignition system damaged	Examine ignition system
	Wear	Overhaul engine
Engine has not enough power	Charred glass fiber yarn in silencer	Renew filling
	Air filter obstructed	Clean or renew airfilter
	Control flap does not work	Check control flap, joint rod and centrifugal timer
	Fuel supply partly interrupted or blocked	Blow through fuel pipe and clean carburetor
	Loss of compression through loose spark plug	Tighten spark plug
	Exhaust system damaged	Check exhaust system for damage
	Engine has not enough preignition	Check and adjust ignition

TROUBLE	CAUSE	REMEDY
Engine has not enough power	Reed paddles tensionless or damaged, surface of reed valve housing damaged Wear Electronical ignition timing faulty	Replace reed paddles or reed valve housing Overhaul engine Have ignition system checked
Engine revs not high and running with four stroke cycle	Carburetor overflows if level adjust too high, float needle seating is dirty or enlarged Loose carburetor jets	Clean carburetor, if necessary replace float needle and adjust level Tighten jets
High rpm misfiring	Incorrect heat range spark plug or low quality spark plug Incorrect or faulty spark plug connector Loose, corroded or non conductive ignition socket connector	Refer to technical data section Test and/or replace spark plug connectors correct type Check and seal with silicon
Engine splutters into the carburetor	Lack of fuel Spark plug with incorrect heat value (Ignition by incandescence) Engine takes air out of control	Clean fuel pipes, examine tank aeration and clean Fit correct spark plug Check intake flange and carburettor if firmly settled
Engine overheating	Insufficient liquid in cooling system Cooling system not or insufficiently bled Radiator fins clogged Frothing in cooling system Pinched or kinked water hoses Incorrect ignition timing because of loose stator screws Incorrect dimension „X“	Top up coolant and bleed cooling system check cooling system for leaks Bleed cooling system (see operating instructions) Clean radiator fins with water jet Renew coolant using branded anti-freeze/anti-corrosive Replace with correct routed hoses Readjust to correct ignition timing specifications, secure screws properly with Loctite 242 Measure and adjust to correct specification
Emission of white smoke (steam)	Cylinder head or O-ring of cylinder head gasket leaks	Check cylinder head, replace O-ring
Excessive oil escapes from transmission breather tube	Excessive oil quantity in transmission Water pump shaft seal ring or right-hand crankshaft seal ring defect Silicon O-rings of control roller or of control flap leaks	Correct transmission oil level Replace shaft seal ring and change gear oil, check coolant Replace O-rings
All switched on lamps blown out	Voltage regulator faulty	Control connections of voltage regulator. Check voltage regulator

8.0 Technical data / maintenance schedule

Cap.	Component / Component unit	Page
8.1	Technical data - engine	8-2
8.2	Tolerance, assembly clearance	8-3
8.3	Tightening torques - engine	8-3
8.4	Gasket thicknesses	8-3
8.5	Basic carburetor setting	8-3
8.6	Maintenance schedule	8-4

8.1 TECHNICAL DATA - ENGINE 125 / 200 '98

	125 SX	125 EXC	125 EGS	200 MXC	200 EXC, EGS
Engine					
Design	Liquid-cooled single-cylinder two-stroke engine with intake and exhaust control				
Piston displacement	124.8 ccm				
Bore / stroke	54.25 / 54 mm (2.136 / 2.126 in)				
Fuel	SUPER fuel, research octane no 98, mixed with high grade two stroke oil				
Oil / gasolin ratio	1:40 when using high grade two stroke oil (Shell Advance Racing X). When in doubt, please contact your importer				
Crankshaft bearing	1 deep-groove ball bearing / 1 cylinder roller bearing				
Connecting rod bearing	needle bearing				
Piston pin bearing	needle bearing				
Piston	forged piston				
Piston ring	one plain compression ring				
Dimension "X" (upper edge piston, upper edge cylinder)	0.60 mm (0.024 in)				
Ignition timing	1.4 mm (0.055 in) (16.5°) BTDC				
Spark plug	NGK R 6918-B8				
Electrode gap	0.60 mm (0.024 in)				
Dimension "Z" (height of the control flap)	42 mm (1.65 in)				
Primary drive	straight cut spur gears, primary ratio 23:73				
Clutch	multiple disc clutch in oil bath				
Transmission	6 speed, claw actuated				
Gear ratio					
1st gear	13 : 32	12 : 33	12 : 33	13 : 32	12 : 33
2nd gear	15 : 30	15 : 31	15 : 31	15 : 30	15 : 31
3rd gear	17 : 28	17 : 28	17 : 28	17 : 28	17 : 28
4th gear	19 : 26	19 : 26	19 : 26	19 : 26	19 : 26
5th gear	21 : 25	21 : 25	21 : 25	21 : 25	22 : 25
6th gear	22 : 24	20 : 20	20 : 20	22 : 23	22 : 20
Gear lubrication	0.7 l engine oil 20W-40 (Shell Advance V SX4)				
Rear wheel ratio	13:50	13:50	14:40	14:50	14:48 14:50
Available chain sprockets	13t / 14t / 15t for chain 5/8 x 1/4"				
Available final sprockets	38t / 40t / 42t / 45t / 48t / 50t / 52t for chain 5/8 x 1/4"				
Coolant	1.2 litres, 40% anti freeze, 60% water, at least -25 °C (-13 °F)				
Ignition system	KOKUSAN 2K-1	USA: KOKUSAN 2K-2 EU: KOKUSAN 2K-3	KOKUSAN 2K-3	KOKUSAN 2K-2	KOKUSAN 2K-3
Generator output	no generator	12V 40 W 12V / 110 W	12V 110 W	12V 40 W	12V 110 W
Carburetor	flat-slide carburetor, carburetor setting see table				
Air-filter	wet foam type air filter insert				

