W11 ARTICULATED LOADER TABLE OF CONTENTS AND SERVICE MANUAL INTRODUCTION

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CASE CORPORATION

C E Div. 9-67532
September 1979

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Reprinted

Service Manual Introduction

This Symbol Shows Important Information About Safety In This Manual. When You See This Symbol, Carefully Read The Information That Follows and Understand The Possible Causes of Injury Or Death. 1-1-A

Safety Rules

It is recommended that the warning tag shown in figure 1 be put on the key for the key switch when a person is working on the machine. A warning tag comes with the machine. Additional warning tags, part number 331-4614, are available from Service Parts Supply.

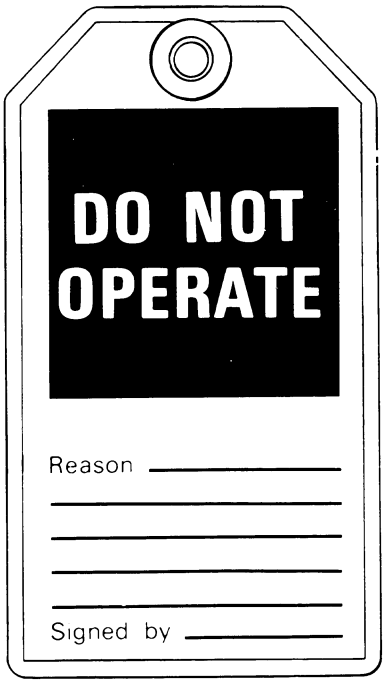


Figure 1

WARNING: *Read operator's manual to familiarize yourself with control lever functions.* 46-27

WARNING: *Operate controls from the operator's seat only.* 35-7

WARNING: *When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.* 35-4

WARNING: *When doing checks and tests on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.* 47-44

WARNING: *When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit, make sure all people are out of the way.* 47-45

WARNING: *Whenever the bucket must be raised to aid in servicing, block the loader arms in place with lift cylinder safety strut or a suitable safety stand.* 23-7-A

WARNING: *This is a one man machine, no riders allowed.* 35-8

CAUTION: *When removing hardened pins such as a pivot pin, or a hardened shaft, use a soft head (brass or bronze) hammer or use a driver made from brass or bronze and a steel head hammer.* 46-17

CAUTION: *When using a hammer to remove and install pivot pins or separate parts, using compressed air or using a grinder, wear eye protection that completely encloses the eyes (approved goggles or other approved eye protectors).* 46-13

CAUTION: *When servicing or repairing the machine, keep the shop floor and operator's compartment and steps free of oil, water, grease, tools, etc. Use an oil absorbing material and/or shop cloths as required. Use safe practices at all times.* 40-8

CAUTION: *Use suitable floor (service) jacks or chain hoists to raise wheels off the floor. Always block machine in place with suitable safety stands.* 40-7

CAUTION: *Pin sized and smaller streams of hydraulic oil under pressure can penetrate the skin and result in serious infection. If hydraulic oil under pressure does penetrate the skin, seek medical treatment immediately. Maintain all hoses and tubes in good condition. Make sure all connections are tight. Make a replacement of any tube or hose that is damaged or thought to be damaged. DO NOT use your hand to check for leaks; use a piece of cardboard or wood.* 40-6-A

CAUTION: *Some components of this machine are very heavy. Use suitable lifting equipment or additional help as instructed in this service manual.* 40-10

General Information

This service manual has been prepared with the latest service information available. Troubleshooting, removal, disassembly, inspection and installation procedures and complete specifications and tightening references can be found in most sections. Some sections will have drawings without a written procedure because the job is easily done. This service manual is one of the most important tools available to the service technician.

The terms right-hand and left-hand and front and rear as used in this manual indicate the right and left sides, and front and rear of the machine as seen from the operator's seat for correct operation of the machine or attachment.

Text

If the service manual is for more than one machine or different models of components (planetary axles, gear boxes, control valves, etc.) the procedures will have steps that are for a specific component.

Table of Contents

The first two pages of this section are a Table of Contents which show the series number and title, and the sections that are in each series. The individual sections, where necessary, will have a Table of Contents on the second page of that section.

Page Numbers

All page numbers are made of two sets of numbers separated by a dash, such as 4002-9. The numbers before the dash are the section numbers. The numbers following the dash are the page numbers in that section. Page numbers will be found at the upper right or left of each page.

Illustrations

Illustrations are put as near as possible to the test and are to be used as a part of the text.

Torque References

Most of the time two grades of fasteners (bolts, nuts and screws) are used on Case machines. The grades of the fasteners are grade 5 and grade 8. See Section 1051 for torque specifications and identification marks.

The specifications in Section 1051 are standard torque values and are to be used on all fasteners during assembly and installation unless special torque values are shown in a section.

Product Identification Number, Serial Number and Model Number

When replacement parts are needed, it can be necessary to give the parts department one or all of the numbers. The model number is normally found on the Product Identification Number plate or the Serial Number plate.

The Product Identification Number and Serial Numbers will be found in the following locations.

Machine - Product Identification Number plate fastened to the instrument panel.

Engine - Serial Number plate on the right-hand side of the engine above the starter.

Other component parts - Serial Number plate on the part or the serial number is stamped in the part.

NOTE: A Part Number plate will be found on some parts.

Classification of Lubricants

The Society of Automative Engineers (SAE), the American Petroleum Institute (API), and the National Lubricating Grease Institute (NLGI) put oil and grease in classifications and grades according to temperature and use.

Engine Oil

The SAE number is the viscosity of engine oils, for example, SAE 30 is a single viscosity oil. SAE 10W30 is a variable viscosity oil.

The API classification (SD, CD, etc.) is the oil performance according to the application of the engine. Only oil specified in Section 1050 is to be used. These oils have the needed additives to give maximum engine protection. Both the SAE grade and API classification must be found on the container.

Gear Lubricant and Grease

Gear lubricant and grease for each application is specified in Section 1050.

Special Tools

There are some special tools that are needed to remove and install, disassemble and assemble, check and adjust the component parts of this machine. Some special tools are easily made locally and the necessary information to make the tool is in this service manual, Other special tools are more difficult to make locally and available from Service Tools in the U.S. and from Jobborn Manufacturing in Canada. Use these tools according to the instructions in this service manual for your personal safety and to do the job correctly.

Special tools are no longer available from Case Service Parts Supply. Special tools are available from:

Service Tools
P.O. Box 314
Owatonna, Minnesota 55060

Jobborn Manufacturing Co.
97 Frid Street
Hamilton, Ontario L8P 4M3
Canada

Section

1010

GENERAL ENGINE SPECIFICATIONS

W11 Loader

Written In *Clear And Simple English*

CASE CORPORATION

Rac 9-46091

Printed in U.S.A.
August, 1978

DIESEL ENGINES

General

Type	Case Open Chamber, 4 Cylinder, 4 Stroke Cycle, Valve-in-Head
Firing Order	1-3-4-2
Bore	4 Inches (101.6mm)
Stroke	4-1/8 Inches (104.8mm)
Piston Displacement	207 Cubic Inches (3 391.1 cm^3)
Compression Ratio	16.5 to 1
No Load Governed Speed	2285 to 2315 RPM
Rated Engine Speed	2100 RPM
Engine Idling Speed	700 to 750 RPM
Valve Tappet Clearance (Exhaust)	(Cold) .014 Inch (0.356mm)
(Intake)	(Cold) .012 Inch (0.305mm)

