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Section 1210

GENERAL SPECIFICATIONS 4494 TRACTORS

Written In *Clear
And
Simple
English*

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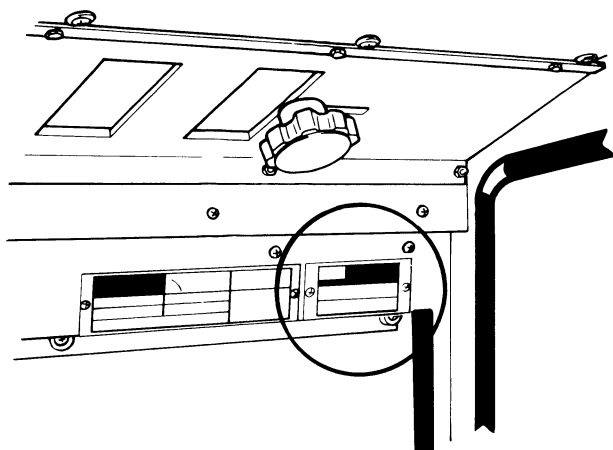
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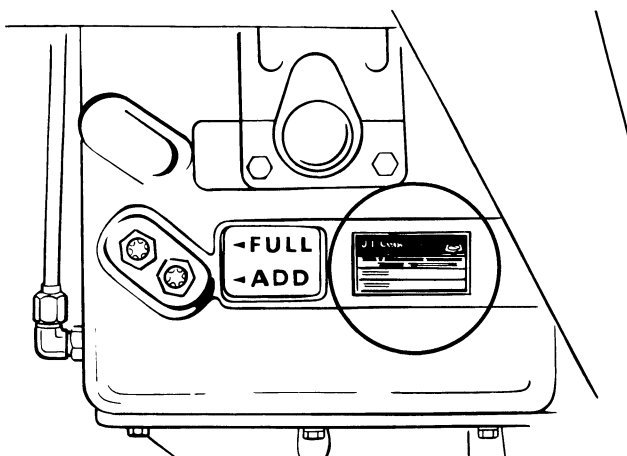
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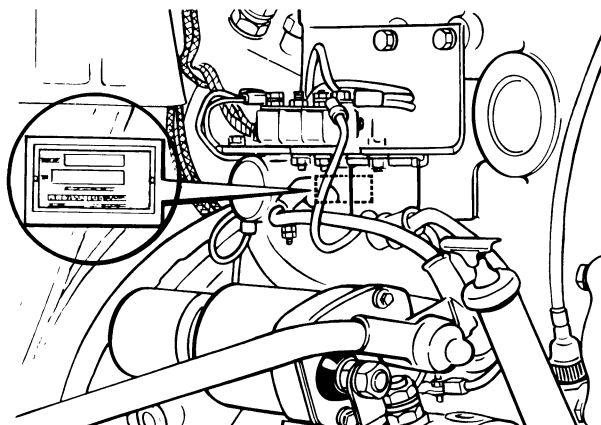
SERIAL NUMBERS



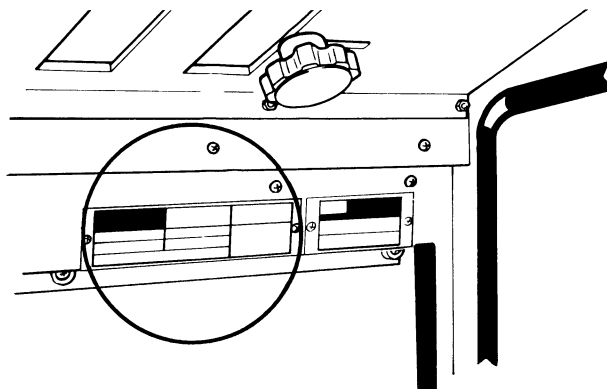
**MODEL AND PRODUCT IDENTIFICATION
NUMBER PLATE**



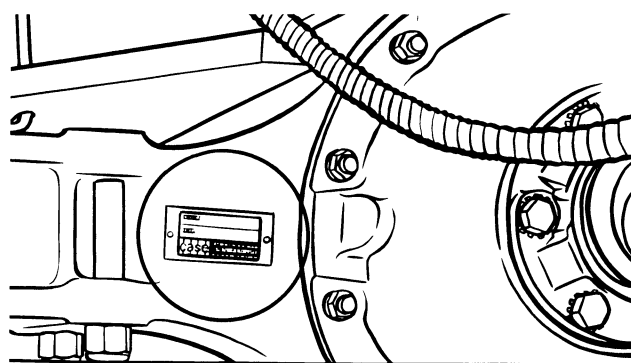
TRANSMISSION SERIAL NUMBER PLATE



ENGINE SERIAL NUMBER PLATE



CAB SERIAL NUMBER PLATE



**AXLE SERIAL NUMBER
PLATE (Front and Rear)**

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 Inches (117.5 mm)
Stroke	5 Inches (127 mm)
Piston Displacement	504 Cubic Inches (8 259 cm ³)
Compression Ratio	15.75 to 1
Cylinder Sleeves	Wet Type, Can be Removed.
Governor Engine Speed without Load	2340 to 2380 RPM
Rated Engine Speed	2200 RPM
Engine Idle Speed	725 to 775 RPM
Rocker Arm-to-Valve Clearance (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.*

