



INTERNATIONAL HARVESTER SHOP MANUAL SERIES:

B-275

B-414

B-354

B-364

B-384

B-424

B-444

B-2424

B-2444

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SHOP MANUAL

INTERNATIONAL HARVESTER

SERIES B-275-B-414-354-364-384-424-444-2424-2444

All tractors are powered by four cylinder, four cycle engines. The Series B-275 tractors are equipped with a 144 cubic inch displacement diesel engine while the Series B-414 is available with either a 154 cubic inch displacement diesel engine or a 144 cubic inch displacement gasoline engine. Series 364 and 384 have a diesel 154 cubic inch displacement engine. Series 354 has a 144 cubic inch displacement engine in both diesel and gasoline models. Series 424 and 2424 are available with either a 154 cubic inch displacement diesel engine or a 146 cubic inch displacement gasoline engine. Series 444 and 2444 are available with either a 154 cubic inch displacement diesel engine or a 153 cubic inch displacement gasoline engine. A dual range transmission is standard equipment on all tractors and provides eight forward and two reverse speeds. In addition, the Series B-414, 364, 384, 424, 444, 2424 and 2444 tractors have available a forward and reverse transmission designed to work in conjunction with the main tractor transmission.

Engine serial number is stamped on a pad on right side of engine crankcase. Tractor serial number is stamped on a name plate on the right side of the clutch housing.

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SERVICE DATA

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GENERAL					
Engine Make	Own	Own	Own	Own	Own
Number of Cylinders	4	4	4	4	4
Bore—Inches	3-3/8	3½	3-3/8	3-3/8	3-3/8
Stroke—Inches	4	4	4	4-1/16	4¼
Displacement—Cubic Inches	144	154	144	146	153
Compression Ratio	19.3:1 (B-275) 20.1:1 (354)	23:1	6.3:1	7.6:1	7.7:1
Compression Pressure at 200 rpm					
Cranking Speed	330-335	445-470	80-105	180	180
Cylinder Sleeves Wet or Dry?	Wet	Wet	Wet	None	None
Forward Speeds—Number of	8	8	8	8	8
Main Bearings—Number of	5	5	5	3	3
Alternator, Generator and					
Regulator Make	Lucas	Delco-Remy (1)	Lucas	Delco-Remy	Delco-Remy
Starter Make	Lucas	Delco-Remy (1)	Lucas	Delco-Remy	Delco-Remy
Distributor Make			Lucas (2)	IH	IH

(1) B-414, 364 and 384 Lucas. (2) 354 Delco-Remy.

SERVICE DATA CONT.

	Series B-275, 354 Diesel	Series 424, 2424, 444, 2444, B-414, 364, 384 Diesel	Series B-414, 354 Non-Diesel	Series 424, 2424 Non-Diesel	Series 444, 2444 Non-Diesel
TUNE-UP					
Firing Order	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2
Valve Tappet Gap (Hot)	.020	.020	.020	—In. 0.014-Ex. 0.020—	0.020
Valve Face and Seat Angle	45°	45°	45°	45°	45°
Breaker Contact Gap			0.014	0.020	0.020
Distributor Timing—Retard			5° BTDC	TDC	TDC
Distributor Timing—Advanced			39° BTDC	17° BTDC	17° BTDC
Timing Mark Location	Crankshaft Pulley	Flywheel	Crankshaft Pulley		
Injection Pump Make	C.A.V.	C.A.V.			
Injection Pump Model	BPE or DPA	DPA			
Injection Pump Timing—Static	20° BTDC	16° BTDC			
Injection Nozzle Make	C.A.V.	C.A.V.			
Injection Nozzle Model	BDN8S1(3)	BDN8S1(3)			
Injection Nozzle Pop Pressure	See Par. 95	See Par. 95			
Spark Plug Electrode Gap			0.024	0.023	0.023
Carburetor Make			Zenith	Marvel Schebler	Marvel Schebler
Carburetor Model			VNN or VNP	TSX896	TSX896
Engine High Idle Rpm	See	See	2200	2200	2200
Engine Rated Rpm	Paragraph 113	Paragraph 113	2000	2000	2000
Engine Low Idle Rpm	113	113	500-525	425	425
(3) 354, 364 and 384—BDN-4SD.					

SIZES—CAPACITIES—CLEARANCES

Crankshaft Main Journal Diameter	2.124-2.125	2.124-2.125	2.124-2.125	2.6235-2.6245	2.6235-2.6245
Crankshaft Rod Journal Diameter	1.7495-1.750	1.7495-1.750	1.7495-1.750	2.059-2.060	2.059-2.060
Piston Pin Diameter	1.1021-1.1024	1.1021-1.1024	1.1021-1.1024	0.8591-0.8593	0.8591-0.8593
Valve Stem Diameter	0.341-0.342	0.341-0.342	0.341-0.342	0.3405-0.3415	0.3405-0.3415
Rocker Arm Shaft Diameter	0.748-0.749	0.748-0.749	0.748-0.749	0.748-0.749	0.748-0.749
Camshaft Journal Diameter, No. 1	1.811-1.812	1.811-1.812	1.811-1.812	1.811-1.812	1.811-1.812
Camshaft Journal Diameter, No. 2	1.577-1.578	1.577-1.578	1.577-1.578	1.577-1.578	1.577-1.578
Camshaft Journal Diameter, No. 3	1.499-1.500	1.499-1.500	1.499-1.500	1.499-1.500	1.499-1.500
Main Bearings—Diametral Clearance	0.002-0.004	0.002-0.004	0.002-0.004	0.0009-0.0039	0.009-0.0039
Rod Bearings—Diametral Clearance	0.001-0.0029	0.001-0.0029	0.001-0.0029	0.0009-0.0039	0.0009-0.0039
Camshaft Bearings—Diametral Clearance	0.0015-0.0035	0.0015-0.0035	0.0015-0.0035	0.0009-0.0054	0.0009-0.0054
Piston Skirt Clearance	0.0031-0.0039(4)	0.0031-0.0039	0.0031-0.0039	0.001-0.002	0.001-0.002
Crankshaft End Play	0.004-0.008	0.004-0.008	0.004-0.008	0.004-0.010	0.004-0.010
Camshaft End Play	0.008-0.017	0.008-0.017	0.008-0.017	0.003-0.012	0.003-0.012
Cooling System—Quarts	10.8	10.8(5)	10.8(5)	13	13
Crankcase Oil—Quarts	8(6)	8.3	8(7)	5½	5½
Transmission and Differential— Quarts	20	20	20	20	20
Hydraulic Reservoir—Gallons	3	3	3	3	3
(4) B-275—0.0048-0.0056. (5) B-414—9.5. (6) B-275—5.4. (7) B-414—5.					

TIGHTENING TORQUES—FT.-LBS.

Cylinder Head	75-80(8)	75-80	75-80	80-90	80-90
Main Bearing Bolts			See Paragraphs 70 and 80		
Connecting Rod Bolts	40-45(9)	40-45	40-45	43-49	43-49
(8) B-275—70-75. (9) B-275—30-35.					

FRONT SYSTEM

AXLE MAIN MEMBER

Series B-275-B-414-354-364-384

1. The axle main member pivots on pin (5—Fig. 1 or 2) which is retained in front axle support (7) by a groove pin

or bolt (9). Diameter of pivot pin is 1.115-1.116. Press new bushing (4) into place and ream to 1.118-1.120. Normal operating clearance of pivot pin in the bushing is 0.002-0.005.

To renew the axle pivot pin and bushings on Series B-275 and B-414, raise hood and remove the cotter pins from rear of stay rod slides, then disconnect headlight wires from con-

nectors located on forward side of front support. Unbolt and remove hood, being careful not to lose the two pivot spacers.

On Series 354, 364 and 384, remove hood, grille, grille support and front end weight support.

On models equipped with stay rod attachment, unbolt and remove stay rod ball socket cap (3—Fig. 3). Do not

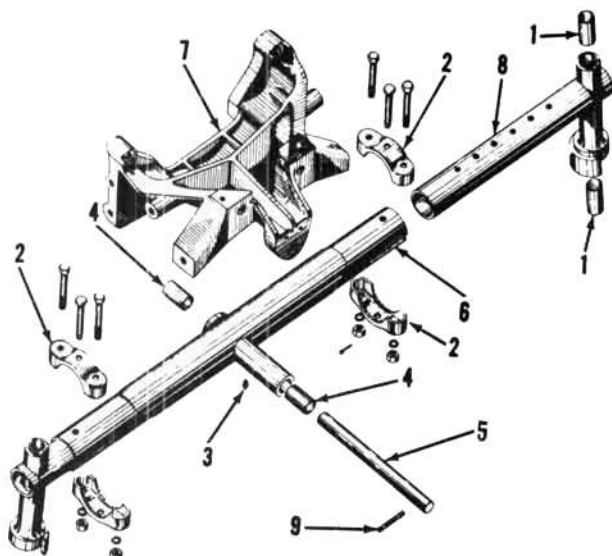


Fig. 1—Exploded view of Series B-275 adjustable front axle and component parts. Bushings (1 and 4) are pre-sized. Shims (10—Fig. 2) are also used with this axle.

1. Knuckle bushings
2. Axle clamps
3. Grease fitting
4. Pivot bushings
5. Pivot pin
6. Axle main member
7. Front support
8. Axle extension
9. Groove pin

damage shim (or shims) (4) between ball socket and socket cap.

On all models, disconnect drag link or power steering cylinder from left steering arm, then drive out the groove pin or bolt (9—Fig. 1 or 2) which retains axle pivot pin (5) in front support (7). Jack up tractor enough to take the weight off the front axle, drive pivot pin forward out of front support and remove the axle and wheels assembly. Do not damage the shim (or shims) which are between axle main member and front support. Shims are available in thicknesses of 0.002, 0.0032, 0.0048, 0.010, 0.028 and 0.036. Any further disassembly is evident.

Series 424-444-2424-2444

2. The axle main member (18—Fig. 4, 5 and 6) pivots on pin (17) which is retained in lower bolster (20) by a cap screw. The pre-sized pivot bushing (19) is pressed into position and can be removed after the axle main member has been removed from tractor. Normal clearance between pivot pin and bushing is 0.008-0.014.

To remove the axle main member assembly, support front of tractor using a jack under the clutch housing. Disconnect tie-rods from steering arm at center of tractor. On models equipped with standard axle (Fig. 4) or heavy duty axle (Fig. 6) and with power steering, disconnect hydraulic cylinders from axle main member. On models equipped with narrow tread axle (Fig. 5) and with power steering, unpin anchor end of cylinder and unbolt and remove lower cylinder arm (33). Remove cylinder or secure with wire on left side of tractor. Then on all models, adjust the height of the jack to

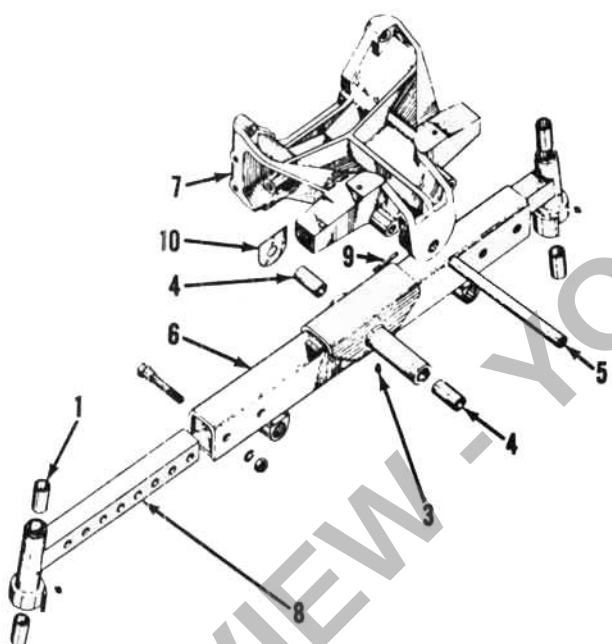


Fig. 2—Exploded view of Series B-414, 354, 364 and 384 adjustable front axle and component parts.

