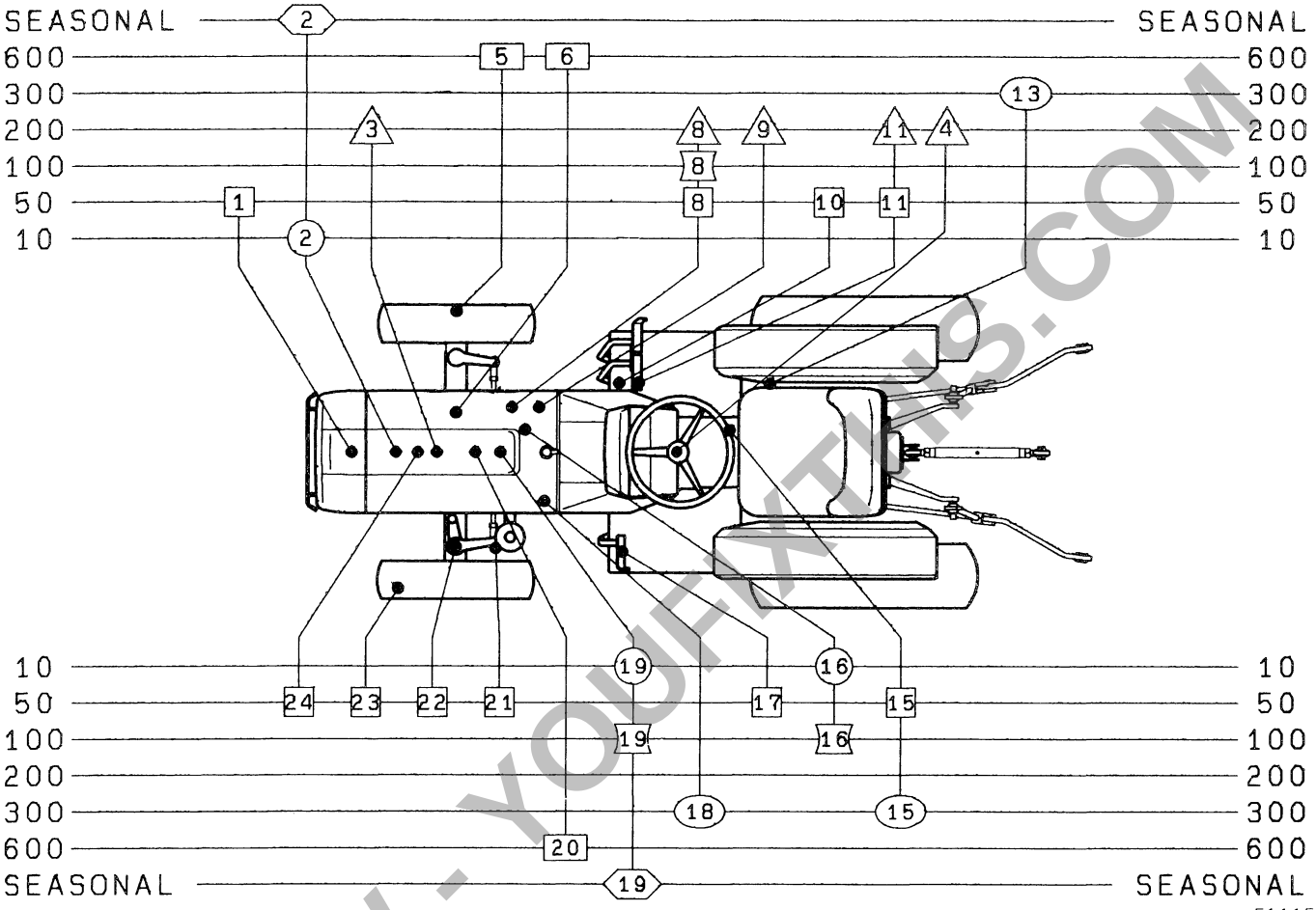
LUBRICATION AND MAINTENANCE CHART – FORD 1715
TWO-WHEEL DRIVE



F1115

NO	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil Level	×					Every
19	Air Cleaner	×					(10) Hours
2	Radiator Coolant	×					or Daily
13	Hydraulic Filter				×		First 50 Hours
15	Transmission Oil Level	×					
23	Tires	×					
17	Clutch Pedal	×				×	
1	Battery	×					
8	Fuel Filter	DRAIN					
	Lubrication Fittings						
21	Steering Linkage			×			Every
22	Front Wheel Spindles (2)			×			50
24	Pivot Shaft			×			Hours
17	Clutch Pedal			×			
11	Brake Pedal			×			
10	Pedal Shaft			×			

