40 CRAWLER Series E
TABLE OF CONTENTS

*Case 504BDT Engine

CE Div. 8-38230 - Aug. 1981

Printed in U.S.A.

The arrangement of the sections of this manual is according to the machine location code established in the CARES system.

GENERAL INFORMATION

INTRODUCTION

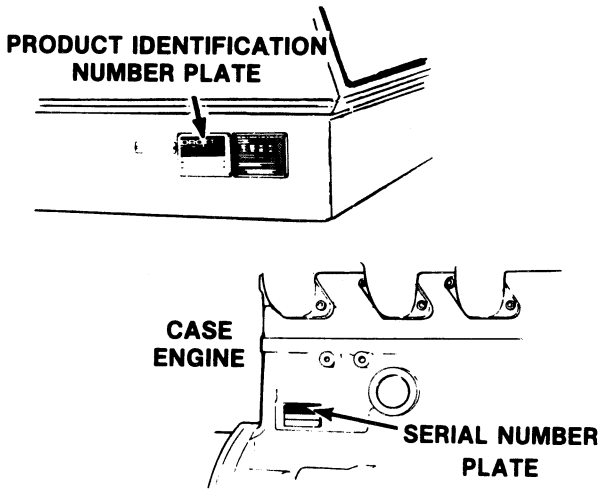
This manual provides instructions for maintenance and service of the 40 Crawler series "E". The information is arranged according to machine locations as established by the CARES system.

If further service information is required, contact your nearest J I Case dealer or Service Representative for assistance.

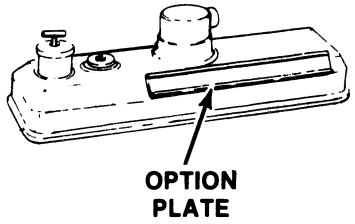
PARTS AND SERVICE

When writing to the dealer or manufacturer about your machine, always give reference to the model and PIN (Product Identification Number) in addition to the part name and location. The PIN plate is on the lower right corner of the cab.

All main components of the machine have an identification plate or number on the component housing. The location of the engine serial plate is shown.

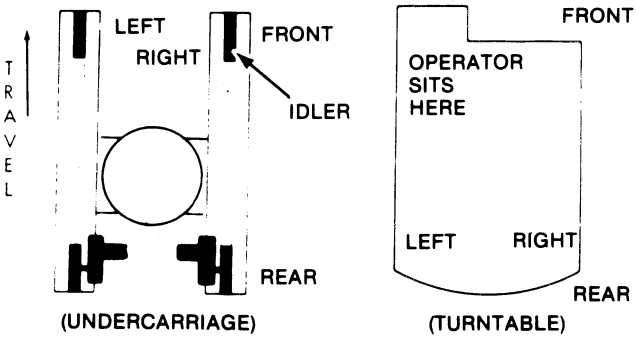


DETROIT DIESEL ENGINE



DIRECTIONAL REFERENCE

The turntable on this machine rotates through a full 360 degrees. The normal driving position is with the Boom over the front of the undercarriage (track drive transmission to the rear), as shown. In this position, directional callouts for both the turntable and the undercarriage are the same. All reference to Front, Rear and Left will be made with respect to this position. RIGHT is the Operator's right; LEFT is the Operator's left.



Section 1010

GENERAL SPECIFICATIONS

40 Crawler, Series E

CASE CORPORATION

CE Div. 8-38230 - Aug. 1981

Printed in U.S.A.

CASE 504 BDT DIESEL ENGINE

General

Type	6 Cylinder, 4 Stroke Cycle, Valve-in-Head Turbo-Charged
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 2 litre)
Compression Ratio	15 8 to 1
No Load Governed Speed	2230-2270 RPM
Rated Engine Speed	2100 RPM
Engine Idling Speed	725 to 775 RPM
Exhaust Valve Rotators	Positive-type
Valve Tappet Clearance (Exhaust)	Cold, 0 025 inch (0 635 mm)
(Intake)	Cold, 0 015 inch (0 381 mm)

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	7
Type Bearings	Replaceable Precision Steel Back, Copper-Lead or Aluminum Alloy Liners

Engine Lubricating System

Crankcase Capacity	19 Quarts (18 1 litres)
with Filter Change	23 Quarts (21 8 litres)
Oil Pressure	45 to 60 PSI (310 to 413 kPa) with Engine Warm and Operating at Rated Engine Speed
Type System	Pressure and Spray Circulation
Oil Pump	High Capacity, Gear Type
Oil Filter (2)	Full flow Spin on Type

Fuel System

Fuel Injection Pump	Robert Bosch, Type PES Multiple Plunger
Pump Timing	30 Degrees Before Top Dead Center (Port Closing)
Fuel Injectors	Pencil Type, Opening Pressure 3200 PSI (22 064 kPa)
Fuel Transfer Pump	Plunger Type, Integral Part of Injection Pump
Governor	Variable Speed, Fly-Weight Centrifugal Type, Integral Part of Injection Pump
1st Stage Fuel Filter	Full Flow Spin on Type
2nd Stage Fuel Filter	Full Flow Spin on Type

DETROIT DIESEL 4-71N ENGINE

General

Type	Diesel, 4 Cylinder, 2 Stroke Cycle
Firing Order	1-3-4-2
Bore	4 25 inches (108 mm)
Stroke	5 inches (127 mm)
Piston Displacement	284 cubic inches (4 6 litres)
Compression Ratio	18 7 to 1
No Load Governed Speed	2470 RPM
Rated Engine Speed (Load)	2300 RPM
Engine Idling Speed	600 RPM
Crankcase Oil Capacity	14 quarts (13 3 litres)
with filter change	16 quarts (15 1 litres)

CRAWLER UNDERCARRIAGE

Track System Classification	D4
Track Gauge	7 ft 5 in (2 26 m)
Track Rollers	Sealed, 8 per side
Top Carrier Rollers	Sealed, 2 per side
Track Drives	Hydraulic Gear Motors with Drott Final Drive Transmissions
Track Brakes (Digging)	Self-adjust, spring-apply, hydraulic-release
Track Idler	Spring cushion, hydraulic-adjust
Track Pads	3 Bar Grouser or Cast Slope Bottom, 24 inch (609 mm) or 30 inch (762 mm) width

UPPERSTRUCTURE

Turntable Swing	Hydraulic Gear Motor and Spur Gear Reduction
Turntable Bearing	Single Race Bearing with Integral Gear Central Lubrication in Cab
House Brake	Mechanical, Double Disc
Rotation	Continuous at 5 6 RPM
Counterweight	8200 lb (3 720 kg) Integral with Turntable
Leveler (opt)	8½ degree pivot

BOOM AND ATTACHMENTS

"E" Main Boom with 9 ft (2 7 m) or 10 ft 5 in (3 2 m) dipper
"Y" Main Boom with Tool Boom and Tool Boom Extension

BUCKETS

Type	Capacity	Width	Weight	No of Teeth
Standard	5/8 yd ^{3} (46 m^3)	30 in (760 mm)	1480 lb (671 kg)	4
	3/4 yd ^{3} (58 m^3)	36 in (910 mm)	1600 lb (726 kg)	5
	1 yd ^{3} (.70 m^3)	42 in (1 070 mm)	1720 lb (780 kg)	6
Severe Duty	1/2 yd ^{3} (37 m^3)	24 in (610 mm)	1200 lb (544 kg)	3
	3/4 yd ^{3} (.58 m^3)	36 in (910 mm)	1485 lb (673 kg)	5
High Capacity	7/8 yd ^{3} (67 m^3)	36 in (910 mm)	1720 lb (780 kg)	5

ELECTRICAL SYSTEM

Type	24 volt d-c, negative ground
Batteries (2)	12 volt, 625 C C A , 17 plates per cell
Alternator	24 volt, 42 amp

HYDRAULIC SYSTEM

Type	Two main pump circuits, with pressure summation by Power Sensing Valve
Pump	Gear pump with two sections
Control Valves	Two 4-spool valves, one single spool valve
Relief Pressures	See Section 8202
Filters	Two 10 micron filters in return lines Two 100 mesh strainer/diffusers in tank

Section 2002

ENGINE TUNE-UP

Rac. 9-76379

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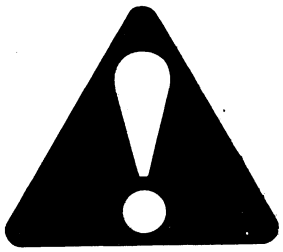
CASE CORPORATION

ENGINE TUNEUP

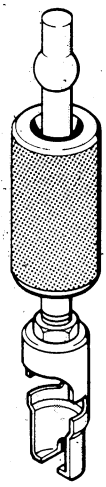
A COMPLETE ENGINE TUNEUP INCLUDES THE PERFORMING OF THE FOLLOWING ITEMS:



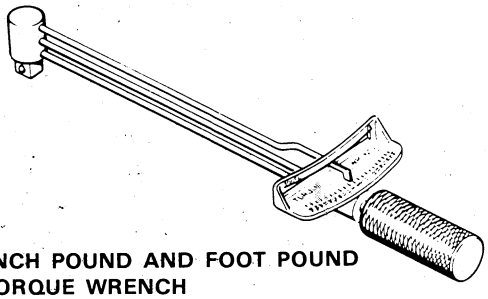
THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY.

SPECIAL TOOLS

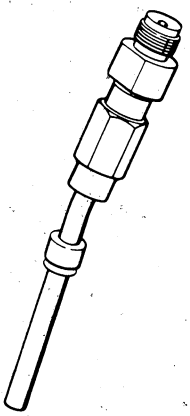
A43277 INJECTOR
BORE CLEANER
(CLAMP TYPE INJECTOR)



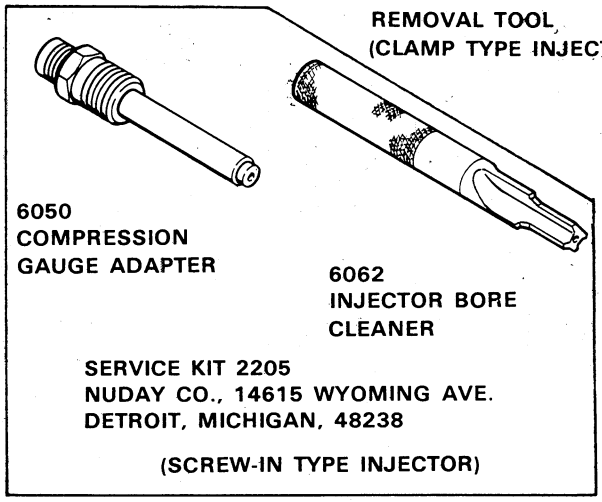
A43278 INJECTOR
REMOVAL TOOL
(CLAMP TYPE INJECTOR)



INCH POUND AND FOOT POUND
TORQUE WRENCH



COMPRESSION GAUGE
ADAPTER
BACHARACH 70-314
(D-558)
(CLAMP TYPE INJECTOR)

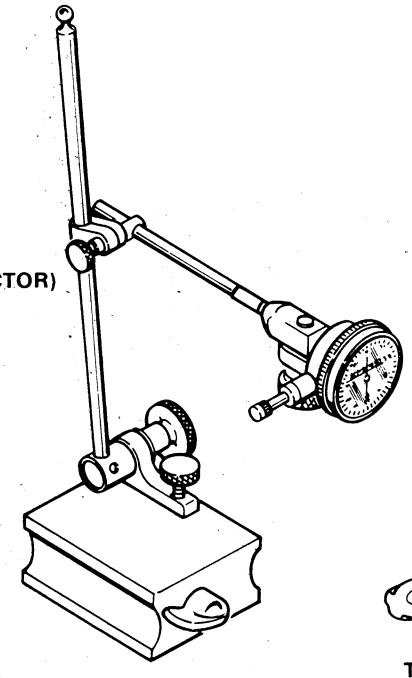


6050
COMPRESSION
GAUGE ADAPTER

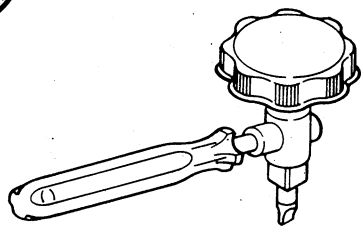
6062
INJECTOR BORE
CLEANER

SERVICE KIT 2205
NUDAY CO., 14615 WYOMING AVE.
DETROIT, MICHIGAN, 48238

(SCREW-IN TYPE INJECTOR)