1. Knuckle bushings
3. Grease fitting
4. Pivot bushings
5. Pivot pin
6. Axle main member
7. Front support
8. Axle extension
9. Groove pin
10. Shims

Fig. 4—Exploded view of Series 424, 444, 2424 and 2444 standard adjustable front axle and component parts.

1. Steering knuckle
2. Woodruff key
3. Felt washer
4. Thrust bearing
5. Bushing
6. Axle extension
8. Steering arm R.H.
9. Tie rod assy. (2 used)
10. Ball socket
11. Ball
12. Shim
13. Cap
14. Lock plate
15. Clamp
17. Pivot pin
18. Axle main member
19. Pivot bushing
20. Lower bolster
22. Tie rod extension
24. Tube
25. Clamp
26. Tie rod end
27. Steering arm L.H.
28. Spacer

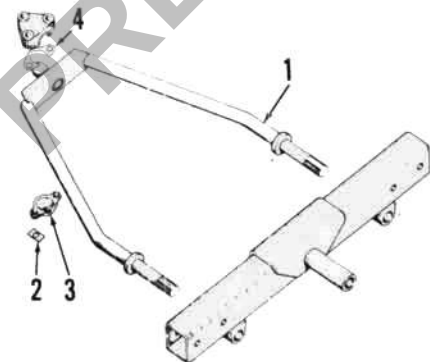
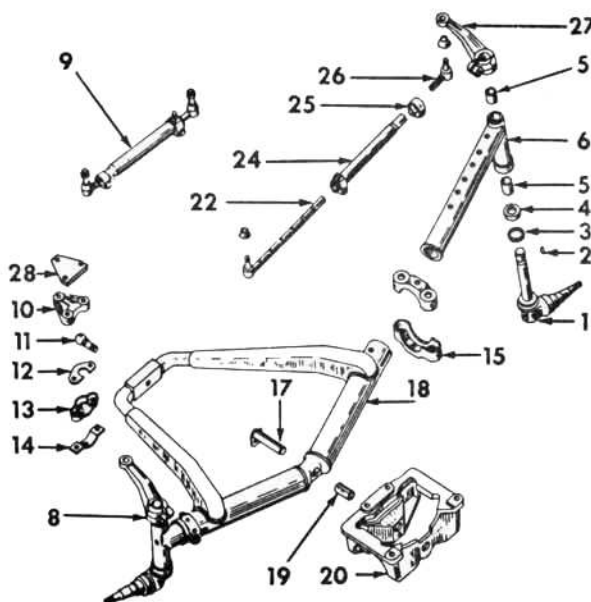


Fig. 3—Power steering stay rod attachment.

1. Stay rod
2. Lock plate
3. Socket cap
4. Shim



remove weight from front tires. Remove pivot pin retaining cap screw and drive out pivot pin. Unbolt and remove stay rod ball socket cap (13). Raise front of tractor and roll front axle assembly forward from under tractor.

STEERING KNUCKLES

Series B-275-B-414-354-364-384

3. The steering knuckles can be removed from the axle extensions after steering arms and wheel assemblies have been removed.

After being pressed into place, ream inside diameter of new knuckle bushings (1—Fig. 1 or 2) to 1.359-1.360. Outside shaft diameter of new steering knuckle (8 or 11—Fig. 7) is 1.357-1.358. Operating clearance between knuckle shafts and bushings is 0.001-0.003. Use a piloted drift when installing bushings and install same with outer ends flush with bore.

Series 424-444-2424-2444

4. To remove the steering knuckles (1—Fig. 4 or 5) from tractors equipped with adjustable front axle, first support front of tractor and remove front wheel assemblies. Disconnect tie rods (9) from steering arms (8 and 27) and remove the arms from steering knuckles.

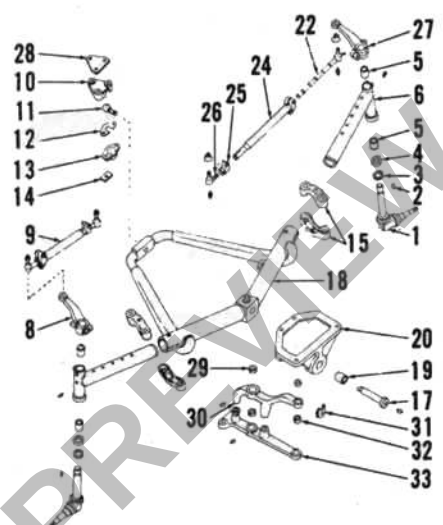


Fig. 5—Exploded view of Series 424, 444, 2424 and 2444 narrow tread adjustable front axle and component parts.

1. Steering knuckle
2. Woodruff key
3. Felt washer
4. Thrust bearing
5. Bushing
6. Axle extension
8. Steering arm R.H.
9. Tie rod assy.
10. Ball socket
11. Ball
12. Shim
13. Cap
14. Lock plate
15. Axle clamp
17. Pivot pin
18. Axle main member
19. Pivot bushing
20. Lower bolster
22. Tie rod extension
24. Tube
25. Clamp
26. Tie rod end
27. Steering arm L.H.
28. Spacer
29. Rear bushing
30. Cylinder arm (upper)
31. Pivot pin lock
32. Front bushing
33. Cylinder arm (lower)

Remove Woodruff keys and lower steering knuckles out of axle.

The procedure for removing steering knuckles (1—Fig. 6) from the non-adjustable heavy duty axle is the same as the adjustable axle with the following exceptions: The steering arms and steering knuckles are splined instead of having Woodruff keys. Snap rings (7) must also be removed before steering knuckles can be removed from axle.

Steering knuckle bushings (5—Fig. 4, 5 and 6) should be installed with a closely fitting mandrel and sized after installation, if necessary, to provide a recommended clearance of 0.002-0.004

for the steering knuckle.

When installing thrust bearings (4) on steering knuckles, make certain that open end of outer race is facing downward.

TIE-ROD, DRAG LINK AND TOE-IN

All Models

5. On early B-275 models the tie-rod and drag link ends are of the non-adjustable type and excessive wear is corrected by renewal of the complete tie-rod and/or drag link. On later B-275

Fig. 6—Exploded view of Series 424, 444, 2424 and 2444 heavy duty non-adjustable front axle and component parts.

1. Steering knuckle
3. Felt washer
4. Thrust bearing
5. Bushing
7. Snap ring
8. Steering arm R.H.
9. Tie rod assy.
10. Ball socket
11. Ball
12. Shim
13. Cap
14. Lock plate
17. Pivot pin
18. Axle main member
19. Pivot bushing
20. Lower bolster
24. Tube
25. Clamp
26. Tie rod end
27. Steering arm L.H.
28. Spacer

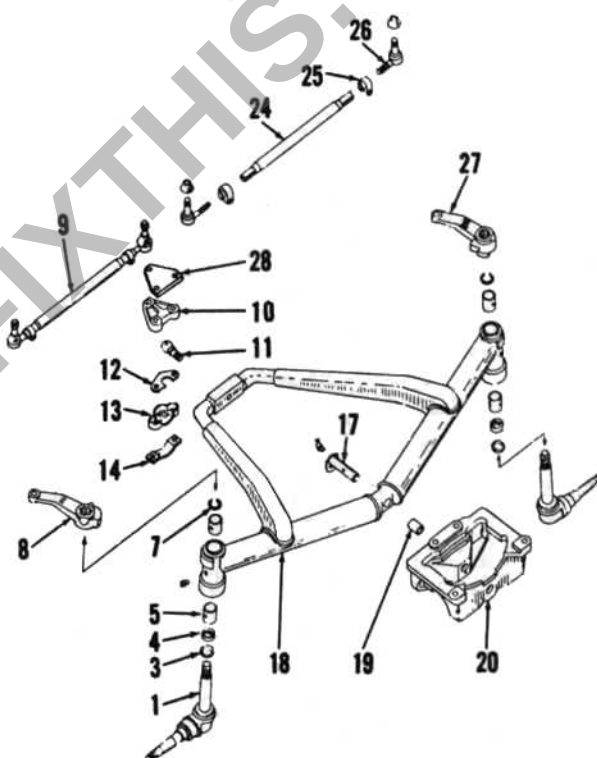
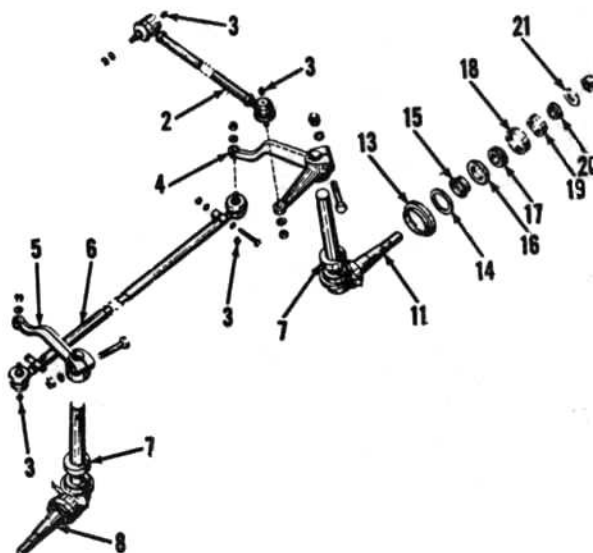


Fig. 7—Exploded view of Series B-275, B-414, 354, 364 and 384 steering knuckles, steering arms, tie rod and drag link used on models with no power steering. Models with power steering are similar.

2. Drag link
3. Grease fitting
4. L.H. steering arm
5. R.H. steering arm
6. Tie rod
7. Thrust bearing
8. R.H. steering knuckle
11. L.H. steering knuckle
13. Dust shield
14. Felt washer
15. Bearing spacer
16. Oil seal
17. Bearing cone
18. Bearing cup
19. Bearing cup
20. Bearing cone
21. Retainer washer



LUBRICATION AND BLEEDING

Series B-414-424-444-2424-2444-354-364-384

14. The hydraulic lift housing serves as the fluid reservoir for both the power steering system and the hydraulic lift system. Capacity of the reservoir is 3.0 gallons. Recommended fluid is IH "Hy-Tran" fluid.

To bleed the power steering system on B-414, 354, 364 and 384 tractors, fill reservoir to bottom of filler hole, start engine and cycle the steering system from lock to lock position until all air is bled from system. Recheck fluid level in reservoir and add fluid as required.

On Models 424, 444, 2424 and 2444, fill reservoir to proper level and then, start engine and run at low idle speed. Rotate steering wheel (hand pump) as rapidly as possible in order to activate the control valve and continue to rotate the steering wheel until the front wheels reach the stop in the direction in which the steering wheel is being turned. Now quickly reverse the direction of steering wheel and follow same procedure until front wheels reach stop in opposite direction. Continue to turn front wheels from lock to lock until steering wheel has no wheel spin (free wheeling) and has a solid feel with no skips or sponginess. Check and add fluid to reservoir, if necessary.

TROUBLESHOOTING

Series B-414-354-364-384

15. Some of the troubles that may arise in the operation of the power steering system and their possible causes are given as follows:

1. Loss of Power Assist.
 - a. Fluid level low.
 - b. Connections loose or damaged.
 - c. Relief valve sticking.
 - d. Power cylinder internal parts worn.
 - e. Control valve sticking.
 - f. Low pump output.
2. Binding.
 - a. Power cylinder internal parts worn.
 - b. Ball pin binding.
 - c. Control valve sticking.
 - d. Worn ball pin cups.
 - e. Loose locating sleeve.
3. Heavy Steering.
 - a. Relief valve sticking.
 - b. Power cylinder internal parts worn.
 - c. Control valve sticking.
 - d. Worn ball pin cups.
 - e. Loose locating sleeve.
 - f. Low pump output.
4. Noisy Operation.
 - a. Fluid level low.

- b. Relief valve sticking.
- c. Control valve sticking.
5. Steering Chatter.
 - a. Worn piston rod ball cups.
 - b. Loose reaction bracket.

