TABLE OF CONTENTS
4494 AND 4694 TRACTORS

TABLE OF CONTENTS
4494 AND 4694 TRACTORS

Section

1210

GENERAL SPECIFICATIONS

4494 TRACTORS

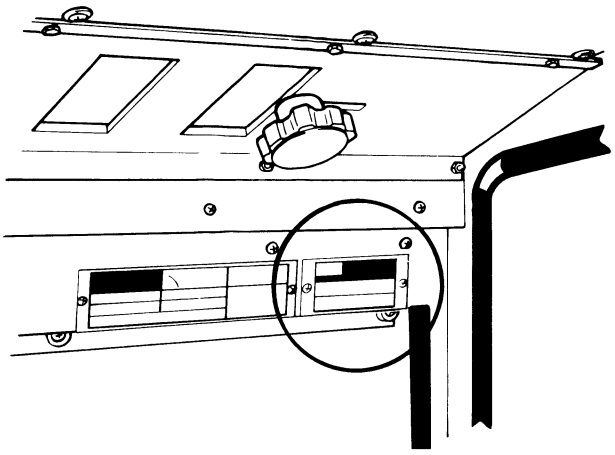
Written In *Clear And Simple English*

CASE CORPORATION

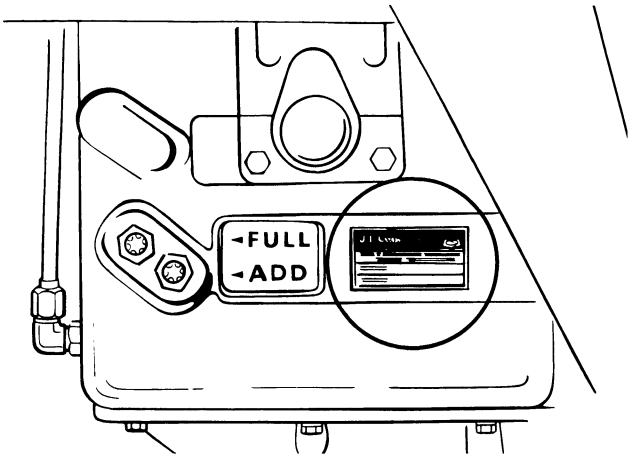
Rac 8-26230

Printed in U.S.A.
August, 1984

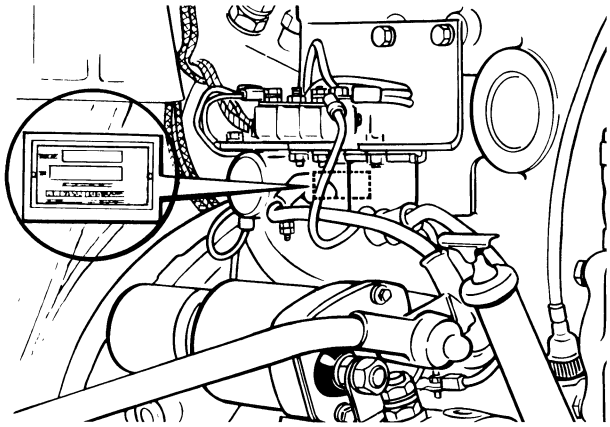
SERIAL NUMBERS



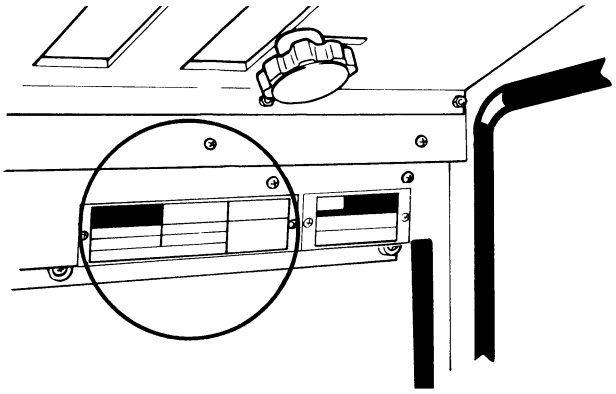
MODEL AND PRODUCT IDENTIFICATION NUMBER PLATE



