pinion shaft for wear or damage.

When reassembling starter drive, install shims (13) between rear housing (14) and reduction gear (12) as necessary until pinion shaft end play is less than 0.5 mm (0.020 inch) on starter Models M002T50371 and M002T50381 or 1.0 mm (0.040 inch) on starter Model M002T56271. To check and adjust pinion gear end gap, first disconnect connector from terminal "M" on solenoid. Connect battery positive cable to solenoid "S" terminal and connect battery negative cable to starter housing to shift pinion gear outward. Lightly push pinion gear inward to remove slack and measure gap between gear and stop washer (2). If necessary add or remove solenoid mounting shims (9) to obtain recommended pinion gap of 0.5-2.0 mm (0.020-0.080 inch).

SAFETY START SWITCH

All Models

71. All tractors are equipped with a safety start switch which must be actuated to complete circuit between starting switch and starting motor. On Models MT300 and MT300D, safety switch is actuated when engine clutch pedal is fully depressed. On all other models, switch is actuated by placing range transmission shift lever in neutral position.

To adjust switch, loosen switch locknuts and place shift lever in neutral position or depress clutch pedal. Adjust locknuts until safety switch plunger is properly actuated by shift lever or clutch pedal.

FUEL SHUT-OFF SOLENOID CIRCUIT

All Models

72. The electric fuel shut-off system is designed to reset injection pump control rack to "excess fuel" position when starting engine and to move control rack to "shut-off" position when key switch is turned to OFF position. Also, if engine oil pressure drops below a prescribed level, system will automatically return pump control rack to "shut-off" position. Refer to Fig. 74 for wiring schematic of fuel shut-off solenoid circuit.

73. TROUBLE-SHOOTING. If fuel shut-off system does not operate properly, some problems and their possible causes are as follows:

1. Solenoid does not retract when starter is operating.
   a. Disconnected wiring or bad connection at "ST" terminal of ignition switch.
   b. Control timer defective.
2. Solenoid does not extend when ignition switch is turned to "ON" or "OFF" position.
   a. Blown fuse or disconnected wiring.
   b. Faulty ignition switch.
   c. Faulty oil pressure switch.
   d. Faulty solenoid.
   e. Faulty control timer.
3. Engine stops when ignition switch is returned to "ON" from "START" position.
   a. Oil pressure switch defective.
   b. Faulty ignition switch.

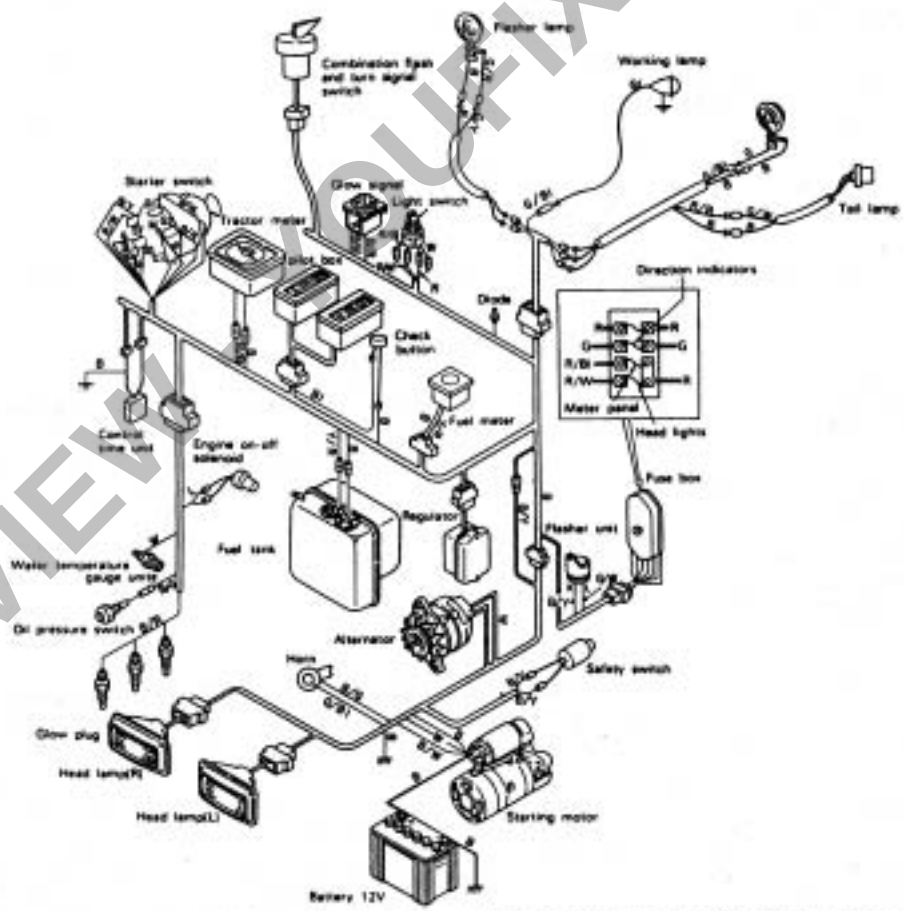


Fig. 75—Basic electrical diagram for all tractors except Models MT300 and MT300D. Color code is as follows:

