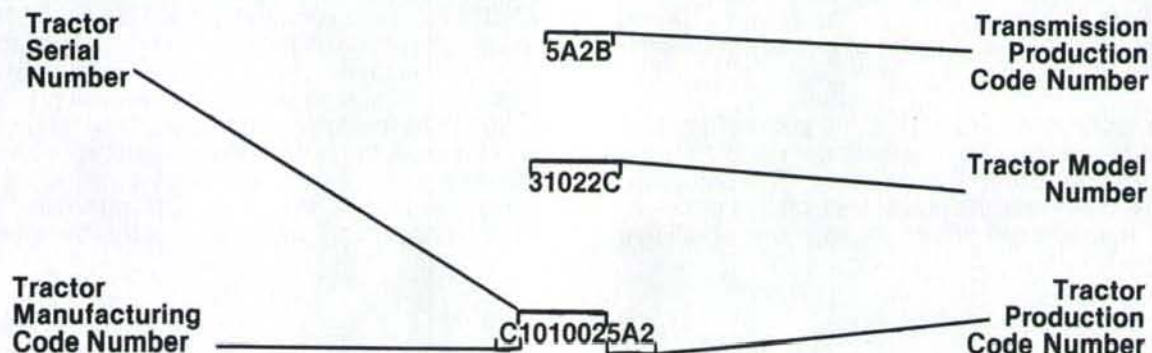


SHOP MANUAL

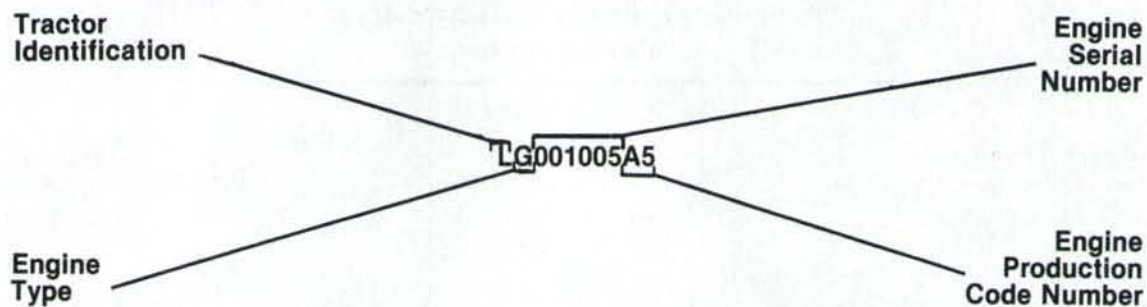
FORD

MODELS 2310-2600-2610-3600-3610-4100 (After 1974)-4110-4600-4610 (Prior To 1984)-4600SU-4610SU (Prior To 1984)

Tractor Series Identification Plate is located under right hood panel. Tractor Serial Number, along with manufacturing and production code numbers and tractor model number, will appear on implement mounting pad at right front corner of transmission (directly behind engine starter). Numbers will be stamped on top of pad, on mounting face of pad, or partially on top of and partially on mounting face of pad. Refer to following explanation of the numbers that will appear at this location:



Engine Serial Number, along with tractor size identification, engine type identification and engine product code number, will appear on either the left or right pan rail of cylinder block casting approximately at mid-length of engine. Refer to following explanation of the numbers that will appear at this location:



Tractor Identification:
 B – 2310 – 2600 – 2610
 C – 3600 – 3610
 D – 4100 – 4110 – 4600 –
 4610 – 4600SU – 4610SU

Engine Type:

(Early)	(Late)
D – Diesel	1 & 5 – Diesel
G – Gasoline	2 & 6 – Gasoline
P – LP-Gas	

The following tractor models are covered in this manual:

2310 All Purpose
 2600 All Purpose
 2610 All Purpose
 3600 All Purpose
 3610 All Purpose

4100 All Purpose (After 1974)
 4110 All Purpose
 4600 All Purpose
 4610 All Purpose (Prior To 1984)
 4600SU
 4610SU (Prior To 1984)

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DUAL DIMENSIONS

This service manual provides specifications in both the U.S. Customary and Metric (SI) systems of measurement. The first specification is given in the measuring system perceived by us to be the preferred system when servicing a particular component, while the second specification (given in parenthesis) is the converted measurement. For instance, a specification of "0.011 inch (0.28 mm)" would indicate that we feel the preferred measurement, in this instance, is the U.S. system of measurement and the metric equivalent of 0.011 inch is 0.28 mm.

