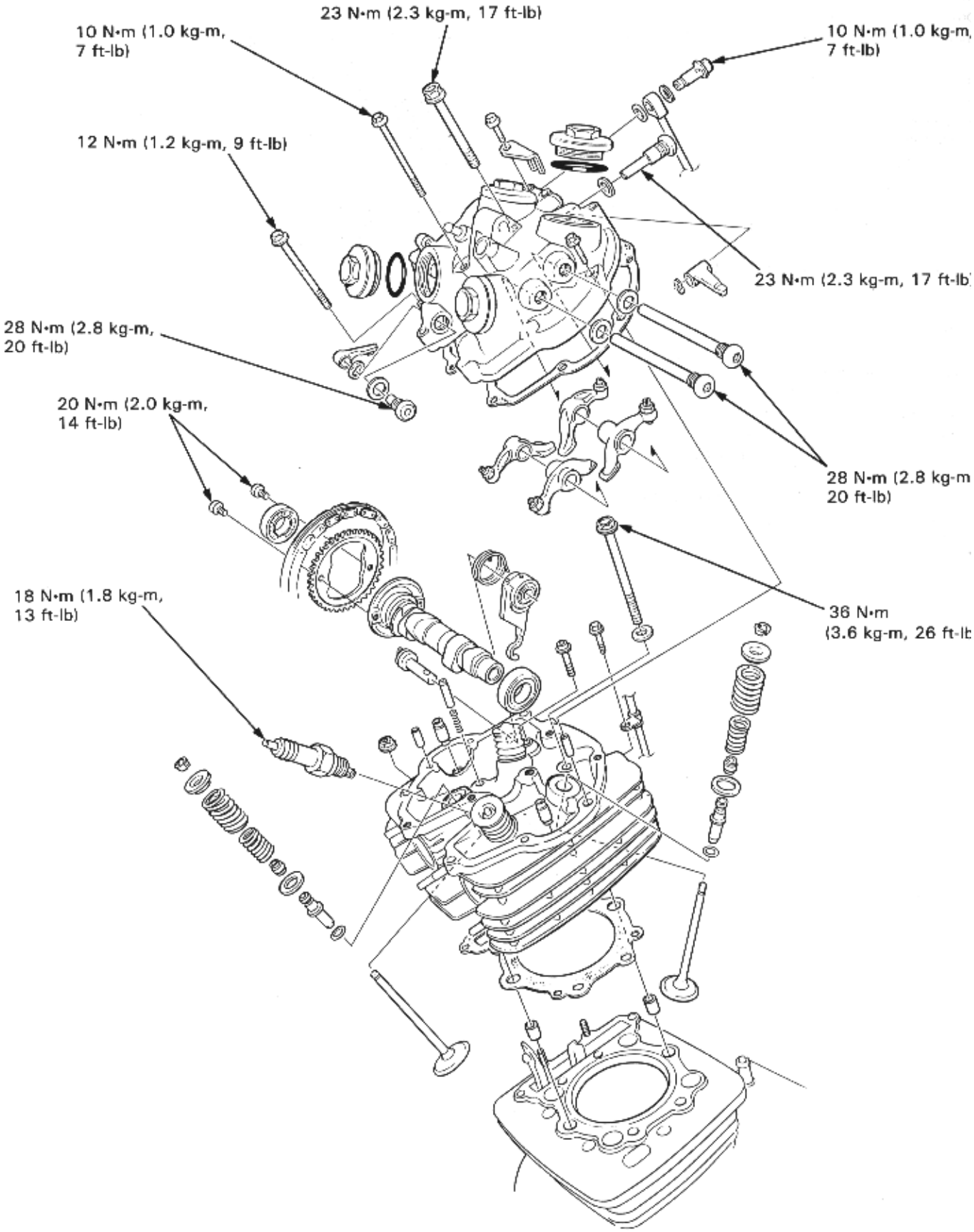

23 N•m (2.3 kg-m, 17 ft-lb)
10 N•m (1.0 kg-m, 7 ft-lb)
10 N•m (1.0 kg-m, 7 ft-lb)
12 N•m (1.2 kg-m, 9 ft-lb)
23 N•m (2.3 kg-m, 17 ft-lb)
28 N•m (2.8 kg-m, 20 ft-lb)
20 N•m (2.0 kg-m, 14 ft-lb)
28 N•m (2.8 kg-m 20 ft-lb)
18 N•m (1.8 kg-m, 13 ft-lb)
36 N•m (3.6 kg-m, 26 ft-lb

6. CYLINDER HEAD/VALVES

SERVICE INFORMATION

GENERAL

- This section covers maintenance of the cylinder head, valves, camshaft, rocker arms and sub-rocker arms. These procedures can be performed with the engine in the frame.
- Coat the camshaft bearings with clean engine oil to provide initial lubrication.
- Pour clean engine oil into the oil pockets in the cylinder head to lubricate the cam.
- Before assembly, apply molybdenum disulfide grease to camshaft journals to provide initial lubrication.

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			10.5–12.5 kg/cm² (149.31–177.75 psi)	—
Camshaft Cam lobe height	'88:	IN	31.155–31.315 mm (1.2266–1.2329 in)	31.05 mm (1.222 in)
		EX	31.091–31.251 mm (1.2241–1.2304 in)	31.00 mm (1.220 in)
	AFTER '88:	IN	31.101–31.341 mm (1.2244–1.2339 in)	30.48 mm (1.200 in)
		EX	31.072–31.312 mm (1.2233–1.2328 in)	30.45 mm (1.199 in)
	Run out		—	0.04 mm (0.002 in)
Rocker arm I.D.			11.500–11.518 mm (0.4528–0.4535 in)	11.55 mm (0.455 in)
Sub-rocker arm I.D.		IN	8.000–8.015 mm (0.3150–0.3156 in)	8.05 mm (0.317 in)
		EX	7.000–7.015 mm (0.2756–0.2762 in)	7.05 mm (0.278 in)
Rocker arm shaft O.D.			11.466–11.484 mm (0.4514–0.4521 in)	11.41 mm (0.449 in)
Sub-rocker arm shaft O.D.		IN	7.969–7.972 mm (0.3137–0.3138 in)	7.92 mm (0.312 in)
		EX	6.969–6.972 mm (0.2744–0.2745 in)	6.92 mm (0.272 in)
Rocker arm shaft-to-arm clearance			0.016–0.052 mm (0.0006–0.0020 in)	0.14 mm (0.006 in)
Sub-rocker arm shaft-to-arm clearance			0.013–0.043 mm (0.0005–0.0017 in)	0.10 mm (0.004 in)
Valve spring	Free length	Inner	35.1 mm (1.38 in)	34.1 mm (1.34 in)
		Outer	36 mm (1.42 in)	35.0 mm (1.38 in)
	Preload/length	Inner	6.14 ± 0.4 kg/28 mm (13.536 ± 0.88 lb/1.1 in)	—
		Outer	11.8 ± 1.0 kg/31.5 mm (26.01 ± 2.20 lb/1.240 in)	—
Valve	Stem O.D.	IN	6.575–6.590 mm (0.2589–0.2594 in)	6.56 mm (0.258 in)
		EX	6.565–6.575 mm (0.2585–0.2589 in)	6.55 mm (0.258 in)
	Guide I.D.	IN	6.600–6.615 mm (0.2598–0.2604 in)	6.63 mm (0.261 in)
		EX	6.600–6.615 mm (0.2598–0.2604 in)	6.63 mm (0.261 in)
	Stem-to-guide Clearance	IN	0.010–0.040 mm (0.0004–0.0016 in)	0.060 mm (0.0024 in)
		EX	0.030–0.055 mm (0.0012–0.0022 in)	0.080 mm (0.0031 in)
	Valve face width	IN	1.20–1.85 mm (0.047–0.073 in)	2.6 mm (0.10 in)
		EX	0.9–1.7 mm (0.04–0.67 in)	2.4 mm (0.09 in)
Cylinder head	Warpage		—	0.10 mm (0.004 in)
	Valve seat width	IN/EX	1.2–1.4 mm (0.05–0.06 in)	2.0 mm (0.08 in)

TORQUE VALUES

Cylinder head bolt	30 N·m (3.6 kg-m, 22 ft-lb)	Apply oil to the threads
Cam sprocket bolt	20 N·m (2.0 kg-m, 14 ft-lb)	
Rocker arm shaft	28 N·m (2.8 kg-m, 20 ft-lb)	Apply a locking agent to the threads
Sub-rocker arm shaft (IN)	28 N·m (2.8 kg-m, 20 ft-lb)	
(EX)	23 N·m (2.3 kg-m, 17 ft-lb)	
Cylinder head cover bolt (8 mm)	23 N·m (2.3 kg-m, 17 ft-lb)	
(6 mm)	12 N·m (1.2 kg-m, 9 ft-lb)	
(6 mm SH)	10 N·m (1.0 kg-m, 7 ft-lb)	
Spark plug	18 N·m (1.8 kg-m, 13 ft-lb)	
Engine hanger plate nut (8 mm)	34 N·m (3.4 kg-m, 25 ft-lb)	
(10 mm)	60 N·m (6.0 kg-m, 43 ft-lb)	
Oil pipe bolt	10 N·m (1.0 kg-m, 7 ft-lb)	

TOOLS

Special

Cam chain tensioner holder	07973—MG30002 or 07973—MG30003
Valve guide reamer	07984—5510000 or 07984—657010C (U.S.A. only)

Common

Valve spring compressor	07757—0010000
Valve guide remover, 6.6 mm	07742—0010200 or 07984—6570100

TROUBLESHOOTING

Engine top-end problems are usually performance-related and can usually be diagnosed by a compression test. Engine noises can usually be traced to the top-end with a sounding rod or stethoscope.

Low Compression
- Valve
  - —Incorrect valve adjustment
  - —Burned or bent valves
  - —Incorrect valve timing
  - —Broken valve spring
- Cylinder head
  - —Leaking or damaged head gasket
  - —Warped or cracked cylinder head
- Cylinder and piston (Refer to Section 7)
- Faulty decompressor cam

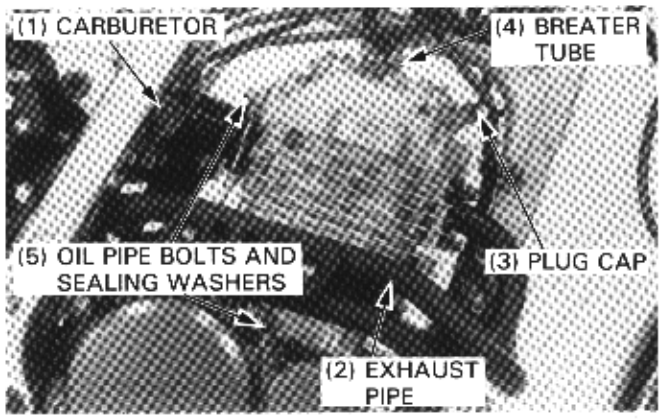
High compression
- Exessive carbon build-up on piston head or combustion chamber
- Decompressor does not operate or is damaged

Excessive Noise
- Incorrect valve adjustment
- Sticking valve or broken valve spring
- Damaged or worn rocker arm or camshaft
- Loose or worn cam chain
- Worn or damaged cam chain tensioner
- Worn cam sprocket teeth
- Faulty cam chain tensioner

