

INDEX (CONT.)

	Models			
	7110	7120	7130	7140
DIESEL FUEL SYSTEM				
Bleed System	55	55	55	55
Ether Starting Aid	67	67	67	67
Fuel, Filters & Transfer				
Pump	52,53,54	52,53,54	52,53,54	52,53,54
Fuel Solenoid Shut-Off	66	66	66	66
Injection Pump	56	56	56	56
Injector Nozzle	59	59	59	59
Timing	57	57	57	57
DIFFERENTIAL (REAR)				
R&R and Overhaul	171	171	171	171
DIFFERENTIAL LOCK				
Control Valve	175	175	175	175
ELECTRICAL SYSTEM				
Accessory Systems	95	95	95	95
Alternator	85	85	85	85
Batteries	79	79	79	79
Cab Fan	130	130	130	130
Charging System	81	81	81	81
Digital Instrument Cluster ..	96	96	96	96
Heater & Air Conditioning .	131	131	131	131
Protective Circuits	93	93	93	93
Starting Motor	88	88	88	88
Windshield Wiper	129	129	129	129
ENGINE				
Cam Followers	30	30	30	30
Camshaft	37	37	37	37
Connecting Rods &				
Bearings	42	42	42	42
Crankshaft & Bearings	43	43	43	43
Cylinder Head	25	25	25	25
Cylinder Sleeves	40	40	40	40
Flywheel	47	47	47	47
Main Bearings	43	43	43	43
Oil Pan	48	48	48	48
Oil Pump	49	49	49	49
Piston & Rod Removal	39	39	39	39
Piston Pins & Bushings	41	41	41	41
Pistons & Rings	40	40	40	40
Remove & Reinstall Engine				
Assembly	24	24	24	24
Timing Gear Cover	31	31	31	31
Timing Gears	32	32	32	32
Valve Adjustment	27	27	27	27
Valve Guides & Springs ...	28	28	28	28
Valves & Seats	26	26	26	26

INDEX (CONT.)

	Models			
	7110	7120	7130	7140
FINAL DRIVES				
Overhaul	177	177	177	177
Remove & Reinstall	176	176	176	176
FRONT-WHEEL DRIVE				
Differential	11	11	11	11
Front Drive Shaft	12	12	12	12
Front Support	7	7	7	7
Pivot Housing & Axle shaft	10	10	10	10
R&R Drive Axle Assy.	6	6	6	6
Tie Rod & Toe-In	8	8	8	8
Wheel Hub & Planetary	9	9	9	9
HYDRAULIC LIFT SYSTEM				
Electronic Diagnostic				
Codes	203	203	203	203
Control Circuit Tests	204	204	204	204
Control Valve	221	221	221	221
Hitch Adjustments	216	216	216	216
Hitch Lift Assist Cylinders ..	223	223	223	223
Lift Housing	222	222	222	222
Operation	200	200	200	200
HYDRAULIC SYSTEM				
Priority Valve	198	198	198	198
Pto Control Valve	199	199	199	199
Pump Compensator Valve ..	196	196	196	196
Pump Drive Unit	197	197	197	197
Pumps	193	193	193	193
Remote Control Valves	224	224	224	224
PARK LOCK				
Linkage Adjustment	182	182	182	182
Overhaul Park Lock	183	183	183	183
POWER SHIFT				
Adjustment	134	134	134	134
Control Valve	138	138	138	138
Power Shift Operation	133	133	133	133
Speed Transmission, Overhaul	150	150	150	150
Range Transmission, Overhaul	161	161	161	161
POWER STEERING SYSTEM				
Fluid, Filters & Bleeding ...	13	13	13	13
Hand Pump	20	20	20	20
Operational Tests	16	16	16	16
Steering Cylinder	22,23	22,23	22,23	22,23
System Pressure	15	15	15	15
Trouble-Shooting	14	14	14	14

INDEX (CONT.)

