Insert this Manual in Group IV Hydraulic System After Section R
Supplement No.1 of Rac. Form 9-75861 730-830 -930 and
Rac. Form 9-76931 1030 Service Manuals or Use as Wall Chart

SECTION R

SUPPLEMENT No. 2

DRAFT-O-MATIC ADJUSTMENTS AND CHECK-OUT PROCEDURE ON THE 730-830, 930 AND 1030 SERIES TRACTORS

(Tractor Serial No. 8340819 And After)
or
(Prior to Serial No. 8340819 With Wishbone Spring Kit No. A57793 Installed)

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INTRODUCTION AND IDENTIFICATION

Two types of power steering pumps have been used on Case Tractors - 1. Gear Type. 2. Roll Type. The Oil Flow Diagrams are of the roll type pump, but the oil flow is the same for both gear and roll type pumps.



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SERVICING THE 2-1/2" x 8" HYDRAULIC CYLINDER A-4
SERVICING 3-1/4" x 8" AND 4" x 8" HYDRAULIC CYLINDERS A-6

SERVICING BREAK-AWAY COUPLINGS

COUPLING SOCKET

(Refer to Figure A-1)

Disassembly

To disassemble the coupling socket, unscrew the socket body (1) from the hose (11) and remove spring (10), piston (9), seal retainer (8) and piston seal (7) from the socket body.

To disassemble the socket body (1) from the locking sleeve (5), remove sleeve locking ring (6), locking balls (2), sleeve spring (4) and inner "O" ring (3).

Inspection

Thoroughly clean and insect all machined surfaces for nicks, grooves and burrs that may cause improper seating and leakage. Replace any damaged parts.

Check spring (10) for a pressure of 18-1/2 lbs. at compressed height of 1-1/64".

Assembly

To assemble the coupling, install inner "O" ring (3) into the socket body (1); then install the socket body, sleeve spring (4) and locking balls into locking sleeve (5), and retain with sleeve locking ring (6).

NOTE Replace "O" ring (3) and seal (7) anytime the coupling is disassembled.

Next, assemble piston seal (7) seal retainer (8), piston (9) and piston spring (10) into socket body (1), and install the coupling socket assembly on hose (11).

COUPLING PLUG

(Refer to Figure A-2)

Disassembly

To disassemble the coupling plug, unscrew plug (1) from hose (7) and remove piston sleeve (8), spring (6) "O" ring (5), piston (4), seal retainer (3) and seal (2) from plug (1).

Inspection

Thoroughly clean and inspect all machined surfaces for nicks, grooves and burrs that may cause improper seating and leakage.

Check spring (6) for a pressure of 18-1/2 lbs. at a compressed height of 1-1/64".

Assembly

To assemble the coupling plug, install seal (2), seal retainer (3), piston (4), "O" ring (5), spring (6) and piston sleeve (8) into plug (1). Then screw the plug assembly to the hose (7).

NOTE Replace "O" ring (5) and seal (2), anytime plug is disassembled.

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OPERATING PRINCIPLES

The operation of the fuel injector is simple and positive.

The spring in the holder body maintains a preset pressure on the nozzle valve by means of



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REMOVAL OF CYLINDER AND VALVE
Ross VC-28 Series
(Refer to Figure O-15)

Before removing the steering cylinder and valve thoroughly steam clean the exterior of the cylinder and valve to prevent the entry of foreign particles.

1. Disconnect the rear drag link at the steering valve ball stud by removing the cotter pin and nut.

2. Disconnect the inlet (pressure) hose and outlet (return) hose from the valve.

NOTE

Cap the inlet and outlet hoses to prevent the entry of foreign particles.

3. Disconnect the piston rod from the piston rod mounting bracket.

4. Loosen the front drag link clamp and unscrew the complete cylinder and valve assembly from the drag link.

INSTALLATION OF CYLINDER AND VALVE
Ross VC-28 Series
(Refer to Figure O-15)

1. Screw the cylinder and valve assembly into the front drag link leaving no clearance (Inset A) between the end of the drag link and the hex head on the end cap. Tighten drag link clamp.

2. Connect the piston rod to the piston rod mounting bracket.

3. Connect the inlet (pressure) hose and outlet (return) hose.

4. Connect the rear drag link to the steering valve ball stud using slotted nut and cotter pin.

5. Refer to Page O-27 for bleeding the system.

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SECTION

A

SERVICING

BREAK-AWAY COUPLINGS

AND

PORTABLE HYDRAULIC CYLINDERS

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IMPORTANT

WHEN AN IMPROPER SPRAY PATTERN OR FUEL LEAKAGE IS NOTED WHILE TESTING AN INJECTOR ON WHICH YOU HAVE INSTALLED A NEW NOZZLE ASSEMBLY, CHECK YOUR REPAIR PROCEDURE AS FOLLOWS:

1. Did you disassemble the new nozzle and wash both the valve and body in clean diesel fuel to remove the protective coating before assembling it to the holder?