B- Black
Bl- Blue
Br- Brown
G- Green
Gr- Gray
P- Pink
R- Red
W- White
Y- Yellow

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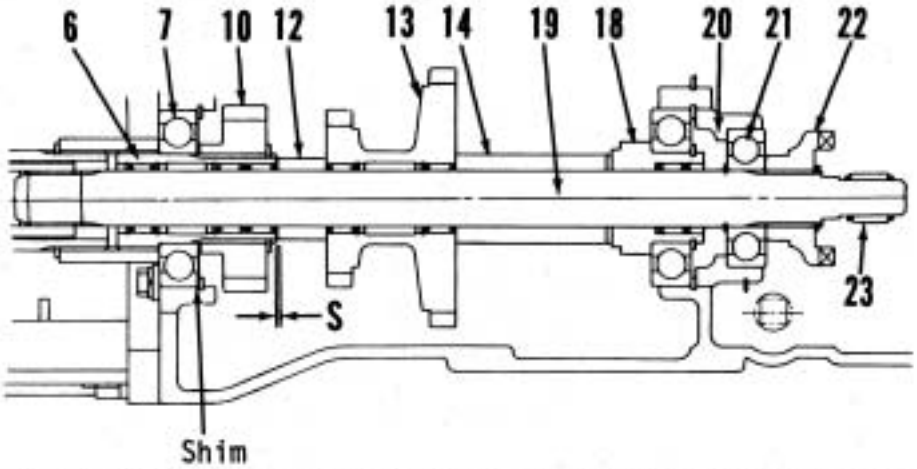


Fig. 112—Cross-sectional view of pto drive shaft used on Model MT300. Adjust clearance "S" by changing length of spacer (12). Refer to Fig. 111 legend.

To reinstall countershaft on tractors without creeper gear, assemble thrust washer, needle bearing, gears and spacer onto rear of shaft. Install rear bearing onto shaft making sure all end play of components is removed. Insert shaft assembly into housing from the rear and and assemble gears (14, 15 and 16) onto shaft as it is installed. Secure rear bearing with snap ring (29). Drive front bearing onto shaft until gear end play is removed. Select and install required shims (12) between front bearing and spacer (11) to obtain recommended shaft end play of 0.05-0.20 mm (0.002-0.008 inch).

To reinstall countershaft on tractors equipped with creeper gear, assemble thrust washers, needle bearings and gears (22, 23 and 24) onto shaft. Temporarily position center snap ring (17) just in front of thrust washer (20). Install gears (14, 15 and 16), then tilt shaft assembly and place into housing. Assemble needle bearing, gear (25), thrust washer (26) and snap ring (27) onto rear of shaft. Install rear bearing into housing with sealed end of bearing facing inward, then install rear retaining ring. Drive shaft into rear bearing. Install and tighten nut (30) until it lightly depresses bearing, then stake nut. Move front drive gears and snap ring (17) forward until snap ring is seated in its groove. Install front bearing (13) onto shaft until end play of gear is removed. Select and install shims (12) as necessary between front bearing and spacer (11) to obtain recommended shaft end play of 0.05-0.20 mm (0.002-0.008 inch).

118. PTO OUTPUT SHAFT. Remove wing bolts and remove shaft shield from rear of housing. Remove cap screws securing bearing retainer (34—Fig. 111), then thread two cap screws into tapped wing bolt holes to remove retainer. Unscrew slotted nut (26) and move nut forward on shaft. Pull output shaft (32) rearward from housing and remove one-way clutch cam (22), spring (24), spring seat (25), snap ring (21) and nut (26). After shaft is removed, drive bearings (28) out of housing.

To reassemble pto output shaft, install rear bearing onto shaft. Install snap ring (30), spacer (29) and front bearing into housing bore. Insert shaft into housing from the rear and assemble components to shaft while observing the following: Be sure front bearing is not pushed out of housing bore as shaft is installed. Spring seat (25) should be positioned with chamfered side of inner diameter towards spring. Tighten nut firmly, then bend tab of washer to lock it in place. Lubricate lip of oil seal and "O" ring with grease. Be sure oil seal lip faces inward. Tighten bearing retainer cap screws to a torque of 25-30 N·m (18-22 ft.-lbs.).

119. PTO DRIVE SHAFT. To disassemble pto drive shaft and components, proceed as follows: Pull shaft (19—Fig. 111) rearward from housing and remove drive gears and spacers as shaft is withdrawn. Remove snap ring (11) and gear (10) from front splined hub (6). Remove bearing retainer plate from front of housing, then tap front splined hub and bearing forward out of housing. Tap rear splined hub and bearing forward out of housing. Remove needle bearing (23), snap ring, one-way clutch hub (22), bearing (21) and retainer (20) from drive shaft.

Inspect all parts for excessive wear or other damage. Renew ball bearings and needle bearings as necessary. When installing ball bearing (16) onto rear splined hub (18), be sure seal of bearing faces forward.

To reassemble drive shaft, proceed as follows: If front splined hub (6—Fig. 112) or ball bearing (7) is being renewed, select and install shims as necessary between bearing and snap ring so front edge of bearing is flush with front edge of housing. Install front bearing retainer

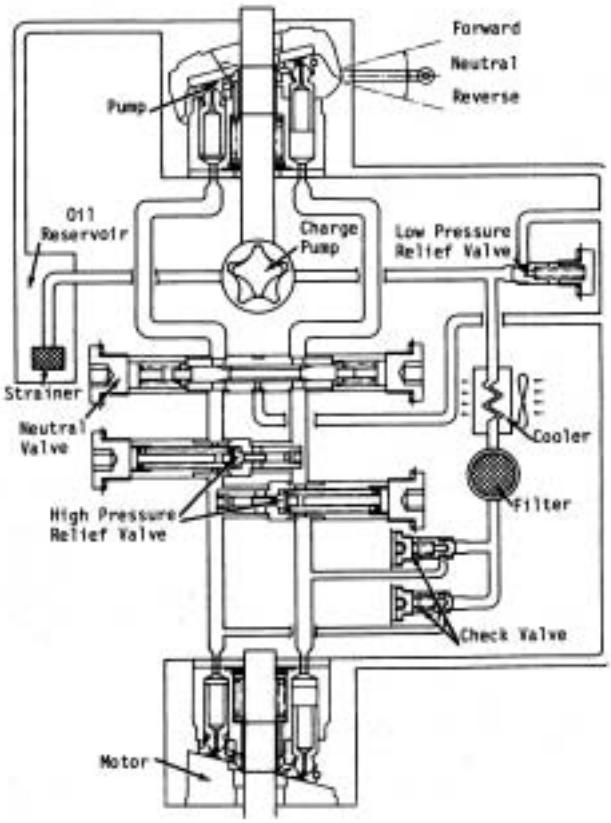


Fig. 113—Schematic diagram of hydrostatic transmission used on Models MT180H and MT180HD.