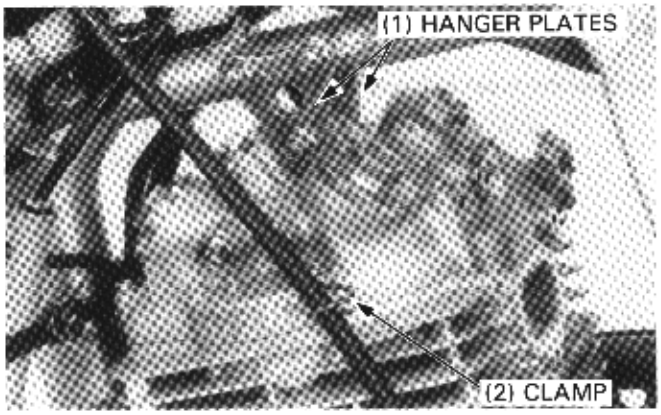
Poor idling
- Compression too low
- Faulty decompressor cam

CYLINDER HEAD COVER REMOVAL

Remove the following components:
–Fuel tank (page 4-3)
–Carburetor and carburetor insulator (page 4-7 and 8)
–Oil pipe bolts, sealing washers and oil pipe
–Cylinder head cover breather tube
–Spark plug cap



–Clutch cable clamp
–Engine hanger plates
–tapet hole caps

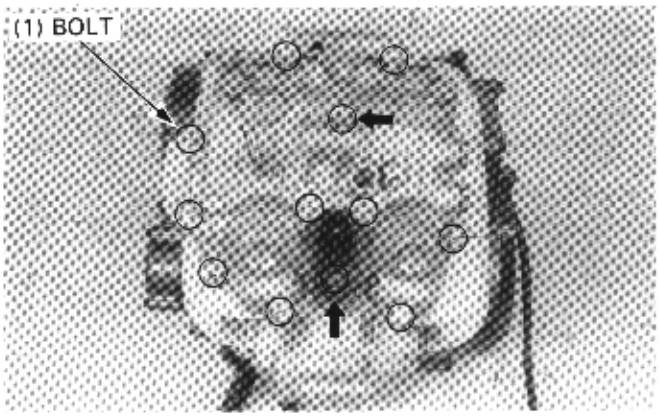


Remove the crankshaft hole cap and timing hole cap.
Turn the crankshaft and align the "T" mark on the flywheel with the index notch on the left crankcase cover when on the compression stroke (page 3-6).

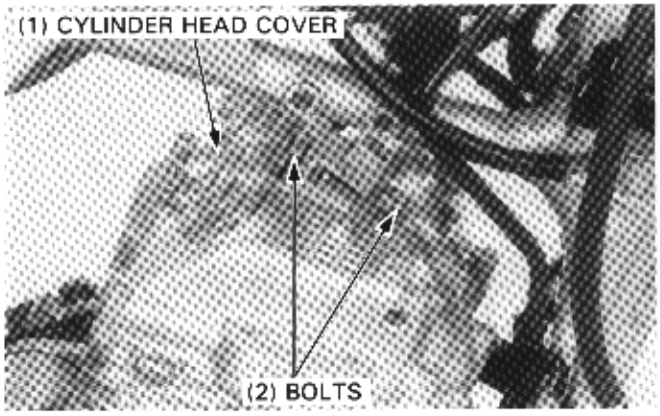
Remove the cylinder head cover bolts.

NOTE

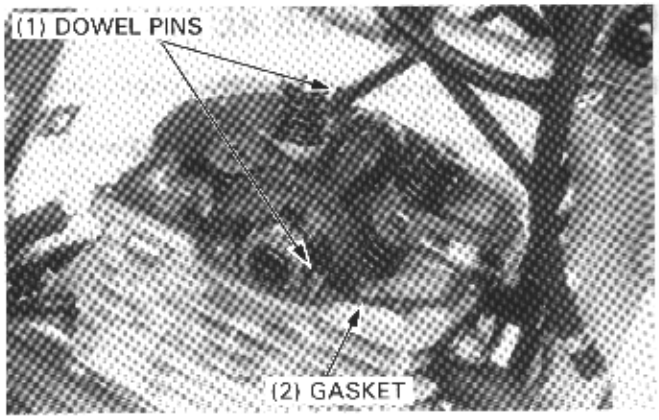
- Loosen the bolts indicated by the arrows. Remove these bolts after removing the cylinder head cover.



Slide the cylinder head cover to the intake side and remove it.
Remove the bolts from the cylinder head cover.

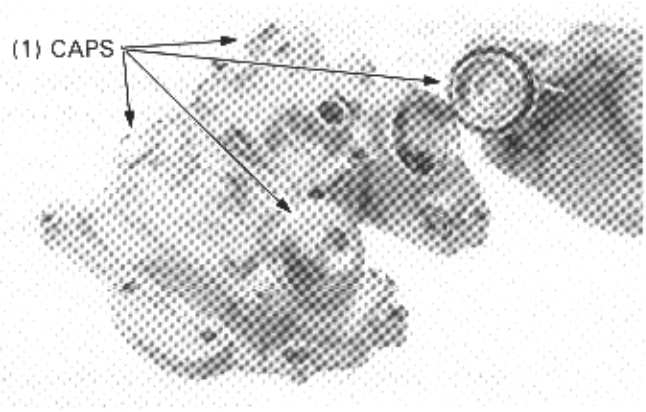


Remove the dowel pins and head cover gasket.

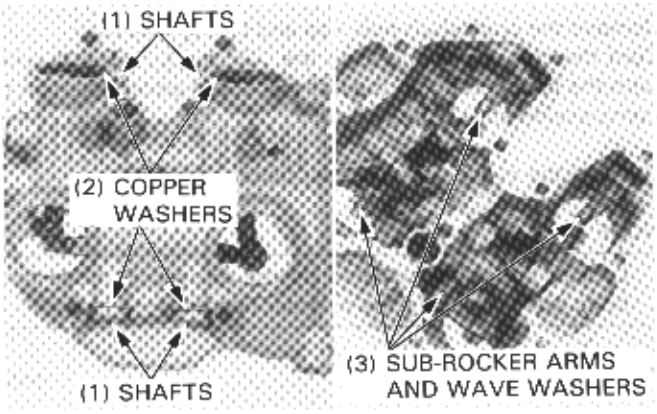


CYLINDER HEAD COVER DISASSEMBLY

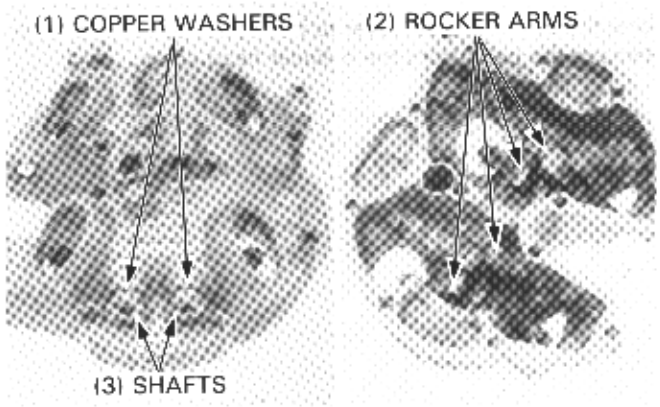
Remove the tapet hole caps from the cylinder head cover.



Remove the sub-rocker arm shafts, sealing washers, wave washers and sub-rocker arms from the cylinder head cover.

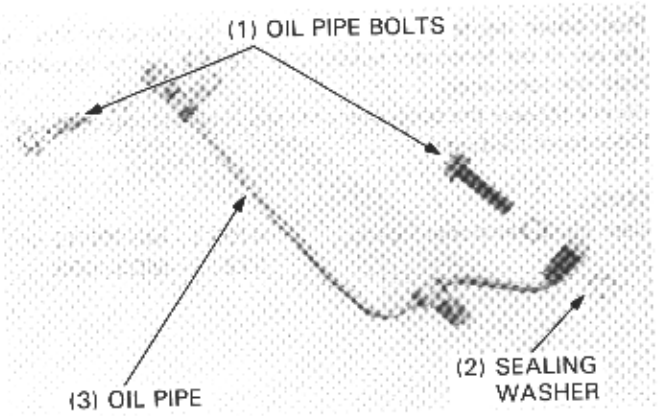


Remove the rocker arm shafts, copper washers and rocker arms from the cylinder head cover.



OIL PIPE INSPECTION

Check the oil pipe and oil pipe bolts for bends or clogging.
Check the condition of the sealing washers.



ROCKER ARM INSPECTION

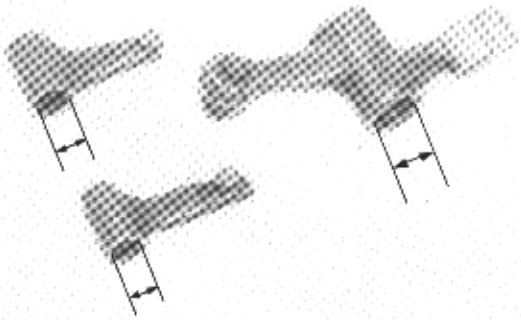
Inspect the rocker arms and sub-rocker arms for wear or damage.

NOTE

- If any rocker arms require servicing or replacement, inspect the cam lobes for scoring, chipping or flat spots.

Measure the I.D. of the rocker arms and sub-rocker arms.

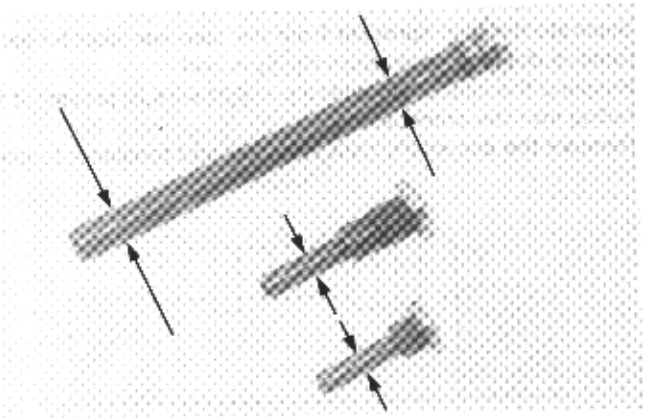
SERVICE LIMITS:
Rocker arm: 11.55 mm (0.455 in)
Sub-rocker arm: IN: 8.05 mm (0.317 in)
EX: 7.05 mm (0.277 in)



ROCKER ARM SHAFT INSPECTION

Inspect the rocker arm and sub-rocker arm shafts for wear or damage.
Measure each shaft O.D.

SERVICE LIMTS:
Rocker arm shaft: 11.41 mm (0.449 in)
Sub-rocker arm shaft: IN: 7.92 mm (0.312 in)
EX: 6.92 mm (0.272 in)



Calculate the rocker arm-to-shaft clearance.

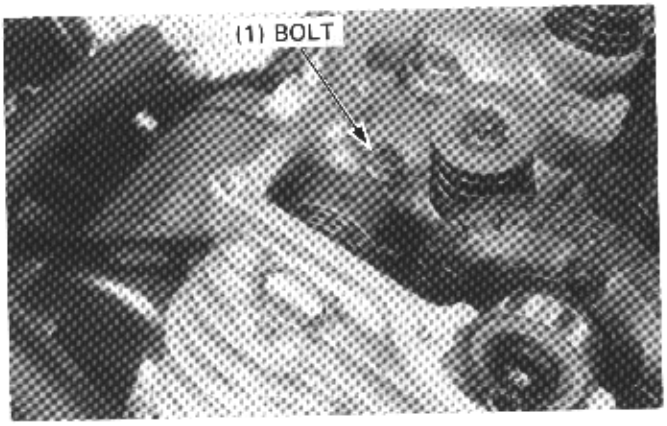
SERVICE LIMIT: 0.14 mm (0.006 in)

Calculate the sub-rocker arm-to-shaft clearance.