CONDENSED SERVICE DATA

	2600	3600	4100	4600, 4600SU
GENERAL				
Engine Make	Own	Own	Own	Own
No. of Cylinders	3	3	3	3
Bore, Inches:				
Non-Diesel	4.2	4.2	.....	4.4
Diesel	4.2	4.2	4.2	4.4
Bore, mm:				
Non-Diesel	106.7	106.7	.....	111.8
Diesel	106.7	106.7	106.7	111.8
Stroke, Inches:				
Non-Diesel	3.8	4.2	.....	4.4
Diesel	3.8	4.2	4.4	4.4
Stroke, mm:				
Non-Diesel	96.5	106.7	.....	111.8
Diesel	96.5	106.7	111.8	111.8
Displacement, Cubic Inches:				
Non-Diesel	158	175	.....	201
Diesel	158	175	183	201
Displacement, cc:				
Non-Diesel	2589	2867	.....	3293
Diesel	2589	2867	2998	3293
Compression Ratio:				
Non-Diesel	8.0:1	8.0:1	.....	8.0:1
Diesel	17.3:1	16.3:1	16.3:1	16.3:1
Firing Order	1-2-3	1-2-3	1-2-3	1-2-3
Valve Tappet Gap (Warm):				
Intake	0.014-0.016 inch (0.355-0.406 mm)			
Exhaust	0.017-0.019 inch (0.431-0.482 mm)			
Valve Face Angle, Degrees:				
Intake	44	44	44	44
Exhaust	44	44	44	44
Valve Seat Angle, Degrees:				
Intake	45	45	45	45
Exhaust	45	45	45	45
Ignition Timing	Par. 128	Par. 128	.....	Par. 128
Injection Timing	See Paragraph 114			
Spark Plug Make	Motorcraft	Motorcraft	.....	Motorcraft
Spark Plug Type	AG-5	AG-5	.....	AG-5
Engine Low Idle, rpm:	600-700	600-700	600-700	600-700
Engine High Idle, rpm:				
Non-Diesel	2200-2300	2200-2300	.....	2400-2500
Diesel	2225-2275	2225-2275	2425-2475	2425-2475
Engine Rated rpm:				
Non-Diesel	2000	2000	.....	2200
Diesel	2000	2000	2200	2200
Grounded Battery Terminal	Negative	Negative	Negative	Negative

SIZES-CAPACITIES-CLEARANCES

Crankshaft Journal Diameter	See Paragraph 85
Crankpin Diameter	See Paragraph 84
Camshaft Journal Diameter	2.3895-2.3905 inches (60.693 - 60.718 mm)
Piston Pin Diameter	1.4997-1.5000 inches (38.092-38.100 mm)
Valve Stem Diameter, Intake	0.3711-0.3718 inch (9.425-9.443 mm)
Valve Stem Diameter, Exhaust	0.3701-0.3708 inch (9.400-9.418 mm)

CONDENSED SERVICE DATA (CONT.)

	2600	3600	4100	4600, 4600SU
SIZES-CAPACITIES-CLEARANCES, CONT.				
Main Bearing Diametral Clearance	0.0022-0.0045 inch (0.0559-0.1143 mm)			
Rod Bearing Diametral Clearance:				
Aluminum	0.0021-0.0042 inch (0.053-0.107 mm)			
Copper-Lead	0.0017-0.0038 inch (0.0431-0.0965 mm)			
Camshaft Bearing Diametral Clearance	0.001-0.003 inch (0.0254-0.0762 mm)			
Crankshaft End Play	0.004-0.008 inch (0.1016-0.2032 mm)			
Camshaft End Play	0.001-0.007 inch (0.0254-0.1778 mm)			
Piston Skirt-to-Cylinder Clearance	See Paragraph 82			
Cooling System (Less Heater):				
Quarts (U.S.)	11			
Liters	10.41			
Crankcase With Filter:				
Quarts (U.S.)	7			
Liters	6.65			
Transmission	See Paragraph 139, 149			
Final Drive & Hydraulic:				
Quarts (U.S.)	24.6	24.6	48.3	48.3
Liters	23.37	23.37	45.88	45.88
Steering Gear Manual:				
Quarts (U.S.)	0.66			
Liters	0.63			
Power Steering:				
Quarts (U.S.)	1.9*	1.9*	1.9*	2.3**
Liters	1.8	1.8	1.8	2.2

*Oil capacity is 2.3 U.S. quarts (2.2 liters) on models equipped with a cab.

**Oil capacity is 1.9 U.S. quarts (1.8 liters) on Model 4600SU when not equipped with a cab.

	2310	2610	3610	4110	4610, 4610SU
GENERAL					
Engine Make	Own	Own	Own	Own	Own
No. of Cylinders	3	3	3	3	3
Bore, Inches:					
Non-Diesel .....	.....	4.2	4.2	.....	4.4
Diesel	4.2	4.2	4.4	4.4	4.4
Bore, mm:					
Non-Diesel .....	.....	106.7	106.7	.....	111.8
Diesel	106.7	106.7	111.8	111.8	111.8
Stroke, Inches:					
Non-Diesel .....	.....	3.8	4.2	.....	4.4
Diesel	3.8	4.2	4.2	4.4	4.4
Stroke, mm:					
Non-Diesel .....	.....	96.5	106.7	.....	111.8
Diesel	96.5	106.7	106.7	111.8	111.8
Displacement, Cubic Inches:					
Non-Diesel .....	.....	158	175	.....	201
Diesel	158	175	192	201	201
Displacement, cc:					
Non-Diesel .....	.....	2589	2867	.....	3293
Diesel	2589	2867	3146	3293	3293
Compression Ratio:					
Non-Diesel .....	.....	7.75:1	7.75:1	.....	7.75:1
Diesel	17.3:1	17.3:1	16.3:1	16.3:1	See Par. 79
Firing Order	1-2-3	1-2-3	1-2-3	1-2-3	1-2-3
Valve Tappet Gap (Warm):					
Intake	0.014-0.016 inch (0.355-0.406 mm)				
Exhaust	0.017-0.019 inch (0.431-0.482 mm)				

CONDENSED SERVICE DATA (CONT.)

