SHOP MANUAL

CASE/INTERNATIONAL

MODELS 235, 235H, 245, 255, 265 & 275

The tractor model number and product identification (serial) number is on a plate located on the right side of the front frame rail. The engine serial number is stamped into the injection pump mounting pad on right side of engine. Serial number of the ROPS (Roll Over Protective Structure) is located on right side of structure. On some models, the transmission serial number is stamped into the right of case.

INDEX (By Starting Paragraph)

	Models					
	235	235H	245	255	265	275
BRAKES						
Adjustment	194	194	194	194	194	194
Operation	193	193	193	193	193	193
R&R and Overhaul	195	195	195	195	196	197
CLUTCH						
Clutch Linkage						
All Models Without Live Pto	112	112	112	112	112	112
Models With Live Pto	113	113	113	113	113	113
Clutch Split	115	115	116	116	115	117
Cover, Pressure Plate and Disc	118	118	118	118	118	118
COOLING SYSTEM						
Belt	105	105	105	105	105	105
Radiator	103	103	103	103	103	103
Thermostat	104	104	104	104	104	104
Water Pump	106	106	106	106	106	106
DIESEL FUEL SYSTEM						
Fuel Filter and Lines	89	89	89	89	89	89
Fuel Shut-Off Solenoid	102	102	102	102	102	102
Glow Plugs	101	101	101	101	101	101
Governor and Injection Pump Camshaft	94	94	94	94	94	94
Injection Pump	91	91	91	91	91	91
Injector Nozzles	96	96	96	96	96	96
DIFFERENTIAL	186	186	186	186	186	186
ELECTRICAL SYSTEM						
Alternator and Regulator	107	107	107	107	107	107
Circuit Description	110	110	110	110	110	110
Safety Switches	109	109	109	109	109	109
Starting Motor	108	108	108	108	108	108

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CONDENSED SERVICE DATA

	Models				
	235, 235H	245	255	265	275
GENERAL					
Engine Make	Mitsubishi				
Engine Model	K3B	K3D	K3E	K3H	K3M
Number of Cylinders	3				
Bore	68 mm (2.677 in.)	73 mm (2.874 in.)	76 mm (2.992 in.)	78 mm (3.071 in.)	84 mm (3.307 in.)
Stroke	78 mm (3.071 in.)			90 mm (3.543 in.)	
Displacement	849 cc (51.81 cu.in.)	979 cc (59.74 cu.in.)	1061 cc (64.75 cu.in.)	1290 cc (78.72 cu.in.)	1496 cc (91.29 cu.in.)
Compression Ratio	23:1				
TUNE-UP					
Firing Order	1-3-2				
Valve Clearance, Cold —					
Inlet	0.25 mm (0.010 in.)				
Exhaust	0.25 mm (0.010 in.)				
Valve Face and Seat Angle —					
Inlet	45°				
Exhaust	45°				
Injector —					
Opening Pressure	10,789-12,749 kPa (1565-1849 psi)			14,714-16,672 kPa (2134-2418 psi)	
Engine Low Idle	900-950				
Engine High Idle	2825-2900				2825-2880
Engine Rated Speed	2700	2700	2800	2700	2700
Battery —					
Voltage	12				
Ground	Negative				
Transmission —					
Types Available	*	†	†	†	‡
Speeds —					
Sliding gear	6F - 2R	....			
Hydrostatic	Variable × 2	....			
Constant mesh	....	9F - 3R			....
Synchromesh		9F - 3R			
SIZES					
Crankshaft Main Journal Diameter	52 mm (2.0472 in.)			57 mm (2.44 in.)	
Crankshaft Crankpin Diameter	42 mm (1.6535 in.)			48 mm (1.890 in.)	
Piston Pin Diameter	19 mm (0.905 in.)		23 mm (0.905 in.)		
Valve Stem Diameter	6.6 mm (0.2598 in.)			8.0 mm (0.3150 in.)	

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CONDENSED SERVICE DATA (CONT.)

	Models				
	235, 235H	245	255	265	275
CLEARANCES					
Main Bearing, Diametral Clearance, Maximum	0.1 mm (0.004 in.)				
Rod Bearing Diametral Clearance, Maximum	0.15 mm (0.006 in.)				
Camshaft Bearing, Diametral Clearance, Maximum — Front	0.15 mm (0.006 in.)				
Crankshaft End Play, Maximum	0.1 mm (0.004 in.)				
CAPACITIES					
Cooling System	6 L (6.34 qt.)	5.3 L (5.6 qt.)		5.8 L (6.1 qt.)	6 L (6.34 qt.)
Crankcase With Filter	3.5 L (3.70 qt.)	4.5 L (4.8 qt.)		4.7 L (5.0 qt.)	
Transmission — Constant Mesh	....	20 L (5.3 gal.)		46 L (12.2 gal.)	....
Sliding Gear	12 L (3.17 gal.)	....		....	
Synchronized	....	25 L (6.6 gal.)		46 L (12.2 gal.)	#
Hydrostatic	14 L (3.70 gal.)	....		....	
Front Drive Axle	2.5 L (2.6 qt.)	3.5 L (3.7 qt.)		....	7.3 L (7.7 qt.)

* Model 235 is equipped with a sliding gear transmission and 235H model is equipped with a hydrostatic transmission. Both the sliding gear transmission and the variable speed (F/R) hydrostatic transmission are coupled to a two speed, range transmission.

† Models 245, 255 and 265 may be equipped with either a constant mesh transmission or a synchromesh transmission. Both constant mesh and synchromesh transmissions are coupled to a three speed range transmission, which provide 9 forward and 3 reverse speeds. The constant mesh transmission is used without live pto; the synchromesh transmission is used with live pto.

‡ Model 275 tractors are equipped with a three forward and 1 reverse speed synchromesh transmission coupled to a three speed range transmission, which provides 9 forward and 3 reverse speeds.

On 275 models, capacity of the gear transmission is 6.5 L (1.7 gal.), capacity of the range transmission is 19 L (5.0 gal.), and capacity of the rear axle gear case is 3 L (0.8 gal.) for each side.