Series 424-444-2424-2444

16. The following list shows some of

the troubles, and their possible causes, which may occur in the operation of the Hydrostatic steering system.

1. No Power Steering or Steers Slowly.
 - a. Excessive load on front wheels and/or air pressure low in front tires.

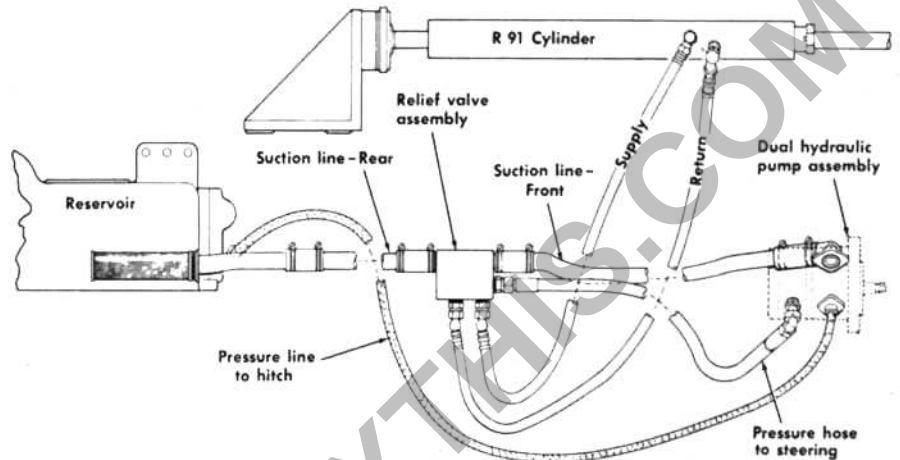


Fig. 13—View showing general arrangement of power steering components used on all Series 354, 364, 384 and Series B-414 S/N 21196 and later. On tractors equipped with R92 cylinder, supply and return hoses are connected to cylinder in reverse of connections shown.

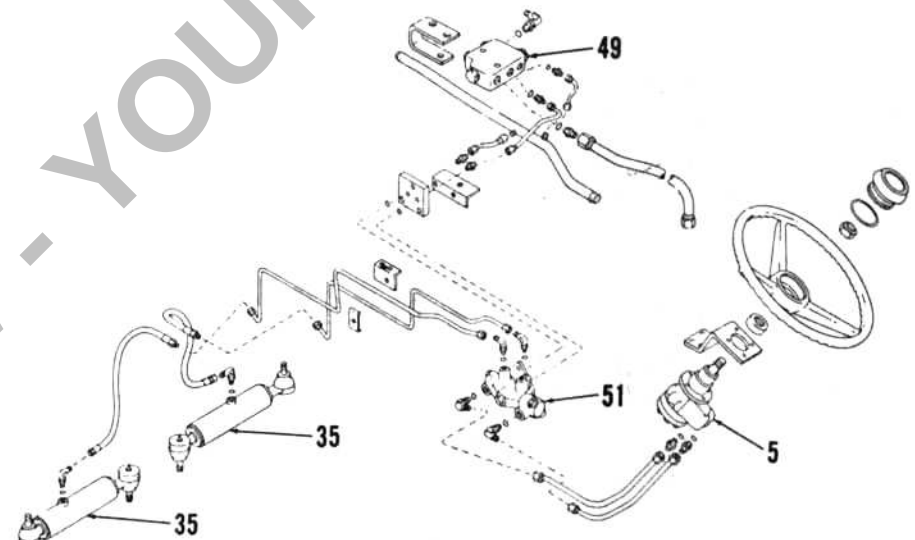


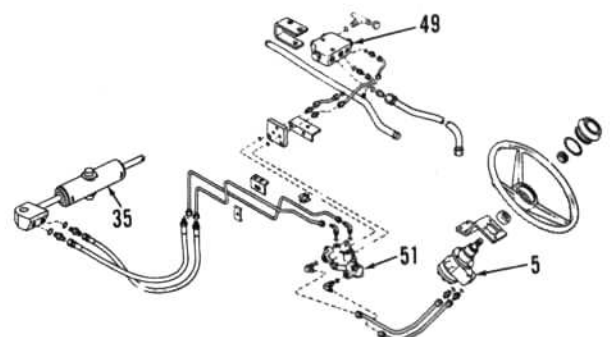
Fig. 14—Schematic view showing the general arrangement of the power steering system components of Series 424, 444, 2424 and 2444 used with front axes shown in Figs. 4 and 6.

5. Hand pump
35. Steering cylinder

49. Flow divider valve
51. Control (pilot) valve

Fig. 15—Schematic view showing the general arrangement of the power steering system components used on Series 424, 444, 2424 and 2444 equipped with the narrow tread front axle shown in Fig. 5.

5. Hand pump
35. Steering cylinder
49. Flow divider valve
51. Control (pilot) valve



alternator halves. Remove mounting bolts and separate alternator. Separate stator from slip ring end bracket and rotor assembly from drive end bracket. Remove drive pulley, fan and shaft key. Then press rotor shaft from front bearing. Unsolder field winding connections and remove slip ring. Then press off rear bearing. To reassemble, reverse disassembly process. Use only "M" grade 45-55 resin-cored solder to attach stator wire to diode pins (Fig. 79). Torque alternator mounting bolts to 55 in. lbs.

Series B-414 Non-Diesel

136. DISTRIBUTOR AND IGNITION TIMING. Lucas distributor is used and specifications are as follows:

ModelD3A4/LT
Breaker contact gap (in.).....0.014
Breaker arm spring
pressure (oz.).....28-34
Advance Data*

Start advance5 at 500

Maximum advance19.5 at 1100

*Advance data is in distributor degrees and rpm. Double the listed values for flywheel degrees and rpm.

Static timing should occur at 5 degrees BTDC. The rear flange of the crankshaft pulley is marked with a TDC mark (notch) and may or may not have an IGN. (5 degrees) mark (notch). If pulley does not have the IGN. mark, add such a mark 9/32-in. before the TDC mark.

NOTE: If advance timing is to be checked with a timing light, add an additional mark (notch) 2-7/32 inches ahead of the TDC mark at this time. This mark will indicate the 39 degrees BTDC advance timing specified for the engine.

To set static timing, proceed as follows: Check to see that distributor breaker points are in good condition and set at 0.014, then turn engine until number one piston is coming up on compression stroke. Continue to turn engine until the 5 degree mark on crankshaft pulley is aligned with timing pointer. Loosen distributor mounting, pull spark plug wire from number one spark plug and turn on ignition switch. Hold disconnected spark plug wire about 1/8-in. from a clean point on engine, then rotate distributor body clockwise until a spark jumps between the spark plug wire and engine. Tighten distributor mounting at this point.

NOTE: Always approach the number one cylinder firing position by rotating distributor body in the direction oppo-

site to breaker cam rotation (clockwise). If necessary, turn distributor body counter-clockwise past timing point, then set timing by turning distributor body clockwise.

Turn ignition switch off and reinstall the number one spark plug wire.

If running timing is to be checked

with a timing light, proceed as follows: Be sure the advance timing mark (2-7/32 in. before TDC) has been added to crankshaft pulley. Attach timing light, start engine and direct timing light at timing pointer. Timing pointer should be aligned with the advance timing mark (39 degrees) when engine is operating at high idle (2200 rpm).

Fig. 79—Soldering stator wire to diode pins. Use long nose pliers as thermal shunt to avoid damage to diodes.

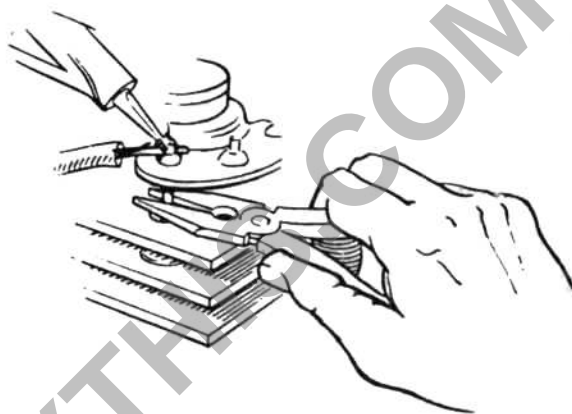
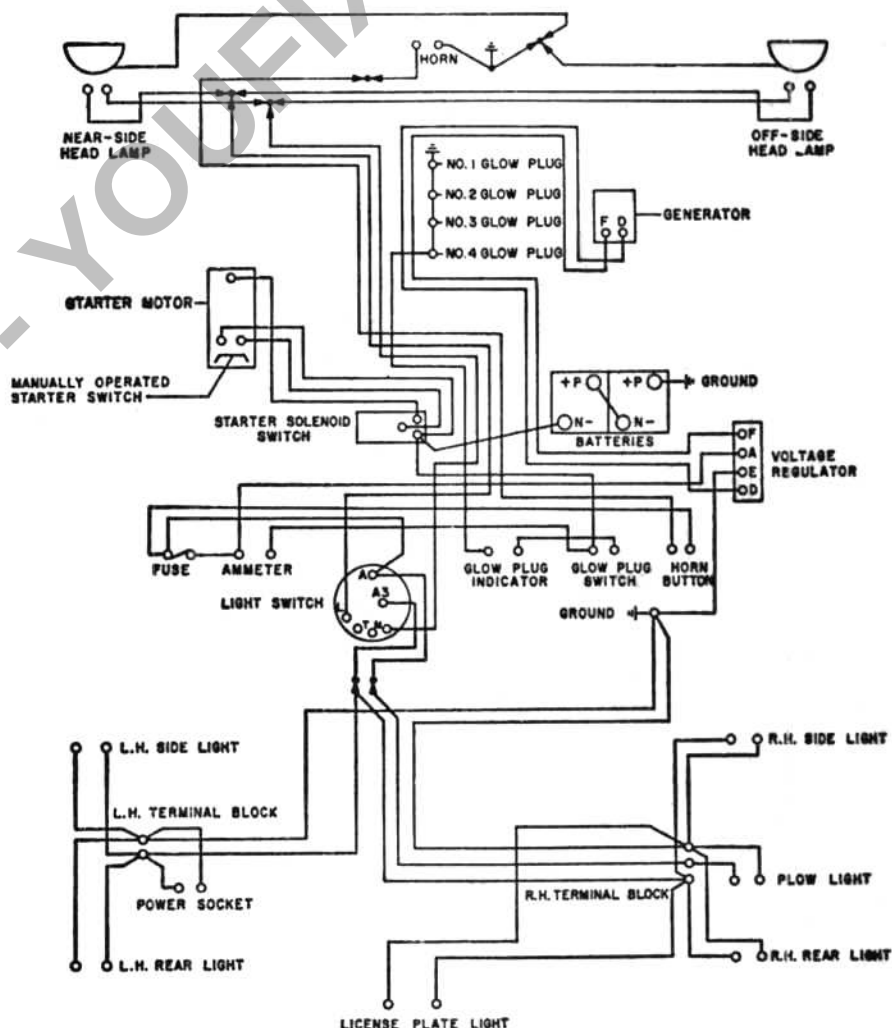


Fig. 80—Wiring diagram of the International B-275 tractor. Some of the units above may not be included.



