

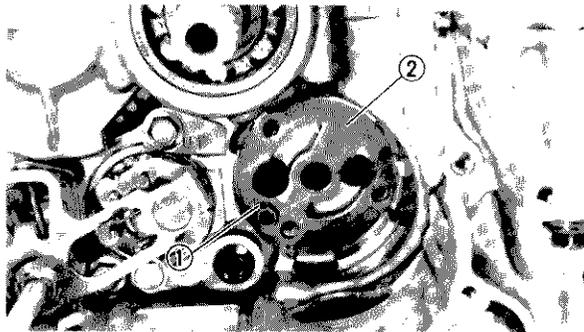
3. Check:

- Shift pawl ① position
- Gaps ② and ③ are not equal → Replace the defective parts or adjust the adjuster.

② Shift cam

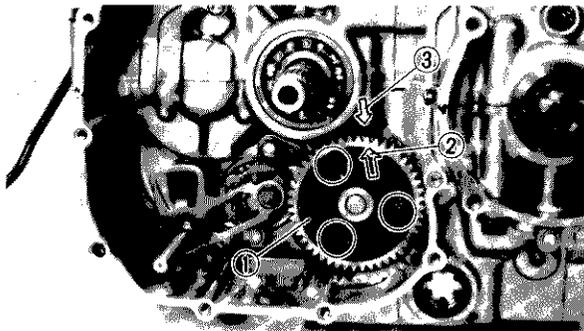
4. Install:

- Dowel pin ①
- Gasket (new) ②



5. Install:

- Oil pump assembly ①



	<p>Oil pump mounting bolts: 10 Nm (1.0 m · kg, 7.2 ft · lb) Use LOCTITE®</p>
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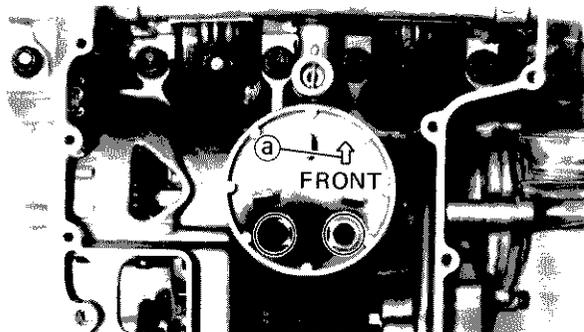
NOTE:

Align the oil pump arrow mark ② with crankcase arrow mark ③ .

OIL PAN AND OIL STRAINER

1. Install:

- Oil strainer assembly



	<p>Bolts (oil strainer assembly): 10 Nm (1.0 m · kg, 7.2 ft · lb)</p>
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NOTE:

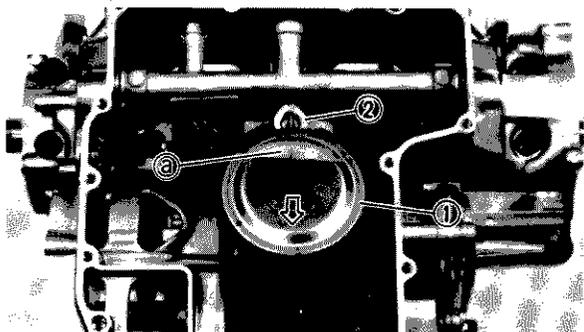
Install the oil strainer assembly so that the arrow mark ① face forward.

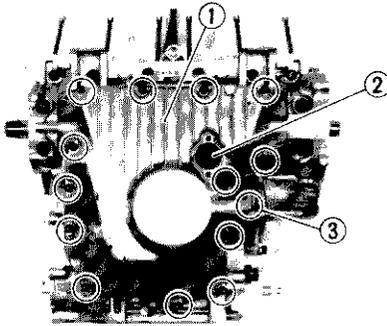
2. Install:

- Oil strainer cover ①
- Relief valve ②

NOTE:

The element (window) ① must be installed vertically against housing arrow mark.

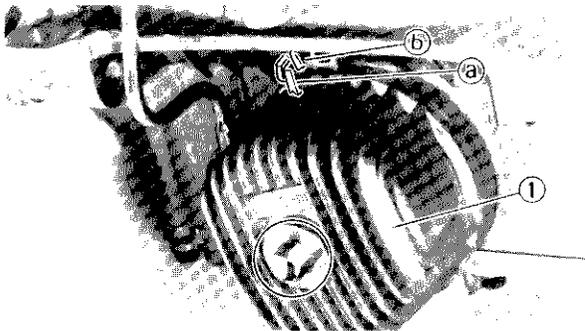




3. Install:
- Dowel pins
 - Gasket (new)
 - Oil pan ①
 - Oil level switch ②
 - Drain plug ③
 - Clamp



Bolts (oil pan):
10 Nm (1.0 m · kg, 7.2 ft · lb)



4. Install:
- Oil filter assembly ①



Bolt (oil filter):
15 Nm (1.5 m · kg, 11 ft · lb)

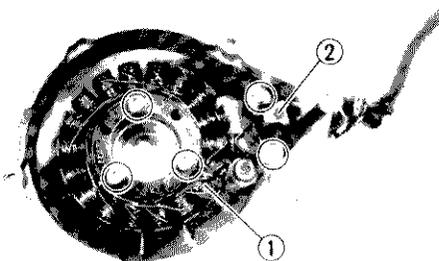
NOTE:

Align the projection ① on the oil filter assembly with the slots ② on the crankcase.

A Rubber

A.C. MAGNETO AND STARTOR MOTOR

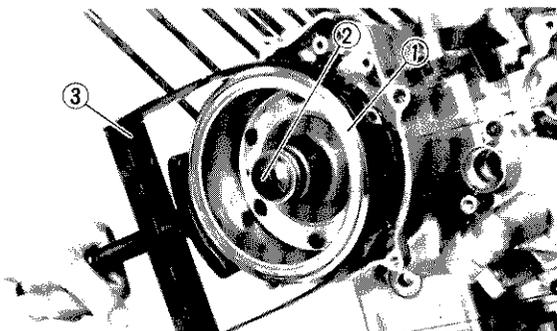
1. Install:
- Stator coil assembly ①
 - Pickup coil ②



Bolts (stator coil assembly):
10 Nm (1.0 m · kg, 7.2 ft · lb)
Use LOCTITE®

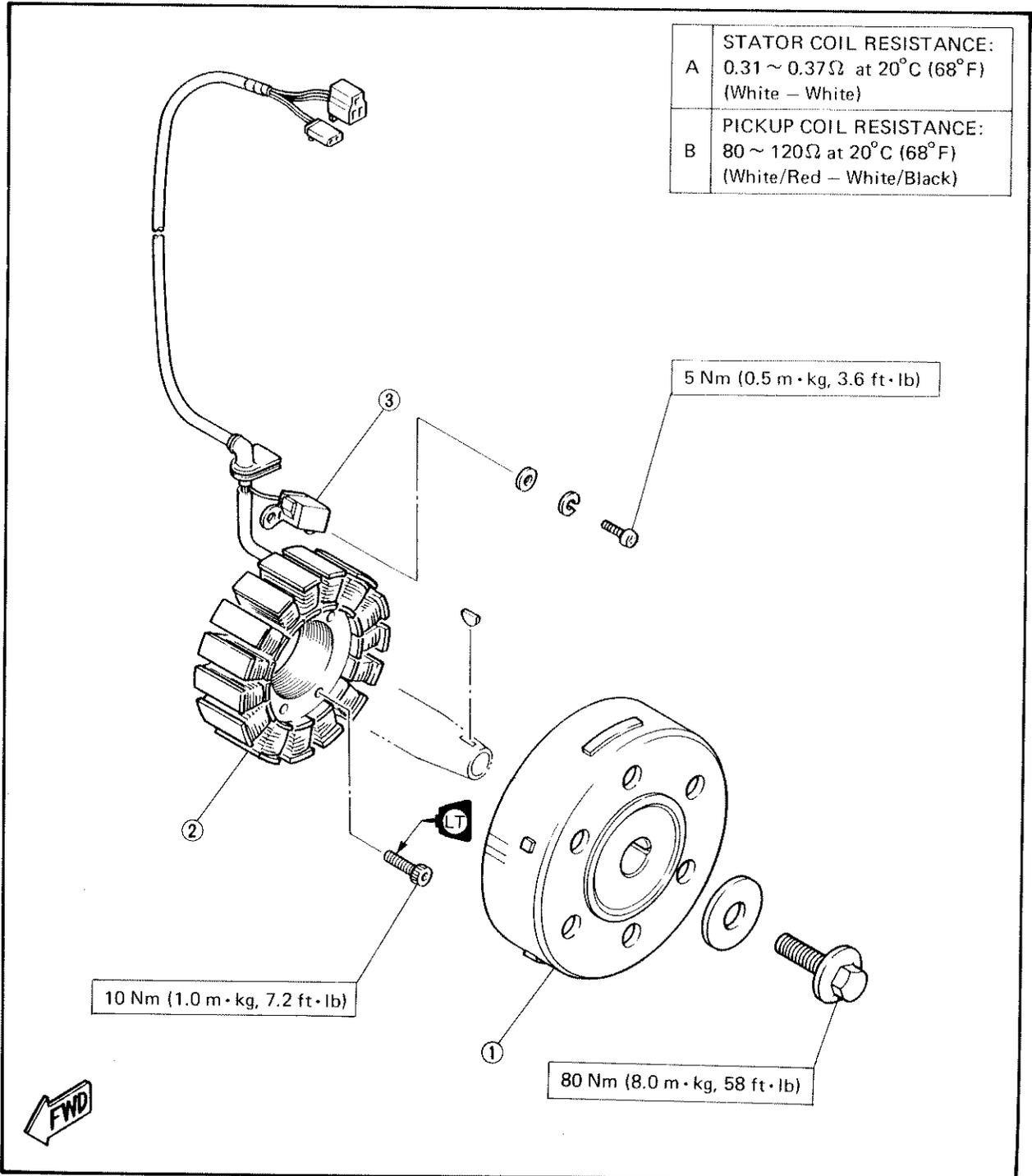
Screws (pickup coil):
5 Nm (0.5 m · kg, 3.6 ft · lb)

2. Install:
- Woodruff key
 - Magneto ①
 - Bolt (magneto) ②
3. Attach:
- Rotor holding tool ③



A.C. GENERATOR

- ① Magneto
- ② Stator coil assembly
- ③ Pickup coil





NOTE: _____

- Clean the tapered portions of the crankshaft and magneto.
- When installing the magneto, make sure the woodruff key is properly seated in the key way of the crankshaft.



Rotor holding tool:
YS-01880,
90890-01701

4. Tighten:
- Bolt (magneto)

NOTE: _____

Tighten the bolt (magneto) while holding the magneto with the universal rotor holder.