8.2 TOLERANCES AND FITTING CLEARANCES	
Piston fitting clearance	125 = 0.06 mm 200 = 0.085 mm
Piston ring end gap	max. 0.40 mm
Connecting rod bearing - radial clearance	0.025-0.035 mm
Transmission shafts end float	0.2-0.4 mm
Clutch springs - length	new = 39 mm, minimum length = 38 mm

8.4 GASKET THICKNESSES	
Crankcase	0.5 mm
Clutch cover	0.5 mm
Clutch driving cylinder	0.30 / 0.50 / 0.75 mm
Cylinder bottom gasket	as required
Available bottom gasket	0.15 / 0.2 / 0.5 / 0.7 mm
Cylinder-head gasket	1.10 mm + O-ring

8.5 BASIC CARBURETOR SETTING			
	125 SX, EXC	200 EXC EUROPE	200 EXC, MAX USA
Carburetor	Keihin PWK 39	Keihin PWK 39	Keihin PWK 39
Carburetor setting number	290597	280197	280597
Main jet	190 (188)	180 (178, 182)	180 (178, 182)
Idling jet	48	45	45
Starting jet	85	85	85
Jetneedle	NOZH (N1EH)	N1EH (NOZH)	N1EH (NOZH)
Needle position from top	III	II	III
Throttle valve	6	6	6
Air adjustment screw open	1.5 turn	1.5 turn	1.5 turn

8.3 TIGHTENING TORQUES

Flange bolts - cylinder-head	M 7	18 Nm (13 ft.lb)
Nuts-cylinder base	M 8	30 Nm (22 ft.lb)
Flywheel collar nut	M 12x1	60 Nm (44 ft.lb)
Nut for primary sprocket (LH thread)	M 16x1.5	180 Nm (133 ft.lb)
Nut for inner clutch hub	M 18x1.5	120 Nm (88 ft.lb)
Crankcase and clutch cover bolts	M 6	8 Nm (6 ft.lb)
Spark plug	M 14x1.25	20 Nm (14 ft.lb)
Nut swingarm pivot	M 14	100 Nm (74 ft.lb)
Other screws	M 6 M 8 M 10	10 Nm 30 Nm 50 Nm (7 ft.lb) (22 ft.lb) (37 ft.lb)

8.6 PERIODIC LUBRICATION AND MAINTENANCE SCHEDULE

125-380 7.97



AT A REGULAR COMPETITION USE OF THE BIKE, THE 4000 KM (2500 MILES) SERVICE IS TO BE DONE AFTER EVERY RACE

KTM rider

KTM dealer

before each start

after washing

1st service after 1000 km (600 miles) or 10 hours

after 2000 km (1250 miles) or 20 hours

after 4000 km (2500 miles) or once a year

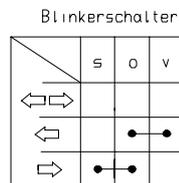
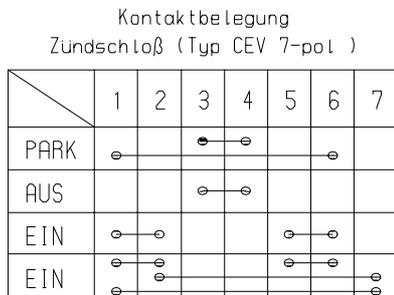
at least once a year

Check transmission oil level	•				
Change transmission oil			•		•
Check spark plug and electrode gap				•	•
Change spark plug					•
Functional testing of the exhaust control system					•
Check intake manifold for leaks and cracks	•				•
Drain and clean carburetor float chamber		•			•
Adjust idling			•		•
Check breather hoses of engine case and gas tank for correct position without buckles			•		
Clean and check airfilter element, box and carburetor connection boot		•			•
Check chain, sprockets, guides and chain wear	•		•		•
Clean and oil chain	•				•
Check chain tension	•		•		•
Check coolant level	•		•		•
Check quality of antifreeze					•
Check cooling system for leaks - visual inspection	•		•		•
Check exhaust system for cracks and leaks					•
Replace glass fiber yarn of silencer					•
Check of the exhaust suspension system					•
Check brake fluid level front and rear	•		•		•
Change brake fluid					•
Check thickness of disc brake pads	•				•
Check brake discs					•
Inspect condition and installation of front and rear brake hoses	•		•		•
Check free travel and free movability of hand brake lever and foot brake lever	•		•		•
Check the oil level in the master cylinder of the hydraulic clutch (125/200)				•	•
Change the oil of the hydraulic clutch (125/200)					•
Check telescopic fork action	•				•
Check telescopic fork for leaks					•
Push up the protective bellows and remove the dirt; the drain holes must be free of obstructions (Marzocchi fork)		•	•	•	•
Clean the dust scrabbers of the telescopic force (WP Extreme fork)		•		•	•
Undo the bleeder screws at the fork legs					•
Change oil of telescopic fork					•
Service telescopic fork completely					•
Check steering head bearing free play			•		•
Clean and regrease steering head bearing					•
Check setting and damping of shock absorber	•				•
Service shock absorber completely					•
Grease swingarm needle bearings					•
Check for even spoke tension and rim alignment	•		•		•
Check wheel bearings	•				•
Check tires for cuts and air pressure	•				•
Check cables for damage and free movement	•				•
Adjust and oil control cables		•	•		•
Check electrical system	•		•		•
Check battery holder and connections (A, CH)					•
Check adjustment of headlight					•
Apply contact spray to light switches, flasher switches and ignition lock		•			•
Check all bolts, nuts, screws and clamps for proper tightness	•		•		•
Clean and lubricate control lever pivot points		•	•	•	•