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102 634	1-21	102 639	6-10	103 319	5-8	103 320	5-22
102 634	2-7	102 639	6-40	103 319	5-9	103 320	6-12
102 634	2-9	102 639	6-42	103 319	5-14	103 320	6-14
102 634	2-15	102 639	6-52	103 319	5-18	103 320	6-18
102 634	2-23	102 649	6-61	103 319	5-21	103 320	6-29
102 634	3-7	102 831	1-27	103 319	5-24	103 320	6-31B
102 634	3-14	102 831	2-29	103 319	5-25	103 320	6-48
102 634	3-36	103 024	4-3	103 319	6-8	103 320	6-73
102 634	6-31B	103 025	2-17	103 319	6-15	103 320	6-76
102 635	1-3	103 026	1-14	103 319	6-19	103 320	6-85
102 635	1-6	103 026	6-38	103 319	6-35	103 320	6-90
102 635	1-26	103 028	4-32	103 319	6-36	103 321	1-4
102 635	2-3	103 084	5-4	103 319	6-46	103 321	1-17
102 635	2-6	103 084	5-18	103 319	6-62	103 321	1-22
102 635	2-28	103 084	5-21	103 319	6-76	103 321	1-23
102 635	3-12	103 089	3-15	103 319	6-85	103 321	1-24
102 635	3-17	103 089	3-17	103 319	6-90	103 321	1-26
102 635	4-3	103 092	6-35	103 319	6-91	103 321	2-4
102 635	4-6	103 092	6-36	103 320	1-7	103 321	2-24
102 635	4-7	103 128	3-14	103 320	1-8	103 321	2-25
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102 635	4-49	103 319	2-16	103 320	2-8	103 321	3-13
102 635	5-4	103 319	2-29	103 320	2-9	103 321	3-14
102 635	5-12	103 319	2-31	103 320	2-14	103 321	3-17
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102 637	6-4A	103 319	3-25	103 320	3-36	103 321	4-30
102 637	6-4B	103 319	3-26	103 320	4-6	103 321	4-33

Closing voltage range	1.5-3.2
Voltage regulator, Air gap (lower points closed)	0.067 (1)
Upper point opening (lower points closed)	0.014
Voltage setting at degrees F,	
13.9-15.0 at 65°	
13.8-14.8 at 85°	
13.7-14.6 at 105°	
13.5-14.4 at 125°	
13.4-14.2 at 145°	
13.2-14.0 at 165°	
13.1-13.9 at 185°	

(1) When bench tested, set air gap at 0.067 as a starting point, then adjust air gap to obtain specified difference between voltage settings of upper and lower contacts. Operation on lower contacts must be 0.05-0.4 volt lower than on upper contacts. Voltage setting may be increased up to 0.3 volt to correct chronic battery under-charging or decreased up to 0.3 volt to correct battery over-charging. Temperature (ambient) is measured $\frac{1}{4}$ -inch away from regulator cover and adjustment should be made only when regulator is at normal operating temperature.

140. ALTERNATOR TESTING AND OVERHAUL. The only test which can be made without removal and disassembly of alternator is output test. Output should be approximately 32 amperes at 5000 alternator rpm.

To disassemble the alternator, first place match marks (M—Fig. 85) on the two frame halves (6 and 16), then remove the four through-bolts. Pry frame apart with a screwdriver between stator frame (11) and drive end frame (6). Stator assembly (11) must remain with slip ring end frame (16) when unit is separated.

NOTE: When frames are separated, brushes will contact rotor shaft at bearing area. Brushes **MUST** be cleaned of lubricant if they are to be re-used.

Clamp the iron rotor (12) in a protected vise only tight enough to permit loosening of pulley nut (1). Rotor and end frame can be separated after pulley is removed. Check bearing surfaces of rotor shaft for visible wear or scoring. Examine slip ring surfaces for scoring or wear and windings for overheating or other damage. Check rotor for grounded, shorted or open circuits using an ohmmeter as follows:

Refer to Fig. 86 and touch the ohmmeter probes to points (1-2 and 1-3); a reading near zero will indicate a ground. Touch ohmmeter probes to the two slip rings (2-3); reading should be 4.6-5.5 ohms. A higher reading will indicate an open circuit and a lower reading will indicate a short. If windings are satisfactory, mount rotor in a lathe and check runout at slip rings using a dial indicator. Runout should not exceed 0.002. Slip ring surfaces can be trued if runout is excessive or if surfaces are scored. Finish with 400 grit or finer polishing cloth until scratches or machine marks are removed.

Disconnect the three stator leads and separate stator assembly (11—Fig. 85) from slip ring end frame assembly. Check stator windings for grounded or open circuits as follows: Connect ohmmeter leads successively between each pair of stator leads. A high reading would indicate an open circuit.

NOTE: The three stator leads have a common connection in the center of the windings. Connect ohmmeter leads

between each stator lead and stator frame. A very low reading would indicate a grounded circuit. A short circuit within the stator windings cannot be readily determined by test because of the low resistance of the windings.

Three negative diodes (19) are located in the slip ring end frame (16) and three positive diodes (20) in heat sink (15). Diode should test at or near infinity in one direction when tested with an ohmmeter, and at or near zero when meter leads are reversed. Renew any diode with approximately equal meter readings in both directions. Diodes must be removed and installed using an arbor press or vise and suitable tool which contacts only the outer edge of the diode. Do not attempt to drive a faulty diode out of end frame or heat sink as shock may cause damage to the other good diodes. If all diodes are being renewed, make certain the positive diodes (marked with red printing) are installed in the heat sink and negative diodes (marked with black printing) are installed in the end frame.

Brushes are available only in an assembly which includes brush holder (13). Brush springs are available for service and should be renewed if heat damage or corrosion is evident. If brushes are reused, make sure all grease is removed from surface of brushes before unit is reassembled. When reassembling, install brush springs and brushes in holder, push brushes up against spring pressure and

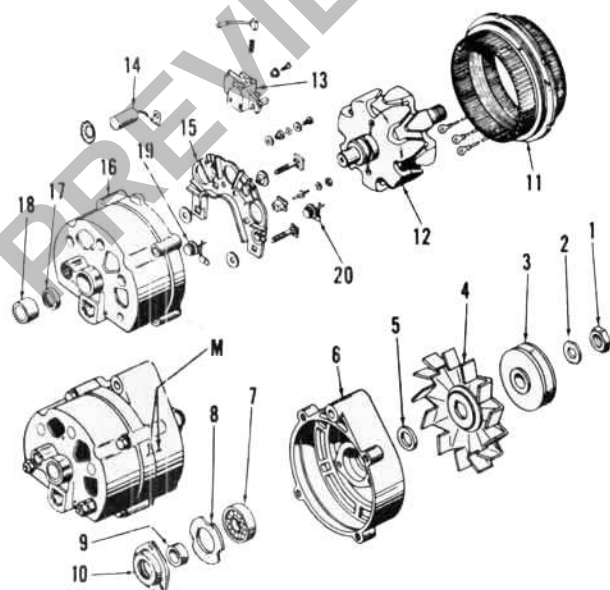


Fig. 85—Exploded view of "DELCOTRON" alternator used on Series 444 and 2444.

1. Pulley nut
2. Washer
3. Drive pulley
4. Fan
5. Spacer
6. Drive end frame
7. Ball bearing
8. Gasket
9. Bearing retainer
10. Stator assembly
11. Rotor assembly
12. Brush holder
13. Capacitor
14. Heat sink
15. Slip ring end frame
16. Felt seal & retainer
17. Needle bearing
18. Negative diode (3 used)
19. Positive diode (3 used)

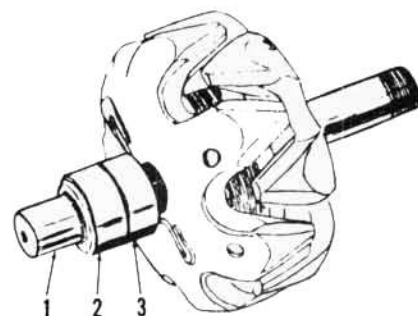


Fig. 86—Removed rotor assembly showing test points when checking for grounds, shorts and opens.

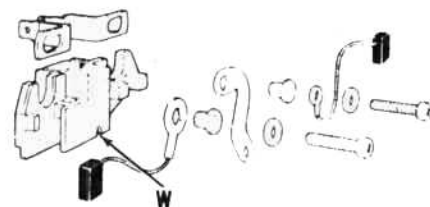
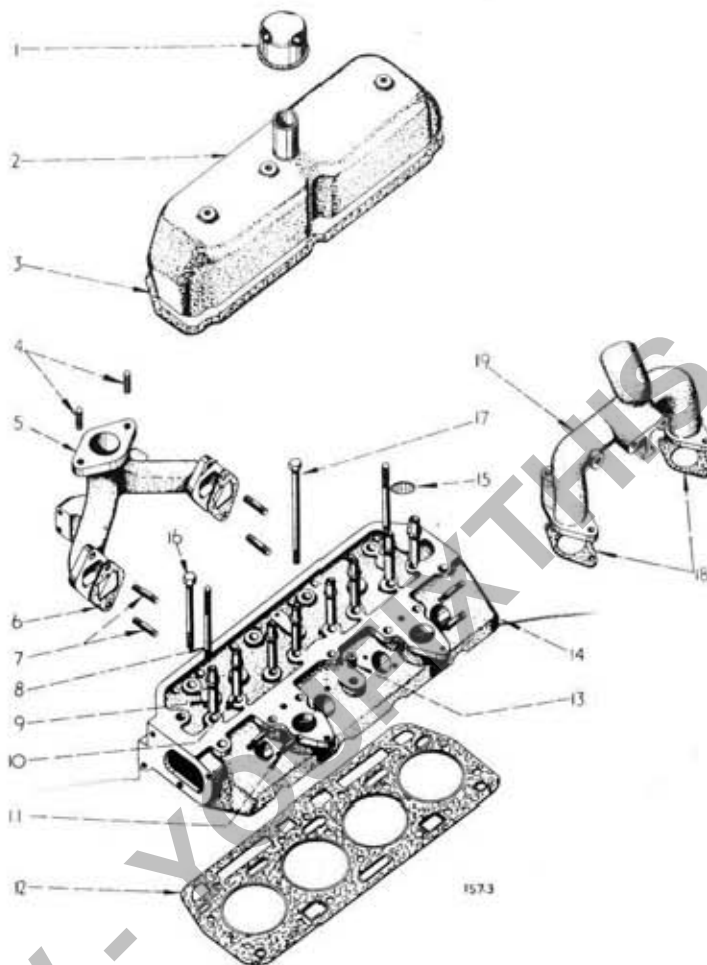


Fig. 87—Exploded view of brush holder assembly. Insert wire in hole (W) to hold brushes up. Refer to text.



Part Number	Ref. No.	Description	Serial Number	No. Req'd.
CYLINDER HEAD AND MANIFOLDS				
707 469 R1	1	BREATHER, cylinder head, (Illustrated)		1
or 709 522 R91	1	BREATHER, cylinder head		1
703 894 R21	2	COVER, valve housing, cpte.		1
102 635		NUT, hex., 3/8"		2
703 896 R1	3	GASKET, valve cover		1
704 164 R1	4	STUD, exhaust manifold		2
3045 354 R11	5	MANIFOLD, exhaust, cpte. w/two STUD 704 164 R1		1
704 165 R2	6	GASKET, exhaust manifold		2
703 874 R1	7	STUD, exhaust manifold		4
20 229 D		NUT, exhaust manifold stud		4

PETROL ENGINE



Part Number	Ref. No.	Description	Serial Number	No. Req'd.
IGNITION SYSTEM - continued				
3044 233 R91	12	CABLE, No. 1 spark plug		1
3044 213 R91	13	DISTRIBUTOR cpte. (see detail list)		1
179 795		BOLT, hex. hd., 1/4" - 20 x 3/4"		2
103 319		WASHER, lock, 1/4"		2
3044 224 R91		SLEEVE, cable		1
3044 226 R91		CABLE, spark plug assy. fitted with SUPPRESSORS, w/CABLE 3044 227 R91 and CABLE 3044 228 R91 (Domestic)		x
3044 227 R91		CABLE, Nos. 1, 2 and 3 spark plug, assy. cpte. with SUPPRESSORS (Domestic) (comprising 1 CABLE 3044 232 R91 3 SUPPRESSORS 3044 231 R91)		1
3044 228 R91		CABLE, No. 4 spark plug, cpte. w/SUPPRESSOR (Domestic) (comprising 1 CABLE 3044 230 R91 1 SUPPRESSOR 3044 231 R91)		1
3044 232 R91		CABLE, Nos. 1, 2 and 3 spark plug, assy. (Domestic) (comprising 1 CABLE 3044 233 R91 1 CABLE 3044 235 R91 1 CABLE 3044 234 R91 1 SLEEVE 3044 224 R91)		1
3044 215 R91		CABLE, ignition, high tension, coil to distributor (Export)		1
3044 219 R91		CABLE, spark plug, assy. (Export) (comprising 1 CABLE 3044 220 R91 1 CABLE 3044 225 R91)		x
3044 225 R91		CABLE, No. 4 spark plug, cpte.		1
3044 220 R91		CABLE, Nos. 1, 2 and 3 spark plug, assy (comprising		1
3044 221 R91		CABLE, No. 1 spark plug		1
3044 222 R91		CABLE, No. 2 spark plug		1
3044 223 R91		CABLE, No. 3 spark plug		1
3044 224 R91		SLEEVE, cable		1
3047 607 R1		NUT, coil		1
3046 364 R1		WASHER, coil		1