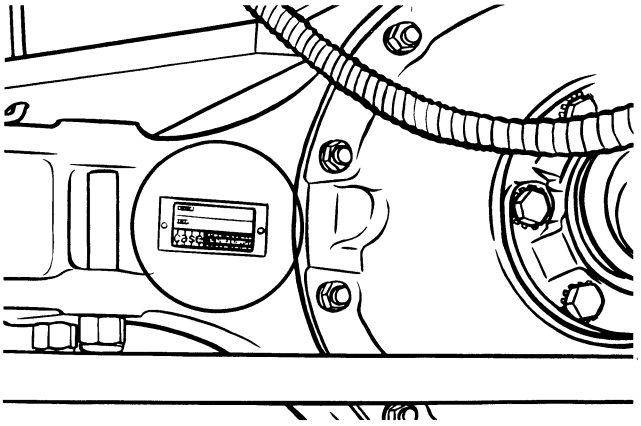
TRANSMISSION SERIAL NUMBER PLATE



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: *Do not increase past 25 degrees BTC at any time. The given 25 degrees Gives Minimum Emissions in Tractor Operation and Longer Engine Life.*
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.

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

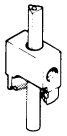
Drawbar

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

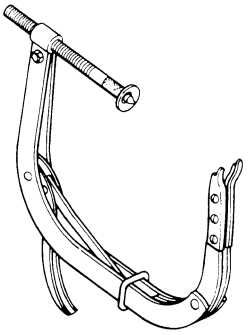
INSTALLATION INSTRUCTIONS FOR M20614 TEFLON VALVE SEAL KIT