GENERAL, CONT.	2310	2610	3610	4110	4610, 4610SU
Valve Face Angle, Degrees:					
Intake	44.5	44.5	44.5	44.5	44.5
Exhaust	44.5	44.5	44.5	44.5	44.5
Valve Seat Angle, Degrees:					
Intake	45	45	45	45	45
Exhaust	45	45	45	45	45
Ignition Timing .....	.....	Par. 128	Par. 128	.....	Par. 128
Injection Timing .....	.....	.....	See Paragraph 114	.....	.....
Spark Plug Make .....	.....	Motorcraft	Motorcraft	.....	Motorcraft
Spark Plug Type .....	.....	AG-5	AG-5	.....	AG-5
Engine Low Idle, rpm:	600-850	600-850	600-850	600-850	600-850
Engine High Idle, rpm:					
Non-Diesel .....	.....	2250-2350	2250-2350	.....	2450-2550
Diesel	2225-2275	2225-2275	2225-2275	2425-2475	2350-2400
Engine Rated Speed, rpm:					
Non-Diesel .....	.....	2000	2000	.....	2200
Diesel	2000	2000	2000	2200	2200
Grounded Battery Terminal.....	Negative	Negative	Negative	Negative	Negative

SIZES - CAPACITIES - CLEARANCES

Crankshaft Journal Diameter .....	.....	.....	See Paragraph 85	.....	.....
Crankpin Diameter .....	.....	.....	See Paragraph 84	.....	.....
Camshaft Journal Diameter .....	.....	.....	2.3895-2.3905 inches	.....	.....
			(60.693-60.718 mm)		
Piston Pin Diameter .....	.....	.....	1.4997-1.5000 inches	.....	.....
			(38.092-38.100 mm)		
Valve Stem Diameter, Intake .....	.....	.....	0.3711-0.3718 inch	.....	.....
			(9.425-9.443 mm)		
Valve Stem Diameter, Exhaust .....	.....	.....	0.3701-0.3708 inch	.....	.....
			(9.400-9.418 mm)		
Main Bearing Diametral Clearance .....	.....	.....	0.0022-0.0045 inch	.....	.....
			(0.0559-0.1143 mm)		
Rod Bearing Diametral Clearance:					
Aluminum .....	.....	.....	0.0021-0.0042 inch	.....	.....
			(0.053-0.107 mm)		
Copper-Lead .....	.....	.....	0.0017-0.0038 inch	.....	.....
			(0.0431-0.0965 mm)		
Camshaft Bearing Diametral Clearance .....	.....	.....	0.001-0.003 inch	.....	.....
			(0.0254-0.0762 mm)		
Crankshaft End Play .....	.....	.....	0.004-0.008 inch	.....	.....
			(0.1016-0.2032 mm)		
Camshaft End Play .....	.....	.....	0.001-0.007 inch	.....	.....
			(0.0254-0.1778 mm)		
Piston Skirt-to-Cylinder Clearance .....	.....	.....	See Paragraph 82	.....	.....
Cooling System (Less Heater):					
Quarts (U.S.) .....	.....	.....	11	.....	.....
Liters .....	.....	.....	10.41	.....	.....
Crankcase With Filter:					
Quarts (U.S.) .....	.....	.....	7	.....	.....
Liters .....	.....	.....	6.65	.....	.....
Transmission .....	.....	.....	See Paragraph 149, 158	.....	.....
Final Drive & Hydraulic:					
Quarts (U.S.)	24.6	24.6	24.6	48.3	48.3
Liters	23.37	23.37	23.37	45.88	45.88
Steering Gear, Manual:					
Quarts (U.S.) .....	.....	.....	0.66	.....	.....
Liters .....	.....	.....	0.63	.....	.....
Power Steering:					
Quarts (U.S.)	1.9*	1.9*	1.9*	1.9*	2.3**
Liters	1.8	1.8	1.8	1.8	2.2

*Oil capacity is 2.3 U.S. quarts (2.2 liters) on models equipped with a cab.

**Oil capacity is 1.9 U.S. quarts (1.8 liters) on Model 4610SU when not equipped with a cab.

FRONT SYSTEM AND STEERING

(Models 2310- 2600-2610-3600- 3610-4100-4110 Without Cab)

FRONT AXLE ASSEMBLY AND STEERING LINKAGE

1. SPINDLE BUSHINGS. To renew spindle bushings (19 and 22—Fig. 1), proceed as follows: Support front of tractor and disconnect steering arms (17) from wheel spindles (24). Slide spindle out of axle extension (21). Drive old bushings from front axle extension and install new ones using a piloted drift or bushing driver. New bushings will not require final sizing if not distorted during installation. Renew thrust bearing (23) if worn or rough.

2. AXLE CENTER MEMBER, PIVOT PIN AND BUSHINGS. To remove axle center member (6—Fig. 1), support front of tractor, unbolt axle extensions from axle center member and swing axle extensions and wheel assemblies away from tractor. Remove cap screw (1) and retainer (2), then unscrew front axle pivot pin (3). Withdraw axle center member from either side of tractor. Press out bushing (7).

To reassemble, press a new bushing into axle center member. Insert axle center member into front support, install pivot pin and tighten pin to 300-320 ft.-lbs. (408-435 N·m). Install retainer (2) and tighten cap screw (1) to 75 ft.-lbs.

(102 N·m). If removed, tighten radius rod to axle extension bolts to 130-160 ft.-lbs. (176-217 N·m).

3. FRONT SUPPORT. To remove front support, proceed as follows: Remove engine hood, grille, lower hood to front support bolts and unbolt radiator from front support. Place floor jack under front end of transmission and take weight of tractor from front axle. Remove front axle pivot pin as in paragraph 2. Remove bolts retaining front support casting to engine and lower front support to floor. When reinstalling, tighten front support bolts to 180-220 ft.-lbs. (244-299 N·m).