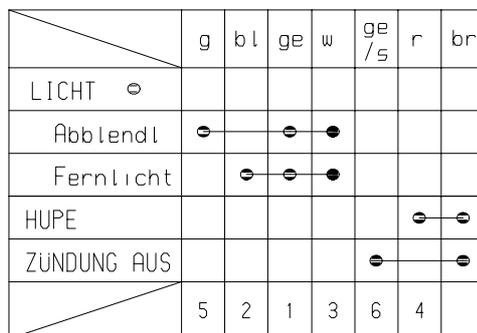
Deutsch	Englisch	Italienisch	Französisch
1 Scheinwerfer	1 headlight	1 faro	1 phare
2 Standlicht	2 parking light	2 luce di posizione	2 feu de position
3 Blinker li vo	3 turn indic left fr	3 lampegg ant sn	3 clignoteur av gauche
4 Blinker re vo	4 turn indic right fr	4 lampegg ant dx	4 clignoteur av droit
5 Tachobeleuchtung	5 speedometer light	5 luce di tachimetro	5 éclair comp vitesse
6 Fernlichtkontrolle	6 high beam indicator	6 spia abbagliante	6 témoin feu route
7 Blinkerkontrolle	7 turn indicator	7 spia lampeggiatori	7 témoin de clignoteur
8 4-pol Stecker	8 multip cont plug (4)	8 connettore a 4 poli	8 connect multiple (4)
9 Zündschloß	9 ignition lock	9 accensione	9 contact d'allum
10 zum Kombischalter	10 to combinat switch	10 multicomando	10 commodo
11 Bremslichtsch vo	11 stoplight switch f	11 int luce arresto ant	11 contact de stop av
12 Bremslichtsch hi	12 stoplight switch r	12 int luce arresto post	12 contact Harr de stop
13 Horn	13 horn	13 clacson	13 klaxon
14 Blinkgeber	14 turn indicator	14 trasmett di lampeg	14 centrale clignot
15 CDI-Einheit	15 CDI-unit	15 CDI-seatola	15 boitier CDI
16 Zündkerze	16 spark plug	16 candela	16 bougie
17 Zündspule	17 ignition coil	17 bobina d'accens	17 bobine d'allumage
18 Generator	18 generator	18 dinamo	18 generateur
19 Kondensator	19 capacitor	19 condensatore	19 condensateur
20 Spannungsregler	20 voltage regulator	20 regol di tens	20 regulateur
21 Batterie 1 2Ah	21 battery 1 2Ah	21 batteria 1 2Ah	21 batterie 1 2Ah
22 Stecksicherung 10A	22 fuse 10A	22 fusibile 10A	22 fusible 10A
23 6-pol Stecker	23 multip cont plug (9)	23 connettore a 9 poli	23 connect multiple (9)
24 Blinker li hi	24 blinker left rear	24 lampegg post sn	24 clign arr gauche
25 Blinker re hi	25 blinker right rear	25 lampegg post dx	25 clign arr droite
26 Brems-Schlußlicht	26 rear-stoplight	26 fanal post di freno	26 feu arr et de stop
27 Blinkerschalter	27 blink switch	27 int lampeggiatori	27 contact d clignoteur
28 Parallelverbinder	28 parallel connector	28 parallelo composto	28 parallele connecteur
29 3-pol Stecker	29 multip cont plug (3)	29 connettore a 3 poli	29 connect multiple (9)