Bolt (magneto):
80 Nm (8.0 m·kg, 58 ft·lb)

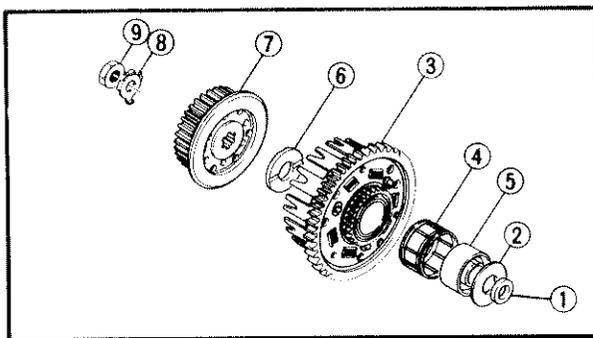
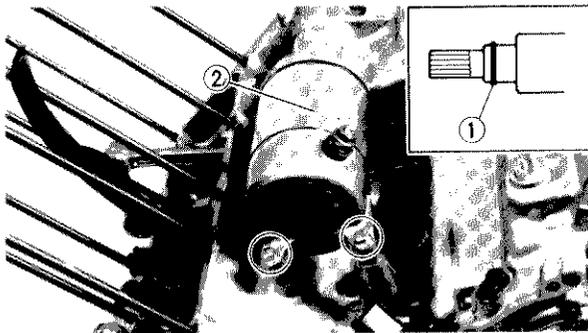
5. Check:
- O-ring (starter motor) ①
Damage → Replace.
6. Install:
- Starter motor ②

NOTE: _____

Apply the lithium soap base grease onto the O-ring.



Bolt (starter motor):
10 Nm (1.0 m·kg, 7.2 ft·lb)



CLUTCH

1. Install:
- Collar ①
 - Thrust washer ②
 - Clutch housing ③
 - Bearing ④
 - Spacer ⑤
 - Thrust washer ⑥
 - Clutch boss ⑦
 - Lock washer (new) ⑧
 - Nut (clutch boss) ⑨

NOTE: _____

Install the bearing ④ and spacer ⑤ after installation of the clutch housing ③.

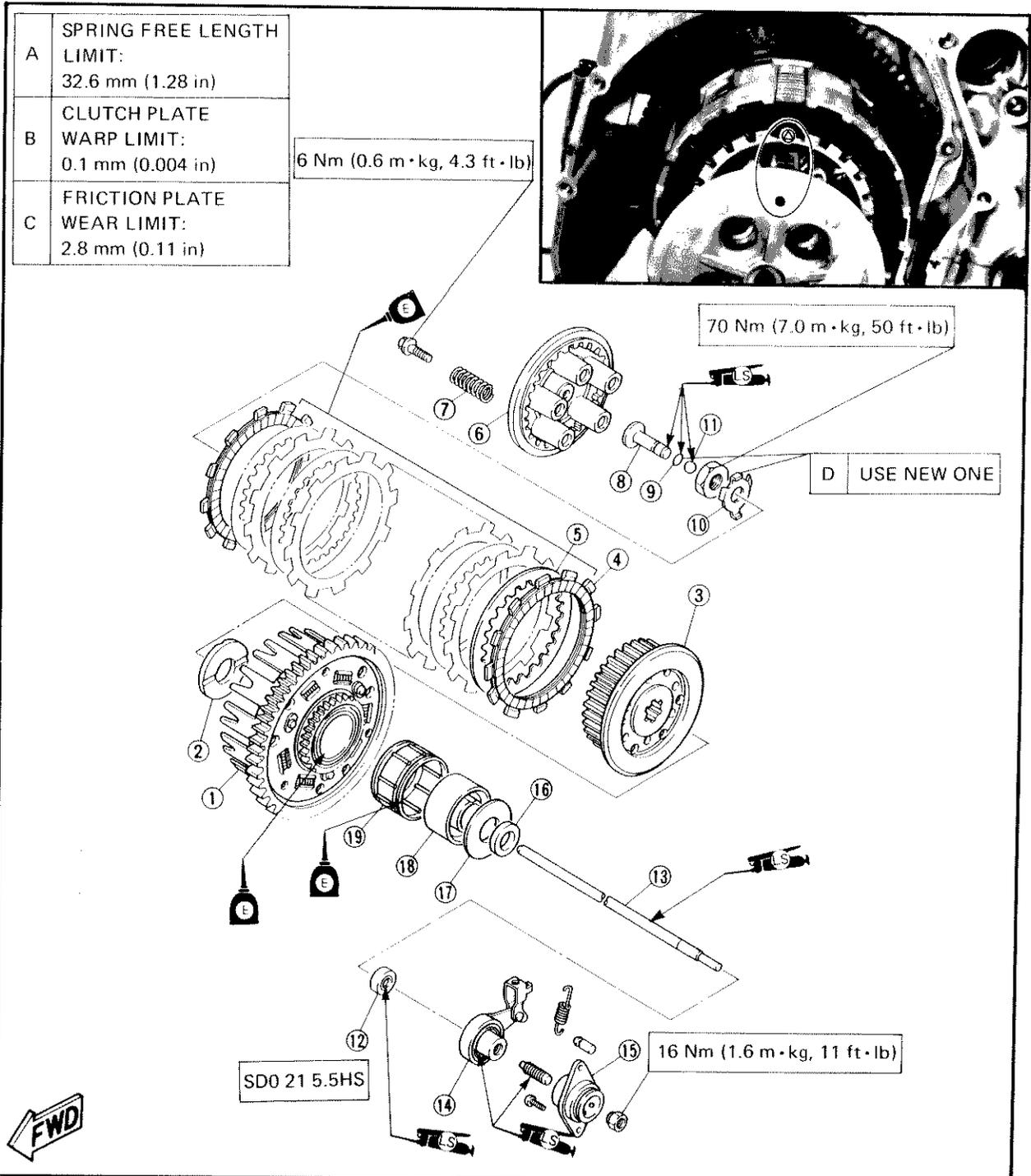
WARNING: _____

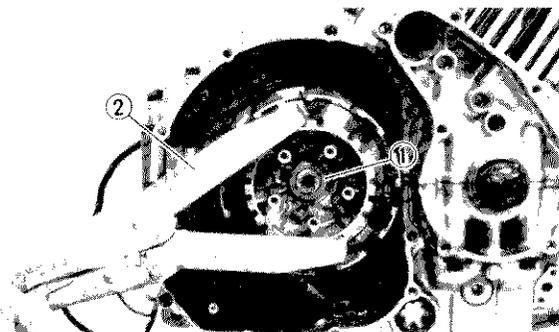
Always use a new lock washer.



CLUTCH

- ① Primary driven gear
- ② Thrust washer
- ③ Clutch boss
- ④ Friction plate
- ⑤ Clutch plate
- ⑥ Pressure plate
- ⑦ Clutch spring
- ⑧ Push rod #1
- ⑨ O-ring
- ⑩ Lock washer
- ⑪ Bolt
- ⑫ Oil seal
- ⑬ Push rod #2
- ⑭ Push lever assembly
- ⑮ Bolt screw housing
- ⑯ Collar
- ⑰ Thrust washer
- ⑱ Spacer
- ⑲ Bearing





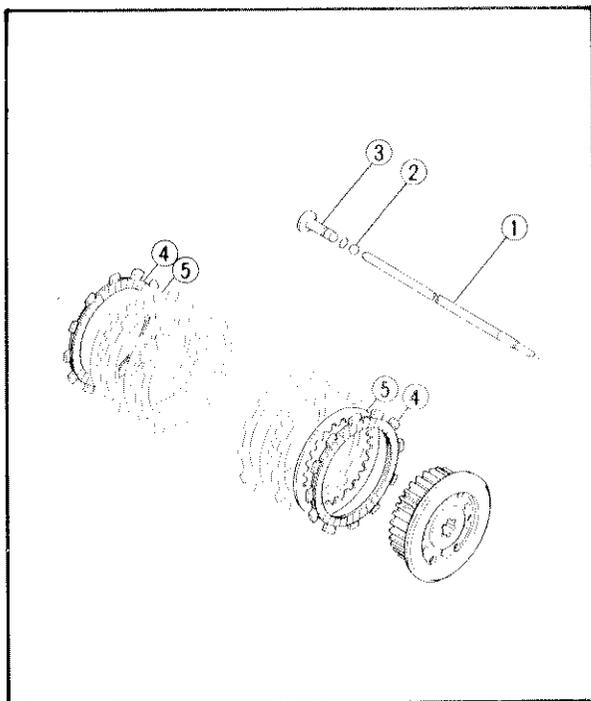
2. Tighten:
- Nut (clutch boss) ①
- Use the Universal Clutch Holder ②.

NOTE: _____
Tighten the nut ① (clutch boss) while holding the clutch boss with the universal clutch holder ②.

	<p>Universal clutch holder: YM-91042 90890-04086</p>
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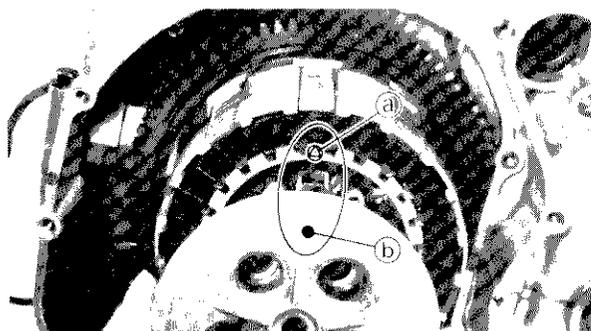
	<p>Nut (clutch boss): 70 Nm (7.0 m·kg, 50 ft·lb)</p>
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3. Bend the lock washer tab along the nut flat.



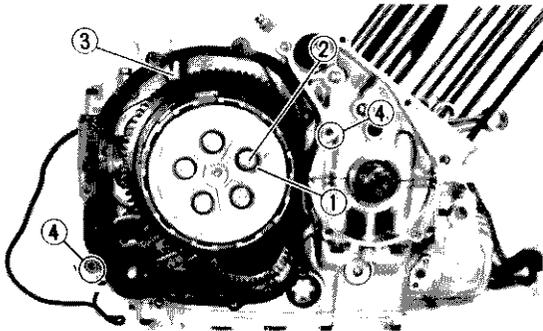
4. Install:
- Push rod #2 ①
 - Ball ②
 - Push rod #1 ③
 - Friction plates ④
 - Clutch plates ⑤

NOTE: _____
Apply the transmission oil onto the friction plate ③.
Apply the lithium soap base grease onto the push rod #1, #2, O-ring and ball.
Install the clutch plates and friction plate alternately on the clutch boss, starting with a friction plate and ending with a friction plate.



5. Install:
- Pressure plate

NOTE: _____
Be sure the match mark (a) on the clutch boss is aligned with the match mark (b) on the pressure plate.



6. Install:

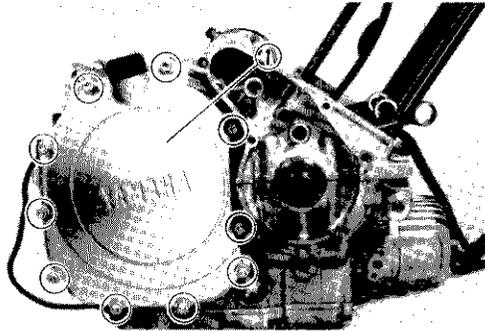
- Clutch springs ①
- Bolts (clutch spring) ②
- Gasket (new) ③
- Dowel pins ④



Bolts (clutch spring):
6 Nm (0.6 m · kg, 4.3 ft · lb)

NOTE:

Tighten the bolts (clutch spring) in stage, using a crisscross pattern.