SERVICE LIMIT: 0.08 mm (0.003 in)

CAMSHAFT REMOVAL

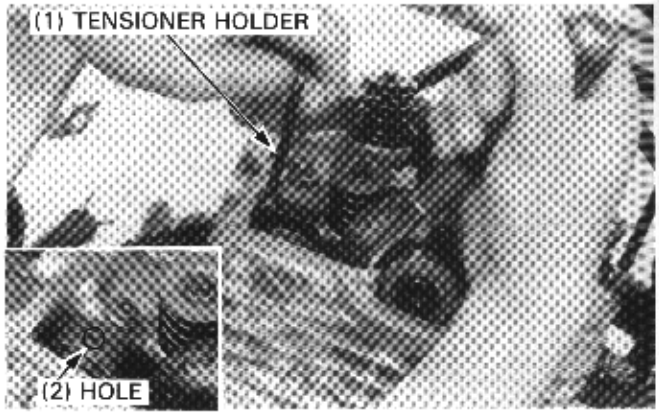
Remove the cam chain tensioner shaft bolt.



Push down the tensioner lever using a screwdriver and insert the pin of the tensioner holder into the hole of the tensioner to hold the tensioner.
Slowly release the tensioner until the tool rests against the cylinder head casting.

TOOL:

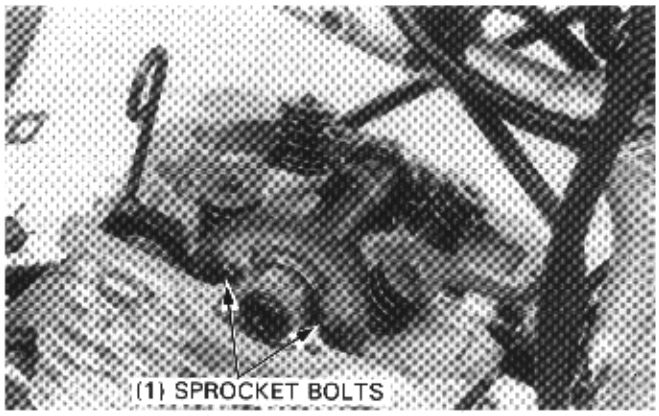
Cam chain tensioner holder	**07973—MG30002 or 07973—MG30003**



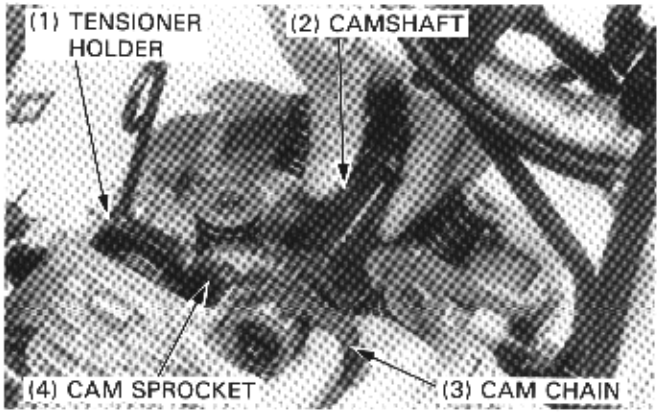
Turn the crankshaft and remove the cam sprocket bolts.

CAUTION

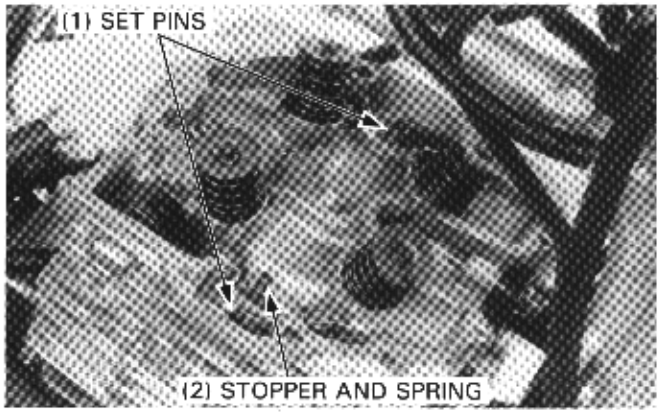
- *Be careful not drop the bolts into the crankcase.*



Separate the cam sprocket from the cam sprocket holder and remove the cam chain from the sprocket.
Suspend the cam chain with a piece of wire to prevent it from falling into the crankcase.
Remove the camshaft, cam sprocket and tensioner holder.



Remove the camshaft bearing set pins, reverse decompressor cam stopper and spring.



CAMSHAFT BEARING INSPECTION

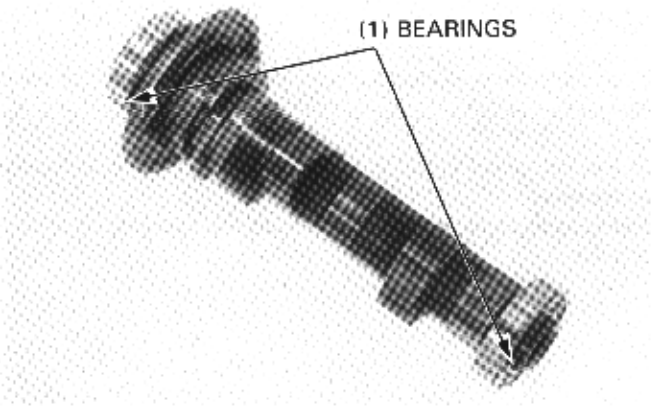
Turn the outer race of each bearing with your finger. The bearings should turn smoothly and quietly. Also check that the bearing inner race fits tightly on the camshaft.

If the outer races do not turn smoothly and quietly or inner races fit loosely on the camshaft, replace the bearings.

NOTE

- Always replace the camshaft bearings in pairs.

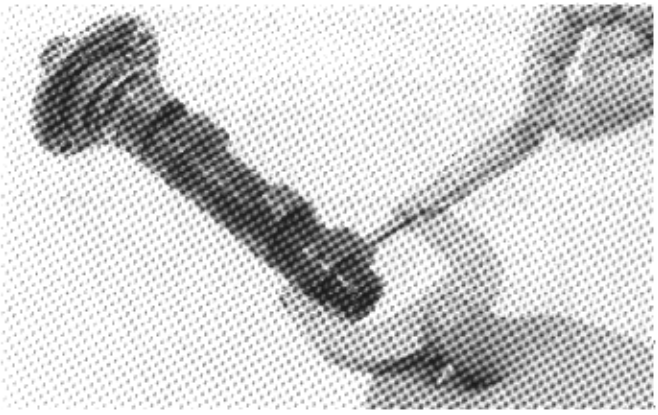
Remove the bearings from the camshaft.



CAMSHAFT INSPECTION

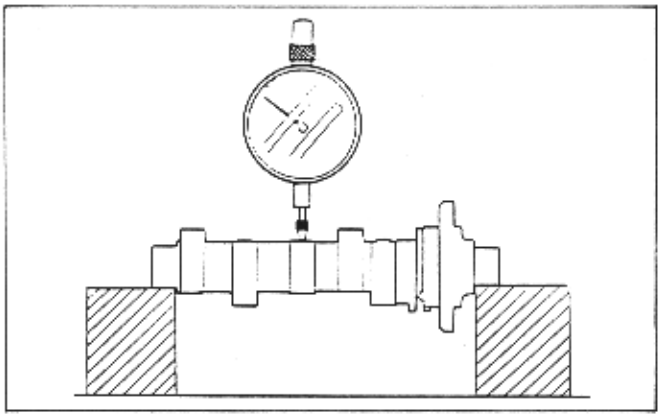
Check each cam lobe for wear or damage.
Measure each cam lobe height.

SERVICE LIMITS:
Intake: 31.05 mm (1.222 in)
Exhaust: 31.00 mm (1.220 in)



Support both ends of the camshaft with blocks.
Measure the camshaft runout with a dial indicator.
Actual runout is 1/2 of the total indicator reading.

SERVICE LIMIT: 0.04 mm (0.002 in)

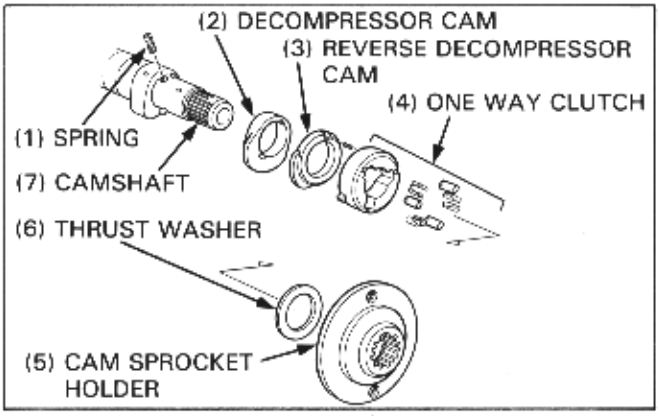


DECOMPRESSOR SYSTEM DISASSEMBLY

Press the cam sprocket holder off the camshaft.
Remove the thrust washer, one way clutch, reverse decompressor cam and decompressor cam with spring.

NOTE

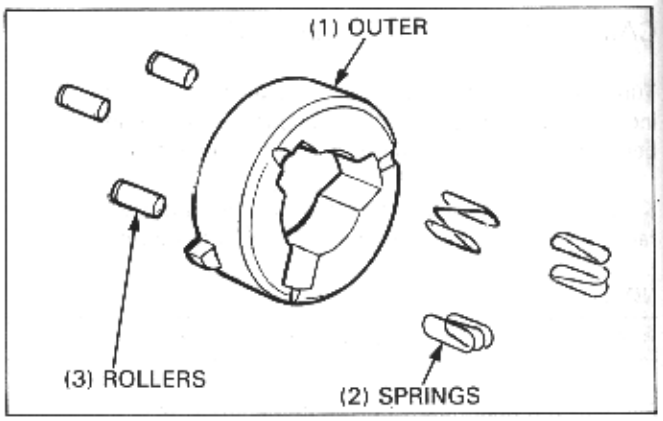
- Do not confuse the cam spring with the clutch spring.



INSPECTION

Check the one way clutch outer, rollers and springs for wear or damage.

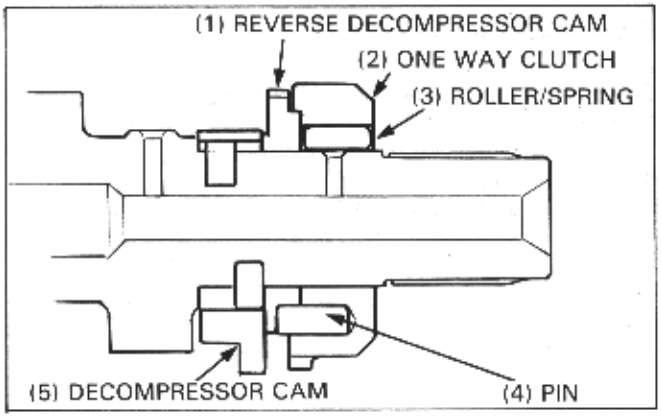
Check both decompressor cams for wear or damage, replace if necessary.
Inspect the cams' sliding surface on the camshaft for scoring or wear.



