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3394 AND 3594 TRACTORS

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CASE CORPORATION

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Section

1210

GENERAL SPECIFICATIONS

CASE CORPORATION

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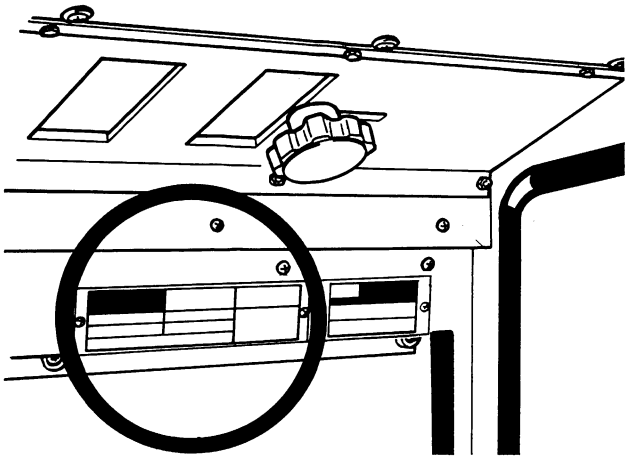
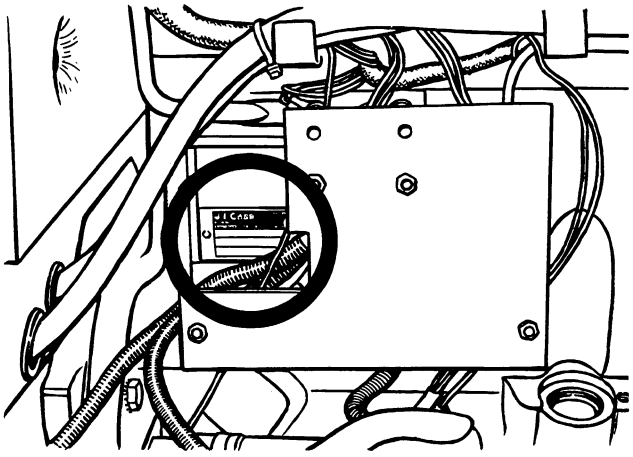
SERIAL NUMBERS



CAB SERIAL NUMBER PLATE



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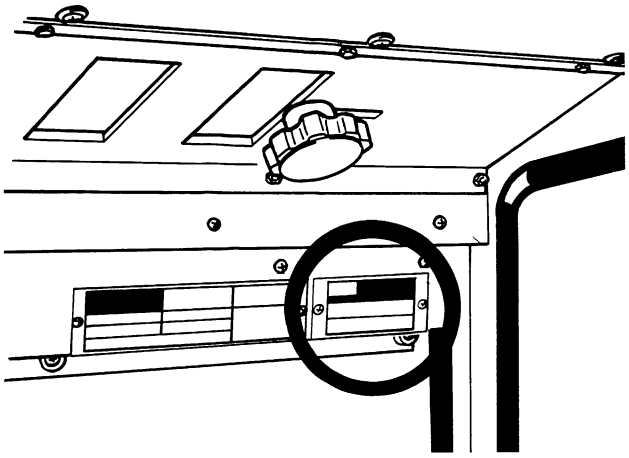
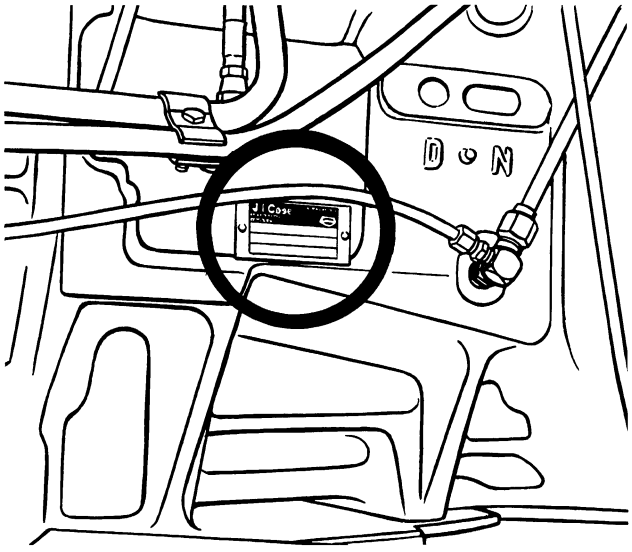


MODEL AND PRODUCT IDENTIFICATION NUMBER PLATE



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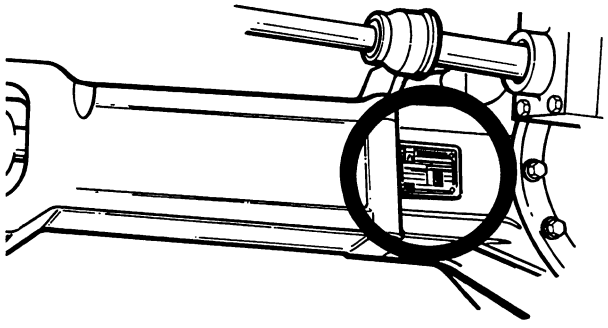


AXLE SERIAL NUMBER

DIESEL ENGINE SPECIFICATIONS

General

Type	Six Cylinder, Four Stroke Cycle, Turbocharged, Valve In Cylinder Head
Firing Order	1-5-3-6-2-4
Bore	4-5/8 inch (117.5 mm)
Stroke	5 inch (127 mm)
Piston Displacement	504 Cubic inch (8 259 cm^3)
Compression Ratio	15.8 to 1
Cylinder Sleeves	Wet Type, Can Be Removed
Governor Engine Speed Without Load	2280 to 2320 RPM
Rated Engine Speed	2100 RPM
Engine Idle Speed	725 to 775 RPM
Rocker Arm to Valve Clearance, Cold (Exhaust)	0.025 inch (0.635 mm)
(Intake)	0.015 inch (0.381 mm)

IMPORTANT: *Rocker arm to valve clearance adjustment must be made when the engine is not running.*

Crankshaft

Main Bearing Journal Diameter	3.5 inch (88.9 mm)
Rod Bearing Journal Diameter	3.0 inch (76.2 mm)

Piston And Rod

Rings Per Piston	3
Compression Rings Per Piston	2
Oil Rings Per Piston	1
Type of Piston Pin	Full Float
Type of Bearings	Replacement Bearings Available, Steel Back With Aluminum or Copper and Lead Liners

Main Bearings

Quantity of Bearings	7
Type of Bearings	Replacement Bearings Available, Steel Back With Aluminum or Copper and Lead Liners

Engine Lubrication System

Oil Pressure	45 to 60 PSI (310 to 414 kPa)(3.1 to 4.14 bar) With Engine Warm and Operating at Rated Speed With a Light Emitting Diode (LED) Service Monitor Located in the Digital Instrument Cluster.
Type System	Constant Pressure and Spray With Piston Oil Cooling
Oil Pump	Gear Type
Oil Filter (2)	Full Flow, Turn on Type, Bypass Valve in Filter Base
Oil Capacity	With Filters, 21 U.S. Quarts (20 Litres) Without Filters, 23 U.S. Quarts (22 Litres)
Oil Cooler	Cooled by Engine Coolant

Fuel System

Fuel Injection Pump	Robert Bosch, Type PES
Pump Timing	25 Degrees (BTC) Before Top Center. **IMPORTANT:** *Do not increase past 25 degrees BTC at any time. The given 25 degrees gives minimum emissions in tractor operation.*
Fuel Injectors	American or Robert Bosch, 17 mm
Fuel Transport Pump	Plunger Type, a Part of the Fuel Injection Pump
Governor	Variable Speed, a Part of the Fuel Injection Pump
First Stage Fuel Filter	Full Flow, Turn On Type
Second Stage Fuel Filter	Full Flow, Turn On Type
Water Trap and Drain for Fuel Tank	Location is in Bottom of Fuel Tank
Fuel Tank Capacity	85 U.S. Gallons (322 Litres)
Fuel Level Indicator	Liquid Crystal Display (LCD) Bar Indicator Located in the Digital Instrument Cluster
Hand Primer Pump	Location is on Top of Fuel Transport Pump
Fuel Strainer	Location is at Bottom of Fuel Transport Pump

GENERAL TRACTOR SPECIFICATIONS

Air Intake System

Type	Dry Type Air Induction System, Two Stage, Aspirated System With Service Indicator on Digital Instrument Cluster

Cooling System

Capacity	44 U.S. Quarts (41.6 Litres)
Type	Pressure System, Thermostat Controlled, Bypass, Impeller Type Pump
Radiator	Heavy Duty Fin and Tube Type
Thermostats	Two, Starts to Open at Approximately 175°F (79°C), Fully Open at 202°F (94°C)
Pressure Cap	10 PSI (69 kPa)(0.69 bar)
Water Level	Light Emitting Diode (LED) Service Monitor Located in the Digital Instrument Cluster
Coolant Temperature	Liquid Crystal Display (LCD) Bar Indicator Located in the Digital Instrument Cluster