7. Install:

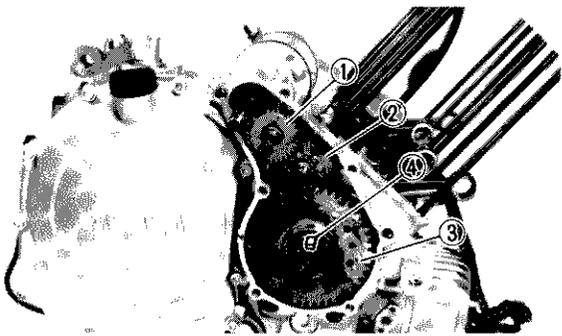
- Dowel pins
- Gasket (crankcase cover)
- Crankcase cover (right) ①



Bolts (crankcase cover):
10 Nm (1.0 m · kg, 7.2 ft · lb)

NOTE:

Tighten the bolts (crankcase cover) in stage, using a crisscross pattern.



STARTER CLUTCH

1. Install:

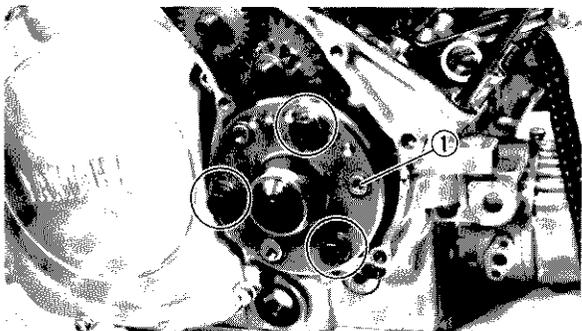
- Idle gear ①
- Idle gear ②
- Starter clutch gear ③
- Woodruff key ④

2. Install:

- Starter clutch ①
- Washer
- Bolts (starter clutch)



Bolt (starter clutch):
80 Nm (8.0 m · kg, 58 ft · lb)



3. Install:

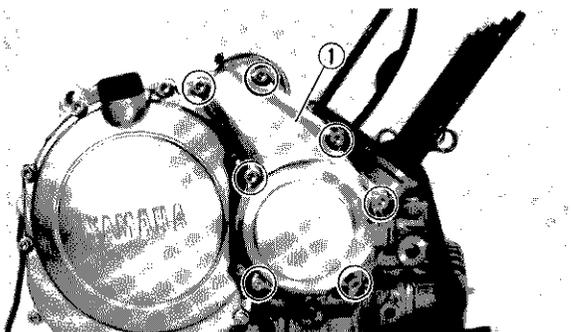
- Dowel pins
- Gasket (starter clutch cover) (new)
- Starter clutch cover ①



Bolts (starter clutch cover):
10 Nm (1.0 m · kg, 7.2 ft · lb)

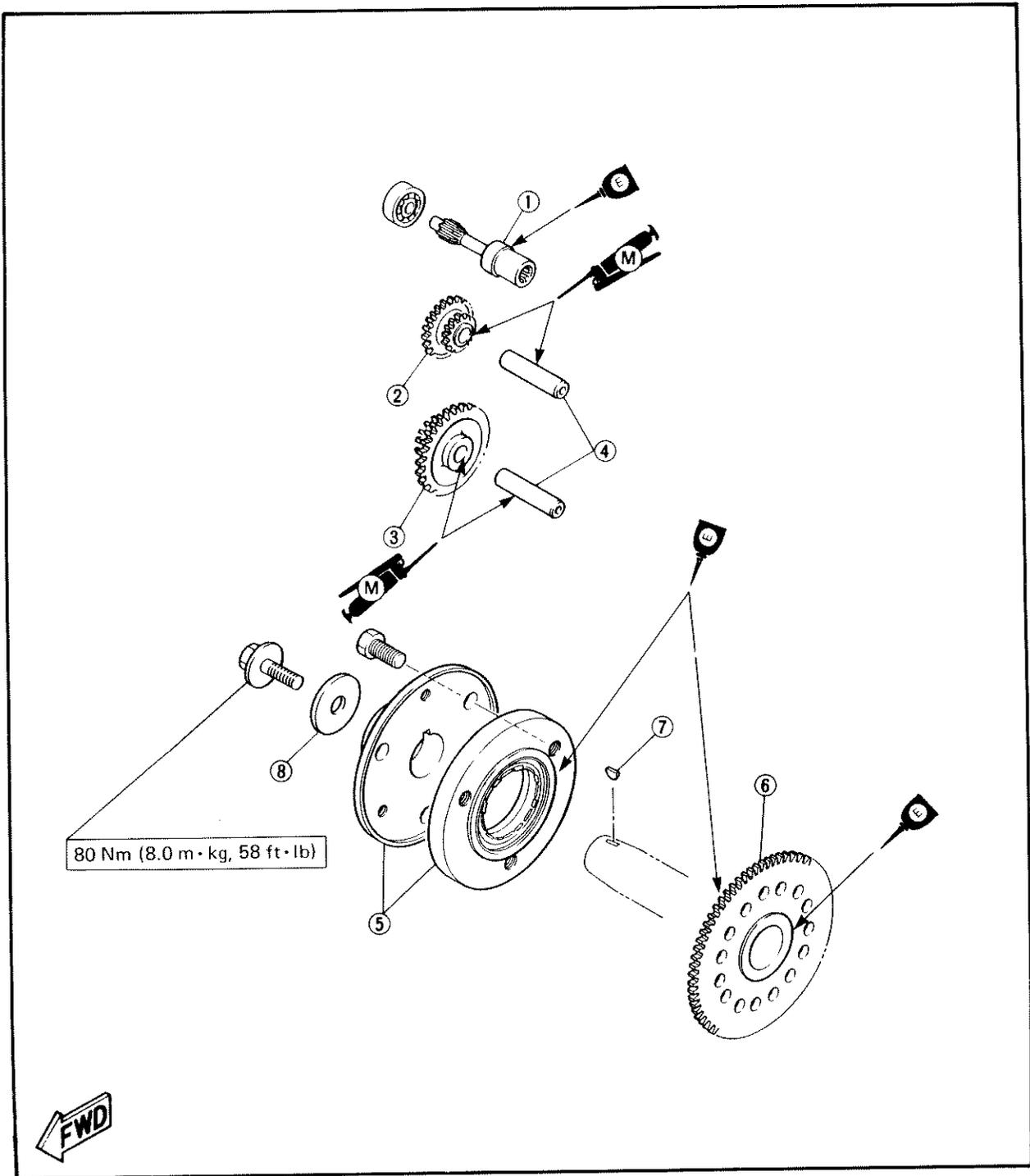
NOTE:

Tighten the bolts (starter clutch cover) in stage, using a crisscross pattern.



STARTER CLUTCH

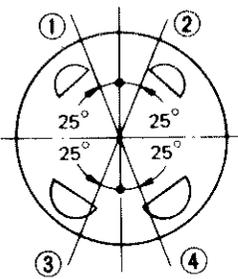
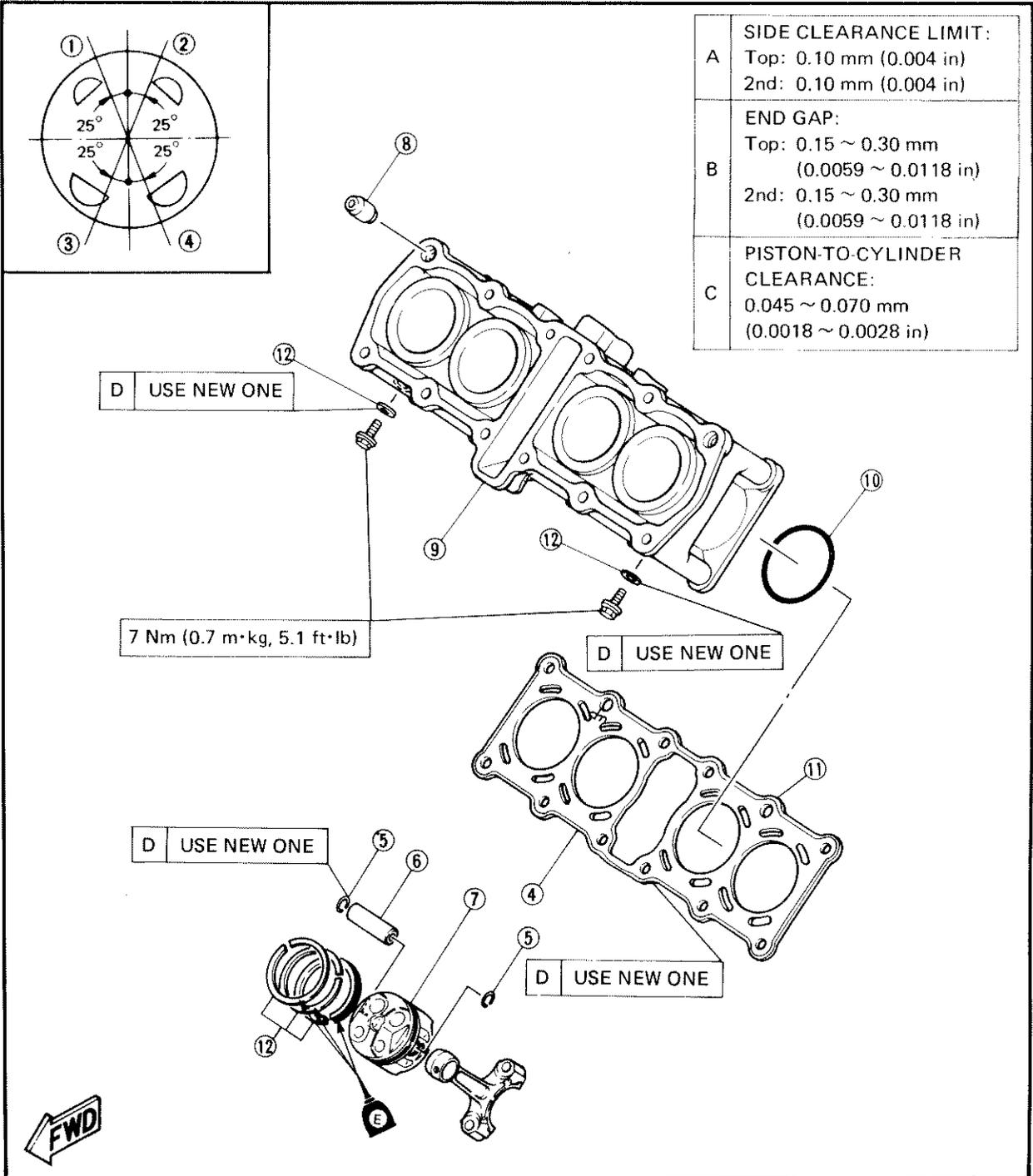
- ① Starter drive gear
- ② Idle gear
- ③ Idle gear
- ④ Shaft
- ⑤ Starter clutch assembly
- ⑥ Starter clutch gear
- ⑦ Woodruff key
- ⑧ Washer