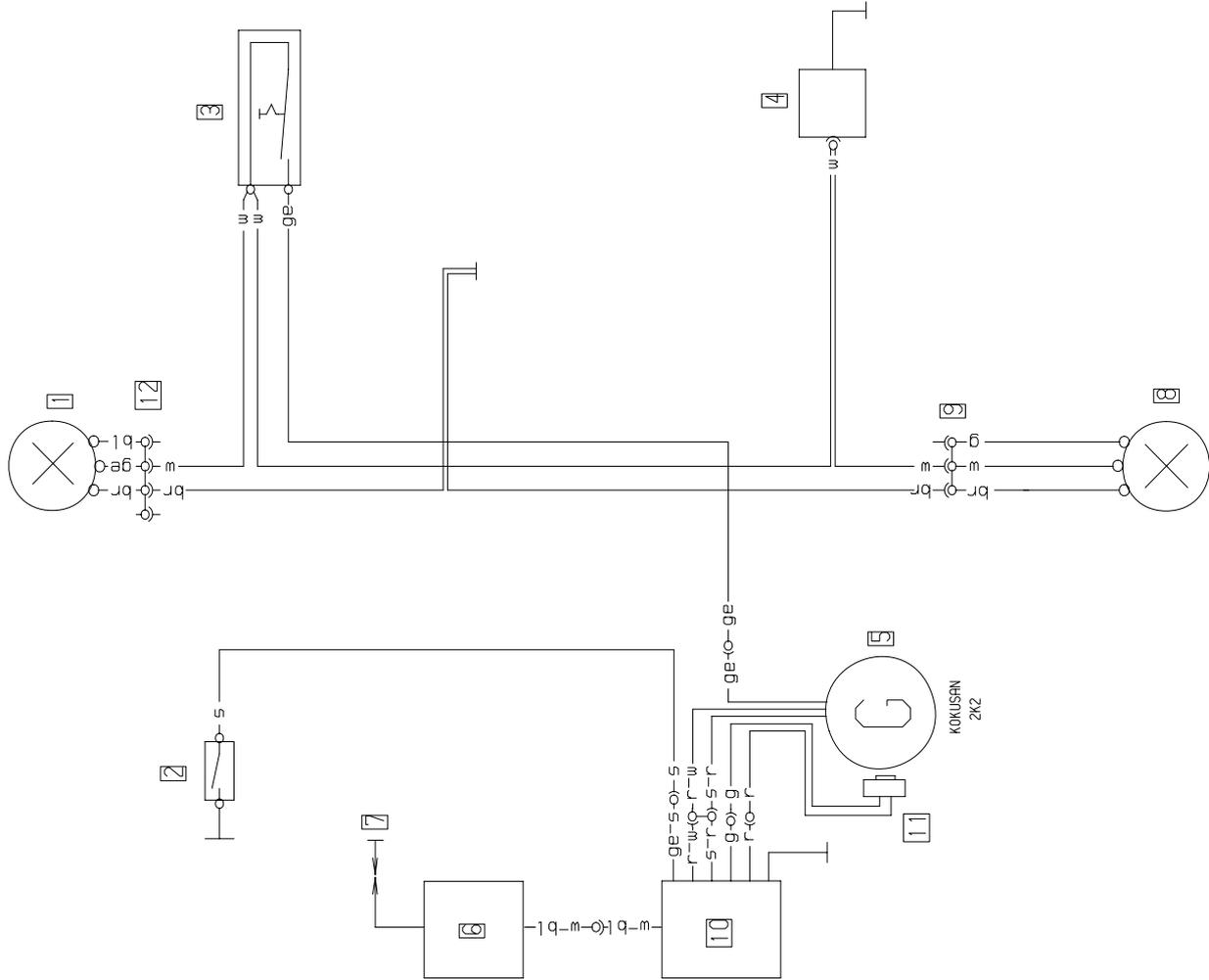
Deutsch	Englisch	Italienisch	Französisch	Spanisch
bl blau	bl blue	bl blu	bl bleu	bl azul
br braun	br brown	br marrone	br brun	br marron
ge gelb	ge yellow	ge giallo	ge jaune	ge amarillo
gr grau	gr grey	gr grigio	gr gris	gr gris
g grün	g green	g verde	g vert	g verde
o orange	o orange	o arancione	o orange	o naranja
r rot	r red	r rosso	r rouge	r rojo
s schwarz	s black	s nero	s noir	s negro
v violett	v violet	v violetto	v violet	v violeta
w weiß	w white	w bianco	w blanc	w blanco

Spanisch
1 faro
2 luz de posicion
3 interm izquierdo delantero
4 intermitente derecho delantero
5 luz tacometro
6 lampara aviso luces largas
7 lampara aviso intermitentes
8 conector multiple (4)
9 llave de contacto
10 interruptor combinado
11 interr luz de freno del
12 interr luz de fren tras
13 claxon
14 conjunto del intermitente
15 unidad cdi
16 bujia
17 bobina de encendido
18 generador
19 condensador
20 regulador de tension
21 bateria 12V 1 2Ah
22 fusible principal 10A
23 conector multiple (4)
24 intermitente izquierdo trasero
25 intermitente derecho trasero
26 luz de freno trasero
27 interuptor clignoteur
28 parallele connecteur
29 conector multiple (3)



Kontaktbelegung -
Lichtschalter (Typ CEV 9610)