4. DRAG LINKS AND TOE-IN. Drag link ends are non-adjustable automotive type and renewal procedure is evident. Refer to Fig. 1 for manual steering tractors and to Fig. 4 for power steering.

Front wheel toe-in should be $\frac{1}{4}$ - to $\frac{1}{2}$ -inch (6.35 to 12.7 mm); vary the length of each drag link an equal amount to obtain proper toe-in.

MANUAL STEERING GEAR

5. ADJUSTMENT. To adjust steering gear, first be sure gear housing is

properly filled, then disconnect both drag links from steering arms and proceed as follows:

6. WORMSHAFT END PLAY. To check wormshaft end play, first loosen locknuts (1—Fig. 2) on sector shaft adjusting screws (8) and back screws out two full turns. Wormshaft should turn freely without perceptible end play. Shims (24) are available in thicknesses of 0.0024 inch (0.060 mm) (brass), 0.005 inch (0.127 mm) (steel) and 0.010 inch (0.254 mm) (steel); also, a 0.005 inch (0.127 mm) thick paper gasket is available. Install at least one paper gasket and brass or steel shims as required. Tighten steering shaft cover retaining cap screws to a torque of 25 ft.-lbs. (34 N·m). Renew wormshaft bearings as outlined in paragraph 9 if end play is perceptible with paper gasket, but without any metal shims installed.

After checking or adjusting wormshaft end play, readjust sector shaft end play as follows:

7. SECTOR SHAFT END PLAY. Before adjusting sector shaft end play, be sure wormshaft is properly adjusted as outlined in paragraphs 5 and 6, then proceed as follows:

Turn steering wheel to mid or straight-ahead position. With locknuts on both sector shaft adjusting screws loosened and adjusting screw on forward sector shaft (left side) backed out several turns, turn sector shaft adjusting screw (right side) in until there is no perceptible end play in rear sector shaft (13—Fig. 2). Tighten locknut while holding adjusting screw. Turn adjusting screw on left side of unit (front sector shaft) in until there is no perceptible end play of front sector shaft (9). Hold the adjusting screw and tighten locknut.

Adjustment of steering gear is correct if a pull of 1 to 2 $\frac{3}{4}$ lbs. (0.45 to 1.23 kg) is required at outer edge of steering wheel to turn steering gear over center position. When adjustment of sector shafts is correct, reconnect drag links to steering arms.

8. R&R STEERING GEAR ASSEMBLY. To remove steering gear assembly proceed as follows: Disconnect battery and remove engine hood panel. Disconnect wiring harness plug located forward of fuel tank and safety start switch. Detach proofmeter cable at front connection. Remove steering wheel and sheet metal covers at each side of steer-

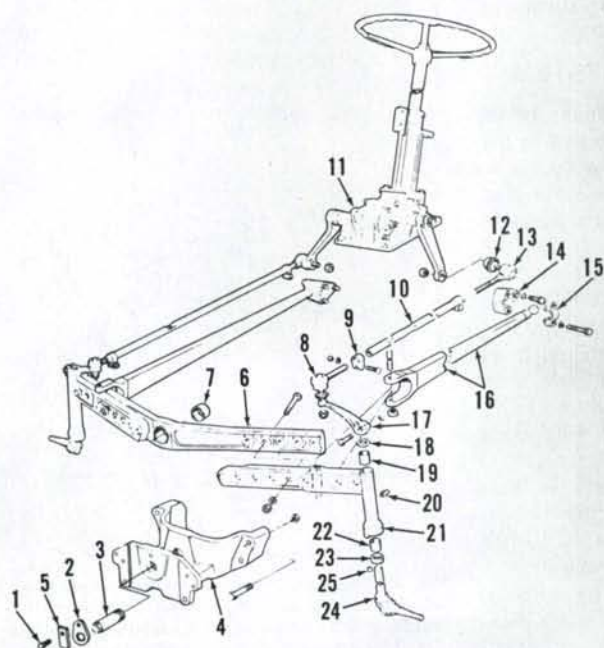


Fig. 1—Exploded view of front axle and related parts used on Models 2310, 2600, 2610, 3600, 3610, 4100 and 4110 without a cab.

1. Cap screw
2. Retainer
3. Pivot pin
4. Front support
5. Retainer
6. Axle center member
7. Bushing
8. Front drag link end
9. Clamp
10. Drag link
11. Steering gear assy.
12. Dust cover
13. Rear drag link end
14. Radius rod ball spacer
15. Radius rod cap
16. Radius rod
17. Steering arm
18. Dust seal
19. Spindle bushing, upper
20. Grease fitting
21. Axle extension, L.H.
22. Spindle bushing, lower
23. Thrust bearing
24. Spindle
25. Steering arm key

ing gear. Disconnect throttle linkage and remove rear hood panel. Disconnect fuel gage sender wire and all other wires which will interfere with fuel tank removal. Shut off fuel supply, disconnect fuel supply line and diesel fuel return line from tank, then remove fuel tank assembly. Thoroughly clean steering gear and surrounding area. Disconnect drag links from steering arms, then unbolt and remove steering gear assembly from transmission housing. Drain lubricant from steering gear housing if unit is to be disassembled.

To reinstall steering gear, reverse removal procedure. Refill gear housing with Ford 134 oil.