Special Tools Required

M20624 SEAL INSTALLATION TOOL

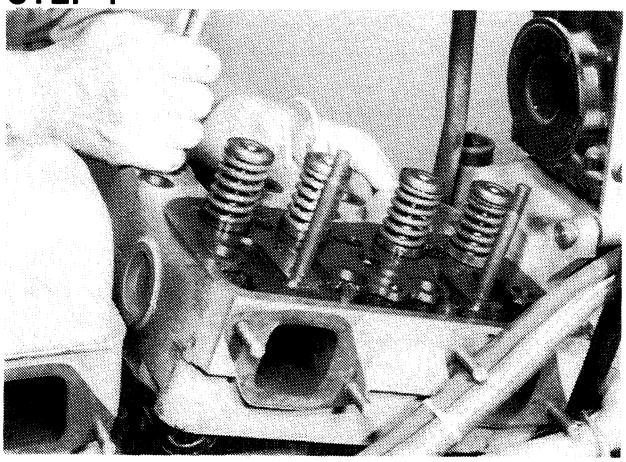


M20617 VALVE GUIDE CUTTING TOOL



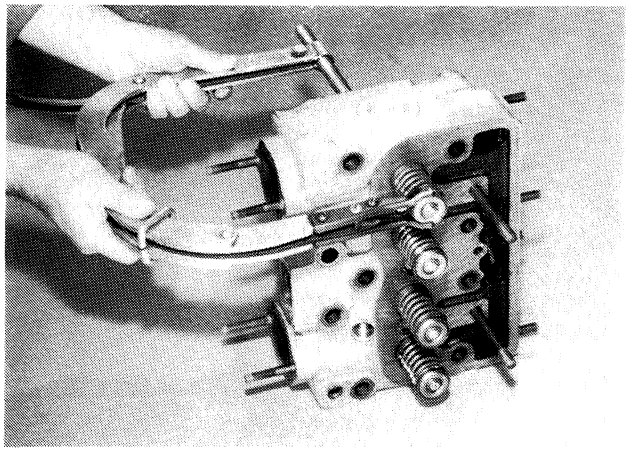
VALVE SPRING COMPRESSOR

STEP 1



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

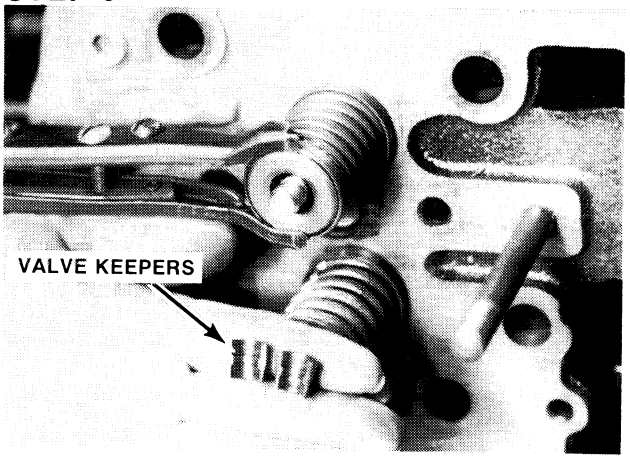
STEP 2



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

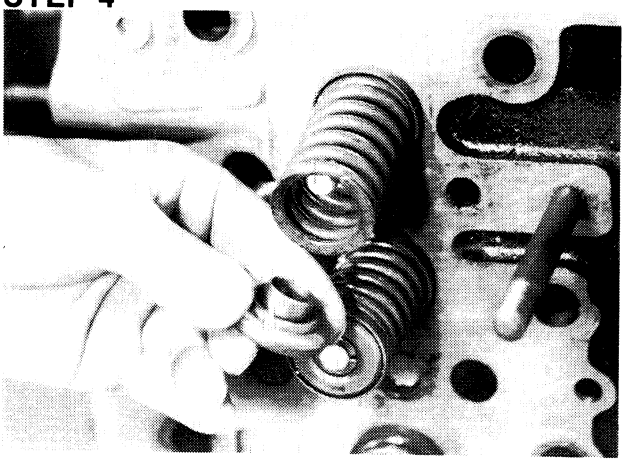
IMPORTANT: *Make a mark on the valves, rotators, spring retainers and keepers. This will make sure that the parts are installed in the original location.*

STEP 3



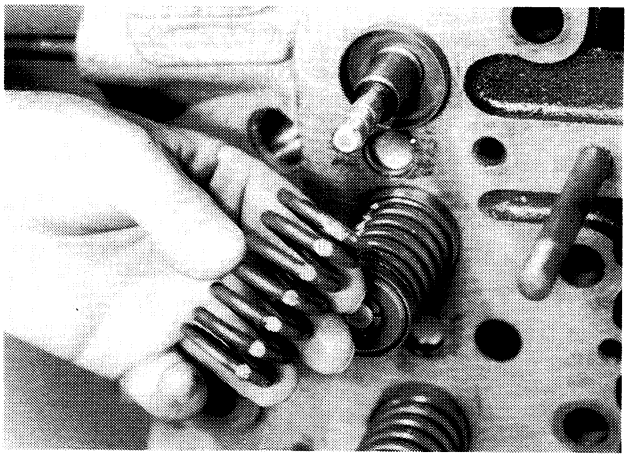
Push down the valve springs and remove the valve keepers.

STEP 4



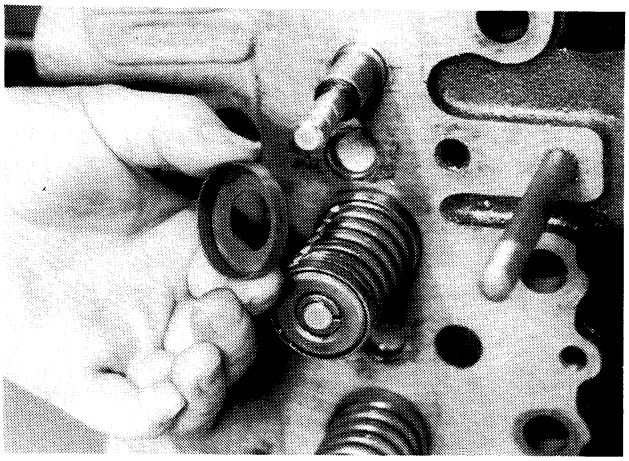
Remove the valve rotators or the valve spring retainers.

STEP 5



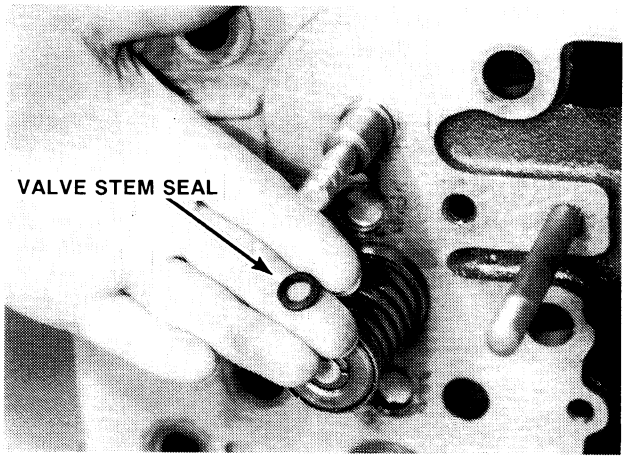
Remove the valve springs.