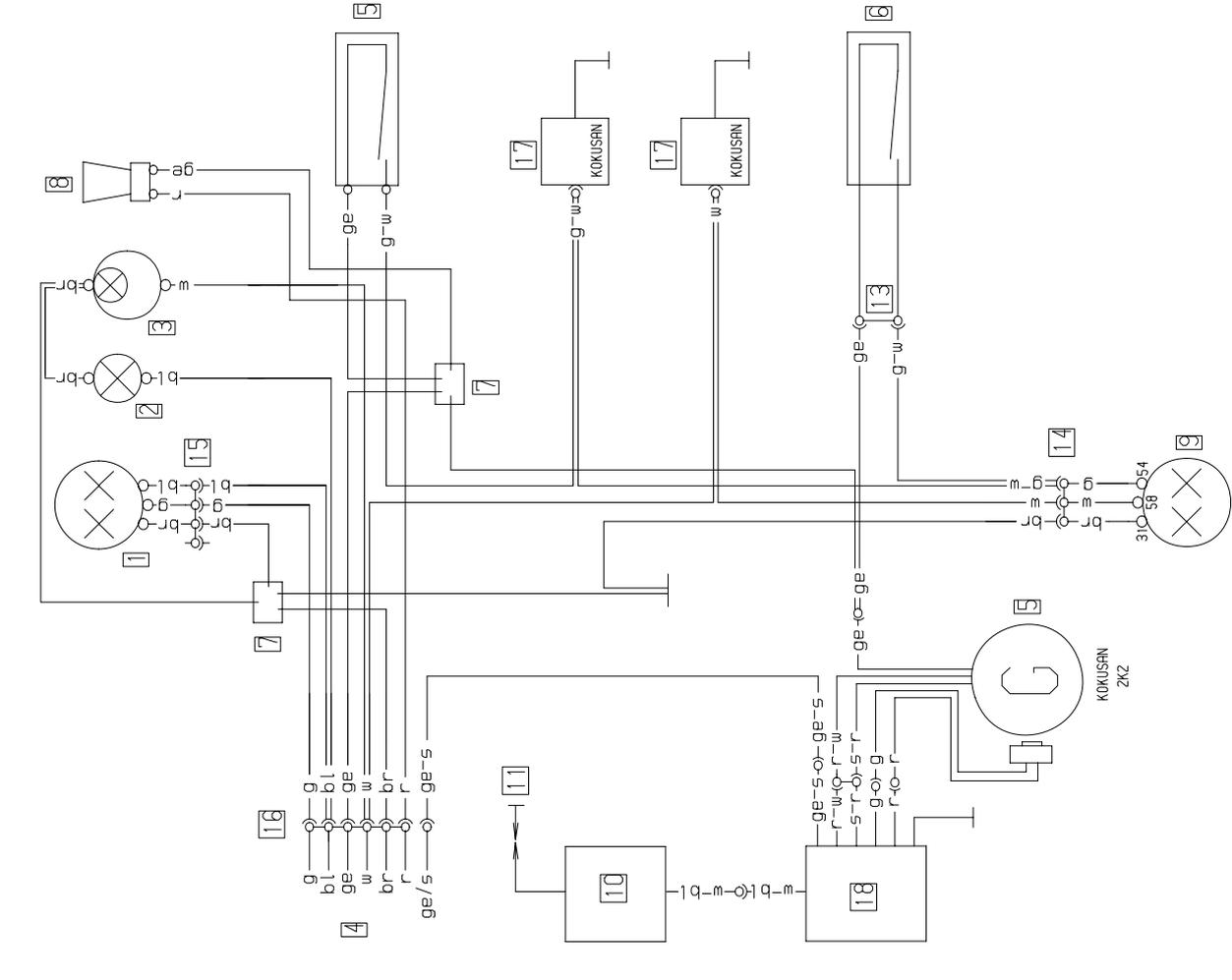
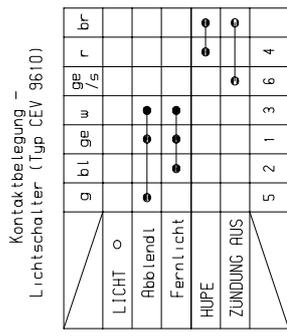


Deutsch	Englisch	Italienisch	Französisch
1 Scheinwerfer	1 headlight	1 foro	1 phare
2 Kurzschlußtaster	2 short-circuit button	2 interr cortocircuito	2 bouton d'arret
3 Lichtschalter	3 light switch	3 interr della luce	3 interr d' eclaireage
4 Spannungsbegrenzer	4 voltage limiter	4 regol di tens	4 regulateur
5 Generator	5 generator	5 dinamo	5 generateur
6 Zündspule	6 ignition coil	6 bobina d' accens	6 bobine d' allumage
7 Zündkerze	7 spark plug	7 candela	7 bougie
8 Schlußlicht	8 rearlight	8 fanale posteriore	8 feu arriere
9 3-pol Stecker	9 multip cont plug (3)	9 connettore a 3 poli	9 connect multiple (3)
10 CDI-Einheit	10 CDI-unit	10 CDI-seatola	10 CDI-unite
11 Impulsgeber	11 pulser coil	11 distributore	11 generateur d' impuls
12 4-pol Stecker	12 multip cont plug (4)	12 connettore a 4 poli	12 connect multiple (4)
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 arancione	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 blanc

Spanisch
1 foro
2 interruptor a masa
3 interruptor d' luz
4 regulador de tension
5 generador
6 bobina de encendido
7 bujia
8 luz de trasera
9 conect multiple (3)
10 unidad cdi
11 generador de impuls
12 conect multiple (4)
bl azul
br marron
ge amarillo
gr gris
g verde
o naranja
r rojo
s negro
v violeta
w blanco