	Models			
	7110	7120	7130	7140
POWER TAKE-OFF				
Clutch Overhaul	188,191	188,191	188,191	188,191
Control Valve	186	186	186	186
Linkage Adjustment	184	184	184	184
Overhaul Dual Shaft	190	190	190	190
Overhaul Single Shaft	189	189	189	189
Pressure Adjustment	185	185	185	185
Rear Unit, R&R	187	187	187	187
Reduction Gears	192	192	192	192
TURBOCHARGER				
Operation	68	68	68	68
Overhaul	70	70	70	70
Remove & Reinstall	69	69	69	69

DUAL DIMENSIONS

This service manual provides specifications in both the U.S. Customary and Metric (SI) system of measurements. The first specification is given in the measuring system used during manufacture, while the second specification (given in parenthesis) is the converted measurement. For instance, a specification of "0.011 inch (0.279 mm)" would indicate that the equipment was manufactured using the U.S. system of measurement and the metric equivalent of 0.011 inch is 0.279 mm.

CONDENSED SERVICE DATA

	Models			
	7110	7120	7130	7140
GENERAL				
Engine Make	Case-International			
Engine Model	6T-830			6TA-830
Cylinders, No. of	6			
Bore	4.488 in. (114 mm)			
Stroke	5.315 in. (135 mm)			
Displacement	505 cu. in. (8.3 L)			
Compression Ratio	17.3:1			16.5:1
Main Bearings, No. of	7			
Cylinder Sleeves	Wet			
Forward Speeds	18 or 24			
TUNE-UP				
Firing Order	1-5-3-6-2-4			
Valve Tappet Gap, Cold—				
Intake	0.012 in. (0.305 mm)			
Exhaust	0.024 in. (0.609 mm)			

The balance of reassembly is the reverse of disassembly procedure. Tighten axle extension bolts (10) to a torque of 375-425 ft.-lbs. (510-575 N.m).

FRONT SUPPORT

All Models

5. REMOVE AND REINSTALL. To remove the front support (5—Fig. 3), first remove hood, grille and side panels. Disconnect air intake hose. Drain radiator and disconnect front wiring harness connector. Disconnect upper and lower radiator hoses, coolant filter hose and coolant recovery hose. Disconnect ether starting line from intake manifold. Remove hoses from clip on radiator, then remove air conditioning condenser and lay back on top of engine. Identify and disconnect oil cooler lines and remove oil cooler. Attach a hoist with lift straps to radiator support. Unbolt radiator support from front support and tilt radiator forward to clear fan as the assembly is removed.

If so equipped, remove front weights and weight bracket. Remove front axle assembly as in paragraph 4, but do not separate axle extensions from axle main member. Attach a hoist to front support, unbolt from side rails and slide support forward from tractor.

Reinstall by reversing the removal procedure. Tighten side rail to front support bolts to a torque of 162-184 ft.-lbs. (220-250 N.m). Tighten the five cap screws securing radiator support to front support to a torque of 34-38 ft.-lbs. (46-52 N.m).

FRONT DRIVE AXLE

All models are available with a Spicer front drive axle. Front drive axle can be engaged or disengaged with tractor on the go. Front drive axle is spring clutch engaged and hydraulically disengaged. The solenoid control valve is located on left side of rear frame housing and is identical to the rear differential lock valve. Refer to paragraph 175 for service information. Unit is equipped with a limited slip differential.

NOTE: The front drive axle clutch is located in the RANGE transmission housing and the clutch output shaft is located in the SPEED transmission housing. Refer to these sections for R&R AND OVERHAUL procedures.

DRIVE AXLE ASSEMBLY

Models So Equipped

6. REMOVE AND REINSTALL. To remove front drive axle assembly (8—Fig. 4), place shift control

lever in PARK position and block rear wheels securely. If so equipped, remove front weights and weight bracket. Loosen front wheel lug nuts. Raise hood and remove side panels. Install front split stands, CAS-10749 or equivalent, to side rails. Raise front of tractor and remove front wheels. Install axle carrier CAS-10500-4 to support drive axle. Unbolt front of drive shaft shield (10) and slide shield rearward. Unbolt front drive shaft "U" joint (9) and lower front end of drive shaft. Disconnect steering cylinder hoses and plug or cap all openings to prevent entrance of dirt into system. Remove cap screw (1) and washer (2), then remove pivot shaft (3). Catch washers (5 and 6) as shaft is withdrawn. Lower axle carrier and remove axle assembly forward from tractor.