2. Is your injector repair room absolutely clean and free of dust?

3. Are you using lint free cloths? Remember -- Do not use laundered shop cloths. These cloths may contain metal particles that will ruin an injection nozzle.

4. Is the oil in your injector test stand absolutely clean? Is the test stand high pressure tubing connection for the injector absolutely clean? Is the test stand oil filter in place and in good condition? Carelessness in caring for the injector test stand will result in pump abrasives directly into the injector.



5. Did the new nozzle body and nozzle valve become mismated or damaged from dropping or careless handling before installation?

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3 1/4"x8" AND 4"x8" HYDRAULIC CYLINDERS

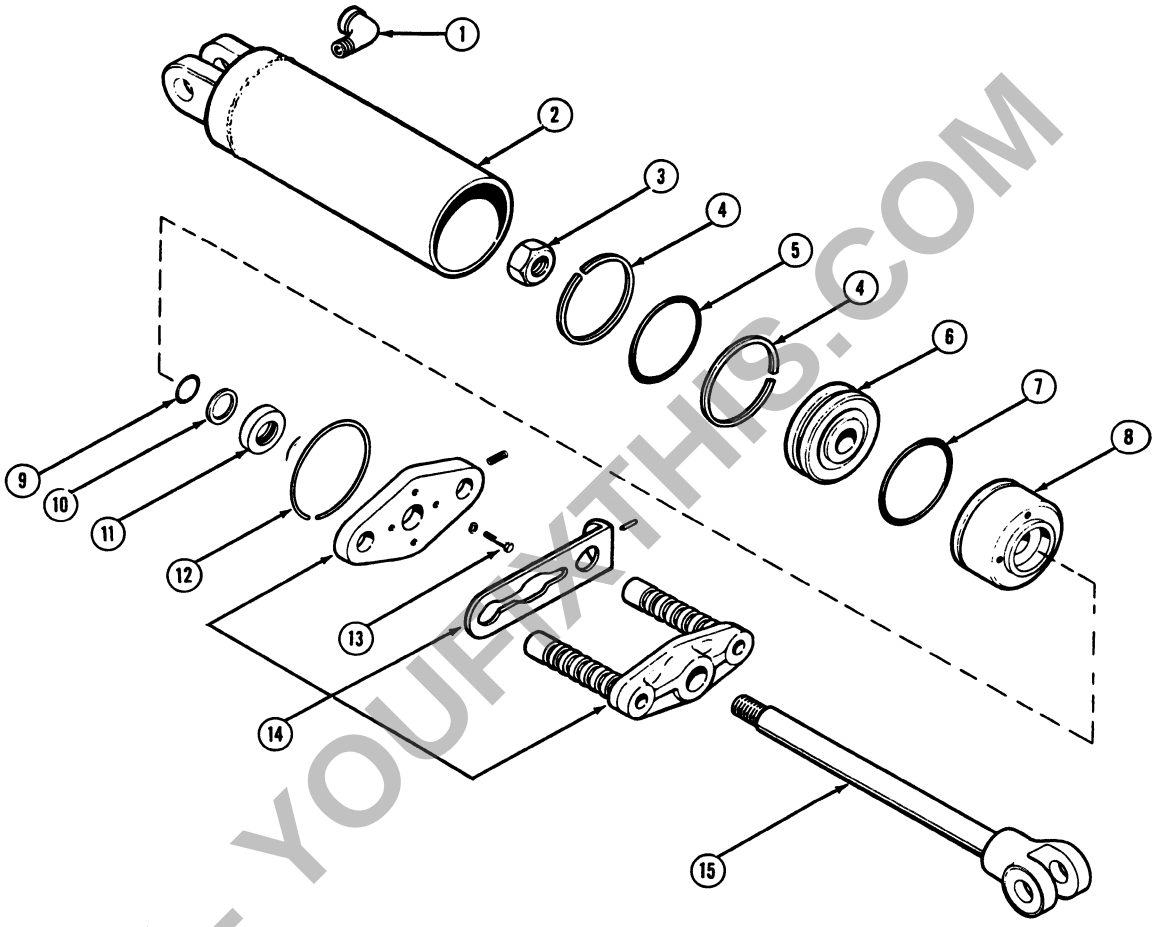


Figure A-5

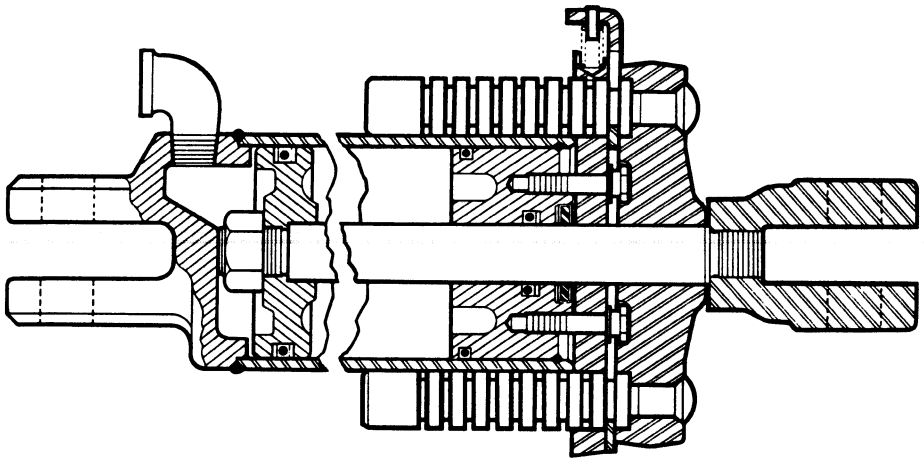
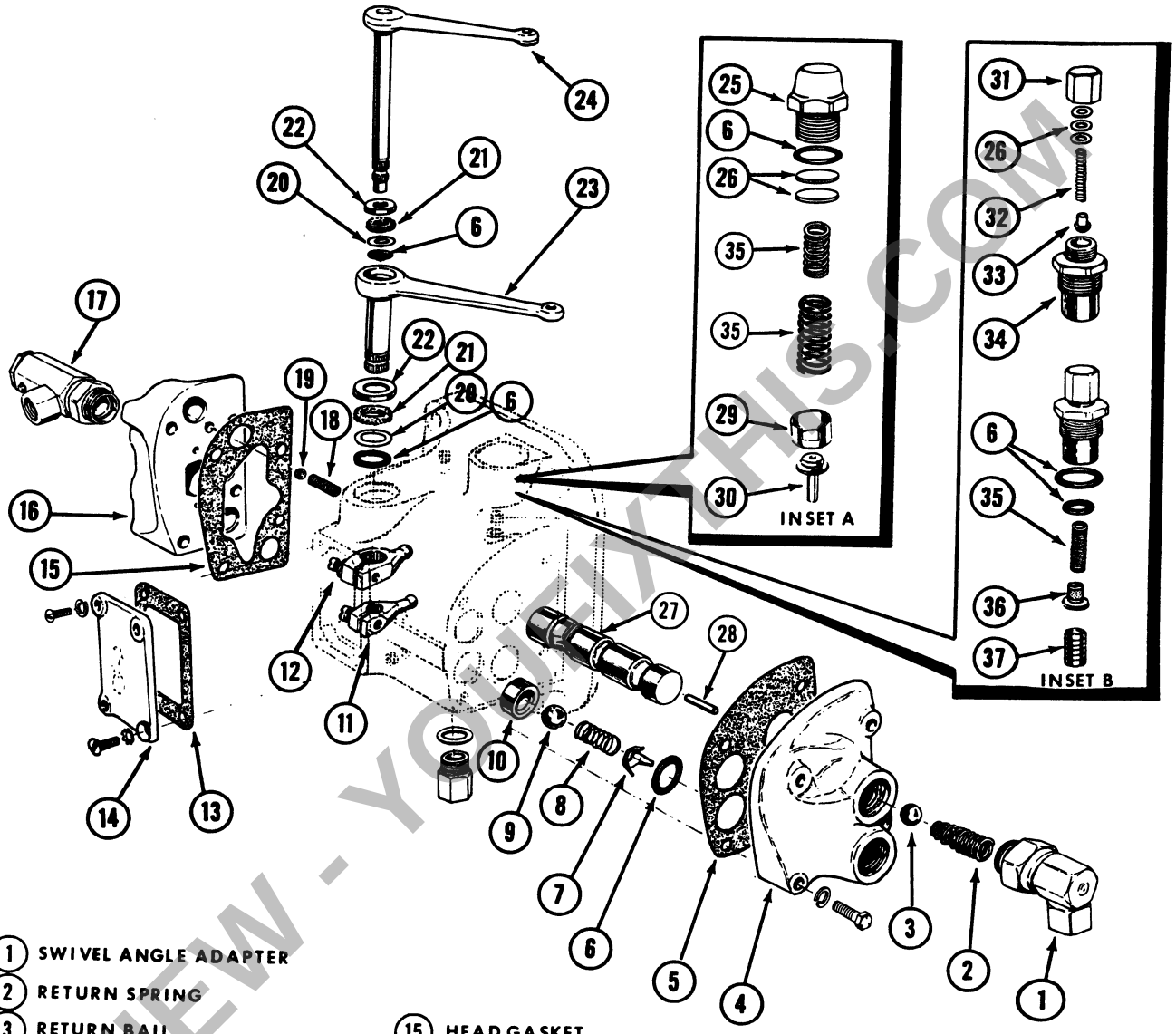