NO	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil				×		Every
8	Fuel Filter		×				100
19	Air Cleaner Element		×				Hours
3	Fan Belt	×				×	Every
9	Engine Oil Filter				×		200
11	Brake					×	Hours
8	Fuel Filter Element				×		
4	Steering Free-play					×	
15	Transmission Oil				×		Every
13	Hydraulic Filter				×		Hours
5	Front Wheel Bearings			×			Every
6	Fuel Injectors	×				×	600
20	Valve Clearance	×				×	Hours
2	Radiator Coolant				×		Seasonal
19	Air Cleaner Element				×		

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ENGINE

Type ····· Diesel
Number of Cylinders ····· 3
Bore ····· 3.31 in. (8.4 cm)
Stroke ····· 3.15 in. (8.0 cm)
Displacement ····· 81.16 cu.in. (1330 cc)
Compression Ratio ····· 23 : 1
Firing Oredr ····· 1-2-3
Low Idle Speed ····· 800-900 rpm
Maximum Speed :
  High Idle ····· 2750-2800 rpm
  Rated ····· 2600 rpm
Valve Clearance (Cold Engine) :
  Intake ····· 0.008 in. (.20 mm)
  Exhaust ····· 0.008 in. (.20 mm)

CAPACITIES

Fuel Tank ····· 7.1 U.S. Gals.
5.9 Imp. Gals.
27 Liters
Cooling System ····· 4.2 U.S. Qts.
3.5 Imp. Qts.
4.0 Liters
Engine Crankcase :
  Less Filter ····· 4.2 U.S. Qts.
3.5 Imp. Qts.
4.0 Liters
  With Filter Change ····· 4.8 U.S. Qts.
4.0 Imp. Qts.
4.5 Liters
Rear Axle and Transmission ···· 23.3 U.S. Qts.
(Includes Hydraulics) ····· 19.3 Imp. Qts.
22 Liters
Front Axle Final Reduction and
Differential Gear Case ····· 3.2 U.S. Qts.
2.6 Imp. Qts.
3.0 Liters
Power Steering (4WD) ····· 1.9 U.S. Qts.
1.6 Imp. Qts.
1.8 Liters

COOLING SYSTEM

Type ····· Pressurized Liquid with Recirculating
Water Pump : Bypass
  Type ····· Centrifugal
  Drive ····· V-Belt
  Water Pump Belt
    Deflection ···· 7/16 to 9/16 (10-15 mm)
when 20-25 lbs. (9-11 kg)
Thumb Force is Applied
Midway Between Pulleys.

COOLING SYSTEM — Cont'd.

  Fan Diameter ····· 13.4 in. (34 cm)
Thermostat :
  Start to Open ····· 160°F (71°C)
  Fully Open ····· 185°F 85°C)
Radiator Cap ····· 13 psi (.9 bar)

ELECTRICAL SYSTEM

Alternator ····· 12-volt, Heavy
Duty, 35 amps
Regulator ····· Mechanical
Battery ····· 12-volt, 65 amp.
Hour Rating with
Negative Ground
Stating Moter ····· Reduction,
Magnet Shift

FUEL SYSTEM

Type of Fuel to Use	Temperature	Type
Diesel	Above 20°F (−6.7°C)	No. 2D Cetane Rating min. 40
	Below 20°F (−6.7°C)	No. 1D Cetane Rating min. 40

Injection Pump :
  Type ····· In-Line
  Timing ····· 22.5°BTDC

CLUTCH

Type ····· 8.46 in. (21.5 cm)
Dry Disc.,
Organic Face
Pedal Free-Travel ····· 3/4-1-3/16 in.
(19-30 mm)

BRAKES

Type ····· Wet Disc
6.1 in. ×4.8 in. Diameter
(15.5 cm×12.3 cm)