Electrical System

Type of System	12 Volt, Negative Ground
Batteries	Two 12 Volt Batteries Connected in Parallel, AABM Group Size TFG10-600, Rated in 1.255 to 1.265 Specific Gravity. Discharge Rate 300 Amperes at 0°F.
Alternator	12 Volt, 105 Ampere Output, Negative Ground With a Light Emitting Diode (LED) and a Liquid Crystal Display (LCD) Service Monitors Located in the Digital Instrument Cluster.
Voltage Regulator	12 Volt, Solid State, Inside Component of Alternator
Starter Motor	12 Volt With Solenoid Switch
Head Lamps (2)	12 Volt, 40/60 Watt Sealed Beam High-Low
Front Flood Lamps (4 Max)	12 Volt, 50 Watt, Sealed Beam
Rear Flood Lamps (4 Max)	12 Volt, 50 Watt, Sealed Beam
Flasher Lamps (2) with Direction Turn Signals	12 Volt, Amber Lens
Tail Lamps (2)	12 Volt, Red Lens
Electrical System Circuit Breaker	
Primary Circuit	12 Volt, Three 50 Ampere Circuit Breakers Connected in Parallel, 150 Ampere Rating, 112.5 Ampere Minimum Continuing Capacity.
Auxiliary Circuit	12 Volt, Four 50 Ampere Circuit Breakers

Electrical System

Bulb And Lamp Replacement:

Instrument Cluster Lamps	No. 73
Dome Lamp Bulb	No. 93
Console Lamp Bulb	No. 194
Flasher Lamp Bulb	No. 1156
Head Lamp	No. 4652
Front and Rear Flood Lamp	No. A48265
Tail Lamp Bulb	No. 168

Fuse Replacement:

Instrument Cluster	3.0 Ampere
Automatic Shutoff Solenoid	7.5 Ampere
Tail Lamp	15 Ampere
Lamp Switch Feed	25 Ampere
Accessories	3.0 Ampere
Ether Switch and Cab Relay	20 Ampere
Head Lamp Low Beam	15 Ampere
Head Lamp High Beam	15 Ampere
Front Flood Lamps	25 Ampere
Radio and Night Lamp	10 Ampere
Ignition Switch	25 Ampere
Flasher and Dome Lamp	15 Ampere
Rear Flood lamps	25 Ampere
Wiper	7.5 Ampere
Blower	15 Ampere
Cigarette Lighter	15 Ampere
Instrument Reset	5.0 Ampere
Transmission Control Differential Lock	20 Ampere
Range Switch	1.0 Ampere
Rear Wiper and Washer (If equipped)	10 Ampere

Tractor Brakes

Type	Hydraulic, Power Assistance, Self-Adjusting, Several Plate Wet Type Differential Brakes.

Power Shift Transmission

Type	Three Speed, or Six Speed, Compound Planetary with Hydraulically Actuated Clutches and a Four Speed Gear Section
Gear Selection	12 Speeds Forward and Three Speeds Reverse or 24 Speeds Forward and Three Speeds Reverse
Shift Control	Actuated by a Lever on the Console.
Oil Cooler	Transmission, Remote Hydraulics, Steering and Brake Oil

Parking Lock System

Parking Lock	Actuated by Gear Shift Lever

Differential Lock

Type	Electrically Controlled by Switch on Control Console and Hydraulically Actuated

Hydrostatic Power Steering

Type	Gear Pump of Hydraulic Pump
Pump Capacity at 2100 RPM	13 GPM (4.92 l/min)
Steering Pump	Hydrostatic Type, Actuated By the Steering Wheel
Steering Cylinder	Double Action Cylinder

Hitch System

Type of Sensing	Lower Link
Type of Control	Hand Lever
Type of Valve	Three Position-Lift, Hold and Lower
Type of Draft Arms	Rigid, Swing Type or Extendable With Lower Float Adjuster
Type of Hitch	Three Point, Category III
Conversion Hitch Coupler (Available)	Category III To II
Lift Capacity at 24 inch (610 mm) Behind Lift Point	7,750 lb (3 515 kg)

Remote Hydraulic System

Pump	Axial Piston Pump, Pressure-and Flow Compensated.
Type Remote Valve	Closed Center, Two to Four Sections, Hand Lever Control, 1st Section Priority, 1st/2nd Section Load Check on "B" Port, 3rd Section Load Check Optional-Single or Dual, Variable Flow Control for Each Section.
Pump Capacity at 2100 Engine RPM	28 to 30 GPM (106 to 114 l/min)
Maximum System Pressure	2250 PSI (15 503 kPa)(155.03 bar) With a Light Emitting Diode (LED) Service Monitor for Both Transmission Oil Pressure and Transmission Filter Located in the Digital Instrument Cluster
Couplings	ASAE R366 Standard, Fast Removal, Break Away Type

Power Takeoff

PTO Type	Independent of Transmission
Type of Clutch	Hydraulic Actuated
Rotation	Clockwise
Spline Size	21 Splines, 1.375 inch (34.9 mm) Diameter
PTO Speed	1000 RPM Shaft Speed at 2100 Engine RPM

Drawbar

Standard or Yoke Type	Full Swing, Roller Mount, Takes a 1-1/2 inch (38.1 mm) Diameter Pin.

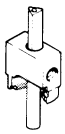
Mechanical Front Drive (MFD)

Front Axle	Spiral Bevel With Planetary Reduction in Hub
Interaxle Ratio - Front/Rear	1.332
Differential Oil Capacity	9 U.S. Quarts (8.5 litres)
Planetary Oil Capacity	1.5 U.S. Quarts (1.4 litres) each planetary

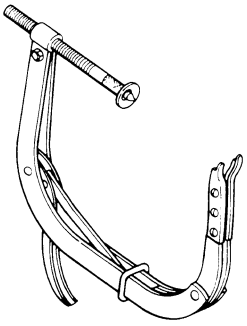
INSTALLATION INSTRUCTIONS FOR M20614 TEFLON VALVE SEAL KIT

Special Tools Required

M20624 SEAL INSTALLATION TOOL

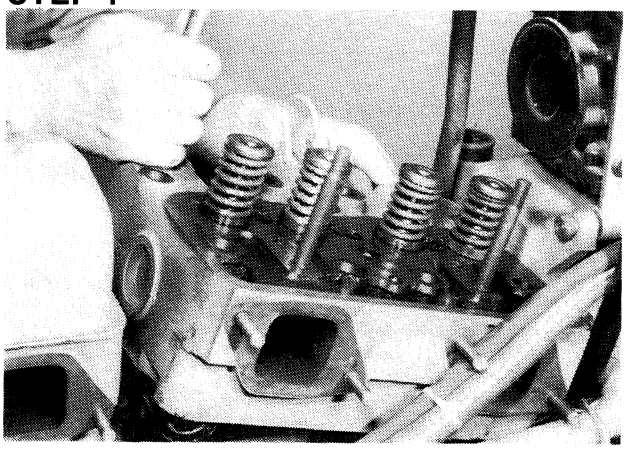


M20617 VALVE GUIDE CUTTING TOOL



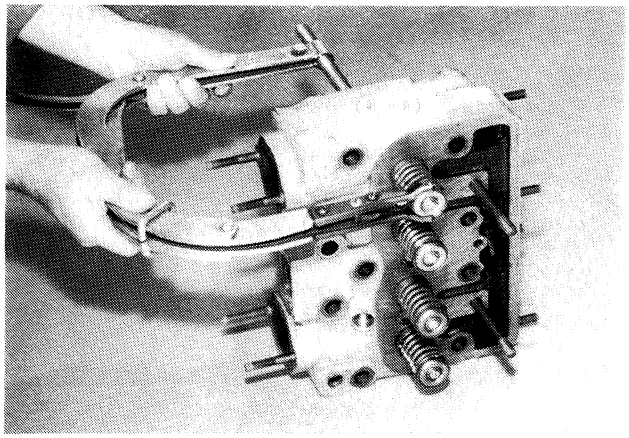
VALVE SPRING COMPRESSOR

STEP 1



Remove the cylinder heads. See Section 2215 of the Service Manual for removal of the cylinder heads.

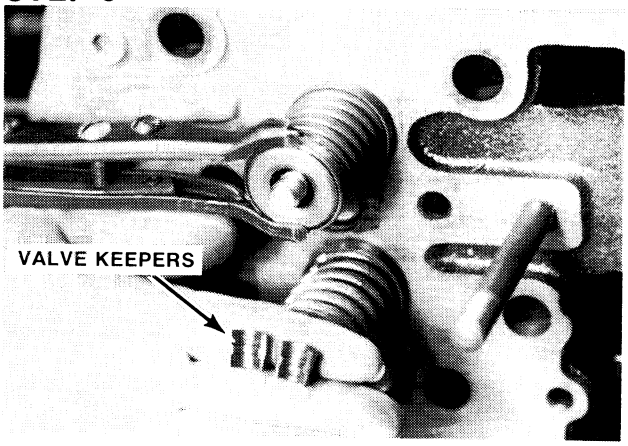
STEP 2



Use a valve spring compressor to push down the valve springs.