Figure A-6

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DISASSEMBLY OF CONTROL VALVE

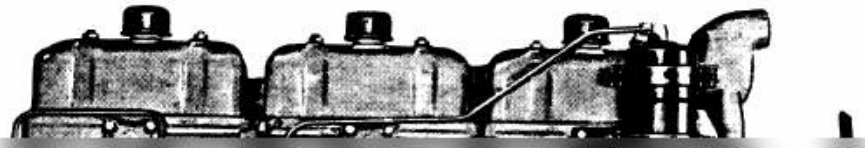


1. SWIVEL ANGLE ADAPTER
2. RETURN SPRING
3. RETURN BALL
4. RIGHT HAND HEAD
5. HEAD GASKET
6. "O" RING
7. SPRING GUIDE
8. OUTLET SPRING
9. OUTLET BALL
10. BALL SEAT
11. LEVER SHAFT ARM
12. LEVER SHAFT ARM
13. COVER GASKET
14. COVER
15. HEAD GASKET
16. LEFT HAND HEAD
17. CYLINDER SPEED REGULATOR VALVE
18. RELIEF VALVE SPRING
19. RELIEF VALVE BALL
20. FLAT WASHER
21. FELT SEAL
22. SEAL RETAINER
23. LEVER
24. LEVER
25. CAP NUT
26. SHIMS
27. CYLINDER SPOOL
28. AUXILIARY SPOOL
29. RETAINER
30. PLUNGER
31. CAP NUT
32. RELIEF VALVE SPRING
33. RELIEF VALVE POPPET
34. RELIEF VALVE BODY
35. RELIEF VALVE SPRING
36. RELIEF VALVE STRAINER
37. RELIEF VALVE PISTON

Figure D-7

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CASE FOUR AND SIX CYLINDER ENGINES