Deutsch	Englisch	Italienisch	Französisch
1 Scheinwerfer	1 headlight	1 fano	1 phare
2 Fernlichtkontrolle	2 high beam control	2 spia abbagliante	2 témoin feu route
3 Tachobeleuchtung	3 tachometer light	3 luz del tacometro	3 éclair comp vitesse
4 zum Kombischalter	4 to combinat switch	4 multicomando	4 comando
5 Bremslichtsch. v	5 stoplight switch f	5 int luce arresto ant	5 contact de stop av
6 Bremslichtsch. h	6 stoplight switch r	6 int luce arrest post	6 contact de stop der
7 Parallelverbinder	7 parallel connector	7 parallelo composto	7 parallele connecteur
8 Schnorre	8 horn	8 clacson	8 klaxon
9 Brems-Schließlicht	9 rear-stoplight	9 fanal post di freno	9 feu arr et de stop
10 Zündspule	10 ignition coil	10 bobina d'accens	10 bobine d'allumage
11 Zündkerze	11 spark plug	11 candela	11 bougie
12 Generator	12 generator	12 dinamo	12 generateur
13 2-pol Stecker	13 multip cont plug (2)	13 connettore a 2 poli	13 connect multiple (2)
14 3-pol Stecker	14 multip cont plug (3)	14 connettore a 3 poli	14 connect multiple (3)
15 4-pol Stecker	15 multip cont plug (4)	15 connettore a 4 poli	15 connect multiple (4)
16 6-pol Stecker	16 multip cont plug (6)	16 connettore a 6 poli	16 connect multiple (6)
17 Spannungsregler	17 voltage limiter	17 regol di tens	17 regulateur
18 CDI-Einheit	18 CDI-unit	18 CDI-seatola	18 boitier CDI
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 arancione	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 blanc

Spanisch
1 fano
2 control luces largas
3 luz tacometro
4 llave combinada
5 interr luces de freno del
6 interr luces de freno tras
8 claxon
9 luz freno tras
10 bobina de encendido
11 bujia
12 generador
13 conector multiple (2)
14 conector multiple (3)
15 conector multiple (4)
16 conector multiple (6)
17 regulador de tension
18 unidad cdi
bl azul
br marron
ge amarillo
gr gris
g verde
o naranja
r rojo
s negro
v violeta
w blanco