Piston and Connecting Rods

Rings per Piston	3
Number of Compression Rings	2
Number of Oil Rings	1
Type Pins	Full Floating Type
Type Bearing	Replaceable Precision, Steel Back, Copper-Lead or Aluminum Alloy Liners

Main Bearings

Number of Bearings	5
Type Bearings	Replaceable Precision Steel Back, Copper-Lead or Aluminum Alloy Liners

Engine Lubricating System

Crankcase Capacity (Without Filter)	5 US Quarts (4.7 litres)
(With Filter Change)	6 US Quarts (5.7 litres)
Oil Pressure	50 to 70 PSI (345 to 483 kPa) with Engine Warm and Operating at Rated Engine Speed
Type System	Pressure and Spray Circulation
Oil Pump	Gear Type
Oil Filter	Full Flow Spin on Type

Fuel System

Fuel Injection Pump	Roosa-Master
Pump Timing	0° Degrees Before Top Dead Center
Fuel Injectors	Pencil Type, Opening Pressure 2800 PSI (19 306 kPa)
Fuel Transfer Pump	Vane Type, Integral Part of Injection Pump
Governor	Variable Speed, Fly-Weight Centrifugal Type, Integral Part of Injection Pump
Fuel Filters	Full Flow Spin on Type

Section 1012

DECALS AND PAINTING

Written In *Clear And Simple English*

CASE CORPORATION

C.E. Div. 9-67531
October 1978

PRINTED IN U.S.A.

GENERAL INFORMATION

1. All decals about operation of the machine and/or attachments must be in a condition so that you can read the decals easily. Replace any decal that has damage or can not be read.

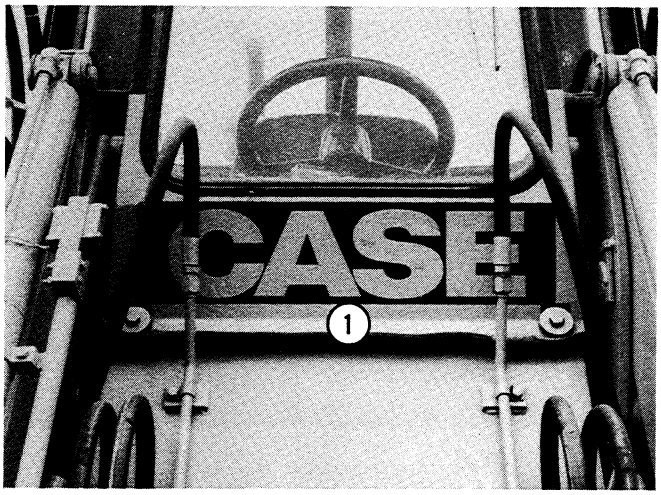
2. All decals that start with the words WARNING, CAUTION, or DANGER must be in a condition so that you can read the decals easily. Replace any decal that has damage or cannot be read.

3. When you paint the machine or attachment, put covers over the good decals and remove the decals which have damage or can not be read easily. Use enamel thinner to make the decal easier to remove.

4. Remove the old decal before you install a new decal. Use enamel thinner to make the old decal easier to remove.

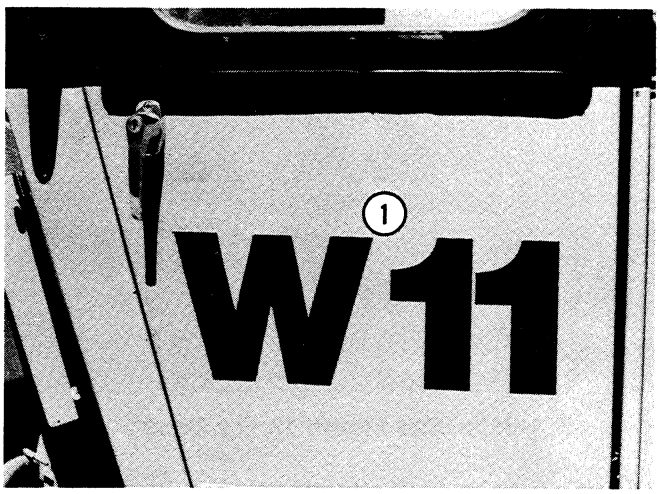
5. When you paint the machine or attachment, use standard procedure. Remove the grease, wash the area, use sandpaper to prepare the surface for paint, and put covers over all good decals and parts which you do not want to paint.

6. The following pages show decals installed on the machine or attachments. Part numbers of the decals are shown also. Check the parts catalog to make sure that the part number is correct before you make an order for the decals. Decals are available separately or in a kit for the machine.