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2½" x 8" HYDRAULIC CYLINDER

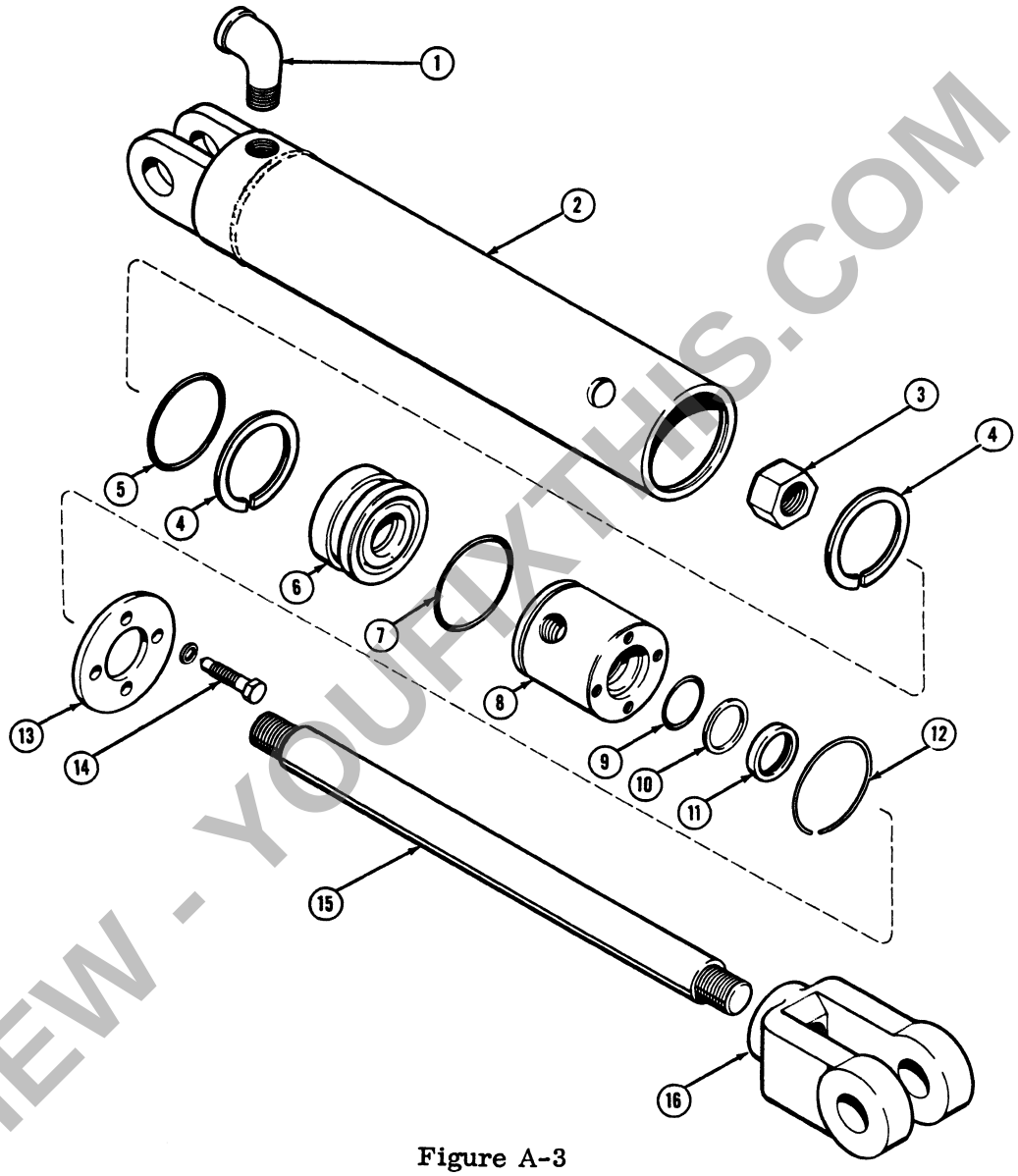


Figure A-3

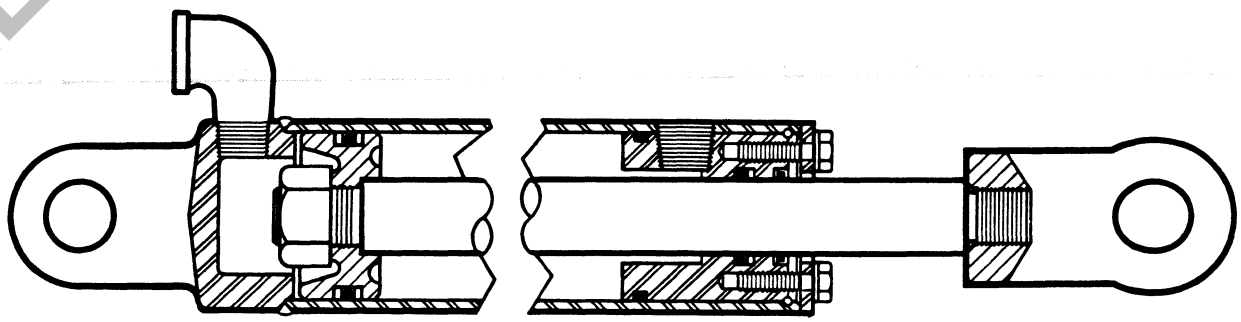


Figure A-4

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TABLE OF CONTENTS - 930 SERIES COMFORT KING

Description	Group	Section	Page
Specifications, General (engine wear limits, torque specifications)	I	C	C-1 thru C-8
Specifications, Electrical (charging circuit, cranking circuit, ignition system, wiring diagrams)	I	F	F-1 thru F-30
Diesel Engine Cylinder Head Assembly (rocker arms, manifolds, valves)	II	K	K-1 thru K-16
LP Gas Engine Cylinder Head Assembly. (rocker arms, manifolds, valves)	II	L	L-1 thru L-13
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Diesel Fuel Injection Pump (adjustments, timing, linkage)	III	I	I-33 thru I-43
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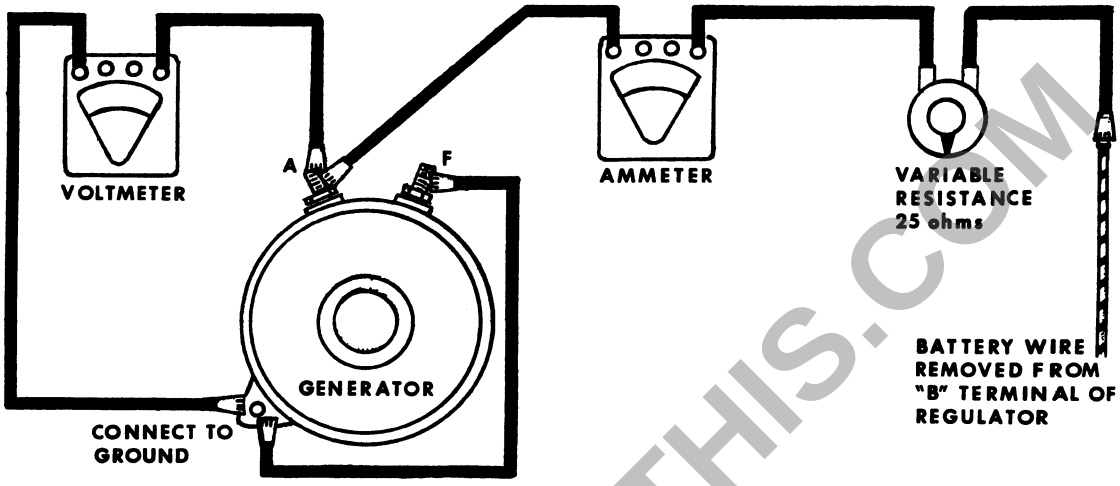
INSTRUCTIONS
FOR
REMOVAL AND INSTALLATION
OF THE
FACTORY INSTALLED OPERATORS CAB
ON THE
930 AND 1030 SERIES TRACTORS.