PISTON AND CYLINDER

- ① Top ring
- ② Oil ring (Lower)
- ③ Oil ring (Upper)
- ④ Second ring
- ⑤ Circlip
- ⑥ Piston pin
- ⑦ Piston
- ⑧ Dowel pin
- ⑨ Cylinder
- ⑩ O-ring
- ⑪ Gasket (Cylinder)
- ⑫ Piston ring set



A	SIDE CLEARANCE LIMIT: Top: 0.10 mm (0.004 in) 2nd: 0.10 mm (0.004 in)
B	END GAP: Top: 0.15 ~ 0.30 mm (0.0059 ~ 0.0118 in) 2nd: 0.15 ~ 0.30 mm (0.0059 ~ 0.0118 in)
C	PISTON-TO-CYLINDER CLEARANCE: 0.045 ~ 0.070 mm (0.0018 ~ 0.0028 in)

D USE NEW ONE

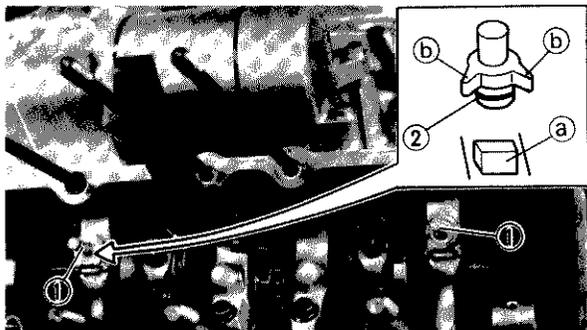
7 Nm (0.7 m·kg, 5.1 ft·lb)

D USE NEW ONE

D USE NEW ONE

D USE NEW ONE





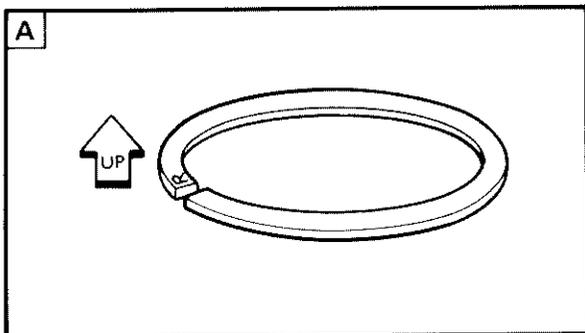
PISTON AND CYLINDER

1. Install:

- Oil jet nozzles ①
(with O-ring ②)

NOTE:

Position the projection ① on crankcase between arms ② on the oil jet nozzle.

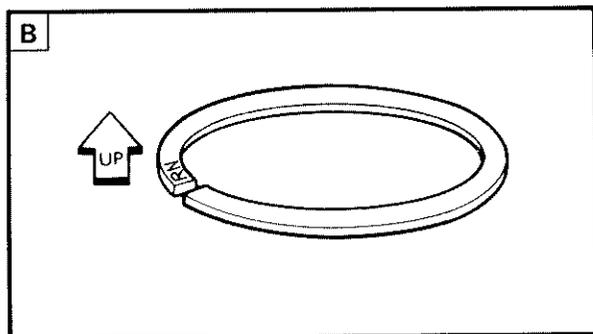


2. Install:

- Piston rings

NOTE:

- Be sure to install rings to that manufacturer's marks or numbers are located on the top side of the rings. Oil the pistons and rings liberally.
- Piston ring with "R" mark should be installed into top ring position.
- Piston ring with "RN" mark should be installed into second ring position.



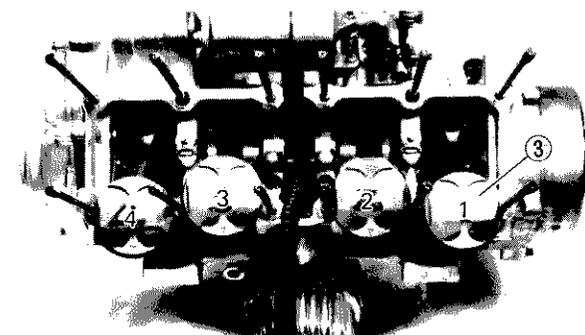
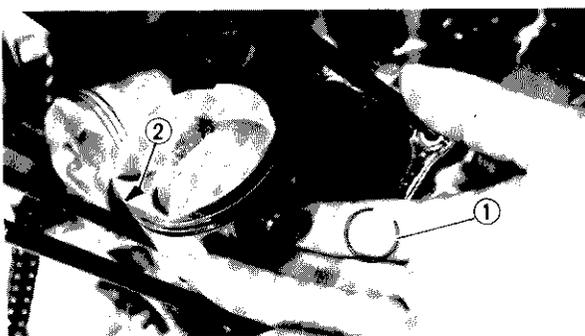
- A** Top ring
- B** Second ring

3. Install:

- Piston pins
- Pistons
- Circlips (piston pin) ①

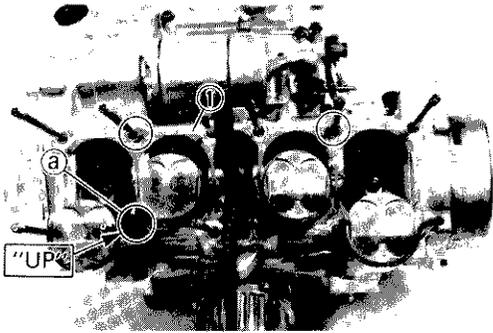
NOTE:

- Be sure the piston arrow mark ② face to exhaust side of the engine.
- Do not tap the piston pin to install it.
- Before installing the piston pin circlip, cover the crankcase with a clean rag to prevent the circlip from falling into the crankcase cavity.
- Be sure the marked piston numbers ③ should be in sequence (1, 2, 3, 4) beginning from the left.



⚠ WARNING:

Always use a new circlips (piston pin).

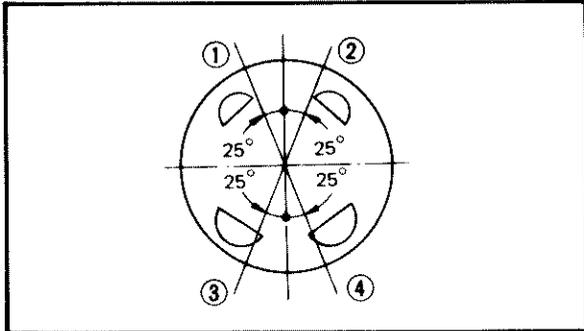


4. Install:
- Gasket (cylinder) (new) ①
 - Dowel pins

NOTE: _____
 The gasket "UP" mark should be face upward.

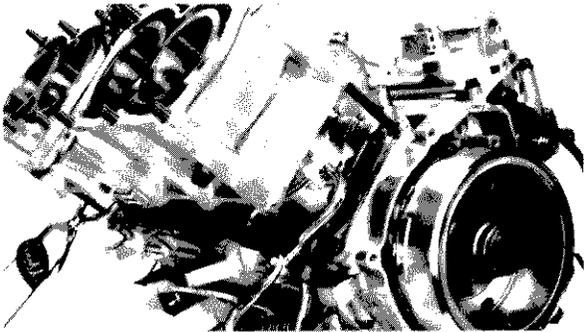
⚠ WARNING: _____

Always use a new gasket.



5. Lubricate:
- Pistons
 - Piston rings
 - Cylinder

NOTE: _____
 Apply a liberal coating of 4-stroke engine oil.

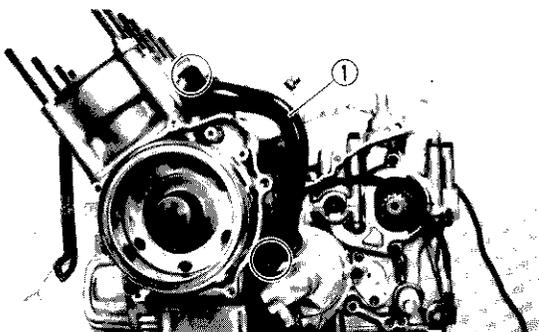


6. Position:
- Offset the piston ring end gaps.
- Top ring end ①
 - Oil ring end (lower) ②
 - Oil ring end (upper) ③
 - 2nd ring end ④

7. Install:
- Cylinder

NOTE: _____

- Install pistons #2 and #3 first.
- Pass the timing chain and timing chain guide (exhaust side) through the timing chain cavity.



8. Install:
- O-ring
 - Water pipe ①

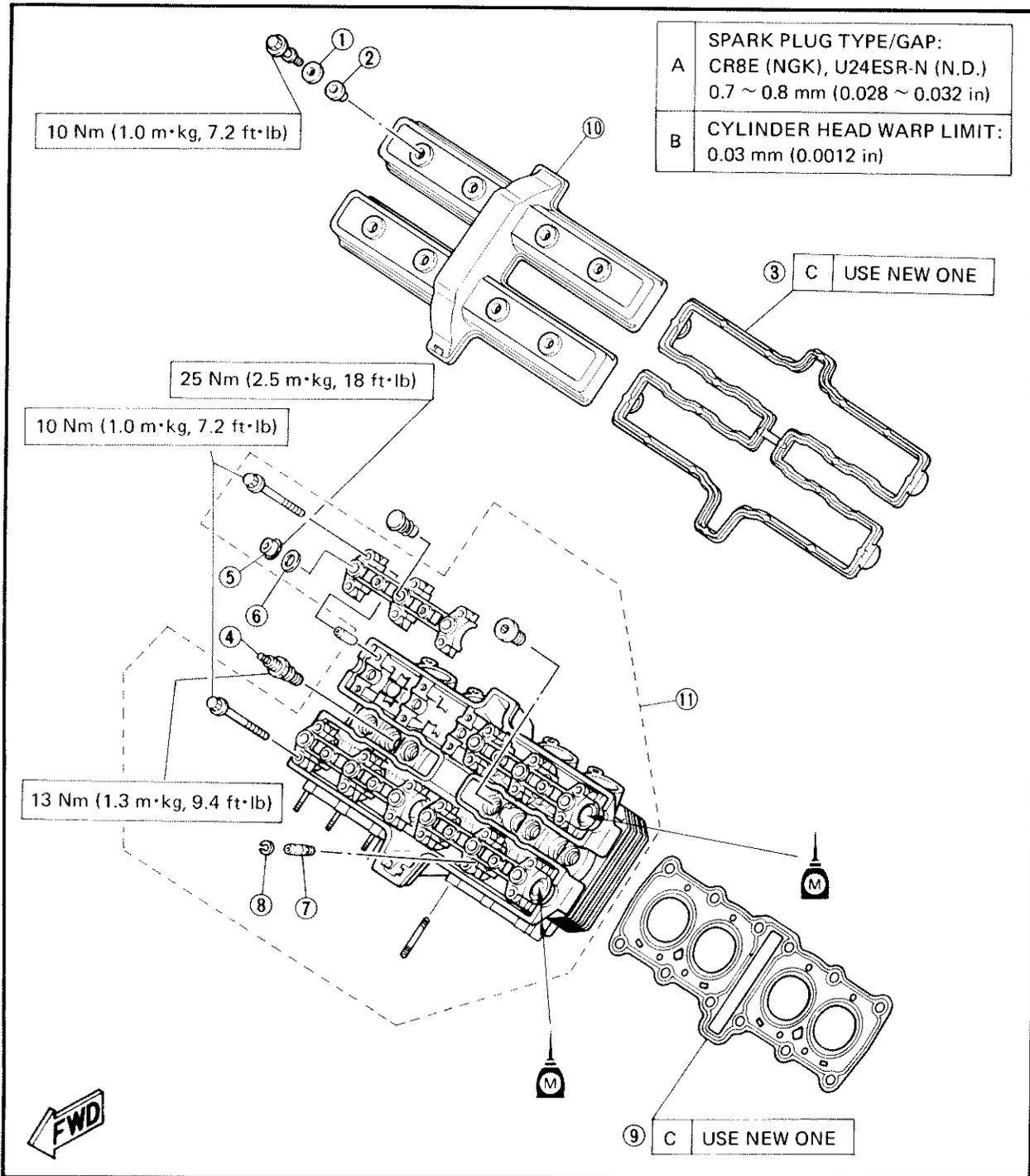
	<p>Bolts (water pipe): 10 Nm (1.0 m · kg, 7.2 ft · lb)</p>
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CYLINDER HEAD AND CAMSHAFT