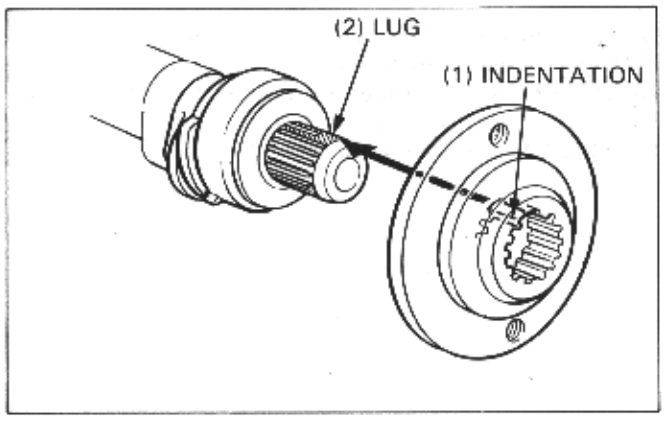
DECOMPRESSOR SYSTEM ASSEMBLY

Lubricate both decompressor cams, one way clutch and the thrust washer with oil, then install the decompressor cam with its spring, onto the camshaft.

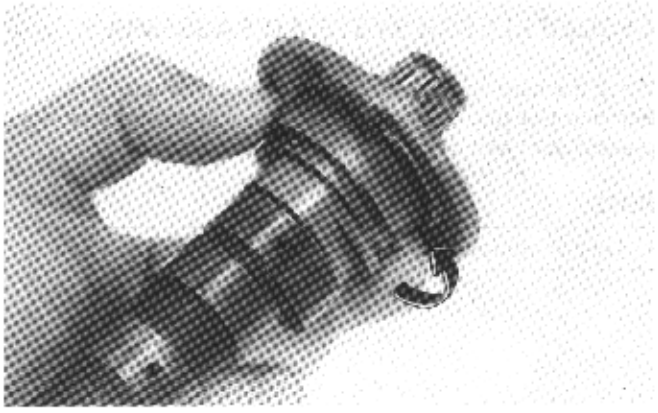
Install the reverse decompressor cam and the one way clutch with a pin.
Install the the thrust washer.



Press the cam sprocket holder onto the camshaft after aligning the lug on the camshaft with the indentation on the cam sprocket holder.



Be sure that the one way clutch outer rotates in one direction only.

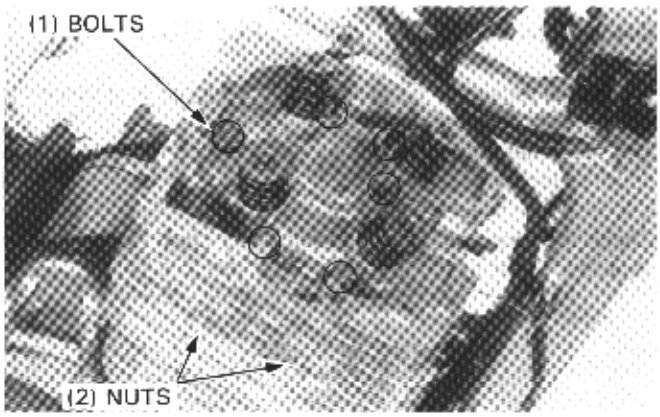


CYLINDER HEAD REMOVAL

Remove the following components:
– Exhaust pipes (page 15-7)
– Cylinder head cover (page 6-3)
– Camshaft (page 6-5)
– Cylinder head nuts
– Cylinder head bolts

NOTE

• Loosen the bolts in a crisscross pattern in two or more steps.

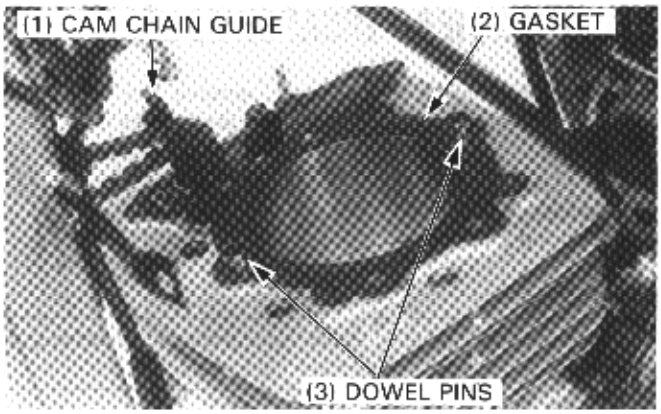


Remove the cylinder head.

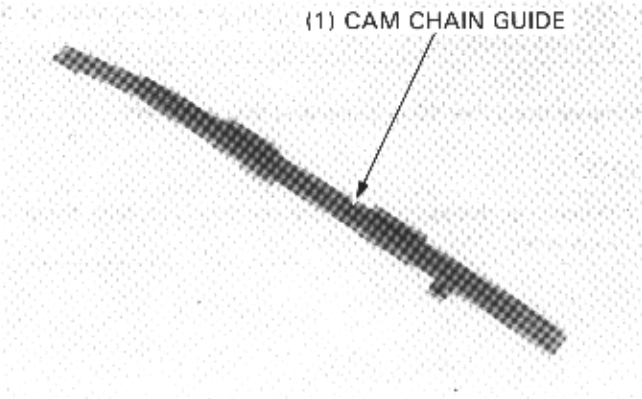
CAUTION

• *Be careful not to damage the cylinder head mating surfaces.*

Remove the dowel pins, cylinder head gasket and cam chain guide.

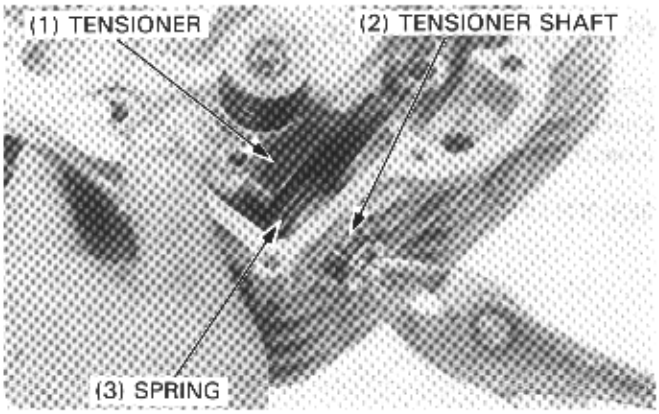


Inspect the cam chain guide for wear or damage.
Replace the guide with a new one, if necessary.



CAM CHAIN TENSIONER REMOVAL

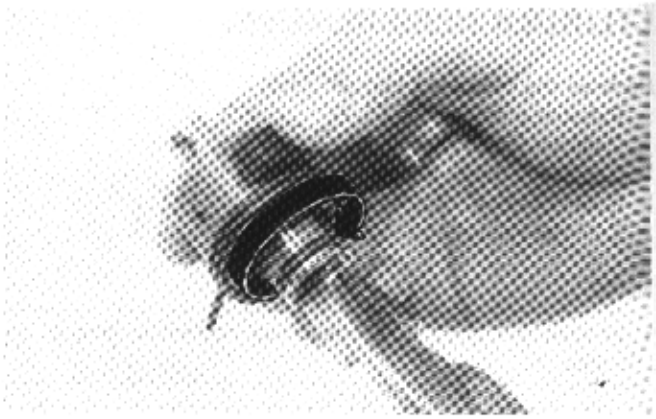
Remove the tensioner shaft.
Remove the cam chain tensioner and spring.



CAM CHAIN TENSIONER INSPECTION

Insert the tensioner shaft into the tensioner and inspect the tensioner by turning the shaft.
The tensioner shaft turns clockwise freely and should not turn counterclockwise.

Check the tensioner lifter and tensioner shaft for excessive or abnormal wear or damage.



CYLINDER HEAD DISASSEMBLY

Using a valve spring compressor, remove the valve spring cotters, retainers, sprigs, spring seats and valves from the cylinder head.

TOOL:
Valve spring compressor **07757—0010000**

CAUTION

- *To prevent loss of tension, do not compress the valve springs more than necessary to remove the cotters.*

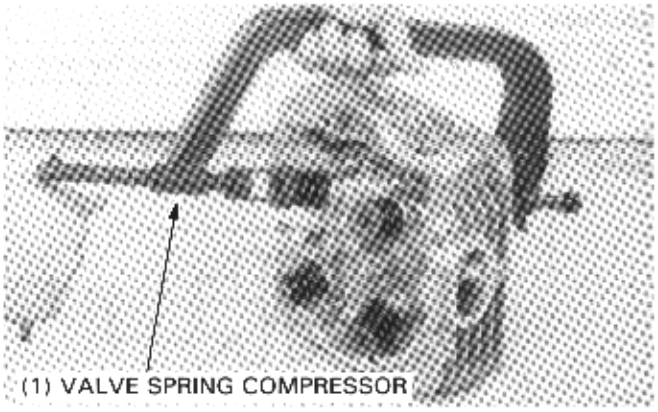
NOTE

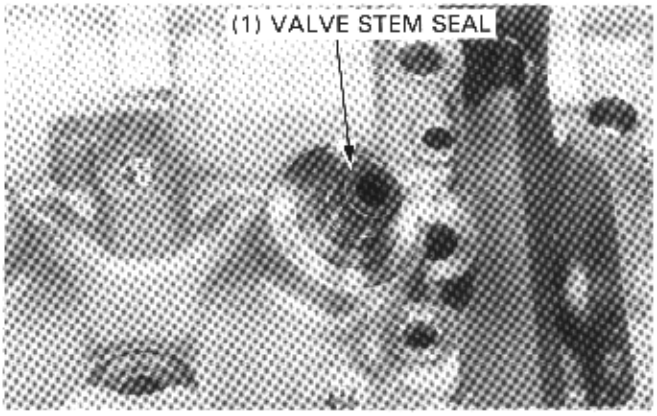
- Mark all parts to ensure that they are reassembled in their original positions.

Remove the valve stem seals and discard them.

NOTE

- Whenever the stem seals are removed, replace them with new ones.

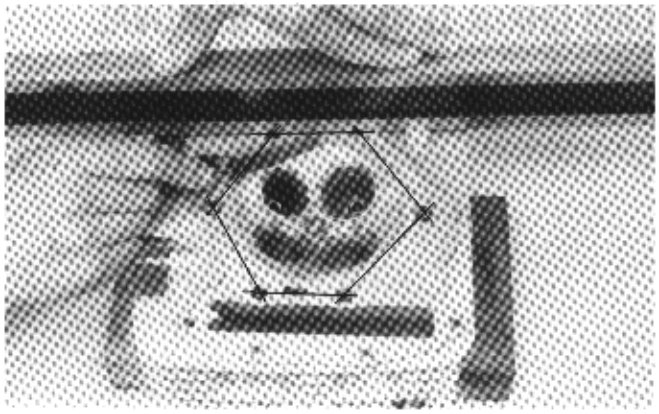




CYLINDER HEAD INSPECTION

Check the spark plug hole and valve areas for cracks.
Check the cylinder head for warpage with a straight edge and a feeler gauge.

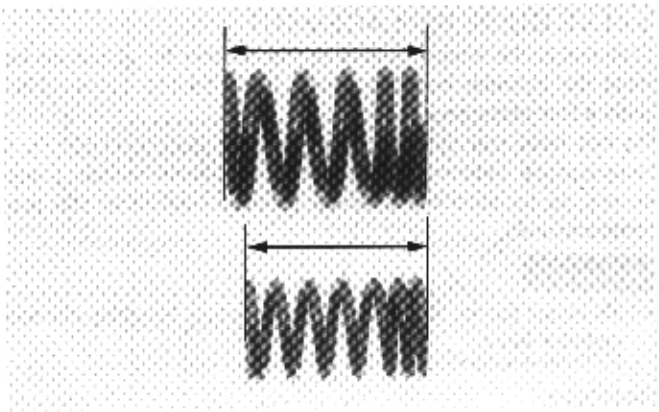
SERVICE LIMIT: 0.10 mm (0.004 in)



VALVE SPRING INSPECTION

Measure the free length of the inner and outer valve springs.