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GENERATOR OUT-PUT CHECK HOOK-UP



NOTE Load should be a resistance of 25 ohms.

Figure F-14. Hook Up For Generator Output Check

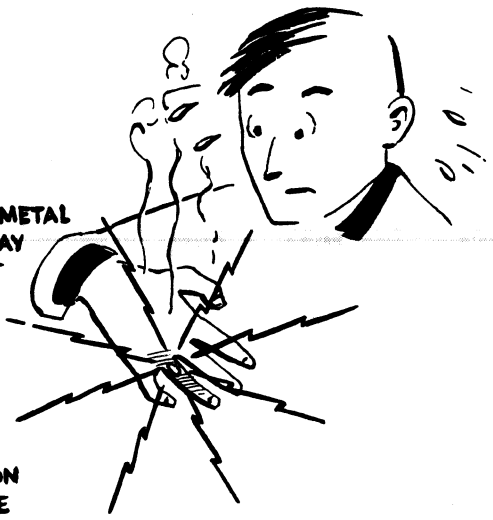
Disconnect Field and Amature wire from Generator and Battery wire from Regulator

GREEN CROSS FOR SAFETY

IMPORTANT SAFETY PRECAUTIONS THAT MUST ALWAYS BE OBSERVED WHEN WORKING AROUND ELECTRICAL SYSTEMS



NEVER SMOKE NEAR BATTERIES THAT ARE BEING CHARGED OR HAVE RECENTLY BEEN CHARGED



NEVER WEAR RINGS OR METAL WATCH BANDS AS YOU MAY GROUND A LIVE CIRCUIT



THINK OUT YOUR CIRCUIT BEFORE YOU MAKE OR BREAK A CONNECTION AS A WRONG CONNECTION CAN BE PAINFUL AND EXPENSIVE.

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INSPECTION (CONT'D)

Cast Iron Piston

Whenever you are installing a new cast iron piston in a sleeve that has seen use, or vise versa, it is advisable to check the piston clearance in the sleeve. Use long wide feeler ribbons. Refer to "Specification" Section. Proceed as follows:

1. Lubricate the piston and sleeve with a thin film of light clean engine oil.

2. Insert the feeler ribbon in the sleeve at a right angle (90 degrees) to the crankshaft, Figure M-23.

3. Insert the piston, less rings, in the sleeve (bottom side up), as shown in Figure M-23, with the piston pin holes in-line with the crankshaft. Push the piston as far as possible into the sleeve. The piston skirt must be well into the sleeve.

Repeat this check using different thickness of feeler ribbon. Refer to "Specification" Section for correct clearance.

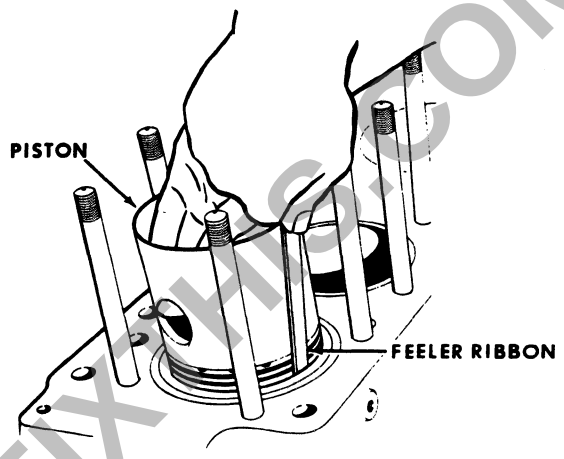


Figure M-23

Aluminum Piston

On the aluminum piston, the only accurate method of checking the piston clearance in the sleeve is by measuring both parts as follows:

1. Using a micrometer, measure the outside diameter of the piston at the top of the skirt (immediately below the oil ring) Figure M-24.

IMPORTANT

Take this measurement only on the thrust face of the piston, or perpendicular to the piston pin bore, Figure M-24.

When checking aluminum piston clearance, the temperature of the piston and engine should be as close to 70 degrees Fahrenheit as is practical. Checking piston clearance where air temperatures are extremely low or high may result in misleading readings.

Temperature affects the expansion and contraction of aluminum.