9. OVERHAUL. Major overhaul of steering gear unit necessitates removal of the unit from the tractor as outlined in paragraph 8. After removing unit, refer to Fig. 2 and proceed as follows:

Remove steering arm retaining nuts (14) and pull steering arms (10 and 16) from sector shafts (9 and 13). Sector shafts and side covers (4) can be removed as a unit after removing cover retaining screws. To separate shaft and cover, remove locknut (1) and thread adjusting screw (8) into cover until threads clear. Unbolt steering shaft cover (27) from gear housing (11) and remove cover, shaft and ball nut assembly. Do not disassemble ball nut and steering shaft assembly (23) as component replacement parts are not available. If steering shaft and/or ball nut are damaged, renew the complete assembly. The need and procedure for further disassembly and/or overhaul is evident from inspection of the unit.

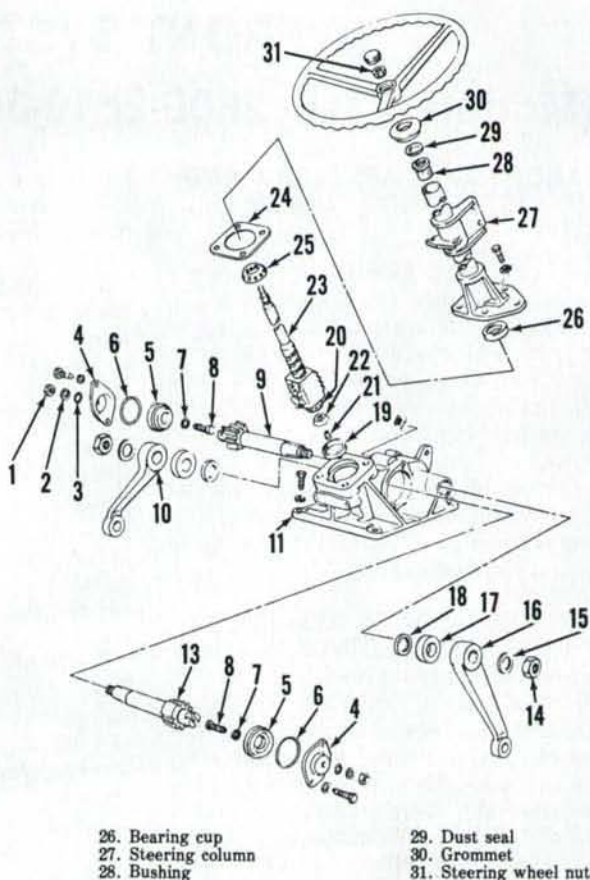
Gear housing sector shaft bushings are not serviced separately from housing; install a new housing if bushings are excessively worn. Bushings (5) are renewable.

Shims (7) on adjusting screws (8) are available in thicknesses of 0.063, 0.064, 0.066 and 0.069 inch (1.600, 1.625, 1.676 and 1.752 mm). When reassembling, select a shim that will provide 0.000-0.002 inch (0.00-0.05 mm) clearance between adjusting screw head and slot in sector shaft.

To reassemble, insert steering shaft and ball nut unit into gear housing with gear teeth on ball nut forward, then install steering shaft housing (27) with proper number of shims as outlined in paragraph 6. Insert sector shafts, with their adjusting screws and correct thickness shims, into gear housing so sector gear teeth and ball nut teeth are timed as shown in Fig. 3. Place new "O" rings (6-Fig. 2) on side covers (4) and pull side covers into place with sector shaft adjustment screws. Install and tighten side cover retaining cap screws to a tor-

Fig. 2—Exploded view of manual steering gear assembly used on Models 2310, 2600, 2610, 3600, 3610, 4100 and 4110 without a cab. Wormshaft (23) end play is adjustable by varying thickness of shims (24); sector shaft end play is adjusted by screws (8). Select a shim (7) that will provide 0.000-0.002 inch (0.00-0.05 mm) clearance between head of adjusting screw (8) and slot in sector shaft (9 or 13).

1. Locknut
2. Washer
3. Packing
4. Side covers
5. Bushing
6. "O" ring
7. Shim
8. Adjusting screw
9. Sector gear (single)
10. Steering arm, L.H.
11. Housing
13. Sector gear (double)
14. Nut
15. Washer
16. Steering arm, R.H.
17. Felt dust seal
18. Oil seal
19. Bearing cup
20. Bearing cone & rollers
21. Bearing retainer eyelet
22. Bearing retainer
23. Wormshaft assy.
24. Shims
25. Bearing cone & rollers
26. Bearing cup
27. Steering column



que of 25 ft.-lbs. (34 N·m) and adjust sector shaft end play as outlined in paragraph 7. Install new packing rings (3-Fig. 2) on adjusting screws, install flat washers (2) and tighten adjusting screw locknuts (1) while holding adjusting screws in proper position.

Refill gear housing with Ford 134 gear lubricant to level of plug opening (approximately 1.3 pints [0.61 liters]). When reinstalling steering arms, tighten retaining nuts (14) to a torque of 115-125 ft.-lbs. (156-170 N·m).

POWER STEERING SYSTEM

CAUTION: Absolute cleanliness of all parts is of the utmost importance in the operation and servicing of the hydraulic power steering system. Of equal importance is the avoidance of nicks or burrs on any of the working parts.

10. FLUID AND BLEEDING. Recommended power steering fluid is Ford M2C41-A oil. Maintain fluid level at bottom of reservoir filler hole with tractor on level ground. Fluid and filter should be changed after each 600 hours of operation.