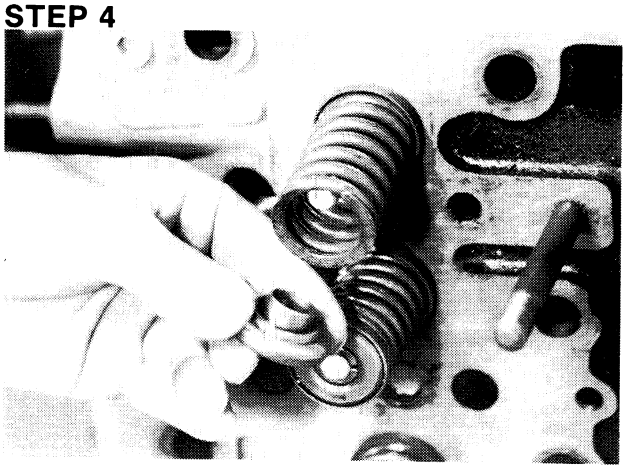
IMPORTANT: *Make a mark on the valves, rotators, spring retainers and keepers. This will make sure that the parts are installed in the original location.*

STEP 3



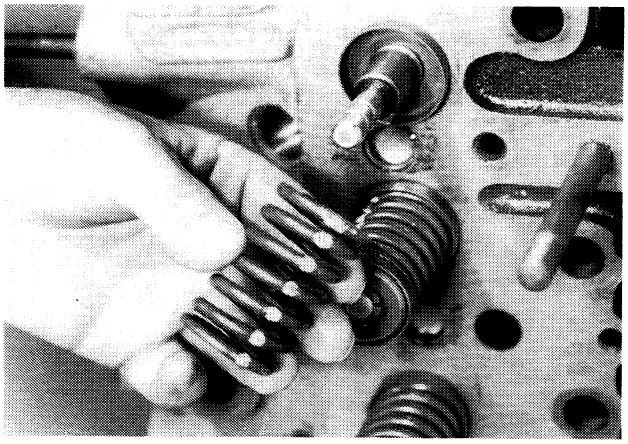
Push down the valve springs and remove the valve keepers.

STEP 4



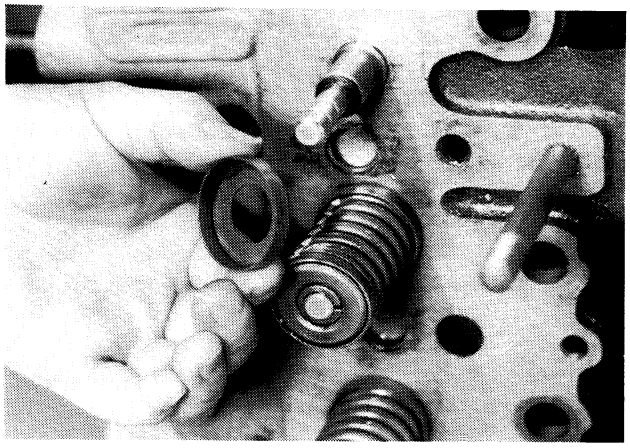
Remove the valve rotators or the valve spring retainers.

STEP 5



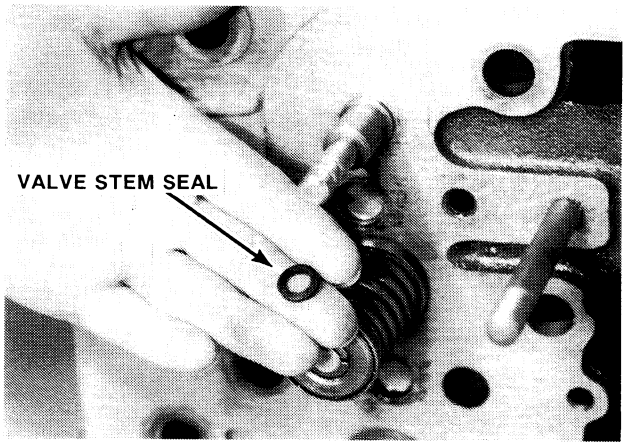
Remove the valve springs.

STEP 6



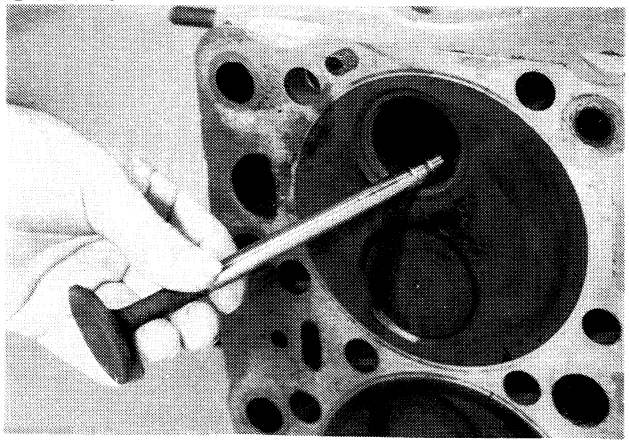
Remove the spring seats.

STEP 7



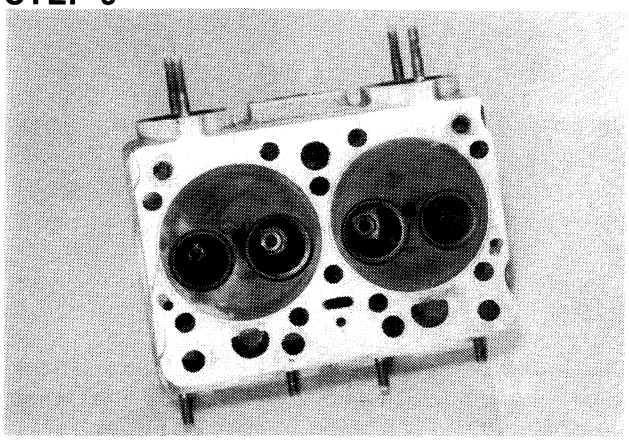
Remove the valve stem seals.

STEP 8



Remove the valves.

STEP 9

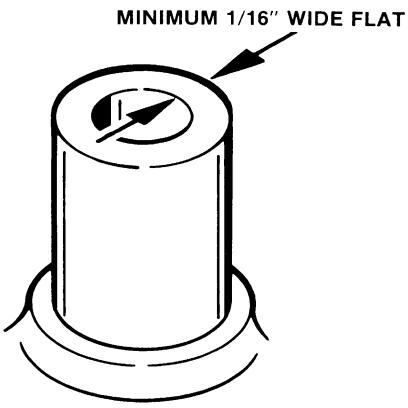


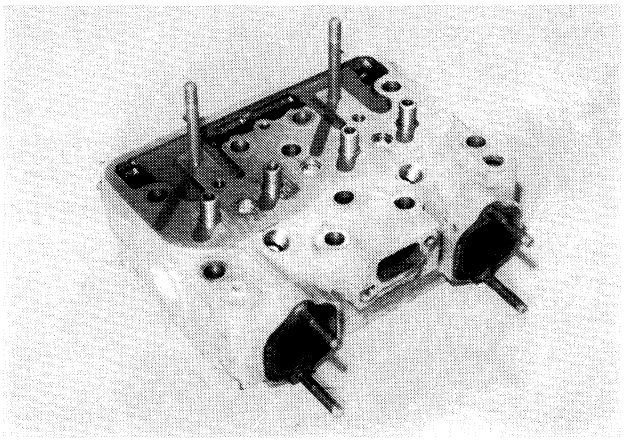
Clean the cylinder head completely, removing all the carbon and other deposits. Check for cracks and for any sign of damage, existing in the area of the fire ring contact.

STEP 10

Clean the valves with a fine wire brush that is power driven. Remove all carbon and varnish deposits. Do not scratch the valve stems.

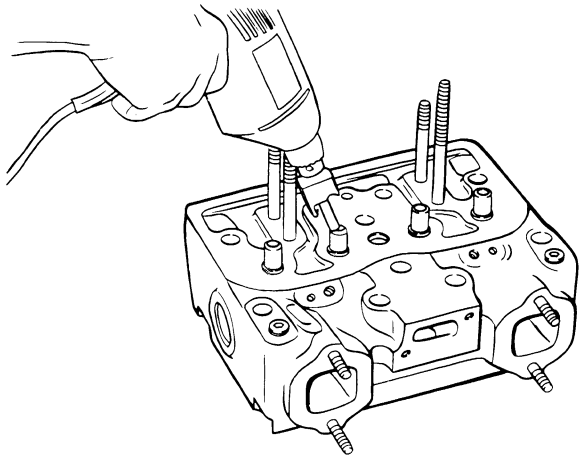
STEP 11





Check the top surface of the valve guide. There must be a minimum of a 1/16" (0.0625 mm) wide flat around the complete top surface.

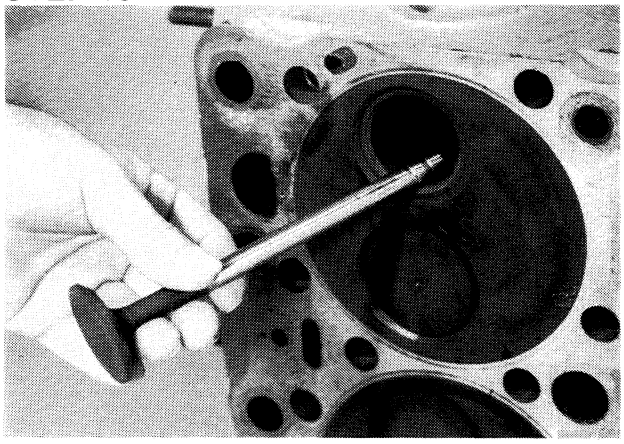
STEP 12



Use the M20617 tool in an electric drill to give the necessary flat area on the valve guide.