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FRONT AXLE SYSTEM (TWO-WHEEL DRIVE)

TIRES, WHEELS AND BEARINGS

All Two-Wheel-Drive Models

1. The front wheel bearings should be removed, cleaned, inspected and renewed or repacked with grease every 1000 hours of operation. To remove front wheel hub and bearings, raise and support the front axle, unbolt and remove the tire and wheel assembly, then remove cap (1—Fig. 1 or Fig. 2). On 235 and 235H models, straighten locking washer (3—Fig. 1), then remove nut (2) and lockwasher. On all except 235 and 235H models, remove cotter pin, castellated nut (2—Fig. 2), and washer (3). On all models, use a suitable puller to remove the hub assembly from spindle axle shaft. Seal (8—Fig. 1 or Fig. 2) and inner bearing (6) will remain on spindle. Pack wheel bearings liberally with a suitable wheel bearing grease, such as Case IH 251 HEP.

Reassemble by reversing disassembly procedure. On 235 and 235H models, install new locking washer (3—Fig. 1) and tighten nut (2) to 39-58 N•m (28-43 ft.-lbs.) torque, loosen nut until the rolling torque of wheel hub (5) is 0.6-0.8 N•m (6-7 in.-lbs.), then lock position of nut with tab of locking washer (3) and install cap (1). Tighten bolts retaining front wheel to hub to 118-132 N•m (87-98 ft.-lbs.) torque.

On all except 235 and 235H models, tighten castellated nut (2—Fig. 2) to 39-58 N•m (28-43 ft.-lbs.) torque, loosen nut until the rolling torque of wheel hub (5) is 0.6-0.8 N•m (6-7 in.-lbs.), then lock position of nut with cotter pin and install cap (1). Tighten bolts retaining front wheel to hub to 83-93 N•m (61-69 ft.-lbs.) torque.

Rear wheel to axle hub bolts and rear axle stud nuts for 235 and 235H models should be tightened to 118-132 N•m (87-98 ft.-lbs.) torque. On 245, 255 and 275 models, the rear wheel to axle hub bolts should be tightened to 118-132 N•m (87-98 ft.-lbs.) torque and nuts securing rear wheel rim to wheel disc should be tightened to 152-172 N•m (112-127 ft.-lbs.) torque. Rear wheel disc to axle hub and rear wheel rim to wheel disc nuts should be tightened to 152-172 N•m (112-127 ft.-lbs.) torque for 265 models.

On all models, lug bolt torque for all wheels should be checked after the first 10 hours of operation following installation and every 100 hours thereafter.

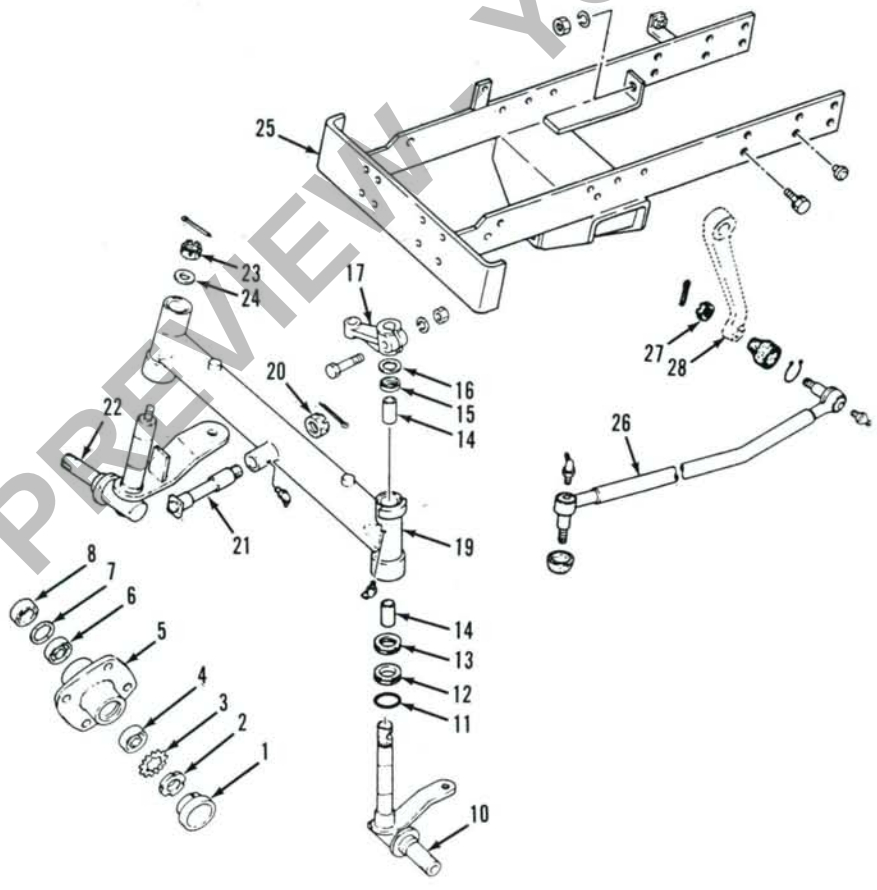


Fig. 1—Exploded view of front axle used on 235 models. Drag link (26) attaches to arm (17) and tie rod connects arms attached to the spindles (10 & 22).

1. Cap
2. Nut
3. Tab washer
4. Outer ball bearing
5. Wheel hub
6. Inner ball bearing
7. Spacer
8. Seal
10. Left spindle
11. "O" ring
12. Spacer
13. Thrust bearing
14. Bushings
15. Seal
16. Washer
17. Steering arm
19. Axle main member
20. Nut
21. Axle pivot
22. Right spindle
23. Nut
24. Washer
25. Front frame
26. Drag link
27. Nut
28. Steering arm

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FRONT DRIVE SYSTEM (FOUR-WHEEL DRIVE 235 AND 235H MODELS)

16. Mechanical front-wheel drive is available on 235, 235H, 245, 255 and 275 models. Paragraphs 17 through 24 cover service to the Front Drive System used on 235 and 235H models. Refer to paragraph 26 through 33 for service to the Front Drive System used on 245 and 255 models or to paragraph 35 through 42 for service to the Front Drive System used on 275 models.