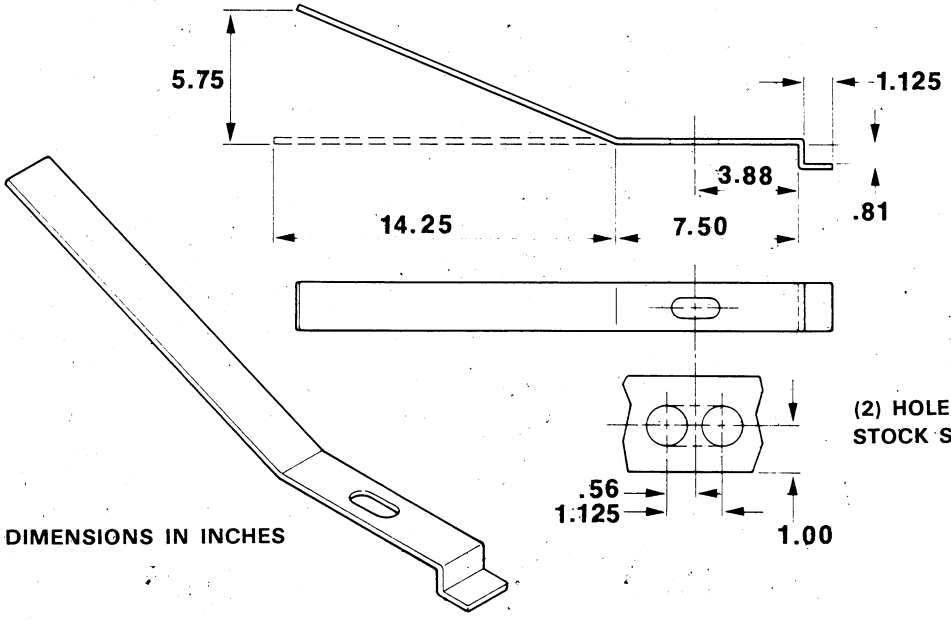
DIAL INDICATOR



TAPPET ADJUSTMENT TOOL

SPECIFICATIONS FOR TOOLS WHICH MUST BE MADE

Valve Spring Compressor Tool



NOTE: ALL DIMENSIONS IN INCHES

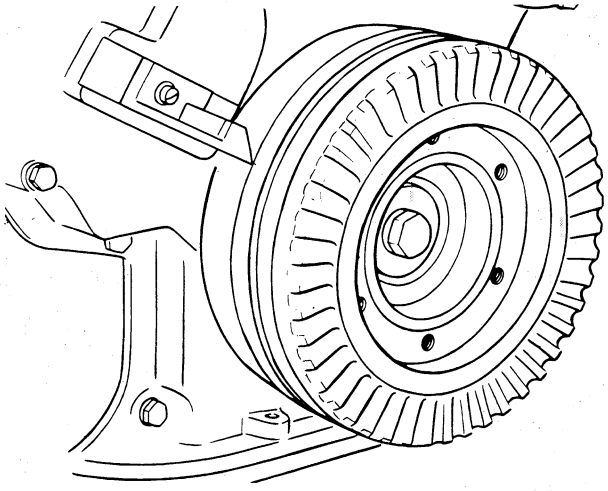
ENGINE TUNEUP PROCEDURE

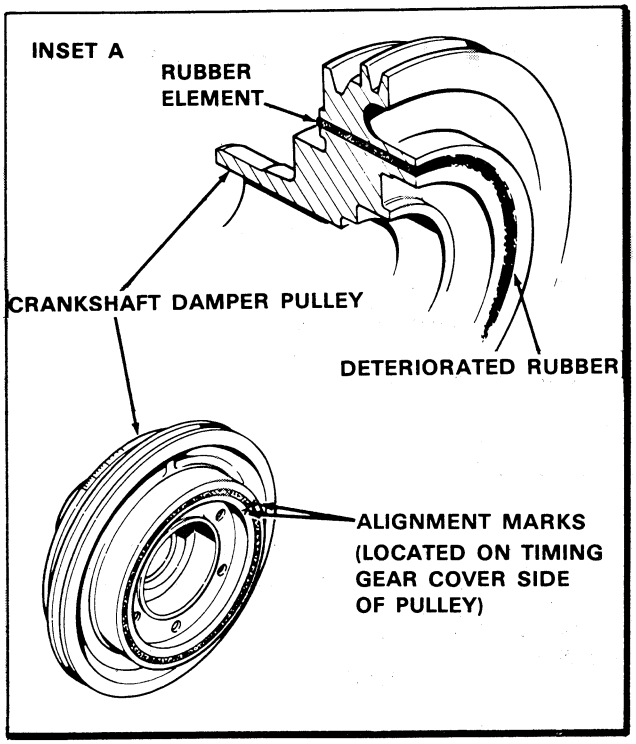
Checking Crankshaft Damper Pulley

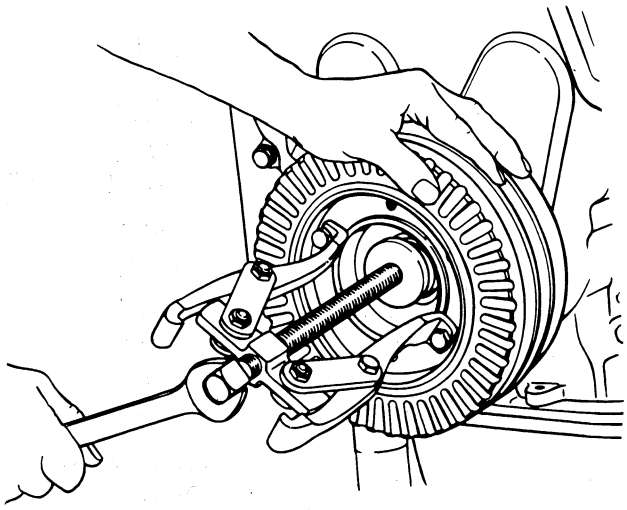
STEP 1

THE RECOMMENDED CHANGE INTERVAL FOR THE CRANKSHAFT DAMPER PULLEY IS 2000 HOURS MAXIMUM. AT ANY TIME OVER 1500 HOURS. CONSIDER CHANGING PULLEY AT ANY MAJOR ENGINE OVERHAUL OR TUNE UP.

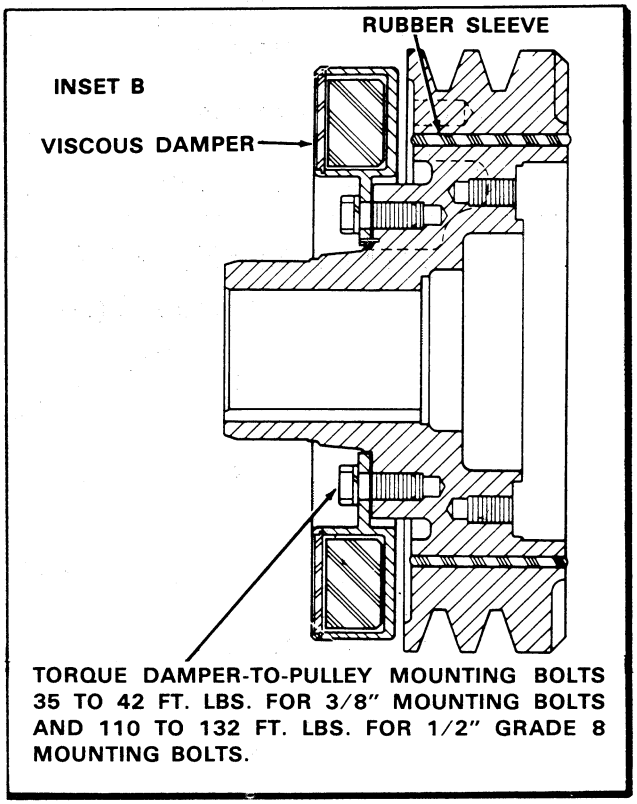
EVERY 500 HOURS AND AT ENGINE TUNEUP, VISUALLY INSPECT RUBBER ELEMENT FOR PEEL AREAS OR RUBBER MISSING. CHECK ALIGNMENT OF THE "V" MARKS BETWEEN THE INNER AND OUTER MEMBERS. IF "V" MARKS SHIFT, ENGINE TIMING WILL BE OFF AND DAMPER PULLEY MUST BE REPLACED.





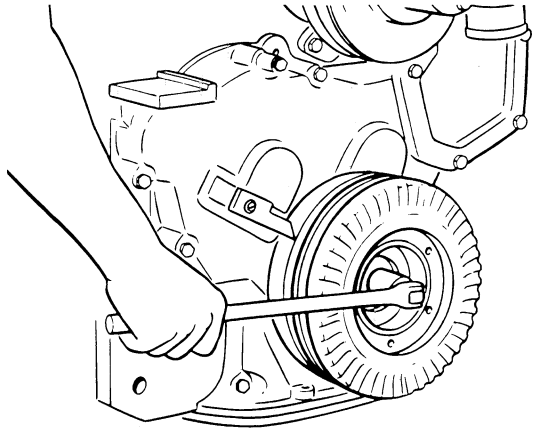


USE BOLT ON TYPE PULLER TO REMOVE PULLEY. REMOVE VISCOUS DAMPER FROM PULLEY (IF SO EQUIPPED). DO NOT PULL OR HAMMER ON OUTSIDE OF PULLEY OR VISCOUS DAMPER; SERIOUS DAMAGE TO PULLEY, DAMPER, AND RUBBER SLEEVE COULD RESULT.



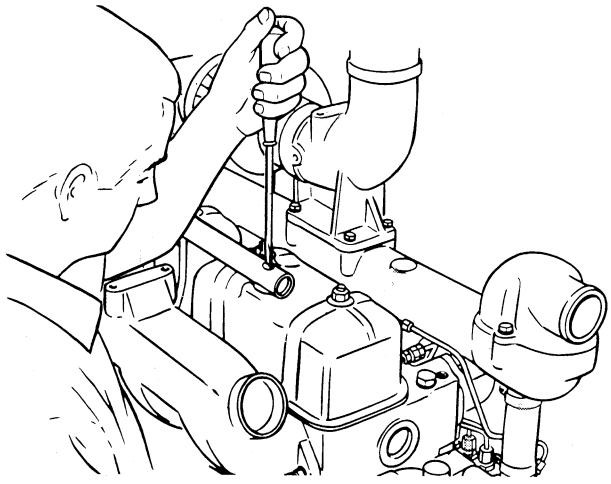
Checking Top Dead Center

STEP 2



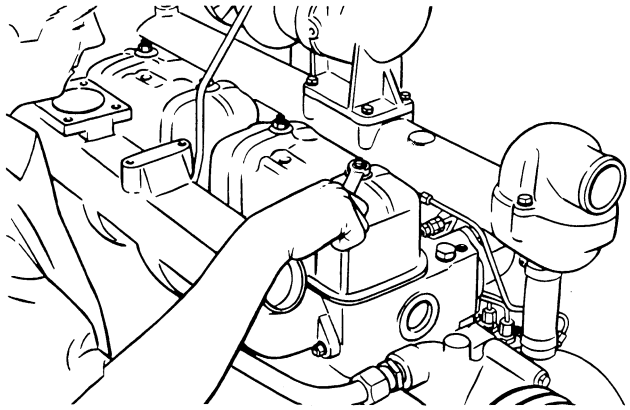
CRANK ENGINE UNTIL 10° BTDC MARK ON CRANKSHAFT PULLEY IS ALIGNED WITH TIMING POINTER.

STEP 3



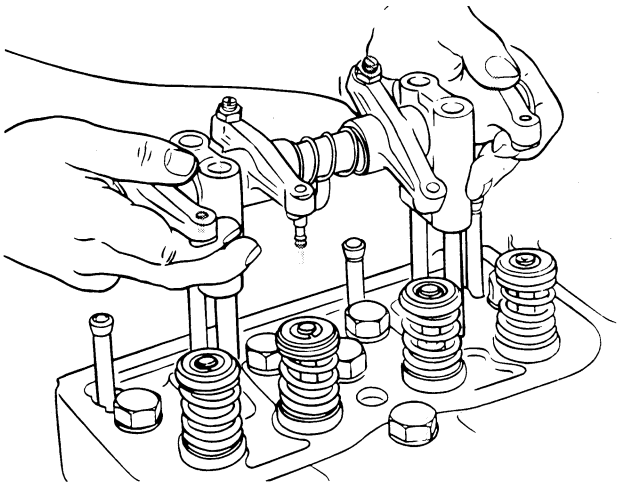
REMOVE BREATHER TUBE.