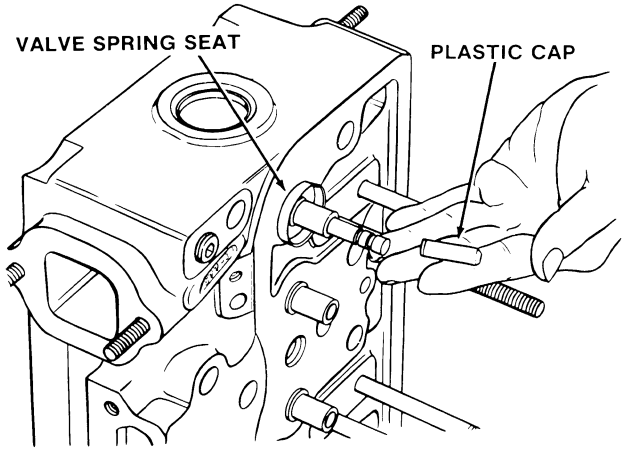
IMPORTANT: *Do not go over 450 RPM when drilling.*

STEP 13



Put clean engine oil on the valves before installing the valves in the cylinder head.

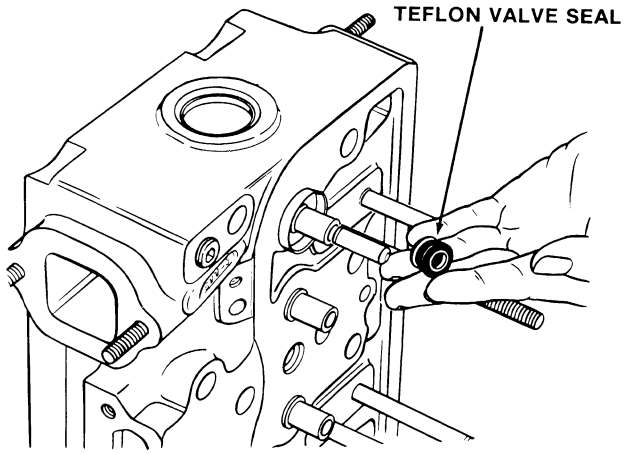
STEP 14



Install the spring seats. Put the plastic installation cap on the end of the valve stem. The plastic cap prevents the sharp edges on the valve stem grooves from cutting the valve seal.

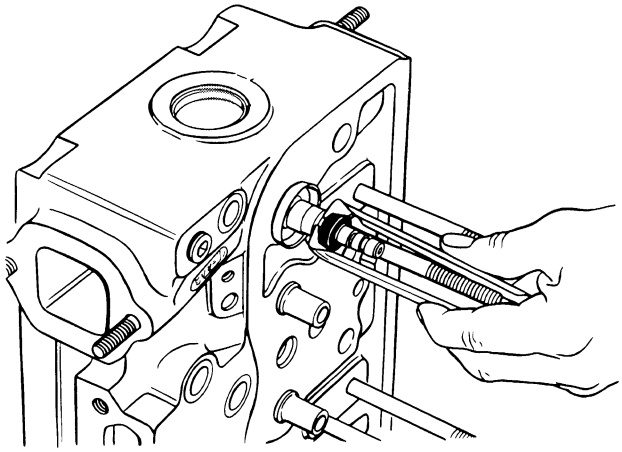
NOTE: *One M20614 kit is required for one cylinder head.*

STEP 15



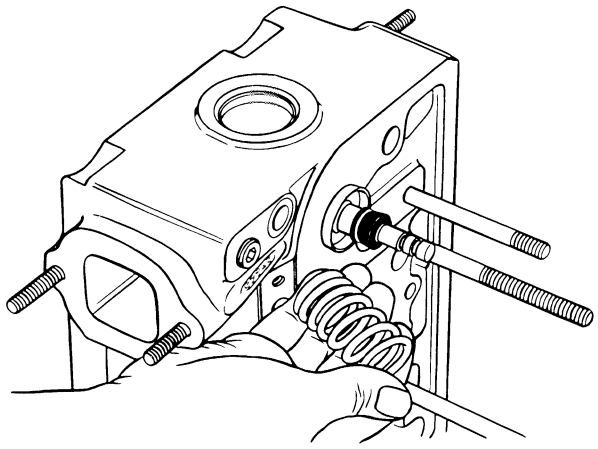
Put the valve seal over the plastic cap. Hold your thumb against the white seal insert to keep the insert from coming out. Push the valve seal down so that the seal jacket is against the top of the valve guide. Remove the installation cap. Keep the cap since the cap will be used again.

STEP 16



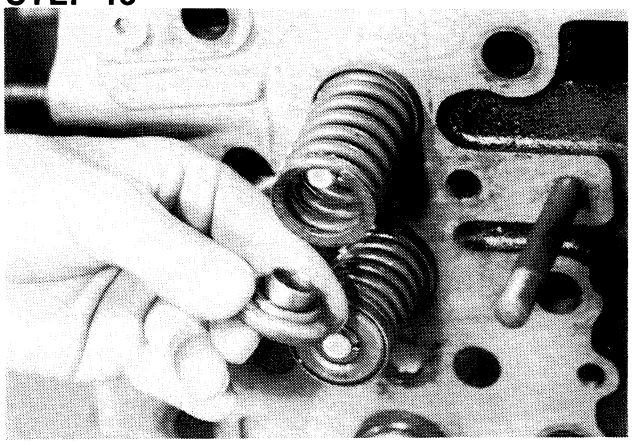
Use the M20624 tool and push the seal down over the valve guide until the seal is level with the top of the guide.

STEP 17



Install the valve spring. Either end of the valve spring can be installed in the valve spring seat because both ends of the spring are closed.

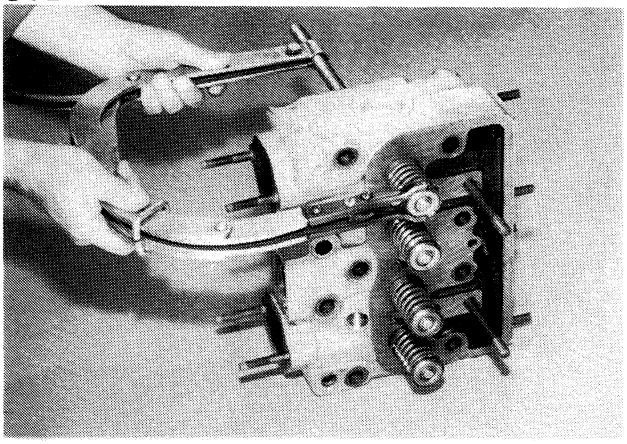
STEP 18



Install the valve rotators or the valve spring retainers (flat side up).

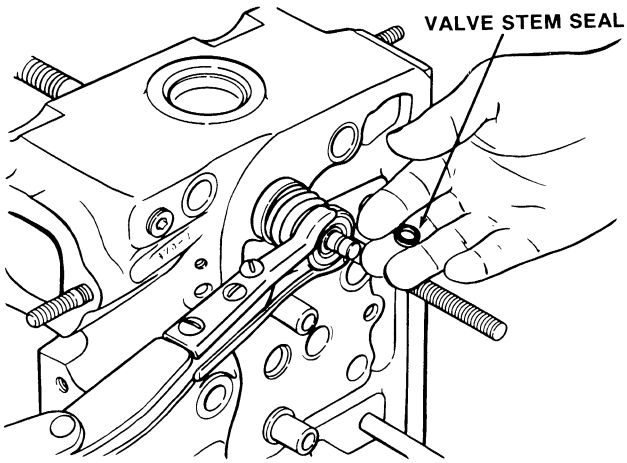
IMPORTANT: *Install the valve rotators or the valve spring retainers with the original valves because these parts are worn as counterparts of each other.*

STEP 19



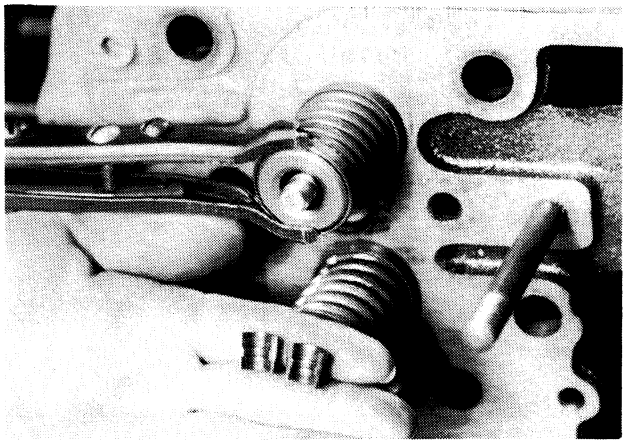
Push down the valve springs with a spring compressor.

STEP 20



Install a new valve seal in the lower valve stem groove.

STEP 21



Install the valve keepers in the upper valve stem groove.