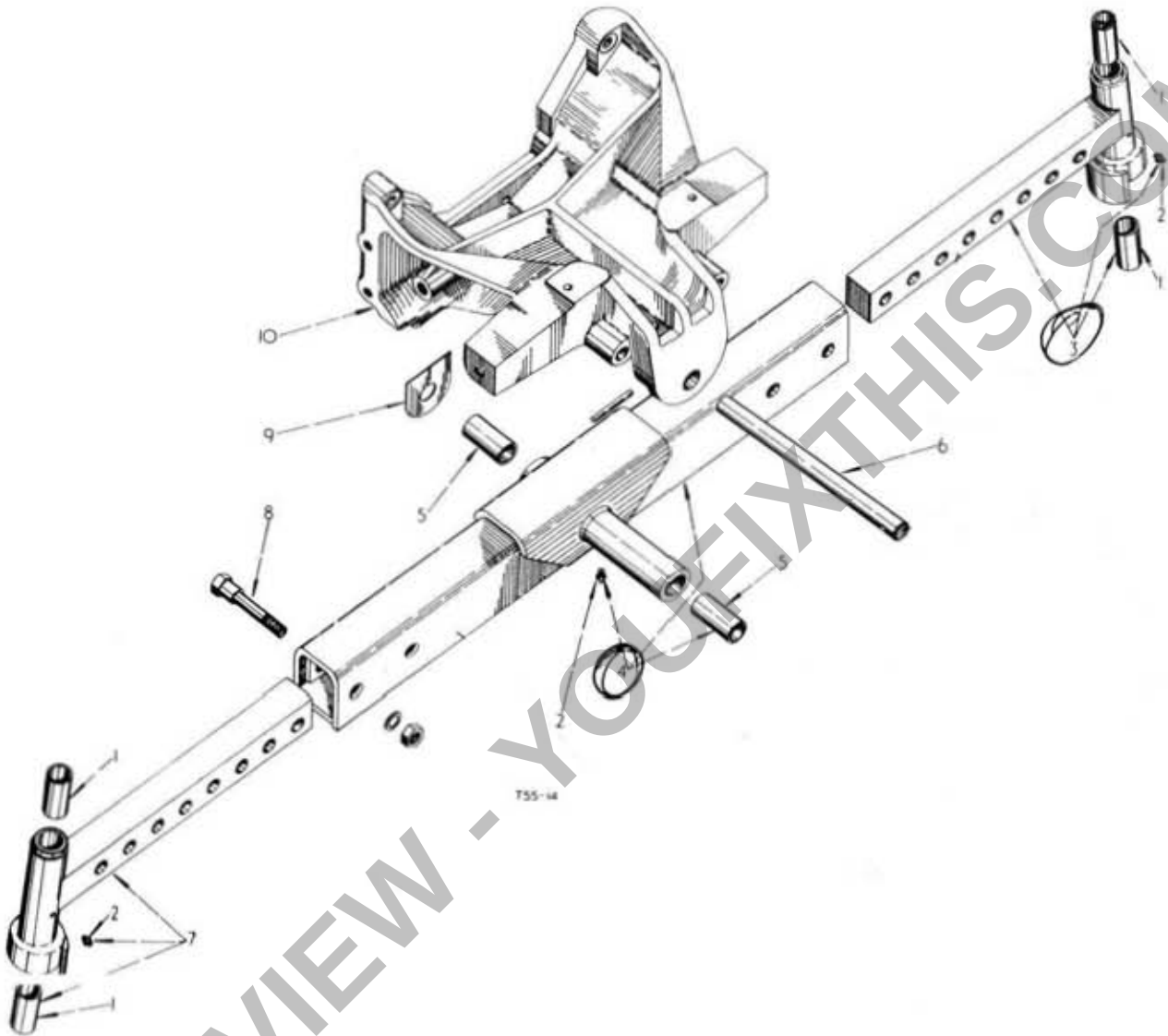
ELECTRICAL SYSTEM

Part Number	Ref. No.	Description	Serial Number	No. Req'd.
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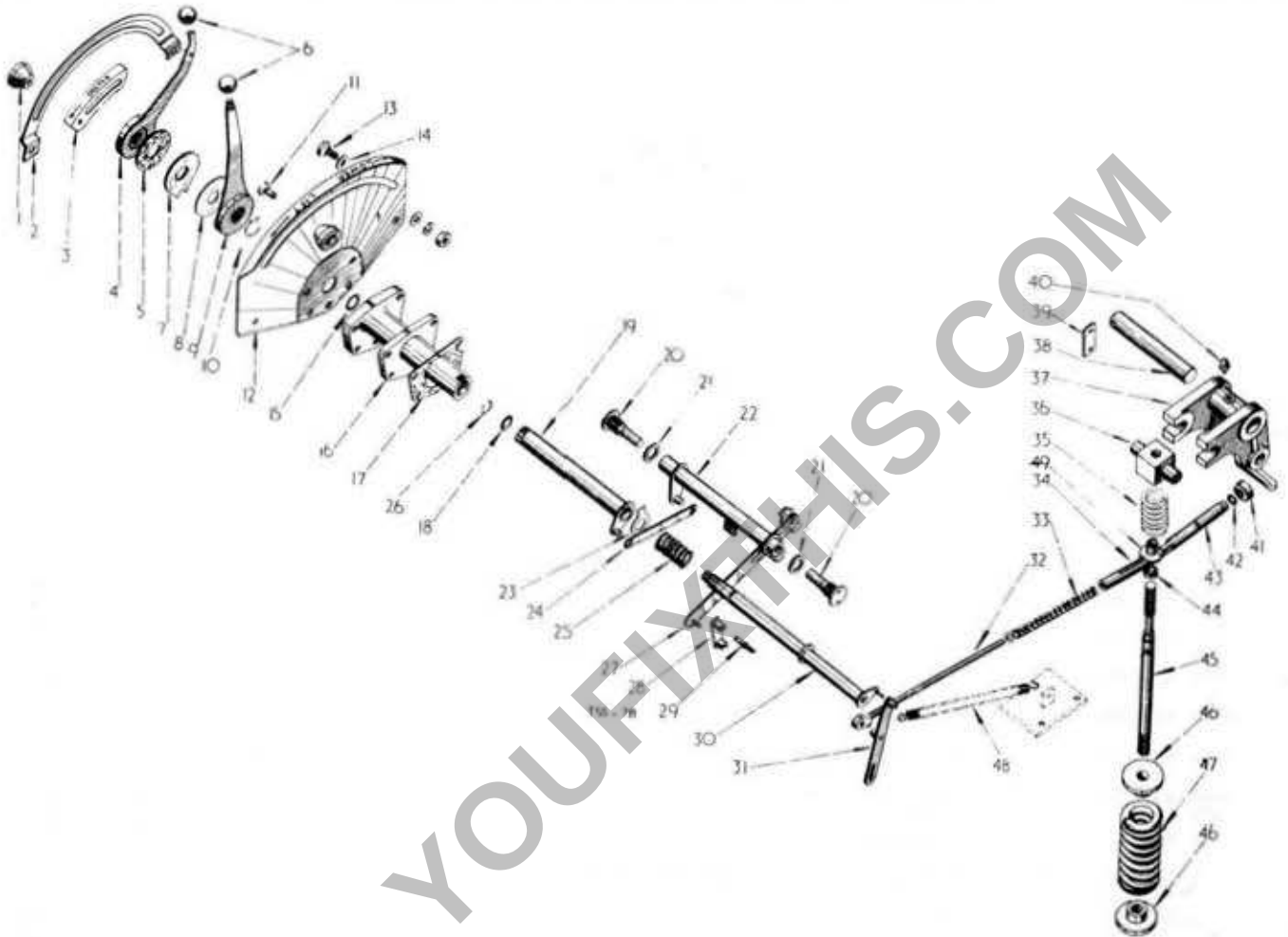
CABLE CLIPS - INDUSTRIAL FENDERS

			A	B
	A	CLIPS, cable, etc., required for head and plough light attachment	x	-
	B	CLIPS, cable, etc., required for industrial road traffic lighting attachment	-	x
* 56 279 D or 708 116 R1		CLIP, cable (7/8" bolt) (scuttle rear support R.H.)	1	1
60 938 D or 708 115 R1		CLIP, cable (3/8" bolt) front transmission cover front	-	2
* 60 938 D or 708 115 R1		CLIP, cable (3/8" bolt) rear transmission cover R.H.	1	1
708 113 R1		CLIP, cable (1/4" bolt) fender L.H.	-	1
708 115 R1		CLIP, cable (3/8" bolt) registration number plate	-	1
* 708 113 R1		CLIP, cable (1/4" bolt) fender R.H.	1	2
* 179 796		BOLT, hex. hd., 1/4" x 7/8"	1	2
* 109 084		NUT, hex., 1/4"	1	2
* 103 319		WASHER, lock, 1/4"	1	2
* 708 117 R1		CLIP, cable (1/2" bolt) rear axle carrier R.H.	1	2
708 117 R1		CLIP, cable (1/2" bolt) rear axle carrier L.H.	-	1
* 112 734		GROMMET, 3/8"	1	8
3047 698 R1		GROMMET, 1/4"	4	-

* NOTE: These items are not required to be duplicated if an attachment is already fitted



Part Number	Ref. No.	Description	Serial Number	No. Req'd.
FRONT AXLE				
40 090 D	1	BUSH, steering knuckle pivot		4
109 461	2	LUBRICATOR, straight, 1/8" NPT		3
or 138 322 H	2	LUBRICATOR, straight, 1/8" NPT		3
3043 858 R91	3	EXTENSION, front axle, cpte. L.H. W/two BUSHES 40 090 D and LUBRICATOR 109 461		1
3043 850 R91	4	AXLE, front, cpte. W/two BUSHES 3043 856 R1 and LUBRICATOR 109 461		1



Part Number	Ref. No.	Description	Serial Number	No. Req'd.
HYDRAULIC LIFT ATTACHMENT (VARY TOUCH) - CONTROL LEVERS				
3044 389 R1	1	NUT, stop, control lever		2
3044 387 R1	2	STRIP, quadrant		1
180 075		BOLT, hex. hd., 5/16" x 5/8"		2
120 376		NUT, hex., 5/16"		2
120 214		WASHER, lock, 5/16"		2
3045 639 R11	3	SLIDE, draft control, assy.		1
3044 393 R91	4	LEVER, control, assy. (draft) w/KNOB 371 602 R1		1
3044 397 R1	5	WASHER, friction		1
371 602 R1	6	KNOB, control lever		2
3044 402 R1	7	PLATE, friction		1
3044 887 R1	8	DISC, friction - outer		1
3044 398 R91	9	LEVER, control, assy. (position) w/KNOB 371 602 R1		1
3044 888 R1	10	DISC, friction - inner	up to B414/1783	1
3049 026 R1	10	CIRCLIP, 25 mm	B414/1784 up	1
3044 388 R1	11	STOP, control lever		1