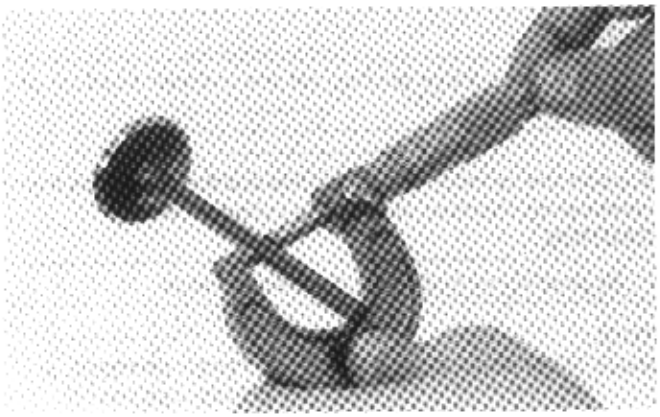
SERVICE LIMITS:
INNER: 34.1 mm (1.34 in)
OUTER: 35.0 mm (1.38 in)



Inspect each valve for bending, burning, scratches or abnormal stem wear.

Check valve movement in the guide, and measure and record each valve stem O.D.

SERVICE LIMITS: IN: 6.56 mm (0.258 in)
EX: 6.55 mm (0.258 in)

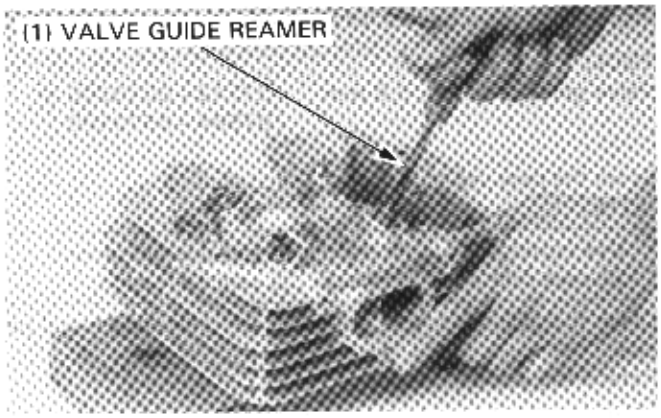


Ream the valve guides to remove any carbon deposits before checking clearances.

NOTE

- It is important that the reamer is always rotated in the same direction when it is inserted or removed.

TOOL:
Valve guide reamer: 07984—5510000 or 07984—657010C (U.S.A. only)

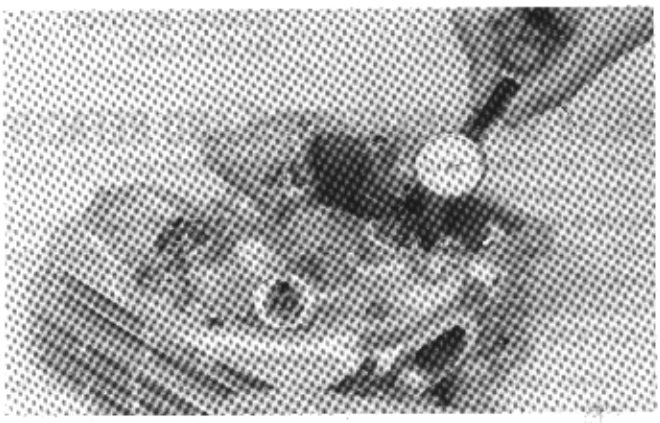


Measure and record each valve guide I.D.

SERVICE LIMITS: IN: 6.63 mm (0.261 in)
EX: 6.63 mm (0.261 in)

Calulate the valve stem-to-guide clearance.

SERVICE LIMITS: IN: 0.065 mm (0.0026 in)
EX: 0.080 mm (0.0031 in)



If the stem-to-guide clearance exceeds the service limit, determine if a new guide with standard dimensions would bring the clearance within tolerance. If so, replace guides as necessary and ream to fit.

If stem-to-guide clearance still exceeds the service limit when new guides are installed, replace the valves.

NOTE

- Reface valve seats whenever new valve guides are installed.

VALVE GUIDE REPLACEMENT

Chill the replacement guides in the freezer for about an hour.
Heat the cylinder head to about 130–140°C (275–290°F) with a hot plate or a oven.
Do not heat the cylinder head beyond 300°F (150°F). Use temperature indicator sticks, available from welding supply stores, to be sure the cylinder head is heated to the proper temperature.

⚠WARNING

- ***To avoid burns, wear heavy gloves when handling the heated cylinder head.***

CAUTION

- *Do not use a torch to heat the cylinder, it may cause warping.*

NOTE

- To clear the valve guides, set the cylinder head on proper blocks.

Support the cylinder head and drive out the old guides from the combustion chamber side of the cylinder head.

CAUTION

- *Be careful not to damage the cylinder head.*

TOOL:
Valve guide remover, 6.6 mm **07742–0010200 or 07942–6570100**

Place a new O-ring on the new valve guide.
Drive in the valve from the rocker arm side.
Inspect the valve guides for damage.

TOOL:
Valve guide remover, 6.6 mm **07742–0010200 or 07984–6570100**

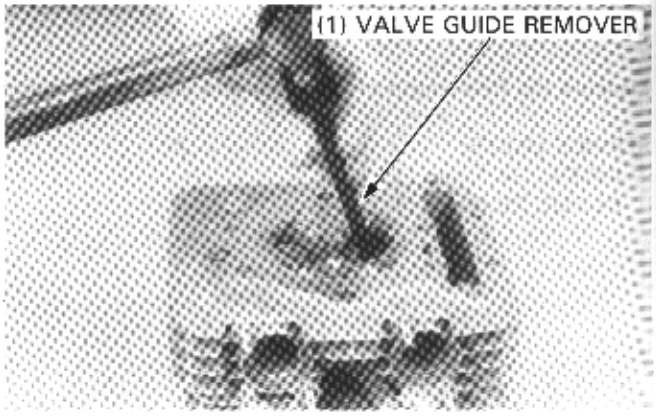
Ream the new valve guides after installation.

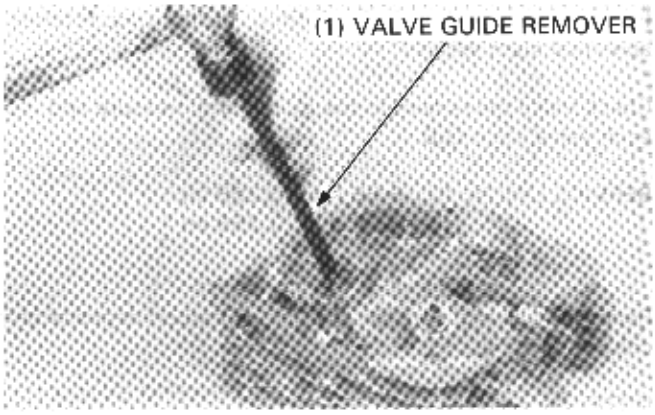
NOTE

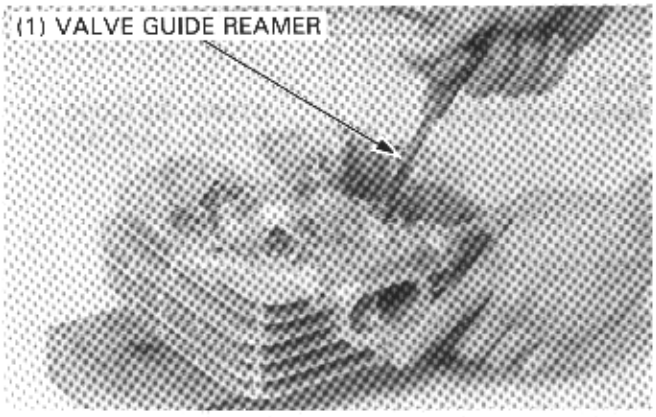
- Use cutting oil on the reamer during this operation.
- Always rotate the reamer in the same direction.

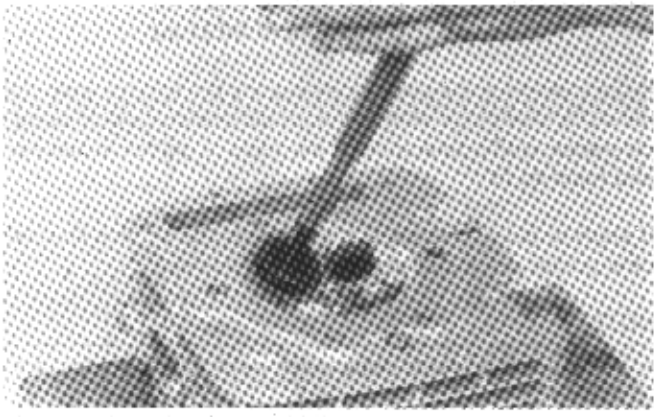
Clean the cylinder head throughly to remove any metal particles.
Reface the valve seats (page 6-13).

TOOL:
Valve guide reamer, 6.6 mm **07984–5510000 or 07984–657010C (U.S.A. only)**









VALVE SEAT INSPECTION AND REFACING

Clean all intake and exhaust valves thoroughly to remove carbon deposits.
Apply a light coating of Prussian Blue to each valve face.Lap each valve and seat using a rubber hose or other hand-lapping tool.
Remove and inspect each valve.

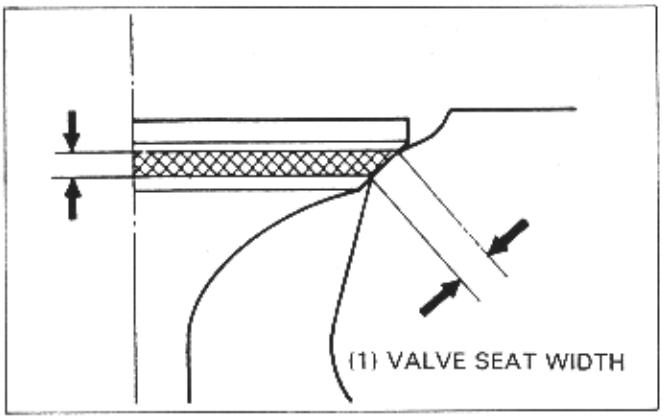
CAUTION

- *Valves cannot be ground. If the valve face is burned or badly worn or if it contacts the seat unevenly, replace the valve.*

Inspect the width of each valve seat.

SERVICE LIMITS:
INTAKE: 2.6 mm (0.10 in)
EXHAUST: 2.4 mm (0.09 in)

If the seat is too wide, too narrow or has low spots, the seat must be ground.

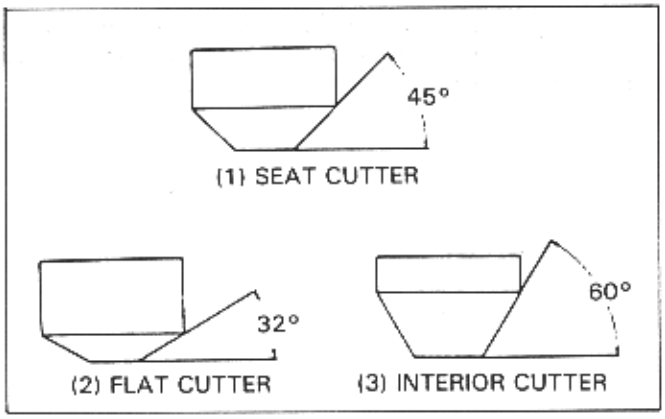


VALVE SEAT CUTTERS

Honda Valve Seat Cutters, grinder or equivalent valve seat refacing equipment are recommended to correct a worn valve seat.

