

384 Tractor Chassis

Service Manual

GSS-1489

Reprinted

CASE III

SERVICE MANUAL

INTERNATIONAL

384

TRACTORS

GROUP INDEX

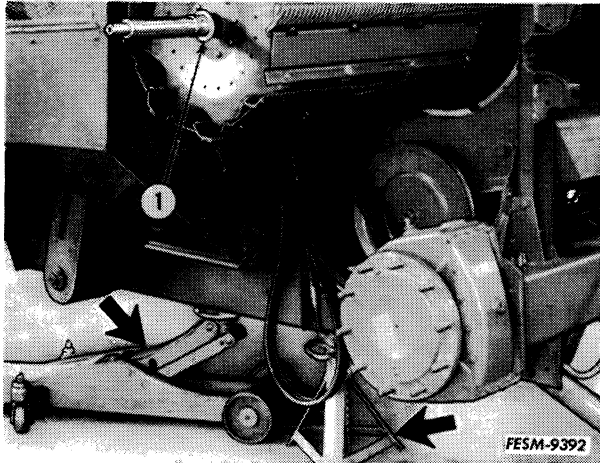
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WORK SAFELY – FOLLOW THESE RULES

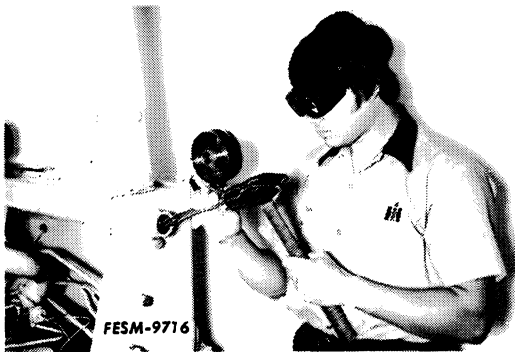


This symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions.

1. To prevent injury, do not allow children or by-standers around the machine while it is being adjusted and/or serviced.



2. Always use safety stands in conjunction with hydraulic jacks or hoists. Do not rely on the jack or hoist to carry the load, they could fail.

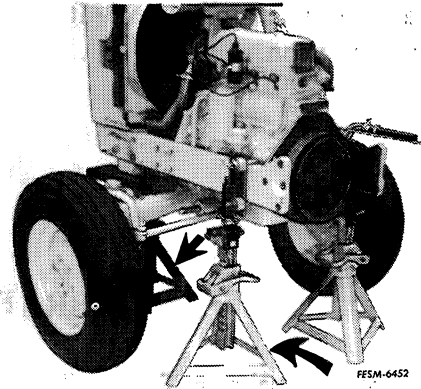


3. Always wear safety glasses when using a hammer, chisel or other tools that may cause chips to fly.

4. Keep work area organized and clean. Wipe up oil or spills of any kind. Keep tools and parts off of the floor. Eliminate the possibility of a fall which could result in a serious injury.

5. Be sure to reinstall safety devices, guards or shields after adjusting and/or servicing the machine.

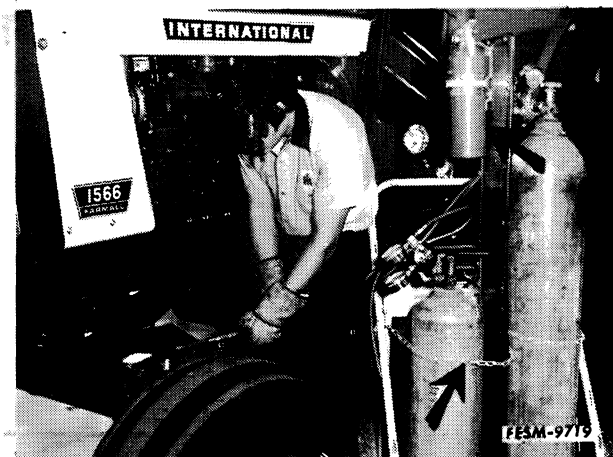
6. After servicing, be sure all tools, parts, or servicing equipment are removed from the machine.