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front of tractor until front wheels are clear of ground. Support front of tractor with suitable stands. Disconnect drag link from steering arm. Remove pivot pin set bolt (8), tap pivot pin out of axle main member and withdraw axle assembly from tractor. Retain shims (4) for use in reassembly.

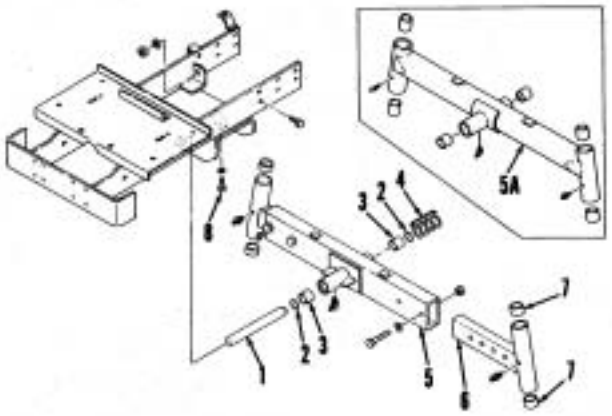


Fig. 3B—Exploded view of axle assembly used on Models MT210 and MT250. Fixed tread-width axle (5A) shown in inset is used on MT210 tractors prior to serial number 10166.

1. Pivot pin
2. "O" rings
3. Bushings
4. Shims
5. Axle main member
6. Axle extension
7. Bushings
8. Set bolt

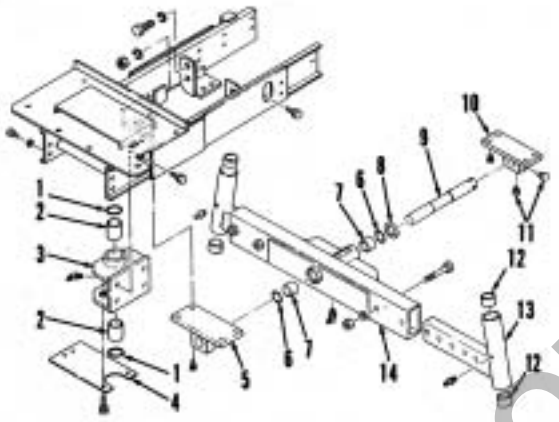


Fig. 3C—Exploded view of axle assembly used on Model MT300.

1. "O" rings
2. Bushings
3. Steering arm support
4. Plate
5. Support bracket
6. "O" rings
7. Bushings
8. Spacer
9. Pivot pin
10. Support bracket
11. Set bolts
12. Bushings
13. Axle extension
14. Axle main member

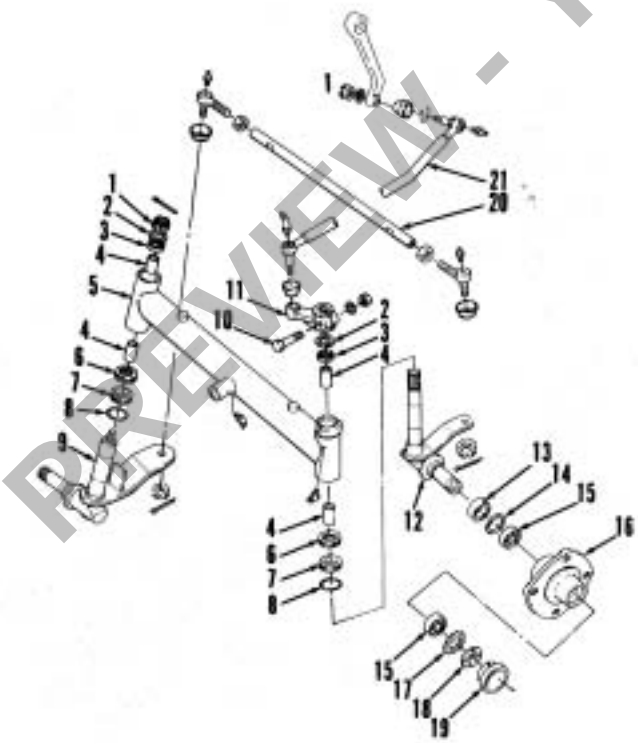


Fig. 4—Exploded view of steering spindles, wheel hub and steering linkage used on Models MT160, MT180, MT180H.

1. Nuts
2. Washer
3. Seal
4. Bushings
5. Axle
6. Thrust bearing
7. Bushing
8. "O" ring
9. Spindle R.H.
10. Clamp bolt
11. Steering arm
12. Spindle L.H.
13. Seal
14. Spacer
15. Bearings
16. Wheel hub
17. Washer
18. Nut
19. Cap
20. Tie rod
21. Drag link

Pivot pin outside diameter should be 25.96-25.98 mm (1.022-1.023 inches) and bushing inside diameter should be 26.01-26.14 mm (1.024-1.029 inches). Renew worn parts as necessary.

Thoroughly lubricate pivot pin and bushings with grease prior to reassembly. Assemble axle main member to frame mounting bracket, then select and install shim pack (4) to obtain 0.1-0.3 mm (0.004-0.012 inch) clearance between axle center boss and frame bracket boss. Install pivot pin set bolt. Make certain axle pivots smoothly.

Model MT300

3. All tractors are equipped with an adjustable tread-width front axle assembly which pivots on a center pin (9—Fig. 3C). The pivot pin is retained in support brackets (5 and 10) by two set bolts (11) in rear bracket. Pivot pin bushings (7) are renewable.

To remove front axle, raise front of tractor and support with suitable stands. Disconnect steering tie rod from left spindle arm. Remove mounting cap screws from pivot pin brackets, then withdraw axle assembly from tractor. Remove support brackets and pivot pin from axle main number.