NOTE

- Follow the refacer manufacturer's operating instructions.

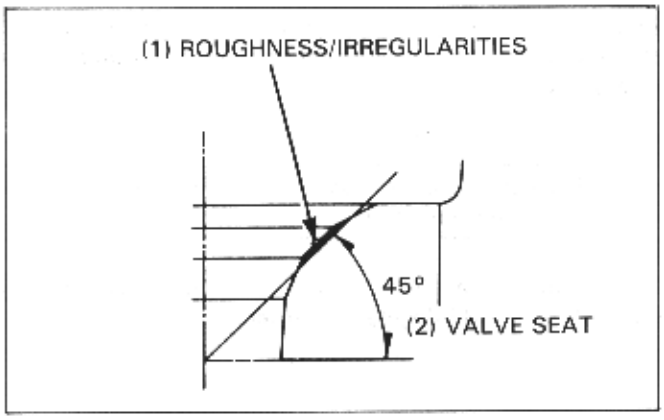


VALVE SEAT REFACING

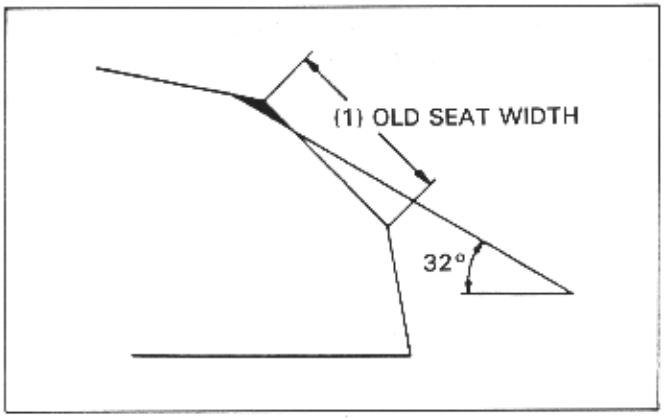
Use a 45 degree cutter to remove any roughness or irregularities from the seat.

NOTE

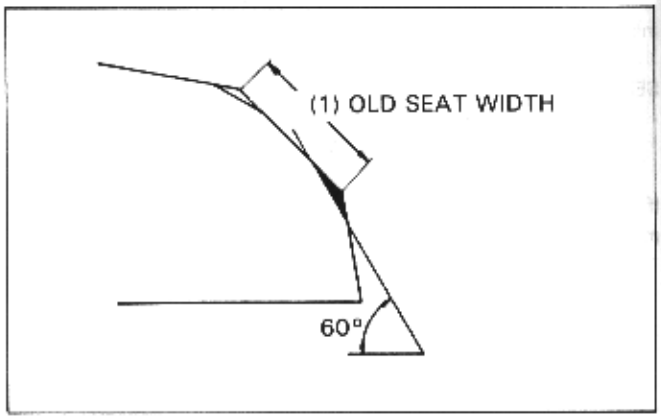
- Reface the seat with a 45 degree cutter when a valve guide is replaced.



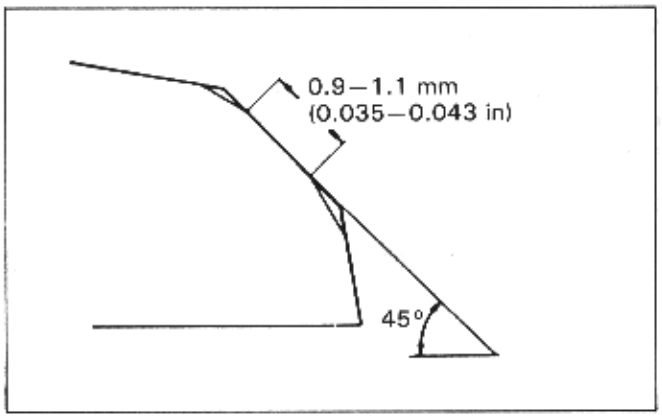
Use a 32 degree cutter to remove the top 1/4 of the existing valve seat material.



Use a 60 degree cutter to remove the bottom 1/4 of the old seat. Remove the cutter and inspect the area you have refaced.



Install a 45 degree finish cutter and cut the seat to the proper width. Make sure that all pitting and irregularities are removed. Refinish if necessary.

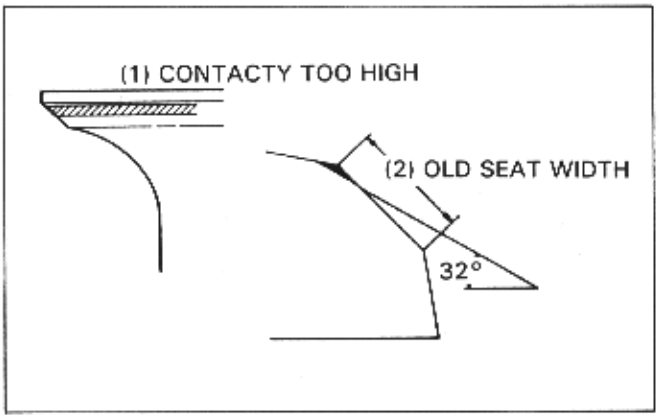


Apply a thin coating of Prussian Blue to the valve seat. Press the valve through the valve guide and onto the seat to make a clear pattern.

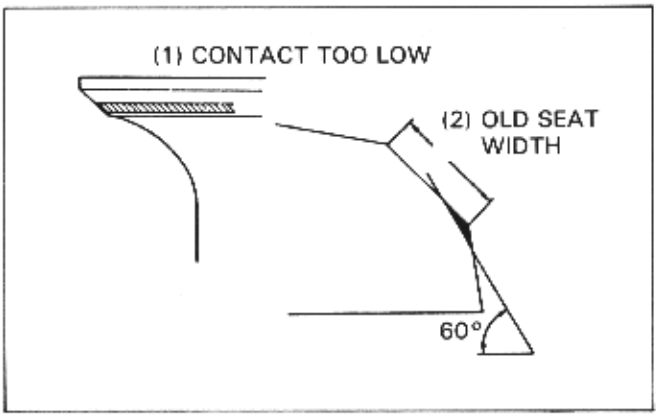
NOTE

- The location of the valve seat in relation to the valve face is very important for good sealing.

If the contact area is too high on the valve, the seat must be lowered using a 32 degree flat cutter.



If the contact area is too low on the valve, the seat must be raised using a 60 degree inner cutter.

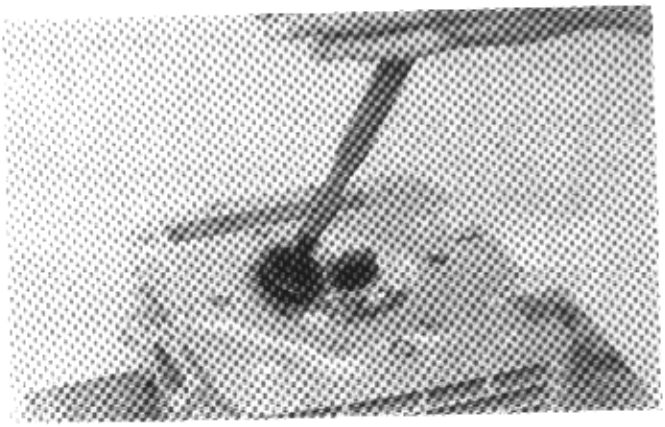


Refinish the seat to specifications, using a 45 degree finish cutter.

After cutting the seat, apply lapping compound to the valve face, and lap the valve using light pressure.
After lapping, wash all residual compound off the cylinder head and valve.

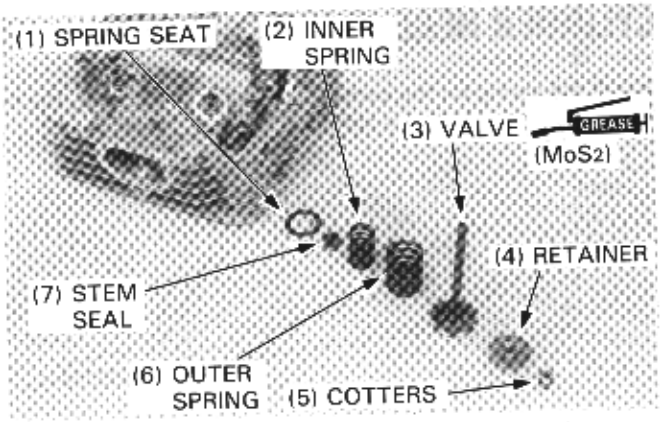
NOTE

- Do not allow lapping compound to enter the guides.



CYLINDER HEAD ASSEMBLY

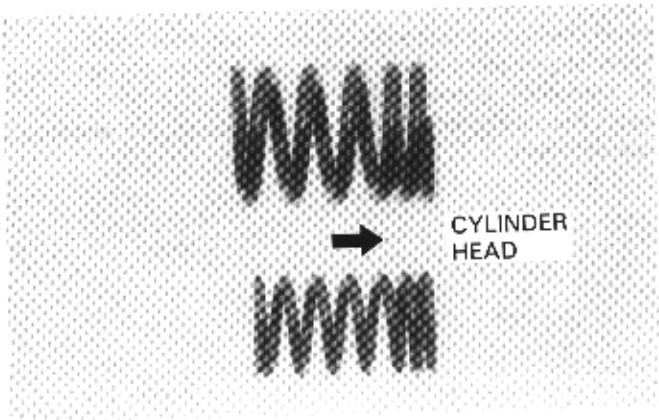
Install the valve spring seats and new stem seals.
Lubricate each valve stem with MoS_2 paste grease (page 2-14) and insert the valve into the valve guide.



Install the valve springs and retainers.

NOTE

- Install the valve springs with their narrower pitches facing to the cylinder head.
- Replace the stem seals with new ones whenever they are removed.
- Install the valves into the valve guides, turning them slowly so you do not damage the stem seals.

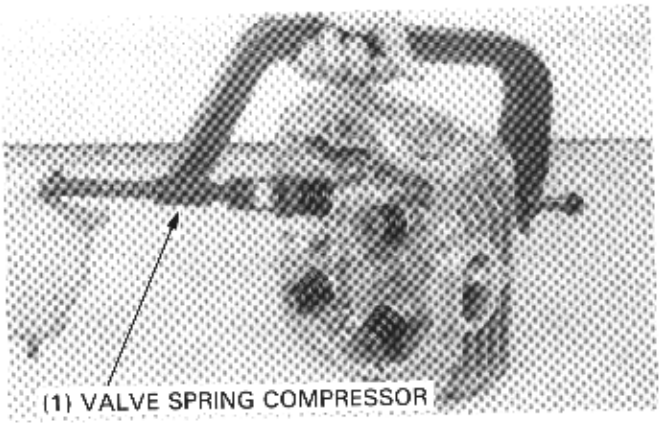


Compress the valve springs using the valve spring compressor, then install the valve cotters.