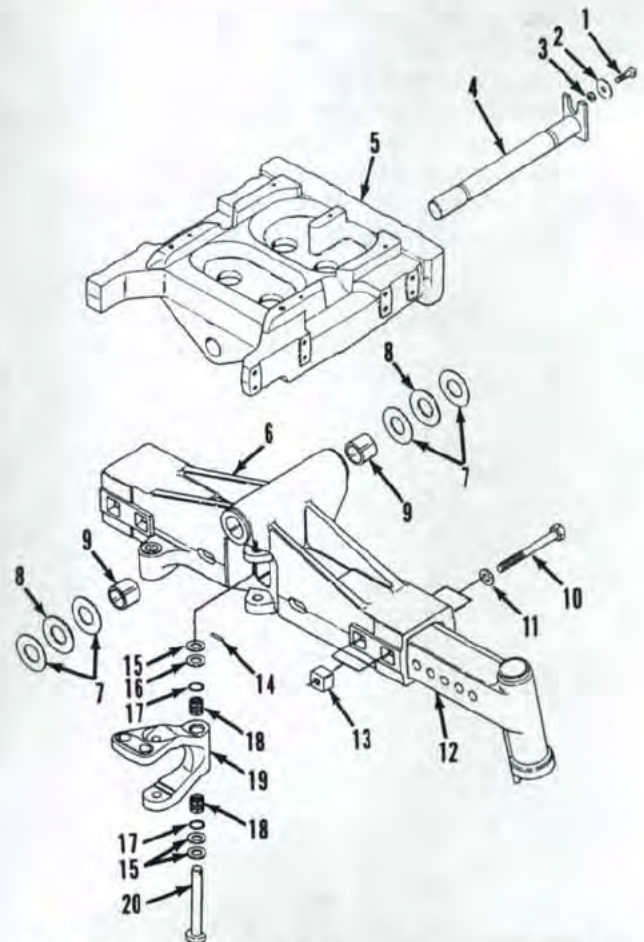


Fig. 3—Exploded view of axle main member, front support and related parts used on all two-wheel drive tractors.

- | | |
|--------------------------|----------------------------------|
| 1. Cap screw | 12. Axle extension |
| 2. Flat washer | 13. Square nut |
| 3. Spacer | 14. Roll pin |
| 4. Pivot shaft | 15. Washer, 0.156 in. (3.96 mm) |
| 5. Front support | 16. Washer, 0.042 in. (1.067 mm) |
| 6. Axle main member | 17. "O" Ring |
| 7. Washer (steel) | 18. Bushing |
| 8. Thrust washer (nylon) | 19. Center steering arm |
| 9. Pivot bushings | 20. Pivot pin |
| 10. Bolt | |
| 11. Washer | |

Inspect bushings (7) and renew as necessary. When installing new bushings, apply a coat of Loctite anti-seize to bore in axle housing. Freeze bushings in dry ice and carefully install flush to $\frac{1}{16}$ inch (1.6 mm) below the face of axle housing.

Inspect thrust washers (5 and 6) for excessive wear and renew as necessary. Reinstall axle assembly to front support. Make sure that nylon thrust washer (6) is installed between steel thrust washers (5) at both front and rear sides of axle. Use as many additional steel washers as possible at rear side of axle housing to shim axle housing forward. Secure pivot shaft (3) in place with washer (2) and cap screw (1), tightened to a torque of 93-112 ft.-lbs. (126-152 N.m). Connect steering cylinder lines and reinstall front drive shaft. Tighten drive shaft coupling bolts to a torque of 45-54 ft.-lbs. (61-73 N.m). Install front drive shaft shield. Remove axle carrier. Install front wheels and remove split stands from side rails. Tighten front wheel lug nuts to a torque of 300-370 ft.-lbs. (407-502 N.m). If so equipped, install front weight bracket and tighten cap screws to a torque of 450-540 ft.-lbs. (610-730 N.m), then install front weights.