SERVICE

Model I

125 / 200 EXC '98

Kabelstrangnummer
vorne 503 11 075 100
hinten 503 11 076 000

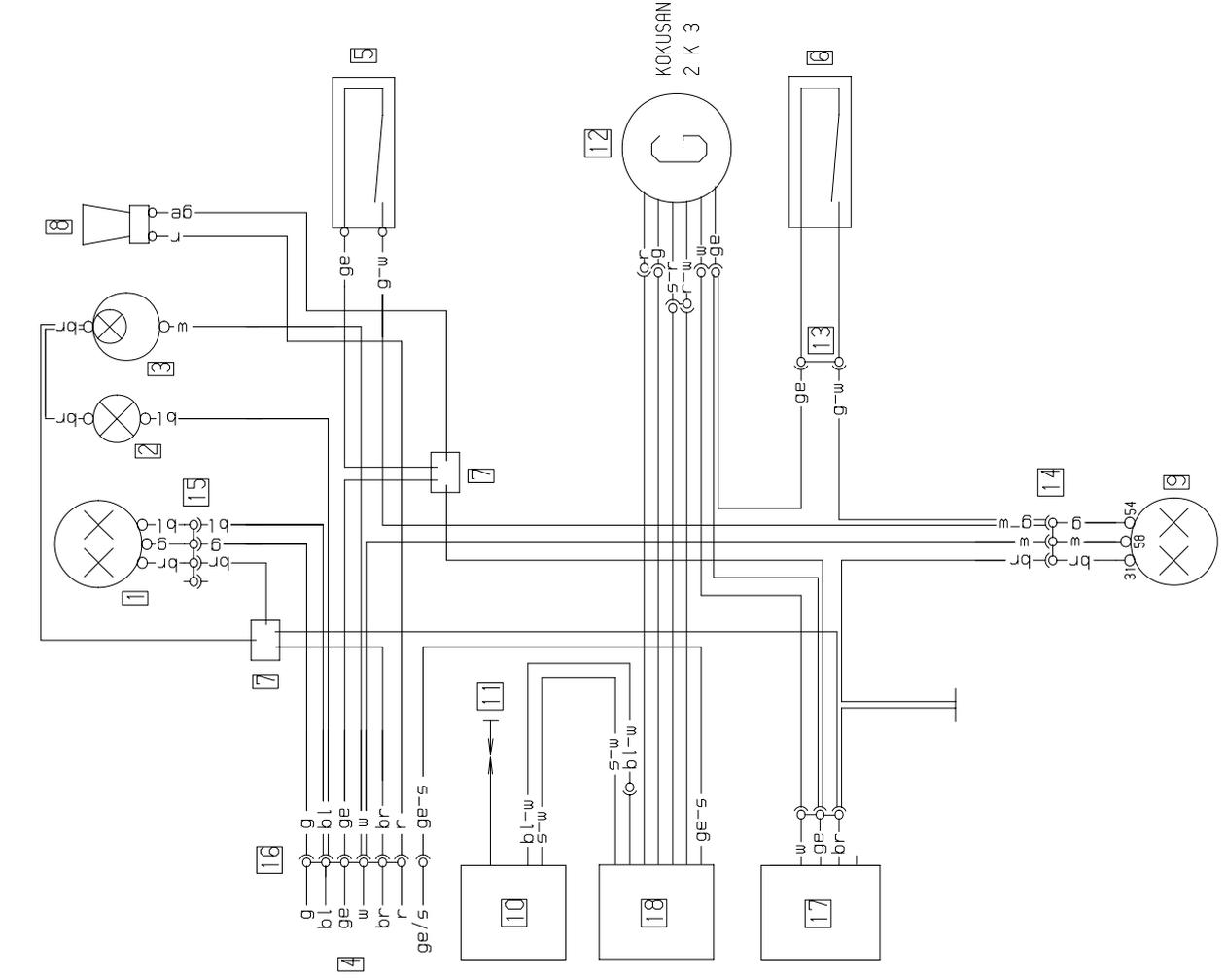
Land
Europa

Datum, Name
24.06.97 ME

Zeichnungsnr
2520XC98

Änderungsstand

Kabelstrangbezeichnung
no 125/200 EXC '98
hi 125-300 EXC '98



Deutsch	Englisch	Italienisch	Französisch
1 Scheinwerfer	1 headlight	1 fano	1 phare
2 Fernlichtkontrolle	2 high beam control	2 spia abbagliante	2 témoin feu route
3 Tachobelichtung	3 tachometer light	3 luz del tacometro	3 éclair comp vitesse
4 zum Kombischalter	4 to combinat switch	4 multi comando	4 comando
5 Bremslichtsch v	5 stoplight switch f	5 int luce arresto ant	5 contact de stop av
6 Bremslichtsch h	6 stoplight switch r	6 int luce arresto post	6 contact de stop der
7 Parallelverbinder	7 parallel connector	7 parallelo composto	7 parallele connecteur
8 Schwärze	8 horn	8 clacson	8 klaxon
9 Brems-Schlußlicht	9 rear-stop light	9 fonal post di freno	9 feu arr et de stop
10 Zündspule	10 ignition coil	10 bobina d'accens	10 bobine d'allumage
11 Zündkerze	11 spark plug	11 candela	11 bougie
12 Generator	12 generator	12 dinamo	12 generateur
13 2-pol. Stecker	13 multip cont plug (2)	13 commettore a 2 poli	13 connect multiple (2)
14 3-pol. Stecker	14 multip cont plug (3)	14 commettore a 3 poli	14 connect multiple (3)
15 4-pol. Stecker	15 multip cont plug (4)	15 commettore a 4 poli	15 connect multiple (4)
16 6-pol. Stecker	16 multip cont plug (6)	16 commettore a 6 poli	16 connect multiple (6)
17 Spannungsregler	17 voltage limiter	17 rgol di tens	17 regulateur
18 CDI-Einheit	18 CDI-unit	18 CDI-seatola	18 boitier CDI
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 arancione	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 blanc

Spanisch
1 fano
2 control luces largas
3 luz tacometro
4 llave combinada
5 interr luces de freno del
6 interr luces de freno tras
7 conector paralelo
8 claxon
9 luz freno tras
10 bobina de encendido
11 bujia
12 generador
13 conector multiple (2)
14 conector multiple (3)
15 conector multiple (4)
16 conector multiple (6)
17 regulador de tension
18 unidad cdi
bl azul
br marron
ge amarillo
gr gris
g verde
o naranja
r rojo
s negro
v violeta
w blanco

Kontaktbelegung -
Lichtschalter (Typ CEV 9610)

	g	bl	ge	w	ge	r	br
LICHT o							
Abblendl			•				
Fernlicht			•				
HUPE						•	•
ZÜNDUNG AUS	5	2	1	3	6	4	