Inspect all parts for excessive wear or other damage. If clearance between pivot pin and bushings exceeds 0.30 mm (0.012 inch), renew bushings and pins as necessary.

Lubricate pivot pin and bushings with grease prior to reassembly. End clearance between axle center boss and rear support bracket should be 0.10-0.30 mm (0.004-0.012 inch). Spacer (8) is available in different thicknesses to obtain recommended clearance. Tighten support bracket cap screws to a torque of 54-64 N·m (40-47 ft.-lbs.).

TIE RODS AND TOE-IN

All Models

4. The procedure for removal and disassembly of tie rods is obvious after examination of units and reference to Fig. 4, 5 or 6. Tie rod ends are nonadjustable and excessively worn units will require renewal.

Recommended front wheel toe-in is 4-8 mm (3/16-5/16 inch). To adjust toe-in, loosen tie rod end jam nuts, then turn tie rod (ends have left-hand and right-hand threads) to lengthen or shorten rod as necessary. Toe-in should always be checked and adjusted whenever axle tread-width (models so equipped) is changed.

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	MT210	MT210D	MT250	MT250D	MT300	MT300D
TRANSMISSION						
Range	100	100	100	100	113	113
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DUAL DIMENSIONS

This service manual provides specifications in both the Metric (SI) and U.S. Customary systems of measurement. 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 "0.28 mm (0.011 inch)" would indicate that the equipment was manufactured using the metric system of measurement and the U.S. equivalent of 0.28 mm is 0.011 inch.

CONDENSED SERVICE DATA

	MT160, MT160D	MT180, MT180D	MT180H, MT180HD
GENERAL			
Engine Make	Own		
Engine Model	K3A	K3C	K3C
Number of Cylinders	3		
Bore	65 mm (2-9/16 in.)	70 mm (2¾ in.)	70 mm (2¾ in.)
Stroke	78 mm (3 in.)		
Displacement	776 cc (47.4 cu. in.)	900 cc (54.9 cu. in.)	900 cc (54.9 cu. in.)
Forward Speeds	6	6	Infinite
Battery – Volts	12		
Ground Polarity	Negative		
TUNE-UP			
Firing Order	1-3-2		
Compression Pressure	3140 kPa (455 psi)		
Valve Clearance (Cold) – Intake and Exhaust	0.25 mm (0.010)		
Engine Governed Speeds – Rpm			
Slow Idle	900-950		
Fast Idle	2825-2900		
Rated	2700		
Rated Power at Pto	10.0 kW (13.5 hp)	11.0 kW (15.0 hp)	11.6 kW (15.5 hp)
Injection Pump Timing (BTDC)	21°		
Timing Mark Location	Crankshaft Pulley		
Injector Opening Pressure (Min.)	11760 kPa (1706 psi)		

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STEERING SPINDLES AND WHEEL HUBS

Models MT160—MT180—MT180H

5. To remove spindles, raise front of tractor and support with suitable stands. Remove front wheels. Disconnect and remove tie rod. Remove retaining nut (1—Fig. 4), then lower right spindle (9) from axle. Remove clamp bolt (10) from steering arm (11), then lower left spindle (12) from axle.

To remove wheel hub (16), rerpove outer cap (19) and retaining nut (18). Use a suitable puller to remove hub and bearings from spindle.

Inspect all parts for excessive wear or other damage. Outside diameter of spindle should be 24.947-24.980 mm (0.0982-0.083 inch). Inside diameter of spindle bushings should be 25.04-25.07 mm (0.986-0.987 inch). New spindle bushings are presized, but inside diameter should be checked after installation and reamed to specified dimension if necessary.

Reinstall seal, wheel hub and bearings onto spindle. Pack wheel hub with multipurpose grease. Tighten hub retaining nut to a torque of 14-15 N·m (10-11 ft.-lbs.). Be sure wheel hub rotates smoothly.

Lubricate spindle and thrust bearing with grease, then install into axle. Tighten retaining nut on right spindle to a torque of 45-54 N·m (33-40 ft.-lbs.). Position steering arm on left spindle to obtain a gap of 0.5 mm (0.020 inch) or less between arm and washer, then tighten arm clamp bolt to a torque of 20-30 N·m (15-20 ft.-lbs.).

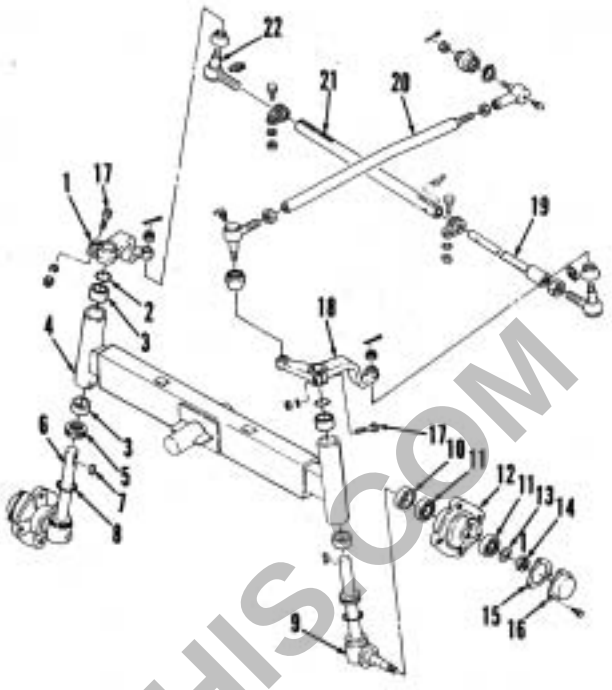


Fig. 5—Exploded view of steering spindles, wheel hub and steering linkage used on late Model MT210 (after serial number 10165) and all Model MT250 tractors. Early Model MT210 tractors are similar except axle tread width is not adjustable.

