

FRONT AXLE SYSTEM (TWO-WHEEL DRIVE)

FRONT AXLE ASSEMBLY AND STEERING LINKAGE

Two-Wheel-Drive Models

1. WHEELS AND BEARINGS. To remove front wheel hub and bearings, raise and support the front axle extension, then unbolt and remove the tire and wheel assembly. Remove cap (2 or 3—Fig. 4), cotter pin (4), castellated nut (5), washer and outer bearing cone (7). Slide the hub assembly from spindle axle shaft. Remove dust shield (12), seal (9) and inner bearing cone (11). Drive bearing cups (8 and 10) from hub if renewal is required. Pack wheel bearings liberally with a multi-purpose lithium based grease. Reassemble by reversing disassembly procedure. Tighten castellated nut (5) to a torque of 80 N·m (60 ft.-lbs.), then back nut off to the nearest hole and install cotter pin (4). Be sure to install cap (2 or 3) securely.

2. TRACK ROD AND TOE-IN. All models are equipped with hydrostatic steering. On 340-360 models, a single track rod connects the left and right steering arms which are attached to the steering spindles. On 399 models, the two track rods are

attached to each end of the hydrostatic steering rod, which is located between the steering arms. The track rod of all models assures that both left and right wheels turn in unison and the distance between ends of track rod establishes front wheel toe-in.

Ends of track rod are automotive type and should be renewed if wear is excessive. The procedure for removing and installing ends is self-evident. Recommended toe-in is 0-5 mm (0-3/16 inch) for all models. Toe-in should be measured between the wheel rims on center line of axle, parallel to ground. Rotate wheels and remeasure to be sure that wheels are not bent giving incorrect reading.

Distance between front wheels is adjustable to seven different widths by relocating axle extensions and changing length of track rod using the pre-existing attachment holes.

On 340-360 models, axle extension and hydrostatic steering cylinder bracket retaining screws (1—Fig. 5) should be tightened to 180-230 N·m (135-170 ft.-lbs.) torque. Tighten track setting screw (2) to 45-55 N·m (33-40 ft.-lbs.) torque before tightening locknut. Note that spacers are used on the outer screws between steering cylinder brackets and axle extensions when axle width is at the four widest settings. To make small toe-in adjustments, remove track adjusting screw (2) from left end of track rod, loosen rod end clamp bolt on right end, then turn center section of track rod until toe-in is correct. Reinstall track adjusting screw (2) and tighten rod end clamp bolt to 45-55 N·m (33-41 ft.-lbs.) torque.

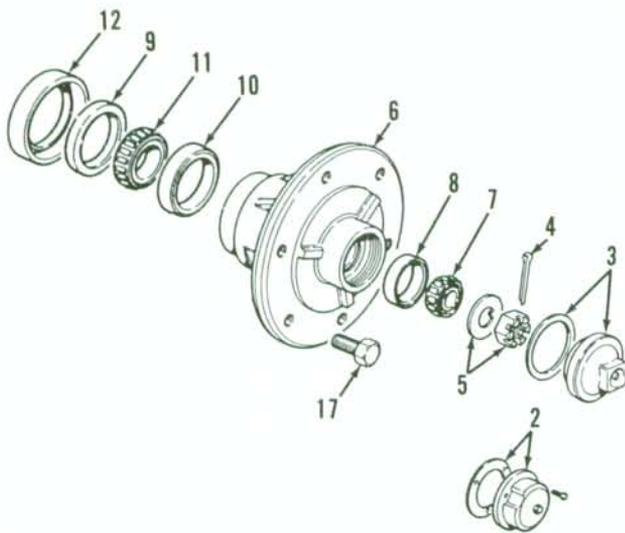


Fig. 4—Exploded view of wheel hub typical of two-wheel-drive models.