STEP 4



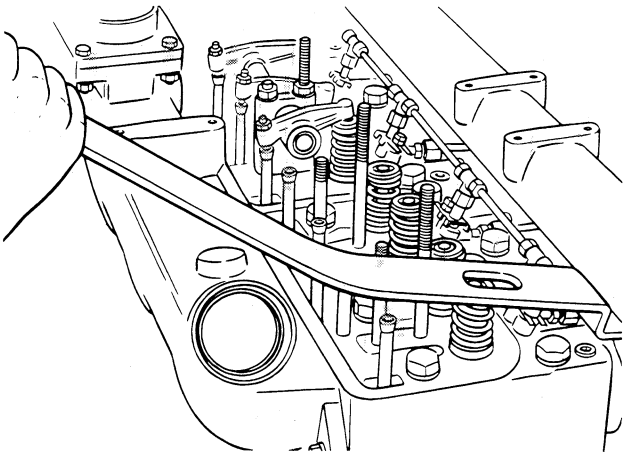
REMOVE VALVE COVER AND GASKET FROM NO. 1 AND NO. 2 CYLINDERS.

STEP 5



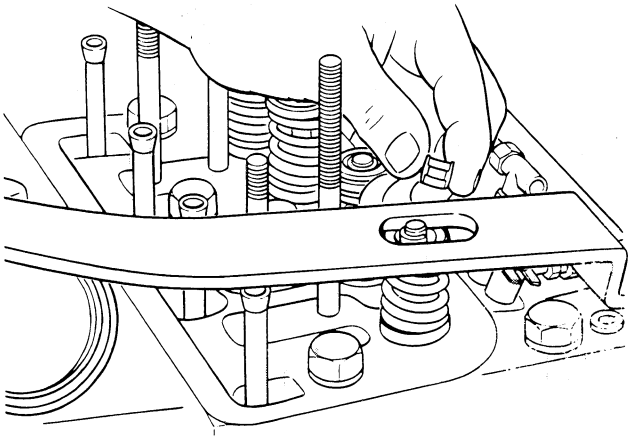
REMOVE ROCKER ARM ASSEMBLY.

STEP 6



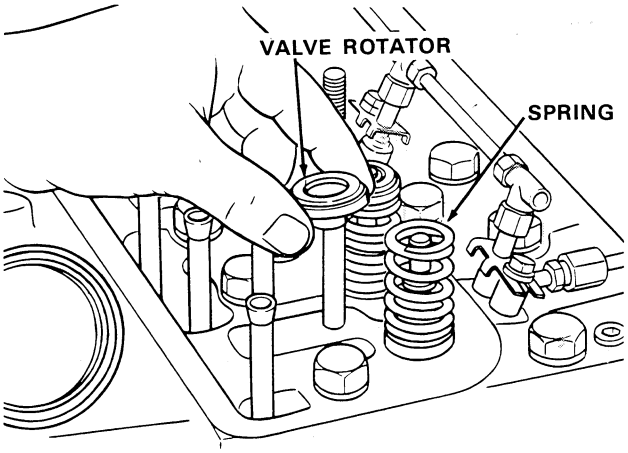
COMPRESS EXHAUST VALVE SPRING ON NO. 1 CYLINDER USING FABRICATED TOOL (SEE PAGE 3).

STEP 7



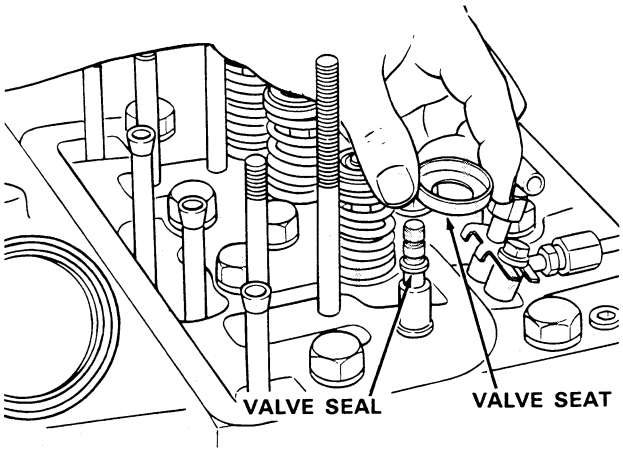
REMOVE VALVE KEEPERS

STEP 8



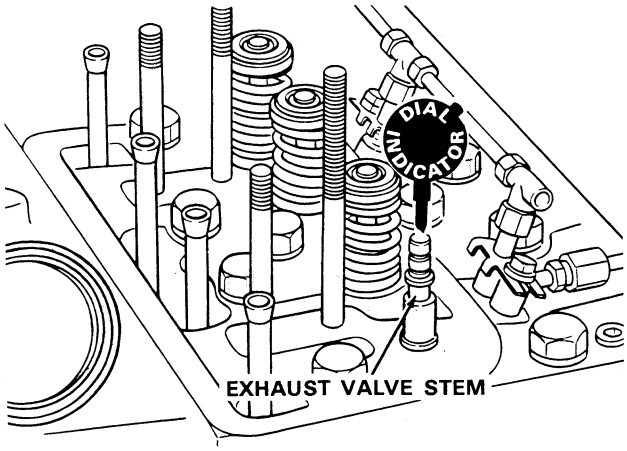
REMOVE VALVE ROTATOR, SPRING AND SEAT.

STEP 9

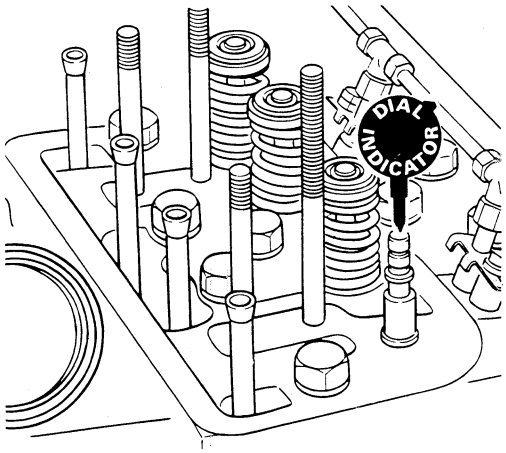


KEEP VALVE SEAL IN PLACE TO PREVENT VALVE FROM FALLING THROUGH VALVE GUIDE IF PISTON IS MOVED TOO FAR

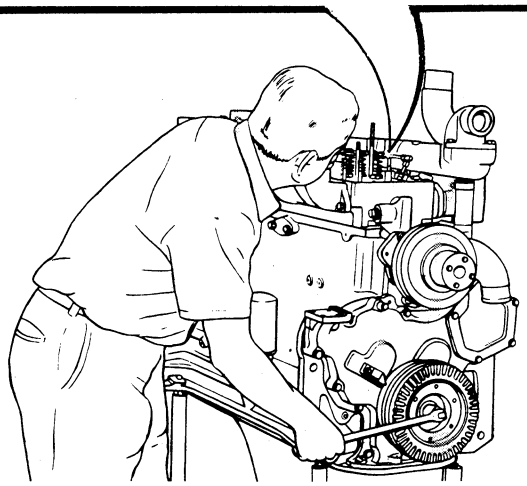
STEP 10



INSTALL DIAL INDICATOR ON END OF VALVE STEM WITH VALVE RESTING ON TOP OF PISTON.



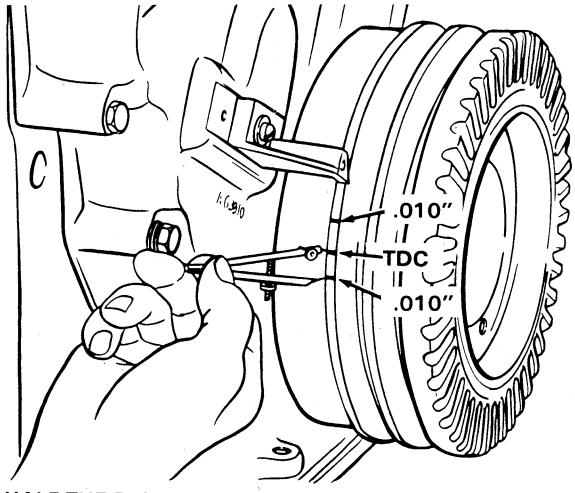
CRANK ENGINE CLOCKWISE UNTIL DIAL INDICATOR HAND STOPS MOVING. RESET INDICATOR TO ZERO.



CRANK ENGINE CLOCKWISE UNTIL .010" SHOWS ON DIAL. SCRIBE A MARK ON CRANKSHAFT PULLEY IN LINE WITH TIMING POINTER.

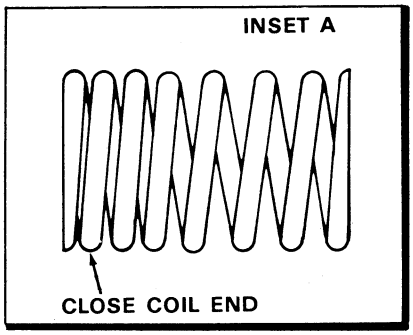
CRANK ENGINE COUNTERCLOCKWISE PAST ZERO MARK ON INDICATOR UNTIL .010" SHOWS ON DIAL. AGAIN, SCRIBE MARK ON CRANKSHAFT PULLEY.

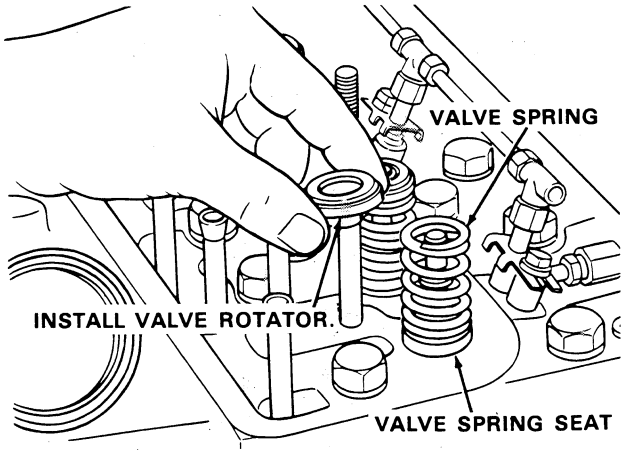
STEP 11



HALF THE DISTANCE BETWEEN THESE TWO SCRIBE MARKS ON CRANKSHAFT PULLEY WILL BE THE TOP DEAD CENTER (TDC) MARK. IF THE SCRIBE MARKS ARE NOT THE SAME AS ORIGINAL MARKS ON PULLEY CHECK DAMPER.

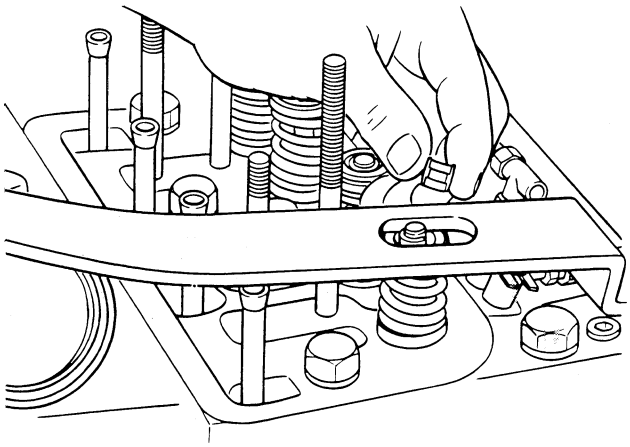
STEP 12





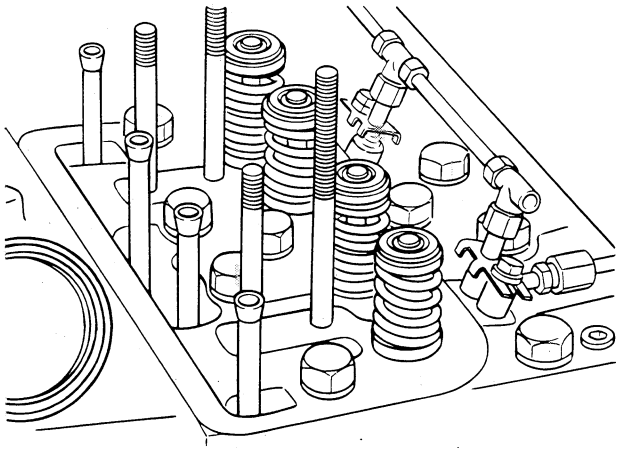
INSTALL SPRING SEAT AND VALVE SPRING. *NOTE:* IF EQUIPPED WITH VALVE SPRING HAVING ONLY ONE CLOSE COIL END, PLACE THIS END TOWARD CYLINDER HEAD, SEE INSET A.