The power steering system is self-bleeding. When unit has been disassembled, refill with new oil to full mark on dipstick, then start engine and cycle system several times by turning steering wheel from lock to lock. Recheck fluid level and add as required.

System is fully bled when no more air bubbles appear in reservoir as system is being cycled.

11. CHECKING SYSTEM PRESSURE AND FLOW. The power steering pump assembly incorporates a pressure relief valve and a flow control valve. System relief pressure should be 600-700 psi (4140-4830 kPa) while flow should be 2.7 gpm (10.26 liters/min.) at 1000 rpm on Models 2600, 3600 and 4100 and 2.5 gpm (9.5 liters/min.) at 1000 rpm on Models 2310, 2610, 3610 and 4110.

To check system relief pressure, in-

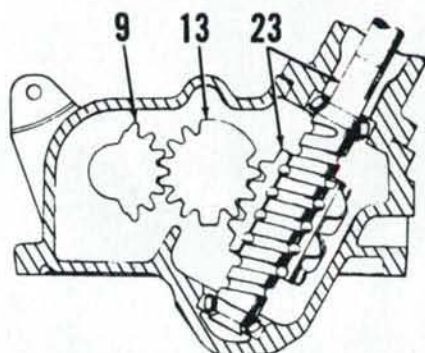


Fig. 3—Cross-sectional view of manual steering gear assembly showing correct installation of sector gears and wormshaft assembly. Refer to Fig. 2 for exploded view and parts identification.

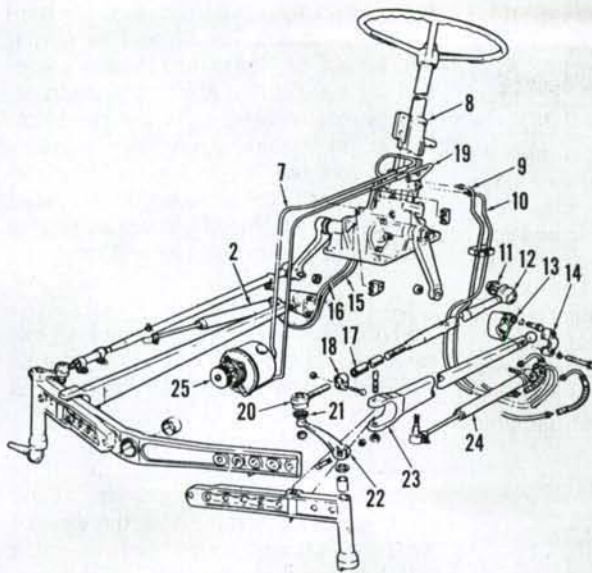


Fig. 4—Drawing of power steering system on Models 2310, 2600, 2610, 3600, 3610, 4100 and 4110 without a cab. For exploded view of steering gear and valve assembly (8), refer to Fig. 6. Exploded view of power steering pump (25) is shown in Fig. 5.

2. Steering cylinder, R.H.
7. Return tube
8. Steering gear & valve assy.
9. Front inner tube, L.H.
10. Rear outer tube, L.H.
11. Dust cover
12. Drag link assy.
13. Radius rod ball spacer
14. Radius rod ball cap
15. Rear outer tube, R.H.
16. Front inner tube, R.H.
17. Drag link tube
18. Clamp
19. Pressure tube
20. Drag link front end
21. Dust seal
22. Steering arm
23. Radius rod
24. Steering cylinder, L.H.
25. Steering pump

stall a "T" fitting in pressure line (19—Fig. 4) at pump connection and connect a 0-1000 psi (0-7000 kPa) gage to fitting. With engine running at 1000 rpm and front wheels turned against lock, gage reading should be 600-700 psi (4140-4830 kPa).

CAUTION: When checking system relief pressure, hold steering wheel against lock only long enough to observe gage reading; pump may be damaged if steering wheel is held in this position for an excessive length of time.

Pump must be disassembled to adjust opening pressure. Refer to paragraph 12 and Fig. 5. Shims (25) control system pressure and are available in thicknesses

of 0.010 and 0.015 inch (0.254 and 0.381 mm). A change of 0.005 inch (0.127 mm) in total shim pack thickness will alter system pressure about 50 psi (345 kPa).

12. R&R AND OVERHAUL PUMP.

Thoroughly clean pump, lines and surrounding area. Disconnect lines from pump and allow fluid to drain. Cap all openings to prevent dirt from entering pump or lines, then unbolt and remove pump assembly from engine front plate. When reinstalling pump, use new sealing "O" ring and tighten retaining bolts to a torque of 26 ft.-lbs. (35 N·m). Reconnect lines, fill and bleed system as in paragraph 10.

Refer to Fig. 5 for an exploded view of

pump and reservoir. Clean pump and surrounding area and disconnect pump pressure and return lines. Remove two cap screws securing pump to engine front cover and lift off pump and reservoir as a unit. Drain reservoir and remove through-bolt (1), reservoir (2) and filter (3).

Relief valve cartridge (32) can now be removed if service is indicated. For access to shims (25), grasp seat (30) lightly in a protected vise and unscrew body (24). Shims (25) are available in thicknesses of 0.010 and 0.015 inch (0.254 and 0.381 mm). Starting with removed shim pack, substitute shims thus varying total pack thickness, to adjust opening pressure. Available shims permit thickness adjustment in increments of 0.005 inch (0.127 mm) and each 0.005 inch (0.127 mm) in shim pack thickness will change opening pressure about 50 psi (345 kPa). If parts are renewed, correct thickness can only be determined by trial and error, using removed shim pack as a guide.