1. 321-5031

Figure 1

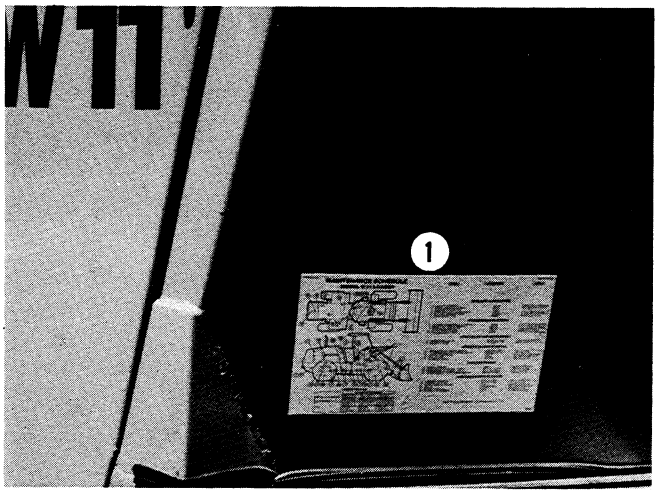


1. 321-4228

Figure 2

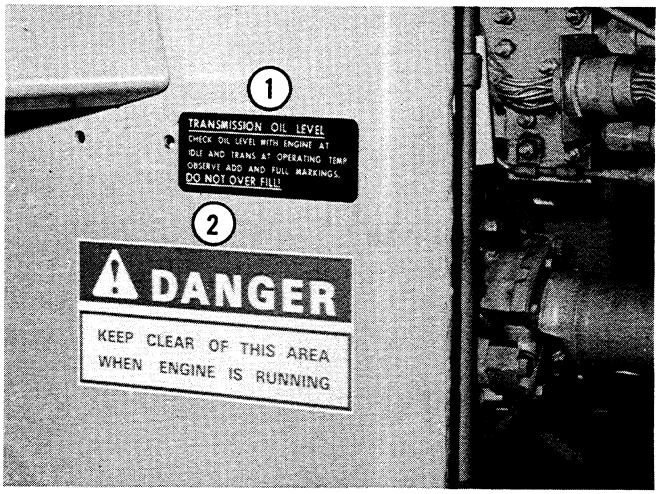
1. 321-4228

Figure 3



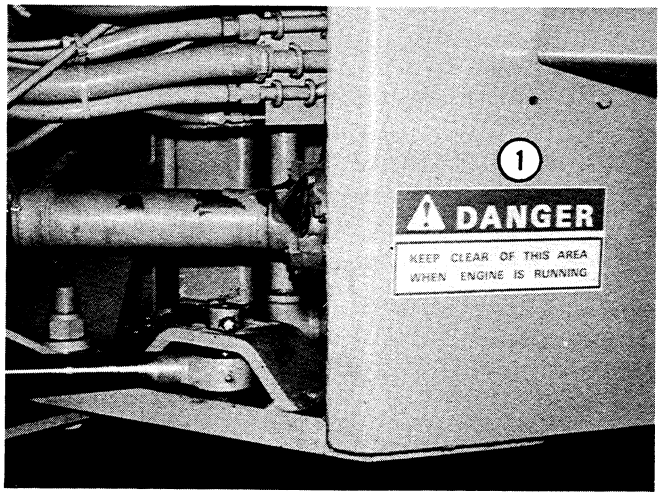
1. 321-3919

Figure 4



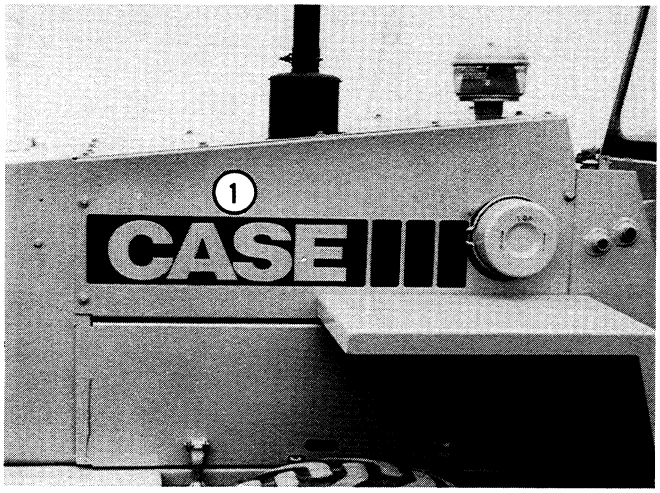
1. 321-1980
2. 321-3205

Figure 5



1. 321-3205

Figure 6



1. 321-5033

Figure 7

1. 321-5032

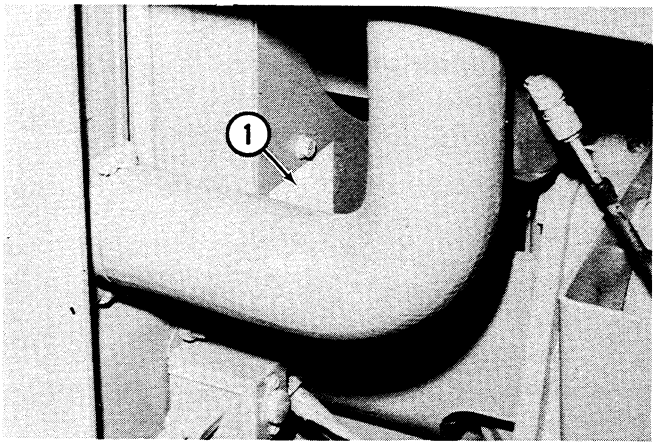
Figure 8

1. 321-5031

Figure 9

1. 321-4126

Figure 10



1. 321-3596. See Figure 12 For Decal.

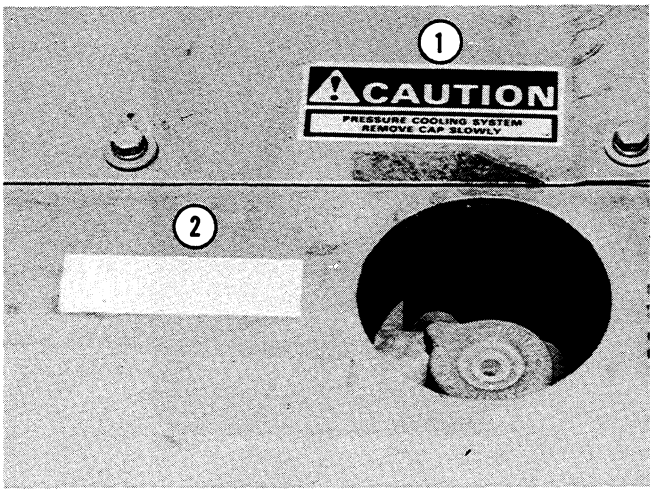
Figure 11

1. 321-3596. See Figure 11 For Location.

Figure 12

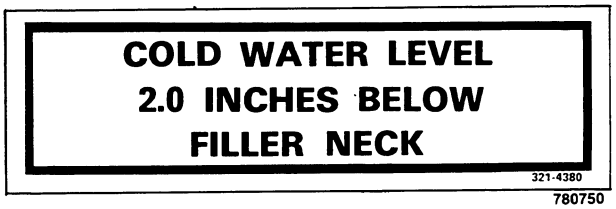
1. 321-3596

Figure 13



1. 321-3061
2. 321-4380. See Figure 15 For Decal.

Figure 14



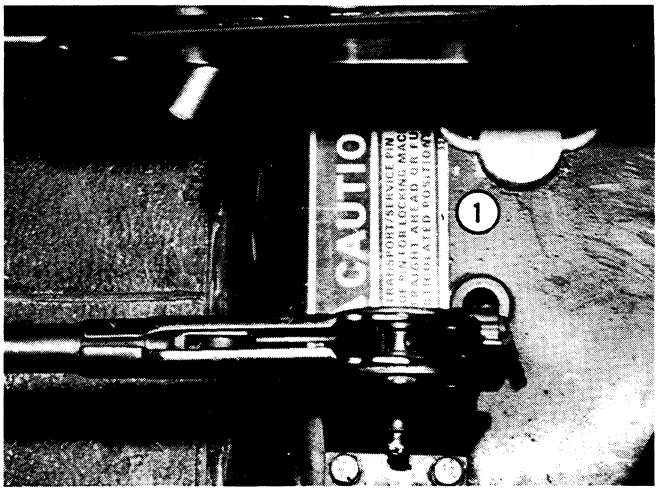
1. 321-4380. See Figure 14 For Location.

Figure 15

1. 321-3705
2. 321-3060

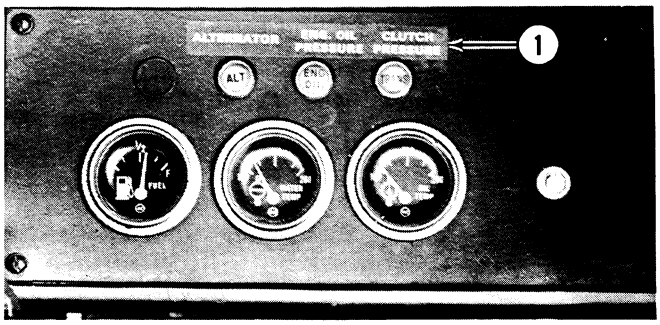
NOTE: These Decals Are Also Used On Machines With ROPS Canopy. For Machine With ROPS Canopy, Decals Are On Left Side Of Front Chassis.