SERVICE

Modell

200 EXC '98 '99

Kabelstrangsnummer
vorne 523 11 075 000
hinten 503 11 076 000

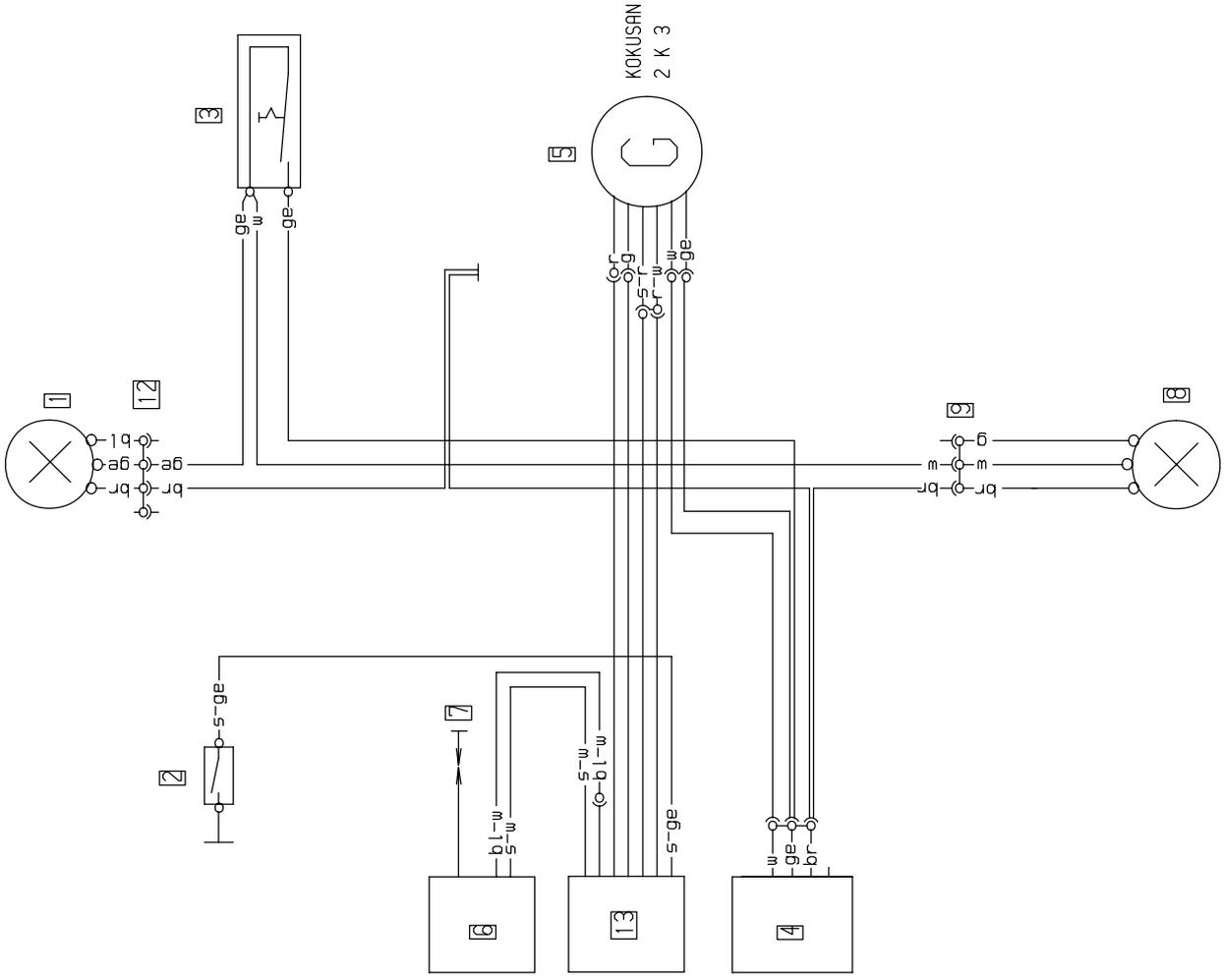
Land
USA

Datum, Name
22.06.98 KE

Zeichnungsnr.
200XCUSA

Herstellungsstand

Kabelstrangsbezeichnung
vo 200 EXC USA '98
hi 125-360 EXC '98



Deutsch	Englisch	Italienisch	Französisch
1 Scherwischer	1 headlight	1 fano	1 phare
2 Kurzschlußtoaster	2 short-circuit button	2 interr cortocircuito	2 bouton d'arret
3 Lichtschalter	3 light switch	3 interr della luce	3 interr d' eclairage
4 Spannungsbegrenzer	4 voltage limiter	4 regol di tens	4 regulateur
5 Generator	5 generator	5 dinamo	5 generateur
6 Zündspule	6 ignition coil	6 bobina d'accens	6 bobine d'allumage
7 Zündkerze	7 spark plug	7 candela	7 bougie
8 Schlußlicht	8 rearlight	8 fanale posteriore	8 feu arriere
9 3-pol Stecker	9 multip cont plug (3)	9 commettore a 3 poli	9 connect multiple (3)
10 CDI-Einheit	10 CDI-unit	10 CDI-seatola	10 CDI-unite
11 Impulsgeber	11 pulser coil	11 distributore	11 generateur d' impuls
12 4-pol Stecker	12 multip cont plug (4)	12 commettore a 4 poli	12 connect multiple (4)
13 CDI-Einheit	13 CDI-unit	13 CDI-seatola	13 boitier CDI
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 grün	gr green	gr grigio	gr gris
o orange	o orange	o verde	o vert
r rot	r red	o arancione	o orange
s schwarz	s black	r rosso	r rouge
v violett	v violet	s nero	s noir
w weiß	w white	v violetto	v violet
		w bianco	w blanc

Spanisch	
1	faro
2	interruptor a masa
3	interruptor d' luz
4	regulador de tension
5	generador
6	bobina de encendido
7	bujia
8	luz de trasera
9	connect multiple (3)
10	unidad cai
11	generador de impuls
12	connect multiple (4)
13	unidad cai
	bl azul
	br marron
	ge amarillo
	gr gris
	o verde
	o naranja
	r rojo
	s negro
	v violeta
	w blanco

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FN 102019 d - Landesgericht Ried im Innkreis