STEERING

Type (2-Wheel Drive) ····· Manual
Type (4-Wheel Drive) ····· Hydraulic Power
Turns-Lock-to-Lock
  Manual Steering ····· 4.0
  Power Steering ····· 2.5
Steering Wheel Free-Play
(Manual Steering OInly) ····· 0.78-1.38 in.
(20-35 mm)
Front Wheel Toe-In ····· 0-13/64 in.
(0-5 mm)

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GENERAL TORQUE SPECIFICATION TABLE (Revised 2-74)

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

NOTE: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used This applies to both UNF and UNC threads

SAE Grade No.		2				5				8 *			
Bolt head identification marks as per grade NOTE: Manufacturing Marks Will Vary													
		Torque				Torque				Torque			
Bolt Size		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		Pounds Feet		Newton Meters	
Inches	Millimeters	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max.	Min.	Max.
1/4	6.35	5	6	6 8	8 13	9	11	12.2	14 9	12	15	16.3	30.3
5/16	7 94	10	12	13 6	16 3	17	20 5	23 1	27.8	24	29	32.5	39.3
3/8	9 53	20	23	27 1	31 2	35	42	47 5	57 0	45	54	61 0	73.2
7/16	11 11	30	35	40 7	47 4	54	64	73 2	86 8	70	84	94.9	113.9
1/2	12 70	45	52	61 0	70 5	80	96	108 5	130 2	110	132	149 2	179.0
9/16	14 29	65	75	88 1	101 6	110	132	149 2	179 0	160	192	217.0	260.4
5/8	15 88	95	105	128 7	142 3	150	180	203 4	244 1	220	264	298.3	358.0
3/4	19 05	150	185	203 3	250 7	270	324	366 1	439 3	380	456	515.3	618.3
7/8	22 23	160	200	216 8	271 0	400	480	542 4	650 9	600	720	813 6	976.3
1	25 40	250	300	338 8	406 5	580	696	786 5	943 8	900	1080	1220.4	1464.5
1-1/8	25 58	—		—		800	880	1084 8	1193 3	1280	1440	1735.7	1952.6
1-1/4	31 75	—		—		1120	1240	1518 7	1681 4	1820	2000	2467.9	2712.0
1-3/8	34 93	—		—		1460	1680	1979 8	2278 1	2380	2720	3227 3	3688.3
1-1/2	38 10	—		—		1940	2200	2630 6	2983 2	3160	3560	4285.0	4827.4

* Thick nuts must be used with Grade 8 bolts

METRIC BOLT TORQUE SPECIFICATIONS

Bolt Size	Grade No.	Coarse Thread			Fine Thread		
		Pitch (mm)	Pounds-Feet	Newton-Meters	Pitch (mm)	Pounds-Feet	Newton-Meters
M6	4T 4T 4 8	1.0	3.6– 5.1	4.9– 6.9	–	–	–
	7T 7T 8T 8 8		6.1– 8.3	8.3– 11 3			
	10T 10T 11T		8 7– 11 6	11.8– 15.7			
M8	4T	1 25	9.4– 12 3	12 7– 16 7	1 0	11 2– 14 8	15 2– 20.1
	7T		16.6– 21.0	22 6– 28.4		19 5– 25.3	26 5– 34.3
	10T		21 0– 26.8	28.4– 36 3		22 4– 29.7	30.4– 40.2
M10	4T	1.5	18.8– 24.6	25 5– 33 3	1 25	21.0– 26.8	28.4– 36.3
	7T		32.5– 41 2	44 1– 55.9		36.2– 46.3	49 0– 62 8
	10T		39.8– 51.4	53.9– 69 6		42 7– 54 2	57.9– 73 5
M12	4T	1 75	27.5– 34 7	37.3– 47.1	1.25	31 8– 40 5	43.1– 54 9
	7T		48.5– 61 5	65.7– 83.4		55 0– 69 4	74 5– 94.1
	10T		68 0– 85.4	92.2–116		73.1– 93 3	99 0–127
M14	4T	2.0	46.3– 59.3	62 8– 80.4	1 5	51.4– 64 4	69.6– 87.3
	7T		76.7– 96.9	104 –131		86.1–109	117 –148
	11T		102 –129	139 –175		108 –137	147 –186
M16	4T	2.0	63 6– 81 0	86 3–110	1 5	67 3– 84 6	91 2–115
	7T		110 –136	149 –184		116 –142	157 –192
	11T		152 –188	206 –255		163 –199	221 –270
M18	4T	2 0	83.9–104	114 –141	1 5	96.9–120	131 –163
	7T		145 –174	196 –235		170 –206	230 –279
	11T		203 –246	275 –333		221 –271	299 –368
M20	4T	2.5	106 –132	144 –179	1 5	127 –156	172 –211
	7T		177 –213	240 –289		203 –246	275 –333
	11T		268 –325	363 –441		293 –358	397 –485