STEP 13



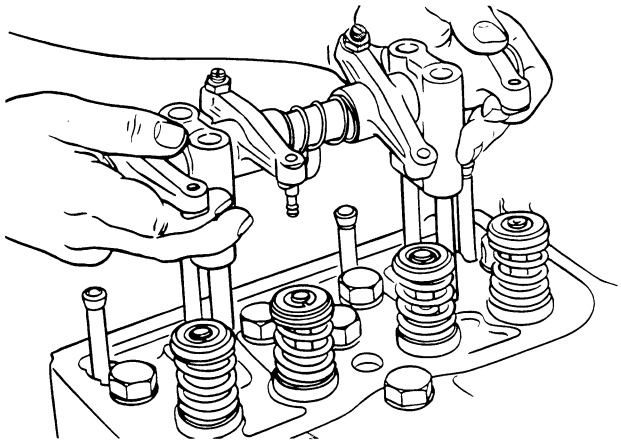
COMPRESS VALVE SPRING USING FABRICATED TOOL. INSTALL SEAL IN LOWER VALVE STEM GROOVE. INSTALL VALVE KEEPERS IN OUTER VALVE STEM GROOVE.

STEP 14



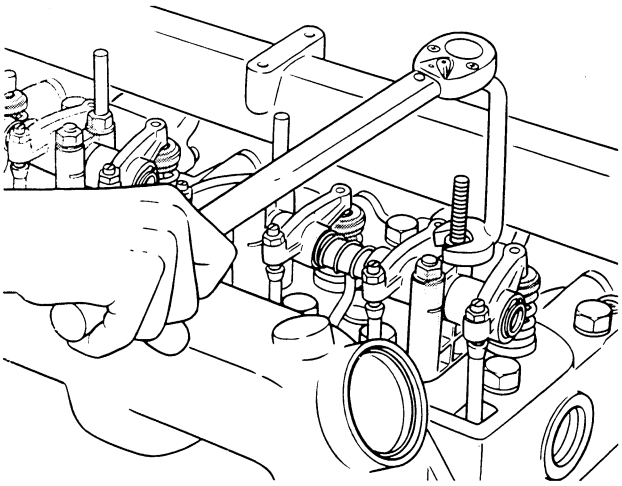
REMOVE SPRING COMPRESSING TOOL. TAP END OF VALVE STEM TO SEAT KEEPERS.

STEP 15



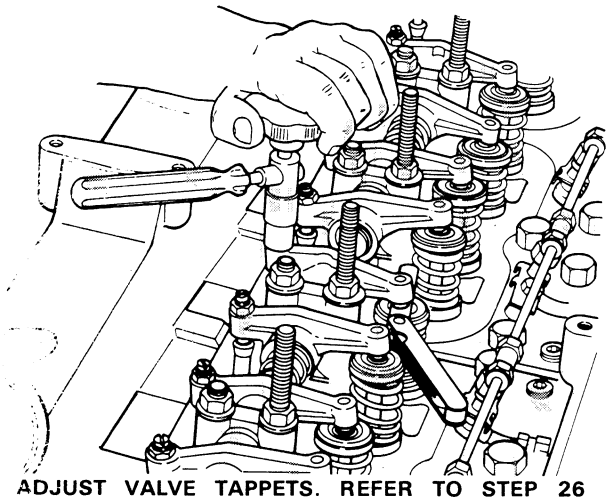
INSTALL ROCKER ARM ASSEMBLY ONTO CYLINDER HEAD.

STEP 16



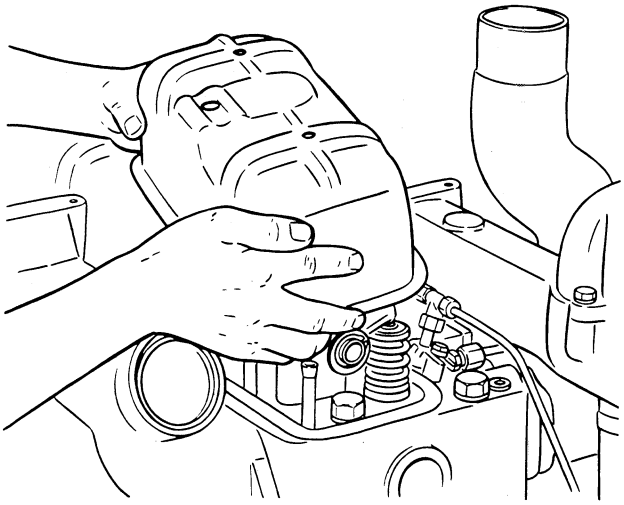
TORQUE ROCKER ARM ASSEMBLY RETAINING NUTS 40 TO 45 FT. LBS.

STEP 17



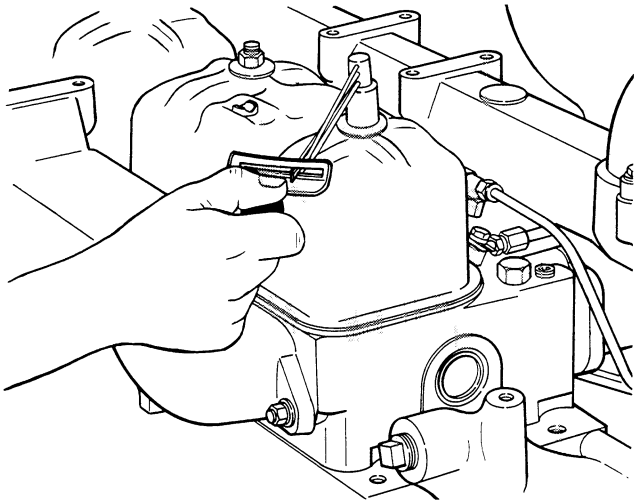
ADJUST VALVE TAPPETS. REFER TO STEP 26 FOR COLD SETTING OR TO STEP 33 FOR HOT SETTING.

STEP 18



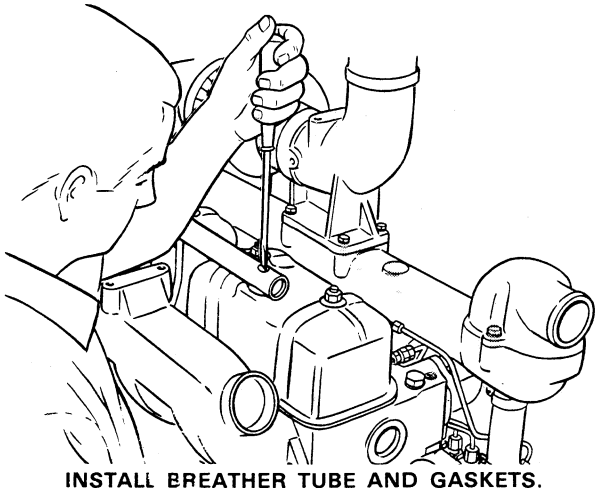
INSTALL VALVE COVERS AND GASKETS.

STEP 19



TORQUE VALVE COVER NUTS 60 TO 70 IN. LBS.

STEP 20

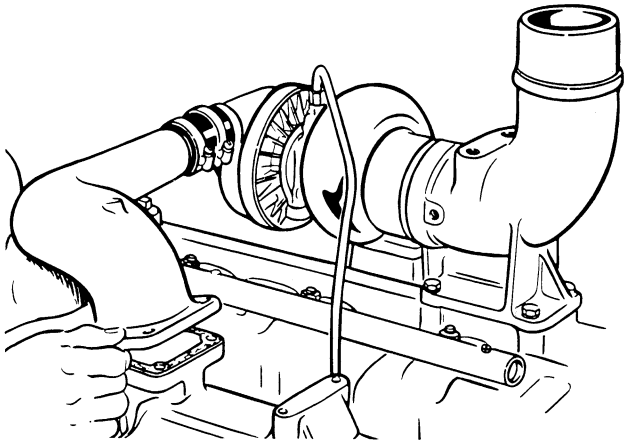


INSTALL BREATHER TUBE AND GASKETS.

Adjusting Tappets

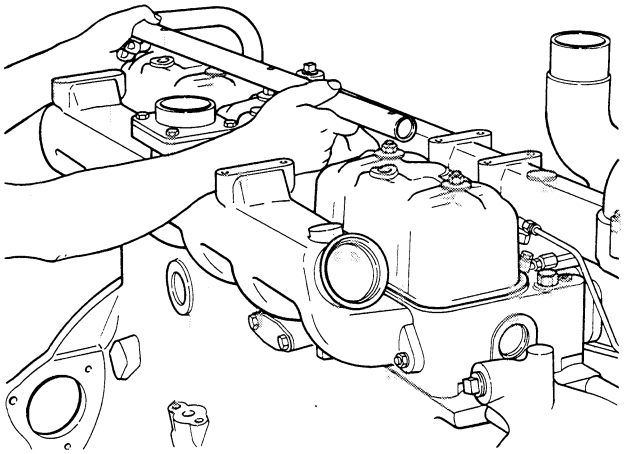
Cold Setting

STEP 21



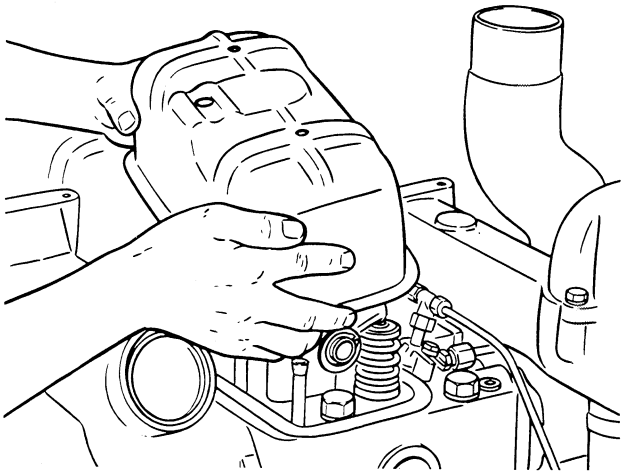
REMOVE TURBOCHARGER INTAKE ELBOW (IF SO EQUIPPED).

STEP 22



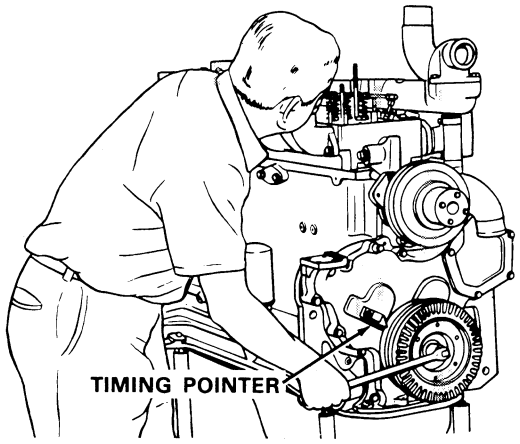
REMOVE BREATHER TUBE.

STEP 23



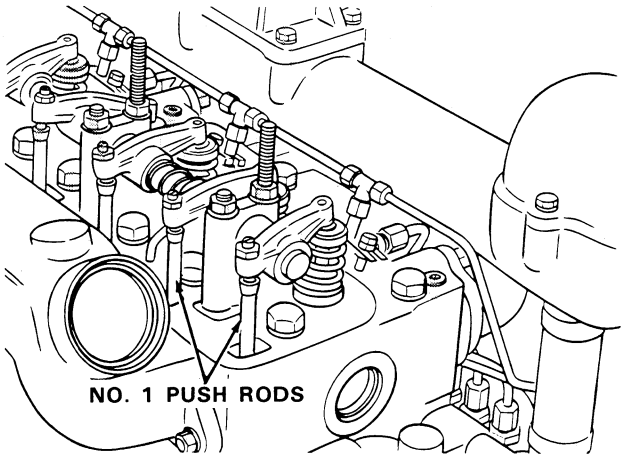
REMOVE VALVE COVERS AND GASKETS FROM ALL CYLINDERS.

STEP 24



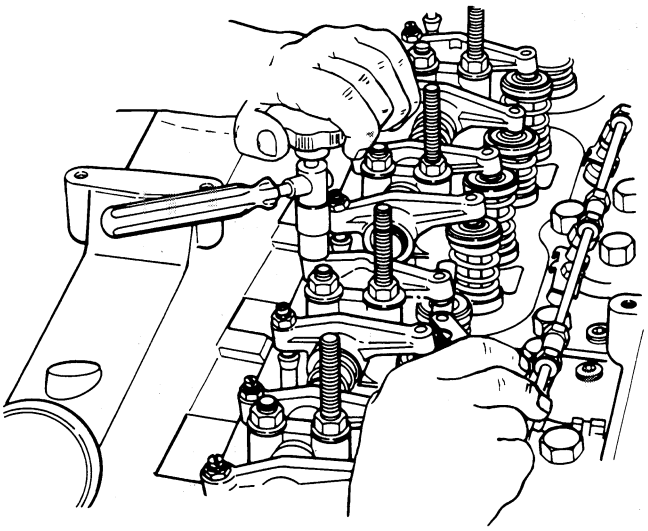
CRANK ENGINE UNTIL TIMING POINTER IS ALIGNED WITH TDC TIMING MARK ON CRANKSHAFT PULLEY.