MAINTENANCE

Four-Wheel-Drive 235 And 235H Models

17. Oil should be maintained at level of plugs (P—Fig. 8) located on both wheel hub cases. Oil is added at fill plug (F). After the first 50 hours of operation and every 200 hours thereafter, drain oil from front drive axle by removing the two plugs (D) from final drive housings and plug (34) from center of axle. Fill with "Case IH 135 HEP SAE 85W-140" or equivalent gear lubricant to the level of plug (P). Capacity is approximately 2.5 L (2.6 qt.); however, some lubricant may be trapped in housing.

Refer to the following for matched (front and rear) standard tire size and recommended pressure. Optional tires and wheels may be offered and pressures may be different than shown, depending upon load and ground conditions, but front and rear wheel and tire sizes should be matched as indicated. Mismatching front and rear wheel sizes may cause excessive tire slippage and possibly accelerate wear of drive system components.

Front —
Size . . . . . 5-12-4 ply
Tread type . . . . . FSLM
Outside diameter . . . . . 550 mm (21.65 in.)
Max. Inflation Pressure . . . . . 200 kPa (28 psi)
Rim size . . . . . 4JA × 12

Rear —
Size . . . . . 8-18-4 ply
Tread type . . . . . FSLH
Outside diameter . . . . . 840 mm (33.07 in.)
Max. Inflation Pressure 85-160 kPa (12-23 psi)
Rim size W6-18

Front —
Size . . . . . 6-12-4 ply
Tread type . . . . . FSLM
Outside diameter . . . . . 564 mm (22.20 in.)
Max. Inflation Pressure . . . . . 200 kPa (28 psi)
Rim size . . . . . 5JA × 12

Rear —
Size . . . . . 9.5-16-4 ply
Tread type . . . . . FSLF
Max. Inflation Pressure 85-135 kPa (12-20 psi)
Rim size W8-16

Front —
Size . . . . . 6-14-4 ply
Tread type . . . . . FD
Max. Inflation Pressure . . . . . 200 kPa (28 psi)
Rim size 5JA-14

Rear —
Size . . . . . 9.5-18-4 ply
Tread type . . . . . FD
Max. Inflation Pressure 85-135 kPa (12-20 psi)
Rim size W8-18

Front —
Size . . . . . 20.5 × 8.00-10-4 ply
Tread type . . . . . PD
Max. Inflation Pressure . . . . . 165 kPa (24 psi)
Rim size 6.00I-10

Rear —
Size . . . . . 31 × 15.5-15-4 ply
Tread type PD1
Max. Inflation Pressure 70-135 kPa (10-20 psi)
Rim size 13LB-15

Front wheels should be installed with concave (cupped) side in, toward center, and should not be reversed. Tighten front wheel retaining nuts to 83-93 N•m (61-69 ft.-lbs.) torque. Rear wheel to axle hub bolts should be tightened to 118-132 N•m (87-98 ft.-lbs.) torque and nuts securing rear wheel rim to wheel disc should be tightened to 152-172 N•m (112-127 ft.-lbs.) torque.

FRONT AXLE ASSEMBLY AND STEERING LINKAGE

Four-Wheel-Drive 235 And 235H Models

18. TIE ROD AND TOE-IN. A single tie rod (62—Fig. 8) connects left and right steering arms (63 and 65). Automotive type ends are not adjustable for wear and should be renewed if worn. Attach steering tie rod ends to steering arms, tighten castellated nuts and install cotter pins. Recommended toe-in is 0-5 mm (0-0.20 in.) and is adjusted by threading rod ends onto tie rod to change the distance between ends. To check alignment, measure distance between wheel rims at front and rear on centerline of axle, parallel to ground. Rotate wheels and re-measure to be sure that wheels are not bent, giving incorrect reading. Tighten rod end jam nut to 59-88 N•m (43-65 ft.-lbs.) torque after wheel alignment is correctly set.

19. R&R AXLE ASSEMBLY. To remove front axle assembly, first remove any front mounted equipment and weights. Detach front end of drag link (64—Fig.

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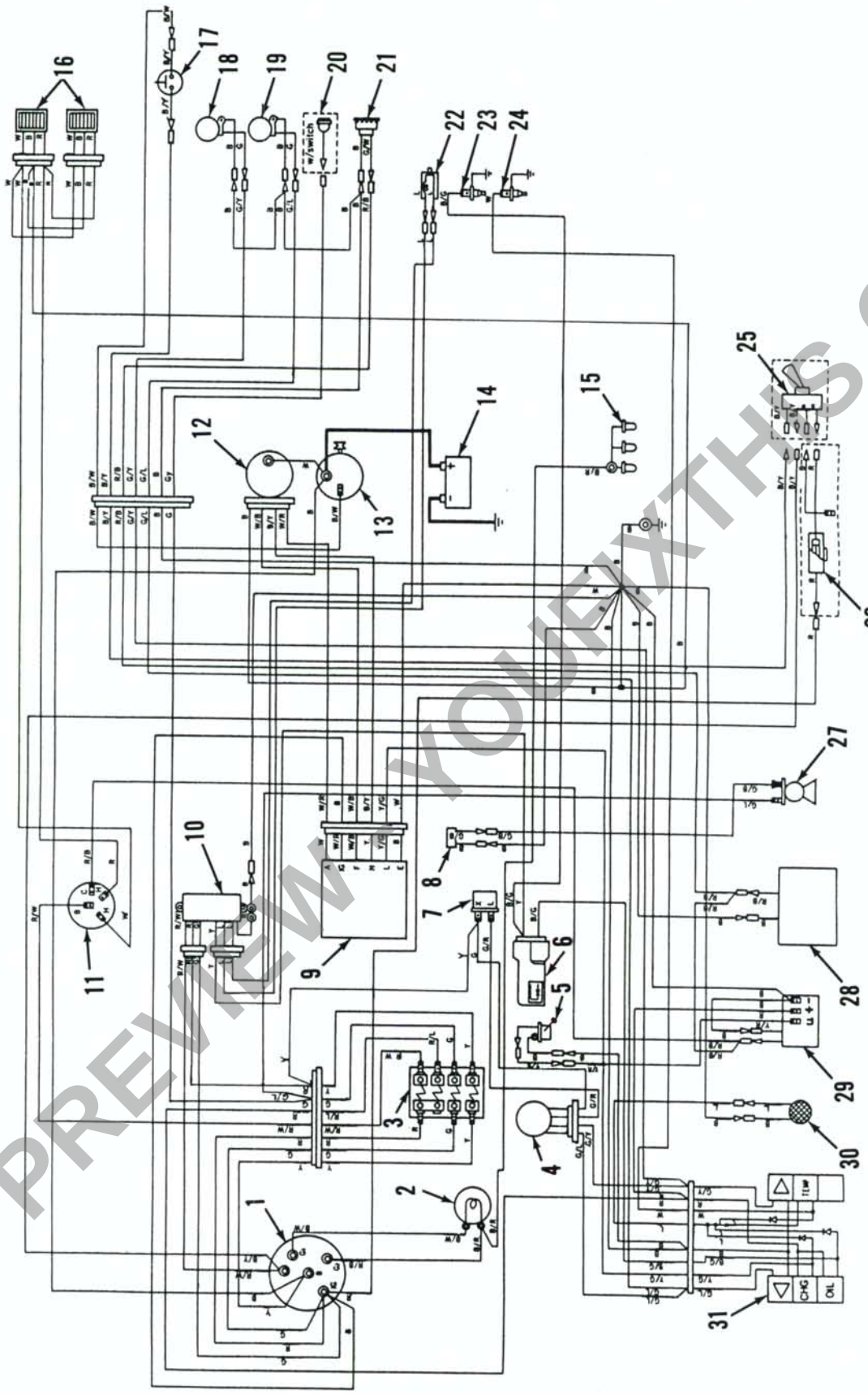