Piston and Rod

Rings Per Piston	3
Compression Rings Per Piston	2
Oil Rings Per Piston	1
Type Piston Pin	Full Float
Type 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.
Type System	Pressure and Spray with Piston Oil Cooling
Oil Pump	Gear Type
Oil Filters (2)	Full Flow, Turn on Type, ByPass Valve in Filter Base.
Oil Capacity	With Filters, 28 U.S. Quarts (27 litres) Without Filters, 24 U.S. Quarts (23 litres)
Oil Cooler	Engine Oil

Fuel System

Fuel Injection Pump	Robert Bosch, Type PES.
Pump Timing	25 Degrees (BTC) Before Top Center. IMPORTANT: <i>Do not increase past 25 degrees BTC at any time. The given 25 degrees Gives Minimum Emissions in Tractor Operation and Longer Engine Life.</i>
Fuel Injectors	American Bosch, 17 mm.
Fuel Transport Pump	Plunger Type, a Part of the Fuel Injection Pump
Governor	Variable Speed, Part of the Fuel Injection Pump
Primary Stage Fuel Filter	Full Flow, Turn on Type
Secondary Stage Fuel Filter	Full Flow, Turn on Type
Water Trap and Drain For Fuel Tanks	Location is in Bottom of Each Fuel Tank
Fuel Tank Capacity	64 U.S. Gallons (242.3 litres) Each Tank, 128 U.S. Gallons (484.6 Litres) Total
Fuel Level Indicator	LCD Bar Indicator on 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 with Service Indication, Strata Tube.
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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 (2)	Start to Open at Approximately 175°F (79 °C), Fully Open at 202°F (94° C)
Pressure Cap	10 PSI (69 kPa)(6.9 bar) No Vent
Water Level	Low Level Service Monitor on Instrument Cluster
Coolant Temperature	LCD Bar Indicator on Instrument Cluster

Electrical System

Type of System	12 volt, Negative Ground
Batteries	Two 12 Volt Batteries Connected in Parallel, AABM Group Size 30H, Rated in 1.255 to 1.265 Specific Gravity. Discharge Rate 300 Amperes at 0° F.
Alternator	12 Volt, 72 Ampere Output, Negative Ground
Voltage Regulator	12 Volt, Solid State, Inside Component of Alternator
Starting 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, Halogen Sealed Beam
Rear Flood Lamps (6 Max)	12 Volt, 50 Watt, Halogen Sealed Beam
Flasher Lamps (2) with Direction Turn Signals	12 volt, Amber Lens
Tail Lamps (2)	12 Volt, Red Lens
Electrical System Circuit Breakers	
Primary Circuit	12 Volt, Three 50 Ampere Circuit Breakers Connected in Parallel, 150 Ampere Rating, 112.5 Ampere Minimum Continuous Capacity.
Auxiliary Circuit	12 Volt, Four 50 Ampere Circuit Breakers
Bulb and Lamp Replacement:	
Instrument Cluster Lamps	No. 73
Dome Lamp Bulb	No. 561
Console Lamp Bulb	No. 194
Flasher Lamp Bulbs	No. 1156
Head Lamps	No. 4652
Front and Rear Flood Lamps	No. A48265
Tail Lamp Bulbs	No. 168
Fuse and Circuit Breaker Replacement:	
Instrumentation	3.0 Ampere
Shutdown Solenoid	25.0 Ampere
Tail Light	15.0 Ampere
Light Switch Feed	25.0 Ampere
Accessories	3.0 Ampere
Switch Controls	10.0 Ampere
Head Lamp Low Beam	15.0 Ampere
Head Lamp High Beam	15.0 Ampere
Front Flood Light	25.0 Ampere
Radio and Night Light	10.0 Ampere
Ignition Switch	15.0 Ampere
Turn Signal and Dome Light	15.0 Ampere
Rear Flood Light	25.0 Ampere
Wiper	7.5 Ampere
Blower	15.0 Ampere
Cigar Lighter	15.0 Ampere
Steering Controller	3.0 Ampere
Hitch Controller	5.0 Ampere
Transmission Controller	20.0 Ampere
Transmission Controller	1.0 Ampere
Cluster	5.0 Ampere
ACC Power Feed	5.0 Ampere

Tractor Brakes

Type Hydraulic Actuated, Self-Adjusting,
Several Plate Dry Type.