1. Arm
2. "O" ring
3. Bushings
4. Axle extension
5. Thrust bearing
6. Spindel R.H.
7. Key
8. "O" ring
9. Spindle L.H.
10. Seal
11. Bearings
12. Wheel hub
13. Washer
14. Nut
15. Gasket
16. Cap
17. Clamp bolt
18. Steering arm
19. Tie rod
20. Drag link
21. Tie rod link
22. Tie rod end

Models MT210—MT250

6. To remove spindles, first raise and support front of tractor. Remove front wheels. Remove clamp bolts (17—Fig. 5) from spindle arms (1 and 18). Lift arms off spindles (6 and 9), then lower spindles from axle.

To remove wheel hub (12), remove hub cap (16) and retaining nut (14). Use a suitable puller to withdraw hub and bearings from spindle.

Thoroughly clean all parts and inspect for excessive wear or other damage. Outside diameter of spindle should be 25.957-25.973 mm and inside diameter of spindle bushings (3) should be 26.01-26.14 mm (1.024-1.029 inch). Use a suitable bushing driver when installing new spindle bushings. Bushings are presized, but inside diameter may be deformed slightly during installation. Carefully ream bushings to specified size if necessary.

Reassemble seal, wheel hub and bearings onto spindle shaft. Pack wheel hub and bearings with multipurpose grease. Tighten retaining nut to remove bearing play and install cotter pin. Be sure hub rotates smoothly.

To reinstall spindles, proceed as follows: Lubricate parts with grease during assembly. Be sure to install thrust bearing (5) with smaller inner diameter race downward. Position arms (1 and 18) on spindles so there is 0.3 mm (0.012 inch) or less clearance between lower side of arm and top of axle extension. Reinstall front wheels and reconnect tie rod and drag link if removed.

Model MT300

7. To remove spindles, raise front of tractor and support with suitable stands. Remove front wheels. Disconnect tie rod ends (10—Fig. 6) and center steering rod (13) from spindle arms. Drive spring pins out of retainer collars (4), then lower spindles from axle.

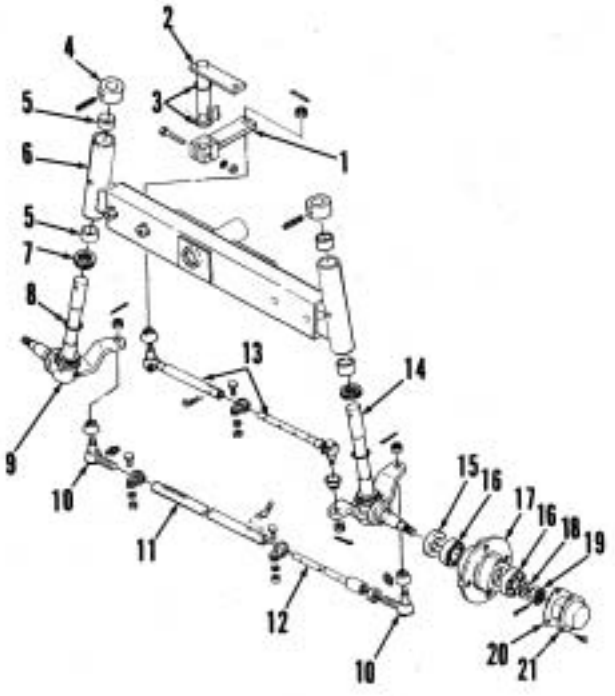


Fig. 6—Exploded view of spindles, wheel hub and steering linkage used on Model MT300.

1. Steering arm
2. Bellcrank
3. "O" rings
4. Collar
5. Bushings
6. Axle
7. Thrust bearing
8. "O" ring
9. Spindle R.H.
10. Tie rod end
11. Tie rod tube
12. Tie rod
13. Steering link
14. Spindle L.H.
15. Seal
16. Bearings
17. Wheel hub
18. Washer
19. Nut
20. Gasket
21. Cap

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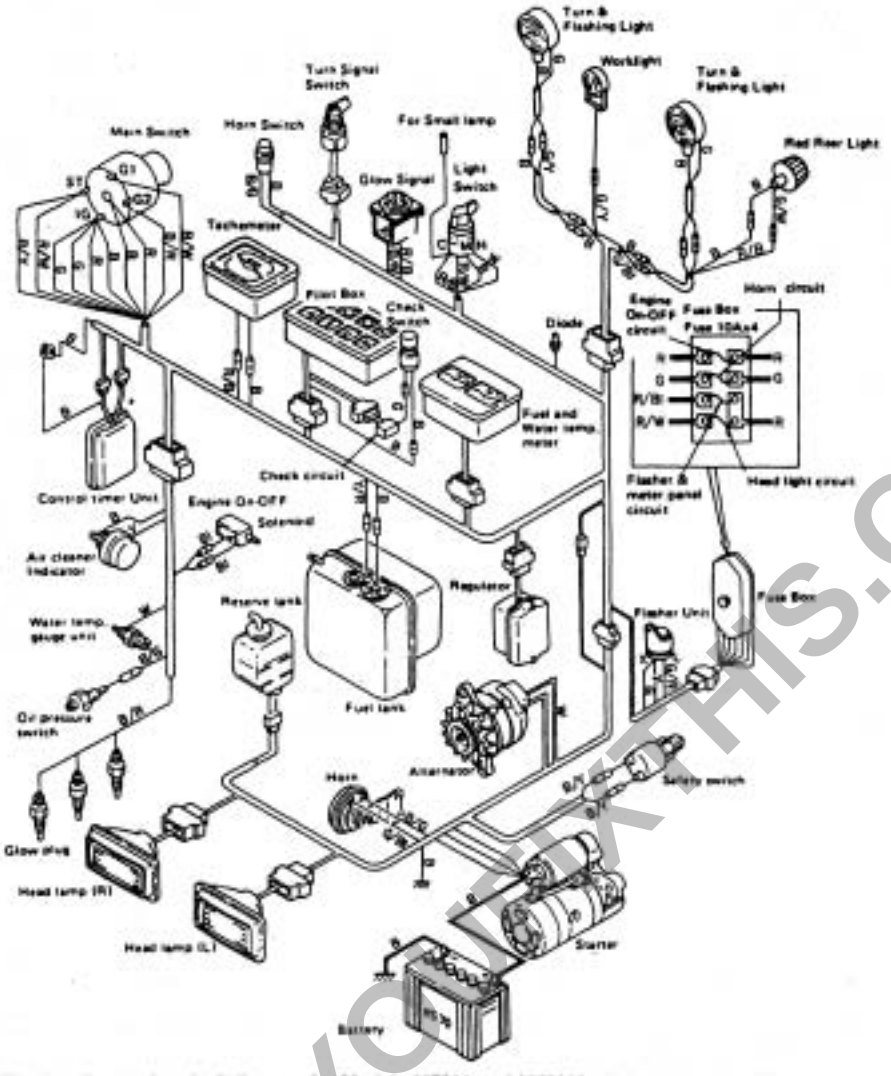