Fig. 57—Wiring diagram for 235 and 235H models.

B. Black
G. Green
Gy. Gray
L. Blue
R. Red
W. White
Y. Yellow

1. Starting switch
2. Glow plug indicator
3. Fuse box (10 amp)
4. Turn signal switch
5. Fuel gauge sender
6. Diode
7. Flasher unit
8. Horn switch
9. Voltage regulator
10. Control timer unit
11. Light switch
12. Alternator
13. Starter motor
14. Battery
15. Glow plugs
16. Head lights (12V-35W)
17. Starter safety switches
18. Turn signal lamp, right (12V-26.8W)
19. Turn signal lamp, left (12V-26.8W)
20. Work light (12V-30W)
21. Tail light (12V-8W)
22. Engine stop solenoid
23. Oil pressure switch
24. Temperature switch
25. Front pto switch
26. Front pto fuse (12V-10 amp)
27. Horn (12V-1.5A)
28. Tractor meter (12V-3.4W)
29. Fuel gauge & lamp (12V-3.4W)
30. Test button
31. Warning lamp assy. (12V-3.4W)

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TROUBLESHOOTING

235H Hydrostatic Model

176. The following are symptoms which may occur during operation and possible causes related to the hydrostatic transmission.

1. Tractor will not move or operates erratically.
   a. Transmission oil level low.
   b. Control linkage improperly adjusted or damaged.
   c. Charge pump damaged.
   d. Engine clutch or transmission input shaft failure.
2. Tractor moves, but lacks power.
   a. High pressure relief valve opening pressure set too low.
   b. Internal leakage of high pressure oil.
3. Tractor moves in one direction only.
   a. Control linkage faulty.
   b. One high pressure relief valve is defective.
   c. One charge pressure check valve not seating correctly.
   d. Neutral valve spool spring broken or valve stuck.
4. Abnormal noise when operating.
   a. Suction filter plugged.
   b. Air leak on suction side of charge pump.
   c. Charge pump or relief valve faulty.
5. Tractor fails to stop in neutral.
   a. Control linkage out of adjustment.
   b. Neutral valve stuck or damaged.
6. Oil overheating.
   a. Tractor overloaded.
   b. Oil cooler plugged.

TESTS AND ADJUSTMENTS

235H Hydrostatic Model

177. The first step in testing and diagnosing problems should be to check the quantity and quality of oil. The transmission filler opening and dipstick is located ahead of the operator seat. Additional checking can be accomplished by draining the fluid, removing filters and checking fluid and filters for condition and impurities. The clutch shaft is visible through opening for dipstick and movement of the swashplate is visible through opening for square head filler plug located just ahead of the dipstick. It is not recommended to operate engine with the dipstick or plug removed.

178. PRESSURES TESTS. Special test fittings (No. 14-2-97), which are available from manufacturer and appropriate pressure gauges (one 5000 psi and one 160 psi) are required to test pressure.

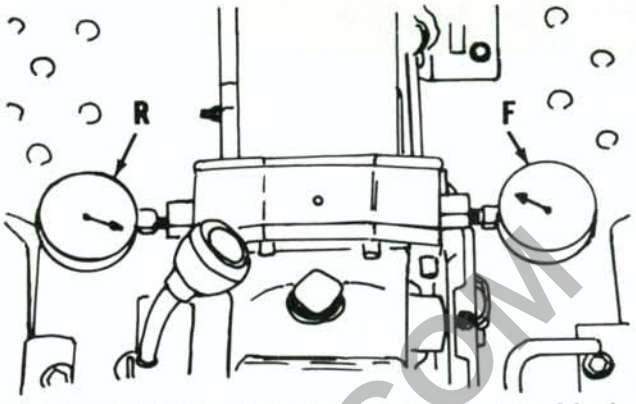


Fig. 111—Testing the forward drive pressure of hydrostatic transmission requires special plugs and gauges installed as shown. Refer to text.

To check Forward Drive Pressure, proceed as follows. Remove the Allen head plugs from right side of neutral valve bore and install the special plug and 0-5000 psi test gauge (F—Fig. 111). Remove the socket head plug from left side and install special plug and 0-160 psi test gauge (R). Set the brake, block the wheels, start the engine and set speed to 1300 rpm. Shift the range transmission to HIGH range, then move the hydrostatic drive lever FORWARD until the engine speed drops to 1000 rpm.