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NOTE: More frequent engine oil and filter changes are recommended if the tractor is operated for extended periods of time at maximum rated power and speed. Under such conditions, or other types of continued severe operating conditions, the engine oil and the engine oil filter should be changed at 70 hour intervals.

1. With the engine off, but at normal operating temperature, drain and discard the engine oil by removing the drain plug, Figure 36. Reinstall the plug after the oil has drained and discard the oil.
2. Unscrew the oil filter, Figure 34, catching the used oil in a suitable container placed below the filter Discard the filter.
3. Coat the gasket on the new filter with a film of oil. Screw the filter into place until the gasket contacts its mating surface, then turn the filter approximately 3/4 of a turn by hand. Do not overtighten.
4. Add new oil of the type specified, page 30. Start the engine and check the filter for leaks after adding the oil. Be sure the oil is at the proper level.

FUEL FILTER

Draining the Filter: Drain the diesel fuel filter when water is visible in the sediment bowl.

Cleaning the Fuel Filter: Clean the fuel filter every 100 hours by rinsing in a container of clean diesel fuel.

1 Be sure there is adequate fuel in the fuel tank, close the fuel shut-off valve, then remove the fuel sediment bowl, Figure 37.
2. Open the fuel shut-off valve until all water has been removed and only fuel flows from the filter
3. Install the fuel sediment bowl and bleed the system as outlined under "Bleeding the Fuel System."

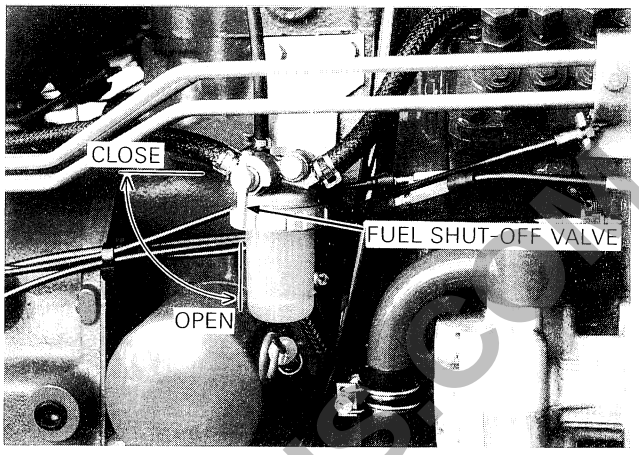


Figure 37 – Fuel Filter

Changing the Fuel Filter: Change the diesel fuel filter every 200 hours.

1. Close the shut-off valve.
2. Remove the sediment bowl, Figure 37.
3. Open the fuel shut-off valve to drain any remaining water from the tank.
4. Discard the old element and install a new element.
5. Install and securely tighten the sediment bowl.
6. Open the fuel shut-off valve so fuel will flow to the filter
7. Bleed the fuel filter and injection pump as covered under "Bleeding the Fuel System."