Cylinder Head

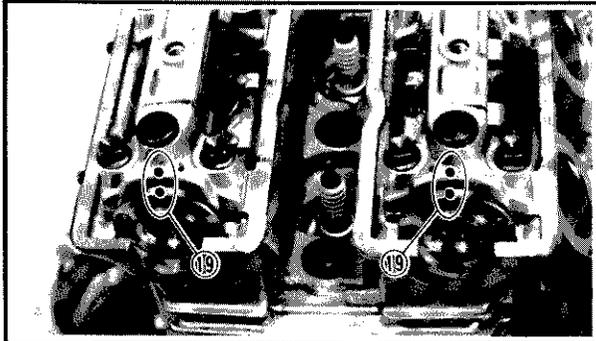
- ① Washer
- ② Rubber washer
- ③ Gasket (Cylinder head cover)
- ④ Spark plug
- ⑤ Nut
- ⑥ Washer
- ⑦ Valve guide
- ⑧ Circlip
- ⑨ Gasket (cylinder head)
- ⑩ Cylinder head cover
- ⑪ Cylinder head assembly



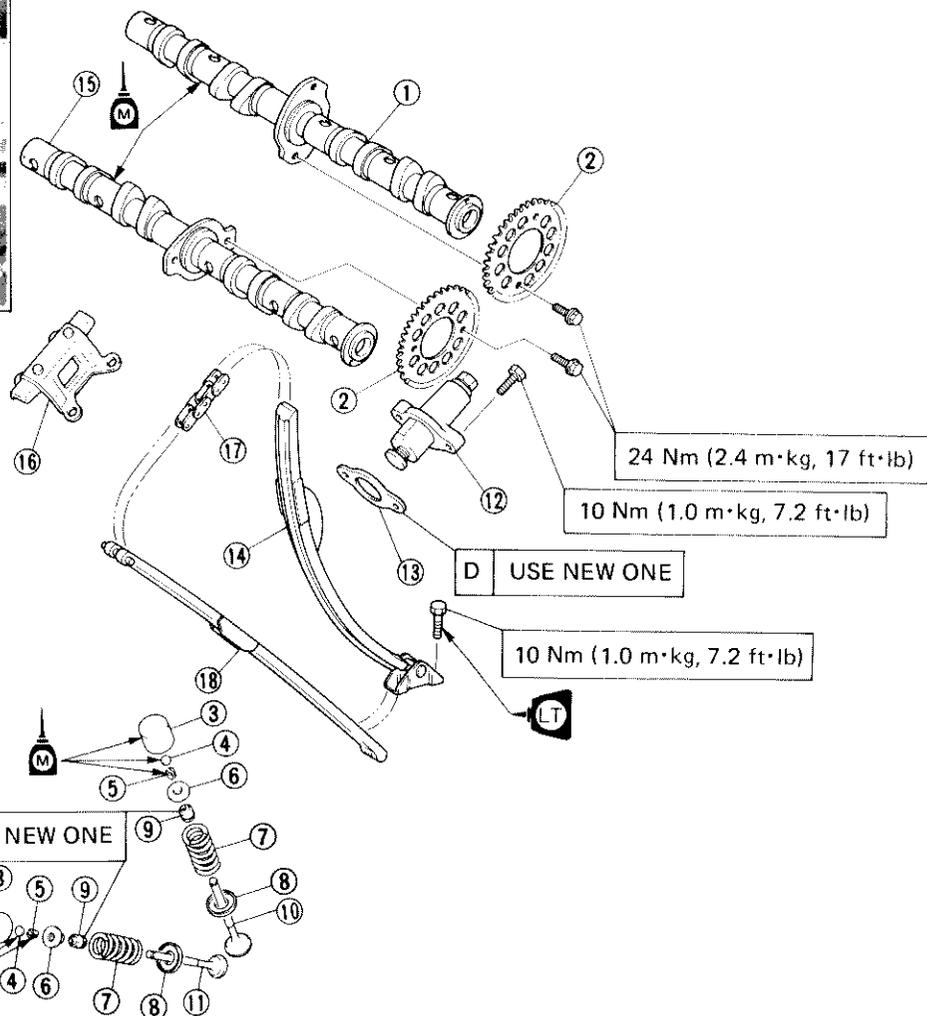
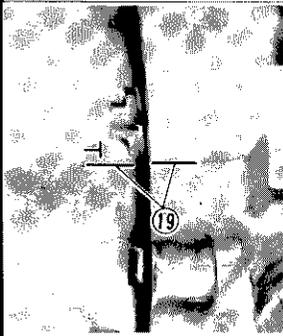


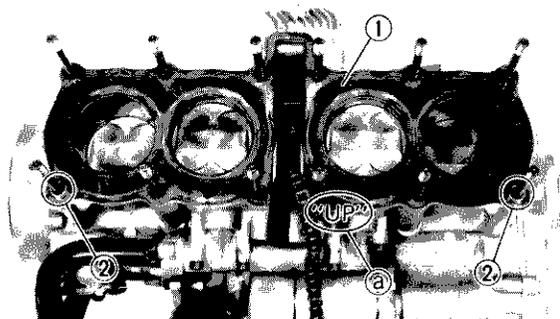
Camshaft

- | | | |
|-------------------------|------------------------------------|-------------------------------------|
| ① Camshaft (intake) | ⑧ Spring seat | ⑮ Camshaft (exhaust) |
| ② Timing chain sprocket | ⑨ Oil seal | ⑯ Chain guide (upper) |
| ③ Valve lifter | ⑩ Intake valve | ⑰ Timing chain |
| ④ Valve pad | ⑪ Exhaust valve | ⑱ Timing chain guide (exhaust side) |
| ⑤ Valve retainer | ⑫ Timing chain tensioner | ⑲ Match mark |
| ⑥ Spring seat | ⑬ Gasket (timing chain tensioner) | |
| ⑦ Valve spring | ⑭ Timing chain guide (intake side) | |



A	VALVE CLEARANCE (COLD):
	INTAKE:
B	0.11 ~ 0.20 mm (0.004 ~ 0.008 in)
	EXHAUST:
C	0.21 ~ 0.30 mm (0.008 ~ 0.012 in)





CYLINDER HEAD AND CAMSHAFT

1. Install:

- Gasket (cylinder head) (new) ①
- Dowel pins ②

NOTE:

The gasket "UP" mark should face upward.

⚠ WARNING:

Always use a new gasket (cylinder head).

NOTE:

- Select either of the two procedures explained in this manual, as follows:
- Procedure 1.
The timing chain is disconnected → Connect.
- Procedure 2.
The camshafts are removed → Install.

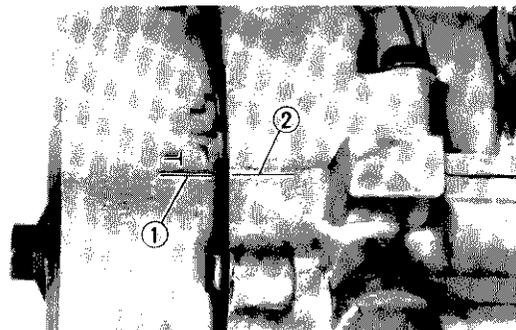
2. Install:

- Camshafts
- Timing chain

Procedure 1

1. Align:

- "T" mark ①
(with crankcase matching line ②)

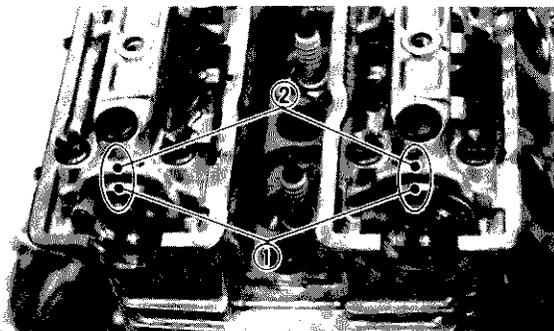


2. Install:

- Camshafts and cylinder head assembly

NOTE:

Be sure the camshaft timing marks ① align with the camshaft cap marks ②.

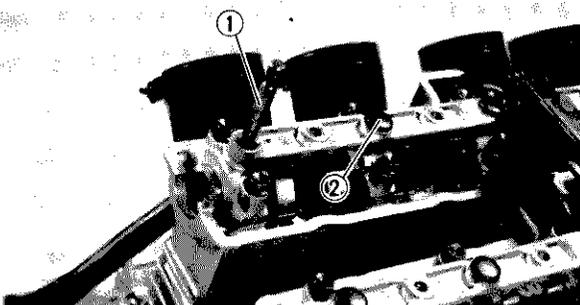


3. Install:

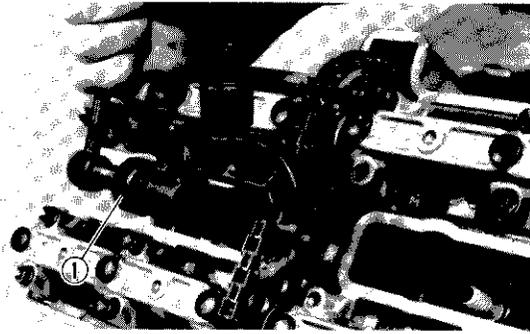
- Nuts (cylinder head)
 - Caps ②
- Use the Hexagon Wrench 6 mm (0.24 in) ①.

NOTE:

Tighten the nuts in their proper tightening sequence and torque nuts in two stages.