CAUTION: Do not move hydrostatic drive lever to the rear or the low pressure gauge will be damaged.

When engine speed is slowed to 1000, observe the pressure indicated on the gauges. The maximum forward drive pressure recorded by the high pressure gauge should be 3763-4118 psi (25,945-28,392 kPa). Refer to paragraph 179 if high pressure is too low. Charge pressure is indicated by the low pressure gauge. When hydrostatic lever is in neutral position, charge pressure should be 57-85 psi (393-586 kPa). Refer to paragraph 179 if charge pressure is too low.

To check Reverse Drive Pressure, install the special plug and 0-5000 psi test gauge (R) in port located on the left side and install special plug and 0-160 psi test gauge (H) on right side. Set the brake, block the wheels, start the engine and set speed to 1300 rpm. Shift the range transmission to HIGH range, then move the hydrostatic drive lever toward REVERSE until the engine speed drops to 1000 rpm.

CAUTION: Do not move hydrostatic drive lever forward or the low pressure gauge will be damaged.

When engine speed is slowed to 1000, observe the pressure indicated on the gauges. The maximum reverse drive pressure recorded by the high pressure gauge (R) should be 3763-4118 psi (25,945-28,392 kPa). Refer to paragraph 179 if high pressure is too low. Charge pressure is indicated by the low pressure gauge (H). When hydrostatic lever is in neutral posi-

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diameter of oil seals, then install flush with housing outer surface. Tighten output shaft nut (8) to 30-40 N•m (22-29 ft.-lbs.) torque, then bend tab of lockwasher (9) into notch of nut. Apply Loctite 515 sealant to outer diameter of plugs (7 and 20), then install flush with housing. Apply thread sealant to threads of oil level plug (4), drain plug (6) mounting screws for end cover (3) and bottom cover (5). Fill housing with CASE IH HY-TRAN PLUS FLUID or equivalent to oil level plug (4) opening.

HYDRAULIC LIFT SYSTEM

The hydraulic system basically consists of an oil reservoir (or sump), hydraulic pump, control valve lift cylinder and lift links. The hydraulic lift pump (1—Fig. 130, Fig. 131, Fig. 132, Fig. 133, Fig. 134, Fig. 135, Fig. 136, Fig. 137 or Fig. 138) is mounted on left side of engine and is driven by engine timing gears whenever the engine is running. The pump supplies pressurized fluid for rockshaft control, remote control valves and, on models so equipped, power steering and the live pto hydraulic clutch. Some models are equipped with a second, auxiliary pump (8—Fig. 135, Fig. 136, Fig. 137 or Fig. 138) mounted ahead of the standard pump.

FLUID AND FILTERS

All Models

202. Oil used as operating fluid for the hydraulic lift system is also used for the transmission, final drive and rear axles. The transmission housing, rear axle center housing and axle housings are used as the reservoir to contain the hydraulic system operating fluid. Oil level should be maintained between the marks on the dipstick. The dipstick and fill plug are located on top of transmission in front of operator's seat.

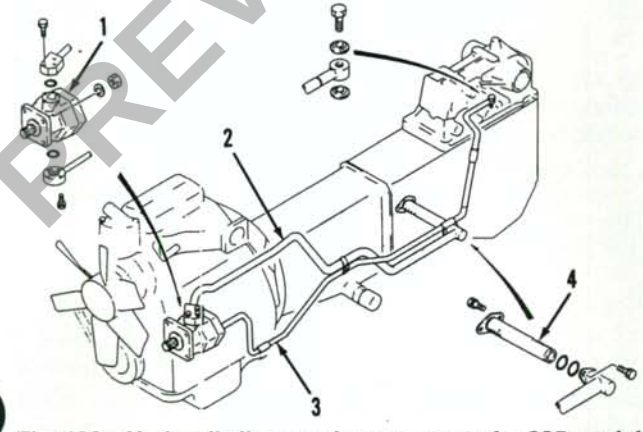


Fig. 130—Hydraulic lines and components for 235 models are located as shown.

1. Main hydraulic pump
2. Suction line
3. Pressure line
4. Suction screen (filter)

The manufacturer recommends that fluid and filters be changed after the first 50 hours of operation if new or rebuilt major components have been installed in the system. During normal service, fluid and filters should be changed every 200 hours of operation. Lower the lift arms before draining oil. Refer to Fig. 131, Fig. 132, Fig. 133, Fig. 134, Fig. 135, Fig. 136, 137 or Fig. 138 for location of filters and other components. Oil is drained by removing plugs located in the bottom of transmission and rear axle center housing. Some models are equipped with only one filter, but some models are equipped with one suction screen (filter) and one canister type filter. On all models, all filters should always be serviced when oil is drained and reservoir is filled with new oil. Refer to the LUBRICATION paragraph in the appropriate transmission section.

Fill system reservoir with "CASE IH HY-TRAN PLUS" or equivalent fluid, then start engine. Some

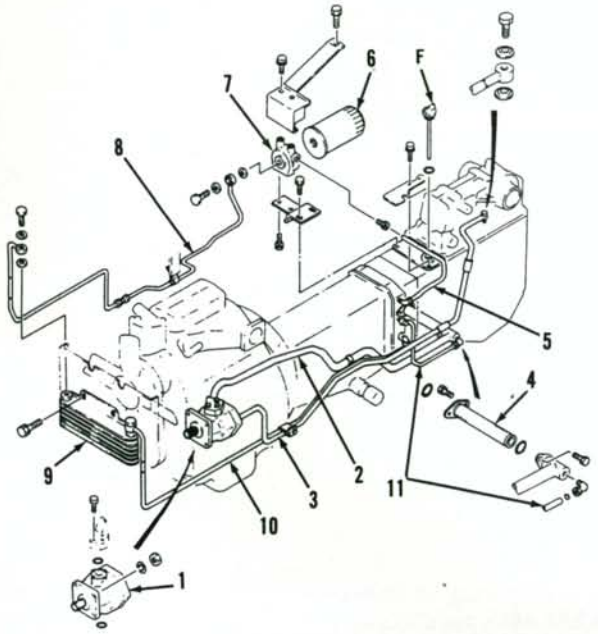


Fig. 131—Hydraulic lines and components for 235H (hydrostatic transmission) models are located as shown.