Park Brake

Type Cable Actuated by over center Type Handle Adjustable
from Operators Seat. Several Plate Type.

Power Shift Transmission

Type Three Speed Compound Planetary with Hydraulically
Actuated Clutches and Four Speed Gear Section.

Gear Selection 12 Speeds Forward and Four Speeds Reverse

Shift Control

Range Shift Mechanically Actuated By a
Lever on the Front Console.

Power Shift Electrically Actuated By a
Lever on the Front Console.

Oil Cooler Transmission, Hydraulic and Steering Oil

Oil Type Case Powergard PTF

Oil Capacity (with PTO and Hitch) 62 U.S. Quarts (59 litres)

(No PTO and Hitch) 54 U.S. Quarts (51 litres)

Oil Refill Capacity (with PTO and Hitch) *32 U.S. Quarts (30.3 litres)

(No PTO and Hitch) *30 U.S. Quarts (28.4 litres)

* Includes 8 Qts. (7.6 litres) for Filter Change.

Hydrostatic Front Power Steering

Oil Supply Hydraulic Pump, 15 gpm (56.8 litres/min) at 2200 RPM and
2000 PSI (13 790 kPa)(137.9 bar). 10 gpm (38 litres/min) for
front steering and 5 gpm (19 litres/min) returns to filters.

Relief Valve Pressure 2650 PSI (18 272 kPa)(182.7 bar)

Front Steering Cylinders Two Cylinders with Two Way Action

Steering Pump Hydrostatic Type, Actuated by the steering wheel

Rear Power Steering

Oil Supply Hydraulic Pump, 10 gpm (37.85 litres/min) at 2200 RPM

Relief Valve Pressure 1650 to 1900 PSI (11 377 to 13 101 kPa)
(113.8 to 131 bar)

Rear Steering Cylinders Two Cylinders with Two Way Action

Controls Selective Steering with Automatic Rear Steering with

All Wheels Controlled by Steering Wheel or Rear Wheels Controlled by a Hydraulic-Electric Servo System
with Three Position Selection Switch and a Toggle Switch on the Side Console.

Axle Differential and Planetaries

Front and Rear Spiral Bevel with Planetary Reduction in hub.

Differential Oil Capacity 19 U.S. Quarts (18 litres) Each Differential

Planetary Oil Capacity 11 U.S. Quarts (10.4 litres) Each Planetary

Hitch System (If Equipped)

Type of Sensing Electronic
 Type Control Hand Lever
 Type Valve Three Position - Lift, Hold and Lower
 Type Draft Arms Rigid, Swing Type with Manual Float Adjustment
 Type Hitch Three Point, Category III
 Hitch Coupler (Available) Category III

Remote Hydraulic System

Pump Axial Piston Pump, Pressure and Flow Compensated
 Type Remote Valve Closed Center, Two to Four Sections, Hand
 Lever Control, Variable Flow Control for
 Each Section or Remote Valve with Lock
 Check.
 Pump Capacity at 2200 RPM 31 GPM (117.4 litres/min) at
 2000 PSI (13 790 kPa)(137.9 bar)
 Max System Pressure 2250 PSI (15 503 kPa)(155 bar)
 Couplings ASAE S366 Standard (will also Fit ISO Male Couplers), Fast Removal, Break Away Type
 Hydraulic Charge Pump 43 GPM (162.8 litres/min) at 2200 RPM
 and 100 PSI (240 kPa)(2.4 bar)
 Charge Circuit Relief Valve Pressure 35 PSI (241 kPa)(2.41 bar)
 Oil Type Case Powergard PTF
 Oil Capacity 28 GPM (106 litres/min)

Power Takeoff (If Equipped)

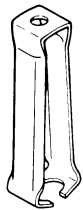
Type Clutch Hydraulic Actuated
 Rotation Clockwise
 Spline Size 21 Splines, 1-3/8 inch (34.9 mm) Diameter
 Engine Speed 2200 RPM 1000 RPM Shaft Speed