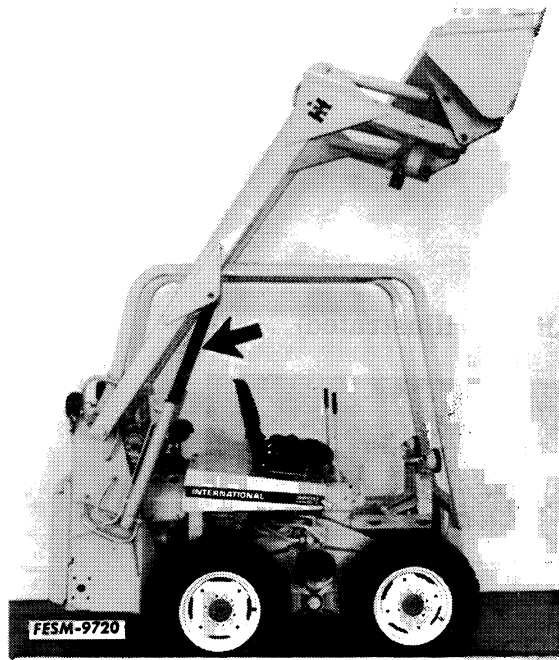
7. When splitting tractors, or disassembling machines, be sure to use safety stands and adequate supports to prevent tipping or rollover.



8. Use a safety catch on all hoist hooks. Do not take a chance, the load could slip off of the hook.



9. When using an acetylene torch always wear welding goggles and gloves. Keep a "charged" fire extinguisher within reach. Be sure the acetylene and oxygen tanks are separated by a metal shield and are chained to the cart. Do not weld or heat areas near fuel tanks or fuel lines and utilize proper shielding around hydraulic lines.



10. Always use a safety bar to block hydraulic cylinders. Never rely on the machine hydraulic system to hold when working on loaders, etc. A hydraulic line or cylinder could fail or someone could accidentally strike the control levers causing the loader to fall.

11. Electrical storage batteries give off highly inflammable hydrogen gas when charging and continue to do so for some time after receiving a steady charge. Do not under any circumstances allow an electric spark or an open flame near the battery. Always disconnect a battery cable before working on the electrical system.

12. Hydraulic fluid escaping under pressure can have enough force to penetrate the skin. Hydraulic fluid may also infect a minor cut or opening in the skin. If injured by escaping fluid, see a doctor at once. Serious infection or reaction can result if medical treatment is not given immediately.

Do not attempt to repair or tighten hoses that are under pressure, when the boom is raised, or with the tractor engine running. Cycle all hydraulic control valves to relieve all pressure before disconnecting the lines or performing other work on the hydraulic system. Make sure all connections are tight and hoses and lines are in good condition before applying pressure to the system. To locate a leak under pressure, use a small piece of cardboard or wood. Never use hands.

13. Handle gasoline with care - it is highly flammable:

- (a) Use approved gasoline container.
- (b) Never remove the fuel tank cap or fill the fuel tank when the engine is running, is hot, or indoors. Also, do not smoke when working around flammable fuel.
- (c) When refueling, keep the hose and nozzle of the funnel and container in contact with the metal of the fuel tank to avoid the possibility of an electric spark igniting the fuel. Do not overfill the fuel tank - overflow creates fire hazard. Wipe up spilled gasoline.
- (d) Replace fuel tank cap securely.

14. Always use a protective fixture when inflating tubeless tires that have been repaired or are loose on the rim. Do not inflate over 30 psi to seat the tire bead.

15. Use pullers to remove bearings, bushings, gears, cylinder sleeves, etc. when applicable. Use hammers, punches and chisels only when absolutely necessary. Then, be sure to wear safety glasses.

16. Be careful when using compressed air to dry parts. Use approved air blow guns, do not exceed 30 psi, wear safety glasses or goggles and use proper shielding to protect everyone in the work area.

17. Do not wear rings, wrist watches or loose fitting clothing when working on machinery, they could catch on moving parts causing serious injury. Wear sturdy, rough-soled work shoes. Never adjust and/or service a machine in bare feet, sandals or sneakers.

18. Excessive or repeated skin contact with sealants or solvents may cause skin irritation. In case of skin contact, remove sealant or solvent promptly by washing with soap and water.

IMPORTANT: The above is only a partial list of safe work rules. In addition, always refer to the Operator's Manual for the specific machine for additional safe work rules regarding the machine operation.