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|------------------------------------|----------------------------|
| 2. Hub cap | 8. Outer bearing cup |
| 3. Hub cap | 9. Seal |
| 4. Cotter pin | 10. Inner bearing cup |
| 5. Castellated nut and tang washer | 11. Inner bearing cone |
| 6. Hub | 12. Dust shield |
| 7. Outer bearing cone | 17. Wheel retaining screws |

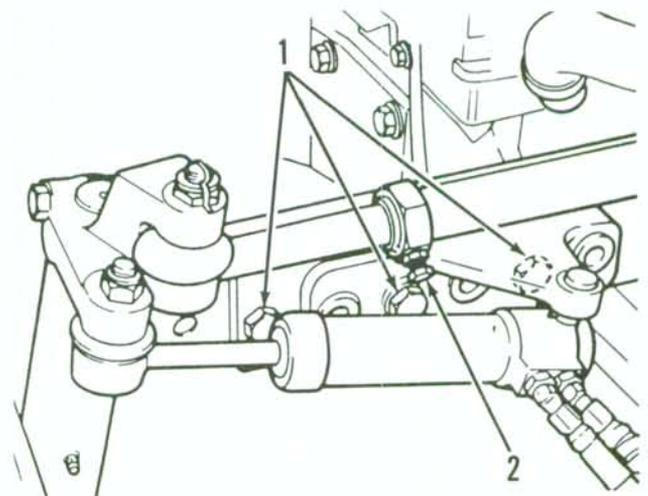


Fig. 5—View of axle left end typical of 340-360 models. Track adjusting screw and lock nut (2) and cylinder bracket and axle extension screws (1) must be properly installed and tightened.

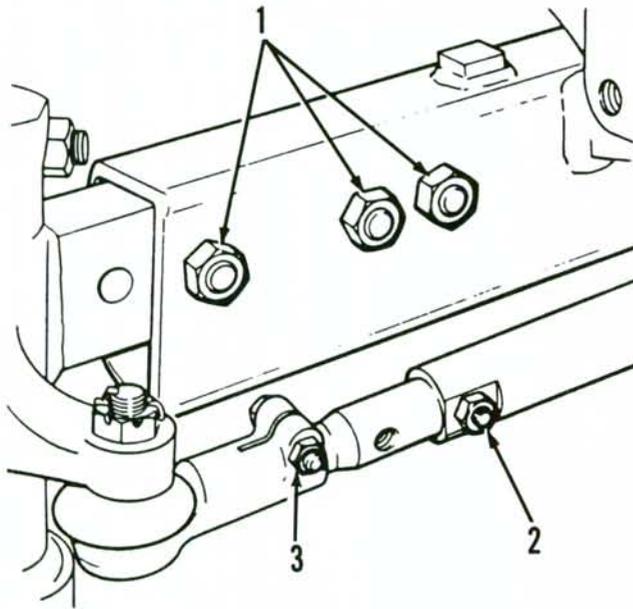


Fig. 6—View of axle left end typical of type used on 399 models. Right side is equipped with a similar track rod, adjusting bolt (2) and rod end. Rod end may be locked with clamp bolt (3) as shown or jam nut.

On 399 models, axle extension retaining screws (1—Fig. 6) should be tightened to 340-450 N·m (250-330 ft.-lbs.) torque. Tighten track setting bolt (2) to 120-160 N·m (90-120 ft.-lbs.). To make small toe-in adjustments, remove track adjusting bolt (2), loosen rod end clamp bolt (3) or jam nut, then turn track rod until toe-in is correct. Reinstall track adjusting bolt (2) and tighten to 120-160 N·m (90-120 ft.-lbs.) torque. Tighten rod end clamp bolt (3) to 45 N·m (33 ft.-lbs.) torque or jam nut to 160-200 N·m (120-130

ft.-lbs.) torque. Equal toe-in adjustments should be made to both sides to center steering.

3. SPINDLES, AXLE EXTENSIONS AND BUSHINGS. To remove spindle (12—Fig. 7 or Fig. 8), first remove the wheel and hub. Disconnect rod end (2) from steering arm (1), remove clamp screw (13) from steering arm, then remove steering arm. Remove key (14) and seal (20) from top of spindle, then lower spindle out of axle extension (19). Remove thrust bearing (11) from spindle. Clean and inspect parts for wear or other damage and renew as necessary.