STEP 25



CHECK PUSH RODS ON NO. 1 CYLINDER FOR LOOSENESS. IF PUSH RODS ARE LOOSE, NO. 1 CYLINDER IS AT TDC ON THE COMPRESSION STROKE. IF PUSH RODS ARE TIGHT, CRANK ENGINE ONE COMPLETE REVOLUTION AND ALIGN TIMING POINTER WITH TDC MARK ON PULLEY.

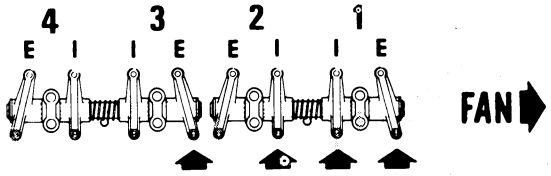
STEP 26



CHECK AND ADJUST THE INTAKE AND EXHAUST VALVES AS POINTED OUT BY THE ARROWS BELOW.

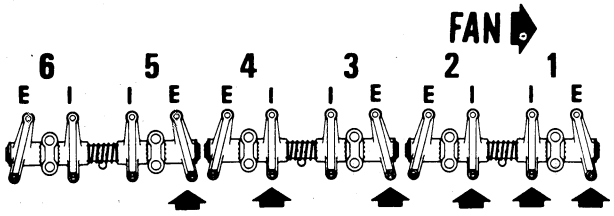
TAPPET CLEARANCE COLD - INTAKE VALVES .015"
EXHAUST VALVES - .025"

FOUR CYLINDER ENGINES



NO. 1 TDC COMPRESSION STROKE

SIX CYLINDER ENGINES



NO. 1 TDC COMPRESSION STROKE

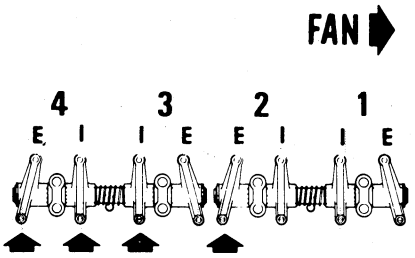
STEP 27

CRANK THE ENGINE ONE COMPLETE REVOLUTION AND ALIGN THE TIMING POINTER WITH THE TDC MARK ON CRANKSHAFT PULLEY.

CHECK AND ADJUST THE INTAKE AND EXHAUST VALVES AS POINTED OUT BY THE ARROWS BELOW.

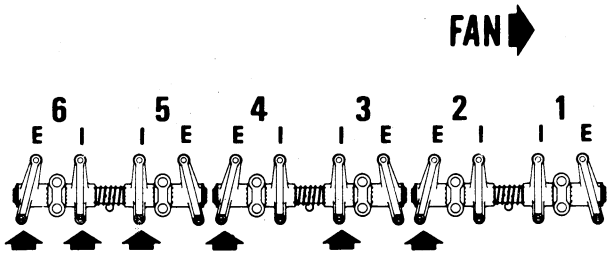
TAPPET CLEARANCE COLD - INTAKE VALVES .015"
EXHAUST VALVES .025"

FOUR CYLINDER ENGINES



NO. 4 TDC COMPRESSION STROKE

SIX CYLINDER ENGINES



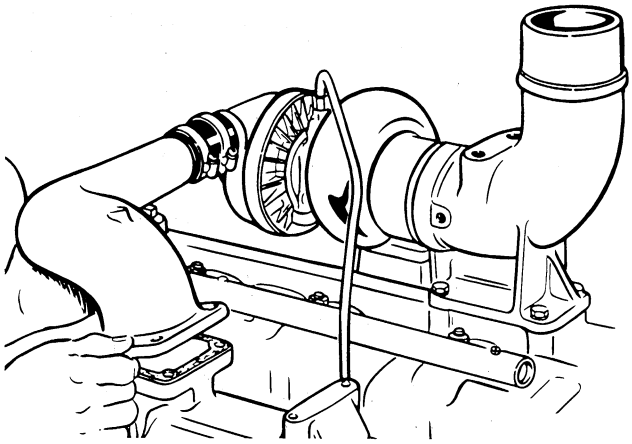
NO. 6 TDC COMPRESSION STROKE

NOTE: AFTER COMPLETING COLD SETTING VALVE TAPPET ADJUSTMENT PROCEED TO STEP 35.

Adjusting Tappets

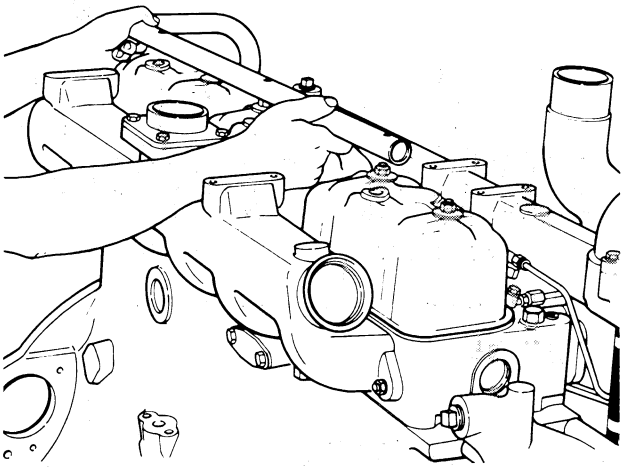
Hot Setting with Engine Stopped

STEP 28



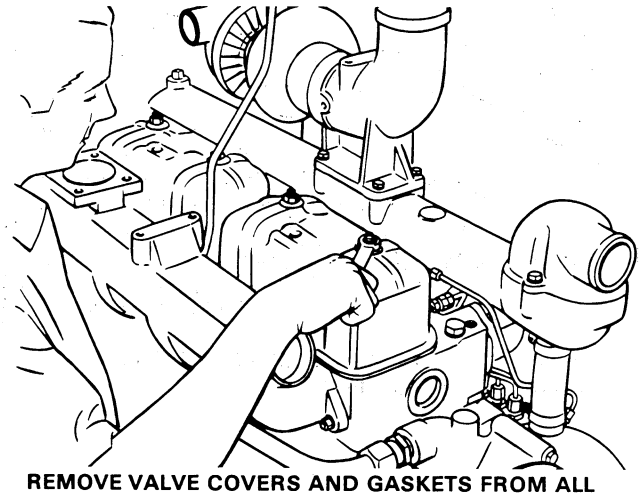
REMOVE TURBOCHARGER INTAKE ELBOW (IF SO EQUIPPED).

STEP 29



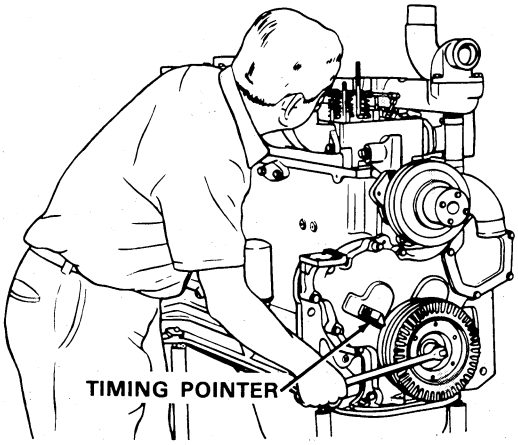
REMOVE BREATHER TUBE

STEP 30



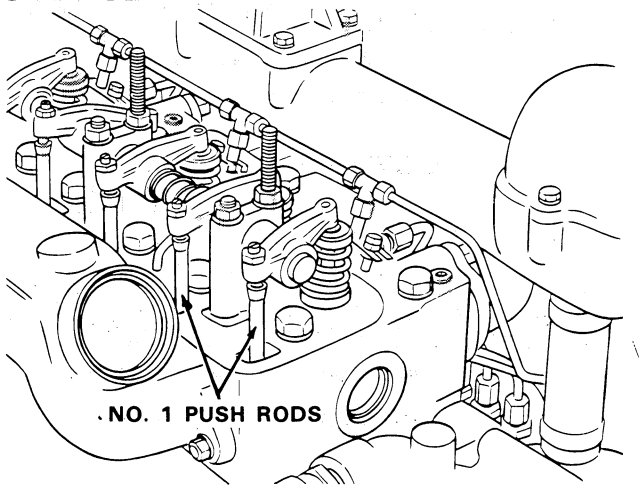
REMOVE VALVE COVERS AND GASKETS FROM ALL CYLINDERS.

STEP 31



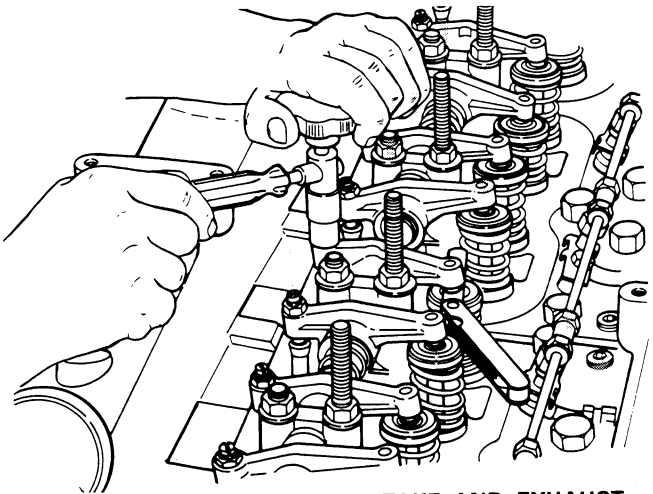
CRANK ENGINE UNTIL TIMING POINTER IS ALIGNED WITH TDC TIMING MARK ON CRANKSHAFT PULLEY.

STEP 32



CHECK PUSH RODS ON NO. 1 CYLINDER FOR LOOSENESS. IF PUSH RODS ARE LOOSE, NO.1 CYLINDER IS AT TDC ON THE COMPRESSION STROKE. IF PUSH RODS ARE TIGHT, CRANK ENGINE ONE COMPLETE REVOLUTION AND ALIGN TIMING POINTER WITH TDC MARK ON PULLEY.

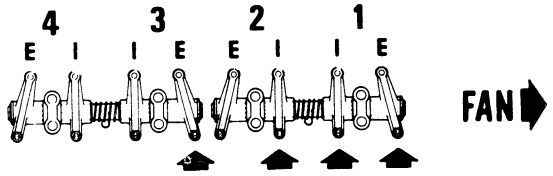
STEP 33



CHECK AND ADJUST THE INTAKE AND EXHAUST VALVES AS POINTED OUT BY THE ARROWS BELOW.

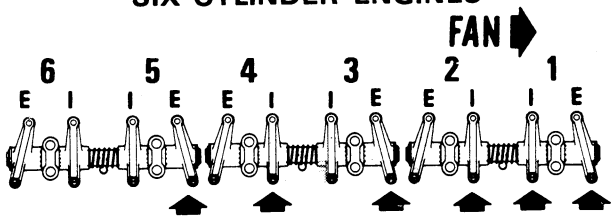
TAPPET CLEARANCE HOT - INTAKE VALVES .015"
EXHAUST VALVES .020"

FOUR CYLINDER ENGINES



NO. 1 TDC COMPRESSION STROKE

SIX CYLINDER ENGINES



NO. 1 TDC COMPRESSION STROKE

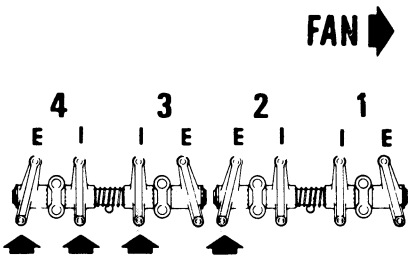
STEP 34

CRANK THE ENGINE ONE COMPLETE REVOLUTION AND ALIGN THE TIMING POINTER WITH THE TDC MARK ON CRANKSHAFT PULLEY.

CHECK AND ADJUST THE INTAKE AND EXHAUST VALVES AS POINTED OUT BY THE ARROWS BELOW.