To disassemble pump, bend back tab washer and remove shaft nut (23), drive gear (22) and key (12). Mark or note relative positions of flange housing (18), pump body (13) and cover (6); then remove pump through-bolts (5). Keep parts in their proper relative position when disassembling pump unit. Pump gears (10 and 11) are available in a matched set only. Bearing blocks (9) are available separately but should be renewed in pairs if renewal is necessary because of wear. Bearing blocks should also be renewed with gear set if any shaft or bore wear is evident.

When reassembling pump, tighten through-bolts (5) to 15 ft.-lbs. (20 N·m) and drive gear nut (23) to 58 ft.-lbs. (78 N·m).

13. CONTROL VALVE AND STEERING GEAR ASSEMBLY.

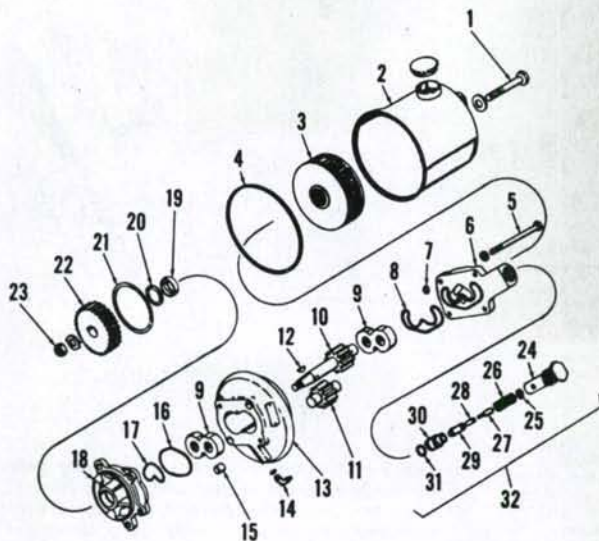
The power steering system is linkage booster type which utilizes a control valve combined with steering shaft and gear assembly as an integral unit. Refer to Fig. 6 for an exploded view of assembly. Adjustment and service information for unit is contained in the following paragraphs 14 through 18.

14. ADJUST STEERING GEAR.

The steering wormshaft (21—Fig. 6) is carried in needle roller bearings (20 and 22) which require no adjustment. End thrust of wormshaft is utilized to operate control valve spool.

To adjust sector gears, loosen locknuts (1) and back both adjusting screws (8) out two full turns. Turn adjusting screw on rear sector shaft (13) in until there is no perceptible backlash of rear sector shaft gears. Tighten locknut

Fig. 5—Exploded view of power steering pump with integral reservoir.



1. Bolt
2. Reservoir
3. Filter
4. Gasket
5. Through-bolt
6. Cover
7. "O" ring
8. Seal ring
9. Bearing block
10. Driven gear
11. Follow gear
12. Woodruff key
13. Body
14. Outlet elbow
15. Ring dowel
16. Seal ring
17. Seal ring
18. Flange housing
19. Oil seal
20. Snap ring
21. "O" ring
22. Drive gear
23. Shaft nut
24. Valve body
25. Shim pack
26. Spring
27. Spring guide
28. Seal
29. Valve head
30. Valve seat
31. "O" ring
32. Relief valve

while holding adjusting screw in this position. With rear sector shaft adjusted, turn adjusting screw on front sector shaft (9) in until there is no perceptible backlash of front sector shaft gears, then tighten locknut while holding adjusting screw in this position.

15. R&R STEERING GEAR AND CONTROL VALVE ASSEMBLY. Remove steering gear by disconnecting oil lines and using procedure outlined in paragraph 8.

To reinstall steering gear assembly, reverse removal procedure. Refill and bleed power steering system as outlined in paragraph 10. Refill steering gear with Ford 134 oil.

16. RENEW CONTROL VALVE UPPER SEAL. If power steering fluid leaks from steering column housing, the control valve upper seal (40-Fig. 6) is leaking and can be renewed as follows:

Follow general procedures outlined in paragraph 15, except that fuel lines do not need to be disconnected nor does fuel tank need to be removed. Thoroughly clean steering gear and control valve assembly. Remove cap screws retaining steering column (41) to steering gear and remove steering column. Remove seal from lower end of steering column with a suitable puller. Drive bushing (42) from upper end of steering column with a 1-inch (25.4 mm) diameter dowel.

Install new seal in lower end of steering column using a 1 3/8 inch (34.9 mm) diameter driver. Install seal so spring and lip will be downward (towards control valve). Tighten steering column retaining cap screws to a torque of 25 ft.-lbs. (34 N·m) and remove seal guide. Install new bushing in top end of steering column, then reinstall removed parts. Refill and bleed power steering as outlined in paragraph 10.

17. OVERHAUL CONTROL VALVE. With steering gear and control valve assembly removed from tractor as outlined in paragraph 15 proceed as follows:

Scribe a line across steering column, valve housing and adapter to facilitate reassembly. Remove return line union (33-Fig. 6) from valve housing, discard "O" ring (32) and unscrew check valve (34). Remove cap screws retaining steering column and remove column from steering shaft. Carefully unstack locknut (38) and temporarily install steering wheel on shaft to hold shaft while unscrewing nut. Remove steering wheel and nut and position steering gear unit on bench so steering shaft is in horizontal position. Slide spring washer (37), upper thrust bearing (36), control valve assembly (27) and lower thrust bearing (26) from steering shaft.