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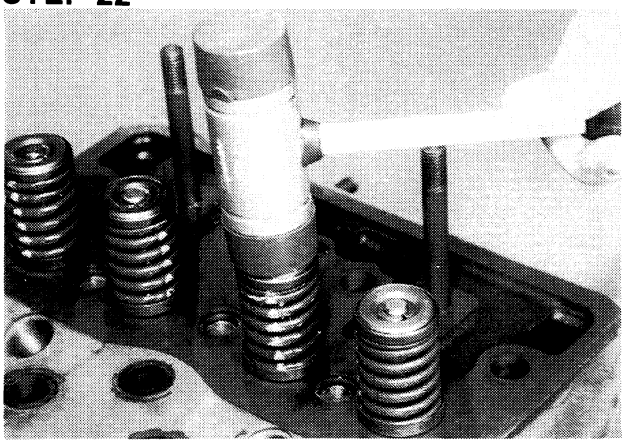
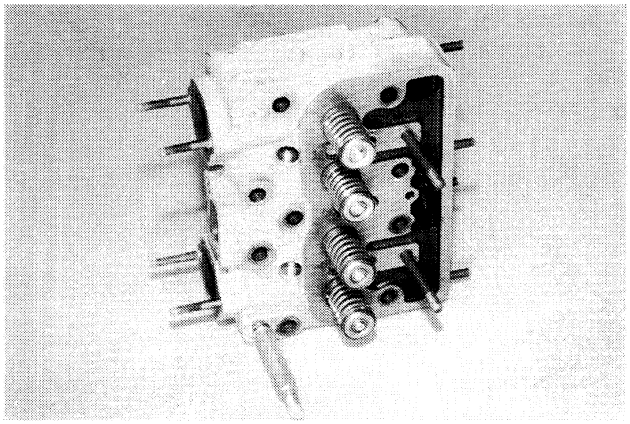
STEP 22



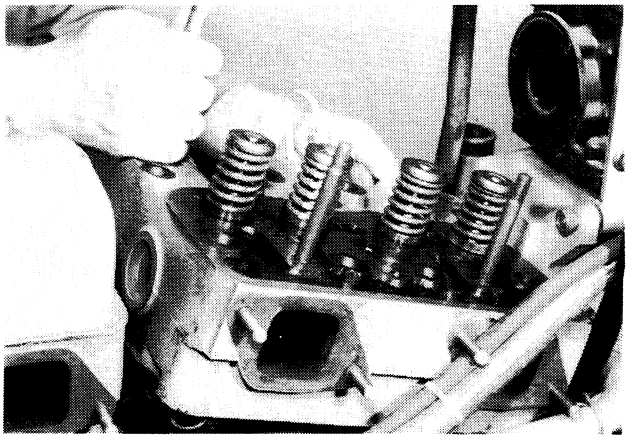
Remove the spring compressor. Hit the end of the valve stems with a soft hammer to seat the valve keepers.

STEP 23



Install teflon seals on all the intake and exhaust valves.

STEP 24



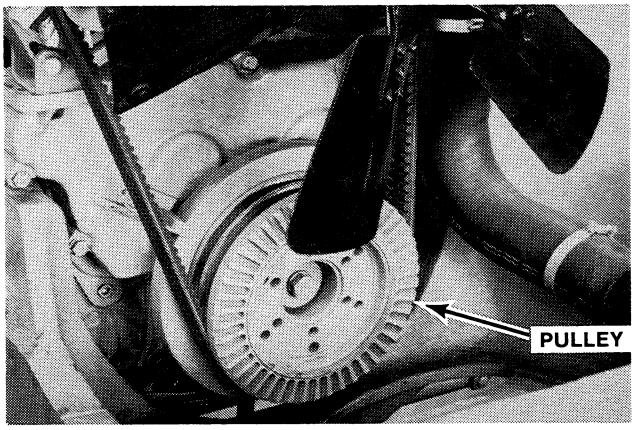
Install the cylinder heads. See Section 2215 of the Service Manual for installation of the cylinder heads.

Revised 7-83 Printed in U S A.

ENGINE TUNE-UP PROCEDURE

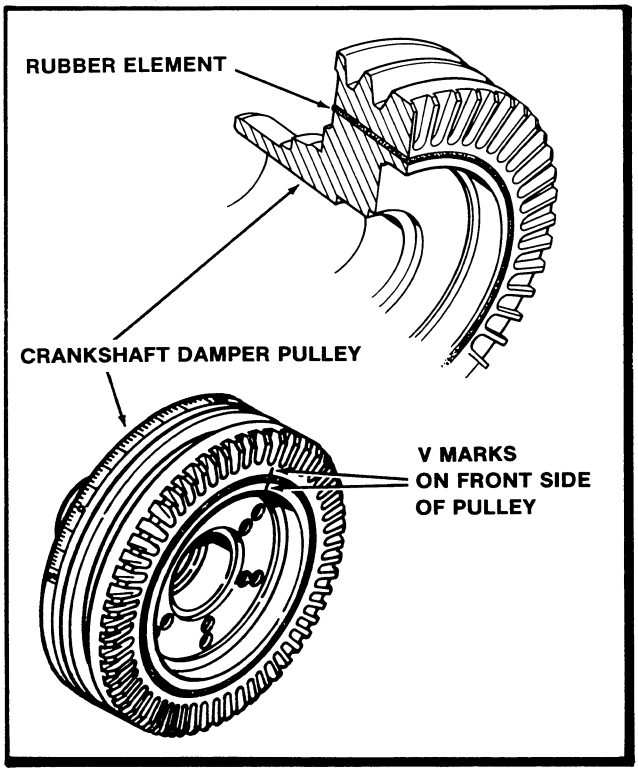
Checking The Crankshaft Damper Pulley (If Equipped)

STEP 1

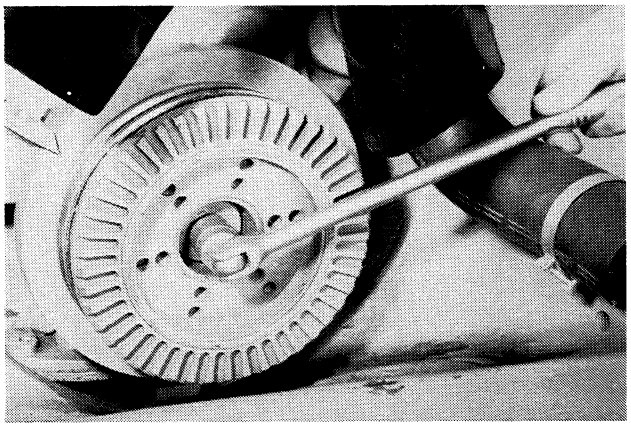


The recommendation for the change interval for the crankshaft damper pulley is 2000 hours maximum. At any time over 1500 hours change the pulley at any engine overhaul or tune-up.

Every 500 hours and during the engine tune-up, visually check the rubber element for areas where the rubber is coming off or cracked. Check the alignment of the marks between the inner and outer units. If the marks move, the damper pulley must be replaced. Go to Step 2 for pulley removal.



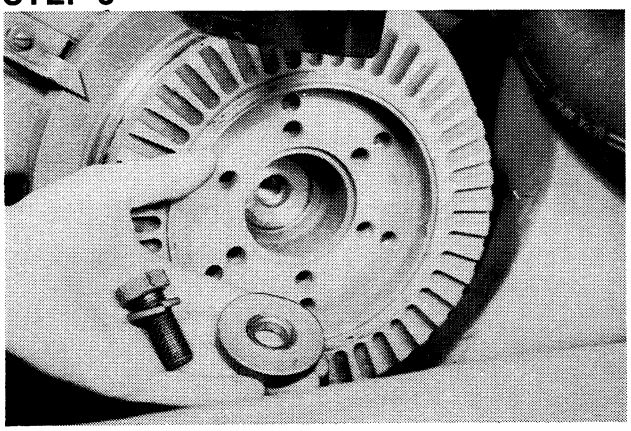
STEP 2



Loosen the pulley to crankshaft bolt.

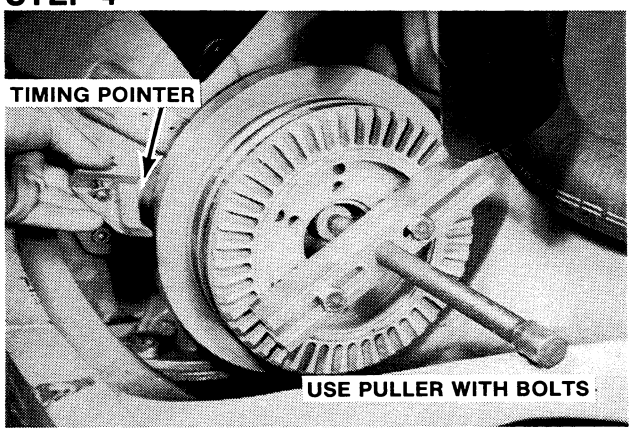
NOTE: *See Section 9260 or 9360 of the Service Manual for hood removal and Section 2255 for radiator and alternator belts removal.*

STEP 3



Remove the bolt, lockwasher and the retainer washer.