Fig. 76—Basic electrical diagram for Models MT300 and MT300D. Color code is same as Fig. 75.

CLUTCH

74. All models use a single plate, dry disc, spring-loaded clutch. Models MT300 and MT300D are equipped with a coil spring and release lever type pressure plate. All other models are equipped with a diaphragm spring type pressure plate.

All Models

75. ADJUSTMENT. Clutch pedal free play, measured at top of pedal, should ber 20 to 30 mm (13/16 to 1-3/16 inches) on Models MT160, MT160D, MT180, MT180D, MT180H and MT180HD; 10 to 25 mm (7/16 to 1 inch) on Models MT210, MT210D, MT250 and MT250D; 10 to 20 mm (7/16 to 13/16 inch) on Models MT300 and MT300D. Pedal free play will decrease as clutch lining wears.

To adjust free play, disconnect clutch linkage rod (2–Fig. 78) and turn clevis in or out as necessary to obtain desired pedal free play.

Models MT160—MT160D—MT180—MT180D—MT180H—MT180HD

76. CLUTCH SPLIT. To separate (split) tractor between engine and clutch housing, first remove hood and grille assembly and side covers. Disconnect battery cables, then disconnect wiring to glow plugs, fuel shut-off solenoid, water temperature sender, oil pressure switch, alternator and starter. Disconnect tachometer cable from left side of engine. Shut-off fuel and disconnect fuel supply line and return line. Disconnect control rod from governor control lever. Disconnect pipes from hydraulic pump. On Models MT180H and MT180HD, disconnect transmission oil cooler pipes. On tractors equipped with front-wheel drive, disconnect propeller shaft. On all models, disconnect drag link from steering arm. Remove front covers from both steps. Support engine and front end with a suitable hoist and lifting sling. Support clutch housing with floor jack and safety stand. Remove cap screws securing engine to clutch housing, then pull engine away from clutch housing.

Models MT210—MT210D—MT250—MT250D—MT300—MT300D

77. CLUTCH SPLIT. To separate (split) clutch housing from engine, first remove engine side covers and grille assembly. Disconnect battery cables. Remove instrument panel lower cover and disconnect wiring harness. Disconnect engine speed control linkage. Remove air cleaner lower hose from intake manifold. Disconnect tachometer

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plate. Install gear (10) and snap ring onto front hub. Assemble rear hub (18 or 35–Fig. 111) with bearings into housing bore. Assemble bearing (21) and retainer (20), clutch hub (22) and needle bearing (23) onto rear of drive shaft. Lubricate needle bearings and shaft with clean oil. Insert shaft from the rear while assembling gears and spacers onto shaft. End clearance (S–Fig. 112) between gear (10) and spacer (12) should be 0.3-0.7 mm (0.012-0.028 inch). Spacer is available in three different lengths and should be changed if necessary to obtain recommended end clearance.

HYDROSTATIC TRANSMISSION

Models MT180H—MT180HD

120. The hydrostatic transmission serves as the "speed transmission" portion of the drive train for these tractors. It provides infinitely variable speeds in both forward and reverse and is controlled by a single shift lever mounted on right side of tractor.

The transmission utilizes a reversible swashplate, variable displacement, axial piston type pump to provide hydraulic pressure to a stationary swashplate, fixed displacement, piston type motor. Refer to transmission shematic shown in Fig. 113. Pump output may be varied by changing the angle of pump swashplate with a resulting change in tractor speed. Reversing the pump swashplate angle reverses the direction of pump flow to provide forward and reverse operation.

The hydrostatic circuit is a closed loop type. A charge pump, located on transmission front plate, makes up any oil lost from the closed circuit. Valving consists of low pressure relief valve to regulate charge pressure, forward and reverse high pressure relief valves, charge circuit check valves and a neutral valve. An oil cooler and a spin-on type hydraulic filter are also included in hydraulic circuit.

121. LUBRICATION. Transmission oil also serves as oil for the hydraulic system. A filter screen is located in left side of differential housing and a spin-on filter element is located on right side of tractor below the seat. After servicing hydrostatic transmission, screen should be cleaned and filter and hydraulic oil renewed after the first 50 hours of operation and every 200 hours of operation thereafter. Manufacturer recommends using a high quality transmission/hydraulic oil. Capacity is approximately 14 L (14.8 quarts).