F. Filler plug
1. Main hydraulic pump
2. Suction line
3. Pressure line
4. Suction screen (filter)
5. Line to filter
6. Cartridge filter
7. Filter adapter
8. Line from filter to oil cooler
9. Oil cooler
10. Line from cooler
11. Line to inlet

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tighten retaining screws to 25-30 N•m (18-22 ft.-lbs.) torque.

Check clearance between sector shaft (11) and foot of adjusting screw (13) with a feeler gauge. Shims of various thicknesses can be installed on foot of adjusting screw to reduce clearance between screw and sector shaft. Adjusting screw and shim should slide easily in groove of sector shaft, but should have less than 0.05 mm (0.002 in.) clearance. Install seal (10) with lip toward inside. Grease seal lip, assemble selected shim and screw (13) in sector shaft (11), then install sector shaft and adjusting screw. Coat mating surface of side cover (15) and housing (12) with sealer, then install side cover, tightening the retaining screws to 25-30 N•m (18-22 ft.-lbs.) torque. Fill steering gear with 0.3 L (0.63 pint) of gear oil and install steering wheel. Attach a spring scale to outer edge of steering wheel and measure torque required to begin turning. Proper starting torque is 0.61 kg (1.34 lbs.). Measure the amount of backlash at the outer edge of steering wheel and adjust to nearly 0 by turning adjusting screw (13). Tighten locknut after adjusting the screw (13). Backlash at wheel rim should be less than 10 mm (0.4 in.), but should not cause binding.

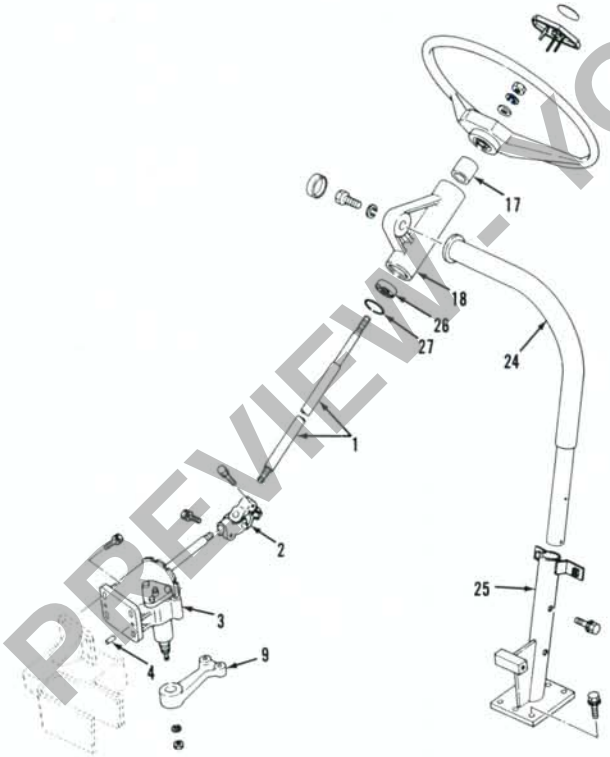


Fig. 26—View of steering gear assembly and related parts for 265 model. Refer to Fig. 27 for exploded view of manual steering gear (3).

1. Steering shaft
2. Universal joint
3. Steering gear
4. Dowel pin
9. Steering arm
17. Column bushing
18. Column
24. Upper column support
25. Lower column support
26. Bearing
27. Snap ring

Install steering arm (9) with punch mark on shaft (11) and arm aligned.

46. ADJUSTMENT. Steering wheel free play (backlash) can be adjusted by turning the steering sector adjusting screw (13—Fig. 25) without removing the steering gear assembly. To adjust screw (13), first loosen locknut (22), then turn screw in to decrease free play and out to increase. Specified free play is 0-10 mm (0-0.4 in.), as measured at outside rim of steering wheel. Excessive play which is not affected by the adjustment screw can be caused by wear or damage.

Refer to paragraph 45 for checking ball nut end play and adjusting end play of steering shaft bearings.

Manual Steering 265 Model

47. REMOVE AND REINSTALL. The steering gear assembly (3—Fig. 26) is attached to the front frame as shown and can be removed after detaching the steering rods from steering arm (9) and universal joint (2) from steering shaft.

Fill steering gear with gear oil through opening for plug (23—Fig. 27) before installing. Make sure that all retaining screws and nuts are tightened securely when installing.

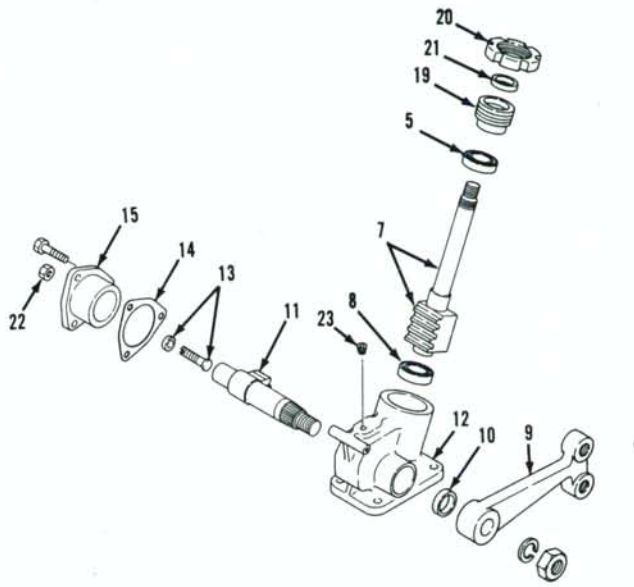


Fig. 27—Exploded view of manual steering gear used on some Model 265 tractors.