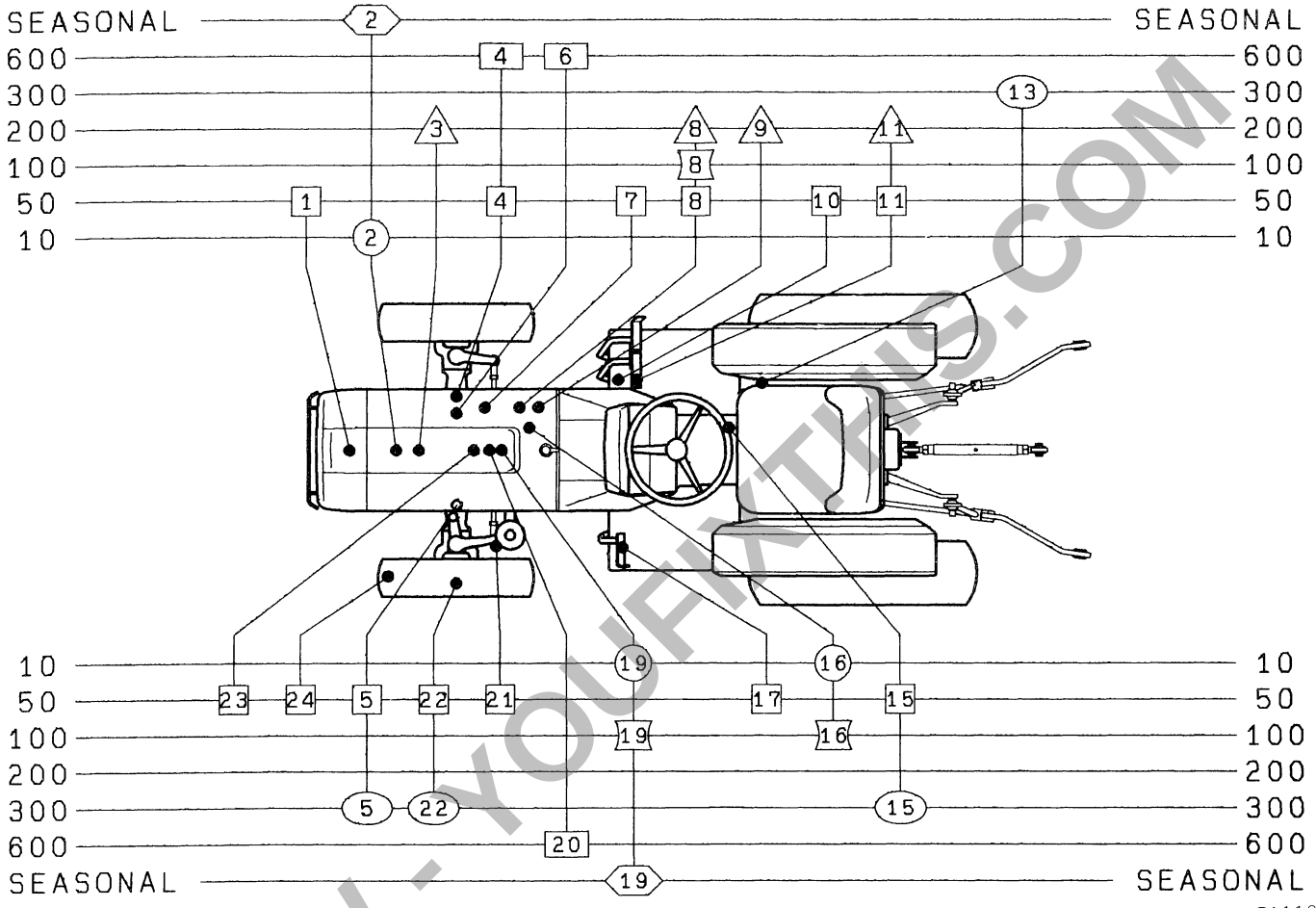
BLEEDING THE FUEL SYSTEM

Bleed the fuel system after it has been drained :

- If a new filter element has been installed,
- If the tractor has run out of fuel,
- If the lines leading to or from the filter have been disconnected,
- If the injection pump has been removed and reinstalled.