Drawbar

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

INSTALLATION INSTRUCTIONS FOR M20614 TEFLON VALVE SEAL KIT

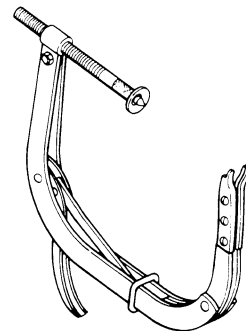
Special Tools Required



M20624 SEAL INSTALLATION TOOL

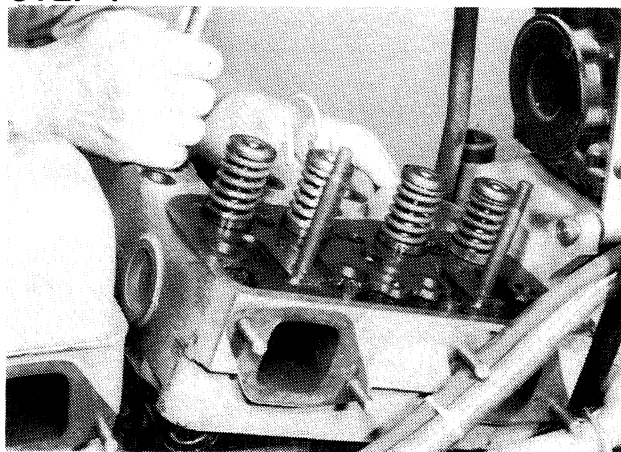


M20617 VALVE GUIDE CUTTING TOOL



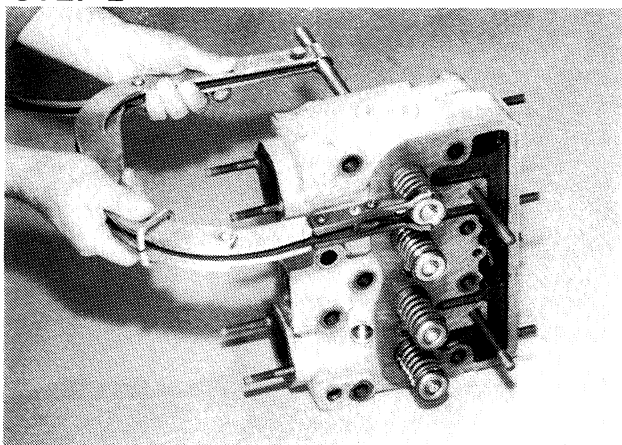
VALVE SPRING COMPRESSOR

STEP 1



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

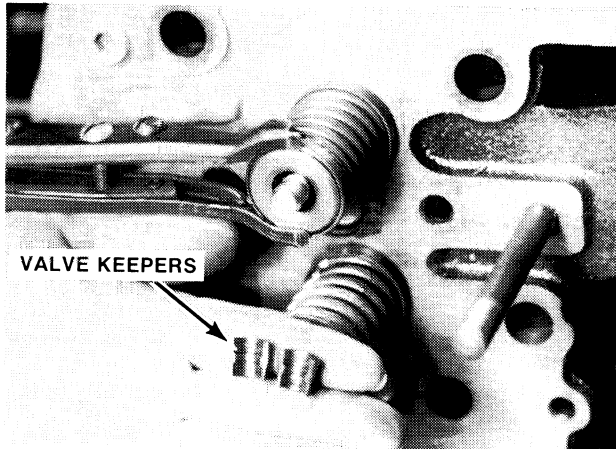
STEP 2



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

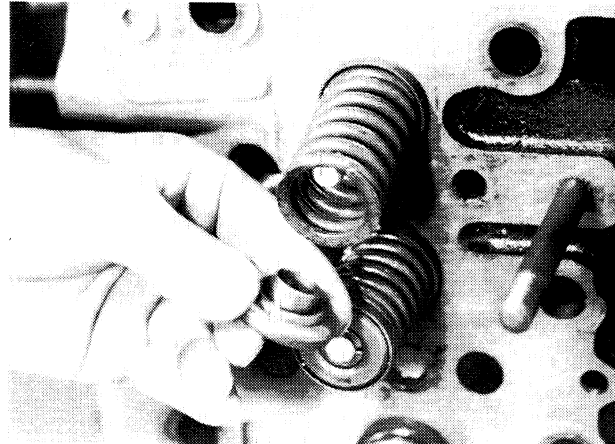
IMPORTANT: Make a mark on the valves, rotators, spring retainers and keepers. This will make sure that the parts are installed in the original location.

STEP 3

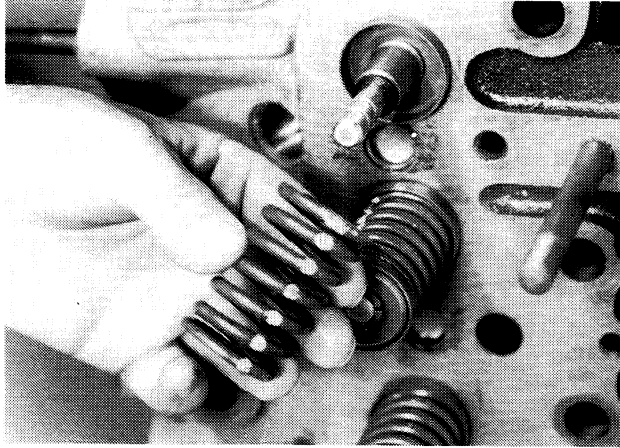


Push down the valve springs and remove the valve keepers.