STEP 6



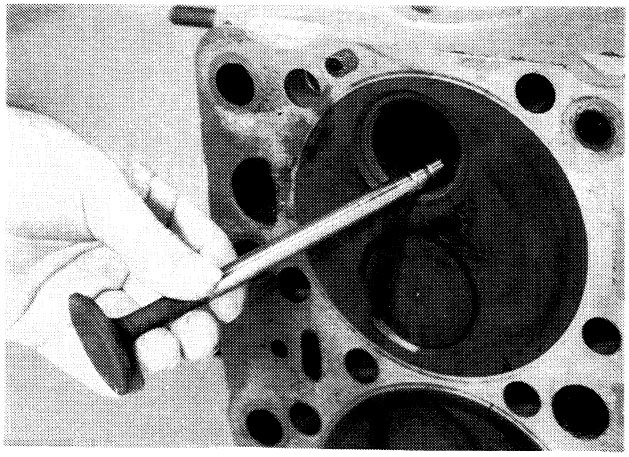
Remove the spring seats.

STEP 7



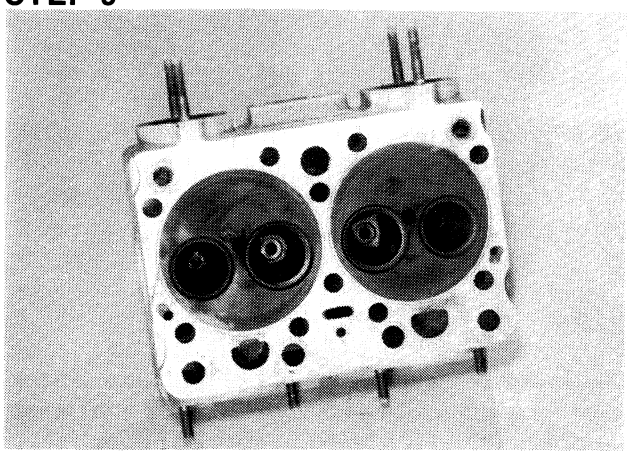
Remove the valve stem seals.

STEP 8



Remove the valves.

STEP 9

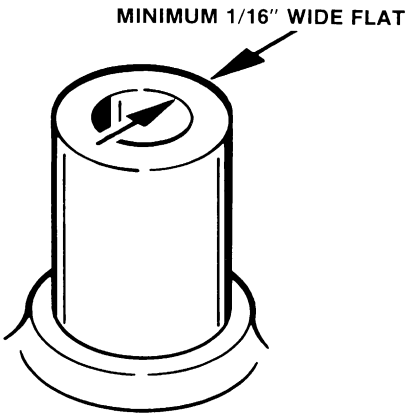


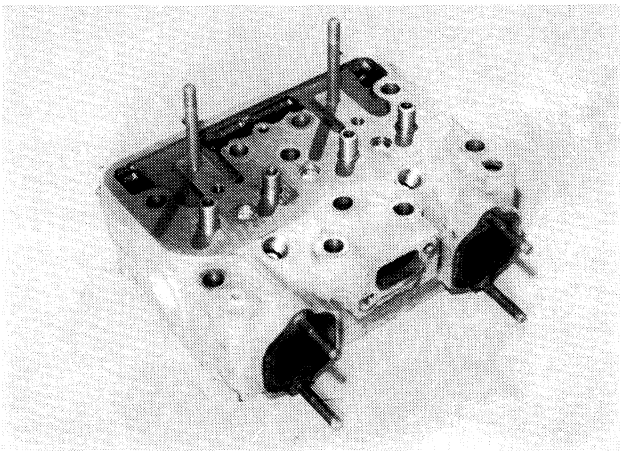
Clean the cylinder head completely, removing all the carbon and other deposits. Check for cracks and for any sign of damage, existing in the area of the fire ring contact.

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.

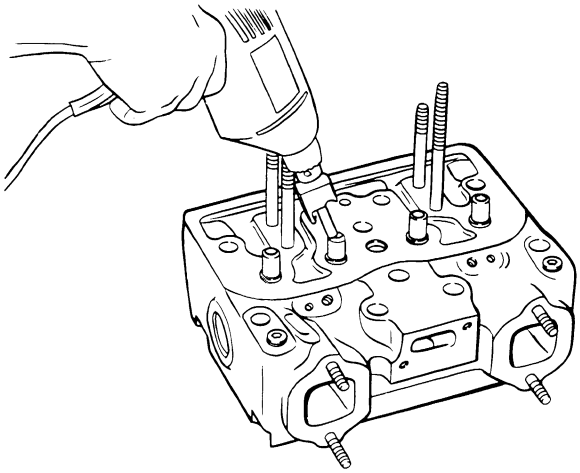
STEP 11





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.