122. LINKAGE ADJUSTMENT. To adjust control linkage for neutral position, proceed as follows: Disconnect transmission control rods (A and B–Fig. 114) from control lever (5) on transmission and foot control pedal (2). Be sure control lever detent ball is in neutral position in detent plate (1). Raise and support rear of tractor so rear wheels are off the ground. Be sure front-wheel drive (if so equipped) is disengaged. Start engine and shift range transmission into low gear. With clutch released and engine running at high idle speed, rear wheels should not rotate. If wheels turn, loosen cap screws securing detent plate. Move plate and control lever together until rear wheels stop turning, then retighten mounting cap screws. With foot control pedal in neutral position, adjust length of rod (A) until pin can be inserted freely through holes in control lever (5) and control rod yoke (6). Place hand control lever (3) in neutral position, then adjust length of control rod (B) until control rod aligns with foot control bracket (2).

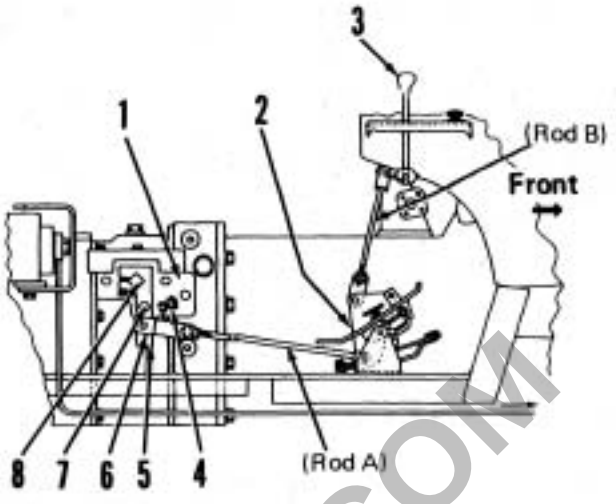


Fig. 114—View of hydrostatic transmission control linkage.
1. Detent plate
2. Foot control bracket
3. Hand control lever
4. Reverse speed limiting screw
5. Transmission control lever
6. Yoke
7. Detent
8. Control shaft

123. TROUBLE-SHOOTING. Some of the troubles and their possible causes which may occur during operation of hydrostatic transmission are as follows:

1. Tractor does not move or stops when slightly loaded. Could be caused by:
   a. Low oil level.
   b. Hydraulic filter plugged.
   c. Air entering system on suction side.
   d. High pressure relief valve defective.
   e. Check valve defective.
   f. Neutral valve sticking.
   g. Internal wear or damage.
2. Tractor moves only in one direction. Could be caused by:
   a. Charge check valve sticking.
   b. Neutral valve spool sticking.
3. Tractor does not travel normally and jerky starts. Could be caused by:
   a. Control linkage damaged or loose.
   b. Neutral valve spool sticking.
4. Vibration or noise during operation. Could be caused by:
   a. Low oil level.
   b. Hydraulic filter plugged.
   c. Suction side air leak.
   d. Excessive load.

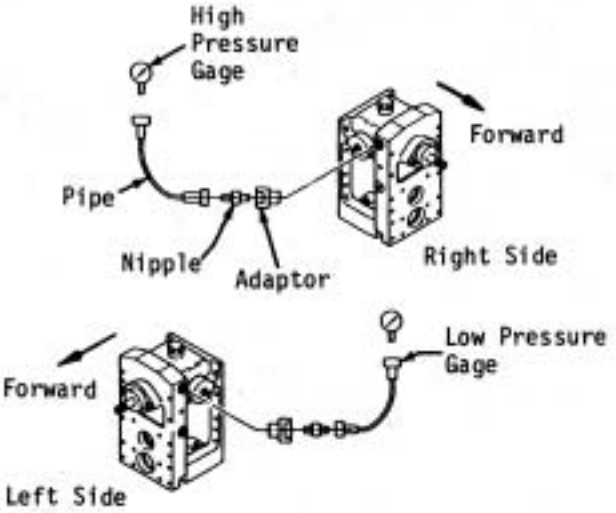


Fig. 115—To check hydrostatic transmission pressures in forward, install high pressure gage on right side of neutral valve and low pressure gage on left side of valve. To check pressures in reverse, switch position of gages.

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cap screws from wheel hub bearing retainer (26 – Fig. 12). Pull retainer with wheel hub (28) and bevel gear (21) from outer drive case. Use a suitable puller to remove bevel gear (21) and inner bearing (20). Remove retaining ring (23), then tap hub shaft out of retainer. Remove outer bearing retaining ring (24), then remove outer bearing (25) and oil seal (27) from retainer. Remove steering arm (3 or 4 – Fig. 9) and thrust washers (7) from outer drive case. Remove spindle shaft upper bearing retainer (9 – Fig. 12) and lower bearing retainer (17). Tap lightly on upper end of spindle shaft (11) and separate spindle housing (12), shaft and bevel gears from outer drive case (16). Pull axle shaft (3), bearing and bevel gear (6) from axle housing (1). Remove snap ring (7) and withdraw gear, shims and bearing from axle shaft.

To reassemble outer drive, proceed as follows: When installing axle shaft bearing (2 – Fig. 13), be sure side of bearing with grooves (5) cut in end of races, faces inward. Use caution when installing new oil seal (13 – Fig. 12) into outer drive case as seal is thin and easily distorted. Assemble spindle shaft (11), bearings (10), pinion gears (8 and 19) and outer drive housings (12 and 16). Apply thread sealant to cap screws securing upper and lower bearing retainers (9 and 17), then tighten cap screws to a torque of 25-30 N·m (18-22 ft.-lbs.). Be sure housings rotate smoothly.

To check backlash between axle shaft bevel gear (3 – Fig. 14) and spindle bevel gear (4), temporarily install outer drive housing onto axle housing. Position a dial indicator against a tooth of lower bevel gear (7) as shown, then move bevel gear and note backlash reading. Recommended backlash is 0.2-0.4 mm (0.008-0.016 inch). To adjust backlash, change thickness of shims (8) between axle shaft bearing (2) and bevel gear (3). When proper backlash is obtained, install housing "O" ring (9) and tighten spindle housing cap screws to a torque of 49-58 N·m (36-43 ft.-lbs.).