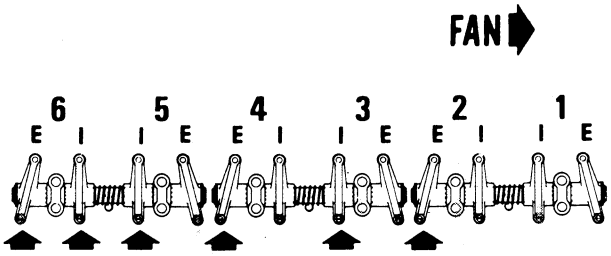
TAPPET CLEARANCE HOT - INTAKE VALVES .015"
EXHAUST VALVES .020"

FOUR CYLINDER ENGINES



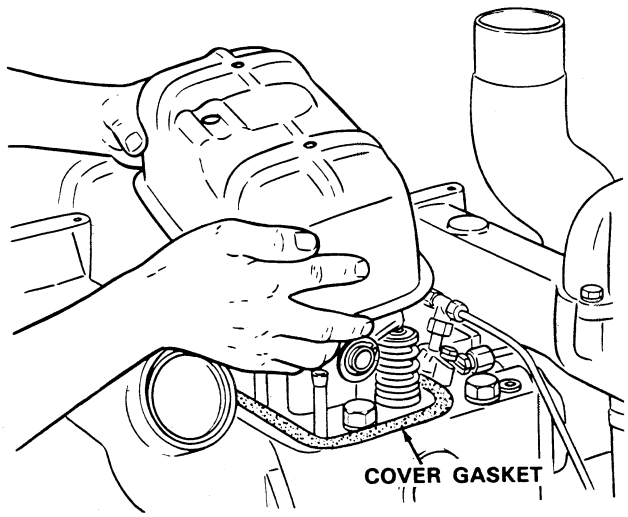
NO. 4 TDC COMPRESSION STROKE

SIX CYLINDER ENGINES



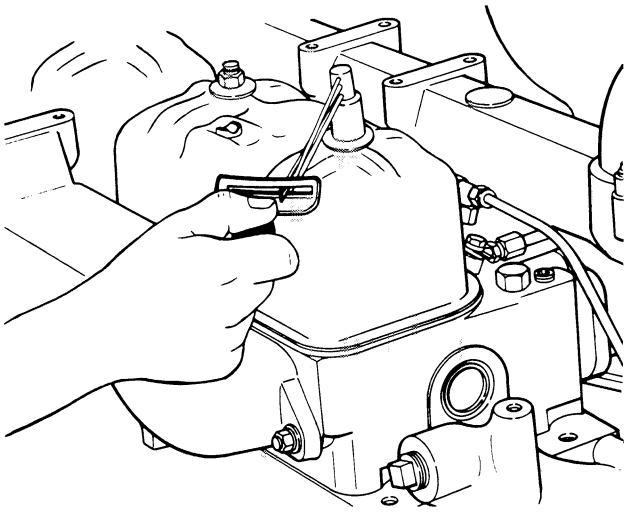
NO. 6 TDC COMPRESSION STROKE

STEP 35



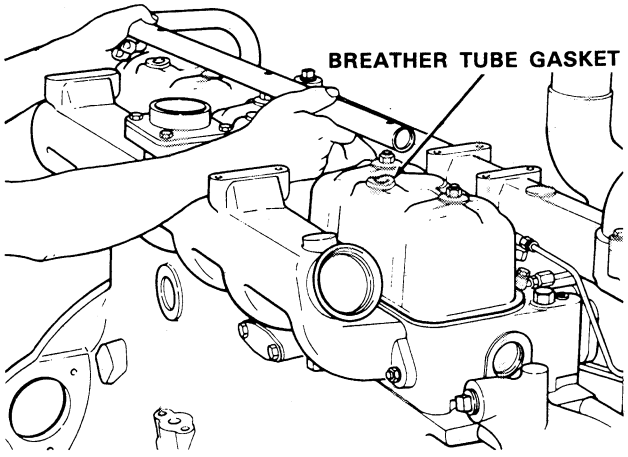
AFTER TAPPET ADJUSTMENT, INSTALL VALVE COVERS AND GASKETS.

STEP 36



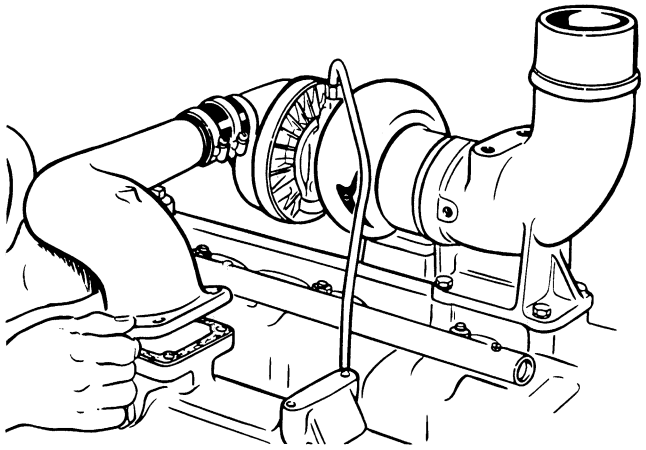
TORQUE VALVE COVER NUTS 60 TO 70 IN. LBS.

STEP 37



INSTALL BREATHER TUBE AND GASKETS.

STEP 38



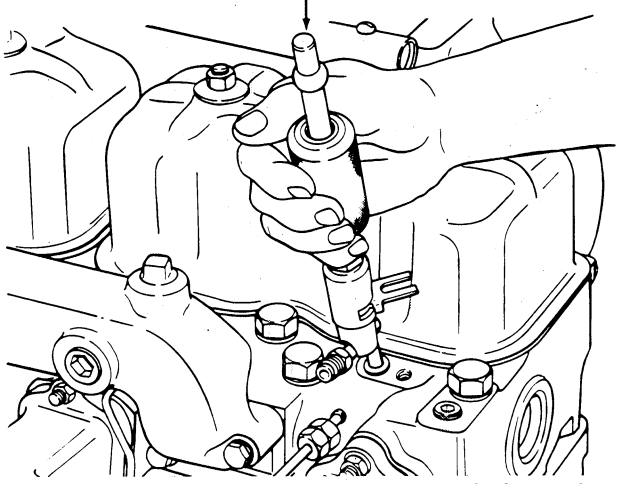
INSTALL TURBOCHARGER INTAKE ELBOW

Checking Nozzle Spray Pattern and Engine Compression

Nozzle Removal

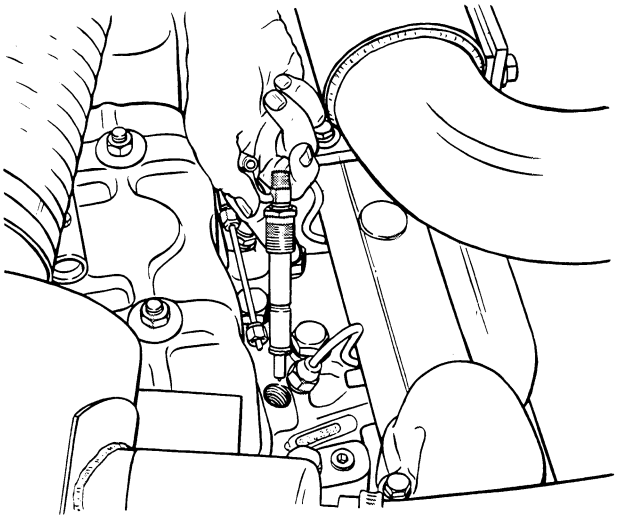
STEP 39 (CLAMP TYPE INJECTOR)

NOZZLE PULLER A43278



REMOVE AND TEST EACH FUEL INJECTOR. REFER TO SECTION 3013. PERFORM A COMPRESSION TEST ON EACH CYLINDER BEFORE INSTALLING FUEL INJECTOR

STEP 40 (SCREW-IN TYPE INJECTOR)



REMOVE AND TEST EACH FUEL INJECTOR. REFER TO SECTION 3113. PERFORM A COMPRESSION TEST ON EACH CYLINDER BEFORE INSTALLING FUEL INJECTOR.

Compression Check

STEP 41

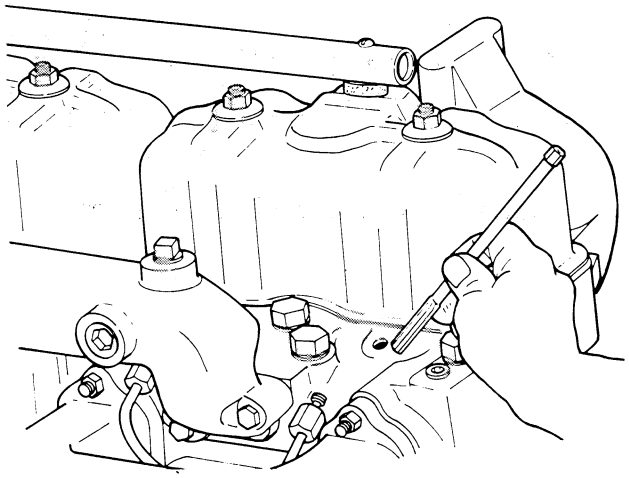
THERE ARE TWO METHODS OF CHECKING COMPRESSION PRESSURE - THE CRANKING METHOD AND THE ENGINE RUNNING METHOD. THE ENGINE MUST BE AT OPERATING TEMPERATURE FOR EITHER METHOD USED.

A. CRANKING METHOD - REMOVE ALL INJECTORS.

B. RUNNING METHOD - DISCONNECT HIGH PRESSURE FUEL LINE AND LEAKOFF LINE FROM NO. 1 INJECTOR. ROUTE FUEL FROM THESE LINES BACK TO FUEL TANK OR CLEAN CONTAINER. REPEAT FOR EACH CYLINDER.

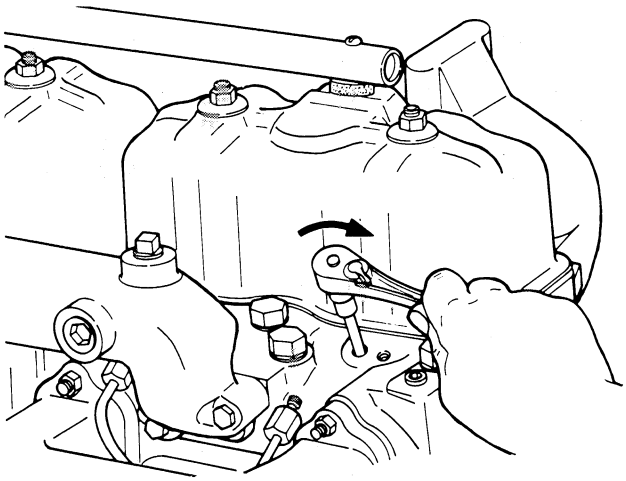
CAUTION *Before cranking engine make sure all operating controls are in neutral, brakes are set and wheels are securely blocked.*

STEP 42 (CLAMP TYPE INJECTOR)



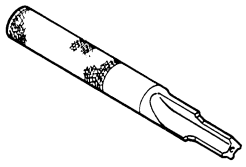
CLEAN CYLINDER HEAD INJECTOR BORE USING BORE CLEANING TOOL A43277.

STEP 43 (CLAMP TYPE INJECTOR)

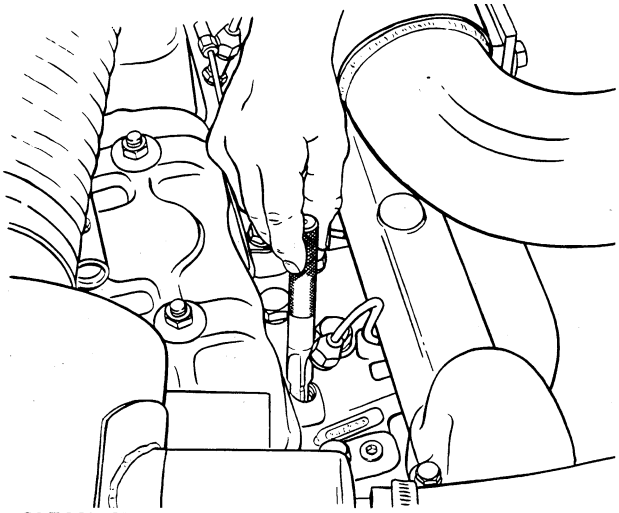


ALWAYS TURN TOOL CLOCKWISE. COUNTER-CLOCKWISE ROTATION DULLS TOOL. BLOW OUT WITH COMPRESSED AIR.