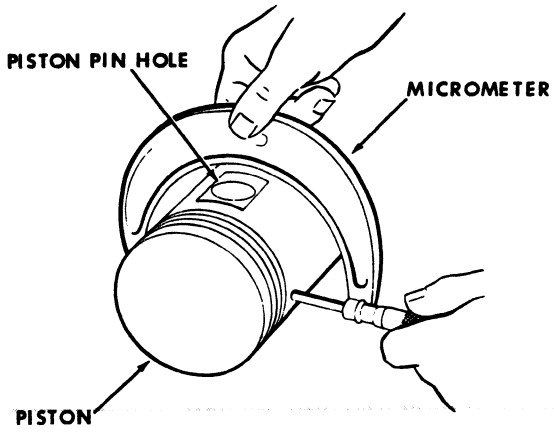
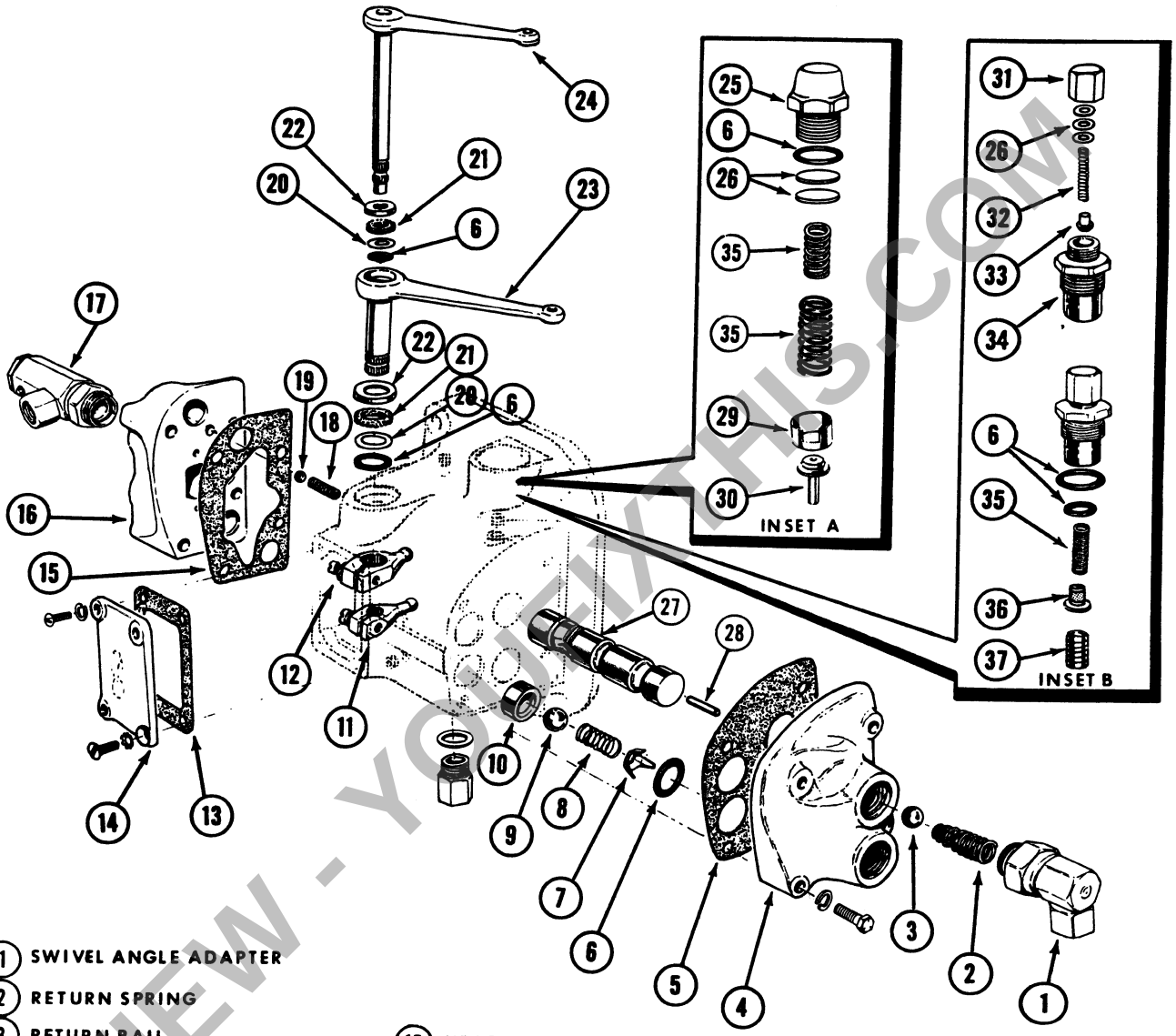