Part Number	Ref. No.	Description	Serial Number	No. Req'd.
SINGLE SPEED CONSTANT RUNNING P.T.O. ATTACHMENT				
SINGLE SPEED P.T.O. GEARS AND SHAFTS (540 and 745 r.p.m)				
751 077 R1	1	CAGE, bearing, trans. driving shaft		1
751 140 R91	2	OIL SEAL, P.T.O. driving shaft, rear		1
or 3042 160 R91	2	OIL SEAL, P.T.O. driving shaft, rear		1
703 911 R1	3	CIRCLIP, P.T.O. driving shaft rear bearing retaining (110 mm internal)		1
or 933 078 R1	3	RING, locking		1
or 933 089 R1	4	RING, locking (60 mm external)		1
287 048 R91	5	BEARING, P.T.O. driving shaft, rear (Fafnir)		1
or 700 515 R91	5	BEARING, P.T.O. driving shaft, rear (R & M)		1
or 700 513 R91	5	BEARING, P.T.O. driving shaft, rear (Fischer)		1
or 85 662 H	5	BEARING, P.T.O. driving shaft, rear (S.K.F.)		1
or 289 104 R91	5	BEARING, P.T.O. driving shaft, rear (M.R.C.)		1
or ST 269 A	5	BEARING, P.T.O. driving shaft, rear (I.H.)		1
*3044 006 R1	6	SHAFT, driving and gear, P.T.O. (15 Teeth)		1
**3044 303 R1	6	SHAFT, driving and gear, P.T.O. (19 Teeth)		1
704 235 R91	7	BEARING, P.T.O. driving shaft, front		1
or 704 234 R91	7	BEARING, P.T.O. driving shaft, front		1
or 20 161 D	7	BEARING, P.T.O. driving shaft, front		1
3049 149 R91	8	OIL SEAL, P.T.O. driving shaft, front		1
or 3049 150 R91	8	OIL SEAL, P.T.O. driving shaft, front		1
751 149 R1	9	CIRCLIP, P.T.O. front bearing retaining (85 mm internal)		2
751 148 R3	10	CAP, P.T.O. front bearing		1
751 147 R1	11	*O* RING, P.T.O. front bearing cap		1



Part Number	Ref. No.	Description	Serial Number	No. Req'd.	
POWER STEERING, CYLINDER AND VALVE					
				A B C D	
3043 938 R91	1	BOOSTER, steering, cpte. (see detail list)		1 1	1 1
3044 026 R91	2	LINK, drag, cpte.		- -	- 1
3043 949 R92	2	LINK, drag, assy., cpte. (illustrated)		1 1	1 -
		comprising :-			
3045 321 R91	3	SOCKET, assy., L.H.		- -	- 1
3040 921 R91	3	SOCKET, assy. (comprising		1 1	1 -
		1 BOOT 3041 067 R1 1 PIN 103 374			
		1 CLIP 3041 066 R1 1 WASHER 3041 065 R1)			
		1 NUT 3046 707 R1			
705 247 R1	4	NUT, 3/8" B.S.P., L.H.		1 1	1 1
3043 953 R1	5	DRAGLINK		1 1	1 -
3044 027 R1	5	DRAGLINK		- -	- 1
705 248 R1	6	NUT, 3/8" B.S.P., R.H.		1 1	1 1
3043 951 R1	7	END, draglink		1 1	1 1
102 649		NUT, hex., slotted, 5/8" UNF		1 1	1 1
103 386		PIN, cotter, 1/8" x 1-1/4"		1 1	1 1
103 345		WASHER, plain, 21/32" x 1-5/16" x .095		1 1	1 1
3044 022 R91	8	LINK, connecting, cpte.		- -	- 1
3043 945 R91	8	LINK, connecting, cpte. comprising :-		1 1	1 -
3043 937 R1	9	NUT, jam, 1" - 12 UNF		1 1	1 1
3043 946 R1	10	LINK, connecting		1 1	1 1
705 247 R1	11	NUT, 3/8" B.S.P., L.H.		1 1	1 1
3045 309 R91	12	SOCKET, assy., L.H.		1 1	1 -
3045 314 R91	12	SOCKET, assy., L.H.		- -	- 1
3043 982 R1	13	BANJO		2 2	2 2
704 743 R91	14	WASHER, sealing		6 6	6 6
3043 983 R1	15	BOLT, banjo		2 2	2 2
3043 978 R91	16	HOSE, assy.		2 2	2 2
3045 582 R91	17	VALVE, flow control and pipes, ass. (Mechanical Depth Control)		1 1	1 1
		(See detail list)			
3045 581 R91	17	VALVE, flow control and pipes, assy. (Vary Touch)		1 1	1 1
		(See detail list)			
103 866		PLUG, pipe, 1/4" NPT (used in Crankcase)		1 1	1 1
or 219 189		PLUG, pipe, 1/4" NPT (used in Crankcase)		1 1	1 1
or 103 818		PLUG, pipe, 1/4" NPT (used in Crankcase)		1 1	1 1



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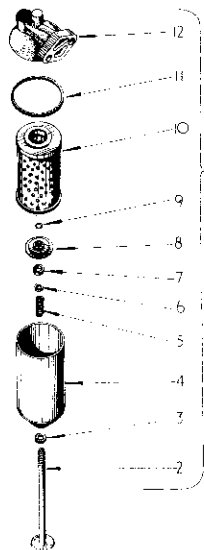
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703 644 R91	6-25	703 844 R91	1-7	703 908 R91	4-39	703 972 R1	4-38
703 644 R91	6-27	703 844 R91	2-7	703 911 R1	6-20	703 984 R1	4-33
703 644 R91	6-79	703 849 R1	1-7	703 911 R1	6-22	704 008 R1	4-32
703 644 R91	6-81	703 849 R1	1-28	703 911 R1	6-24	704 009 R1	4-32
703 644 R91	6-82	703 850 R1	1-8	703 911 R1	6-26	704 010 R1	4-32
703 644 R91	6-84	703 850 R1	2-9	703 913 R3	4-46	704 017 R1	4-33
703 644 R91	6-93	703 851 R1	1-8	703 914 R11	4-47	704 021 R1	4-20
703 696 R1	6-20	703 851 R1	1-28	703 915 R1	4-47	704 021 R1	6-73
703 696 R1	6-22	703 851 R1	2-9	703 917 R92	4-47	704 022 R92	6-10
703 696 R1	6-24	703 851 R1	2-27	703 921 R1	4-20	704 029 R1	4-34
703 696 R1	6-26	703 852 R1	1-8	703 921 R1	6-73	704 038 R1	4-36
703 700 R1	1-13	703 853 R11	1-7	703 922 R1	4-20	704 039 R2	4-36
703 812 R1	1-5	703 865 R1	1-10	703 922 R1	6-73	704 041 R91	4-36
703 812 R1	2-5	703 865 R1	2-10	703 923 R91	6-44	704 043 R93	4-50
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703 815 R1	1-27	703 875 R1	1-4	703 929 R1	4-48	704 051 R12	6-10
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703 815 R1	2-27	703 876 R2	1-4	703 929 R1	6-43	704 052 R12	6-10
703 815 R1	2-29	703 877 R1	1-9	703 930 R1	4-48	704 058 R1	6-8
703 816 R1	1-26	703 883 R6	1-4	703 930 R1	6-41	704 058 R1	6-10
703 816 R1	1-28	703 884 R21	1-6	703 930 R1	6-43	704 059 R1	6-10
703 816 R1	2-27	703 884 R21	2-6	703 931 R1	4-48	704 060 R1	6-10
703 816 R1	2-28	703 885 R1	1-6	703 931 R1	6-41	704 061 R5	6-10
703 818 R91	2-29	703 885 R1	2-6	703 931 R1	6-43	704 083 R91	4-23
703 820 R92	1-26	703 886 R2	1-6	703 932 R3	4-44	704 083 R91	6-59
703 820 R92	2-28	703 886 R2	2-6	703 932 R31	4-45	704 083 R91	6-69
703 822 R91	1-27	703 887 R2	1-6	703 934 R1	4-45	704 088 R91	1-12
703 822 R91	2-29	703 887 R2	2-6	703 935 R13	4-44	704 088 R91	2-12
703 825 R11	1-27	703 893 R2	1-6	703 938 R13	4-44	704 089 R91	1-12
703 825 R11	2-29	703 893 R2	2-6	703 942 R3	4-45	704 089 R91	2-12
703 827 R1	1-8	703 894 R21	1-3	703 952 R1	4-15	704 094 R1	2-11
703 827 R1	2-8	703 894 R21	2-3	703 952 R2	3-14	704 095 R1	1-11
703 828 R1	1-8	703 896 R1	1-3	703 952 R2	4-12	704 095 R1	2-11
703 828 R1	2-8	703 896 R1	1-28	703 952 R2	4-43	704 100 R1	1-11
703 829 R1	1-8	703 896 R1	2-3	703 957 R1	4-30	704 100 R1	2-11
703 829 R1	2-8	703 896 R1	2-27	703 957 R1	6-90	704 102 R91	4-46
703 832 R1	1-8	703 897 R1	3-6	703 966 R1	4-38	704 107 R1	1-21
703 832 R1	2-8	703 898 R1	3-6	703 967 R2	4-37	704 133 R3	4-5
703 840 R1	1-9	703 899 R1	3-6	703 968 R21	4-37	704 135 R1	4-5
703 840 R1	1-28	703 905 R21	4-39				



D I E S E L E N G I N E

Ref. No.	Part No.	DESCRIPTION
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LUBRICATING OIL FILTER



145 BA

1	3042 420 R92	FILTER, oil assy., Tecalemit, optional w/705 612 R91 and 708 548 R91 (comprising 1 BOLT 3069 976 R91 1 CIRCLIP 3065 965 R1 1 CONTAINER 3043 289 R1 1 HEAD 3069 975 R91 1 PACKAGE 3043 283 R92 2 PLATE 3043 315 R1 1 PLATE 3043 293 R91 1 RING 3042 423 R1 1 SPRING 3043 291 R1 1 WASHER 3042 425 R1 1 WASHER 3043 292 R1 1 WASHER 3042 428 R1) 179 841 BOLT, hex-hd., 3/8" x 1-1/4" (2) 108 321 WASHER, lock, 3/8" (2)
2	3069 976 R1	BOLT, centre assy.
3	3042 425 R1	WASHER, centre bolt sealing

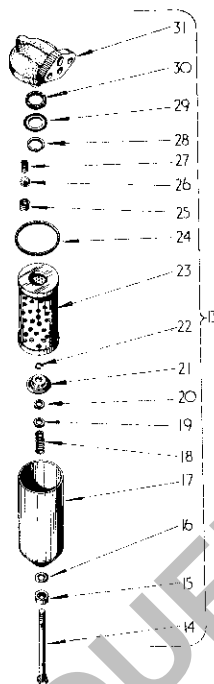
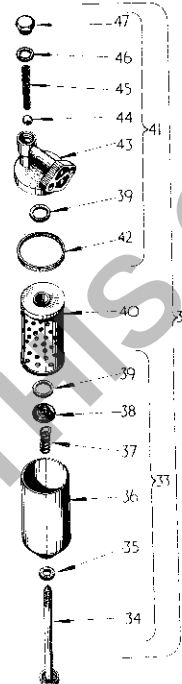
Group-1 Page 16



D I E S E L E N G I N E

Ref. No.	Part No.	DESCRIPTION
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LUBRICATING OIL FILTER- contd.



4	3043 289 R1	CONTAINER
5	3043 291 R1	SPRING, pressure plate
6	3043 292 R1	WASHER, pressure plate spring
7	3042 428 R1	WASHER, felt
8	3043 293 R91	PLATE, pressure, assy.
9	3065 965 R1	CIRCLIP, centre bolt (used w/grooved centre bolt)
9	3042 430 R1	CIRCLIP, centre bolt
10	3043 283 R92	PACKAGE, element, service (with PLATE 3043 315 R1, RING 3042 423 R1 and RING 707 859 R1 optional with 3042 419 R93 3043 315 R1 PLATE, adaptor (2)
11	3042 423 R1	RING, sealing
12	3069 975 R91	HEAD, filter, assy.