Figure 16



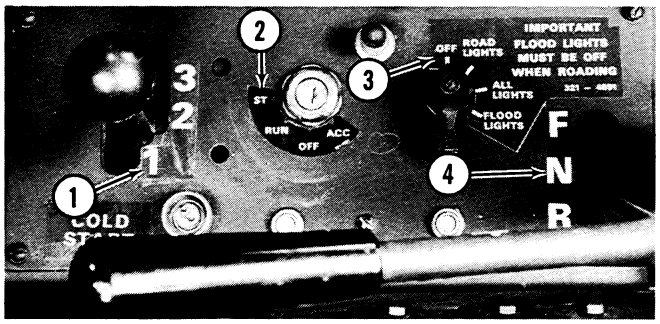
1. 321-3927

Figure 17



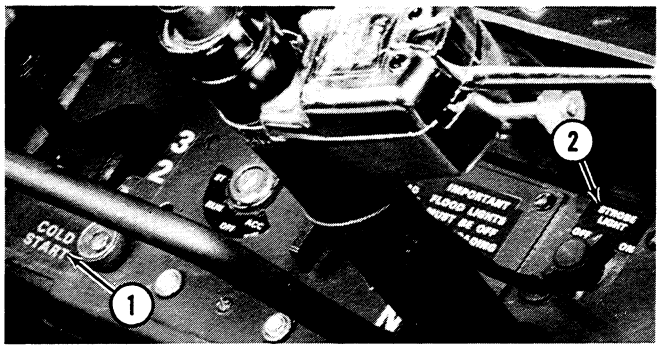
1. 321-3922

Figure 18



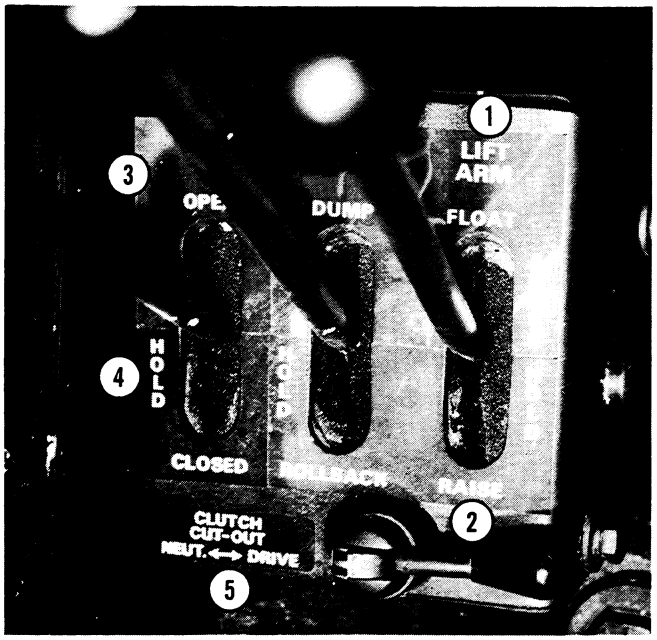
1. 321-3921
2. 321-4921
3. 321-4691
4. 321-3923

Figure 19



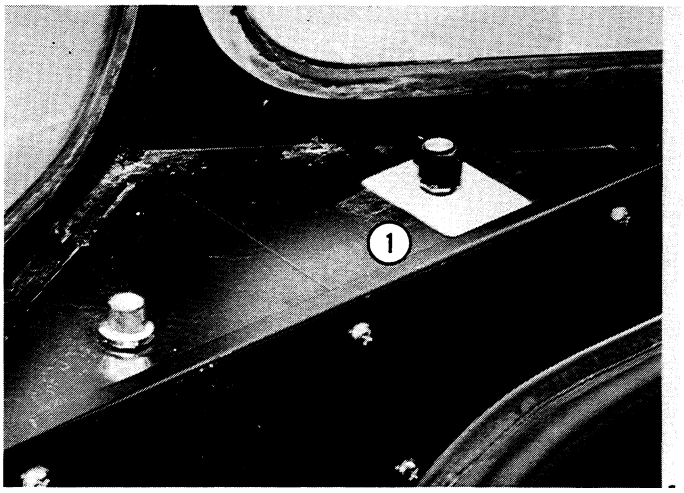
1. 321-4278
2. 321-4922

Figure 20



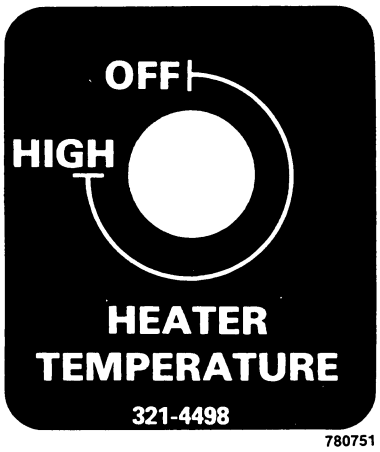
1. 321-4478
2. 321-4477
3. 321-4475
4. 321-4476
5. 321-2785

Figure 21



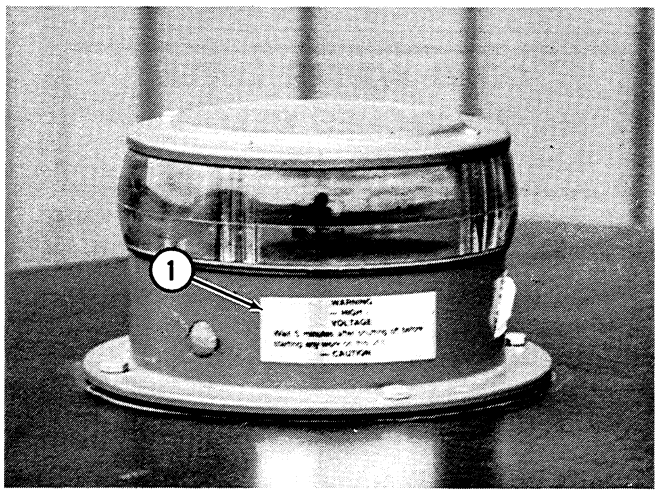
1. 321-4498. See Figure 23 For Decal.

Figure 22



1. 321-4498. See Figure 22 For Location.

Figure 23



1. D82934

Figure 24

Section
1026

DETAILED SPECIFICATIONS

207 Diesel Engines

FRACTION to DECIMAL to MILLIMETER CONVERSION TABLE

Fraction	Decimal	MM	Fraction	Decimal	MM	Fraction	Decimal	MM
1/64	.0156	0.397	23/64	.3593	9.128	45/64	.7031	17.859
1/32	.0312	0.794	3/8	.3750	9.525	23/32	.7187	18.256
3/64	.0468	1.191	25/64	.3906	9.922	47/64	.7343	18.653
1/16	.0625	1.587	13/32	.4062	10.319	3/4	.7500	19.050
5/64	.0781	1.984	27/64	.4218	10.716	49/64	.7656	19.447
3/32	.0937	2.381	7/16	.4375	11.113	25/32	.7812	19.844
7/64	.1093	2.778	29/64	.4531	11.509	51/64	.7968	20.240
1/8	.1250	3.175	15/32	.4687	11.906	13/16	.8125	20.637
9/64	.1406	3.572	31/64	.4843	12.303	53/64	.8281	21.034
5/32	.1562	3.969	1/2	.5000	12.700	27/32	.8437	21.431
11/64	.1718	4.366	33/64	.5156	13.097	55/64	.8593	21.828
3/16	.1875	4.762	17/32	.5312	13.494	7/8	.8750	22.225
13/64	.2031	5.159	35/64	.5468	13.890	57/64	.8906	22.622
7/32	.2187	5.556	9/16	.5625	14.287	29/32	.9062	23.019
15/64	.2343	5.953	37/64	.5781	14.684	59/64	.9218	23.415
1/4	.2500	6.350	19/32	.5937	15.081	15/16	.9375	23.812
17/64	.2656	6.747	39/64	.6093	15.478	61/64	.9531	24.209
9/32	.2812	7.144	5/8	.6250	15.875	31/32	.9687	24.606
19/64	.2968	7.541	41/64	.6406	16.272	63/64	.9843	25.003
5/16	.3125	7.937	21/32	.6562	16.669	1	1.0000	25.400
21/64	.3281	8.334	43/64	.6718	17.065			
11/32	.3437	8.731	11/16	.6875	17.462			

INCH to MILLIMETER CONVERSION TABLE

Inch	MM	Inch	MM	Inch	MM	Inch	MM
1	25.400	6	152.000	10	254.000	60	1,524.000
2	50.800	7	177.800	20	508.000	70	1,778.000
3	76.200	8	203.200	30	762.000	80	2,032.000
4	101.600	9	228.600	40	1,016.000	90	2,286.000
5	127.000	10	254.000	50	1,270.000	100	2,540.000