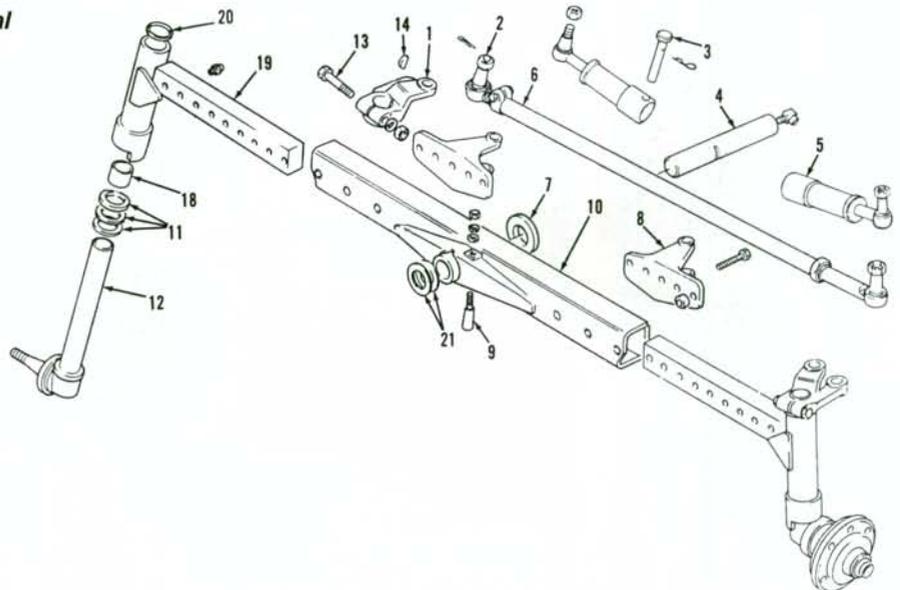
Each axle extension (19) is equipped with two spindle bushings that must be reamed after pressing into position. Clean all metal particles from bore and be sure that hole for grease fitting is clean and open before assembling.

When reassembling, install thrust bearing (11) on spindle so that numbered side of bearing is facing upward and insert spindle through axle extension. Install seal (20) and key (14) then locate steering arm on top of spindle. Tighten steering arm retaining clamping screw to a torque of 125-165 N·m (94-122 ft.-lbs.) for 340-360 models; 280-370 N·m (207-273 ft.-lbs.) torque for 399 models. Refer to paragraph 2 for track and toe-in adjustment and other recommended torques. Balance of reassembly is the reverse of disassembly.

4. AXLE CENTER MEMBER, PIVOT PIN AND BUSHINGS. To remove front axle assembly, first remove any front mounted equipment, guards, weights and weight frame. Raise front of tractor in such a way that it will not interfere with the removal

Fig. 7—Exploded view of front axle typical of two-wheel-drive 340-360 models.

1. Steering arm
2. Rod end
3. Cylinder pivot pin
4. Axle pivot pin
5. Steering cylinder
6. Track rod
7. Thrust washer
8. Steering cylinder bracket
9. Tapered retaining pin
10. Axle center member
11. Thrust washers
12. Spindle
18. Bushing
19. Axle extension
20. Seal
21. Shims