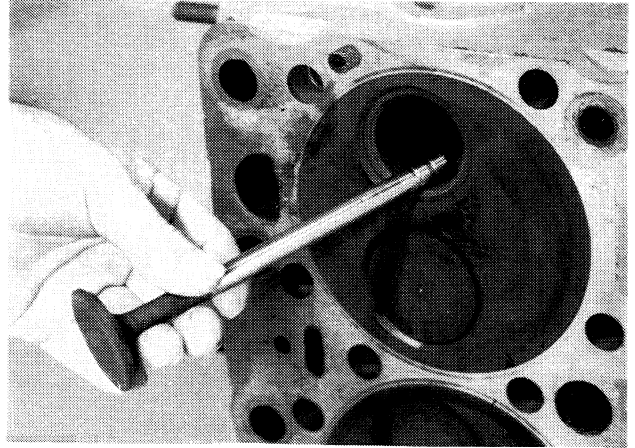
STEP 4



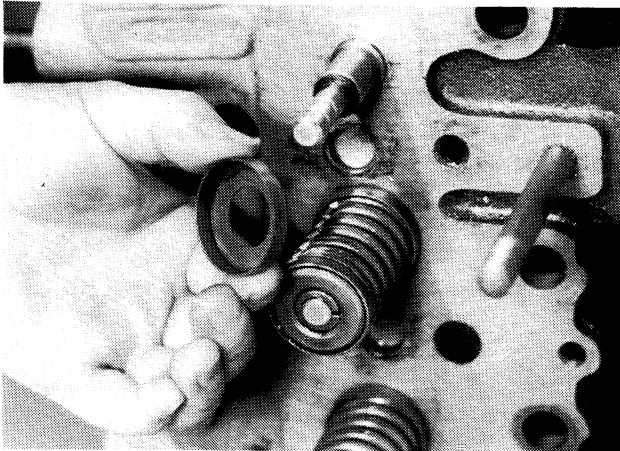
Remove the valve rotators or the valve spring retainers.

STEP 5

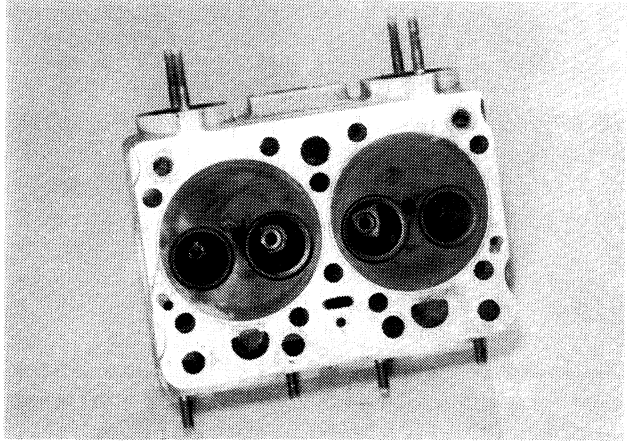
Remove the valve springs.

STEP 8

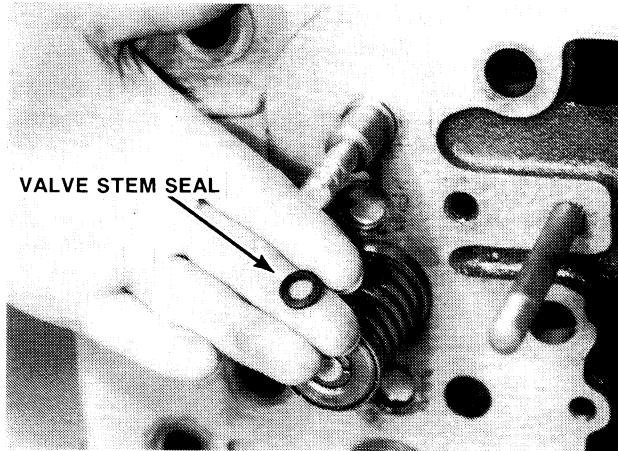
Remove the valves.

STEP 6

Remove the spring seats.

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.