STEP 44 (SCREW-IN TYPE INJECTOR)

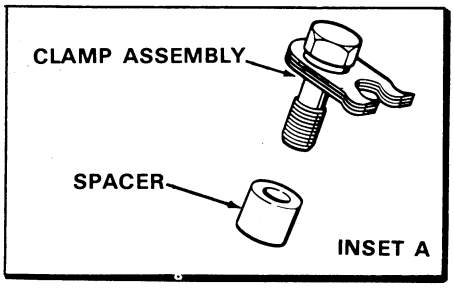


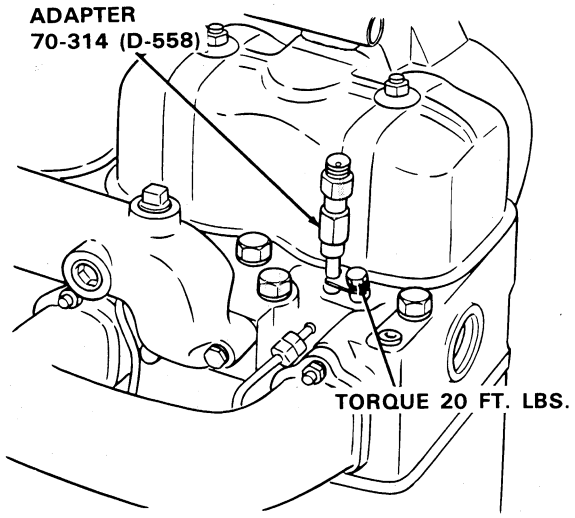
BORE CLEANING TOOL
NUDAY CO. P/N 6062
14615 WYOMING AVE.
DETROIT, MICHIGAN£ 48238
(PART OF KIT 2205)



CLEAN CYLINDER HEAD INJECTOR BORE USING BORE CLEANING TOOL 6062.

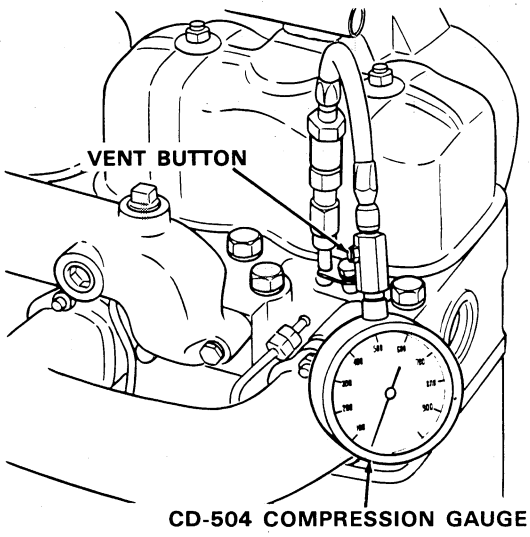
STEP 45 (CLAMP TYPE INJECTOR)





INSTALL BACHARACH 70-314 (D-558) COMPRESSION GAUGE ADAPTER. SECURE WITH AN ORIGINAL INJECTOR CLAMP ASSEMBLY AND SPACER.

STEP 46 (CLAMP TYPE INJECTOR)

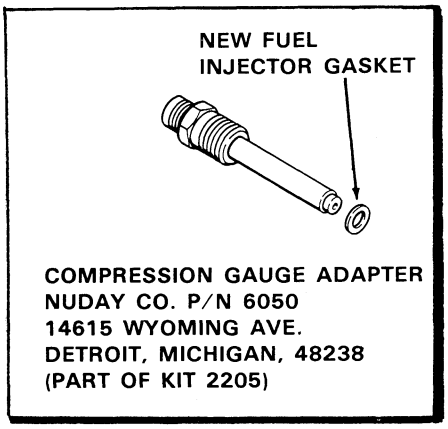


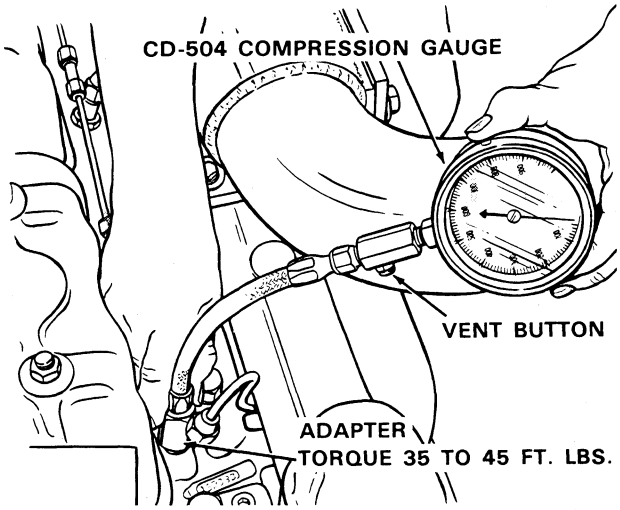
CONNECT CASE NO. CD-504 COMPRESSION GAUGE TO ADAPTER.

NOTE: TAKE SEVERAL COMPRESSION READINGS ON EACH CYLINDER USING VENT VALVE BUTTON TO RELIEVE GAUGE PRESSURE.

SEE CHART ON NEXT PAGE.

STEP 47 (SCREW-IN TYPE INJECTOR)





INSTALL GAUGE ADAPTER WITH A NEW FUEL INJECTOR GASKET, IN CYLINDER HEAD. TORQUE ADAPTER 35 TO 45 FT. LBS.

CONNECT CASE NO. CD-504 COMPRESSION GAUGE TO ADAPTER.

NOTE: TAKE SEVERAL COMPRESSION READINGS ON EACH CYLINDER USING VENT VALVE BUTTON TO RELIEVE GAUGE PRESSURE.

STEP 48

NOTE: WHEN CHECKING COMPRESSION USING THE CRANKING METHOD, START AT NO. 1 CYLINDER AND CONTINUE DOWN THE LINE (NO. 2, 3, 4 ETC). THEN, RECHECK NO. 1 CYLINDER AFTER COMPLETING THE LAST CYLINDER SINCE COMPRESSION MAY VARY DUE TO BATTERY RUN-DOWN.

STEP 49

IT IS VERY IMPORTANT THAT ALL CYLINDER PRESSURES BE APPROXIMATELY THE SAME. SEE CHART FOR ALLOWABLE COMPRESSION PRESSURE VARIATION.

IF COMPRESSION IS GREATER THAN NORMAL, CARBON DEPOSITS ARE INDICATED. IF READING IS BELOW NORMAL, LEAKING VALVES OR EXCESSIVE RING CLEARANCE IS INDICATED.

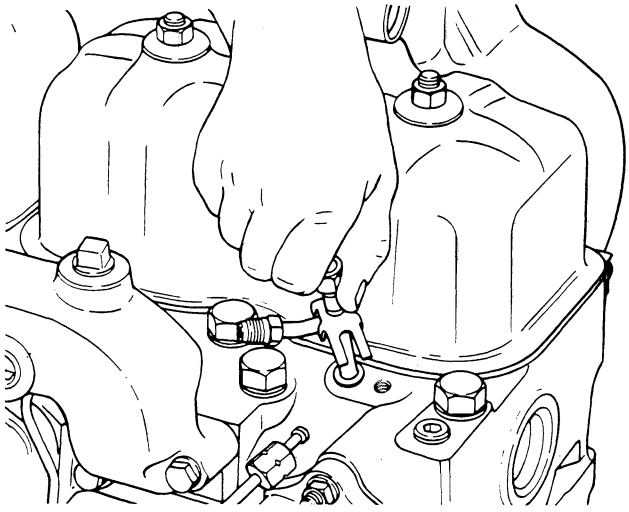
	ENGINE SPEED	NORMAL COMPRESSION PRESSURE	ALLOWABLE VARIATION BETWEEN CYLINDERS
CRANKING	APPROXIMATELY 200 RPM UNTIL COMPRESSION GAUGE STABILIZES	400 PSI*	25 PSI
RUNNING	800 RPM	480 PSI*	20 PSI

*NOTE: A 4% REDUCTION IN PSI MUST BE ALLOWED FOR EVERY 1000 FT. ABOVE SEA LEVEL.

STEP 50

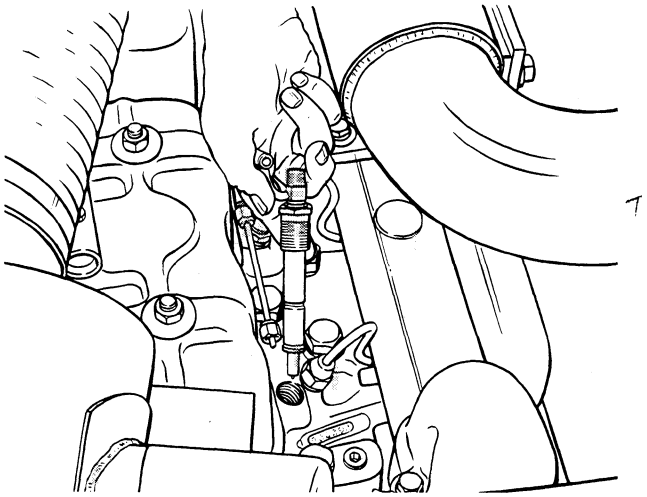
NOTE: TO MAKE A SIMPLE TEST WHEN A COMPRESSION LEAK IS INDICATED, SQUIRT A TEASPOON OF OIL INTO CYLINDER AND RECHECK COMPRESSION. IF PRESSURE RISES TO NEAR NORMAL, COMPRESSION LOSS IS PAST THE RINGS. VERY LITTLE CHANGE IN COMPRESSION INDICATES LEAKAGE PAST THE VALVES.

STEP 51 (CLAMP TYPE INJECTOR)



INSTALL FUEL INJECTORS. REFER TO SECTION 3013.

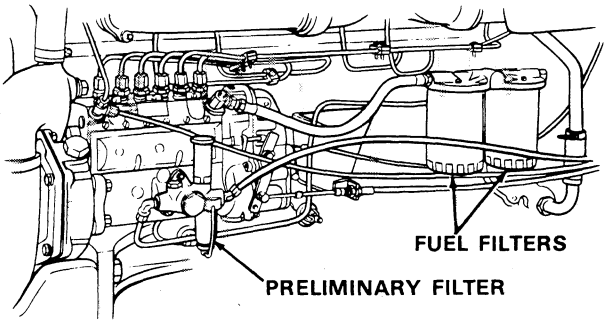
STEP 52 (SCREW-IN TYPE INJECTOR)



INSTALL FUEL INJECTORS. REFER TO SECTION 3113.

Cleaning Fuel Line Screen and Filters

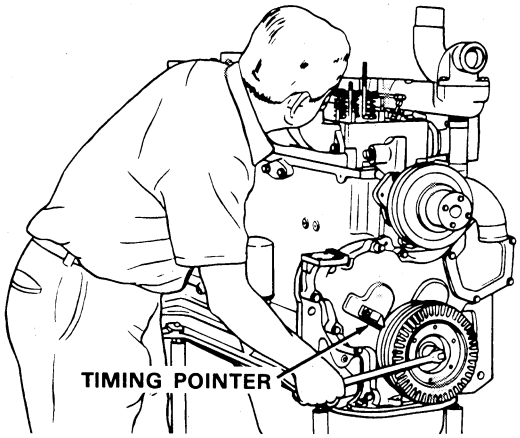
STEP 53



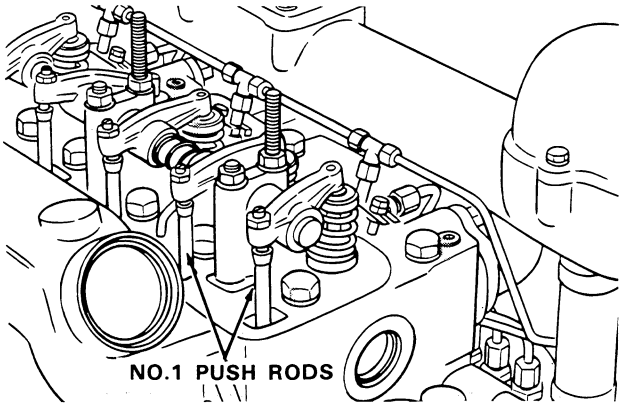
REFER TO SECTION 3010 FOR CLEANING AND SERVICING THE FUEL FILTERS AND SYSTEM.