5. Upper bearing
7. Ball nut & shaft assy.
8. Lower bearing
9. Steering arm
10. Oil seal
11. Sector shaft
12. Steering gear housing
13. Sector adjusting screw & shim
14. Gasket
15. Side cover
19. Adjuster
20. Locknut
21. Seal
22. Locknut
23. Fill plug

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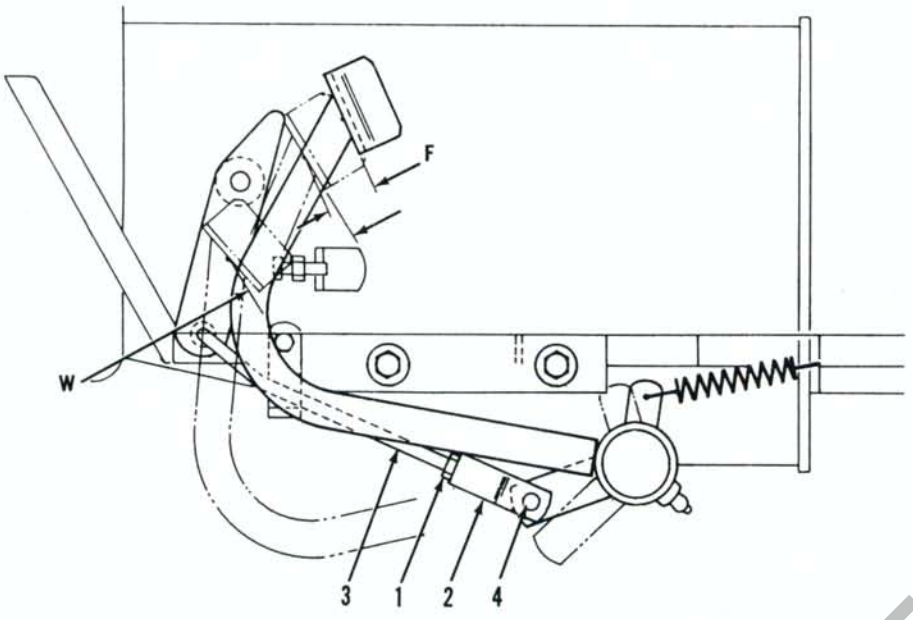


Fig. 62—Drawing of clutch pedal and external linkage typical of all models except 275. Adjust pedal linkage to adjust free travel (F).

F. Free play
W. Working travel
1. Locknut
2. Clevis
3. Linkage rod
4. Pin

bearing and fingers of clutch as well as making sure that clutch does not drag when disengaged. Checking is accomplished by measuring free travel (free play) of clutch pedal, from full up position to the point where throw out bearing contacts release fingers.

The clutch pedal free travel (F—Fig. 62) should be 20-30 mm (0.79-1.18 in.) for 235 and 235H models. Effective (working) travel (W) of pedal should be 65-75 mm (2.56-2.76 in.). Pedal free travel will decrease as clutch lining wears. Adjust free travel by loosening clevis locknut (1), disconnecting clevis (2) from pedal, then turning clevis further on or off connecting linkage (3). Reattach clevis and recheck pedal free travel (F). Install cotter pin in clevis pin (4) and tighten clevis locknut (1) when adjustment is correct.

Clutch pedal free travel (F—Fig. 62) should be 10-20 mm (0.0.30-0.79 in.) for 245 and 255 models. Effective (working) travel (W) of pedal should be 80-90 mm (3.15-3.54 in.). Pedal free travel will decrease as clutch lining wears. Adjust free travel by loosening clevis locknut (1), disconnecting clevis (2) from pedal, then turning clevis further on or off connecting linkage (3). Reattach clevis and recheck pedal free travel. Install cotter pin in clevis pin (4) and tighten clevis locknut (1) when adjustment is correct.

Clutch pedal free travel (F—Fig. 62) should be 20-30 mm (0.79-1.18 in.) for 265 model. Effective (working) travel (W) of pedal should be 30-45 mm (1.18-1.77 in.) for 265 models with synchronized transmission or 75-115 mm (2.95-4.53 in.) for models with constant mesh transmission. Pedal free travel will decrease as clutch lining wears. Adjust free travel by loosening clevis locknut (1), disconnecting clevis (2) from pedal, then turning clevis further on or off connecting linkage (3). Reattach clevis and recheck pedal free travel. Install cotter pin in clevis pin (4) and tighten clevis locknut (1) when adjustment is correct.

Clutch pedal free travel (F—Fig. 63) should be 10-20 mm (0.39-0.79 in.) for 275 model. Adjust free travel by loosening clevis locknut (1), disconnecting clevis from operating lever, then turning clevis (2) further on or off connecting linkage (3). Reattach clevis and recheck pedal free travel. Install cotter pin (4) in clevis pin and tighten clevis locknut (1) when

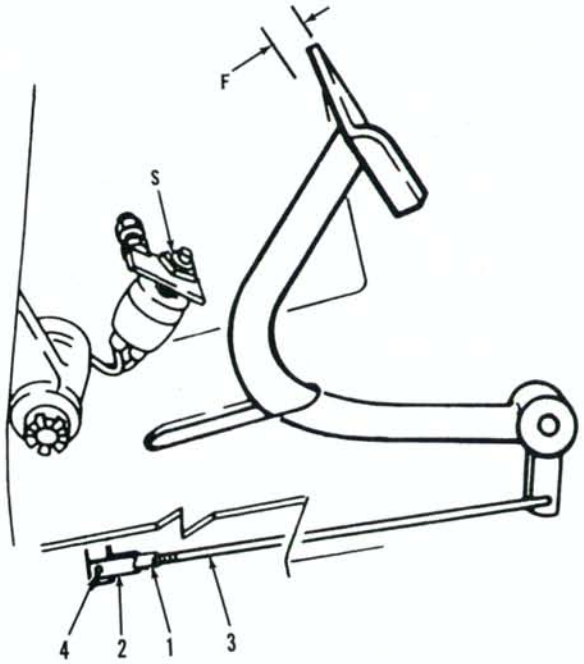


Fig. 63—Drawing of clutch pedal and external linkage typical of 275 model. Safety starting switch (S) may be installed as shown.