Nuts (cylinder head):
25 Nm (2.5 m · kg, 18 ft · lb)



4. Connect:

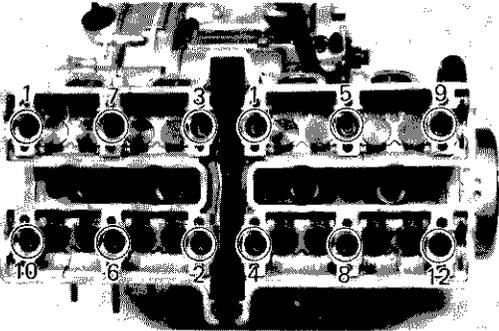
- Timing chain
- With the chain joint (new).
Use the timing chain cutter ①.



Timing chain cutter:
P/N YM-01112
90890-01112

NOTE:

Keep the cam chain as tense as possible on the exhaust side.



5. Go to "TIMING CHAIN TENSIONER".

Procedure 2.

1. Install:

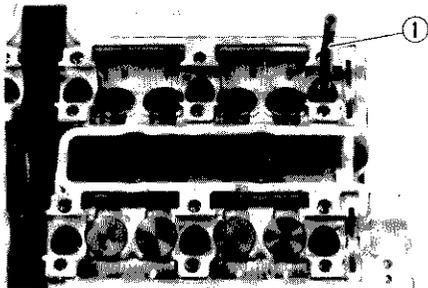
- Cylinder head assembly

2. Tighten:

- Nuts (cylinder head)
- Use the Hexagon wrench 6 mm (0.24 in)
①.

NOTE:

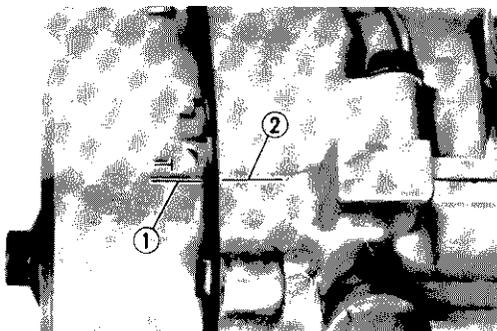
Tighten the nuts in their proper tightening sequence and torque nuts in two stages.



Nuts (cylinder head):
25 Nm (2.5 m · kg, 18 ft · lb)

3. Align:

- T-mark ①
- (with crankcase matching line ②.)

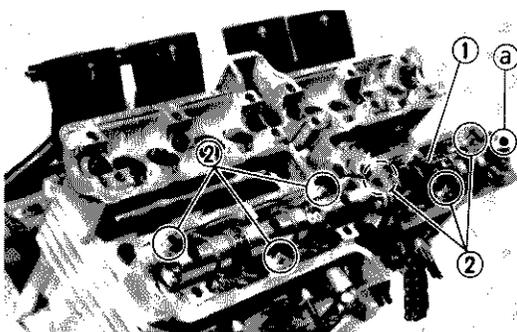


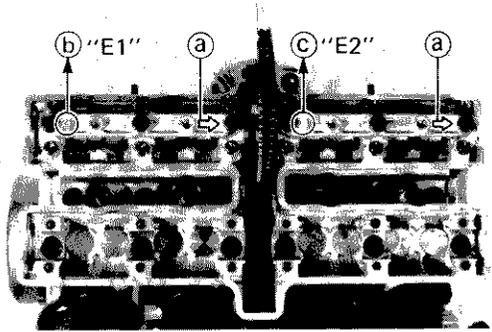
4. Install:

- Camshaft (exhaust) ①
- Dowel pins ②

NOTE:

- Apply the molybdenum disulfide oil on the camshaft.
- Install the camshaft so that the punch mark ③ face upward.



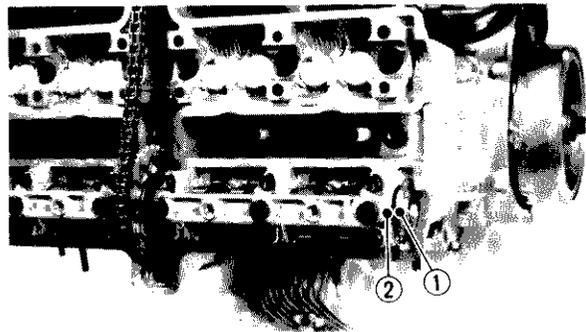


3. Install:
- Camshaft caps (exhaust)

NOTE:

- Face the arrow marks (a) on the camshaft caps to the clutch.
- The camshaft cap with the punched mark "E1" (b) should be installed on the rotor side and the "E2" (c) on the clutch side.
- Tighten the bolts (camshaft cap) in their proper tightening sequence and torque the bolts in two stages.

	<p>Bolt (camshaft cap): 10 Nm (1.0 m·kg, 7.2 ft·lb)</p>
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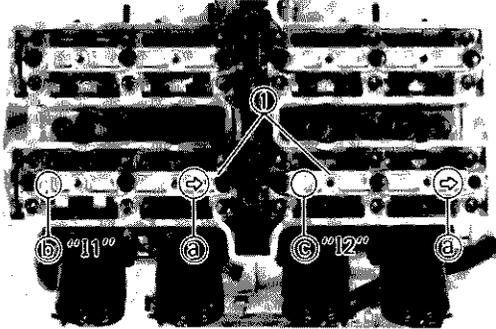
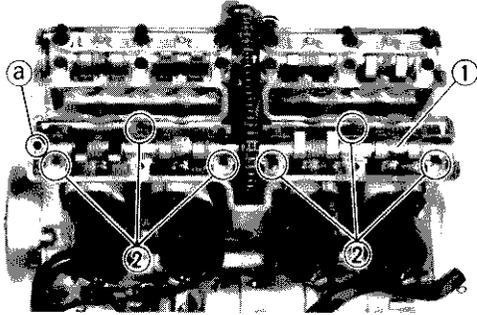
4. Align:
- Punch mark (camshaft – exhaust) (1)
(with punch mark (camshaft cap – exhaust) (2))

Alignment steps:

- Remove the timing chain from cam sprocket.
- Using the camshaft wrench, turn the camshaft and align the punch marks.

	<p>Camshaft wrench: YM-04115, 90890-04115</p>
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- Hang the timing chain onto the cam sprocket, taking care so that there is no slack in the chain on the exhaust side.



5. Install:

- Camshaft (intake) ①
- Dowel pins ②

Hung the timing drain onto the cam sprocket.

NOTE: _____

- Apply the molybdenum disulfide oil to the camshaft.
- Install the camshaft so that the punched mark ① faces upward.

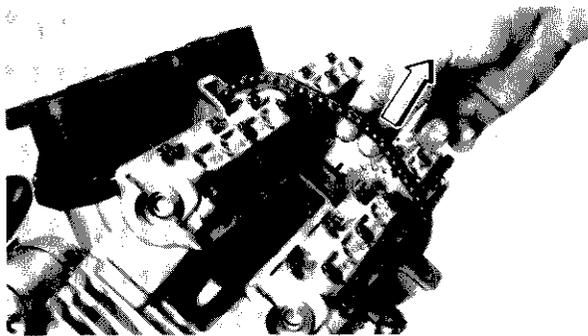
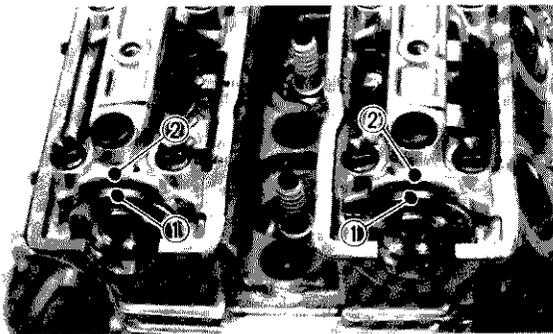
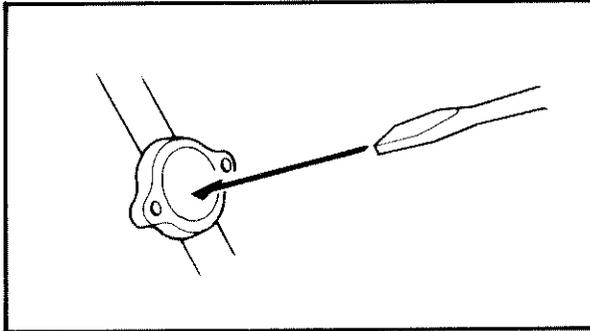
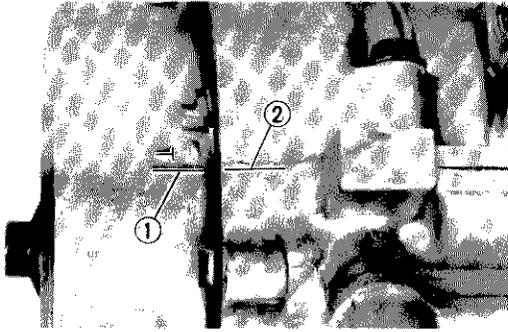
6. Install:

- Camshaft caps ①

NOTE: _____

- Face the arrow marks ① on the camshaft caps to the clutch.
- The camshaft cap with the punched mark "11" ② should be installed on the rotor side, and the "12" ③ on the clutch side.
- Tighten the bolts (camshaft cap) in their proper tightening sequence and torque the bolts in two stages.

	<p>Bolt (camshaft cap): 10 Nm (1.0 m · kg, 7.2 ft · lb)</p>
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7. Check:

- Valve timing

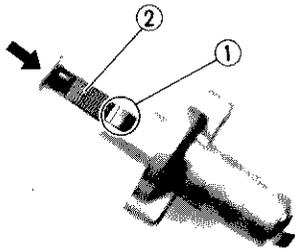
Checking steps:

- Align "T" mark ① on the rotor with the crankcase matching line ②.
- Push the timing chain through the timing chain tensioner hole.
- Check that the each punched marks ① (on camshafts) align with the punched mark ② on the camshaft caps.
- If the punched marks does not align, pull the timing chain (to increase the chain slack on upper side) and adjust valve timing by changing the engagement of the timing chain and sprocket (EX and/or IN).
- Recheck the valve timing of by following above steps.



TIMING CHAIN TENSIONER

1. Position:
 - Timing chain
 - Exhaust side → Tense.
 - Intake side → Slack.
2. Install:
 - Timing chain tensioner

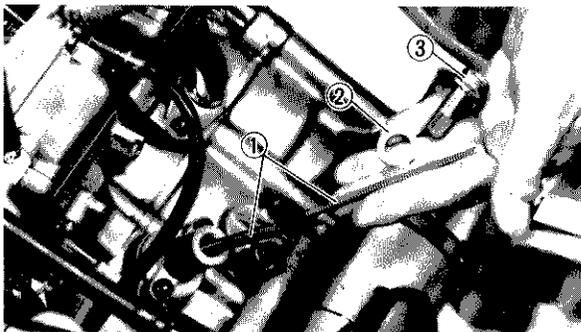


Installation steps:

- Remove the tensioner end cap bolt and spring.
- Release the timing chain tensioner one-way cam ① and push the tension rod ②.
- Install the tensioner with a new gasket into the cylinder.

NOTE:

Position the "UP" mark on timing chain tensioner upside.