Retiming Injection Pump

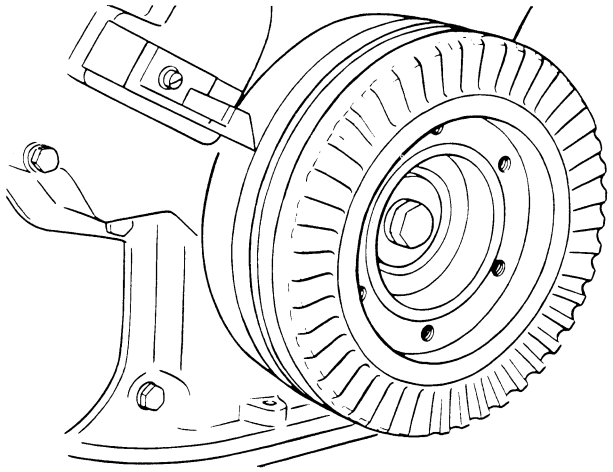
STEP 54



CRANK ENGINE UNTIL TIMING POINTER IS ALIGNED WITH TDC TIMING MARK ON CRANKSHAFT PULLEY.

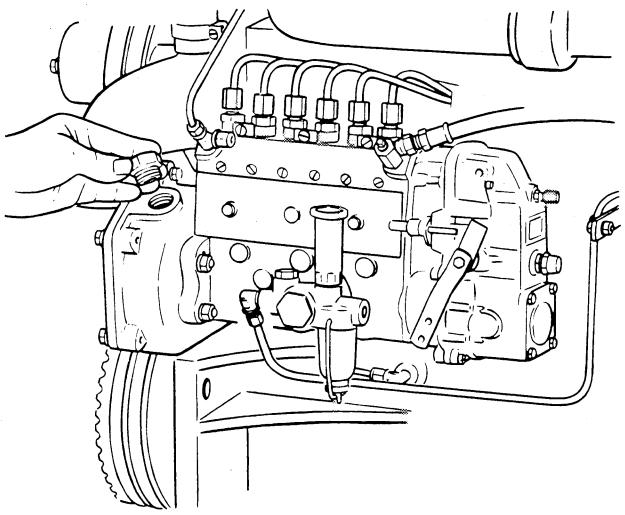


CHECK PUSH RODS ON NO. 1 CYLINDER FOR LOOSENESS. IF PUSH RODS ARE LOOSE, NO. 1 CYLINDER IS AT TDC ON THE COMPRESSION STROKE. IF PUSH RODS ARE TIGHT, CRANK ENGINE ONE COMPLETE REVOLUTION AND ALIGN TIMING POINTER WITH TDC MARK ON PULLEY.



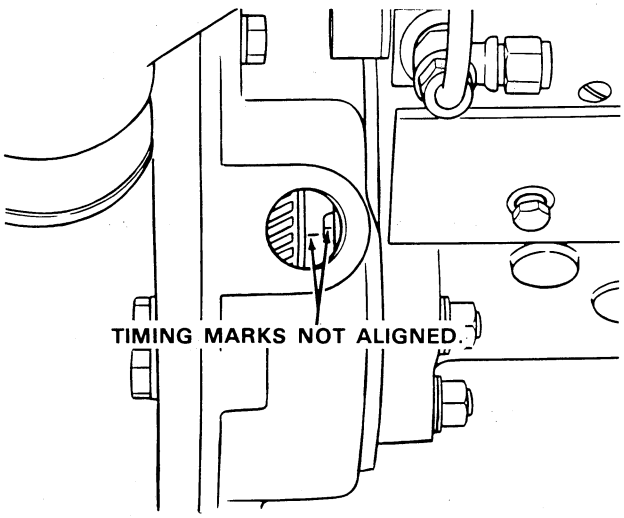
CRANK ENGINE CCW TO 35° MARK THEN, CRANK ENGINE CW TO SPECIFIED FUEL PUMP TIMING. NOTE: REFER TO ENGINE DATA DECAL ON ENGINE VALVE COVER FOR FUEL PUMP TIMING.

STEP 55



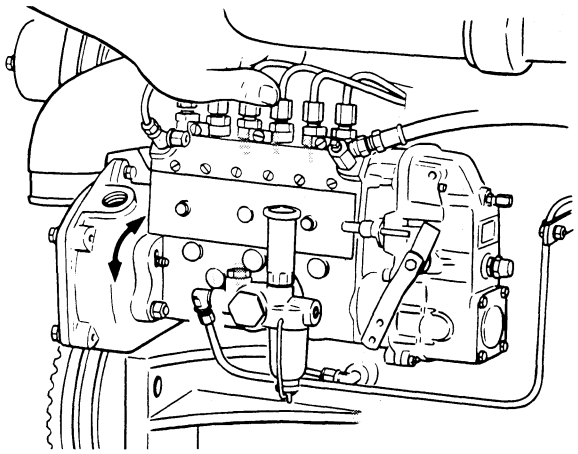
REMOVE PLUG FROM TIMING GEAR COVER.

STEP 56



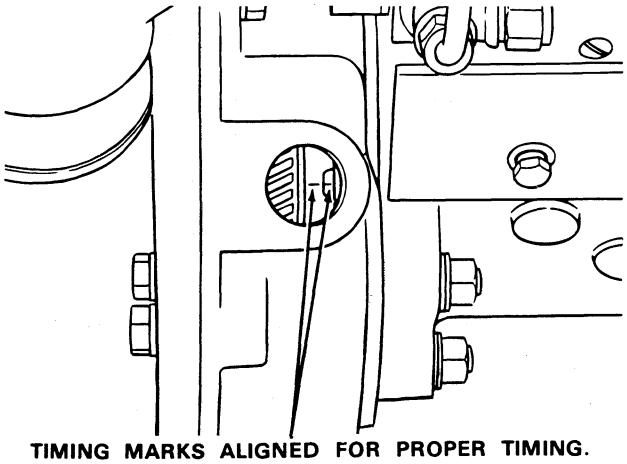
CHECK TIMING MARKS. IF MARKS ARE NOT ALIGNED, PROCEED TO NEXT STEP. IF MARKS ARE IN LINE PUMP IS IN TIME.

STEP 57



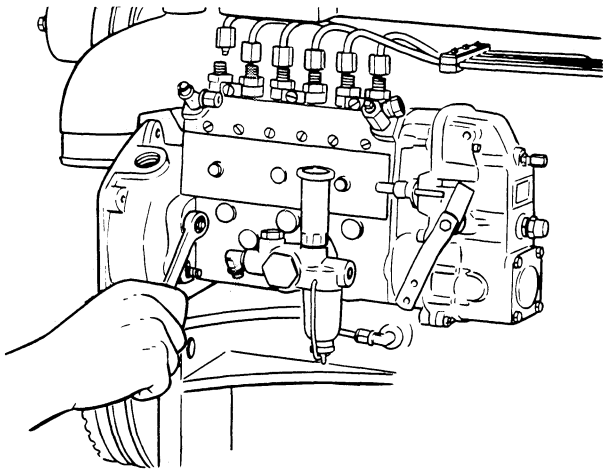
LOOSEN PUMP MOUNTING NUTS. MOVE PUMP TOWARD OR AWAY FROM ENGINE UNTIL TIMING MARKS ARE ALIGNED.

STEP 58



TIMING MARKS ALIGNED FOR PROPER TIMING.

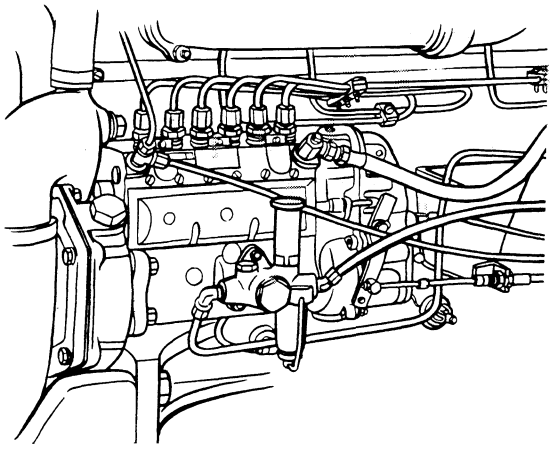
STEP 59



TORQUE PUMP MOUNTING NUTS 35 TO 42 FT. LBS. INSTALL PLUG IN TIMING GEAR COVER.

Adjusting Governed Speed

STEP 60



CHECK AND ADJUST THE ENGINE GOVERNED SPEED AS OUTLINED IN SECTION 3012.

Suggest:

If the above button click is invalid.

Please download this document

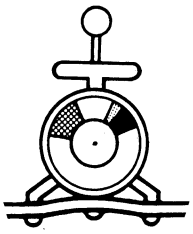
first, and then click the above link

to download the complete manual.

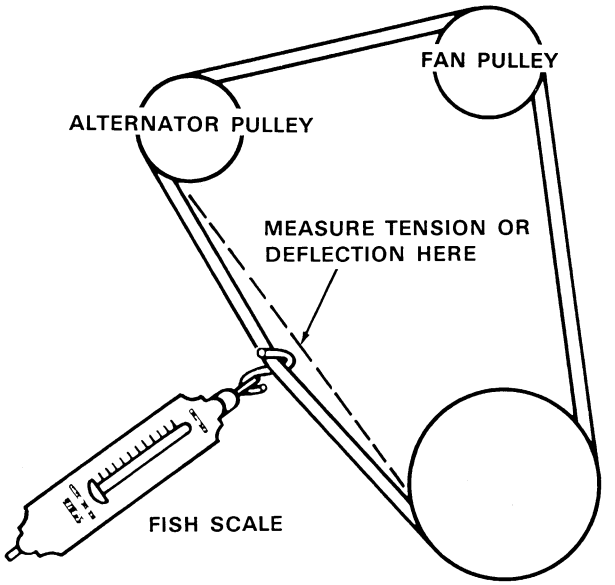
Thank you so much for reading

Adjusting Fan Belts

STEP 61

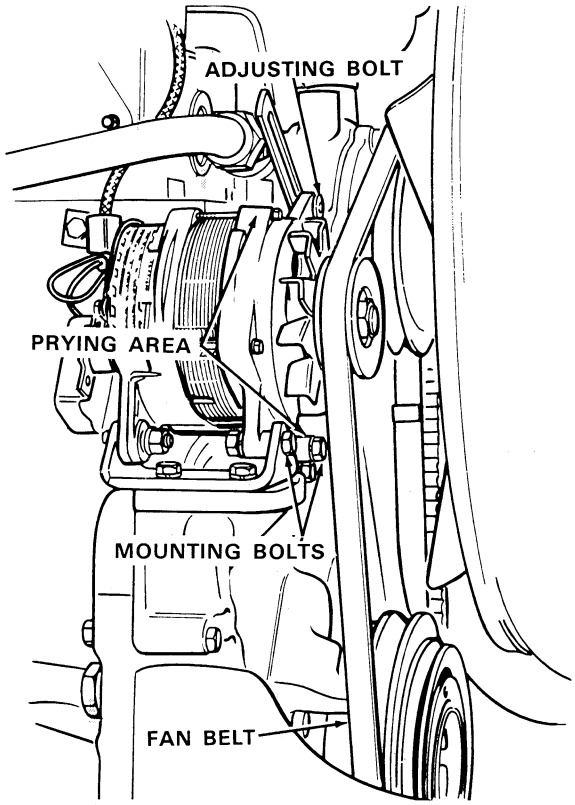


BELT TENSION GAUGE



MEASURE FAN BELT FOR PROPER DEFLECTION USING A FISH SCALE OR BELT TENSION GAUGE. MEASUREMENTS MUST BE MADE BETWEEN ALTERNATOR PULLEY AND CRANKSHAFT PULLEY. REFER TO VEHICLE OPERATORS MANUAL FOR PROPER AMOUNT OF DEFLECTION AND FORCE TO BE APPLIED. NOTE: IF EQUIPPED WITH AIR CONDITIONING, REFER TO AIR CONDITIONING SECTION OF THIS MANUAL FOR COMPRESSOR BELT ADJUSTMENT.

STEP 62



LOOSEN ALTERNATOR ADJUSTING AND MOUNTING BOLTS. USE PRY BAR TO PUT TENSION ON BELT. APPLY PRY BAR ONLY TO FRONT CAST HOUSING AREA AND PIPE SPACER LOCATED ON FRONT TIMING GEAR COVER.

TO REPLACE FAN BELT, SWING ALTERNATOR INWARD TOWARD ENGINE. REMOVE OLD BELT, SLIP NEW BELT OVER FAN AND ONTO FAN PULLEY, THEN ONTO CRANKSHAFT AND ALTERNATOR PULLEY. FOR TIGHTENING SEQUENCE OF BELT, REFER TO OPERATOR'S MANUAL.

STEP 63

INSPECT AND SERVICE THE AIR INTAKE SYSTEM. REFER TO THE AIR INTAKE SYSTEM SECTION OF THIS MANUAL.