1. Locknut
2. Clevis
3. Linkage rod
4. Pin

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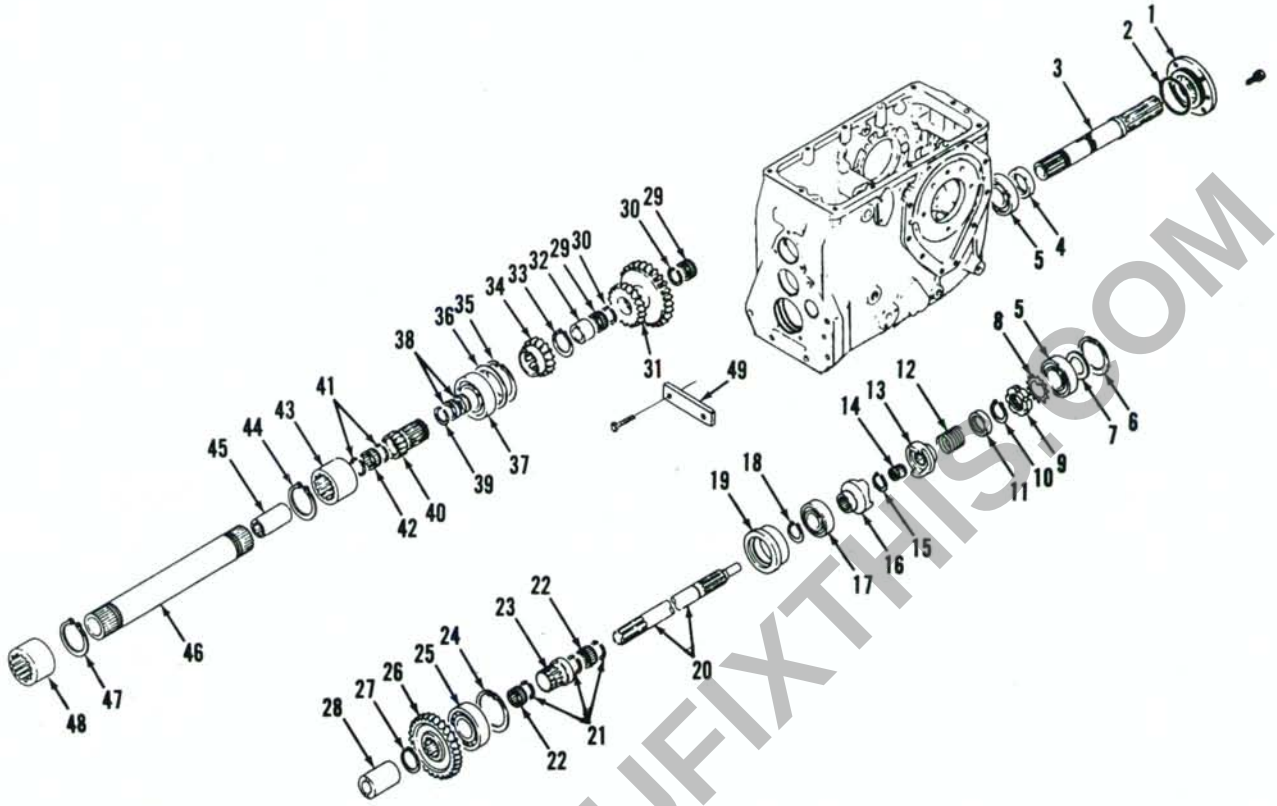


Fig. 104—Exploded view of lower shafts and related gears for 275 models. An unsplined spacer is used in place of gear (26) and boss (23) on models without four-wheel drive. On models with super low gear, gear cluster and thin spacer is installed in place of collar (28).

1. Retainer & rear cover
2. "O" ring
3. Pto output shaft.
4. Oil seal
5. Ball bearing
6. Snap ring
7. Shim
8. Tab lockwasher
9. Nut
10. Snap ring
11. Spacer
12. Spring
13. Ratchet coupling
14. Pilot bearing
15. Snap ring
16. Ratchet coupling
17. Ball bearing
18. Snap ring
19. Retainer
20. Pto shaft
21. Snap rings
22. Needle bearings
23. Splined boss (rear)
24. Snap ring
25. Ball bearing
26. Drive gear
27. Snap ring
28. Spacer
29. Needle bearings
30. Snap rings
31. Reduction gears
32. Spacer (22.5, 23 or 23.5 mm)
33. Snap ring
34. Gear
35. Snap ring
36. Shim
37. Ball bearing
38. Needle bearings
39. Snap ring
40. Splined boss (front)
41. Snap rings
42. Needle bearing
43. Coupling
44. Snap ring
45. Coupling
46. Drive shaft
47. Snap ring
48. Coupling
49. Retainer plate

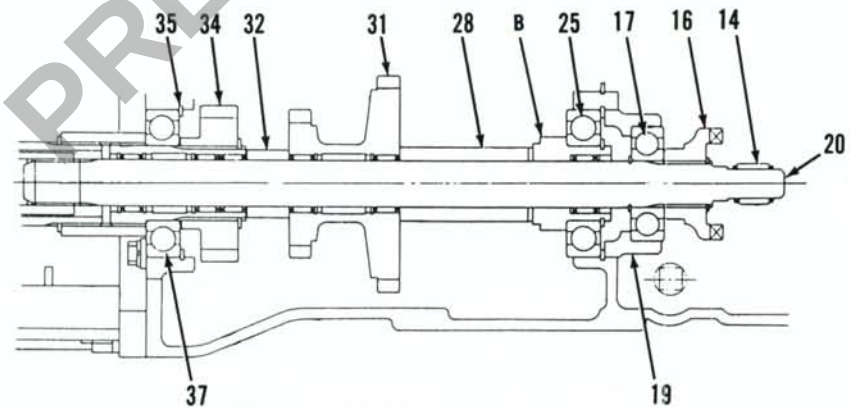


Fig. 105—Cross section of range transmission lower shaft of models with two-wheel drive. Refer to Fig. 104 for legend except unsplined boss (B).

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