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LUBRICATION AND MAINTENANCE CHART – FORD 1715 FOUR-WHEEL DRIVE



F1116

NO	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil Level	×					Every (10) Hours or Daily
19	Air Cleaner	×					
2	Radiator Coolant	×					
13	Hydraulic Filter				×		First 50 Hours
15	Transmission Oil Level	×					Every 50 Hours
24	Tires	×					
17	Clutch Pedal	×				×	
1	Battery	×					
8	Fuel Filter	DRAIN					
5	Front Axle Oil Level	×					
22	Final Reduction Gear Cases Oil Level	×					
4	Power Steering Oil Level	×					
	Lubrication Fittings						
21	Steering Linkage			×			
17	Clutch Pedal			×			
11	Brake Pedal			×			
7	Power Steering cylinder			×			
10	Pedal Shaft			×			
23	Drive Shaft Cover			×			

NO	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil				×		Every (100) Hours
8	Fuel Filter		×				
19	Air Cleaner Element		×				
3	Fan Belt	×				×	Every (200) Hours
9	Engine Oil Filter				×		
11	Brake					×	
8	Fuel Filter Element				×		
5	Front Axle Oil				×		Every (300) Hours
22	Final Reduction Gear Cases Oil				×		
15	Transmission Oil				×		
13	Hydraulic Filter				×		
6	Fuel Injector	×				×	Every (600) Hours
4	Power Steering Oil				×		
20	Valve Clearance	×				×	
2	Radiator Coolant				×		Seasonal
19	Air Cleaner Element				×		

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SPECIFICATIONS

STEERING-Cont'd

Turning Radius
(Without Brake) ·····8.69 ft. (265 cm)
Two Wheel Drive
9.38 ft. (286 cm)
Four Wheel Drive

POWER TAKE-OFF

Type ·····Transmission
Shaft ·····1-3/8 in. (3.49 cm)
6 Spline SAE STD
Engine Speed for 540 rpm
PTO Operation ·····2419 rpm
Horsepower PTO
Observed ·····23.0

HYDRAULIC LIFT SYSTEM

Type ·····Live Category 1
3-point Linkage
Pump Type ·····Gear
Pump Capacity ·····6.16 U.S. gpm@
5.13 Imp. gpm@
23.3 liters per minute@
2133 psi at 2600 rpm
147 bar at 2600 rpm
System Relief Valve
Setting ·····2133 psi (147 bar)

CAST IRON WEIGHTS

(3) Front End Weights ·····33 lbs.
(15 kg) each
(4) Rear Wheel Weights ·····66 lbs.
(30 kg) each

Draw Bars

Fixed Type ·····Standard
Extendable ·····Optional
Swinging ·····Optional

TIRES

Front :

Standard (AG)

Two Wheel Drive	Four Wheel Drive
4.00-15, F2, 4PR	6-14 R1, 4PR

Optional (AG)

Two Wheel Drive	Four Wheel Drive
5.50-16, F2, 4PR	7-14 R1, 4PR

Optional (TURF)

Two Wheel Drive	Four Wheel Drive
23-8.50-12, 4PR	25-8.50-14,4PR

Rear :
Standard (AG) ····(Two & Four Wheel Drive)
9.5×24, R1, 4PR
Optional (AG)·····(Two & Four Wheel Drive)
11.2×24, R1, 4PR
Optional (TURF) ··(Two & Four Wheel Drive)
13.6-16, R3, 4PR

WHEEL BOLT TORQUES

Front Wheel : Disc-to-Hub

Two Wheel Drive	Four Wheel Drive
43-54 lb. ft. (58-73 N.m)	69-87 lbs. ft. (93-117 N.m)

Rear Wheel :
Disc-to-Axle ·····137-159 lbs. ft.
(186-215 N.m)

ROPS ATTACHING BOLT TORQUES

ROPS to Axle (M12) ·····55 lbs. ft. (74 N.m)
Seat Belt (M10)·····37 lbs. ft. (50 N.m)

LUBRICANTS

TRACTOR COMPONENT	LUBRICANT RECOMENDATION	FNH PART NO.
Engine Oil	FNH Super Premium	1QM-2C 121-AMV (Case-24 Qts. 15W-40) 1QM-2C 121-A10 (Case-24 Qts. SAE 10W) 1QM-2C 121-A30 (Case-24 Qts. SAE 30W)
Transmission, Rear Axle, Power Steering and Hydraulic System Oil	FNH 134	1GM-134C (1 Gal.) 5GM-134C (5 Gal.)
Front Wheel Bearings and Lubrication Fittings	M1C-137-B	1TM-1C-137-B (1 Tube)
Front Axle	FNH 134	1GM-134C (1 Gal.) EOAZ-19580-E (5 Gal.)