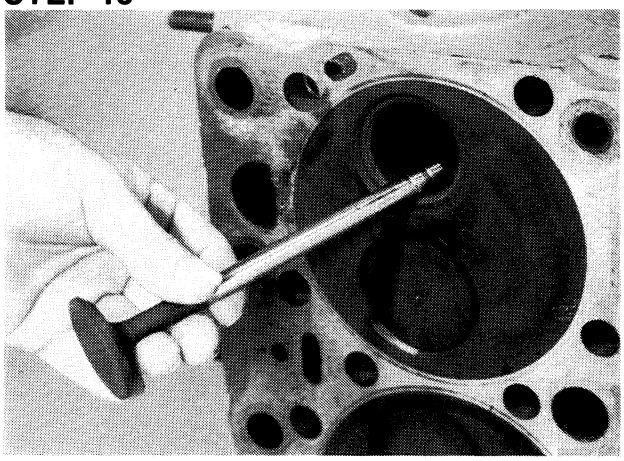
STEP 12



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

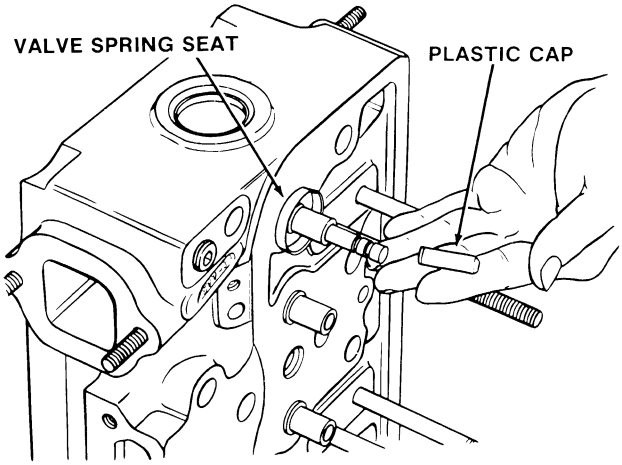
IMPORTANT: *Do not go over 450 RPM when drilling.*

STEP 13



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

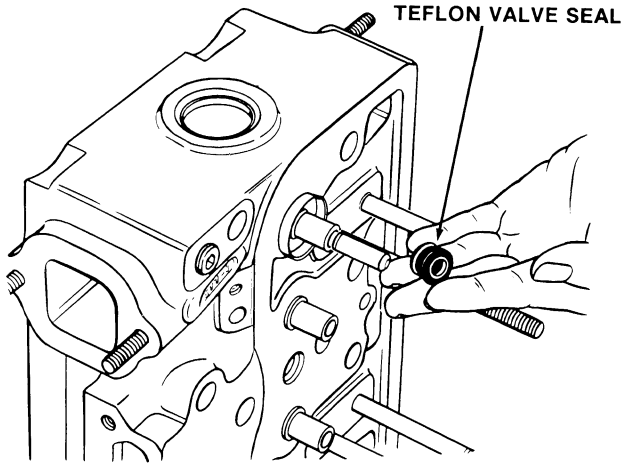
STEP 14



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.

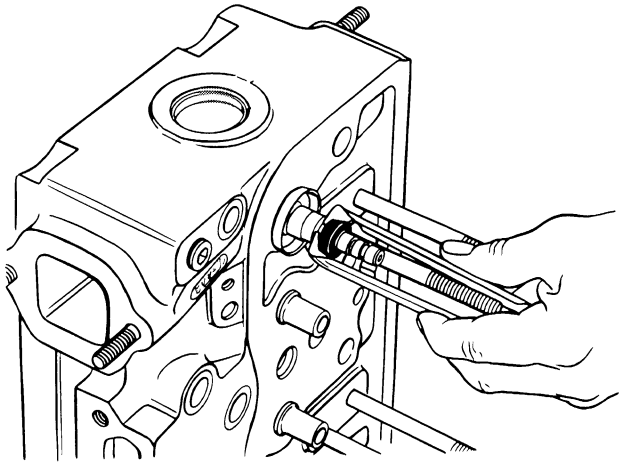
NOTE: *One M20614 kit is required for one cylinder head.*