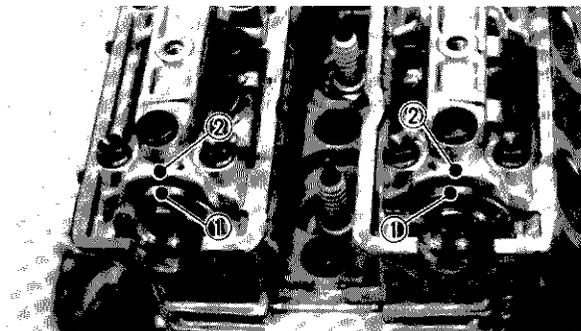


Bolts (timing chain tensioner):
10 Nm (1.0 m·kg, 7.2 ft·lb)

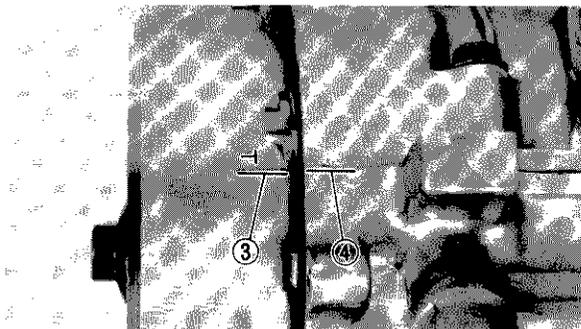
- Install the springs ①, washer ② and end cap bolt ③.



End cap bolt (cam chain tensioner):
20 Nm (2.0 m·kg, 14 ft·lb)

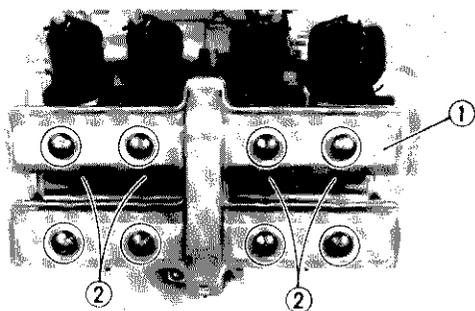


3. Turn:
 - Crankshaft
 - Counterclockwise for a several turns.
4. Inspect:
 - Camshaft timing marks ①
 - Align with the camshaft cap marks ②.
 - Crankshaft "T" mark ③
 - Align with the crankcase matching line ④.
 - Out of alignment → Adjust.
 - Refer to "CAMSHAFT INSTALLATION STEPS".
5. Measure:
 - Valve clearance
 - Out of specification → Adjust.
 - Refer to "VALVE CLEARANCE ADJUSTMENT" section in the CHAPTER 3.



Intake valve (cold):
0.11 ~ 0.20 mm
(0.004 ~ 0.008 in)

Exhaust valve (cold):
0.21 ~ 0.30 mm
(0.008 ~ 0.012 in)

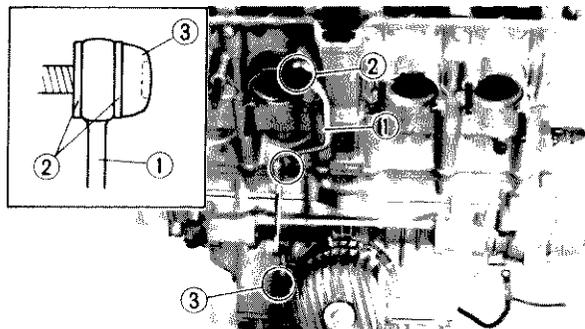


6. Install:

- Gasket (cylinder head cover)
- Cylinder head cover ①
- Spark plug ②



Bolts (cylinder head cover):
10 Nm (1.0 m · kg, 7.2 ft · lb)

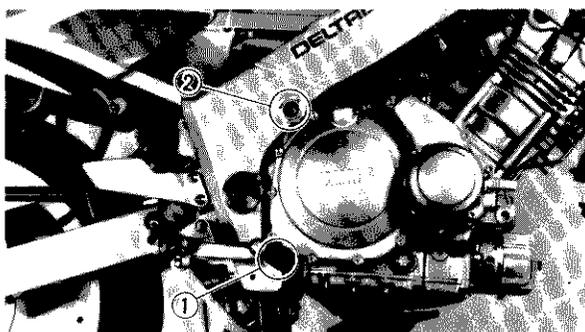


7. Install:

- Oil delivery pipe ①
- Washers (new) ②
- Union bolts ③



Union bolts (oil delivery pipe):
20 Nm (2.0 m · kg, 14 ft · lb)



REMounting ENGINE

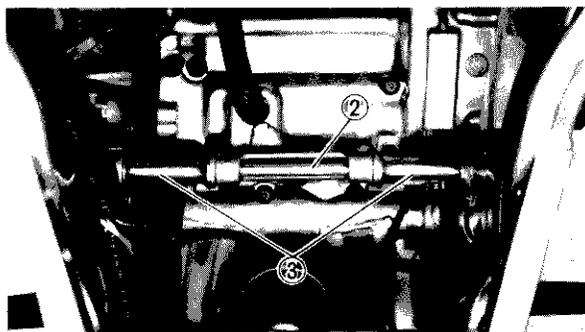
When remounting the engine, reverse the removal procedure. Note the following points.

1. Install:

- Engine assembly
- Bolt (engine mount – rear lower) ①
- Bolt (engine mount – rear upper) ②



Bolt (engine mount – rear lower):
45 Nm (4.5 m · kg, 32 ft · lb)
Bolt (engine mount – rear upper):
55 Nm (5.5 m · kg, 40 ft · lb)



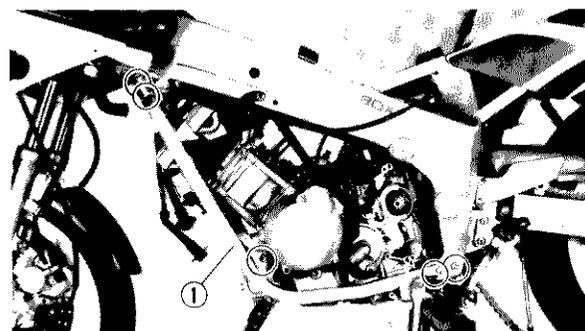
③ Collars

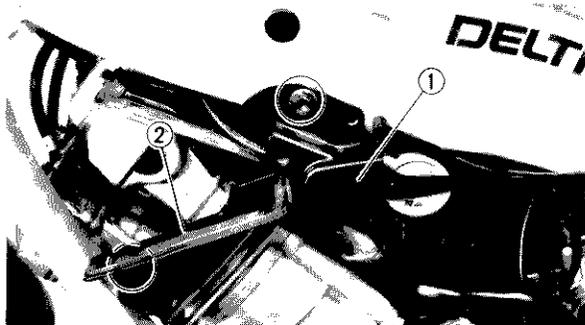
2. Install:

- Down tube frames (left and right) ①
- Bolt (engine – mount) ②



Bolts (down tube frame – lower):
33 Nm (3.3 m · kg, 24 ft · lb)
Bolts (down tube frame – upper):
60 Nm (6.0 m · kg, 43 ft · lb)
Use LOCTITE®
Bolt (engine mount):
55 Nm (5.5 m · kg, 40 ft · lb)



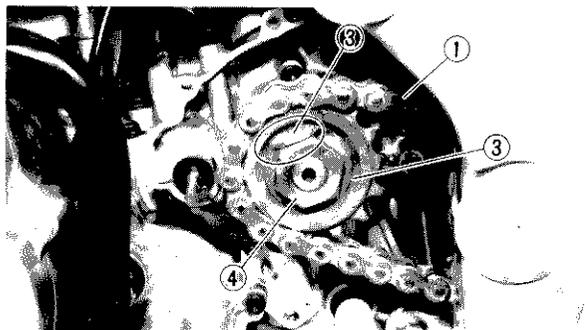


3. Install:

- Starter lever ①
- Cover ②



Bolt (starter lever):
8 Nm (0.8 m · kg, 5.8 ft · lb)



4. Install:

- Drive chain ①
- Drive sprocket ②
- Lock washer (new) ③
- Nut (drive sprocket) ④

Bend the end of lock washer tab.



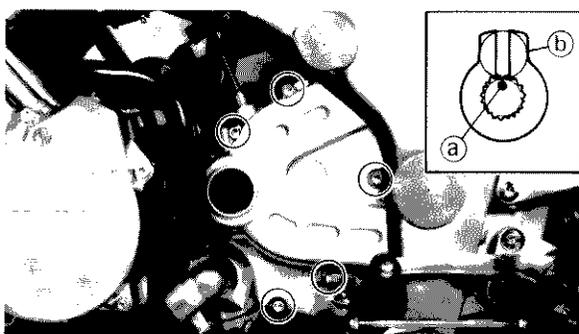
Nut (drive sprocket):
70 Nm (7.0 m · kg, 50 ft · lb)

NOTE:

When tightening the nut (drive sprocket), apply the rear brake pedal and transmission gear to the 6th position.

⚠ WARNING:

Always use a new lock washer.



5. Install:

- Collar
- Cover (crankcase left)
- Shift arm

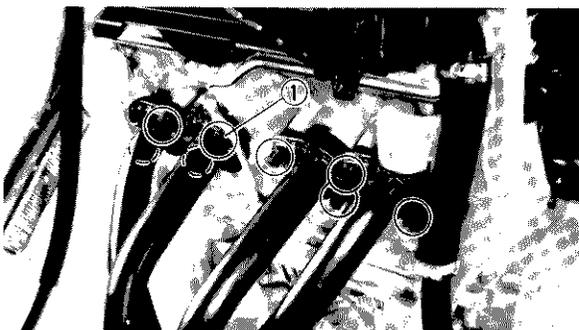


Bolts (crankcase cover):
10 Nm (1.0 m · kg, 7.2 ft · lb)
Use LOCTITE®

Bolt (shift arm):
10 Nm (1.0 m · kg, 7.2 ft · lb)

NOTE:

Align the punch mark (a) with the slot (b) on shift arm.