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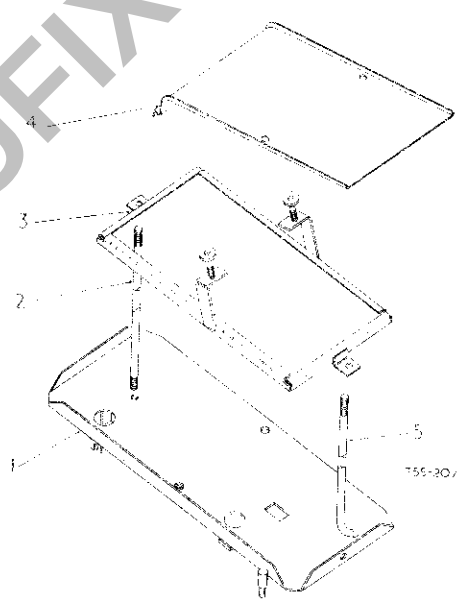


ELECTRICAL

Ref. No.	Part No.	DESCRIPTION
INSTRUMENT PANEL, INSTRUMENTS (Petrol)- contd.		
3	3045 281 R91	SWITCH, cpte., ignition and starter (*) comprising :-
	3047 377 R91	LOCK and KEYS
	3047 375 R1	NUT, fixing front
	3047 376 R1	SPACER
3	3062 964 R91	SWITCH, ignition and starter B-414/2160 Petrol
	3062 962 R1	KEY
	3062 961 R1	LOCK (2)
	3063 384 R1	RING, sealing, rubber
4	\$	LIGHT, oil pressure warning comprising :-
	3048 831 R91	BULB, 12 V 2 watt
	3048 828 R91	HOLDER, assy., lamp, sub.
	3048 830 R91	INDICATOR, green
5	705 266 R91	PUSH, horn (Attachment)
6	708 435 R1 186 758	PLATE, filler, instrument panel SCREW, pan-hd., cr-rec-tapping, No. 8 x 1/4" (4)
7	709 489 R92	SWITCH, lighting (Attachment) (comprising
	1 KNOB	3042 366 R1
	1 NUT	3042 361 R1
	1 NUT	3042 365 R1
	4 SCREW	3042 364 R1
	1 WASHER	3042 360 R1
	1 WASHER	3042 362 R1
	4 WASHER	3042 363 R1)
8	\$	LIGHT, ignition warning comprising :-
	3048 831 R91	BULB, 12 V 2 watt
	3048 828 R91	HOLDER, assy., lamp, sub.
	3048 829 R91	INDICATOR, Red
9	707 481 R92	HOLDER, cpte., fuse, and LID 709 193 R92 (Attach)
	706 594 R1	SCREW, brass, rd-hd., 5 BA x 1/4"
	706 595 R1	NUT, lock, brass, 5 BA
	706 596 R1	WASHER, brass, 5 BA
10	3044 085 R11 704 445 R1 704 444 R2	PANEL, instrument, cpte. NUT, spire speed, 1/4" BSW (4) SCREW, rd-hd., 1/4" BSW x 1/2" (4) (cad-pltd.)
	709 193 R92	LID, assy., fuse holder
	700 166 R1	FUSE, 25 amp
	707 887 R1	FUSE, 25 amp
	706 489 R1	SLEEVE, rubber (+)
	3043 824 R1	BRACKET, clamping)
	3043 825 R1	SCREW, plate fixing) Regulator
	705 827 R1	WASHER, plate fixing screw)
	3042 366 R1	KNOB)
	3042 361 R1	NUT, friction)
	3042 365 R1	NUT, switch retaining)
	3042 364 R1	SCREW (4))
	3042 360 R1	WASHER, lock) Lighting Switch
	3042 363 R1	WASHER)
	3042 363 R1	WASHER (+))



ELECTRICAL

Ref. No.	Part No.	DESCRIPTION
INSTRUMENT PANEL, INSTRUMENTS (Petrol)- contd.		
3044 023 R1		NUT, battery tray spire
3041 100 R91		SWITCH, oil-pressure)
3060 472 R91		SWITCH, oil pressure) optional
		\$ Not supplied separately
		(*) Order Switch 3062 964 R1, Lock 3062 961 R1, Key 3062 962 R1 and Ring 3063 384 R1
BATTERY CARRIER (Diesel Machines)		
		
1	3065 744 R92	CARRIER, assy., battery B-414/30339 up
1	3043 889 R94	CARRIER, assy., battery (*) up to B-414/30338
	179 835	BOLT, hex-hd., 3/8" x 5/8" (2)
	179 838	CAPSCREW, hex., 3/8" x 7/8" (2)
	103 321	WASHER, lock, 5/8" (2)
	114 666	WASHER, ext-tooth, 3/8" (2)
2	3065 746 R1	STUD, hold down, battery B-414/30339 up
2	3062 057 R1	STUD, hold down, battery B-414/10597 to/30338
2	707 531 R1	STUD, hold down, battery up to B-414/10506 (2)



C H A S S I S

Ref. No.	Part No.	DESCRIPTION
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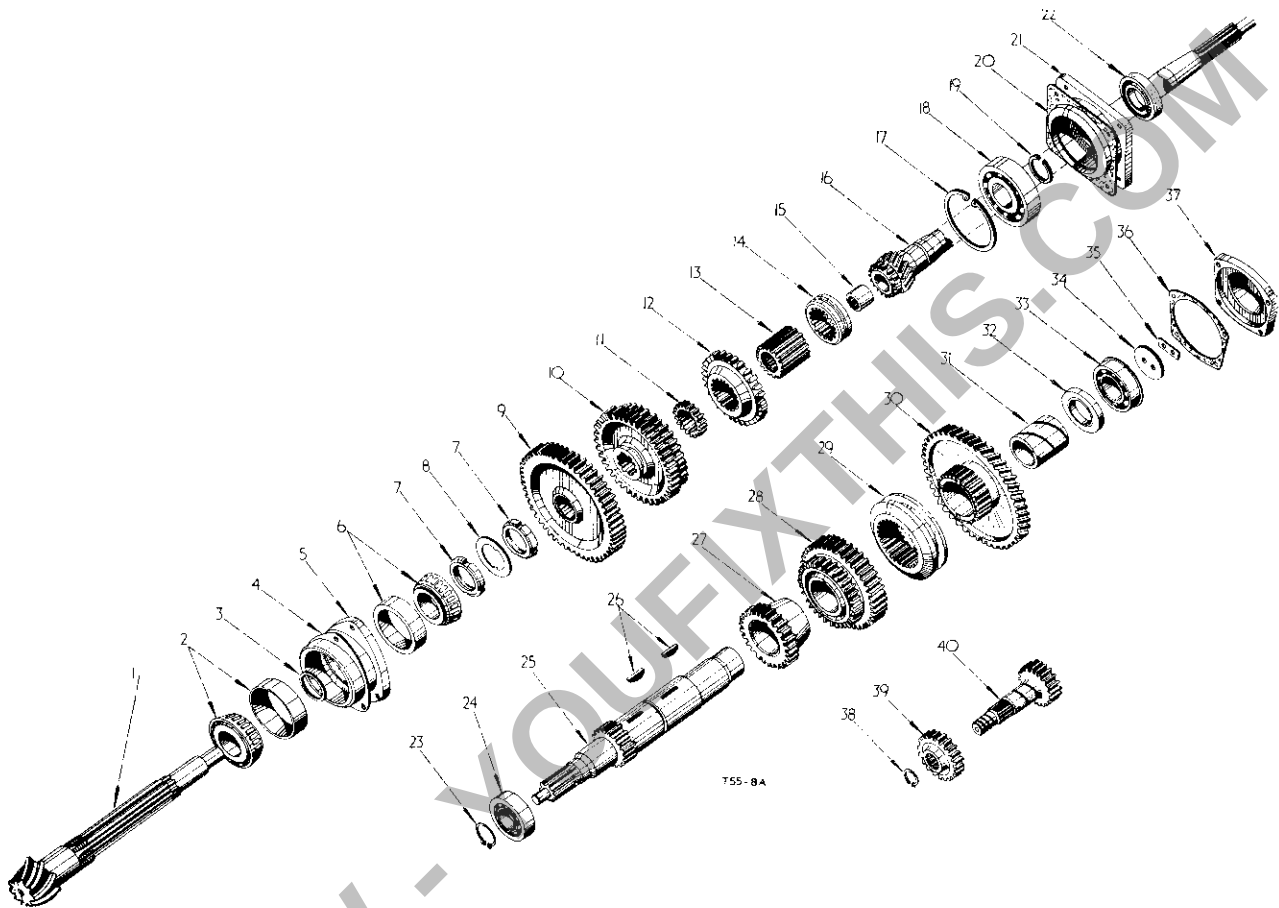
TRANSMISSION GEARS AND SHAFTS



C H A S S I S

Ref. No.	Part No.	DESCRIPTION
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TRANSMISSION GEARS AND SHAFTS- contd.



755-84

1	S	SHAFT, transmission spline (order 3044 544 R91)	5	3044 041 R1	CAGE, transmission spline shaft taper roller bearing
2	3049 253 R91	BEARING, roller taper, transmission spline) shaft, rear (Skefco)		186 334	BOLT, hex-hd., 1/2" UNF x 2-5/8" (3)
2	3044 034 R91	BEARING, roller taper, transmission spline) shaft, rear (Timken)		103 028	NUT, hex., 1/2" UNF (3)
				116 551	WASHER, lock, internal tooth, 1/2" (3)
3	3044 037 R1	SPACER, transmission spline shaft roller bearing	6	3049 254 R91	BEARING, roller, taper, trans. spline shaft, front (Skefco)
	3044 038 R1	SHIM, trans. spline shaft taper roller bearing (.002) (As req'd)	6	321 990 R91	BEARING, roller, taper, trans. spline shaft, front (Timken)
	3044 040 R1	SHIM, trans. spline shaft taper roller bearing (.004) (As req'd)			optional
	3044 039 R1	SHIM, trans. spline shaft taper roller bearing (.010) (As req'd)	7	3044 035 R1	NUT, lock transmission spline shaft, taper roller bearing (2)
4	701 008 R1	SHIM, transmission spline shaft taper bearing cage (heavy) (As req'd)	8	3044 036 R1	WASHER, lock, transmission spline shaft taper roller bearing, lock nut
4	701 009 R1	SHIM, transmission spline shaft taper bearing cage (Medium) (As req'd)	9	3043 990 R1	GEAR, sliding, 1st and reverse speed (52 T)
4	701 010 R1	SHIM, transmission spline shaft taper bearing cage (light) (As req'd)	10	751 071 R1	GEAR, sliding, 2nd and 3rd speed (44 and 38 T)