NOTE: Take care that control valve spool, plungers (30) and check valves (29) do not drop out of valve housing as it is removed from steering shaft. Unbolt and remove adapter (23) from steering gear housing.

Note which end of control valve spool has the identification groove (Fig. 9), then slide spool from housing. Remove the six plungers (30-Fig. 6), three

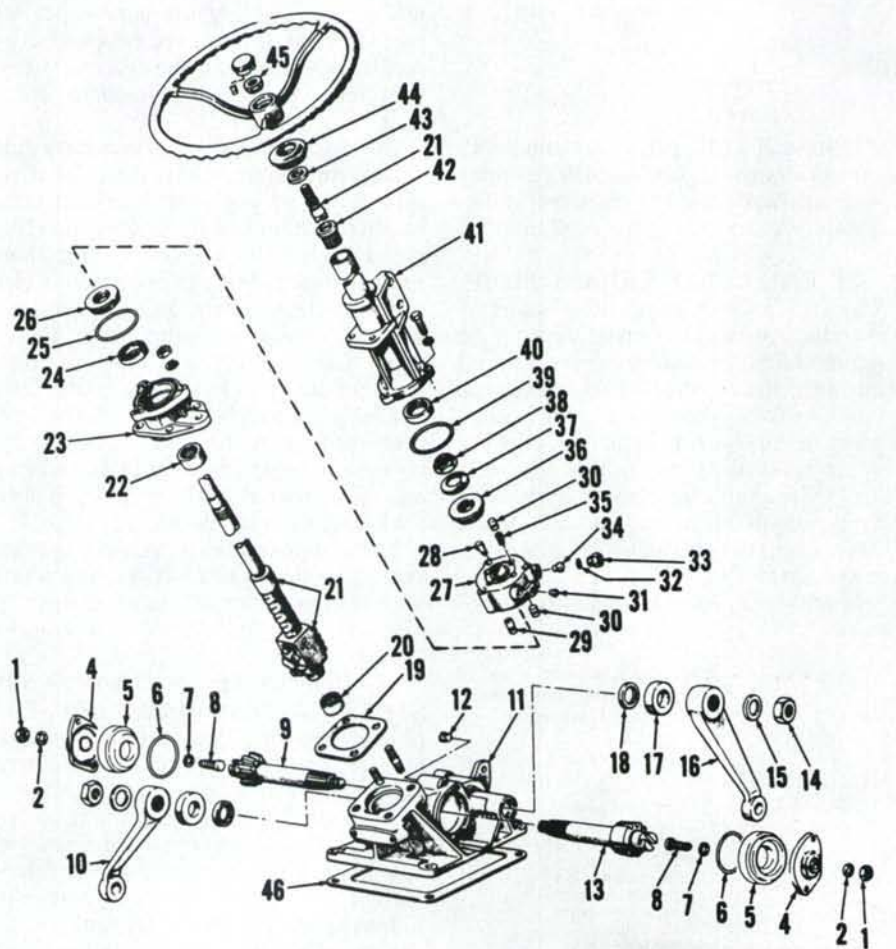


Fig. 6—Exploded view of power steering gear and valve assembly. Turning effort on steering wheel, or reaction of front wheels through steering linkage and gears, causes wormshaft (21) to move up or down, thereby actuating the control valve (27).

- | | | |
|-----------------------------|------------------------------|---------------------------|
| 1. Locknut | 17. Felt dust seal | 32. "O" ring |
| 2. Washer | 18. Oil seal | 33. Return union |
| 3. Side covers | 19. Paper gasket (0.005 in.) | 34. Check valve |
| 4. Bushing | 20. Needle roller bearing | 35. Plunger springs (3) |
| 5. "O" ring | 21. Wormshaft assy. | 36. Thrust bearing assy. |
| 6. Shim | 22. Needle roller bearing | 37. Preload spring washer |
| 7. Adjusting screw | 23. Adapter assy. | 38. Locknut |
| 8. Sector gear, single | 24. Oil seal | 39. "O" ring |
| 9. Steering arm, L.H. | 25. "O" ring | 40. Oil seal |
| 10. Housing | 26. Thrust bearing assy. | 41. Steering column |
| 11. Oil lever & filler plug | 27. Valve assy. | 42. Upper bushing |
| 12. Sector gear, double | 28. Tube seat | 43. Dust seal |
| 13. Nut | 29. Reaction plungers (2) | 44. Grommet |
| 14. Washer | 30. Thrust plungers (6) | 45. Steering wheel nut |
| 15. Steering arm, R.H. | 31. Tube seat | |

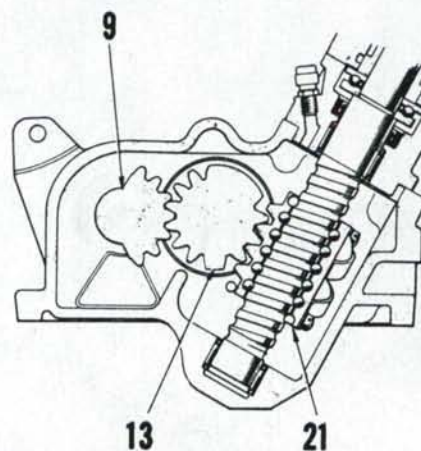


Fig. 7—Cross-sectional view of steering gear assembly showing correct installation (timing) of sector gears and wormshaft; refer to Fig. 6 for exploded view of unit and for parts identification.