Figure M-24

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ASSEMBLY OF CONTROL VALVE



1. SWIVEL ANGLE ADAPTER
2. RETURN SPRING
3. RETURN BALL
4. RIGHT HAND HEAD
5. HEAD GASKET
6. "O" RING
7. SPRING GUIDE
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33. RELIEF VALVE POPPET
34. RELIEF VALVE BODY
35. RELIEF VALVE SPRING
36. RELIEF VALVE STRAINER
37. RELIEF VALVE PISTON

Figure D-13

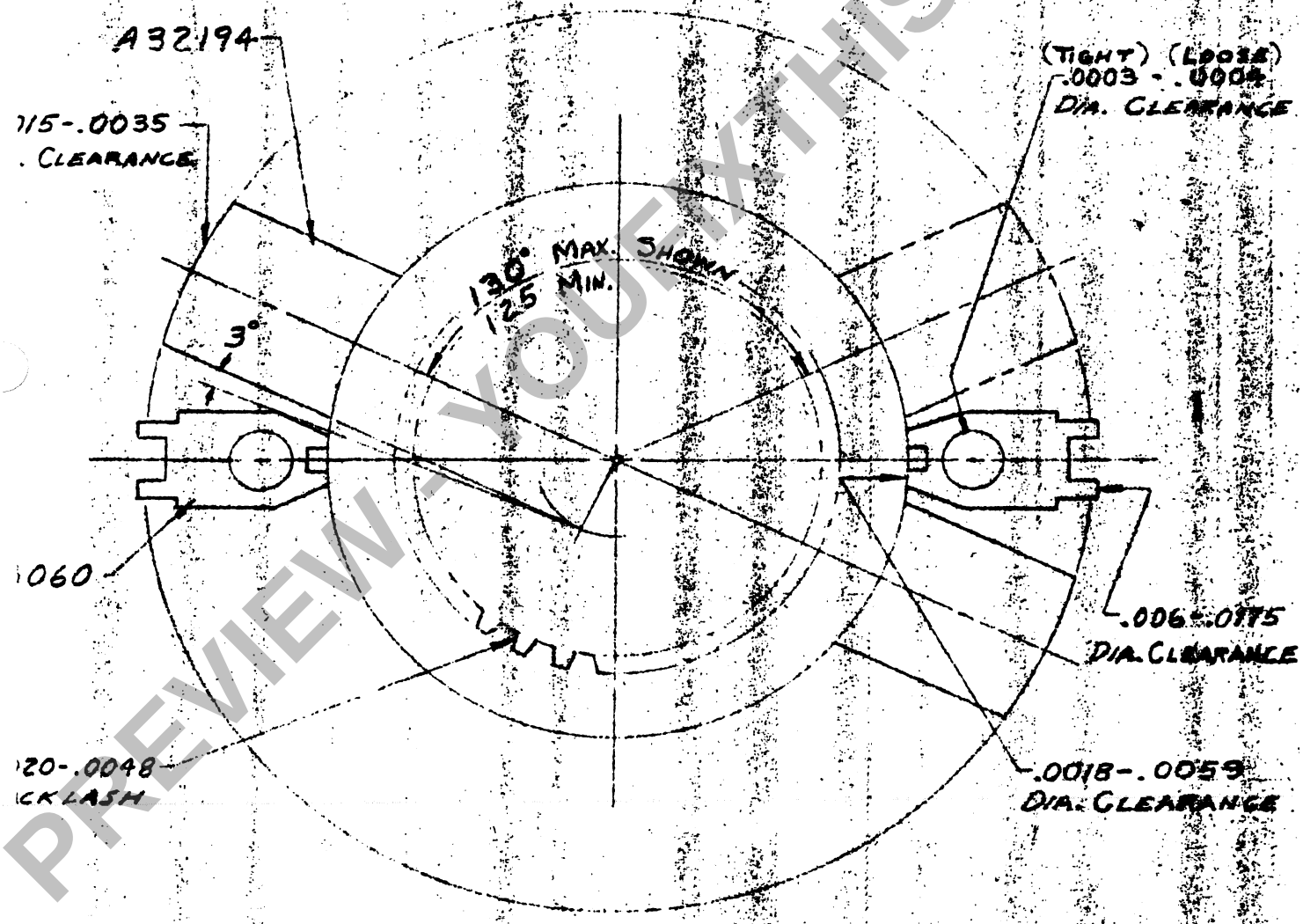
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BY K. TATE DATE 4-9-64
CHKD. BY JCR DATE

SUBJECT J. I. CASE CO. HYD. POWER STEERING VANE MOTOR A33058 (830Y – 930GP)

SHEET NO. ____ OF ____
JOB NO. ____



SHAFT DIA. @ LOWER BRG. 3.0000/2.9994 (A32186)
TOTAL VERTICAL VANE CLEARANCE .0009/.0018
SELECT FIT TO INSURE MAX. VANE CLEARANCE OF .0015
VANE HEIGHT 2.1767/2.1762

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