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Bleed the fuel system as follows :

WARNING : Fuel oil in the injection system is under high pressure and can penetrate the skin

Unqualified persons should not remove or attempt to adjust a pump injector, nozzle or any part of the fuel injection system

DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.

If any fluid is injected into the skin, obtain medical attention immediately or gangrene may result.

Failure to follow these instructions can result in serious injury

1. Be sure there is adequate fuel in the fuel tank
2. Open the fuel shut-off valve.
3. Open the bleed screw at the pump Figure 38 and let the air bubbles escape, then close the bleed screw.

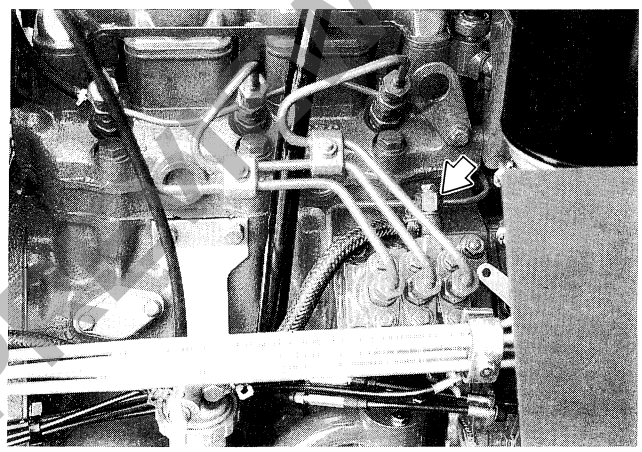


Figure 38 – Fuel System Bleed Screw

4. Push the hand throttle to the high speed position. Turn the engine over for a few seconds to bleed the high pressure fuel tube.

Injector Lines : Bleed the injector lines if the tractor has run out of fuel, if new injectors have been installed, or if the injection pump has been removed for service repairs.

1 Loosen the injector line fittings at the injectors
2. Move the hand throttle control lever to its wide open position.
3. Crank the engine until air-free fuel flows from each connection, then tighten the fittings to 18-22 lbs. ft. (24-29 Nm).

IMPORTANT : Do not crank the engine continuously for more than 30 seconds. Doing so may cause starting motor failure If air is not purged from the system, repeat the procedure.

AIR CLEANER

Checking Dirt Level : Check the dirt level in the dust pan daily or every 10 hours, Figure 39.

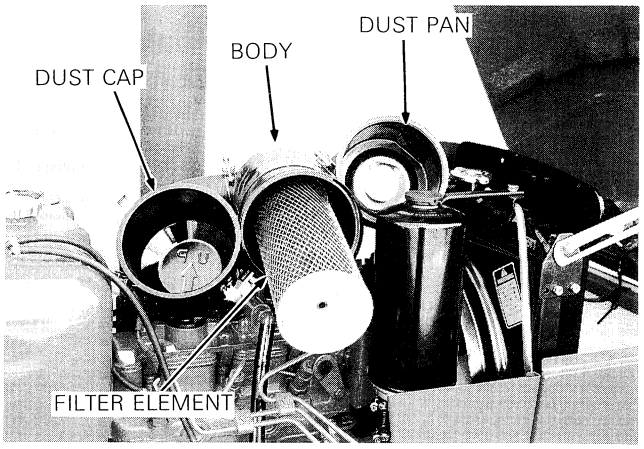


Figure 39 – Air Cleaner – Disassembled

Clean the element every 100 hours of service.

1. Loosen the spring clamps and remove the dust cap, Figure 39.
2. Remove the seal and dust pan from the dust cap and clean the dust cap, seal and dust pan using a damp lint free cloth, Figure 39.
3. Remove the wing nut holding the filter element

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NOTE : Should the recommended engine oil not be readily available, use a commercial oil as shown on page 30.

IMPORTANT : Engine crankcase oil drain intervals should be adjusted downward when diesel fuel sulfer content is over 0.5%. (See page 31.)