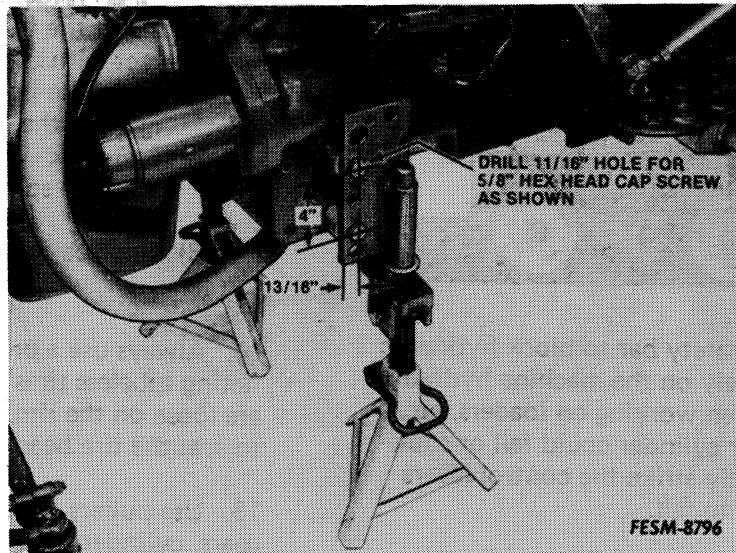
SPECIAL SERVICE TOOLS REQUIRED

GROUP 6

- FES 14-12 Compression test adapter
- FES 14-13 Swivel connector
- FES 14-14 Compression test adapter
- FES 44-10 Pre-cup aligning tool
- FES 44-11 Cylinder head aligning dowels

GROUP 7

- FES 142-1 Tractor stand adapter (modify as illustrated)



- FES 44-1 Clutch aligning tool
 - FES 44-12 Clutch release lever adjusting template
- ### GROUP 8
- FES 44-2 Countershaft rear bearing installing plate
 - FES 44-3 Transmission countershaft front bearing puller and installing tool
 - FES 44-4 Transmission countershaft nut socket
 - FES 44-5 Transmission spline shaft bearing spacer

GROUP 9

- FES 44-9 Parallel gauge block

GROUP 12

(Flo-Rater Adapters)

- FES 99-1 1/2" NPT 45° Street elbow (brass)
 - FES 99-2 1/2" NPT Tru-seal locknut
 - FES 99-3 1/2" NPT Nipple 1-1/2" length
 - FES 99-4 1/2" NPT Female connector X
 - 7/8"-14 O-ring boss with O-ring
 - FES 113 Hitch relief valve tool kit
 - FES 114 Hitch cylinder test kit
 - FES 44-6 Rockshaft seal driver
 - FES 44-8 Hydraulic control valve seat tool
- ### GROUP 13
- FES 44-7 PTO oil seal protector sleeve



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GROUP 1 GENERAL

1. INTRODUCTION

1a. GENERAL

The instructions contained in this manual are for the guidance of servicemen responsible for the repair and overhaul of the International 384 Diesel Tractor.

Throughout the manual the terms LEFT, RIGHT, FRONT and REAR are applicable to a person seated in the driver's seat and facing the radiator.

1b. SERVICE TOOLS

International machines are so designed that few special tools are required. However, where the use of special tools will facilitate work such equipment is mentioned in the specifications for the relevant GROUP. If this equipment can be easily made in the workshop, dimensional drawings are provided in the text.

1c. SERVICE PARTS

I.H. machines deserve genuine I.H. service parts. The best material obtainable and experience gained through many years of manufacturing enable the International Harvester Company to produce quality that will not be found in imitation or "will fit" components. For the correct service parts always refer to the Parts Catalogue. These catalogues are continually brought up to date by issuing revisions.

1d. SERIAL NUMBERS

The engine serial number is stamped on the right side of the crankcase. The tractor serial number is stamped on a nameplate attached to the right side of the clutch housing.

1e. ADJUSTMENTS

Where adjustments are necessary the GROUP will contain the relevant information. Reference to these paragraphs prior to dismantling a unit may prevent unnecessary work being carried out.

1f. ILLUSTRATION REFERENCES

The illustration references used in this manual are of the type (1-4). This refers to the item marked 1 in Fig. 4 of the GROUP in which the reference appears. Where more than one item is referred to the reference will be of the type (1 & 2-4).

Where reference is made to illustrations in another GROUP the reference will be followed by the GROUP number and if the GROUP is divided into sections this will be indicated by the Section letter after the GROUP number (1-4 GROUP 6B).

1g. INSPECTION AND REPAIR

The following notes should be used as a general guide to inspection and repair. Where a special procedure is necessary for a component or assembly full details will be found in the relevant paragraph of the GROUP.

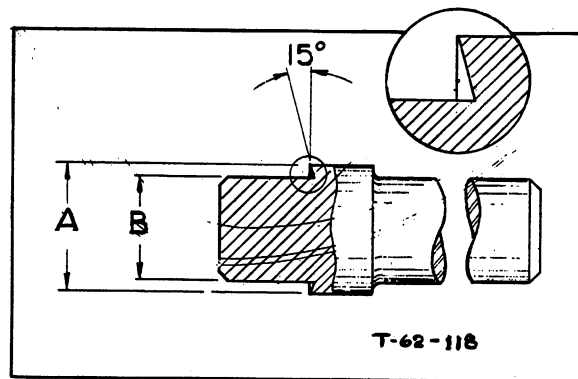
(a) RELIEF VALVES

Whenever a relief valve is re-set, or a new relief valve fitted, the system pressure should be checked as detailed in the relevant GROUP of this Service Manual.