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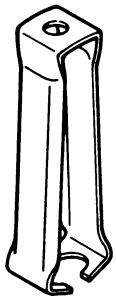
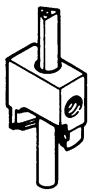
INSTALLATION INSTRUCTIONS FOR M20611 TEFLON VALVE SEAL KIT

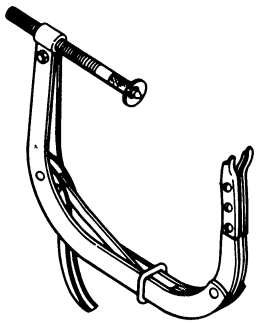
Special Tools Required



M20624 SEAL INSTALLATION TOOL

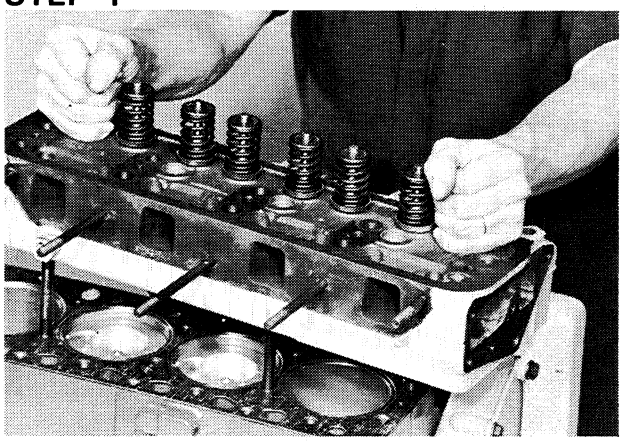


M20615 VALVE GUIDE CUTTING TOOL



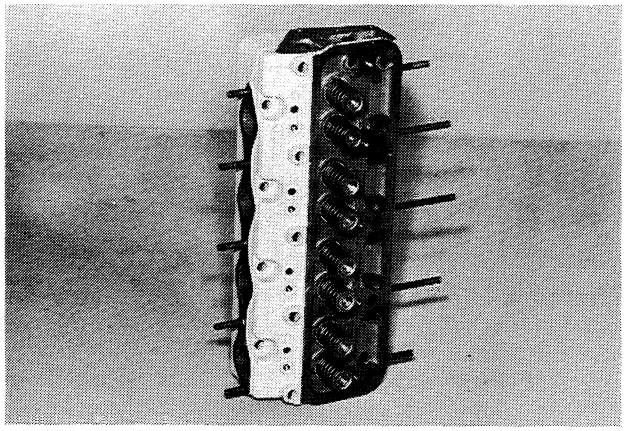
VALVE SPRING COMPRESSOR

STEP 1



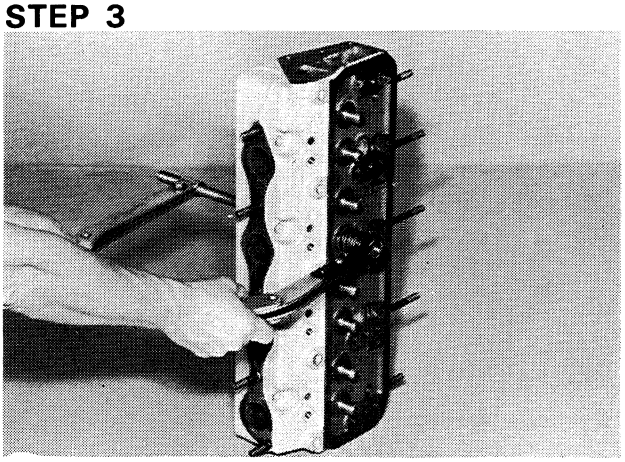
Remove the cylinder head from the engine block. Refer to section 2015 for head removal. *NOTE:* This cylinder head requires two M20611 Kits.

STEP 2



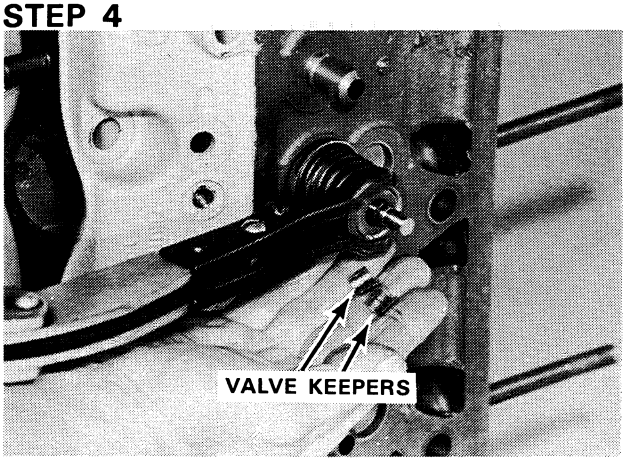
Place cylinder head on work bench.

STEP 3



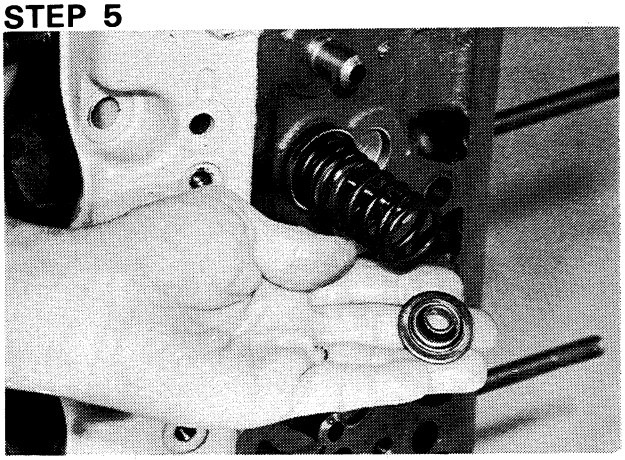
Install a valve spring compressor.

STEP 4



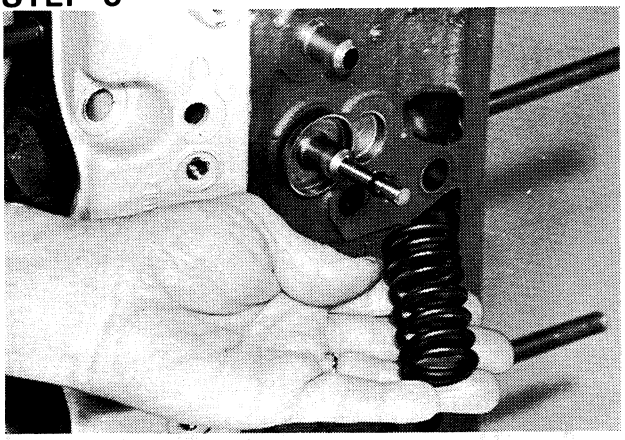
Compress valve spring and remove valve keepers. *IMPORTANT:* Valves and valve keepers should be marked when removed to insure that they will be reinstated in their original location.