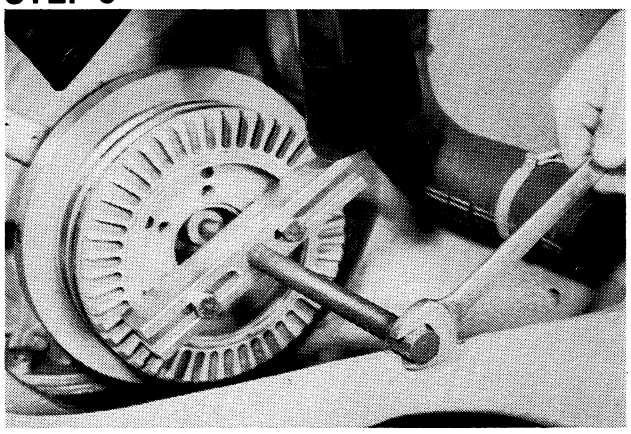
STEP 4



Remove the timing pointer.

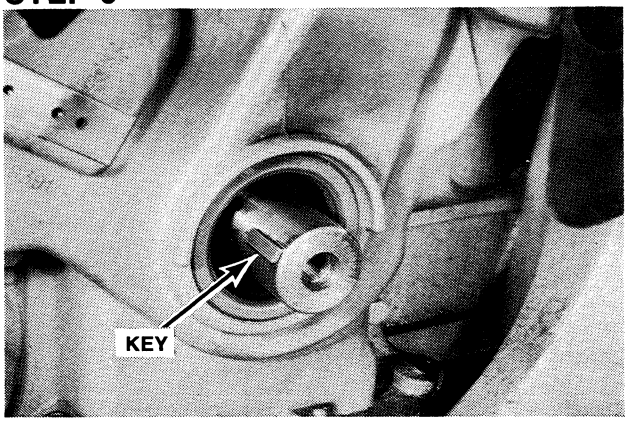
IMPORTANT: *Use a puller with bolts to remove the pulley. Do not pull or hit the pulley or the viscous damper. Serious damage to the pulley, damper and the rubber sleeve in the pulley can result.*

STEP 5



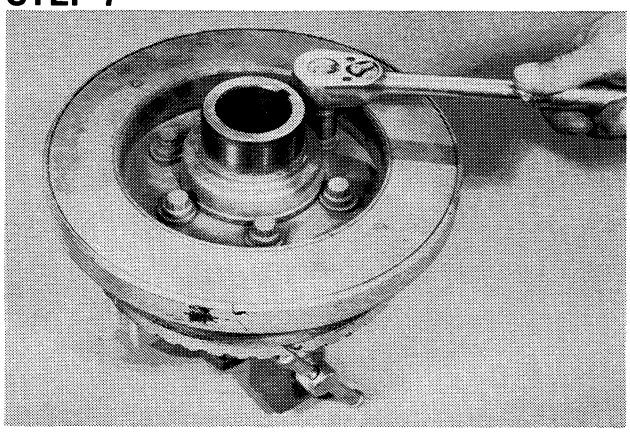
Remove the pulley.

STEP 6



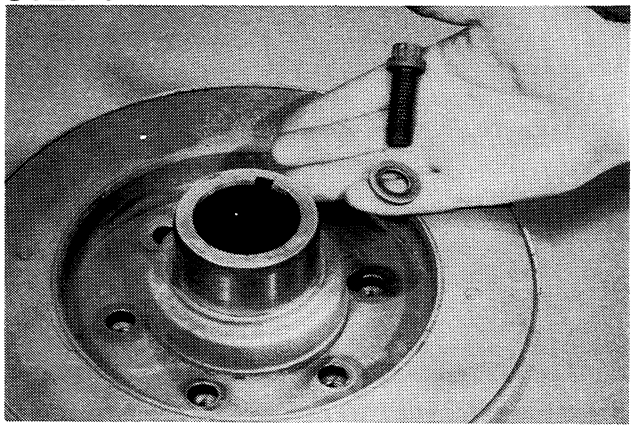
Do not lose the pulley retaining key.

STEP 7



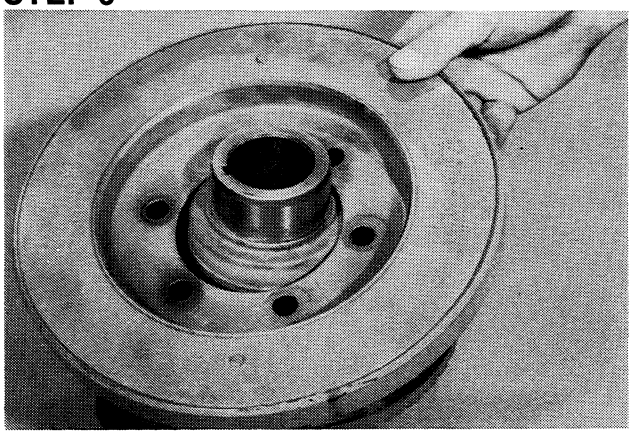
Leave the puller on the pulley and put the puller in a vise. Loosen the bolts that hold the damper (if equipped) to the pulley.

STEP 8



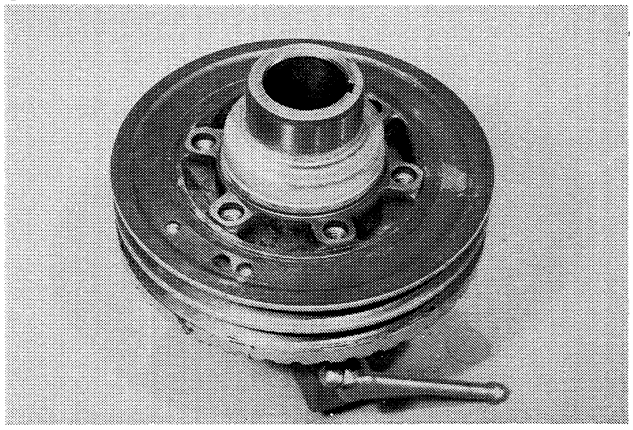
Remove the bolts and the washers.

STEP 9



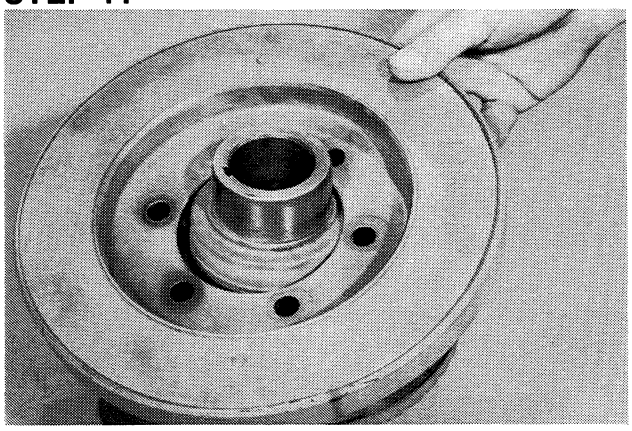
Remove the damper.

STEP 10



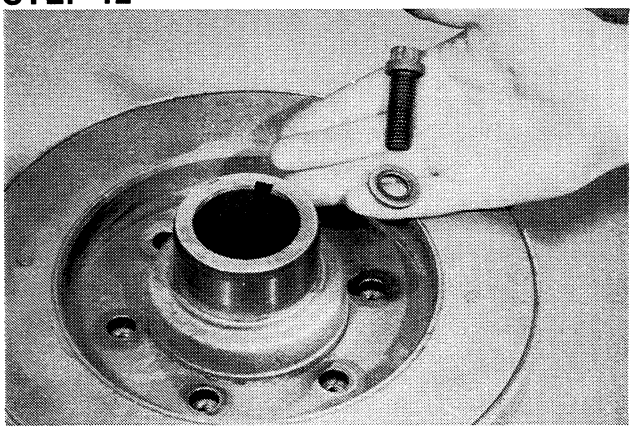
Fasten the puller to the front side of a new pulley and put the puller in a vise.

STEP 11



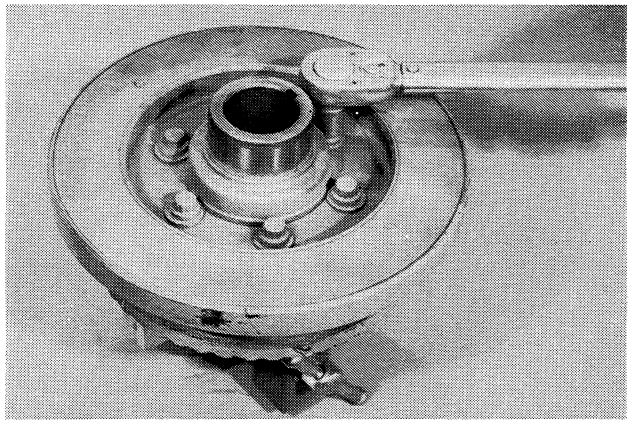
Install the damper to the pulley. The flat side of the damper is against the pulley.