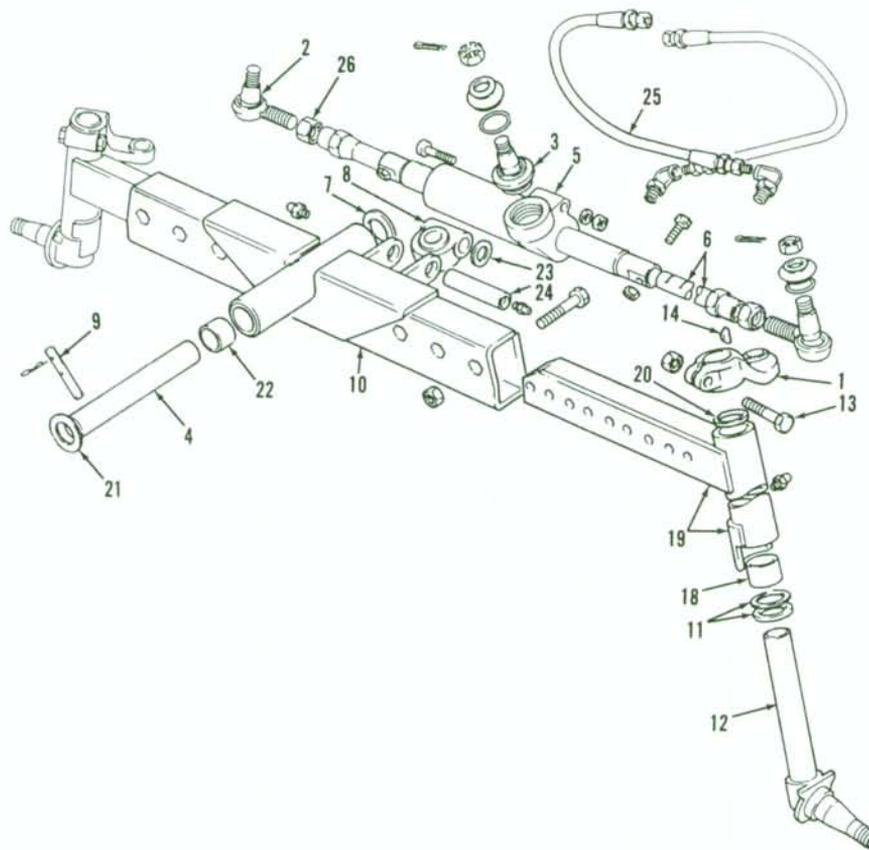


Fig. 8—Exploded view of front axle typical of type used on two-wheel-drive 399 models.

1. Steering arm
2. Rod end
3. Cylinder ball joint
4. Axle pivot pin
5. Steering cylinder
6. Track rod
7. Thrust washer
8. Pivot block
9. Retaining pin
10. Axle center member
11. Thrust washers
12. Spindle
14. Key
18. Bushing
19. Axle extension
20. Seal
21. Shims
22. Bushing
23. Shims
24. Pivot pin
25. Hydraulic hoses
26. Jam nut

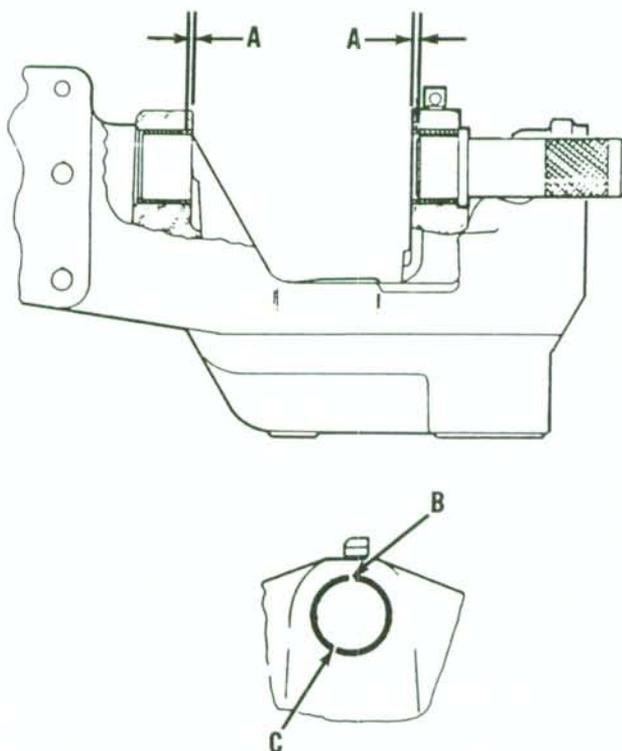


Fig. 9—Axle pivot bushings should be installed as shown for 340-360 models. Hole (B) should be aligned with grease passage and slot (C) should be in position indicated.

of the axle, such as with a support located under engine sump. Removal of wheels, spindles and axle extensions will reduce weight and may make handling the center member easier; however, the complete axle assembly can be removed as a unit. Disconnect hydrostatic steering hoses from the steering cylinder or cylinders and cover openings to prevent the entry of dirt. Support the axle with a suitable jack to prevent tipping while permitting the axle to be lowered and moved safely. Remove retaining pin (9—Fig. 7 or Fig. 8), then use a suitable puller to withdraw axle pivot pin (4). Carefully lower the axle assembly and roll axle from under tractor.

Check axle pivot bushings and renew if necessary. Bushings are located in support housing of 340-360 models and should be installed flush to 0.5 mm (0.020 inch) below flush (A—Fig. 9) with housing bore. Split (Fig. 9) in bushing should be down and hole (B) for grease passage should be up as shown. Axle pivot bushings (22—Fig. 8) are located in axle of 399 models. On all models, it may be necessary to ream bushings after installation. Reverse removal procedure when assembling. Axle end play should be 0.05-0.25 mm (0.002-0.010 inch) on pivot pin. Push the axle toward rear on pivot pin, then measure axle end play with a feeler gauge as shown in Fig. 10 or Fig. 11. Shims (21—Fig. 7 or Fig. 8) are available in various thick-



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