Install oil seal (27 – Fig.12) into retainer (26). Assemble wheel shaft (28), outer bearing (25), original shim pack (22) and bevel gear (21). Do not install inner bearing (20) at this time. Install bevel gear and hub assembly into outer drive housing and position a dial indicator against wheel hub as shown in Fig. 15. Move wheel hub to check backlash between wheel shaft bevel gear (21 – Fig. 12) and spindle shaft lower bevel gear (19). Rec-

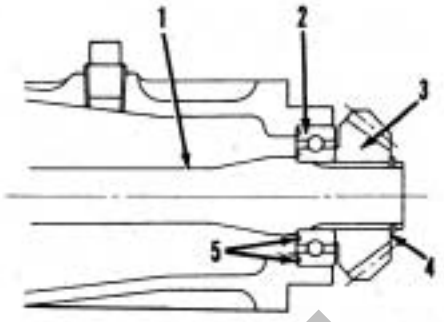


Fig. 13—On Models MT160D, MT180D and MT180HD, install axle bearing so grooved side of bearing race faces inward.

1. Axle shaft
2. Bearing
3. Bevel gear
4. Snap ring
5. Grooves

ommended backlash is 0.2-0.4 mm (0.008-0.016 inch). Adjust shim pack (22) between bevel gear and outer bearing (25) to obtain desired backlash. After

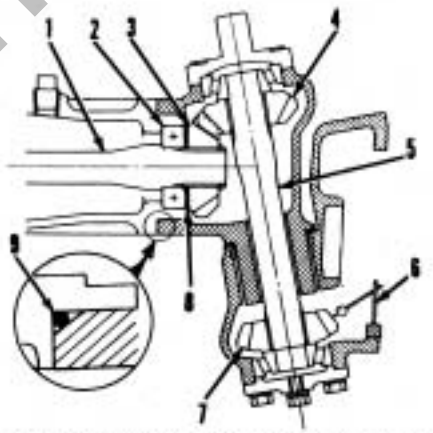


Fig. 14—Use a dial indicator positioned against lower pinion gear to check backlash between upper gear and axle gear. Adjust backlash with shims (8).

1. Axle shaft
2. Bearing
3. Bevel gear
4. Bevel gear
5. Spindle shaft
6. Dial indicator
7. Bevel gear
8. Shim
9. "O" ring

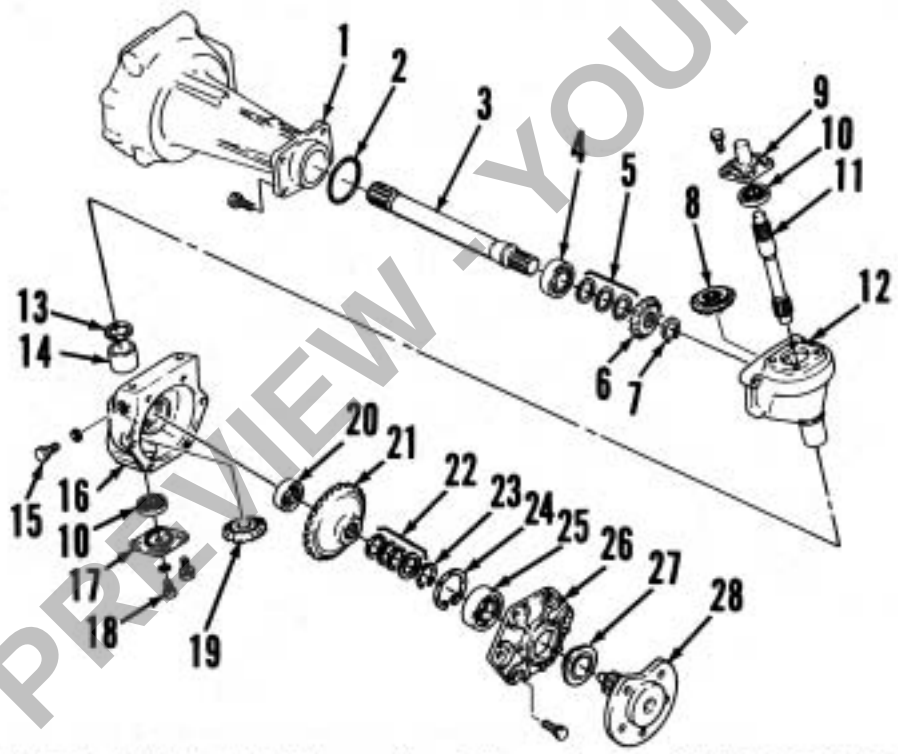


Fig. 12—Exploded view of outer drive assembly and axle assembly used on Models MT160D, MT180D and MT180HD.

1. Axle housing
2. "O" ring
3. Axle shaft
4. Bearing
5. Spacers
6. Bevel gear
7. Snap ring
8. Bevel gear
9. Upper bearing retainer
10. Bearing
11. Spindle shaft
12. Spindle housing
13. Oil seal
14. Bushing
15. Oil level plug
16. Outer drive housing
17. Lower bearing retainer
18. Drain plug
19. Bevel gear
20. Bearing
21. Bevel gear
22. Spacers
23. Snap ring
24. Snap ring
25. Bearing
26. Hub retainer
27. Seal
28. Wheel hub

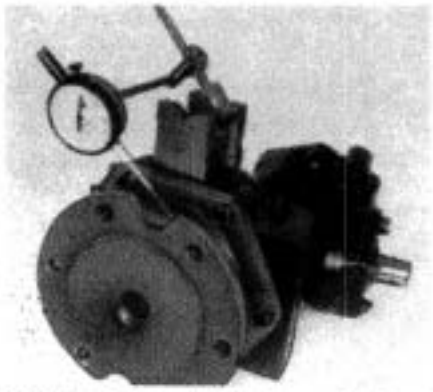


Fig. 15—Position a dial indicator against wheel hub as shown to check bevel drive gear backlash. Refer to text.

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