6. Install:

- Muffler assembly

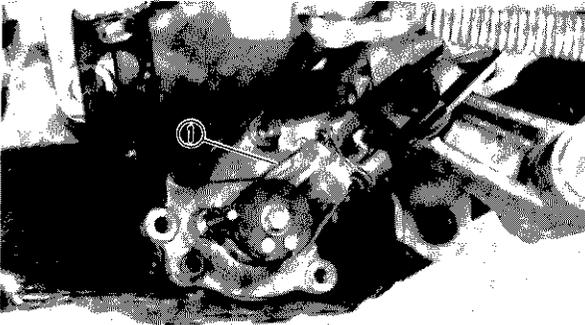
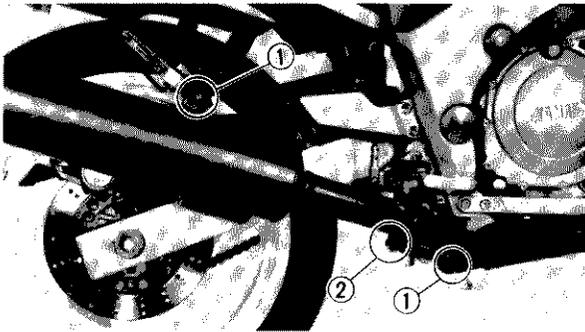
7. Tighten:

- Flange nuts (exhaust pipe) ①



Flange nuts (exhaust pipe):
10 Nm (1.0 m · kg, 7.2 ft · lb)

Bolts (cowling stay):
10 Nm (1.0 m · kg, 7.2 ft · lb)



8. Tighten:

- Bolt (muffler bracket) ①
- Bolt (exhaust pipe joint) ②



Bolt (muffler bracket):
20 Nm (2.0 m·kg, 14 ft·lb)

Bolt (exhaust pipe joint)

For California only:

20 Nm (2.0 m·kg, 14 ft·lb)

9. Connect:

- EXUP cables ① (FZR600WC only)

10. Install:

- Valve cover (FZR600WC only)



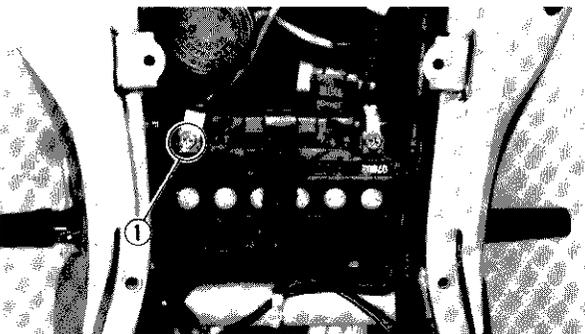
Bolt (valve cover):

10 Nm (1.0 m·kg, 7.2 ft·lb)

11. Adjust:

- EXUP cables (FZR600WC only)

Refer to "EXUP CABLE ADJUSTMENT"
section in the CHAPTER 3.



12. Install:

- Radiator assembly



Bolt (radiator):

10 Nm (1.0 m·kg, 7.2 ft·lb)

13. Connect:

- Battery leads

NOTE:

Connect the positive lead ① first.

14. Fill:

- Crankcase

With recommended engine oil.

Refer to "ENGINE OIL REPLACEMENT"
section in the CHAPTER 3.



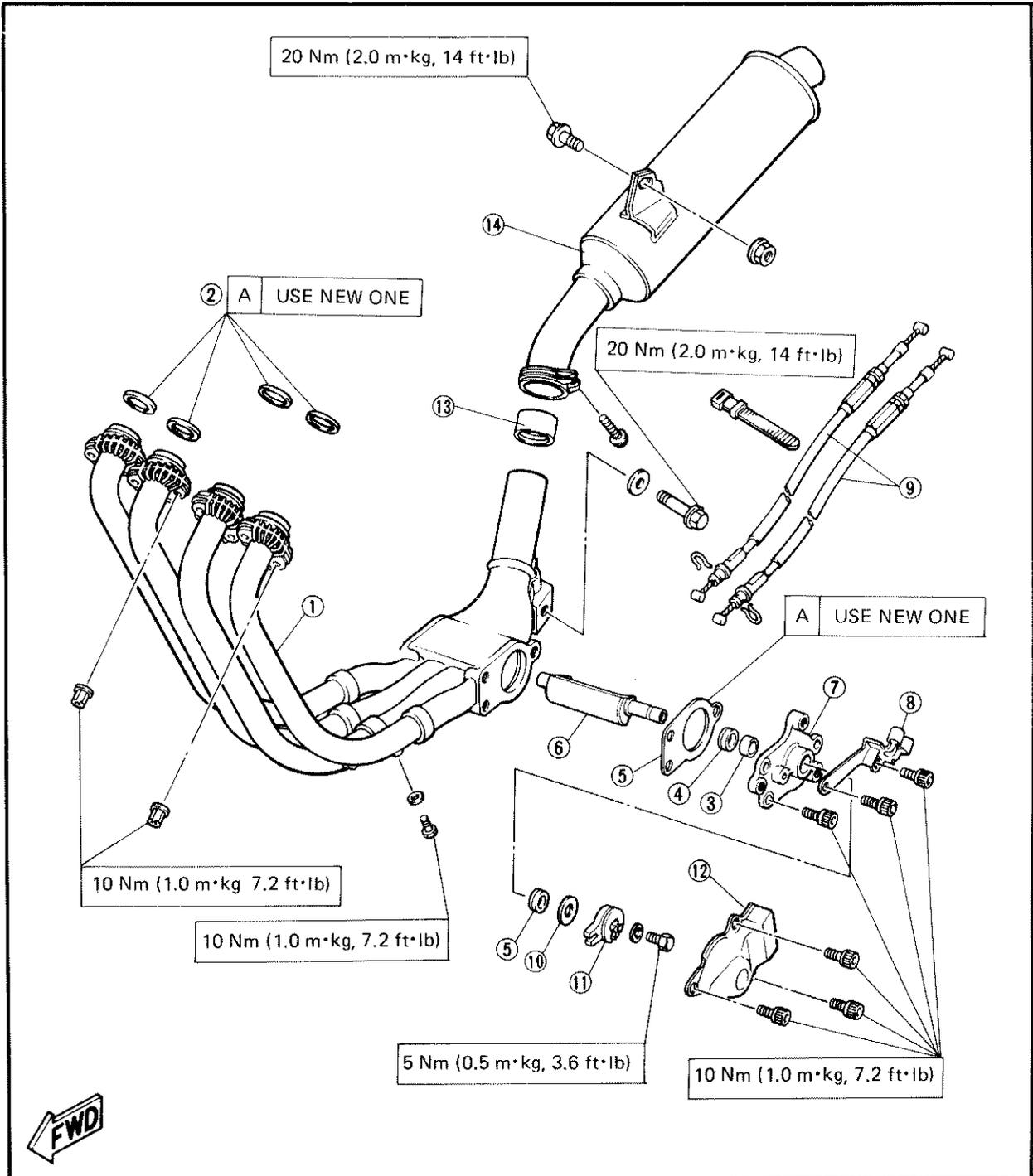
Total amount:

3.1 L (2.7 Imp qt, 3.3 US qt)



EXUP VALVE (FZR600WC ONLY)

- | | |
|-------------------------|--------------------|
| ① Exhaust pipe assembly | ⑧ Bracket |
| ② Gasket (Exhaust pipe) | ⑨ Cables |
| ③ Bush | ⑩ Washer |
| ④ Oil seal | ⑪ Pulley |
| ⑤ Gasket | ⑫ Valve cover |
| ⑥ Shaft arm | ⑬ Gasket (Muffler) |
| ⑦ Housing | ⑭ Muffler assembly |





15. Fill:

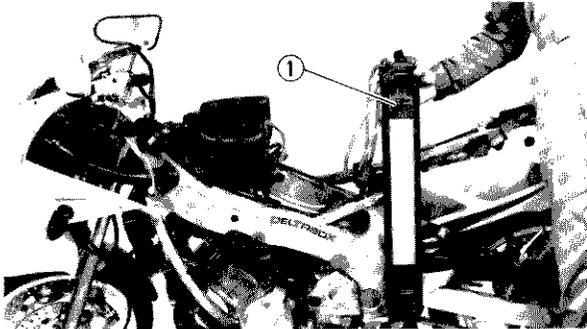
- Cooling system

Refer to "COOLANT LEVEL INSPECTION" section in the CHAPTER 3.



Total amount:

2.2 L (2.7 Imp qt, 2.3 US qt)



16. Adjust:

- Carburetor synchroniz

Refer to "CARBURETOR SYNCHRONIZATION" section in the CHAPTER 3.

17. Adjust:

- Idle speed

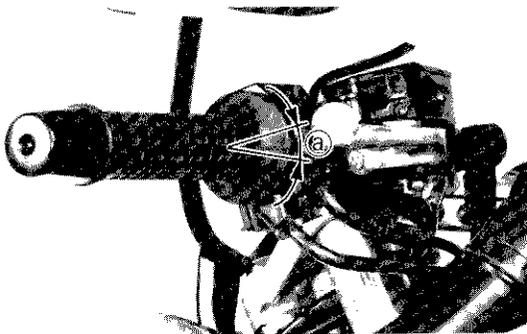
Refer to "IDLE SPEED ADJUSTMENT" section in the CHAPTER 3.



Idle speed:

1,150 ~ 1,250 r/min

1,250 ~ 1,350 r/min (FZR600WC)



18. Adjust:

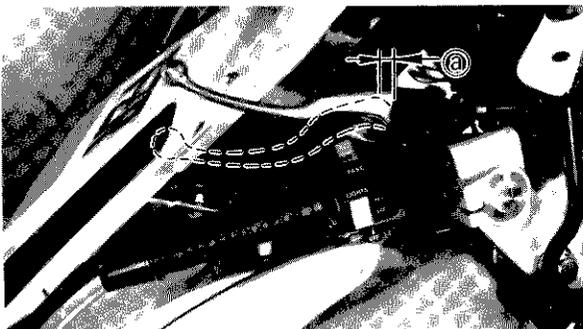
- Throttle cable free play ^a

Refer to "THROTTLE CABLE ADJUSTMENT" section in the CHAPTER 3.



**Throttle cable free play
(throttle grip):**

3 ~ 7 mm (0.12 ~ 0.28 in)



19. Adjust:

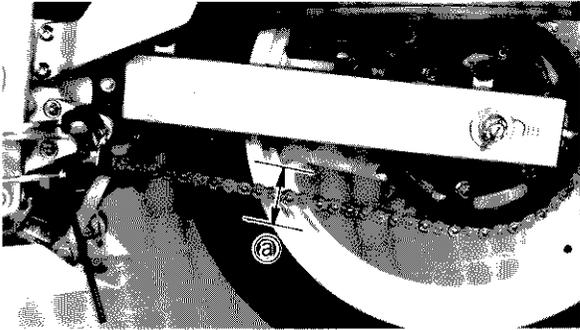
- Clutch cable free play

Refer to "CLUTCH CABLE ADJUSTMENT" section in the CHAPTER 3.



Clutch cable free play:

2 ~ 3 mm (0.08 ~ 0.12 in)



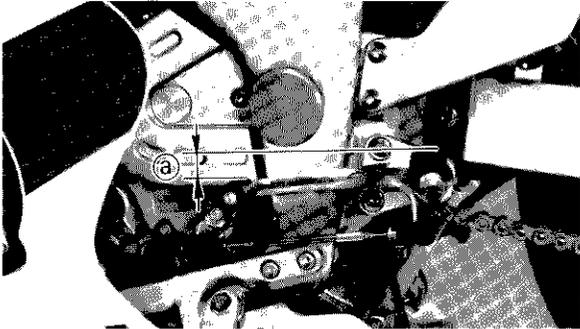
20. Adjust:

- Drive chain slack

Refer to "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.



Drive chain slack:
20 ~ 30 mm (0.8 ~ 1.2 in)



21. Adjust:

- Change pedal height

Refer to "CHANGE PEDAL POSITION ADJUSTMENT" section in the CHAPTER 3.