STEP 15



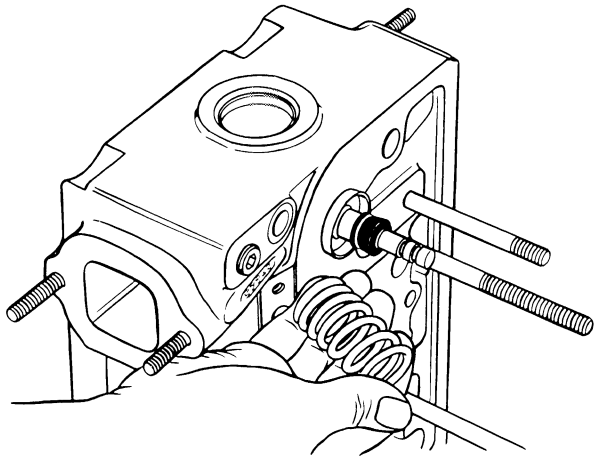
Put the valve seal over the plastic cap. Hold your thumb against the white seal insert to keep the insert from coming out. Push the valve seal down so that the seal jacket is against the top of the valve guide. Remove the installation cap. Keep the cap since the cap will be used again.

STEP 16



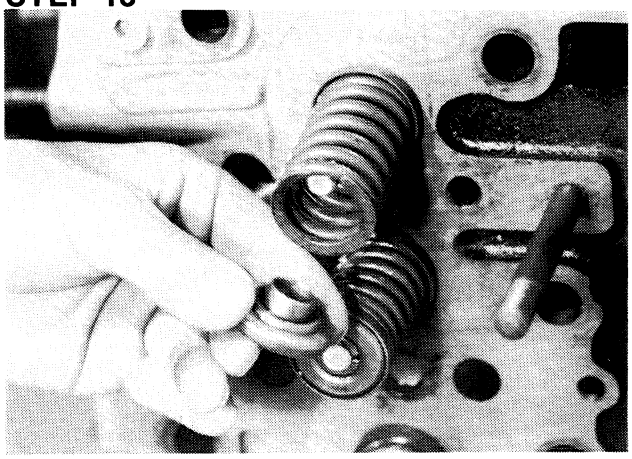
Use the M20624 tool and push the seal down over the valve guide until the seal is level with the top of the guide.

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.*

Suggest:

If the above button click is invalid.

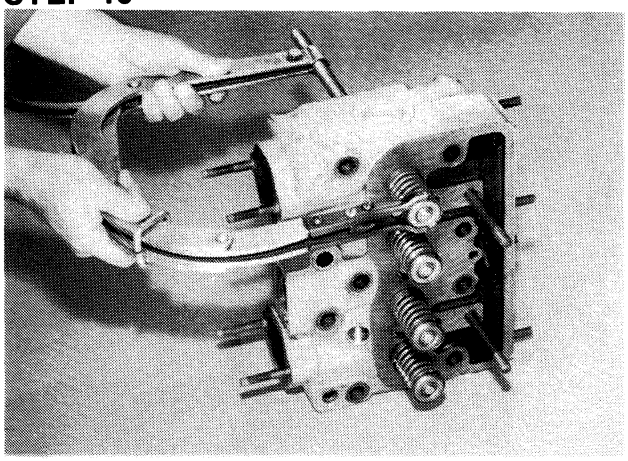
Please download this document

first, and then click the above link

to download the complete manual.