CAUTION

- *To prevent loos of tension, do not compress the valve springs more than necessary to install the valve cotters.*

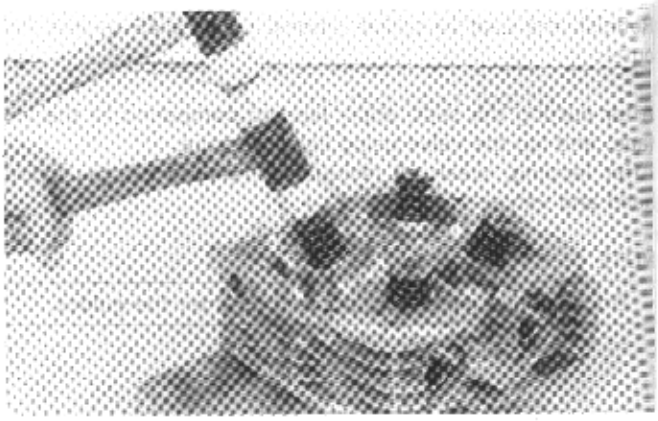
TOOL:
Valve spring compressor **07757—0010000**



Tap the valve stems gently with a plastic hammer to firmly seat the cotters.

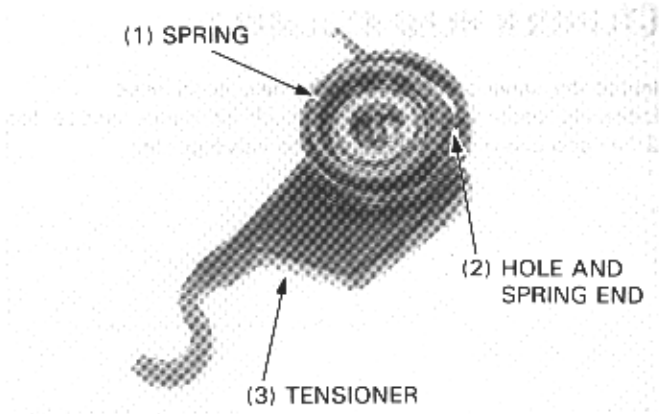
CAUTION

- *Support the cylinder head above the work bench surface to prevent possible valve damage.*

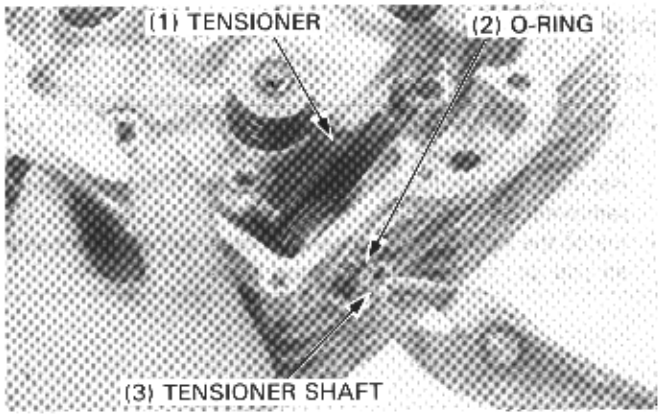


CYLINDER HEAD INSTALLATION

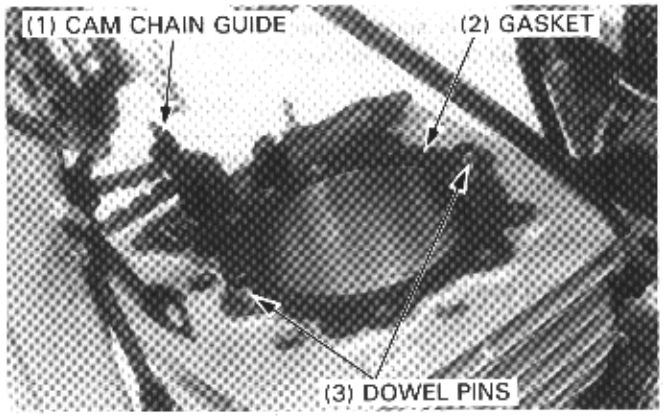
Install the spring on the cam chain tensioner aligning, the hole in the tensioner with the spring end.



Install the cam chain tensioner into the cyliner head.
Apply engine oil to a new O-ring and install it in the groove of the cam chain tensioner shaft.
Insert the tensioner shaft through the tensioner and into the cylinder head.



Install the cam chain guide, dowel pins and a new head gasket.

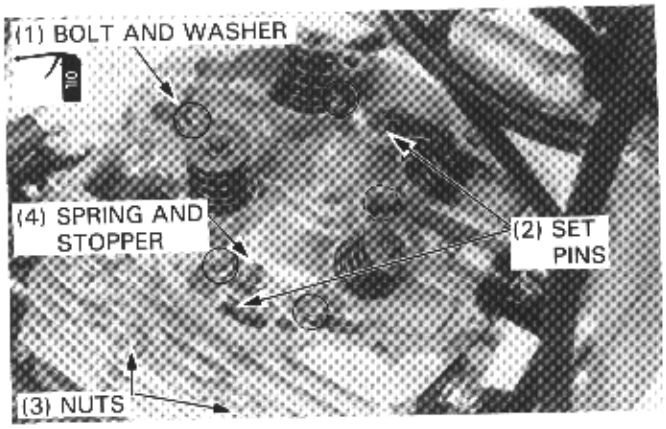


Install the following parts:
– Cylinder head
– Camshaft bearing set pins
– Spring and reverse decompressor cam stopper

Apply oil to the cylinder head bolts and washers.
Tighten the cylinder head bolts in a crisscross pattern in two or more steps.

TORQUE: 36N·m (3.6 kg-m, 26 ft-lb)

Tighten the cylinder head nuts.
Install the exhaust pipes (page 15-7).

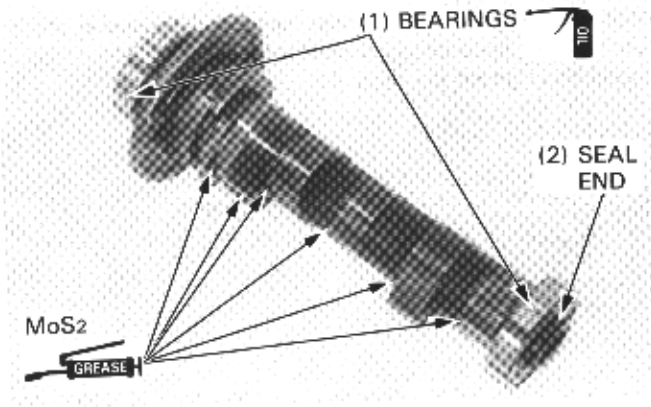


CAMSHAFT INSTALLATION

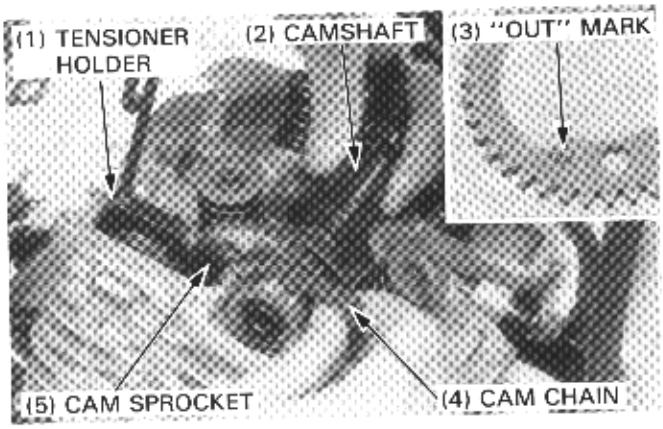
Apply oil to the camshaft bearings and install them onto the camshaft ends with their sealed ends facing out.
Apply MoS_2 paste (page 2-14) to the cam lobe surfaces and camshaft journal.

While pushing down the tensioner's lever, set the cam chain tensioner holder onto the tensioner, aligning the pin of the holder with the hole in the tensioner.
Slowly release the tensioner lever until the holder rests against the cylinder head casting.

TOOL:
Cam chain tensioner holder **07973—MG30002 or 07973—MG30003**



Install the cam sprocket to the camshaft over the right camshaft bearing with the "OUT" mark facing the outside .
Install the camshaft through the cam chain.
Remove the crankshaft hole cap and timing hole cap.
Turn the crankshaft counterclockwise and align the "T" mark on the flywheel with the index notch on the left crankcase cover.
Rail the cam chain over the cam sprocket chain so that the timing marks on the sprocket align with the upper surface of the cylinder head.



Install the cam sprocket onto the sprocket holder of the camshaft.

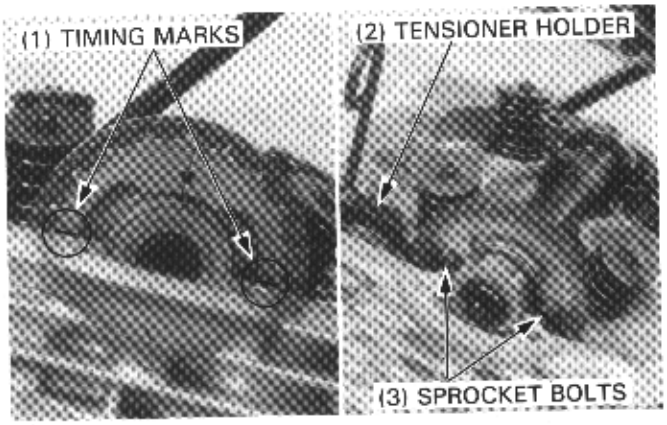
NOTE

- Do not turn the sprocket when installing it onto the sprocket holder.

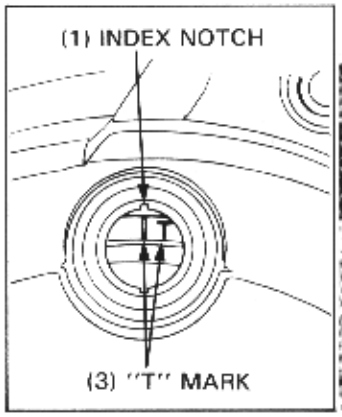
Apply locking agent to the threads of the cam sprocket bolts and screw one bolt in loosely, then screw the other bolt in after turning the crankshaft.
Tighten the sprocket bolts to the specified torque.

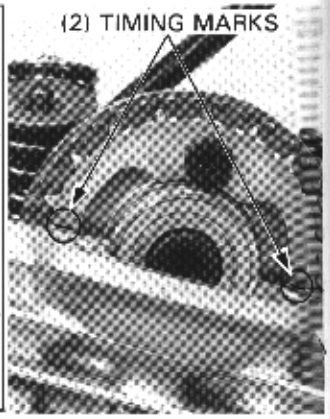
TORQUE: 20 N·m (2.0 kg-m, 14 ft-lb)

Remove the tensioner holder.

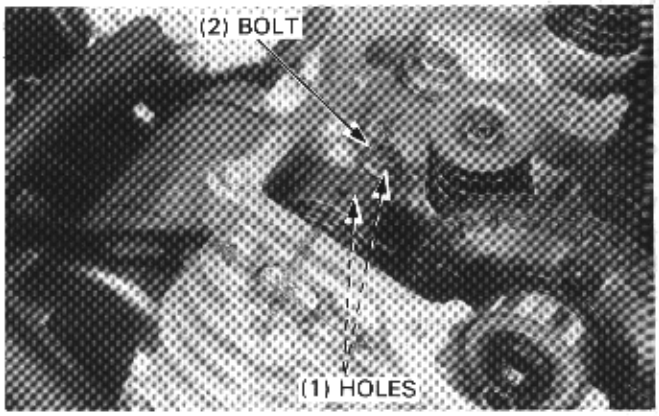


Turn the crankshaft counterclockwise 360° and align the "T" mark on the flywheel with the index notch on left crankcase cover again.
Make sure that the timing marks on the cam sprocket align with the upper surface of the cylinder head.