STEP 5



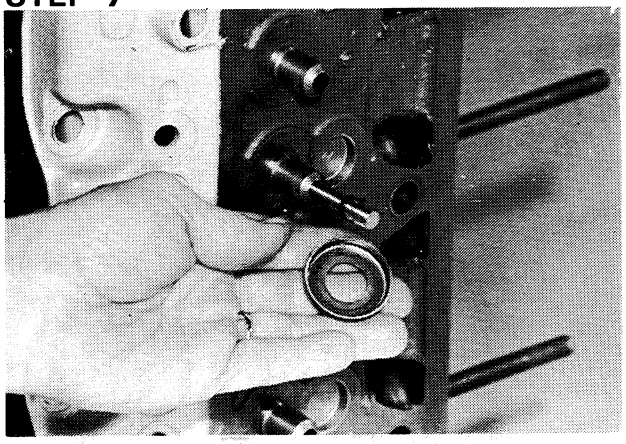
Remove spring retainer.

STEP 6



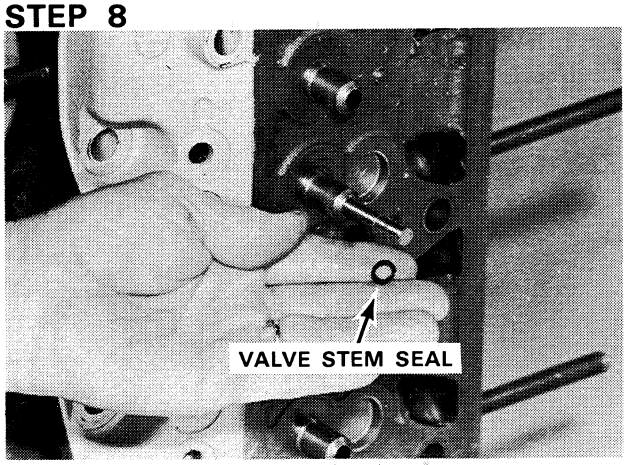
Remove spring.

STEP 7



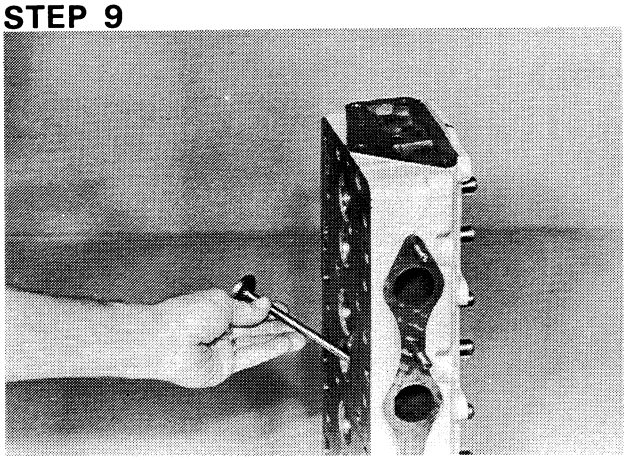
Remove spring seat.

STEP 8



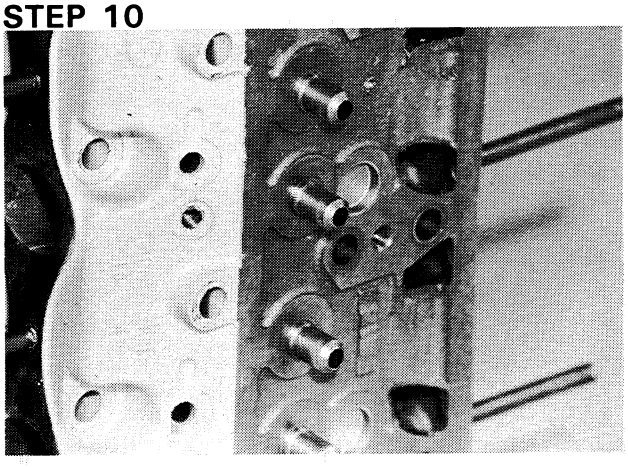
Remove valve stem seal.

STEP 9



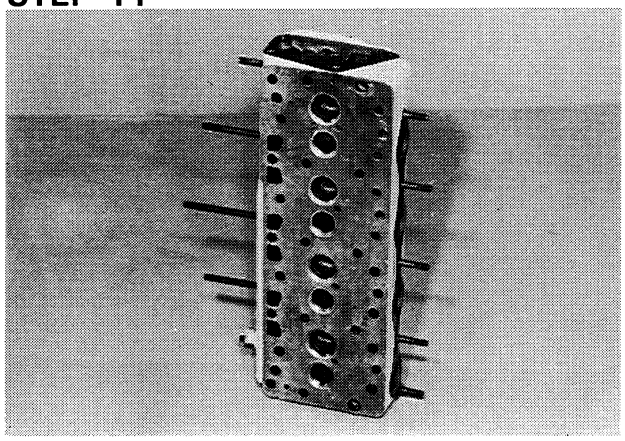
Remove valve.

STEP 10



Remove all the valve assemblies.

STEP 11

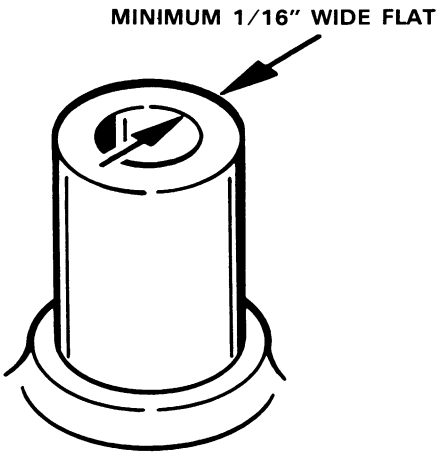


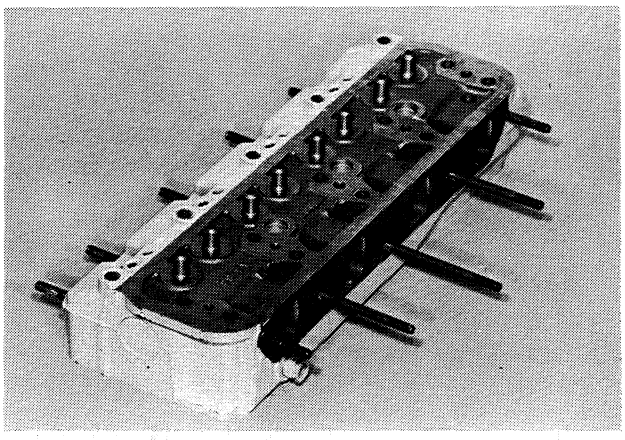
Wash, clean and inspect head. Use a rotary brush to clean around and down into valve ports. Refer to Section 2015 for complete head reconditioning.

STEP 12

Clean valves with a fine power drive wire brush, removing all carbon and varnish deposits. Be careful not to scratch valve stems. Refer to Section 2015 for valve inspection.