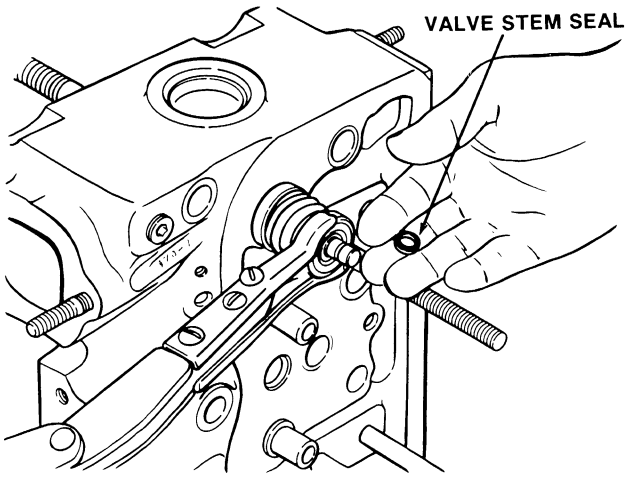
Thank you so much for reading

STEP 19



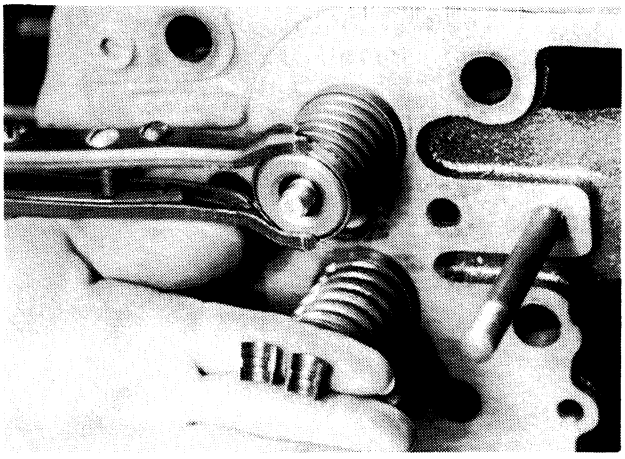
Push down the valve springs with a spring compressor.

STEP 20



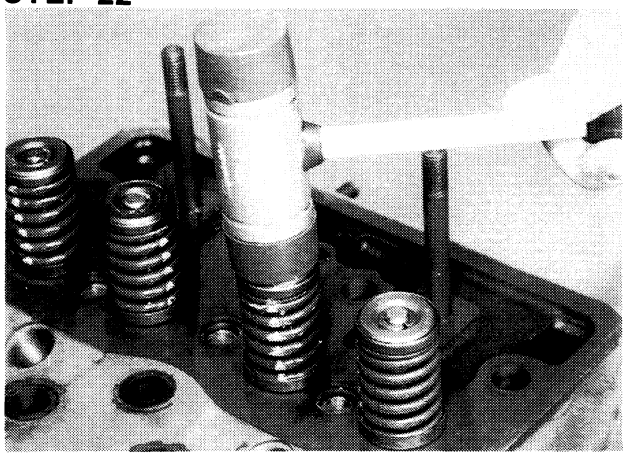
Install a new valve seal in the lower valve stem groove.

STEP 21



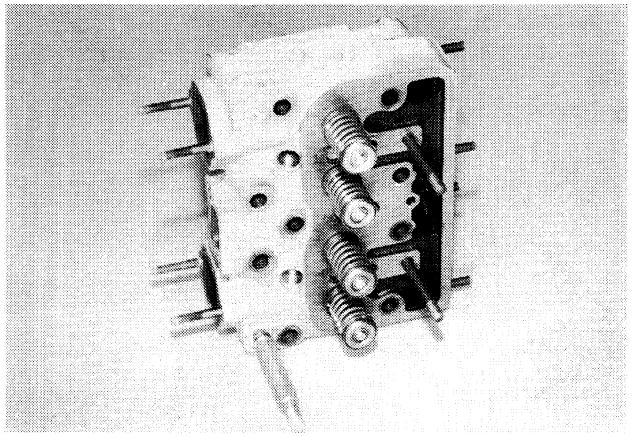
Install the valve keepers in the upper valve stem groove.

STEP 22



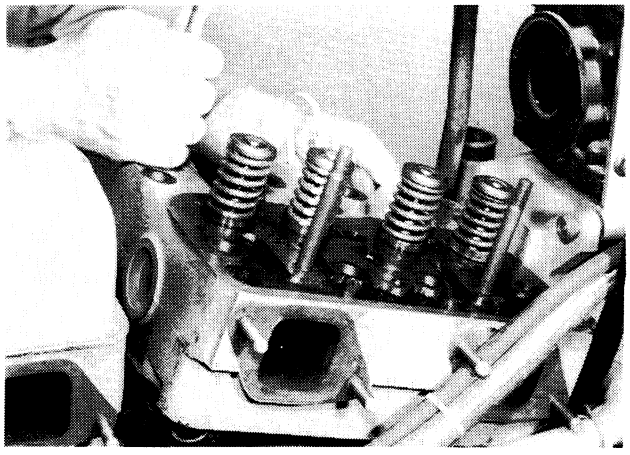
Remove the spring compressor. Hit the end of the valve stems with a soft hammer to seat the valve keepers.

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.