(b) BEARINGS

Inspect for evidence of overheating, cracks, scores, pitting and general wear and renew if necessary. Serviceable bearings must be cleaned, soaked in oil and wrapped in grease proof material until required for use.

When installing needle bearings, have the manufacturer's marking outward and use a dolly made to the dimensions in the diagram.



A = 1.5 mm (0.62 in) less than outer diameter

B = 0.07 mm (0.003 in) less than inner bore

(c) PINS AND BUSHES

Inspect for damage, scoring and pitting, check with mating part for wear. Renew as necessary.

**GROUP 1
GENERAL**

(d) CLEAVISES AND PINS

Check with mating part for wear.

(e) SEALERS

ALWAYS use new gaskets and oil seals during assembly and installation taking care not to damage them.

Pack lip type seals with grease and use sleeves or tape whenever a seal has to be passed over splines or threads. Felt dust seals must be soaked in oil before assembly.

The crankcase oil filler tube and/or dipstick tube and all studs and bolts which are assembled entering oil chambers are to be coated with thread sealing compound unless otherwise stated.

Where special fittings are encountered the dimensions should be varied to suit.

'O' rings should be lubricated with the type of oil specified for the particular system.

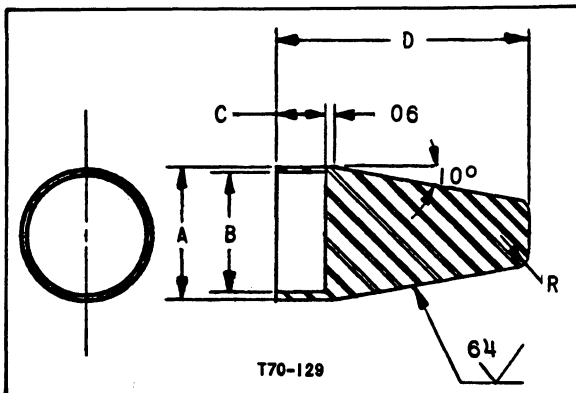
If a backing ring is employed this must be installed on the low pressure side of the 'O' ring.

Use sleeves or tape when installing 'O' rings over splines or serrations. Ensure that the 'O' ring is not left in a twisted condition. A mould mark is usually visible and will indicate if the ring is twisted.

Tighten plugs and swivel nuts sealed by an 'O' ring to the following torque:

(f) 'O' RINGS

When installing 'O' rings over the threads of standard pipe fittings a tool made to the dimensions in the diagram MUST be used.



PIPE SIZE	THREAD SIZE & T.P.I.	A ^{±.005}	B ^{±.005}	C ^{±.010}	D ^{±.030}
1/4	7/16-20	.523	.443	.280	1.000
5/16	1/2-20	.585	.506	.280	1.000
3/8	9/16-18	.648	.568	.300	1.500
1/2	3/4-16	.835	.756	.330	1.500
5/8	7/8-14	.960	.881	.380	1.500
3/4	1-1/16-12	1.147	1.068	.465	2.500
7/8	1-3/16-12	1.273	1.193	.465	2.500
1	1-5/16-12	1.397	1.318	.465	2.500
1-1/4	1-5/8-12	1.711	1.631	.465	2.500

JIC 37° SEAT				
THREAD SIZE	MIN.		MAX.	
	kgm	lbft	kgm	lbft
7/16 - 20	0.83	6	1.38	10
1/2 - 20	1.38	10	2.07	15
9/16 - 18	2.07	15	2.76	20
3/4 - 16	3.46	25	4.14	30
7/8 - 14	4.84	35	5.53	40
1-1/16 - 12	8.30	60	9.67	70
1-3/16 - 12	9.67	70	11.06	80
1-5/16 - 12	11.06	80	12.44	90
1-5/8 - 12	13.14	95	15.89	115
1-7/8 - 12	16.59	120	19.35	140
2-1/2 - 12	34.56	250	41.47	300

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(g) GEARS AND SPLINES

Check splines with their mating parts for wear. Check gears and splines for pitting, burrs, broken or missing teeth. Burrs can be removed with a fine carborundum stone but care must be taken to remove only the burr and that the gear or spline profile is not altered.

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