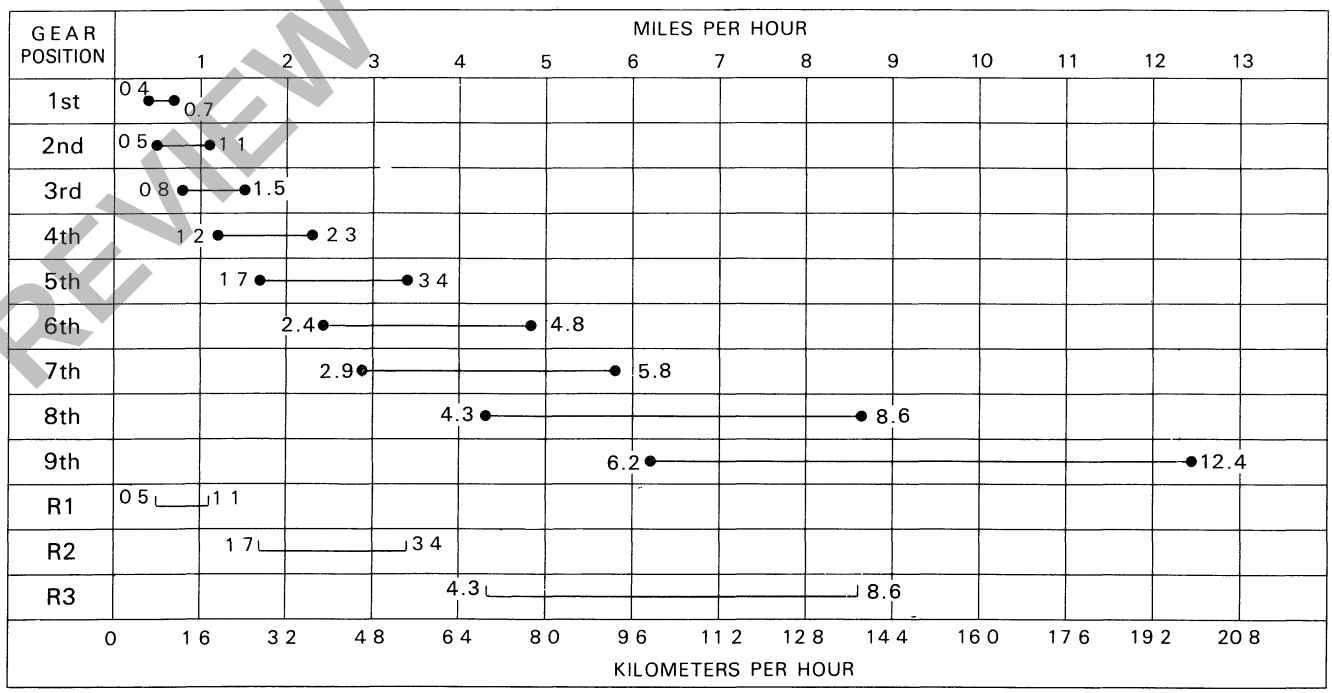
GENERAL DIMENSIONS

	Tow-Wheel Drive	Four-Wheel Drive
Length	111.4 in. (283.0 cm)	111.4 in (283.0 cm)
Wheelbase	63 in. (160.0 cm)	63 in. (160.0 cm)
Height :		
Top of Steering Wheel	55.7 in. (141.5 cm)	55.1 in. (140.0 cm)
Top of ROPS	84.4 in. (214.5 cm)	84.4 in. (214.5 cm)
Top of Vertical Exhaust	78.7 in. (200.0cm)	78.5 in. (199.5 cm)
Width :	51.6 .in (131 cm)	51.6 in. (131 cm)

GENERAL DIMENSIONS — Cont'd

	Tow-Wheel Drive	Four-Wheel Drive
Minimum Ground Clearance	11.8 in. (30.0 cm)	11.2 in. (28.5 cm)
Adjustable Wheel Tread		
Front	39.2-41.3 in. (995-1050 cm)	42.5 in. (108.0 cm)
Rear	42.2-48.2 in. (107-122.5 cm)	42.2-48.2 in. (107-122.5 cm)
Weight (W/ROPS) (Less Options)	1929 lbs. (875 kg)	2116 lbs. (960 kg)

GROUND SPEEDS
From 1300-2600 RPM Engine Speed
with 9.5×24 Rear Tires



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