A T T A C H M E N T S

Ref. No.	Part No.	DESCRIPTION
THREE POINT LINKAGE ATTACHMENT- contd.		
12	704 179 R1	LINK, top, telescoping (half) (cat. 2 end)
13	704 177 R21	EYEBOLT, w/BALL assy., top link (cat. 2)
14	704 182 R1	PIN, top link (cat. 2)
15	704 207 R3 119 512	SWIVEL, lift rod (2) LUBRICATOR, lift rod
16	704 541 R3 3044 309 R1 103 407	ROD, lift, upper half PIN, special, std-hd., 5/8" x 3-3/8" PIN, cotter, 3/16" x 1"
17	704 542 R5	ROD, lift, lower half
18	704 208 R93	CHAIN, assy., check (2)
19	704 188 R97	LINK, w/two HOLDERS 707 071 R12 and two COTTERS 704 212 R91 assy., lower, (2)
20	704 194 R2	BUSH, lower link (2)
21	704 196 R96	ROD, cpte., lift, levelling (comprising 1 BEARING 704 197 R91 1 BOX 704 195 R4 1 CRANK 704 200 R32 1 COLLAR 704 203 R1 2 LUBRICATOR 119 512 1 NUT 704 205 R3 1 PIN 142 507 1 PLUG 172 580 1 ROD 704 198 R1)
22	704 198 R1	ROD, levelling
23	704 197 R91	BEARING, ball, thrust, 20 mm)
23	704 201 R91	BEARING, ball, thrust, 20 mm) optional
23	704 202 R91	BEARING, ball, thrust, 20 mm)
24	172 580	PLUG, expansion, 1-7/8" O.D.
25	704 203 R1 142 507	COLLAR, levelling control crank PIN, , groove, type 1, 3/16" x 7/8"
26	704 195 R4 119 512	BOX, levelling LUBRICATOR, 7/16"
27	704 200 R32	CRANK, levelling control
28	704 205 R3 119 512	NUT, levelling rod LUBRICATOR, 7/16"
29	704 208 R93	CHAIN, assy., check (2)
30	707 071 R12	HOLDER, w/CHAIN cpte., lynch pin (4)
31	704 779 R3 17 349 R1 103 323	BRACKET, check chain, inner (2) BOLT, hex-hd., 1/2" x 1-1/16" (2) WASHER, lock, 1/2" (2)
32	707 817 R91	PLATE, cpte., support, drawbar, R.H.)
32	707 816 R91	PLATE, cpte., support, drawbar, L.H.) (A) used on 707 820 R32 attachment
32	3064 335 R91	PLATE, cpte., support, drawbar R.H. (A) (Illustrated)
32	3064 336 R91 271 606	PLATE, cpte., support, drawbar L.H. (A) CAPSCREW, hex-hd., 3/4" x 1-3/8" (**) (4)
	114 610	WASHER, lock, external tooth , 3/4" (**) (4)



A T T A C H M E N T S

Ref. No.	Part No.	DESCRIPTION
THREE POINT LINKAGE ATTACHMENT- contd.		
32	704 052 R12	PLATE, cpte., support, drawbar R.H.)
32	704 051 R12	PLATE, cpte., support, drawbar L.H.) (B) used on 706 137 R93 attachment
32	3060 786 R11	PLATE, cpte., support, drawbar R.H. (B)
32	3060 787 R11	PLATE, cpte., support, drawbar L.H. (B)
33	707 815 R1	BRACKET, check chain, R.H. (A) (Illustrated)
	707 814 R1	BRACKET, check chain, L.H. (A)
	704 214 R2	BRACKET, check chain, R.H. (b)
	704 213 R2	BRACKET, check chain, L.H. (b)
	17 956 R1	BOLT, mach., hex-hd., 7-3/4" x 5/8" (4)
	102 639	NUT, hex., 3/8" (4)
	709 307 R92	EYEBOLT, assy., top link, (cat. 1) (As req'd) (comprising 1 CHAIN 704 184 R92 1 COTTER 704 212 R91 1 EYEBOLT 704 178 R21 1 HOOK 704 185 R1 1 PIN 704 183 R1 1 NUT 218 445)
	709 308 R92	EYEBOLT, assy., top link, (cat. 2) (As req'd) (comprising 1 CHAIN 704 184 R92 1 COTTER 704 212 R91 1 EYEBOLT 704 177 R21 1 HOOK 704 185 R1 1 PIN 704 182 R1)
	704 190 R51	END, cpte., lower link, (cat. 1) (As req'd)
	704 191 R51	END, cpte. lower link (cat. 2) (As req'd)
(*) Used only with Hydraulic Lift Attachment (Mech. Depth Control) (* *) Not required when Drawbar Attachment fitted		

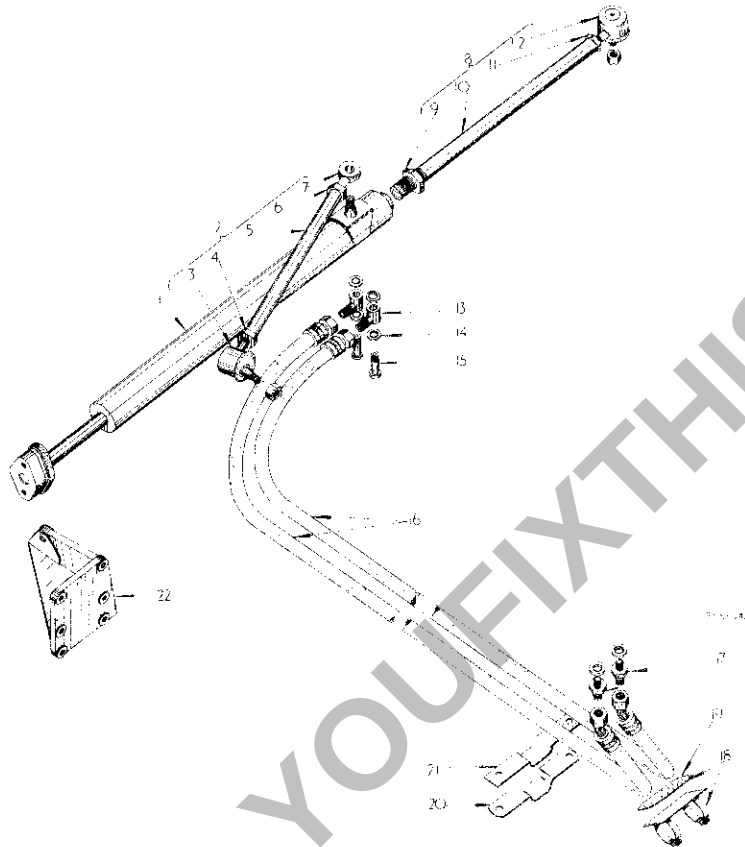


ATTACHMENTS

Ref. No.	Part No.	DESCRIPTION
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POWER STEERING AND FRONT AXLE ATTACHMENTS-contd.

POWER STEERING BOOSTER AND HOSES



1	3043 938 R92	BOOSTER, opte., steering (see detail list)
2	3044 026 R91	LINK, opte., drag (C)
2	3043 949 R92	LINK, opte., drag (A, B) (illustrated) comprising :-
3	3045 321 R91	SOCKET, assy., L.H. (C)
3	3040 921 R92	SOCKET, assy. (A, B) (comprising
		1 BOOT 3041 067 R1
		1 CLIP 3041 066 R1
		1 NUT 3046 707 R1
		1 PIN 103 374
		1 WASHER 3041 065 R1)
4	705 247 R1	NUT, 3/8" B.S.P. L.H.
5	3043 953 R1	DRAGLINK (A, B)
5	3044 027 R1	DRAGLINK (C)
6	705 248 R1	NUT, 3/8" B.S.P. R.H.
7	3043 951 R1	END, draglink
	102 649	NUT, hex., slotted, 5/8" UNF
	103 386	PIN, cotter, 1/8" x 1-1/4"
	103 345	WASHER, plain, 21/32" x 1-5/16" x .095

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ATTACHMENTS

Ref. No.	Part No.	DESCRIPTION
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POWER STEERING AND FRONT AXLE ATTACHMENT- contd.

POWER STEERING BOOSTER AND HOSES- contd.

8	3044 022 R91	LINK, opte., connecting (C)
8	3043 945 R91	LINK, opte., connecting (A, B) comprising :-
9	3043 937 R1	NUT, jam, 1" - 12 UNF
10	3043 940 R1	LINK, connecting
11	705 247 R1	NUT, 3/8" B.S.P. L.H.
12	3045 309 R91	SOCKET, assy., L.H. (A, B)
12	3045 314 R91	SOCKET, assy., L.H. (C)
13		BANJO (2) (see Steering Booster)
14		WASHER, (6) (see Steering Booster)
15		BOLT, banjo (2) (see Steering Booster)
16	3043 978 R91	HOSE, assy. (2)
17	702 270 R2	ADAPTOR, reducing (2)
18	3045 831 R91	SHIELD, w/PLATE 3060 195 R1 and SHEET 3047 839 R1 opte., hose (*)
	179 793	BOLT, hex-hd., 1/1" x 5/8" (2)
	109 984	NUT, hex., 1/4" (2)
	103 319	WASHER, lock, 1/4" (2)

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A T T A C H M E N T S

Ref. No.	Part No.	DESCRIPTION
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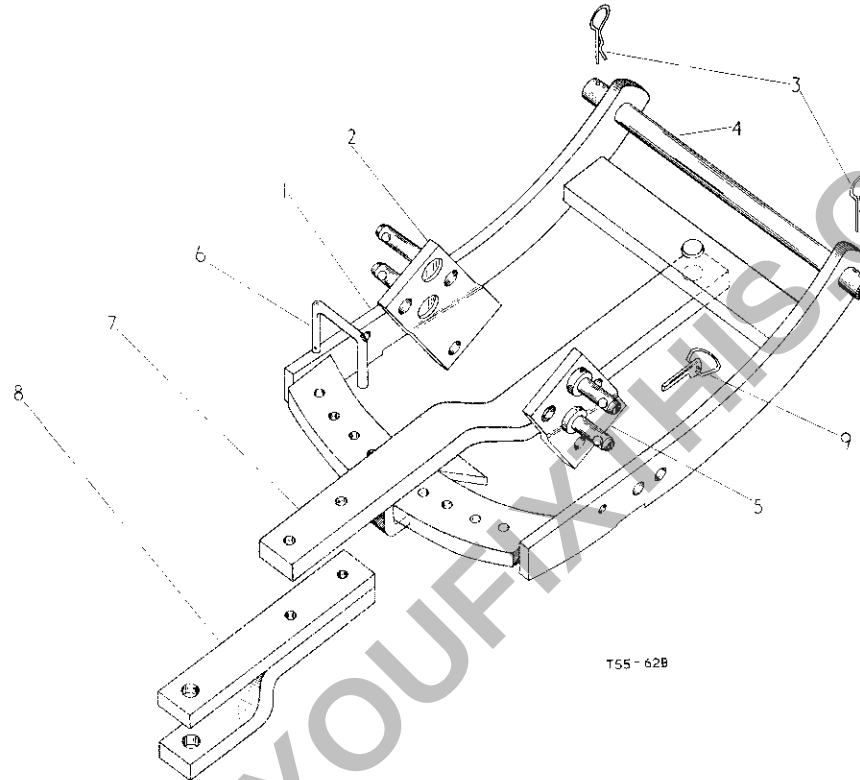
DRAWBAR ATTACHMENT



A T T A C H M E N T S

Ref. No.	Part No.	DESCRIPTION
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DRAWBAR ATTACHMENT- contd.



	3068 381 R91	ATTACHMENT, drawbar (*)		6	704 061 R5 720 031 R1	PIN, stop, swinging drawbar PIN, cotter
1	704 022 R93 271 611 220 081 103 323	FRAME, cpte., drawbar BOLT, hex-hd., 3/4" x 2" (2) NUT, hex., 3/4" (2) WASHER, lock, 3/4" (2)		7	3068 370 R11 223 444 102 639	DRAWBAR, cpte., swinging, adjustable height BOLT, hex-hd., 5/8" x 4" (2) NUT, hex., 5/8" (2)
2	3060 786 R11 271 606 114 610	PLATE, cpte., support, drawbar, L.H. SCREW, cap, hex-hd., 3/4" x 1-3/8" (2) WASHER, lock, external tooth, 3/4" (2)		8	3064 333 R11 223 444 102 639	CLEVIS, assy., drawbar BOLT, hex-hd., 5/8" x 4" (2) NUT, hex., 5/8" (2)
3	3067 210 R1	CLIP, spring (2)		9	704 212 R93 700 531 R1 704 187 R1	COTTER, cpte., implement COTTER, implement RING, clip, implement cotter
4	704 058 R1	PIN, drawbar frame				
5	3060 787 R11 271 606 114 610	PLATE, cpte., support, drawbar, R.H. SCREW, cap, hex-hd., 3/4" x 1-3/8" (2) WASHER, lock, external tooth, 3/4" (2)				

(*) For use on machines fitted with 1,000 r.p.m. but
not with three Point Linkage Attachment 3044 336 R91

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