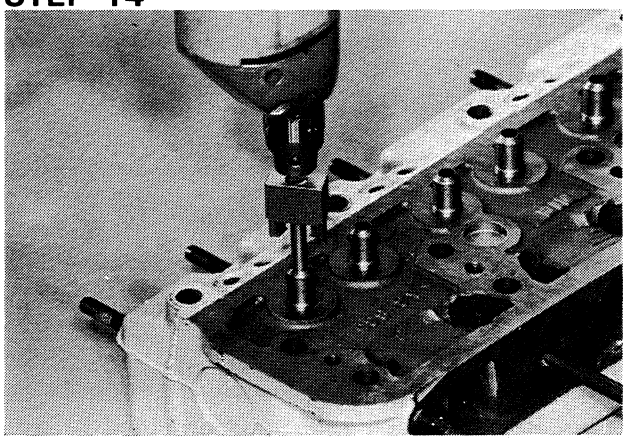
STEP 13





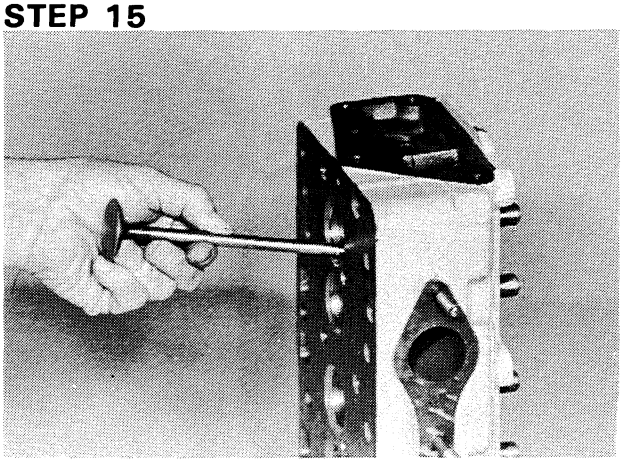
Check valve guide top surface. There must be a minimum of a 1/16" wide flat around entire top surface.

STEP 14



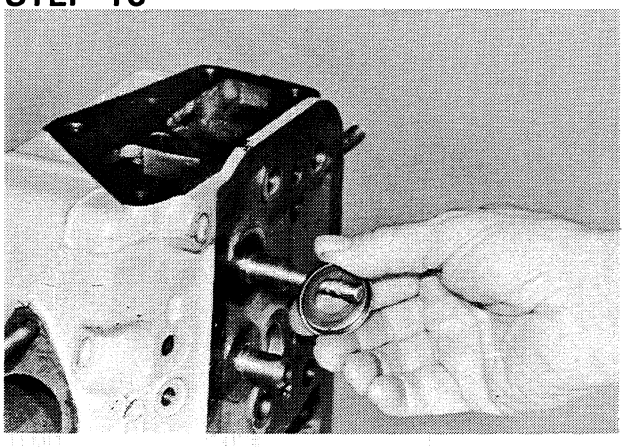
Use M20615 tool in a electric drill (if required) to provide necessary flat area on valve guide. *IMPORTANT:* Do not exceed 450 RPM drill speed when using valve guide cutting tool.

STEP 15



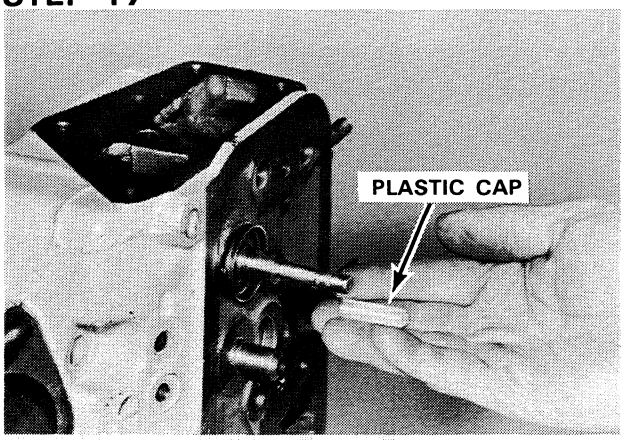
Dip valve stems into HDM #30 oil before assembly in cylinder head.

STEP 16



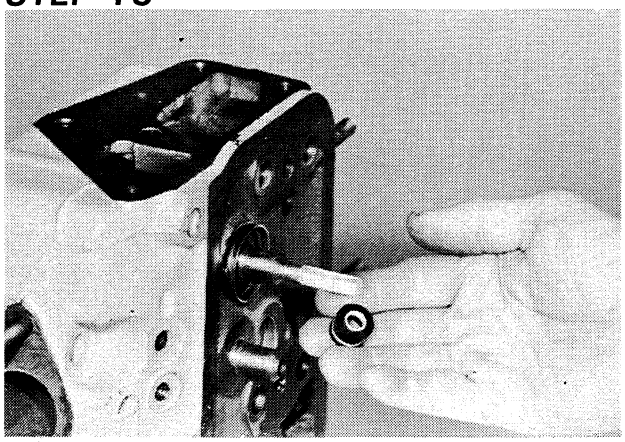
Install spring seat.

STEP 17



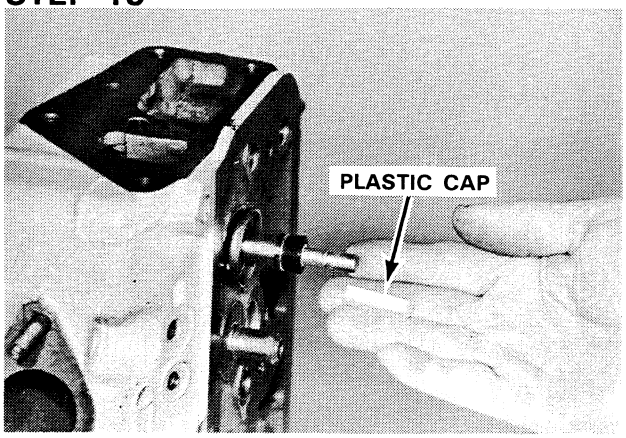
Place plastic installation cap, provided in kit, on the end of the valve stem. *NOTE:* Cap prevents sharp edges on valve stem grooves from cutting valve seal.

STEP 18



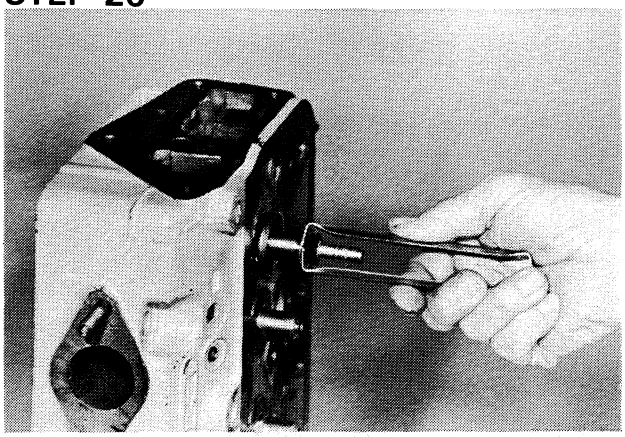
Carefully start valve seal on cap and hold thumb against white seal insert to avoid dislodging it. Push seal down until seal jacket touches top of valve guide.

STEP 19



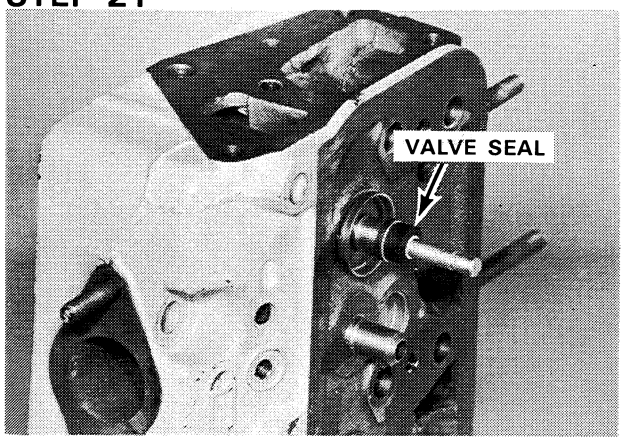
Remove installation cap and save, since it must be reused.

STEP 20



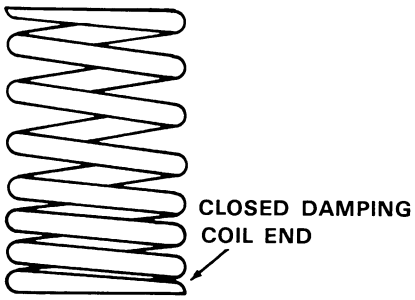
Use M20624 tool and press seal down over valve guide until seal is flush with top of guide.