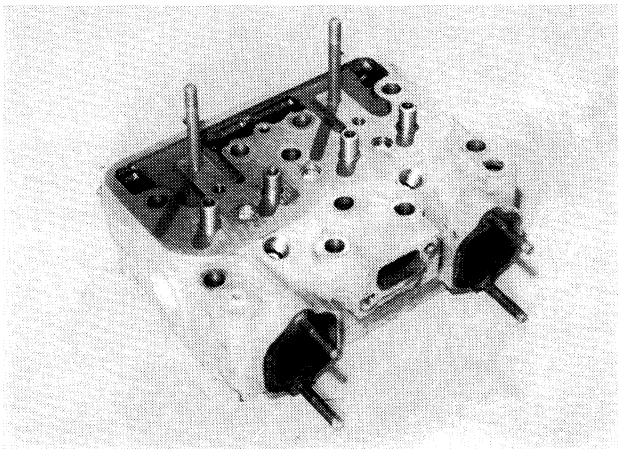
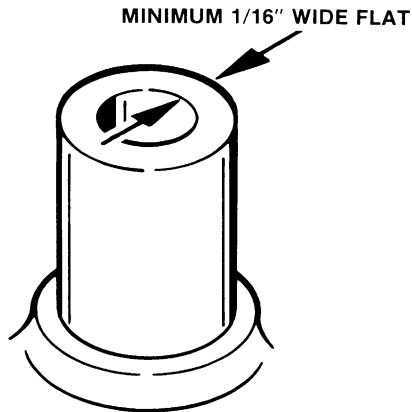
STEP 7

Remove the valve stem seals.

STEP 10

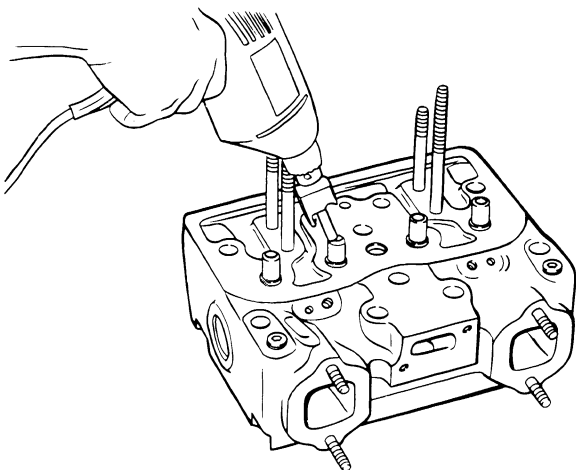
Clean the valves with a fine wire brush that is power driven. Remove all carbon and varnish deposits. Do not scratch the valve stems.

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.

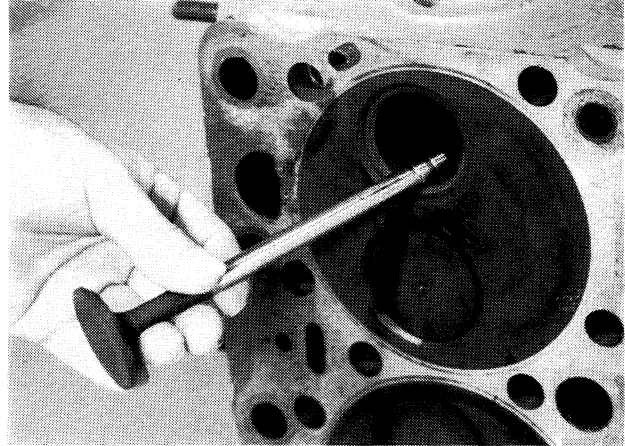
STEP 12



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

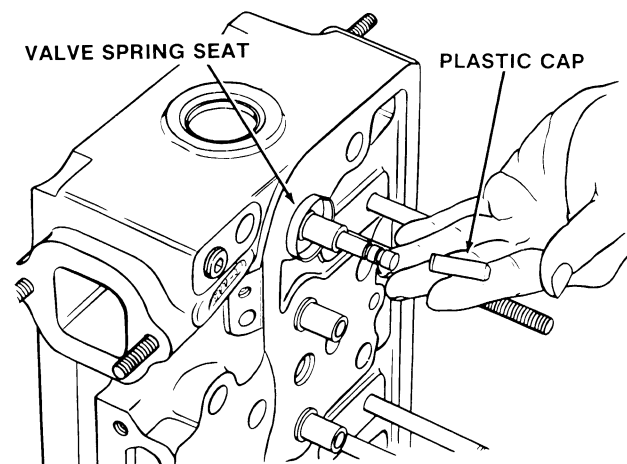
IMPORTANT: Do not go over 450 RPM when drilling.

STEP 13



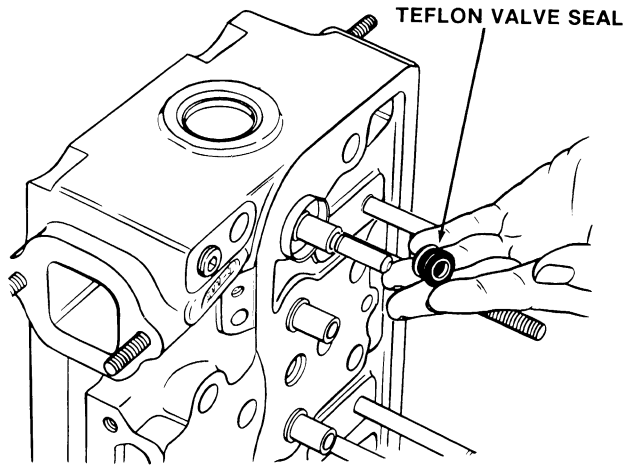
Put clean engine oil on the valves before installing the valves in the cylinder head.