STEP 12



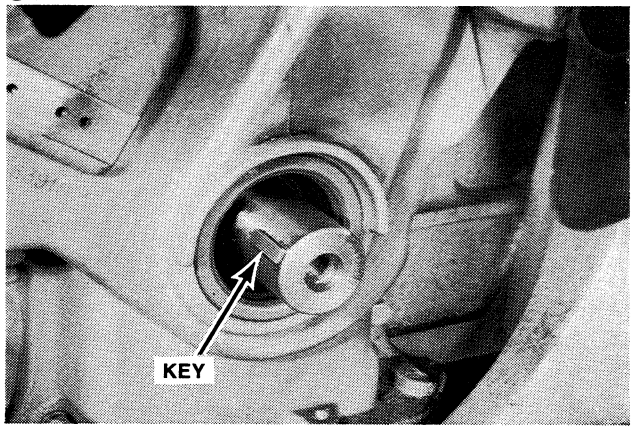
Install the bolts and new hardened washers.

STEP 13



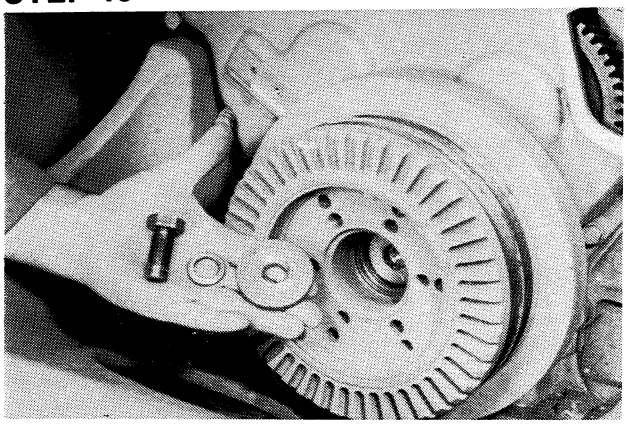
Tighten the bolts to a torque of 110 to 132 ft. lbs. (149 to 179 Nm)(14.9 to 17.9 kgm). Remove the puller.

STEP 14



Replace the key if the key shows damage.

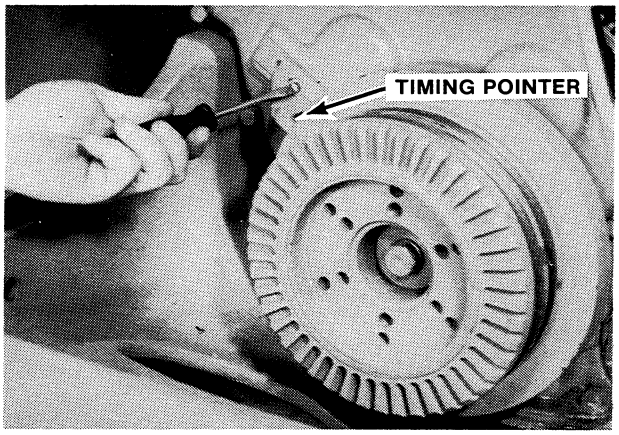
STEP 15



Install the pulley to the crankshaft. Install the bolt, lockwasher and retaining washer.

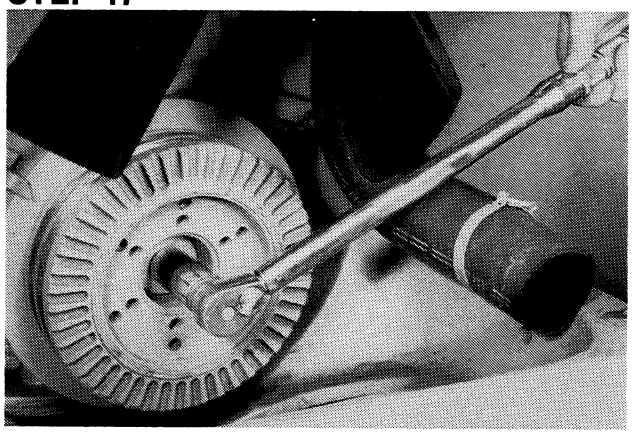
NOTE: *The hub side of the pulley must be put against the engine. Align the crankshaft key with the slot in the pulley.*

STEP 16

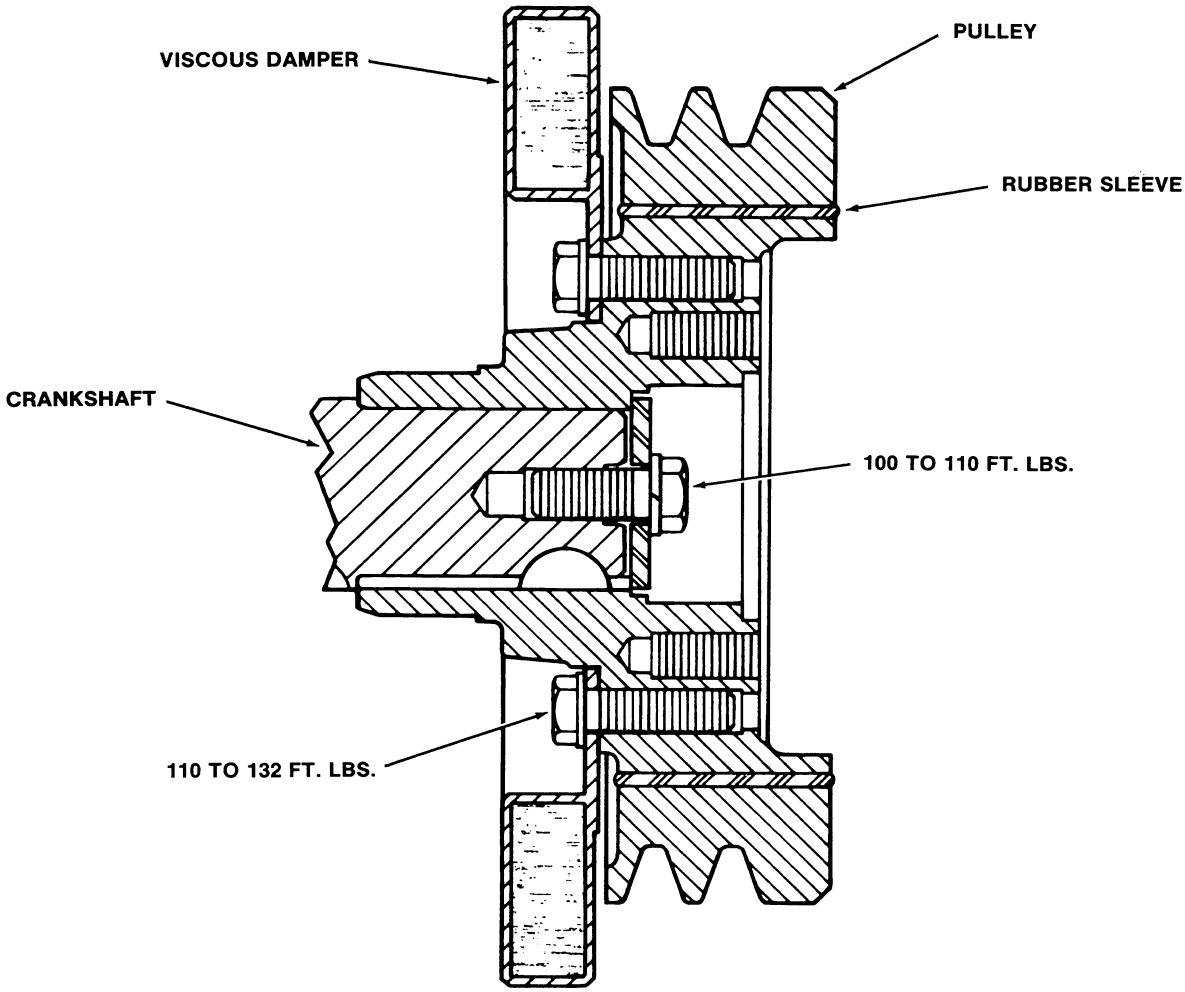


Install the timing pointer.

STEP 17



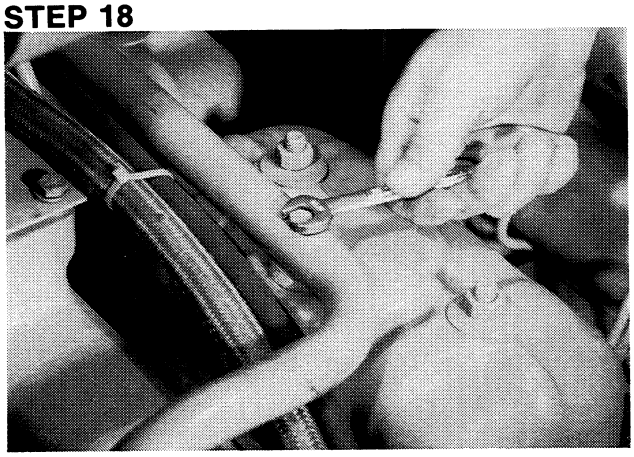
Tighten the bolt to a torque of 100 to 110 ft. lbs. (136 to 149 Nm)(13.6 to 14.9 kgm).