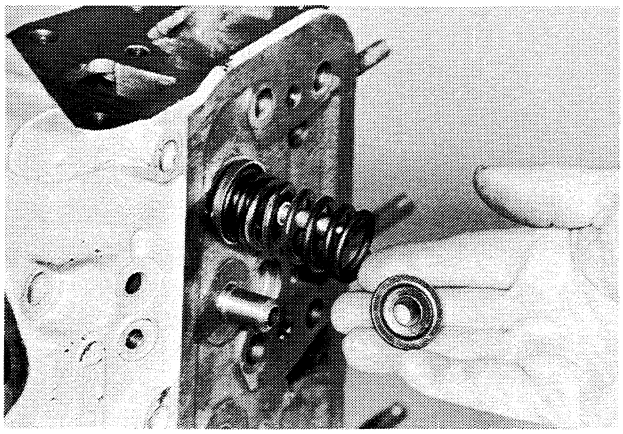
STEP 21



Valve seal installed.

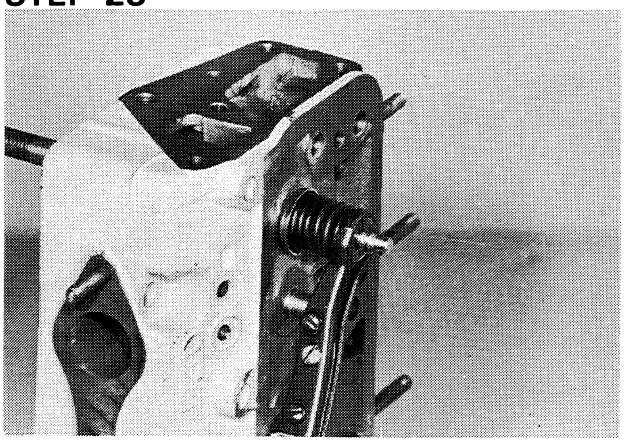
STEP 22





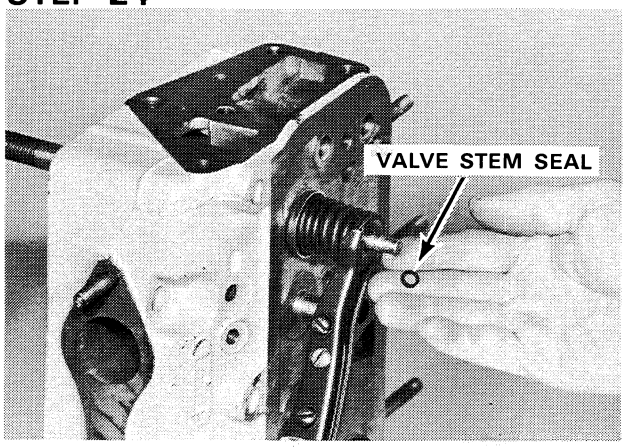
Install spring (damping coil end down) and spring retainer.

STEP 23



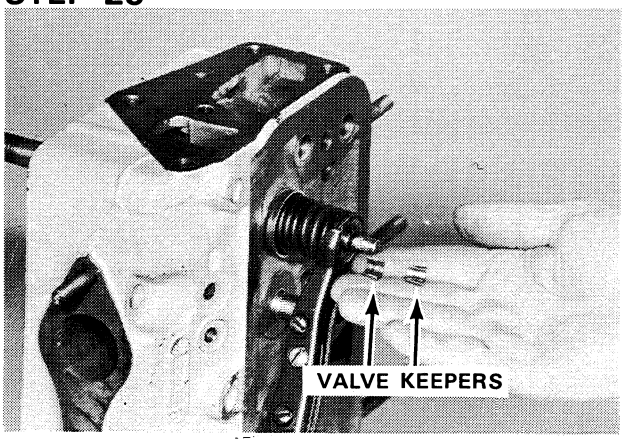
Install valve spring compressor.

STEP 24



Install stem seal in lower valve stem groove.

STEP 25



Install valve keepers in outer valve stem groove.

Suggest:

If the above button click is invalid.

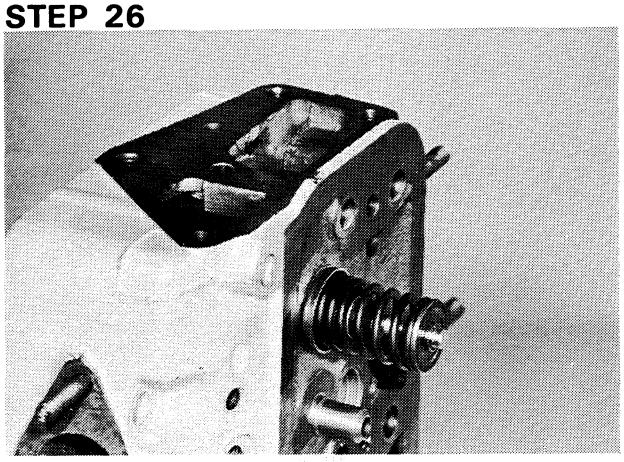
Please download this document

first, and then click the above link

to download the complete manual.

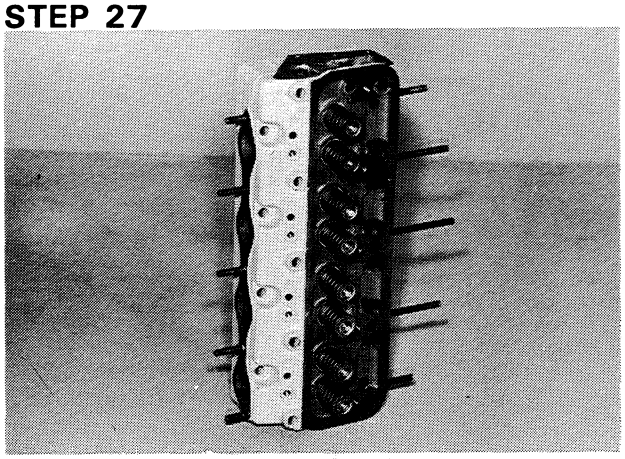
Thank you so much for reading

STEP 26



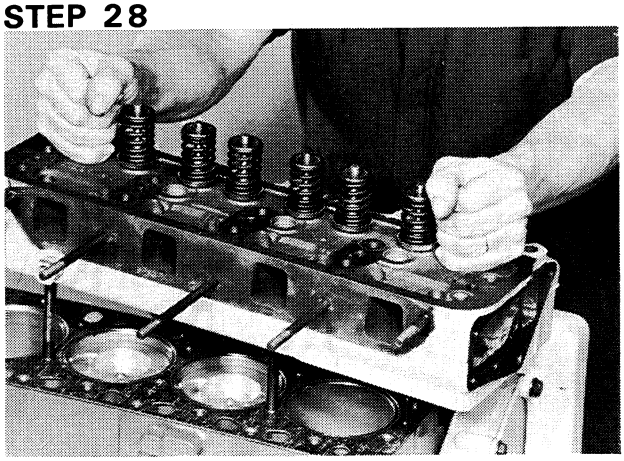
Remove spring compressor and tap valve stem end to seat keepers.

STEP 27



Install teflon seals on the other intake and exhaust valves, following the preceeding procedure.

STEP 28



Install cylinder head on engine block following procedure outlined in Section 2015.

NOTE: The Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.