STEP 14

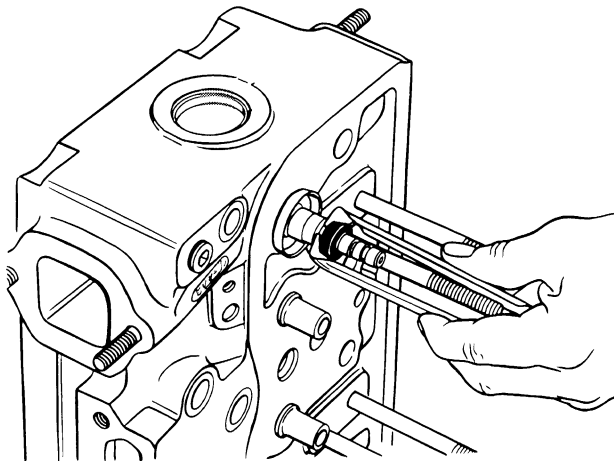


Install the spring seats. Put the plastic installation cap on the end of the valve stem. The plastic cap prevents the sharp edges on the valve stem grooves from cutting the valve seal.

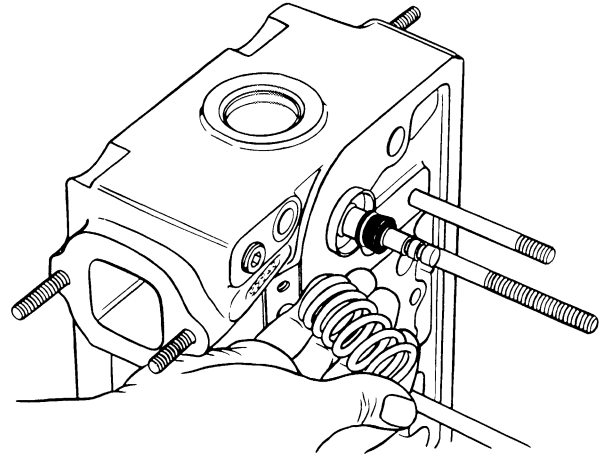
NOTE: One M20614 kit is required for one cylinder head.

STEP 15

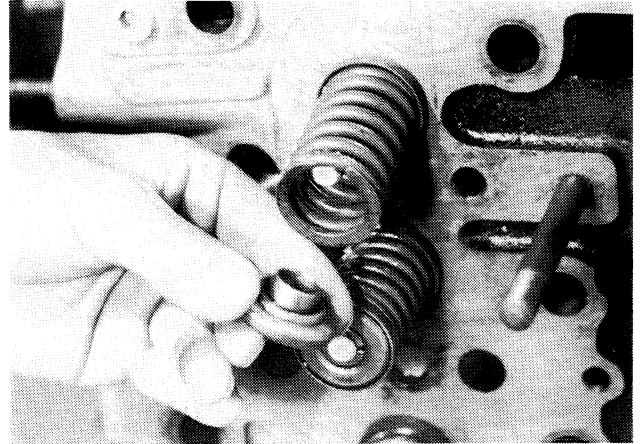
Put the valve seal over the plastic cap. Hold your thumb against the white seal insert to keep the insert from coming out. Push the valve seal down so that the seal jacket is against the top of the valve guide. Remove the installation cap. Keep the cap since the cap will be used again.

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.*



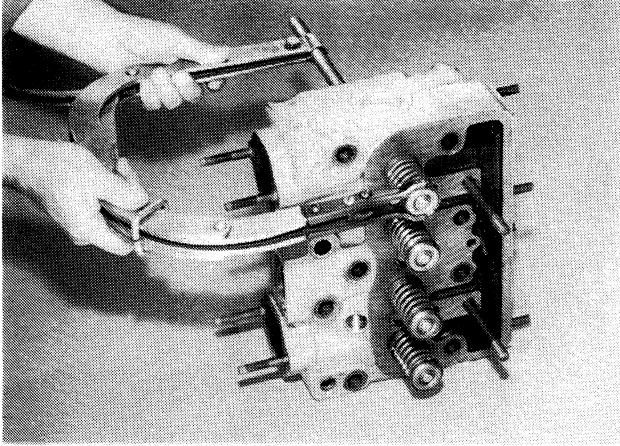
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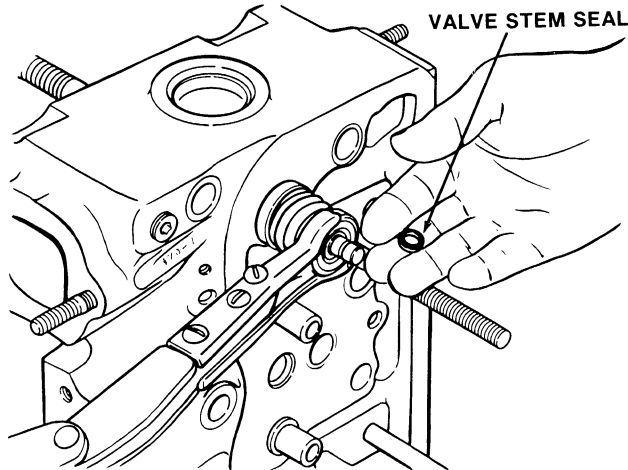
Thank you so much for reading