Checking Top Dead Center

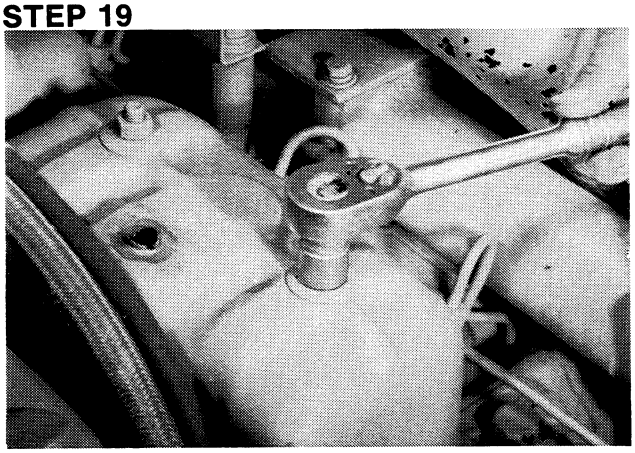
IMPORTANT: *Before checking top dead center, check the alignment marks on the pulley, see Step 1.*

STEP 18



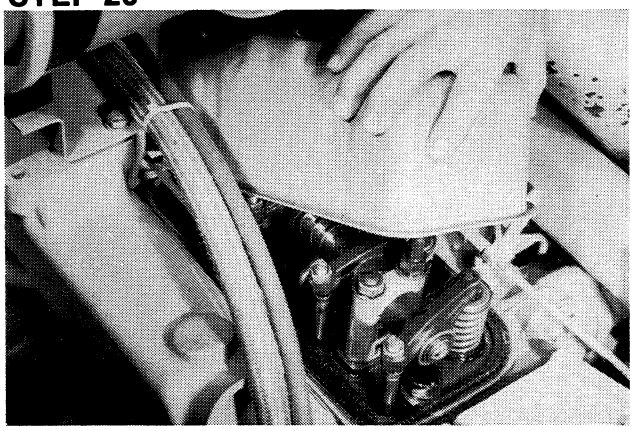
Remove the breather tube.

STEP 19



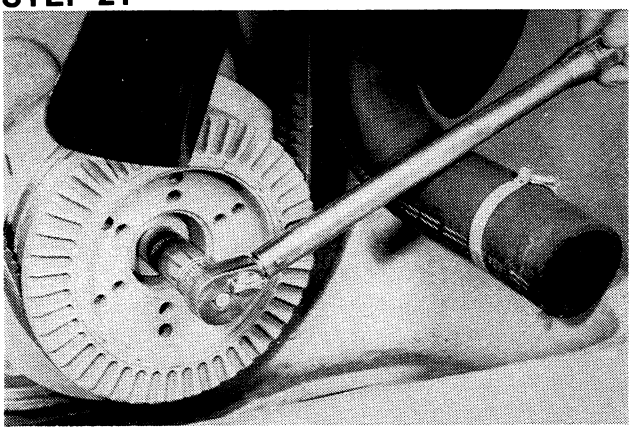
Remove the nuts, washers and rubber gaskets from the front valve cover.

STEP 20



Remove the front valve cover.

STEP 21



Turn the engine over until the Top Dead Center mark on the crankshaft pulley is aligned with the timing pointer.

Suggest:

If the above button click is invalid.

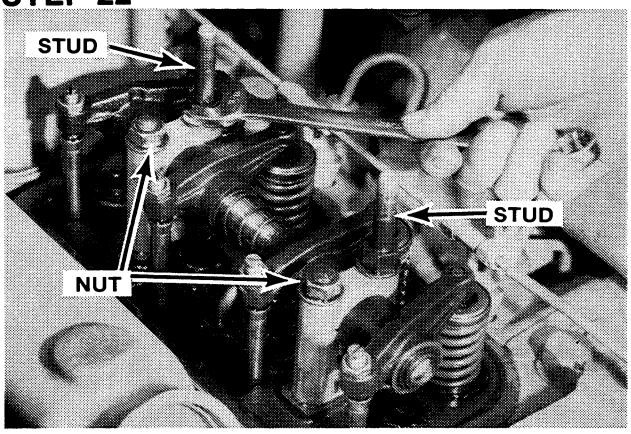
Please download this document

first, and then click the above link

to download the complete manual.

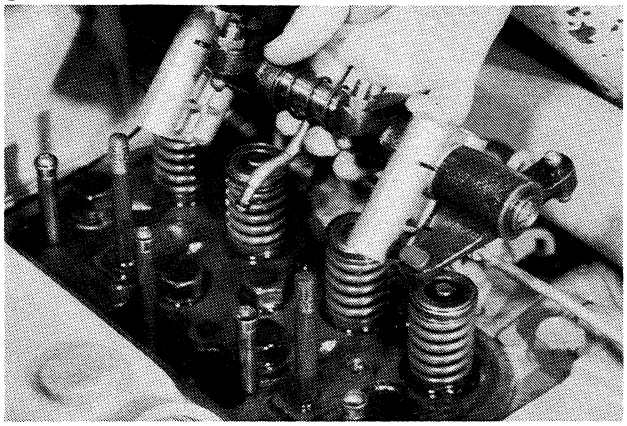
Thank you so much for reading

STEP 22



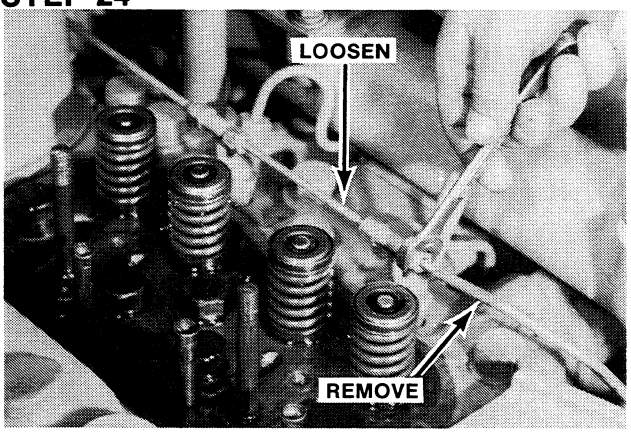
Remove the rocker arm retaining studs, nuts and washers.

STEP 23



Remove the rocker arm assembly.

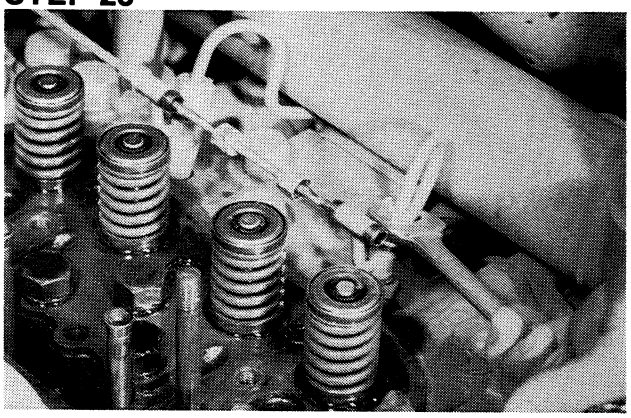
STEP 24



Remove the leak off line from the Number One fuel injection nozzle to the fuel pump. Loosen the leak off line between the Number One and the Number Two fuel injection nozzles.

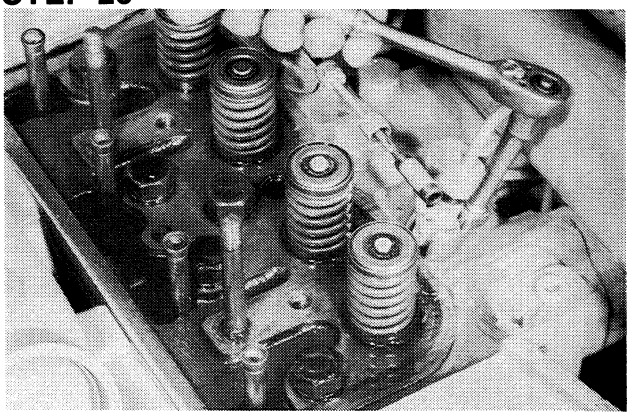
NOTE: *Removal of fuel lines will prevent damage to the lines when removing the exhaust valve spring.*

STEP 25



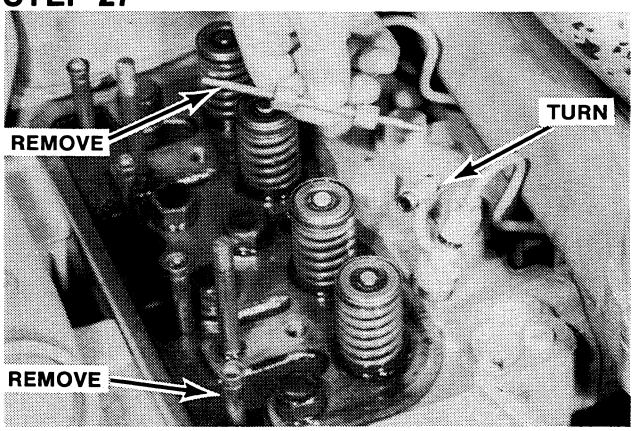
Loosen the Number One nozzle fuel line.

STEP 26



Loosen the retaining nut of the Number One nozzle using a 7/8" crowsfoot wrench (Snap-On Tool Part Number AN-8508-14, flared nut type or AN-8506-8, open end type) with an extension and ratchet wrench.

STEP 27



Remove the leak off line and turn the fuel injector nozzle towards the rear of the engine. Remove the Number One cylinder exhaust push rod.