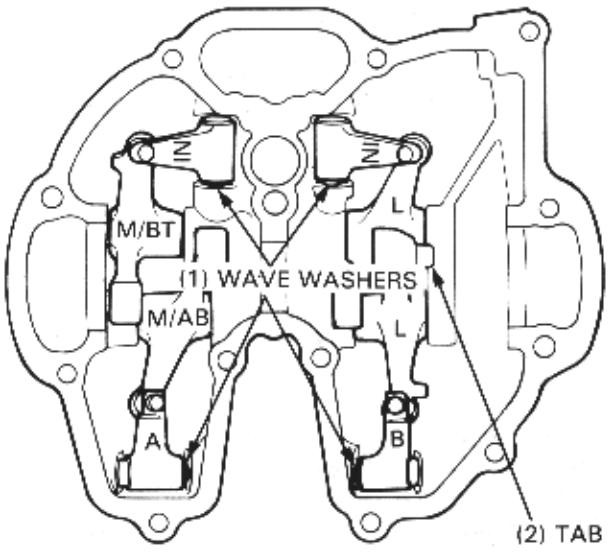
Align the holes in the cylinder head and tensioner shaft by turning the tensioner shaft clockwise.
Install and tighten the bolt.



CYLINDER HEAD COVER ASSEMBLY

NOTE

- Each rocker arm is stamped with its letter code in the location as shown. Install properly.
- Note the locations of the wave washers.



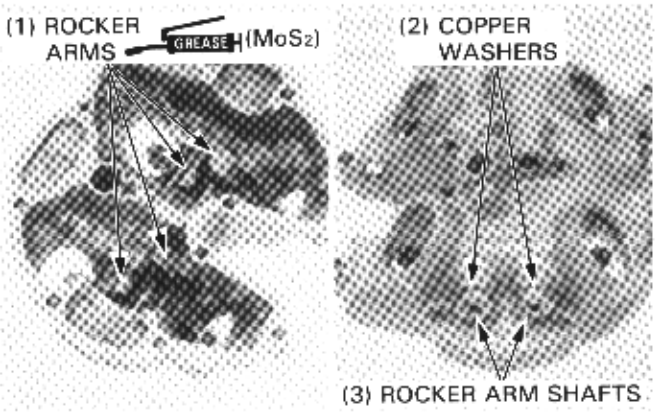
Install each rocker arm in the correct position, referring to the illustraion on page 6-18.

Apply oil to the rocker arm shaft sliding surface.
Apply a locking agent to the threads of the rocker arm shafts.

With the copper washers, insert the rocker arm shafts through the cylinder head cover and rocker arms, and tighten them to the specified torque.

TORQUE: 28 N·m (2.8 kg-m, 20 ft-lb)

Apply MoS_2 paste (page 2-14) to the rocker arm slipper surfaces.

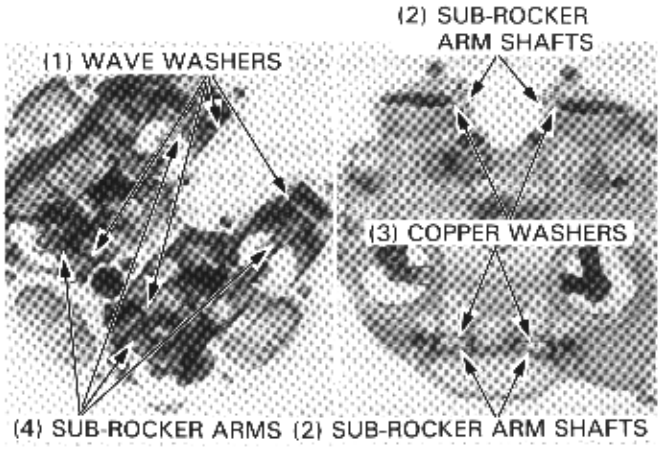


Install the sub-rocker arms and wave washers in the correct positions, referring to the illustration on page 6-18.

Apply oil to the sub-rocker arm shaft sliding surfaces.
Apply a locking agent to the threads of the sub-rocker arm shafts, then insert them through the cylinder head cover and sub-rocker arm with copper washers.
Tighten the sub-rocker arm shaft.

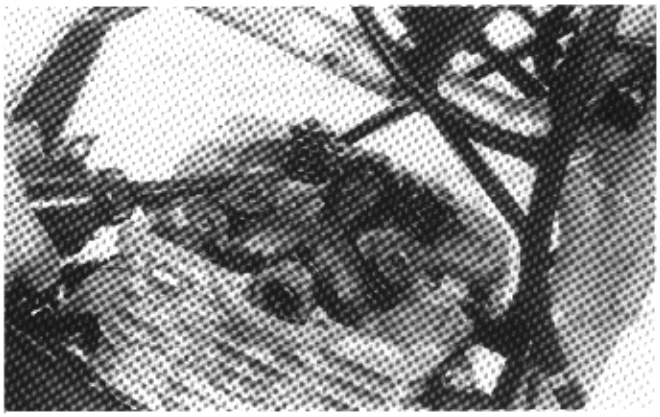
TORQUE:
INTAKE: 28 N·m (2.8 kg-m, 20 ft-lb)
EXHAUST: 23 N·m (2.3 kg-m, 17 ft-lb)

Apply MoS_2 paste (page 2-14) to the sub-rocker arm slipper surfaces.

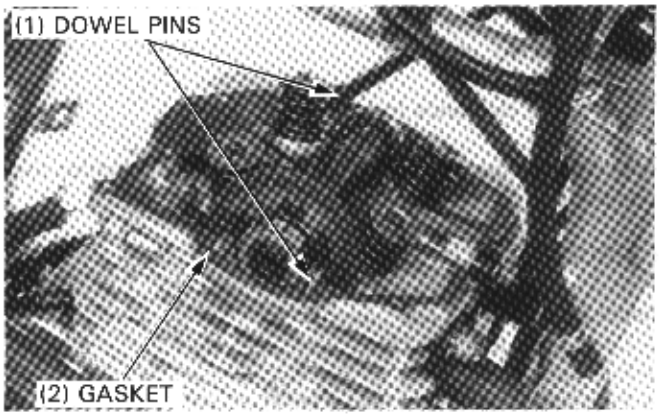


CYLINDER HEAD COVER INSTALLATION

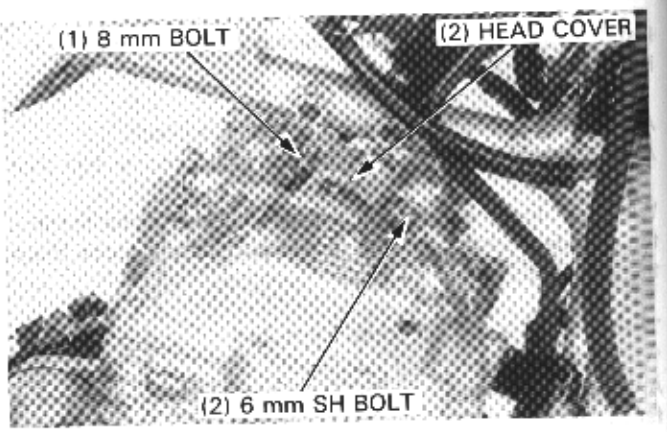
Pour clean engine oil into the oil pockets in the cylinder head so that the cam lobes are submerged.



Install the dowel pins and a new gasket.



Set the 8 mm bolt and 6 mm SH bolt on the head cover, then slide the cylinder head cover over the cylinder head.

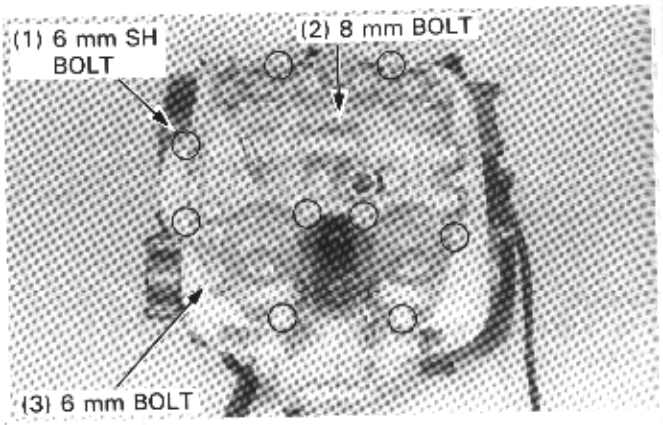


Tighten the cylinder head cover bolts.

TORQUE:
8 mm bolt: 23 N·m (2.3 kg-m, 17 ft-lb)
6 mm bolt: 12 N·m (1.2 kg-m, 9 ft-lb)
6 mm SH bolt: 10 N·m (1.0 kg-m, 7 ft-lb)

NOTE

- Tighten the cylinder head cover bolts in a crisscross pattern in two or more steps.

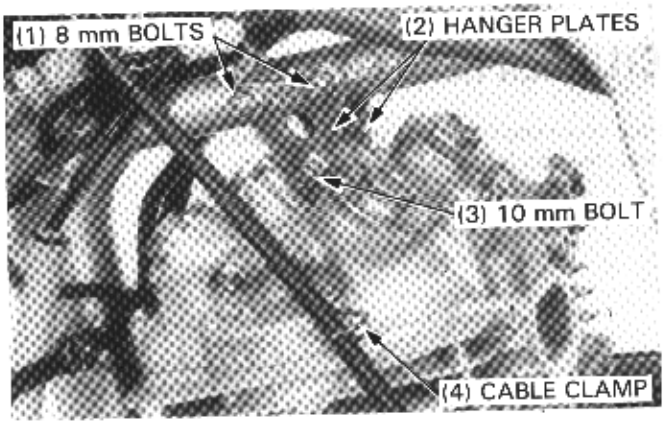


Install and tighten the spark plug.

TORQUE: 18 N·m (1.8 kg-m, 13 ft-lb)

Install the engine hanger plates, bolts and nuts.
Tighten the nuts to the specified torque.

TORQUE:
8 mm bolts: 34 N·m (3.4 kg-m, 25 ft-lb)
10 mm bolt: 60 N·m (6.0 kg-m, 43 ft-lb)



Install the clutch cable clamp and tighten the bolt.

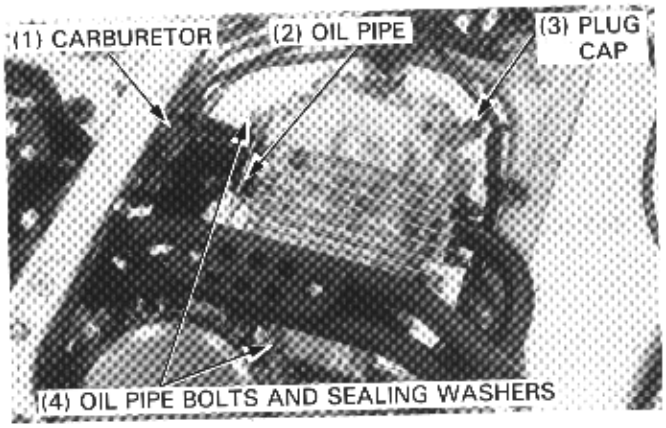
TORQUE: 10 N·m (1.0 kg-m, 7 ft-lb)

Connect the cylinder head cover breather tube, and secure it with the clip.
Install the spark plug cap.

Adjust valve clearance (page 3-6).

Install the oil pipe with four sealing washers, and tighten the oil pipe bolts.

TORQUE: 10 N·m (1.0 kg-m, 7 ft-lb)



Install the following components:
– Carburetor (page 4-15)
– Fuel tank (page 4-3)
– Seat and side covers (page 15-2)