STEP 19



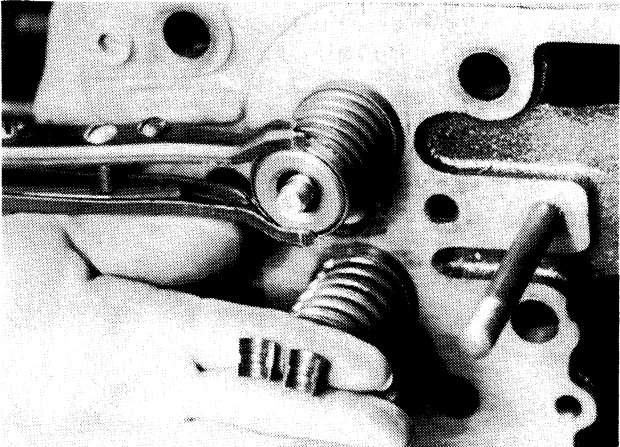
Push down the valve springs with a spring compressor.

STEP 20



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

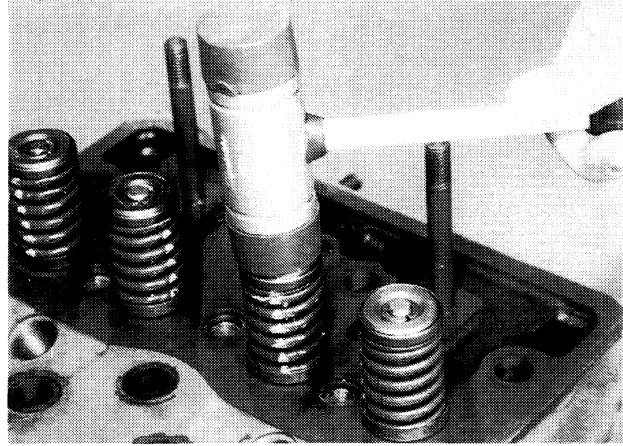
STEP 21



Install the valve keepers in the upper valve stem groove.

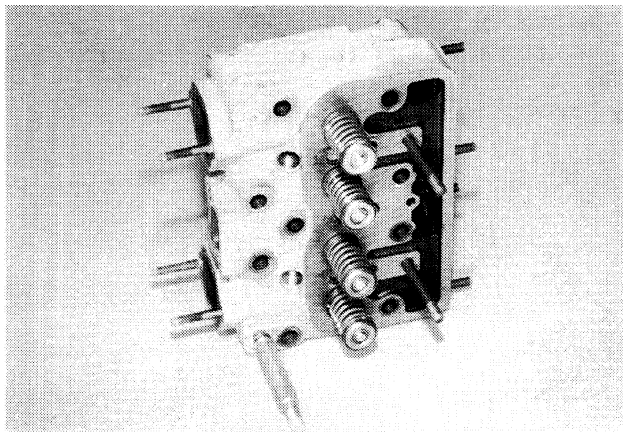
Rac 8-20111

STEP 22



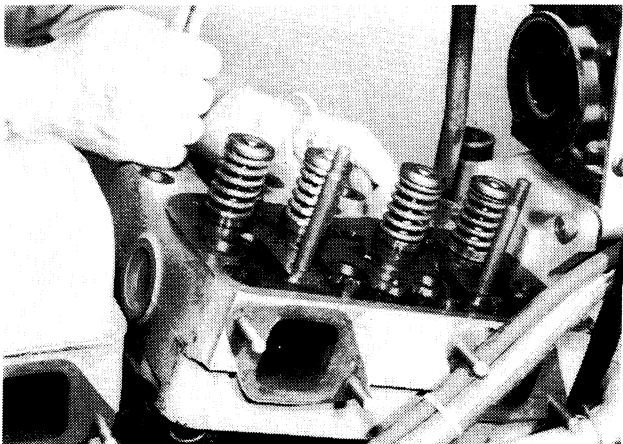
Remove the spring compressor. Hit the end of the valve stems with a soft hammer to seat the valve keepers.

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.

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