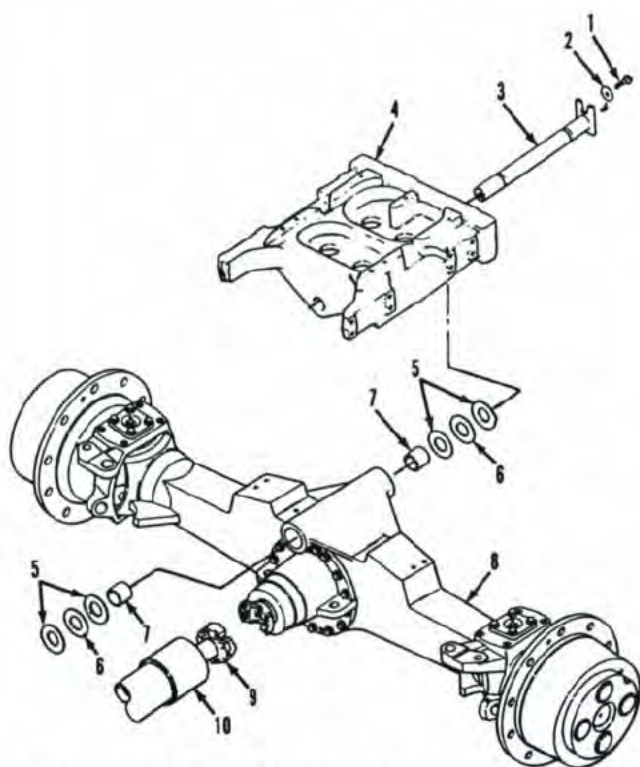


Fig. 4—View of front drive axle and front support removed from tractor.

- | | |
|-------------------|--------------------------|
| 1. Cap screw | 6. Thrust washer (nylon) |
| 2. Flat washer | 7. Bushings |
| 3. Pivot shaft | 8. Drive axle assy. |
| 4. Front support | 9. Front drive shaft |
| 5. Washer (steel) | 10. Drive shaft shield |

FRONT SUPPORT

Models So Equipped

7. REMOVE AND REINSTALL. To remove front support (4—Fig. 4), first remove hood, grille and panels. Disconnect air intake hose. Drain radiator and disconnect front wiring harness connector. Disconnect upper and lower radiator hoses, coolant bleed hose and coolant recovery hose. Disconnect either starting line from intake manifold. Remove hoses from clip on radiator, then remove air conditioning condenser and lay back on top of engine. Identify and disconnect oil cooler lines and remove oil cooler. Attach a hoist with lift straps to radiator support. Unbolt radiator support from front support and move radiator forward to clear fan as the assembly is moved.

If so equipped, remove front weights and weight bracket. Remove front drive axle assembly as outlined in paragraph 6. Attach a hoist to front support, unbolt from side rails and slide front support forward from tractor.

Reinstall by reversing removal procedure. Tighten side rail to front support bolts to a torque of 162-200 ft.-lbs. (220-250 N.m). Tighten the five cap screws securing radiator support to front support to a torque of 34-38 ft.-lbs. (46-52 N.m).

TIE ROD AND TOE-IN

Models So Equipped

8. Due to the closeness between tie rod and front support, removal of tie rod and toe-in adjustment can be accomplished only after removal of front drive axle assembly as outlined in paragraph 6. Disassembly of tie rod is obvious after removal and reference to Fig. 5. Toe-in should be adjusted to 0-0.5 inch (0-12.7 mm). One full turn of a tie rod end (2 or 6) will change toe $\frac{3}{8}$ inch (9.5 mm). Make sure bow of tie rod tube (4) is down.

Tighten slotted nuts (1) to a torque of 140 ft.-lbs. (190 N.m). Tighten jam nuts (3 and 5) to a torque of 250-300 ft.-lbs. (340-405 N.m).

WHEEL HUB AND PLANETARY

Models So Equipped

9. R&R AND OVERHAUL. To remove the wheel hub and planetary, support axle housing and remove front wheel and tire assembly. Rotate wheel hub until drain plug (13—Fig. 6) is at bottom.

NOTE: Front drive shaft must be disconnected before wheel hub can be rotated.